

# Industrial Ethernet

Version 2023



**Weidmüller** 

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# Industrial Ethernet – Active components

## Catalogue 9

<b>A</b>	<b>Active components</b>	Introduction - Active components
<b>B</b>		Unmanaged Switches
<b>C</b>		Managed Switches
<b>D</b>		Industrial Security Router
<b>E</b>		u-link Remote Access Service
<b>F</b>		Media converter and protocol gateways
<b>G</b>		IoT-Gateways
<b>H</b>		Industrial WLAN
<b>I</b>		Accessories - Active components

# Industrial Ethernet – Passive components

## Catalogue 9

### Passive components

Introduction - Passive components

Single Pair Ethernet (SPE)

IP20 plug-in connectors and mounting rail outlets

FrontCom® IP65 service interfaces

IP67 plug-in connectors

IP65 connection components / FreeCon connecting components

Copper cabling solutions

Fibre-optic cabling solutions

Accessories - Passive components

### Appendix

Service and support

Index

Search according to type or order number

# Active components

## An overview of our portfolio

### Unmanaged Switches

Fast Ethernet, Fast / Gigabit Ethernet, Gigabit Ethernet  
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### Unmanaged Power over Ethernet

**Switches / Injectors** – Fast Ethernet, Gigabit Ethernet  
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### Managed Switches

Fast Ethernet, Fast / Gigabit Ethernet, Gigabit Ethernet  
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### Managed Power over Ethernet Switches

Gigabit Ethernet  
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### Managed Switches IEC 61850-3

Fast / Gigabit Ethernet, Gigabit Ethernet  
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### Modular Managed Switches IEC 61850-3

Fast / Gigabit Ethernet, Gigabit Ethernet, 10-Gigabit Ethernet  
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### Media interface modules for modular switches

Fast Ethernet, Gigabit Ethernet, 10-Gigabit Ethernet  
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### Industrial Security Routers

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### u-link Remote Access Service

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### Ethernet media converters (copper/fiber-optic)

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### Serial / Ethernet converters and Modbus TCP / RTU gateway

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### IoT-Gateways

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# Active components

## An overview of our portfolio

### Industrial WLAN

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### SFP transceiver

Fast Ethernet, Gigabit Ethernet, 10-Gigabit Ethernet

Page I.4



### Configuration backup and restore module

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### Antennas and antenna accessories

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### Mounting kits for 19" rack and wall

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# Passive components

## An overview of our portfolio

### Single Pair Ethernet (SPE)

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### IP20 plug-in connectors

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### IP20 mounting rail outlets

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### IP65 service interface FrontCom®

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### IP67 plug-in connectors

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### IP65 connection components / connectivity components FreeCon

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### IP65 FreeCon Active PROFINET

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# Cabling solutions

## An overview of our portfolio

### Raw cable Single Pair Ethernet (SPE)

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### Installation cables

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### Connecting cables

Page P.10



### Dragline cables

Page P.16



### Single Pair Ethernet (SPE) patch cables

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### RJ45 patch cables

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### System cables assembled

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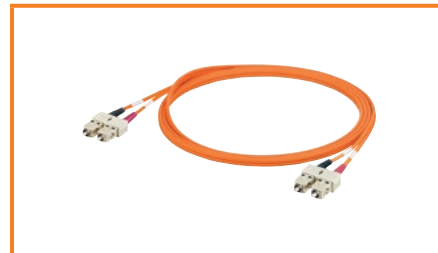
### FO connecting cables

Page Q.3



### FO patch cables

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### FO system cables

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# Passive components

## Accessories from a single source

### Cable connector

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### Copper cabling tools

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### Fibre-optic cabling tools

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### General tools

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### Cabtite

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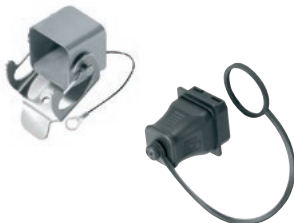
### Cable Bender

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### Protective caps

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### Inkjet printer

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### Markers

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# Service and support

## Service connects – worldwide

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- Service connects – worldwide
- Engineering services and customised products
- easyConnect – Your Industrial Service Platform
- Support Center
- Additional support services
- Weidmüller Configurator

## Digital ordering options

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Purchasing made easy:

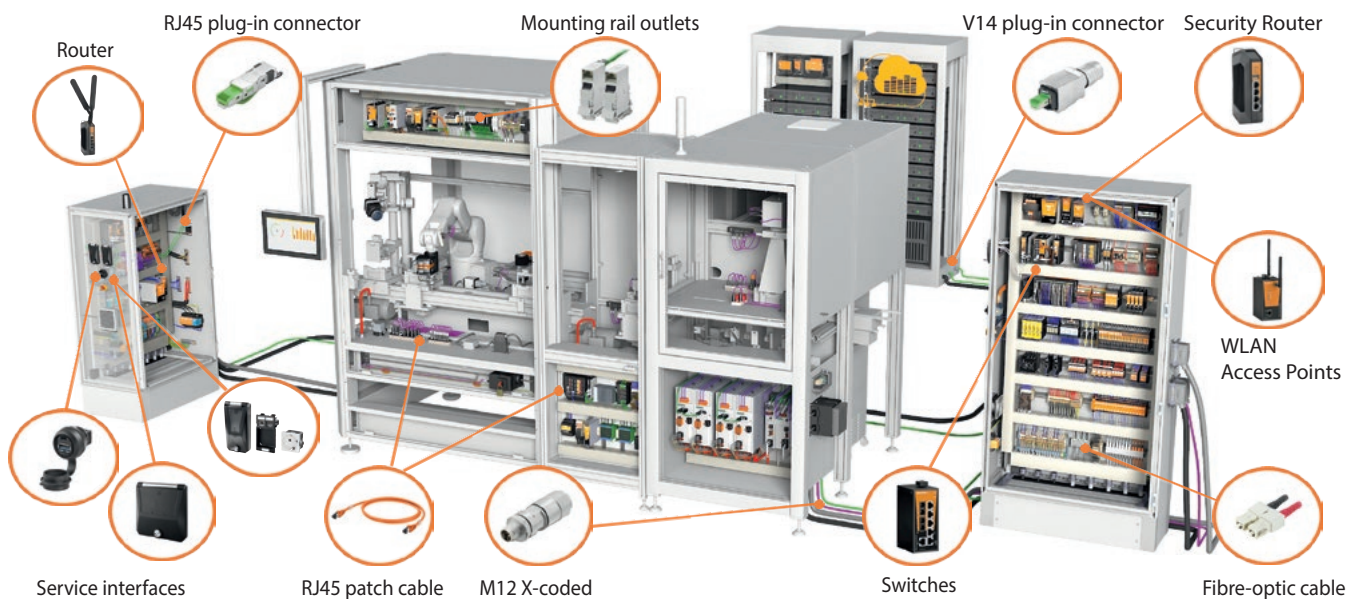
- Weidmüller eShop
- OCI interface
- EDI interface

# Intended use for Industrial Ethernet

## A complete range of products for industrial communications infrastructure

The trend to network industrial plant components using Ethernet protocols was already apparent several years ago. Ethernet communication is now well established in all market segments; including automotive, general machine construction, process industry, transportation, energy and even Maritime. The requirements of these differ in terms of protocols, environmental conditions, certifications and standards. As well as being a leading provider of industrial connection and network products, Weidmüller embraces solutions for these differing requirements with a comprehensive and highquality product range of active and passive components for Ethernet communications.

The basic requirements of these industrial markets are high reliability, availability and safeguarding against failure. These are met by extremely high MTBF times of our network components. Using Weidmüller's high-quality STEADYTEC® connector system means that maximum reliability and simple operation is ensured. Indeed, Weidmüller's network components create a complete communications infrastructure for industrial applications in machine construction, process and plant engineering and energy.





### Automotive

The automotive manufacturers of AIDA (Automation Initiative of the German Automotive Industry) are the drivers behind the use of the Industrial Ethernet in manufacturing. Extremely harsh environmental conditions place high demands on the components used: Cabling must be torsion-resistant and there are increased EMC requirements for connectors and active devices. For these areas of application, Weidmüller offers a complete product range consisting of copper and fibre optic connectors that are designed to meet the special needs of robot cabling.



### Machinery & Plant Engineering

Machinery has to stand out from the competition with special services and a stronger customer focus. This results in a dynamic change in machinery and plant construction, demanding greater economic efficiency, quality, flexibility and performance from machines. The networking of machine segments and plant parts and their connection to higher-level office networks is playing an increasingly important role in this. Our products are perfectly adapted to these requirements and offer not only robustness and reliability, but are also easy to configure.



### Ships

The shipbuilding industry is also experiencing disruptive market development in the face of rapidly advancing technological developments. Autonomous shipping, sustainability, networking, digitalisation concepts and advanced data analytics are the key topics in this respect. To meet the requirements of this industry, the various products in our portfolio include variants with a marine approval according to DNV.



### Transmission & Distribution

The energy market is booming – especially in the field of renewable energies. The products used here must often be able to withstand harsh environmental conditions. To ensure that power grids function reliably and stably, intelligent solutions are being integrated more and more in order to minimise downtimes and to reduce maintenance work. This requires uninterrupted communication. We support the energy sector with reliable components that are approved according to IEC 61850-3 and IEEE 1613 standards.



### Process industry

In large-scale process plants, fibre optic media are often used for communication over long distances. However, for reliable data transmission in the field, the components used must be protected from harmful environmental influences. These include high temperature fluctuations, vibrations, dust exposure and electromagnetic influences. Our active and passive Ethernet components have ATEX approval and can reliably withstand these influences.



# Active components

## Introduction

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Active components

Introduction - Active components

A.2

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# Transfer data between devices in the network flexibly and reliably

## Active Industrial Ethernet – the perfect solution for countless applications

A

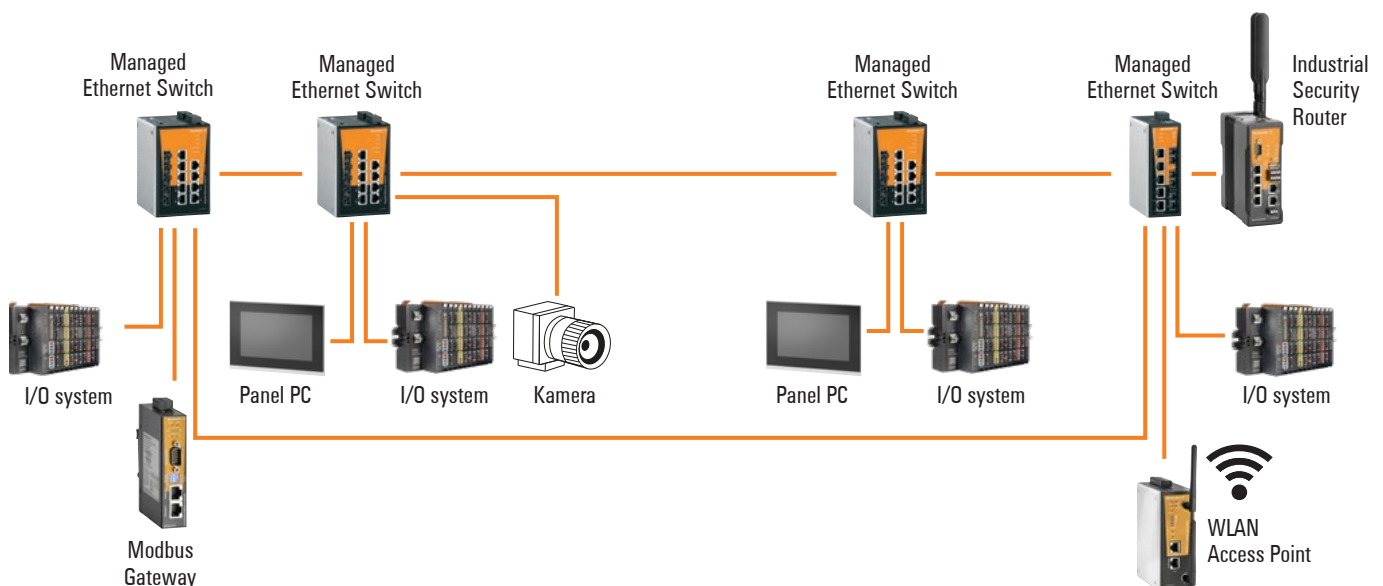
The Industrial Ethernet has proved itself in many areas of automation. With its high performance and flexibility, it opens up a multitude of design options for the network infrastructure. Our Industrial Ethernet components are the perfect connection solution for data communication between Ethernet-capable devices in industrial automation. They have various features and approvals, which is why they are ideally suited to many industrial applications.

As a complete supplier of industrial network infrastructures, we are active in machinery and plant engineering, shipbuilding, the process industry and energy, including traditional/renewable power generation, as well as transmission and distribution.

Our broad product range includes a variety of products with a wide range of approvals for individual requirements. These include Fast/Gigabit switches (unmanaged/managed including Power over Ethernet variants), routers, WLAN devices, IoT gateways, media converters and protocol gateways, as well as u-link, our remote maintenance solution. All our Ethernet components meet the highest demands and enable reliable, flexible Ethernet communication.

Thanks to the highly differentiated Eco, Basic, Value, Advanced, Premium and SubstationLine product lines, our switches are suitable for meeting a wide range of requirements. This allows us to guarantee optimal data transmission at all times – from simple communication structures to the complex data meshes of extensive systems.

As an ideal complement to this, we offer you a comprehensive passive product portfolio of RJ45 and fibre optic connectors and cables. This makes Weidmüller your perfect partner for Industrial Ethernet solutions.







# Always the best choice for your requirements

## Our switch product lines for all-round application-oriented solutions

A

Ethernet networks must allow the exchange of data packets between specific participants. For this purpose, the participants are connected to each other via Ethernet switches. Ethernet switches thus collect all data streams and distribute them to the respective participants to enable communication to take place. Since Ethernet switches have to meet very different requirements depending on the area of application, we offer a variety of product lines. They differ in terms of their properties, special features and technical highlights.



### EcoLine:

Our unmanaged EcoLine switches are characterised by a rich variety of different models and high economic efficiency. They can be used in a uniquely wide temperature range of -40 to +75 °C, which enables them to be operated both inside production plants and in the field. The robust devices have 5 to 24 ports as well as a redundant voltage input. Their SFP ports allow especially flexible use, regardless of the available communication media and/or the required distance. Power over Ethernet switches are also available within the EcoLine in order to reduce the required cabling work.



### BasicLine:

The BasicLine series consists of an extensive range of unmanaged plug and play switches. All devices were developed for use in harsh industrial environments and have numerous international approvals, such as cULus, Class I, Div. 2, ATEX and DNV. This makes them ideal for use in many different industries. The devices are available with Fast Ethernet and Gigabit Ethernet ports. In addition, the series also includes individual variants with Power over Ethernet ports.



### ValueLine:

Our ValueLine series features unmanaged and managed switches available with Fast Ethernet and Gigabit Ethernet ports. Our ValueLine managed switches support various industrial communication protocols, e.g. MODBUS/TCP, PROFINET/RT and ETHERNET/IP. This enables optimal integration into the most common automation networks. They also support a variety of helpful management functions, such as port mirroring and error messaging via e-mail or relay. All of these functions can be set up with ease via the web-based management interface. ValueLine switches also have numerous international approvals to ensure proper operation in a variety of industries (cULus, Class I Div. 2 / ATEX Zone 2, DNV).



#### AdvancedLine:

The managed switches of our AdvancedLine are characterised by a wide assortment of variants and economic efficiency. The different model variants designed for Fast Ethernet and Gigabit as well as integrating 5 to 24 ports and SFP slots ensure a high degree of flexibility. Their especially wide temperature range of -40 to +75 °C allows them to be used both in production plants and in the field. All switches in the series can be intuitively configured via a browser-based web interface. The comprehensive management tool can be used to set up various redundancy, monitoring, traffic filtering and security functions. The AdvancedLine ranges from full-managed switches for demanding applications to lite-managed switches for simpler requirements within a network and offers an excellent price-performance ratio. Power over Ethernet switches are also available in the AdvancedLine in order to reduce cabling work.



#### PremiumLine:

The managed switches of our PremiumLine are true high-end products. They are especially suitable for ambitious network solutions with high data volumes. The devices are available in a wide variety of versions. For example, customers can select the number of ports, transmission rate (Fast/Gigabit Ethernet) and connection variant. PremiumLine switches support various industrial application protocols, e.g. MODBUS/TCP, PROFINET RT and ETHERNET / IP. They also have numerous international approvals, such as cULus, Class I Div.2 / ATEX Zone 2 and DNV, making them a perfect choice for many different industries and applications.



#### SubstationLine:

The SubstationLine comprises managed Ethernet switches that comply with the IEC 61850-3 standard, making them robust enough for operation in harsh environments. All switches include a redundant power supply, and the series also includes variants with Fast Ethernet, Gigabit, all the way up to 10 Gigabit Ethernet, as well as sophisticated features like PTPv2 time synchronisation. All devices were designed for use in substations and other energy (T&D) systems, where electromagnetic interference is higher than in other industries. To cope with the complexity of larger networks, the SubstationLine also offers switches with Layer 3 functionality.



# Unmanaged Switches Overview

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<b>Unmanaged Switches</b>	Introduction - Unmanaged Switches	B.2
	Unmanaged Switches Fast Ethernet	B.4
	Unmanaged Power over Ethernet Switches Fast Ethernet	B.14
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	Power over Ethernet Injector Gigabit Ethernet	B.24

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# The proven standard for active network components

## Unmanaged switches – adaptable and economical

### B

Unmanaged switches require no configuration and are nevertheless adaptable. They use basic standardised protocols, such as autonegotiation, autocrossing and flow control, allowing them to adapt automatically to widely varying transmission speeds or connector assignments. In addition, the switches are protocol-transparent. Each port of a switch forms its own collision domain. All switches support the use of twisted pair cabling with RJ45 interface or fibre optic cable based on the interfaces specified in IEEE 802.3.

Our unmanaged switches are the simple and economical standard start-up solution for the Industrial Ethernet. We offer different versions with different features. In addition to the unmanaged switches of the EcoLine, BasicLine and ValueLine, we can also offer you Power over Ethernet variants within all lines that can significantly reduce your wiring work. This means you can also operate Ethernet devices in areas that are difficult to access – without a separate power supply cable.

#### Your special advantage:

- Wide variety of ports in terms of number and features to meet individual requirements
- Fast Ethernet and Gigabit versions available, including Power over Ethernet variants
- Rapid fault diagnosis thanks to the clearly visible LED display
- Robust housing for reliable long-term use in different environments

See chapter A for details about the product lines



**Variety of versions**

Variety of port numbers and media types for a wide range of applications (up to 24 ports)

**Design advantage**

Space-saving design for high economic efficiency



**Variety of models**

Numerous international approvals, such as cULus, KC, EAC, Class 1 Div. 2 / ATEX Zone 2 and DNV

**Variety of models**

Fast Ethernet | Gigabit and Power over Ethernet versions

**5 and 8-Port unmanaged Fast Ethernet Switches**

- Compact design
- Wide temperature range
- Redundant voltage inputs

**IE-SW-EL05-5TX**



**IE-SW-EL08-8TX**



**Technical data**

<b>Technology</b>	Standard
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
<b>Switch characteristics</b>	
MAC table size	1 K
Packet buffer size	448 kbit
<b>Interfaces</b>	
RJ45 ports	10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Fibre-optic ports	5x RJ45
<b>Power supply</b>	
Connection type	1 removable 4-pin terminal block
Voltage supply range	10.8...52.8VDC / 18...36VAC
Voltage supply	12/24/48 V DC, 24 V AC, 2 redundant inputs
Current consumption	0.1A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
<b>Physical characteristics</b>	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	95 / 26.1 / 70 mm (3.7402 / 1.0276 / 2.7559 inch)
Net weight	205 GRM
<b>Environmental conditions</b>	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
<b>EMC conformity and approvals</b>	
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
<b>MTBF</b>	
Operating time (hours), min.	2638236 hrs
According to Standard	Telcordia SR-332
<b>Approvals</b>	
Approvals	CE; CULUS; EAC; KOREANCERT
<b>Note</b>	

Technology	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX, IEEE 802.3x for flow control
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
MAC table size	1 K
Packet buffer size	448 kbit
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Fibre-optic ports	5x RJ45
Power supply	
Connection type	1 removable 4-pin terminal block
Voltage supply range	10.8...52.8VDC / 18...36VAC
Voltage supply	12/24/48 V DC, 24 V AC, 2 redundant inputs
Current consumption	0.1A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	95 / 26.1 / 70 mm (3.7402 / 1.0276 / 2.7559 inch)
Net weight	205 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
MTBF	
Operating time (hours), min.	2638236 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS; EAC; KOREANCERT
Note	

Technology	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX, IEEE 802.3x for flow control
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
MAC table size	1 K
Packet buffer size	448 kbit
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Fibre-optic ports	8x RJ45
Power supply	
Connection type	1 removable 4-pin terminal block
Voltage supply range	10.8...52.8VDC / 18...36VAC
Voltage supply	12/24/48 V DC, 24 V AC, 2 redundant inputs
Current consumption	0.14A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	95 / 41 / 90 mm (3.7402 / 1.6142 / 3.5433 inch)
Net weight	350 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
MTBF	
Operating time (hours), min.	1390019 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS; EAC; KOREANCERT
Note	

**Ordering data**

<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-EL05-5TX	1	2682130000
<b>Note</b>		

<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-EL05-5TX	1	2682130000
<b>Note</b>		

<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-EL08-8TX	1	2682140000
<b>Note</b>		



### 8-Port unmanaged Fast Ethernet Switches

- Compact design
- Wide temperature range

#### Technical data

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Fibre-optic ports	
<b>Fibre optic transceiver characteristics</b>	
Transmission rate	
Connector type	
Transceiver type	
Transmission distance, typ.	
Wavelength	
Receive power	
Transmission power	
Link-budget	
<b>Power supply</b>	
Connection type	
Voltage supply range	
Voltage supply	
Current consumption	
Overload current protection	
Reverse polarity protection	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
Operating altitude	
<b>EMC conformity and approvals</b>	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	

#### Ordering data

Type	Qty.	Order No.
IE-SW-EL08-6TX-2SC	1	2682170000

#### Note

### IE-SW-EL08-6TX-2SC



IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3x for flow control
Store and Forward
IEEE 802.3x flow control
1 K
448 kbit
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
6x RJ45, 2x SC Multi-mode
100BaseFX ports (SC connector), Multimode
100 Mbps
SC-Duplex
Multimode
2 km
1310nm
-31...0dBm
-23.5...-14dBm
7.5 dB
1 removable 3-pole terminal block
9...33VDC
12/24 V DC, 1 single input
0.14A @ 24V DC
Yes
Yes
Metal
IP30
DIN rail
115 / 41 / 84 mm (4.5276 / 1.6142 / 3.3071 inch)
350 GRM
-40 °C...75 °C
5 to 95 % (non-condensing)
2000m in acc. with UL
EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
UL 61010-1, UL 61010-2-201
according to IEC 60068-2-27
according to IEC 60068-2-6
1218117 hrs
Telcordia SR-332
CE; CULUS; EAC; KOREANCERT

Type	Qty.	Order No.
IE-SW-EL08-6TX-2SC	1	2682170000

#### Note

### IE-SW-EL08-6TX-2SCS



IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3x for flow control
Store and Forward
IEEE 802.3x flow control
1 K
448 kbit
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
6x RJ45, 2x SC Single-mode
100BaseFX ports (SC connector), Singlemode
100 Mbps
SC-Duplex
Singlemode
30 km
1310nm
-34...0dBm
-15...-8dBm
19 dB
1 removable 3-pole terminal block
9...33VDC
12/24 V DC, 1 single input
0.14A @ 24V DC
Yes
Yes
Metal
IP30
DIN rail
115 / 41 / 84 mm (4.5276 / 1.6142 / 3.3071 inch)
350 GRM
-40 °C...75 °C
5 to 95 % (non-condensing)
2000m in acc. with UL
EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
UL 61010-1, UL 61010-2-201
according to IEC 60068-2-27
according to IEC 60068-2-6
1060513 hrs
Telcordia SR-332
CE; CULUS; EAC; KOREANCERT

Type	Qty.	Order No.
IE-SW-EL08-6TX-2SCS	1	2682180000

#### Note

**16-Port unmanaged Fast Ethernet**

**Switches**

- Wide temperature range
- Reliable operation due to redundant voltage inputs, fault relay and LED diagnostics
- SFP-ports for fiber optic transmission over long distances

**Technical data**

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Fibre-optic ports	
<b>Power supply</b>	
Connection type	
Voltage supply range	
Voltage supply	
Current consumption	
Overload current protection	
Reverse polarity protection	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
Operating altitude	
<b>EMC conformity and approvals</b>	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	

**Ordering data**

<b>Type</b>	
<b>Qty.</b>	
<b>Order No.</b>	
<b>Note</b>	

**IE-SW-EL16-14TX-2FESFP**



<b>Technology</b>	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3x for flow control
Store and Forward	
IEEE 802.3x flow control	
4 K	
2.75 Mbit	
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port	
14x RJ45, 2x Slots 100BaseSFP	
100BaseSFP-Slot	
1 removable 6-pin terminal block	
10.8...52.8VDC	
12/24/48 V DC, 2 redundant inputs	
0.34A @ 24V DC	
Yes	
Yes	
Metal	
IP30	
DIN rail	
170 / 74 / 140 mm (6.6929 / 2.9134 / 5.5118 inch)	
1140 GRM	
-40 °C...75 °C	
5 to 95 % (non-condensing)	
2000m in acc. with UL	
EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms	
UL 61010-1, UL 61010-2-201	
according to IEC 60068-2-27	
according to IEC 60068-2-6	
719800 hrs	
Telcordia SR-332	
CE; CULUS; EAC	

<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-EL16-14TX-2FESFP	1	2682160000
<b>Note</b>		

**IE-SW-EL16-16TX**



<b>Technology</b>	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX, IEEE 802.3x for flow control
Store and Forward	
IEEE 802.3x flow control	
8 K	
1 Mbit	
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port	
16x RJ45	
1 removable 6-pin terminal block	
10.8...52.8VDC	
12/24/48 V DC, 2 redundant inputs	
0.27A @ 24V DC	
Yes	
Yes	
Metal	
IP30	
DIN rail	
153.6 / 74.3 / 107.5 mm (6.0472 / 2.9252 / 4.2323 inch)	
1188 GRM	
-40 °C...75 °C	
5 to 95 % (non-condensing)	
2000m in acc. with UL	
EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms	
UL 61010-1, UL 61010-2-201	
according to IEC 60068-2-27	
according to IEC 60068-2-6	
1160204 hrs	
Telcordia SR-332	
CE; CULUS; EAC; KOREANCERT	

<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-EL16-16TX	1	2682150000
<b>Note</b>		

## 24-Port unmanaged Fast Ethernet Switch

- Wide temperature range
- Reliable operation due to redundant voltage inputs, fault relay and LED diagnostics

## IE-SW-EL24-24TX



### Technical data

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Fibre-optic ports	
<b>Power supply</b>	
Connection type	
Voltage supply range	
Voltage supply	
Current consumption	
Overload current protection	
Reverse polarity protection	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
Operating altitude	
<b>EMC conformity and approvals</b>	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	

### Ordering data

<b>Note</b>
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IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX, IEEE 802.3x for flow control
Store and Forward
IEEE 802.3x flow control
8 K
1 Mbit
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
24x RJ45
1 removable 6-pin terminal block
10.8...52.8VDC
12/24/48 V DC, 2 redundant inputs
0.39A @ 24V DC
Yes
Yes
Metal
IP30
DIN rail
154 / 96.4 / 108.5 mm (6.063 / 3.7953 / 4.2716 inch)
1369 GRM
-40 °C...75 °C
5 to 95 % (non-condensing)
2000m in acc. with UL
EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
UL 61010-1, UL 61010-2-201
according to IEC 60068-2-27
according to IEC 60068-2-6
959803 hrs
Telcordia SR-332
CE; CULUS; EAC; KOREANCERT

Type	Qty.	Order No.
IE-SW-EL24-24TX	1	2682190000

5-Port unmanaged Fast Ethernet Switches

- Extensive approvals
- Compact design
- Redundant voltage inputs

Technical data

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Fibre-optic ports	
Function DIP switch	
<b>Fibre optic transceiver characteristics</b>	
Transmission rate	
Connector type	
Transceiver type	
Transmission distance, typ.	
Wavelength	
Receive power	
Transmission power	
Link-budget	
<b>Power supply</b>	
Connection type	
Voltage supply range	
Voltage supply	
Current consumption	
Overload current protection	
Reverse polarity protection	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
<b>EMC conformity and approvals</b>	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	

Ordering data

Type	Qty.	Order No.
IE-SW-BL05-5TX	1	1240840000
IE-SW-BL05-5TX	1	1240850000

Note

IE-SW-BL05-5TX



Technology	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control, Back pressure flow control
<b>Switch characteristics</b>	
MAC table size	1 K
Packet buffer size	512 Kbit
<b>Interfaces</b>	
RJ45 ports	10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	5x RJ45
Fibre-optic ports	
Function DIP switch	1x for enabling/disabling the broadcast storm protection
<b>Fibre optic transceiver characteristics</b>	
Transmission rate	
Connector type	
Transceiver type	
Transmission distance, typ.	
Wavelength	
Receive power	
Transmission power	
Link-budget	
<b>Power supply</b>	
Connection type	1 removable 4-pin terminal block
Voltage supply range	9.6...60VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.1 A at 24 V
Overload current protection	1.1 A
Reverse polarity protection	Available
<b>Physical characteristics</b>	
Housing main material	Aluminium
Protection degree	IP30
Type of mounting	DIN rail, Panel (with optional mounting kit)
Dimensions H x W x D	115 / 30 / 70 mm (4.5276 / 1.1811 / 2.7559 inch)
Net weight	175 GRM
<b>Environmental conditions</b>	
Operating temperature	1240840000: -10 °C...60 °C; 1240850000: -40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
<b>EMC conformity and approvals</b>	
EMC standards	EN 55032, EN 55035, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz - 6 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8 PFMF: 100A/m
Safety standard	UL508
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
<b>MTBF</b>	
Operating time (hours), min.	3040784 hrs
According to Standard	Telcordia (Bellcore), GB
<b>Approvals</b>	
Approvals	CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC; KOREANCERT
<b>Note</b>	

Type	Qty.	Order No.
IE-SW-BL05-5TX	1	1240840000
IE-SW-BL05-5TX	1	1240850000

IE-SW-BL05-4TX-1SC



Technology	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control, Back pressure flow control
<b>Switch characteristics</b>	
MAC table size	1 K
Packet buffer size	512 Kbit
<b>Interfaces</b>	
RJ45 ports	10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	4 x RJ45, 1 * SC Multi-mode
Fibre-optic ports	100BaseFX ports (SC connector), Multimode
Function DIP switch	1x for enabling/disabling the broadcast storm protection
<b>Fibre optic transceiver characteristics</b>	
Transmission rate	100 Mbps
Connector type	SC-Duplex
Transceiver type	Multimode
Transmission distance, typ.	5 km
Wavelength	typ.: 1300nm / TX: 1260...1360nm / RX: 1100...1600nm
Receive power	-32...-3dBm
Transmission power	-20...-10dBm
Link-budget	12 dB
<b>Power supply</b>	
Connection type	1 removable 4-pin terminal block
Voltage supply range	9.6...60VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.11 A at 24 V
Overload current protection	1.1 A
Reverse polarity protection	Available
<b>Physical characteristics</b>	
Housing main material	Aluminium
Protection degree	IP30
Type of mounting	DIN rail, Panel (with optional mounting kit)
Dimensions H x W x D	115 / 30 / 70 mm (4.5276 / 1.1811 / 2.7559 inch)
Net weight	175 GRM
<b>Environmental conditions</b>	
Operating temperature	1240890000: -10 °C...60 °C; 1286550000: -40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
<b>EMC conformity and approvals</b>	
EMC standards	EN 55032, EN 55035, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz - 6 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8 PFMF: 100A/m
Safety standard	UL508
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
<b>MTBF</b>	
Operating time (hours), min.	3040784 hrs
According to Standard	Telcordia (Bellcore), GB
<b>Approvals</b>	
Approvals	CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC; KOREANCERT
<b>Note</b>	

Type	Qty.	Order No.
IE-SW-BL05-4TX-1SC	1	1240890000
IE-SW-BL05-4TX-1SC	1	1286550000

**IE-SW-BL05-4TX-1ST**



IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control
Store and Forward
IEEE 802.3x flow control, Back pressure flow control
1 K
512 Kbit
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
4 x RJ45, 1 * ST Multi-mode
100BaseFX ports (ST connector), Multimode
1x for enabling/disabling the broadcast storm protection
100 Mbps
ST-Duplex
Multimode
5 km
typ.: 1300nm / TX: 1260...1360nm / RX: 1100...1600nm
-32...-3dBm
-20...-10dBm
12 dB
1 removable 4-pin terminal block
9.6...60VDC
12/24/48 V DC, 2 redundant inputs
0.11 A at 24 V
1.1 A
Available
Aluminium
IP30
DIN rail, Panel (with optional mounting kit)
115 / 30 / 70 mm (4.5276 / 1.1811 / 2.7559 inch)
175 GRM
1240880000: -10 °C...60 °C; 1286540000: -40 °C...75 °C
5 to 95 % (non-condensing)
EN 55032, EN 55035, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz - 6 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8 PFMF: 100A/m
UL508
according to IEC 60068-2-27
according to IEC 60068-2-6
3040784 hrs
Telcordia (Bellcore), GB
CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC; KOREANCERT

Type	Qty.	Order No.
IE-SW-BL05-4TX-1ST	1	1240880000
IE-SW-BL05T-4TX-1ST	1	1286540000

**IE-SW-BL05-4TX-1SCS**



IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control
Store and Forward
IEEE 802.3x flow control, Back pressure flow control
1 K
512 Kbit
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
4 x RJ45, 1 * SC Single-mode
100BaseFX ports (SC connector), Singlemode
1x for enabling/disabling the broadcast storm protection
100 Mbps
SC-Duplex
Singlemode
40 km
typ.: 1310nm / TX: 1280...1340nm / RX: 1100...1600nm
-34...-3dBm
-5...0dBm
29 dB
1 removable 4-pin terminal block
9.6...60VDC
12/24/48 V DC, 2 redundant inputs
0.11 A at 24 V
1.1 A
Available
Aluminium
IP30
DIN rail, Panel (with optional mounting kit)
115 / 30 / 70 mm (4.5276 / 1.1811 / 2.7559 inch)
175 GRM
1240870000: -10 °C...60 °C; 1286530000: -40 °C...75 °C
5 to 95 % (non-condensing)
EN 55032, EN 55035, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz - 6 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8 PFMF: 100A/m
UL508
according to IEC 60068-2-27
according to IEC 60068-2-6
3040784 hrs
Telcordia (Bellcore), GB
CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC; KOREANCERT

Type	Qty.	Order No.
IE-SW-BL05-4TX-1SCS	1	1240870000
IE-SW-BL05T-4TX-1SCS	1	1286530000

8-Port unmanaged Fast Ethernet Switches

- Extensive approvals
- Compact design
- Redundant voltage inputs

Technical data

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Fibre-optic ports	
Function DIP switch	
<b>Fibre optic transceiver characteristics</b>	
Transmission rate	
Connector type	
Transceiver type	
Transmission distance, typ.	
Wavelength	
Receive power	
Transmission power	
Link-budget	
<b>Power supply</b>	
Connection type	
Voltage supply range	
Voltage supply	
Current consumption	
Overload current protection	
Reverse polarity protection	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
<b>EMC conformity and approvals</b>	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	

Ordering data

Type	Qty.	Order No.
IE-SW-BL08-8TX	1	1240900000
IE-SW-BL08-8TX	1	1286560000

Note

IE-SW-BL08-8TX



IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control
Store and Forward
IEEE 802.3x flow control, Back pressure flow control
2 K
768 Kbit
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
8x RJ45
1x for enabling/disabling the broadcast storm protection
1 removable 4-pin terminal block
9.6...60VDC
12/24/48 V DC, 2 redundant inputs
0.13 A at 24 V
1.1 A
Available
Aluminium
IP30
DIN rail
114 / 50 / 70 mm (4.4882 / 1.9685 / 2.7559 inch)
275 GRM
1240900000: -10 °C...60 °C; 1286560000: -40 °C...75 °C
5 to 95 % (non-condensing)
EN 55032, EN 55035, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz - 6 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8 PFMF: 100A/m
UL508
according to IEC 60068-2-27
according to IEC 60068-2-6
2701531 hrs
Telcordia (Bellcore), GB
CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC; KOREANCERT

Type	Qty.	Order No.
IE-SW-BL08-8TX	1	1240900000
IE-SW-BL08-8TX	1	1286560000

IE-SW-BL08-6TX-2SC



IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control
Store and Forward
IEEE 802.3x flow control, Back pressure flow control
2 K
768 Kbit
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
6x RJ45, 2 * SC Multi-mode
100BaseFX ports (SC connector), Multimode
1x for enabling/disabling the broadcast storm protection
100 Mbps
SC-Duplex
Multimode
5 km
typ.: 1300nm / TX: 1260...1360nm / RX: 1100...1600nm
-32...-3dBm
-20...-10dBm
12 dB
1 removable 4-pin terminal block
9.6...60VDC
12/24/48 V DC, 2 redundant inputs
0.22 A at 24 V
1.1 A
Available
Aluminium
IP30
DIN rail
115 / 50 / 70 mm (4.5276 / 1.9685 / 2.7559 inch)
275 GRM
1240910000: -10 °C...60 °C; 1240920000: -40 °C...75 °C
5 to 95 % (non-condensing)
EN 55032, EN 55035, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz - 6 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8 PFMF: 100A/m
UL508
according to IEC 60068-2-27
according to IEC 60068-2-6
2428212 hrs
Telcordia (Bellcore), GB
CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC; KOREANCERT

Type	Qty.	Order No.
IE-SW-BL08-6TX-2SC	1	1240910000
IE-SW-BL08-6TX-2SC	1	1240920000

IE-SW-BL08-6TX-2ST



IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control
Store and Forward
IEEE 802.3x flow control, Back pressure flow control
2 K
768 Kbit
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
6x RJ45, 2 * ST Multi-mode
100BaseFX ports (ST connector), Multimode
1x for enabling/disabling the broadcast storm protection
100 Mbps
ST-Duplex
Multimode
5 km
typ.: 1300nm / TX: 1260...1360nm / RX: 1100...1600nm
-32...-3dBm
-20...-10dBm
12 dB
1 removable 4-pin terminal block
9.6...60VDC
12/24/48 V DC, 2 redundant inputs
0.22 A at 24 V
1.1 A
Available
Aluminium
IP30
DIN rail
115 / 50 / 70 mm (4.5276 / 1.9685 / 2.7559 inch)
275 GRM
1240930000: -10 °C...60 °C; 1286570000: -40 °C...75 °C
5 to 95 % (non-condensing)
EN 55032, EN 55035, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz - 6 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8 PFMF: 100A/m
UL508
according to IEC 60068-2-27
according to IEC 60068-2-6
2428212 hrs
Telcordia (Bellcore), GB
CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC; KOREANCERT

Type	Qty.	Order No.
IE-SW-BL08-6TX-2ST	1	1240930000
IE-SW-BL08T-6TX-2ST	1	1286570000

IE-SW-BL08-6TX-2SCS



IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control
Store and Forward
IEEE 802.3x flow control, Back pressure flow control
2 K
768 Kbit
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
6x RJ45, 2 * SC Single-mode
100BaseFX ports (SC connector), Singlemode
1x for enabling/disabling the broadcast storm protection
100 Mbps
SC-Duplex
Singlemode
40 km
typ.: 1310nm / TX: 1280...1340nm / RX: 1100...1600nm
-34...-3dBm
-5...0dBm
29 dB
1 removable 4-pin terminal block
9.6...60VDC
12/24/48 V DC, 2 redundant inputs
0.22 A at 24 V
1.1 A
Available
Aluminium
IP30
DIN rail
115 / 50 / 70 mm (4.5276 / 1.9685 / 2.7559 inch)
275 GRM
1412110000: -10 °C...60 °C; 1412120000: -40 °C...75 °C
5 to 95 % (non-condensing)
EN 55032, EN 55035, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz - 6 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8 PFMF: 100A/m
UL508
according to IEC 60068-2-27
according to IEC 60068-2-6
2428212 hrs
Telcordia (Bellcore), GB
CE; CULUS; CULUSEX; DEMKOATEX; EAC; KOREANCERT

Type	Qty.	Order No.
IE-SW-BL08-6TX-2SCS	1	1412110000
IE-SW-BL08T-6TX-2SCS	1	1412120000

IE-SW-BL08-7TX-1SC



IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control
Store and Forward
IEEE 802.3x flow control, Back pressure flow control
2 K
768 Kbit
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
7x RJ45, 1 * SC Multi-mode
100BaseFX ports (SC connector), Multimode
1x for enabling/disabling the broadcast storm protection
100 Mbps
SC-Duplex
Multimode
5 km
typ.: 1300nm / TX: 1260...1360nm / RX: 1100...1600nm
-32...-3dBm
-20...-10dBm
12 dB
1 removable 4-pin terminal block
9.6...60VDC
12/24/48 V DC, 2 redundant inputs
0.17 A at 24 V
1.1 A
Available
Aluminium
IP30
DIN rail
115 / 50 / 70 mm (4.5276 / 1.9685 / 2.7559 inch)
275 GRM
1412070000: -10 °C...60 °C; 1412080000: -40 °C...75 °C
5 to 95 % (non-condensing)
EN 55032, EN 55035, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz - 6 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8 PFMF: 100A/m
UL508
according to IEC 60068-2-27
according to IEC 60068-2-6
2428212 hrs
Telcordia (Bellcore), GB
CE; CULUS; CULUSEX; DEMKOATEX; EAC; KOREANCERT

Type	Qty.	Order No.
IE-SW-BL08-7TX-1SC	1	1412070000
IE-SW-BL08T-7TX-1SC	1	1412080000

**16-Port unmanaged Fast Ethernet Switches**

- Extensive approvals
- Warning via relay output in case of power failure and port error
- Redundant voltage inputs

**IE-SW-VL16-16TX**



**Technical data**

<b>Technology</b>
Standard
Data switching
Flow control
<b>Switch characteristics</b>
MAC table size
Packet buffer size
<b>Interfaces</b>
RJ45 ports
Number of ports
Function DIP switch
<b>Power supply</b>
Connection type
Voltage supply range
Voltage supply
Current consumption
Overload current protection
Reverse polarity protection
<b>Physical characteristics</b>
Housing main material
Protection degree
Type of mounting
Dimensions H x W x D
Net weight
<b>Environmental conditions</b>
Operating temperature
Humidity
<b>EMC conformity and approvals</b>
EMC standards
Safety standard
Shock
Vibration
<b>MTBF</b>
Operating time (hours), min.
According to Standard
<b>Approvals</b>
Approvals
<b>Note</b>

IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control
Store and Forward
IEEE 802.3x flow control, Back pressure flow control
4 K
1.25 Mbit
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
16x RJ45
Port surveillance, Broadcast storm protection enable/disable
1 removable 6-pin terminal block
9.6...60VDC
12/24/48 V DC, 2 redundant inputs
0.27 A at 24 V
1.6 A
Available
metal
IP30
DIN rail
135 / 80.5 / 105 mm (5.315 / 3.1693 / 4.1338 inch)
1140 GRM
1241000000: 0 °C...60 °C;
1286590000: -40 °C...75 °C
5 to 95 % (non-condensing)
EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8
UL508, UL 60950-1, EN 60950-1
according to IEC 60068-2-27
according to IEC 60068-2-6
257000 hrs
MIL-HDBK-217F, GB 25°C
CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC; KOREANCERT

**Ordering data**

<b>Note</b>
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Type	Qty.	Order No.
IE-SW-VL16-16TX	1	1241000000
IE-SW-VL16T-16TX	1	1286590000



**5-Port IP67 unmanaged Fast Ethernet Switches**

- M12 connection system and IP67 protected housing
- 10/100BaseT (X), 4-pin M12 (D-coded)
- Full/half duplex mode and auto MDI/MDI-X
- Input voltage 12 to 45 V DC, 18 to 30 V AC

**IE-SW-IP67-5M12**



**Technical data**

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
<b>Interfaces</b>	
M12-Ports	
Number of ports	
<b>Power supply</b>	
Voltage supply	
Current consumption	
Overload current protection	
Connection type	
Reverse polarity protection	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
<b>EMC conformity and approvals</b>	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	

IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control
Store and Forward
IEEE 802.3x flow control, Back pressure flow control
2 K
384 Kbit
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X connection, D-coded, 4-pole
5 * M12 D coded
24/36 V DC, 24 V AC
0.12 A bei 24V DC
1.1 A
1 x M12 socket, A-coded, Pin
Available
Plastic
IP67 encapsulated
Wall mounting, when screwed in
125 / 60 / 29.6 mm (4.9213 / 2.3622 / 1.1654 inch)
270 GRM
1504410000: -25 °C..60 °C;
1504420000: -40 °C..75 °C
5 to 95 % (non-condensing)
EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2
ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8
UL508
according to IEC 60068-2-27
according to IEC 60068-2-6
370224 hrs
Telcordia (Bellcore), GB
CE; CULUS; EAC

**Ordering data**

<b>Note</b>
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Type	Qty.	Order No.
IE-SW-IP67-5M12	1	1504410000
IE-SW-IP67T-5M12	1	1504420000

**6 and 8-Port unmanaged PoE+ Fast Ethernet Switches**

- IEEE 802.3af/at compliant PoE ports
- Fiber optic ports for communication links over long distances
- Reliable operation due to redundant voltage inputs, fault relay and LED diagnostics

**Technical data**

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	1 K
Packet buffer size	448 kbit
<b>Interfaces</b>	
RJ45 ports	4x RJ45 10/100 BaseT(X) PoE+, 2x SC Multi-mode
Number of ports	100BaseFX ports (SC connector), Multimode
Fibre-optic ports	1 relay output with a current capacity of 1 A at 24 V DC
Signalling contact	2x for enabling/disabling power fault alarm via relay
Function DIP switch	
<b>Fibre optic transceiver characteristics</b>	
Transmission rate	100 Mbps
Connector type	SC-Duplex
Transceiver type	Multimode
Transmission distance, typ.	2 km
Wavelength	typ.: 1310nm
Receive power	-31...0dBm
Transmission power	-23.5...-14dBm
Link-budget	7.5 dB
<b>Power supply</b>	
Connection type	1 removable 6-pin terminal block
Voltage supply range	24...57VDC
Voltage supply	24/48 V DC, 2 redundant inputs
Current consumption	2.8A @ 24V DC; 2.2A @ 57V DC
Overload current protection / Reverse polarity protection	Yes / Yes
<b>Power over Ethernet (PoE)</b>	
PoE pin assignment	Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI
Total PoE power budget	60W @ 24...49.9V DC; 120W @ 50...57V DC
<b>Physical characteristics</b>	
Housing main material	Metal
Type of mounting	DIN rail
Dimensions H x W x D	144.3 / 41 / 94.9 mm (5.6811 / 1.6142 / 3.7362 inch)
<b>Environmental conditions</b>	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
Net weight	680 g
<b>EMC conformity and approvals</b>	
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0,5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	UL 61010-1, UL 61010-2:201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
<b>MTBF</b>	
Operating time (hours), min. / According to Standard	538904 hrs / Telcordia SR-332
<b>Approvals</b>	
Approvals	CE; CULUS; EAC; KOREANCERT
<b>Note</b>	
<b>Ordering data</b>	
<b>Note</b>	

**IE-SW-EL06-4PoE-2SC**



IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control, IEEE 802.3at/af for Power-over-Ethernet		
Store and Forward		
IEEE 802.3x flow control		
1 K		
448 kbit		
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port		
4x RJ45 10/100 BaseT(X) PoE+, 2x SC Multi-mode		
100BaseFX ports (SC connector), Multimode		
1 relay output with a current capacity of 1 A at 24 V DC		
2x for enabling/disabling power fault alarm via relay		
100 Mbps		
SC-Duplex		
Multimode		
2 km		
typ.: 1310nm		
-31...0dBm		
-23.5...-14dBm		
7.5 dB		
1 removable 6-pin terminal block		
24...57VDC		
24/48 V DC, 2 redundant inputs		
2.8A @ 24V DC; 2.2A @ 57V DC		
Yes / Yes		
Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI		
60W @ 24...49.9V DC; 120W @ 50...57V DC		
Metal		
DIN rail		
144.3 / 41 / 94.9 mm (5.6811 / 1.6142 / 3.7362 inch)		
-40 °C...75 °C		
5 to 95 % (non-condensing)		
2000m in acc. with UL		
680 g		
EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0,5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms		
UL 61010-1, UL 61010-2:201		
according to IEC 60068-2-27		
according to IEC 60068-2-6		
538904 hrs / Telcordia SR-332		
CE; CULUS; EAC; KOREANCERT		
<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-EL06-4POE-2SC	1	2682390000
<b>Note</b>		

**IE-SW-EL08-8PoE**



IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control, IEEE 802.3at/af for Power-over-Ethernet		
Store and Forward		
IEEE 802.3x flow control		
1 K		
448 kbit		
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port		
8x RJ45 10/100 BaseT(X) PoE+		
1 relay output with a current capacity of 1 A at 24 V DC		
2x for enabling/disabling power fault alarm via relay		
1 removable 6-pin terminal block		
12...57VDC		
12/24/48 V DC, 2 redundant inputs		
6.3A @ 12V DC; 5.74A @ 24V DC		
Yes / Yes		
Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI		
60W @ 12...23.9V DC; 120W @ 24...57V DC		
Metal		
DIN rail		
144.3 / 41 / 94.9 mm (5.6811 / 1.6142 / 3.7362 inch)		
-40 °C...75 °C		
5 to 95 % (non-condensing)		
2000m in acc. with UL		
600 g		
EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0,5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms		
UL 61010-1, UL 61010-2:201		
according to IEC 60068-2-27		
according to IEC 60068-2-6		
744974 hrs / Telcordia SR-332		
CE; CULUS; EAC; KOREANCERT		
<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-EL08-8POE	1	2682380000
<b>Note</b>		

**6-Port unmanaged Fast Ethernet PoE+ Switches**

- 4x IEEE 802.3af/at compliant PoE ports
- Up to 30 watts per PoE port
- 12/24/48 V DC redundant wide-range power supply
- Integrated DC/DC converter can supply 48 V-PoE devices across the entire input voltage range of 12...57 V DC
- Intelligent power consumption detection and classification
- Broadcast Storm Protection

**IE-SW-BL06-2TX-4PoE**



**Technical data**

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Function DIP switch	
<b>Power supply</b>	
Voltage supply	
Voltage supply range	
Connection type	
Current consumption	
Overload current protection	
Reverse polarity protection	
<b>Power over Ethernet (PoE)</b>	
PoE pin assignment	
Total PoE power budget	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
<b>EMC conformity and approvals</b>	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	
<b>Ordering data</b>	
<b>Note</b>	

IEEE 802.3af for Power-over-Ethernet, IEEE 802.3at for Power-over-Ethernet, IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control		
Store and Forward		
IEEE 802.3x flow control, Back pressure flow control		
2 K		
768 Kbit		
10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port		
2 * RJ45 10/100 BaseT(X), 4 * RJ45 10/100 BaseT(X) PoE+		
Broadcast storm protection enable/disable		
12/24/48 V DC, 2 redundant inputs		
12...57VDC		
1 removable 4-pin terminal block		
6.19A @ 12V DC; 5.55A @ 24V DC; 2.71A @ 48V DC		
Yes		
Yes		
Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI		
62W @ 12...17V DC; 120W @ 18...57V DC		
Aluminium		
IP30		
DIN rail		
114 / 50 / 70 mm (4.4882 / 1.9685 / 2.7559 inch)		
375 GRM		
1241380000: -10 °C...60 °C		
1286920000: -40 °C...75 °C		
5 to 95 % (non-condensing)		
FCC Part 15 Subpart B Class A, EN 55032, EN 55024, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, EN 61000-4-8		
UL 508		
according to IEC 60068-2-27		
according to IEC 60068-2-6		
1398743 hrs		
Telcordia (Bellcore), GB		
CE; CULUS; EAC; KOREANCERT		
<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-BL06-2TX-4POE	1	1241380000
IE-SW-BL06T-2TX-4POE	1	1286920000
<b>Note</b>		

**18-Port unmanaged Fast/Gigabit Ethernet Switch**

- Compact design
- Wide temperature range
- Redundant voltage inputs
- SFP-ports for fiber optic transmission over long distances

**IE-SW-EL18-16TX-2GC**



**Technical data**

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Fibre-optic ports	
Signalling contact	
<b>Power supply</b>	
Connection type	
Voltage supply range	
Voltage supply	
Current consumption	
Overload current protection	
Reverse polarity protection	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
Operating altitude	
<b>EMC conformity and approvals</b>	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	
<b>Ordering data</b>	
<b>Note</b>	

IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3x for flow control		
Store and Forward		
IEEE 802.3x flow control		
8 K		
1 Mbit		
10/100BaseT(X) or 10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port		
16x RJ45 10/100BaseT(X), 2x combo-ports (10/100/1000BaseT(X) or 1000BaseSFP)		
1000BaseSFP-Slot		
1 relay output with a current capacity of 1 A at 24 V DC		
1 removable 6-pin terminal block		
10.8...52.8VDC		
12/24/48 V DC, 2 redundant inputs		
0.35A @ 24V DC		
Yes		
Yes		
Metal		
IP30		
DIN rail		
154 / 96.4 / 108.5 mm (6.063 / 3.7953 / 4.2716 inch)		
1363 GRM		
-40 °C...75 °C		
5 to 95 % (non-condensing)		
2000m in acc. with UL		
EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0,5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms		
UL 61010-1, UL 61010-2-201		
according to IEC 60068-2-27		
according to IEC 60068-2-6		
748087 hrs		
Telcordia SR-332		
CE; CULUS; EAC; KOREANCERT		
<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-EL18-16TX-2GC	1	2682200000
<b>Note</b>		

5-Port unmanaged Gigabit Ethernet Switches

- Compact design
- Wide temperature range
- Redundant voltage inputs
- SFP-ports for fiber optic transmission over long distances

Technical data

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
Jumbo frame support	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Fibre-optic ports	
Signalling contact	
Function DIP switch	
<b>Power supply</b>	
Connection type	
Voltage supply range	
Voltage supply	
Current consumption	
Overload current protection	
Reverse polarity protection	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
Operating altitude	
<b>EMC conformity and approvals</b>	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	
<b>Ordering data</b>	
<b>Note</b>	

IE-SW-EL05-5GT



Technology	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3x for flow control	
Store and Forward		
Flow control	IEEE 802.3x flow control	
MAC table size	4 K	
Packet buffer size	1 Mbit	
Jumbo frame support	up to 9.72 KB	
Interfaces		
RJ45 ports	10/100/1000BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port	
Number of ports	5x RJ45	
Fibre-optic ports		
Signalling contact		
Function DIP switch		
Power supply		
Connection type	1 removable 4-pin terminal block	
Voltage supply range	10.8...52.8VDC	
Voltage supply	12/24/48 V DC, 2 redundant inputs	
Current consumption	0.14A @ 24V DC	
Overload current protection	Yes	
Reverse polarity protection	Yes	
Physical characteristics		
Housing main material	Metal	
Protection degree	IP30	
Type of mounting	DIN rail	
Dimensions H x W x D	95 / 26.1 / 70 mm (3.7402 / 1.0276 / 2.7559 inch)	
Net weight	235 GRM	
Environmental conditions		
Operating temperature	-40 °C...75 °C	
Humidity	5 to 95 % (non-condensing)	
Operating altitude	2000m in acc. with UL	
EMC conformity and approvals		
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms	
Safety standard	UL 61010-1, UL 61010-2-201	
Shock	according to IEC 60068-2-27	
Vibration	according to IEC 60068-2-6	
MTBF		
Operating time (hours), min.	2556319 hrs	
According to Standard	Telcordia SR-332	
Approvals		
Approvals	CE; CULUS; EAC; KOREANCERT	
Note		
Ordering data		
Type	Qty.	Order No.
IE-SW-EL05-5GT	1	2682210000
Note		

IE-SW-EL05-4GT-1GESFP



Technology	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3x for flow control	
Store and Forward		
Flow control	IEEE 802.3x flow control	
MAC table size	1 K	
Packet buffer size	1 Mbit	
Jumbo frame support	up to 10 KB	
Interfaces		
RJ45 ports	10/100/1000BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port	
Number of ports	4 x RJ45, 1x 1000BaseSFP Slot	
Fibre-optic ports	1000BaseSFP-Slot	
Signalling contact	1 relay output with a current capacity of 1 A at 24 V DC	
Function DIP switch	2x for enabling/disabling power fault alarm via relay	
Power supply		
Connection type	1 removable 6-pin terminal block	
Voltage supply range	10.8...52.8VDC	
Voltage supply	12/24/48 V DC, 2 redundant inputs	
Current consumption	0.18A @ 24V DC	
Overload current protection	Yes	
Reverse polarity protection	Yes	
Physical characteristics		
Housing main material	Metal	
Protection degree	IP30	
Type of mounting	DIN rail	
Dimensions H x W x D	144.3 / 26.1 / 94.9 mm (5.6811 / 1.0276 / 3.7362 inch)	
Net weight	420 GRM	
Environmental conditions		
Operating temperature	-40 °C...75 °C	
Humidity	5 to 95 % (non-condensing)	
Operating altitude	2000m in acc. with UL	
EMC conformity and approvals		
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms	
Safety standard	UL 61010-1, UL 61010-2-201	
Shock	according to IEC 60068-2-27	
Vibration	according to IEC 60068-2-6	
MTBF		
Operating time (hours), min.	1861840 hrs	
According to Standard	Telcordia SR-332	
Approvals		
Approvals	CE; CULUS; EAC	
Note		
Ordering data		
Type	Qty.	Order No.
IE-SW-EL05-4GT-1GESFP	1	2682220000
Note		

**8-Port unmanaged Gigabit Ethernet Switches**

- Compact design
- Wide temperature range
- Redundant voltage inputs

**Technical data**

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
Jumbo frame support	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Fibre-optic ports	
Signalling contact	
Function DIP switch	
<b>Power supply</b>	
Connection type	
Voltage supply range	
Voltage supply	
Current consumption	
Overload current protection	
Reverse polarity protection	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
Operating altitude	
<b>EMC conformity and approvals</b>	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	
<b>Ordering data</b>	
<b>Note</b>	

**IE-SW-EL08-8GT-MINI**



IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3x for flow control		
Store and Forward		
IEEE 802.3x flow control		
4 K		
1.5 Mbit		
up to 9 KB		
10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port		
8x RJ45		
1 removable 4-pin terminal block		
10.8...52.8VDC		
12/24/48 V DC, 2 redundant inputs		
0.42A @ 12V DC		
Yes		
Yes		
Metal		
IP30		
DIN rail		
95 / 41 / 90 mm (3.7402 / 1.6142 / 3.5433 inch)		
365 GRM		
-40 °C...75 °C		
5 to 95 % (non-condensing)		
2000m in acc. with UL		
EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 10 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 1 kV; Signal: 4 kV, IEC 61000-4-6 CS: 3 Vrms		
UL 61010-1, UL 61010-2-201		
according to IEC 60068-2-27		
according to IEC 60068-2-6		
1742238 hrs		
Telcordia SR-332		
CE; CULUS; EAC; KOREANCERT		
<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-EL08-8GT-MINI	1	2705000000
<b>Note</b>		

**IE-SW-EL08-8GT**



IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3x for flow control		
Store and Forward		
IEEE 802.3x flow control		
4 K		
1.5 Mbit		
up to 9216 Bytes		
10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port		
8x RJ45		
1 relay output with a current capacity of 1 A at 24 V DC		
2x for enabling/disabling power fault alarm via relay		
1 removable 6-pin terminal block		
10.8...52.8VDC		
12/24/48 V DC, 2 redundant inputs		
0.2A @ 24V DC		
Yes		
Yes		
Metal		
IP30		
DIN rail		
144.3 / 26.1 / 94.9 mm (5.6811 / 1.0276 / 3.7362 inch)		
425 GRM		
-40 °C...75 °C		
5 to 95 % (non-condensing)		
2000m in acc. with UL		
EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms		
UL 61010-1, UL 61010-2-201		
according to IEC 60068-2-27		
according to IEC 60068-2-6		
926332 hrs		
Telcordia SR-332		
CE; CULUS; EAC; KOREANCERT		
<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-EL08-8GT	1	2682230000
<b>Note</b>		

### 10-Port unmanaged Gigabit Ethernet Switch

- Compact design
- Wide temperature range
- Redundant voltage inputs
- SFP-ports for fiber optic transmission over long distances

#### Technical data

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
Jumbo frame support	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Fibre-optic ports	
Signalling contact	
Function DIP switch	
<b>Power supply</b>	
Connection type	
Voltage supply range	
Voltage supply	
Current consumption	
Overload current protection	
Reverse polarity protection	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
Operating altitude	
<b>EMC conformity and approvals</b>	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	
<b>Ordering data</b>	
<b>Note</b>	

### IE-SW-EL10-8GT-2GESFP



IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3x for flow control		
Store and Forward		
IEEE 802.3x flow control		
4 K		
1.5 Mbit		
up to 9 KB		
10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port		
8x RJ45, 2x 100/1000BaseSFP Slot		
100/1000Base SFP Slot		
1 removable 4-pin terminal block		
10.8...52.8VDC		
12/24/48 V DC, 2 redundant inputs		
0.41A @ 12V DC		
Yes		
Yes		
Metal		
IP30		
DIN rail		
127 / 41 / 90 mm (5 / 1.6142 / 3.5433 inch)		
451 GRM		
-40 °C...75 °C		
5 to 95 % (non-condensing)		
2000m in acc. with UL		
EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms		
UL 61010-1, UL 61010-2-201		
according to IEC 60068-2-27		
according to IEC 60068-2-6		
1056516 hrs		
Telcordia SR-332		
CE; CULUS; EAC		
<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-EL10-8GT-2GESFP	1	2682240000
<b>Note</b>		

**5-Port unmanaged Gigabit Ethernet Switches**

- Gigabit Ethernet on all ports
- Variants with slots for SFP transceivers
- Redundant dual 12/24/48 V DC power inputs
- Relay output warning for power failure and port break alarm
- Broadcast storm protection
- Supports jumbo frame transmission

**Technical data**

<b>Technology</b>	
Standard	
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
Jumbo frame support	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Fibre-optic ports	
Alarm contact	
Function DIP switch	
<b>Power supply</b>	
Connection type	
Voltage supply	
Current consumption	
Reverse polarity protection	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
<b>EMC conformity and approvals</b>	
Explosive risk zone	
Ship use	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	

**Ordering data**

<b>Note</b>
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**IE-SW-BL05-4GT-1GS**



IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3ab for 1000BaseT(X), IEEE 802.3z for 1000BaseX, IEEE 802.3x for flow control, IEEE 802.3az Energy-Efficient Ethernet
Store and Forward
IEEE 802.3x flow control, Back pressure flow control
8 K
1024 Kbit
up to 10 KB
10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
4 * RJ45 10/100/1000BaseT(X), 1 * combo-port (10/100/1000BaseT(X) or 100/1000BaseSFP)
100/1000Base SFP Slot
1 relay output with a current capacity of 1 A at 24 V DC
Port surveillance, Broadcast storm protection enable/disable, Enable/disable jumbo frame support, Activate/deactivate IEEE 802.3az energy-efficient Ethernet, Switching between 100BaseSFP and 1000BaseSFP on SFP port
1 removable 6-pin terminal block
12/24/48 V DC, 2 redundant inputs
0.16 A at 24 V
Available
metal
IP30
DIN rail, Panel (with optional mounting kit)
135 / 29 / 105 mm (5.315 / 1.1417 / 4.1338 inch)
422 GRM
2435400000: -10 °C..60 °C
2435410000: -40 °C..75 °C
5 to 95 % (non-condensing)
UL/cUL, Class I, Division 2, Groups A, B, C and D, ATEX Zone 2 Ex nA nC IIC T4 Gc
DNV
EN 55032, EN 55035, EN 61000-6-4, EN 61000-6-2, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8
UL508, EN 60950-1
according to IEC 60068-2-27
according to IEC 60068-2-6
2823446 hrs
Telcordia (Bellcore), GB
CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; KOREANCERT

Type	Qty.	Order No.
IE-SW-BL05-4GT-1GS	1	2435400000
IE-SW-BL05T-4GT-1GS	1	2435410000



### 8-Port unmanaged Gigabit Ethernet Switches

- Gigabit Ethernet on all ports
- Variants with slots for SFP transceivers
- Redundant dual 12/24/48 V DC power inputs
- Relay output warning for power failure and port break alarm
- Broadcast storm protection
- Supports jumbo frame transmission

#### Technical data

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
Jumbo frame support	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Fibre-optic ports	
Alarm contact	
Function DIP switch	
<b>Power supply</b>	
Connection type	
Voltage supply	
Current consumption	
Reverse polarity protection	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
<b>EMC conformity and approvals</b>	
Explosive risk zone	
Ship use	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	

#### Ordering data

<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-VL08-8GT	1	1241270000
IE-SW-VL08T-8GT	1	1286860000
<b>Note</b>		

### IE-SW-VL08-8GT



<b>Technology</b>	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3ab for 1000BaseT(X), IEEE 802.3x for flow control, IEEE 802.3az Energy-Efficient Ethernet
<b>Store and Forward</b>	IEEE 802.3x flow control, Back pressure flow control
<b>MAC table size</b>	8 K
<b>Packet buffer size</b>	4000 Kbit
<b>Jumbo frame support</b>	up to 9.6 KB
<b>Interfaces</b>	10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
<b>Number of ports</b>	8 * RJ45 10/100/1000BaseT(X)
<b>Relay output</b>	1 relay output with a current capacity of 1 A at 24 V DC
<b>Port surveillance</b>	Port surveillance, Broadcast storm protection enable/disable, Enable/disable jumbo frame support, Activate/deactivate IEEE 802.3az energy-efficient Ethernet
<b>Power supply</b>	1 removable 6-pin terminal block 12/24/48 V DC, 2 redundant inputs 0.32 A at 24 V Available
<b>Physical characteristics</b>	Metal IP30 DIN rail 135 / 52.85 / 105 mm (5.315 / 2.0807 / 4.1338 inch) 850 GRM
<b>Environmental conditions</b>	1241270000: -10 °C...60 °C 1286860000: -40 °C...75 °C 5 to 95 % (non-condensing)
<b>EMC conformity and approvals</b>	UL/cUL, Class I, Division 2, Groups A, B, C and D, ATEX Zone 2 Ex nA nC IIC T4 Gc DNV EN 55032, EN 55035, EN 61000-6-4, EN 61000-6-2, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8 UL508, EN 62368-1 according to IEC 60068-2-27 according to IEC 60068-2-6
<b>MTBF</b>	2424649 hrs Telcordia (Bellcore), GB
<b>Approvals</b>	CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC; KOREANCERT

<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-VL08-8GT	1	1241270000
IE-SW-VL08T-8GT	1	1286860000

### IE-SW-VL08-6GT-2GS



<b>Technology</b>	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3ab for 1000BaseT(X), IEEE 802.3z for 1000BaseX, IEEE 802.3x for flow control, IEEE 802.3az Energy-Efficient Ethernet
<b>Store and Forward</b>	IEEE 802.3x flow control, Back pressure flow control
<b>MAC table size</b>	8 K
<b>Packet buffer size</b>	4000 Kbit
<b>Jumbo frame support</b>	up to 9.6 KB
<b>Interfaces</b>	10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
<b>Number of ports</b>	6 * RJ45 10/100/1000BaseT(X), 2 * combo-ports (10/100/1000BaseT(X) or 100/1000BaseSFP) 100/1000Base SFP Slot
<b>Relay output</b>	1 relay output with a current capacity of 1 A at 24 V DC
<b>Port surveillance</b>	Port surveillance, Broadcast storm protection enable/disable, Enable/disable jumbo frame support, Activate/deactivate IEEE 802.3az energy-efficient Ethernet
<b>Power supply</b>	1 removable 6-pin terminal block 12/24/48 V DC, 2 redundant inputs 0.34 A at 24 V Available
<b>Physical characteristics</b>	Metal IP30 DIN rail 135 / 52.85 / 105 mm (5.315 / 2.0807 / 4.1338 inch) 850 GRM
<b>Environmental conditions</b>	1241280000: -10 °C...60 °C 1286870000: -40 °C...75 °C 5 to 95 % (non-condensing)
<b>EMC conformity and approvals</b>	UL/cUL, Class I, Division 2, Groups A, B, C and D, ATEX Zone 2 Ex nA nC IIC T4 Gc DNV EN 55032, EN 55035, EN 61000-6-4, EN 61000-6-2, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8 UL508, EN 60950-1 according to IEC 60068-2-27 according to IEC 60068-2-6
<b>MTBF</b>	2283188 hrs Telcordia (Bellcore), GB
<b>Approvals</b>	CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC

<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-SW-VL08-6GT-2GS	1	1241280000
IE-SW-VL08T-6GT-2GS	1	1286870000

**8 and 10-Port unmanaged PoE+ Gigabit Ethernet Switches**

- IEEE 802.3af/at compliant PoE ports
- Compact design
- Wide temperature range
- Redundant voltage inputs
- SFP-ports for fiber optic transmission over long distances

**Technical data**

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
Jumbo frame support	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Fibre-optic ports	
Signalling contact	
Function DIP switch	
<b>Power supply</b>	
Connection type	
Voltage supply	
Current consumption	
Overload current protection / Reverse polarity protection	
<b>Power over Ethernet (PoE)</b>	
PoE pin assignment	
Total PoE power budget	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
Operating altitude	
<b>EMC conformity and approvals</b>	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	

**Ordering data**

<b>Note</b>
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**IE-SW-EL08-8GTPoE**



IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3ab for 1000Base-T, IEEE 802.3x for flow control, IEEE 802.3at/af for Power-over-Ethernet
Store and Forward
IEEE 802.3x flow control
4 K
192 KB
up to 9.72 KB
10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
8x RJ45 10/100/1000 BaseT(X) PoE+
1 relay output with a current capacity of 1 A at 24 V DC
2x for enabling/disabling power fault alarm via relay
1 removable 6-pin terminal block
12/24/48 V DC, 2 redundant inputs
6.6A @ 12V DC; 5.86A @ 24V DC; 2.32A @ 57V DC
Yes / Yes
Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI
60W @ 12...23.9V; 120W @ 24...57V
Metal
IP30
DIN rail
144.3 / 41 / 94.9 mm (5.6811 / 1.6142 / 3.7362 inch)
700 GRM
-40 °C...75 °C
5 to 95 % (non-condensing)
2000m in acc. with UL
EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
UL 61010-1, UL 61010-2:201
according to IEC 60068-2-27
according to IEC 60068-2-6
532527 hrs
Telcordia SR-332
CE; CULUS; EAC

Type	Qty.	Order No.
IE-SW-EL08-8GTPoE	1	268240000

**IE-SW-EL10-8GTPoE-2GESFP**



IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3ab for 1000Base-T, IEEE 802.3z for 1000BaseX, IEEE 802.3x for flow control, IEEE 802.3at/af for Power-over-Ethernet
Store and Forward
IEEE 802.3x flow control
8 K
4 Mbit
up to 9.6 KB
10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
8x RJ45 10/100/1000 BaseT(X) PoE+, 2x 100/1000BaseSFP Slot 100/1000Base SFP Slot
1 relay output with a current capacity of 1 A at 24 V DC
2x for enabling/disabling power fault alarm via relay, 2x for switching between 100BaseSFP and 1000BaseSFP on SFP port
1 removable 6-pin terminal block
12/24/48 V DC, 2 redundant inputs
7.12A @ 12V DC; 6.13A @ 24V DC; 2.95A @ 48V DC
Yes / Yes
Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI
60W @ 12...23.9V; 120W @ 24...57V
Metal
IP30
DIN rail
145.1 / 54.3 / 108.3 mm (5.7126 / 2.1378 / 4.2638 inch)
969 GRM
-40 °C...75 °C
5 to 95 % (non-condensing)
2000m in acc. with UL
EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
UL 61010-1, UL 61010-2:201
according to IEC 60068-2-27
according to IEC 60068-2-6
537330 hrs
Telcordia SR-332
CE; CULUS; EAC

Type	Qty.	Order No.
IE-SW-EL10-8GTPoE-2GESFP	1	268241000

### 5-Port unmanaged Gigabit Ethernet PoE+ Switches

- Gigabit Ethernet at all ports
- 4x IEEE 802.3af/at conform PoE ports
- Up to 36 Watt per PoE port
- 12/24/48 V DC redundant wide-range power supply
- Support for jumbo frames
- Intelligent power consumption detection and classification
- Intelligent PoE surge voltage and short-circuit protection

#### Technical data

<b>Technology</b>	Standard
Data switching	
Flow control	
<b>Switch characteristics</b>	
MAC table size	
Packet buffer size	
Jumbo frame support	
<b>Interfaces</b>	
RJ45 ports	
Number of ports	
Function DIP switch	
<b>Power supply</b>	
Voltage supply	
Voltage supply range	
Connection type	
Current consumption	
Overload current protection / Reverse polarity protection	
<b>Power over Ethernet (PoE)</b>	
PoE pin assignment	
Total PoE power budget	
<b>Physical characteristics</b>	
Housing main material	
Protection degree	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
<b>EMC conformity and approvals</b>	
EMC standards	
Safety standard	
Shock	
Vibration	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	

#### Ordering data

<b>Note</b>
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### IE-SW-BL05-1GT-4GTPoE



IEEE 802.3af for Power-over-Ethernet, IEEE 802.3at for Power-over-Ethernet, IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3ab for 1000BaseT(X), IEEE 802.3x for flow control, IEEE 802.3az Energy-Efficient Ethernet
Store and Forward
IEEE 802.3x flow control, Back pressure flow control
8 K
1024 Kbit
up to 10 KB
10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
4 * RJ45 10/100/1000BaseT(X) PoE+, 1 * RJ45 10/100/1000BaseT(X)
Broadcast storm protection enable/disable, Enable/disable jumbo frame support, Activate/deactivate IEEE 802.3az energy-efficient Ethernet, Switching between standard PoE (up to 30 W) and High Power PoE (up to 36 W)
12/24/48 V DC, 2 redundant inputs
12...57VDC
2 removable 2-pole terminal blocks
5.92A @ 12V DC; 5.65A @ 24V DC; 3.21A @ 48V DC
Yes / Yes
Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI
62W @ 12...17V DC; 120W @ 18...35V DC; 144W @ 36...57V DC
Aluminium
IP30
DIN rail
135 / 29 / 105 mm (5.315 / 1.1417 / 4.1338 inch)
360 GRM
1504320000: 0 °C...60 °C
1504340000: -40 °C...75 °C
5...95 %, no condensation
FCC Part 15 Subpart B Class A, EN 55032, EN 55024, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, EN 61000-4-8
UL 508
according to IEC 60068-2-27
according to IEC 60068-2-6
1257910 hrs
Telcordia (Bellcore), GB
CE; CULUS; EAC; KOREANCERT

Type	Qty.	Order No.
IE-SW-BL05-1GT-4GTPOE	1	1504320000
IE-SW-BL05T-1GT-4GTPOE	1	1504340000

**PoE+ Gigabit Ethernet Injector**

- IEEE 802.3af/at compliant PoE ports
- Compact design
- Wide temperature range

**IE-INJ-EL02-2GTPoE**



**Technical data**

<b>Technology</b>	Standard
<b>Interfaces</b>	RJ45 ports
Number of ports	
<b>Power supply</b>	
Voltage supply	12/24/48 V DC, 1 single input
Voltage supply range	12...57VDC
Connection type	1 removable 4-pin terminal block
Current consumption	3.12A @ 12V DC; 2.81A @ 24V DC; 1.3A @ 48V DC
Overload current protection	Yes
Reverse polarity protection	Yes
<b>Power over Ethernet (PoE)</b>	
PoE pin assignment	Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI-X
Total PoE power budget	30W @ 12...23.9V DC; 60W @ 24...57V DC
<b>Physical characteristics</b>	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	70 / 41 / 95 mm (2.7559 / 1.6142 / 3.7402 inch)
Net weight	400 GRM
<b>Environmental conditions</b>	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
<b>EMC conformity and approvals</b>	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
<b>MTBF</b>	
Operating time (hours), min.	3165390 hrs
According to Standard	Telcordia SR-332
<b>Approvals</b>	
Approvals	CE; CULUS
<b>Note</b>	

IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3ab for 1000Base-T, IEEE 802.3at/af for Power-over-Ethernet		
10/100/1000BaseT(X), auto negotiation, Full-/half-duplex mode, MDI-X		
2x RJ45 10/100/1000BaseT(X), 2x RJ45 10/100/1000 BaseT(X) PoE+		
12/24/48 V DC, 1 single input		
12...57VDC		
1 removable 4-pin terminal block		
3.12A @ 12V DC; 2.81A @ 24V DC; 1.3A @ 48V DC		
Yes		
Yes		
Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI-X		
30W @ 12...23.9V DC; 60W @ 24...57V DC		
Metal		
IP30		
DIN rail		
70 / 41 / 95 mm (2.7559 / 1.6142 / 3.7402 inch)		
400 GRM		
-40 °C...75 °C		
5 to 95 % (non-condensing)		
2000m in acc. with UL		
EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms		
UL 61010-1, UL 61010-2-201		
according to IEC 60068-2-27		
according to IEC 60068-2-6		
3165390 hrs		
Telcordia SR-332		
CE; CULUS		

**Ordering data**

<b>Note</b>
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Type	Qty.	Order No.
IE-INJ-EL02-2GTPoE	1	2682440000

# Managed Switches

## Overview

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	Managed Switches, IEC 61850-3, 19" rack mounting Fast/Gigabit Ethernet	C.32
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# Increased productivity through uninterrupted operation

## Managed switches – for optimal control and effective redundancy

In order to coordinate the different requirements of communication participants within an industrial network, managed switches feature extensive control mechanisms for data distribution and bandwidth management. Different configuration options are supported, e.g. web-based configuration, SNMP, Telnet console, command-line interface (CLI) and serial console connection.

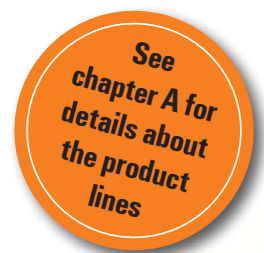
### C

In the industrial Ethernet infrastructures of today, system availability must be ensured through network redundancy. This prevents machine downtimes and production losses due to connection errors in the highly integrated systems. Weidmüller managed switches feature high-performance redundancy mechanisms in order to increase the availability of managed Ethernet networks.

In order to satisfy all the requirements of industrial networks, our managed switches are available in four different lines: ValueLine, AdvancedLine, PremiumLine and SubstationLine. This selection ensures the availability of the right product regardless of application-specific and industrial requirements. The lines offer both DIN rail and 19" rack models, Fast, Gigabit and up to 10 Gigabit interfaces, a broad selection of port numbers and types, Power over Ethernet variants, support for the most important industrial automation protocols and the necessary approvals for use in such demanding sectors as the process industry, transmission and distribution, and shipbuilding.

#### Your special advantage:

- Wide variety of ports in terms of number and features to meet individual requirements
- Models available with Fast Ethernet, Gigabit and up to 10 Gigabit interfaces
- Lite- to full-managed models, including Power over Ethernet variants
- Support of industrial protocols for optimal integration into the most common automation networks



**Variety of models**  
Lite- to full-managed models

**Support of a variety of communication protocols**  
Industrial Ethernet protocols, such as PROFINET-RT, Ethernet/IP and Modbus/TCP



**Backup and restore function**  
External backup and restore (EBR) module available

**Configuration**  
Different configuration options supported

**Extensive approvals**  
Numerous international approvals, such as CE, FCC, EAC cULus, Class 1 Div. 2, ATEX Zone 2, DNV, IEC 61850-3 and IEEE 1613

### 5-Port lite managed Fast Ethernet Switch

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40 °C up to 75 °C



#### Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
MAC table size	2 K
Packet buffer size	1 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Upload of a configuration file via web-interface or TFTP-Server
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Syslog, Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), O-Ring (recovery time <10 ms), O-Chain (recovery time <10 ms), Fast recovery
Network traffic filter	Port based VLAN
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, Loop protection, TACACS+ Authentication, Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH)
Time synchronization management	NTP server, SNTP client
Industrial protocol support	Modbus/TCP slave
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	5x RJ45
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function DIP switch	1x for enabling/disabling power fault alarm via relay, 3x for ring redundancy settings
Function reset button	<5 sec: System reboot, >5 sec: Factory default
Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.5A @ 12V DC; 0.25A @ 24V DC; 0.12A @ 48V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Note	

Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	144.3 / 26.1 / 95 mm (5.6811 / 1.0276 / 3.7402 inch)
Net weight	396 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	1796601 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS; EAC; KOREANCERT

#### Ordering data

Type	Qty.	Order No.
IE-SW-AL05LM-5TX	1	2682250000



## 6-Port lite managed Fast Ethernet Switch

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40 °C up to 75 °C



### Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
MAC table size	2 K
Packet buffer size	1 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Upload of a configuration file via web-interface or TFTP-Server
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Syslog, Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), O-Ring (recovery time <10 ms), O-Chain (recovery time <10 ms), Fast recovery
Network traffic filter	Port based VLAN
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, Loop protection, TACACS+ Authentication, Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH)
Time synchronization management	NTP server, SNTP client
Industrial protocol support	Modbus/TCP slave
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	4 x RJ45, 2 * SC Multi-mode
Fibre-optic ports	100BaseFX ports (SC connector), Multimode
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot, >5 sec: Factory default
Fibre optic transceiver characteristics	
Transmission rate	100 MBit/s
Connector type	SC-Duplex
Transceiver type	Multimode
Transmission distance, typ.	2 km
Wavelength	1310nm
Receive power	-31...0dBm
Transmission power	-23.5...-14dBm
Link-budget	7.5 dB
Power supply	
Connection type	1 removable 7-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.47A @ 12V DC; 0.24A @ 24V DC; 0.12A @ 48V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Note	

Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	145.4 / 54.2 / 107.1 mm (5.7244 / 2.1339 / 4.2165 inch)
Net weight	799 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	SELV according to EN 62368-1, UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	595597 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS; EAC

### Ordering data

Type	Qty.	Order No.
IE-SW-AL06LM-4TX-2SC	1	2682260000

6-Port lite managed Fast Ethernet Switch

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40 °C up to 75 °C



Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
MAC table size	2 K
Packet buffer size	1 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Upload of a configuration file via web-interface or TFTP-Server
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Syslog, Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), O-Ring (recovery time <10 ms), O-Chain (recovery time <10 ms), Fast recovery
Network traffic filter	Port based VLAN
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, Loop protection, TACACS+ Authentication, Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH)
Time synchronization management	NTP server, SNTP client
Industrial protocol support	Modbus/TCP slave
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	4 x RJ45, 2 * SC Single-mode
Fibre-optic ports	100BaseFX ports (SC connector), Singlemode
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot, >5 sec: Factory default
Fibre optic transceiver characteristics	
Transmission rate	100 Mbit/s
Connector type	SC-Duplex
Transceiver type	Singlemode
Transmission distance, typ.	30 km
Wavelength	1310nm
Receive power	-34...0dBm
Transmission power	-15...-8dBm
Link-budget	19 dB
Power supply	
Connection type	1 removable 7-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.47A @ 12V DC; 0.24A @ 24V DC; 0.12A @ 48V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Note	

Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	145.4 / 54.2 / 107.1 mm (5.7244 / 2.1339 / 4.2165 inch)
Net weight	799 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	SELV according to EN 62368-1, UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	609551 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS; EAC

Ordering data

Type	Qty.	Order No.
IE-SW-AL06LM-4TX-2SCS	1	2682270000

## 8-Port managed Fast Ethernet Switch

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40 °C up to 75 °C



### Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
MAC table size	8 K
Packet buffer size	1 Mbit
Priority queues	4
Max. number of available VLANs	4095
IGMP Groups	1024
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ45 port), Upload of a configuration file via web-interface or TFTP-Server
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10 ms), O-Chain (recovery time <10 ms), Link Aggregation Control Protocol (LACP), Fast recovery
Network traffic filter	Quality of Service (QoS), Class of Service (CoS), Type of Service (ToS), Differentiated Services Code Point (DSCP), Port based VLAN, Tag based VLAN, IGMP v2/v3, Multicast VLAN Registration (MVR), Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, Access control (port based via IEEE 802.1X), Access control list (IP-based), Access control list (MAC-based), Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH), Loop protection
Time synchronization management	NTP server, SNTP client
Industrial protocol support	Modbus/TCP slave, PROFINET device acc. to conformance class A
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	8x RJ45
Console port interface	RS-232 (RJ45 connector)
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot, >5 sec: Factory default
Note	

Power supply	
Connection type	1 removable 7-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.47A @ 12V DC; 24A @ 24V DC; 0.12A @ 48V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	144.3 / 52 / 107.1 mm (5.6811 / 2.0472 / 4.2165 inch)
Net weight	812 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	SELV according to EN 62368-1, UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	841599 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS; EAC; KOREANCERT

### Ordering data

Type	Qty.	Order No.
IE-SW-AL08M-8TX	1	2682280000

16-Port managed Fast Ethernet Switch

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40 °C up to 75 °C



Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
MAC table size	8 K
Packet buffer size	1 Mbit
Priority queues	4
Max. number of available VLANs	4095
Number of IGMP-Groups per VLAN	256
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ45 port), Upload of a configuration file via web-interface or TFTP-Server
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10 ms), O-Chain (recovery time <10 ms), Link Aggregation Control Protocol (LACP), Fast recovery
Network traffic filter	Quality of Service (QoS), Class of Service (CoS), Type of Service (ToS), Differentiated Services Code Point (DSCP), Port based VLAN, Tag based VLAN, IGMP v2/v3, Multicast VLAN Registration (MVR), Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, Access control (port based via IEEE 802.1X), Access control list (IP-based), Access control list (MAC-based), Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH), Loop protection
Time synchronization management	NTP server, SNTP client
Industrial protocol support	Modbus/TCP slave, PROFINET device acc. to conformance class A
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	16x RJ45
Console port interface	RS-232 (RJ45 connector)
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot, >5 sec: Factory default
Note	

Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	1.2A @ 12V DC, 0.6A @ 24V DC, 0.3A @ 48V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	153.6 / 74.3 / 107.5 mm (6.0472 / 2.9252 / 4.2323 inch)
Net weight	1188 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	SELV according to EN 62368-1, UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	886987 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE, CULUS; EAC, KOREANCERT

Ordering data

Type	Qty.	Order No.
IE-SW-AL16M-16TX	1	2682310000

## 24-Port managed Fast Ethernet Switch

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40 °C up to 75 °C



### Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
MAC table size	8 K
Packet buffer size	1 Mbit
Priority queues	4
Max. number of available VLANs	4095
Number of IGMP-Groups per VLAN	256
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ45 port), Upload of a configuration file via web-interface or TFTP-Server
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10 ms), O-Chain (recovery time <10 ms), Link Aggregation Control Protocol (LACP), Fast recovery
Network traffic filter	Quality of Service (QoS), Class of Service (CoS), Type of Service (ToS), Differentiated Services Code Point (DSCP), Port based VLAN, Tag based VLAN, IGMP v2/v3, Multicast VLAN Registration (MVR), Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, Access control (port based via IEEE 802.1X), Access control list (IP-based), Access control list (MAC-based), Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH), Loop protection
Time synchronization management	NTP server, SNTP client
Industrial protocol support	Modbus/TCP slave, PROFINET device acc. to conformance class A
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	24x RJ45
Console port interface	RS-232 (RJ45 connector)
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot, >5 sec: Factory default
Note	

Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	1.2A @ 12V DC, 0.6A @ 24V DC, 0.3A @ 48V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	154 / 96.4 / 108.5 mm (6.063 / 3.7953 / 4.2716 inch)
Net weight	1369 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	SELV according to EN 62368-1, UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	731289 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE, CULUS, EAC

### Ordering data

Type	Qty.	Order No.
IE-SW-AL24M-24TX	1	2682320000

5-Port managed Fast Ethernet Switches

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- Turbo Ring and Turbo Chain with fast recovery time (<20 ms for up to 250 switches)
- IGMP snooping, QoS, port- and tag-based VLAN
- Configurable error messages via SNMP trap, e-mail or relay output
- User-friendly, web-based configuration and management



Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control, IEEE 802.1D-2004 for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control, Back pressure flow control
MIB	MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9
Switch characteristics	
MAC table size	2 K
Packet buffer size	1 Mbit
Priority queues	4
Max. number of available VLANs	64
IGMP-Groups	256
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Local serial console port (RS-232 via RJ-45 port), Windows tool
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Turbo-Ring (recovery time <20 ms), Turbo-Chain (recovery time <20 ms)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, Port based VLAN, IGMP v1/v2, GMRP, Traffic Rate Limiting
IP-address management	Static, BootP, RARP, DHCP-Client, DHCP-Server (port based), DHCP Option 82 (Relay Agent)
Security functions	VLAN segmentation, Enable/disable ports, Loop protection
Time synchronization management	SNTP client, NTP client
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	5x RJ45
Console port interface	RS-232
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function DIP switch	Turbo-Ring, Master, Coupler, Reserve
Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	9.6...60VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.29A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Note	

Physical characteristics	
Housing main material	metal
Protection degree	IP30
Type of mounting	DIN rail, Panel (with optional mounting kit)
Dimensions H x W x D	135 / 53.6 / 105 mm (5.315 / 2.1102 / 4.1338 inch)
Net weight	650 GRM
Environmental conditions	
Operating temperature	IE-SW-VL05M-5TX: -10 °C...60 °C IE-SW-VL05MT-5TX: -40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8
Safety standard	UL508, UL 60950-1, EN 60950-1
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-32
MTBF	
Operating time (hours), min.	1547941 hrs
According to Standard	Telcordia (Bellcore), GB
Approvals	
Approvals	CE; CULUS; CULUSEX; DETNORVER; EAC; KOREANCERT

Ordering data

Type	Qty.	Order No.
IE-SW-VL05M-5TX	1	1504280000
IE-SW-VL05MT-5TX	1	1504310000

## 8-Port managed Fast Ethernet Switch

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- Turbo Ring and Turbo Chain with fast recovery time (<20 ms for up to 250 switches)
- IGMP snooping, QoS, port- and tag-based VLAN
- Configurable error messages via SNMP trap, e-mail or relay output
- User-friendly, web-based configuration and management



EtherNet/IP™



ModbusTCP

### Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control, IEEE 802.1D-2004 for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control, Back pressure flow control
MIB	MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9
Switch characteristics	
MAC table size	8 K
Packet buffer size	1 Mbit
Priority queues	4
Max. number of available VLANs	64
IGMP-Groups	256
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Local serial console port (RS-232 via RJ-45 port), Windows tool
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Turbo-Ring (recovery time <20 ms), Turbo-Chain (recovery time <20 ms)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, Port based VLAN, IGMP v1/v2, GMRP, Traffic Rate Limiting
IP-address management	Static, BootP, RARP, DHCP-Client, DHCP-Server (port based), DHCP Option 82 (Relay Agent)
Security functions	VLAN segmentation, Enable/disable ports, Loop protection
Time synchronization management	SNTP client, NTP client
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	8x RJ45
Console port interface	RS-232
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function DIP switch	Turbo-Ring, Master, Coupler, Reserve
Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	9.6...60VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.26A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Note	

### Physical characteristics

Housing main material	metal
Protection degree	IP30
Type of mounting	DIN rail, Panel (with optional mounting kit)
Dimensions H x W x D	135 / 53.6 / 105 mm (5.315 / 2.1102 / 4.1338 inch)
Net weight	890 GRM

### Environmental conditions

Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)

### EMC conformity and approvals

EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8
Safety standard	UL508, UL 60950-1, EN 60950-1
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-32

### MTBF

Operating time (hours), min.	1339439 hrs
According to Standard	Telcordia (Bellcore), GB

### Approvals

Approvals	CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC; KOREANCERT
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### Ordering data

Type	Qty.	Order No.
IE-SW-VL08MT-8TX	1	1240940000

8-Port managed Fast Ethernet Switch

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- Turbo Ring and Turbo Chain with fast recovery time (<20 ms for up to 250 switches)
- IGMP snooping, QoS, port- and tag-based VLAN
- Configurable error messages via SNMP trap, e-mail or relay output
- User-friendly, web-based configuration and management



Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control, IEEE 802.1D-2004 for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control, Back pressure flow control
Switch characteristics	
MAC table size	8 K
Packet buffer size	1 Mbit
Priority queues	4
Max. number of available VLANs	64
IGMP-Groups	256
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Local serial console port (RS-232 via RJ-45 port), Windows tool
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Turbo-Ring (recovery time <20 ms), Turbo-Chain (recovery time <20 ms)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, Port based VLAN, IGMP v1/v2, GMRP, Traffic Rate Limiting
IP-address management	Static, BootP, RARP, DHCP-Client, DHCP-Server (port based), DHCP Option 82 (Relay Agent)
Security functions	VLAN segmentation, Enable/disable ports, Loop protection
Time synchronization management	SNTP client, NTP client
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	6x RJ45, 2 * SC Multi-mode
Console port interface	RS-232
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function DIP switch	Turbo-Ring, Master, Coupler, Reserve
Fibre optic transceiver characteristics	
Transmission rate	100 Mbps
Connector type	SC-Duplex
Transceiver type	Multimode
Transmission distance, typ.	5 km
Wavelength	1300nm
Receive power	-32...-3dBm
Transmission power	-20...-10dBm
Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	9.6...60VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.35A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Note	

Physical characteristics	
Housing main material	metal
Protection degree	IP30
Type of mounting	DIN rail, Panel (with optional mounting kit)
Dimensions H x W x D	135 / 53.6 / 105 mm (5.315 / 2.1102 / 4.1338 inch)
Net weight	890 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8
Safety standard	UL508, UL 60950-1, EN 60950-1
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-32
MTBF	
Operating time (hours), min.	IE-SW-VL08MT-6TX-2SC: 1277138 hrs
According to Standard	Telcordia (Bellcore), GB
Approvals	
Approvals	CE; CULUS; CULUSEX; DEMKOATEX; EAC

Ordering data

Type	Qty.	Order No.
IE-SW-VL08MT-6TX-2SC	1	1344770000



## 8-Port managed Fast Ethernet Switch

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- Turbo Ring and Turbo Chain with fast recovery time (<20 ms for up to 250 switches)
- IGMP snooping, QoS, port- and tag-based VLAN
- Configurable error messages via SNMP trap, e-mail or relay output
- User-friendly, web-based configuration and management



EtherNet/IP™



ModbusTCP

### Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control, IEEE 802.1D-2004 for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control, Back pressure flow control
Switch characteristics	
MAC table size	8 K
Packet buffer size	1 Mbit
Priority queues	4
Max. number of available VLANs	64
IGMP-Groups	256
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Local serial console port (RS-232 via RJ-45 port), Windows tool
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Turbo-Ring (recovery time <20 ms), Turbo-Chain (recovery time <20 ms)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, Port based VLAN, IGMP v1/v2, GMRP, Traffic Rate Limiting
IP-address management	Static, BootP, RARP, DHCP-Client, DHCP-Server (port based), DHCP Option 82 (Relay Agent)
Security functions	VLAN segmentation, Enable/disable ports, Loop protection
Time synchronization management	SNTP client, NTP client
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	6x RJ45, 2 * ST Multi-mode
Console port interface	RS-232
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function DIP switch	Turbo-Ring, Master, Coupler, Reserve
Fibre optic transceiver characteristics	
Transmission rate	100 Mbps
Connector type	ST-Duplex
Transceiver type	Multimode
Transmission distance, typ.	5 km
Wavelength	1300nm
Receive power	-32...-3dBm
Transmission power	-20...-10dBm
Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	9.6...60VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.35A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Note	

Physical characteristics	
Housing main material	metal
Protection degree	IP30
Type of mounting	DIN rail, Panel (with optional mounting kit)
Dimensions H x W x D	135 / 53.6 / 105 mm (5.315 / 2.1102 / 4.1338 inch)
Net weight	890 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8
Safety standard	UL508, UL 60950-1, EN 60950-1
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-32
MTBF	
Operating time (hours), min.	IE-SW-VL08MT-6TX-2ST: 1102845 hrs
According to Standard	Telcordia (Bellcore), GB
Approvals	
Approvals	CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC

### Ordering data

Type	Qty.	Order No.
IE-SW-VL08MT-6TX-2ST	1	1240990000

8-Port managed Fast Ethernet Switch

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- Turbo Ring and Turbo Chain with fast recovery time (<20 ms for up to 250 switches)
- IGMP snooping, QoS, port- and tag-based VLAN
- Configurable error messages via SNMP trap, e-mail or relay output
- User-friendly, web-based configuration and management



Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control, IEEE 802.1D-2004 for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control, Back pressure flow control
Switch characteristics	
MAC table size	8 K
Packet buffer size	1 Mbit
Priority queues	4
Max. number of available VLANs	64
IGMP-Groups	256
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Local serial console port (RS-232 via RJ-45 port), Windows tool
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Turbo-Ring (recovery time <20 ms), Turbo-Chain (recovery time <20 ms)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, Port based VLAN, IGMP v1/v2, GMRP, Traffic Rate Limiting
IP-address management	Static, BootP, RARP, DHCP-Client, DHCP-Server (port based), DHCP Option 82 (Relay Agent)
Security functions	VLAN segmentation, Enable/disable ports, Loop protection
Time synchronization management	SNTP client, NTP client
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	6x RJ45, 2 * SC Single-mode
Console port interface	RS-232
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function DIP switch	Turbo-Ring, Master, Coupler, Reserve
Fibre optic transceiver characteristics	
Transmission rate	100 Mbps
Connector type	SC-Duplex
Transceiver type	Singlemode
Transmission distance, typ.	40 km
Wavelength	1310nm
Receive power	-34...-3dBm
Transmission power	-5...0dBm
Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	9.6...60VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.35A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Note	

Physical characteristics	
Housing main material	metal
Protection degree	IP30
Type of mounting	DIN rail, Panel (with optional mounting kit)
Dimensions H x W x D	135 / 53.6 / 105 mm (5.315 / 2.1102 / 4.1338 inch)
Net weight	890 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8
Safety standard	UL508, UL 60950-1, EN 60950-1
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-32
MTBF	
Operating time (hours), min.	1294561 hrs
According to Standard	Telcordia (Bellcore), GB
Approvals	
Approvals	CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC

Ordering data

Type	Qty.	Order No.
IE-SW-VL08MT-6TX-2SCS	1	1241020000

## 8-Port managed Fast Ethernet Switch

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- Turbo Ring and Turbo Chain with fast recovery time (<20 ms for up to 250 switches)
- IGMP snooping, QoS, port- and tag-based VLAN
- Configurable error messages via SNMP trap, e-mail or relay output
- User-friendly, web-based configuration and management



EtherNet/IP



ModbusTCP

### Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3x for flow control, IEEE 802.1D-2004 for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control, Back pressure flow control
Switch characteristics	
MAC table size	8 K
Packet buffer size	1 Mbit
Priority queues	4
Max. number of available VLANs	64
IGMP-Groups	256
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Local serial console port (RS-232 via RJ-45 port), Windows tool
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Turbo-Ring (recovery time <20 ms), Turbo-Chain (recovery time <20 ms)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, Port based VLAN, IGMP v1/v2, GMRP, Traffic Rate Limiting
IP-address management	Static, BootP, RARP, DHCP-Client, DHCP-Server (port based), DHCP Option 82 (Relay Agent)
Security functions	VLAN segmentation, Enable/disable ports, Loop protection
Time synchronization management	SNTP client, NTP client
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	5x RJ45, 1 * SC Multi-mode, 2 * SC Single-mode
Console port interface	RS-232
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function DIP switch	Turbo-Ring, Master, Coupler, Reserve
Fibre optic transceiver characteristics	
Transmission rate	100 Mbps
Connector type	SC-Duplex
Transceiver type	Multimode, Singlemode
Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	9.6...60VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.32A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Note	

Physical characteristics	
Housing main material	metal
Protection degree	IP30
Type of mounting	DIN rail, Panel (with optional mounting kit)
Dimensions H x W x D	135 / 53.6 / 105 mm (5.315 / 2.1102 / 4.1338 inch)
Net weight	890 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8
Safety standard	UL508, UL 60950-1, EN 60950-1
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-32
MTBF	
Operating time (hours), min.	1253072 hrs
According to Standard	Telcordia (Bellcore), GB
Approvals	
Approvals	CE; CULUS; EAC

### Ordering data

Type	Qty.	Order No.
IE-SW-VL08MT-5TX-1SC-2SCS	1	1345240000

16-Port managed Fast Ethernet Switches

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- Plug-n-play Turbo Ring and Turbo Chain (<20 ms for up to 250 switches)
- IEEE 1588 PTP, Modbus/TCP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported



Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control, IEEE 802.1D-2004 for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1Q for VLAN tagging, IEEE 802.1p for Class of Service, IEEE 802.1X for authentication, IEEE 802.3ad for port trunk with LACP
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control, Back pressure flow control
MIB	MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9
Switch characteristics	
Priority queues	4
Max. number of available VLANs	64
IGMP-Groups	256
MAC table size	8 K
Packet buffer size	2 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Local serial console port (RS-232 via RJ-45 port), Windows tool
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Turbo-Ring (recovery time <20 ms), Turbo-Chain (recovery time <20 ms), Link Aggregation Control Protocol (LACP)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, Port based VLAN, IGMP v1/v2, GMRP, Traffic Rate Limiting
IP-address management	Static, BootP, RARP, DHCP-Client, DHCP-Server (port based), DHCP Option 82 (Relay Agent)
Security functions	VLAN segmentation, Enable/disable ports, Access control (port based via IEEE 802.1X), Access control list (MAC-based), Loop protection, TACACS+ and IEEE 802.1X User Authentication
Time synchronization management	SNTP client, NTP client, PTPv1
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	16x RJ45
Console port interface	RS-232
Alarm contact	2 relay outputs with a current capacity of 1 A at 24 V DC
Digital inputs	2 inputs with the same ground, isolated- +13 To +30 V for logic "1" - -30 To +3 V for logic "0" - Max. input current: 8 mA
Note	

Power supply	
Connection type	2 removable 6-pin terminal blocks
Voltage supply range	12...45VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.41A @ 24V DC
Overload current protection	Existing
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	metal
Protection degree	IP30
Type of mounting	DIN rail, Panel (with optional mounting kit)
Dimensions H x W x D	135 / 94 / 142.7 mm (5.315 / 3.7008 / 5.6181 inch)
Net weight	1586 GRM
Environmental conditions	
Operating temperature	IE-SW-PL16M-16TX: 0 °C...60 °C IE-SW-PL16MT-16TX: -40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0,5 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8
Safety standard	UL508, UL 60950-1, EN 60950-1
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-32
MTBF	
Operating time (hours), min.	247000 hrs
According to Standard	Telcordia (Bellcore), GB
Approvals	
Approvals	CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC; KOREANCERT

Ordering data

Type	Qty.	Order No.
IE-SW-PL16M-16TX	1	1241100000
IE-SW-PL16MT-16TX	1	1286820000

## 8-Port managed Fast/Gigabit Ethernet Switch

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wideoperating temperature range of -40°C up to 75°C



ModbusTCP

### Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3ab for 1000BaseT(X), IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	4
Max. number of available VLANs	4095
IGMP-Groups	1024
MAC table size	8 K
Packet buffer size	1 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface or TFTP-Server
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), O-Chain (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP), Fast recovery
Network traffic filter	Quality of Service (QoS), Class of Service (CoS), Type of Service (ToS), Differentiated Services Code Point (DSCP), Port based VLAN, Tag based VLAN, IGMP v2/v3, Multicast VLAN Registration (MVR), Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, Access control (port based via IEEE 802.1X), Access control list (IP-based), Access control list (MAC-based), Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH), Loop protection
Time synchronization management	NTP server, SNTP client
Industrial protocol support	Modbus/TCP slave, PROFINET device acc. to conformance class A
Interfaces	
RJ45 ports	10/100BaseT(X) or 10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	6x RJ45 10/100BaseT(X), 2x RJ45 10/100/1000BaseT(X)
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Console port interface	RS-232 (RJ45 connector)
Function reset button	<5 sec: System reboot, >5 sec: Factory default
Note	

Power supply	
Connection type	1 removable 7-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.83A @ 12V DC; 0.41A @ 24V DC; 0.19A @ 48V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	144.3 / 52 / 107.1 mm (5.6811 / 2.0472 / 4.2165 inch)
Net weight	817 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	SELV according to EN 62368-1, UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	798350 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE, CULUS; EAC

### Ordering data

Type	Qty.	Order No.
IE-SW-AL08M-6TX-2GT	1	2682290000

10-Port managed Fast/Gigabit Ethernet Switch

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wideoperating temperature range of -40°C up to 75°C
- SFP-ports for fiber optic transmission over long distances



Technical data

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	4
Max. number of available VLANs	4095
IGMP-Groups	1024
MAC table size	8 K
Packet buffer size	1 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface or TFTP-Server
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), O-Chain (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP), Fast recovery
Network traffic filter	Quality of Service (QoS), Class of Service (CoS), Type of Service (ToS), Differentiated Services Code Point (DSCP), Port based VLAN, Tag based VLAN, IGMP v2/v3, Multicast VLAN Registration (MVR), Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, Access control (port based via IEEE 802.1X), Access control list (IP-based), Access control list (MAC-based), Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH), Loop protection
Time synchronization management	NTP server, SNTP client
Industrial protocol support	Modbus/TCP slave, PROFINET device acc. to conformance class A
Interfaces	
RJ45 ports	10/100BaseT(X) or 10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	8x RJ45 10/100BaseT(X), 2x combo-ports (10/100/1000BaseT(X) or 100/1000BaseSFP)
Fibre-optic ports	100/1000Base SFP Slot
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Console port interface	RS-232 (RJ45 connector)
Function reset button	<5 sec: System reboot, >5 sec: Factory default
Note	

Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.9A @ 12V DC, 0.45A @ 24V DC, 0.2A @ 48V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	153.6 / 74.3 / 107.5 mm (6.0472 / 2.9252 / 4.2323 inch)
Net weight	1159 GRM
Environmental conditions	
Operating temperature	-40...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	366529 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE, CULUS, EAC

Ordering data

Type	Qty.	Order No.
IE-SW-AL10M-8TX-2GC	1	2740420000

## 18-Port managed Fast/Gigabit Ethernet Switch

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wideoperating temperature range of -40°C up to 75°C
- SFP-ports for fiber optic transmission over long distances



ModbusTCP

### Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3ab for 1000BaseT(X), IEEE 802.3z for 1000BaseX, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	4
Max. number of available VLANs	4095
IGMP-Groups	1024
MAC table size	8 K
Packet buffer size	1 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ45 port), Upload of a configuration file via web-interface or TFTP-Server
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), O-Chain (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP), Fast recovery
Network traffic filter	Quality of Service (QoS), Class of Service (CoS), Type of Service (ToS), Differentiated Services Code Point (DSCP), Port based VLAN, Tag based VLAN, IGMP v2/v3, Multicast VLAN Registration (MVR), Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, Access control (port based via IEEE 802.1X), Access control list (IP-based), Access control list (MAC-based), Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH), Loop protection
Time synchronization management	NTP server, SNTP client
Industrial protocol support	Modbus/TCP slave, PROFINET device acc. to conformance class A
Interfaces	
RJ45 ports	10/100BaseT(X) or 10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	16x RJ45 10/100BaseT(X), 2x combo-ports (10/100/1000BaseT(X) or 100/1000BaseSFP)
Fibre-optic ports	100/1000Base SFP Slot
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Console port interface	RS-232 (RJ45 connector)
Function reset button	<5 sec: System reboot, >5 sec: Factory default
Note	

Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	1.2A @ 12V DC, 0.6A @ 24V DC, 0.3A @ 48V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	154 / 96.4 / 108.5 mm (6.063 / 3.7953 / 4.2716 inch)
Net weight	1363 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	SELV according to EN 62368-1, UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	600504 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE, CULUS; EAC

### Ordering data

Type	Qty.	Order No.
IE-SW-AL18M-16TX-2GC	1	2682330000

## 10-Port managed Fast/Gigabit Ethernet Switches

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- 2 Gigabit Ethernet ports for redundant ring and 1 Gigabit Ethernet port for uplink solution
- Ring redundancy with fast recovery time (< 20 ms for up to 250 switches)
- IEEE 1588 PTP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported



EtherNet/IP™



ModbusTCP

## Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3ab for 1000BaseT(X), IEEE 802.3x for flow control, IEEE 802.1D-2004 for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1Q for VLAN tagging, IEEE 802.1p for Class of Service, IEEE 802.1X for authentication, IEEE 802.3ad for port trunk with LACP
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control, Back pressure flow control
MIB	MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9
Switch characteristics	
Priority queues	4
Max. number of available VLANs	64
IGMP-Groups	256
MAC table size	8 K
Packet buffer size	1 MBit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Local serial console port (RS-232 via RJ-45 port), Windows tool
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Turbo-Ring (recovery time <20/50 ms at Fast/Gigabit Ethernet interface), Turbo-Chain (recovery time <20/50 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, Port based VLAN, IGMP v1/v2, GMRP, Traffic Rate Limiting
IP-address management	Static, BootP, RARP, DHCP-Client, DHCP-Server (port based), DHCP Option 82 (Relay Agent)
Security functions	VLAN segmentation, Enable/disable ports, Access control (port based via IEEE 802.1X), Access control list (MAC-based), Loop protection, TACACS+ and IEEE 802.1X User Authentication
Time synchronization management	SNTP client, NTP client, PTPv1
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100BaseT(X), 10/100/1000BaseT(X), auto negotiation
Number of ports	3 * RJ45 10/100/1000BaseT(X), 7 * RJ45 10/100BaseT(X)
Alarm contact	2 relay outputs with a current capacity of 1 A at 24 V DC
Digital inputs	2 inputs with the same ground, isolated- +13 To +30 V for logic "1" - -30 To +3 V for logic "0" - Max. input current: 8 mA
Console port interface	RS-232
Note	

Power supply	
Connection type	2 removable 6-pin terminal blocks
Voltage supply range	12...45VDC
Voltage supply	24 V DC, 2 redundant inputs
Current consumption	0.65A @ 24V DC
Overload current protection	Existing
Reverse polarity protection	Available
Physical characteristics	
Housing main material	metal
Protection degree	IP30
Type of mounting	DIN rail, Panel (with optional mounting kit)
Dimensions H x W x D	135 / 80.2 / 107 mm (5.315 / 3.1575 / 4.2126 inch)
Net weight	1170 GRM
Environmental conditions	
Operating temperature	IE-SW-PL10M-3GT-7TX: -10 °C...60 °C IE-SW-PL10MT-3GT-7TX: -40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, EN 61000-4-8
Safety standard	UL508, UL 60950-1, EN 60950-1
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-32
MTBF	
Operating time (hours), min.	911314 hrs
According to Standard	Telcordia (Bellcore), GB
Approvals	
Approvals	CE; CULUS; CULUSEX; DEMKOATEX; EAC

## Ordering data

Type	Qty.	Order No.
IE-SW-PL10M-3GT-7TX	1	1241290000
IE-SW-PL10MT-3GT-7TX	1	1286930000



## 18-Port managed Fast/Gigabit Ethernet Switches

- Supports the automation protocols Modbus/TCP, PROFINET RT and EtherNet/IP
- 2 Gigabit Ethernet ports plus 16 Fast Ethernet ports for copper and fibre
- Ring redundancy with rapid recovery time (< 20 ms for up to 250 switches)
- IEEE 1588 PTP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported



EtherNet/IP™



ModbusTCP

### Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3ab for 1000BaseT(X), IEEE 802.3z for 1000BaseX, IEEE 802.3x for flow control, IEEE 802.1D-2004 for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1Q for VLAN tagging, IEEE 802.1p for Class of Service, IEEE 802.1X for authentication, IEEE 802.3ad for port trunk with LACP
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control, Back pressure flow control
MIB	MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9
Switch characteristics	
Priority queues	4
Max. number of available VLANs	64
IGMP-Groups	256
MAC table size	8 K
Packet buffer size	2 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Local serial console port (RS-232 via RJ-45 port), Windows tool
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Turbo-Ring (recovery time <20/50 ms at Fast/Gigabit Ethernet interface), Turbo-Chain (recovery time <20/50 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, Port based VLAN, IGMP v1/v2, GMRP, Traffic Rate Limiting
IP-address management	Static, BootP, RARP, DHCP-Client, DHCP-Server (port based), DHCP Option 82 (Relay Agent)
Security functions	VLAN segmentation, Enable/disable ports, Access control (port based via IEEE 802.1X), Access control list (MAC-based), Loop protection, TACACS+ and IEEE 802.1X User Authentication
Time synchronization management	SNTP client, NTP client, PTPv1
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100BaseT(X) or 10/100/1000BaseT(X), auto negotiation
Number of ports	16 * RJ45 10/100BaseT(X), 2 * combo-ports (10/100/1000BaseT(X) or 1000BaseSFP)
Fibre-optic ports	1000BaseSFP-Slot
Alarm contact	2 relay outputs with a current capacity of 1 A at 24 V DC
Digital inputs	2 inputs with the same ground, isolated- +13 To +30 V for logic "1" - -30 To +3 V for logic "0" - Max. input current: 8 mA
Console port interface	RS-232
Note	

Power supply	
Connection type	2 removable 6-pin terminal blocks
Voltage supply range	12...45VDC
Voltage supply	24 V DC, 2 redundant inputs
Current consumption	0.51 A @ 24V DC
Overload current protection	Existing
Reverse polarity protection	Available
Physical characteristics	
Housing main material	metal
Protection degree	IP30
Type of mounting	DIN rail, Panel (with optional mounting kit)
Dimensions H x W x D	135 / 94 / 142.7 mm (5.315 / 3.7008 / 5.6181 inch)
Net weight	1630 GRM
Environmental conditions	
Operating temperature	IE-SW-PL18M-2GC-16TX: 0 °C...60 °C IE-SW-PL18MT-2GC-16TX: -40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8
Safety standard	UL508, UL 60950-1, EN 60950-1
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-32
MTBF	
Operating time (hours), min.	240000 hrs
According to Standard	Telcordia (Bellcore), GB
Approvals	
Approvals	CE; CULUS; CULUSEX; DEMKOATEX; DETNORVER; EAC

### Ordering data

Type	Qty.	Order No.
IE-SW-PL18M-2GC-16TX	1	1241320000
IE-SW-PL18MT-2GC-16TX	1	1286970000

8-Port managed Gigabit Ethernet Switch

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 75°C



Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3ab for 1000BaseT(X), IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	8
Max. number of available VLANs	4096
Number of IGMP-Groups per VLAN	256
MAC table size	8 K
Packet buffer size	4 Mbit
Jumbo frame support	up to 9.6 KB
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Command Line Interface (Telnet/SSH), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface, TFTP-Server or external backup module
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <30 ms), O-Chain (recovery time <30 ms), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	8x RJ45
Console port interface	RS-232 (RJ45 connector)
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default, Note: behavior of reset button can be configured via web interface
Note	

Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.55A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	145.1 / 54.3 / 108.3 mm (5.7126 / 2.1378 / 4.2638 inch)
Net weight	800 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	508672 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE, CULUS; EAC

Ordering data

Type	Qty.	Order No.
IE-SW-AL08M-8GT	1	2682350000

## 12-Port managed Gigabit Ethernet Switch

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 75°C
- SFP-ports for fiber optic transmission over long distances



### Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3ab for 1000BaseT(X), IEEE 802.3z for 1000BaseX, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	8
Max. number of available VLANs	4096
Number of IGMP-Groups per VLAN	256
MAC table size	8 K
Packet buffer size	4 Mbit
Jumbo frame support	up to 9.6 KB
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Command Line Interface (Telnet/SSH), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface, TFTP-Server or external backup module
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <30 ms), O-Chain (recovery time <30 ms), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100/1000BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	8x RJ45, 4x 100/1000BaseSFP Slot
Console port interface	RS-232 (RJ45 connector)
Fibre-optic ports	100/1000Base SFP Slot
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default, Note: behavior of reset button can be configured via web interface
Note	

Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.54A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	145.1 / 54.3 / 108.3 mm (5.7126 / 2.1378 / 4.2638 inch)
Net weight	822 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	551478 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE, CULUS; EAC

### Ordering data

Type	Qty.	Order No.
IE-SW-AL12M-8GT-4GESFP	1	2682340000

### 14-Port managed Gigabit Ethernet Switch

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 75°C
- SFP-ports for fiber optic transmission over long distances



#### Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3ab for 1000BaseT(X), IEEE 802.3z for 1000BaseX, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP), IEEE 1588 PTPv2 for time synchronization
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	8
Max. number of available VLANs	4096
Number of IGMP-Groups per VLAN	256
MAC table size	8 K
Packet buffer size	4 Mbit
Jumbo frame support	up to 9.6 KB
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Command Line Interface (Telnet/SSH), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface, TFTP-Server or external backup module
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <30 ms), O-Chain (recovery time <30 ms), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client, PTPv2
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100/1000BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	12x RJ45, 2 * Slots 100/1000BaseSFP
Console port interface	RS-232 (RJ45 connector)
Fibre-optic ports	100/1000Base SFP Slot
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default, Note: behavior of reset button can be configured via web interface
Note	

Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.53A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	153.6 / 74.3 / 109.2 mm (6.0472 / 2.9252 / 4.2992 inch)
Net weight	1090 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	713154 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS; EAC

#### Ordering data

Type	Qty.	Order No.
IE-SW-AL14M-12GT-2GESFP	1	2682360000

## 24-Port managed Gigabit Ethernet Switch

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 75°C
- SFP-ports for fiber optic transmission over long distances



### Technical data

Technology	
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3ab for 1000BaseT(X), IEEE 802.3z for 1000BaseX, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP), IEEE 1588 PTPv2 for time synchronization
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	8
Max. number of available VLANs	4096
Number of IGMP-Groups per VLAN	256
MAC table size	8 K
Packet buffer size	4 Mbit
Jumbo frame support	up to 9.6 KB
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Command Line Interface (Telnet/SSH), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface, TFTP-Server or external backup module
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <30 ms), O-Chain (recovery time <30 ms), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client, PTPv2
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100/1000BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	16x RJ45, 8x 100/1000BaseSFP Slot
Console port interface	RS-232 (RJ45 connector)
Fibre-optic ports	100/1000Base SFP Slot
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default, Note: behavior of reset button can be configured via web interface
Note	

Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	0.84A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	154 / 96.4 / 108.5 mm (6.063 / 3.7953 / 4.2716 inch)
Net weight	1290 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	507660 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS; EAC

### Ordering data

Type	Qty.	Order No.
IE-SW-AL24M-16GT-8GESFP	1	2682370000

## 6-Port managed PoE+ Gigabit Ethernet Switch

- IEEE 802.3af/at compliant PoE ports
- Integrated DC/DC converter for powering PoE devices over the entire PSE input voltage range of 12 to 57 V DC
- Advanced PoE management features, including PD Alive Check with auto reboot function and PoE scheduling
- SFP-ports for fiber optic transmission over long distances



### Technical data

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.3at/af for Power-over-Ethernet, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service / Quality of Service (CoS/DoS), IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	8
Max. number of available VLANs	4096
Number of IGMP-Groups per VLAN	256
MAC table size	8 K
Packet buffer size	4 Mbit
Jumbo frame support	up to 9.6 KB
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Command Line Interface (Telnet/SSH), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface, TFTP-Server or external backup module
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <30 ms), O-Chain (recovery time <30 ms), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave

#### Note

Interfaces	
RJ45 ports	10/100/1000BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	4 * RJ45 10/100/1000BaseT(X) PoE+, 2x 100/1000BaseSFP Slot
Console port interface	RS-232 (RJ45 connector)
Fibre-optic ports	100/1000Base SFP Slot
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default, Note: behavior of reset button can be configured via web interface
Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	12...57VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	6.6A @ 12V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Power over Ethernet (PoE)	
PoE pin assignment	Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI
Total PoE power budget	60W @ 12...23.9V DC; 120W @ 24...57V DC
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	145.1 / 54.3 / 108.5 mm (5.7126 / 2.1378 / 4.2716 inch)
Net weight	910 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 V
Safety standard	UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	495624h
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS; EAC

### Ordering data

Type	Qty.	Order No.
IE-SW-AL06M-4GTPOE-2GESFP	1	2682430000

## 8-Port managed PoE+ Gigabit Ethernet Switch

- IEEE 802.3af/at compliant PoE ports
- Integrated DC/DC converter for powering PoE devices over the entire PSE input voltage range of 12 to 57 V DC
- Advanced PoE management features, including PD Alive Check with auto reboot function and PoE scheduling



### Technical data

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service / Quality of Service (CoS/DoS), IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP), IEEE 802.3at/af for Power-over-Ethernet
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	8
Max. number of available VLANs	4096
Number of IGMP-Groups per VLAN	256
MAC table size	8 K
Packet buffer size	4 Mbit
Jumbo frame support	up to 9.6 KB
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Command Line Interface (Telnet/SSH), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface, TFTP-Server or external backup module
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <30 ms), O-Chain (recovery time <30 ms), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave

### Note

Interfaces	
RJ45 ports	10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	8x RJ45 10/100/1000 BaseT(X) PoE+
Console port interface	RS-232 (RJ45 connector)
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default, Note: behavior of reset button can be configured via web interface
Power supply	
Connection type	1 removable 6-pin terminal block
Voltage supply range	12...57VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs
Current consumption	6.53A @ 12V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Power over Ethernet (PoE)	
PoE pin assignment	Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI
Total PoE power budget	60W @ 12...23.9V DC; 120W @ 24...57V DC
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	145.1 / 54.3 / 108.5 mm (5.7126 / 2.1378 / 4.2716 inch)
Net weight	915 GRM
Environmental conditions	
Operating temperature	-40 °C...75 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 V
Safety standard	UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	495670h
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS; EAC

### Ordering data

Type	Qty.	Order No.
IE-SW-AL08M-8GTPOE	1	2682420000

10-Port managed Fast/Gigabit Ethernet Switch

- Meets IEC 61850-3 / IEEE 1613 standards
- Redundant power supply modules
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances



Technical data

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1D-2004 for RSTP:2004 (Rapid Spanning Tree Protocol 2004), IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	4
Max. number of available VLANs	4095
IGMP-Groups	1024
MAC table size	8 K
Packet buffer size	1 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface or TFTP-Server
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), O-Chain (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP), Fast recovery
Network traffic filter	Quality of Service (QoS), Class of Service (CoS), Type of Service (ToS), Differentiated Services Code Point (DSCP), Port based VLAN, Tag based VLAN, IGMP v2/v3, Multicast VLAN Registration (MVR), Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, Access control (port based via IEEE 802.1X), Access control list (IP-based), Access control list (MAC-based), Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH), Loop protection
Time synchronization management	NTP server, SNTP client
Industrial protocol support	Modbus/TCP slave, PROFINET device acc. to conformance class A
Note	

Interfaces		
RJ45 ports	10/100BaseT(X) or 10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port	
Number of ports	7x RJ45 10/100BaseT(X), 3x combo-ports (10/100/1000BaseT(X) or 100/1000BaseSFP)	
Console port interface	RS-232 (RJ45 connector)	
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC	
Function reset button	<5 sec: System reboot, >5 sec: Factory default	
Fibre-optic ports	100/1000Base SFP Slot	
Power supply		
Connection type	2x 3-pin fork/ring lug connection	
Voltage supply range	88...373VDC / 85V...264VAC	
Voltage supply	110/220 V DC, 110/220 V AC, 2 redundant isolated inputs	
Current consumption	0.18A @ 110V AC	
Overload current protection	Yes	
Reverse polarity protection	Yes	
Physical characteristics		
Housing main material	Metal	
Protection degree	IP30	
Type of mounting	DIN rail	
Dimensions H x W x D	154 / 96.4 / 148.5 mm (6.063 / 3.7953 / 5.8464 inch)	
Net weight	2000 GRM	
Environmental conditions		
Operating temperature	-40 °C...85 °C	
Humidity	5 to 95 % (non-condensing)	
Operating altitude	2000m in acc. with UL	
EMC conformity and approvals		
EMC standards	EN 55032, CISPR 22, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class A, EN 55035, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 3 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8, IEC 61000-4-11	
Power Transmission & Distribution Systems acc. to standard	IEEE 1613, IEC 61850-3	
Safety standard	SELV according to EN 62368-1	
Shock	IEC 60870-2-2 class Cm	
Vibration	IEC 60870-2-2 class Cm and class Bm	
Free fall	IEC 60870-2-2 class Cm	
MTBF		
Operating time (hours), min.	599113h	
According to Standard	Telcordia SR-332	
Approvals		
Approvals	CE	
Ordering data		
Type	Qty.	Order No.
IE-SW-SL10M-7TX-3GC-HV	1	2778950000



10-Port managed Fast/Gigabit Ethernet Switch

- Meets IEC 61850-3 / IEEE 1613 standards
- Redundant power supply modules
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances



Technical data

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1D-2004 for RSTP:2004 (Rapid Spanning Tree Protocol 2004), IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	4
Max. number of available VLANs	4095
IGMP-Groups	1024
MAC table size	8 K
Packet buffer size	1 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface or TFTP-Server
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), O-Chain (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP), Fast recovery
Network traffic filter	Quality of Service (QoS), Class of Service (CoS), Type of Service (ToS), Differentiated Services Code Point (DSCP), Port based VLAN, Tag based VLAN, IGMP v2/v3, Multicast VLAN Registration (MVR), Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, Access control (port based via IEEE 802.1X), Access control list (IP-based), Access control list (MAC-based), Management access security via secure IP-list and configuration of allowed access methods (web-interface, telnet, SSH), Loop protection
Time synchronization management	NTP server, SNTP client
Industrial protocol support	Modbus/TCP slave, PROFINET device acc. to conformance class A
Note	

Interfaces	
RJ45 ports	10/100BaseT(X) or 10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	7x RJ45 10/100BASE-T(X), 3x combo-ports (10/100/1000BASE-T(X) or 100/1000BaseSFP)
Console port interface	RS-232 (RJ45 connector)
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot, >5 sec: Factory default
Fibre-optic ports	100/1000Base SFP Slot
Power supply	
Connection type	2 removable 2-pin terminal blocks
Voltage supply range	12...52VDC
Voltage supply	48 V DC, 2 redundant inputs
Current consumption	0.8A @ 12V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	154 / 96.4 / 148.5 mm (6.063 / 3.7953 / 5.8464 inch)
Net weight	1450 GRM
Environmental conditions	
Operating temperature	-40 °C...85 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, CISPR 22, FCC Part 15 Subpart B Class A, EN 55035, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 3 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV, IEC 61000-4-6 CS: 10 V
Power Transmission & Distribution Systems acc. to standard	IEEE 1613, IEC 61850-3
Safety standard	SELV according to EN 62368-1
Shock	IEC 60870-2-2 class Cm
Vibration	IEC 60870-2-2 class Cm and class Bm
Free fall	IEC 60870-2-2 class Cm
MTBF	
Operating time (hours), min.	528570h
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE

Ordering data

Type	Qty.	Order No.
IE-SW-SL10M-7TX-3GC-LV	1	2778960000

## 20-Port managed Gigabit Ethernet Switch

- Meets IEC 61850-3 / IEEE 1613 standards
- Redundant power supply modules
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances



### Technical data

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP), IEEE 1588 PTPv2 for time synchronization
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	8
Max. number of available VLANs	4095
Number of IGMP-Groups per VLAN	256
MAC table size	8 K
Packet buffer size	4 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface, TFTP-Server or external backup module
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <30 ms), O-Chain (recovery time <30 ms), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client, PTPv2
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	8x RJ45, 12x 100/1000BaseSFP Slot
Console port interface	RS-232 (RJ45 connector)
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default
Fibre-optic ports	100/1000Base SFP Slot
Note	

Power supply	
Connection type	2x 3-pin fork/ring lug connection
Voltage supply range	88...373VDC / 85V...264VAC
Voltage supply	110/220 V DC, 110/220 V AC, 2 redundant isolated inputs
Current consumption	0.37A @ 110V AC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	154 / 115 / 159 mm (6.063 / 4.5276 / 6.2598 inch)
Net weight	1900 GRM
Environmental conditions	
Operating temperature	-40 °C...85 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, CISPR 22, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class A, EN 55035, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 3 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8, IEC 61000-4-11
Power Transmission & Distribution Systems acc. to standard	IEEE 1613, IEC 61850-3
Safety standard	SELV according to EN 62368-1
Shock	IEC 60870-2-2 class Cm
Vibration	IEC 60870-2-2 class Cm and class Bm
Free fall	IEC 60870-2-2 class Cm
MTBF	
Operating time (hours), min.	421961h
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE

### Ordering data

Type	Qty.	Order No.
IE-SW-SL20M-8GT-12GESFP-HV	1	2778970000

**20-Port managed Gigabit Ethernet Switch**

- Meets IEC 61850-3 / IEEE 1613 standards
- Redundant power supply modules
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances



**Technical data**

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP), IEEE 1588 PTPv2 for time synchronization
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	8
Max. number of available VLANs	4095
Number of IGMP-Groups per VLAN	256
MAC table size	8 K
Packet buffer size	4 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface, TFTP-Server or external backup module
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <30 ms), O-Chain (recovery time <30 ms), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client, PTPv2
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Interfaces	
RJ45 ports	10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	8x RJ45, 12x 100/1000BaseSFP Slot
Console port interface	RS-232 (RJ45 connector)
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default
Fibre-optic ports	100/1000Base SFP Slot
Note	

Power supply	
Connection type	2x 3-pin fork/ring lug connection
Voltage supply range	12...52VDC
Voltage supply	48 V DC, 2 redundant inputs
Current consumption	1.88A @ 12V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	154 / 115 / 159 mm (6.063 / 4.5276 / 6.2598 inch)
Net weight	1550 GRM
Environmental conditions	
Operating temperature	-40 °C...85 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, CISPR 22, FCC Part 15 Subpart B Class A, EN 55035, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 3 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV, IEC 61000-4-6 CS: 10 V
Power Transmission & Distribution Systems acc. to standard	IEEE 1613, IEC 61850-3
Safety standard	SELV according to EN 62368-1
Shock	IEC 60870-2-2 class Cm
Vibration	IEC 60870-2-2 class Cm and class Bm
Free fall	IEC 60870-2-2 class Cm
MTBF	
Operating time (hours), min.	273551h
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE

**Ordering data**

Type	Qty.	Order No.
IE-SW-SL20M-8GT-12GESFP-LV	1	2778980000

## 26-Port 19" managed Fast/Gigabit Ethernet Switch

- Meets IEC 61850-3 / IEEE 1613 standards
- Redundant power supply modules
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances



### Technical data

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP), IEEE 1588 PTPv2 for time synchronization
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	8
Max. number of available VLANs	4095
Number of IGMP-Groups per VLAN	256
MAC table size	8 K
Packet buffer size	4 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface or TFTP-Server
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), O-Chain (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client, PTPv2
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave

Note



Interfaces	
RJ45 ports	10/100BaseT(X) or 10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	24x RJ45 10/100BASE-T(X), 2x combo-ports (10/100/1000BaseT(X) or 100/1000BaseSFP)
Console port interface	RS-232 (RJ45 connector)
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default
Fibre-optic ports	100/1000Base SFP Slot
Power supply	
Connection type	1x 10-pin fork/ring lug connection
Voltage supply range	100...370VDC / 100V...240VAC
Voltage supply	110/220 V DC, 110/220 V AC, 2 redundant isolated inputs
Current consumption	0.17A @ 110V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	19" rack mounting
Dimensions H x W x D	44 / 443.7 / 262.5 mm (1.7323 / 17.4685 / 10.3346 inch)
Net weight	4070 GRM
Environmental conditions	
Operating temperature	-40 °C...85 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, CISPR 22, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class A, EN 55035, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 3 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8, IEC 61000-4-11
Power Transmission & Distribution Systems acc. to standard	IEEE 1613, IEC 61850-3
Safety standard	SELV according to EN 62368-1
Shock	IEC 60870-2-2 class Cm
Vibration	IEC 60870-2-2 class Cm and class Bm
Free fall	IEC 60870-2-2 class Cm
MTBF	
Operating time (hours), min.	262968h
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE

### Ordering data

Type	Qty.	Order No.
IE-SW-SL26M-24TX-2GC-HV	1	2778990000

## 26-Port 19" managed Fast/Gigabit Ethernet Switch

- Meets IEC 61850-3 / IEEE 1613 standards
- Redundant power supply modules
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances



### Technical data

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP), IEEE 1588 PTPv2 for time synchronization
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
Priority queues	8
Max. number of available VLANs	4095
Number of IGMP-Groups per VLAN	256
MAC table size	8 K
Packet buffer size	4 Mbit
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface or TFTP-Server
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), O-Chain (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client, PTPv2
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave

### Note



Interfaces	
RJ45 ports	10/100BaseT(X) or 10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Number of ports	24x RJ45 10/100BASE-T(X), 2x combo-ports (10/100/1000BaseT(X) or 100/1000BaseSFP)
Console port interface	RS-232 (RJ45 connector)
Alarm contact	1 relay output with a current capacity of 1 A at 24 V DC
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default
Fibre-optic ports	100/1000Base SFP Slot
Power supply	
Connection type	1x 10-pin fork/ring lug connection
Voltage supply range	20...72VDC
Voltage supply	24 V DC, 48 V DC, 2 redundant inputs
Current consumption	0.96A @ 24V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	19" rack mounting
Dimensions H x W x D	44 / 443.7 / 262.5 mm (1.7323 / 17.4685 / 10.3346 inch)
Net weight	3600 GRM
Environmental conditions	
Operating temperature	-40 °C...85 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, CISPR 22, FCC Part 15 Subpart B Class A, EN 55035, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 3 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV, IEC 61000-4-6 CS: 10 V
Power Transmission & Distribution Systems acc. to standard	IEEE 1613, IEC 61850-3
Safety standard	SELV according to EN 62368-1
Shock	IEC 60870-2-2 class Cm
Vibration	IEC 60870-2-2 class Cm and class Bm
Free fall	IEC 60870-2-2 class Cm
MTBF	
Operating time (hours), min.	297924h
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE

### Ordering data

Type	Qty.	Order No.
IE-SW-SL26M-24TX-2GC-LV	1	2779000000

**Modular 28-port 19" managed Fast/Gigabit/10-Gigabit Ethernet switch**

- Meets IEC 61850-3 / IEEE 1613 standards
- Modular design to allocate up to 28 ports with up to 10-GbE speed
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances


**Technical data**

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3ae for 10-Gigabit Ethernet, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP), IEEE 1588 PTPv2 for time synchronization
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
MAC table size	8 K
Packet buffer size	32 Mbit
Memory (Flash)	16 MB
Memory (RAM)	128 MB
Jumbo frame support	up to 10 KB
Priority queues	8
Max. number of available VLANs	4095
Number of IGMP-Groups per VLAN	128
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface, TFTP-Server or external backup module
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), O-Chain (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client, PTPv2
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Note	



Interfaces	
Supported media interface modules	M1, M2, M3: IE-SWM-SL04-4SC, IE-SWM-SL04-4SCS, IE-SWM-SL04-4ST, IE-SWM-SL04-4STS, IE-SWM-SL08-8GT, IE-SWM-SL08-8GESFP, M4: IE-SWM-SL04-4GESFP, IE-SWM-SL02-2GESFP+, IE-SWM-SL04-4GESFP+,
Number of ports	up to 28 (depending on used media interface modules)
Console port interface	RS-232 (RJ45 connector)
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default
Power supply	
Connection type	1x 10-pin fork/ring lug connection
Voltage supply range	100...370VDC; 100V...240VAC
Voltage supply	110/220 V DC, 110/220 V AC, 2 redundant isolated inputs
Current consumption	0.36A @ 110V DC; 0.18A @ 220V DC; 0.67A @ 110V AC; 0.43A @ 220V AC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	19" rack mounting
Dimensions H x W x D	44 / 440 / 325 mm (1.7323 / 17.3228 / 12.7953 inch)
Net weight	6450 GRM
Environmental conditions	
Operating temperature	-40 °C...85 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, CISPR 22, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class A, EN 55035, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 3 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8, IEC 61000-4-11
Power Transmission & Distribution Systems acc. to standard	IEEE 1613, IEC 61850-3
Safety standard	SELV according to EN 62368-1, UL 61010-1, UL 61010-2-201
Shock	IEC 60870-2-2 class Cm
Vibration	IEC 60870-2-2 class Cm and class Bm
Free fall	IEC 60870-2-2 class Cm
MTBF	
Operating time (hours), min.	647420h
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS

**Ordering data**

Type	Qty.	Order No.
IE-SW-SL28M-HV	1	2779010000

**Modular 28-port 19" managed Fast/Gigabit/10-Gigabit Ethernet switch**

- Meets IEC 61850-3 / IEEE 1613 standards
- Modular design to allocate up to 28 ports with up to 10-GbE speed
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances


**Technical data**

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3ae for 10-Gigabit Ethernet, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP), IEEE 1588 PTPv2 for time synchronization
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
MAC table size	8 K
Packet buffer size	32 Mbit
Memory (Flash)	16 MB
Memory (RAM)	128 MB
Jumbo frame support	up to 10 KB
Priority queues	8
Max. number of available VLANs	4095
Number of IGMP-Groups per VLAN	128
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface, TFTP-Server or external backup module
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), O-Chain (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client, PTPv2
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Note	



Interfaces	
Supported media interface modules	M1, M2, M3: IE-SWM-SL04-4SC, IE-SWM-SL04-4SCS, IE-SWM-SL04-4ST, IE-SWM-SL04-4STS, IE-SWM-SL08-8GT, IE-SWM-SL08-8GESFP, M4: IE-SWM-SL04-4GESFP, IE-SWM-SL02-2GESFP+, IE-SWM-SL04-4GESFP+
Number of ports	up to 28 (depending on used media interface modules)
Console port interface	RS-232 (RJ45 connector)
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default
Power supply	
Connection type	1x 10-pin fork/ring lug connection
Voltage supply range	20...72VDC
Voltage supply	24 V DC, 48 V DC, 2 redundant inputs
Current consumption	1.64A @ 24V DC; 0.82A @ 48V DC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	19" rack mounting
Dimensions H x W x D	44 / 440 / 325 mm (1.7323 / 17.3228 / 12.7953 inch)
Net weight	6450 GRM
Environmental conditions	
Operating temperature	-40 °C...85 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, CISPR 22, FCC Part 15 Subpart B Class A, EN 55035, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 3 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV, IEC 61000-4-6 CS: 10 V
Power Transmission & Distribution Systems acc. to standard	IEEE 1613, IEC 61850-3
Safety standard	SELV according to EN 62368-1
Shock	IEC 60870-2-2 class Cm
Vibration	IEC 60870-2-2 class Cm and class Bm
Free fall	IEC 60870-2-2 class Cm
MTBF	
Operating time (hours), min.	608907h
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE

**Ordering data**

Type	Qty.	Order No.
IE-SW-SL28M-LV	1	2779020000

**Modular Layer 3 28-port 19" managed Fast/Gigabit/10-Gigabit Ethernet Switch**

- Meets IEC 61850-3 / IEEE 1613 standards
- Modular design to allocate up to 28 ports with up to 10-GbE speed
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances
- Routing between up to 28 IP subnets



**Technical data**

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3ae for 10-Gigabit Ethernet, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP), IEEE 1588 PTPv2 for time synchronization
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
MAC table size	8 K
Packet buffer size	32 Mbit
Memory (Flash)	16 MB
Memory (RAM)	128 MB
Jumbo frame support	up to 10 KB
Priority queues	8
Max. number of available VLANs	4095
Number of IGMP-Groups per VLAN	128
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface, TFTP-Server or external backup module
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), O-Chain (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client, PTPv2
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Layer 3 support	Static or dynamic routing according to RIP v2, VRRP (Virtual Router Redundancy Protocol)
Note	



Interfaces	
Supported media interface modules	M1, M2, M3: IE-SWM-SL04-4SC, IE-SWM-SL04-4SCS, IE-SWM-SL04-4ST, IE-SWM-SL04-4STS, IE-SWM-SL08-8GT, IE-SWM-SL08-8GESFP, M4: IE-SWM-SL04-4GESFP, IE-SWM-SL02-2GESFP+, IE-SWM-SL04-4GESFP+,
Number of ports	up to 28 (depending on used media interface modules)
Console port interface	RS-232 (RJ45 connector)
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default
Power supply	
Connection type	1x 10-pin fork/ring lug connection
Voltage supply range	100...370VDC; 100V...240VAC
Voltage supply	110/220 V DC, 110/220 V AC, 2 redundant isolated inputs
Current consumption	0.36A @ 110V DC; 0.18A @ 220V DC; 0.67A @ 110V AC; 0.43A @ 220V AC
Overload current protection	Yes
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	19" rack mounting
Dimensions H x W x D	44 / 440 / 325 mm (1.7323 / 17.3228 / 12.7953 inch)
Net weight	6450 GRM
Environmental conditions	
Operating temperature	-40 °C...85 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, CISPR 22, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class A, EN 55035, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 3 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8, IEC 61000-4-11
Power Transmission & Distribution Systems acc. to standard	IEEE 1613, IEC 61850-3
Safety standard	SELV according to EN 62368-1
Shock	IEC 60870-2-2 class Cm
Vibration	IEC 60870-2-2 class Cm and class Bm
Free fall	IEC 60870-2-2 class Cm
MTBF	
Operating time (hours), min.	647420h
According to Standard	Telcordia SR-332
Approvals	
Approvals	CULUS

**Ordering data**

Type	Qty.	Order No.
IE-SW-L3-SL28M-HV	1	2875580000



**Modular Layer 3 28-port 19" managed Fast/Gigabit/10-Gigabit Ethernet Switch**

- Meets IEC 61850-3 / IEEE 1613 standards
- Modular design to allocate up to 28 ports with up to 10-GbE speed
- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 85°C
- SFP-ports for fiber optic transmission over long distances
- Routing between up to 28 IP subnets



**Technical data**

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX and 100BASE-FX, IEEE 802.3ab for 1000BASE-T, IEEE 802.3z for 1000BASE-X, IEEE 802.3ae for 10-Gigabit Ethernet, IEEE 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP), IEEE 1588 PTPv2 for time synchronization
Data switching	Store and Forward
Flow control	IEEE 802.3x flow control
Switch characteristics	
MAC table size	8 K
Packet buffer size	32 Mbit
Memory (Flash)	16 MB
Memory (RAM)	128 MB
Jumbo frame support	up to 10 KB
Priority queues	8
Max. number of available VLANs	4095
Number of IGMP-Groups per VLAN	128
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Telnet console, Command Line Interface (CLI), Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface, TFTP-Server or external backup module
Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports
Network redundancy	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), O-Chain (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client)
Network traffic filter	Quality of Service (QoS), Tag based VLAN, IGMP v2/v3, Traffic Rate Limiting
IP-address management	Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay
Security functions	VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles
Time synchronization management	SNTP server, SNTP client, PTPv2
Industrial protocol support	PROFINET device acc. to conformance class B, EtherNet/IP, Modbus/TCP slave
Layer 3 support	Static or dynamic routing according to RIP v2, VRRP (Virtual Router Redundancy Protocol)
Note	



Interfaces		
Supported media interface modules	M1, M2, M3: IE-SWM-SL04-4SC, IE-SWM-SL04-4SCS, IE-SWM-SL04-4ST, IE-SWM-SL04-4STS, IE-SWM-SL08-8GT, IE-SWM-SL08-8GESFP, M4: IE-SWM-SL04-4GESFP, IE-SWM-SL02-2GESFP+, IE-SWM-SL04-4GESFP+	
Number of ports	up to 28 (depending on used media interface modules)	
Console port interface	RS-232 (RJ45 connector)	
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default	
Power supply		
Connection type	1x 10-pin fork/ring lug connection	
Voltage supply range	20...72VDC	
Voltage supply	24 V DC, 48 V DC, 2 redundant inputs	
Current consumption	1.64A @ 24V DC; 0.82A @ 48V DC	
Overload current protection	Yes	
Reverse polarity protection	Yes	
Physical characteristics		
Housing main material	Metal	
Protection degree	IP30	
Type of mounting	19" rack mounting	
Dimensions H x W x D	44 / 440 / 325 mm (1.7323 / 17.3228 / 12.7953 inch)	
Net weight	6450 GRM	
Environmental conditions		
Operating temperature	-40 °C...85 °C	
Humidity	5 to 95 % (non-condensing)	
Operating altitude	2000m in acc. with UL	
EMC conformity and approvals		
EMC standards	EN 55032, CISPR 22, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class A, EN 55035, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 3 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8, IEC 61000-4-11	
Power Transmission & Distribution Systems acc. to standard	IEEE 1613, IEC 61850-3	
Safety standard	SELV according to EN 62368-1	
Shock	IEC 60870-2-2 class Cm	
Vibration	IEC 60870-2-2 class Cm and class Bm	
Free fall	IEC 60870-2-2 class Cm	
MTBF		
Operating time (hours), min.	608907h	
According to Standard	Telcordia SR-332	
Approvals		
Approvals		
Ordering data		
Type	Qty.	Order No.
IE-SW-L3-SL28M-LV	1	2875590000

**Media interface modules for modular switch – Fast Ethernet**

- Modular design provides wide variety of media interface types (RJ-45, SFP, SC/ST-Duplex)

**Technical data**

<b>Interfaces</b>
Number of ports
Fibre-optic ports
<b>Fibre optic transceiver characteristics</b>
Transmission rate
Connector type
Transceiver type
Transmission distance, typ.
Wavelength
Receive power
Transmission power
Link-budget
<b>Power supply</b>
Voltage supply
<b>Physical characteristics</b>
Housing main material
Type of mounting
Dimensions H x W x D
Net weight
<b>Environmental conditions</b>
Operating temperature
Humidity
Operating altitude
<b>MTBF</b>
Operating time (hours), min.
According to Standard
<b>Approvals</b>
Approvals
<b>Note</b>

**Ordering data**

<b>Note</b>
-------------

**IE-SWM-SL04-4SC**



<b>Interfaces</b>
4x SC Multi-mode
100BaseFX ports (SC connector), Multimode
<b>Fibre optic transceiver characteristics</b>
100 MBit/s
SC-Duplex
Multimode
2 km
1310nm
-31...0dBm
-23.5...-14dBm
7.5 dB
<b>Power supply</b>
via Ethernet switch
<b>Physical characteristics</b>
Metal
Insert in module slot
40.7 / 99 / 107 mm (1.6024 / 3.8976 / 4.2126 inch)
348 GRM
<b>Environmental conditions</b>
-40 °C...85 °C
5 to 95 % (non-condensing)
2000m in acc. with UL
<b>MTBF</b>
315658hrs
Telcordia SR-332
<b>Approvals</b>
CE

Type	Qty.	Order No.
IE-SWM-SL04-4SC	1	2779170000

**IE-SWM-SL04-4SCS**



<b>Interfaces</b>
4x SC Single-mode
100BaseFX ports (SC connector), Singlemode
<b>Fibre optic transceiver characteristics</b>
100 MBit/s
SC-Duplex
Singlemode
30 km
1310nm
-34...0dBm
-15...-8dBm
19 dB
<b>Power supply</b>
via Ethernet switch
<b>Physical characteristics</b>
Metal
Insert in module slot
40.7 / 99 / 107 mm (1.6024 / 3.8976 / 4.2126 inch)
348 GRM
<b>Environmental conditions</b>
-40 °C...85 °C
5 to 95 % (non-condensing)
2000m in acc. with UL
<b>MTBF</b>
401287hrs
Telcordia SR-332
<b>Approvals</b>
CE

Type	Qty.	Order No.
IE-SWM-SL04-4SCS	1	2779160000

**Media interface modules for modular switch – Fast Ethernet**

- Modular design provides wide variety of media interface types (RJ-45, SFP, SC/ST-Duplex)

**Technical data**

<b>Interfaces</b>
Number of ports
Fibre-optic ports
<b>Fibre optic transceiver characteristics</b>
Transmission rate
Connector type
Transceiver type
Transmission distance, typ.
Wavelength
Receive power
Transmission power
Link-budget
<b>Power supply</b>
Voltage supply
<b>Physical characteristics</b>
Housing main material
Type of mounting
Dimensions H x W x D
Net weight
<b>Environmental conditions</b>
Operating temperature
Humidity
Operating altitude
<b>MTBF</b>
Operating time (hours), min.
According to Standard
<b>Approvals</b>
Approvals
<b>Note</b>

**Ordering data**

<b>Note</b>
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**IE-SWM-SL04-4ST**



4x ST Multi-mode
100BaseFX ports (ST connector), Multimode
100 MBit/s
ST-Duplex
Multimode
2 km
1310nm
-31...0dBm
-23.5...-14dBm
7.5 dB
via Ethernet switch
Metal
Insert in module slot
40.7 / 99 / 107 mm (1.6024 / 3.8976 / 4.2126 inch)
348 GRM
-40 °C...85 °C
5 to 95 % (non-condensing)
2000m in acc. with UL
314863hrs
Telcordia SR-332
CE

Type	Qty.	Order No.
IE-SWM-SL04-4ST	1	2779190000

**IE-SWM-SL04-4STS**



4x ST Single-mode
100BaseFX ports (ST connector), Singlemode
100 MBit/s
ST-Duplex
Singlemode
30 km
1310nm
-34...0dBm
-15...-8dBm
19 dB
via Ethernet switch
Metal
Insert in module slot
40.7 / 99 / 107 mm (1.6024 / 3.8976 / 4.2126 inch)
348 GRM
-40 °C...85 °C
5 to 95 % (non-condensing)
2000m in acc. with UL
401287hrs
Telcordia SR-332
CE

Type	Qty.	Order No.
IE-SWM-SL04-4STS	1	2779180000

Media interface modules for modular switch Fast/Gigabit Ethernet – SubstationLine

Media interface modules for modular switch – Gigabit Ethernet

- Modular design provides wide variety of media interface types (RJ45, SFP, SC/ST-Duplex)

IE-SWM-SL08-8GT



IE-SWM-SL08-8GESFP



Technical data

<b>Interfaces</b>	RJ45 ports
Number of ports	
<b>Power supply</b>	
Voltage supply	
<b>Physical characteristics</b>	
Housing main material	
Type of mounting	
Dimensions H x W x D	
Net weight	
<b>Environmental conditions</b>	
Operating temperature	
Humidity	
Operating altitude	
<b>MTBF</b>	
Operating time (hours), min.	
According to Standard	
<b>Approvals</b>	
Approvals	
<b>Note</b>	

	10/100/1000BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
	8x RJ45
	via Ethernet switch
	Metal
	Insert in module slot
	40.7 / 99 / 107 mm (1.6024 / 3.8976 / 4.2126 inch)
	348 GRM
	-40 °C...85 °C
	5 to 95 % (non-condensing)
	2000m in acc. with UL
	1303990hrs
	Telcordia SR-332
	CE

	8x 100/1000BaseSFP Slot
	via Ethernet switch
	Metal
	Insert in module slot
	40.7 / 99 / 107 mm (1.6024 / 3.8976 / 4.2126 inch)
	348 GRM
	-40 °C...85 °C
	5 to 95 % (non-condensing)
	2000m in acc. with UL
	3712062hrs
	Telcordia SR-332
	CE

Ordering data

<b>Note</b>
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Type	Qty.	Order No.
IE-SWM-SL08-8GT	1	2779140000

Type	Qty.	Order No.
IE-SWM-SL08-8GESFP	1	2779150000

Media interface modules for modular switch – Gigabit Ethernet

**IE-SWM-SL04-4GESFP**



**Technical data**

<b>Interfaces</b>
Fibre-optic ports
Number of ports
<b>Power supply</b>
Voltage supply
<b>Physical characteristics</b>
Housing main material
Type of mounting
Dimensions H x W x D
Net weight
<b>Environmental conditions</b>
Operating temperature
Humidity
Operating altitude
<b>MTBF</b>
Operating time (hours), min.
According to Standard
<b>Approvals</b>
Approvals
<b>Note</b>

1000BaseSFP-Slot
4x 1000BaseSFP slot
via Ethernet switch
Metal
Insert in module slot
40.7 / 99 / 136 mm (1.6024 / 3.8976 / 5.3543 inch)
348 GRM
-40 °C...85 °C
5 to 95 % (non-condensing)
2000m in acc. with UL
4419625hrs
Telcordia SR-332
CE

**Ordering data**

<b>Note</b>
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Type	Qty.	Order No.
IE-SWM-SL04-4GESFP	1	2779200000

Media interface modules for modular switch – 10-Gigabit Ethernet

IE-SWM-SL02-2GESFP+

IE-SWM-SL04-4GESFP+



Technical data

<b>Interfaces</b>
Fibre-optic ports
Number of ports
<b>Power supply</b>
Voltage supply
<b>Physical characteristics</b>
Housing main material
Type of mounting
Dimensions H x W x D
Net weight
<b>Environmental conditions</b>
Operating temperature
Humidity
Operating altitude
<b>MTBF</b>
Operating time (hours), min.
According to Standard
<b>Approvals</b>
Approvals
<b>Note</b>

10GBaseSFP+ slot
2x 10GBaseSFP+ slot
via Ethernet switch
Metal
Insert in module slot
40.7 / 99 / 136 mm (1.6024 / 3.8976 / 5.3543 inch)
348 GRM
-40 °C...60 °C
5 to 95 % (non-condensing)
2000m in acc. with UL
3814097hrs
Telcordia SR-332
CE

10GBaseSFP+ slot
4x 10GBaseSFP+ slot
via Ethernet switch
Metal
Insert in module slot
40.7 / 99 / 136 mm (1.6024 / 3.8976 / 5.3543 inch)
348 GRM
-40 °C...60 °C
5 to 95 % (non-condensing)
2000m in acc. with UL
1871812hrs
Telcordia SR-332
CE

Ordering data

<b>Note</b>
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Type	Qty.	Order No.
IE-SWM-SL02-2GESFP+	1	2779210000

Type	Qty.	Order No.
IE-SWM-SL04-4GESFP+	1	2779220000

# Industrial Security Router Overview

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<b>Industrial Security Router</b>	Introduction - Industrial Security Router	D.2
	Industrial Security Router	D.4

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# Secure data communication with integrated VPN technology

## Industrial security routers – versatile, reliable and flexible

As data and information networking continues to increase, Ethernet communication seeing more and more use in industrial automation technology. This is a trend that has not only changed the individual requirements of many customers, but has also had an impact on the devices used. These must now support a flexible system structure, allow networking with each other and, in addition to the targeted integration of all relevant network participants, also guarantee maximum data security

**D** In order to provide optimal support for meeting the many different requirements, we offer different versions of industrial security routers. These routers enable secure, reliable and location-independent communication between machines and systems, as well as reliable user authentication to protect the network.

Our routers with integrated VPN technology are ideally suited for secure remote access to components and systems in remote networks. They are available with either wired or mobile Internet connectivity and support the u-link Remote Access Service. This allows remote access systems to be set up quickly and easily, with no special IT knowledge required.

### Your special advantage:

- Easy integration of subnets with identical IP address ranges through 1:1 NAT
- Secure and easy remote maintenance via Weidmüller u-link Remote Access Service
- Future-proof network connection with static and dynamic routing
- Increased network security thanks to stateful inspection firewall, IP/port forwarding and network segmentation
- Full flexibility thanks to Fast Ethernet and Gigabit Ethernet interfaces with up to 4 separate subnets and ports

Compatible  
with u-link  
Remote Access  
Service





**Reliable Internet connection**

Reliable Internet connection thanks to integrated 4G/LTE mobile modem

**WLAN interface**

Also for use as a service access point

**Remote Access Service**

Secure remote access with VPN

**Configuration**

Extensive configuration options for IP address mapping

**Internet communication**

Secure Internet communication thanks to IPsec and OpenVPN



## 2-Port Fast Ethernet Industrial Security Router

- Firewall for secure protection of machinery and equipment
- Extensive IP address management for the integration of series machines
- WLAN interface – also for use as a service access point



### Technical data

Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v2c, Command Line Interface (Telnet/SSH), Upload of a configuration file via web-interface
Monitoring function	SNMP v2c, Syslog, Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap
IP-address management	Static, DHCP-Client, DHCP-Server (pool-based), DHCP-Relay, DNS-Relay
Security functions	Access Control List (MAC-based) for WLAN Access Point mode
Time synchronization management	NTP server, NTP client
Operating modes	WLAN Access Point, WLAN Client, Virtual COM mode, TCP Server mode, TCP Client mode, UDP Server/Client mode
Routing functionality	
Firewall functions	Stateful Packet Inspection Firewall (Layer-3)
NAT functions	Source / Destination NAT (Port / Host / Network)
Routing functions	IPv4 routing, Static and dynamic IP Routing
VPN functions	u-link client, OpenVPN (Server or Client), IPSec (Initiator or Responder)
Interfaces	
Number of ports	2x RJ45 10/100BASE-T(X), 1x DB9 male for RS-232/422/485
Digital outputs	1x, with a current capacity of 0.2 A at 30 V DC
Digital inputs	1x, 5 to 30 V for logic "1", 0 to 2 V for logic "0"
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default
Connector for external antennas	1x RP-SMA female
Serial communication parameters	
Baud rate	110 bit/s to 460800 bit/s
Data bits	7, 8
Parity	none, odd, even, Mark, Space
Stop bits	1, 2
WLAN interface	
Data security	64-bit and 128-bit WEP encryption, WPA/WPA2 Personal and Enterprise (IEEE 802.1X/RADIUS, TKIP and AES)
Transmission rate WLAN	IEEE 802.11b: 1...11Mbps IEEE 802.11g: 6...54Mbps IEEE 802.11n: 6.5...150Mbps

#### Note

Power supply	
Connection type	1 removable 4-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs, or 48 V DC Power-over-Ethernet (IEEE 802.3af)
Current consumption	0.22A @ 12V DC; 0.11A @ 24V DC; 0.07A @ 48V DC
Reverse polarity protection	Yes
Overload current protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail, Wall mounting
Dimensions H x W x D	95 / 45 / 81 mm (3.7402 / 1.7717 / 3.189 inch)
Net weight	411 GRM
Environmental conditions	
Operating temperature	-25 °C...70 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	SELV according to EN 62368-1, UL 61010-1, UL 61010-2:201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	381084 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS; EAC

### Ordering data

Type	Qty.	Order No.
IE-SR-2TX-WL	1	2682590000

**2-Port Fast Ethernet Industrial Security Router**

- Firewall for secure protection of machinery and equipment
- Extensive IP address management for the integration of series machines
- Integrated 4G/LTE modem with dual SIM option
- WLAN interface – also for use as a service access point



**Technical data**

Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v2c, Command Line Interface (Telnet/SSH), Upload of a configuration file via web-interface, SMS control commands
Monitoring function	SNMP v2c, Syslog, Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Event based warning via SMS, Device information and mobile radio status via SMS request
IP-address management	Static, DHCP-Client, DHCP-Server (pool-based), DHCP-Relay, DNS-Relay
Security functions	Access Control List (MAC-based) for WLAN Access Point mode
Time synchronization management	NTP server, NTP client
Operating modes	WLAN Access Point, WLAN Client, Virtual COM mode, TCP Server mode, TCP Client mode, UDP Server/Client mode
Routing functionality	
Firewall functions	Stateful Packet Inspection Firewall (Layer-3)
NAT functions	Source / Destination NAT (Port / Host / Network)
Routing functions	IPv4 routing, Static and dynamic IP Routing
VPN functions	u-link client, OpenVPN (Server or Client), IPSec (Initiator or Responder)
Interfaces	
Number of ports	2x RJ45 10/100BASE-T(X), 1x DB9 male for RS-232/422/485
Digital outputs	1x, with a current capacity of 0.2 A at 30 V DC
Digital inputs	1x, 5 to 30 V for logic "1", 0 to 2 V for logic "0"
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default
Number of SIM-Card slots	2
SIM-Card slot type	Mini-SIM (ID-000 format)
Connector for external antennas	2x SMA female, 1x RP-SMA female
Serial communication parameters	
Baud rate	110 bit/s to 460800 bit/s
Data bits	7, 8
Parity	none, odd, even, Mark, Space
Stop bits	1, 2
WLAN interface	
Data security	64-bit and 128-bit WEP encryption, WPA/WPA2 Personal and Enterprise (IEEE 802.1X/RADIUS, TKIP and AES)
Transmission rate WLAN	IEEE 802.11b: 1...11Mbps IEEE 802.11g: 6...54Mbps IEEE 802.11n: 6.5...150Mbps

Note

Mobile radio interface	
Wireless module	multi-band modem (4G/3G/2G), Region:, EMEA
Transmission rate mobile radio	LTE category: CAT 4 Download rate, max.: 150Mbps Upload rate, max.: 50Mbps
Frequency band	LTE-FDD: B1, B3, B7, B8, B20, B28A, LTE-TDD: B38, B40, B41, WCDMA: B1,B8, GSM: B3,B8
Power supply	
Connection type	1 removable 4-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs, or 48 V DC Power-over-Ethernet (IEEE 802.3af)
Current consumption	0.46A @ 12V DC; 0.22A @ 24V DC; 0.11A @ 48V DC
Reverse polarity protection	Yes
Overload current protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail, Wall mounting
Dimensions H x W x D	95 / 45 / 81 mm (3.7402 / 1.7717 / 3.189 inch)
Net weight	437 GRM
Environmental conditions	
Operating temperature	-25 °C...70 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	SELV according to EN 62368-1, UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	355921 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS; EAC

**Ordering data**

Type	Qty.	Order No.
IE-SR-2TX-WL-4G-EU	1	2682560000

## 2-Port Fast Ethernet Industrial Security Router

- Firewall for secure protection of machinery and equipment
- Extensive IP address management for the integration of series machines
- Integrated 4G/LTE modem with dual SIM option
- WLAN interface – also for use as a service access point



## Technical data

Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v2c, Command Line Interface (Telnet/SSH), Upload of a configuration file via web-interface, SMS control commands
Monitoring function	SNMP v2c, Syslog, Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Event based warning via SMS, Device information and mobile radio status via SMS request
IP-address management	Static, DHCP-Client, DHCP-Server (pool-based), DHCP-Relay, DNS-Relay
Security functions	Access Control List (MAC-based) for WLAN Access Point mode
Time synchronization management	NTP server, NTP client
Operating modes	WLAN Access Point, WLAN Client, Virtual COM mode, TCP Server mode, TCP Client mode, UDP Server/Client mode
Routing functionality	
Firewall functions	Stateful Packet Inspection Firewall (Layer-3)
NAT functions	Source / Destination NAT (Port / Host / Network)
Routing functions	IPv4 routing, Static and dynamic IP Routing
VPN functions	u-link client, OpenVPN (Server or Client), IPSec (Initiator or Responder)
Interfaces	
Number of ports	2x RJ45 10/100BASE-T(X), 1x DB9 male for RS-232/422/485
Digital outputs	1x, with a current capacity of 0.2 A at 30 V DC
Digital inputs	1x, 5 to 30 V for logic "1", 0 to 2 V for logic "0"
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default
Number of SIM-Card slots	2
SIM-Card slot type	Mini-SIM (ID-000 format)
Connector for external antennas	2x SMA female, 1x RP-SMA female
Serial communication parameters	
Baud rate	110 bit/s to 460800 bit/s
Data bits	7, 8
Parity	none, odd, even, Mark, Space
Stop bits	1, 2
WLAN interface	
Data security	64-bit and 128-bit WEP encryption, WPA/WPA2 Personal and Enterprise (IEEE 802.1X/RADIUS, TKIP and AES)
Transmission rate WLAN	IEEE 802.11b: 1...11Mbps IEEE 802.11g: 6...54Mbps IEEE 802.11n: 6.5...150Mbps

## Note

Mobile radio interface	
Wireless module	multi-band modem (4G/3G), Region:, North America
Transmission rate mobile radio	LTE category: CAT 4 Download rate, max.: 150Mbps Upload rate, max.: 50Mbps
Frequency band	LTE-FDD:, B2, B4, B5, B12, B13, B14, B66, B71, WCDMA: B2,B4,B5
Power supply	
Connection type	1 removable 4-pin terminal block
Voltage supply range	10.8...52.8VDC
Voltage supply	12/24/48 V DC, 2 redundant inputs, or 48 V DC Power-over-Ethernet (IEEE 802.3af)
Current consumption	0.46A @ 12V DC; 0.22A @ 24V DC; 0.11A @ 48V DC
Reverse polarity protection	Yes
Overload current protection	Yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail, Wall mounting
Dimensions H x W x D	95 / 45 / 81 mm (3.7402 / 1.7717 / 3.189 inch)
Net weight	437 GRM
Environmental conditions	
Operating temperature	-25 °C...70 °C
Humidity	5 to 95 % (non-condensing)
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Safety standard	SELV according to EN 62368-1, UL 61010-1, UL 61010-2-201
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Free fall	According to IEC 60068-2-31
MTBF	
Operating time (hours), min.	353679 hrs
According to Standard	Telcordia SR-332
Approvals	
Approvals	CE; CULUS; EAC

## Ordering data

Type	Qty.	Order No.
IE-SR-2TX-WL-4G-US-V	1	268258000

### 4-Port Fast Ethernet Industrial Security Router

- Easy integration of subnets with identical IP address ranges through 1: 1 NAT
- Secure and easy remote maintenance with Weidmüller u-link remote access service
- Future-proof network connection with static and dynamic routing
- Increased network security through stateful inspection firewall, IP/Port- forwarding and network segmentation



#### Technical data

Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Windows tool
Monitoring function	SNMP v1/v2c/v3, Syslog
IP-address management	Static, DHCP-Client, DHCP-Server (pool-based)
Security functions	IPv4 Stateful Packet Inspection Firewall (incoming/outgoing), NAT masquerading, 1:1 NAT, IP forwarding, Port forwarding
Time synchronization management	NTP client
Industrial protocol support	Modbus/TCP slave
Modes of operation	
IP router	IP routing (IPv4, Layer-3) with SPI firewall (Stateful Packet Inspection), Static or dynamic routing, Supports RIPv2 / OSPF
Transparent bridge	4-port switch with additional Layer-2 filter
VPN functionality	
u-link	OpenVPN-based remote access service via the Weidmüller u-link cloud
OpenVPN	Configurable as OpenVPN server or client (Layer 2 and Layer 3), Authentication via X.509 certificate, Tunnel support via HTTP proxy, Maximum 10 different client or server configurations
IPsec	Configurable as IPsec server or client
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	4x RJ45 10/100BaseT(X)
Number of SCM-Card slots	1
Digital inputs	1x, galvanically isolated, VPN-initiate: establishes a pre-configured VPN connection (24 V in), Cut: physically disconnects (Link Down) the WAN port (24 V in), Trigger pre-configured packet filter rules (24 V in)
Serial port	1x RS-485, 2-wire, galvanically isolated, 1 removable 3-pole terminal block
Function reset button	Restoration of factory settings
SCM-Card slot type	Smart Card (ID-000 format), Save and restore the configuration using smart card (memory chip)
LED indicator	Power: indicates power supply status, boot-up process, firmware update process, Status: indicates system status, VPN: indicates VPN tunnel status, Port LED: Link/ACT, Speed (RJ45 port)
Note	

Power supply	
Connection type	1 removable 4-pin terminal block
Voltage supply range	19.2...28.8VDC
Voltage supply	24 V DC, 1 single input
Current consumption	0.8A @ 24V
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Plastic
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	134.5 / 29.9 / 94.8 mm (5.2953 / 1.1772 / 3.7323 inch)
Net weight	175 GRM
Environmental conditions	
Operating temperature	-30 °C...70 °C
Humidity	5 - 90 %, no condensation
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, EN 61000-6-2, EN 61000-6-4
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Approvals	
Approvals	CE; CULUS; EAC

#### Ordering data

Type	Qty.	Order No.
IE-SR-4TX	1	2751270000

## 4-Port Fast Ethernet Industrial Security Router

- Easy integration of subnets with identical IP address ranges through 1:1 NAT
- Secure and easy remote maintenance with Weidmüller u-link remote access service
- Future-proof network connection with static and dynamic routing
- Increased network security through stateful inspection firewall, IP/Port- forwarding and network segmentation
- Reliable internet connection, even without on-site internet access, thanks to integrated 4G/LTE cellular modem



## Technical data

Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Windows tool
Monitoring function	SNMP v1/v2c/v3, Syslog
IP-address management	Static, DHCP-Client, DHCP-Server (pool-based)
Security functions	IPv4 Stateful Packet Inspection Firewall (incoming/outgoing), NAT masquerading, 1:1 NAT, IP forwarding, Port forwarding
Time synchronization management	NTP client
Industrial protocol support	Modbus/TCP slave
Modes of operation	
IP router	IP routing (IPv4, Layer-3) with SPI firewall (Stateful Packet Inspection), Static or dynamic routing, Supports RIPv2 / OSPF
Transparent bridge	4-port switch with additional Layer-2 filter
VPN functionality	
u-link	OpenVPN-based remote access service via the Weidmüller u-link cloud
OpenVPN	Configurable as OpenVPN server or client (Layer 2 and Layer 3), Authentication via X.509 certificate, Tunnel support via HTTP proxy, Maximum 10 different client or server configurations
IPsec	Configurable as IPsec server or client
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	4x RJ45 10/100BaseT(X)
Number of SCM-Card slots	1
Number of SIM-Card slots	1
Digital inputs	1x, galvanically isolated, VPN-initiate: establishes a pre-configured VPN connection (24 V in), Cut: physically disconnects (Link Down) the WAN port (24 V in), Trigger pre-configured packet filter rules (24 V in)
Serial port	1x RS-485, 2-wire, galvanically isolated, 1 removable 3-pole terminal block
Function reset button	Restoration of factory settings
SCM-Card slot type	Smart Card (ID-000 format), Save and restore the configuration using smart card (memory chip)
SIM-Card slot type	Mini-SIM (ID-000 format)
LED indicator	Power: indicates power supply status, boot-up process, firmware update process, Status: indicates system status, VPN: indicates VPN tunnel status, LTE/4G: indicates mobile radio connection status, Port LED: Link/ACT, Speed (RJ45 port)
Connector for external antennas	1x SMA female
Mobile radio interface	
Mode of operation	Permanent connection, Manual connection control via web interface
Wireless module	multi-band modem (4G/3G/2G)
Transmission rate mobile radio	LTE category: CAT 4 Download rate, max.: 150Mbps Upload rate, max.: 50Mbps
Frequency band	EMEA, LTE: B1 (2100), B3 (1800), B7 (2600), B8 (900), B20 (800DD), UMTS/WCDMA: B1 (2100), B8 (900), GSM/GPRS/EDGE: B3 (1800), B8 (900)
Note	

Power supply	
Connection type	1 removable 4-pin terminal block
Voltage supply range	19.2...28.8VDC
Voltage supply	24 V DC, 1 single input
Current consumption	0.8A @ 24V
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Plastic
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	134.5 / 29.9 / 94.8 mm (5.2953 / 1.1772 / 3.7323 inch)
Net weight	213 GRM
Environmental conditions	
Operating temperature	-30 °C...70 °C
Humidity	5 - 90 %, no condensation
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, EN 61000-6-2, EN 61000-6-4
Safety standard	EN 62368-1, EN 62311
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Approvals	
Approvals	CE; CULUS; EAC

## Ordering data

Type	Qty.	Order No.
IE-SR-4TX-LTE/4G-EU	1	2751280000

## 4-Port Fast Ethernet Industrial Security Router

- Easy integration of subnets with identical IP address ranges through 1:1 NAT
- Secure and easy remote maintenance with Weidmüller u-link remote access service
- Future-proof network connection with static and dynamic routing
- Increased network security through stateful inspection firewall, IP/Port- forwarding and network segmentation
- Reliable internet connection, even without on-site internet access, thanks to integrated 4G/LTE cellular modem



### Technical data

Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Windows tool
Monitoring function	SNMP v1/v2c/v3, Syslog, Event based warning via E-Mail
IP-address management	Static, DHCP-Client, DHCP-Server (pool-based)
Security functions	IPv4 Stateful Packet Inspection Firewall (incoming/outgoing), NAT masquerading, 1:1 NAT, IP forwarding, Port forwarding
Time synchronization management	NTP client
Industrial protocol support	Modbus/TCP slave
Modes of operation	
IP router	IP routing (IPv4, Layer-3) with SPI firewall (Stateful Packet Inspection), Static or dynamic routing, Supports RIPv2 / OSPF
Transparent bridge	4-port switch with additional Layer-2 filter
VPN functionality	
u-link	OpenVPN-based remote access service via the Weidmüller u-link cloud
OpenVPN	Configurable as OpenVPN server or client (Layer 2 and Layer 3), Authentication via X.509 certificate, Tunnel support via HTTP proxy, Maximum 10 different client or server configurations
IPsec	Configurable as IPsec server or client
Interfaces	
RJ45 ports	10/100BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Number of ports	4x RJ45 10/100BaseT(X)
Number of SCM-Card slots	1
Number of SIM-Card slots	1
Digital inputs	1x, galvanically isolated, VPN-initiate: establishes a pre-configured VPN connection (24 V in), Cut: physically disconnects (Link Down) the WAN port (24 V in), Trigger pre-configured packet filter rules (24 V in)
Serial port	1x RS-485, 2-wire, galvanically isolated, 1 removable 3-pole terminal block
Function reset button	Restoration of factory settings
SCM-Card slot type	Smart Card (ID-000 format), Save and restore the configuration using smart card (memory chip)
SIM-Card slot type	Mini-SIM (ID-000 format)
LED indicator	Power: indicates power supply status, boot-up process, firmware update process, Status: indicates system status, VPN: indicates VPN tunnel status, LTE/4G: indicates mobile radio connection status, Port LED: Link/ACT, Speed (RJ45 port)
Connector for external antennas	1x SMA female
Mobile radio interface	
Mode of operation	Permanent connection, Manual connection control via web interface
Wireless module	multi-band modem (4G/3G)
Transmission rate mobile radio	LTE category: CAT 6 Download rate, max.: 300Mbps Upload rate, max.: 50Mbps
Frequency band	EMEA / Americas, LTE: B1 (2100), B2 (1900), B3 (1800), B4 (AWS), B5 (850), B7 (2600), B12 (700ac), B13 (700c), B20 (800DD), B25 (1900), B26 (US 850 Ext), B29 (US 700de Lower), B30 (2300 WCS), B41 (TDD 2500), UMTS: B1 (2100), B2 (1900), B3 (1800), B4 (AWS), B5 (850), B8 (900)
Note	

Power supply	
Connection type	1 removable 4-pin terminal block
Voltage supply range	19.2...28.8VDC
Voltage supply	24 V DC, 1 single input
Current consumption	0.8A @ 24V
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Plastic
Protection degree	IP30
Type of mounting	DIN rail
Dimensions H x W x D	134.5 / 29.9 / 94.8 mm (5.2953 / 1.1772 / 3.7323 inch)
Net weight	213 GRM
Environmental conditions	
Operating temperature	-30 °C...70 °C
Humidity	5 - 90 %, no condensation
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 55032, EN 55024, EN 61000-6-2, EN 61000-6-4
Safety standard	EN 62368-1, EN 62311
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Approvals	
Approvals	CE; CULUS; EAC

### Ordering data

Type	Qty.	Order No.
IE-SR-4TX-LTE/4G-USEMEA	1	2739630000

### 4-Port Gigabit Ethernet Industrial Security Router

- Highly functional router and firewall
- Integrated u-link remote access service
- Up to 4 independent and individually secured networks



#### Technical data

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX, IEEE 802.3ab for 1000BASE-T
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Windows tool
Monitoring function	SNMP v1/v2c/v3, Syslog
IP-address management	Static, DHCP-Client, DHCP-Server (pool-based)
Security functions	IPv4 Stateful Packet Inspection Firewall (incoming/outgoing), NAT masquerading, 1:1 NAT, IP forwarding, Port forwarding
Time synchronization management	NTP server, NTP client
Modes of operation	
Extended IP router	Each interface (LAN, WAN, optional 4G/LTE) can be configured as separate IP network
IP router	IP routing (IPv4, Layer-3) with SPI firewall (Stateful Packet Inspection), Static or dynamic routing, Supports RIPv2 / OSPF
Transparent bridge	4-port switch with additional Layer-2 filter
VPN functionality	
u-link	OpenVPN-based remote access service via the Weidmüller u-link cloud
OpenVPN	Configurable as OpenVPN server or client (Layer 2 and Layer 3)
IPsec	Configurable as IPsec server or client
Interfaces	
Number of ports	4x RJ45 10/100/1000BaseT(X)
Number of SCM-Card slots	1
Function reset button	Restoration of factory settings
SCM-Card slot type	Smart Card (ID-000 format), Save and restore the configuration using smart card (memory chip)
USB port	USB 2.0 interface for firmware update or restoration of the device configuration via USB flash drive
Note	

Power supply	
Connection type	1 removable 4-pin terminal block
Voltage supply range	19.2...28.8VDC
Voltage supply	24 V DC, 1 single input
Current consumption	1.3A @ 24V
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Aluminium
Speed	Gigabit Ethernet
Protection degree	IP20
Type of mounting	DIN rail
Dimensions H x W x D	150 / 35 / 115 mm (5.9055 / 1.378 / 4.5276 inch)
Net weight	564 GRM
Environmental conditions	
Operating temperature	-25 °C...70 °C
Humidity	5 - 90 %, no condensation
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 61000-6-4, EN 61000-6-2
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Approvals	
Approvals	CE

#### Ordering data

Type	Qty.	Order No.
IE-SR-4GT	1	2873910000



## 4-Port Gigabit Ethernet Industrial Security Router

- Highly functional router and firewall
- Integrated u-link remote access service
- Up to 4 independent and individually secured networks
- Reliable internet connection thanks to integrated 4G/LTE mobile modem



### Technical data

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX, IEEE 802.3ab for 1000BASE-T
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Windows tool
Monitoring function	SNMP v1/v2c/v3, Syslog
IP-address management	Static, DHCP-Client, DHCP-Server (pool-based)
Security functions	IPv4 Stateful Packet Inspection Firewall (incoming/outgoing), NAT masquerading, 1:1 NAT, IP forwarding, Port forwarding
Time synchronization management	NTP server, NTP client
Modes of operation	
Extended IP router	Each interface (LAN, WAN, optional 4G/LTE) can be configured as separate IP network
IP router	IP routing (IPv4, Layer-3) with SPI firewall (Stateful Packet Inspection), Static or dynamic routing, Supports RIPv2 / OSPF
Transparent bridge	4-port switch with additional Layer-2 filter
VPN functionality	
u-link	OpenVPN-based remote access service via the Weidmüller u-link cloud
OpenVPN	Configurable as OpenVPN server or client (Layer 2 and Layer 3)
IPsec	Configurable as IPsec server or client
Interfaces	
Connector for external antennas	2x SMA female
Number of ports	4x RJ45 10/100/1000BaseT(X)
Number of SCM-Card slots	1
Number of SIM-Card slots	1
Function reset button	Restoration of factory settings
SCM-Card slot type	Smart Card (ID-000 format), Save and restore the configuration using smart card (memory chip)
SIM-Card slot type	Mini-SIM (ID-000 format)
USB port	USB 2.0 interface for firmware update or restoration of the device configuration via USB flash drive
Mobile radio interface	
Wireless module	multi-band modem (4G/3G/2G)
Transmission rate mobile radio	LTE category: CAT 4 Download rate, max.: 150Mbps Upload rate, max.: 50Mbps
Frequency band	LTE-FDD: B1, B3, B7, B8, B20, B28, LTE-TDD: B38, B40, B41, WCDMA: B1, B5, B8, GSM/GPRS/EDGE: 850, 900, 1800 MHz
Note	

Power supply	
Connection type	1 removable 4-pin terminal block
Voltage supply range	19.2...28.8VDC
Voltage supply	24 V DC, 1 single input
Current consumption	1.5A @ 24V
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Aluminium
Speed	Gigabit Ethernet
Protection degree	IP20
Type of mounting	DIN rail
Dimensions H x W x D	150 / 35 / 115 mm (5.9055 / 1.378 / 4.5276 inch)
Net weight	632 GRM
Environmental conditions	
Operating temperature	-25 °C...70 °C
Humidity	5 - 90 %, no condensation
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 61000-6-4, EN 61000-6-2
Safety standard	EN 62368-1, EN 62311
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Approvals	
Approvals	CE

### Ordering data

Type	Qty.	Order No.
IE-SR-4GT-LTE/4G-EU	1	2873920000

## 4-Port Gigabit Ethernet Industrial Security Router

- Highly functional router and firewall
- Integrated u-link remote access service
- Up to 4 independent and individually secured networks
- Reliable internet connection thanks to integrated 4G/LTE mobile modem



### Technical data

Technology	
Standard	IEEE 802.3 for 10BASE-T, IEEE 802.3u for 100BASE-TX, IEEE 802.3ab for 1000BASE-T
Management features	
Device configuration	Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Windows tool
Monitoring function	SNMP v1/v2c/v3, Syslog
IP-address management	Static, DHCP-Client, DHCP-Server (pool-based)
Security functions	IPv4 Stateful Packet Inspection Firewall (incoming/outgoing), NAT masquerading, 1:1 NAT, IP forwarding, Port forwarding
Time synchronization management	NTP server, NTP client
Modes of operation	
Extended IP router	Each interface (LAN, WAN, optional 4G/LTE) can be configured as separate IP network
IP router	IP routing (IPv4, Layer-3) with SPI firewall (Stateful Packet Inspection), Static or dynamic routing, Supports RIPv2 / OSPF
Transparent bridge	4-port switch with additional Layer-2 filter
VPN functionality	
u-link	OpenVPN-based remote access service via the Weidmüller u-link cloud
OpenVPN	Configurable as OpenVPN server or client (Layer 2 and Layer 3)
IPsec	Configurable as IPsec server or client
Interfaces	
Connector for external antennas	2x SMA female
Number of ports	4x RJ45 10/100/1000BaseT(X)
Number of SCM-Card slots	1
Number of SIM-Card slots	1
Function reset button	Restoration of factory settings
SCM-Card slot type	Smart Card (ID-000 format), Save and restore the configuration using smart card (memory chip)
SIM-Card slot type	Mini-SIM (ID-000 format)
USB port	USB 2.0 interface for firmware update or restoration of the device configuration via USB flash drive
Mobile radio interface	
Wireless module	multi-band modem (4G/3G)
Transmission rate mobile radio	LTE category: CAT 6 Download rate, max.: 300Mbps Upload rate, max.: 50Mbps
Frequency band	EMEA / Americas, LTE: B1 (2100), B2 (1900), B3 (1800), B4 (AWS), B5 (850), B7 (2600), B12 (700ac), B13 (700c), B20 (800DD), B25 (1900), B26 (US 850 Ext), B29 (US 700de Lower), B30 (2300 WCS), B41 (TDD 2500), UMTS: B1 (2100), B2 (1900), B3 (1800), B4 (AWS), B5 (850), B8 (900)
Note	

Power supply	
Connection type	1 removable 4-pin terminal block
Voltage supply range	19.2...28.8VDC
Voltage supply	24 V DC, 1 single input
Current consumption	1.5A @ 24V
Reverse polarity protection	Yes
Physical characteristics	
Housing main material	Aluminium
Speed	Gigabit Ethernet
Protection degree	IP20
Type of mounting	DIN rail
Dimensions H x W x D	150 / 35 / 115 mm (5.9055 / 1.378 / 4.5276 inch)
Net weight	632 GRM
Environmental conditions	
Operating temperature	-25 °C...70 °C
Humidity	5 - 90 %, no condensation
Operating altitude	2000m in acc. with UL
EMC conformity and approvals	
EMC standards	EN 61000-6-4, EN 61000-6-2
Safety standard	EN 62368-1, EN 62311
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
Approvals	
Approvals	CE

### Ordering data

Type	Qty.	Order No.
IE-SR-4GT-LTE/4G-USEMEA	1	2873930000

# u-link Remote Access Service Overview

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<b>u-link Remote Access Service</b>	Introduction - u-link Remote Access Service	E.2
	u-link Remote Access Service	E.6

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# u-link Remote Access Service – A tool for all purposes

## Advanced features for convenient remote access management

The remote maintenance of machines and systems is often a complex and time-consuming task. On top of that is the demand for a targeted and secure functional connection to the associated IT systems. For many users, these two challenges constitute a major obstacle to the global connection of systems.

u-link guarantees a quick and secure access to machines and plants and, at the same time, allows the efficient management of production plants, user clients, access rights and firmware versions. The intuitive u-link web portal are quick and easy to configure without expert knowledge and can be adapted to specific processes. Secure servers in Europe provide an online platform that ensures conformity between different IT systems when carrying out remote maintenance.

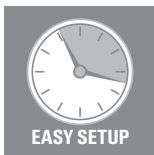


E



### Individual system management

u-link can manage users and groups as well as their access rights according to individual specifications. This includes group assignments and access rights to production systems.



### Little configuration effort

Thanks to the intuitive user interface, the devices and clients can be connected easily and without detailed IT knowledge. Thus u-link allows you to quickly network multiple systems.



### Secure remote access and remote diagnostics

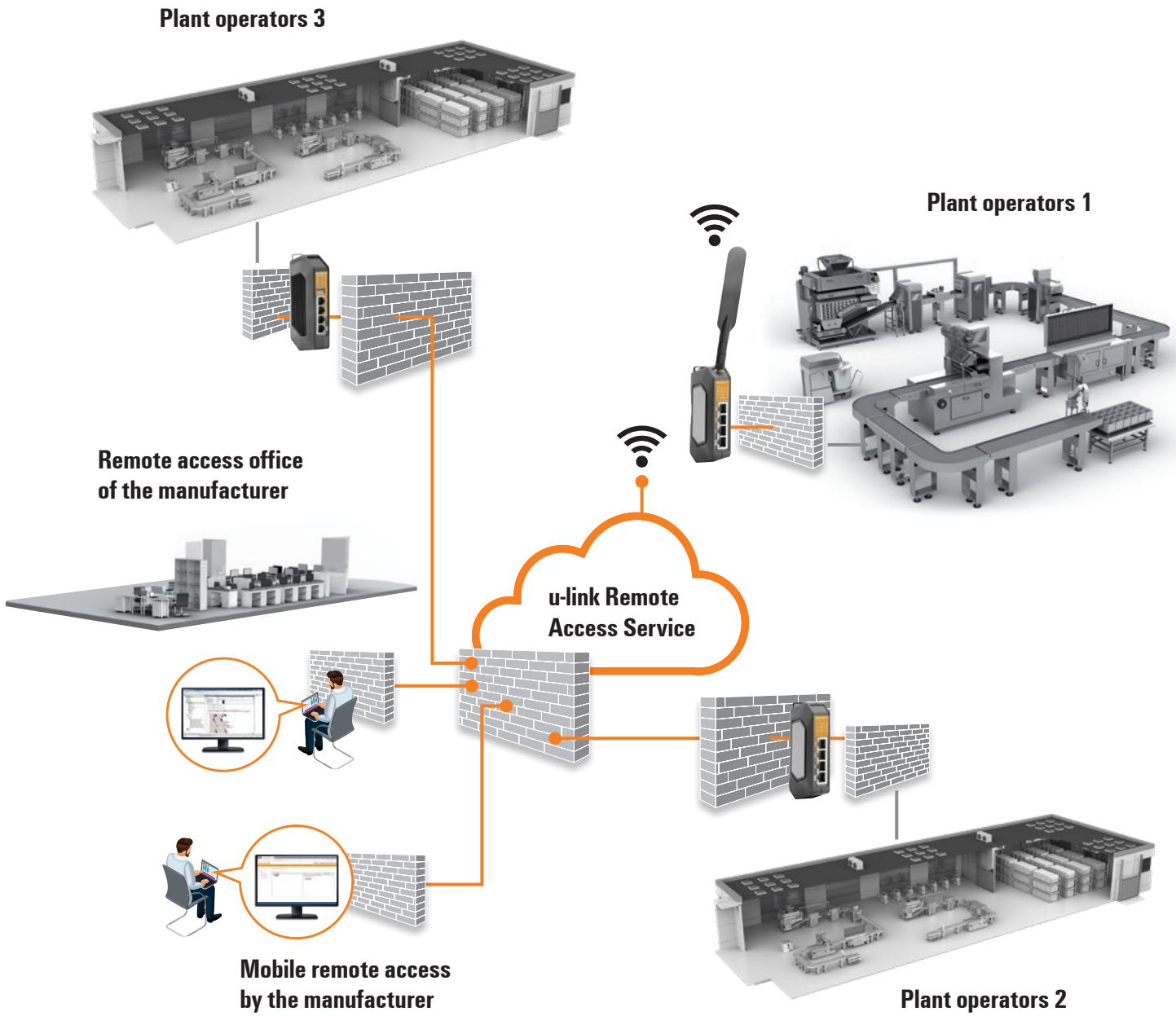
Remote access to machines and systems takes place via a secure VPN connection – worldwide and regardless of location. You have secure access to your systems at all times via the highly available servers.



### Condition monitoring and status reporting

Weidmüller Heartbeat can be used to report the availability of a router to u-link. This makes condition monitoring easier and enables status messages of the installed router.

[u-link.weidmueller.com](http://u-link.weidmueller.com)



# Simple – secure – u-link

## The integrated security concept for your networks

The growing number of network-capable devices together with the increasing networking of manufacturing through the Internet provides ample opportunities for cyber attacks. To protect your systems, u-link offers state-of-the-art functions without increasing complexity.

### E

#### Your security features:



- X.509 certificates for authentication
- 2048 bit key length



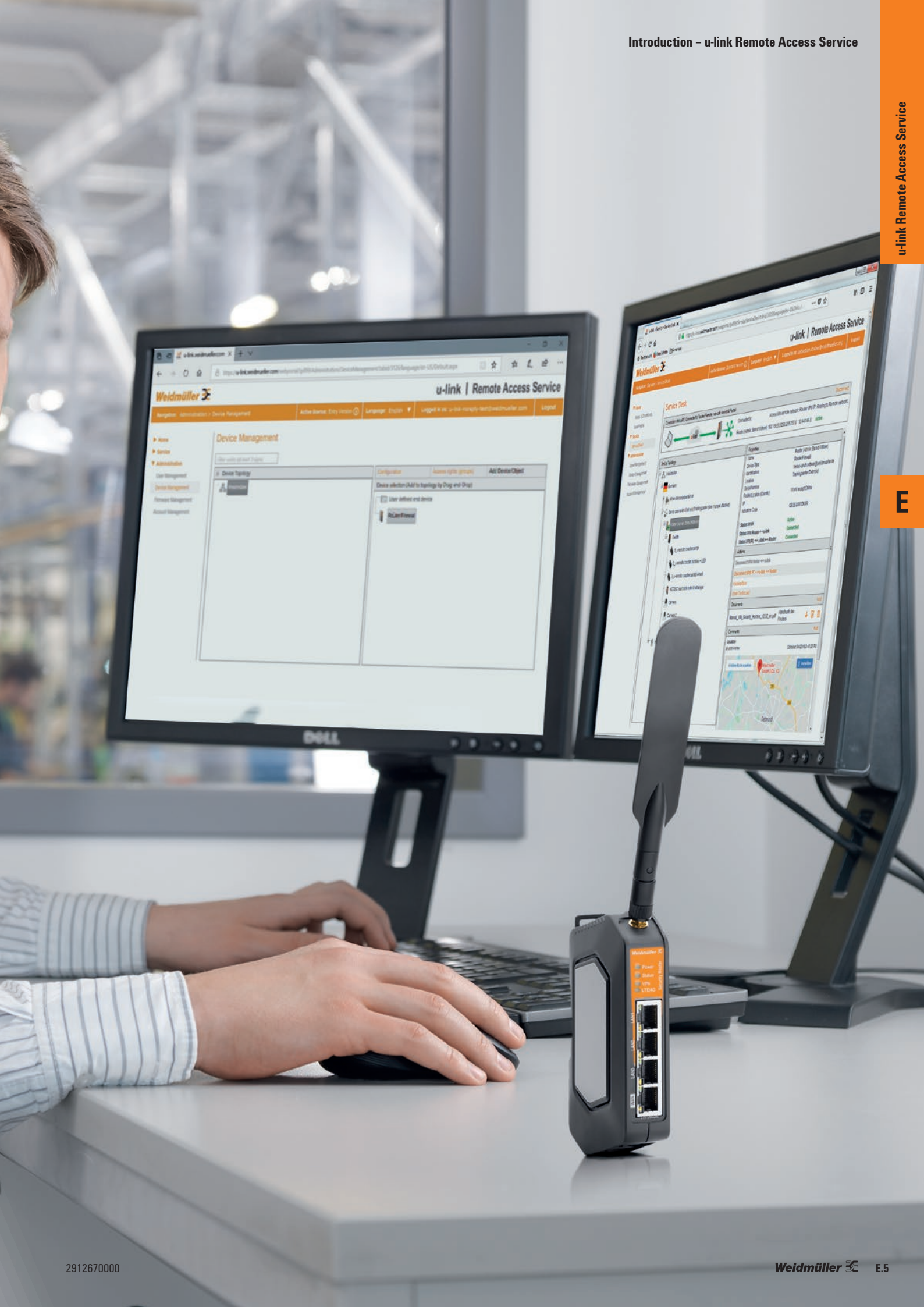
- TLS/SSL encryption
- 2-factor authentication
- Custom password policy



- Outgoing connections only
- Port 443 exclusively used for remote access
- User and rights management



- Firewall integrated in u-link for remote access
- Option of enabling remote access on site
- Remote firmware update
- High-performance firewall



## u-link Remote Access Service

### u-link device licenses

- 1-click VPN remote access for service PC's
- easyAccess: web, rdp or vnc connections to remote hosts fully browser based for use with tablet or smartphone
- Organization and Group Management
- Topologies including 3rd party end-devices
- Firmware management: Display of firmware status of all routers and the option of a time-controlled, automated firmware update
- Individual access rights: granular configuration of access rights to devices in the target network
- Extensive event log: Presentation of all activities in the u-link portal with extensive filter and export functions
- Password policy: Increased security through configurable specification of minimum requirements for password quality and validity period



### Technical data

Version	
Version	License code for u-link Remote Access Service., Adds additional configurable u-link clients on Weidmüller hardware to the basic license and extends the period of the basic license accordingly.
Function and performance features	
Number of configurable user objects (service PC)	Unrestricted
Number of configurable u-link clients on Weidmüller hardware (access points remote network)	U-LINK-50-DEVICES-1Y: 50 U-LINK-100-DEVICES-1Y: 100 U-LINK-250-DEVICES-1Y: 250 U-LINK-500-DEVICES-1Y: 500 U-LINK-1000-DEVICES-1Y: 1000
Type of 2-factor authentication	E-mail, Google-Authenticator APP, Microsoft Authenticator APP
Type of web-based access (easyAccess)	Local web-server, RDP, VNC server
VPN channel bandwidth	100 Mbit/s
User organisation	Organisation of service users in groups, assignment of selective access rights to device topology, group-dependent assignment of rights re. device configuration and user administration, Self-management of organizations within the framework of organizational rights
Firmware management	Display of the firmware version of all u-link clients and optional, time-controlled, automatic firmware updates (for selected device classes)
Functionality of integrated cloud firewall	Group-based rules for accessing remote networks based on IP, port and protocol
Device management	Illustration of the device infrastructure (remote access objects) in a clearly defined tree structure via location, group and device objects
Simultaneously usable pass-through VPN connections	1 (expandable by booking further pass-through VPN connections)
Period	1 year from activation of the license key or expiry of the existing license. The individual license term is visible during activation.
Monthly data volume and bandwidth	Unlimited (subject to normal market usage)
Usage information	Extended reporting and statistical information (connection reports, usage duration, data volume)
Password guideline	Increased security through configurable specification of minimum requirements for the password quality and validity period
System availability	≥ 99.6%
Note	

System requirements	
Hardware (service PC)	PC with operating system Windows 7, 8 or 10
Hardware, remote target network	Weidmüller hardware with u-link VPN client
Portal administration (user/device configuration)	via Webbrowser (HTTPS), login via username and password
VPN software (service PC)	u-link VPN-client (installation on PC)
Miscellaneous	
Activation	Client account administrator enters the licence key in the u-link portal (functions immediately available)
Included in delivery	Email with license key

### Ordering data

Type	Qty.	Order No.
U-LINK-50-DEVICES-1Y		2870090000
U-LINK-100-DEVICES-1Y		2870100000
U-LINK-250-DEVICES-1Y		2870110000
U-LINK-500-DEVICES-1Y		2870120000
U-LINK-1000-DEVICES-1Y		2924220000



**u-link VPN license extension**

- Additional simultaneous VPN connections

**Technical data**

Version	
Version	"VPN connection" licence code for u-link Remote Access Service. Can be used as an additional VPN connection or to extend the period of a VPN connection that has already been activated
Function and performance features	
Number of additional VPN connections (per licence code)	1 (pass-through VPN connection for service PC <> u-link <> router/target network or easyAccess connection)
VPN channel bandwidth	100 Mbit/s
Period	1 year from activation of the license key or expiry of the existing license. The individual license term is visible during activation.
Usage	Use as additional VPN channel or to extend period of a VPN channel
System requirements	
Hardware (service PC)	PC with operating system Windows 7, 8 or 10
Hardware, remote target network	Weidmüller hardware with u-link VPN client
Portal administration (user/device configuration)	via Webbrowser (HTTPS), login via username and password
VPN software (service PC)	u-link VPN-client (installation on PC)
Note	

Miscellaneous	
Activation	Client account administrator enters the licence key in the u-link portal (functions immediately available)
Included in delivery	Email with license key

**Ordering data**

Type	Qty.	Order No.
U-LINK-1-CONNECTION-1Y		2870130000

**u-link feature extension**

- Secure and reliable VPN connection to and from China

**Technical data**

Version	
Version	License code for u-link Remote Access Service., Allows the use of the server in China for a secure and reliable VPN connection to and from China.
Function and performance features	
China-VPN	Reliable VPN connection to and from China
Period	1 year from activation of the license key or expiry of the existing license. The individual license term is visible during activation.
System requirements	
Hardware (service PC)	PC with operating system Windows 7, 8 or 10
Hardware, remote target network	Weidmüller hardware with u-link VPN client
Portal administration (user/device configuration)	via Webbrowser (HTTPS), login via username and password
VPN software (service PC)	u-link VPN-client (installation on PC)
Note	

Miscellaneous	
Activation	Client account administrator enters the licence key in the u-link portal (functions immediately available)
Included in delivery	Email with license key

**Ordering data**

Type	Qty.	Order No.
U-LINK-CNSERVER-1Y		2870140000



# Media converter and protocol gateways

## Overview

<b>Media converter and protocol gateways</b>	Introduction - Media converter and protocol gateways	F.2
	Ethernet media converter (copper/fiber optic)	F.4
	Serial/Ethernet converter	F.5
	Serial/Ethernet converter and Modbus TCP/RTU gateway	F.6

## Transmit data without interference

### Media converters and protocol gateways – convenient and economical

A goal of industrial automation is to achieve the continuous networking of all system components. This also requires the interconnection of devices and network segments that use different transmission technologies or are very far away from each other. Our media converters and protocol gateways ensure smooth communication between all network participants and are also especially convenient and economical.

#### Serial/Ethernet converters for integrating existing devices

In many systems, serial devices with RS232, RS422 or RS485 interfaces are still widely used. These may include control systems, sensors, measuring instruments, motors, drives, barcode readers and operating displays. Our serial/Ethernet converters allow you to integrate such serial components quickly and easily into your existing Ethernet network structure. For this purpose, the converters support a variety of operating modes, such as TCP server, TCP client, UDP, Real COM, RFC2217, reverse Telnet, pair connection and Ethernet modem.

## F

#### Media converters for easy and economical glass fibre utilisation

In case of high requirements on interference immunity or long transmission distances, optical fibres are an expedient solution – in the process industry, for example. With fibre optics, transmission distances ranging between 5 km (multi-mode fibres) and 40 km (single-mode fibres) can be achieved without the use of intermediate generators. Our media converters convert Ethernet signals on an RJ45 port to fibre optic signals for SC or ST cables. In the process, the collision domain of both participants is retained so as to ensure the greatest possible port transparency.

#### Seamless integration of Ethernet and serial Modbus devices

Modbus is one of the most popular automation protocols in the world and supports traditional RS-232/422/485 devices and Ethernet devices. However, the Ethernet-based Modbus protocol is different from the original serial-based protocols. In order to integrate Modbus networks, the Modbus TCP/RTU Gateway includes two Ethernet interfaces and one serial interface that supports RS-232, RS-422 and RS-485 communication. It automatically and intelligently translates between Modbus TCP (Ethernet) and Modbus ASCII/RTU (serial) protocols.



**Simple warning system**  
Warning in case of power failure and port errors

**Surge protection**  
Improved surge protection for serial ports, LAN and power supply connections

**Power supply**  
Redundant power supply inputs



**Extensive approvals**  
Developed and approved for EX areas (Class 1 Div. 2/ Atex Zone 2)



## Ethernet media converter (copper/fiber optic)

## Industrial Media Converter (10/100BaseT (X) to 100BaseFX)

- 10/100BaseT(X) auto-negotiation and auto-MDI/MDI-X
- Link Fault Pass-Through (LFP)
- Power failure, port break alarm by relay output
- Redundant power inputs
- Designed for hazardous locations (Zone 2)



## Technical data

Technology			
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT (X) and 100BaseFX		
Interfaces			
Fibre Ports	100BaseFX (SC/ST-duplex connection)		
RJ45 ports	10/100BaseT(X)		
DIP Switches	100BaseFX Full/Half duplex selection, Port fault alarm		
Alarm Contact	One relay output with current carrying capacity of 1 A at 24 V DC		
Specification optical fiber			
Transceiver Type	100Base FX		
	Multi-Mode		Single-Mode
Fiber Cable Type	OM1	50/125 µm	G.652
		800 MHz*km	
Typical Distance	4 km	5 km	40 km
Wave-length	Typical (nm)	1300	
	TX Range (nm)	1260 to 1360	1280 to 1340
	RX Range (nm)	1100 to 1600	1100 to 1600
Optical Power	TX Range (dBm)	-10 to -20	0 to -5
	RX Range (dBm)	-3 to -32	-3 to -34
	Link-Budget (dB)	12	29
	Dispersion Penalty (dB)	3	1

**Note:** When connecting a single-mode fiber transceiver over a short distance, we recommend using an attenuator to prevent the transceiver from being damaged by excessive optical power.

## Power Requirements

Input Voltage	24 V DC (12 to 48 V DC), two redundant inputs
Current consumption	0.16 A at 24 V
Connection	1 removable 6-pole terminal block
Overload Current Protection	1.1 A
Reverse Polarity Protection	Present

## Technical data

Housing	Metal, IP30 protection
Dimensions (W x H x D)	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
Weight	630 g
Installation	DIN-Rail

## Environmental Limits

Operating temperature	Standard Models: 0 to 60 °C (32 to 140 °F)
	Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Operating Humidity	5 to 95 % (non-condensing)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)

## Approvals

Security	UL 508
EMC	EN 55032/24 CISPR 32, FCC Part 15B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV IEC 61000-4-6 CS: 3 V IEC 61000-4-8
Hazardous Location	UL/cUL Class1, Division 2, Groups A, B, C, and D, ATEX Zone 2 Ex nA nC IIC T4 Gc
Maritime	DNV
Freefall	IEC60068-2-32
Shock	IEC60068-2-27
Vibration	IEC60068-2-6
MTBF (mean time between failures)	
Time	401,000 hrs
Database	MIL-HDBK-217F: GB 25 °C
Warranty	
Warranty Period	5 years

## Ordering data

Version	Type	Operating Temperature	Order No.
1 * RJ45, 1 * SC-Multimode	IE-MC-VL-1TX-1SC	0 to +60 °C	1241400000
	IE-MC-VLT-1TX-1SC	-40 to +75 °C	1286880000
1 * RJ45, 1 * ST-Multimode	IE-MC-VL-1TX-1ST	0 to +60 °C	1241410000
	IE-MC-VLT-1TX-1ST	-40 to +75 °C	1286890000
1 * RJ45, 1 * SC-Singlemode	IE-MC-VL-1TX-1SCS	0 to +60 °C	1241420000
	IE-MC-VLT-1TX-1SCS	-40 to +75 °C	1286900000

## Accessories

	Type	Order No.
19" Rack Mounting Kit	RM-KIT	1241440000

**1 and 2-port Serial/Ethernet Converter for industrial automation**

- High surge protection for the serial ports, LAN ports and power supply connection
- Rugged screw-type terminal blocks for power and serial connectors
- Cascading Ethernet ports for easy wiring
- Redundant DC power inputs
- Warning by relay output and email
- Low power consumption

**Technical data**

Ethernet Interface	
Number of Ports	2
Speed	10/100 MBit/s, auto MDI/MDIX
Connection	8-pin RJ45
Magnetic Isolation Protection	1.5 kV built-in
Ethernet Line Protection	1 kV (level 2) surge protection
Serial Interface	
Number of ports that can be used simultaneously	IE-CS-2TX-1RS232/485: 1 IE-CS-2TX-2RS232/485: 2
Serial Standards	RS 232/422/485
Connection	IE-CS-2TX-1RS232/485: DB9 for RS 232, terminal block for RS 422/485 IE-CS-2TX-2RS232/485: DB9 for RS 232/422/485
Serial Line Protection	<ul style="list-style-type: none"> <li>• 15 kV ESD protection for all signals</li> <li>• 1 kV (level 2) surge protection</li> </ul>
RS 485 Data Direction Control	ADDC® (automatic data direction control)
Serial Communication Parameters	
Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	RTS/CTS and DTR/DSR (RS 232 only), XON/XOFF
Baud rate	50 bit/s to 921.6 kbit/s
Serial Signals	
RS 232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS 422	Tx+, Tx-, Rx+, Rx-, GND
RS 485 4w	Tx+, Tx-, Rx+, Rx-, GND
RS 485 2w	Data+, Data-, GND
Software	
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, Rtelnet, DNS, SNMP, HTTP, SMTP, SNTP, IGMP
Configuration Options	Web Console, Serial Console, Telnet Console, Windows Utility
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8 x86/x64, 2012 x64
Technical data	
Housing	Metal, IP30 protection
Weight	IE-CS-2TX-1RS232/485: 475 g IE-CS-2TX-2RS232/485: 485 g
Dimensions (W x H x D)	36 x 105 x 140 mm (1.42 x 4.13 x 5.51 in)
Environmental Limits	
Operating temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Ambient Relative Humidity	5 to 95 % RH
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Power Requirements	
Input Voltage	12 to 48 V DC
Current consumption	IE-CS(T)-2TX-1RS232/485: 0.22 A at 12 V IE-CS(T)-2TX-2RS232/485: 0.25 A at 12 V

**Approvals**

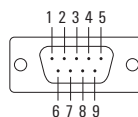
EMC	EN 55032/24 CISPR 32, FCC Part 15B Class A IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8
Security	UL 508
Hazardous Location	UL/cUL Class 1 Division 2 Groups A, B, C and D ATEX Zone 2 Ex nA nC IIC T3 Gc
Shock	IEC60068-2-27
Freefall	IEC60068-2-32
Vibration	IEC60068-2-6

Alert Tools	Built-in buzzer and RTC (real-time clock)
Automatic Reboot Trigger	Built-in WDT (watchdog timer)
MTBF (mean time between failures)	
Time	262,805 hrs
Database	Telcordia (Bellcore), GB

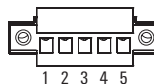
Reliability	
Alert Tools	Built-in buzzer and RTC (real-time clock)
Automatic Reboot Trigger	Built-in WDT (watchdog timer)
MTBF (mean time between failures)	
Time	262,805 hrs
Database	Telcordia (Bellcore), GB

Warranty	
Warranty Period	5 years

Pin assignment				
RS 232/422/485 (Male DB9)	PIN	RS 232	RS 422/RS 485-4w	RS 485-2W
	1	DCD	TxD-(A)	-
	2	RxD	TxD+(B)	-
	3	TxD	RxD+(B)	Data+(B)
	4	DTR	RxD-(A)	Data-(A)
	5	GND	GND	GND
	6	DSR	-	-
	7	RTS	-	-
	8	CTS	-	-



Pin Assignment				
RS 422/485 Terminal block	PIN	RS 422/RS 485-4w	RS 485-2w	
	1	TxD+(B)	-	
	2	TxD-(A)	-	
	3	RxD+(B)	Data+(B)	
	4	RxD-(A)	Data-(A)	
	5	GND	GND	



Ordering data				
Version	Type	Operating Temperature	Order No.	
2 * RJ45; 1 * serial (RS232: Sub-DB9, RS422/485: terminal block)	IE-CS-2TX-1RS232/485	0 to +60 °C	1242080000	
2 * RJ45; 2 * serial (RS232/422/485: 2 * SubDB9)	IE-CS-2TX-2RS232/485	-40 to +75 °C	1285830000	
	IE-CS-2TX-1RS232/485	0 to +60 °C	1242090000	
	IE-CS-2TX-2RS232/485	-40 to +75 °C	1285840000	

Accessories		
Type	Order No.	
19" Rack Mounting Kit	RM-KIT	1241440000

## Serial/Ethernet converter and Modbus TCP/RTU gateway

### Serial/Ethernet converter and Modbus TCP/RTU protocol gateway

- Integrated 2-port switch for line topology without need for additional switch
- Device server and modbus protocol gateway in one device
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 70°C



### Technical data

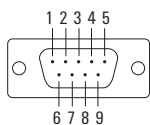
Technology	
Standards	IEEE 802.3 for 10BASE-T IEEE 802.3u for 100BASE-TX
Processing type	Store and Forward
Management features	
Device configuration	Webbrowser (HTTP/HTTPS) SSH Upload of a configuration file via web-interface
Monitoring function	Modbus traffic monitor Syslog Event based warning via E-Mail Event based warning via SNMP trap
IP-address management	Static DHCP-Client BootP
Security functions	Enable/disable ports Management access security via secure IP-list and configuration of allowed access methods (web-interface, SSH)
Time synchronization management	SNTP client
Operating modes	Virtual COM mode TCP Server mode TCP Client mode UDP Server/Client mode Modbus RTU/ASCII Master to Modbus TCP Slave Gateway Modbus TCP Master to Modbus RTU/ASCII Slave Gateway
Interfaces	
RJ45 ports	2x 10/100BASE-T(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
DB9	1x DB9 male for RS-232/422/485
DIP switches	1x for pull low resistor setting (1 k $\Omega$ , 150 k $\Omega$ ) 1x for pull high resistor setting (1 k $\Omega$ , 150 k $\Omega$ ) 1x for termination resistor setting (120 $\Omega$ )
Reset button	< 5 sec: System reboot ; > 5 sec: Factory default

#### Serial interface characteristics

Standard	RS-232/422/485
Baud rate	50 bit/s to 460.8 kbit/s
Data Bits	7, 8
Stop Bits	1, 2
Parity	odd, even, none, mark, space
Flow Control	XON/XOFF, RTS/CTS, DTR/DSR

#### Pin assignment

RS 232/422/485  
(Male DB9)



Pin #	RS-232 (DTE Device)	RS-422	RS-485 (4-wire)	RS-485 (2-wire)
1	DCD	RX-	RX-	DATA-
2	RXD	RX+	RX+	DATA+
3	TXD	TX+	TX+	-
4	DTR	TX-	TX-	-
5	GND	GND	GND	GND
6	DSR	-	-	-
7	RTS	-	-	-
8	CTS	-	-	-
9	RI	-	-	-

Power supply	
Connection type	1 removable 4-pin terminal block
Input voltage	24 V DC (12 - 48 V), 2 redundant inputs
Current consumption at 24 V	0.20 A
Overload current protection	yes
Reverse polarity protection	yes
Physical characteristics	
Housing main material	Metal
Protection degree	IP30
Type of mounting	DIN rail
Dimensions (W x H x D)	26.1 x 110 x 75.2 mm (1.02 x 4.33 x 2.95 in)
Weight	251 g
Environmental conditions	
Operating temperature	-40 to 70°C (-40 to 158°F)
Storage temperature	-40 to 85°C (-40 to 185°F)
Humidity	5 to 95% (non-condensing)
Operating altitude	≤ 2000 m
EMC conformity and approvals	
EMC	EN 55032, EN 55024, CISPR 32, FCC Part 15 Subpart B Class A IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz bis 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV IEC 61000-4-6 CS: 3 Vrms
Safety	UL 61010-1, UL 61010-2-201
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6
Free fall	IEC 60068-2-31
MTBF	
Time	1,479,078 hrs
Database	Telcordia SR332
Guarantee	
Time interval	5 years

#### Ordering Information

Version	Model Type	Order No.
2x RJ45 10/100 Mbit/s, 1x DB9 for RS-232/422/485	IECS-MBGW-2TX-1COM	<b>2682600000</b>

#### Accessories

	Model Type	Order No.
19" Rack Mounting Kit	RM-KIT	<b>1241440000</b>



# IoT-Gateways Overview

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<b>IoT-Gateways</b>	Introduction - IoT-Gateways	G.2
	IoT-Gateways	G.4

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# Integration of existing components into IoT networks

## Complete application representation for the IoT gateway

The intelligent networking of machines and devices in the IoT opens up many possibilities and offers opportunities for new business models. IoT gateways enable the exchange of data between field devices and servers or cloud applications. The transmitted data can be used to deepen process knowledge, carry out optimisations or offer new services.

With the help of our IoT gateway, you can collect machine data and gain access to your field devices and controls. Various protocols and interfaces are available for this purpose. Data pre-processing is carried out using the open IoT standard Node-RED, whose large community has a wide range of solutions in store. You can set up interfaces to your own IT systems as well as to cloud solutions like Weidmüller easy connect, Azure, IoT AWS oder IBM Watson. For location-independent remote system maintenance, you can also integrate the gateway into the u-link Remote Access Service.

### Your special advantage:

- Full flexibility for your application thanks to various interfaces and protocols as well as the open application tool Node-RED
- Easy handling thanks to pre-defined nodes and open programming using your own nodes
- Secure and cost-optimised use of cloud systems through pre-processing and storage

Also  
available in  
IP54

**Flexible IoT integration**

Process data can be collected via various interfaces, such as Ethernet, CAN, RS485 or RS232. In addition, many protocols for coupling with PLC systems are supported – e.g. Siemens, Rockwell or the industry standard OPC-UA.

**Versatile IT integration**

Whether via company network or mobile radio: The open IoT standard Node-RED allows data to be pre-processed and transmitted to other systems, such as servers, SCADA systems or cloud platforms, via various transmission media and protocols.

**Integrated remote access**

The simple and secure remote access solution u-link Remote Access Service enables a quick response to changes in situations on site – and that worldwide.

## IoT-Gateways

### IoT-Gateway

- Enables machine data acquisition and provides access to field devices and PLC's via various protocols and interfaces
- Interfaces to your own IT systems as well as to common cloud systems
- Data traffic reduction through preprocessing on edge via the open IoT standard Node-RED
- Secure and easy remote maintenance with Weidmüller u-link remote access Service
- Integration of most common communication interfaces in small design
- D1Open programming platform Node-RED with strong community support



### Technical data

Interfaces	
Digital outputs	1x, 19.2 - 28 V high; max. 1 A
Digital inputs	2x, >10 V high, <3.6 V low; max. 30 V DC
Ethernet ports	2
RJ45 ports	10/100BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port
Serial port	1x RS232/RS485
USB port	1x USB 2.0 (Type A; max. 500 mA)

System data	
Real-time clock	Capacity buffered (max. 5 days)
Processor	Dual Core ARM Cortex A9, 600 MHz
Memory (Flash)	4 GB
Memory (RAM)	1 GB, DDR3

VPN functionality	
u-link	OpenVPN-based remote access service via the Weidmüller u-link cloud

Technical data	
Housing main material	Metal
Speed	Fast Ethernet
Protection degree	IP20
Type of mounting	DIN rail
Dimensions H x W x D	125 / 35 / 105 mm
Net weight	412 GRM

Environmental conditions	
Operating temperature	-20 °C...60 °C
Humidity	5 to 95 % (non-condensing)

Power supply	
Voltage supply	24 V DC
Voltage supply range	19.2...28VDC
Current consumption	0.24A @ 24DC
Reverse polarity protection	Yes

Note	

Approvals	
EMC standards	EN 61000-6-3, EN 61000-6-2
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
ROHS marking	J

### Ordering data

Type	Qty.	Order No.
IOT-GW30	1	2682620000

Mobile phone antennas and connection cables can be found in Chapter I.

## IoT-Gateway 4G EU

- Enables machine data acquisition and provides access to field devices and PLC's via various protocols and interfaces
- Interfaces to your own IT systems as well as to common cloud systems
- Data traffic reduction through preprocessing on edge via the open IoT standard Node-RED
- Secure and easy remote maintenance with Weidmüller u-link remote access Service
- Integration of most common communication interfaces in small design
- D1Open programming platform Node-RED with strong community support



### Technical data

Interfaces	
Connector for external antennas	SMA (socket)
Number of SIM-Card slots	1
Digital outputs	1x, 19.2 - 28 V high; max. 1 A
Digital inputs	2x, >10 V high, <3.6 V low; max. 30 V DC
Ethernet ports	2
RJ45 ports	10/100BaseT(X), auto negotiation, Full/half-duplex mode, Auto MDI/MDI-X port
Serial port	1x RS232/RS485
SIM-Card slot type	Micro-SIM
USB port	1x USB 2.0 (Type A; max. 500 mA)
System data	
Real-time clock	Capacity buffered (max. 5 days)
Processor	Dual Core ARM Cortex A9, 600 MHz
Memory (Flash)	4 GB
Memory (RAM)	1 GB, DDR3
VPN functionality	
u-link	OpenVPN-based remote access service via the Weidmüller u-link cloud
Technical data	
Housing main material	Metal
Speed	Fast Ethernet
Protection degree	IP20
Type of mounting	DIN rail
Dimensions H x W x D	125 / 35 / 105 mm
Net weight	500 GRM
Environmental conditions	
Operating temperature	-20 °C...60 °C
Humidity	5 to 95 % (non-condensing)
Power supply	
Voltage supply	24 V DC
Voltage supply range	19.2...28VDC
Current consumption	0.24A @ 24DC
Reverse polarity protection	Yes
Note	

Mobile radio interface	
Frequency band	LTE: 2100MHz (B1), 1800MHz (B3), 850MHz (B5), 2600MHz (B7), 900MHz (B8), 800MHz (B20), 2600MHz (B38), 2300MHz (B40), 2600MHz (B41), UMTS/WCDMA: 2100MHz (B1), 850MHz (B5), 900MHz (B8), GSM/GPRS/EDGE: 900MHz (B8), 1800MHz (B3)
Wireless module	LTE / HSPA+ multiband wireless module (4G / 3G / 2G) for fast wireless Internet access
LTE category	CAT 4
Download rate, max.	150
Upload rate, max.	50
Approvals	
EMC standards	EN 61000-6-3, EN 61000-6-2
Shock	according to IEC 60068-2-27
Vibration	according to IEC 60068-2-6
ROHS marking	J

### Ordering data

Type	Qty.	Order No.
IOT-GW30-4G-EU	1	2682630000

Mobile phone antennas and connection cables can be found in Chapter I.



# Industrial WLAN Overview

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<b>Industrial WLAN</b>	Introduction - Industrial WLAN	H.2
	Industrial WLAN	H.4

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# Industrial WLAN

## Wireless communication solutions

In many mobile applications and industrial environments that are difficult to access, cabling does not usually make sense. Instead, WLAN-based wireless communication solutions are employed. In logistics, for example, WLAN is used to connect AGVs (Automatic Guided Vehicles). Roaming between several radio cells is important in this case in order to enable individually configurable radio coverage.

Our WLAN module can be used flexibly as an access point (AP), bridge or client. The alternative Power over Ethernet supply makes integration into an existing infrastructure especially easy. Maximum data integrity is guaranteed through integration into a RADIUS service and secure encryption with WPA2 in the radio field. Several radio fields can be flexibly spread out. Within these fields, the clients can move between the radio cells thanks to fast roaming. Several areas can be assigned for each radio cell (Multi-SSID) and allocated to different VLANs. This way, the wired infrastructure is continued 1:1 in the radio range.

### Your special advantage:

- Compliant access point / client according to IEEE 802.11a/b/g/n
- MIMO technology for data rates up to 300 Mbit/s
- Fast roaming for interruption-free connection changes between access points
- DFS support in 5 GHz band
- Power supply with PoE according to IEEE 802.3af possible
- Integrated DIs/DOs for monitoring and alarms





### Turbo roaming for interruption-free connections

Roaming technology ensures a seamless wireless connection and allows you to switch quickly between different wireless access points without the risk of discontinued data communication.



### Various wireless modes of operation

The most important modes of operation for wireless networks are AP Client mode and Bridge mode. AP mode can be used to create a new WLAN or to connect an existing WLAN to a wired network. Bridge mode allows two Ethernet devices to be connected wirelessly using a point-to-point connection.

### Integrated digital inputs/outputs

Weidmüller WLAN access points have integrated digital inputs/outputs that can be used to send alarm notifications in real time via the network to the responsible maintenance personnel.

**BasicLine WLAN Access Point/Client**

- IEEE 802.11a/b/g/n conform access point/client
- MIMO technology for data rates up to 300Mbit/s
- Fast roaming for interruption-free connection change between access points
- DFS support in 5GHz bandwidth

**Technical data**

WLAN Interface	
Standards	IEEE 802.11a/b/g/n for Wireless LAN IEEE 802.11i for Wireless Security IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT
Spread Spectrum and Modulation (typically)	<ul style="list-style-type: none"> <li>• DSSS with DBPSK, DQPSK, CCK</li> <li>• OFDM with BPSK, QPSK, 16QAM, 64QAM</li> <li>• 802.11b: CCK at 11/5.5 Mbps, DQPSK at 2 Mbps, DBPSK at 1 Mbps</li> <li>• 802.11a/g: 64QAM at 54/48 Mbps, 16QAM at 36/24 Mbps, QPSK at 18/12 Mbps, BPSK at 9/6 Mbps</li> <li>• 802.11n: 64QAM at 300 Mbps to BPSK at 6.5 Mbps</li> </ul>
Operating Channels (central frequency)	US model: 2.412 to 2.462 GHz (11 channels) / 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels)* / 5.500 to 5.700 GHz (8 channels, excluding 5.600 to 5.640 GHz)* / 5.745 to 5.825 GHz (5 channels) EU model: 2.412 to 2.472 GHz (13 channels) / 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels)* / 5.500 to 5.700 GHz (11 channels)*
*DFS (Dynamic Frequency Selection): If the device is operated in access point mode on these channels, the device automatically switches to another channel once a radar signal is detected. After switching to another channel, a 60-second availability check is carried out in accordance with the specification, before communication can take place on the channel.	
Security	<ul style="list-style-type: none"> <li>• SSID Broadcast enable/disable</li> <li>• Firewall for MAC/IP/protocol/port-based filtering</li> <li>• 64-bit and 128-bit WEP encryption, WPA/WPA2 personnel and enterprise (IEEE 802.1X/RADIUS, TKIP and AES)</li> </ul>
Transmission Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: 6.5 to 300 Mbps
Transmit Power	802.11b: Type 26±1.5 dBm at 1 Mbps, Type 26±1.5 dBm at 2 Mbps Type 26±1.5 dBm at 5.5 Mbps, Type 25±1.5 dBm at 11 Mbps 802.11g: Type 23±1.5 dBm at 6 to 24 Mbps, Type 21±1.5 dBm at 36 Mbps Type 19±1.5 dBm at 48 Mbps, Type 18±1.5 dBm at 54 Mbps 802.11n: Type 23±1.5 dBm at MCS0/8 20 MHz, (2.4 GHz) Type 18±1.5 dBm at MCS7/15 20 MHz Type 23±1.5 dBm at MCS0/8 40 MHz Type 17±1.5 dBm at MCS7/15 40 MHz 802.11a: Type 23±1.5 dBm at 6 to 24 Mbps, Type 21±1.5 dBm at 36 Mbps Type 20±1.5 dBm at 48 Mbps, Type 18±1.5 dBm at 54 Mbps 802.11n: Type 23±1.5 dBm at MCS0/8 20 MHz (5 GHz) Type 18±1.5 dBm at MCS7/15 20 MHz Type 23±1.5 dBm at MCS0/8 40 MHz Type 17±1.5 dBm at MCS7/15 40 MHz

**Note:** In accordance with regional regulations, the maximum permissible transmit power is limited on the UNII bandwidths via the device firmware. The corresponding values are contained in the following tables:

	US model	EU model
2.4 GHz	26 dBm	18 dBm
5 GHz (UNII-1)	23 dBm	21 dBm
5 GHz (UNII-2)	23 dBm	21 dBm
5 GHz (UNII-2e)	23 dBm	23 dBm
5 GHz (UNII-3)	23 dBm	-

Receive Sensitivity	802.11b: • 93 dBm at 1 Mbps, -93 dBm at 2 Mbps • 93 dBm at 5.5 Mbps, -88 dBm at 11 Mbps
	802.11g: • 88 dBm at 6 Mbps, -86 dBm at 9 Mbps • 85 dBm at 12 Mbps, -85 dBm at 18 Mbps • 85 dBm at 24 Mbps, -82 dBm at 36 Mbps • 78 dBm at 48 Mbps, -74 dBm at 54 Mbps
	802.11n: • 70 dBm at MCS7 20 MHz, -69 dBm at MCS15 20 MHz (2.4 GHz) • 67 dBm at MCS7 40 MHz, -67 dBm at MCS15 40 MHz
	802.11a: • 90 dBm at 6 Mbps, -88 dBm at 9 Mbps • 88 dBm at 12 Mbps, -85 dBm at 18 Mbps • 81 dBm at 24 Mbps, -78 dBm at 36 Mbps • 74 dBm at 48 Mbps, -72 dBm at 54 Mbps
	802.11n: • 69 dBm at MCS7 20 MHz, -71 dBm at MCS15 20 MHz (5 GHz) • 63 dBm at MCS7 40 MHz, -68 dBm at MCS15 40 MHz

Protocol Support	
General Protocols	Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNMP, TCP, UDP, RADIUS, SNMP, DHCP, LLDP
Interfaces	
Supplied antenna	2x omni-directional dual-band antenna, 2 dBi, RP-SMA (male)
Connector for External Antennas	RP-SMA (female), 500 V insulation
RJ45 port	1x 10/100/1000BaseT (X) auto negotiation, full/half duplex mode and auto MDI/MDI-X connection
Console Port	RS 232 (RJ45-type)

**Technical data**

Technical data	
Housing	Metal, IP30 protection
Weight	307 g
Dimensions (W x H x D)	58 x 115 x 70 mm (2.29 x 4.53 x 2.76 in)
Installation	DIN-Rail
Environmental Limits	
Operating temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 % to 95 % (non-condensing)
Power Requirements	
Input Voltage	24 V DC (12 to 48 V DC), two redundant inputs
Connection	1 removable 4-pin terminal block, 500 V insulation
Power Consumption	0.56 A at 12 VDC 0.14 A at 48 VDC
Power consumption	6.96 W
Reverse Polarity Protection	Present
Approvals	
Safety	EN62368-1, UL 60950-1
Radio	EN 301 489-1/17, EN 300 328, EN 301 893, TELEC, FCC ID: SLE-WAPN008, KC
EMC	EN 55032/24 CISPR 32, FCC Part 15B Class B IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 3 V IEC 61000-4-8
MTBF (mean time between failures)	
Time	749,476 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years

**Ordering data**

Version	Type	Operating Temperature	Order No.
WLAN Access Point/Client, IEEE 802.11 a/b/g/n, EU-Modell	IE-WL-BL-AP-CL-EU IE-WLT-BL-AP-CL-EU	0 to +60 °C -40 to +75 °C	<b>2536600000</b> <b>2536650000</b>
WLAN Access Point/Client, IEEE 802.11 a/b/g/n, US-Modell	IE-WL-BL-AP-CL-US IE-WLT-BL-AP-CL-US	0 to +60 °C -40 to +75 °C	<b>2536660000</b> <b>2536670000</b>

**Accessories**

	Type	Order No.
External Backup and Restore Module	EBR-Modul RS232	<b>1241430000</b>
19" Rack Mounting Kit	RM-KIT	<b>1241440000</b>

WLAN antennas and connection cables, see chapter F.

**ValueLine WLAN Access Point/Bridge/Client**

- IEEE 802.11a/b/g/n conform Access Point/Client/Bridge
- MIMO technology for data rates up to 300Mbit/s
- Fast roaming for interruption-free connection change between access points
- DFS support in 5GHz bandwidth
- Power can be supplied via PoE in accordance with IEEE 802.3af
- Integrated DI/DOs for monitoring and alarms



**Technical data**

WLAN-Interface	
Standards	IEEE 802.11a/b/g/n for wireless LAN IEEE 802.11i for wireless security IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT IEEE 802.3af for Power-over-Ethernet IEEE 802.1D for Spanning Tree Protocol IEEE 802.1w for Rapid STP IEEE 802.1Q for VLAN
Spreading code process and modulation (typical)	<ul style="list-style-type: none"> <li>• DSSS with DBPSK, DQPSK, CCK</li> <li>• OFDM with BPSK, QPSK, 16QAM, 64QAM</li> <li>• 802.11b: CCK at 11/5.5 Mbps, DQPSK at 2 Mbps, DBPSK at 1 Mbps</li> <li>• 802.11a/g: 64QAM at 54/48 Mbps, 16QAM at 36/24 Mbps, QPSK at 18/12 Mbps, BPSK at 9/6 Mbps</li> <li>• 802.11n: 64QAM at 300 Mbps to BPSK at 6.5 Mbps</li> </ul>
Operating Channels (central frequency)	US model: 2.412 to 2.462 GHz (11 channels) / 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels)* / 5.500 to 5.700 GHz (8 channels, excluding 5.600 to 5.640 GHz)* / 5.745 to 5.825 GHz (5 channels) EU model: 2.412 to 2.472 GHz (13 channels) / 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels)* / 5.500 to 5.700 GHz (11 channels)*
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Security	<ul style="list-style-type: none"> <li>• SSID Broadcast enable/disable</li> <li>• Firewall for MAC/IP/protocol/port-based filtering</li> <li>• 64-bit and 128-bit WEP encryption, WPA/WPA2 personal and enterprise (IEEE 802.1X/RADIUS, TKIP and AES)</li> </ul>
Transmission Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: 6.5 to 300 Mbps
Transmit power	802.11b: Type 26±1.5 dBm at 1 Mbps, Type 26±1.5 dBm at 2 Mbps Type 26±1.5 dBm at 5.5 Mbps, Type 25±1.5 dBm at 11 Mbps 802.11g: Type 23±1.5 dBm at 6 to 24 Mbps, Type 21±1.5 dBm at 36 Mbps Type 19±1.5 dBm at 48 Mbps, Type 18±1.5 dBm at 54 Mbps 802.11n: Type 23±1.5 dBm at MCS0/8 20 MHz, (2.4 GHz) Type 18±1.5 dBm at MCS7/15 20 MHz Type 23±1.5 dBm at MCS0/8 40 MHz Type 17±1.5 dBm at MCS7/15 40 MHz 802.11a: Type 23±1.5 dBm at 6 to 24 Mbps, Type 21±1.5 dBm at 36 Mbps Type 20±1.5 dBm at 48 Mbps, Type 18±1.5 dBm at 54 Mbps 802.11n: Type 23±1.5 dBm at MCS0/8 20 MHz (5 GHz) Type 18±1.5 dBm at MCS7/15 20 MHz Type 23±1.5 dBm at MCS0/8 40 MHz Type 17±1.5 dBm at MCS7/15 40 MHz

**Note:** In accordance with regional regulations, the maximum permissible transmit power is limited on the UNII bandwidths via the device firmware. The corresponding values are contained in the following tables:

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5 GHz (UNII-2)	23 dBm	21 dBm
5 GHz (UNII-2e)	23 dBm	23 dBm
5 GHz (UNII-3)	23 dBm	-

Receive sensitivity

802.11b: • 93 dBm at 1 Mbps, -93 dBm at 2 Mbps  
 • 93 dBm at 5.5 Mbps, -88 dBm at 11 Mbps

802.11g: • 88 dBm at 6 Mbps, -86 dBm at 9 Mbps  
 • 85 dBm at 12 Mbps, -85 dBm at 18 Mbps  
 • 85 dBm at 24 Mbps, -82 dBm at 36 Mbps  
 • 78 dBm at 48 Mbps, -74 dBm at 54 Mbps

802.11n: • 70 dBm at MCS7 20 MHz, -69 dBm at MCS15 20 MHz (2.4 GHz)  
 • 67 dBm at MCS7 40 MHz, -67 dBm at MCS15 40 MHz

802.11a: • 90 dBm at 6 Mbps, -88 dBm at 9 Mbps  
 • 88 dBm at 12 Mbps, -85 dBm at 18 Mbps  
 • 81 dBm at 24 Mbps, -78 dBm at 36 Mbps  
 • 74 dBm at 48 Mbps, -72 dBm at 54 Mbps

802.11n: • 69 dBm at MCS7 20 MHz, -71 dBm at MCS15 20 MHz (5 GHz)  
 • 63 dBm at MCS7 40 MHz, -68 dBm at MCS15 40 MHz

**Supported protocols**

General protocols: Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNMP, TCP, UDP, RADIUS, SNMP, DHCP, LLDP, VLAN, STP/RSTP

**Interfaces**

Supplied antenna: 2x omni-directional dual-band antenna, 2 dBi, RP-SMA (male)

Connection for external antennas: RP-SMA (female), 500 V insulation

RJ45 port: 1x 10/100/1000BaseT (X) auto negotiation, full/half duplex mode and auto MDI/MDI-X connection

Console port: RS 232 (RJ45 connection)

Alarm contact: 1 relay output with a current capacity of 1 A at 24 V DC

Digital inputs: 2 galvanically separated inputs  
 • +13 to +30 V for the state "1"  
 • +3 to -30 V for the state "0"  
 • max. Current consumption: 8 mA

**Technical data**

Technical data	
Housing	Metal, IP30 protection class
Weight	860 g
Dimensions (W x H x D)	52.7 x 135 x 105 mm (2.08 x 5.32 x 4.13 in)
Installation	DIN-Rail
Environmental conditions	
Operating temperature	Standard models: -25 to 60°C (-13 to 140°F) Models with extended temperature range: -40 to 75 °C (-40 to 167 °F)
Storage temperature	-40 to 85 °C (-40 to 185 °F)
Relative ambient air humidity	5% to 95% (non-condensing)
Power supply	
Input voltage	24 V DC (12 to 48 V DC), two redundant inputs or 48 V DC PoE (IEEE802.3af)
Connection	1 removable 10-pin terminal block, 500 V insulation
Current consumption	0.6 A at 12 VDC 0.15 A at 48 VDC
Power consumption	7.2 W
Reverse polarity protection	Present
Approvals	
Safety	EN62368-1, UL 60950-1
Wireless	EN 301 489-1/17, EN 300 328, EN 301 893, TELEC, FCC ID: SLE-WAPN008, KC
EMC	EN 61000-6-2/6-4 CISPR 32, FCC Part 15B Class B IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 3 V/m IEC 61000-4-8 PFMF: 1 A/m
Explosive risk zones	UL / cUL Class I, Division 2; ATEX Zone 2 Ex nA IIC T4 Gc
MTBF (mean time between failures)	
Time	570,854 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Period	5 Years

**Ordering data**

Version	Type	Operating Temperature	Order No.
WLAN Access Point/Bridge/Client, IEEE 802.11 a/b/g/n, EU-Modell	IE-WL-VL-AP-BR-CL-EU	-25 to +60 °C	<b>2536680000</b>
WLAN Access Point/Bridge/Client, IEEE 802.11 a/b/g/n, US-Modell	IE-WLT-VL-AP-BR-CL-EU	-40 to +75 °C	<b>2536690000</b>
WLAN Access Point/Bridge/Client, IEEE 802.11 a/b/g/n, US-Modell	IE-WL-VL-AP-BR-CL-US	-25 to +60 °C	<b>2536700000</b>
WLAN Access Point/Bridge/Client, IEEE 802.11 a/b/g/n, US-Modell	IE-WLT-VL-AP-BR-CL-US	-40 to +75 °C	<b>2536710000</b>

**Accessories**

	Type	Order No.
External backup and restore module	EBR-Modul RS232	<b>1241430000</b>
19" Rack Mounting Kit	RM-KIT	<b>1241440000</b>

WLAN antennas and connection cables, see chapter F.



# Active components

## Overview of accessories

<b>Accessories – Active components</b>	Introduction – Accessories – Active components	I.2
	SFP transceiver (for use with switches of Eco- Advanced- and SubstationLine)	I.4
	10 Gigabit Ethernet SFP+ transceiver (for use with switches of SubstationLine)	I.6
	SFP transceiver (for use with switches of Basic- Value- and PremiumLine)	I.7
	Configuration backup and restore module (for use with switches of Value- and PremiumLine such as Basic- and ValueLine WLAN devices)	I.8
	Configuration backup and restore module (for use with switches of Advanced- and SubstationLine)	I.9
	WLAN antennas and connection cables	I.10
	Mobile radio antennas and connection cables	I.14
	Combined antenna (mobile radio/WLAN)	I.17
	Antenna mounting	I.18
	Mounting kits for 19" rack and wall	I.19

# Easy assembly, configuration and operation

## Our accessories for active Industrial Ethernet solutions

Industrial Ethernet connection solutions from Weidmüller are versatile and can be precisely matched to the infrastructure of your machine, system or factory. In order to guarantee optimum functionality, we provide you with all the connection technology from a single source. We also offer a wide range of accessories for your active Industrial Ethernet components.

### Configuration module

To quickly back up, restore and load configurations, we recommend our configuration module. It supports you in performing reconfigurations for replacement devices, thereby minimising your downtimes.

### SFP transceivers

Our SFP transceivers give you more flexibility in your choice of transmission media. We offer you a broad selection – for transmission speeds up to 10 Gbit/s and distances up to 60 km. The modules support digital diagnostic monitoring (DDM) for the easy monitoring of the transceiver status.

### Antennas and antenna accessories

In order to use radio products in different environments, external antennas and antenna cables are often required. The various antennas are optimised for the respective applications and can be quickly attached with the appropriate mounting material.

### 19" mounting kit

For our Industrial Ethernet components, we also offer a mounting kit as an alternative for the installation of DIN rail-based components in 19" racks.

### Individual solutions

In addition to our line of accessories, we provide you with a wide range of products and services for custom connection solutions. This also includes our assembly service, which supports you in mastering even the most complex cabling tasks.





## Fast Ethernet SFP transceiver (for use with switches of Eco- Advanced- and SubstationLine)

## Fast Ethernet SFP transceiver

- IEEE 802.3u compliant
- Class 1 laser product; EN 60825-1 compliant
- Pluggable during operation (hot pluggable)
- Supports DDM (Digital Diagnostic Monitoring)



## Technical data

Fibre optic transceiver characteristics			
	IE-SFP-1FE-MM-2	IE-SFP-1FE-SM-30	IE-SFP-1FE-SM-60
	2682450000	2682460000	2682470000
Transmission speed	100 Mbit/s	100 Mbit/s	100 Mbit/s
Digital Diagnostic Monitor function (DDM)	Supported	Supported	Supported
Transceiver Type	Multimode	Singlemode	Singlemode
Connector type	LC-Duplex	LC-Duplex	LC-Duplex
Fiber Cable Type	OM1, OM2	G.652	G.652
Typical Distance	2 km, 4 km	30 km	60 km
Wavelength typ (nm)	1310	1310	1310
Wavelength (TX) range (nm)	1270 to 1380	1280 to 1340	1280 to 1340
Wavelength (RX) range (nm)	1260 to 1620	1260 to 1620	1260 to 1620
Optical Power (TX) range (dBm)	-14 to -20	-8 to -15	0 to -5
Optical Power (RX) range (dBm)	-3 to -32	-3 to -34	-3 to -34
Link-Budget (dB)	12	19	29

**Note:** When connecting a single-mode fiber transceiver over a short distance, we recommend using an attenuator to prevent the transceiver from being damaged by excessive optical power.

## Power supply

Voltage supply 3.3 V (via Ethernet switch)

## Physical characteristics

Type of mounting Insert in SFP slot

Weight 17.5 g

## Environmental conditions

Operating temperature -40 to 85 °C (-40 to 185 °F)

Storage temperature -40 to 85 °C (-40 to 185 °F)

Humidity 5 to 95 % (non-condensing)

## EMC conformity and approvals

EMC EN 55032, EN 55024

## Guarantee

Time interval 3 years

## Ordering Information

Version	Model Type	Order No.
SFP Transceiver, 100 Mbit/s, Multimode, LC-Duplex, 2 km, -40 °C...85 °C	IE-SFP-1FE-MM-2	<b>2682450000</b>
SFP Transceiver, 100 Mbit/s, Singlemode, LC-Duplex, 30 km, -40 °C...85 °C	IE-SFP-1FE-SM-30	<b>2682450000</b>
SFP Transceiver, 100 Mbit/s, Singlemode, LC-Duplex, 60 km, -40 °C...85 °C	IE-SFP-1FE-SM-60	<b>2682470000</b>

**Gigabit Ethernet SFP transceiver**

- IEEE 802.3z compliant
- Class 1 laser product; EN 60825-1 compliant
- Pluggable during operation (hot pluggable)
- Supports DDM (Digital Diagnostic Monitoring)



**Technical data**

Fibre optic transceiver characteristics								
	IE-SFP-1GE-MM-05	IE-SFP-1GE-MM-2	IE-SFP-1GE-SM-10	IE-SFP-1GE-SM-40	IE-SFP-1GE-SM-10-BiDi-TX1310	IE-SFP-1GE-SM-10-BiDi-TX1550	IE-SFP-1GE-SM-20-BiDi-TX1310	IE-SFP-1GE-SM-20-BiDi-TX1550
Transmission speed	1000 Mbit/s	1000 Mbit/s	1000 Mbit/s	1000 Mbit/s	1000 Mbit/s	1000 Mbit/s	1000 Mbit/s	1000 Mbit/s
Digital Diagnostic Monitor function (DDM)	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Transceiver Type	Multimode	Multimode	Singlemode	Singlemode	Singlemode BiDi	Singlemode BiDi	Singlemode BiDi	Singlemode BiDi
Connector type	LC-Duplex	LC-Duplex	LC-Duplex	LC-Duplex	LC-Simplex	LC-Simplex	LC-Simplex	LC-Simplex
Fiber Cable Type	OM1, OM2	OM1, OM2	G.652	G.652	G.652	G.652	G.652	G.652
Typical Distance	275 m, 550 m	2 km	10 km	40 km	10 km	10 km	20 km	20 km
Wavelength typ (nm)	850	1310	1310	1310	RX 1550 / TX 1310	RX 1310 / TX 1550	RX 1550 / TX 1310	RX 1310 / TX 1550
Wavelength (TX) range (nm)	830 to 870	1270 to 1355	1280 to 1365	1280 to 1350	1270 to 1355	1510 to 1570	1270 to 1355	1510 to 1570
Wavelength (RX) range (nm)	770 to 870	1260 to 1620	1260 to 1620	1260 to 1610	1470 to 1600	1250 to 1380	1470 to 1600	1250 to 1380
Optical Power (TX) range (dBm)	-3 to -9	-1 to -9	-3 to -9	+3 to -3	-3 to -9	-3 to -9	-2 to -8	-2 to -8
Optical Power (RX) range (dBm)	-3 to -18	-1 to -19	-3 to -20	-3 to -24	-3 to -20	-3 to -20	-3 to -23	-3 to -23
Link-Budget (dB)	9	10	11	21	11	11	15	15

**Note:** When connecting a single-mode fiber transceiver over a short distance, we recommend using an attenuator to prevent the transceiver from being damaged by excessive optical power.

Power supply	
Voltage supply	3.3 V (via Ethernet switch)
Physical characteristics	
Type of mounting	Insert in SFP slot
Weight	17.5 g
Environmental condition	
Operating temperature	-40 to 85 °C (-40 to 185 °F)
Storage temperature	-40 to 85 °C (-40 to 185 °F)
Humidity	5 to 95 % (non-condensing)
EMC conformity and approvals	
EMC	EN 55032, EN 55024
Guarantee	
Time interval	3 years

Ordering Information		
Version	Model Type	Order No.
SFP Transceiver, 1000 Mbit/s, Multimode, LC-Duplex, 0.5 km, -40 °C...85 °C	IE-SFP-1GE-MM-05	2682480000
SFP Transceiver, 1000 Mbit/s, Multimode, LC-Duplex, 2 km, -40 °C...85 °C	IE-SFP-1GE-MM-2	2682490000
SFP Transceiver, 1000 Mbit/s, Singlemode, LC-Duplex, 10 km, -40 °C...85 °C	IE-SFP-1GE-SM-10	2682500000
SFP Transceiver, 1000 Mbit/s, Singlemode, LC-Duplex, 40 km, -40 °C...85 °C	IE-SFP-1GE-SM-40	2682510000
SFP Transceiver, 1000 Mbit/s, Singlemode BiDi, LC-Simplex, 10 km, -40 °C...85 °C	IE-SFP-1GE-SM-10-BiDi-TX1310	2682520000
SFP Transceiver, 1000 Mbit/s, Singlemode BiDi, LC-Simplex, 10 km, -40 °C...85 °C	IE-SFP-1GE-SM-10-BiDi-TX1550	2682530000
SFP Transceiver, 1000 Mbit/s, Singlemode BiDi, LC-Simplex, 20 km, -40 °C...85 °C	IE-SFP-1GE-SM-20-BiDi-TX1310	2682540000
SFP Transceiver, 1000 Mbit/s, Singlemode BiDi, LC-Simplex, 20 km, -40 °C...85 °C	IE-SFP-1GE-SM-20-BiDi-TX1550	2682550000

## 10 Gigabit Ethernet SFP+ transceiver (for use with switches of SubstationLine)

### 10 Gigabit Ethernet SFP+ transceiver

- IEEE 802.3ae compliant
- Class 1 laser product; EN 60825-1 compliant
- Pluggable during operation (hot pluggable)
- Supports DDM (Digital Diagnostic Monitoring)



### Technical data

Fibre optic transceiver characteristics			
	IE-SFP-10GE-MM-03 2779110000	IE-SFP-10GE-SM-20 2779120000	IE-SFP-10GE-SM-40 2779130000
Transmission speed	10 Gbit/s	10 Gbit/s	10 Gbit/s
Digital Diagnostic Monitor function (DDM)	Supported	Supported	Supported
Transceiver Type	Multimode	Singlemode	Singlemode
Connector type	LC-Duplex	LC-Duplex	LC-Duplex
Fiber Cable Type	OM1, OM2, OM3	G.652	G.652
Typical Distance	33 m, 82 m, 300 m	20 km	40 km
Wavelength typ (nm)	850	1310	1550
Wavelength (TX) range (nm)	840 to 860	1260 to 1355	1530 to 1565
Wavelength (RX) range (nm)	840 to 860	1260 to 1600	1250 to 1600
Optical Power (TX) range (dBm)	-1 to -6.5	0.5 to -4	4 to -4.7
Optical Power (RX) range (dBm)	-1 to -9.9	0.5 to -15	-1 to -15.8
Link-Budget (dB)	3.4	11	11.1

**Note:** When connecting a single-mode fiber transceiver over a short distance, we recommend using an attenuator to prevent the transceiver from being damaged by excessive optical power.

#### Power supply

Voltage supply 3.3 V (via Ethernet switch)

#### Physical characteristics

Type of mounting Insert in SFP slot

Weight 17.5 g

#### Environmental conditions

Operating temperature -40 to 85 °C (-40 to 185 °F)

Storage temperature -40 to 85 °C (-40 to 185 °F)

Humidity 5 to 95 % (non-condensing)

#### EMC conformity and approvals

EMC EN 55032, EN 55024

#### Guarantee

Time interval 3 years

#### Ordering Information

Version	Model Type	Order No.
SFP+ Transceiver, 10 Gbit/s, Multimode, LC-Duplex, 0.3 km, -40 °C..85 °C	IE-SFP-10GE-MM-03	<b>2779110000</b>
SFP+ Transceiver, 10 Gbit/s, Singlemode, LC-Duplex, 20 km, -40 °C..85 °C	IE-SFP-10GE-SM-20	<b>2779120000</b>
SFP+ Transceiver, 10 Gbit/s, Singlemode, LC-Duplex, 40 km, -40 °C..85 °C	IE-SFP-10GE-SM-40	<b>2779130000</b>

**Gigabit Ethernet SFP-Transceiver**

- Supports DDM (Digital Diagnostic Monitoring)
- IEEE 802.3z-conform
- Symmetric LVPECL inputs and outputs
- TTL signal detection indicator
- Pluggable during operation (hot pluggable)
- Class 1 laser product; EN 60825-1-conform



**Fast Ethernet SFP-Transceiver**

- Supports DDM (Digital Diagnostic Monitoring)
- IEEE 802.3u-conform
- Symmetric PECL inputs and outputs
- TTL signal detection indicator
- Pluggable during operation (hot pluggable)
- Class 1 laser product; EN 60825-1-conform



**Technical data**

Interfaces						
Fibre-optic ports		100BaseSFP (LC-duplex connection)				
Specification optical fiber						
		1000BaseSFP				
		SFP-SX		SFP-LX		SFP-LHX
Transceiver Type		Multi-Mode		Multi-Mode		Single-Mode
Fiber Cable Type		OM1	OM2	OM1	OM2	G.652
Typical Distance		300 m	550 m	1 km	2 km	10 km
Wave-length	Typical (nm)	850				
	TX Range (nm)	830 to 860		1270 to 1355		1280 to 1340
	RX Range (nm)	770 to 860		1260 to 1610		1260 to 1610
Optical Power	TX Range (dBm)	-4 to -9.6		-1 to -9		-3 to -9
	RX Range (dBm)	0 to -18		-1 to -19		-3 to -21
	Link-Budget (dB)	8.5		10		12
Dispersion Penalty (dB)		4.3	3.6	5	5	1
Power consumption		max. 1 Watt				
Environmental Limits						
Operating temperature		Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)				
Storage Temperature		-40 to 85 °C (-40 to 185 °F)				
Ambient Relative Humidity		5 to 95 % (non-condensing)				
Approvals						
Security		CE, FCC, TÜV (EN 60825), UL 60950-1				
Maritime		DNV				
Warranty						
Warranty Period		5 years				

**Ordering data**

SFP Variants	Type	Operating Temperature	Order No.
Gigabit-Ethernet, Multimode, LC-duplex connection, 500 m	IE-SFP-1GSXLC	0 to +60 °C	1241490000
	IE-SFP-1GSXLC-T	-40 to 85 °C	1286700000
Gigabit-Ethernet, Multimode, LC-duplex connection, 2 km	IE-SFP-1GLSXL	0 to +60 °C	1241500000
	IE-SFP-1GLSXL-T	-40 to 85 °C	1286710000
Gigabit-Ethernet, Singlemode, LC-duplex connection, 10 km	IE-SFP-1GLXLC	0 to +60 °C	1241510000
	IE-SFP-1GLXLC-T	-40 to 85 °C	1286720000
Gigabit-Ethernet, Singlemode, LC-duplex connection, 40 km	IE-SFP-1GLHXL	0 to +60 °C	1241520000
	IE-SFP-1GLHXL-T	-40 to 85 °C	1286730000

**Technical data**

Interfaces			
Fibre-optic ports		100BaseSFP (LC-duplex connection)	
Specification optical fiber			
		100BaseSFP	
		SFP-M	SFP-S
Transceiver Type		Multi-Mode	
Fiber Cable Type		OM1/OM2	50/125 µm 62/125 µm 800 MHz*km
Typical Distance		2 km	4 km
Wave-length	Typical (nm)	1300	
	TX Range (nm)	1280 to 1340	
	RX Range (nm)	1100 to 1600	
Optical Power	TX Range (dBm)	-8 to -18	
	RX Range (dBm)	-3 to -32	
	Link-Budget (dB)	14	
Dispersion Penalty (dB)		2	3
Power consumption		max. 1 Watt	
Environmental Limits			
Operating temperature		-40 to 85 °C (-40 to 185 °F)	
Storage Temperature		-40 to 85 °C (-40 to 185 °F)	
Ambient Relative Humidity		5 to 95 % (non-condensing)	
Approvals			
Security		CE, FCC, TÜV (EN 60825), UL 60950-1	
Maritime		DNV	
Warranty			
Warranty Period		5 years	

**Ordering data**

Port Variants	Type	Operating Temperature	Order No.
Fast Ethernet, Multimode, LC-duplex connection, 4 km	IE-SFP-1FEMLC-T	-40 to +85 °C	1241450000
	IE-SFP-1FESLC-T	-40 to +85 °C	1241470000

## Configuration backup and restore module (for use with switches of Value- and PremiumLine such as Basic- and ValueLine WLAN devices)

### Module for saving and loading a device configuration

- Reduce system downtime by simple reconfiguration in case of replacing devices
- Automatic loading of the saved configuration possible after device restart
- Compact, rugged, reliable design
- For use with switches of Value- and PremiumLine such as Basic- and ValueLine WLAN devices

### EBR-MODULE RS232



#### Technical data

<b>Basic Operation</b>	
Connection type	RJ45-Port, RS232
<b>Physical characteristics</b>	
Housing main material	PVC casting
Type of fixing	M4 screw (< 4 mm)
Cable length	0.35 m
Protection degree	IP40
Dimensions H x W x D	12 / 32.5 / 97 mm
<b>Environmental conditions</b>	
Operating temperature	0 °C...60 °C
Humidity	5 to 95 % (non-condensing)
<b>EMC conformity and approvals</b>	
EMC standards	FCC Part 15, CISPR (EN55022) Class A, EN 61000-4-2 (ESD), Stage 2, EN 61000-4-3 (RS), Stage 3, EN 61000-4-4 (EFT), Stage 3, EN 61000-4-5 (surge voltage), Stage 3, EN 61000-4-6 (CS), Stage 3
Approvals	CE
<b>Note</b>	

#### Ordering data

Type	Qty.	Order No.
EBR-MODULE RS232	1	1241430000
<b>Note</b>		

### Module for saving and loading a device configuration

- Reduce system downtime by simple reconfiguration in case of replacing devices
- 2 storage spaces selectable via DIP switch
- Compact, rugged, reliable design
- For use with switches of Advanced- and SubstationLine

### IE-EBR-MODULE-RS232-ALM



#### Technical data

Interfaces	
Function DIP switch	
Function start button	
LED indicator	
Power supply	
Connection type	
Current consumption	
Voltage supply	
Physical characteristics	
Housing main material	
Cable length	
Protection degree	
Dimensions H x W x D	
Environmental conditions	
Operating temperature	
Humidity	
Operating altitude	
EMC conformity and approvals	
EMC standards	
Free fall	
Shock	
Safety standard	
Vibration	
Approvals	
MTBF	
Operating time (hours), min.	
According to Standard	
Note	

1x for selection of the configuration storage space (A or B), 1x for selection between upload or download of a configuration
Starts the upload or download of a configuration power, data transmitting, transmission status
RJ45
0.14A @ 5V DC
5 V DC (via RS-232 RTS signal of serial console port)
PC molding
210 mm
IP40
14.5 / 32 / 90.25 mm
-10 °C...60 °C
5 to 95 % (non-condensing)
≤ 2000 m
EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m
According to IEC 60068-2-31 according to IEC 60068-2-27
UL 61010-1, UL 61010-2-201 according to IEC 60068-2-6
CE; CULUS; EAC
6645051hrs
Telcordia SR-332

#### Ordering data

Note	
------	--

Type	Qty.	Order No.
IE-EBR-MODULE-RS232-ALM	1	2682610000

## WLAN antennas and connection cables

### WLAN antennas

### IE-ANT-P-ABG-75-9-NF



#### Technical data

Version
Product type
3dB beamwidth (horizontal)
3dB beamwidth (vertical)
Radiation
Type of connection
Antenna gain
Frequency range
Impedance
Composite power max.
Vertical electrical tilt
Polarisation
Standing wave ratio
front-to-back ratio
<b>Physical characteristics</b>
Colour
Housing main material
Operating temperature
Dimensions H x W x D
Applications
Wind load
<b>Included in delivery</b>
Included in delivery
<b>Note</b>

Dual Band (2.4 GHz / 5 GHz), Gain 9 dBi
WLAN antenna, Directional antenna
Band 1: 75°, Band 2: 55°
Band 1: 55°, Band 2: 55°
Directional
1x N-type female, bottom
Band 1: 9 dBi, Band 2: 9 dBi
Band 1: 2400 - 2500 (MHz), Band 2: 5150 - 5875 (MHz)
50 Ω
10 W
Band 1: 0°, Band 2: 0°
Vertical
< 2
Band 1: 15 dB, Band 2: 15 dB
grey
PC
-40 °C...80 °C
80 / 101 / 35 mm
for indoor and outdoor use
Frontal, Lateral, 7 N, @ 160 Km/h
1 x antenna, 1 x wall mounting

#### Ordering data

<b>Note</b>
-------------

Type	Qty.	Order No.
IE-ANT-P-ABG-75-9-NF	1	1367140000



WLAN antennas

IE-ANT-WL-DB-MIMO-DO-RPSMAM

IE-ANT-WL-DB-SISO-LO-NF



Technical data

Version
Product type
Type of connection
Antenna gain
Amount of antenna elements (MIMO)
Frequency range
Impedance
Composite power max.
Polarisation
Standing wave ratio
<b>Mechanical characteristics cable</b>
Min. bending radius, repetitive
Cable length
<b>Physical characteristics</b>
Colour
Material for base plate
Operating temperature
Height
Diameter
<b>Included in delivery</b>
Included in delivery
<b>Note</b>

Wi-Fi antenna, Up to Wi-Fi 6 & 6E (IEEE802.11ax)
Omni-directional antenna
2x RP-SMA male
1.5 dBi, 0.5 dBi
2
2.3-2.8 GHz, 4.9-7.125 GHz
50 Ω
25 W
Linear, Vertical
< 2.0 typical, 2.5 max.
25 mm
1 m
white
UV-stable rugged thermoplastics
-40 °C...80 °C
67 mm
137 mm
1 x antenna

Wi-Fi antenna, Up to Wi-Fi 3 (IEEE 802.11a)
Omni-directional antenna
N female
3 dBi, 4 dBi
2.4-2.5 GHz, 4.9-6.425 GHz
50 Ω
100 W
Vertical
< 2.0 typical, 3.5 max.
black
-40 °C...85 °C
45.7 mm
36.2 mm
1 x antenna

Ordering data

<b>Note</b>
-------------

Type	Qty.	Order No.
IE-ANT-WL-DB-MIMO-DO-RPSMAM	1	2788070000

Type	Qty.	Order No.
IE-ANT-WL-DB-SISO-LO-NF	1	2788110000

## WLAN antennas and connection cables

### WLAN antennas

### IE-ANT-WL-DB-MIMO-PD-RPSMAM



#### Technical data

Version	Wi-Fi antenna, Up to Wi-Fi 6 & 6E (IEEE802.11ax)
Product type	Semi-directional antenna
Type of connection	2x RP-SMA male
Antenna gain	6 dBi, 5 dBi
Amount of antenna elements (MIMO)	2
Frequency range	2.3-2.8 GHz, 4.9-7.125 GHz
Impedance	50 Ω
Composite power max.	20 W
Polarisation	+/- 45° linear
Standing wave ratio	< 2.0 typical, 2.5 max.
<b>Mechanical characteristics cable</b>	
Cable length	0.78 m
<b>Physical characteristics</b>	
Colour	white
Operating temperature	-40 °C...70 °C
Height	34 mm
Width	198 mm
Diameter	137 mm
Wind load	200 km/h
<b>Included in delivery</b>	
Included in delivery	1 x antenna
<b>Note</b>	

#### Ordering data

Type	Qty.	Order No.
IE-ANT-WL-DB-MIMO-PD-RPSMAM	1	2788080000
<b>Note</b>		

Connection cable WLAN antennas

IE-CC-NM-RPSMAM

IE-CC-RPSMAM-RPSMAF



Technical data

Type of connection
<b>Electrical characteristics cable</b>
Attenuation at 2.4 GHz
Attenuation at 2000 MHz
Attenuation at 5 GHz
Attenuation at 800 MHz
<b>Mechanical characteristics cable</b>
Min. bending radius, repetitive
Sheathing colour
UV-resistant
Material sheath
<b>Physical characteristics</b>
Operating temperature
<b>Note</b>

Connection 1:, N male, Connection 2:, RP-SMA male
0.62 dB/m
0.56 dB/m
0.94 dB/m
0.34 dB/m
25 mm
black
Yes
PVC
-40 °C...85 °C

Connection 1:, RP-SMA male, Connection 2:, RP-SMA female
0.62 dB/m
0.56 dB/m
0.94 dB/m
0.34 dB/m
25 mm
black
Yes
PVC
-40 °C...85 °C

Ordering data

	1,0 m
	3,0 m
	5,0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-CC-NM-RPSMAM-1M	1	2788040000
IE-CC-NM-RPSMAM-3M	1	2788050000
IE-CC-NM-RPSMAM-5M	1	2788060000

Type	Qty.	Order No.
IE-CC-RPSMAM-RPSMAF-1M	1	2787950000
IE-CC-RPSMAM-RPSMAF-3M	1	2787960000
IE-CC-RPSMAM-RPSMAF-5M	1	2787970000

Mobile radio antennas and connection cables

Mobile radio antenna

IE-ANT-CELL-MIMO-DO-SMAM



Technical data

Version	Cellular antenna, Up to 5G (NR)
Product type	Omnidirectional antenna
Type of connection	2x SMA male
Antenna gain	2.5 dBi
Amount of antenna elements (MIMO)	2
Frequency range	690-950 MHz, 1.7-3.8 GHz
Impedance	50 Ω
Composite power max.	50 W
Polarisation	Linear, Vertical
Standing wave ratio	< 2.0 typical, 3.0 max.
<b>Mechanical characteristics cable</b>	
Min. bending radius, repetitive	25 mm
Cable length	1 m
<b>Physical characteristics</b>	
Colour	black
Operating temperature	-40 °C...85 °C
Height	100 mm
<b>Included in delivery</b>	
Included in delivery	1 x antenna
<b>Note</b>	

Ordering data

Type	Qty.	Order No.
IE-ANT-CELL-MIMO-DO-SMAM	1	2788120000
<b>Note</b>		

Mobile radio antenna

IE-ANT-CELL-SISO-EO-SMAM

IE-ANT-CELL-SISO-LO-NF



Technical data

Version	
Product type	
Type of connection	
Antenna gain	
Amount of antenna elements (MIMO)	
Frequency range	
Impedance	
Composite power max.	
Polarisation	
Standing wave ratio	
<b>Physical characteristics</b>	
Colour	
Operating temperature	
Height	
<b>Included in delivery</b>	
Included in delivery	
<b>Note</b>	

Cellular antenna, Up to 5G (support for frequencies below 2.7 GHz, e.g., bands n1, n2, n28)
Omni-directional antenna
SMA male
2 dBi
690-950 MHz, 1.7-3.8 GHz
50 Ω
10 W
Vertical
1.5 typical / 2.0 max
black
-40 °C...75 °C
208 mm
1 x antenna

Cellular antenna, Up to 5G (NR)
Omni-directional antenna
N female
3 dBi
690-950 MHz, 1.7-3.8 GHz
50 Ω
150 W
Vertical
< 2.0 typical, 2.5 max.
black
-40 °C...70 °C
89 mm
1 x antenna

Ordering data

<b>Note</b>
-------------

Type	Qty.	Order No.
IE-ANT-CELL-SISO-EO-SMAM	1	2788130000

Type	Qty.	Order No.
IE-ANT-CELL-SISO-LO-NF	1	2788150000

Mobile radio antennas and connection cables

Connection cable mobile radio antenna

IE-CC-NM-SMAM

IE-CC-SMAM-SMAF



Technical data

Type of connection
<b>Electrical characteristics cable</b>
Attenuation at 2.4 GHz
Attenuation at 2000 MHz
Attenuation at 5 GHz
Attenuation at 800 MHz
<b>Mechanical characteristics cable</b>
Min. bending radius, repetitive
Sheathing colour
UV-resistant
Material sheath
<b>Physical characteristics</b>
Operating temperature
Length
<b>Note</b>

Connection 1:, N male, Connection 2:, SMA male
0.62 dB/m
0.56 dB/m
0.94 dB/m
0.34 dB/m
25 mm
black
Yes
PVC
-40 °C...85 °C
1 m

Connection 1:, SMA male, Connection 2:, SMA female
0.62 dB/m
0.56 dB/m
0.94 dB/m
0.34 dB/m
25 mm
black
Yes
PVC
-40 °C...85 °C
1 m

Ordering data

	1,0 m
	3,0 m
	5,0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-CC-NM-SMAM-1M	1	2788010000
IE-CC-NM-SMAM-3M	1	2788020000
IE-CC-NM-SMAM-5M	1	2788030000

Type	Qty.	Order No.
IE-CC-SMAM-SMAF-1M	1	2787920000
IE-CC-SMAM-SMAF-3M	1	2787930000
IE-CC-SMAM-SMAF-5M	1	2787940000



Combined antenna (mobile radio / WLAN)

IE-ANT-CELL/WL-MB-MIMO-DO



Technical data

Version	Cellular antenna, Wi-Fi antenna, Up to 5G (NR), Up to Wi-Fi 6 & 6E (IEEE802.11ax)
Product type	Omni-directional antenna
Type of connection	2x SMA male, 2x RP-SMA male
Antenna gain	2.5 dBi, 3-4 dBi
Amount of antenna elements (MIMO)	2
Frequency range	690-950 MHz, 1.7-3.8 GHz, 2.4-2.5 GHz, 4.9-7.125 GHz
Impedance	50 Ω
Composite power max.	50 W
Polarisation	Linear, Vertical
Standing wave ratio	< 2.0 typical, 3.5 max.
<b>Mechanical characteristics cable</b>	
Min. bending radius, repetitive	25 mm
Cable length	1 m
<b>Physical characteristics</b>	
Colour	white
Operating temperature	-40 °C...85 °C
Height	90 mm
Diameter	132 mm
<b>Included in delivery</b>	
Included in delivery	1 x antenna
<b>Note</b>	

Ordering data

Type	Qty.	Order No.
IE-ANT-CELL/WL-MB-MIMO-DO	1	2788090000
<b>Note</b>		

Antenna mounting

Antenna mounting

**IE-ANT-MOUNT-PANEL**

**IE-ANT-MOUNT-POLE-NF**



**Technical data**

Physical characteristics
Colour
Housing main material
Height
Note

silver
Aluminium
138 mm

silver
Aluminium
108 mm

**Ordering data**

Note
------

Type	Qty.	Order No.
IE-ANT-MOUNT-PANEL	1	2789830000

Type	Qty.	Order No.
IE-ANT-MOUNT-POLE-NF	1	2788470000



**Kit for 19" rack-mounting**

- For mounting DIN-rail based devices in 19" racks

**RM-KIT**



**Technical data**

Dimensions H x W x D

177.8 / 481 / 202.4

Note

**Ordering data**

Note

Type	Qty.	Order No.
RM-KIT	1	1241440000





# Passive components

## Introduction

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<b>Introduction – Passive components</b>	IE-line connectors	J.2
	Differences between industrial and office Ethernet	J.4
	PROFINET and SERCOS III cabling solutions	J.6
	EtherNet/IP cabling solutions	J.10

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# IE-LINE plug-in connectors

## Clever and flexible with **STEADYTEC**<sup>®</sup> technology



**STEADYTEC**<sup>®</sup> – this name stands for the future of connection technology in the field of data and signal transmissions. Established market leaders in the industry, **STEADYTEC**<sup>®</sup> forms the foundation for reliable, application-orientated, standards-compliant solutions - for offices through to areas with harsh industrial conditions.

**The objective:** The development of reliable plug-in connector technologies for industrial applications. Technologies that satisfy the highest customer demands and hence enable new, specialised and dependable solutions.

**The result:** An extremely reliable, extraordinarily practical, flexible and especially efficient plug-in connector system for office and industrial applications. And using products whose characteristics accurately reflect the values originally laid out:

- fast
- reliable
- solution-based
- simple

### The Ethernet connector system: clever – flexible

Connectors for modern industrial applications need to be designed in such a way that they simplify processes and cope with faster data transmission. Weidmüller's Ethernet connectors keep you a step ahead. These products are not only ready for 10 gigabit, they are also standardised for IEC 61076-3-106 and IEC 61076-3-117. In addition, the connector variants 4 (Ethernet TCP/IP), variants 5 and 1 (Ethernet IP) and variant 14 (PROFINET/AIDA) which are named in these standards are all specified as mandatory in the standards covering generic cabling systems for industrial premises: ISO/IEC 24702, IEC 61918 (Automation Island), as well as for Fieldbus installations IEC 61784-5. What's more, you have a unique choice of versions made of plastic or metal as well as inserts for copper and fibre-optic cabling. All of the connectors are designed for ease of use and for quick on-site assembly. They are also modular and can be tailored to suit your application.





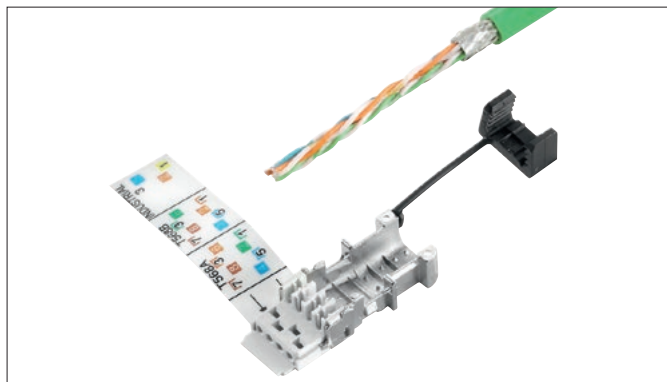
### Tool-free assembly and powerful connections: the RJ45 gigabit connector!

You can now securely plug the connector you need directly into your machinery with very little effort – and without a single tool! The 10-gigabit connector, with IDC-connection, was developed to provide quick, simple, secure and, most importantly, tool-free wiring.

In addition, zinc die-casting makes the connector more robust and therefore suitable for industrial applications and as it is fitted with a protected locking clip means it is suitable for meeting the requirements of harsh industrial environments. Weidmüller's IE product line fulfils the requirements for 10 GBit Ethernet, according to IEEE 802.3an, up to 500 MHz.

#### STEADYTEC®: Systematic benefits

- **Cat. 6A 10 GBit System Class E<sub>A</sub>**
- **Assembly without tools in the field**
- **Countless variations thanks to highly diverse combinations of inserts**
- **Unrestricted compatibility because standardised to IEC 61076-3-106**
- **Reliable and long-lasting thanks to use of diecast zinc**
- **Suitable for industry thanks to IP67 class of protection**
- **Simple ordering procedure and low storage costs thanks to Weidmüller's modular system**



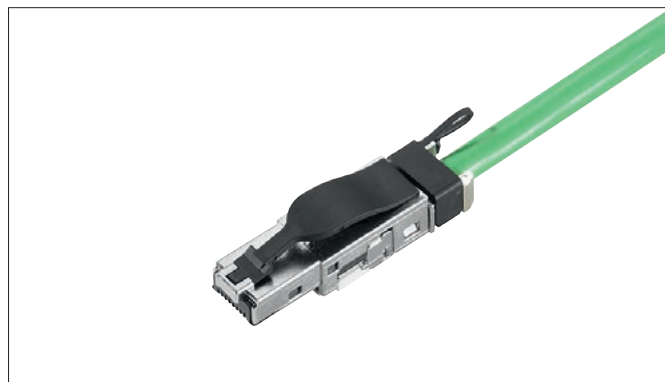
1. Strip sheath cladding and shorten shield to 5 mm



2. Prepare wires and shorten



3. Snap together the two pluggable elements



4. Finished

# From office communication to Industrial Ethernet

## An overview of the differences

### Office Ethernet

### Industrial Ethernet



#### Cabling

- Fixed building installation
- Variable connection options
- Pre-assembled connection cables
- Star topology most widely in use

- Individual plant-influenced networks
- Robust component characteristics
- On-site, user assembly connections
- Redundant network topologies (ring)

#### Transmission

- Large volume of data
- Mid-level network availability
- Mostly only acyclical transmission
- No real-time characteristics required for standard applications

- Small data packets (measurement values)
- Very high network availability
- Extremely high real-time requirement
- Mostly cyclical transmission

#### Surroundings

- No extreme conditions

- Extreme temperatures
- Dust, dirt, splashing water, oils gases,
- Vibration, electromagnetic fields
- Risks of danger and damage from mechanical or chemical influences



# Customised cabling solutions for PROFINET and SERCOS III

Weidmüller’s cabling products enable you to create a specific infrastructure that meets all the requirements of PROFINET and SERCOS III.

The cabling components for copper and fibre-optic cables are designed and tested for use in harsh industrial conditions. Interoperability in the system is assured by the PROFINET and SERCOS cabling guidelines that specifically prescribe the interfaces to be used. For PROFINET this is guaranteed through the manufacturer’s declaration.

Comprehensive protection against disturbance by electromagnetic fields is achieved through the use of high quality shielding of the cables and the related connection components. Significant system reserves are offered through the star quad design of the cables and their wire cross-section of AWG 22. Stable real-time transmission is guaranteed, for applications such as PROFINET IRT or SERCOS III typical hardware synchronisation, by the low signal transmission time differences resulting from the cable construction. At the same time the cables offer high crush resistance for reliable installation in industrial applications.

The cabling components are also remarkably easy to handle when out in the field. The plug-in connectors for copper and fibre-optic can all be assembled on-site. This reduces installation time, reduces errors and simplifies maintenance.



## Profile specific guidelines for the connection components

### Cable:

- Quad-star design of AWG 22

### Connector:

- IP20 RJ45
- IP20 SC-RJ
- IP67 PushPull RJ45
- IP67 PushPull Power
- IP67 PushPull SC-RJ
- IP67 M12 D-coding





Weidmüller offers you a wide range of cabling solutions for PROFINET and SERCOS III applications. IP20 plug-in connectors for copper and fibre-optic cables are also included as well as IP67 plug-in connectors and junction

boxes for the toughest requirements. The components are designed to be used together from the floor distributors down to the machines.

**IP20**  
plug-in connector



**IP67**  
plug-in connectors data / power



**IP67**  
connection components



**IP20**  
assembled cables



**IP20**  
mounting rail outlets



**IP67**  
flanges data / power



**IP67**  
assembled RJ45 cables



**IP65**  
service interfaces



**IP67**  
plug-in M12 connectors



**IP67**  
assembled M12 cables



**Raw cable**  
copper and fibre-optic



# Selection table

## Ideal combinations



### IP20 plug-in connector



Description	Type	Order No.
RJ45 tool-free PROFINET printing	IE-PS-RJ45-FH-BK-P	1132060000
RJ45 tool-free angled Profinet printing	IE-PS-RJ45-FH-90-P-1.6	1518100000
SC-RJ for POF fibres 1 mm	IE-PS-SCRJ1-POF	1206720000
SC-RJ for POF fibres 1 mm reconnectable	IE-PS-SCRJ1-POF-QA	2564950000

### IP20 assembled data cables



Description	Type	Order No.
RJ45 patch cable PVC type B - 1 m	IE-C5DS4VG0010A60A60-E	1522100010
RJ45 patch cable PVC type B - 3 m	IE-C5DS4VG0030A60A60-E	1522100030
RJ45 patch cable PVC type B - 5 m	IE-C5DS4VG0050A60A60-E	1522100050
RJ45 patch cable PVC type B - 10 m	IE-C5DS4VG0100A60A60-E	1522100100
SC-RJ zipcord patch cable - POF - 1 m	IE-FPOZ2EE0001MSJOSJO-X	1273430010
SC-RJ zipcord patch cable - POF - 3 m	IE-FPOZ2EE0003MSJOSJO-X	1273430030
SC-RJ zipcord patch cable - POF - 5 m	IE-FPOZ2EE0005MSJOSJO-X	1273430050
SC-RJ zipcord patch cable - POF - 10 m	IE-FPOZ2EE0010MSJOSJO-X	1273430100

Further PROFINET cables - SERCOS III cables can be found in Chapter L

### IP20 mounting rail outlets



Description	Type	Order No.
RJ45 coupling	IE-TO-RJ45-C	8946920000
RJ45 coupling low profile	IE-TO-RJ45-CLP	2812440000
RJ45 module PROFINET printing	IE-TO-RJ45-FJP	8946950000
SC-RJ POF coupling / multimode	IE-TO-SCRJ-MM	8946990000
SC-RJ singlemode coupling	IE-TO-SCRJ-SM	8947000000

### IP65 service interface



Beschreibung	Type	Order No.
FrontCom® Micro RJ45 coupling	IE-FCM-RJ45-C	1018790000
FrontCom® Micro RJ45 module PROFINET printing	IE-FCM-RJ45-FJP	1018830000

### IP67 flange data



Description	Type	Order No.
PushPull standard flange RJ45 coupling	IE-BSS-V14M-RJ45-C	1012310000
PushPull central cable gland RJ45 coupling	IE-BSC-V14M-RJ45-C	1058250000
PushPull standardised flange RJ45 module PROFINET printing	IE-BSS-V14M-RJ45-FJP	1085260000
PushPull standardised flange hybrid (Q10) 10-pole module without contacts	IE-BSS-V14M-HYB-10P-FJ	1072900000
Contacts for Hybrid (Q10) module 0.5 mm <sup>2</sup> - 0.75 mm <sup>2</sup> VPE 300	IE-BIC-HYB-P-0,75-300	1068970000
Contacts for Hybrid (Q10) module 0.2 mm <sup>2</sup> - 0.5 mm <sup>2</sup> VPE 300	IE-BIC-HYB-P-0,5-300	1096150000
PushPull standardised flange SC-RJ coupling POF / multimode	IE-BSS-V14M-SCRJ-MM-C	1058120000
PushPull standardised flange SC-RJ coupling singlemode	IE-BSS-V14M-SCRJ-SM-C	1058140000
PushPull central cable gland SC-RJ coupling POF / multimode	IE-BSC-V14M-SCRJ-MM-C	1062590000
PushPull central cable gland SC-RJ coupling singlemode	IE-BSC-V14M-SCRJ-SM-C	1062600000
PushPull device flange	IE-BHD-V14M	1047940000

other inserts can be found in Chapter J

### IP67 Power connectors




Description	Type	Order No.
PushPull Power with 24 V / 16 A use	IE-PS-VAPM-5P-2.5	2465440000
PushPull Power with 24 V / 16 A use with SNAP IN connection	IE-PS-VAPM-5P-2.5-QT	2912590000

### IP67 flange power




Description	Type	Order No.
PushPull Power standardised flange with 24 V / 16 A use	IE-BSS-VAPM-24V	2493480000
PushPull Power device flange	IE-BHD-VAPM	2493490000

**IP67 data connectors**

	Description	Type	Order No.
	PushPull RJ45 tool-free module PROFINET printing	IE-PS-V14M-RJ45-FH-P	1012170000
	PushPull RJ45 Crimp PROFINET	IE-PS-V14M-RJ45-TH-P	2768740000
	PushPull Hybrid (Q10) 10-pole without contacts	IE-PS-V14M-HYB-10P	1072910000
	PushPull SC-RJ POF 1 mm	IE-PS-V14M-2SC-POF	1191550000
	PushPull SC-RJ POF 1 mm reconnectable	IE-PS-V14M-2SC-POF-QA	2568260000


**IP67 assembled data cables**

	Description	Type	Order No.
	PushPull RJ45 patch cable PUR - Type C - 1 m	IE-C5DD4UG0010A2EA2E-X	1119730010
	PushPull RJ45 patch cable PUR - Type C - 3 m	IE-C5DD4UG0030A2EA2E-X	1119730030
	PushPull RJ45 patch cable PUR - Type C - 5 m	IE-C5DD4UG0050A2EA2E-X	1119730050
	PushPull RJ45 patch cable PUR - Type C - 10 m	IE-C5DD4UG0100A2EA2E-X	1119730100
Further PROFINET cables - SERCOS III cables can be found in Chapter L			


**IP67 plug connector M12 D-coded and X-Type**

M 12 components can be found in Chapter J


**IP65 connection components**

	Description	Type	Order No.
	FreeCon passive double junction box RJ45/Power	IE-CD-V14MRJ/VAPM24V-FJ	1068830000
	FreeCon passive single junction box RJ45	IE-CD-V14MRJ-FJ	1068880000
	FreeCon passive single junction box Hybrid (Q10) without contacts	IE-CD-V14MHYB-10P-FJ	1068850000
	FreeCon passive double coupling RJ45/Power	IE-CD-V14MRJ/VAPM24V-C-MA	1068820000
	FreeCon passive single coupling RJ45	IE-CD-V14MRJ-C-MA	1068870000
	FreeCon passive single coupling hybrid (Q10)	IE-CD-V14MHYB-10P-C-MA	1068840000
	FreeCon PushPull Power Y-distributor	IE-CD-VAPM24V-Y-MA	1297010000
	FreeCon PushPull Power single coupling	IE-CD-VAPM24V-C-MA	1397690000
	FreeCon passive single coupling SCRJ	IE-CD-V14MSCRJ-MM-C-MA	1318150000


**Media converter / repeater (only for PROFINET)**

	Description	Type	Order No.
	FreeCon active FO PROFINET repeater II	IE-CDR-V14MSCPOF/VAPM-C II	2455360000
	FreeCon active FO PROFINET media converter II	IE-CDM-V14MRJSCP/VAPM-C II	2588270000
	FreeCon active PROFINET copper repeater	IE-CDR-V14MRJ/VAPM-C	2581810000

**Raw cable copper cable**

	Description	Type	Order No.
	100 m ring installation cable PVC type A	IE-C5AS4VG-100	8899000000
	500 m ring installation cable PVC type A	IE-C5AS4VG-500	2763430000
	100 m ring connection cable PVC type B	IE-C5DS4VG-100	8898990000
	500 m ring connection cable PVC type B	IE-C5DS4VG-500	2763470000
	100 m ring dragline cable PUR type C	IE-C5DD4UG-100	8899010000
	500 m ring dragline cable PUR type C	IE-C5DD4UG-500	2763450000
	500 m ring Torsion cable PUR type C	IE-C5IT4UG-500	2763520000
	500 m ring hybrid cable PVC	IE-C5DHAG-500	2763460000

**Raw cable fibre-optic cable**

	Description	Type	Order No.
	500 m ring POF breakout cable 2X980/1000 µm TPE	IE-FPOD2UG-500	2763640000
	500 m ring POF mini breakout cable 2X980/1000 µm PE	IE-FPOB2EG-500	2781950000

## Customised cabling solutions for Ethernet/IP

The wiring guidelines for EtherNet/IP clearly define the interfaces to be used to ensure interoperability in EtherNet/IP systems.

Weidmüller offers all the cabling products needed to build a requirement specific infrastructure which is tailored to the needs of EtherNet/IP.

The wiring components for copper and fibre-optic cables are designed and tested for use in harsh industrial environments. The user is provided with clear guidelines about the requirements of the components for use in industrial environments with the introduction of the MICE classification (EtherNet/IP Media Planning and Installation Manual).

The high-quality shielding of the cables and connection components offers comprehensive protection against electromagnetic interference.

The cables are 8-wire twisted-pair cables for RJ45 or star quad for use in M12.

The cabling components are also easy to handle in the field. The plug-in connectors for copper and fibre optic cables can all be assembled on-site. This reduces installation time, reduces errors and simplifies maintenance.

The connectors wire/pin assignment is either according to TIA568-A or TIA568-B as required. The connectors and modules are marked accordingly, making them easier to connect.



### Profile specific guidelines for the connection components

#### Cable:

- 8-wire twisted-pair shielded cables

#### Connector:

- IP20 RJ45
- IP20 SC-RJ
- IP67 bayonet RJ45
- IP67 M12 D-coding



Weidmüller offers you a wide range of cabling solutions for EtherNet/IP applications. IP20 plug-in connectors for copper and fibre-optic cables are available, as well as IP67 connectors and junction boxes for the most exacting

requirements. The components are designed to be used together from the floor distributors down to the machines.

**IP20**  
plug-in connector



**IP67**  
plug-in connectors data



**IP67**  
connection components



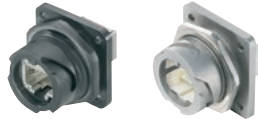
**IP20**  
assembled cables



**IP20**  
mounting rail outlets



**IP67**  
flanges data / power



**IP67**  
assembled RJ45 cables



**IP65**  
service interfaces



**IP67**  
plug-in M12 connectors



**IP67**  
assembled M12 cables



**Raw cable**  
copper and fibre-optic



# Selection table

## Ideal combinations for a perfect fit



### IP20 plug-in connector



Description	Type	Order No.
RJ45 crimp	IE-PS-RJ45-TH-BK	1963590000
RJ45 tool-free TIA-A printing	IE-PS-RJ45-FH-BK-A	1132040000
RJ45 tool-free TIA-B printing	IE-PS-RJ45-FH-BK-B	1132050000
SC-RJ for 1 mm POF fibres	IE-PS-SCRJ1-POF	1206720000

### IP20 assembled data cables



Description	Type	Order No.
RJ45 patch cables - see CabinetLine		
SC-RJ zipcord patch cable - POF - 1 m	IE-FPOZ2EE0001MSJOSJO-X	1273430010
SC-RJ zipcord patch cable - POF - 3 m	IE-FPOZ2EE0003MSJOSJO-X	1273430030
SC-RJ zipcord patch cable - POF - 5 m	IE-FPOZ2EE0005MSJOSJO-X	1273430050
SC-RJ zipcord patch cable - POF - 10 m	IE-FPOZ2EE0010MSJOSJO-X	1273430100
Other EtherNet/IP cables available on request		

### IP20 mounting rail outlets



Description	Type	Order No.
RJ45 coupling	IE-TO-RJ45-C	8946920000
RJ45 Module TIA-A printing	IE-TO-RJ45-FJA	8946930000
RJ45 Module TIA-B printing	IE-TO-RJ45-FJB	8946940000
SC-RJ POF coupling / multimode	IE-TO-SCRJ-MMM	8946990000
SC-RJ singlemode coupling	IE-TO-SCRJ-SM	8947000000

### IP65 service interface



Description	Type	Order No.
FrontCom® Micro RJ45 coupling	IE-FCM-RJ45-C	1018790000
FrontCom® Micro RJ45 module TIA-A printing	IE-FCM-RJ45-FJA	1018810000
FrontCom® Micro RJ45 module TIA-B printing	IE-FCM-RJ45-FJB	1018820000

### IP67 flange data



Description	Type	Order No.
Bayonet flange metal RJ45 coupling	IE-BS-V01M-RJ45-C	1963470000
Bayonet flange metal RJ45 module TIA-A printing	IE-BS-V01M-RJ45-FJA	1963480000
Bayonet flange plastic RJ45 coupling	IE-BS-V01P-RJ45-C	1012370000
Bayonet flange metal RJ45 module TIA-A printing	IE-BS-V01P-RJ45-FJA	1012380000
Bayonet flange metal SC-RJ POF / multimode	IE-BS-V01M-SCRJ-MM	1221010000
Bayonet flange metal SC-RJ singlemode	IE-BS-V01M-SCRJ-SM	1221020000
Other inserts can be found in Chapter J		

### IP67 data connectors



Description	Type	Order No.
Bayonet plug metal RJ45 crimped	IE-PS-V01M-RJ45-TH	1963140000
Bayonet plug metal RJ45 tool-free	IE-PS-V01M-RJ45-FH	1963120000
Bayonet plug plastic RJ45 crimped	IE-PS-V01P-RJ45-TH	1012470000
Bayonet plug plastic RJ45 tool-free	IE-PS-V01P-RJ45-FH	1012490000
Bayonet plug metal SC-RJ use POF	IE-PS-V01M-2SC-POF	1963280000

## IP67 assembled data cables



Description	Type	Order No.
Bayonet metal RJ45 patch cable PUR 1 m	IE-C5ES8UG0010B41B41-E	1066850000
Bayonet metal RJ45 patch cable PUR 2 m	IE-C5ES8UG0020B41B41-E	1066860000
Bayonet metal RJ45 patch cable PUR 5 m	IE-C5ES8UG0050B41B41-E	1066870000
Bayonet metal RJ45 patch cable PUR 10 m	IE-C5ES8UG0100B41B41-E	1066880000
Bayonet plastic RJ45 patch cable PUR 1 m	IE-C5ES8UG0010P41P41-E	1106010000
Bayonet plastic RJ45 patch cable PUR 2 m	IE-C5ES8UG0020P41P41-E	1106020000
Bayonet plastic RJ45 patch cable PUR 5 m	IE-C5ES8UG0050P41P41-E	1106030000
Bayonet plastic RJ45 patch cable PUR 10 m	IE-C5ES8UG0100P41P41-E	1106040000

Other EtherNet/IP cables available on request

## IP67 plug-in M12 connectors

M 12 components can be found in Chapter J

## IP65 connection components



Description	Type	Order No.
Single junction box, plastic	IE-OP-V01P-1S	1061830000
Plastic cable coupling	IE-CC-V01P	1061820000
RJ45 module TIA-A printing	IE-BI-RJ45-FJ-A	1962850000
RJ45 module TIA-B printing	IE-BI-RJ45-FJ-B	1963840000

## Raw cable copper cable



Description	Type	Order No.
100 m ring installation cable PVC Cat. 5 SF/UTP	IE-C5CS8VG-100	8813150000
500 m ring installation cable PVC Cat. 5 SF/UTP	IE-C5CS8VG-500	2763440000
100 m ring installation cable PUR Cat. 5 SF/UTP	IE-C5CS8UG-100	8813160000
500 m ring installation cable PUR Cat. 5 SF/UTP	IE-C5CS8UG-500	2762870000
100 m ring connection cable PVC Cat. 5 SF/UTP	IE-C5ES8VG-100	8813190000
500 m ring connection cable PVC Cat. 5 SF/UTP	IE-C5ES8VG-500	2763510000
100 m ring connection cable PUR Cat. 5 SF/UTP	IE-C5ES8UG-100	8813200000
500 m ring connection cable PUR Cat. 5 SF/UTP	IE-C5ES8UG-500	2763500000

Other EtherNet/IP cables available on request

## Raw cable fibre-optic cable



Description	Type	Order No.
500 m ring POF breakout cable 2X980/1000 µm TPE	IE-FPOD2UG-500	2763640000
500 m ring POF mini breakout cable 2X980/1000 µm PE	IE-FPOB2EG-500	2781950000





# Single Pair Ethernet (SPE)

Single Pair Ethernet (SPE)	Overview	K.2
	Assembled cables IP20	K.8
	Assembled cables IP67	K.9
	Raw cable	K.11
	Connection components	K.13

# Single Pair Ethernet

## The network infrastructure for Industrial IIoT

## K

In the factory of the future, machines and systems will be connected to each other consistently via a data infrastructure. These cyber-physical systems can act independently in the Industrial Internet of Things (IIoT), communicate in real time, and control production processes. In order to enable this, a continuous network with high-performance data connections from the sensor to the cloud is required. This pushes conventional Ethernet systems to their limits.

Single Pair Ethernet (SPE) facilitates the extension of the Ethernet to the sensor. It is compact, flexible, and enables high ranges. This means that data connections are achievable in situations where conventional Ethernet systems have reached their limits. SPE provides for the extension of existing installations and supports consistent communication based on the Ethernet protocol. Indeed, SPE is considered by Weidmüller as the missing component needed to close the current gap in the supply of standard Ethernet at field level.

SPE runs at the same transmission speeds as conventional Ethernet but with simplified 2-wire cabling technology and data lines up to 1,000 m in length. Together with other new technologies such as TSN, OPC-UA, or 5G, SPE enables both continuous IP communication between the server and the cloud, as well as supplying up to 60 Watts of power in complex IIoT solutions through PoDL (Power over Data Line).



**Single Pair Ethernet**  
System Alliance

**SPElink**®

The Single Pair Ethernet System Alliance (SPESA) represents the future-oriented Single Pair Ethernet technology. Weidmüller is a founding member of this alliance and, together with its partners, is implementing its goals in the market in a common and holistic manner.

A new connector family has been developed for this new technology. This complies with the international IEC63171-2/-5 standard and bears the name **SPElink**® at Weidmüller.



# The new standard for high demands

## Single Pair Ethernet connectors for the industry

Single Pair Ethernet (SPE) connections can transfer data and power using only one twin wire. This enables both end-to-end IP communication between server and cloud, as well as power supply in complex IIoT solutions. SPE connectors therefore are particularly efficient and future-oriented.

### The market requirements for data connectors in the field level are:

- Smallest, most compact design possible for implementing IIoT devices
- High robustness for use in industrial environments
- Easy to connect for safe, fast installation
- Future-proof design through international standards

### Advantages of SPE connectors at a glance:

#### Miniaturisation

#### Industrial suitability

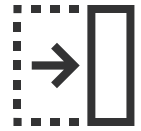


#### Simplicity

#### Future-proof

# Particularly compact

## Miniaturisation of Single Pair Ethernet connectors according to IEC 63171-2



### K

Weidmüller has been developing user-friendly connectors for industrial use, according to IEC63171-2. With a pitch of 7.62mm the compact connector system saves up to 50% space in comparison to RJ45 interfaces. The vertical arrangement of the two contacts allows a very high packing density. This enables device manufacturers to save valuable space on the PCB and to build smaller devices. This reduces port costs in device construction and effectively saves space in the control cabinet.

#### Small mating face

- Currently the smallest mating face according to IEC 63171 on the market

#### High packing density

- Double the packing density compared to RJ45 connectors
- Doubling of the interfaces with the same housing contour
- Only 20% of the volume of an RJ45 jack
- Minimum space requirement in the device

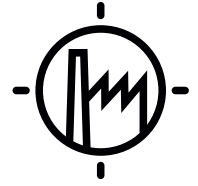
#### Easy IP67-integration

- Can be integrated into standard M8 housings and connectors as with I/O-Link or PROFINET
- M8 connectors with male and female contacts available
- Front and rear panel mounting with male and female contacts supported
- Simple integration in M8 sensors
- Inverse M8 system possible



# Made for highest demands

## The industrial suitability of Single Pair Ethernet connectors



Originally developed for automotive applications, the aim of single pair ethernet technology was to realise the most efficient infrastructure capable of delivering high performance with as little cabling as possible. There are similar expectations within industry applications and building automation where the number of intelligent end devices in the plant is increasing but the amount of available space is not. Weidmuller Single Pair Ethernet (SPE) connector solutions deliver long cable lengths, a compact design that is simple, robust and vibration-proof, as well as being insensitive to electromagnetic influences.

### Mechanical robustness

- Robust metal housing with metal snap-in hooks
- Safe industrial double contacting compared to single-sided contacting RJ45
- Shock resistant and vibration resistant according to IEC 60068
- Stable latching with lateral forces

### EMC Compatibility

- Coupling attenuation at 600 MHz according to IEEE 802.3
- Additional burst test according to IEC 61000-6-2
- Optimum shield connection on the PCB due to four symmetrical legs

### Industrial suitability

- PCB connectors for environments up to pollution degree 2
- Impulse voltage strength of 2.25 kV according to IEEE 802.3
- Optimum contact distance for 100 Ohm systems



## Easy to use

# The simplicity of Single Pair Ethernet connectors



### K

Ethernet technology is too complex for many industrial applications. Single Pair Ethernet (SPE) components are clearly superior due to their simplicity. Compared to four-pair Ethernet, installation is less difficult and allows a significant reduction in space and weight. SPE connectors also enable robust cabling in a short time. At the same time, they offer extended cable lengths in an extremely compact design.

#### Proven locking mechanism

- Industry standard plugs and sockets with metal Snap-in hooks locking
- Known locking and unlocking mechanism as for RJ45 connectors
- High holding force (> 50 N)

#### Tool-free installation

- Well proven IDC connection technology
- Simple assembly due to a two-part connector
- Clear colour coding to prevent miswiring
- Suitable for all commercially available SPE cables

#### Easy integration

- Trouble-free integration into M8 housings and connectors
- Compatibility of IP20 and IP67 variants
- Optional use of the IP20 connector as service connector for devices with M8IP67 interfaces





# Ready for the challenges of tomorrow

## Future-proof Single Pair Ethernet connectors



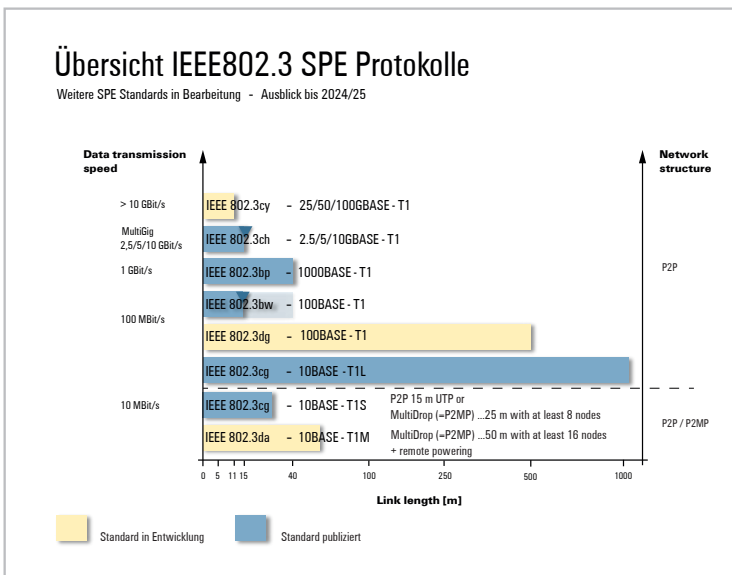
Single Pair Ethernet (SPE) is the next milestone in network technology, as it enables continuous intelligent networking across all levels. SPE is scalable, deterministic, and fully compatible, allowing all components to communicate with each other. As a comprehensive key technology for applications in the field of Industry 4.0 and IIoT, it will form the core of a wide range of industrial applications in the future.

### Extensive support

The SPE product family is already supported by several well-known connector manufacturers, which have joined together to form the Single Pair Ethernet System Alliance. This collaboration, with leading technology companies from a wide range of markets and application areas, means that the level of combined technological competence will result in unprecedented and lasting benefits for all users.

### Suitable for low to high transmission rates

The compact SPE interface is suitable for various Ethernet applications with transfer rates from 10 MBit/s to 1 GBit/s. Simulations confirm a bandwidth of up to 2.5 GHz – this corresponds to the new Ethernet transmission standard IEEE 802.3ch, which is currently under development for up to 10 GBit/s.



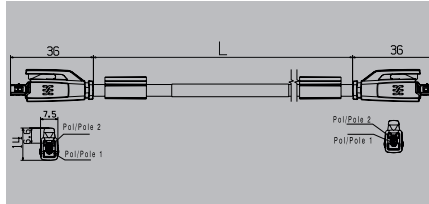
**Assembled cables**  
**IP20**

**Plug - Plug**

Socket contact / Socket contact



**SPElink®**



**Technical data**

Product type
Category
Shielding
Ambient temperature (operational)
Rated voltage (DC)
Rated current
PoE / PoE+
Transmission rate
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Characteristic impedance
Capacity at 800 Hz
Coupling attenuation 1 to 600 MHz
Coupling attenuation up to 1000 MHz
Test voltage: wire-wire-shield
Resistance differential
Transmission rate
Version connector left
Version connector right
Number of wires
Colour coding
Complete shielding / Overlap of shielding braid
Insulation
Insulation diameter
Sheath diameter, min. / max.
Cross-section / Strands
Shielding
Material sheath
Colour
Halogen
UV-resistant
Connector standard
Approvals
<b>Note</b>

Patch cable
T1-B
STP
-40...80 °C
60 V
3.5 A
PoDL acc. to IEEE 802.3bu / cg
10/100 MBit/s, 1000 MBit/s
1000 V DC
2250 V DC
100 ± 15 Ω at 20 MHz
1.6 nF/km
Type I
1 kV DC, 1 min
2 %
10/100 MBit/s, 1000 MBit/s
SPE plug (IEC 63171-2) - IP20 socket contact straight
SPE plug (IEC 63171-2) - IP20 socket contact straight
2
white / blue
Shielding braid made from copper wiring / 80 %
PE
1.65 mm
4.9 / 5.3 mm
2*AWG 22 / 7
STP
PVC
black
Yes
Complies with UL 1581 Sec. 1200
IEC 63171-2
CE; CULUS; EAC

**Ordering data**

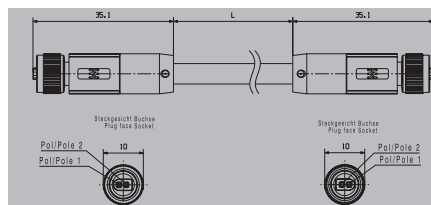
	1.0 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
	15.0 m
	40.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-S1DS2VE0010T01T01-E	1	2725850010
IE-S1DS2VE0020T01T01-E	1	2725850020
IE-S1DS2VE0030T01T01-E	1	2725850030
IE-S1DS2VE0050T01T01-E	1	2725850050
IE-S1DS2VE0100T01T01-E	1	2725850100
IE-S1DS2VE0150T01T01-E	1	2725850150
IE-S1DS2VE0400T01T01-E	1	2725850400



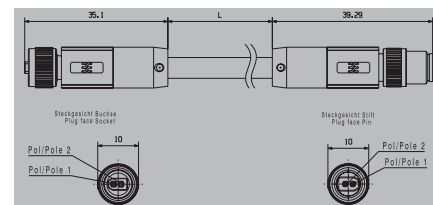
### M8 plug Male / Male

Socket contact / Socket contact



### M8 plug Male / Female

Socket contact / Pin contact



### Technical data

Product type	Patch cable
Category	T1-B
Shielding	STP
Ambient temperature (operational)	-40...85 °C
Rated voltage (DC)	60 V
Rated current	3.5 A
PoE / PoE+	PoDL acc. to IEEE 802.3bu / cg
Transmission rate	10/100 MBit/s, 1000 MBit/s
Dielectric strength, contact / contact	1000 V DC
Dielectric strength, contact / shield	2250 V DC
Current-carrying capacity	3.5A @ 0°C
Characteristic impedance	100 ± 15 Ω at 20 MHz
Capacity at 800 Hz	1.6 nF/km
Coupling attenuation 1 to 600 MHz	Type I
Coupling attenuation up to 1000 MHz	
Test voltage: wire-wire-shield	1 kV DC, 1 min
Resistance differential	2 %
Transmission rate	10/100 MBit/s, 1000 MBit/s
Version connector left	M8 SPE ( IEC63171-5) - IP67 socket contact - straight
Version connector right	M8 SPE ( IEC63171-5) - IP67 socket contact - straight
Number of wires	2
Colour coding	white / blue
Complete shielding / Overlap of shielding braid	Shielding braid made from copper wiring / 80 %
Insulation	PE
Insulation diameter	1.65 mm
Sheath diameter, min. / max.	4.9 / 5.3 mm
Cross-section / Strands	2*AWG 22 / 7
Shielding	STP
Material sheath	PVC
Colour	black
Halogen	Yes
UV-resistant	Complies with UL 1581 Sec. 1200
Connector standard	IEC 63171-5
Approvals	CE, EAC
Note	

### Ordering data

Type	Qty.	Order No.
	2.0 m	
	5.0 m	
	10.0 m	
	15.0 m	
	20.0 m	
	40.0 m	
Note		

Product type	Patch cable
Category	T1-B
Shielding	STP
Ambient temperature (operational)	-40...85 °C
Rated voltage (DC)	60 V
Rated current	3.5 A
PoE / PoE+	PoDL acc. to IEEE 802.3bu / cg
Transmission rate	10/100 MBit/s, 1000 MBit/s
Dielectric strength, contact / contact	1000 V DC
Dielectric strength, contact / shield	2250 V DC
Current-carrying capacity	3.5A @ 0°C
Characteristic impedance	100 ± 15 Ω at 20 MHz
Capacity at 800 Hz	1.6 nF/km
Coupling attenuation 1 to 600 MHz	Type I
Coupling attenuation up to 1000 MHz	
Test voltage: wire-wire-shield	1 kV DC, 1 min
Resistance differential	2 %
Transmission rate	10/100 MBit/s, 1000 MBit/s
Version connector left	M8 SPE ( IEC63171-5) - IP67 socket contact - straight
Version connector right	M8 SPE ( IEC63171-5) - IP67 pin contact - straight
Number of wires	2
Colour coding	white / blue
Complete shielding / Overlap of shielding braid	Shielding braid made from copper wiring / 80 %
Insulation	PE
Insulation diameter	1.65 mm
Sheath diameter, min. / max.	4.9 / 5.3 mm
Cross-section / Strands	2*AWG 22 / 7
Shielding	STP
Material sheath	PVC
Colour	black
Halogen	Yes
UV-resistant	Complies with UL 1581 Sec. 1200
Connector standard	IEC 63171-5
Approvals	CE, EAC
Note	

Type	Qty.	Order No.
IE-S1DS2VE0020TM1TM1-E	1	2726050020
IE-S1DS2VE0050TM1TM1-E	1	2726050050
IE-S1DS2VE0100TM1TM1-E	1	2726050100
IE-S1DS2VE0150TM1TM1-E	1	2726050150
IE-S1DS2VE0200TM1TM1-E	1	2726050200
IE-S1DS2VE0400TM1TM1-E	1	2726050400
Note		

Product type	Patch cable
Category	T1-B
Shielding	STP
Ambient temperature (operational)	-40...85 °C
Rated voltage (DC)	60 V
Rated current	3.5 A
PoE / PoE+	PoDL acc. to IEEE 802.3bu / cg
Transmission rate	10/100 MBit/s, 1000 MBit/s
Dielectric strength, contact / contact	1000 V DC
Dielectric strength, contact / shield	2250 V DC
Current-carrying capacity	3.5A @ 0°C
Characteristic impedance	100 ± 15 Ω at 20 MHz
Capacity at 800 Hz	1.6 nF/km
Coupling attenuation 1 to 600 MHz	Type I
Coupling attenuation up to 1000 MHz	
Test voltage: wire-wire-shield	1 kV DC, 1 min
Resistance differential	2 %
Transmission rate	10/100 MBit/s, 1000 MBit/s
Version connector left	M8 SPE ( IEC63171-5) - IP67 socket contact - straight
Version connector right	M8 SPE ( IEC63171-5) - IP67 pin contact - straight
Number of wires	2
Colour coding	white / blue
Complete shielding / Overlap of shielding braid	Shielding braid made from copper wiring / 80 %
Insulation	PE
Insulation diameter	1.65 mm
Sheath diameter, min. / max.	4.9 / 5.3 mm
Cross-section / Strands	2*AWG 22 / 7
Shielding	STP
Material sheath	PVC
Colour	black
Halogen	Yes
UV-resistant	Complies with UL 1581 Sec. 1200
Connector standard	IEC 63171-5
Approvals	CE, EAC
Note	

Type	Qty.	Order No.
IE-S1DS2VE0020TM1TM2-E	1	2726060020
Note		

**Assembled cables**  
**IP67**

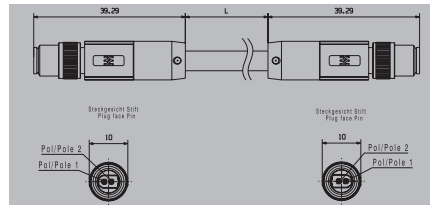
K

**M8 plug Female / Female**

Pin contact / Pin contact



**SPElink®**



**Technical data**

Product type
Category
Shielding
Ambient temperature (operational)
Rated voltage (DC)
Rated current
PoE / PoE+
Transmission rate
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Current-carrying capacity
Characteristic impedance
Capacity at 800 Hz
Coupling attenuation 1 to 600 MHz
Coupling attenuation up to 1000 MHz
Test voltage: wire-wire-shield
Resistance differential
Transmission rate
Version connector left
Version connector right
Number of wires
Colour coding
Complete shielding / Overlap of shielding braid
Insulation
Insulation diameter
Sheath diameter, min. / max.
Cross-section / Strands
Shielding
Material sheath
Colour
Halogen
UV-resistant
Connector standard
Approvals
<b>Note</b>

Patch cable
T1-B
STP
-40...85 °C
60 V
3.5 A
PoDL acc. to IEEE 802.3bu / cg
10/100 MBit/s, 1000 MBit/s
1000 V DC
2250 V DC
3.5A @ 0°C
100 ± 15 Ω at 20 MHz
1.6 nF/km
Type I
1 kV DC, 1 min
2 %
10/100 MBit/s, 1000 MBit/s
M8 SPE ( IEC63171-5) - IP67 pin contact - straight
M8 SPE ( IEC63171-5) - IP67 pin contact - straight
2
white / blue
Shielding braid made from copper wiring / 80 %
PE
1.65 mm
4.9 / 5.3 mm
2*AWG 22 / 7
STP
PVC
black
Yes
Complies with UL 1581 Sec. 1200
IEC 63171-5
CE, EAC

**Ordering data**

2.0 m
5.0 m
10.0 m
15.0 m
20.0 m
40.0 m
<b>Note</b>

Type	Qty.	Order No.
IE-S1DS2VE0020TM2TM2-E	1	2726070020

Raw cables

- AWG 22

PUR

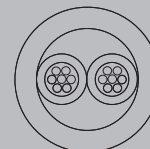
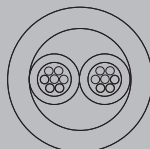
LSZH



SPElink®



SPElink®



Technical data

Product type	
Category	
Shielding	
Cross-section	
Sheath diameter, max.	
Material sheath	
Sheathing colour	
Insulation diameter	
Min. bending radius, repetitive	
Min. bending radius, once only	
Ambient temperature (operational)	
Installation temperature	
Storage temperature	
Halogen	
Resistance to spread of flame	
Approvals	
<b>Note</b>	

System cable	
T1-B	
S/FTP	
Cross-section	1 x 2 x AWG 22/7 - 0.35 mm <sup>2</sup>
Sheath diameter, max.	5.3 mm
Material sheath	PUR
Sheathing colour	black
Insulation diameter	1.7 mm
Min. bending radius, repetitive	
Min. bending radius, once only	22 mm
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	...
Storage temperature	...
Halogen	halogen-free, acc. to IEC 60754-1, halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1-2
Approvals	
<b>Note</b>	

System cable	
T1-B	
S/FTP	
Cross-section	1 x 2 x AWG 22/7 - 0.35 mm <sup>2</sup>
Sheath diameter, max.	5.1 mm
Material sheath	LSZH
Sheathing colour	black
Insulation diameter	1.7 mm
Min. bending radius, repetitive	
Min. bending radius, once only	22 mm
Ambient temperature (operational)	-20 °C...60 °C
Installation temperature	...
Storage temperature	...
Halogen	halogen-free, acc. to IEC 60754-2, halogen-free, acc. to IEC 60754-1
Resistance to spread of flame	in accordance with IEC 60332-1-2
Approvals	
<b>Note</b>	

Ordering data

	500.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-S1DS2UE-500	1	2924340000

Type	Qty.	Order No.
IE-S1DS2LE-500	1	2924350000

Accessories

Type	Qty.	Order No.

Type	Qty.	Order No.

Type	Qty.	Order No.

<b>Note</b>	
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<b>Note</b>	
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<b>Note</b>	
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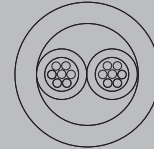
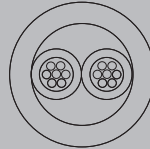
Raw cable

Raw cables

- AWG 26

PUR

LSZH



Technical data

Product type
Category
Shielding
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Halogen
Resistance to spread of flame
Approvals

System cable
T1-B
S/FTP
1 x 2 x AWG 26/7 - 0.132 mm <sup>2</sup>
4.3 mm
PUR
black
1.15 mm
56 mm
28 mm
-40 °C...80 °C
...
halogen-free, acc. to IEC 60754-1, halogen-free, acc. to IEC 60754-2
in accordance with IEC 60332-1-2

System cable
T1-B
S/FTP
1 x 2 x AWG 26/7 - 0.132 mm <sup>2</sup>
3.7 mm
LSZH
black
1.15 mm
56 mm
28 mm
-20 °C...60 °C
...
halogen-free, acc. to IEC 60754-2, halogen-free, acc. to IEC 60754-1
in accordance with IEC 60332-1-2

Note

Ordering data

500.0 m
Note

Type	Qty.	Order No.
IE-S1ES2UE-500	1	2924360000

Type	Qty.	Order No.
IE-S1ES2LE-500	1	2924370000

Accessories

Type	Qty.	Order No.

Type	Qty.	Order No.

Note

**Plug**

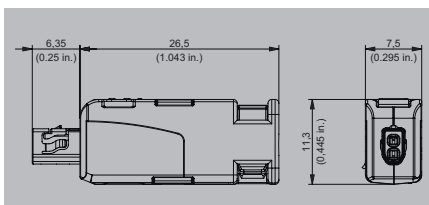
- Only one pair of wires for data and power
- Multi-port support
- IP20

**Field-terminated plug IP20**

**Socket contact**



**SPElink®**



**Technical data**

Category	T1-B
Protection degree	IP20
Transmission rate	10/100 MBit/s, 100 MBit/s
Ambient temperature (operational)	-40...85 °C
Plugging cycles	750
Housing main material	zinc diecast nickel-plated
Contact material	Bronze tin-plated
Contact surface	Gold-plated
Rated voltage	
Connection diameter, flexible, min. / max.	0.48...0.76 mm
Connection cross-section, flexible, min. / max.	AWG 26...AWG 22
Connection diameter, solid, min. / max.	0.41...0.64 mm
Connection cross-section, solid, min. / max.	AWG 24...AWG 22
Sheath diameter, min. / max.	3.6...5.7 mm
Insulation cross-section, min.	0.85 mm
Insulation cross-section, max.	1.6 mm
Insulation strength	≥ 500 MΩ
PoE / PoE+	PoDL acc. to IEEE 802.3bu / cg
Dielectric strength, contact / contact	≥ 1000 V DC
Dielectric strength, contact / shield	≥ 1500 V DC
Connector standard	IEC 63171-2
UL 94 flammability rating	V-0

Category	T1-B
Protection degree	IP20
Transmission rate	10/100 MBit/s, 100 MBit/s
Ambient temperature (operational)	-40...85 °C
Plugging cycles	750
Housing main material	zinc diecast nickel-plated
Contact material	Bronze tin-plated
Contact surface	Gold-plated
Rated voltage	
Connection diameter, flexible, min. / max.	0.48...0.76 mm
Connection cross-section, flexible, min. / max.	AWG 26...AWG 22
Connection diameter, solid, min. / max.	0.41...0.64 mm
Connection cross-section, solid, min. / max.	AWG 24...AWG 22
Sheath diameter, min. / max.	3.6...5.7 mm
Insulation cross-section, min.	0.85 mm
Insulation cross-section, max.	1.6 mm
Insulation strength	≥ 500 MΩ
PoE / PoE+	PoDL acc. to IEEE 802.3bu / cg
Dielectric strength, contact / contact	≥ 1000 V DC
Dielectric strength, contact / shield	≥ 1500 V DC
Connector standard	IEC 63171-2
UL 94 flammability rating	V-0

**Note**

**Ordering data**

Plug	field-terminated plug
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Type	Qty.	Order No.
IE-PS-SP0-S-FH-180	1	2726040000

**Note**

**Accessories**

Type	Qty.	Order No.
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Type	Qty.	Order No.
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**Note**

Connection components

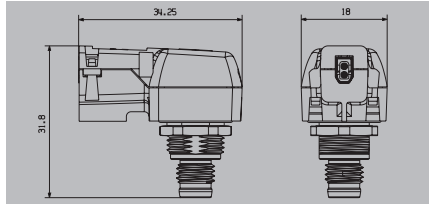
Adapter IP20 / IP65 (M8)

- Only one pair of wires for data and power

Adapter



SPElink®



Technical data

Category	T1-B
Ambient temperature (operational)	-40...85 °C
Protection degree	IP65 (in plugged condition)
Connection 1 / 2 / Connection	SPE socket acc. to IEC 63171-2 / M8 socket male contact
Number of poles	2
Outlet direction	Angled
Contact material	Cu
Contact surface	Ni/Au
Contact carrier material	
Operational voltage range	≤ 50 V AC, ≤ 60 V DC
Rated current	3.5 A at 0°C
Insulation strength	≥ 500 MΩ
Dielectric strength, contact / contact	≥ 1000 V DC
Dielectric strength, contact / shield	2250 V DC
Connector standard	IEC 63171-2, IEC 63171-5
UL 94 flammability rating	V-0

Note

Ordering data

Type	Qty.	Order No.
IE-AD-SP0-P-SPM-P-90	10	2814400000

Note

Accessories

Type	Qty.	Order No.

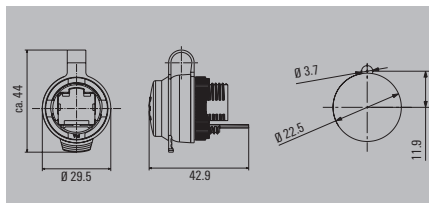
Note

## FrontCom® Micro Service Interface

- Only one pair of wires for data and power

## Coupling

### Pin contacts



### Technical data

Category  
 Protection degree  
 Ambient temperature (operational)  
 Plugging cycles  
 Housing main material  
 Contact material  
 Contact surface  
 Rated voltage  
 Rated current  
 Insulation cross-section, min.  
 Insulation cross-section, max.  
 Insulation strength  
 PoE / PoE+  
 Dielectric strength, contact / contact  
 Dielectric strength, contact / shield  
 Connector standard  
 UL 94 flammability rating

T1-B  
 IP65, in closed state  
 -40...70 °C  
 750  
 PA UL 94 V0  
  
 Gold over nickel  
  
 3.5 A at 0°C  
  
  
 PoDL acc. to IEEE 802.3bu / cg  
 ≥ 1000 V DC  
 2250 V DC  
 IEC 63171-2

**Note**

### Ordering data

Coupling

**Note**

Type	Qty.	Order No.
IE-FCM-SPO-C	1	2870820000

### Accessories

**Fixing tool**

**Marking tags**

SwitchMark markers white

**Holder**

Type	Qty.	Order No.
IE-FISP-V4	2	9204370000
SM 27/18 MC NE WS	80	1699860000
SM-H 27/18 SW	25	1716630000

**Note**

## Connection components

### Mounting rail outlets

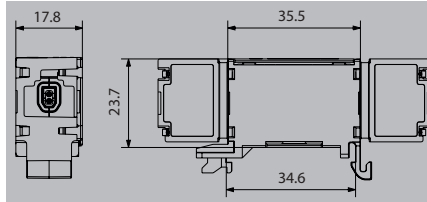
- Only one pair of wires for data and power
- IP20
- TS35

### Coupling, straight outlet

#### Pin contacts



SPElink®



### Technical data

Category
Protection degree
Ambient temperature (operational)
Plugging cycles
Housing main material
Contact material
Contact surface
Rated voltage
Rated current
Insulation cross-section, min.
Insulation cross-section, max.
Insulation strength
PoE / PoE+
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Connector standard
UL 94 flammability rating

T1-B
IP30, in closed state
-40...70 °C
750
PA 66
Cu
Gold over nickel
3.5 A at 0°C
≥ 500 MΩ
PoDL acc. to IEEE 802.3bu / cg
≥ 1000 V DC
2250 V DC
IEC 63171-2
V-0

#### Note

### Ordering data

#### Note

Type	Qty.	Order No.
IE-TO-SPO-CLP	10	2870790000

### Accessories

#### Marking tags

MultiCard, white

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000

#### Note



**Coupling**

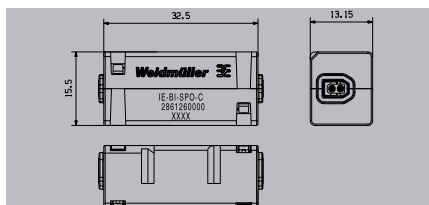
- IP20
- For housing variants 1, 4, 5, 14 and for FrontCom®
- SPE coupling for FrontCom® only

**Coupling IP20 / IP20**

**Pin contacts**



**SPElink®**



**Technical data**

Category	T1-B
Protection degree	IP67 with housing
Ambient temperature (operational)	-40...85 °C
Plugging cycles	750
Housing main material	PA 66
Contact material	Cu
Contact surface	Gold over nickel
Rated voltage	
Rated current	3.5 A at 0°C
Insulation cross-section, min.	
Insulation cross-section, max.	
Insulation strength	≥ 500 MΩ
PoE / PoE+	PoDL acc. to IEEE 802.3bu / cg
Dielectric strength, contact / contact	≥ 1000 V DC
Dielectric strength, contact / shield	2250 V DC
Connector standard	IEC 63171-2
UL 94 flammability rating	V-0
<b>Note</b>	

Category	T1-B
Protection degree	IP67 with housing
Ambient temperature (operational)	-40...85 °C
Plugging cycles	750
Housing main material	PA 66
Contact material	Cu
Contact surface	Gold over nickel
Rated voltage	
Rated current	3.5 A at 0°C
Insulation cross-section, min.	
Insulation cross-section, max.	
Insulation strength	≥ 500 MΩ
PoE / PoE+	PoDL acc. to IEEE 802.3bu / cg
Dielectric strength, contact / contact	≥ 1000 V DC
Dielectric strength, contact / shield	2250 V DC
Connector standard	IEC 63171-2
UL 94 flammability rating	V-0
<b>Note</b>	

**Ordering data**

<b>tool-free</b>	
	Coupling
<b>Note</b>	

Type	Qty.	Order No.
IE-BI-SPO-C	10	2861260000

**Accessories**

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Type	Qty.	Order No.

<b>Note</b>
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Connection components

PCB connector IP20

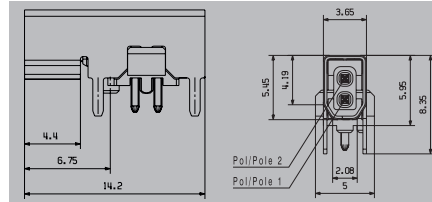
- Only one pair of wires for data and power
- Multi-port support
- Robust locking mechanism
- Shock and vibration proof
- Most compact design

PCB connector, 90°

Pin contact



SPElink®

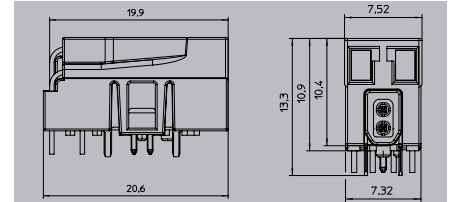


PCB connector, 90°, incl. LED

Pin contact



SPElink®



Technical data

Category
Protection degree
Ambient temperature (operational)
Transmission rate
Type of connection
Outgoing elbow
Number of poles
Mounting onto the PCB
Plugging cycles
Contact material
Contact surface
Rated voltage
Rated current
Insulation strength
PoE / PoE+
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Connector standard
UL 94 flammability rating

T1-B
IP20
-40...85 °C
10/100 MBit/s, 1000 MBit/s
Solder connection, Male contact
90°
2
THT/THR solder connection
750
Cu
Ni/Au
72 V
4 A
≥ 500 MΩ
PoDL acc. to IEEE 802.3bu / cg
1000 V DC
2250 V DC
IEC 63171-2
V-0

T1-B
IP20
-40...85 °C
10/100 MBit/s, 1000 MBit/s
Solder connection, Male contact
90°
2
THT/THR solder connection
750
Cu
Ni/Au
72 V
4 A
≥ 500 MΩ
PoDL acc. to IEEE 802.3bu / cg
1000 V DC
2250 V DC
IEC 63171-2
V-0

Note

Ordering data

PCB connector, IP20, pin contact
PCB connector, IP20, pin contact incl. LEDs

Note

Type	Qty.	Order No.
IE-PCB-SP0-P-90V-THR	100	2726010000

Type	Qty.	Order No.
IE-PCB-SP0-P-90V-THR-YG/YG	100	2795120000
Bi-colour LED: yellow/green   yellow/green		

Accessories

Type	Qty.	Order No.
------	------	-----------

Type	Qty.	Order No.
------	------	-----------

Note

### PCB connector IP20

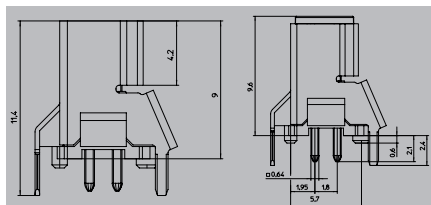
- Only one pair of wires for data and power
- Multi-port support
- Robust locking mechanism
- Shock and vibration proof
- Most compact design

### PCB connector, 180°

Pin contact



SPElink®



#### Technical data

Category  
 Protection degree  
 Ambient temperature (operational)  
 Transmission rate  
 Type of connection  
 Outgoing elbow  
 Number of poles  
 Mounting onto the PCB  
 Plugging cycles  
 Contact material  
 Contact surface  
 Rated voltage  
 Rated current  
 Insulation strength  
 PoE / PoE+  
 Dielectric strength, contact / contact  
 Dielectric strength, contact / shield  
 Connector standard  
 UL 94 flammability rating

T1-B  
 IP20  
 -40...85 °C  
 10/100 MBit/s, 1000 MBit/s  
 Solder connection, Male contact  
 180°  
 2  
 THT/THR solder connection  
 750  
 Cu  
 Ni/Au  
 72 V  
 4 A  
 ≥ 500 MΩ  
 PoDL acc. to IEEE 802.3bu / cg  
 1000 V DC  
 2250 V DC  
 IEC 63171-2  
 V-0

Note

#### Ordering data

PCB connector, IP20, pin contact  
 PCB connector, IP20, pin contact incl. LEDs

Note

Type	Qty.	Order No.
IE-PCB-SP0-P-180V-THR	100	2795170000

#### Accessories

Type	Qty.	Order No.
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Note

Connection components

Empty housing

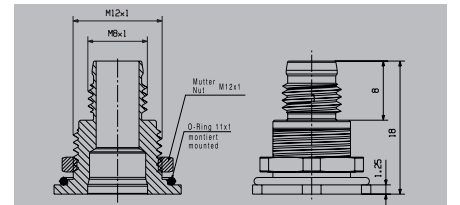
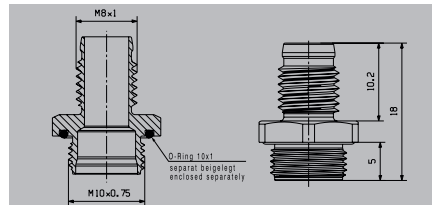
M8 front wall mounting

M8 rear wall mounting



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Technical data

Category
Ambient temperature (operational)
Protection degree
Housing main material
Seal material
Configuration
Type of mounting
Connection thread
Connector standard
Tightening torque fixing nut
<b>Note</b>

-40...85 °C
IP67
Brass, nickel-plated
FKM
Frontpanel mounting
Screw mounting
M10 x 0.75
IEC 61076-2-104, IEC 63171-5
2.5 Nm
<b>Note</b>

40...85 °C
IP67
Brass, nickel-plated
FKM
Backpanel mounting
Screw mounting
M10 x 0.75
IEC 61076-2-104, IEC 63171-5
2.5 Nm
<b>Note</b>

Ordering data

<b>Note</b>
-------------

Type	Qty.	Order No.
IE-BHD-SPE-M8-OT-FP	10	2726020000
Inserts and fixing nut must be ordered separately.		

Type	Qty.	Order No.
IE-BHD-SPE-M8-OT-BP	20	2726030000
Inserts to be ordered separately, fixing nut included.		

Accessories

Fastening nut
---------------

Type	Qty.	Order No.
IE-BHD-SPE-FP-CN-M10X0.75	10	2739640000

Type	Qty.	Order No.
IE-BHD-SPE-FP-CN-M10X0.75	10	2739640000

<b>Note</b>
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<b>Note</b>
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<b>Note</b>
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PCB insert

M8 insert 180° pin contacts

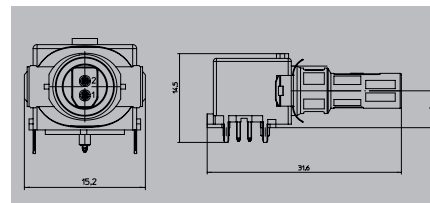
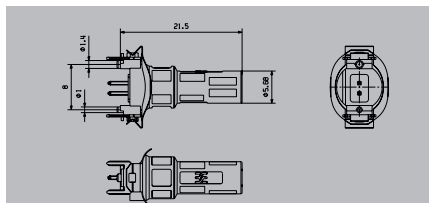
M8 insert 90° pin contacts



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Technical data

Category	T1-B
Ambient temperature (operational)	-40...85 °C
Protection degree	IP67 with housing
Pollution severity	2
Connection thread	M8
Number of poles	2
Type of connection	Solder connection, Male contact
Outgoing elbow	180°
Contact material	Copper alloy
Contact surface	Ni/Au
Contact carrier material	LCP
Operational voltage range	≤ 50 V AC, ≤ 60 V DC
Rated current	4 A
Insulation strength	≥ 500 MΩ
Dielectric strength, contact / contact	1000 V DC
Dielectric strength, contact / shield	2250 V DC
Connector standard	IEC 63171-5
UL 94 flammability rating	V-0
Note	

Category	T1-B
Ambient temperature (operational)	-40...85 °C
Protection degree	IP67 with housing
Pollution severity	2
Connection thread	M8
Number of poles	2
Type of connection	Solder connection, Male contact
Outgoing elbow	90°
Contact material	Copper alloy
Contact surface	Ni/Au
Contact carrier material	LCP
Operational voltage range	≤ 50 V AC, ≤ 60 V DC
Rated current	4 A
Insulation strength	≥ 500 MΩ
Dielectric strength, contact / contact	1000 V DC
Dielectric strength, contact / shield	2250 V DC
Connector standard	IEC 63171-5
UL 94 flammability rating	V-0
Note	

Category	T1-B
Ambient temperature (operational)	-40...85 °C
Protection degree	IP67 with housing
Pollution severity	2
Connection thread	M8
Number of poles	2
Type of connection	Solder connection, Male contact
Outgoing elbow	90°
Contact material	Copper alloy
Contact surface	Ni/Au
Contact carrier material	LCP
Operational voltage range	≤ 50 V AC, ≤ 60 V DC
Rated current	4 A
Insulation strength	≥ 500 MΩ
Dielectric strength, contact / contact	1000 V DC
Dielectric strength, contact / shield	2250 V DC
Connector standard	IEC 63171-5
UL 94 flammability rating	V-0
Note	

Ordering data

Type	Qty.	Order No.
THR	100	2735920000
SMD	100	2795110000
Note		

Type	Qty.	Order No.
IE-PCB-SPM-P-180-THR	100	2735920000
IE-PCB-SPM-P-180-SMD	100	2795110000
Note		

Type	Qty.	Order No.
IE-PCB-SPM-P-90-THR	100	2795100000
Note		

Accessories

Type	Qty.	Order No.
Note		

Type	Qty.	Order No.
Note		

Type	Qty.	Order No.
Note		

Note		
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Note		
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Note		
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# IP20 plug-in connectors and mounting rail outlets

## Overview

<b>IP20 plug-in connectors and mounting rail outlets</b>	IP20 plug-in connectors	Single Pair Ethernet (SPE) plug	L.2
		RJ45 plug	L.4
		FD Connector	L.10
		RJ45 keystone	L.11
		<hr/>	
	IP20 mounting rail outlets	Coupling Single Pair Ethernet (SPE)	L.13
		RJ45	L.14
		RJ45 and RJ12 Counter installation (Smart Metering)	L.17
		USB	L.19
		FD	L.20
		Socket adapter	L.22

## IP20 plug-in connectors

### Single Pair Ethernet (SPE) plug

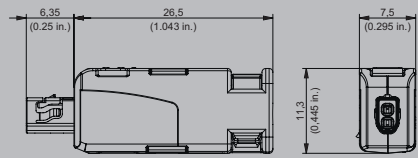
- Only one pair of wires for data and power
- Multi-port support
- IP20

### Field-terminated plug IP20

#### Socket contact



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### Technical data

Category
Protection degree
Transmission rate
Ambient temperature (operational)
Plugging cycles
Housing main material
Contact material
Contact surface
Rated voltage
Connection diameter, flexible, min. / max.
Connection cross-section, flexible, min. / max.
Connection diameter, solid, min. / max.
Connection cross-section, solid, min. / max.
Sheath diameter, min. / max.
Insulation cross-section, min.
Insulation cross-section, max.
Insulation strength
PoE / PoE+
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Connector standard
UL 94 flammability rating

T1-B
IP20
10/100 MBit/s, 100 MBit/s
-40...85 °C
750
zinc diecast nickel-plated
Bronze tin-plated
Gold-plated
0.48...0.76 mm
AWG 26...AWG 22
0.41...0.64 mm
AWG 24...AWG 22
3.6...5.7 mm
0.85 mm
1.6 mm
≥ 500 MΩ
PoDL acc. to IEEE 802.3bu / cg
≥ 1000 V DC
≥ 1500 V DC
IEC 63171-2
V-0

#### Note

### Ordering data

Plug	field-terminated plug
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#### Note

Type	Qty.	Order No.
IE-PS-SPO-S-FH-180	1	2726040000

### Accessories

Type	Qty.	Order No.
------	------	-----------

#### Note



### Single Pair Ethernet (SPE) plug

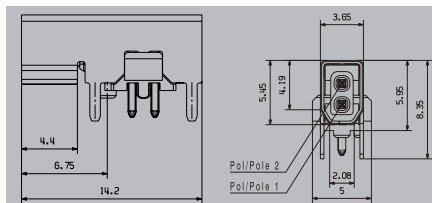
- Only one pair of wires for data and power
- Multi-port support
- Robust locking mechanism
- Shock and vibration proof
- Most compact design

### PCB connector, 90°

Pin contact



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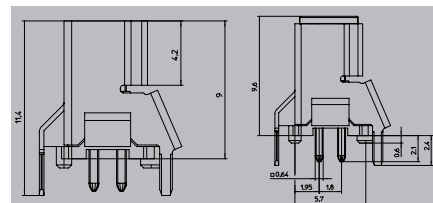


### PCB connector, 180°

Pin contact



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### Technical data

Category
Protection degree
Ambient temperature (operational)
Transmission rate
Type of connection
Outgoing elbow
Number of poles
Mounting onto the PCB
Plugging cycles
Contact material
Contact surface
Rated voltage
Insulation strength
PoE / PoE+
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Connector standard
UL 94 flammability rating

T1-B
IP20
-40...85 °C
10/100 MBit/s, 1000 MBit/s
Solder connection, Male contact
90°
2
THT/THR solder connection
750
Cu
Ni/Au
72 V
≥ 500 MΩ
PoDL acc. to IEEE 802.3bu / cg
1000 V DC
2250 V DC
IEC 63171-2
V-0

T1-B
IP20
-40...85 °C
10/100 MBit/s, 1000 MBit/s
Solder connection, Male contact
180°
2
THT/THR solder connection
750
Cu
Ni/Au
72 V
≥ 500 MΩ
PoDL acc. to IEEE 802.3bu / cg
1000 V DC
2250 V DC
IEC 63171-2
V-0

Note

### Ordering data

PCB connector, IP20, pin contact
PCB connector, IP20, pin contact incl. LEDs

Note

Type	Qty.	Order No.
IE-PCB-SPO-P-90V-THR	100	2726010000
IE-PCB-SPO-P-90V-THR-YG/YG	100	2795120000

Type	Qty.	Order No.
IE-PCB-SPO-P-180V-THR	100	2795170000

### Accessories

Type	Qty.	Order No.

Type	Qty.	Order No.

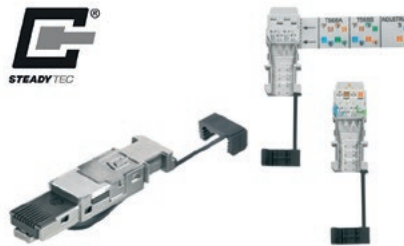
Note

## IP20 plug-in connectors

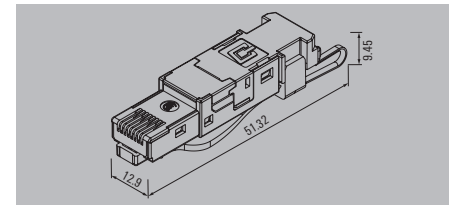
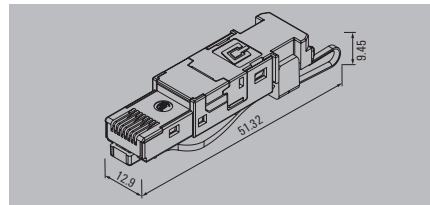
### RJ45 plug, tool free

- Cat. 6A(8 wires)/cat. 5 (4 wires) for PROFINET
- Multi-port support
- IP20

### 8-wire



### 4-wire for PROFINET



### Technical data

Category
Protection degree
Housing main material
Connection diameter, flexible, min. / max.
Connection cross-section, flexible, min. / max.
Connection diameter, solid, min. / max.
Connection cross-section, solid, min. / max.
Wire connection cross-section, finely stranded
Insulation diameter, min. / max.
Sheath diameter, min. / max.
Contact surface
Shielding
Plugging cycles
Ambient temperature (operational)
Contact resistance
Insulation strength
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Connector standard
Current-carrying capacity at 50 °C
Speed
PoE / PoE+
Approvals

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP20
Zinc diecast
0.48 mm / 0.76 mm
AWG 26/7 / AWG 22/7
0.41 mm / 0.64 mm
AWG 24/1 / AWG 22/1
Approval of the cable by Weidmüller necessary
0.85 mm / 1.6 mm
5.5 mm / 8.5 mm
Gold over nickel
360° all-round enclosure
750
-40 °C...70 °C
≤ 20 mΩ
≥ 500 MΩ
≥ 1000 V DC
≥ 1500 V DC
IEC 60603-7-51
1 A
10 GBit/s
conforming to IEEE 802.3at
CULUS
Approvals available on request

Cat.5 (ISO/IEC 11801)
IP20
Zinc diecast
0.48 mm / 0.76 mm
AWG 26/7 / AWG 22/7
0.41 mm / 0.64 mm
AWG 26/1 / AWG 22/1
Approval of the cable by Weidmüller necessary
0.85 mm / 1.6 mm
5.5 mm / 8.5 mm
Gold over nickel
360° all-round enclosure
750
-40 °C...70 °C
≤ 20 mΩ
≥ 500 MΩ
≥ 1000 V DC
≥ 1500 V DC
IEC 60603-7-51
1 A
10 GBit/s
conforming to IEEE 802.3at
CULUS

#### Note

### Ordering data

Plug	
	with tear-off flags: EIA/TIA T568-A/B / PROFINET
	with printing: PROFINET
	with printing: EIA/TIA T568-A
	with printing: EIA / TIA T568-B

#### Note

Type	Qty.	Order No.
IE-PS-RJ45-FH-BK	10	1963600000
IE-PS-RJ45-FH-BK-A	10	1132040000
IE-PS-RJ45-FH-BK-B	10	1132050000

Type	Qty.	Order No.
IE-PS-RJ45-FH-BK-P	10	1132060000

### Accessories

Strain relief	
green	
grey	
blue	
orange	
yellow	
white	

#### Tools

Optional pressing tool

Type	Qty.	Order No.
IE-CR-IP20-RJ45-FH-GN	10	1963100000
IE-CR-IP20-RJ45-FH-GY	10	1963060000
IE-CR-IP20-RJ45-FH-BU	10	1963080000
IE-CR-IP20-RJ45-FH-OG	10	1963070000
IE-CR-IP20-RJ45-FH-YE	10	1963090000
IE-CR-IP20-RJ45-FH-WH	10	1963050000
PWZ RJ45	1	1118040000

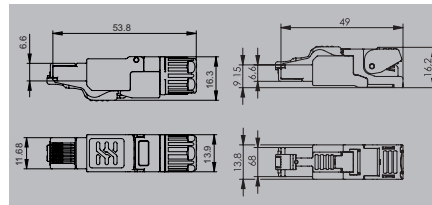
Type	Qty.	Order No.
IE-CR-IP20-RJ45-FH-GN	10	1963100000
IE-CR-IP20-RJ45-FH-GY	10	1963060000
IE-CR-IP20-RJ45-FH-BU	10	1963080000
IE-CR-IP20-RJ45-FH-OG	10	1963070000
IE-CR-IP20-RJ45-FH-YE	10	1963090000
IE-CR-IP20-RJ45-FH-WH	10	1963050000
PWZ RJ45	1	1118040000

#### Note

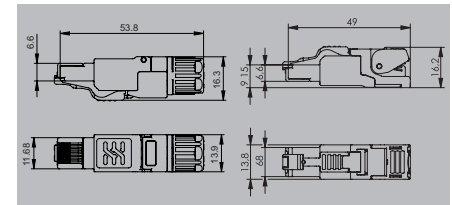
**RJ45 plug, straight, tool free**

- Fieldattachable
- Cat. 6<sub>A</sub> (8-wire)
- Multi-port-compatible
- IP20

**8-wire, insulation diameter 1.1 - 1.6 mm**



**8-wire, insulation diameter 0.85 - 1.1 mm**



**Technical data**

Category  
 Protection degree  
 Housing main material  
 Connection diameter, flexible, min. / max.  
 Connection cross-section, flexible, min. / max.  
 Connection diameter, solid, min. / max.  
 Connection cross-section, solid, min. / max.  
 Connection diameter, very finely stranded, min./max.  
 Connection cross-section, very finely stranded, min./max.

Cat.6A / Class EA (ISO/IEC 11801 2010)  
 IP20  
 Zinc diecast, nickel-plated  
 0.46 mm / 0.76 mm  
 AWG 27 / AWG 22  
 0.51 mm / 0.64 mm  
 AWG 24 / AWG 22  
 0.61 mm / 0.78 mm / Approval of the cable by Weidmüller necessary  
 AWG 24 / AWG 22 / Approval of the cable by Weidmüller necessary

Cat.6A / Class EA (ISO/IEC 11801 2010)  
 IP20  
 Zinc diecast, nickel-plated  
 0.46 mm / 0.61 mm  
 AWG 27 / AWG 24  
 0.41 mm / 0.51 mm  
 AWG 26 / AWG 24  
 0.51 mm / / Approval of the cable by Weidmüller necessary  
 AWG 26 / / Approval of the cable by Weidmüller necessary

Insulation diameter, min. / max.  
 Sheath diameter, min. / max.  
 Contact surface  
 Shielding  
 Plugging cycles  
 Ambient temperature (operational)  
 Contact resistance  
 Insulation strength  
 Dielectric strength, contact / contact  
 Dielectric strength, contact / shield  
 Connector standard  
 Current-carrying capacity at 50 °C  
 Speed  
 PoE / PoE+  
 Approvals

1.1 mm / 1.6 mm  
 5 mm / 9 mm  
 Gold over nickel  
 360° all-round enclosure  
 750  
 -40 °C...85 °C  
 ≤ 20 mΩ  
 ≥ 500 MΩ  
 ≥ 1000 V DC  
 ≥ 1500 V DC  
 IEC 60603-7-51  
 1 A  
 10 GBit  
 conforming to IEEE 802.3at  
 CULUS; DETNORVER

0.85 mm / 1.1 mm  
 5 mm / 9 mm  
 Gold over nickel  
 360° all-round enclosure  
 750  
 -40 °C...85 °C  
 ≤ 20 mΩ  
 ≥ 500 MΩ  
 ≥ 1000 V DC  
 ≥ 1500 V DC  
 IEC 60603-7-51  
 1 A  
 10 GBit  
 conforming to IEEE 802.3at  
 CULUS; DETNORVER

**Note**

**Ordering data**

Plug with latching strain relief	
	with printing: EIA/TIA T568-A
	with printing: EIA / TIA T568-B
Plug with cable gland	
	with printing: EIA/TIA T568-A
	with printing: EIA / TIA T568-B

**Note**

Type	Qty.	Order No.
IE-PS-RJ45-FH-180-A-1.6	1	1992820000
IE-PS-RJ45-FH-180-B-1.6	1	1992830000
IE-PS-RJ45-FH-180-A-1.6-CG	1	2703390000
IE-PS-RJ45-FH-180-B-1.6-CG	1	2703410000

Type	Qty.	Order No.
IE-PS-RJ45-FH-180-A-1.1	1	1992850000
IE-PS-RJ45-FH-180-B-1.1	1	1992860000
IE-PS-RJ45-FH-180-A-1.1-CG	1	2703440000
IE-PS-RJ45-FH-180-B-1.1-CG	1	2703460000

**Accessories**

Substitute wire manager	
TIA-A, insulation diameter 1.1...1.6 mm	
TIA-B, insulation diameter 1.1...1.6 mm	
TIA-A, insulation diameter 0.85...1 mm	
TIA-B, insulation diameter 0.85...1 mm	

**Tools**

Optional pressing tool

Type	Qty.	Order No.
IE-PI-RJ45-FH-A-1.6	30	1992880000
IE-PI-RJ45-FH-B-1.6	30	1992900000
PWZ RJ45	1	1118040000

Type	Qty.	Order No.
IE-PI-RJ45-FH-A-1.1	30	1992920000
IE-PI-RJ45-FH-B-1.1	30	1992930000
PWZ RJ45	1	1118040000

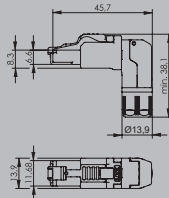
**Note**

## IP20 plug-in connectors

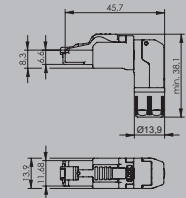
### RJ45 plug, angled, tool free

- Assembled
- Cat. 6<sub>A</sub> (8-wire)
- Compatible with multiple ports
- IP20

### 8-wire, insulation diameter 1.1 - 1.6 mm



### 8-wire, insulation diameter 0.85 - 1.1 mm



### Technical data

Category  
Protection degree  
Housing main material  
Connection diameter, flexible, min. / max.  
Connection cross-section, flexible, min. / max.  
Connection diameter, solid, min. / max.  
Connection cross-section, solid, min. / max.  
Connection diameter, very finely stranded, min./max.  
  
Connection cross-section, very finely stranded, min./max.

Insulation diameter, min. / max.  
Sheath diameter, min. / max.  
Contact surface  
Shielding  
Plugging cycles  
Ambient temperature (operational)  
Contact resistance  
Insulation strength  
Dielectric strength, contact / contact  
Dielectric strength, contact / shield  
Connector standard  
Current-carrying capacity at 50 °C  
Speed  
PoE / PoE+  
Approvals

#### Note

Cat.6A / Class EA (ISO/IEC 11801 2010)  
IP20  
Zinc diecast, nickel-plated  
0.46 mm / 0.76 mm  
AWG 27 / AWG 22  
0.51 mm / 0.64 mm  
AWG 24 / AWG 22  
0.61 mm / 0.78 mm / Approval of the cable by Weidmüller necessary  
  
AWG 24 / AWG 22 / Approval of the cable by Weidmüller necessary

1.1 mm / 1.6 mm  
5 mm / 9 mm  
Gold over nickel  
360° all-round enclosure  
750  
-40 °C...85 °C  
≤ 20 mΩ  
≥ 500 MΩ  
≥ 1000 V DC  
≥ 1500 V DC  
IEC 60603-7-51  
1 A  
10 GBit  
conforming to IEEE 802.3at  
CULUS; DETNORVER

Cat.6A / Class EA (ISO/IEC 11801 2010)  
IP20  
Zinc diecast, nickel-plated  
0.46 mm / 0.61 mm  
AWG 27 / AWG 24  
0.41 mm / 0.51 mm  
AWG 26 / AWG 24  
0.51 mm / / Approval of the cable by Weidmüller necessary  
  
AWG 26 / / Approval of the cable by Weidmüller necessary

0.85 mm / 1.1 mm  
5 mm / 9 mm  
Gold over nickel  
360° all-round enclosure  
750  
-40 °C...85 °C  
≤ 20 mΩ  
≥ 500 MΩ  
≥ 1000 V DC  
≥ 1500 V DC  
IEC 60603-7-51  
1 A  
10 GBit  
conforming to IEEE 802.3at  
CULUS; DETNORVER

### Ordering data

Plug  
with printing: EIA/TIA T568-A  
with printing: EIA / TIA T568-B

#### Note

Type	Qty.	Order No.
IE-PS-RJ45-FH-90-A-1.6	1	1992870000
IE-PS-RJ45-FH-90-B-1.6	1	1992890000

With pre-installed dust cap

Type	Qty.	Order No.
IE-PS-RJ45-FH-90-A-1.1	1	1518080000
IE-PS-RJ45-FH-90-B-1.1	1	1518090000

With pre-installed dust cap

### Accessories

Substitute wire manager  
TIA-A, insulation diameter 1.1...1.6 mm  
TIA-B, insulation diameter 1.1...1.6 mm  
TIA-A, insulation diameter 0.85...1 mm  
TIA-B, insulation diameter 0.85...1 mm

#### Tools

Optional pressing tool

Type	Qty.	Order No.
IE-PI-RJ45-FH-A-1.6	30	1992880000
IE-PI-RJ45-FH-B-1.6	30	1992900000
PWZ RJ45	1	1118040000

Type	Qty.	Order No.
IE-PI-RJ45-FH-A-1.1	30	1992920000
IE-PI-RJ45-FH-B-1.1	30	1992930000
PWZ RJ45	1	1118040000

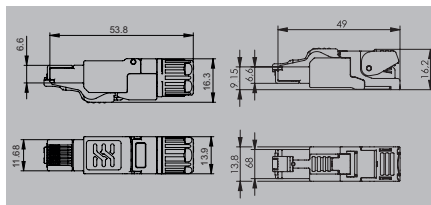
#### Note

### RJ45 plug, straight and angled, tool free

- Fieldattachable
- Cat. 5 (4-wire) for PROFINET
- Multi-port-compatible
- IP20

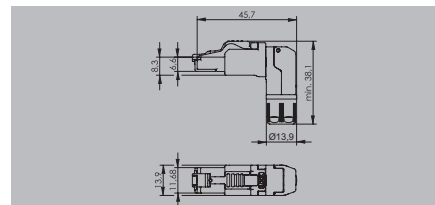
### 4-wire for PROFINET

straight



### 4-wire for PROFINET

angled



#### Technical data

Category
Protection degree
Housing main material
Connection diameter, flexible, min. / max.
Connection cross-section, flexible, min. / max.
Connection diameter, solid, min. / max.
Connection cross-section, solid, min. / max.
Connection diameter, very finely stranded, min./max.
Connection cross-section, very finely stranded, min./max.
Insulation diameter, min. / max.
Sheath diameter, min. / max.
Contact surface
Shielding
Plugging cycles
Ambient temperature (operational)
Contact resistance
Insulation strength
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Connector standard
Current-carrying capacity at 50 °C
Speed
PoE / PoE+
Approvals

#### Note

Cat.5 (ISO/IEC 11801)
IP20
Zinc diecast, nickel-plated
0.46 mm / 0.76 mm
AWG 27 / AWG 22
0.51 mm / 0.64 mm
AWG 24 / AWG 22
0.61 mm / 0.78 mm / Approval of the cable by Weidmüller necessary
AWG 24 / AWG 22 / Approval of the cable by Weidmüller necessary
1.1 mm / 1.6 mm
5 mm / 9 mm
Gold over nickel
360° all-round enclosure
750
-40 °C...85 °C
≤ 20 mΩ
≥ 500 MΩ
≥ 1000 V DC
≥ 1500 V DC
IEC 60603-7-51
1 A
100 MBit
conforming to IEEE 802.3at
CULUS; DETNORVER

Cat.5 (ISO/IEC 11801)
IP20
Zinc diecast, nickel-plated
0.46 mm / 0.76 mm
AWG 27 / AWG 22
0.51 mm / 0.64 mm
AWG 24 / AWG 22
0.61 mm / 0.78 mm / Approval of the cable by Weidmüller necessary
AWG 24 / AWG 22 / Approval of the cable by Weidmüller necessary
1.1 mm / 1.6 mm
5 mm / 9 mm
Gold over nickel
360° all-round enclosure
750
-40 °C...85 °C
≤ 20 mΩ
≥ 500 MΩ
≥ 1000 V DC
≥ 1500 V DC
IEC 60603-7-51
1 A
100 MBit
conforming to IEEE 802.3at
CULUS; DETNORVER

#### Ordering data

<b>Plug with latching strain relief</b>	
	with printing: PROFINET
<b>Plug with cable gland</b>	
	with printing: PROFINET
<b>Note</b>	

Type	Qty.	Order No.
IE-PS-RJ45-FH-180-P-1.6	1	1992840000
IE-PS-RJ45-FH-180-P-1.6-CG	1	2703420000
With pre-installed dust cap		

Type	Qty.	Order No.
IE-PS-RJ45-FH-90-P-1.6	1	1518100000
With pre-installed dust cap		

#### Accessories

<b>Substitute wire manager</b>	
	PROFINET, insulation diameter 1.1...1.6 mm
<b>Tools</b>	
	Optional pressing tool

Type	Qty.	Order No.
IE-PI-RJ45-FH-P-1.6	30	1992910000
PWZ RJ45	1	1118040000

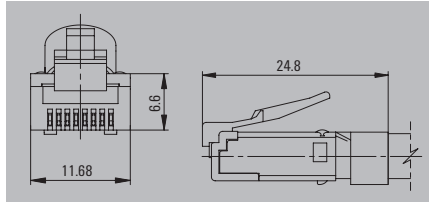
Type	Qty.	Order No.
IE-PI-RJ45-FH-P-1.6	30	1992910000
PWZ RJ45	1	1118040000

#### Note

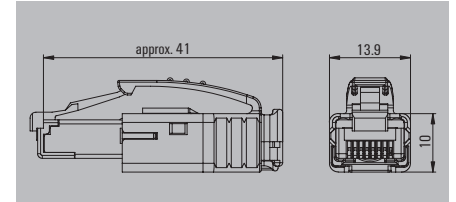
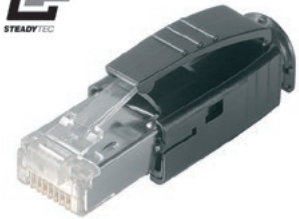
RJ45 crimp plug

- Cat. 6
- With anti-folding protection
- With anti-crash lever protection

8-wire, housing 1-part



8-wire, housing 2-part



Technical data

Category	
Protection degree	
Connection diameter, flexible, min. / max.	
Connection cross-section, flexible, min. / max.	
Connection diameter, solid, min. / max.	
Connection cross-section, solid, min. / max.	
Insulation cross-section, max.	
Sheath diameter, min. / max.	
Shielding	
Plugging cycles	
Ambient temperature (operational)	
Connector standard	
Bending protection sleeve material	
Material insulator	
Contact material / Contact surface	
Shielding material	
Cable pull-out force, min.	
Contact resistance	
Insulation strength	
Dielectric strength, contact / contact	
Dielectric strength, contact / shield	
Current-carrying capacity at 50 °C	
PoE / PoE+	
Approvals	
<b>Note</b>	

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP20
0.46 mm / 0.61 mm
AWG 27 / AWG 24
0.36 mm / 0.51 mm
AWG 27 / AWG 24
1.05 mm
5.5 mm / 6.2 mm
360° all-round enclosure
750
-40 °C...70 °C
IEC 60603-7-51
PVC, UL 94-V0
Polycarbonate PC, UL 94 V-0
Phosphorus bronze / Gold-plated
0.5 mm brass, 2 µm nickel
89 N
≤ 20 mΩ
500 MΩ
≤ 1000 V DC
≤ 1500 V DC
1 A
conforming to IEEE 802.3af
EAC

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP20
0.46 mm / 0.61 mm
AWG 27 / AWG 24
0.36 mm / 0.51 mm
AWG 27 / AWG 24
1.05 mm
5 mm / 7.3 mm
360° all-round enclosure
750
-40 °C...70 °C
IEC 60603-7-51
Polycarbonate PC, UL 94 V-0
Polycarbonate PC, UL 94 V-0
Phosphorus bronze / Gold-plated
0.5 mm brass, 2 µm nickel
89 N
≤ 20 mΩ
500 MΩ
≤ 1000 V DC
≤ 1500 V DC
1 A
conforming to IEEE 802.3af
CURUS

Ordering data

Plug	
	with kink protection; 5.5 - 6.2 mm
	with anti-kink protection; 6.2 - 7.1 mm
	with anti-kink sleeve, black
	without anti-kink sleeve
<b>Note</b>	

Type	Qty.	Order No.
IE-P63	10	8813110000
IE-P70	10	8813120000
IE-P	100	8813100000

Type	Qty.	Order No.
IE-PS-RJ45-TH-BK	10	1963590000
IE-PM-RJ45-TH	100	1963580000

Accessories

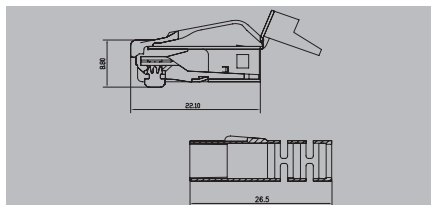
Kink prevention sleeve	
	white
	green
	grey
	yellow
	orange
	black
	blue
Tools	Pressing tool
<b>Note</b>	

Type	Qty.	Order No.
TT 8 RS MP 8	1	9202800000

Type	Qty.	Order No.
IE-PH-RJ45-TH-WH	10	1962430000
IE-PH-RJ45-TH-GN	10	1962490000
IE-PH-RJ45-TH-GY	10	1962440000
IE-PH-RJ45-TH-YE	10	1962480000
IE-PH-RJ45-TH-OG	10	1962450000
IE-PH-RJ45-TH-BK	10	1962500000
IE-PH-RJ45-TH-BU	10	1962470000
TT 8 RS MP 8	1	9202800000

## RJ45 PROFINET crimp plug

## 4-wire for PROFINET, 1-part enclosure



### Technical data

Category
Protection degree
Connection diameter, flexible, min. / max.
Connection cross-section, flexible, min. / max.
Connection diameter, solid, min. / max.
Connection cross-section, solid, min. / max.
Insulation cross-section, max.
Sheath diameter, min. / max.
Shielding
Plugging cycles
Ambient temperature (operational)
Connector standard
Bending protection sleeve material
Material insulator
Contact material / Contact surface
Shielding material
Cable pull-out force, min.
Contact resistance
Insulation strength
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Current-carrying capacity at 50 °C
PoE / PoE+
Approvals

Cat.5 (ISO/IEC 11801)
IP20
0.57 mm / 0.64 mm
AWG 23 / AWG 22
0.57 mm / 0.64 mm
AWG 23 / AWG 22
1.6 mm
/ 7.5 mm
360° all-round enclosure
750
-40 °C...70 °C
IEC 60603-7
Polyamide PA6, UL 94-V0
Copper alloy
≤ 10 mΩ
500 MΩ
1000 V AC
conforming to IEEE 802.3af

**Note**

### Ordering data

<b>Plug</b>
<b>Note</b>

Type	Qty.	Order No.
IE-PS-RJ45-TH-BK-P	10	2584980000

### Accessories

<b>Tools</b>
Pressing tool

Type	Qty.	Order No.
IE-CWZ-RJ45-TH-P	1	2614210000

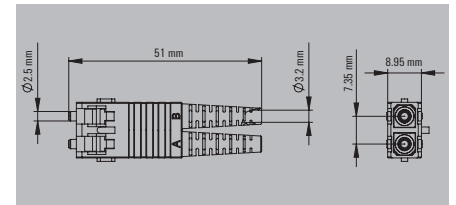
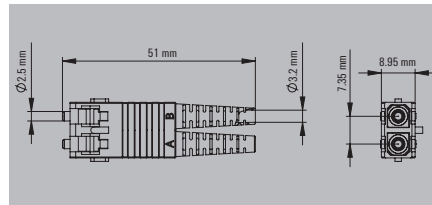
**Note**

FO connector

- IP20

SCRJ, POF, Crimp

SCRJ, POF, reconnectable



Technical data

Protection degree
Plugging cycles
Ambient temperature (operational)
Connector standard
Individual wire diameter, min. / max.
Crimp barrel material
Pressure spring material
Ferrule material
Dust protection cap material
Bending protection sleeve material
Cable pull-out force, min.
Housing main material
Housing material, insert
Humidity
Approvals

IP20
1000
-20 °C...80 °C
IEC 61754-24
2.1 mm...2.3 mm
Copper, nickel-plated
Stainless steel, rust-proof
Nickel silver
TPE
TPE
100 N
PC UL 94 V0
Zinc diecast, nickel-plated
0...93 % rel. humidity
UL

IP20
1000
-20 °C...80 °C
IEC 61754-24
2.1 mm...2.3 mm
Copper, nickel-plated
Stainless steel, rust-proof
Nickel silver
TPE
TPE
100 N
PC UL 94 V0
Zinc diecast, nickel-plated
0...93 % rel. humidity

**Note**

Ordering data

	POF
<b>Note</b>	

Type	Qty.	Order No.
IE-PS-SCRJ1-POF	10	1206720000

Type	Qty.	Order No.
IE-PS-SCRJ1-POF-QA	10	2564950000

Accessories

Tools
Mounting tool, POF
Replacement ferrule
Contact Removal Tool

Type	Qty.	Order No.
HTX-IE-POF	1	1208870000
IE-SCRJ1-IP20-POF-100	100	1278420000
REMOVAL TOOL HD	1	1866730000

Type	Qty.	Order No.
HTX-IE-POF-QA	1	2602860000

**Note**

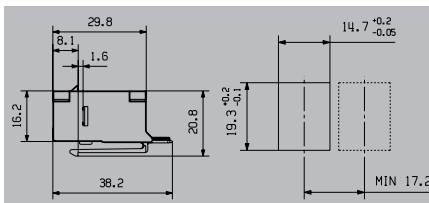
**Note**

**Note**



RJ45 keystone

RJ45 Coupling



Technical data

Housing main material
Category
Protection degree
Plugging cycles
PoE / PoE+
Connector standard
Approvals
<b>Note</b>

Zinc diecast
Cat.6A / Class EA (ISO/IEC 11801 2010)
IP20
750
conforming to IEEE 802.3at
IEC 60603-7-5
EAC
<b>Note</b>

Ordering data

<b>Note</b>
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Type	Qty.	Order No.
IE-XR-RJ45/RJ45-2	24	8952950000

Accessories

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Type	Qty.	Order No.

<b>Note</b>
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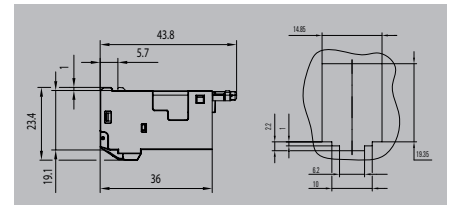
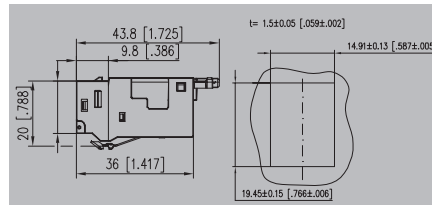
RJ45 keystone

RJ45 module

RJ45 module

Mounting cut-out Rectangular

Mounting cut-out special shape



Technical data

Category	
Wiring	
Protection degree	
Housing main material	
Connection diameter, flexible	
Conductor connection cross-section, flexible (AWG)	
Connection diameter, solid	
Conductor connection cross-section, solid (AWG)	
Insulation cross-section, max.	
Plugging cycles	
Ambient temperature (operational)	
Connector standard	
Contact surface	
Contact resistance	
Insulation strength	
PoE / PoE+	
Dielectric strength, contact / contact	
Dielectric strength, contact / shield	
Approvals	
<b>Note</b>	

Cat.6A / Class EA (ISO/IEC 11801 2010)	
TIA-568A, TIA-568B, PROFINET	
IP20	
Zinc diecast	
0.48...0.76 mm	
AWG 26...AWG 22	
0.41...0.64	
AWG 26...AWG 22	
1.8	
750	
-40...70 °C	
IEC 60603-7-51	
Gold over nickel	
≤ 20 mΩ	
500 MΩ	
conforming to IEEE 802.3at	
≥ 1000 V DC	
<b>Note</b>	

Cat.6A / Class EA (ISO/IEC 11801 2010)	
TIA-568A, TIA-568B, PROFINET	
IP20	
Zinc diecast	
0.48...0.76 mm	
AWG 26...AWG 22	
0.41...0.64	
AWG 26...AWG 22	
1.8	
750	
-40...70 °C	
IEC 60603-7-51	
Gold over nickel	
≤ 20 mΩ	
500 MΩ	
conforming to IEEE 802.3at	
≥ 1000 V DC	
DETNRVER	
<b>Note</b>	

Ordering data

<b>Note</b>	
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Type	Qty.	Order No.
IE-KEY-RJ45/DC-1	1	2782300000

Type	Qty.	Order No.
IE-XRJ45/DC	1	8808330000

Accessories

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Type	Qty.	Order No.

Type	Qty.	Order No.

<b>Note</b>	
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**Coupling Single Pair Ethernet (SPE)**

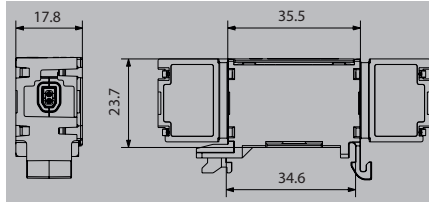
- Only one pair of wires for data and power
- IP20
- TS35

**Outlet direction straight**

**Pin contacts**



**SPElink®**



**Technical data**

Category  
 Protection degree  
 Ambient temperature (operational)  
 Plugging cycles  
 Housing main material  
 Contact material  
 Contact surface  
 Rated voltage  
 Rated current  
 Insulation cross-section, min.  
 Insulation cross-section, max.  
 Insulation strength  
 PoE / PoE+  
 Dielectric strength, contact / contact  
 Dielectric strength, contact / shield  
 Connector standard  
 UL 94 flammability rating

T1-B  
 IP30, in closed state  
 -40...70 °C  
 750  
 PA 66  
 Cu  
 Gold over nickel  
  
 3.5 A at 0°C  
  
 ≥ 500 MΩ  
 PoDL acc. to IEEE 802.3bu / cg  
 ≥ 1000 V DC  
 2250 V DC  
 IEC 63171-2  
 V-0

**Note**

**Ordering data**

**Note**

Type	Qty.	Order No.
IE-TO-SP0-CLP	10	<b>2870790000</b>

**Accessories**

**Marking tags** MultiCard, white

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	<b>1857440000</b>

**Note**

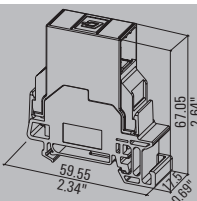


Module RJ45

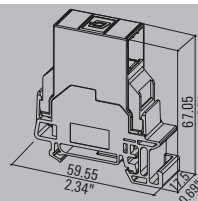
Outlet direction straight

- Cat. 6<sub>A</sub>
- IP20
- TS 35

8-wire



4-wire



Technical data

Category
Protection degree
Housing main material
Contact surface
Colour
Type of mounting
Plugging cycles
Configuration
Ambient temperature (operational)
Temperature range, assembly, min. / max.
Connector standard
Connection diameter, flexible, min. / max.
Connection cross-section, flexible, min. / max.
Connection diameter, solid, min. / max.
Connection cross-section, solid, min. / max.
<b>Electrical properties*</b>
PoE / PoE+
Contact resistance
Current-carrying capacity at 50 °C
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Insulation strength
Approvals
<b>Note</b>

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP20
PA UL 94 V0
Au ≥ 0.8 µm
Light Grey
TS 35
750 (RJ45)
Switchable volt. connection from module/coupling to mounting rail
-40 °C...70 °C
-25 °C...70 °C
IEC 60603-7-51
0.48 mm / 0.76 mm
AWG 26 / AWG 22
0.4 mm / 0.64 mm
AWG 24 / AWG 22
conforming to IEEE 802.3af
≤ 20 mΩ
1 A
≥ 1000 V DC
≥ 1500 V DC
500 MΩ
EAC
Weidmüller connection cat. 7 AWG 27/7 LSZH cable possible

Cat.5 (ISO/IEC 11801)
IP20
PA UL 94 V0
Au ≥ 0.8 µm
Light Grey
TS 35
750 (RJ45)
Switchable volt. connection from module/coupling to mounting rail
-40 °C...70 °C
-25 °C...70 °C
IEC 60603-7-51
0.48 mm / 0.76 mm
AWG 26 / AWG 22
0.4 mm / 0.64 mm
AWG 24 / AWG 22
conforming to IEEE 802.3af
≤ 20 mΩ
1 A
≥ 1000 V DC
≥ 1500 V DC
500 MΩ
EAC

Ordering data

A-coded
B-coded
PROFINET-coded
<b>Note</b>

Type	Qty.	Order No.
IE-TO-RJ45-FJ-A	10	8946930000
IE-TO-RJ45-FJ-B	10	8946940000

Type	Qty.	Order No.
IE-TO-RJ45-FJ-P	10	8946950000

Accessories

Marking tags
MultiCard, white

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000

<b>Note</b>
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<b>Note</b>
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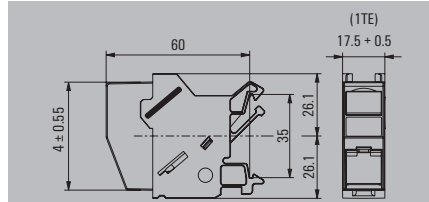
<b>Note</b>
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**Module RJ45**

**Outlet direction diagonal**

- Cat. 6
- IP20
- TS 35

**8-wire**



**Technical data**

Category	Cat.6A / Class EA (ISO/IEC 11801 2010)
Protection degree	IP20
Housing main material	PA 66, UL 94: V-0
Contact surface	
Colour	Light Grey
Type of mounting	TS 35
Plugging cycles	750 (RJ45)
Configuration	1 TE pitch dimension acc. to DIN 43880. insta-compatible Installation flange with mounting frame
Ambient temperature (operational)	-25 °C...70 °C
Temperature range, assembly, min. / max.	...
Connector standard	IEC 60603-7-5
Connection diameter, flexible, min. / max.	0.48 mm / 0.64 mm
Connection cross-section, flexible, min. / max.	AWG 26 / AWG 22
Connection diameter, solid, min. / max.	0.4 mm / 0.64 mm
Connection cross-section, solid, min. / max.	AWG 24 / AWG 22
<b>Electrical properties*</b>	
PoE / PoE+	conforming to IEEE 802.3at
Contact resistance	≤ 20 mΩ
Current-carrying capacity at 50 °C	1 A
Dielectric strength, contact / contact	≥ 1000 V DC
Dielectric strength, contact / shield	≥ 1500 V DC
Insulation strength	500 MΩ
Approvals	CULUS; DETNORVER
<b>Note</b>	

**Ordering data**

	A/B-coded	
<b>Note</b>		
<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-XM-RJ45/IDC	1	8808360000

**Accessories**

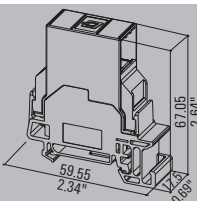
<b>Marking tags</b>	Marking tag	
<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
IE-DM	50	8813500000

**Note**

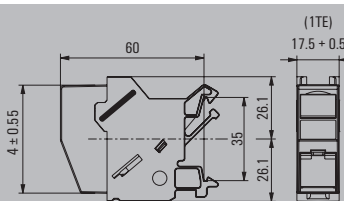
Coupling RJ45, 8-wire

- Cat. 6<sub>A</sub>
- IP20
- TS35

Outlet direction straight



Outlet direction diagonal



Technical data

Category
Protection degree
Housing main material
Contact material / Contact surface
Colour
Type of mounting
Plugging cycles
Configuration
Ambient temperature (operational)
Temperature range, assembly, min. / max.
Humidity
Shock resistance acc. to IEC 60512-6-3
Vibration resistance acc. to IEC 60512-6-4
Housing material, insert
Connector standard
<b>Electrical properties*</b>
PoE / PoE+
Contact resistance
Current-carrying capacity at 50 °C
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Insulation strength
Approvals
<b>Note</b>

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP20
PA UL 94 V0
Spring steel, Ni 1.2 µm / Au ≥ 0.8 µm
Light Grey
TS 35
750 (RJ45)
Switchable volt. connection from module/coupling to mounting rail
-40 °C...70 °C
-25 °C...70 °C
0...93 % rel. humidity
250 ms <sup>2</sup>
50 ms <sup>2</sup> sinusoidal (9...500 Hz)
Zinc diecast
IEC 60603-7-51
conforming to IEEE 802.3af
≤ 20 mΩ
1 A
≥ 1000 V DC
≥ 1500 V DC
500 MΩ
EAC
<b>Note</b>

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP20
PA 66, UL 94: V-0
Light Grey
TS 35
750
1 TE pitch dimension acc. to DIN 43880. insta-compatible
Installation flange with mounting frame
-25 °C...70 °C
...
IEC 60603-7-5
conforming to IEEE 802.3at
≤ 20 mΩ
1 A
≥ 1000 V DC
≥ 1500 V DC
500 MΩ
CULUS; DETNORVER
<b>Note</b>

Ordering data

<b>Note</b>
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Type	Qty.	Order No.
IE-TO-RJ45-C	10	8946920000

Type	Qty.	Order No.
IE-XM-RJ45/RJ45	1	8879050000

Accessories

Marking tags	MultiCard, white Marking tag
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Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
IE-DM	50	8813500000

<b>Note</b>
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<b>Note</b>
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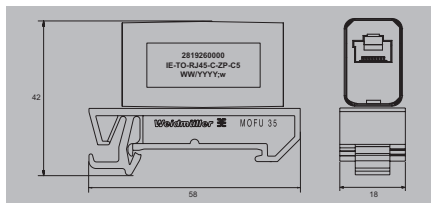
<b>Note</b>
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**Coupling RJ45, Counter installation (Smart Metering)**

- Cat. 5
- IP20

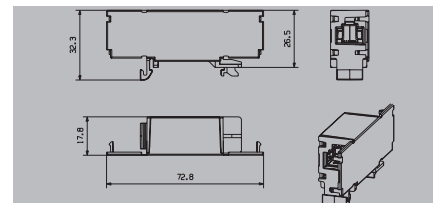
**TS35**

unshielded



**TS35 + mounting in the meter cross**

shielded



**Technical data**

Category
Protection degree
Housing main material
Contact material / Contact surface
Colour
Type of mounting
Plugging cycles
Configuration
Ambient temperature (operational)
Temperature range, assembly, min. / max.
Humidity
Shock resistance acc. to IEC 60512-6-3
Vibration resistance acc. to IEC 60512-6-4
Housing material, insert
Connector standard
<b>Electrical properties*</b>
PoE / PoE+
Contact resistance
Current-carrying capacity at 50 °C
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Insulation strength
Approvals
<b>Note</b>

Cat. 5
IP20
Plastic
/ Gold over nickel
beige, black
TS 35
750 (RJ45)
-40 °C...80 °C
...
Plastic
IEC 60603-7-51
1 A

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP20
Spring steel, Ni 1.2 µm / Au ≥ 0.8 µm
Light Grey
TS 35
750 (RJ45)
Switchable volt. connection from module/coupling to mounting rail
-40 °C...70 °C
...
0...93 % rel. humidity
500 ms <sup>2</sup>
50 ms <sup>2</sup> sinusoidal (10...500 Hz)
Zinc diecast
IEC 60603-7-51
conforming to IEEE 802.3af
≤ 20 mΩ
1 A
≥ 1000 V DC
≥ 1500 V DC
500 MΩ

**Ordering data**

<b>Note</b>
-------------

Type	Qty.	Order No.
IE-T0-RJ45-C-ZP-C5	10	2819260000

Type	Qty.	Order No.
IE-T0-RJ45-C-LP	10	2812440000

**Accessories**

Type	Qty.	Order No.

Type	Qty.	Order No.

Type	Qty.	Order No.

<b>Note</b>
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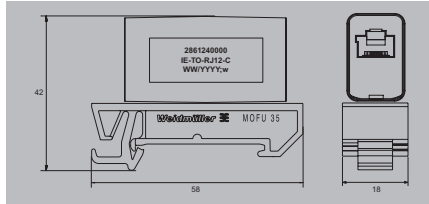
--



**Coupling RJ12, Counter installation  
(Smart Metering)**

- IP20
- unshielded

**TS35**



**Technical data**

Protection degree  
 Housing main material  
 Contact material / Contact surface  
 Colour  
 Type of mounting  
 Plugging cycles  
 Ambient temperature (operational)  
 Housing material, insert  
 Connector standard  
 Approvals

IP20  
 Plastic  
 / Gold over nickel  
 beige, black  
 TS 35  
 ≥ 200  
 -40 °C...80 °C  
 Plastic  
 TIA-1096-A

**Note**

**Ordering data**

**Note**

Type	Qty.	Order No.
IE-T0-RJ12-C	10	2861240000

**Accessories**

Type	Qty.	Order No.
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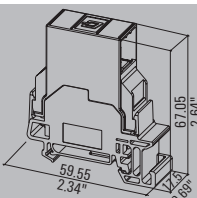
**Note**



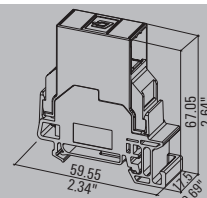
**USB connection**

- IP20
- TS 35

**USB A**



**USB AB**



**Technical data**

Protection degree  
 Housing main material  
 Colour  
 Type of mounting  
 Ambient temperature (operational)  
 Temperature range, assembly, min. / max.  
 Connector standard  
 Connection 1 / 2  
 Approvals

IP20  
 PA UL 94 V0  
 Light Grey  
 TS 35  
 -40 °C...70 °C  
 -25 °C...70 °C  
 IEC 61076-3-107  
 USB A / USB A  
 EAC

IP20  
 PA UL 94 V0  
 Light Grey  
 TS 35  
 -40 °C...70 °C  
 -25 °C...70 °C  
 IEC 61076-3-107  
 USB A / USB B  
 EAC

Note

**Ordering data**

**USB**

Type	Qty.	Order No.
IE-T0-USB	1	<b>8946960000</b>

Type	Qty.	Order No.
IE-T0-USB-AB	1	<b>1438180000</b>

Note

**Accessories**

**Marking tags**

MultiCard, white

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	<b>1857440000</b>

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	<b>1857440000</b>

Note



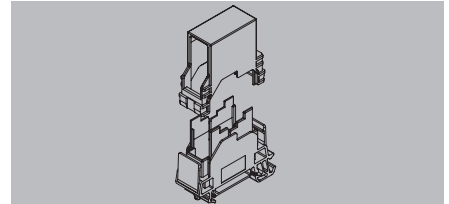
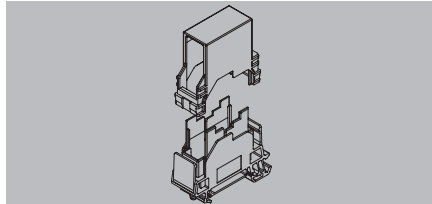
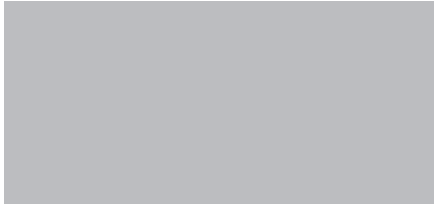
Coupling fibre-optic

- IP20
- TS 35

SC duplex



SC-RJ



Technical data

Protection degree  
 Housing main material  
 Colour  
 Type of mounting  
 Plugging cycles  
 Ambient temperature (operational)  
 Temperature range, assembly, min. / max.  
 Connector standard  
 Approvals

IP20  
 PA UL 94 V0  
 Light Grey  
 TS 35  
 1000  
 -40 °C...70 °C  
 -25 °C...70 °C  
 IEC 61754-4  
 UL

IP20  
 PA UL 94 V0  
 Light Grey  
 TS 35  
 1000  
 -40 °C...70 °C  
 -25 °C...70 °C  
 IEC 61754-24  
 UL

Note

Ordering data

Fibre-optic	
	Singlemode
	Multimode/POF

Type	Qty.	Order No.
IE-TO-SCD-SM	1	8946980000
IE-TO-SCD-MM	10	8946970000

Type	Qty.	Order No.
IE-TO-SCRJ-SM	10	8947000000
IE-TO-SCRJ-MM	10	8946990000

Note

Accessories

Marking tags	
	MultiCard, white

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000

Note

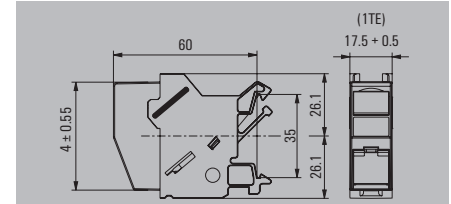
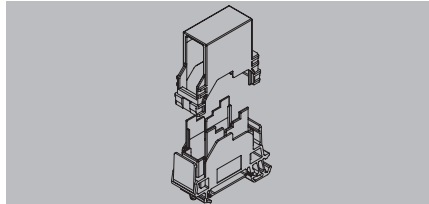
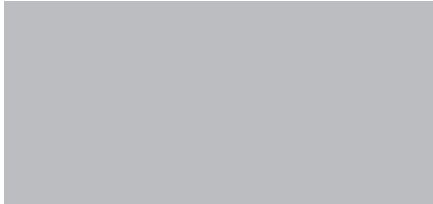
**Coupling fibre-optic**

- IP20
- TS 35

**LC Duplex**



**ST**



**Technical data**

Protection degree  
 Housing main material  
 Colour  
 Type of mounting  
 Configuration

Plugging cycles  
 Ambient temperature (operational)  
 Temperature range, assembly, min. / max.  
 Connector standard  
 Approvals

IP20  
 PA UL 94 V0  
 Light Grey  
 TS 35

1000  
 -40 °C...70 °C  
 -25 °C...70 °C  
 IEC 61754-20  
 EAC

IP20  
 PA 66, UL 94: V-0  
 Light Grey  
 TS 35  
 1 TE pitch dimension acc. to DIN 43880. insta-compatible  
 Installation flange with mounting frame

750  
 -25 °C...70 °C  
 ...  
 IEC 61754-2  
 EAC

**Note**

**Ordering data**

Singlemode  
 Multimode

Type	Qty.	Order No.
IE-TO-LCD-SM	10	8947020000
IE-TO-LCD-MM	10	8947010000

Type	Qty.	Order No.
IE-XM-ST/ST	1	8808340000

**Note**

**Accessories**

Marking tags  
 MultiCard, white  
 Marking tag

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
IE-DM	50	8813500000

**Note**



Socket adapter

- IP20
- TS 35

Socket adapter



Technical data

Protection degree  
 Housing main material  
 Ambient temperature (operational)  
 Approvals

IP20  
 Polycarbonate PC, Acrylnitril-Butadien-Styrol (ABS)  
 -25 °C...70 °C

Note

Ordering data

Note

Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

Accessories

Inserts, Power

- Socket AU 15 A
- Socket AU 10 A
- Socket CH
- Socket CN
- Socket GB
- Socket DE
- Socket DE orange
- Socket DK
- Socket FR orange
- Socket IT/EU
- Socket FR/B/CZ
- Socket IND
- RCBO
- ISR socket

Type	Qty.	Order No.
IE-FCI-PWB-AU	1	1450830000
IE-FCI-PWB-AU-10A	1	1546590000
IE-FCI-PWB-CH	1	1450780000
IE-FCI-PWB-CN	1	1450790000
IE-FCI-PWB-GB	1	1450770000
IE-FCI-PWB-DE	1	1450730000
IE-FCI-PWB-DE-OR	1	1554000000
IE-FCI-PWB-DK	1	2661340000
IE-FCI-PWB-FR-OR	1	2007230000
IE-FCI-PWB-IT	1	1450810000
IE-FCI-PWB-FR/B/CZ	1	2426700000
IE-FCI-PWB-IND	1	2500710000
IE-FCI-PWB-RCBO	1	1534250000
IE-FCI-PWB-ISR	1	2531060000

Note

# FrontCom® IP65 service interfaces

## Overview

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### FrontCom® IP65 service interfaces

FrontCom® Vario IP65 service interface	M.2
FrontCom® Micro IP65 service interface	
RJ45	M.32
Single Pair Ethernet (SPE)	M.33
USB	M.34

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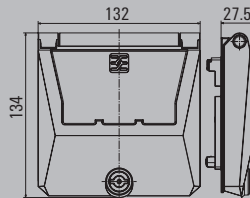
## FrontCom® Vario IP65 service interface

### FrontCom® Vario

#### Double frame

- IP65
- Possibility of using single and double insertion plates

### Metal cover



### Technical data

Protection degree / Protection class (UL)  
 Material cover  
 Material frame  
 Ambient temperature (operational)  
 Approvals

IP65, in closed state / Type 12  
 Zinc diecast, powder-coated  
 Zinc diecast  
 -40 °C...70 °C  
 CSA; CURUS

**Note**

### Ordering data

- Rotary button operation
- Lockable with key
- Lockable with electrical cabinet key
- Lockable with electrical cabinet key (Daimler lock)

Type	Qty.	Order No.
IE-FC-DFM-KNOB	1	2003170000
IE-FC-DFM-KEY	1	2003180000
IE-FC-DFM-CAB	1	2003190000
IE-FC-DFM-CAB-DB	1	2003150000

**Note**

### Accessories

#### spare key

Type	Qty.	Order No.
IE-FC-KEY2	1	2066650000

#### Marking tags

- silver
- light grey
- white

SM 27/18 K MC NE SI	80	1713760000
SM 27/18 K MC NE GR	80	1073340000
SM 27/18 K MC NE WS	80	1707270000
ESG 7/20 SIRIUS MC NE WS	200	1736181044

#### Touch-safe protection

Touch-safe protection

IE-FC-PWPC	1	1450820000
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#### Bar (for mounting single insert plates)

Partition

IE-FC-DF-IPH	1	2003340000
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**Note**

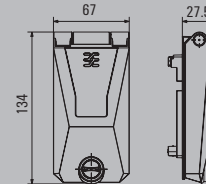
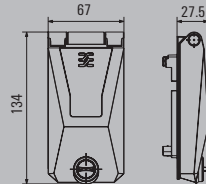
FrontCom® Vario

Single frame

- IP65

Metal cover

Plastic cover



Technical data

Protection degree / Protection class (UL)	
Material cover	
Material frame	
Ambient temperature (operational)	
Approvals	
<b>Note</b>	

IP65, in closed state / Type 12
Zinc diecast, powder-coated
Zinc diecast
-40 °C...70 °C
CSA; CURUS; DETNORVER

IP65, in closed state
Polycarbonate PC
Zinc diecast
-40 °C...70 °C
DETNORVER

Ordering data

Rotary button operation	
Lockable with key	
Control cabinet key (double bit)	
Control cabinet key (Daimler)	
<b>Note</b>	

Type	Qty.	Order No.
IE-FC-SFM-KNOB	1	1450530000
IE-FC-SFM-KEY2	1	1450540000
IE-FC-SFM-CAB	1	2003160000
IE-FC-SFM-CAB-DB	1	2663200000

Type	Qty.	Order No.
IE-FC-SFP-KNOB	1	1450510000
IE-FC-SFP-KEY2	1	1450520000
IE-FC-SFP-CAB	1	2003140000
IE-FC-SFP-CAB-DB	1	2663190000

Accessories

spare key	
Marking tags	
Touch-safe protection	Touch-safe protection
Accessories for mounting cut-out	
	Punch for hole punching tool
	Punching tool

Type	Qty.	Order No.
IE-FC-KEY2	1	2066650000
SM 27/18 K MC NE SI	80	1713760000
SM 27/18 K MC NE GR	80	1073340000
SM 27/18 K MC NE WS	80	1707270000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000
KOK 52 X 91	1	2008410000
IE-KO-HAT	1	1966810000

Type	Qty.	Order No.
IE-FC-KEY2	1	2066650000
SM 27/18 K MC NE SI	80	1713760000
SM 27/18 K MC NE GR	80	1073340000
SM 27/18 K MC NE WS	80	1707270000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000
KOK 52 X 91	1	2008410000
IE-KO-HAT	1	1966810000

Note

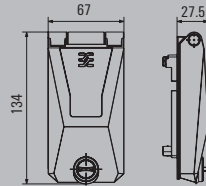


**FrontCom® Vario IP65 service interface**

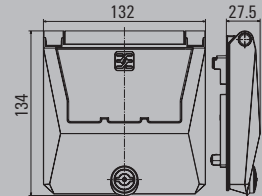
**FrontCom® Vario  
Frame UL Type 4X**

- For particularly harsh environmental conditions (outdoor) with UL Type 4X approval

**Single frame, metal lid**



**Double frame, metal lid**



**Technical data**

Protection degree / Protection class (UL)  
Material cover  
Material frame  
Ambient temperature (operational)  
Approvals

**Note**

IP65, in closed state / Type 4X  
Zinc diecast, powder-coated  
Zinc diecast, powder-coated  
-40 °C...70 °C  
CSA; CURUS; DETNORVER

IP65, in closed state / Type 4X  
Zinc diecast, powder-coated  
Zinc diecast, powder-coated  
-40 °C...70 °C  
CSA; CURUS; DETNORVER

**Ordering data**

Rotary button operation

**Note**

Type	Qty.	Order No.
IE-FC-SFM-KNOB-4X	1	2669630000

Type	Qty.	Order No.
IE-FC-DFM-KNOB-4X	1	2669640000

**Accessories**

**Marking tags**

silver  
light grey  
white

Type	Qty.	Order No.
SM 27/18 K MC NE SI	80	1713760000
SM 27/18 K MC NE GR	80	1073340000
SM 27/18 K MC NE WS	80	1707270000
ESG 7/20 SIRIUS MC NE WS	200	1736181044

Type	Qty.	Order No.
SM 27/18 K MC NE SI	80	1713760000
SM 27/18 K MC NE GR	80	1073340000
SM 27/18 K MC NE WS	80	1707270000
ESG 7/20 SIRIUS MC NE WS	200	1736181044

**Touch-safe protection**

Touch-safe protection

IE-FC-PWPC	1	1450820000
------------	---	------------

IE-FC-PWPC	1	1450820000
------------	---	------------

**Accessories for mounting cut-out**

Punch for hole punching tool  
Punching tool

KDK 52 X 91	1	2008410000
IE-KD-HAT	1	1966810000

**Bar (for mounting single insert plates)**

Partition

IE-FC-DF-IPH	1	2003340000
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**Note**

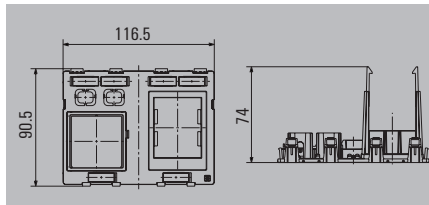


**FrontCom® Vario**

**Insert plates for double frames**

- IP20

**1 x power, 2 x data, 1 x RCBO**



**Technical data**

Material  
 Insert, data  
 Insert Power large  
 Insert RCBO (2 modular width units)  
 Insert suitable for RCBO according to standard  
 Insert GFCl /2 x Power US pre-assembled  
 Ambient temperature (operational)  
 Approvals

Material	Polycarbonate PC
Insert, data	2
Insert Power large	1
Insert RCBO (2 modular width units)	1
Insert suitable for RCBO according to standard	DIN43880
Insert GFCl /2 x Power US pre-assembled	
Ambient temperature (operational)	-40 °C...70 °C
Approvals	CSA; CURUS

**Note**

**Ordering data**

shielded  
 unshielded

Type	Qty.	Order No.
IE-FC-DSP-PWB/2ST/FILS	1	2067080000
IE-FC-DIP-PWB/2ST/FILS	1	2067070000

**Note**

**Accessories**

**Inserts, Data**

SPE Coupling  
 RJ45 coupling  
 RJ45 module EIA/TIA T568 B  
 RJ45 module PROFINET  
 RJ45 module EIA/TIA T568 A  
 USB 2.0 A / A  
 USB 3.0 A / A  
 USB 2.0 A / B

Type	Qty.	Order No.
IE-BI-SPO-C	10	2861260000
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000

**Marking tags**

ESG 7/20 SIRIUS MC NE WS	200	1736181044
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**Touch-safe protection**

Touch-safe protection

IE-FC-PWPC	1	1450820000
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**Note**

An overview of the power inserts can be found in this chapter under power insert sockets.

**FrontCom® Vario IP65 service interface**

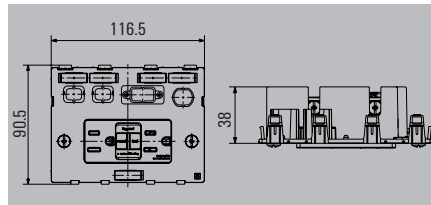
**FrontCom® Vario**

**Insert plates for double frames**

- IP20

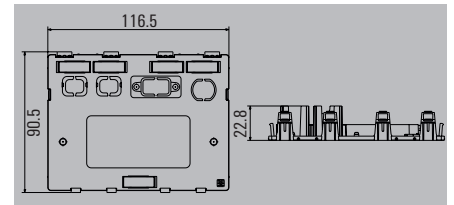
**1x GFCI, 2x data, 1x signal, 1x fuse**

GFCI pre-assembled



**1x GFCI, 2x data, 1x signal, 1x fuse**

without GFCI



**Technical data**

Material	Polycarbonate PC
Insert, data	2
Insert Power large	
Insert fuse	1
Signal insert D-Sub 9-pole / VGA / HDMI	1
Insert RCBO (2 modular width units)	1
Insert GFCI / 2 x Power US pre-assembled	1
Ambient temperature (operational)	-35 °C...66 °C
Approvals	CSA; CURUS
<b>Technical data GFCI insert</b>	
Operating voltage / Rated current	125 V AC / 20 A
GFCI protected US outlet	2 pieces
Self-test	automatically every 3 seconds
Status indication	red LED
Type of connection	Screw connection
Line connection cross-section	
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 4 mm <sup>2</sup>
<b>Note</b>	

Material	Polycarbonate PC
Insert, data	2
Insert Power large	
Insert fuse	1
Signal insert D-Sub 9-pole / VGA / HDMI	1
Insert RCBO (2 modular width units)	1
Insert GFCI / 2 x Power US pre-assembled	1
Ambient temperature (operational)	-35 °C...66 °C
Approvals	CSA; CURUS
<b>Technical data GFCI insert</b>	
Operating voltage / Rated current	125 V AC / 20 A
GFCI protected US outlet	2 pieces
Self-test	automatically every 3 seconds
Status indication	red LED
Type of connection	Screw connection
Line connection cross-section	
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 4 mm <sup>2</sup>
<b>Note</b>	

Material	Polycarbonate PC
Insert, data	2
Insert Power large	
Insert fuse	1
Signal insert D-Sub 9-pole / VGA / HDMI	1
Insert RCBO (2 modular width units)	1
Insert GFCI / 2 x Power US pre-assembled	1
Ambient temperature (operational)	-40 °C...70 °C
Approvals	
<b>Technical data GFCI insert</b>	
Operating voltage / Rated current	125 V AC / 20 A
GFCI protected US outlet	2 pieces
Self-test	automatically every 3 seconds
Status indication	red LED
Type of connection	Screw connection
Line connection cross-section	
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 4 mm <sup>2</sup>
<b>Note</b>	

**Ordering data**

	shielded
	unshielded
<b>Note</b>	

Type	Qty.	Order No.
IE-FC-DSP-CI/3A/2ST/1D9	1	2004810000
IE-FC-DIP-CI/3A/2ST/1D9	1	2003370000
incl. pre-mounted GFCI		

Type	Qty.	Order No.
IE-FC-DIP-PWC-3A/2ST/1D9	1	2897320000

**Accessories**

Inserts, Signal	
	D-Sub, 9-pole, female/female
	D-Sub, 9-pole, female / male
	D-Sub, 9-pole, female / solder connection
	VGA coupling
	HDMI coupling
Fuse inserts	
	3 A
Inserts, Data	
	SPE Coupling
	RJ45 coupling
	RJ45 module EIA/TIA T568 A
	RJ45 module EIA/TIA T568 B
	RJ45 module PROFINET
	USB 2.0 A / A
	USB 3.0 A / A
	USB 2.0 A / B
Marking tags	
<b>Note</b>	

Type	Qty.	Order No.
IE-FCI-D9-FF	1	1450840000
IE-FCI-D9-FM	1	1450850000
IE-FCI-D9-FS	1	1450870000
IE-FCI-HD15-FF	1	1556290000
IE-FCI-HDMI-FF	1	2003390000
IE-FCI-PWCB-3A	1	1543690000
IE-BI-SP0-C	10	2861260000
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000
ESG 7/20 SIRIUS MC NE WS	200	1736181044

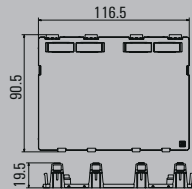
Type	Qty.	Order No.
IE-FCI-D9-FF	1	1450840000
IE-FCI-D9-FM	1	1450850000
IE-FCI-D9-FS	1	1450870000
IE-FCI-HD15-FF	1	1556290000
IE-FCI-HDMI-FF	1	2003390000
IE-FCI-PWCB-3A	1	1543690000
IE-BI-SP0-C	10	2861260000
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000
ESG 7/20 SIRIUS MC NE WS	200	1736181044

**FrontCom® Vario**

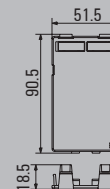
**Insert plates**

- IP20

**blank double plate**



**blank single plate**



**Technical data**

Material  
Ambient temperature (operational)  
Approvals

**Note**

Polycarbonate PC  
-40 °C...70 °C  
CSA; CURUS

Polycarbonate PC  
-40 °C...70 °C  
CSA; CURUS; DETNORVER

**Ordering data**

unshielded

**Note**

Type	Qty.	Order No.
IE-FC-DIP-BP	1	2004890000

Type	Qty.	Order No.
IE-FC-IP-BP	1	1450710000

**Accessories**

Type	Qty.	Order No.

Type	Qty.	Order No.

**Note**

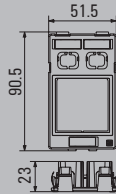
**FrontCom® Vario IP65 service interface**

**FrontCom® Vario**

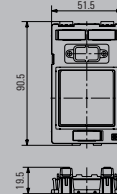
**Insert plates**

- IP20

**1 x power, 2 x data**



**1x Power, 1x Signal**



**Technical data**

Material
Insert, data
Signal insert D-Sub 9-pole / VGA / HDMI
Insert, signal, D-Sub, 25-pole
Insert Power large
Insert Power small
Insert Power US
Ambient temperature (operational)
Approvals
<b>Note</b>

Polycarbonate PC
2
1
-40 °C...70 °C
CSA; CURUS; DETNORVER

Polycarbonate PC
1
1
-40 °C...70 °C
CSA; CURUS

**Ordering data**

shielded
unshielded
<b>Note</b>

Type	Qty.	Order No.
IE-FC-SP-PWB/2ST	1	1450550000
IE-FC-IP-PWB/2ST	1	1450630000

Type	Qty.	Order No.
IE-FC-IP-PWB/1D9	1	2003350000

**Accessories**

Inserts, Data	
SPE Coupling	
RJ45 coupling	
RJ45 module EIA/TIA T568 A	
RJ45 module EIA/TIA T568 B	
RJ45 module PROFINET	
USB 2.0 A / A	
USB 3.0 A / A	
USB 2.0 A / B	
Marking tags	
ESG 7/20 SIRIUS MC NE WS	
Touch-safe protection	
Touch-safe protection	
Inserts, Signal	
D-Sub, 9-pole, female/female	
D-Sub, 9-pole, female / male	
D-Sub, 9-pole, female / solder connection	
VGA coupling	
HDMI coupling	

Type	Qty.	Order No.
IE-BI-SP0-C	10	2861260000
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000

Type	Qty.	Order No.
IE-FC-IP-PWB/1D9	1	2003350000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000
IE-FCI-D9-FF	1	1450840000
IE-FCI-D9-FM	1	1450850000
IE-FCI-D9-FS	1	1450870000
IE-FCI-HD15-FF	1	1556290000
IE-FCI-HDMI-FF	1	2003390000

**Note**

You will find an overview of the power inserts in this chapter under Power inserts-sockets.

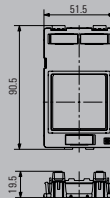
You will find an overview of the power inserts in this chapter under Power inserts-sockets.

**FrontCom® Vario**

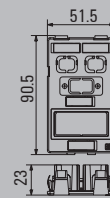
**Insert plates**

- IP20

**1x Power**



**1x Power, 2x Data, 1x Signal**



**Technical data**

Material
Insert, data
Signal insert D-Sub 9-pole / VGA / HDMI
Insert, signal, D-Sub, 25-pole
Insert Power large
Insert Power small
Insert Power US
Ambient temperature (operational)
Approvals
<b>Note</b>

Polycarbonate PC
2
1
1
-40 °C...70 °C
CSA; CURUS
<b>Note</b>

Polycarbonate PC
2
1
1
-40 °C...70 °C
CSA; CURUS; DETNORVER
<b>Note</b>

**Ordering data**

shielded
unshielded
<b>Note</b>

Type	Qty.	Order No.
IE-FC-IP-PWB	1	2548060000
<b>Note</b>		

Type	Qty.	Order No.
IE-FC-SP-PWS/2ST/1D9	1	1450600000
IE-FC-IP-PWS/2ST/1D9	1	1450690000
<b>Note</b>		

**Accessories**

<b>Inserts, Data</b>
SPE Coupling
RJ45 coupling
RJ45 module EIA/TIA T568 A
RJ45 module EIA/TIA T568 B
RJ45 module PROFINET
USB 2.0 A / A
USB 3.0 A / A
USB 2.0 A / B
<b>Marking tags</b>
Touch-safe protection
<b>Inserts, Signal</b>
D-Sub, 9-pole, female/female
D-Sub, 9-pole, female / male
D-Sub, 9-pole, female / solder connection
VGA coupling
HDMI coupling

Type	Qty.	Order No.
ESG 7/20 SIRIUS MC NE WS		
200		
1736181044		
IE-FC-PWPC		
1		
1450820000		
<b>Note</b>		

Type	Qty.	Order No.
IE-BI-SP0-C		
10		
2861260000		
IE-BI-RJ45-C		
10		
1962840000		
IE-BI-RJ45-FJ-A		
10		
1962850000		
IE-BI-RJ45-FJ-B		
10		
1963840000		
IE-BI-RJ45-FJ-P		
10		
1963830000		
IE-BI-USB-A		
10		
1019570000		
IE-BI-USB-3.0-A		
10		
1487920000		
IE-BI-USB-AB		
10		
1131380000		
ESG 7/20 SIRIUS MC NE WS		
200		
1736181044		
IE-FC-PWPC		
1		
1450820000		
IE-FC-D9-FF		
1		
1450840000		
IE-FC-D9-FM		
1		
1450850000		
IE-FC-D9-FS		
1		
1450870000		
IE-FC-HD15-FF		
1		
1556290000		
IE-FC-HDMI-FF		
1		
2003390000		
<b>Note</b>		

**Note**

You will find an overview of the power inserts in this chapter under Power inserts-sockets.

You will find an overview of the power inserts in this chapter under Power inserts-sockets.

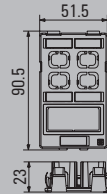
**FrontCom® Vario IP65 service interface**

**FrontCom® Vario**

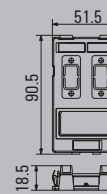
**Insert plates**

- IP20

**1 x power, 4 x data**



**1 x power, 2 x signal**



**Technical data**

Material
Insert, data
Signal insert D-Sub 9-pole / VGA / HDMI
Insert, signal, D-Sub, 25-pole
Insert Power large
Insert Power small
Insert Power US
Ambient temperature (operational)
Approvals
<b>Note</b>

Polycarbonate PC
4
2
1
-40 °C...70 °C
CSA; CURUS; DETNORVER

Polycarbonate PC
2
1
-40 °C...70 °C
CSA; CURUS; DETNORVER

**Ordering data**

shielded
unshielded
<b>Note</b>

Type	Qty.	Order No.
IE-FC-SP-PWS/4ST	1	1450570000
IE-FC-IP-PWS/4ST	1	1450640000

Type	Qty.	Order No.
IE-FC-SP-PWS/2D9	1	1450610000
IE-FC-IP-PWS/2D9	1	1450680000

**Accessories**

<b>Inserts, Power</b>	Socket IT/EU
<b>Inserts, Data</b>	SPE Coupling
	RJ45 coupling
	RJ45 module EIA/TIA T568 A
	RJ45 module EIA/TIA T568 B
	RJ45 module PROFINET
	USB 2.0 A / A
	USB 3.0 A / A
	USB 2.0 A / B
<b>Marking tags</b>	
<b>Touch-safe protection</b>	Touch-safe protection
<b>Inserts, Signal</b>	D-Sub, 9-pole, female/female
	D-Sub, 9-pole, female / male
	D-Sub, 9-pole, female / solder connection
	VGA coupling
	HDMI coupling
<b>Note</b>	

Type	Qty.	Order No.
IE-FCI-PWS-IT	1	1450810000
IE-BI-SP0-C	10	2861260000
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000

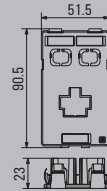
Type	Qty.	Order No.
IE-FCI-PWS-IT	1	1450810000
IE-FCI-D9-FF	1	1450840000
IE-FCI-D9-FM	1	1450850000
IE-FCI-D9-FS	1	1450870000
IE-FCI-HD15-FF	1	1556290000
IE-FCI-HDMI-FF	1	2003390000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000

**FrontCom® Vario**

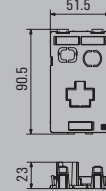
**Insert plates**

- IP20

**1 x power, 2 x data**



**1 x power, 1 x 3A fuse, 1 x data**



**Technical data**

Material	Polycarbonate PC
Insert, data	2
Signal insert D-Sub 9-pole / VGA / HDMI	
Insert, signal, D-Sub, 25-pole	
Insert Power large	
Insert Power small	
Insert Power US	1
Insert fuse	
Ambient temperature (operational)	-40 °C...70 °C
Approvals	CSA; CURUS; DETNORVER
<b>Note</b>	

Material	Polycarbonate PC
Insert, data	2
Signal insert D-Sub 9-pole / VGA / HDMI	
Insert, signal, D-Sub, 25-pole	
Insert Power large	
Insert Power small	
Insert Power US	1
Insert fuse	
Ambient temperature (operational)	-40 °C...70 °C
Approvals	CSA; CURUS; DETNORVER
<b>Note</b>	

Material	Polycarbonate PC
Insert, data	1
Signal insert D-Sub 9-pole / VGA / HDMI	
Insert, signal, D-Sub, 25-pole	
Insert Power large	
Insert Power small	
Insert Power US	1
Insert fuse	1
Ambient temperature (operational)	-40 °C...70 °C
Approvals	CSA; CURUS
<b>Note</b>	

**Ordering data**

	shielded
	unshielded
<b>Note</b>	

Type	Qty.	Order No.
IE-FC-SP-PWU/2ST	1	1450620000
IE-FC-IP-PWU/2ST	1	1450700000
For US socket the touch-safe protection is mandatory		

Type	Qty.	Order No.
IE-FC-IP-PWU/1ST/CB	1	1543710000
For US socket the touch-safe protection is mandatory		

**Accessories**

Inserts, Signal	
D-Sub, 9-pole, female/female	
D-Sub, 9-pole, female / male	
D-Sub, 9-pole, female / solder connection	
D-Sub, 25-pole, female/female	
D-Sub, 25-pole, female/male	
D-Sub, 25-pole, female / solder connection	
HDMI coupling	
VGA coupling	
Inserts, Data	
SPE Coupling	
RJ45 coupling	
RJ45 module EIA/TIA T568 A	
RJ45 module EIA/TIA T568 B	
RJ45 module PROFINET	
USB 2.0 A / A	
USB 3.0 A / A	
USB 2.0 A / B	
Marking tags	
Touch-safe protection	
Touch-safe protection	
Inserts, Power	
US socket	
Fuse inserts	
3 A	
<b>Note</b>	

Type	Qty.	Order No.
IE-BI-SP0-C	10	2861260000
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000
IE-FC-PWS-US	1	1450800000
<b>Note</b>		

Type	Qty.	Order No.
IE-BI-SP0-C	10	2861260000
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000
ESG 7/20 SIRIUS MC NE WS	200	1736181044
IE-FC-PWPC	1	1450820000
IE-FCI-PWS-US	1	1450800000
IE-FCI-PWCB-3A	1	1543690000
<b>Note</b>		

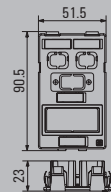


**FrontCom® Vario**

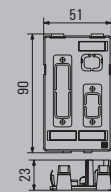
**Insert plates**

- IP20

**2 x data, 2 x signal**



**1 x data, 2 x signal**



**Technical data**

Material
Insert, data
Signal insert D-Sub 9-pole / VGA / HDMI
Insert, signal, D-Sub, 25-pole
Insert Power large
Insert Power small
Insert Power US
Insert fuse
Ambient temperature (operational)
Approvals
<b>Note</b>

Polycarbonate PC
2
2
-40 °C...70 °C
CSA; CURUS; DETNORVER
<b>Note</b>

Polycarbonate PC
1
1
1
-40 °C...70 °C
CSA; CURUS; DETNORVER
<b>Note</b>

**Ordering data**

	shielded
	unshielded
<b>Note</b>	

Type	Qty.	Order No.
IE-FC-SP-2ST/2D9	1	1450590000
IE-FC-IP-2ST/2D9	1	1450670000

Type	Qty.	Order No.
IE-FC-SP-1ST/1D9/1D25	1	1450580000
IE-FC-IP-1ST/1D9/1D25	1	1450650000

**Accessories**

Inserts, Signal	
D-Sub, 9-pole, female/female	
D-Sub, 9-pole, female / male	
D-Sub, 9-pole, female / solder connection	
D-Sub, 25-pole, female/female	
D-Sub, 25-pole, female/male	
D-Sub, 25-pole, female / solder connection	
HDMI coupling	
VGA coupling	
<b>Inserts, Data</b>	
SPE Coupling	
RJ45 coupling	
RJ45 module EIA/TIA T568 A	
RJ45 module EIA/TIA T568 B	
RJ45 module PROFINET	
USB 2.0 A / A	
USB 3.0 A / A	
USB 2.0 A / B	
<b>Marking tags</b>	
<b>Touch-safe protection</b>	
Touch-safe protection	
<b>Inserts, Power</b>	
US socket	
<b>Fuse inserts</b>	
3 A	
<b>Note</b>	

Type	Qty.	Order No.
IE-FCI-D9-FF	1	1450840000
IE-FCI-D9-FM	1	1450850000
IE-FCI-D9-FS	1	1450870000
IE-FCI-HDMI-FF	1	2003390000
IE-FCI-HD15-FF	1	1556290000
<b>Inserts, Signal</b>		
IE-BI-SP0-C	10	2861260000
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000
<b>Marking tags</b>		
ESG 7/20 SIRIUS MC NE WS	200	1736181044
<b>Touch-safe protection</b>		
IE-FC-PWPC	1	1450820000
<b>Inserts, Power</b>		
<b>Fuse inserts</b>		
<b>Note</b>		

Type	Qty.	Order No.
IE-FCI-D9-FF	1	1450840000
IE-FCI-D9-FM	1	1450850000
IE-FCI-D9-FS	1	1450870000
IE-FCI-D25-FM	1	1450890000
IE-FCI-D25-FS	1	1450900000
IE-FCI-D25-FF	1	1450880000
IE-FCI-HDMI-FF	1	2003390000
IE-FCI-HD15-FF	1	1556290000
<b>Inserts, Signal</b>		
IE-BI-SP0-C	10	2861260000
IE-BI-RJ45-C	10	1962840000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000
IE-BI-USB-AB	10	1131380000
<b>Marking tags</b>		
ESG 7/20 SIRIUS MC NE WS	200	1736181044
<b>Touch-safe protection</b>		
IE-FC-PWPC	1	1450820000
<b>Inserts, Power</b>		
<b>Fuse inserts</b>		
<b>Note</b>		



**Data inserts**

**RJ45 Single Pair Ethernet (SPE)**

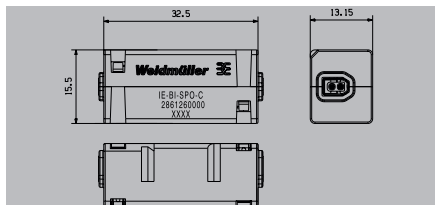
- IP20
- For housing variants 1, 4, 5, 14 and for FrontCom®
- SPE coupling for FrontCom® only

**Coupling**

**Pin contacts**



**SPElink®**



**Technical data**

Protection degree
Plugging cycles
Shielding
Housing main material
Contact surface
Connection cross-section, flexible, min. / max.
Connection cross-section, solid, min. / max.
Insulation diameter, min. / max.
Connector standard
Ambient temperature (operational)
PoE / PoE+
Approvals
<b>Note</b>

IP67 with housing
750
PA 66
Gold over nickel
...
IEC 63171-2
-40 °C...85 °C
PoDL acc. to IEEE 802.3bu / cg
<b>Note</b>

**Ordering data**

<b>tool-free</b>
Coupling
<b>Note</b>

Type	Qty.	Order No.
IE-BI-SPO-C	10	2861260000
<b>Note</b>		

**Accessories**

<b>Note</b>
-------------

Type	Qty.	Order No.
<b>Note</b>		

<b>Note</b>
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<b>Note</b>
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## FrontCom® Vario IP65 service interface

### Data inserts

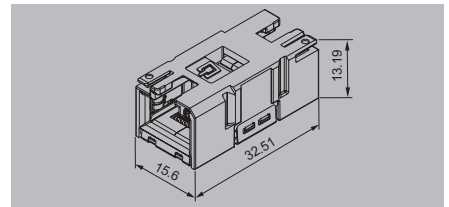
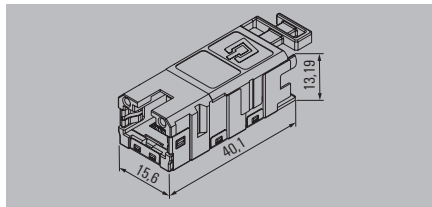
#### RJ45

- Completely in Cat. 6<sub>A</sub>
- IP20
- For housing variants 1, 4, 5, 14 and for FrontCom®

### Module



### Coupling



### Technical data

Protection degree  
 Plugging cycles  
 Shielding  
 Housing main material  
 Contact surface  
 Connection cross-section, flexible, min. / max.  
 Connection cross-section, solid, min. / max.  
 Insulation diameter, min. / max.  
 Connector standard  
 Ambient temperature (operational)  
 PoE / PoE+  
 Approvals

IP67 with housing  
 750  
 360° all-round enclosure  
 Zinc diecast  
 Gold over Nickel, Au ≥ 0.8 µm  
 AWG 26 / AWG 22  
 AWG 24 / AWG 22  
 0.85 mm...1.6 mm  
 IEC 60603-7-51  
 -40 °C...70 °C  
 conforming to IEEE 802.3af  
 CULUS

IP67 with housing  
 750  
 360° all-round enclosure  
 Zinc diecast  
 Gold over Nickel, Au ≥ 0.8 µm  
 ...  
 IEC 60603-7-51  
 -40 °C...70 °C  
 conforming to IEEE 802.3af  
 CULUS; DETNORVER

#### Note

Connection of WM Cat. 7 AWG 27/7 LSZH possible

### Ordering data

tool-free	
	TIA-A. Cat. 6 <sub>A</sub>
	TIA-B. Cat. 6 <sub>A</sub>
	PROFINET Cat. 5
	Coupling

Type	Qty.	Order No.
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000

Type	Qty.	Order No.
IE-BI-RJ45-C	10	1962840000

#### Note

### Accessories

Tools
Optional pressing tool

Type	Qty.	Order No.
PWZ RJ45	1	1118040000

Type	Qty.	Order No.
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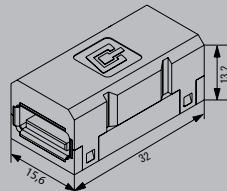
#### Note

Data inserts

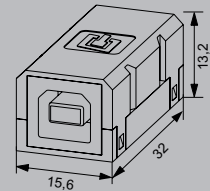
USB

- IP20
- For housing variants 1, 4, 5, 14 and for FrontCom®

Coupling USB A/A



Coupling USB A/B



Technical data

Protection degree  
Shielding  
Ambient temperature (operational)  
Connection 1 / 2  
Connector standard  
Approvals

IP67 with housing  
360° all-round enclosure  
-40 °C...70 °C  
USB A / USB A  
IEC 61076-3-107  
CULUS; DETNORVER

IP67 with housing  
360° all-round enclosure  
-40 °C...70 °C  
USB A / USB B  
IEC 61076-3-107  
CULUS; DETNORVER

Note

Ordering data

USB 2.0	
USB 3.0	

Type	Qty.	Order No.
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000

Type	Qty.	Order No.
IE-BI-USB-AB	10	1131380000

Note

Accessories

USB cable 2.0	
0.5 m	
1.0 m	
1.5 m	
1.8 m	
3.0 m	
USB cable 3.0	
0.5 m	
1.8 m	
3.0 m	
5.0 m	

Type	Qty.	Order No.
IE-USB-A-A-0.5M	1	1993550005
IE-USB-A-A-1.0M	1	1993550010
IE-USB-A-A-1.5M	1	1993550015
IE-USB-A-A-1.8M	1	1993550018
IE-USB-A-A-3.0M	1	1993550030
IE-USB-3.0-A-A-0.5M	1	2581730005
IE-USB-3.0-A-A-1.8M	1	2581730018
IE-USB-3.0-A-A-3M	1	2581730030
IE-USB-3.0-A-A-5M	1	2581730050

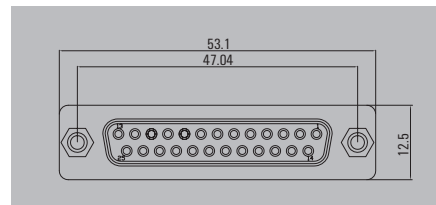
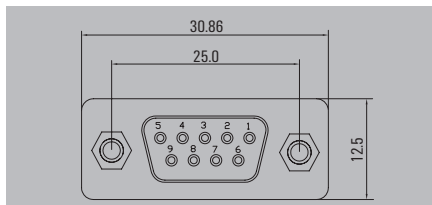
Type	Qty.	Order No.

Note

**Signal inserts**  
**D-sub**

**9-pole**

**25-pole**



**Technical data**

Protection degree	
Housing main material	
Number of poles	
Housing surface	
Material insulator	
Contact surface	
Contact resistance	
Insulation strength	
Dielectric strength, contact / contact	
Ambient temperature (operational)	
Approvals	
<b>Note</b>	

IP20
SPCC
9
tin-plated
PBT glass fibre reinforced UL 94 V-0
Gold-plated
≤ 20 mΩ
1000 MΩ at 500 V DC
1 kV <sub>eff</sub> / 1 min.
-55 °C...105 °C
DETNORVER; UR

IP20
SPCC
25
tin-plated
PBT glass fibre reinforced UL 94 V-0
Gold-plated
≤ 20 mΩ
1000 MΩ at 500 V DC
1 kV <sub>eff</sub> / 1 min.
-55 °C...105 °C
DETNORVER; UR

**Ordering data**

Socket / socket
Socket / plug
Socket / solder connection
<b>Note</b>

Type	Qty.	Order No.
IE-FCI-D9-FF	1	1450840000
IE-FCI-D9-FM	1	1450850000
IE-FCI-D9-FS	1	1450870000

Type	Qty.	Order No.
IE-FCI-D25-FF	1	1450880000
IE-FCI-D25-FM	1	1450890000
IE-FCI-D25-FS	1	1450900000

**Accessories**

Type	Qty.	Order No.
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Type	Qty.	Order No.
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Type	Qty.	Order No.
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<b>Note</b>
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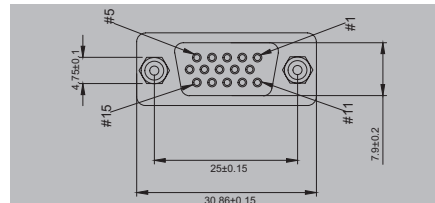
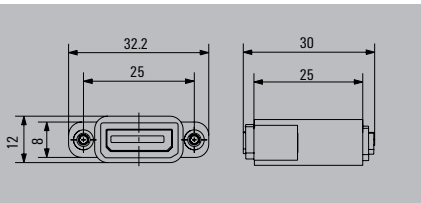
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Signal inserts

HDMI

HD15 / VGA



Technical data

Protection degree
Housing main material
Number of poles
Housing surface
Contact surface
Contact resistance
Insulation strength
Dielectric strength, contact / contact
Ambient temperature (operational)
Approvals
<b>Note</b>

IP20
PVC casting
9
Gold-plated
-15 °C...50 °C
UR

IP20
25
Gold over nickel
1000 MΩ at 500 V DC
1000 V <sub>eff</sub> / 1 min
-55 °C...105 °C
DET NORVER; UR

Ordering data

<b>Note</b>
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Type	Qty.	Order No.
IE-FCHDMI-FF	1	2003390000

Type	Qty.	Order No.
IE-FCI-HD15-FF	1	1556290000

Accessories

Type	Qty.	Order No.

Type	Qty.	Order No.

Type	Qty.	Order No.

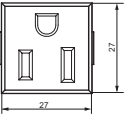
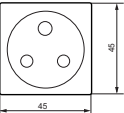
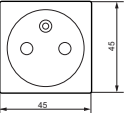
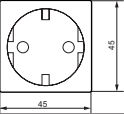
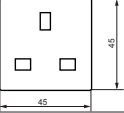
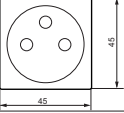
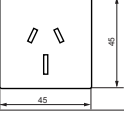
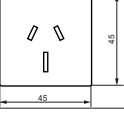
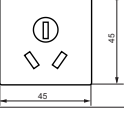
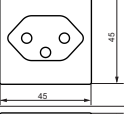
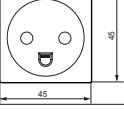
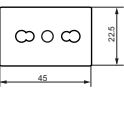
<b>Note</b>
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**Type overview: Power inserts/sockets**

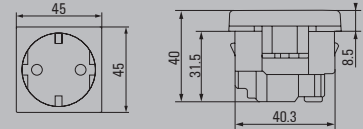
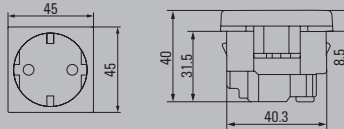
Type	Region	Plug-Type		Qty.	Order No.
IE-FCI-PWS-US	USA	Type B		1	1450800000
<p>Power socket type B isn't compatible with mounting rail adaptor, but it's applicable with following insert plates: 1450620000, 1450700000, 1543710000.</p>					
IE-FCI-PWB-IND	India, South Africa	Type D		1	2500710000
IE-FCI-PWB-FR/B/CZ	France, Belgium, Czechia	Type E		1	2426700000
IE-FCI-PWB-DE	Germany	Type F		1	1450730000
IE-FCI-PWB-GB	Great Britain	Type G		1	1450770000
IE-FCI-PWS-ISR	Israel	Typ H		1	2531060000
IE-FCI-PWB-AU-15A	Australia	Type I		1	1450830000
<p>The difference to IE-FCI-PWB-AU-10A and IE-FCI-PWB-CN is rated current: 15A 240V and the protective contact is higher and wider. Furthermore the difference to IE-FCI-PWB-CN is the connection on the backside.</p>					
IE-FCI-PWB-AU-10A	Australia	Type I		1	1546590000
<p>The difference to IE-FCI-PWB-CN is the connection on the backside. Connector face is the same. The difference to IE-FCI-PWB-AU is rated current: 10A 240V and the protective contact is smaller and thinner.</p>					
IE-FCI-PWB-CN	China	Type I		1	1450790000
<p>The difference to IE-FCI-PWB-AU is rated current: 10A 240V and the protective contact is smaller and thinner. Furthermore the difference to IE-FCI-PWB-AU-10A and IE-FCI-PWB-AU is the connection on the backside.</p>					
IE-FCI-PWB-CH	Schwitzerland	Type J		1	1450780000
IE-FCI-PWB-DK	Denmark	Type K		1	2661340000
IE-FCI-PWS-IT	Italy, Europe	Type L		1	1450810000



**Power inserts**  
**Power sockets**

**Germany, white**

**Germany, orange**



**Technical data**

Protection degree  
 Housing main material  
 Type of connection  
 Connector face  
 Connector standard  
 Line connection cross-section  
     finely stranded with wire-end ferrule  
     finely stranded without wire-end ferrule  
     finely stranded with wire-end ferrule  
     finely stranded without wire-end ferrule  
 Conductor connection cross-section, rigid  
 Stripping length  
 Rated voltage (AC)  
 Rated current  
 Ambient temperature (operational)  
 Approvals

IP20  
 Polycarbonate PC  
 PUSH IN  
 Type F

1.5 ... 1.5 mm<sup>2</sup>  
 1.5 ... 2.5 mm<sup>2</sup>  
 1.5 ... 1.5 mm<sup>2</sup>  
 1.5 ... 2.5 mm<sup>2</sup>  
 1.5 ... 2.5 mm<sup>2</sup>

10 mm  
 250 V  
 16 A  
 -5 °C...40 °C  
 DETNORVER

IP20  
 Polycarbonate PC  
 PUSH IN  
 Type F

1.5 ... 1.5 mm<sup>2</sup>  
 1.5 ... 2.5 mm<sup>2</sup>  
 1.5 ... 1.5 mm<sup>2</sup>  
 1.5 ... 2.5 mm<sup>2</sup>  
 1.5 ... 2.5 mm<sup>2</sup>

10 mm  
 250 V  
 16 A  
 -5 °C...40 °C  
 DETNORVER

**Note**

**Ordering data**

**Note**

Type	Qty.	Order No.
IE-FCI-PWB-DE	1	1450730000

Type	Qty.	Order No.
IE-FCI-PWB-DE-OR	1	1554000000

**Accessories**

FrontCom	
Adapter for mounting rail installation	
<b>Flat blade connector, 6.5 mm</b>	
straight, 4.8 mm, fully insulated	

Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

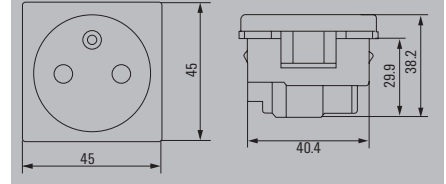
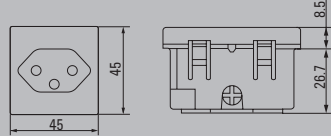
Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

**Note**

**Power inserts**  
**Power sockets**

**Switzerland**

**France / Belgium / Czech Republic**



**Technical data**

Protection degree
Housing main material
Type of connection
Connector face
Connector standard
Line connection cross-section
finely stranded with wire-end ferrule
finely stranded without wire-end ferrule
finely stranded with wire-end ferrule
finely stranded without wire-end ferrule
Conductor connection cross-section, rigid
Stripping length
Rated voltage (AC)
Rated current
Ambient temperature (operational)
Approvals

IP20
Polycarbonate PC
PUSH IN
Type J
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
10 mm
250 V
10 A
-5 °C...40 °C
DETNORVER

IP20
Polycarbonate PC
PUSH IN
Type E
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
12 mm
250 V
16 A
-5 °C...35 °C

**Note**

**Ordering data**

**Note**

**Accessories**

<b>FrontCom</b>	Adapter for mounting rail installation
<b>Flat blade connector, 6.5 mm</b>	straight, 4.8 mm, fully insulated

Type	Qty.	Order No.
IE-FCI-PWB-CH	1	1450780000

Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

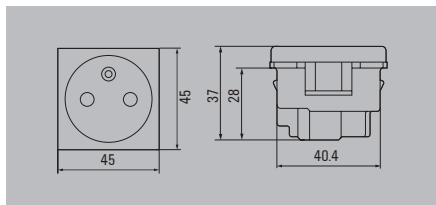
Type	Qty.	Order No.
IE-FCI-PWB-FR/B/CZ	1	2426700000

Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

**Note**



France, orange

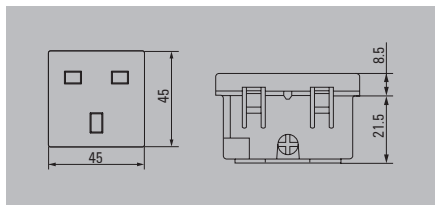


IP20
Polycarbonate PC
PUSH IN
Type E
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 1.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
12 mm
250 V
16 A
-5 °C...35 °C

Type	Qty.	Order No.
IE-FCI-PWB-FR-OR	1	2007230000

Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

UK

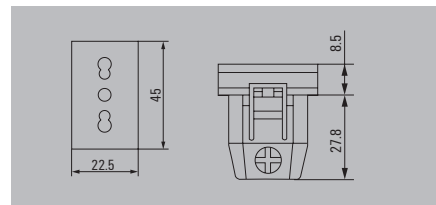


IP20
Polycarbonate PC
Screw connection
Type G
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
9 mm
250 V
13 A
-5 °C...40 °C
DET NORVER

Type	Qty.	Order No.
IE-FCI-PWB-GB	1	1450770000

Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

Italy / Europe



IP20
Polycarbonate PC
Screw connection
Type L
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
9 mm
250 V
16 A
-5 °C...40 °C
DET NORVER

Type	Qty.	Order No.
IE-FCI-PWS-IT	1	1450810000

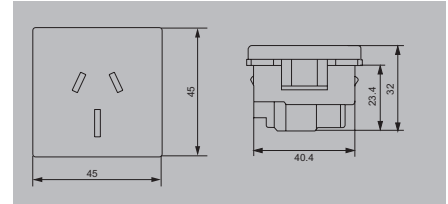
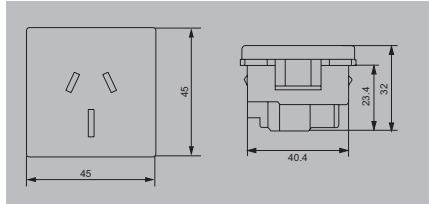
Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000



**Power inserts**  
**Power sockets**

**Australia, 15 A**

**Australia, 10 A**



**Technical data**

Protection degree  
Housing main material  
Type of connection  
Connector face  
Connector standard  
Line connection cross-section  
    finely stranded with wire-end ferrule  
    finely stranded without wire-end ferrule  
    finely stranded with wire-end ferrule  
    finely stranded without wire-end ferrule  
Conductor connection cross-section, rigid  
Stripping length  
Rated voltage (AC)  
Rated current  
Ambient temperature (operational)  
Approvals

IP20  
Polycarbonate PC  
Screw connection  
Type I

1.5 ... 2.5 mm<sup>2</sup>  
1.5 ... 4 mm<sup>2</sup>  
1.5 ... 2.5 mm<sup>2</sup>  
1.5 ... 4 mm<sup>2</sup>

1.5 ... 4 mm<sup>2</sup>  
9 mm  
240 V  
15 A  
-5 °C...40 °C  
DETNRORVER

IP20  
Polycarbonate PC  
Screw connection  
Type I

1.5 ... 2.5 mm<sup>2</sup>  
1.5 ... 4 mm<sup>2</sup>  
1.5 ... 2.5 mm<sup>2</sup>  
1.5 ... 4 mm<sup>2</sup>

1.5 ... 4 mm<sup>2</sup>  
9 mm  
240 V  
10 A  
-5 °C...40 °C  
DETNRORVER

**Note**

**Ordering data**

**Note**

Type	Qty.	Order No.
IE-FCI-PWB-AU	1	1450830000

Type	Qty.	Order No.
IE-FCI-PWB-AU-10A	1	1546590000

**Accessories**

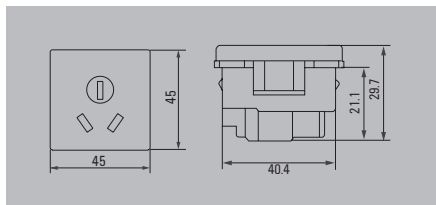
FrontCom	
Adapter for mounting rail installation	
<b>Flat blade connector, 6.5 mm</b>	straight, 4.8 mm, fully insulated

Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

**Note**

China

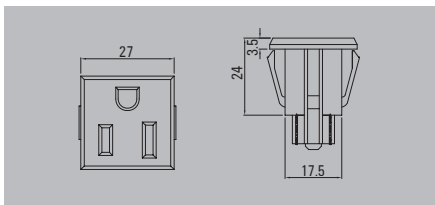


IP20
Polycarbonate PC
Screw connection
Type I
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
1.5 ... 2.5 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
1.5 ... 4 mm <sup>2</sup>
9 mm
250 V
10 A
-5 °C...40 °C
DETNRVER

Type	Qty.	Order No.
IE-FCI-PWB-CN	1	1450790000

Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

USA



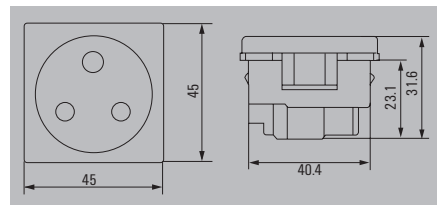
IP20
PA 66
Solder connection, FS 4.8 x 0.8
Type B
...
...
...
...
...
125 V
15 A
-20 °C...85 °C
CURUS; DETNRVER; UR

Type	Qty.	Order No.
IE-FCI-PWS-US	1	1450800000

For US socket the touch-safe protection is mandatory

Type	Qty.	Order No.
VFSKHV/1,5-2,5/485	100	1491920000

India



IP20
Polycarbonate PC
Screw connection
Type D
1.5 ... 2.5 mm <sup>2</sup>
...
1.5 ... 2.5 mm <sup>2</sup>
...
1.5 ... 4 mm <sup>2</sup>
9 mm
250 V
5 A
-5 °C...40 °C

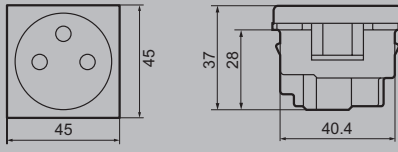
Type	Qty.	Order No.
IE-FCI-PWB-IND	1	2500710000

Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

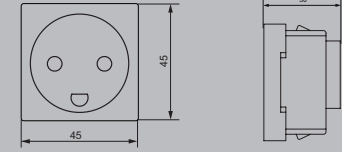


**Power inserts**  
**Power sockets**

**Israel**



**Denmark**



**Technical data**

Protection degree  
 Housing main material  
 Type of connection  
 Connector face  
 Connector standard  
 Line connection cross-section  
     finely stranded with wire-end ferrule  
     finely stranded without wire-end ferrule  
     finely stranded with wire-end ferrule  
     finely stranded without wire-end ferrule  
 Conductor connection cross-section, rigid  
 Stripping length  
 Rated voltage (AC)  
 Rated current  
 Ambient temperature (operational)  
 Approvals

IP20  
 PP  
 Screw connection  
 Type H

1.5 ... 1.5 mm<sup>2</sup>  
 ...  
 1.5 ... 1.5 mm<sup>2</sup>  
 ...  
 1.5 ... 2.5 mm<sup>2</sup>  
 11 mm  
 250 V  
 16 A  
 -5 °C...40 °C

IP20  
 Polycarbonate PC  
 PUSH IN  
 Type K

1.5 ... 1.5 mm<sup>2</sup>  
 1.5 ... 2.5 mm<sup>2</sup>  
 1.5 ... 1.5 mm<sup>2</sup>  
 1.5 ... 2.5 mm<sup>2</sup>  
 1.5 ... 2.5 mm<sup>2</sup>  
 13 mm  
 250 V  
 13 A  
 -5 °C...40 °C

**Note**

**Ordering data**

**Note**

**Accessories**

FrontCom	
Adapter for mounting rail installation	
<b>Flat blade connector, 6.5 mm</b>	straight, 4.8 mm, fully insulated

Type	Qty.	Order No.
IE-FCI-PWB-ISR	1	2531060000

Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

Type	Qty.	Order No.
IE-FCI-PWB-DK	1	2661340000

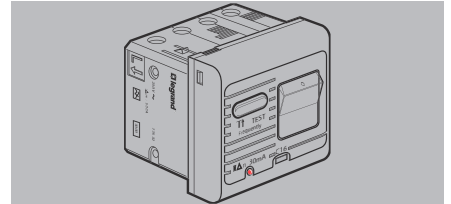
Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

**Note**

Power inserts

RCBO

RCBO



Technical data

Ambient temperature (operational)  
 Operating voltage  
 Rated current  
 $I_{\Delta n}$   
 $I_{\Delta n}$   
 Triggering characteristic  
 Type of connection  
 Line connection cross-section  
     finely stranded with wire-end ferrule  
     finely stranded with wire-end ferrule  
 Conductor connection cross-section, rigid

-5 °C...40 °C  
 230 V AC  
 16 A  
 500 A  
 30 mA  
 Typ C  
 Screw connection  
 1.5 ... 2.5 mm<sup>2</sup>  
 1.5 ... 2.5 mm<sup>2</sup>  
 1.5 ... 2.5 mm<sup>2</sup>

Note

Ordering data

Note

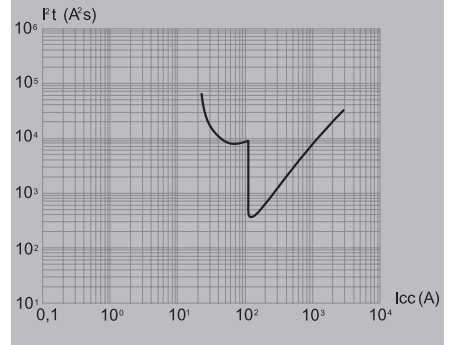
Accessories

FrontCom

Adapter for mounting rail installation

Type	Qty.	Order No.
IE-FCI-PWB-RCBO	1	1534250000

Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000



Note

**Power inserts**

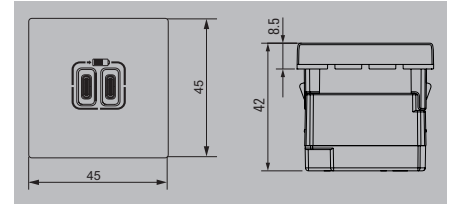
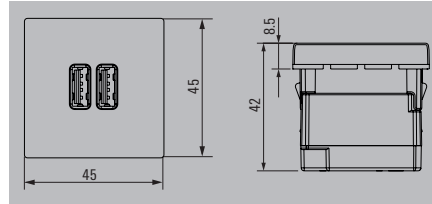
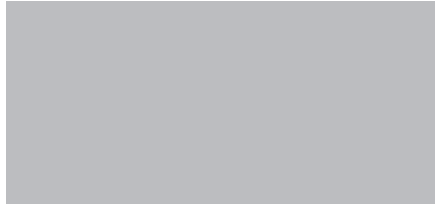
**USB charge insert**

- IP20
- USB Charger 5 V / 3 A

**2 x USB A**



**2 x USB C**



**Technical data**

Ambient temperature (operational)	0 °C...45 °C
Input voltage	100...240 V AC
Frequency range	50...60 Hz
Input current	≤ 300 mA
Output voltage	5 V DC
Output current	3 A
Degree of efficiency	80%
Power consumption in standby mode	max. 0.1 W
Standards	EN 60950-1, EN 62684
Protection class	II
Housing main material	Polycarbonate PC
Type of connection	Screw connection
Line connection cross-section	1.5 ... 2.5 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 2.5 mm <sup>2</sup>
Stripping length	6 mm
Note	

Ambient temperature (operational)	0 °C...45 °C
Input voltage	100...240 V AC
Frequency range	50...60 Hz
Input current	≤ 300 mA
Output voltage	5 V DC
Output current	3 A
Degree of efficiency	80%
Power consumption in standby mode	max. 0.1 W
Standards	EN 60950-1, EN 62684
Protection class	II
Housing main material	Polycarbonate PC
Type of connection	Screw connection
Line connection cross-section	1.5 ... 2.5 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 2.5 mm <sup>2</sup>
Stripping length	6 mm
Note	

Ambient temperature (operational)	0 °C...45 °C
Input voltage	100...240 V AC
Frequency range	50...60 Hz
Input current	≤ 300 mA
Output voltage	5 V DC
Output current	3 A
Degree of efficiency	80%
Power consumption in standby mode	max. 0.1 W
Standards	EN 60950-1, EN 62684
Protection class	II
Housing main material	Polycarbonate PC
Type of connection	Screw connection
Line connection cross-section	1.5 ... 2.5 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 2.5 mm <sup>2</sup>
Stripping length	6 mm
Note	

**Ordering data**

Type	Qty.	Order No.
IE-FCI-PWB-2USB-A-5V	1	2505070000
Note		

Type	Qty.	Order No.
IE-FCI-PWB-2USB-A-5V	1	2505070000
Note		

Type	Qty.	Order No.
IE-FCI-PWB-2USB-C-5V	1	2902350000
Note		

**Accessories**

FrontCom	Adapter for mounting rail installation
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Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

Type	Qty.	Order No.
IE-DINRAIL-AD-PWB	1	2534680000

Note	
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Note	
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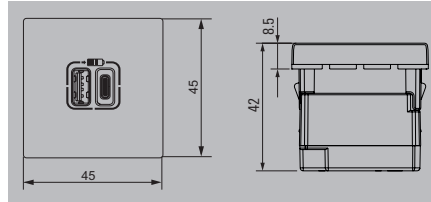
Note	
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**Power inserts**

**USB charge insert**

- IP20
- USB Charger 5 V / 3 A

**USB A / USB C**



**Technical data**

Ambient temperature (operational)	0 °C...45 °C
Input voltage	100...240 V AC
Frequency range	50...60 Hz
Input current	≤ 300 mA
Output voltage	5 V DC
Output current	3 A
Degree of efficiency	80%
Power consumption in standby mode	max. 0.1 W
Standards	EN 60950-1, EN 62684
Protection class	II
Housing main material	Polycarbonate PC
Type of connection	Screw connection
Line connection cross-section	
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
finely stranded with wire-end ferrule	1.5 ... 2.5 mm <sup>2</sup>
Conductor connection cross-section, rigid	1.5 ... 2.5 mm <sup>2</sup>
Stripping length	6 mm
<b>Note</b>	

**Ordering data**

Type	Qty.	Order No.
IE-FCI-PWB-2USB-A/C-5V	1	2902340000
<b>Note</b>		

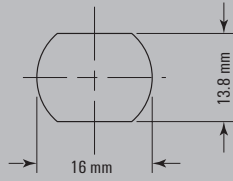
**Accessories**

FrontCom	Type	Qty.	Order No.
Adapter for mounting rail installation	IE-DINRAIL-AD-PWB	1	2534680000

**Note**

3A fuse

3A fuse



**Technical data**

Operating voltage	32 V DC, 250 V AC
Rated current	3 A
Type of connection	Flat-blade receptacles 6.5 mm
<b>Note</b>	

Operating voltage	32 V DC, 250 V AC
Rated current	3 A
Type of connection	Flat-blade receptacles 6.5 mm
<b>Note</b>	

**Ordering data**

<b>Note</b>	
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Type	Qty.	Order No.
IE-FCI-PWCB-3A	1	1543690000

**Accessories**

Flat blade connector, 6.5 mm	angled
	straight

Type	Qty.	Order No.
WFSKHV/1,5-2,5	100	1491970000
VFSKHV/1,5-2,5/638	100	1491940000

**Note**

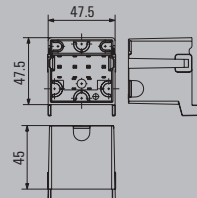
**Note**



**Accessories**

**Touch-safe protection**

**Touch-safe protection socket outlet single frame**



**Technical data**

Length x width x height	47.5 / 47.5 / 45 mm
Material	PC
<b>Note</b>	

Length x width x height	47.5 / 47.5 / 45 mm
Material	PC
<b>Note</b>	

**Ordering data**

<b>Note</b>
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Type	Qty.	Order No.
IE-FC-PWPC	1	1450820000

**Accessories**

<b>Note</b>
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Type	Qty.	Order No.

<b>Note</b>
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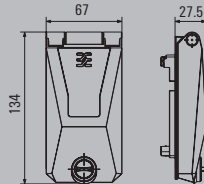
<b>Note</b>
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**Sets**

- shielded

**2x Data 1x Power DE**

Plastic cover



**Technical data**

Frame  
 Insert plate  
 Data inserts  
 Power inserts  
 Rated voltage for socket  
 Rated current for socket  
 Protection degree  
 products included in the set

Plastic cover  
 2x data, 1x power, Shielded  
 USB 2.0 A/A, RJ45 coupling Cat.6<sub>A</sub>  
 Socket DE  
 250 V  
 16 A  
 IP65, in closed state  
 1450510000;1450550000;1450730000;1019570000;1962840000

**Note**

**Ordering data**

shielded  
 unshielded

Type	Qty.	Order No.
IE-FC-SET-SPDED001-KN-P	1	1529580000

**Note**

**Accessories**

Type	Qty.	Order No.

**Note**

Sets

Incl. fixed label: "Service only!", "USB", "Ethernet", "230 V AC"

2x Data, 1x Power



2x Data, 1x Power



Technical data

Frame
Insert plate
Data inserts
Power inserts
Rated voltage for socket
Rated current for socket
Protection degree
products included in the set
Note

Plastic cover, Lockable with key
2x data, 1x power, Shielded
USB 2.0 A/A, RJ45 coupling Cat.6 <sub>A</sub>
Socket DE
250 V
16 A
IP65, in closed state
1450520000;1450550000;1450730000;1019570000;1962840000;1450820000
Note

Plastic cover, Lockable with key
2x data, 1x power, Unshielded
USB 2.0 A/A, RJ45 coupling Cat.6 <sub>A</sub>
Socket DE
250 V
16 A
IP65, in closed state
1450520000;1450630000;1450730000;1019570000;1962840000;1450820000
Note

Ordering data

shielded
unshielded
Note

Type	Qty.	Order No.
IE-FC-SET-SPDEK001-KY-P	1	1989020000
Note		

Type	Qty.	Order No.
IE-FC-SET-IPDEK001-KY-P	1	1543680000
Note		

Accessories

Type	Qty.	Order No.
Note		

Type	Qty.	Order No.
Note		

Type	Qty.	Order No.
Note		

Note
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Note
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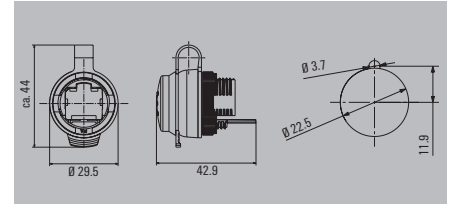
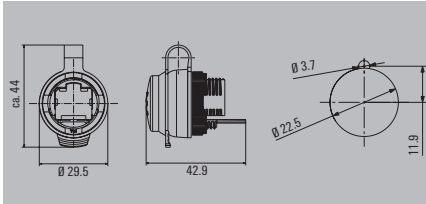
Note
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FrontCom® Micro IP65 service interface

FrontCom® Micro RJ45  
Module

8-wire

4-wire



Technical data

Category  
Protection degree  
Housing main material  
Contact surface  
Colour  
Shielding  
Type of mounting  
Plugging cycles  
Connector standard  
Connection 1 / 2  
Wall thickness, min. / max.  
Dust protection cap material  
PoE / PoE+  
Ambient temperature (operational)  
Approvals

Cat.6A / Class EA (ISO/IEC 11801 2010)  
IP65, in closed state  
PA UL 94 V0  
Gold over nickel  
black  
360° shield contact  
Cabinet, Distribution box  
750  
IEC 60603-7-51  
RJ45 / IDC  
1 mm / 3 mm  
EPDM  
conforming to IEEE 802.3af  
-40 °C...70 °C  
CULUS

Cat.5 (ISO/IEC 11801)  
IP65, in closed state  
PA UL 94 V0  
Gold over nickel  
black  
360° shield contact  
Cabinet, Distribution box  
750  
IEC 60603-7-51  
RJ45 / IDC  
1 mm / 3 mm  
EPDM  
conforming to IEEE 802.3af  
-40 °C...70 °C  
CULUS

Note

Note

Note

Ordering data

PROFINET module  
TIA-A module  
TIA-B module

Type	Qty.	Order No.
IE-FCM-RJ45-FJ-A	10	1018810000
IE-FCM-RJ45-FJ-B	10	1018820000

Type	Qty.	Order No.
IE-FCM-RJ45-FJ-P	10	1018830000

Note

Note

Note

Accessories

Fixing tool

Marking tags

SwitchMark markers white  
MultiCard, white

Holder

Type	Qty.	Order No.
IE-FISP-V4	2	9204370000
SM 27/18 MC NE WS	80	1699860000
ESG 9/11 K MC NE WS	200	1857440000
SM-H 27/18 SW	25	1716630000

Type	Qty.	Order No.
IE-FISP-V4	2	9204370000
SM 27/18 MC NE WS	80	1699860000
ESG 9/11 K MC NE WS	200	1857440000
SM-H 27/18 SW	25	1716630000

Note

Note

Note

**FrontCom® Micro  
Coupling**

**RJ45**

8-wire

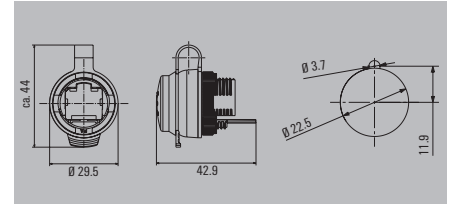
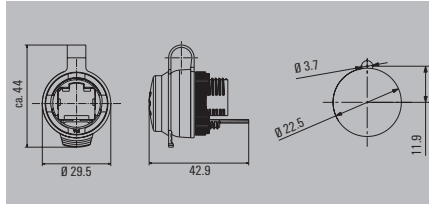


**Single Pair Ethernet (SPE)**

Pin contacts



**SPElink®**



**Technical data**

Category
Protection degree
Housing main material
Contact surface
Colour
Shielding
Type of mounting
Plugging cycles
Connector standard
Connection 1 / 2
Wall thickness, min. / max.
Dust protection cap material
PoE / PoE+
Ambient temperature (operational)
Approvals
<b>Note</b>

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP65, in closed state
PA UL 94 V0
Gold over nickel
black
360° shield contact
Cabinet, Distribution box
750 (RJ45)
IEC 60603-7-51
RJ45 / RJ45
1 mm / 3 mm
EPDM
conforming to IEEE 802.3af
-40 °C...70 °C
CULUS

T1-B
IP65, in closed state
PA UL 94 V0
Gold over nickel
black
360° shield contact
Cabinet, Distribution box
750
IEC 63171-2
SPE socket acc. to IEC 63171-2 / SPE socket acc. to IEC 63171-2
1 mm / 3 mm
EPDM
PoDL acc. to IEEE 802.3bu / cg
-40 °C...70 °C

**Ordering data**

	Coupling
<b>Note</b>	

Type	Qty.	Order No.
IE-FCM-RJ45-C	10	1018790000

Type	Qty.	Order No.
IE-FCM-SPO-C	10	2870820000

**Accessories**

<b>Fixing tool</b>	
<b>Marking tags</b>	SwitchMark markers white
<b>Holder</b>	

Type	Qty.	Order No.
IE-FISP-V4	2	9204370000
SM 27/18 MC NE WS	80	1699860000
SM-H 27/18 SW	25	1716630000

Type	Qty.	Order No.
IE-FISP-V4	2	9204370000
SM 27/18 MC NE WS	80	1699860000
SM-H 27/18 SW	25	1716630000

<b>Note</b>
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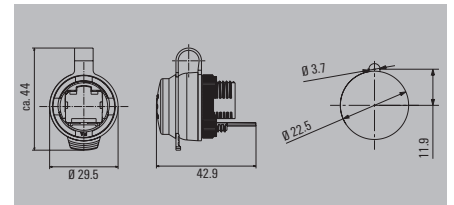
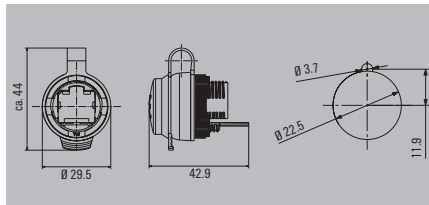
<b>Note</b>
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<b>Note</b>
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FrontCom® Micro USB

Coupling AA

Coupling AB



Technical data

Ambient temperature (operational)  
 Protection degree  
 Housing main material  
 Colour  
 Shielding  
 Type of mounting  
 Connector standard  
 Connection 1 / 2  
 Dust protection cap material  
 Wall thickness, min. / max.  
 Approvals

-40 °C...70 °C  
 IP65, in closed state  
 PA UL 94 V0  
 black  
 360° shield contact  
 Cabinet, Distribution box  
 IEC 61076-3-107  
 USB A / USB A  
 EPDM  
 1 mm / 3 mm  
 CULUS; EAC

-40 °C...70 °C  
 IP65, in closed state  
 PA UL 94 V0  
 black  
 360° shield contact  
 Cabinet, Distribution box  
 IEC 61076-3-107  
 USB A / USB B  
 EPDM  
 1 mm / 3 mm  
 CULUS; EAC

Note

Approvals available on request

Ordering data

	USB 2.0
	USB 3.0

Type	Qty.	Order No.
IE-FCM-USB-A	10	1018840000
IE-FCM-USB-3.0-A	10	1427960000

Type	Qty.	Order No.
IE-FCM-USB-AB	10	1222550000

Note

Accessories

Fixing tool

Marking tags

SwitchMark markers white  
 MultiCard, white

Holder

USB cable 2.0

0.5 m  
 1.0 m  
 1.5 m  
 1.8 m  
 3.0 m

USB cable 3.0

0.5 m  
 1.8 m  
 3.0 m  
 5.0 m

Type	Qty.	Order No.
IE-FISP-V4	2	9204370000

SM 27/18 MC NE WS	80	1699860000
ESG 9/11 K MC NE WS	200	1857440000

SM-H 27/18 SW	25	1716630000
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IE-USB-A-A-0.5M	1	1993550005
IE-USB-A-A-1.0M	1	1993550010
IE-USB-A-A-1.5M	1	1993550015
IE-USB-A-A-1.8M	1	1993550018
IE-USB-A-A-3.0M	1	1993550030

IE-USB-3.0-A-A-0.5M	1	2581730005
IE-USB-3.0-A-A-1.8M	1	2581730018
IE-USB-3.0-A-A-3M	1	2581730030
IE-USB-3.0-A-A-5M	1	2581730050

Type	Qty.	Order No.
IE-FISP-V4	2	9204370000

SM 27/18 MC NE WS	80	1699860000
ESG 9/11 K MC NE WS	200	1857440000

SM-H 27/18 SW	25	1716630000
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Note

# IP67 plug-in connectors

## Overview

<b>IP67 plug-in connectors</b>	PushPull V14 - RJ45	N.2
	PushPull V14 - Hybrid	N.7
	PushPull V14 - FO	N.10
	Bayonet V1 Metal-RJ45	N.12
	Bayonet V1 Metal-FO	N.14
	Bayonet V1 Plastic-RJ45	N.16
	PushPull V4 - RJ45	N.19
	PushPull V4 - FO	N.23
	RockStar® V5 - RJ45	N.25
	SnapIn V6 - RJ45	N.27
	M8 Single Pair Ethernet (SPE)	N.30
	M12 D-coded	N.32
	M12 X-Type	N.41
	Inserts	N.49
	PushPull Power	N.60

## PushPull V14 - RJ45

### Plug PushPull V14 - RJ45 PROFINET

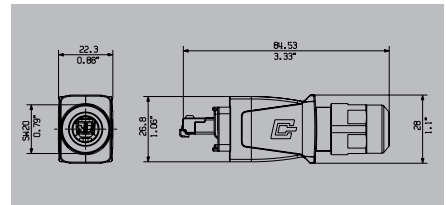
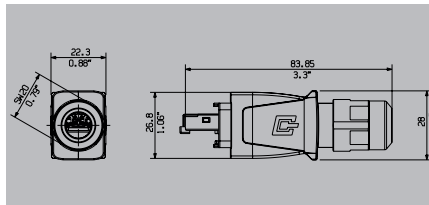
- 4-wire, RJ45 plug field attachable with colour coding on the plug

### 4-wire, field-attachable

#### PROFINET printing



### 4-wire, crimp



#### Technical data

Category
Protection degree
Housing main material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connector standard
Connection diameter, flexible, min. / max.
Connection cross-section, flexible, min. / max.
Connection diameter, solid, min. / max.
Connection cross-section, solid, min. / max.
Approvals

Cat.5 (ISO/IEC 11801)
IP67
Zinc diecast
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
IEC 61076-3-117 Var. 14, IEC 60603-7-51
0.48 mm / 0.76 mm
AWG 26 / AWG 22
0.4 mm / 0.64 mm
AWG 24 / AWG 22
CULUS

Cat.5 (ISO/IEC 11801)
IP67
Zinc diecast
Gold over nickel
5.5 mm / 7.5 mm
750
-40 °C...70 °C
IEC 60603-7, IEC 61076-3-117 Var. 14
0.57 mm / 0.64 mm
AWG 23 / AWG 22
0.57 mm / 0.64 mm
AWG 23 / AWG 22
CULUS

Other approvals for individual parts of the set available

CULUS

#### Ordering data - Sets

RJ45
Note

Type	Qty.	Order No.
IE-PS-V14M-RJ45-FHP	10	1012170000

Type	Qty.	Order No.
IE-PS-V14M-RJ45-TH-P	10	2768740000

#### Ordering data - Empty housings

Note
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Type	Qty.	Order No.
IE-PH-V14M-RJ	10	1011560000

Type	Qty.	Order No.
IE-PH-V14M-RJ	10	1011560000

#### Accessories

Dust protection cap	Protective cap
Marking tags	MultiCard, white
Plug insert for V14 PROFINET crimp	Replacement crimp inserts
Tools	Pressing tool

Type	Qty.	Order No.
IE-PP-V14P	10	1058280000
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
IE-PP-V14P	10	1058280000
ESG 9/11 K MC NE WS	200	1857440000
IE-PI-RJ45-TH-P	10	2768720000
IE-CWZ-RJ45-TH-P	1	2614210000

Note

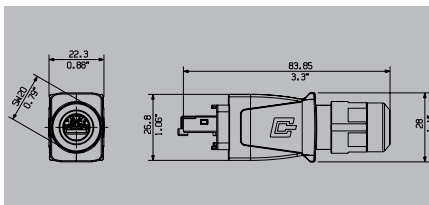
Plug inserts can also be ordered separately. Refer to Inserts.



**Plug PushPull V14 - RJ45**

- 8-wire, RJ45 plug field attachable with colour coding on the plug

**8-wire, crimp**



**Technical data**

Category  
 Protection degree  
 Housing main material  
 Contact surface  
 Sheath diameter, min. / max.  
 Plugging cycles  
 Ambient temperature (operational)  
 Connector standard  
 Connection diameter, flexible, min. / max.  
 Connection cross-section, flexible, min. / max.  
 Connection diameter, solid, min. / max.  
 Connection cross-section, solid, min. / max.  
 Approvals

Cat.6A / Class EA (ISO/IEC 11801 2010)  
 IP67  
 Zinc diecast  
 Gold over nickel  
 5 mm / 10 mm  
 750  
 -40 °C...70 °C  
 IEC 61076-3-117 Var. 14, IEC 60603-7-51  
 0.46 mm / 0.61 mm  
 AWG 27/7 / AWG 24/7  
 0.36 mm / 0.51 mm  
 AWG 26/1 / AWG 24/1  
 CULUS

**Note**

**Ordering data - Sets**

	RJ45
<b>Note</b>	

Type	Qty.	Order No.
IE-PS-V14M-RJ45-TH	10	1012160000

**Ordering data - Empty housings**

<b>Note</b>	

Type	Qty.	Order No.
IE-PH-V14M-RJ	10	1011560000

**Accessories**

<b>Dust protection cap</b>	Protective cap
<b>Marking tags</b>	MultiCard, white
<b>Tools</b>	Pressing tool

Type	Qty.	Order No.
IE-PP-V14P	10	1058280000
ESG 9/11 K MC NE WS	200	1857440000
TT 8 RS MP 8	1	9202800000

**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

**PushPull V14 - RJ45 flange Module**

**4-wire**

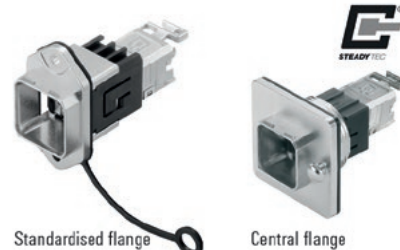
PROFINET printing



Standardised flange

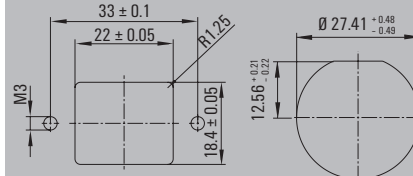
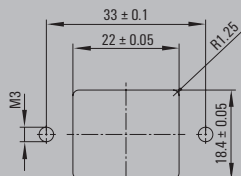
**8-wire**

TIA-A



Standardised flange

Central flange



**Technical data**

Category	
Protection degree	IP67
Housing main material	Zinc diecast
Contact surface	Gold over nickel
Sheath diameter, min. / max.	5 mm / 10 mm
Plugging cycles	750
Ambient temperature (operational)	-40 °C...70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-51
Connection diameter, flexible, min. / max.	0.48 mm / 0.76 mm
Connection cross-section, flexible, min. / max.	AWG 26 / AWG 22
Connection diameter, solid, min. / max.	0.4 mm / 0.64 mm
Connection cross-section, solid, min. / max.	AWG 24 / AWG 22
Approvals	CULUS
<b>Note</b>	Other approvals for individual parts of the set available

Category	
Protection degree	IP67
Housing main material	Zinc diecast
Contact surface	Gold over nickel
Sheath diameter, min. / max.	5 mm / 10 mm
Plugging cycles	750
Ambient temperature (operational)	-40 °C...70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-51
Connection diameter, flexible, min. / max.	0.48 mm / 0.76 mm
Connection cross-section, flexible, min. / max.	AWG 26 / AWG 22
Connection diameter, solid, min. / max.	0.4 mm / 0.64 mm
Connection cross-section, solid, min. / max.	AWG 24 / AWG 22
Approvals	CULUS
<b>Note</b>	Other approvals for individual parts of the set available

Category	
Protection degree	IP67
Housing main material	Zinc diecast
Contact surface	Gold over nickel
Sheath diameter, min. / max.	5 mm / 10 mm
Plugging cycles	750
Ambient temperature (operational)	-40 °C...70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-51
Connection diameter, flexible, min. / max.	0.48 mm / 0.76 mm
Connection cross-section, flexible, min. / max.	AWG 26 / AWG 22
Connection diameter, solid, min. / max.	0.4 mm / 0.64 mm
Connection cross-section, solid, min. / max.	AWG 24 / AWG 22
Approvals	CULUS
<b>Note</b>	Other approvals for individual parts of the set available

**Ordering data - Sets**

	Standardised flange
	Central flange
<b>Note</b>	

Type	Qty.	Order No.
IE-BSS-V14M-RJ45-FJ-P	10	1085260000

Type	Qty.	Order No.
IE-BSS-V14M-RJ45-FJ-A	10	1012320000
IE-BSC-V14M-RJ45-FJ-A	10	1058270000

**Ordering data - Empty housings**

	Standardised flange
	Central flange
	Device flange
<b>Note</b>	

Type	Qty.	Order No.
IE-BHS-V14M-RJA	10	1011540000
IE-BHC-V14M-RJA	10	1047950000
IE-BHD-V14M	10	1047940000

Type	Qty.	Order No.
IE-BHS-V14M-RJA	10	1011540000
IE-BHC-V14M-RJA	10	1047950000
IE-BHD-V14M	10	1047940000

**Accessories**

Dust protection cap	Protective cap
---------------------	----------------

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

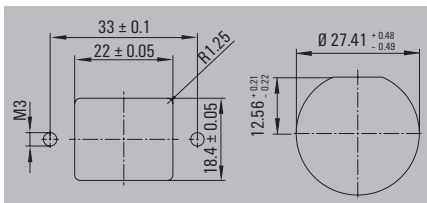
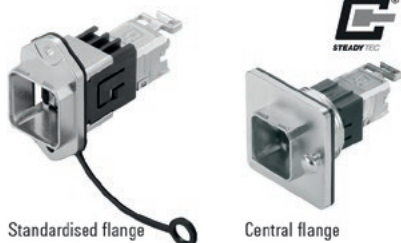
**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

Plug inserts can also be ordered separately, see Inserts

**PushPull V14 - RJ45 flange Coupling**

**8-wire**



**Technical data**

Category
Protection degree
Housing main material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connector standard
Connection diameter, flexible, min. / max.
Connection cross-section, flexible, min. / max.
Connection diameter, solid, min. / max.
Connection cross-section, solid, min. / max.
Approvals
<b>Note</b>

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67
Zinc diecast
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
IEC 61076-3-117 Var. 14, IEC 60603-7-51
CULUS
Other approvals for individual parts of the set available

**Ordering data - Sets**

Standardised flange
Central flange
<b>Note</b>

Type	Qty.	Order No.
IE-BSS-V14M-RJ45-C	10	1012310000
IE-BSC-V14M-RJ45-C	10	1058250000

**Ordering data - Empty housings**

Standardised flange
Central flange
Device flange
<b>Note</b>

Type	Qty.	Order No.
IE-BHS-V14M-RJA	10	1011540000
IE-BHC-V14M-RJA	10	1047950000
IE-BHD-V14M	10	1047940000

**Accessories**

Dust protection cap
Protective cap

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

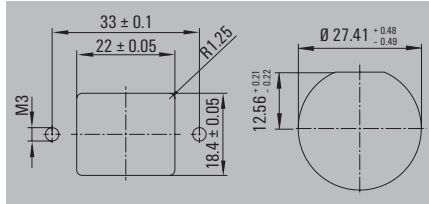
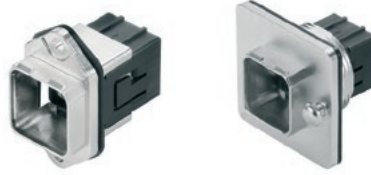


**PushPull V14 - RJ45**

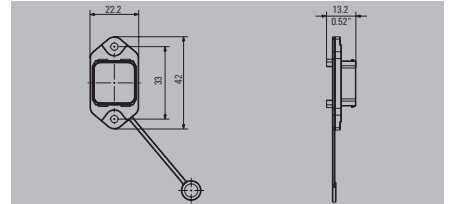
**Flange-mounted empty housing / PushPull device flange V14**

- IP 67

**Empty housing**



**Device flange**



**Technical data**

- Category
- Protection degree
- Housing main material
- Contact surface
- Sheath diameter, min. / max.
- Plugging cycles
- Ambient temperature (operational)
- Connector standard
- Connection diameter, flexible, min. / max.
- Connection cross-section, flexible, min. / max.
- Connection diameter, solid, min. / max.
- Connection cross-section, solid, min. / max.
- Approvals

IP67  
Zinc diecast  
  
750  
-40 °C...70 °C  
IEC 61076-3-117 Var. 14

IP67  
Zinc diecast  
  
750  
-40 °C...70 °C  
IEC 61076-3-117 Var. 14

**Note**

CULUS

CULUS

**Ordering data**

- Standardised flange
- Central flange
- Device flange

Type	Qty.	Order No.
IE-BHS-V14M-RJA	10	1011540000
IE-BHC-V14M-RJA	10	1047950000

Type	Qty.	Order No.
IE-BHD-V14M	10	1047940000

**Note**

**Accessories**

Dust protection cap	
Protective cap	

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

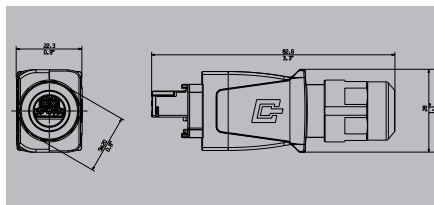
Plug inserts can also be ordered separately. Refer to Inserts.

Plug PushPull V14 - Hybrid

Hybrid



**sercos**  
the automation bus



Technical data

Category
Protection degree
Housing main material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connection 1 / 2
Connector standard
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Rated current (hybrid connector)
Volume resistance
Approvals
<b>Note</b>

Cat.5 (ISO/IEC 11801)
IP67
Zinc diecast
Gold over nickel
5 mm / 10 mm
500
-40 °C...70 °C
Hybrid (Q10) / Crimp
IEC 61076-3-119 CDV, IEC 61076-3-117 Var. 14
AWG 27 / AWG 20
0.08 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
3 A per contact
<10 mΩ
CULUS
Other approvals for individual parts of the set available

Ordering data - Sets

<b>Note</b>
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Type	Qty.	Order No.
IE-PS-V14M-HYB-10P	10	1072910000
Order contacts separately		

Ordering data - Empty housings

<b>Note</b>
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Type	Qty.	Order No.
IE-PH-V14M-RJ	10	1011560000

Accessories

<b>Crimping contact (sockets)</b>
0.08...0.2 mm <sup>2</sup>
0.2...0.5 mm <sup>2</sup>
0.75 mm <sup>2</sup>
<b>Tools</b>
Pressing tool
<b>Cable</b>
Hybrid cable, 100 m
Hybrid cable, 500 m
<b>Dust protection cap</b>
Protective cap
<b>Marking tags</b>
MultiCard, white

Type	Qty.	Order No.
IE-PIC-HYB-S-0,2-300	300	1135150000
IE-PIC-HYB-S-0,5-300	300	1096180000
IE-PIC-HYB-S-0,75-300	300	1068950000
HTF HYB	1	1119580000
IE-C5DHAG-100	1	2763660000
IE-C5DHAG-500	1	2763460000
IE-PP-V14P	10	1058280000
ESG 9/11 K MC NEWS	200	1857440000

<b>Note</b>
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Plug inserts can also be ordered separately. Refer to Inserts.
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PushPull V14 - Hybrid

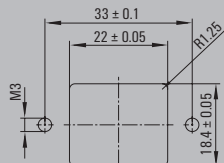
Flange PushPull V14 - Hybrid

Standardised flange

Pin contacts



**sercos**  
the automation bus



Technical data

Category
Protection degree
Housing main material
Seal material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connection 1 / 2
Connector standard
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Rated current (hybrid connector)
Volume resistance
Approvals
<b>Note</b>

Cat.5 (ISO/IEC 11801)
IP67
Zinc diecast
EPDM
Gold over nickel
5 mm / 10 mm
500
-40 °C...70 °C
Hybrid (Q10) / Crimp
IEC 61076-3-119 CDV, IEC 61076-3-117 Var. 14
AWG 27 / AWG 20
0.08 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
3 A per contact
<10 mΩ
CULUS
Other approvals for individual parts of the set available

Ordering data - Sets

<b>Note</b>
-------------

Type	Qty.	Order No.
IE-BSS-V14M-HYB-10P-FJ	10	1072900000
Order contacts separately		

Ordering data - Empty housings

Standardised flange
<b>Note</b>

Type	Qty.	Order No.
IE-BHS-V14M-RJA	10	1011540000

Accessories

<b>Crimping contact (pins)</b>	
	0.08...0.2 mm <sup>2</sup>
	0.2...0.5 mm <sup>2</sup>
	0.75 mm <sup>2</sup>
<b>Tools</b>	Pressing tool
<b>Cable</b>	Hybrid cable, 100 m Hybrid cable, 500 m
<b>Dust protection cap</b>	Protective cap

Type	Qty.	Order No.
IE-BIC-HYB-P-0,2-300	300	1135160000
IE-BIC-HYB-P-0,5-300	300	1096150000
IE-BIC-HYB-P-0,75-300	300	1068970000
HTF HYB	1	1119580000
IE-C5DHAG-100	1	2763660000
IE-C5DHAG-500	1	2763460000
IE-BP-V14P	10	1058310000

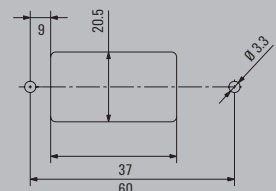
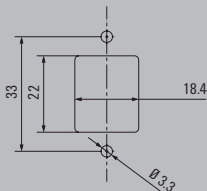
<b>Note</b>
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Plug inserts can also be ordered separately. Refer to Inserts.
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V14 flange adapter

Straight

Angled



Technical data

Protection degree
Housing main material
Seal material
Type of mounting
Ambient temperature (operational)
Note

IP67
Zinc diecast
EPDM
2 screws, M3 (not included)
-40...70 °C
Note

IP67
Zinc diecast
EPDM
2 screws, M3 (not included)
-40...70 °C
Note

Ordering data

Note
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Type	Qty.	Order No.
IE-AD-BHS-V14M-RJA	1	1302000000
Flange and plug inserts must be ordered separately, see Inserts/Flanges		

Type	Qty.	Order No.
IE-BHS-V14M-RJA-45	10	1296710000
Flange inserts must be ordered separately, see Inserts		

Accessories

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Type	Qty.	Order No.

Type	Qty.	Order No.

Note
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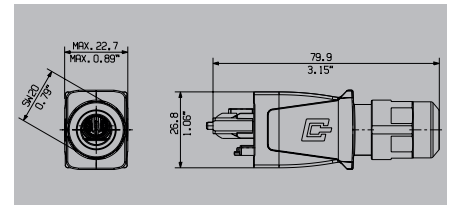
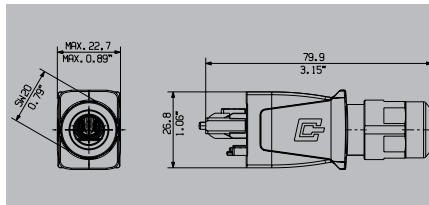
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PushPull V14 plug - fibre-optic

Without kink prevention, crimp

Without kink prevention, reconnectable



Technical data

Protection degree
Housing main material
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connector standard
Approvals
<b>Note</b>

IP67
Zinc diecast
5 mm / 10 mm
750
-40...70 °C
IEC 61076-3-117 Var. 14, IEC 61754-24
CULUS

IP67
Zinc diecast
5 mm / 10 mm
750
-40...70 °C
IEC 61076-3-117 Var. 14, IEC 61754-24

Ordering data - Sets

	POF
<b>Note</b>	

Type	Qty.	Order No.
IE-PS-V14M-2SC-POF	10	1191550000

Type	Qty.	Order No.
IE-PS-V14M-2SC-POF-QA	10	2568260000

Ordering data - Empty housings

<b>Note</b>
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Type	Qty.	Order No.
IE-PH-V14M-F0	10	1058100000

Type	Qty.	Order No.
IE-PH-V14M-F0	10	1058100000

Accessories

<b>Inserts</b>	POF
<b>Dust protection cap</b>	Protective cap
<b>Tools</b>	Tool set POF, crimp Mounting tool, POF MULTI-STRIPAX IE-POF Cevlar scissors
<b>Replacement ferrule</b>	
<b>Marking tags</b>	MultiCard, white

Type	Qty.	Order No.
IE-PI-SCRJ-POF	10	1067410000
IE-PP-V14P	10	1058280000
TOOL SET IE-POF	1	1208930000
HTX-IE-POF	1	1208870000
MULTI-STRIPAX IE-POF	1	1208880000
SCISSORS KEVLAR	1	1208910000
IE-SCR-JP67-POF-100	100	1278430000
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
IE-PI-SCRJ-POF-QA	10	2564960000
IE-PP-V14P	10	1058280000
HTX-IE-POF-QA	1	2602860000
MULTI-STRIPAX IE-POF	1	1208880000
SCISSORS KEVLAR	1	1208910000
ESG 9/11 K MC NE WS	200	1857440000

**Note**

Plug inserts can also be ordered separately, see Inserts

Plug inserts can also be ordered separately, see Inserts

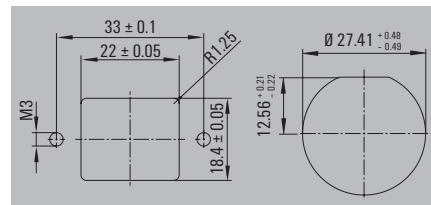
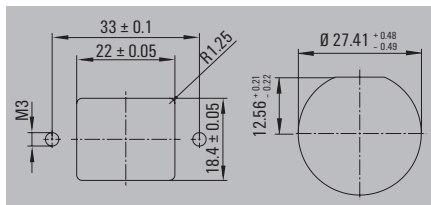
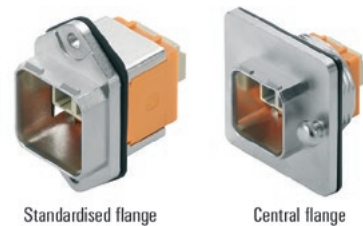
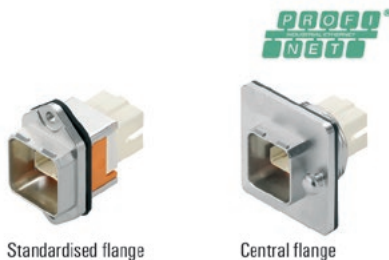


Flange PushPull V14 - fibre-optic

SCRJ

LC Duplex coupling

IP67 plug-in connectors



Technical data

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Insertion loss
Connector standard
Approvals
<b>Note</b>

IP67
Zinc diecast
500
-40 °C...70 °C
≤ 0.5 dB
IEC 61076-3-117 Var. 14, IEC 61754-24
CULUS

IP67
Zinc diecast
500
-40 °C...70 °C
≤ 0.4 dB
IEC 61076-3-117 Var. 14, IEC 61754-20

Ordering data - Sets

Central flange Singlemode
Standardised flange Singlemode
Central flange Multimode/POF
Standardised flange Multimode/POF
<b>Note</b>

Type	Qty.	Order No.
IE-BSC-V14M-SCRJ-SM-C	10	1062600000
IE-BSS-V14M-SCRJ-SM-C	10	1058140000
IE-BSC-V14M-SCRJ-MM-C	10	1062590000
IE-BSS-V14M-SCRJ-MM-C	10	1058120000

Type	Qty.	Order No.
IE-BSC-V14M-LCD-SM-C	10	1062620000
IE-BSS-V14M-LCD-SM-C	10	1058150000
IE-BSC-V14M-LCD-MM-C	10	1062610000
IE-BSS-V14M-LCD-MM-C	10	1058130000

Ordering data - Empty housings

Device flange
<b>Note</b>

Type	Qty.	Order No.
IE-BHD-V14M	10	1047940000

Type	Qty.	Order No.
IE-BHD-V14M	10	1047940000

Accessories

Dust protection cap
Protective cap

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

**Note**

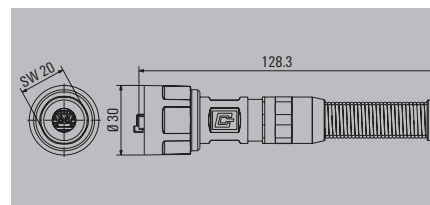
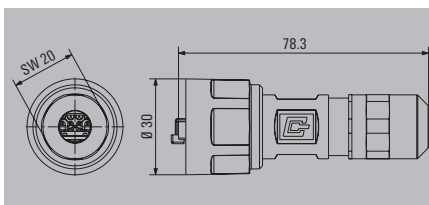
Plug inserts can also be ordered separately. Refer to Inserts.

Plug inserts can also be ordered separately. Refer to Inserts.

Plug bayonet V1 Metal - RJ45

Without kink prevention

With kink prevention



Technical data

Category
Protection degree
Housing main material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Connection cross-section, solid, min. / max.
Connection diameter, solid, min. / max.
Connector standard
Approvals
Note

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67
Zinc diecast
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
IEC 61076-3-106 Var. 1, IEC 60603-7-51
CULUS

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67
Zinc diecast
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
IEC 61076-3-106 Var. 1, IEC 60603-7-51
CULUS

Ordering data - Sets

RJ45 without tools. AWG 26-22. TIA-A/B-PROFINET
RJ45 Crimp. AWG 27-24
Note

Type	Qty.	Order No.
IE-PS-V01M-RJ45-FH	10	1963120000
IE-PS-V01M-RJ45-TH	10	1963140000

Type	Qty.	Order No.
IE-PS-V01M-RJ45-FH-BP	10	1963130000
IE-PS-V01M-RJ45-TH-BP	10	1963150000

Ordering data - Empty housings

Note
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Type	Qty.	Order No.
IE-PH-V01M	10	1962550000

Type	Qty.	Order No.
IE-PH-V01M-BP	10	1962560000

Accessories

Dust protection cap	Plug housing protective cap
Marking tags	MultiCard, white

Type	Qty.	Order No.
IE-PP-V01P	10	1965690000
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
IE-PP-V01P	10	1965690000
ESG 9/11 K MC NE WS	200	1857440000

Note
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Plug inserts can also be ordered separately. Refer to Inserts.
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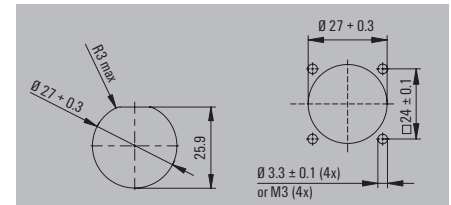
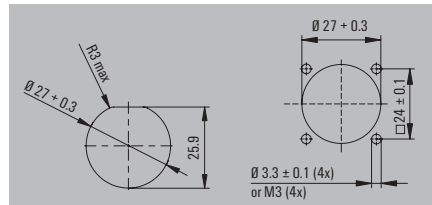
Plug inserts can also be ordered separately. Refer to Inserts.
--

Flange bayonet V1 Metal - RJ45

Module

Coupling

TIA-A



Technical data

Category
Protection degree
Housing main material
Contact surface
Plugging cycles
Ambient temperature (operational)
Connector standard
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Connection cross-section, solid, min. / max.
Connection diameter, solid, min. / max.
Approvals
<b>Note</b>

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67
Zinc diecast
Gold over nickel
750
-40 °C...70 °C
IEC 61076-3-106 Var. 1, IEC 60603-7-51
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
CULUS
<b>Note</b>

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67
Zinc diecast
Gold over nickel
750
-40 °C...70 °C
IEC 61076-3-106 Var. 1, IEC 60603-7-51
CULUS
<b>Note</b>

Ordering data - Sets

<b>Note</b>
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Type	Qty.	Order No.
IE-BS-V01M-RJ45-FJ-A	10	1963480000

Type	Qty.	Order No.
IE-BS-V01M-RJ45-C	10	1963470000

Ordering data - Empty housings

<b>Note</b>
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Type	Qty.	Order No.
IE-BH-V01M	10	1963540000

Type	Qty.	Order No.
IE-BH-V01M	10	1963540000

Accessories

Dust protection cap
Flange-mounted housing protective cap

Type	Qty.	Order No.
IE-BP-V01P	10	1965700000

Type	Qty.	Order No.
IE-BP-V01P	10	1965700000

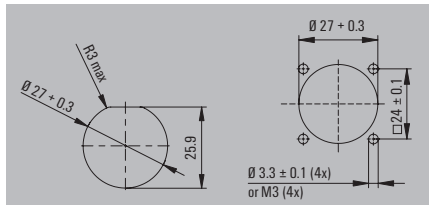
<b>Note</b>
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Plug inserts can also be ordered separately. Refer to Inserts.
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Plug inserts can also be ordered separately. Refer to Inserts.
--

Flange bayonet V1 metal - fibre-optic-SC

Standardised flange



Technical data

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Approvals
<b>Note</b>

IP67
Zinc diecast
500
-40 °C...70 °C
IEC 61076-3-106 Var. 1, IEC 61754-24
<b>Note</b>

Ordering data - Sets

Singlemode
Multimode/POF
<b>Note</b>

Type	Qty.	Order No.
IE-BS-V01M-SCRJ-SM	10	1221020000
IE-BS-V01M-SCRJ-MM	10	1221010000
<b>Note</b>		

Ordering data - Empty housings

<b>Note</b>
-------------

Type	Qty.	Order No.
IE-BHD-V01M-SCA	10	1221030000
<b>Note</b>		

Accessories

Dust protection cap
Flange-mounted housing protective cap
<b>Note</b>

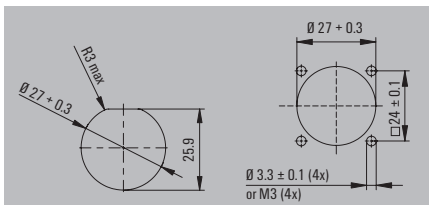
Type	Qty.	Order No.
IE-BP-V01P	10	1965700000
<b>Note</b>		

**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

Flange bayonet V1 metal - fibre-optic-LC

Standardised flange



Technical data

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Approvals
<b>Note</b>

IP67
Zinc diecast
500
-40 °C...70 °C
IEC 61076-3-106 Var. 1, IEC 61754-20
<b>Note</b>

Ordering data - Sets

Singlemode
Multimode
<b>Note</b>

Type	Qty.	Order No.
IE-BS-V01M-LCD-SM-C	10	1963430000
IE-BS-V01M-LCD-MM-C	10	1964440000
<b>Note</b>		

Ordering data - Empty housings

<b>Note</b>
-------------

Type	Qty.	Order No.
IE-BH-V01M	10	1963540000
<b>Note</b>		

Accessories

<b>Dust protection cap</b>
Flange-mounted housing protective cap

Type	Qty.	Order No.
IE-BP-V01P	10	1965700000
<b>Note</b>		

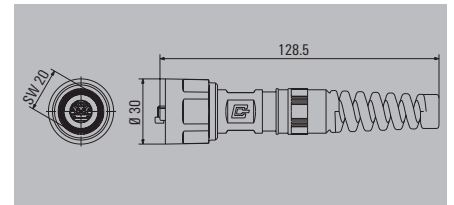
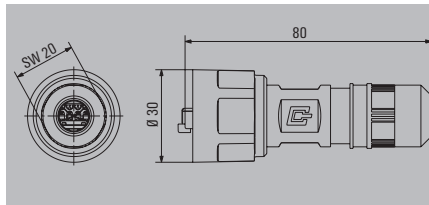
<b>Note</b>
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Plug inserts can also be ordered separately. Refer to Inserts.
--

Plug bayonet V1 Plastic - RJ45

Without kink prevention

With kink prevention



Technical data

Category
Protection degree
Housing main material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Connection cross-section, solid, min. / max.
Connection diameter, solid, min. / max.
Connector standard
Approvals

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67
PA UL 94 V0
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
IEC 61076-3-106 Var. 1, IEC 60603-7-51
CULUS

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67
PA UL 94 V0
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
IEC 61076-3-106 Var. 1, IEC 60603-7-51
CULUS

Note

Ordering data - Sets

RJ45 without tools. AWG 26-22. TIA-A/B-PROFINET
RJ45 Crimp. AWG 27-24

Note

Type	Qty.	Order No.
IE-PS-V01P-RJ45-FH	10	1012490000
IE-PS-V01P-RJ45-TH	10	1012470000

Type	Qty.	Order No.
IE-PS-V01P-RJ45-FH-BP	10	1012570000
IE-PS-V01P-RJ45-TH-BP	10	1012560000

Ordering data - Empty housings

Note

Type	Qty.	Order No.
IE-PH-V01P	10	1012440000

Type	Qty.	Order No.
IE-PH-V01P-BP	10	1012460000

Accessories

Dust protection cap	Plug housing protective cap
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Marking tags	MultiCard, white
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Type	Qty.	Order No.
IE-PP-V01P	10	1965690000

ESG 9/11 K MC NE WS	200	1857440000
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Type	Qty.	Order No.
IE-PP-V01P	10	1965690000

ESG 9/11 K MC NE WS	200	1857440000
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Note

Plug inserts can also be ordered separately. Refer to Inserts.

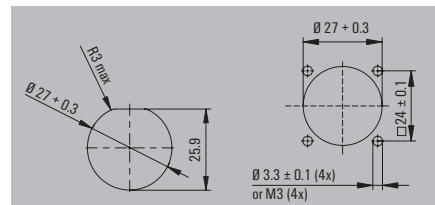
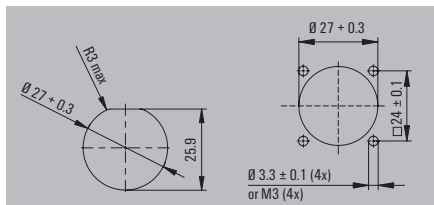
Plug inserts can also be ordered separately. Refer to Inserts.

Flange bayonet V1 Plastic - RJ45

Module

Coupling

TIA-A



Technical data

Category
Protection degree
Housing main material
Contact surface
Plugging cycles
Ambient temperature (operational)
Connector standard
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Connection cross-section, solid, min. / max.
Connection diameter, solid, min. / max.
Approvals
<b>Note</b>

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67
PA UL 94 V0
Gold over nickel
750
-40 °C...70 °C
IEC 61076-3-106 Var. 1, IEC 60603-7-51
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
CULUS
<b>Note</b>

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67
PA UL 94 V0
Gold over nickel
750
-40 °C...70 °C
IEC 61076-3-106 Var. 1, IEC 60603-7-51
CULUS
<b>Note</b>

Ordering data - Sets

<b>Note</b>
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Type	Qty.	Order No.
IE-BS-V01P-RJ45-FJ-A	10	1012380000

Type	Qty.	Order No.
IE-BS-V01P-RJ45-C	10	1012370000

Ordering data - Empty housings

<b>Note</b>
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Type	Qty.	Order No.
IE-BH-V01P	10	1016960000

Type	Qty.	Order No.
IE-BH-V01P	10	1016960000

Accessories

Dust protection cap
Flange-mounted housing protective cap

Type	Qty.	Order No.
IE-BP-V01P	10	1965700000

Type	Qty.	Order No.
IE-BP-V01P	10	1965700000

<b>Note</b>
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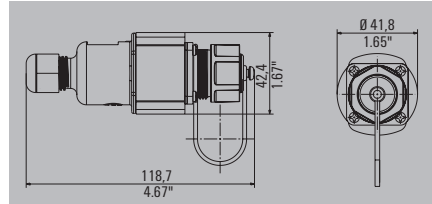
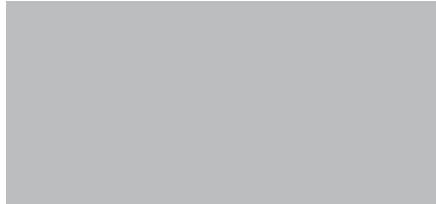
Plug inserts can also be ordered separately. Refer to Inserts.
--

Plug inserts can also be ordered separately. Refer to Inserts.
--

**Bayonet V1 Plastic-RJ45**

**Cable coupling bayonet V1  
Plastic - RJ45**

**Cable coupling**



**Technical data**

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Sheath diameter, min. / max.
Approvals
<b>Note</b>

IP67
PA UL 94 V0
750
-40 °C...70 °C
IEC 61076-3-106 Var. 1
6 mm / 9.5 mm
<b>Note</b>

**Ordering data**

<b>Variant 1</b>	Cable coupling
<b>Note</b>	

Type	Qty.	Order No.
IE-CC-V01P	10	<b>1061820000</b>
RJ45 modules can be ordered separately		

**Accessories**

Inserts, Data
RJ45 module EIA/TIA T568 B
RJ45 module PROFINET
RJ45 module EIA/TIA T568 A

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	<b>1963840000</b>
IE-BI-RJ45-FJ-P	10	<b>1963830000</b>
IE-BI-RJ45-FJ-A	10	<b>1962850000</b>

<b>Note</b>
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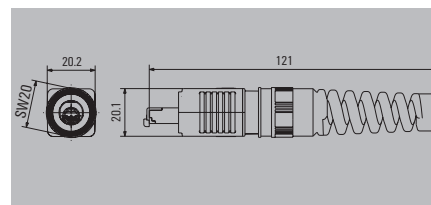
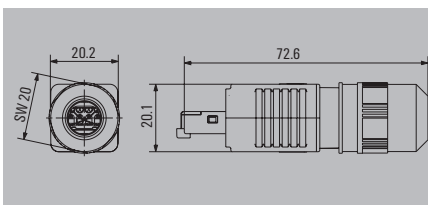
<b>Note</b>
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Plug PushPull V4 - RJ45

Without kink prevention

With kink prevention



Technical data

Category
Protection degree
Housing main material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Connection cross-section, solid, min. / max.
Connection diameter, solid, min. / max.
Connector standard
Approvals
Note

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67
PA UL 94 V0
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
AWG 27/7 / AWG 24/7
0.46 mm / 0.61 mm
AWG 26/1 / AWG 24/1
0.36 mm / 0.51 mm
IEC 61076-3-106 Var. 4, IEC 60603-7-51
CULUS

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67
PA UL 94 V0
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
AWG 27/7 / AWG 24/7
0.46 mm / 0.61 mm
AWG 26/1 / AWG 24/1
0.36 mm / 0.51 mm
IEC 61076-3-106 Var. 4, IEC 60603-7-51
CULUS

Ordering data - Sets

RJ45 without tools. AWG 26-22. TIA-A/B-PROFINET
RJ45 without tools. AWG 26-22. TIA-B
RJ45 Crimp. AWG 27-24
Note

Type	Qty.	Order No.
IE-PS-V04P-RJ45-FH	10	1963160000
IE-PS-V04P-RJ45-FH-B	10	1271240000
IE-PS-V04P-RJ45-TH	10	1963180000

Type	Qty.	Order No.
IE-PS-V04P-RJ45-FH-BP	10	1963170000
IE-PS-V04P-RJ45-TH-BP	10	1963190000

Ordering data - Empty housings

Note
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Type	Qty.	Order No.
IE-PH-V04P	10	1962520000

Type	Qty.	Order No.
IE-PH-V04P-BP	10	1962530000

Accessories

Dust protection cap	Plug housing protective cap
Marking tags	MultiCard, white

Type	Qty.	Order No.
IE-PP-V04P	10	1963890000
ESG 9/11 K MC NE WS	200	1857440000

Type	Qty.	Order No.
IE-PP-V04P	10	1963890000
ESG 9/11 K MC NE WS	200	1857440000

Note

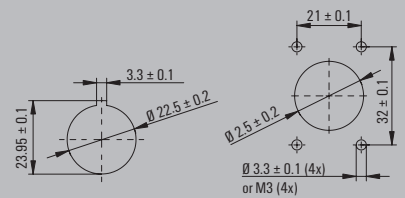
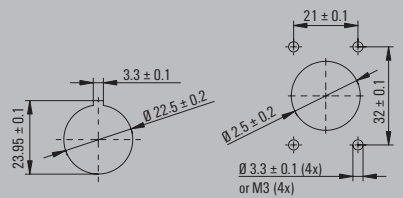
Plug inserts can also be ordered separately. Refer to Inserts.

Plug inserts can also be ordered separately. Refer to Inserts.

Flange PushPull V4 - RJ45

Module

Coupling



Technical data

Category  
 Protection degree  
 Housing main material  
 Contact surface  
 Plugging cycles  
 Ambient temperature (operational)  
 Connector standard  
 Connection cross-section, flexible, min. / max.  
 Connection diameter, flexible, min. / max.  
 Connection cross-section, solid, min. / max.  
 Connection diameter, solid, min. / max.  
 Approvals

Note

Cat.6A / Class EA (ISO/IEC 11801 2010)  
 IP67  
 PA UL 94 V0  
 Gold over nickel  
 750  
 -40 °C...70 °C  
 IEC 61076-3-106 Var. 4, IEC 60603-7-51  
 AWG 26 / AWG 22  
 0.48 mm / 0.76 mm  
 AWG 24 / AWG 22  
 0.4 mm / 0.64 mm  
 CULUS

Other approvals for individual parts of the set available

Cat.6A / Class EA (ISO/IEC 11801 2010)  
 IP67  
 PA UL 94 V0  
 Gold over nickel  
 750  
 -40 °C...70 °C  
 IEC 61076-3-106 Var. 4, IEC 60603-7-51

CULUS

Ordering data - Sets

RJ45 module TIA-A  
 RJ45 module TIA-B  
 Coupling

Note

Type	Qty.	Order No.
IE-BS-V04P-RJ45-FJ-A	10	1963500000
IE-BS-V04P-RJ45-FJ-B	10	1963730000

Type	Qty.	Order No.
IE-BS-V04P-RJ45-C	10	1963490000

Ordering data - Empty housings

Empty enclosure  
 Device flange

Note

Type	Qty.	Order No.
IE-BH-V04P	10	1963520000
IE-BHD-V04P	200	2027660000

Type	Qty.	Order No.
IE-BH-V04P	10	1963520000
IE-BHD-V04P	200	2027660000

Accessories

Dust protection cap  
 Flange-mounted housing protective cap  
 Marking tags  
 MultiCard, white  
 Fixing tool

Type	Qty.	Order No.
IE-BP-V04P	10	1963900000
ESG 9/11 K MC NE WS	200	1857440000
IE-FISP-V4	2	9204370000

Type	Qty.	Order No.
IE-BP-V04P	10	1963900000
ESG 9/11 K MC NE WS	200	1857440000
IE-FISP-V4	2	9204370000

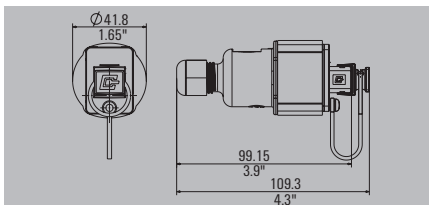
Note

Plug inserts can also be ordered separately. Refer to Inserts.

Plug inserts can also be ordered separately. Refer to Inserts.

Cable coupling PushPull V4 - RJ45

Cable coupling



Technical data

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Sheath diameter, min. / max.
Approvals
<b>Note</b>

IP67
PA UL 94 V0
750
-40 °C...70 °C
IEC 61076-3-106 Var. 4
6 mm / 9.5 mm

Ordering data

Cable coupling
<b>Note</b>

Type	Qty.	Order No.
IE-CC-V04P	10	1045960000
RJ45 modules can be ordered separately		

Accessories

Inserts, Data	
RJ45 module EIA/TIA T568 B	
RJ45 module PROFINET	
RJ45 module EIA/TIA T568 A	
Marking tags	
MultiCard, white	

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000
ESG 9/11 K MC NE WS		
	200	1857440000

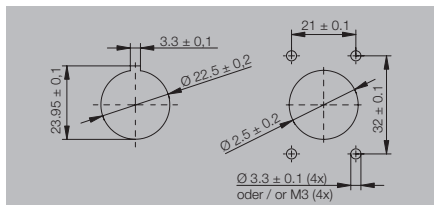
**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

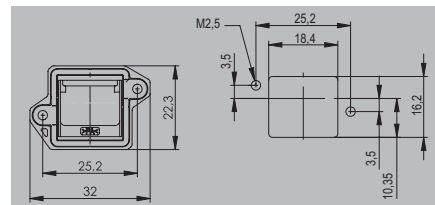
**Flange-mounted empty housing / PushPull V4 device flange**

- IP 67

**Empty housing**



**Device flange**



**Technical data**

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Sheath diameter, min. / max.
Approvals
<b>Note</b>

IP67
PA UL 94 V0
750
-40 °C...70 °C
IEC 61076-3-106 Var. 4
5 mm / 10 mm
CULUS

IP67
PA UL 94 V0
-40 °C...70 °C
IEC 61076-3-106 Var. 4
CULUS

**Ordering data**

	Empty housing
	Device flange
<b>Note</b>	

Type	Qty.	Order No.
IE-BH-V04P	10	1963520000

Type	Qty.	Order No.
IE-BHD-V04P	200	2027660000

**Accessories**

<b>Dust protection cap</b>	Flange-mounted housing protective cap
<b>Marking tags</b>	MultiCard, white
<b>Fixing tool</b>	

Type	Qty.	Order No.
IE-BP-V04P	10	1963900000
ESG 9/11 K MC NE WS	200	1857440000
IE-FISP-V4	2	9204370000

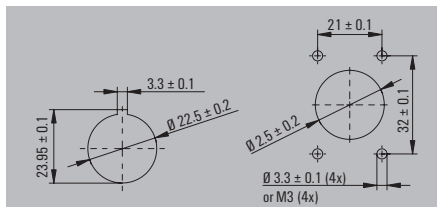
Type	Qty.	Order No.
IE-BP-V04P	10	1963900000
ESG 9/11 K MC NE WS	200	1857440000
IE-FISP-V4	2	9204370000

**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

Flange PushPull V4 - fibre-optic-SC

Standardised flange



Technical data

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Approvals
<b>Note</b>

IP67
PA UL 94 V0
500
-40 °C...70 °C
IEC 61076-3-106 Var. 4, IEC 61754-4, IEC 61754-24
<b>Note</b>

Ordering data - Sets

Singlemode
Multimode
<b>Note</b>

Type	Qty.	Order No.
IE-BS-V04P-SCRJ2SC-SM-C	10	1963420000
IE-BS-V04P-SCRJ2SC-MM-C	10	1964470000

Ordering data - Empty housings

Empty housing
<b>Note</b>

Type	Qty.	Order No.
IE-BH-V04P	10	1963520000

Accessories

Dust protection cap	Flange-mounted housing protective cap
Marking tags	MultiCard, white
Fixing tool	

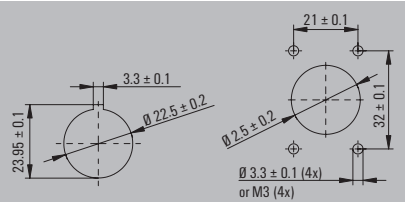
Type	Qty.	Order No.
IE-BP-V04P	10	1963900000
ESG 9/11 K MC NE WS	200	1857440000
IE-FISP-V4	2	9204370000

**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

Flange PushPull V4 - fibre-optic-LC

Standardised flange



Technical data

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Approvals
<b>Note</b>

IP67
PA UL 94 V0
500
-40 °C...70 °C
IEC 61076-3-106 Var. 4, IEC 61754-20
<b>Note</b>

Ordering data - Sets

Singlemode
Multimode
<b>Note</b>

Type	Qty.	Order No.
IE-BS-V04P-LCD-SM-C	10	1963450000
IE-BS-V04P-LCD-MM-C	10	1964460000
<b>Note</b>		

Ordering data - Empty housings

Empty housing
<b>Note</b>

Type	Qty.	Order No.
IE-BH-V04P	10	1963520000
<b>Note</b>		

Accessories

Dust protection cap	Flange-mounted housing protective cap
Marking tags	MultiCard, white
Fixing tool	

Type	Qty.	Order No.
IE-BP-V04P	10	1963900000
ESG 9/11 K MC NE WS	200	1857440000
IE-FISP-V4	2	9204370000

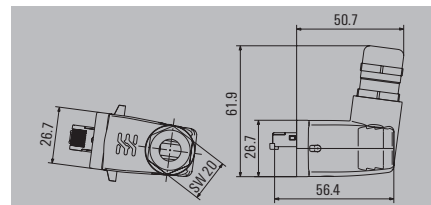
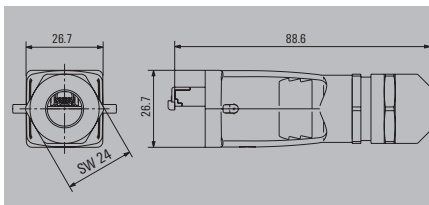
**Note**

Plug inserts can also be ordered separately. Refer to Inserts.

RockStar® heavy-duty connector plug  
V5 - RJ45

Straight V5 - RJ45 plug

V5 - RJ45 plug, angled



Technical data

Category
Protection degree
Housing main material
Contact surface
Sheath diameter, min. / max.
Plugging cycles
Ambient temperature (operational)
Connector standard
Approvals
Note

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67
diecast aluminium
Gold over nickel
5 mm / 12 mm
750
-40 °C...70 °C
IEC 61076-3-106 Var. 5, IEC 60603-7-51
CULUS

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67
diecast aluminium
Gold over nickel
5 mm / 10 mm
750
-40 °C...70 °C
IEC 61076-3-106 Var. 5, IEC 60603-7-51
EAC
Other approvals for individual parts of the set available

Ordering data - Sets

RJ45 without tools. AWG 26-22. TIA-A/B-PROFINET
RJ45 without tools. AWG 26-22 . TIA-B
RJ45 Crimp. AWG 27-24
Note

Type	Qty.	Order No.
IE-PS-V05M-RJ45-FH	10	1963200000
IE-PS-V05M-RJ45-FH-B	10	1271250000
IE-PS-V05M-RJ45-TH	10	1963110000

Type	Qty.	Order No.
IE-PS-V05M-A-RJ45-FH	10	1077300000

Ordering data - Empty housings

Note
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Type	Qty.	Order No.
IE-PH-V05M	10	1962540000

Type	Qty.	Order No.

Accessories

Dust protection cap
Plug housing protective cap
Spare insert holder

Type	Qty.	Order No.
IE-PP-V05M	1	1968920000
IE-PH-AD-V05M-RJ45	1	1993540000

Type	Qty.	Order No.
IE-PP-V05M	1	1968920000

Note

Plug inserts can also be ordered separately. Refer to Inserts.

Plug inserts can also be ordered separately. Refer to Inserts.

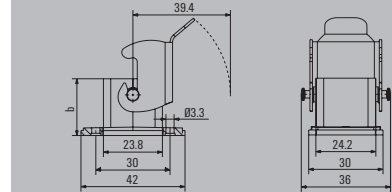
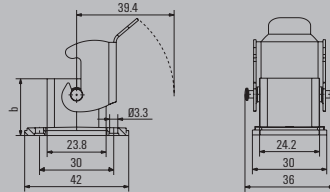
IP67 plug-in connectors

N

RockStar® heavy-duty connector flange  
V5 - RJ45

Module

Coupling



Technical data

Protection degree  
Housing main material  
Contact surface  
Plugging cycles  
Ambient temperature (operational)  
Connector standard  
Connection cross-section, flexible, min. / max.  
Connection diameter, flexible, min. / max.  
Connection cross-section, solid, min. / max.  
Connection diameter, solid, min. / max.  
Approvals

IP67  
diecast aluminium  
Gold over nickel  
750  
-40 °C...70 °C  
IEC 61076-3-106 Var. 5, IEC 60603-7-51  
AWG 26 / AWG 22  
0.48 mm / 0.76 mm  
AWG 24 / AWG 22  
0.4 mm / 0.64 mm  
CULUS

IP67  
diecast aluminium  
Gold over nickel  
750  
-40 °C...70 °C  
IEC 61076-3-106 Var. 5, IEC 60603-7-51

Note

CULUS

Ordering data - Sets

TIA-A Cat. 6<sub>A</sub>  
PROFINET Cat. 5  
Coupling

Type	Qty.	Order No.
IE-BS-V05M-RJ45-FJ-A	10	1963460000
IE-BS-V05M-RJ45-FJ-P	10	1963700000

Type	Qty.	Order No.
IE-BS-V05M-RJ45-C	10	1963510000

Note

Ordering data - Empty housings

Type	Qty.	Order No.
IE-BH-V05M	10	1963530000

Type	Qty.	Order No.
IE-BH-V05M	10	1963530000

Note

Accessories

Dust protection cap
Flange-mounted housing protective cap

Type	Qty.	Order No.
IE-BP-V05M	10	1968930000

Type	Qty.	Order No.
IE-BP-V05M	10	1968930000

Note

Plug inserts can also be ordered separately. Refer to Inserts.

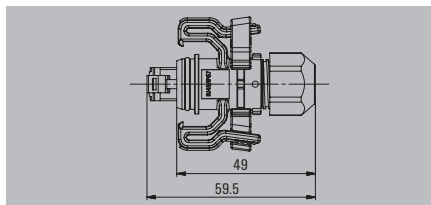
Plug inserts can also be ordered separately. Refer to Inserts.



**Plug SnapIn V6 - RJ45**

- Cat. 6
- IP 67

**Without kink prevention**



**Technical data**

Category	Cat.6A / Class EA (ISO/IEC 11801 2010)
Protection degree	IP67
Shielding	360° shield contact
Housing main material	PA 66, UL 94: V-0
Contact surface	Gold over nickel
Colour	Light Grey
Plugging cycles	750
Wiring	EIA/TIA T568 A
Type of mounting	Floor-mounted, for exposed connections, Wall mounting
Ambient temperature (operational)	-40 °C...70 °C
Connector standard	IEC 61076-3-106 Var. 6, IEC 60603-7-5
Approvals	DETNRVER
<b>Note</b>	

**Ordering data**

Type	Qty.	Order No.
IE-P-IP67	1	8808380000
<b>Note</b>		

**Accessories**

Type	Qty.	Order No.
Plug-in connector	100	1963580000

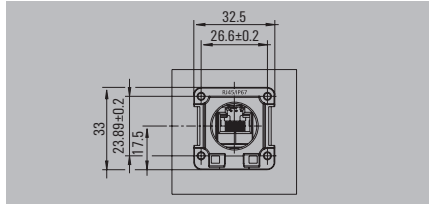
**Note**

**Note**

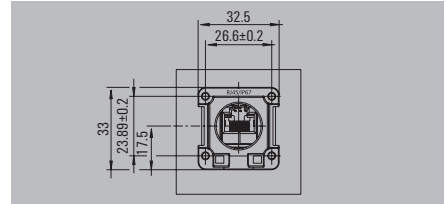
Flange SnapIn V6 - RJ45

- Cat. 6
- IP 67

Module



Coupling



Technical data

Category
Protection degree
Shielding
Housing main material
Contact surface
Colour
Plugging cycles
Type of mounting
Wiring
Ambient temperature (operational)
Connector standard
Approvals

Cat.6 (ISO/IEC 11801)
IP67
360° shield contact
PA 66, UL 94: V-0
Gold over nickel
Light Grey
750
Cabinet, Distribution box
Colour-coded pin assignment according to EIA/TIA T568 A., EIA/TIA T568 B
-40 °C...70 °C
IEC 61076-3-106 Var. 6, IEC 60603-7-5
DETNORVER

Cat.6 (ISO/IEC 11801)
IP67
360° shield contact
PA 66, UL 94: V-0
Gold over nickel
Light Grey
750
Cabinet, Distribution box
-40 °C...70 °C
IEC 61076-3-106 Var. 6, IEC 60603-7-5
DETNORVER

Note

Note

Note

Ordering data

straight
angled, upwards
angled, downwards
Note

Type	Qty.	Order No.
IE-XM-RJ45/IDC-IP67	1	8808440000

Type	Qty.	Order No.
IE-XM-RJ45/RJ45-IP67	1	8808450000
IE-XM-6U-RJ45/RJ45-IP67	1	8829440000
IE-XM-6D-RJ45/RJ45-IP67	1	8829450000

Accessories

Flange insert
RJ45 module A, straight
RJ45 coupling, straight

Type	Qty.	Order No.
IE-XR-RJ45/IDC	1	8808330000

Type	Qty.	Order No.
IE-XR-RJ45/RJ45-2	24	8952950000

Note

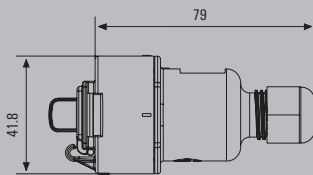
Note

Note

**Cable coupling SnapIn V6 - RJ45**

- Cat. 6
- IP 67

**Cable coupling**



**Technical data**

Category  
 Protection degree  
 Shielding  
 Housing main material  
 Contact surface  
 Colour  
 Plugging cycles  
 Type of mounting  
 Wiring  
  
 Ambient temperature (operational)  
 Connector standard  
 Sheath diameter, min. / max.  
 Approvals

Cat.6A / Class EA (ISO/IEC 11801 2010)  
 IP67  
 360° shield contact  
 PA 66, UL 94: V-0  
 Gold over nickel  
 Light Grey  
 750  
 Floor-mounted, for exposed connections, Wall mounting  
 Colour-coded pin assignment according to  
 EIA/TIA T568 A., EIA/TIA T568 B  
 -40 °C...70 °C  
 IEC 61076-3-106 Var. 6, IEC 60603-7-5  
 6 mm / 9.5 mm  
 DETNORVER

**Note**

**Ordering data**

Cable coupling

**Note**

Type	Qty.	Order No.
IE-C-IP67	1	8813090000

**Accessories**

Type	Qty.	Order No.
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**Note**

## M8 Single Pair Ethernet (SPE)

### Single Pair Ethernet, M8 empty housing

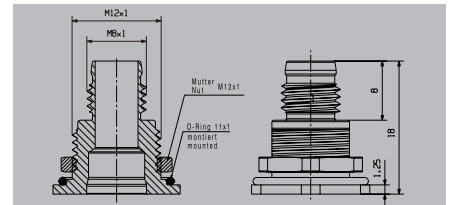
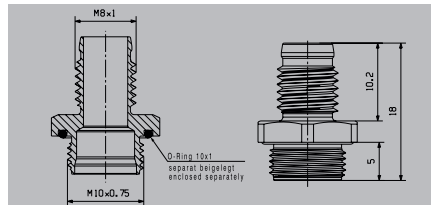
### M8 front wall mounting

### M8 rear wall mounting



SPElink®

SPElink®



#### Technical data

Category  
Ambient temperature (operational)  
Protection degree  
Housing main material  
Seal material  
Configuration  
Type of mounting  
Connection thread  
Connector standard  
Tightening torque fixing nut

-40...85 °C  
IP67  
Brass, nickel-plated  
FKM  
Frontpanel mounting  
Screw mounting  
M10 x 0.75  
IEC 61076-2-104, IEC 63171-5  
2.5 Nm

40...85 °C  
IP67  
Brass, nickel-plated  
FKM  
Backpanel mounting  
Screw mounting  
M10 x 0.75  
IEC 61076-2-104, IEC 63171-5  
2.5 Nm

#### Note

#### Ordering data

#### Note

#### Accessories

Fastening nut

Type	Qty.	Order No.
IE-BHD-SPE-M8-OT-FP	10	2726020000

Inserts and fixing nut must be ordered separately.

Type	Qty.	Order No.
IE-BHD-SPE-M8-OT-BP	20	2726030000

Inserts to be ordered separately, fixing nut included.

Type	Qty.	Order No.
IE-BHD-SPE-FP-CN-M10X0.75	10	2739640000

Type	Qty.	Order No.
IE-BHD-SPE-FP-CN-M10X0.75	10	2739640000

#### Note

PCB insert

M8 insert 180° pin contacts

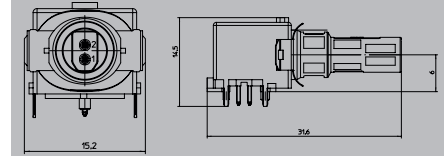
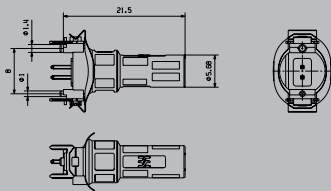
M8 insert 90° pin contacts



SPElink®



SPElink®



Technical data

Category	T1-B
Ambient temperature (operational)	-40...85 °C
Protection degree	IP67 with housing
Pollution severity	2
Connection thread	M8
Number of poles	2
Type of connection	Solder connection, Male contact
Outgoing elbow	180°
Contact material	Copper alloy
Contact surface	Ni/Au
Contact carrier material	LCP
Operational voltage range	≤ 50 V AC, ≤ 60 V DC
Insulation strength	≥ 500 MΩ
Dielectric strength, contact / contact	1000 V DC
Dielectric strength, contact / shield	2250 V DC
Connector standard	IEC 63171-5
UL 94 flammability rating	V-0
Note	

Category	T1-B
Ambient temperature (operational)	-40...85 °C
Protection degree	IP67 with housing
Pollution severity	2
Connection thread	M8
Number of poles	2
Type of connection	Solder connection, Male contact
Outgoing elbow	90°
Contact material	Copper alloy
Contact surface	Ni/Au
Contact carrier material	LCP
Operational voltage range	≤ 50 V AC, ≤ 60 V DC
Insulation strength	≥ 500 MΩ
Dielectric strength, contact / contact	1000 V DC
Dielectric strength, contact / shield	2250 V DC
Connector standard	IEC 63171-5
UL 94 flammability rating	V-0
Note	

Category	T1-B
Ambient temperature (operational)	-40...85 °C
Protection degree	IP67 with housing
Pollution severity	2
Connection thread	M8
Number of poles	2
Type of connection	Solder connection, Male contact
Outgoing elbow	90°
Contact material	Copper alloy
Contact surface	Ni/Au
Contact carrier material	LCP
Operational voltage range	≤ 50 V AC, ≤ 60 V DC
Insulation strength	≥ 500 MΩ
Dielectric strength, contact / contact	1000 V DC
Dielectric strength, contact / shield	2250 V DC
Connector standard	IEC 63171-5
UL 94 flammability rating	V-0
Note	

Ordering data

	THR
	SMD
Note	

Type	Qty.	Order No.
IE-PCB-SPM-P-180-THR	100	2735920000
IE-PCB-SPM-P-180-SMD	100	2795110000

Type	Qty.	Order No.
IE-PCB-SPM-P-90-THR	100	2795100000

Accessories

Type	Qty.	Order No.

Type	Qty.	Order No.

Type	Qty.	Order No.

Note	
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**M12 D-coded**

**M12 plug,  
Tension-clamp connection,  
D-coded**

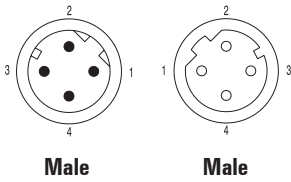


**SAISM / SAIBM**

Straight

**SAISW / SAIBW**

angled



**Ordering data**

<b>Male</b>	4-pole. PG 9
<b>Female</b>	4-pole. PG 9
<b>Note</b>	

Type	Qty.	Order No.
SAISM-4/8S-M12 4P D-ZF	1	<b>1892120001</b>
SAIBM-4/8S-M12 4P D-ZF	1	<b>1892130001</b>

Type	Qty.	Order No.
SAISW-4/8S-M12 4P D-ZF	1	<b>1803930001</b>
SAIBW-4/8S-M12 4P D-ZF	1	<b>1139330000</b>

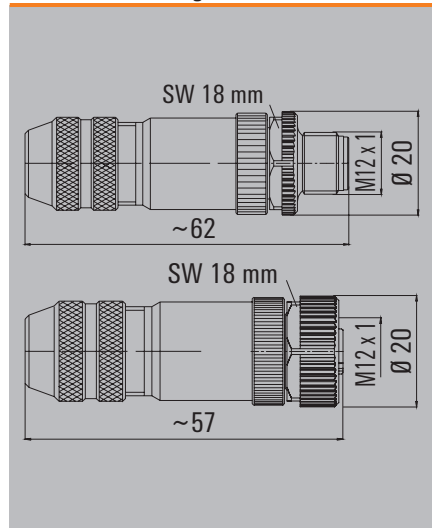
**Technical data**

Type of connection	Tension-clamp connection
Housing main material	CuZn
Ambient temperature (operational)	-40 °C...
Connector standard	IEC 61076-2-101
Connection thread	M12
Cable diameter	6...8 mm (PG9)
Conductor cross-section min. / max.	0.25 mm <sup>2</sup> / 0.5 mm <sup>2</sup>
Rated current	4 A
Rated voltage	250 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

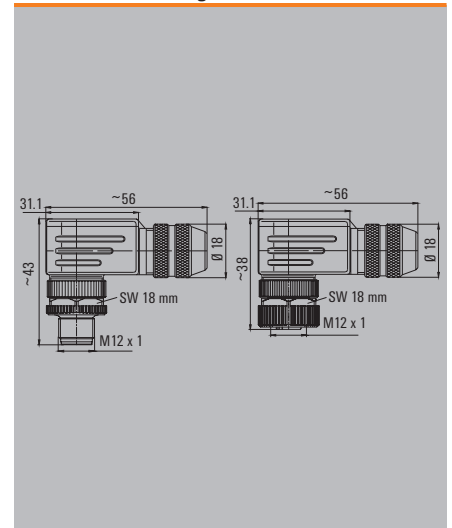
Type of connection	Tension-clamp connection
Housing main material	CuZn
Ambient temperature (operational)	-40 °C...
Connector standard	IEC 61076-2-101
Connection thread	M12
Cable diameter	6...8 mm (PG9)
Conductor cross-section min. / max.	0.25 mm <sup>2</sup> / 0.5 mm <sup>2</sup>
Rated current	4 A
Rated voltage	250 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

Type of connection	Tension-clamp connection
Housing main material	CuZn
Ambient temperature (operational)	-40 °C...
Connector standard	IEC 61076-2-101
Connection thread	M12
Cable diameter	6...8 mm (PG9)
Conductor cross-section min. / max.	0.25 mm <sup>2</sup> / 0.5 mm <sup>2</sup>
Rated current	4 A
Rated voltage	250 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

**Dimensioned drawing**



**Dimensioned drawing**

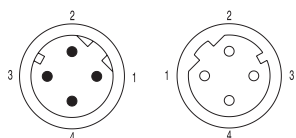


**M12 plug,  
Screw connection,  
D-coded**



**SAISM / SAIBM**

Straight



Male

Male

**Ordering data**

<b>Male</b>	4-pole, PG 9
<b>Female</b>	4-pole, PG 9
<b>Note</b>	

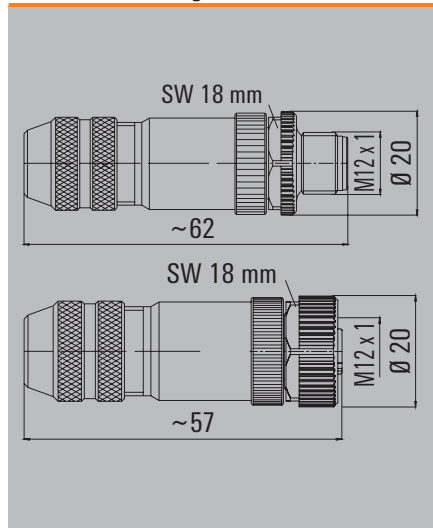
Type	Qty.	Order No.
SAISM-4/8S-M12-4P D-COD	1	1892120000
SAIBM-4/8S-M12-4P D-COD	1	1892130000

**Technical data**

Type of connection	Screw connection
Housing main material	CuZn
Ambient temperature (operational)	-40 °C...85 °C
Connector standard	IEC 61076-2-101
Connection thread	M12
Cable diameter	6...8 mm (PG9)
Conductor cross-section min. / max.	0.14 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	250 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

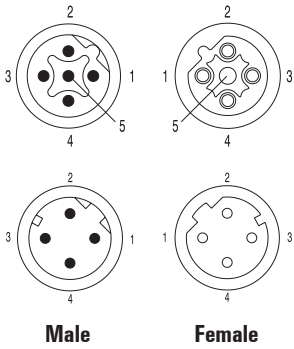
Type of connection	Screw connection
Housing main material	CuZn
Ambient temperature (operational)	-40 °C...85 °C
Connector standard	IEC 61076-2-101
Connection thread	M12
Cable diameter	6...8 mm (PG9)
Conductor cross-section min. / max.	0.14 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	250 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

**Dimensioned drawing**



**M12 D-coded**

**PUSH IN M12  
with shield connection  
D coded**



**SAISP / SAIBP**

**Straight**



**SAISWP / SAIBWP**

**Angled**



**Ordering data**

<b>Male</b>	D-coded, 4-pole
<b>Female</b>	D-coded, 4-pole
<b>Note</b>	

Type	Qty.	Order No.
SAISP-M-4D-4/8-M12	1	2681680000
SAIBP-M-4D-4/8-M12	1	2681700000
Other versions on request		

Type	Qty.	Order No.
SAISWP-M-4D-4/8-M12	1	2681690000
SAIBWP-M-4D-4/8-M12	1	2681710000
Other versions on request		

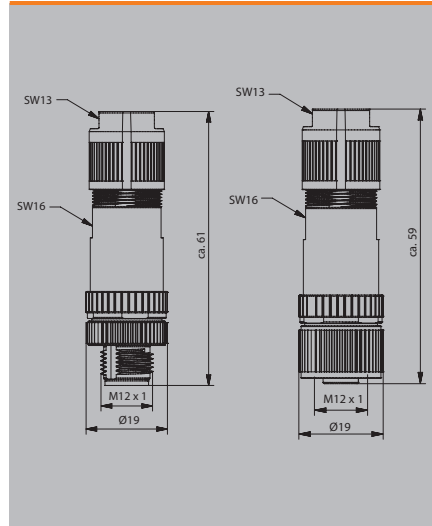
**Technical data**

Type of connection	PUSH IN
Housing main material	PA 66
Connection thread	M12
Cable diameter	4..8 mm
Conductor cross-section min. / max.	0.14...0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	60 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Ni/Au
<b>Note</b>	

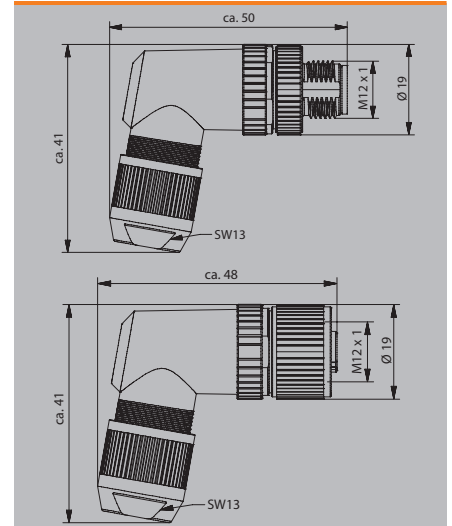
Type of connection	PUSH IN
Housing main material	PA 66
Connection thread	M12
Cable diameter	4..8 mm
Conductor cross-section min. / max.	0.14...0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	60 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Ni/Au
<b>Note</b>	

Type of connection	PUSH IN
Housing main material	PA 66
Connection thread	M12
Cable diameter	4..8 mm
Conductor cross-section min. / max.	0.14...0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	60 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Ni/Au
<b>Note</b>	

**Dimensioned drawing**



**Dimensioned drawing**





## Crimp connection M12 with shield connection D-coded



### SAISC / SAIBC

straight



### SAISC / SAIBC

Panel feed-through



### Ordering data

Male	4-pole
Female	4-pole
Note	

Type	Qty.	Order No.
SAISC-D-18/28-4/9CG	1	2664810000
SAIBC-D-18/28-4/9CG	1	2672420000

Type	Qty.	Order No.
SAISC-WDF-D-18/28-4/9CG	1	2664790000
SAIBC-WDF-D-18/28-4/9CG	1	2664780000

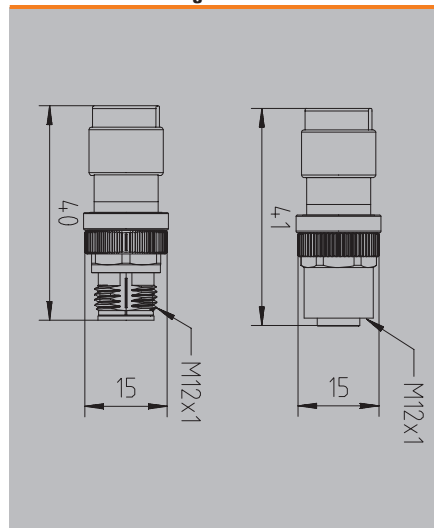
### Technical data

Type of connection	Crimp connection
Housing main material	CuZn
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.08...0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
Note	

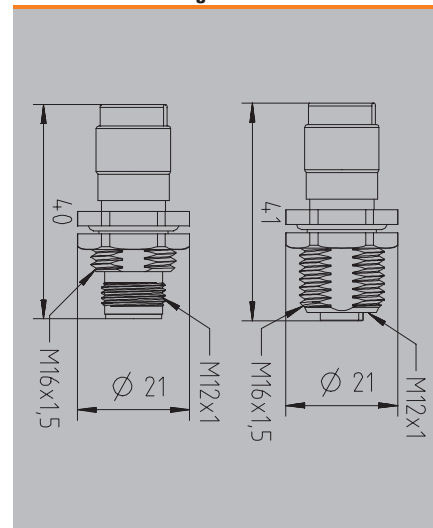
Type of connection	Crimp connection
Housing main material	CuZn
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.08...0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
Note	

Type of connection	Crimp connection
Housing main material	CuZn
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.08...0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
Note	

### Dimensioned drawing



### Dimensioned drawing



**M12 D-coded**

**Crimp connection M12 with shield connection D-coded**



**SAISC / SAIBC**

angled



**Ordering data**

<b>Male</b>	4-pole
<b>Female</b>	4-pole
<b>Note</b>	

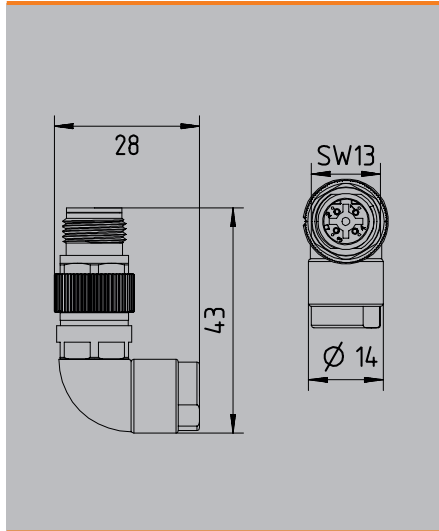
Type	Qty.	Order No.
SAISWC-D-18/28-4/9CG	1	2702690000
SAIBWC-D-18/28-4/9CG	1	2702700000

**Technical data**

Type of connection	Crimp connection
Housing main material	CuZn
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.08...0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

Type of connection	Crimp connection
Housing main material	CuZn
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.08...0.75 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

**Dimensioned drawing**



**Crimp contact M12**



**SAI - KSC / KBC**

straight



**Ordering data**

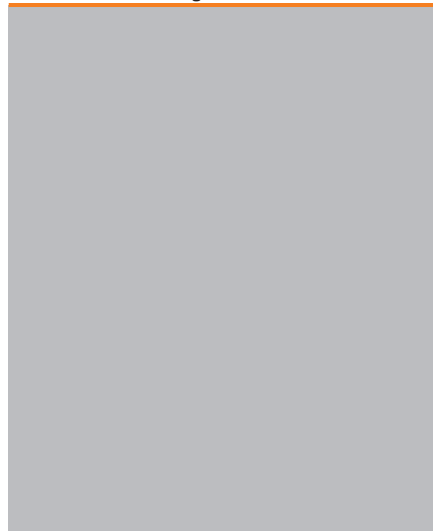
Male	
	AWG 18-20
	AWG 20-22
	AWG 22-24
	AWG 26-28
Female	
	AWG 18-20
	AWG 20-22
	AWG 22-24
	AWG 26-28
Note	

Type	Qty.	Order No.
SAHM12-KSC-18/20	100	2664840000
SAHM12-KSC-20/22	100	2664850000
SAHM12-KSC-22/24	100	2673710000
SAHM12-KSC-26/28	100	2673720000
SAHM12-KBC-18/20	100	2664860000
SAHM12-KBC-20/22	100	2664870000
SAHM12-KBC-22/24	100	2673730000
SAHM12-KBC-26/28	100	2673740000
Note		

**Technical data**

Type of connection	
Housing main material	
Connection thread	
Cable diameter	
Conductor cross-section min. / max.	
Rated current	7 A
Rated voltage	
Temperature range of housing	
Protection degree	
Contact surface	Gold-plated
Note	

**Dimensioned drawing**



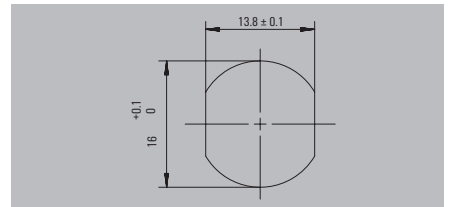
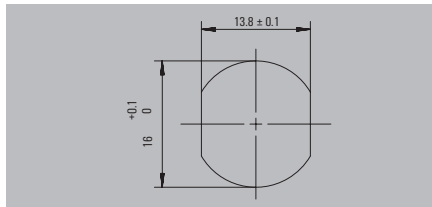
**M12 D-coded**

**Adapter / coupling M12**

- Cat. 5
- IP67
- D-coding

**Adapter M12-RJ45, female**

**Adapter M12-RJ45, male**



**Technical data**

Category
Protection degree
Housing main material
Shielding
Ambient temperature (operational)
Connector standard
Approvals
<b>Note</b>

Cat.5 (ISO/IEC 11801)
IP67
PA 66
Yes
-25 °C...80 °C
IEC 60603-7-5, IEC 61076-2-101
CULUS

Cat.5 (ISO/IEC 11801)
IP67
PA 66
Yes
-25 °C...80 °C
IEC 60603-7-5, IEC 61076-2-101
CULUS

**Ordering data**

<b>Adaptor</b>	
	straight
	angled
<b>Coupling</b>	
<b>Note</b>	

Type	Qty.	Order No.
IE-M12-ADAP S	1	8901620000
IE-M12-ADAP A	1	8901630000

Type	Qty.	Order No.
IE-AD-M12DRJ45-MF-180	1	1514970000
IE-AD-M12DRJ45-MF-90	1	1514940000

**Accessories**

Type	Qty.	Order No.

Type	Qty.	Order No.

Type	Qty.	Order No.

<b>Note</b>
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<b>Note</b>
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<b>Note</b>
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### Adapter / coupling M12

- Cat. 5
- IP67
- D-coding

### Coupling M12-M12



#### Technical data

Category
Protection degree
Housing main material
Shielding
Ambient temperature (operational)
Connector standard
Approvals
<b>Note</b>

Cat.5 (ISO/IEC 11801)
IP67
Polyamide, Brass, nickel-plated
360° shield contact
-5 °C...60 °C
IEC 61076-2-101
EAC
<b>Note</b>

#### Ordering data

<b>Adaptor</b>
straight
angled
<b>Coupling</b>
<b>Note</b>

Type	Qty.	Order No.
IE-M12-COUP	1	8901640000
<b>Note</b>		

#### Accessories

<b>Note</b>
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Type	Qty.	Order No.
<b>Note</b>		

<b>Note</b>
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<b>Note</b>
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## M12 D-coded

### M12 PCB connection element

- Cat. 5
- For installation into the end device
- D-coded

### Standard assembly



### Additional fastening mechanism



### Technical data

Category  
 Protection degree  
 Configuration  
 Housing main material  
 Shielding  
 Ambient temperature (operational)  
 Connector standard  
 Approvals

Cat.5 (ISO/IEC 11801)  
 IP65 in acc. with DIN EN 60529  
 Reflow compatible  
 CuZn, Polyamide, nickel-plated  
 360° shield contact  
 -25...85 °C  
 IEC 61076-2-101  
 EAC

Cat.5 (ISO/IEC 11801)  
 IP65 in acc. with DIN EN 60529  
 Reflow compatible  
 CuZn, Polyamide, nickel-plated  
 360° shield contact  
 -25...85 °C  
 IEC 61076-2-101  
 EAC

#### Note

### Ordering data

Connection element	
	straight
	angled

#### Note

Type	Qty.	Order No.
IE-M12-PCBCE	60	8902810000

Type	Qty.	Order No.
IE-M12-PCBCE-PANEL	10	8902820000
IE-M12-PCBCE-PANEL-A	10	1393470000

### Accessories

Type	Qty.	Order No.

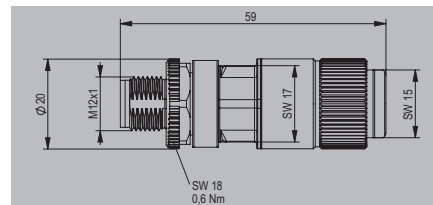
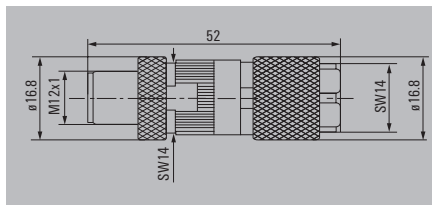
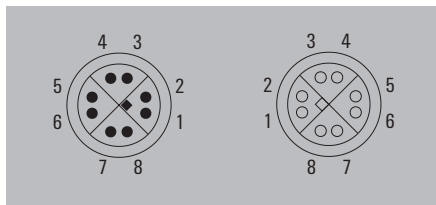
Type	Qty.	Order No.

#### Note

**M12 plug**  
M12 X-type Cat. 6A

**Plug, AWG 26-22**

**Plug, AWG 27-22**



**Technical data**

Category	Cat.6A / Class EA (ISO/IEC 11801 2010)
Protection degree	IP67 plugged
Connection 1 / 2	M12 / IDC
Housing main material	Zinc diecast
Connection thread	M12
Contact material / Contact surface	Brass / Gold-plated
Ambient temperature (operational)	-40 °C...85 °C
Connector standard	IEC 61076-2-109
Current-carrying capacity at 50 °C	0.5 A @ 40 °C
Rated voltage	48 V
Insulation strength	100 MΩ
Plugging cycles	≥ 100
Configuration	
Wall thickness, min. / max.	
Shielding	360° all-round enclosure
Connection diameter, flexible, min. / max.	0.48 mm / 0.76 mm
Connection cross-section, flexible, min. / max.	AWG 26/7 / AWG 22/7
Connection diameter, solid, min. / max.	0.41 mm / 0.64 mm
Connection cross-section, solid, min. / max.	AWG 26/1 / AWG 22/1
Insulation cross-section, max.	1.6 mm
Sheath diameter min. / max.	5 mm / 9.7 mm
Approvals	CULUS
<b>Note</b>	

Category	Cat.6A / Class EA (ISO/IEC 11801 2010)
Protection degree	IP67 plugged
Connection 1 / 2	M12 / IDC
Housing main material	Zinc diecast
Connection thread	M12
Contact material / Contact surface	Brass, tinned / Gold-plated
Ambient temperature (operational)	-40 °C...85 °C
Connector standard	IEC 61076-2-109
Current-carrying capacity at 50 °C	0.5 A @ 40 °C
Rated voltage	50 V
Insulation strength	100 MΩ
Plugging cycles	≥ 100
Configuration	
Wall thickness, min. / max.	
Shielding	360° all-round enclosure
Connection diameter, flexible, min. / max.	0.46 mm / 0.76 mm
Connection cross-section, flexible, min. / max.	AWG 27/7 / AWG 22/7
Connection diameter, solid, min. / max.	0.51 mm / 0.64 mm
Connection cross-section, solid, min. / max.	AWG 24/1 / AWG 22/1
Insulation cross-section, max.	1.6 mm
Sheath diameter min. / max.	5.5 mm / 9 mm
Approvals	CULUS
<b>Note</b>	

**Ordering data**

	Plugs
<b>Note</b>	

Type	Qty.	Order No.
IE-PS-M12X-P-FH	10	1324020000

Type	Qty.	Order No.
IE-PS-M12X-P-AWG22/27FH	1	2007500000

**Accessories**

Type	Qty.	Order No.

Type	Qty.	Order No.

Type	Qty.	Order No.

<b>Note</b>
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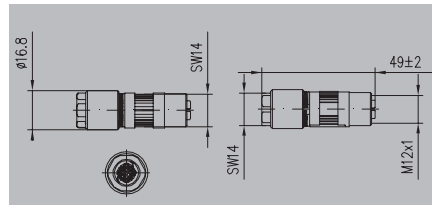
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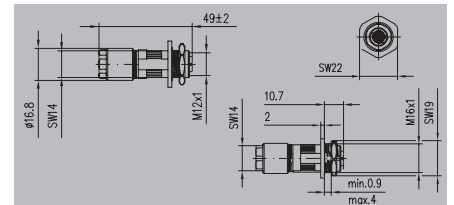
M12 X-Type

M12 plug / flange  
M12 X-type Cat. 6A

Plug, female



Flange



Technical data

Category	Cat.6A / Class EA (ISO/IEC 11801 2010)
Protection degree	IP67 plugged
Connection 1 / 2	M12 / IDC
Housing main material	Zinc diecast
Connection thread	M12
Contact material / Contact surface	Brass / Gold-plated
Ambient temperature (operational)	-40 °C...85 °C
Connector standard	IEC 61076-2-109
Current-carrying capacity at 50 °C	0.5 A @ 40 °C
Rated voltage	48 V
Insulation strength	100 MΩ
Plugging cycles	≥ 100
Configuration	
Wall thickness, min. / max.	
Shielding	360° all-round enclosure
Connection diameter, flexible, min. / max.	0.48 mm / 0.76 mm
Connection cross-section, flexible, min. / max.	AWG 26 / AWG 22
Connection diameter, solid, min. / max.	0.4 mm / 0.64 mm
Connection cross-section, solid, min. / max.	AWG 24 / AWG 22
Insulation cross-section, max.	1.6 mm
Sheath diameter min. / max.	5 mm / 9.7 mm
Approvals	CULUS
Note	

Category	Cat.6A / Class EA (ISO/IEC 11801 2010)
Protection degree	IP67 plugged
Connection 1 / 2	M12 / IDC
Housing main material	Zinc diecast
Connection thread	M12
Contact material / Contact surface	Brass / Gold-plated
Ambient temperature (operational)	-40 °C...85 °C
Connector standard	IEC 61076-2-109
Current-carrying capacity at 50 °C	0.5 A @ 40 °C
Rated voltage	48 V
Insulation strength	100 MΩ
Plugging cycles	≥ 100
Configuration	
Wall thickness, min. / max.	
Shielding	360° all-round enclosure
Connection diameter, flexible, min. / max.	0.48 mm / 0.76 mm
Connection cross-section, flexible, min. / max.	AWG 26 / AWG 22
Connection diameter, solid, min. / max.	0.4 mm / 0.64 mm
Connection cross-section, solid, min. / max.	AWG 24 / AWG 22
Insulation cross-section, max.	1.6 mm
Sheath diameter min. / max.	5 mm / 9.7 mm
Approvals	CULUS
Note	

Category	Cat.6A / Class EA (ISO/IEC 11801 2010)
Protection degree	IP67 plugged
Connection 1 / 2	M12 / IDC
Housing main material	Zinc diecast
Connection thread	M12
Contact material / Contact surface	CuZn / Gold-plated
Ambient temperature (operational)	-40 °C...85 °C
Connector standard	IEC 61076-2-109
Current-carrying capacity at 50 °C	0.5 A @ 40 °C
Rated voltage	48 V
Insulation strength	100 MΩ
Plugging cycles	≥ 100
Configuration	
Wall thickness, min. / max.	0.9 mm / 4 mm
Shielding	360° all-round enclosure
Connection diameter, flexible, min. / max.	0.48 mm / 0.76 mm
Connection cross-section, flexible, min. / max.	AWG 26 / AWG 22
Connection diameter, solid, min. / max.	0.4 mm / 0.64 mm
Connection cross-section, solid, min. / max.	AWG 24 / AWG 22
Insulation cross-section, max.	1.6 mm
Sheath diameter min. / max.	5 mm / 9.7 mm
Approvals	CULUS
Note	

Ordering data

Type	Plugs
Type	IE-PS-M12X-S-FH
Qty.	1
Order No.	1516330000
Note	

Type	Plugs
Type	IE-PS-M12X-S-FH
Qty.	1
Order No.	1516330000
Note	

Type	Flange
Type	IE-BS-M12X-S-FH
Qty.	1
Order No.	1516340000
Note	

Accessories

Tools	
Tool set	Tool set
Tool set with torque function	Tool set with torque function
Cable gland tool, M 12	Cable gland tool, M 12
Cable gland tool with torque function, M 12	Cable gland tool with torque function, M 12

Type	Qty.	Order No.
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12 F	1	1900020000
SCREWTY-M12 F-DM	1	1900021000

Type	Qty.	Order No.
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12 F	1	1900020000
SCREWTY-M12 F-DM	1	1900021000

Note	
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Note	
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Note	
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## Crimp connection M12 with shield connection X-Type



### IE-PS-M12X-180

straight



### IE-PS-M12X-90

angled



### Ordering data

Male	8-pole
Female	8-pole
Note	

### Technical data

Type of connection	Crimp connection
Housing main material	Cu alloy Ni plated
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.14...0.34 mm <sup>2</sup>
Rated current	0.5 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67 plugged
Contact surface	Gold-plated
Note	

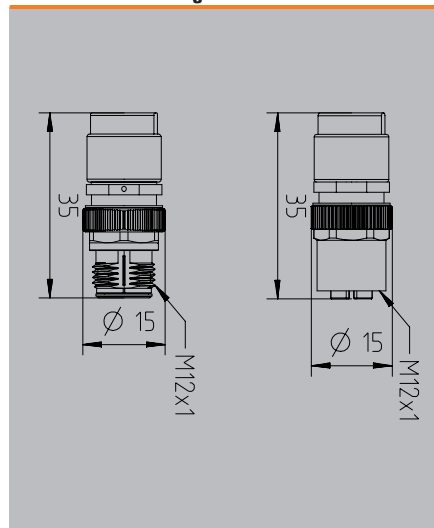
Type	Qty.	Order No.
IE-PS-M12X-180-P-TH	1	2664820000
IE-PS-M12X-180-S-TH	1	2672440000

Type of connection	Crimp connection
Housing main material	Cu alloy Ni plated
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.14...0.34 mm <sup>2</sup>
Rated current	2 A
Rated voltage	30 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67 plugged
Contact surface	Gold-plated
Note	

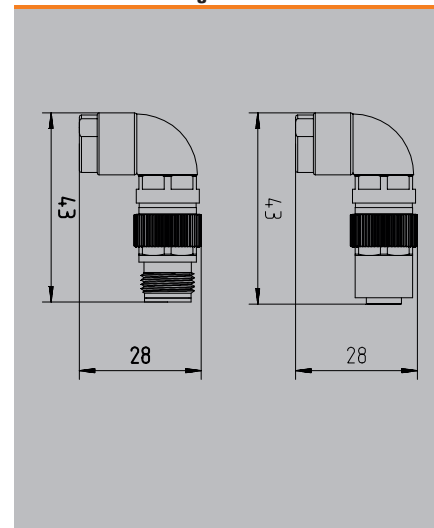
Type	Qty.	Order No.
IE-PS-M12X-90-P-TH	1	2702710000
IE-PS-M12X-90-S-TH	1	2702720000

Type of connection	Crimp connection
Housing main material	Cu alloy Ni plated
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.14...0.34 mm <sup>2</sup>
Rated current	2 A
Rated voltage	30 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67 plugged
Contact surface	Gold-plated
Note	

### Dimensioned drawing



### Dimensioned drawing



## M12 X-Type

### Crimp connection M12 with shield connection X-Type

#### IE-BS-M12X-180

Panel feed-through, straight



#### IE-BS-M12X-90

Panel feed-through, angled



#### Ordering data

<b>Male</b>	8-pole, Back panel mounting
<b>Female</b>	8-pole, Back panel mounting
<b>Note</b>	

Type	Qty.	Order No.
IE-BS-M12X-180-P-TH	1	2747880000
IE-BS-M12X-180-S-TH	1	2747900000

Type	Qty.	Order No.
IE-BS-M12X-90-P-TH	1	2747910000
IE-BS-M12X-90-S-TH	1	2747920000

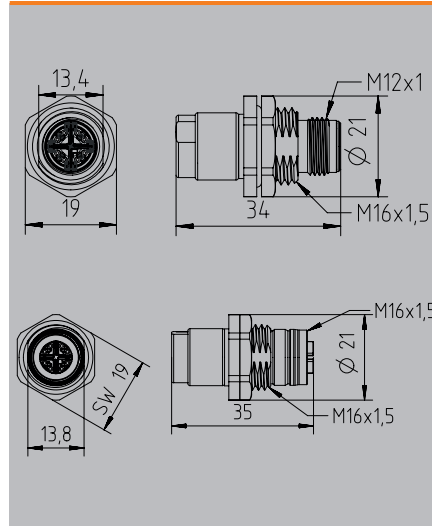
#### Technical data

Type of connection	Crimp connection
Housing main material	CuZn
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.14...0.34 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

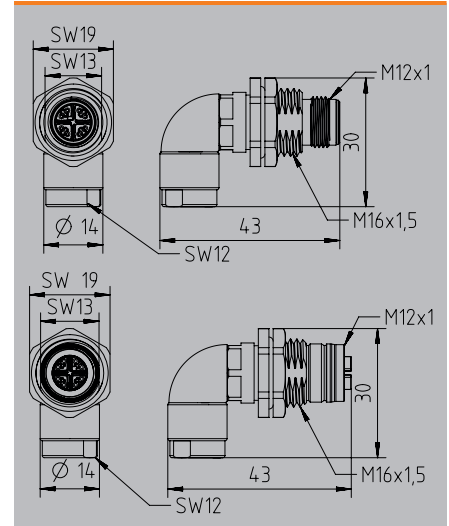
Type of connection	Crimp connection
Housing main material	CuZn
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.14...0.34 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

Type of connection	Crimp connection
Housing main material	CuZn
Connection thread	M12
Cable diameter	4...9 mm
Conductor cross-section min. / max.	0.14...0.34 mm <sup>2</sup>
Rated current	4 A
Rated voltage	50 V
Temperature range of housing	-40 ... +85 °C
Protection degree	IP67
Contact surface	Gold-plated
<b>Note</b>	

#### Dimensioned drawing



#### Dimensioned drawing



## Crimp contact M12 X-Type



### Contacts



### Ordering data

<b>Male</b>	AWG 22-26
<b>Female</b>	AWG 22-26
<b>Note</b>	

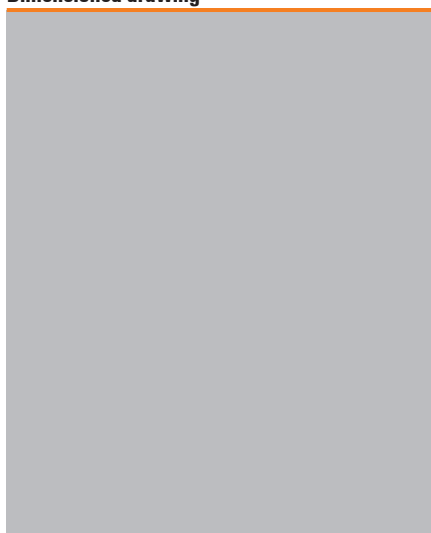
Type	Qty.	Order No.
IE-PIC-M12X-P-22/26	100	2664880000
IE-PIC-M12X-S-22/26	100	2673440000
<b>Note</b>		

### Technical data

Type of connection	
Housing main material	
Connection thread	
Cable diameter	
Conductor cross-section min. / max.	0.34...0.14 mm <sup>2</sup>
Rated current	1 A
Rated voltage	
Temperature range of housing	
Protection degree	
Contact material	Copper alloy, Gold-plated
<b>Note</b>	

Type of connection	
Housing main material	
Connection thread	
Cable diameter	
Conductor cross-section min. / max.	0.34...0.14 mm <sup>2</sup>
Rated current	1 A
Rated voltage	
Temperature range of housing	
Protection degree	
Contact material	Copper alloy, Gold-plated
<b>Note</b>	

### Dimensioned drawing

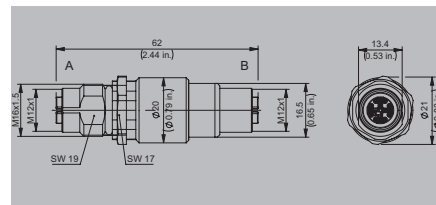
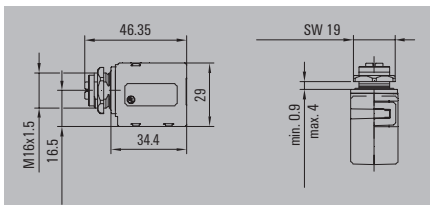
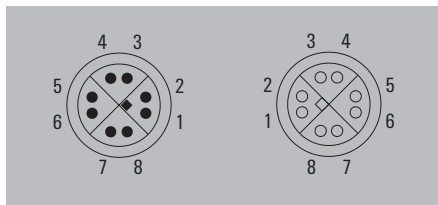


## M12 X-Type

### Adapter / Coupling M12 M12 X-type Cat. 6A

### Adapter M12 X-Type-RJ45

### Coupling M12 X-Type



#### Technical data

	Adapter M12 X-Type-RJ45	Coupling M12 X-Type
Category	Cat.6A / Class EA (ISO/IEC 11801 2010)	Cat.6A / Class EA (ISO/IEC 11801 2010)
Protection degree	IP67	IP67 plugged
Connection 1 / 2	RJ45 / M12	M12 / M12
Housing main material	Zinc diecast	Brass, Copper-tin-zinc alloy
Connection thread	M12	M12 / M12
Contact material / Contact surface	Copper alloy / Gold-plated	CuSn / Au (Gold), ≥ 100 MQ
Ambient temperature (operational)	-25 °C...85 °C	-40 °C...85 °C
Connector standard	IEC 61076-2-109, IEC 60603-7-51	IEC 61076-2-109
Current-carrying capacity at 50 °C		0.5 A @ 40 °C
Rated voltage	50 V	
Insulation strength	100 MΩ	
Plugging cycles	≥ 100 (M12), 750 (RJ45)	≥ 100
Configuration	M12 socket to RJ45 socket	M12 socket to M12 socket
Wall thickness, min. / max.	0.9 mm / 3 mm	/ 4.5 mm
Shielding	360° shield contact	360° shield contact
Connection diameter, flexible, min. / max.		
Connection cross-section, flexible, min. / max.		
Connection diameter, solid, min. / max.		
Connection cross-section, solid, min. / max.		
Insulation cross-section, max.		
Sheath diameter min. / max.		
Approvals	CULUS	
Note		

#### Ordering data

	Type	Qty.	Order No.
Adapter 90°	IE-AD-M12XRJ45-90	10	1400610000
Adapter 180°	IE-AD-M12XRJ45-180	1	1400620000
Coupling	IE-BS-M12X-S-C	1	2731010000
Note			

#### Accessories

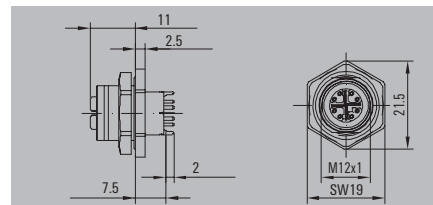
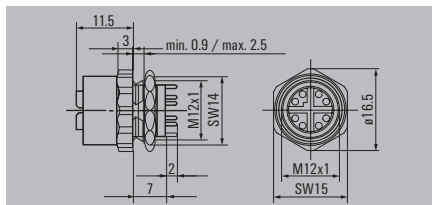
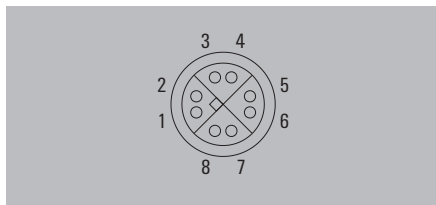
Type	Qty.	Order No.

Note

PCB socket  
M12 X-type Cat. 6A

PCB socket

PCB socket, back panel mounting



Technical data

Category	Cat.6A / Class EA (ISO/IEC 11801 2010)
Protection degree	IP67, when screwed in
Connection 1 / 2	M12 / Solder connection
Housing main material	CuZn
Connection thread	M12
Contact material / Contact surface	CuZn / Gold over nickel
Ambient temperature (operational)	-40 °C...85 °C
Connector standard	IEC 61076-2-109
Current-carrying capacity at 50 °C	0.5 A @ 40 °C
Rated voltage	48 V
Insulation strength	100 MΩ
Plugging cycles	≥ 100
Configuration	Reflow compatible
Wall thickness, min. / max.	0.9 mm / 2.5 mm
Shielding	360° all-round enclosure
Approvals	CULUS
Note	

Category	Cat.6A / Class EA (ISO/IEC 11801 2010)
Protection degree	IP67, when screwed in
Connection 1 / 2	M12 / Solder connection
Housing main material	CuZn
Connection thread	M12
Contact material / Contact surface	CuZn / Gold over nickel
Ambient temperature (operational)	-40 °C...85 °C
Connector standard	IEC 61076-2-109
Current-carrying capacity at 50 °C	0.5 A @ 40 °C
Rated voltage	48 V
Insulation strength	100 MΩ
Plugging cycles	≥ 100
Configuration	Reflow compatible
Wall thickness, min. / max.	0.9 mm / 2.5 mm
Shielding	360° all-round enclosure
Approvals	CULUS
Note	

Category	Cat.6A / Class EA (ISO/IEC 11801 2010)
Protection degree	IP67, when screwed in
Connection 1 / 2	M12 / Solder connection
Housing main material	CuZn
Connection thread	M12
Contact material / Contact surface	CuZn / Gold over nickel
Ambient temperature (operational)	-40 °C...85 °C
Connector standard	IEC 61076-2-109
Current-carrying capacity at 50 °C	0.5 A @ 40 °C
Rated voltage	48 V
Insulation strength	100 MΩ
Plugging cycles	≥ 100
Configuration	Reflow compatible, Back panel mounting
Wall thickness, min. / max.	0.9 mm / 2.5 mm
Shielding	360° all-round enclosure
Approvals	CULUS
Note	

Ordering data

	pre-assembled
	2-part version
Note	

Type	Qty.	Order No.
IE-PCB-M12X-S-180	10	1324010000
IE-PCB2-M12X-S-180	10	1393080000

Type	Qty.	Order No.
IE-PCBR-M12X-S-180	10	1427670000
IE-PCBR2-M12X-S-180	10	1444650000

Accessories

Type	Qty.	Order No.

Type	Qty.	Order No.

Type	Qty.	Order No.

Note	
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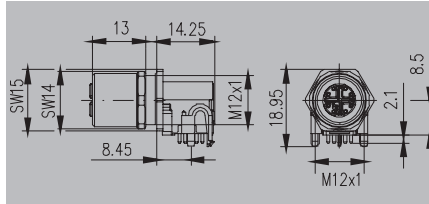
Note	
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Note	
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**M12 X-Type**

**PCB socket  
M12 X-type Cat. 6<sub>A</sub>**

**PCB socket, angled**



**Technical data**

Category
Protection degree
Connection 1 / 2
Housing main material
Connection thread
Contact material / Contact surface
Ambient temperature (operational)
Connector standard
Current-carrying capacity at 50 °C
Rated voltage
Insulation strength
Plugging cycles
Configuration
Wall thickness, min. / max.
Shielding
Approvals

Cat.6A / Class EA (ISO/IEC 11801 2010)
IP67, when screwed in
M12 / Solder connection
CuZn
M12
CuZn / Gold over nickel
-40 °C...85 °C
IEC 61076-2-109
0.5 A @ 40 °C
48 V
100 MΩ
≥ 100
Reflow compatible
1 mm / 2.5 mm
360° all-round enclosure
CULUS

**Note**

**Ordering data**

pre-assembled  
2-part version

Type	Qty.	Order No.
IE-PCB-M12X-S-90	10	2168220000

**Note**

**Accessories**

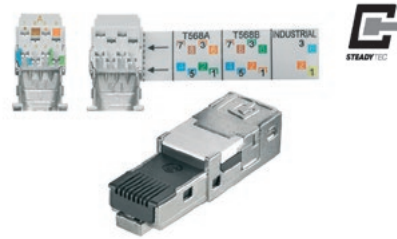
Type	Qty.	Order No.
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**Note**

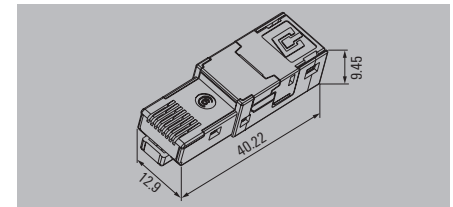
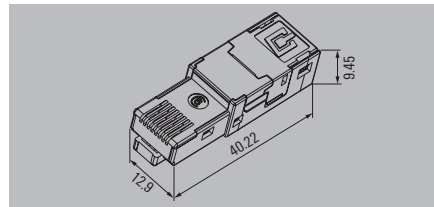
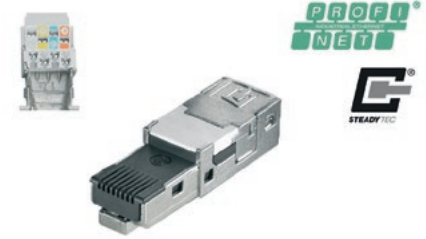
**RJ45 plug inserts, tool free**

- Cat. 6<sub>A</sub>
- IP 20
- For housing variants 1, 4, 5, 14 and HDC

**8-wire**



**4-wire**



**Technical data**

Category	
Protection degree	
Plugging cycles	
Shielding	
Housing main material	
Contact material	
Contact surface	
Connection cross-section, flexible, min. / max.	
Connection diameter, flexible, min. / max.	
Connection cross-section, solid, min. / max.	
Connection diameter, solid, min. / max.	
Wire connection cross-section, finely stranded	
Insulation diameter, min. / max.	
Humidity	
Ambient temperature (operational)	
Insulation strength	
Contact resistance	
Dielectric strength, contact / contact	
Dielectric strength, contact / shield	
Current-carrying capacity at 50 °C	
PoE / PoE+	
Speed	
Connector standard	
Approvals	
<b>Note</b>	

Cat.6 <sub>x</sub> / Class E <sub>x</sub> (ISO/IEC 11801 2010)
IP67 with housing
750
360° all-round enclosure
Zinc diecast
Gold over Nickel, Au ≥ 0.8 μm
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
Approval of the cable by Weidmüller necessary
0.85 mm...1.6 mm
-40 °C...70 °C
500 MΩ
≤ 20 mΩ
≥ 1000 V DC
≥ 1500 V DC
1 A
conforming to IEEE 802.3at
10 GBit/s
IEC 60603-7-51
CULUS; CURUS
Approvals available on request

Cat.5 (ISO/IEC 11801)
IP67 with housing
750
360° all-round enclosure
Zinc diecast
Gold over Nickel, Au ≥ 0.8 μm
AWG 26 / AWG 22
0.48 mm / 0.76 mm
AWG 24 / AWG 22
0.4 mm / 0.64 mm
Approval of the cable by Weidmüller necessary
0.85 mm...1.6 mm
-40 °C...70 °C
500 MΩ
≤ 20 mΩ
≥ 1000 V DC
≥ 1500 V DC
1 A
conforming to IEEE 802.3at
100 MBit/s
IEC 60603-7-51
CULUS; CURUS

**Ordering data**

<b>tool-free</b>	
	TIA-A/B/PROFINET
	TIA-A
	TIA-B
	PROFINET
<b>Note</b>	

Type	Qty.	Order No.
IE-PI-RJ45-FH	10	1962730000
IE-PI-RJ45-FH-A	10	1132010000
IE-PI-RJ45-FH-B	10	1132020000

Type	Qty.	Order No.
IE-PI-RJ45-FH-P	10	1132030000

**Accessories**

<b>Tools</b>	
	Optional pressing tool

Type	Qty.	Order No.
PWZ RJ45	1	1118040000

Type	Qty.	Order No.
PWZ RJ45	1	1118040000

<b>Note</b>	
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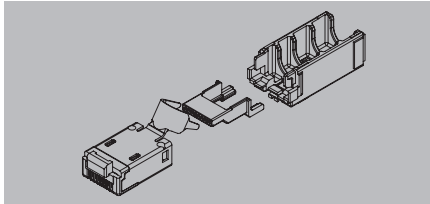
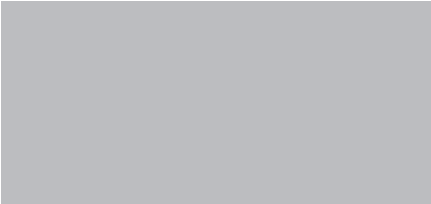
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**Inserts**

**RJ45 plug inserts, crimp**

- Cat. 6<sub>A</sub>
- IP 20
- For housing variants 1, 4, 5 and 14

**8-wire**



**Technical data**

Category
Protection degree
Plugging cycles
Shielding
Housing main material
Contact material
Contact surface
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Connection cross-section, solid, min. / max.
Connection diameter, solid, min. / max.
Insulation diameter, min. / max.
Humidity
Ambient temperature (operational)
Insulation strength
Contact resistance
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Current-carrying capacity at 50 °C
PoE / PoE+
Speed
Connector standard
Approvals

Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
IP67 with housing
750
360° all-round enclosure
Brass, PC UL 94 V0
Phosphorus bronze
Gold over Nickel, Au ≥ 0.8 µm, Ni 2.54 µm
AWG 27/7 / AWG 24/7
0.46 mm / 0.61 mm
AWG 26/1 / AWG 24/1
0.4 mm / 0.51 mm
0.85 mm...1.05 mm
0...93 % rel. humidity
-40 °C...70 °C
500 MΩ
≤ 20 mΩ
≥ 1000 V DC
≥ 1500 V DC
1 A
conforming to IEEE 802.3af
IEC 60603-7-51
CURUS

**Note**

**Ordering data**

<b>Crimp</b>
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Type	Qty.	Order No.
IE-PI-RJ45-TH	10	1962720000

**Note**

**Accessories**

<b>Tools</b>	Pressing tool
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Type	Qty.	Order No.
TT 8 RS MP 8	1	9202800000

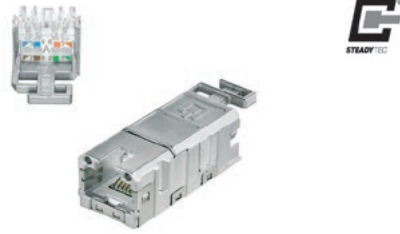
**Note**



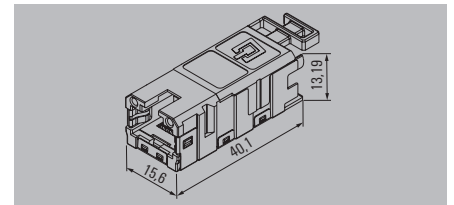
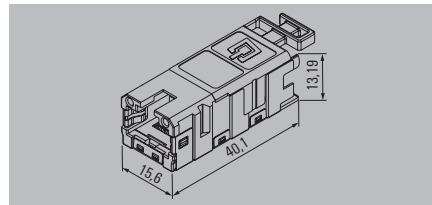
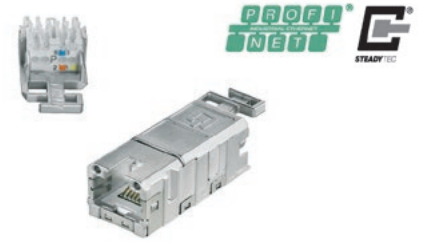
**RJ45 flange inserts, module**

- Completely in Cat. 6<sub>A</sub>
- IP20
- For housing variants 1, 4, 5, 14, HDC and for FrontCom®

**8-wire**



**4-wire**



**Technical data**

Category  
 Protection degree  
 Plugging cycles  
 Shielding  
 Housing main material  
 Contact surface  
 Connection cross-section, flexible, min. / max.  
 Connection cross-section, solid, min. / max.  
 Insulation diameter, min. / max.  
 Connector standard  
 Ambient temperature (operational)  
 PoE / PoE+  
 Approvals

Cat.6<sub>A</sub> / Class E<sub>A</sub> (ISO/IEC 11801 2010)  
 IP67 with housing  
 750  
 360° all-round enclosure  
 Zinc diecast  
 Gold over Nickel, Au ≥ 0.8 μm  
 AWG 26 / AWG 22  
 AWG 24 / AWG 22  
 0.85 mm...1.6 mm  
 IEC 60603-7-51  
 -40 °C...70 °C  
 conforming to IEEE 802.3af  
 CULUS

Cat.5 (ISO/IEC 11801)  
 IP67 with housing  
 750  
 360° all-round enclosure  
 Zinc diecast  
 Gold over Nickel, Au ≥ 0.8 μm  
 AWG 26 / AWG 22  
 AWG 24 / AWG 22  
 0.85 mm...1.6 mm  
 IEC 60603-7-51  
 -40 °C...70 °C  
 conforming to IEEE 802.3af  
 CULUS; DETNORVER

**Note**

Connection of WM Cat. 7 AWG 27/7 LSZH possible

**Ordering data**

tool-free	
TIA-A. Cat. 6 <sub>A</sub>	
TIA-B. Cat. 6 <sub>A</sub>	
PROFINET Cat. 5	

**Note**

Type	Qty.	Order No.
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000

Type	Qty.	Order No.
IE-BI-RJ45-FJ-P	10	1963830000

**Accessories**

Tools	
Optional pressing tool	

Type	Qty.	Order No.
PWZ RJ45	1	1118040000

Type	Qty.	Order No.
PWZ RJ45	1	1118040000

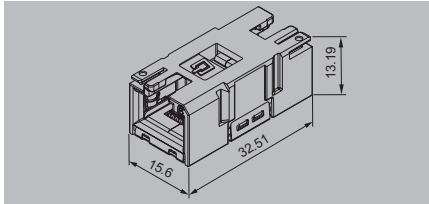
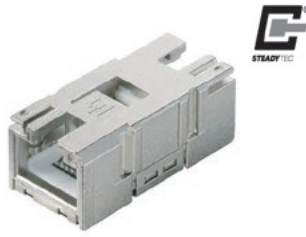
**Note**

**Inserts**

**Flange inserts, coupling**

- IP20
- For housing variants 1, 4, 5, 14, HDC and for FrontCom®
- SPE coupling for FrontCom® only

**RJ45, 8-wire, Cat. 6A**

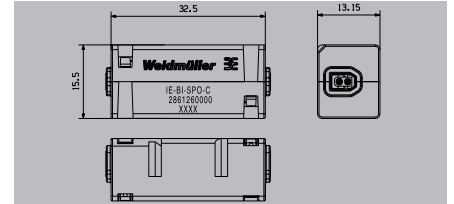


**SPE, 2-wire**

Pin contacts



**SPElink®**



**Technical data**

Category  
 Protection degree  
 Plugging cycles  
 Shielding  
 Housing main material  
 Contact surface  
 Connection cross-section, flexible, min. / max.  
 Connection cross-section, solid, min. / max.  
 Insulation diameter, min. / max.  
 Connector standard  
 Ambient temperature (operational)  
 PoE / PoE+  
 Approvals

Cat.6<sub>A</sub> / Class E<sub>A</sub> (ISO/IEC 11801 2010)  
 IP67 with housing  
 750  
 360° all-round enclosure  
 Zinc diecast  
 Gold over Nickel, Au ≥ 0.8 µm

T1-B  
 IP67 with housing  
 750  
 PA 66  
 Gold over nickel  
 ...  
 IEC 63171-2  
 -40 °C...85 °C  
 PoDL acc. to IEEE 802.3bu / cg

Note

**Ordering data**

tool-free	
	Coupling
Note	

Type	Qty.	Order No.
IE-BI-RJ45-C	10	1962840000
Note		

Type	Qty.	Order No.
IE-BI-SPO-C	10	2861260000
Note		

**Accessories**

Type	Qty.	Order No.

Type	Qty.	Order No.

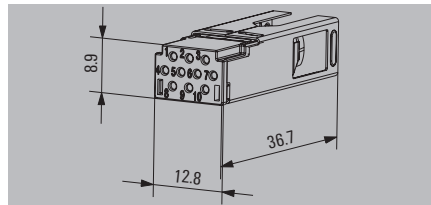
Note

### Plug inserts Hybrid

- Cat. 5
- IP 20
- For housing variant 14

### Crimp

#### Socket contacts



### Technical data

Category
Protection degree
Plugging cycles
Shielding
Housing main material
Contact surface
Number of poles
Connection cross-section, flexible, min. / max.
Connection diameter, flexible, min. / max.
Insulation diameter, min. / max.
Ambient temperature (operational)
Volume resistance
Rated current
Rated voltage
Contact resistance
Approvals

Cat.5 (ISO/IEC 11801)
IP67 with housing
500
360° all-round enclosure
Nickel silver, PA 66
Gold over nickel
10
AWG 27 / AWG 20
0.08 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
1...2.2 mm
-40 °C...70 °C
<10 mΩ
3 A per contact
24 V
≤ 5 mΩ
CULUS

**Note**

### Ordering data

**Note**

### Accessories

Crimping contact (sockets)	
	0.08...0.2 mm <sup>2</sup>
	0.2...0.5 mm <sup>2</sup>
	0.75 mm <sup>2</sup>
Tools	
	Pressing tool

Type	Qty.	Order No.
IE-PI-HYB-10P	10	1068990000
Contacts should be ordered separately		

Type	Qty.	Order No.
IE-PIC-HYB-S-0,2-300	300	1135150000
IE-PIC-HYB-S-0,5-300	300	1096180000
IE-PIC-HYB-S-0,75-300	300	1068950000
HTF HYB	1	1119580000

**Note**

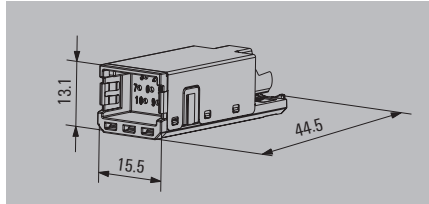
Inserts

Flange inserts Hybrid

- Cat. 5
- IP 20
- For housing variant 14

Module

Pin contacts



Technical data

Category	Cat.5 (ISO/IEC 11801)
Protection degree	IP67 with housing
Plugging cycles	500
Shielding	360° all-round enclosure
Housing main material	Zinc diecast, Nickel silver, PA 66
Contact surface	Gold over nickel
Number of poles	10
Connection cross-section, flexible, min. / max.	AWG 27 / AWG 20
Connection diameter, flexible, min. / max.	0.08 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
Insulation diameter, min. / max.	1...2.2 mm
Rated current	3 A per contact
Rated voltage	24 V
Contact resistance	≤ 10 mΩ
Volume resistance	< 10 mΩ
Ambient temperature (operational)	-40 °C...70 °C
Approvals	CULUS

Category	Cat.5 (ISO/IEC 11801)
Protection degree	IP67 with housing
Plugging cycles	500
Shielding	360° all-round enclosure
Housing main material	Zinc diecast, Nickel silver, PA 66
Contact surface	Gold over nickel
Number of poles	10
Connection cross-section, flexible, min. / max.	AWG 27 / AWG 20
Connection diameter, flexible, min. / max.	0.08 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
Insulation diameter, min. / max.	1...2.2 mm
Rated current	3 A per contact
Rated voltage	24 V
Contact resistance	≤ 10 mΩ
Volume resistance	< 10 mΩ
Ambient temperature (operational)	-40 °C...70 °C
Approvals	CULUS

Note

Ordering data

Note

Accessories

Crimping contact (pins)	
	0.08...0.2 mm <sup>2</sup>
	0.2...0.5 mm <sup>2</sup>
	0.75 mm <sup>2</sup>
Tools	
	Pressing tool

Type	Qty.	Order No.
IE-BI-HYB-10P	10	1069010000
Contacts should be ordered separately		

Type	Qty.	Order No.
IE-BIC-HYB-P-0,2-300	300	1135160000
IE-BIC-HYB-P-0,5-300	300	1096150000
IE-BIC-HYB-P-0,75-300	300	1068970000
Tools		
HTF HYB	1	1119580000

Note

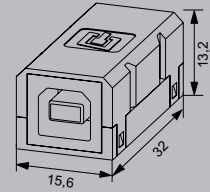
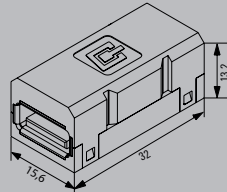
**Flange inserts USB**

- IP20
- For FrontCom®

**Coupling USB A/A**



**Coupling USB A/B**



**Technical data**

Protection degree  
Shielding  
Ambient temperature (operational)  
Connection 1 / 2  
Connector standard  
Approvals

IP67 with housing  
360° all-round enclosure  
-40 °C...70 °C  
USB A / USB A  
IEC 61076-3-107  
CULUS; DETNORVER

IP67 with housing  
360° all-round enclosure  
-40 °C...70 °C  
USB A / USB B  
IEC 61076-3-107  
CULUS; DETNORVER

**Note**

**Ordering data**

USB 2.0	
USB 3.0	

Type	Qty.	Order No.
IE-BI-USB-A	10	1019570000
IE-BI-USB-3.0-A	10	1487920000

Type	Qty.	Order No.
IE-BI-USB-AB	10	1131380000

**Note**

**Accessories**

USB cable 2.0	
0.5 m	
1.0 m	
1.5 m	
1.8 m	
3.0 m	
USB cable 3.0	
0.5 m	
1.8 m	
3.0 m	
5.0 m	

Type	Qty.	Order No.
IE-USB-A-A-0.5M	1	1993550005
IE-USB-A-A-1.0M	1	1993550010
IE-USB-A-A-1.5M	1	1993550015
IE-USB-A-A-1.8M	1	1993550018
IE-USB-A-A-3.0M	1	1993550030
IE-USB-3.0-A-A-0.5M	1	2581730005
IE-USB-3.0-A-A-1.8M	1	2581730018
IE-USB-3.0-A-A-3M	1	2581730030
IE-USB-3.0-A-A-5M	1	2581730050

Type	Qty.	Order No.

**Note**

**Inserts**

**Plug inserts SC**

- IP 20
- For variant 14 housings

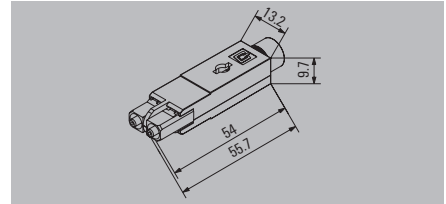
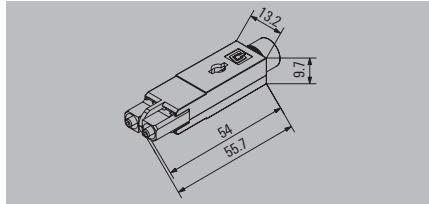
**Plug insert SC, POF**

only for V14



**Connector insert SC, POF, reconnectable**

only for V14



**Technical data**

Protection degree  
Housing main material  
Plugging cycles  
Ambient temperature (operational)  
Connector standard  
Approvals

IP67 with housing  
Zinc diecast, PA  
1000  
-40 °C...70 °C  
IEC 61754-24  
UL

IP67 with housing  
PA 66  
≥ 500  
-40 °C...70 °C  
IEC 61754-24

**Note**

**Ordering data**

POF

**Note**

Type	Qty.	Order No.
IE-PI-SCRJ-POF	10	1067410000

Type	Qty.	Order No.
IE-PI-SCRJ-POF-QA	10	2564960000

**Accessories**

Tools
Tool set POF, crimp
Mounting tool, POF
MULTI-STRIPAX IE-POF
Cevlar scissors

Type	Qty.	Order No.
TOOL SET IE-POF	1	1208930000
HTX-IE-POF	1	1208870000
MULTI-STRIPAX IE-POF	1	1208880000
SCISSORS KEVLAR	1	1208910000
IE-SCRJ-IP67-POF-100	100	1278430000

Type	Qty.	Order No.
HTX-IE-POF-QA	1	2602860000
MULTI-STRIPAX IE-POF	1	1208880000
SCISSORS KEVLAR	1	1208910000

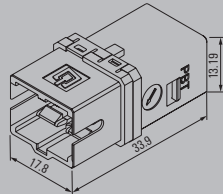
**Replacement ferrule**

**Note**

**Flange inserts SC**

- IP 20
- SC-RJ on 2 SC
- For variant 1, 4 and 14 housings

**Flange inserts SC**



**Technical data**

Protection degree  
 Housing main material  
 Plugging cycles  
 Ambient temperature (operational)  
 Approvals

IP67 with housing  
 PA  
 1000  
 -40 °C...70 °C

**Note**

**Ordering data**

Flange insert
Singlemode
Multimode/POF

Type	Qty.	Order No.
IE-BI-SCRJ2SC-SM-C	10	1962870000
IE-BI-SCRJ2SC-MM-C	10	1964430000

**Note**

**Accessories**

Type	Qty.	Order No.
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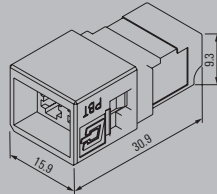
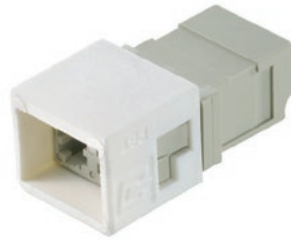
**Note**

**Inserts**

**Flange inserts LC**

- IP 20
- For variant 1, 4 and 14 housings

**Flange inserts LC**



**Technical data**

Protection degree  
 Housing main material  
 Plugging cycles  
 Ambient temperature (operational)  
 Connector standard  
 Approvals

IP67 with housing  
 PBT diecast zinc  
 1000  
 -40 °C...70 °C  
 IEC 61754-20

**Note**

**Ordering data**

Flange insert	
	Singlemode
	Multimode

Type	Qty.	Order No.
IE-BH-LCD-SM-C	10	1962880000
IE-BH-LCD-MM-C	10	1964420000

**Note**

**Accessories**

Tools	
	Crimping pliers GOF LC

Type	Qty.	Order No.
IE-CT-LC-GOF	1	9205330000

**Note**

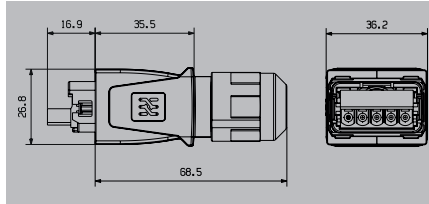




**PushPull Power**

**Plug PushPull Power**

**Plug Power 24 V**



**Technical data**

**General data**

Protection degree  
 Connector standard  
 Ambient temperature (operational)  
 Number of poles  
 Wire connection cross-section, flexible, min./max.  
 Sheath diameter, min. / max.  
 Approvals

IP65, IP67  
 in accordance with PROFINET specification, IEC 61076-3-126  
 -40 °C...70 °C  
 5  
 0.75 mm<sup>2</sup> / 2.5 mm<sup>2</sup>  
 8 mm / 13 mm  
 UR

**Material properties**

Housing base material  
 Sealing material  
 Cable sealing material  
 Contact material / Contact surface  
 UL 94 flammability rating  
 Pollution severity level  
 Plugging cycles

Zinc diecast, nickel-plated  
 NBR  
 EPDM  
 Copper alloy / Gold over nickel  
 V-2  
 2  
 ≥ 100

**Electrical properties\***

Current-carrying capacity at 50 °C  
 Rated voltage

16 A  
 24 V

**Note**

For cables with an outer diameter of 6-8 mm, order an additional reducing seal.

**Ordering data - Sets**

Tension clamp connection  
 SNAP IN connection

Type	Qty.	Order No.
IE-PS-VAPM-5P-2.5	1	2465440000
IE-PS-VAPM-5P-2.5-QT	1	2912590000

**Note**

When using wire end ferrules, we recommend the length of 10 mm.

**Ordering data - Empty housings**

Type	Qty.	Order No.

**Note**

**Accessories**

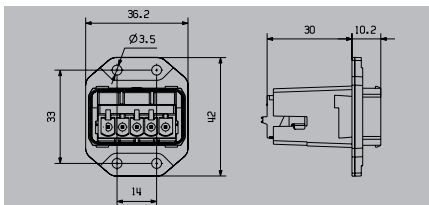
Reducing seal insert 6-8 mm

Type	Qty.	Order No.
IE-REDU-6-8-PS-VAPM	10	2531330000

**Note**

Flanges PushPull Power

Flange Power 24 V



Technical data

General data	
Protection degree	
Connector standard	
Ambient temperature (operational)	
Number of poles	
Connection diameter, flexible, min. / max.	
Connection 1	
Approvals	
Installation	
Material properties	
Housing base material	
Sealing material	
Cable sealing material	
Contact carrier material	
Contact material / Contact surface	
UL 94 flammability rating	
Pollution severity level	
Plugging cycles	
Electrical properties*	
Current-carrying capacity at 50 °C	
Rated voltage	
Note	

IP67	
in accordance with PROFIBUS specification, IEC 61076-3-126	
-40 °C...70 °C	
5	
0.75 mm <sup>2</sup> / 2.5 mm <sup>2</sup>	
Tension clamp	
UR	
4 screws	
Zinc diecast, nickel-plated	
NBR	
EPDM	
PA	
Copper alloy / Gold over nickel	
V-2	
2	
≥ 100	
16 A	
24 V	
Note	

Ordering data - Sets

Note	
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Type	Qty.	Order No.
IE-BSS-VAPM-24V	1	2493480000
Wir empfehlen die Verwendung von 10-mm-Aderendhülsen.		

Ordering data - Empty housings

Note	
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Type	Qty.	Order No.
IE-BHD-VAPM	1	2493490000

Accessories

Dust protection cap	
IP54 protective cap	
Dust cap	
Note	

Type	Qty.	Order No.
IE-BP-VAPP	10	1068930000
IE-BP-VAPP-DC	10	2494060000



# IP65 connection components / FreeCon connecting components

## Overview

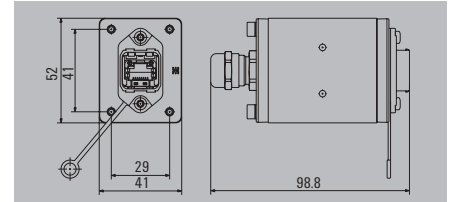
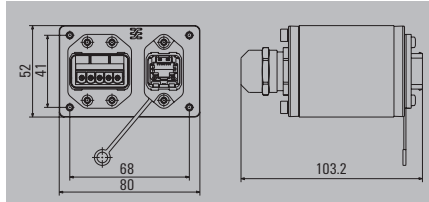
<b>IP65 connection components / FreeCon connecting components</b>	FreeCon Passive V14	0.2
	FreeCon Active PROFINET	0.8
	V1 junction boxes	0.11
	V4 junction boxes	0.13
	V5 junction boxes	0.15
	V6 junction boxes	0.16

## FreeCon Passive V14

### FreeCon V14 - junction box

### Double junction box, Power / RJ45

### Single junction box, RJ45



#### Technical data

General data	
Housing main material	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	IP65
Ambient temperature (operational)	-40 °C...70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5
Approvals	CULUS
Technical specifications power connector	
Housing base material	Zinc diecast, nickel-plated
Sealing material	NBR
Contact material	Copper alloy
Contact carrier material	PA
Contact surface	Gold over nickel
Plugging cycles	≤ 100
Number of poles	5
Sheath diameter, min. / max.	6 mm / 12 mm
Wire connection cross section, stranded, min. / max.	0.75 mm <sup>2</sup> / 2.5 mm <sup>2</sup>
Connection	Tension clamp
Electrical properties power connector	
Current-carrying capacity at 50 °C	16 A
Rated voltage	24 V
Technical specifications for RJ45 module	
Housing base material	Zinc diecast
Contact surface	Gold over nickel
Connection cross-section, flexible, min. / max.	AWG 26 / AWG 22
Plugging cycles (RJ45 module)	750
Connection 1	IDC
Sheath diameter, min./max.	5 mm / 10 mm
Electrical properties for RJ45 module	
Category	Cat.5 (ISO/IEC 11801)
Contact resistance	≤ 20 mΩ
Insulation resistance	> 500 MΩ
Dielectric strength, contact - contact, max.	≤ 1000 V DC
Dielectric strength, contact - contact, min.	≤ 1500 V DC
Current carrying capacity	1 A
Note	

General data	
Housing main material	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	IP65
Ambient temperature (operational)	-40 °C...70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5
Approvals	CULUS
Technical specifications power connector	
Housing base material	Zinc diecast, nickel-plated
Sealing material	NBR
Contact material	Copper alloy
Contact carrier material	PA
Contact surface	Gold over nickel
Plugging cycles	≤ 100
Number of poles	5
Sheath diameter, min. / max.	6 mm / 12 mm
Wire connection cross section, stranded, min. / max.	0.75 mm <sup>2</sup> / 2.5 mm <sup>2</sup>
Connection	Tension clamp
Electrical properties power connector	
Current-carrying capacity at 50 °C	16 A
Rated voltage	24 V
Technical specifications for RJ45 module	
Housing base material	Zinc diecast
Contact surface	Gold over nickel
Connection cross-section, flexible, min. / max.	AWG 26 / AWG 22
Plugging cycles (RJ45 module)	750
Connection 1	IDC
Sheath diameter, min./max.	5 mm / 10 mm
Electrical properties for RJ45 module	
Category	Cat.5 (ISO/IEC 11801)
Contact resistance	≤ 20 mΩ
Insulation resistance	> 500 MΩ
Dielectric strength, contact - contact, max.	≤ 1000 V DC
Dielectric strength, contact - contact, min.	≤ 1500 V DC
Current carrying capacity	1 A
Note	

General data	
Housing main material	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	IP65
Ambient temperature (operational)	-40 °C...70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5
Approvals	CULUS
Technical specifications power connector	
Housing base material	Zinc diecast, nickel-plated
Sealing material	NBR
Contact material	Copper alloy
Contact carrier material	PA
Contact surface	Gold over nickel
Plugging cycles	≤ 100
Number of poles	5
Sheath diameter, min. / max.	6 mm / 12 mm
Wire connection cross section, stranded, min. / max.	0.75 mm <sup>2</sup> / 2.5 mm <sup>2</sup>
Connection	Tension clamp
Electrical properties power connector	
Current-carrying capacity at 50 °C	16 A
Rated voltage	24 V
Technical specifications for RJ45 module	
Housing base material	Zinc diecast
Contact surface	Gold over nickel
Connection cross-section, flexible, min. / max.	AWG 26 / AWG 22
Plugging cycles (RJ45 module)	750
Connection 1	IDC
Sheath diameter, min./max.	5 mm / 10 mm
Electrical properties for RJ45 module	
Category	Cat.5 (ISO/IEC 11801)
Contact resistance	≤ 20 mΩ
Insulation resistance	> 500 MΩ
Dielectric strength, contact - contact, max.	≤ 1000 V DC
Dielectric strength, contact - contact, min.	≤ 1500 V DC
Current carrying capacity	1 A
Note	

#### Ordering data

Type	Qty.	Order No.
IE-CD-V14MRJ/VAPM24V-FJ	1	1068830000
Note		

Type	Qty.	Order No.
IE-CD-V14MRJ/VAPM24V-FJ	1	1068830000
Note		

Type	Qty.	Order No.
IE-CD-V14MRJ-FJ	1	1068880000
Note		

#### Accessories

Mounting foot	
IE-CD-MA	Protective cap
IE-BP-V14P	IP54 protective cap
IE-BP-VAPP	
Note	

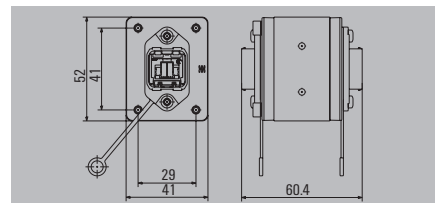
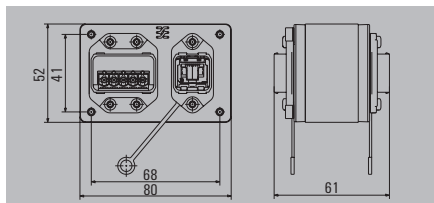
Type	Qty.	Order No.
IE-CD-MA	10	1099580000
IE-BP-V14P	10	1058310000
IE-BP-VAPP	10	1068930000
Note		

Type	Qty.	Order No.
IE-CD-MA	10	1099580000
IE-BP-V14P	10	1058310000
Note		

FreeCon V14 - coupling

Double coupling, Power / RJ45

Single coupling, RJ45



Technical data

General data	
Housing main material	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	IP65
Ambient temperature (operational)	-40 °C...70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5
Approvals	CULUS
Technical specifications power connector	
Housing base material	Zinc diecast, nickel-plated
Sealing material	NBR
Contact material	Copper alloy
Contact carrier material	PA
Contact surface	Gold over nickel
Plugging cycles	≥ 100
Number of poles	5
Electrical properties power connector	
Current-carrying capacity at 50 °C	16 A
Rated voltage	24 V
Technical data for RJ45 coupling	
Housing base material	Zinc diecast
Electrical properties RJ45 coupling	
Category	Cat.6A / Class EA (ISO/IEC 11801 2010)
Contact resistance	≤ 20 mΩ
Contact surface	Gold over nickel
Insulation resistance	> 500 MΩ
Dielectric strength, contact - contact, min.	≥ 1000 V DC
Dielectric strength, contact - shielding, max.	≥ 1500 V DC
Current carrying capacity	1 A
Note	

General data		
Housing main material	Aluminium profile, Cover: die-cast zinc, painted	
Protection degree	IP65	
Ambient temperature (operational)	-40 °C...70 °C	
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5	
Approvals	CULUS	
Technical specifications power connector		
Housing base material	Zinc diecast, nickel-plated	
Sealing material	NBR	
Contact material	Copper alloy	
Contact carrier material	PA	
Contact surface	Gold over nickel	
Plugging cycles	≥ 100	
Number of poles	5	
Electrical properties power connector		
Current-carrying capacity at 50 °C	16 A	
Rated voltage	24 V	
Technical data for RJ45 coupling		
Housing base material	Zinc diecast	
Electrical properties RJ45 coupling		
Category	Cat.6A / Class EA (ISO/IEC 11801 2010)	
Contact resistance	≤ 20 mΩ	
Contact surface	Gold over nickel	
Insulation resistance	> 500 MΩ	
Dielectric strength, contact - contact, min.	≥ 1000 V DC	
Dielectric strength, contact - shielding, max.	≥ 1500 V DC	
Current carrying capacity	1 A	
Note		

General data		
Housing main material	Aluminium profile, Cover: die-cast zinc, painted	
Protection degree	IP65	
Ambient temperature (operational)	-40 °C...70 °C	
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-5	
Approvals	CULUS	
Technical specifications power connector		
Housing base material	Zinc diecast, nickel-plated	
Sealing material	NBR	
Contact material	Copper alloy	
Contact carrier material	PA	
Contact surface	Gold over nickel	
Plugging cycles	≥ 100	
Number of poles	5	
Electrical properties power connector		
Current-carrying capacity at 50 °C	16 A	
Rated voltage	24 V	
Technical data for RJ45 coupling		
Housing base material	Zinc diecast	
Electrical properties RJ45 coupling		
Category	Cat.6A / Class EA (ISO/IEC 11801 2010)	
Contact resistance	≤ 20 mΩ	
Contact surface	Gold over nickel	
Insulation resistance	> 500 MΩ	
Dielectric strength, contact - contact, min.	≥ 1000 V DC	
Dielectric strength, contact - shielding, max.	≥ 1500 V DC	
Current carrying capacity	1 A	
Note		

Ordering data

Note	
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Type	Qty.	Order No.
IE-CD-V14MRJ/VAPM24V-C-MA	1	1068820000
Including mounting foot		

Type	Qty.	Order No.
IE-CD-V14MRJ-C-MA	1	1068870000
Including mounting foot		

Accessories

Dust protection cap	
Protective cap	IE-BP-V14P
IP54 protective cap	IE-BP-VAPP

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000
IE-BP-VAPP	10	1068930000

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

Note	
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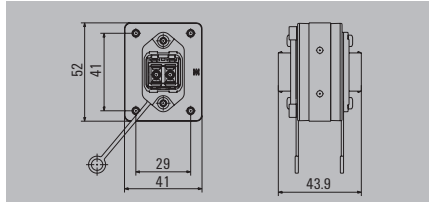
Note		
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Note		
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## FreeCon Passive V14

### FreeCon V14 single coupling

### Single coupling, SCRJ



#### Technical data

##### General data

Housing main material	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	IP65
Ambient temperature (operational)	-40...70 °C
Connector standard	IEC 61076-3-117 Var. 14, IEC 61754-24
Approvals	CULUS

##### Technical specifications - fibre-optic coupler

Housing base material (fibre-optic coupling)	PA
Plugging cycles (fibre-optic coupling)	≥ 500
Seal material (fibre-optic coupling)	NBR
Connection 1 / 2	SCRJ / SCRJ
Insertion attenuation (fibre-optic coupling)	< 0.2 dB
Fibre type	Multimode, POF

##### Note

#### Ordering data

Type	Qty.	Order No.
IE-CD-V14MSCRJ-MM-C-MA	1	1318150000

##### Note

#### Accessories

Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

##### Dust protection cap

Protective cap

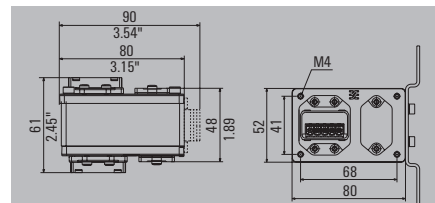
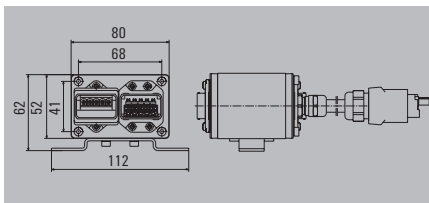
##### Note



FreeCon V14 - Power

Y-distributor, Power

Single coupling, Power



Technical data

General data	
Housing main material	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	IP65
Ambient temperature (operational)	-40...70 °C
Connector standard	in accordance with PROFINET specification
Approvals	CULUS
Technical specifications power connector	
Housing base material	Zinc diecast, nickel-plated
Sealing material	NBR
Cable sealing material	TPE
Contact material	Copper alloy
Contact carrier material	PA
Contact surface	Gold over nickel
UL 94 flammability rating	V-0
Plugging cycles	≥ 100
Pollution severity level	2
Number of poles	5
Electrical properties power connector	
Current-carrying capacity at 50 °C	16 A @ 20 °C
Rated voltage	24 V
Note	

Aluminium profile, Cover: die-cast zinc, painted
IP65
-40...70 °C
in accordance with PROFINET specification
CULUS
Zinc diecast, nickel-plated
NBR
TPE
Copper alloy
PA
Gold over nickel
V-0
≥ 100
2
5
16 A @ 20 °C
24 V

Aluminium profile, Cover: die-cast zinc, painted
IP65, If thread-locking fluid is used
-40...70 °C
in accordance with PROFINET specification
CULUS
Zinc diecast, nickel-plated
NBR
TPE
Copper alloy
PA
Gold over nickel
V-0
≥ 100
2
5
16 A @ 20 °C
24 V

Ordering data

Type	Qty.	Order No.
IE-CD-VAPM24V-Y-MA	1	1297010000

Type	Qty.	Order No.
IE-CD-VAPM24V-C-MA	1	1397690000

Type	Qty.	Order No.
IE-CD-VAPM24V-C-MA	1	1397690000

Accessories

Type	Qty.	Order No.
IE-BP-VAPP	10	1068930000

Type	Qty.	Order No.
IE-BP-VAPP	10	1068930000

Type	Qty.	Order No.
IE-BP-VAPP	10	1068930000

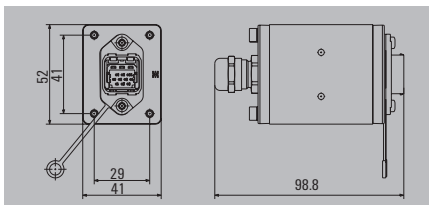
Note

Note

Note

FreeCon V14 - junction box

Single junction box, Hybrid



Technical data

General data	
Housing main material	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	IP65
Ambient temperature (operational)	-40 °C...70 °C
Approvals	CULUS
Technical specifications hybrid connector	
Housing base material	Zinc diecast (flange), PA 66
Sealing material	NBR
Contact material	Copper alloy
Contact surface	Gold over nickel
Plugging cycles	500
Pole count	10
Connection cross-section, flexible, min. / max.	AWG 27 / AWG 20
Connection cross-section, flexible, min. / max.	0.08 mm <sup>2</sup> / 0.75 mm <sup>2</sup>
Electrical properties hybrid connector	
Rated current (hybrid connector)	3 A per contact
Rated voltage (DIN EN 61984)	24 V
Contact resistance	≤ 10 mΩ
Note	

Ordering data		
Type	Qty.	Order No.
IE-CD-V14MHYB-10P-FJ	1	1068850000
Contacts should be ordered separately		
Accessories		
Type	Qty.	Order No.
IE-CD-MA	10	1099580000
IE-BIC-HYB-P-0,2-300	300	1135160000
IE-BIC-HYB-P-0,5-300	300	1096150000
IE-BIC-HYB-P-0,75-300	300	1068970000
HTF HYB	1	1119580000
IE-BP-V14P	10	1058310000
Note		

Ordering data

Note	
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Accessories

Mounting foot	
Crimping contact (pins)	
	0.08...0.2 mm <sup>2</sup>
	0.2...0.5 mm <sup>2</sup>
	0.75 mm <sup>2</sup>
Tools	
	Pressing tool
Dust protection cap	
	Protective cap
Note	

Ordering data		
Type	Qty.	Order No.
IE-CD-V14MHYB-10P-FJ	1	1068850000
Contacts should be ordered separately		

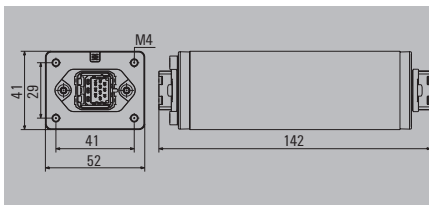
Accessories		
Type	Qty.	Order No.
IE-CD-MA	10	1099580000
IE-BIC-HYB-P-0,2-300	300	1135160000
IE-BIC-HYB-P-0,5-300	300	1096150000
IE-BIC-HYB-P-0,75-300	300	1068970000
HTF HYB	1	1119580000
IE-BP-V14P	10	1058310000
Note		

Note	
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Note		
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FreeCon V14 single coupling

Single coupling, hybrid



Technical data

<b>General data</b>	
Housing main material	Aluminium profile, Cover: die-cast zinc, painted
Protection degree	IP65
Ambient temperature (operational)	-40...70 °C
Approvals	CULUS
<b>Technical specifications hybrid connector</b>	
Housing base material	Zinc diecast (flange), PA 66
Sealing material	NBR
Contact material	Copper alloy
Contact surface	Gold over nickel
Plugging cycles	500
Pole count	10
<b>Electrical properties hybrid connector</b>	
Rated current (hybrid connector)	3 A per contact
Rated voltage (DIN EN 61984)	24
Contact resistance	≤ 10 mΩ
<b>Note</b>	

<b>General data</b>		
Aluminium profile, Cover: die-cast zinc, painted		
IP65		
-40...70 °C		
CULUS		
<b>Technical specifications hybrid connector</b>		
Zinc diecast (flange), PA 66		
NBR		
Copper alloy		
Gold over nickel		
500		
10		
<b>Electrical properties hybrid connector</b>		
3 A per contact		
24		
≤ 10 mΩ		
<b>Note</b>		

Ordering data

<b>Note</b>	
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Type	Qty.	Order No.
IE-CD-V14MHYB-10P-C-MA	1	1068840000

Accessories

<b>Dust protection cap</b>	Protective cap
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Type	Qty.	Order No.
IE-BP-V14P	10	1058310000

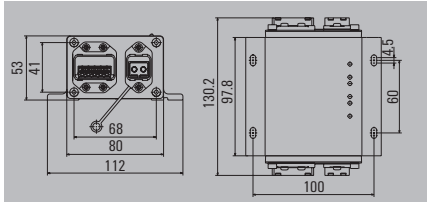
<b>Note</b>
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<b>Note</b>
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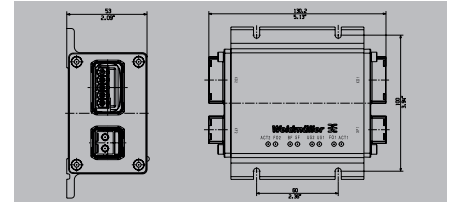
FreeCon Active PROFINET

FreeCon Active PROFINET with diagnostics functionality

POF repeater



POF repeater II



Technical data

General data

Housing main material  
Data interface  
Power interface  
Protection degree  
Ambient temperature (operational)  
Network standard  
Connector standard

Electrical data

Operating voltage  
Operational voltage range  
Current consumption  
Baud rate  
Protocol  
LED indicator

Approvals

Note

Ordering data

Note

Accessories

Note

Aluminium profile, Cover: die-cast zinc, painted  
PROFINET PushPull SCRJ POF (V14)  
PROFINET PushPull Power  
IP65  
-20 °C...55 °C  
IEC 61158, IEC 61784  
IEC 61076-3-117 Var. 14, IEC 61754-24

24 V DC  
18...30 V DC  
200 mA typical  
100 MB  
PROFINET IRT  
FO1: port active, FO2: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2

CE; CULUS

Type	Qty.	Order No.
IE-CDR-V14MSCPOF/VAPM-C	1	1253240000

Delivery incl. protective caps

Type	Qty.	Order No.

Aluminium profile, Zinc die cast, electroplated lid  
PROFINET PushPull SCRJ POF (V14)  
PROFINET PushPull Power  
IP65  
-20 °C...55 °C  
IEC 61158, IEC 61784  
IEC 61076-3-117 Var. 14, IEC 61754-24

24 V DC  
18...30 V DC  
200 mA typical  
100 MB  
PROFINET IRT  
FO1: port active, FO2: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2, ACT1: activity Port1, ACT2: activity Port2

CE; CULUS

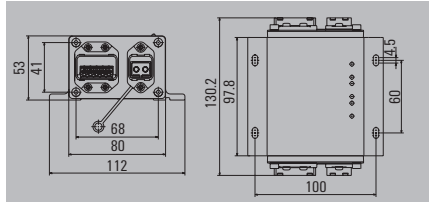
Type	Qty.	Order No.
IE-CDR-V14MSCPOF/VAPM-C II	1	2455360000

Further development of 1253240000, IE-CDR-V14MSCPOF/VAPM-C. For commissioning, the new GSDML file (see Downloads) must be installed.

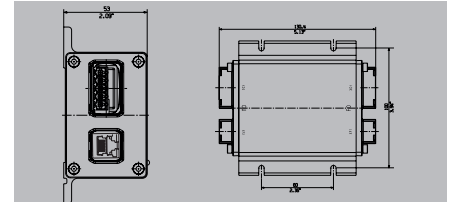
Type	Qty.	Order No.

**FreeCon Active PROFINET**  
with diagnostics functionality

**POF media converter**



**POF media converter II**



**Technical data**

General data	
Housing main material	
Data interface	
Power interface	
Protection degree	
Ambient temperature (operational)	
Network standard	
Connector standard	
Electrical data	
Operating voltage	
Operational voltage range	
Current consumption	
Baud rate	
Protocol	
LED indicator	
Approvals	
Note	

Aluminium profile, Cover: die-cast zinc, painted
PROFINET PushPull SCRJ POF (V14), PROFINET PushPull RJ45 (V14)
PROFINET PushPull Power
IP65
-20 °C...55 °C
IEC 61158, IEC 61784
IEC 61076-3-117 Var. 14, IEC 61754-24, IEC 60603-7-51
24 V DC
18...30 V DC
200 mA typical
100 MB
PROFINET IRT
P1: port active, P2: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2
CE, CULUS

Aluminium profile, Zinc die cast, electroplated lid
PROFINET PushPull SCRJ POF (V14), PROFINET PushPull RJ45 (V14)
PROFINET PushPull Power
IP65
-20 °C...55 °C
IEC 61158, IEC 61784
IEC 61076-3-117 Var. 14, IEC 61754-24, IEC 60603-7-51
24 V DC
18...30 V DC
200 mA typical
100 MB
PROFINET IRT
P1: port active, P2: port active, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2, ACT1: activity Port1, ACT2: activity Port2
CULUS
Further development of 1324440000, IE-CDM-V14MRJSCP/VAPM-C. For commissioning, the new GSDML file (see Downloads) must be installed.

**Ordering data**

Type	Qty.	Order No.
IE-CDM-V14MRJSCP/VAPM-C	1	1324440000
Delivery incl. protective caps		

Note

Type	Qty.	Order No.
IE-CDM-V14MRJSCP/VAPM-C II	1	2588270000

**Accessories**

Type	Qty.	Order No.

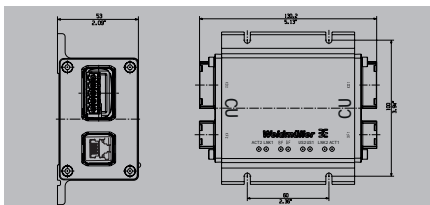
Type	Qty.	Order No.

Note

**FreeCon Active PROFINET**

**FreeCon Active PROFINET  
with diagnostics functionality**

**Copper repeater**



**Technical data**

General data	
Housing main material	
Data interface	
Power interface	
Protection degree	
Ambient temperature (operational)	
Network standard	
Connector standard	
Electrical data	
Operating voltage	
Operational voltage range	
Current consumption	
Baud rate	
Protocol	
LED indicator	
Approvals	
Note	

Aluminium profile, Zinc die cast, electroplated lid
PROFINET PushPull RJ45 (V14)
PROFINET PushPull Power
IP65
-20 °C...55 °C
IEC 61158, IEC 61784
IEC 61076-3-117 Var. 14
24 V DC
18...30 V DC
100 mA
100 MBit/s
PROFINET IRT
ACT1: activity Port1, ACT2: activity Port2, SF: general error, BF: bus error, US1: voltage 1 (electronics), US2: voltage 2, LNK1: port active, LNK2: port active
CULUS

**Ordering data**

Note	
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Type	Qty.	Order No.
IE-CDR-V14MRJ/VAPM-C	1	2581810000
Delivery incl. protective caps		

**Accessories**

Type	Qty.	Order No.
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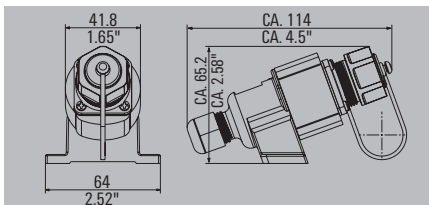
Type	Qty.	Order No.
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Note	
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Note	
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V1 junction boxes - plastic

Single junction box



Technical data

Protection degree
Housing main material
Plugging cycles
Ambient temperature (operational)
Connector standard
Sheath diameter min. / max.
Approvals
<b>Note</b>

IP67
PA UL 94 V0
750
-40 °C...70 °C
IEC 61076-3-106 Var. 1
6 mm / 9.5 mm
<b>Note</b>

Ordering data

<b>Variant 1</b>
Pre-assembled cable
<b>Note</b>

Type	Qty.	Order No.
IE-OP-V01P-1S	10	1061830000
Order RJ45 modules separately		

Accessories

Inserts, Data
RJ45 module EIA/TIA T568 B
RJ45 module PROFINET
RJ45 module EIA/TIA T568 A

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000

<b>Note</b>
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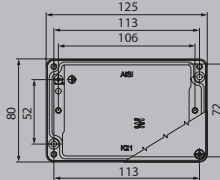
<b>Note</b>
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## V1 junction boxes

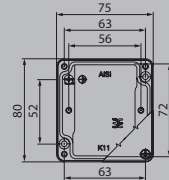
### V1 junction boxes - metal

- IP 67
- For wall or floor mounting

### Double junction box



### Single junction box



### Technical data

Protection degree  
Housing main material  
Colour  
Type of mounting  
Ambient temperature (operational)  
Plugging cycles  
Connector standard  
Sheath diameter min. / max.  
Approvals

IP67  
AL-Si 12  
grey  
Floor-mounted, Wall mounting  
-40 °C...70 °C  
750  
IEC 61076-3-106 Var. 1  
5 mm / 10 mm  
GOSTME25

IP67  
AL-Si 12  
grey  
Floor-mounted, Wall mounting  
-40 °C...70 °C  
750  
IEC 61076-3-106 Var. 1  
5 mm / 10 mm

**Note**

### Ordering data

Variant 1
2 ports. straight
1 port. straight

**Note**

Type	Qty.	Order No.
IE-OM-V01M-K21-2S	1	1966330000

RJ45 modules can be ordered separately

Type	Qty.	Order No.
IE-OM-V01M-K11-1S	1	1966300000

RJ45 modules can be ordered separately

### Accessories

Inserts, Data
RJ45 module EIA/TIA T568 B
RJ45 module PROFINET
RJ45 module EIA/TIA T568 A

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000

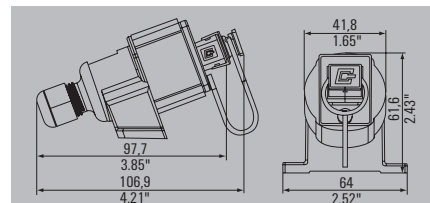
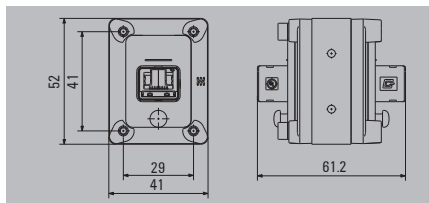
**Note**



FreeCon V4 junction boxes

Single coupling, RJ45

Single junction box



Technical data

General data	
Plugging cycles	750
Housing main material	Aluminium profile, Cover: die-cast zinc, painted
Contact surface	Gold over nickel
UL 94 flammability rating	
Connector standard	IEC 61076-3-106 Var. 4, IEC 60603-7-5
Protection degree	IP65
Ambient temperature (operational)	-40 °C...70 °C
Sheath diameter min. / max.	
Approvals	CULUS
Electrical properties for RJ45 module	
Category	Cat.6A / Class EA (ISO/IEC 11801 2010)
Contact resistance	≤ 20 mΩ
Insulation resistance	> 500 MΩ
Dielectric strength, contact - contact, min.	≥ 1000 V DC
Dielectric strength, contact - shielding, max.	≥ 1500 V DC
Current carrying capacity	1 A
Material properties RJ45 coupling	
Housing base material	Zinc diecast
Note	

750
Aluminium profile, Cover: die-cast zinc, painted
Gold over nickel
IEC 61076-3-106 Var. 4, IEC 60603-7-5
IP65
-40 °C...70 °C
CULUS
Cat.6A / Class EA (ISO/IEC 11801 2010)
≤ 20 mΩ
> 500 MΩ
≥ 1000 V DC
≥ 1500 V DC
1 A
Zinc diecast

750
PA
Gold over nickel
V-0
IEC 61076-3-106 Var. 4
IP67
-40 °C...70 °C
6 mm / 9.5 mm

Ordering data

Pre-assembled cable	
Coupling	
Note	

Type	Qty.	Order No.
IE-CD-V04PRJ-C-MA	1	1122710000
Including mounting foot		

Type	Qty.	Order No.
IE-OP-V04P-1S	10	1045780000
Order RJ45 modules separately, IP 67 protective cap included in delivery		

Accessories

Dust protection cap	
Flange-mounted housing protective cap	
Inserts, Data	
RJ45 module PROFINET	
RJ45 module EIA/TIA T568 A	
RJ45 module EIA/TIA T568 B	

Type	Qty.	Order No.
IE-BP-V04P	10	1963900000

Type	Qty.	Order No.
IE-BP-V04P	10	1963900000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000
IE-BI-RJ45-FJ-B	10	1963840000

Note

Note

Note

IP65 connection components / FreeCon connecting components

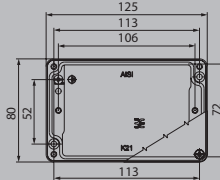
0

V4 junction boxes

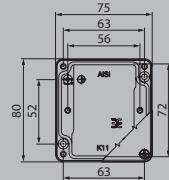
V4 junction boxes

- IP 67
- For wall or floor mounting

Double junction box



Single junction box



Technical data

Protection degree  
 Housing main material  
 Colour  
 Type of mounting  
 Ambient temperature (operational)  
 Plugging cycles  
 Connector standard  
 Sheath diameter min. / max.  
 Approvals

IP67  
 AL-Si 12  
 grey  
 Floor-mounted, Wall mounting  
 -40 °C...70 °C  
 750  
 IEC 61076-3-106 Var. 4  
 5 mm / 10 mm  
 GOSTME25

IP67  
 AL-Si 12  
 grey  
 Floor-mounted, Wall mounting  
 -40 °C...70 °C  
 750  
 IEC 61076-3-106 Var. 4  
 5 mm / 10 mm

Note

Ordering data

Variant 4	
	2 ports. straight
	1 port. straight

Note

Type	Qty.	Order No.
IE-OM-V04P-K21-2S	1	1966250000

RJ45 modules can be ordered separately

Type	Qty.	Order No.
IE-OM-V04P-K11-1S	1	1966220000

RJ45 modules can be ordered separately

Accessories

Inserts, Data	
	RJ45 module EIA/TIA T568 B
	RJ45 module PROFINET
	RJ45 module EIA/TIA T568 A

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000

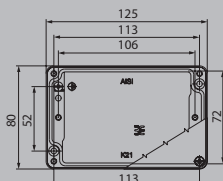
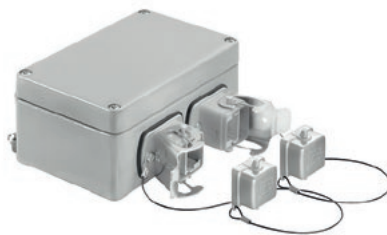
Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000

Note

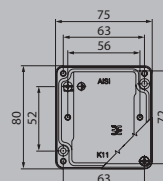
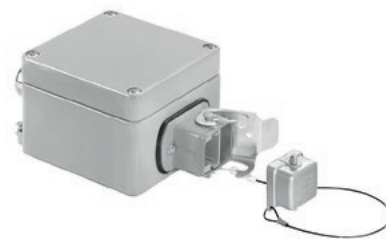
V5 junction boxes

- IP 67
- For wall or floor mounting

Double junction box



Single junction box



Technical data

Protection degree	IP67
Housing main material	AL-Si 12
Colour	grey
Type of mounting	Floor-mounted, Wall mounting
Ambient temperature (operational)	-40 °C...70 °C
Plugging cycles	750
Connector standard	IEC 61076-3-106 Var. 5
Sheath diameter min. / max.	5 mm / 10 mm
Approvals	GOSTME25
Note	

Protection degree	IP67
Housing main material	AL-Si 12
Colour	grey
Type of mounting	Floor-mounted, Wall mounting
Ambient temperature (operational)	-40 °C...70 °C
Plugging cycles	750
Connector standard	IEC 61076-3-106 Var. 5
Sheath diameter min. / max.	5 mm / 10 mm
Approvals	GOSTME25
Note	

Protection degree	IP67
Housing main material	AL-Si 12
Colour	grey
Type of mounting	Floor-mounted, Wall mounting
Ambient temperature (operational)	-40 °C...70 °C
Plugging cycles	750
Connector standard	IEC 61076-3-106 Var. 5
Sheath diameter min. / max.	5 mm / 10 mm
Approvals	
Note	

Ordering data

Variant 5	
	2 ports. straight
	1 port. straight
Note	

Type	Qty.	Order No.
IE-OM-V05M-K21-2S	1	1966290000
RJ45 modules can be ordered separately		

Type	Qty.	Order No.
IE-OM-V05M-K11-1S	1	1966260000
RJ45 modules can be ordered separately		

Accessories

Inserts, Data	
	RJ45 module EIA/TIA T568 B
	RJ45 module PROFINET
	RJ45 module EIA/TIA T568 A

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000

Type	Qty.	Order No.
IE-BI-RJ45-FJ-B	10	1963840000
IE-BI-RJ45-FJ-P	10	1963830000
IE-BI-RJ45-FJ-A	10	1962850000

Note

Note

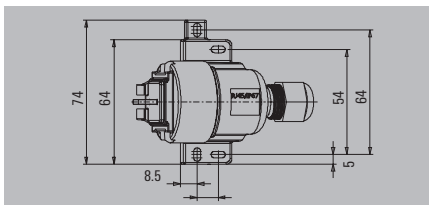
Note

## V6 junction boxes

### V6 junction boxes

- Cat. 6
- IP 67

### Single junction box, RJ45



#### Technical data

Protection degree  
Housing main material  
Colour  
Type of mounting

Configuration

Wiring  
Ambient temperature (operational)  
Plugging cycles  
Connector standard  
Sheath diameter min. / max.  
Approvals

#### Note

IP67  
PA 66, UL 94: V-0  
Light Grey  
Floor-mounted, for exposed connections, Wall mounting

Screw-on junction box  
including RJ45 module with  
IDC connection

EIA/TIA T568 A, EIA/TIA T568 B  
-40 °C...70 °C  
750  
IEC 61076-3-106 Var. 6  
6 mm / 9.5 mm  
DETNRVER

#### Ordering data

#### Note

Type	Qty.	Order No.
IE-S-IP67	1	8808370000

#### Accessories

#### Tools

Pressing tool

Type	Qty.	Order No.
TT 8 RS MP 8	1	9202800000

#### Note

# Copper cabling solutions

## Overview

<b>Copper cabling solutions</b>	Introduction AdvancedLine and CabinetLine	P.2
	Overview - Copper cables	P.4
	Raw cables - Single Pair Ethernet (SPE) cable	P.6
	Raw cables - Installation cable	P.8
	Raw cables - Connection cable	P.10
	Raw cables - Dragline cable	P.16
	Raw cables - PROFINET cable	P.17
	Raw cables - Hybrid cable	P.19
	Assembled cables - Single Pair Ethernet (SPE) cable	P.20
	Assembled cables - Patch cable	P.23
	Assembled cables - PROFINET cable	P.36
	Assembled cables - PROFINET cable PushPull Power	P.40
	Assembled cables - PROFINET cable M12	P.42
	Assembled cables - EtherNet/IP	P.50
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	Assembled cables - USB cable	P.67

# The ideal solution, whatever your needs

## Our AdvancedLine and CabinetLine product ranges

### AdvancedLine

### CabinetLine



P

The AdvancedLine from Weidmüller offers all combinations of cables that are possible with the extensive range of plug connections.

This means flexibility and robustness through the high quality of the used components. The range comprises standard cables and customer-specific versions.

- High-quality cables with very good technical characteristics
- Suitable for demanding IP20 to IP67 applications
- Suitable for temperatures from -40 to +70 °C
- High-quality shielding

The new CabinetLine range of patch cables from Weidmüller is available in a variety of colours for visually differentiating between various networks.

Additional benefits:

All CabinetLine cables are fitted with Weidmüller TM marking sleeves for clearly labelling cables and ports. CabinetLine is available in many different colours in combination with LSZH sheathing material and transmission power Cat. 6A. CabinetLine is also available in the colour green and Cat. 5 with PUR or PVC sheathing material. All variants are fitted with protected clips which facilitate, e.g., pulling through a cable duct.

- For applications in switching cabinets and simple environmental conditions
- Suitable for temperatures from -20 to +60 °C
- Simple shielding



# Overview of copper cables

## Solutions for every environment

Copper cables should be your first choice for applications in offices and harsh industrial environments.

### Advantages:

- Available in many different variations and lengths
- Robust
- Easy to assemble
- RJ45 connections are the most popular

### Assembled cables

#### Industrial patch cables / CabinetLine



...not only for office applications, but also in switching cabinets for industrial applications

- Cat. 6<sub>A</sub>
- With LSZH sheathing – low smoke and zero halogens
- In straight and crossover versions

#### System cable for railway applications



...pre-assembled cable for flexible wiring on railway vehicles for both interior and exterior installations.

- In Cat. 5
- Also for PROFINET
- With Radox sheath

#### Industrial system cables



...pre-assembled cables for flexible installation in machines and plants in industrial applications and difficult environments

- Cat. 5 or Cat. 6<sub>A</sub>
- With PUR sheathing

#### Smart meter patch cable RJ45 6kV and RJ12



Patch Cables for Smart Metering Applications conforming to standards to DIN-VDE 0603 and VDE-AR-N 4100:2019-04

- 6 kV impulse withstand voltage
- IP30 RJ45 connector

#### Industrial trailing cables



...pre-assembled cable for constant motion, e.g., with draglines

- Cat. 5
- Available for PROFINET as well
- With PUR sheathing

#### Industrial Single Pair Ethernet cables/SPElink®



IP20 and IP67 Patch Cables for compact Ethernet transmission with only one wire pair.

- according to IEC 63171-2 / -5
- very robust and space-saving



**Raw cables**

**Industrial installation cables, horizontal cables**



...for stationary, permanent installation in cable ducts and cable trays

- Cat. 5 or Cat. 7
- Available for PROFINET as well
- With PUR or PVC sheathing

**Industrial trailing cables**



...for applications subjected to constant movement

- Cat. 5
- Available for PROFINET as well
- With PUR sheathing

**Industrial connecting cables**



...for flexible installation in machines and plants in industrial applications and difficult environments

- Cat. 5 or Cat. 7
- Available for PROFINET as well
- With PUR or PVC sheathing

**Industrial Single Pair Ethernet raw cables/SPElink®**



For flexible installation in machines and plants in industrial environment / in harsh environments

- T1-B
- Jacket in PUR or LSZH

**Ordering data for copper cables, raw cable**

Type	Cat./Class	Colour	AWG	Outer diameter	Length	100 m	305 m	500 m	1000 m
<b>Industrial Single Pair Ethernet raw cables/SPElink®</b>									
IE-S1DS2UE*	T1-B	black	AWG22/7	PUR				2924340000	
IE-S1DS2LE*	T1-B	black	AWG22/7	LSZH				2924350000	
IE-S1ES2UE*	T1-B	black	AWG26/7	PUR				2924360000	
IE-S1ES2LE*	T1-B	black	AWG26/7	LSZH				2924370000	
<b>Industrial installation cables</b>									
IE-C5CS8UG-xxx	Cat. 5	green	AWG24/1	PUR	8813160000			2762870000	
IE-C5CS8VG-xxx	Cat. 5	green	AWG24/1	PVC	8813150000			2763440000	
IE-C7BS8UG-xxx	Cat. 7	green	AWG23/1	PUR	8813140000			2763530000	
IE-C7BS8VG-xxx	Cat. 7	green	AWG23/1	PVC	8813130000			2763540000	
IE-C5AS4V-xxx	Cat. 5 PROFINET	green	AWG22/1	PVC	8899000000			2763430000	
<b>Industrial connecting cables</b>									
IE-C5ES8UG-xxx	Cat. 5	green	AWG26/7	PUR	8813200000			2763500000	
IE-C5ES8VG-xxx	Cat. 5	green	AWG26/7	PVC	8813190000			2763510000	
IE-C7ES8UG-xxx	Cat. 7	green	AWG26/7	PUR	8813180000			2763550000	
IE-C7ES8VG-xxx	Cat. 7	green	AWG26/7	PVC	8813170000			2763490000	
IE-C5DS4V-xxx	Cat. 5 PROFINET	green	AWG22/7	PVC	8898990000			2763470000	
IE-C5DHAG-xxx	Cat. 5 PROFINET	green	AWG22/7	PVC	2763660000			2763460000	
IE-C7FS8LD-305M	Cat. 7	grey	AWG27/7	LSZH			1273090000		
IE-C7FS8LB-305M	Cat. 7	blue	AWG27/7	LSZH			1326540000		
IE-C7FS8LE-305M	Cat. 7	black	AWG27/7	LSZH			1344690000		
IE-C7FS8LG-305M	Cat. 7	green	AWG27/7	LSZH			1344680000		
IE-C7FS8LR-305M	Cat. 7	red	AWG27/7	LSZH			1287910000		
IE-C7FS8LV-305M	Cat. 7	violet	AWG27/7	LSZH			2779910000		
IE-C7FS8LM-305M	Cat. 7	magenta	AWG27/7	LSZH			1333160000		
IE-C7FS8LD-305M	Cat. 7	orange	AWG27/7	LSZH			2661080000		
IE-C7FS8LY-305M	Cat. 7	yellow	AWG27/7	LSZH			1344670000		
<b>Industrial trailing cables</b>									
IE-C5ED8UG-xxx	Cat. 5	green	AWG26/7	PUR	8813210000			2763490000	2781890000
IE-C5ED8UB-xxx	Cat. 5	blue	AWG26/7	PUR	8960670000			2763480000	2781880000
IE-C5DD4UG-xxx	Cat. 5 PROFINET	green	AWG22/7	PUR	8899010000			2763450000	
IE-C5IT4UGx	Cat. 5 PROFINET	green	AWG22/19	PUR	2764770000			2763520000	

Raw cables - Single Pair Ethernet (SPE) cable

Raw cables  
Single Pair Ethernet

- AWG 22

PUR

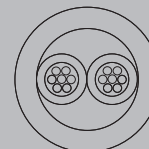
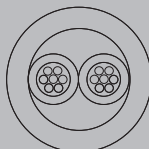
LSZH



SPElink®



SPElink®



Technical data

Product type
Category
Shielding
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Halogen
Resistance to spread of flame
Approvals
<b>Note</b>

System cable
T1-B
S/FTP
1 x 2 x AWG 22/7 - 0.35 mm <sup>2</sup>
5.3 mm
PUR
black
1.7 mm
22 mm
-40 °C...80 °C
halogen-free, acc. to IEC 60754-1, halogen-free, acc. to IEC 60754-2 in accordance with IEC 60332-1-2
<b>Note</b>

System cable
T1-B
S/FTP
1 x 2 x AWG 22/7 - 0.35 mm <sup>2</sup>
5.1 mm
LSZH
black
1.7 mm
22 mm
-20 °C...60 °C
halogen-free, acc. to IEC 60754-2, halogen-free, acc. to IEC 60754-1 in accordance with IEC 60332-1-2
<b>Note</b>

Ordering data

500.0 m
<b>Note</b>

Type	Qty.	Order No.
IE-S1DS2UE-500	1	2924340000
<b>Note</b>		

Type	Qty.	Order No.
IE-S1DS2LE-500	1	2924350000
<b>Note</b>		

Accessories

Type	Qty.	Order No.
<b>Note</b>		

Type	Qty.	Order No.
<b>Note</b>		

Type	Qty.	Order No.
<b>Note</b>		

<b>Note</b>
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<b>Note</b>
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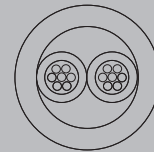
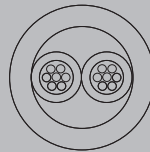
<b>Note</b>
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**Raw cables**  
**Single Pair Ethernet**

- AWG 26

**PUR**

**LSZH**



**Technical data**

Product type	System cable
Category	T1-B
Shielding	S/FTP
Cross-section	1 x 2 x AWG 26/7 - 0.132 mm <sup>2</sup>
Sheath diameter, max.	4.3 mm
Material sheath	PUR
Sheathing colour	black
Insulation diameter	1.15 mm
Min. bending radius, repetitive	56 mm
Min. bending radius, once only	28 mm
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	
Storage temperature	
Halogen	halogen-free, acc. to IEC 60754-1, halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1-2
Approvals	
<b>Note</b>	

Product type	System cable
Category	T1-B
Shielding	S/FTP
Cross-section	1 x 2 x AWG 26/7 - 0.132 mm <sup>2</sup>
Sheath diameter, max.	3.7 mm
Material sheath	LSZH
Sheathing colour	black
Insulation diameter	1.15 mm
Min. bending radius, repetitive	56 mm
Min. bending radius, once only	28 mm
Ambient temperature (operational)	-20 °C...60 °C
Installation temperature	
Storage temperature	
Halogen	halogen-free, acc. to IEC 60754-2, halogen-free, acc. to IEC 60754-1
Resistance to spread of flame	in accordance with IEC 60332-1-2
Approvals	
<b>Note</b>	

Product type	System cable
Category	T1-B
Shielding	S/FTP
Cross-section	1 x 2 x AWG 26/7 - 0.132 mm <sup>2</sup>
Sheath diameter, max.	3.7 mm
Material sheath	LSZH
Sheathing colour	black
Insulation diameter	1.15 mm
Min. bending radius, repetitive	56 mm
Min. bending radius, once only	28 mm
Ambient temperature (operational)	-20 °C...60 °C
Installation temperature	
Storage temperature	
Halogen	halogen-free, acc. to IEC 60754-2, halogen-free, acc. to IEC 60754-1
Resistance to spread of flame	in accordance with IEC 60332-1-2
Approvals	
<b>Note</b>	

**Ordering data**

Type	Qty.	Order No.
IES1ES2UE-500	1	2924360000
<b>Note</b>		

Type	Qty.	Order No.
IES1ES2LE-500	1	2924370000
<b>Note</b>		

Type	Qty.	Order No.
IES1ES2LE-500	1	2924370000
<b>Note</b>		

**Accessories**

Type	Qty.	Order No.

Type	Qty.	Order No.

Type	Qty.	Order No.

<b>Note</b>
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<b>Note</b>
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<b>Note</b>
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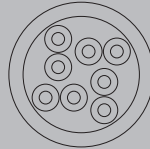
## Raw cables – Installation cable

## Raw cables

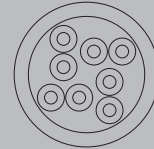
## Installation cable Cat. 5

- In lengths from 100 or 500 metres

## PUR



## PVC



## Technical data

Product type
Category
Shielding
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to spread of flame
Resistance to oils
Approvals

Installation cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*2*AWG 24/1 - 4*2*0.205 mm <sup>2</sup>
6.7 mm
PUR
green (RAL 6018)
1.04 mm
10 x cable diameter
5 x cable diameter
-40 °C...75 °C
-20 °C...60 °C
-40 °C...75 °C
very good
halogen-free, acc. to IEC 60754-2
in accordance with IEC 60332-1
in accordance with IEC 60811-2-1

Installation cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*2*AWG 24/1 - 4*2*0.205 mm <sup>2</sup>
6.7 mm
PVC
green (RAL 6018)
1.04 mm
10 x cable diameter
5 x cable diameter
-40 °C...80 °C
0 °C...50 °C
-40 °C...75 °C
good
in accordance with IEC 60332-1

## Note

## Ordering data

100.0 m
500.0 m

## Note

Type	Qty.	Order No.
IE-C5CS8UG-100	1	8813160000
IE-C5CS8UG-500	1	2762870000

Type	Qty.	Order No.
IE-C5CS8VG-100	1	8813150000
IE-C5CS8VG-500	1	2763440000

## Accessories

Tools
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables
Marking tags
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
Transparent sleeves, 12-mm length
Transparent sleeves, 18-mm length

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

## Note

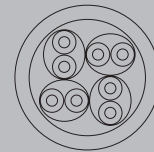
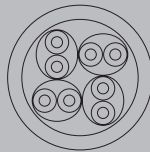
**Raw cables**

**Installation cable Cat. 7**

- In lengths from 100 or 500 metres

**PUR**

**PVC**



**Technical data**

Product type	Installation cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 23/1 - 4*2*0.255 mm <sup>2</sup>
Sheath diameter, max.	8 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.4 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	4 x cable diameter
Ambient temperature (operational)	-40 °C...75 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-40 °C...75 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1
Approvals	
<b>Note</b>	

Product type	Installation cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 23/1 - 4*2*0.255 mm <sup>2</sup>
Sheath diameter, max.	8 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation diameter	1.4 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	4 x cable diameter
Ambient temperature (operational)	-40 °C...75 °C
Installation temperature	0 °C...50 °C
Storage temperature	-40 °C...75 °C
Abrasion resistance	good
Halogen	
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	
Approvals	
<b>Note</b>	

Product type	Installation cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 23/1 - 4*2*0.255 mm <sup>2</sup>
Sheath diameter, max.	8 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation diameter	1.4 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	4 x cable diameter
Ambient temperature (operational)	-40 °C...75 °C
Installation temperature	0 °C...50 °C
Storage temperature	-40 °C...75 °C
Abrasion resistance	good
Halogen	
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	
Approvals	
<b>Note</b>	

**Ordering data**

	100.0 m
	500.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C7BS8UG-100	1	8813140000
IE-C7BS8UG-500	1	2763530000

Type	Qty.	Order No.
IE-C7BS8VG-100	1	8813130000
IE-C7BS8VG-500	1	2763540000

**Accessories**

<b>Tools</b>	
Sheathing strippers, For UTP and STP data cables	
Sheathing strippers, For coaxial and round data cables	
<b>Marking tags</b>	
Wire and cable markers. ø 4.7 - 7.4 mm	
Wire and cable markers. ø 5.8 - 7.8 mm	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	
Transparent sleeves, 12-mm length	
Transparent sleeves, 18-mm length	

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

<b>Note</b>	
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<b>Note</b>	
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<b>Note</b>	
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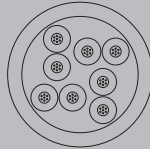
## Raw cables – Connection cable

## Raw cables

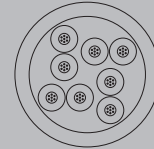
## Connecting cable Cat. 5

- In lengths from 100 or 500 metres

## PUR



## PVC



## Technical data

Product type
Category
Shielding
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to spread of flame
Resistance to oils
Standard, assembly
Approvals

## Note

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
6.3 mm
PUR
green (RAL 6018)
1 mm
10 x cable diameter
4 x cable diameter
-40 °C...75 °C
-10 °C...60 °C
-40 °C...75 °C
very good
halogen-free, acc. to IEC 60754-2
in accordance with IEC 60332-1
in accordance with IEC 60811-2-1
UL-Style 20963 (80°C/30V)

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
6.1 mm
PVC
green (RAL 6018)
1 mm
10 x cable diameter
5 x cable diameter
-40 °C...75 °C
0 °C...50 °C
-40 °C...75 °C
good

in accordance with IEC 60332-1

## Ordering data

100.0 m  
500.0 m

## Note

Type	Qty.	Order No.
IE-C5ES8UG-100	1	8813200000
IE-C5ES8UG-500	1	2763500000

Type	Qty.	Order No.
IE-C5ES8VG-100	1	8813190000
IE-C5ES8VG-500	1	2763510000

## Accessories

Tools
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables

Marking tags
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm
Insertion label, yellow. 12 mm
Insertion label, yellow. 18 mm
Transparent sleeves. 12-mm length
Transparent sleeves. 18-mm length

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

## Note

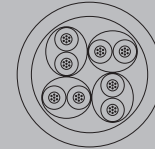
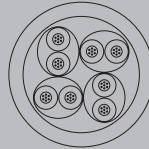
**Raw cables**

**Connecting cable Cat. 7**

- In lengths from 100 or 500 metres

**PUR**

**PVC**



**Technical data**

Product type
Category
Shielding
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to spread of flame
Resistance to oils
Standard, assembly
Approvals

System cable
Cat.7 (ISO/IEC 11801)
S/FTP
4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
6.5 mm
PUR
green (RAL 6018)
1.04 mm
10 x cable diameter
5 x cable diameter
-40 °C...80 °C
-15 °C...60 °C
-40 °C...80 °C
very good
halogen-free, acc. to IEC 60754-2
in accordance with IEC 60332-1
in accordance with IEC 60811-2-1
UL-Style 20963 (80°C/30V)

System cable
Cat.7 (ISO/IEC 11801)
S/FTP
4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
6.5 mm
PVC
green (RAL 6018)
1.04 mm
10 x cable diameter
5 x cable diameter
-40 °C...75 °C
0 °C...50 °C
-40 °C...75 °C
good
in accordance with IEC 60332-1
UL-Style 2879 (80°C/30V)

**Note**

**Ordering data**

100.0 m  
500.0 m

**Note**

Type	Qty.	Order No.
IE-C7ES8UG-100	1	8813180000
IE-C7ES8UG-500	1	2763550000

Type	Qty.	Order No.
IE-C7ES8VG-100	1	8813170000
IE-C7ES8VG-500	1	2763560000

**Accessories**

Tools	
Sheathing strippers, For UTP and STP data cables	
Sheathing strippers, For coaxial and round data cables	
Marking tags	
Wire and cable markers. ø 4.7 - 7.4 mm	
Wire and cable markers. ø 5.8 - 7.8 mm	
Insertion label, yellow. 12 mm	
Insertion label, yellow. 18 mm	
Transparent sleeves. 12-mm length	
Transparent sleeves. 18-mm length	

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

**Note**

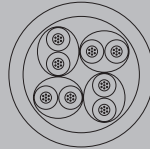
## Raw cables – Connection cable

## Raw cables

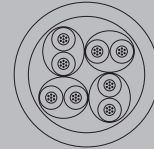
## Connecting cable Cat. 7

- 305 m / 1,000 ft

## LSZH grey



## LSZH blue



## Technical data

Product type
Category
Shielding
Cross-section
Sheath diameter
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Halogen
Resistance to spread of flame
Resistance to oils
Approvals

## Note

System cable
Cat.7 (ISO/IEC 11801)
S/FTP
4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
6.0 mm
LSZH
light grey (RAL 7035)
1.04

5 x cable diameter
-20 °C...60 °C
0 °C...50 °C
No
in accordance with IEC 60332-1

## CULUS

System cable
Cat.7 (ISO/IEC 11801)
S/FTP
4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
6.0 mm
LSZH
blue (RAL 5015)
1.04

5 x cable diameter
-20 °C...60 °C
0 °C...50 °C
No
in accordance with IEC 60332-1

## CULUS

## Ordering data

305 m / 1000 ft

## Note

Type	Qty.	Order No.
IE-C7FS8LD-305M	1	1273090000

Type	Qty.	Order No.
IE-C7FS8LB-305M	1	1326540000

## Accessories

Tools
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables

## Marking tags

Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm
Insertion label, yellow. 12 mm
Insertion label, yellow. 18 mm
Transparent sleeves. 12-mm length
Transparent sleeves. 18-mm length

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000

VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

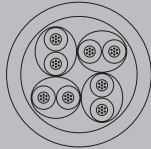
Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000

VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

## Note



LSZH black



System cable  
Cat.7 (ISO/IEC 11801)  
S/FTP  
4\*2\*AWG 27/7 - 4\*2\*0.1 mm<sup>2</sup>  
6.0 mm  
LSZH  
black  
1.04

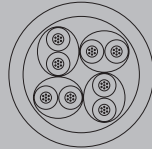
5 x cable diameter  
-20 °C...60 °C  
0 °C...50 °C  
No  
in accordance with IEC 60332-1

CULUS

Type	Qty.	Order No.
IE-C7FS8LE-305M	1	1344690000

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

LSZH green



System cable  
Cat.7 (ISO/IEC 11801)  
S/FTP  
4\*2\*AWG 27/7 - 4\*2\*0.1 mm<sup>2</sup>  
6.0 mm  
LSZH  
green

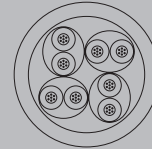
5 x cable diameter  
-20 °C...60 °C  
0 °C...50 °C  
No  
in accordance with IEC 60332-1

CULUS

Type	Qty.	Order No.
IE-C7FS8LG-305M	1	1344680000

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

LSZH red



System cable  
Cat.7 (ISO/IEC 11801)  
S/FTP  
4\*2\*AWG 27/7 - 4\*2\*0.1 mm<sup>2</sup>  
6.0 mm  
LSZH  
red  
1.04

5 x cable diameter  
-20 °C...60 °C  
0 °C...50 °C  
No  
in accordance with IEC 60332-1

CULUS

Type	Qty.	Order No.
IE-C7FS8LR-305M	1	1287910000

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

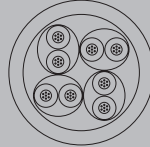
Raw cables – Connection cable

Raw cables

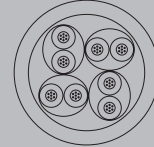
Connecting cable Cat. 7

- 305 m / 1,000 ft

LSZH magenta



LSZH violet



Technical data

Product type	System cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter	6.0 mm
Material sheath	LSZH
Sheathing colour	Magenta
Insulation diameter	1.04
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	No
Halogen	in accordance with IEC 60332-1
Resistance to spread of flame	CULUS
Resistance to oils	
Approvals	
Note	

Product type	System cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter	6.0 mm
Material sheath	LSZH
Sheathing colour	violet
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	No
Halogen	in accordance with IEC 60332-1
Resistance to spread of flame	CULUS
Resistance to oils	
Approvals	
Note	

Product type	System cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter	6.0 mm
Material sheath	LSZH
Sheathing colour	violet
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	No
Halogen	in accordance with IEC 60332-1
Resistance to spread of flame	CULUS
Resistance to oils	
Approvals	
Note	

Ordering data

Type	IE-C7FS8LM-305M
Qty.	1
Order No.	1333160000
Note	305 m / 1000 ft

Type	IE-C7FP8LV-305M
Qty.	1
Order No.	2779910000
Note	

Type	IE-C7FP8LV-305M
Qty.	1
Order No.	2779910000
Note	

Accessories

Tools	Sheathing strippers, For UTP and STP data cables
	Sheathing strippers, For coaxial and round data cables
Marking tags	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
	Transparent sleeves, 12-mm length
	Transparent sleeves, 18-mm length
	Wire and cable markers, ø 4.7 - 7.4 mm
	Wire and cable markers, ø 5.8 - 7.8 mm

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001

Note	
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Note	
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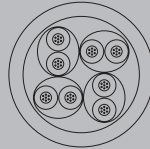
Note	
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**Raw cables**

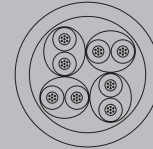
**Connecting cable Cat. 7**

- 305 m / 1,000 ft

**LSZH yellow**



**LZSH orange**



**Technical data**

Product type	System cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter	6.0 mm
Material sheath	LSZH
Sheathing colour	yellow
Insulation diameter	1.04
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	No
Halogen	in accordance with IEC 60332-1
Resistance to spread of flame	CULUS
Resistance to oils	
Approvals	
<b>Note</b>	

Product type	System cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter	6.0 mm
Material sheath	LSZH
Sheathing colour	orange
Insulation diameter	1.04
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	No
Halogen	in accordance with IEC 60332-1
Resistance to spread of flame	CULUS
Resistance to oils	
Approvals	
<b>Note</b>	

Product type	System cable
Category	Cat.7 (ISO/IEC 11801)
Shielding	S/FTP
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter	6.0 mm
Material sheath	LSZH
Sheathing colour	orange
Insulation diameter	1.04
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	No
Halogen	in accordance with IEC 60332-1
Resistance to spread of flame	CULUS
Resistance to oils	
Approvals	
<b>Note</b>	

**Ordering data**

305 m / 1000 ft
<b>Note</b>

Type	Qty.	Order No.
IE-C7FS8LY-305M	1	1344670000

Type	Qty.	Order No.
IE-C7FS8LO-305M	1	2661080000

**Accessories**

Tools
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables
Marking tags
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
Transparent sleeves, 12-mm length
Transparent sleeves, 18-mm length
Wire and cable markers, ø 4.7 - 7.4 mm
Wire and cable markers, ø 5.8 - 7.8 mm

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001

<b>Note</b>
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<b>Note</b>
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<b>Note</b>
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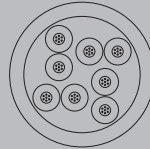
## Raw cables – Dragline cable

## Raw cables

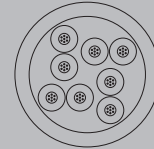
## Dragline cable Cat. 5

- In lengths from 100, 500 or 1000 metres

## PUR green



## PUR blue



## Technical data

Product type
Category
Shielding
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Bending cycles
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to spread of flame
Resistance to oils
Standard, assembly
Approvals

Dragline cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
6.8 mm
PUR
green (RAL 6018)
0.95 mm
60 mm
5 Mio
-40 °C...80 °C
-40 °C...80 °C
-40 °C...80 °C
very good
halogen-free, acc. to IEC 60754-2
in accordance with IEC 60332-1
in accordance with IEC 60811-2-1
UL-Style 20963 (80°C/30V)

Dragline cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
6.8 mm
PUR
blue (RAL 5015)
0.95 mm
60 mm
5 Mio
-40 °C...80 °C
-40 °C...80 °C
-40 °C...80 °C
very good
halogen-free, acc. to IEC 60754-2
in accordance with IEC 60332-1
in accordance with IEC 60811-2-1
UL-Style 20963 (80°C/30V)

## Note

## Ordering data

100.0 m
500.0 m
1000.0 m

Type	Qty.	Order No.
IE-C5ED8UG-100	1	8813210000
IE-C5ED8UG-500	1	2763490000
IE-C5ED8UG-1000	1	2781890000

Type	Qty.	Order No.
IE-C5ED8UB-100	1	8960670000
IE-C5ED8UB-500	1	2763480000
IE-C5ED8UB-1000	1	2781880000

## Note

## Accessories

Tools
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables
Marking tags
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
Transparent sleeves, 12-mm length
Transparent sleeves, 18-mm length

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

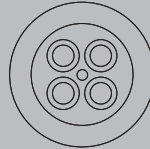
Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

## Note

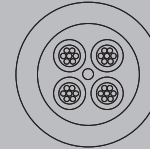
**Raw cables**  
**PROFINET cable**

- In lengths from 100 or 500 metres

**Installation cable type A, PVC**



**Connection cable type B, PVC**



**Technical data**

Product type	Installation cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Cross-section	4*AWG 22/1 - 0.33 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	4 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-40 °C...80 °C
Storage temperature	-40 °C...80 °C
Abrasion resistance	good
Resistance to spread of flame	in accordance with IEC 60332-1 / UL 1685
Standard, assembly	UL-Style 21694
Approvals	
<b>Note</b>	

Product type	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation diameter	1.56 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	3.5 * diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-40 °C...80 °C
Storage temperature	-40 °C...80 °C
Abrasion resistance	good
Resistance to spread of flame	in accordance with IEC 60332-1 / UL 1685
Standard, assembly	UL-Style 21694
Approvals	
<b>Note</b>	

Product type	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation diameter	1.56 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	3.5 * diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-40 °C...80 °C
Storage temperature	-40 °C...80 °C
Abrasion resistance	good
Resistance to spread of flame	in accordance with IEC 60332-1 / UL 1685
Standard, assembly	UL-Style 21694
Approvals	
<b>Note</b>	

**Ordering data**

Type	Qty.	Order No.
IE-C5AS4VG-100	1	8899000000
IE-C5AS4VG-500	1	2763430000

Type	Qty.	Order No.
IE-C5AS4VG-100	1	8899000000
IE-C5AS4VG-500	1	2763430000

Type	Qty.	Order No.
IE-C5DS4VG-100	1	8898990000
IE-C5DS4VG-500	1	2763470000

**Accessories**

Tools	Type	Qty.	Order No.
Sheathing strippers, For UTP and STP data cables	AM 12	1	9030060000
	IE-CST	1	9204350000
Marking tags	VT SF 5/21 MC NE WS VO	160	1689470001
	VT SF 6/21 MC NE WS VO	160	1730560001
	TM-H 12 MC NE GE	320	1718411687
	TM-H 18 MC NE GE	320	1718431687
	TM 4/12 HF/HB	500	1719840000
	TM 4/18 HF/HB	500	1719850000

Tools	Type	Qty.	Order No.
Sheathing strippers, For coaxial and round data cables	AM 12	1	9030060000
	IE-CST	1	9204350000
Marking tags	VT SF 5/21 MC NE WS VO	160	1689470001
	VT SF 6/21 MC NE WS VO	160	1730560001
	TM-H 12 MC NE GE	320	1718411687
	TM-H 18 MC NE GE	320	1718431687
	TM 4/12 HF/HB	500	1719840000
	TM 4/18 HF/HB	500	1719850000

Tools	Type	Qty.	Order No.
Sheathing strippers, For coaxial and round data cables	AM 12	1	9030060000
	IE-CST	1	9204350000
Marking tags	VT SF 5/21 MC NE WS VO	160	1689470001
	VT SF 6/21 MC NE WS VO	160	1730560001
	TM-H 12 MC NE GE	320	1718411687
	TM-H 18 MC NE GE	320	1718431687
	TM 4/12 HF/HB	500	1719840000
	TM 4/18 HF/HB	500	1719850000

<b>Note</b>
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<b>Note</b>
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<b>Note</b>
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Raw cables – PROFINET cable

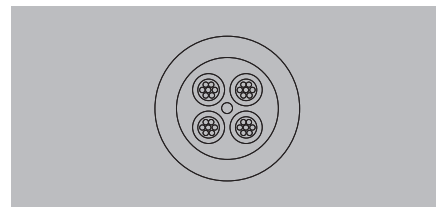
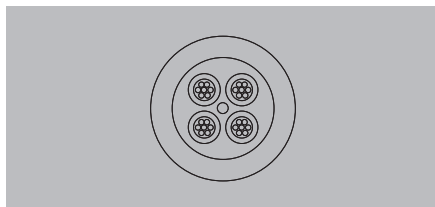
Raw cables  
PROFINET cable

- In lengths from 100 or 500 metres

Dragline cable type C, PUR



Torsion cable type C, PUR



Technical data

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.51 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Bending cycles	3 Mio
Torsion cycles	
Torsion resistance	
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1
Standard, assembly	
Approvals	
Note	

Product type	Torsion cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	S/UTP
Cross-section	4*AWG 22/19 - 0.38 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	5 x cable diameter
Bending cycles	
Torsion cycles	1 mill.
Torsion resistance	180 °/m
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-40 °C...80 °C
Storage temperature	-40 °C...80 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1
Standard, assembly	UL Style 21161
Approvals	
Note	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.51 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Bending cycles	3 Mio
Torsion cycles	
Torsion resistance	
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1
Standard, assembly	
Approvals	
Note	

Ordering data

Cat. 5 PROFINET. PUR	
	100.0 m
	500.0 m
Note	

Type	Qty.	Order No.
IE-C5DD4UG-100	1	8899010000
IE-C5DD4UG-500	1	2763450000

Type	Qty.	Order No.
IE-C5IT4UG-100	1	2764770000
IE-C5IT4UG-500	1	2763520000

Accessories

Tools	
Sheathing strippers, For UTP and STP data cables	
Sheathing strippers, For coaxial and round data cables	
Marking tags	
Wire and cable markers. ø 4.7 - 7.4 mm	
Wire and cable markers. ø 5.8 - 7.8 mm	
Insertion label, yellow. 12 mm	
Insertion label, yellow. 18 mm	
Transparent sleeves. 12-mm length	
Transparent sleeves. 18-mm length	

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

Note
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Note
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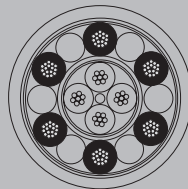
Note
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**Raw cables**

**Hybrid cable**

- In lengths from 100 or 500 metres

**PVC**



**Technical data**

Product type	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup> , 6*0.5 mm <sup>2</sup>
Sheath diameter, max.	9.8 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation diameter	1.6 mm / 1.75 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	-30 °C...75 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-40 °C...70 °C
Storage temperature	good
Abrasion resistance	Yes
Halogen	in accordance with IEC 60332-1 / UL 1685
Resistance to spread of flame	limited
Resistance to oils	
Standard, assembly	
Approvals	
<b>Note</b>	

Product type	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup> , 6*0.5 mm <sup>2</sup>
Sheath diameter, max.	9.8 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation diameter	1.6 mm / 1.75 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	-30 °C...75 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-40 °C...70 °C
Storage temperature	good
Abrasion resistance	Yes
Halogen	in accordance with IEC 60332-1 / UL 1685
Resistance to spread of flame	limited
Resistance to oils	
Standard, assembly	
Approvals	
<b>Note</b>	

**Ordering data**

	100.0 m
	500.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C5DHAG-100	1	2763660000
IE-C5DHAG-500	1	2763460000

**Accessories**

<b>Tools</b>
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables

<b>Marking tags</b>
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm
Insertion label. yellow. 12 mm
Insertion label. yellow. 18 mm
Transparent sleeves. 12-mm length
Transparent sleeves. 18-mm length

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

<b>Note</b>
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<b>Note</b>
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## Assembled cables – Single Pair Ethernet (SPE) cable

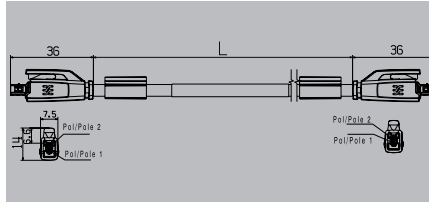
Assembled cable  
Single Pair Ethernet IP20

## Plug - Plug

Socket contact / Socket contact



SPElink®



## Technical data

Product type
Ambient temperature (operational)
Rated voltage (DC) / Rated current
PoE / PoE+
Transmission rate
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Characteristic impedance
Capacity at 800 Hz
Coupling attenuation 1 to 600 MHz
Transmission rate
Version connector left
Version connector right
Complete shielding / Overlap of shielding braid
Insulation
Sheath diameter, min. / max.
Cross-section / Strands
Shielding
Material sheath
Colour
Halogen
UV-resistant
Approvals

## Note

Patch cable
-40...80 °C
60 V / 3.5 A
PoDL acc. to IEEE 802.3bu / cg
10/100 MBit/s, 1000 MBit/s
1000 V DC
2250 V DC
100 ± 15 Ω at 20 MHz
1.6 nF/km
Type I
10/100 MBit/s, 1000 MBit/s
SPE plug (IEC 63171-2) - IP20 socket contact straight
SPE plug (IEC 63171-2) - IP20 socket contact straight
Shielding braid made from copper wiring / 80 %
PE
4.9 / 5.3 mm
2*AWG 22 / 7
STP
PVC
black
Yes
Complies with UL 1581 Sec. 1200
CE, CULUS, EAC

## Ordering data

	1.0 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
	15.0 m
	40.0 m

## Note

Type	Qty.	Order No.
IE-S1DS2VE0010T01T01-E	1	2725850010
IE-S1DS2VE0020T01T01-E	1	2725850020
IE-S1DS2VE0030T01T01-E	1	2725850030
IE-S1DS2VE0050T01T01-E	1	2725850050
IE-S1DS2VE0100T01T01-E	1	2725850100
IE-S1DS2VE0150T01T01-E	1	2725850150
IE-S1DS2VE0400T01T01-E	1	2725850400

## Accessories

Type	Qty.	Order No.

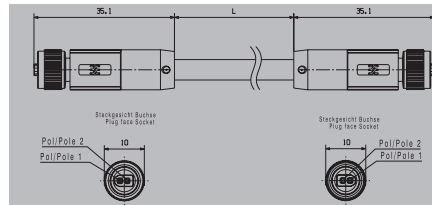
## Note



**Assembled cable**  
**Single Pair Ethernet IP67**

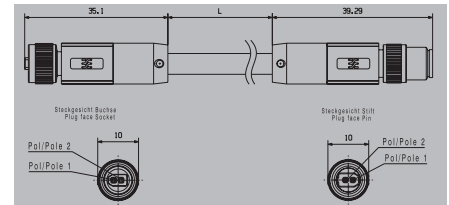
**M8 plug Male / Male**

Socket contact / Socket contact



**M8 plug Male / Female**

Socket contact / Pin contact



**Technical data**

Product type
Ambient temperature (operational)
Rated voltage (DC) / Rated current
PoE / PoE+
Transmission rate
Dielectric strength, contact / contact
Dielectric strength, contact / shield
Characteristic impedance
Capacity at 800 Hz
Coupling attenuation 1 to 600 MHz
Transmission rate
Version connector left
Version connector right
Complete shielding / Overlap of shielding braid
Insulation
Sheath diameter, min. / max.
Cross-section / Strands
Shielding
Material sheath
Colour
Halogen
UV-resistant
Approvals
<b>Note</b>

Patch cable
-40...85 °C
60 V / 3.5 A
PoDL acc. to IEEE 802.3bu / cg
10/100 MBit/s, 1000 MBit/s
1000 V DC
2250 V DC
100 ± 15 Ω at 20 MHz
1.6 nF/km
Type I
10/100 MBit/s, 1000 MBit/s
M8 SPE ( IEC63171-5) - IP67 socket contact - straight
M8 SPE ( IEC63171-5) - IP67 socket contact - straight
Shielding braid made from copper wiring / 80 %
PE
4.9 / 5.3 mm
2*AWG 22 / 7
STP
PVC
black
Yes
Complies with UL 1581 Sec. 1200
CE, EAC
<b>Note</b>

Patch cable
-40...85 °C
60 V / 3.5 A
PoDL acc. to IEEE 802.3bu / cg
10/100 MBit/s, 1000 MBit/s
1000 V DC
2250 V DC
100 ± 15 Ω at 20 MHz
1.6 nF/km
Type I
10/100 MBit/s, 1000 MBit/s
M8 SPE ( IEC63171-5) - IP67 socket contact - straight
M8 SPE ( IEC63171-5) - IP67 pin contact - straight
Shielding braid made from copper wiring / 80 %
PE
4.9 / 5.3 mm
2*AWG 22 / 7
STP
PVC
black
Yes
Complies with UL 1581 Sec. 1200
CE, EAC
<b>Note</b>

**Ordering data**

	2.0 m
	5.0 m
	10.0 m
	15.0 m
	20.0 m
	40.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-S1DS2VE0020TM1TM1-E	1	2726050020
IE-S1DS2VE0050TM1TM1-E	1	2726050050
IE-S1DS2VE0100TM1TM1-E	1	2726050100
IE-S1DS2VE0150TM1TM1-E	1	2726050150
IE-S1DS2VE0200TM1TM1-E	1	2726050200
IE-S1DS2VE0400TM1TM1-E	1	2726050400
<b>Note</b>		

Type	Qty.	Order No.
IE-S1DS2VE0020TM1TM2-E	1	2726060020
<b>Note</b>		

**Accessories**

Type	Qty.	Order No.
<b>Note</b>		

Type	Qty.	Order No.
<b>Note</b>		

Type	Qty.	Order No.
<b>Note</b>		

Assembled cables – Single Pair Ethernet (SPE) cable

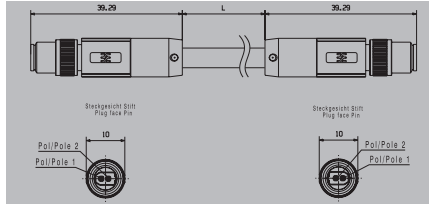
Assembled cable  
Single Pair Ethernet IP67

M8 plug Female / Female

Pin contact / Pin contact



SPElink®



Technical data

Product type  
Ambient temperature (operational)  
Rated voltage (DC) / Rated current  
PoE / PoE+  
Transmission rate  
Dielectric strength, contact / contact  
Dielectric strength, contact / shield  
Characteristic impedance  
Capacity at 800 Hz  
Coupling attenuation 1 to 600 MHz  
Transmission rate  
Version connector left  
  
Version connector right  
  
Complete shielding / Overlap of shielding braid  
Insulation  
Sheath diameter, min. / max.  
Cross-section / Strands  
Shielding  
Material sheath  
Colour  
Halogen  
UV-resistant  
Approvals

Note

Patch cable  
-40...85 °C  
60 V / 3.5 A  
PoDL acc. to IEEE 802.3bu / cg  
10/100 MBit/s, 1000 MBit/s  
1000 V DC  
2250 V DC  
100 ± 15 Ω at 20 MHz  
1.6 nF/km  
Type I  
10/100 MBit/s, 1000 MBit/s  
M8 SPE ( IEC63171-5) - IP67 pin contact - straight  
  
M8 SPE ( IEC63171-5) - IP67 pin contact - straight  
  
Shielding braid made from copper wiring / 80 %  
PE  
4.9 / 5.3 mm  
2\*AWG 22 / 7  
STP  
PVC  
black  
Yes  
Complies with UL 1581 Sec. 1200  
CE, EAC

Ordering data

2.0 m  
5.0 m  
10.0 m  
15.0 m  
20.0 m  
40.0 m

Note

Type	Qty.	Order No.
IE-S1DS2VE0020TM2TM2-E	1	2726070020

Accessories

Type	Qty.	Order No.

Note

## Assembled cables

## Patch cable CabinetLine Cat. 6 straight

## LSZH grey



RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

## Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Connector standard
PoE / PoE+
Cross-section
Sheath diameter, max.
Material sheath
Colour
Insulation diameter
Min. bending radius, repetitive / Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Halogen
Resistance to spread of flame

Patch cable
<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
S/FTP
RJ45 IP 20 / RJ45 IP 20
IEC 60603-7-51
conforming to IEEE 802.3at
4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
5.9 mm
LSZH
grey
1.04 mm
/ 5 x cable diameter
-20 °C...60 °C
0 °C...50 °C
-20 °C...60 °C
halogen-free, acc. to IEC 60754-2
in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
CCLINK; CE; CULUS

## Approvals

## Note

## Ordering data

0.2 m
0.5 m
1.0 m
1.5 m
2.0 m
3.0 m
5.0 m
7.5 m
10.0 m
15.0 m
20.0 m
25.0 m

## Note

Type	Qty.	Order No.
IE-C6FP8LD0002M40M40-D	1	1165940002
IE-C6FP8LD0005M40M40-D	1	1165940005
IE-C6FP8LD0010M40M40-D	1	1165940010
IE-C6FP8LD0015M40M40-D	1	1165940015
IE-C6FP8LD0020M40M40-D	1	1165940020
IE-C6FP8LD0030M40M40-D	1	1165940030
IE-C6FP8LD0050M40M40-D	1	1165940050
IE-C6FP8LD0075M40M40-D	1	1165940075
IE-C6FP8LD0100M40M40-D	1	1165940100
IE-C6FP8LD0150M40M40-D	1	1165940150
IE-C6FP8LD0200M40M40-D	1	1165940200
IE-C6FP8LD0250M40M40-D	1	1165940250

Other lengths available on request

## Accessories

<b>Tools</b>
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
<b>Dust protection cap</b>
Protective cap
<b>Cable routing</b>
90° outlet angle
<b>Note</b>

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000

## Assembled cables - Patch cable

## Assembled cables

## Patch cable CabinetLine Cat. 6 straight

## LSZH blue



RJ45				RJ45
1	white (orange)	1		
2	orange	2		
3	white (green)	3		
4	blue	4		
5	white (blue)	5		
6	green	6		
7	white (brown)	7		
8	brown	8		

## LSZH black



RJ45				RJ45
1	white (orange)	1		
2	orange	2		
3	white (green)	3		
4	blue	4		
5	white (blue)	5		
6	green	6		
7	white (brown)	7		
8	brown	8		

## Technical data

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	blue
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS
Approvals	
Note	

## Ordering data

	0.2 m
	0.5 m
	1.0 m
	1.5 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
	15.0 m
	20.0 m
	25.0 m
Note	

## Accessories

Tools			
Sheathing strippers, For UTP and STP data cables			
Sheathing strippers, For coaxial and round data cables			
Marking tags			
Insertion label, yellow, 12 mm			
Insertion label, yellow, 18 mm			
Dust protection cap	Protective cap		
Cable routing	90° outlet angle		
Note			

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	black
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS
Approvals	
Note	

Type	Qty.	Order No.
IE-C6FP8LB0002M40M40-B	1	1165900002
IE-C6FP8LB0005M40M40-B	1	1165900005
IE-C6FP8LB0010M40M40-B	1	1165900010
IE-C6FP8LB0015M40M40-B	1	1165900015
IE-C6FP8LB0020M40M40-B	1	1165900020
IE-C6FP8LB0030M40M40-B	1	1165900030
IE-C6FP8LB0050M40M40-B	1	1165900050
IE-C6FP8LB0100M40M40-B	1	1165900100
IE-C6FP8LB0150M40M40-B	1	1165900150
IE-C6FP8LB0200M40M40-B	1	1165900200
IE-C6FP8LB0250M40M40-B	1	1165900250

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	black
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS
Approvals	
Note	

Type	Qty.	Order No.
IE-C6FP8LE0002M40M40-E	1	1251610002
IE-C6FP8LE0005M40M40-E	1	1251610005
IE-C6FP8LE0010M40M40-E	1	1251610010
IE-C6FP8LE0015M40M40-E	1	1251610015
IE-C6FP8LE0020M40M40-E	1	1251610020
IE-C6FP8LE0030M40M40-E	1	1251610030
IE-C6FP8LE0050M40M40-E	1	1251610050
IE-C6FP8LE0100M40M40-E	1	1251610100
IE-C6FP8LE0150M40M40-E	1	1251610150
IE-C6FP8LE0200M40M40-E	1	1251610200
IE-C6FP8LE0250M40M40-E	1	1251610250

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000

**Assembled cables**  
Patch cable CabinetLine Cat. 6 straight

**LSZH green**



**LSZH red**



RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

**Technical data**

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	green
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS
Approvals	
Note	

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	red
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS
Approvals	
Note	

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	red
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS
Approvals	
Note	

**Ordering data**

	0.2 m
	0.5 m
	1.0 m
	1.5 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
	15.0 m
	20.0 m
	25.0 m
Note	

Type	Qty.	Order No.
IE-C6FP8LG0002M40M40-G	1	1251590002
IE-C6FP8LG0005M40M40-G	1	1251590005
IE-C6FP8LG0010M40M40-G	1	1251590010
IE-C6FP8LG0015M40M40-G	1	1251590015
IE-C6FP8LG0020M40M40-G	1	1251590020
IE-C6FP8LG0030M40M40-G	1	1251590030
IE-C6FP8LG0050M40M40-G	1	1251590050
IE-C6FP8LG0100M40M40-G	1	1251590100
IE-C6FP8LG0150M40M40-G	1	1251590150
IE-C6FP8LG0200M40M40-G	1	1251590200
IE-C6FP8LG0250M40M40-G	1	1251590250
Note		

Type	Qty.	Order No.
IE-C6FP8LR0002M40M40-R	1	1166030002
IE-C6FP8LR0005M40M40-R	1	1166030005
IE-C6FP8LR0010M40M40-R	1	1166030010
IE-C6FP8LR0015M40M40-R	1	1166030015
IE-C6FP8LR0020M40M40-R	1	1166030020
IE-C6FP8LR0030M40M40-R	1	1166030030
IE-C6FP8LR0050M40M40-R	1	1166030050
IE-C6FP8LR0100M40M40-R	1	1166030100
IE-C6FP8LR0150M40M40-R	1	1166030150
IE-C6FP8LR0200M40M40-R	1	1166030200
IE-C6FP8LR0250M40M40-R	1	1166030250
Note		

**Accessories**

<b>Tools</b>	
	Sheathing strippers, For UTP and STP data cables
	Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
<b>Dust protection cap</b>	Protective cap
<b>Cable routing</b>	90° outlet angle
Note	

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000
Note		

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000
Note		

## Assembled cables - Patch cable

## Assembled cables

## Patch cable CabinetLine Cat. 6 straight

## LSZH magenta



## LSZH violet



RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

## Technical data

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	Magenta
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS
Approvals	
Note	

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	violet
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS
Approvals	
Note	

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	violet
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS
Approvals	
Note	

## Ordering data

	0.2 m
	0.5 m
	1.0 m
	1.5 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
	15.0 m
	20.0 m
	25.0 m
Note	

Type	Qty.	Order No.
IE-C6FP8LM0002M40M40-M	1	1201270002
IE-C6FP8LM0005M40M40-M	1	1201270005
IE-C6FP8LM0010M40M40-M	1	1201270010
IE-C6FP8LM0015M40M40-M	1	1201270015
IE-C6FP8LM0020M40M40-M	1	1201270020
IE-C6FP8LM0030M40M40-M	1	1201270030
IE-C6FP8LM0050M40M40-M	1	1201270050
IE-C6FP8LM0100M40M40-M	1	1201270100
IE-C6FP8LM0150M40M40-M	1	1201270150
IE-C6FP8LM0200M40M40-M	1	1201270200
Note		

Type	Qty.	Order No.
IE-C6FP8LV0002M40M40-V	1	2701550002
IE-C6FP8LV0005M40M40-V	1	2701550005
IE-C6FP8LV0010M40M40-V	1	2701550010
IE-C6FP8LV0015M40M40-V	1	2701550015
IE-C6FP8LV0020M40M40-V	1	2701550020
IE-C6FP8LV0030M40M40-V	1	2701550030
IE-C6FP8LV0050M40M40-V	1	2701550050
IE-C6FP8LV0100M40M40-V	1	2701550100
IE-C6FP8LV0150M40M40-V	1	2701550150
IE-C6FP8LV0200M40M40-V	1	2701550200
Note		

## Accessories

Tools	
Sheathing strippers, For UTP and STP data cables	
Sheathing strippers, For coaxial and round data cables	
Marking tags	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	
Dust protection cap	Protective cap
Cable routing	90° outlet angle
Note	

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000
Note		

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000
Note		

## Assembled cables

## Patch cable CabinetLine Cat. 6 straight

## LSZH yellow



RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

## LSZH orange



RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

## Technical data

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	yellow
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS
Approvals	
Note	

## Ordering data

	0.2 m
	0.5 m
	1.0 m
	1.5 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
	15.0 m
	20.0 m
	25.0 m
Note	

## Accessories

Tools	
Sheathing strippers, For UTP and STP data cables	
Sheathing strippers, For coaxial and round data cables	
Marking tags	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	
Dust protection cap	Protective cap
Cable routing	90° outlet angle
Note	

Type	Qty.	Order No.
IE-C6FP8LY0002M40M40-Y	1	1251580002
IE-C6FP8LY0005M40M40-Y	1	1251580005
IE-C6FP8LY0010M40M40-Y	1	1251580010
IE-C6FP8LY0015M40M40-Y	1	1251580015
IE-C6FP8LY0020M40M40-Y	1	1251580020
IE-C6FP8LY0030M40M40-Y	1	1251580030
IE-C6FP8LY0050M40M40-Y	1	1251580050
IE-C6FP8LY0100M40M40-Y	1	1251580100
IE-C6FP8LY0150M40M40-Y	1	1251580150
IE-C6FP8LY0200M40M40-Y	1	1251580200
IE-C6FP8LY0250M40M40-Y	1	1251580250

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000

Type	Qty.	Order No.
IE-C6FP8L00002M40M40-0	1	2563810002
IE-C6FP8L00005M40M40-0	1	2563810005
IE-C6FP8L00010M40M40-0	1	2563810010
IE-C6FP8L00015M40M40-0	1	2563810015
IE-C6FP8L00020M40M40-0	1	2563810020
IE-C6FP8L00030M40M40-0	1	2563810030
IE-C6FP8L00050M40M40-0	1	2563810050
IE-C6FP8L00100M40M40-0	1	2563810100
IE-C6FP8L00150M40M40-0	1	2563810150
IE-C6FP8L00200M40M40-0	1	2563810200
IE-C6FP8L00250M40M40-0	1	2563810250

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000

## Assembled cables - Patch cable

## Assembled cables

## Patch cable CabinetLine Cat. 6 angled

## LSZH grey 270°



RJ45			RJ45
1	white (orange)	1	
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

## LSZH grey 90°



RJ45			RJ45
1	white (orange)	1	
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

## Technical data

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20, Angled 270° / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	grey
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS

## Approvals

## Note

## Ordering data

	0.5 m
	1.0 m
	1.2 m
	1.5 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m

## Note

## Accessories

Tools	
Sheathing strippers, For UTP and STP data cables	
Sheathing strippers, For coaxial and round data cables	
Marking tags	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	
Dust protection cap	
Protective cap	

## Note

Type	Qty.	Order No.
IE-C6FP8LD0005M40W40-D	1	1233160005
IE-C6FP8LD0010M40W40-D	1	1233160010
IE-C6FP8LD0012M40W40-D	1	1233160012
IE-C6FP8LD0015M40W40-D	1	1233160015
IE-C6FP8LD0020M40W40-D	1	1233160020
IE-C6FP8LD0030M40W40-D	1	1233160030
IE-C6FP8LD0050M40W40-D	1	1233160050
IE-C6FP8LD0100M40W40-D	1	1233160100

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000

## Note

Type	Qty.	Order No.
IE-C6FP8LD0005M40V40-D	1	1248280005
IE-C6FP8LD0010M40V40-D	1	1248280010
IE-C6FP8LD0012M40V40-D	1	1248280012
IE-C6FP8LD0015M40V40-D	1	1248280015
IE-C6FP8LD0020M40V40-D	1	1248280020
IE-C6FP8LD0030M40V40-D	1	1248280030
IE-C6FP8LD0050M40V40-D	1	1248280050
IE-C6FP8LD0100M40V40-D	1	1248280100

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000

## Note



**Assembled cables**  
Patch cable CabinetLine Cat. 6 angled

**LSZH 90° left**



**LSZH 90° right**



RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

**Technical data**

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20, Angled 90° left
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	grey
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS
Approvals	
Note	

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20, Angled 90° right
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	grey
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS
Approvals	
Note	

Product type	Patch cable
Category	<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20, Angled 90° right
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	5.9 mm
Material sheath	LSZH
Colour	grey
Insulation diameter	1.04 mm
Min. bending radius, repetitive	5 x cable diameter
Min. bending radius, once only	-20 °C...60 °C
Ambient temperature (operational)	0 °C...50 °C
Installation temperature	-20 °C...60 °C
Storage temperature	halogen-free, acc. to IEC 60754-2
Halogen	in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
Resistance to spread of flame	CCLINK; CE; CULUS
Approvals	
Note	

**Ordering data**

	0.5 m
	1.0 m
	1.2 m
	1.5 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
Note	

Type	Qty.	Order No.
IE-C6FP8LD0005M40L40-D	1	2703320005
IE-C6FP8LD0010M40L40-D	1	2703320010
IE-C6FP8LD0012M40L40-D	1	2703320012
IE-C6FP8LD0015M40L40-D	1	2703320015
IE-C6FP8LD0020M40L40-D	1	2703320020
IE-C6FP8LD0030M40L40-D	1	2703320030
IE-C6FP8LD0050M40L40-D	1	2703320050
IE-C6FP8LD0100M40L40-D	1	2703320100

Type	Qty.	Order No.
IE-C6FP8LD0005M40R40-D	1	2703330005
IE-C6FP8LD0010M40R40-D	1	2703330010
IE-C6FP8LD0012M40R40-D	1	2703330012
IE-C6FP8LD0015M40R40-D	1	2703330015
IE-C6FP8LD0020M40R40-D	1	2703330020
IE-C6FP8LD0030M40R40-D	1	2703330030
IE-C6FP8LD0050M40R40-D	1	2703330050
IE-C6FP8LD0100M40R40-D	1	2703330100

**Accessories**

<b>Tools</b>	
	Sheathing strippers, For UTP and STP data cables
	Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
<b>Dust protection cap</b>	
	Protective cap
Note	

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000

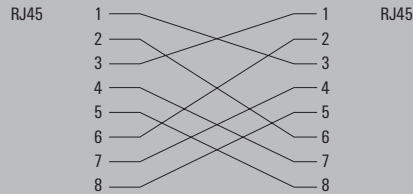
Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000

## Assembled cables - Patch cable

## Assembled cables

## Patch cable CabinetLine Cat. 6 crossover

## LSZH grey



## Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Connector standard
PoE / PoE+
Cross-section
Sheath diameter, max.
Material sheath
Colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Halogen
Resistance to spread of flame

## Approvals

## Note

Patch cable, crossover
<20 m: Cat.6A / >20 m Class EA (ISO/IEC 11801 2010)
S/FTP
RJ45 IP 20 / RJ45 IP 20
IEC 60603-7-51
conforming to IEEE 802.3at
4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
5.9 mm
LSZH
grey, yellow
1.04 mm
5 x cable diameter
-20 °C...60 °C
0 °C...50 °C
-20 °C...60 °C
halogen-free, acc. to IEC 60754-2
in acc. with IEC 60332-2-2, in acc. with IEC 60332-1-2, in acc. with IEC 60332-3-24, in acc. with UL 2556 (FT1)
CCLINK; CE; CULUS

## Ordering data

0.3 m
0.4 m
0.5 m
1.0 m
2.0 m
3.0 m
5.0 m
10.0 m
15.0 m
20.0 m

## Note

Type	Qty.	Order No.
IE-C6FP8LD0003X40X40-Y	1	1312160003
IE-C6FP8LD0004X40X40-Y	1	1312160004
IE-C6FP8LD0005X40X40-Y	1	1312160005
IE-C6FP8LD0010X40X40-Y	1	1312160010
IE-C6FP8LD0020X40X40-Y	1	1312160020
IE-C6FP8LD0030X40X40-Y	1	1312160030
IE-C6FP8LD0050X40X40-Y	1	1312160050
IE-C6FP8LD0100X40X40-Y	1	1312160100
IE-C6FP8LD0150X40X40-Y	1	1312160150
IE-C6FP8LD0200X40X40-Y	1	1312160200

## Accessories

<b>Tools</b>
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
<b>Dust protection cap</b>
Protective cap
<b>Cable routing</b>
90° outlet angle

## Note

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000

**Assembled cables**  
**Patch cable CabinetLine Cat. 5 straight**

**PVC green**

**PUR green**



RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

**Technical data**

Product type	System cable
Category	Cat.5 (ISO/IEC 11801)
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	5.8 mm
Material sheath	PVC
Sheathing colour	green (RAL 6018)
Insulation diameter	0.98 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...75 °C
Abrasion resistance	good
Halogen	Yes
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	
Approvals	EAC
<b>Note</b>	

Product type	System cable
Category	Cat.5 (ISO/IEC 11801)
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	6 mm
Material sheath	PUR
Sheathing colour	green
Insulation diameter	0.98 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...85 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	EN 50305
Approvals	CULUS
<b>Note</b>	

Product type	System cable
Category	Cat.5 (ISO/IEC 11801)
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	6 mm
Material sheath	PUR
Sheathing colour	green
Insulation diameter	0.98 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...85 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	EN 50305
Approvals	CULUS
<b>Note</b>	

**Ordering data**

	0.5 m
	1.0 m
	1.5 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
	15.0 m
	20.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C5ES8VG0005M40M40-G	1	1166020005
IE-C5ES8VG0010M40M40-G	1	1166020010
IE-C5ES8VG0015M40M40-G	1	1166020015
IE-C5ES8VG0020M40M40-G	1	1166020020
IE-C5ES8VG0030M40M40-G	1	1166020030
IE-C5ES8VG0050M40M40-G	1	1166020050
IE-C5ES8VG0100M40M40-G	1	1166020100
IE-C5ES8VG0150M40M40-G	1	1166020150
IE-C5ES8VG0200M40M40-G	1	1166020200

Type	Qty.	Order No.
IE-C5ES8UG0005M40M40-G	1	1166000005
IE-C5ES8UG0010M40M40-G	1	1166000010
IE-C5ES8UG0015M40M40-G	1	1166000015
IE-C5ES8UG0020M40M40-G	1	1166000020
IE-C5ES8UG0030M40M40-G	1	1166000030
IE-C5ES8UG0050M40M40-G	1	1166000050
IE-C5ES8UG0100M40M40-G	1	1166000100
IE-C5ES8UG0150M40M40-G	1	1166000150
IE-C5ES8UG0200M40M40-G	1	1166000200

**Accessories**

<b>Tools</b>	
	Sheathing strippers, For UTP and STP data cables
	Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
<b>Dust protection cap</b>	Protective cap
<b>Cable routing</b>	90° outlet angle
<b>Note</b>	

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000

## Assembled cables - Patch cable

## Assembled cables

## Patch cable CabinetLine Cat. 6 straight

## PUR green



RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

## Technical data

Product type	System cable
Category	Cat. 6A / Class EA (ISO/IEC 11802 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4*2*AWG 27/7 - 4*2*0.1 mm <sup>2</sup>
Sheath diameter, max.	6.4 mm
Material sheath / Sheathing colour	PUR / green
Insulation diameter	1.02 mm
Min. bending radius, repetitive / Min. bending radius, once only	10 x cable diameter / 5 x cable diameter
Ambient temperature (operational)	-40 °C...85 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1 / UL 1581 FT2
Resistance to oils	in accordance with IEC 60811-2-1
Approvals	CULUS

## Note

## Ordering data

	0.3 m
	0.5 m
	1.0 m
	1.5 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
	15.0 m
	20.0 m

## Note

Type	Qty.	Order No.
IE-C6FS8UG0003A40A40-G	1	894 1350003
IE-C6FS8UG0005A40A40-G	1	894 1350005
IE-C6FS8UG0010A40A40-G	1	894 1350010
IE-C6FS8UG0015A40A40-G	1	894 1350015
IE-C6FS8UG0020A40A40-G	1	894 1350020
IE-C6FS8UG0030A40A40-G	1	894 1350030
IE-C6FS8UG0050A40A40-G	1	894 1350050
IE-C6FS8UG0100A40A40-G	1	894 1350100
IE-C6FS8UG0150A40A40-G	1	894 1350150
IE-C6FS8UG0200A40A40-G	1	894 1350200

Other lengths available on request

## Accessories

<b>Tools</b>	
	Sheathing strippers, For UTP and STP data cables
	Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>	
	Wire and cable markers. ø 4.7 - 7.4 mm
	Wire and cable markers. ø 5.8 - 7.8 mm
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
	Transparent sleeves, 12-mm length
	Transparent sleeves, 18-mm length
<b>Dust protection cap</b>	Protective cap
<b>Cable routing</b>	90° outlet angle
<b>Note</b>	

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000



## Assembled cables - Patch cable

## Assembled cables

## Smart Metering Patch cable Cat. 5 straight

- 6 kV

orange



RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

## Technical data

Product type	Patch cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Cable layout	Double insulation according to VDE 0603-100
Rated impulse withstand voltage	6 kV
Version connector left / Version connector right	RJ45 IP30 (plugged) / RJ45 IP30 (plugged)
Connector standard	IEC 60603-7-51
PoE / PoE+	conforming to IEEE 802.3at
Cross-section	4x2xAWG 26/7, 4x2x0.128 mm <sup>2</sup>
Sheath diameter	5.5 mm
Material sheath / Sheathing colour	PVC / orange
Insulation diameter	1 mm
Min. bending radius, repetitive / Min. bending radius, once only	/ 5 x cable diameter
Ambient temperature (operational)	-20 °C...70 °C
Abrasion resistance	
Halogen	
Resistance to spread of flame	
Resistance to oils	in accordance with IEC 60332-1-2
Approvals	
<b>Note</b>	

## Ordering data

	0.3 m
	0.4 m
	0.5 m
	1.0 m
	1.5 m
	2.0 m
	2.5 m
	5.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C5ES8V00003N40N40-O-K6KV	1	2814850003
IE-C5ES8V00005N40N40-O-K6KV	1	2814850005
IE-C5ES8V00010N40N40-O-K6KV	1	2814850010
IE-C5ES8V00015N40N40-O-K6KV	1	2814850015
IE-C5ES8V00020N40N40-O-K6KV	1	2814850020

## Accessories

<b>Tools</b>	
	Sheathing strippers, For UTP and STP data cables
	Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>	
	Wire and cable markers. ø 4.7 - 7.4 mm
	Wire and cable markers. ø 5.8 - 7.8 mm
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
	Transparent sleeves, 12-mm length
	Transparent sleeves, 18-mm length
<b>Dust protection cap</b>	Protective cap
<b>Cable routing</b>	90° outlet angle
<b>Note</b>	

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000

## Assembled cables

## Smart Metering Patch cable RJ12 straight - 6 KV

- 6 kV

red



RJ45			RJ45
1	white (orange)	1	RJ45
2	orange	2	
3	white (green)	3	
4	blue	4	
5	white (blue)	5	
6	green	6	
7	white (brown)	7	
8	brown	8	

## Technical data

Product type
Category
Shielding
Rated impulse withstand voltage
Version connector left / Version connector right
Connector standard
PoE / PoE+
Cross-section
Sheath diameter, max.
Material sheath / Sheathing colour
Insulation diameter
Min. bending radius, repetitive / Min. bending radius, once only
Ambient temperature (operational)
Abrasion resistance
Halogen
Resistance to spread of flame
Resistance to oils
Approvals

## Note

Patch cable
Cat.3
U/UTP
6 kV
RJ12 / RJ12
TIA-1096-A
3x2xAWG 24/7
4.95 mm
LSZH / red
1 mm
-20 °C...60 °C
No
in accordance with IEC 60332-1

## Ordering data

0.3 m
0.8 m
1.1 m

## Note

Type	Qty.	Order No.
IE-C6G06LR0003F40F40-X-K6KV	1	2860910003
IE-C6G06LR0008F40F40-X-K6KV	1	2860910008
IE-C6G06LR0011F40F40-X-K6KV	1	2860910011

## Accessories

<b>Tools</b>	
Sheathing strippers, For UTP and STP data cables	
Sheathing strippers, For coaxial and round data cables	
<b>Marking tags</b>	
Wire and cable markers. ø 4.7 - 7.4 mm	
Wire and cable markers. ø 5.8 - 7.8 mm	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	
Transparent sleeves, 12-mm length	
Transparent sleeves, 18-mm length	
<b>Dust protection cap</b>	Protective cap
<b>Cable routing</b>	90° outlet angle

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
IE-PP-RJ45	10	2552580000
IE-CABLE-BENDER-90	50	2704480000

## Note

Assembled cables - PROFINET cable

Assembled cables

Patch cable PROFINET dragline cable (type C)

Cat. 5

IP20

RJ45 IP20



RJ45 IP20 incl. protective cap



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RJ45		RJ45
1	yellow	1
2	orange	2
3	white	3
6	blue	6

RJ45		RJ45
1	yellow	1
2	orange	2
3	white	3
6	blue	6

Technical data

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 20 / RJ45 IP 20
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Insulation diameter	1.5 mm
Min. bending radius, repetitive / Min. bending radius, once only	7.5 x cable diameter / 5 x cable diameter
Bending cycles	3 Mio
Speed	180 m/min
Acceleration	4 m/s <sup>2</sup>
Pulling force	≤ 150 N
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1
Approvals	CULUS
Note	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 20 with protective cap / RJ45 IP 20 with protective cap
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Insulation diameter	1.5 mm
Min. bending radius, repetitive / Min. bending radius, once only	7.5 x cable diameter / 5 x cable diameter
Bending cycles	3 Mio
Speed	180 m/min
Acceleration	4 m/s <sup>2</sup>
Pulling force	≤ 150 N
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1
Approvals	
Note	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 20 with protective cap / RJ45 IP 20 with protective cap
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Insulation diameter	1.5 mm
Min. bending radius, repetitive / Min. bending radius, once only	7.5 x cable diameter / 5 x cable diameter
Bending cycles	3 Mio
Speed	180 m/min
Acceleration	4 m/s <sup>2</sup>
Pulling force	≤ 150 N
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1
Approvals	
Note	

Ordering data

Type	Qty.	Order No.
IE-C5DD4UG0005A20A20-E	1	1173030005
IE-C5DD4UG0010A20A20-E	1	1173030010
IE-C5DD4UG0020A20A20-E	1	1173030020
IE-C5DD4UG0030A20A20-E	1	1173030030
IE-C5DD4UG0050A20A20-E	1	1173030050
IE-C5DD4UG0100A20A20-E	1	1173030100
IE-C5DD4UG0150A20A20-E	1	1173030150
IE-C5DD4UG0200A20A20-E	1	1173030200
Note		

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
Note		

Type	Qty.	Order No.
IE-C5DD4UG0005A2DA2D-E	1	1376510005
IE-C5DD4UG0010A2DA2D-E	1	1376510010
IE-C5DD4UG0020A2DA2D-E	1	1376510020
IE-C5DD4UG0030A2DA2D-E	1	1376510030
IE-C5DD4UG0050A2DA2D-E	1	1376510050
IE-C5DD4UG0100A2DA2D-E	1	1376510100
IE-C5DD4UG0150A2DA2D-E	1	1376510150
IE-C5DD4UG0200A2DA2D-E	1	1376510200
Note		

Accessories

Tools	Marking tags	Dust protection cap
Sheathing strippers, For UTP and STP data cables	Insertion label, yellow, 12 mm	Protective cap
Sheathing strippers, For coaxial and round data cables	Insertion label, yellow, 18 mm	
Note		

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
IE-PP-RJ45	10	2552580000
Note		

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
Note		





## Assembled cables - PROFINET cable

## Assembled cables

## Patch cable PROFINET dragline cable (type C)

Cat. 5

IP67

## V14 RJ45 IP67



RJ45		RJ45
1	yellow	1
2	orange	2
3	white	3
6	blue	6

## Technical data

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Connector standard	IEC 61076-3-117 Var. 14, IEC 60603-7-51
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 67 PushPull V14 metal / RJ45 IP 67 PushPull V14 metal
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Insulation diameter	1.5 mm
Min. bending radius, repetitive / Min. bending radius, once only	7.5 x cable diameter / 5 x cable diameter
Bending cycles	3 Mio
Speed	180 m/min
Acceleration	4 m/s <sup>2</sup>
Pulling force	≤ 150 N
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1
Approvals	

## Note

## Ordering data

	Type	Qty.	Order No.
1.0 m	IE-C5DD4UG0010A2EA2E-X	1	1119730010
2.0 m	IE-C5DD4UG0020A2EA2E-X	1	1119730020
3.0 m	IE-C5DD4UG0030A2EA2E-X	1	1119730030
5.0 m	IE-C5DD4UG0050A2EA2E-X	1	1119730050
10.0 m	IE-C5DD4UG0100A2EA2E-X	1	1119730100
15.0 m	IE-C5DD4UG0150A2EA2E-X	1	1119730150
20.0 m	IE-C5DD4UG0200A2EA2E-X	1	1119730200

## Note

## Accessories

Tools		Type	Qty.	Order No.
Sheathing strippers, For UTP and STP data cables		AM 12	1	9030060000
Sheathing strippers, For coaxial and round data cables		IE-CST	1	9204350000
Marking tags				
Insertion label, yellow, 12 mm		TMH 12 MC NE GE	320	1718411687
Insertion label, yellow, 18 mm		TMH 18 MC NE GE	320	1718431687

## Note

**Assembled cables**

**Patch cable PROFINET (Type C) Cat. 5, overmoulded IP67**

**V14 RJ45 IP67**



**V14 RJ45 IP67**



RJ45		RJ45
1	yellow	1
2	orange	2
3	white	3
6	blue	6

RJ45		RJ45
1	yellow	1
2	orange	2
3	white	3
6	blue	6

**Technical data**

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Connector standard	IEC 61076-3-117 Var. 14
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 67 PushPull moulded V14 metal / RJ45 IP 67 PushPull moulded V14 metal
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Insulation diameter	1.5 mm
Min. bending radius, repetitive / Min. bending radius, once only	7.5 x cable diameter / 5 x cable diameter
Bending cycles / Pulling force	3 Mio / ≤ 150 N
Torsion cycles / Torsion resistance	180 m/min / 4 m/s <sup>2</sup>
Speed / Acceleration	-40 °C...70 °C
Ambient temperature (operational)	-20 °C...60 °C
Installation temperature	-50 °C...70 °C
Storage temperature	very good
Abrasion resistance	halogen-free, acc. to IEC 60754-2
Halogen	in accordance with IEC 60332-1
Resistance to spread of flame	in accordance with IEC 60811-2-1
Resistance to oils	
Approvals	
<b>Note</b>	

Product type	Torsion cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Connector standard	IEC 61076-3-117 Var. 14
Shielding	S/UTP
Version connector left / Version connector right	RJ45 IP 67 PushPull moulded V14 metal / RJ45 IP 67 PushPull moulded V14 metal
Cross-section	4*AWG 22/19 - 0.38 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Insulation diameter	1.5 mm
Min. bending radius, repetitive / Min. bending radius, once only	10 x cable diameter / 5 x cable diameter
Bending cycles / Pulling force	1 mill. / 180 °/m
Torsion cycles / Torsion resistance	-40 °C...80 °C
Speed / Acceleration	-40 °C...80 °C
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	very good
Storage temperature	halogen-free, acc. to IEC 60754-2
Abrasion resistance	in accordance with IEC 60332-1
Halogen	in accordance with IEC 60811-2-1
Resistance to spread of flame	
Resistance to oils	
Approvals	
<b>Note</b>	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Connector standard	IEC 61076-3-117 Var. 14
Shielding	SF/UTP
Version connector left / Version connector right	RJ45 IP 67 PushPull moulded V14 metal / RJ45 IP 67 PushPull moulded V14 metal
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Insulation diameter	1.5 mm
Min. bending radius, repetitive / Min. bending radius, once only	7.5 x cable diameter / 5 x cable diameter
Bending cycles / Pulling force	3 Mio / ≤ 150 N
Torsion cycles / Torsion resistance	180 m/min / 4 m/s <sup>2</sup>
Speed / Acceleration	-40 °C...70 °C
Ambient temperature (operational)	-20 °C...60 °C
Installation temperature	-50 °C...70 °C
Storage temperature	very good
Abrasion resistance	halogen-free, acc. to IEC 60754-2
Halogen	in accordance with IEC 60332-1
Resistance to spread of flame	in accordance with IEC 60811-2-1
Resistance to oils	
Approvals	
<b>Note</b>	

**Ordering data**

	1.0 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C5DD4UG0010B2EB2E-X	1	1307610010
IE-C5DD4UG0020B2EB2E-X	1	1307610020
IE-C5DD4UG0030B2EB2E-X	1	1307610030
IE-C5DD4UG0050B2EB2E-X	1	1307610050
IE-C5DD4UG0100B2EB2E-X	1	1307610100

Type	Qty.	Order No.
IE-C5IT4UG0010B2EB2E-X	1	1312690010
IE-C5IT4UG0020B2EB2E-X	1	1312690020
IE-C5IT4UG0030B2EB2E-X	1	1312690030
IE-C5IT4UG0050B2EB2E-X	1	1312690050
IE-C5IT4UG0100B2EB2E-X	1	1312690100

**Accessories**

<b>Tools</b>	
	Sheathing strippers, For UTP and STP data cables
	Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
<b>Note</b>	

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

<b>Note</b>	
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<b>Note</b>	
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<b>Note</b>	
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**Assembled cables**  
**Patch cable PushPull Power**

**Power IP67, PVC**



**Power IP67, PUR**



**Technical data**

Connector standard
Version connector left / Version connector right
Ambient temperature (operational)
Cross-section
Wire connection cross section AWG, max.
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation
Number of wires
Min. bending radius, once only
Rated voltage
Current-carrying capacity at 50 °C
Approvals
<b>Note</b>

in accordance with PROFINET specification
PushPull Power / PushPull Power
-40 °C...70 °C
5*1.5 mm <sup>2</sup>
AWG 16
8.1 mm
PVC
grey (similar to RAL 7001)
PVC
5
4 x cable diameter
24 V
16 A
EAC
<b>Note</b>

in accordance with PROFINET specification
PushPull Power / PushPull Power
-40 °C...80 °C
5*1.5 mm <sup>2</sup>
AWG 16
9 mm
PUR
grey (similar to RAL 7001)
TPE
5
5 x cable diameter
24 V
16 A
EAC
<b>Note</b>

**Ordering data**

	1.0 m
	3.0 m
	5.0 m
	10.0 m
	15.0 m
	20.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-CSPS5VS0010VAPVAP-X	1	1350120010
IE-CSPS5VS0030VAPVAP-X	1	1350120030
IE-CSPS5VS0050VAPVAP-X	1	1350120050
IE-CSPS5VS0100VAPVAP-X	1	1350120100
IE-CSPS5VS0150VAPVAP-X	1	1350120150
IE-CSPS5VS0200VAPVAP-X	1	1350120200
Other lengths available on request		

Type	Qty.	Order No.
IE-CSPD5US0050VAPVAP-X	1	1403680050
IE-CSPD5US0100VAPVAP-X	1	1403680100
IE-CSPD5US0150VAPVAP-X	1	1403680150
<b>Note</b>		

**Accessories**

<b>Tools</b>
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687

<b>Note</b>
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<b>Note</b>
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<b>Note</b>
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**Assembled cables**  
**Patch cable PushPull Power**  
**M12 L-coded**

**Power IP67, PUR**



**Technical data**

Connector standard
Version connector left / Version connector right
Ambient temperature (operational)
Cross-section
Wire connection cross section AWG, max.
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation
Number of wires
Min. bending radius, once only
Min. bending radius, repetitive
Rated voltage
Rated current
Approvals

in accordance with PROFINET specification, IEC 61076-2-111
M12 L-code – IP 67 straight socket / PushPull Power
-25 °C...75 °C
5*1.5 mm <sup>2</sup>
8.2 mm
PUR
Silver grey
PP
5
4 x cable diameter
7.5 x cable diameter
24 V
16 A

**Note**

**Note**

**Ordering data**

1.5 m
3.0 m
5.0 m
10.0 m

Type	Qty.	Order No.
IE-CSPD5UD0015LSSVAP-X	1	2732640015
IE-CSPD5UD0030LSSVAP-X	1	2732640030
IE-CSPD5UD0050LSSVAP-X	1	2732640050
IE-CSPD5UD0100LSSVAP-X	1	2732640100

**Note**

**Accessories**

<b>Tools</b>
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables
<b>Marking tags</b>
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687

**Note**

**Note**

Assembled cables – PROFINET cable M12

Assembled cable  
Dragline cable M12

- Cat. 5
- PUR
- D-coded
- PROFINET type C

M12 - M12

Plug / plug



M12 - M12



M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

Technical data

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M12 D-code - IP 67 straight pin / M12 D-code - IP 67 straight pin
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Bending cycles	3 Mio
Speed	180 m/min
Acceleration	4 m/s <sup>2</sup>
Pulling force	≤ 150 N
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1
Approvals	CULUS
<b>Note</b>	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M12 D-code - IP 67 straight socket / M12 D-code - IP 67 straight pin
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Bending cycles	3 Mio
Speed	180 m/min
Acceleration	4 m/s <sup>2</sup>
Pulling force	≤ 150 N
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1
Approvals	CULUS
<b>Note</b>	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M12 D-code - IP 67 straight socket / M12 D-code - IP 67 straight pin
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Bending cycles	3 Mio
Speed	180 m/min
Acceleration	4 m/s <sup>2</sup>
Pulling force	≤ 150 N
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to spread of flame	in accordance with IEC 60332-1
Resistance to oils	in accordance with IEC 60811-2-1
Approvals	CULUS
<b>Note</b>	

Ordering data

	0.5 m
	1.5 m
	3.0 m
	5.0 m
	10.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C5DD4UG0005MCSMCS-E	1	1025950005
IE-C5DD4UG0015MCSMCS-E	1	1025950015
IE-C5DD4UG0030MCSMCS-E	1	1025950030
IE-C5DD4UG0050MCSMCS-E	1	1025950050
IE-C5DD4UG0100MCSMCS-E	1	1025950100

Type	Qty.	Order No.
IE-C5DD4UG0005MSSMCS-E	1	1059330005
IE-C5DD4UG0015MSSMCS-E	1	1059330015
IE-C5DD4UG0030MSSMCS-E	1	1059330030
IE-C5DD4UG0050MSSMCS-E	1	1059330050
IE-C5DD4UG0100MSSMCS-E	1	1059330100

Accessories

<b>Marking tags</b>	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
<b>Tools</b>	Tool set
	Tool set with torque function
	Mounting tool
	Screwty-M12
<b>Note</b>	

Type	Qty.	Order No.
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

Type	Qty.	Order No.
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000







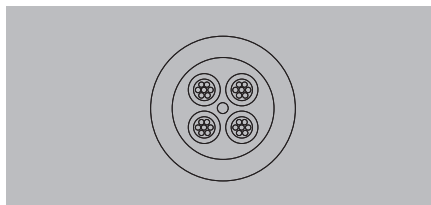
**Assembled cables**

**M12 dragline cable, angled**

- Cat. 5
- PUR
- D-coded
- PROFINET type C

**M12 - open**

Plug / -



**Technical data**

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M12 D-code - IP 67 angled pin / Open
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter, min. / max.	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Abrasion resistance	very good
Halogen	halogen-free, acc. to IEC 60754-2
Resistance to oils	in accordance with IEC 60811-2-1
Fire safety for railway vehicles	
<b>Note</b>	

<b>Note</b>	
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**Ordering data**

Cat. 5 PROFINET. PUR. M12 straight-M12 angled	Length
	1.5 m
	3.0 m
	5.0 m
	10.0 m
Cat. 5 PROFINET. PUR. M12 angled-M12 angled	Length
	1.5 m
	3.0 m
	5.0 m
	10.0 m
Cat. 5. PUR. M12 angled-open	Length
	1.5 m
	3.0 m
	5.0 m
	10.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C5DD4UG0015MCAXXX-X	1	1059750015
IE-C5DD4UG0030MCAXXX-X	1	1059750030
IE-C5DD4UG0050MCAXXX-X	1	1059750050
IE-C5DD4UG0100MCAXXX-X	1	1059750100

**Accessories**

Marking tags	Description
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
	Transparent sleeves, 12-mm length
	Transparent sleeves, 18-mm length
<b>Note</b>	

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

**Assembled cables**

**System cable M12 flange**

- Cat. 5
- PUR
- D-coded
- PROFINET type B

**M12 flange - M12 male**

Plug / socket



**M12 flange - RJ45**

Plug / socket




M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

**Technical data**

Product type	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	360° shield contact
Version connector left / Version connector right	M12 D-code - flange / M12 D-code - pin straight
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	15 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Approvals	
<b>Note</b>	

Product type	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	360° shield contact
Version connector left / Version connector right	M12 D-code - flange / M12 D-code - pin straight
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	15 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Approvals	
<b>Note</b>	

Product type	System cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	360° shield contact
Version connector left / Version connector right	M12 D-code - flange / RJ45 IP 20
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	15 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Approvals	
<b>Note</b>	

**Ordering data**

	0.5 m
	1.0 m
	1.5 m
	2.0 m
	5.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C5DS4UG0005MBSMCS-E	1	1244130005
IE-C5DS4UG0010MBSMCS-E	1	1244130010
IE-C5DS4UG0015MBSMCS-E	1	1244130015
IE-C5DS4UG0020MBSMCS-E	1	1244130020
IE-C5DS4UG0050MBSMCS-E	1	1244130050

Type	Qty.	Order No.
IE-C5DS4UG0005MBSA20-E	1	1234750005
IE-C5DS4UG0010MBSA20-E	1	1234750010
IE-C5DS4UG0015MBSA20-E	1	1234750015
IE-C5DS4UG0020MBSA20-E	1	1234750020
IE-C5DS4UG0050MBSA20-E	1	1234750050

**Accessories**

<b>Marking tags</b>	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
<b>Tools</b>	Tool set
	Tool set with torque function
	Mounting tool
	Screwty-M12
<b>Dust protection cap</b>	Protective cap

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000
IE-PP-RJ45	10	2552580000

<b>Note</b>	
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<b>Note</b>	
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<b>Note</b>	
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**Assembled cables****System cable M12 flange**

- Cat. 5
- PUR
- D-coded
- PROFINET type B

**M12 flange - open**

Socket / -


**Sercos**  
 the automation bus

	M12
yellow	1
white	2
orange	3
blue	4

**Technical data**

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
360° shield contact
M12 D-code - flange / Open
4*AWG 22/7 - 0.32 mm <sup>2</sup>
6.7 mm
PUR
green (RAL 6018)
1.5 mm
15 x cable diameter
5 x cable diameter
-40 °C...70 °C
-20 °C...60 °C
-50 °C...70 °C

**Note****Ordering data**

0.5 m
1.0 m
1.5 m
2.0 m
5.0 m

Type	Qty.	Order No.
IE-C5DS4UG0005MBSXXX-E	1	1234770005
IE-C5DS4UG0010MBSXXX-E	1	1234770010
IE-C5DS4UG0015MBSXXX-E	1	1234770015
IE-C5DS4UG0020MBSXXX-E	1	1234770020
IE-C5DS4UG0050MBSXXX-E	1	1234770050

**Note****Accessories**

<b>Marking tags</b>	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
<b>Tools</b>	Tool set
	Tool set with torque function
	Mounting tool
	Screwty-M12
<b>Dust protection cap</b>	Protective cap

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

**Note**

## Assembled cables – PROFINET cable M12

## Assembled cable

## Connecting cable M12

- Cat. 6
- PVC
- X-type
- PROFINET type B

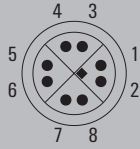
## M12 - M12

Plug / plug



## M12 - open

Plug / -



M12			M12
1	white, orange		1
2	orange		2
3	white, green		3
4	green		4
5	white, brown		5
6	brown		6
7	white, blue		7
8	blue		8

		M12
White, Orange		1
Orange		2
White, Green		3
Green		4
White, Brown		5
Brown		6
White, Blue		7
Blue		8

## Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Pulling force
Ambient temperature (operational)
Installation temperature
Storage temperature
Halogen
Resistance to spread of flame
Standard, assembly
Approvals

Connecting line
Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
S/FTP
M12 X-type IP 67 straight male / M12 X-type IP 67 straight male
4*2*AWG 23/7
8.8 mm
PVC
green (RAL 6018)
1.58 mm
8 x cable diameter
4 x cable diameter
≤ 150 N
-40 °C...80 °C
-40 °C...80 °C
-40 °C...80 °C
Yes
in accordance with IEC 60332-1-2
UL-Style 2461

Connecting line
Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
S/FTP
M12 X-type IP 67 straight male / Open
4*2*AWG 23/7
8.8 mm
PVC
green (RAL 6018)
1.58 mm
8 x cable diameter
4 x cable diameter
≤ 150 N
-40 °C...80 °C
-40 °C...80 °C
-40 °C...80 °C
Yes
in accordance with IEC 60332-1-2
UL-Style 2461

## Note

## Ordering data

0.5 m
1.5 m
3.0 m
5.0 m
10.0 m

## Note

Type	Qty.	Order No.
IE-C6KS8VG0005XCSXCS-E	1	1398070005
IE-C6KS8VG0015XCSXCS-E	1	1398070015
IE-C6KS8VG0030XCSXCS-E	1	1398070030
IE-C6KS8VG0050XCSXCS-E	1	1398070050
IE-C6KS8VG0100XCSXCS-E	1	1398070100

Type	Qty.	Order No.
IE-C6KS8VG0005XCSXXX-E	1	1449470005
IE-C6KS8VG0015XCSXXX-E	1	1449470015
IE-C6KS8VG0030XCSXXX-E	1	1449470030
IE-C6KS8VG0050XCSXXX-E	1	1449470050
IE-C6KS8VG0100XCSXXX-E	1	1449470100

## Accessories

Marking tags	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

## Note

**Assembled cable**  
**Dragline cable M12**

- Cat. 6
- PUR
- X-type
- PROFINET type C

**M12 - M12**

Plug / plug



M12	1	white, orange	1	M12
	2	orange	2	
	3	white, green	3	
	4	green	4	
	5	white, brown	5	
	6	brown	6	
	7	white, blue	7	
	8	blue	8	

**M12 - RJ45**

Plug / plug



RJ45	1	White, Orange	1	M12
	2	Orange	2	
	3	White, Green	3	
	4	Blue	8	
	5	White, Blue	7	
	6	Green	4	
	7	White, Brown	5	
	8	Brown	6	

**Technical data**

Product type	Dragline cable
Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	M12 X-type IP 67 straight male / M12 X-type IP 67 straight male
Cross-section	4*2*AWG 26/19 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	7.8 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	0.98 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	4 x cable diameter
Pulling force	≤ 100 N
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-30 °C...70 °C
Storage temperature	...
Halogen	halogen-free
Resistance to spread of flame	in acc. with IEC 60332-1-2, in acc. with UL 1581 VW-1 and CSA FT1
Standard, assembly	
Approvals	

**Note**

**Ordering data**

	1.0 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
	15.0 m

**Note**

**Accessories**

Marking tags	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

**Note**

Product type	Dragline cable
Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	M12 X-type IP 67 straight male / M12 X-type IP 67 straight male
Cross-section	4*2*AWG 26/19 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	7.8 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	0.98 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	4 x cable diameter
Pulling force	≤ 100 N
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-30 °C...70 °C
Storage temperature	...
Halogen	halogen-free
Resistance to spread of flame	in acc. with IEC 60332-1-2, in acc. with UL 1581 VW-1 and CSA FT1
Standard, assembly	
Approvals	

Type	Qty.	Order No.
IE-C6HD8UG0010XCSXCS-E	1	2723040010
IE-C6HD8UG0030XCSXCS-E	1	2723040030
IE-C6HD8UG0050XCSXCS-E	1	2723040050
IE-C6HD8UG0075XCSXCS-E	1	2723040075
IE-C6HD8UG0100XCSXCS-E	1	2723040100
IE-C6HD8UG0150XCSXCS-E	1	2723040150

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

Product type	Dragline cable
Category	Cat.6 <sub>A</sub> / Class E <sub>A</sub> (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	M12 X-type IP 67 straight male / RJ45 IP 20
Cross-section	4*2*AWG 26/19 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	7.8 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	0.98 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	4 x cable diameter
Pulling force	≤ 100 N
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-30 °C...70 °C
Storage temperature	...
Halogen	halogen-free
Resistance to spread of flame	in acc. with IEC 60332-1-2, in acc. with UL 1581 VW-1 and CSA FT1
Standard, assembly	
Approvals	

Type	Qty.	Order No.
IE-C6HD8UG0010A40XCS-E	1	2723030010
IE-C6HD8UG0030A40XCS-E	1	2723030030
IE-C6HD8UG0050A40XCS-E	1	2723030050
IE-C6HD8UG0075A40XCS-E	1	2723030075
IE-C6HD8UG0100A40XCS-E	1	2723030100
IE-C6HD8UG0150A40XCS-E	1	2723030150

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

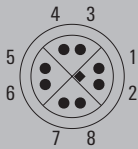
## Assembled cables

## M12 connecting cables

- Cat. 6
- PUR
- X-type

## M12 - RJ45

Plug / plug



RJ45		M12
1	White, Orange	1
2	Orange	2
3	White, Green	3
4	Blue	8
5	White, Blue	7
6	Green	4
7	White, Brown	5
8	Brown	6

## Technical data

Product type	System cable
Category	Cat.6A / Class EA (ISO/IEC 11801 2010)
Shielding	S/FTP
Version connector left / Version connector right	RJ45 IP 20 / M12 X-type IP 67 straight male
Cross-section	4*2*AWG 26/7 - 4*2*0.128 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	0.98 mm
Min. bending radius, repetitive	10 x cable diameter
Min. bending radius, once only	5 x cable diameter
Pulling force	
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-40 °C...80 °C
Halogen	halogen-free, acc. to IEC 60754-1
Resistance to spread of flame	in accordance with IEC 60332-1-2
Standard, assembly	UL Style 20963
Approvals	

## Note

## Ordering data

	1.0 m
	2.0 m
	3.0 m
	5.0 m
	10.0 m
	12.0 m

## Note

## Accessories

Marking tags	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
Dust protection cap	Protective cap

Type	Qty.	Order No.
IE-C6EL8UG0010U40XCS-E	1	1457580010
IE-C6EL8UG0020U40XCS-E	1	1457580020
IE-C6EL8UG0030U40XCS-E	1	1457580030
IE-C6EL8UG0050U40XCS-E	1	1457580050
IE-C6EL8UG0100U40XCS-E	1	1457580100
IE-C6EL8UG0120U40XCS-E	1	1457580120

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
Dust protection cap		
IE-PP-RJ45	10	2552580000

## Note



## Assembled cables – EtherCat P cable M8

Assembled cable  
Dragline cable M8

- Cat. 5
- PUR
- P-coded
- EtherCat P - data and power via the Ethernet line

## M8 - open

Socket / -



## M8 - open

Plug / -



M8	yellow
1	white
2	blue
3	orange
4	

M8	yellow
1	white
2	blue
3	orange
4	

## Technical data

Product type	Dragline cable
Category	Cat. 5e
Shielding	SF/UTP
Version connector left / Version connector right	M8 P-code - IP67 straight socket / Open
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	black
Insulation diameter	1.6 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	...
Storage temperature	...
Approvals	...

## Note

## Ordering data

	1.5 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
	20.0 m
	30.0 m

## Note

## Accessories

## Marking tags

Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm

## Tools

Tool set
Tool set with torque function
Mounting tool
Screwty-M12

Type	Qty.	Order No.
IE-C5DE4UP0015PSSXXX-E	1	2717740015
IE-C5DE4UP0030PSSXXX-E	1	2717740030
IE-C5DE4UP0050PSSXXX-E	1	2717740050
IE-C5DE4UP0075PSSXXX-E	1	2717740075
IE-C5DE4UP0100PSSXXX-E	1	2717740100
IE-C5DE4UP0200PSSXXX-E	1	2717740200
IE-C5DE4UP0300PSSXXX-E	1	2717740300

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

Type	Qty.	Order No.
IE-C5DE4UP0015PCSXXX-E	1	2717750015
IE-C5DE4UP0030PCSXXX-E	1	2717750030
IE-C5DE4UP0050PCSXXX-E	1	2717750050
IE-C5DE4UP0075PCSXXX-E	1	2717750075
IE-C5DE4UP0100PCSXXX-E	1	2717750100
IE-C5DE4UP0200PCSXXX-E	1	2717750200
IE-C5DE4UP0300PCSXXX-E	1	2717750300

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

## Note



**Assembled cable**  
**Dragline cable M8**

- Cat. 5
- PUR
- P-coded
- EtherCat P - data and power via the Ethernet line

**M8 - open**

Socket angled / -



**M8 - open**

Plug angled / -



M8	yellow
1	white
2	blue
3	orange
4	

M8	yellow
1	white
2	blue
3	orange
4	

**Technical data**

Product type	Dragline cable
Category	Cat. 5e
Shielding	SF/UTP
Version connector left / Version connector right	M8 P-code - IP67 angeled socket / Open
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	black
Insulation diameter	1.6 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	...
Storage temperature	...

Product type	Dragline cable
Category	Cat. 5e
Shielding	SF/UTP
Version connector left / Version connector right	M8 P-code - IP67 angeled pin / Open
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	black
Insulation diameter	1.6 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	...
Storage temperature	...

Product type	Dragline cable
Category	Cat. 5e
Shielding	SF/UTP
Version connector left / Version connector right	M8 P-code - IP67 angeled pin / Open
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	black
Insulation diameter	1.6 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	...
Storage temperature	...

**Note**

**Ordering data**

	1.5 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
	20.0 m
	30.0 m

Type	Qty.	Order No.
IE-C5DE4UP0015PSAXXX-E	1	2717760015
IE-C5DE4UP0030PSAXXX-E	1	2717760030
IE-C5DE4UP0050PSAXXX-E	1	2717760050
IE-C5DE4UP0075PSAXXX-E	1	2717760075
IE-C5DE4UP0100PSAXXX-E	1	2717760100
IE-C5DE4UP0200PSAXXX-E	1	2717760200
IE-C5DE4UP0300PSAXXX-E	1	2717760300

Type	Qty.	Order No.
IE-C5DE4UP0015PCAXXX-E	1	2717770015
IE-C5DE4UP0030PCAXXX-E	1	2717770030
IE-C5DE4UP0050PCAXXX-E	1	2717770050
IE-C5DE4UP0075PCAXXX-E	1	2717770075
IE-C5DE4UP0100PCAXXX-E	1	2717770100

**Note**

**Accessories**

<b>Marking tags</b>	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

<b>Tools</b>	
	Tool set
	Tool set with torque function
	Mounting tool
	Screwty-M12

Type	Qty.	Order No.
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

Type	Qty.	Order No.
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

**Note**

Assembled cables – EtherCat P cable M8

Assembled cable  
Dragline cable M8

- Cat. 5
- PUR
- P-coded
- EtherCat P - data and power via the Ethernet line

M8 - M8

Plug straight / Plug straight



M8 - M8

Plug straight / Socket straight



M8		M8
1	yellow	1
2	white	2
3	blue	3
4	orange	4

M8		M8
1	yellow	1
2	white	2
3	blue	3
4	orange	4

Technical data

Product type	Dragline cable
Category	Cat. 5e
Shielding	SF/UTP
Version connector left / Version connector right	M8 P-code - IP67 straight pin / M8 P-code - IP67 straight pin
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	black
Insulation diameter	1.6 mm
Min. bending radius, repetitive	8 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...80 °C
Installation temperature	...
Storage temperature	...
Approvals	...

Note

Ordering data

	1.5 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
	20.0 m
	30.0 m

Note

Accessories

Marking tags

Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm

Tools

Tool set
Tool set with torque function
Mounting tool
Screwty-M12

Note

Type	Qty.	Order No.
IE-C5DE4UP0015PCSPCS-E	1	2717780015
IE-C5DE4UP0030PCSPCS-E	1	2717780030
IE-C5DE4UP0050PCSPCS-E	1	2717780050
IE-C5DE4UP0075PCSPCS-E	1	2717780075
IE-C5DE4UP0100PCSPCS-E	1	2717780100
IE-C5DE4UP0200PCSPCS-E	1	2717780200
IE-C5DE4UP0300PCSPCS-E	1	2717780300

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

Type	Qty.	Order No.
IE-C5DE4UP0015PCSPSS-E	1	2717790015
IE-C5DE4UP0030PCSPSS-E	1	2717790030
IE-C5DE4UP0050PCSPSS-E	1	2717790050
IE-C5DE4UP0075PCSPSS-E	1	2717790075
IE-C5DE4UP0100PCSPSS-E	1	2717790100
IE-C5DE4UP0200PCSPSS-E	1	2717790200
IE-C5DE4UP0300PCSPSS-E	1	2717790300

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

Note

**Assembled cable**  
**Dragline cable M8**

- Cat. 5
- PUR
- P-coded
- EtherCat P - data and power via the Ethernet line

**M8 - M8**

Plug angled / Plug angled



**M8 - M8**

Plug angled / socket angled



M8		M8
1	yellow	1
2	white	2
3	blue	3
4	orange	4

M8		M8
1	yellow	1
2	white	2
3	blue	3
4	orange	4

**Technical data**

Product type  
Category  
Shielding  
Version connector left / Version connector right

Cross-section  
Sheath diameter, max.  
Material sheath  
Sheathing colour  
Insulation diameter  
Min. bending radius, repetitive  
Min. bending radius, once only  
Ambient temperature (operational)  
Installation temperature  
Storage temperature  
Approvals

**Note**

Dragline cable  
Cat. 5e  
SF/UTP  
M8 P-code - IP67 angled pin / M8 P-code - IP67 angled pin

2\*2\*AWG 22/7 - 2\*2\*0.36 mm<sup>2</sup>  
6.7 mm  
PUR  
black  
1.6 mm  
8 x cable diameter  
5 x cable diameter  
-40 °C...80 °C  
...  
...

**Note**

Dragline cable  
Cat. 5e  
SF/UTP  
M8 P-code - IP67 angled pin / M8 P-code - IP67 angled socket

2\*2\*AWG 22/7 - 2\*2\*0.36 mm<sup>2</sup>  
6.7 mm  
PUR  
black  
1.6 mm  
8 x cable diameter  
5 x cable diameter  
-40 °C...80 °C  
...  
...

**Note**

**Ordering data**

1.5 m
3.0 m
5.0 m
7.5 m
10.0 m

**Note**

Type	Qty.	Order No.
IE-C5DE4UP0015PCAPCA-E	1	2717800015
IE-C5DE4UP0030PCAPCA-E	1	2717800030
IE-C5DE4UP0050PCAPCA-E	1	2717800050
IE-C5DE4UP0075PCAPCA-E	1	2717800075
IE-C5DE4UP0100PCAPCA-E	1	2717800100

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY- M12	1	1900000000

Type	Qty.	Order No.
IE-C5DE4UP0015PCAPSA-E	1	2717810015
IE-C5DE4UP0030PCAPSA-E	1	2717810030
IE-C5DE4UP0050PCAPSA-E	1	2717810050
IE-C5DE4UP0075PCAPSA-E	1	2717810075
IE-C5DE4UP0100PCAPSA-E	1	2717810100

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY- M12	1	1900000000

**Accessories**

Marking tags
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm

Tools
Tool set
Tool set with torque function
Mounting tool
Screwty-M12

**Note**

**Assembled cable**  
**Dragline cable M8**

- Cat. 5
- PUR
- D-coded

**M8 - open**



**M8 - open**



M8	yellow
1	white
2	orange
3	blue
4	

M8	yellow
1	white
2	orange
3	blue
4	

**Technical data**

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M8 D-code - IP67 straight pin / Open
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Approvals	
<b>Note</b>	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M8 D-code - IP67 straight socket / Open
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Approvals	
<b>Note</b>	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M8 D-code - IP67 straight socket / Open
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Approvals	
<b>Note</b>	

**Ordering data**

	1.5 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
	20.0 m
	30.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C5DD4UG0015DCSXXX-E	1	2706150015
IE-C5DD4UG0030DCSXXX-E	1	2706150030
IE-C5DD4UG0050DCSXXX-E	1	2706150050
IE-C5DD4UG0075DCSXXX-E	1	2706150075
IE-C5DD4UG0100DCSXXX-E	1	2706150100
IE-C5DD4UG0200DCSXXX-E	1	2706150200
IE-C5DD4UG0300DCSXXX-E	1	2706150300

Type	Qty.	Order No.
IE-C5DD4UG0015DSSXXX-E	1	2706260015
IE-C5DD4UG0030DSSXXX-E	1	2706260030
IE-C5DD4UG0050DSSXXX-E	1	2706260050
IE-C5DD4UG0075DSSXXX-E	1	2706260075
IE-C5DD4UG0100DSSXXX-E	1	2706260100
IE-C5DD4UG0200DSSXXX-E	1	2706260200
IE-C5DD4UG0300DSSXXX-E	1	2706260300

**Accessories**

<b>Marking tags</b>	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
<b>Tools</b>	Tool set
	Tool set with torque function
	Mounting tool
	Screwty-M12

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000



**Assembled cable**  
**Dragline cable M8**

- Cat. 5
- PUR
- D-coded

**M8 - open**

Plug angled / -



**M8 - open**

Socket angled / -



M8	yellow
1	white
2	orange
3	blue
4	

M8	yellow
1	white
2	orange
3	blue
4	

**Technical data**

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M8 D-code - IP67 angeled pin / Open
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Approvals	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M8 D-code - IP67 angeled socket / Open
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Approvals	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M8 D-code - IP67 angeled socket / Open
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Approvals	

**Note**

**Ordering data**

	1.5 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
	20.0 m
	30.0 m

Type	Qty.	Order No.
IE-C5DD4UG0015DCAXXX-E	1	2706190015
IE-C5DD4UG0030DCAXXX-E	1	2706190030
IE-C5DD4UG0050DCAXXX-E	1	2706190050
IE-C5DD4UG0075DCAXXX-E	1	2706190075
IE-C5DD4UG0100DCAXXX-E	1	2706190100

Type	Qty.	Order No.
IE-C5DD4UG0015DSAXXX-E	1	2706160015
IE-C5DD4UG0030DSAXXX-E	1	2706160030
IE-C5DD4UG0050DSAXXX-E	1	2706160050
IE-C5DD4UG0075DSAXXX-E	1	2706160075
IE-C5DD4UG0100DSAXXX-E	1	2706160100
IE-C5DD4UG0200DSAXXX-E	1	2706160200
IE-C5DD4UG0300DSAXXX-E	1	2706160300

**Note**

**Accessories**

<b>Marking tags</b>	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

<b>Tools</b>	Tool set	SCREWTY SET	1	1910000000
	Tool set with torque function	SCREWTY SET-DM	1	1920000000
	Mounting tool	SCREWTY-M12-DM	1	1900001000
	Screwty-M12	SCREWTY-M12	1	1900000000

Type	Qty.	Order No.
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

Type	Qty.	Order No.
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

**Note**

## Assembled cables – PROFINET cable M8, D-coded

### Assembled cable

#### Dragline cable M8

- Cat. 5
- PUR
- D-coded

### M8 - M8

#### Plug straight / Plug straight



### M8 - M8

#### Plug straight / Socket straight



M8	yellow
1	white
2	orange
3	blue
4	

M8	yellow
1	white
2	orange
3	blue
4	

### Technical data

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M8 D-code - IP67 straight pin / M8 D-code - IP67 straight pin
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Approvals	

#### Note

### Ordering data

	1.5 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
	20.0 m
	30.0 m

#### Note

Type	Qty.	Order No.
IE-C5DD4UG0015DCSDCS-E	1	2706200015
IE-C5DD4UG0030DCSDCS-E	1	2706200030
IE-C5DD4UG0050DCSDCS-E	1	2706200050
IE-C5DD4UG0075DCSDCS-E	1	2706200075
IE-C5DD4UG0100DCSDCS-E	1	2706200100
IE-C5DD4UG0200DCSDCS-E	1	2706200200
IE-C5DD4UG0300DCSDCS-E	1	2706200300

Type	Qty.	Order No.
IE-C5DD4UG0015DCSDSS-E	1	2706210015
IE-C5DD4UG0030DCSDSS-E	1	2706210030
IE-C5DD4UG0050DCSDSS-E	1	2706210050
IE-C5DD4UG0075DCSDSS-E	1	2706210075
IE-C5DD4UG0100DCSDSS-E	1	2706210100
IE-C5DD4UG0200DCSDSS-E	1	2706210200
IE-C5DD4UG0300DCSDSS-E	1	2706210300

### Accessories

#### Marking tags

Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm

#### Tools

Tool set	SCREWTY SET	1	1910000000
Tool set with torque function	SCREWTY SET-DM	1	1920000000
Mounting tool	SCREWTY-M12-DM	1	1900001000
Screwty-M12	SCREWTY-M12	1	1900000000

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

#### Note

**Assembled cable**  
**Dragline cable M8**

- Cat. 5
- PUR
- D-coded

**M8 - M8**

Plug angled / Plug angled



**M8 - M8**

Plug angled / socket angled



M8	yellow
1	white
2	orange
3	blue
4	

M8	yellow
1	white
2	orange
3	blue
4	

**Technical data**

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M8 D-code - IP67 angled pin / M8 D-code - IP67 angled pin
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Approvals	
<b>Note</b>	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M8 D-code - IP67 angled pin / M8 D-code - IP67 angled socket
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Approvals	
<b>Note</b>	

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M8 D-code - IP67 angled pin / M8 D-code - IP67 angled socket
Cross-section	4*AWG 22/7 - 0.32 mm <sup>2</sup>
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation diameter	1.5 mm
Min. bending radius, repetitive	7.5 x cable diameter
Min. bending radius, once only	5 x cable diameter
Ambient temperature (operational)	-40 °C...70 °C
Installation temperature	-20 °C...60 °C
Storage temperature	-50 °C...70 °C
Approvals	
<b>Note</b>	

**Ordering data**

	1.5 m
	3.0 m
	5.0 m
	7.5 m
	10.0 m
<b>Note</b>	

Type	Qty.	Order No.
IE-C5DD4UG0015DCADCA-E	1	2706220015
IE-C5DD4UG0030DCADCA-E	1	2706220030
IE-C5DD4UG0050DCADCA-E	1	2706220050
IE-C5DD4UG0075DCADCA-E	1	2706220075
IE-C5DD4UG0100DCADCA-E	1	2706220100

Type	Qty.	Order No.
IE-C5DD4UG0015DCADSA-E	1	2706230015
IE-C5DD4UG0030DCADSA-E	1	2706230030
IE-C5DD4UG0050DCADSA-E	1	2706230050
IE-C5DD4UG0075DCADSA-E	1	2706230075
IE-C5DD4UG0100DCADSA-E	1	2706230100

**Accessories**

<b>Marking tags</b>	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
<b>Tools</b>	Tool set
	Tool set with torque function
	Mounting tool
	Screwty-M12

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY- M12	1	1900000000

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY- M12	1	1900000000

<b>Note</b>	
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<b>Note</b>	
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<b>Note</b>	
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## Assembled cables – PROFINET cable M8, D-coded

### Assembled cable

#### Dragline cable M8

- Cat. 5
- PUR
- D-coded

### M8 - RJ45

Plug straight / Plug straight



RJ45		M8
1	yellow	1
3	white	2
2	orange	3
6	blue	4

### Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Min. bending radius, once only
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals

Dragline cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M8 D-code - IP67 straight pin / RJ45 IP 20
4*AWG 22/7 - 0.32 mm <sup>2</sup>
6.7 mm
PUR
green (RAL 6018)
1.5 mm
7.5 x cable diameter
5 x cable diameter
-40 °C...70 °C
-20 °C...60 °C
-50 °C...70 °C

#### Note

### Ordering data

1.5 m
3.0 m
5.0 m
7.5 m
10.0 m
20.0 m
30.0 m

Type	Qty.	Order No.
IE-C5DD4UG0015DCSU20-E	1	2706250015
IE-C5DD4UG0030DCSU20-E	1	2706250030
IE-C5DD4UG0050DCSU20-E	1	2706250050
IE-C5DD4UG0075DCSU20-E	1	2706250075
IE-C5DD4UG0100DCSU20-E	1	2706250100
IE-C5DD4UG0200DCSU20-E	1	2706250200
IE-C5DD4UG0300DCSU20-E	1	2706250300

#### Note

### Accessories

#### Marking tags

Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm

#### Tools

Tool set
Tool set with torque function
Mounting tool
Screwty-M12

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
SCREWTY SET	1	1910000000
SCREWTY SET-DM	1	1920000000
SCREWTY-M12-DM	1	1900001000
SCREWTY-M12	1	1900000000

#### Note



## Assembled cable Railway cable M12

- Cat. 5
- Radox
- D-coded

### M12 - M12

Plug / plug



M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

### M12 - M12

Plug / socket



M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

### Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to oils
Fire safety for railway vehicles

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 D-code - IP 67 straight pin / M12 D-code - IP 67 straight pin
2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
7.55 mm
Radox GKW S
black, SF/UTP
1.95 mm
6 *diameter
-40 °C...90 °C
-25 °C...90 °C
-40 °C...90 °C
very good
halogen-free, acc. to IEC 60754-2
in accordance with EN 50306-3
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3
CULUS

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 D-code - IP 67 straight socket / M12 D-code - IP 67 straight pin
2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
7.55 mm
Radox GKW S
black, SF/UTP
1.95 mm
6 *diameter
-40 °C...90 °C
-25 °C...90 °C
-40 °C...90 °C
very good
halogen-free, acc. to IEC 60754-2
in accordance with EN 50306-3
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3
CULUS

Approvals

Note

### Ordering data

1.5 m
3.0 m
5.0 m
10.0 m

Note

Type	Qty.	Order No.
IE-C5DB4RE0015MCSMCS-E	1	1010850015
IE-C5DB4RE0030MCSMCS-E	1	1010850030
IE-C5DB4RE0050MCSMCS-E	1	1010850050
IE-C5DB4RE0100MCSMCS-E	1	1010850100

Type	Qty.	Order No.
IE-C5DB4RE0015MSSMCS-E	1	1059340015
IE-C5DB4RE0030MSSMCS-E	1	1059340030
IE-C5DB4RE0050MSSMCS-E	1	1059340050
IE-C5DB4RE0100MSSMCS-E	1	1059340100

### Accessories

Marking tags	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687

Note

## Assembled cables - Railway cable M12

Assembled cable  
Railway cable M12

- Cat. 5
- Radox
- D-coded

## M12 - open

Plug / -



	M12
yellow	1
white	2
orange	3
blue	4

## Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to oils
Fire safety for railway vehicles

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 D-code - IP 67 straight pin / Open
2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
7.55 mm
Radox GKW S
black, SF/UTP
1.95 mm
6 *diameter
-40 °C...90 °C
-25 °C...90 °C
-40 °C...90 °C
very good
halogen-free, acc. to IEC 60754-2
in accordance with EN 50306-3
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3
CULUS

Approvals

## Note

## Ordering data

1.5 m
3.0 m
5.0 m
10.0 m

## Note

Type	Qty.	Order No.
IE-C5DB4RE0015MCSXXX-X	1	1010840015
IE-C5DB4RE0030MCSXXX-X	1	1010840030
IE-C5DB4RE0050MCSXXX-X	1	1010840050
IE-C5DB4RE0100MCSXXX-X	1	1010840100

## Accessories

Tools
Sheathing strippers, For UTP and STP data cables
Sheathing strippers, For coaxial and round data cables

## Marking tags

Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TMH 12 MC NE GE	320	1718411687
TMH 18 MC NE GE	320	1718431687

## Note

## Assembled cables Railway cable M12

- Cat. 5
- Radox
- D-coded

### M12 - M12

Plug / plug



### M12 - M12

Plug / plug



M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

### Technical data

Product type  
Category  
Shielding  
Version connector left / Version connector right

Cross-section  
Sheath diameter, max.  
Material sheath  
Sheathing colour  
Insulation diameter, min. / max.  
Min. bending radius, repetitive  
Ambient temperature (operational)  
Installation temperature  
Storage temperature  
Abrasion resistance  
Halogen  
Resistance to oils  
Fire safety for railway vehicles

#### Note

### Ordering data

1.5 m
3.0 m
5.0 m
10.0 m

#### Note

### Accessories

Marking tags	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	
Transparent sleeves, 12-mm length	
Transparent sleeves, 18-mm length	

#### Note

System cable  
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)  
SF/UTP  
M12 D-code - IP 67 straight pin / M12 D-code - IP 67 angled pin

2\*2\*AWG 22/7 - 2\*2\*0.36 mm<sup>2</sup>  
7.55 mm  
Radox GKW S  
black, SF/UTP  
1.95 mm  
6 \*diameter  
-40 °C...90 °C  
-25 °C...90 °C  
-40 °C...90 °C  
very good  
halogen-free, acc. to IEC 60754-2  
in accordance with EN 50306-3  
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3

Type	Qty.	Order No.
IE-C5DB4RE0015MCSMCA-E	1	1059940015
IE-C5DB4RE0030MCSMCA-E	1	1059940030
IE-C5DB4RE0050MCSMCA-E	1	1059940050
IE-C5DB4RE0100MCSMCA-E	1	1059940100

Type	Qty.	Order No.
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

System cable  
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)  
SF/UTP  
M12 D-code - IP 67 angled pin / M12 D-code - IP 67 angled pin

2\*2\*AWG 22/7 - 2\*2\*0.36 mm<sup>2</sup>  
7.55 mm  
Radox GKW S  
black, SF/UTP  
1.95 mm  
6 \*diameter  
-40 °C...90 °C  
-25 °C...90 °C  
-40 °C...90 °C  
very good  
halogen-free, acc. to IEC 60754-2  
in accordance with EN 50306-3  
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3

Type	Qty.	Order No.
IE-C5DB4RE0015MCAMCA-E	1	1059970015
IE-C5DB4RE0030MCAMCA-E	1	1059970030
IE-C5DB4RE0050MCAMCA-E	1	1059970050
IE-C5DB4RE0100MCAMCA-E	1	1059970100

Type	Qty.	Order No.
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

## Assembled cables - Railway cable M12

## Assembled cables

## Railway cable M12

- Cat. 5
- Radox
- D-coded

## M12 - open

Plug / -



	M12
yellow	1
white	2
orange	3
blue	4

## Technical data

Product type  
Category  
Shielding  
Version connector left / Version connector right

Cross-section  
Sheath diameter, max.  
Material sheath  
Sheathing colour  
Insulation diameter, min. / max.  
Min. bending radius, repetitive  
Ambient temperature (operational)  
Installation temperature  
Storage temperature  
Abrasion resistance  
Halogen  
Resistance to oils  
Fire safety for railway vehicles

System cable  
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)  
SF/UTP  
M12 D-code - IP 67 angled pin / Open  
  
2\*2\*AWG 22/7 - 2\*2\*0.36 mm<sup>2</sup>  
7.55 mm  
Radox GKW S  
black, SF/UTP  
1.95 mm  
6 \*diameter  
-40 °C...90 °C  
-25 °C...90 °C  
-40 °C...90 °C  
very good  
halogen-free, acc. to IEC 60754-2  
in accordance with EN 50306-3  
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3

## Note

## Ordering data

1.5 m  
3.0 m  
5.0 m  
10.0 m

Type	Qty.	Order No.
IE-C5DB4RE0015MCAXXX-X	1	1059900015
IE-C5DB4RE0030MCAXXX-X	1	1059900030
IE-C5DB4RE0050MCAXXX-X	1	1059900050
IE-C5DB4RE0100MCAXXX-X	1	1059900100

## Note

## Accessories

Marking tags  
Insertion label, yellow, 12 mm  
Insertion label, yellow, 18 mm  
Transparent sleeves, 12-mm length  
Transparent sleeves, 18-mm length

Type	Qty.	Order No.
TM-I 12 MC NE GE	320	1718411687
TM-I 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

## Note

## Assembled cables

## Railway cable RW M12

- Cat. 5
- Radox
- D-coded
- RW (reduced wire): suitable for RJ45 connectors

## M12 - open

Plug / -



## M12 - RJ45

Plug / plug



	M12
yellow	1
white	2
orange	3
blue	4

RJ45		M12
1	yellow	1
3	white	2
2	orange	3
6	blue	4

## Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Ambient temperature (operational)
Storage temperature
Abrasion resistance
Halogen
Resistance to oils
Fire safety for railway vehicles

System cable
Cat.5 (ISO/IEC 11801)
SF/UTP
M12 D-code - IP 67 straight pin / Open
2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
7 mm
Radox GKW S
black, SF/UTP
1.58 mm
6 *diameter
-40 °C...90 °C
-40 °C...90 °C
very good
halogen-free, acc. to IEC 60754-2
in accordance with EN 50306-3
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3

System cable
Cat.5 (ISO/IEC 11801)
SF/UTP
M12 D-code - IP 67 straight pin / RJ45 IP 20
2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
7 mm
Radox GKW S
black, SF/UTP
1.58 mm
6 *diameter
-40 °C...90 °C
-40 °C...90 °C
very good
halogen-free, acc. to IEC 60754-2
in accordance with EN 50306-3
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3

Approvals

## Note

## Ordering data

4.0 m
5.0 m
10.0 m

## Note

Type	Qty.	Order No.
IE-C5DB4WE0050MCSXXX-E	1	1269740050
IE-C5DB4WE0100MCSXXX-E	1	1269740100

Type	Qty.	Order No.
IE-C5DB4WE0040MCSA20-E	1	1220310040

## Accessories

<b>Tools</b>	
Sheathing strippers, For UTP and STP data cables	
Sheathing strippers, For coaxial and round data cables	
<b>Marking tags</b>	
Transparent sleeves. 12-mm length	
Transparent sleeves. 18-mm length	
<b>Dust protection cap</b>	Protective cap

Type	Qty.	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

Type	Qty.	Order No.
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
IE-PP-RJ45	10	2552580000

## Note

## Assembled cables – Railway cable RJ45

## Assembled cables

## Railway cable RJ45 - RJ45

- Cat. 5
- Radox
- RW (reduced wire)

## RJ45 - RJ45

## Plug / plug



RJ45		RJ45
1	yellow	1
2	orange	2
3	white	3
6	blue	6

## Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation diameter
Min. bending radius, repetitive
Ambient temperature (operational)
Storage temperature
Abrasion resistance
Halogen
Resistance to oils
Fire safety for railway vehicles

## Approvals

## Note

System cable
Cat.5 (ISO/IEC 11801)
SF/UTP
RJ45 IP 20 / RJ45 IP 20
2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup>
7 mm
Radox GKW S
black, SF/UTP
1.58 mm
6 *diameter
-40 °C...90 °C
-40 °C...90 °C
very good
halogen-free, acc. to IEC 60754-2
in accordance with EN 50306-3
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2, According to EN 45545, HL1 - HL3

## Ordering data

1.0 m
2.0 m
3.0 m
4.0 m
5.0 m
10.0 m
20.0 m

## Note

Type	Qty.	Order No.
IE-C5DB4WE0010A20A20-E	1	1421710010
IE-C5DB4WE0020A20A20-E	1	1421710020
IE-C5DB4WE0030A20A20-E	1	1421710030
IE-C5DB4WE0040A20A20-E	1	1421710040
IE-C5DB4WE0050A20A20-E	1	1421710050
IE-C5DB4WE0100A20A20-E	1	1421710100
IE-C5DB4WE0200A20A20-E	1	1421710200

## Accessories

## Marking tags

Transparent sleeves. 12-mm length
Transparent sleeves. 18-mm length

## Dust protection cap

Protective cap

Type	Qty.	Order No.
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
IE-PP-RJ45	10	2552580000

## Note

Assembled cables  
USB cable

USB A - USB A



USB A 3.0 - USB A 3.0



Technical data

Sheathing colour
Material sheath
Version connector left
Version connector right
Ambient temperature (operational)
Note

black
PVC
USB A
USB A
-15 °C...80 °C

blue
PVC
USB A 3.0
USB A 3.0
-15 °C...80 °C

Ordering data

0.3 m
0.5 m
1.0 m
1.5 m
1.8 m
3.0 m
5.0 m
Note

Type	Qty.	Order No.
IE-USB-A-A-0.3M	1	1993550003
IE-USB-A-A-0.5M	1	1993550005
IE-USB-A-A-1.0M	1	1993550010
IE-USB-A-A-1.5M	1	1993550015
IE-USB-A-A-1.8M	1	1993550018
IE-USB-A-A-3.0M	1	1993550030

Type	Qty.	Order No.
IE-USB-3.0-A-A-0.5M	1	2581730005
IE-USB-3.0-A-A-1.8M	1	2581730018
IE-USB-3.0-A-A-3M	1	2581730030
IE-USB-3.0-A-A-5M	1	2581730050

Accessories

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Type	Qty.	Order No.

Type	Qty.	Order No.

Note
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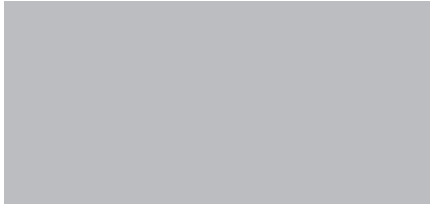
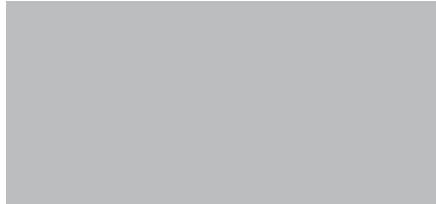
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Assembled cables - USB cable

Assembled cables  
USB cable

USB Micro - FrontCom® interface



Technical data

Sheathing colour
Material sheath
Version connector left
Version connector right
Ambient temperature (operational)
Note

black
USB A Mini
Service Interface, USB A Mini
...
Note

Ordering data

0.3 m
Note

Type	Qty.	Order No.
IE-FCML-MINIUSB-0.3M	1	2488200000
Note		

Accessories

--

Type	Qty.	Order No.

Note
------

--



Assembled cables  
USB cable

USB A - USB Micro



USB A - USB C



Technical data

Sheathing colour
Material sheath
Version connector left
Version connector right
Ambient temperature (operational)
Note

black
PVC
USB A
USB Micro
-15 °C...80 °C
Note

black
PVC
USB A
USB C
-15 °C...80 °C
Note

Ordering data

1.8 m
2.0 m
Note

Type	Qty.	Order No.
IE-USB-A-MICRO-1.8M	1	1487980000
Note		

Type	Qty.	Order No.
IE-USB-A-C-2.0M	1	2838380020
Note		

Accessories

Type
Qty.
Order No.

Type
Qty.
Order No.

Type
Qty.
Order No.

Note
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Note
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Note
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# Fibre-optic cabling solutions

## Overview

<b>Fibre-optic cabling solutions</b>	Overview - Fibre-optic cables	Q.2
	Raw cable - FO connection cable / dragline cable	Q.3
	Assembled cables - FO PROFINET cable	Q.4
	Assembled cables - FO patch cable	Q.5
	Assembled cables - FO dragline cable	Q.10

# Overview – Fibre-optic cables

## First choice for industry

Fibre-optic cables are the best option for working in harsh industrial environments, especially if you:

- Need long transmission paths (up to 120 km!)
- Need to take account of EMC issues
- Must ensure electrical isolation in the case of potential differences

### Raw cables

#### Industrial fibre-optic dragline cable



For flexible installations in and around machinery and plants – for harsh, industrial surroundings, dragline cable compatible

- Polymer optic fibre (POF)
- Breakout cable
- Raw cable for assembling your own connecting cables

### Assembled cables

#### Industrial FO patch cables



...for use in industrial switching cabinets or junction boxes

- Multimode glass fibre
- Singlemode glass fibre
- Polymer optic fibre (POF)

#### Industrial fibre-optic dragline cable



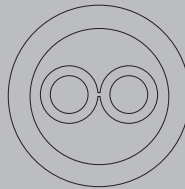
...for flexible installations in and around machinery and plants – for harsh, industrial surroundings, dragline cable compatible

- Multimode fibre-optic
- Breakout cable
- Pre-assembled cable

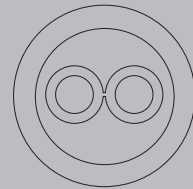
**Raw cables**

- Polymer optical fibre
- Customisable

**Mini-Breakout (Typ B)**



**Breakout (Typ C)**



**Technical data**

Product type  
 Cable layout  
 Sheath diameter, max.  
 Material sheath  
 Sheathing colour  
 Insulation  
 Min. bending radius, repetitive  
 Min. bending radius, once only  
 Bending cycles  
 Ambient temperature (operational)  
 Fibre type  
 Bandwidth  
 Attenuation  
 Core diameter  
 Installation temperature  
 Storage temperature  
 Halogen  
 Approvals

System cable  
 Mini-Breakout  
 7.5 mm  
 Polyethylene  
 green  
 10.000  
 -30 °C...70 °C  
 POF  
 > 35 MHz\*100 m at 650 nm  
 ≤ 160 dB/km at 650 nm  
 980 µm  
 ...  
 -30 °C...70 °C  
 No

Dragline cable  
 Break-out dragline  
 8 mm  
 PUR  
 green  
 60 mm  
 25 mm  
 6 Mio  
 -40 °C...85 °C  
 POF  
 > 35 MHz\*100 m at 650 nm  
 ≤ 160 dB/km at 650 nm  
 980 µm  
 ...  
 -40 °C...85 °C  
 No

**Note**

**Ordering data**

<b>POF 980/1000 µm</b>	500.0 m
------------------------	---------

**Note**

Type	Qty.	Order No.
IE-FPOB2EG-500	1	2781950000

Type	Qty.	Order No.
IE-FPOD2UG-500	1	2763640000

**Accessories**

Marking tags	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	
Transparent sleeves, 12-mm length	
Transparent sleeves, 18-mm length	
Wire and cable markers, ø 4.7 - 7.4 mm	
Wire and cable markers, ø 5.8 - 7.8 mm	

**Tools**

Mounting tool, POF	
Tool set POF, crimp	

Type	Qty.	Order No.
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
HTX-IE-POF	1	1208870000
TOOL SET IE-POF	1	1208930000

Type	Qty.	Order No.
TM-H 12 MC NE GE	320	1718411687
TM-H 18 MC NE GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001
HTX-IE-POF	1	1208870000
TOOL SET IE-POF	1	1208930000

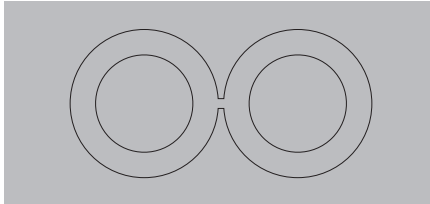
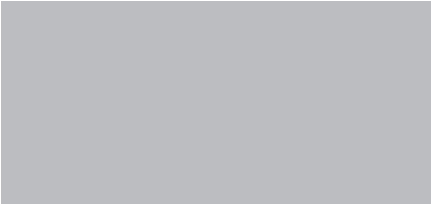
**Note**

**Assembled cables - FO PROFINET cable**

**Assembled cable  
FO patch cable PROFINET**

- Polymer optical fibre

**SC-RJ / SC-RJ**



**Technical data**

Product type
Version connector left / Version connector right
Cable layout
Sheath diameter
Insulation
Sheathing colour
Fibre type
Core diameter
Ambient temperature (operational)
Attenuation
Insertion loss
Bandwidth
Halogen
Approvals

Connecting line
SCRJ IP 20 / SCRJ IP 20
ZIPCORD
2.2*4.5 mm
PE
black
POF
980 µm
-20 °C...80 °C
≤ 160 dB/km at 650 nm
≤ 1.0 dB
≥ 100 MHz*km at 650 nm
No

**Note**

**Note**

**Ordering data**

POF 980/1000 µm	
1.0 m	
3.0 m	
5.0 m	
10.0 m	
20.0 m	

Type	Qty.	Order No.
IE-FPOZ2EE0001MSJOSJO-X	1	1273430010
IE-FPOZ2EE0003MSJOSJO-X	1	1273430030
IE-FPOZ2EE0005MSJOSJO-X	1	1273430050
IE-FPOZ2EE0010MSJOSJO-X	1	1273430100
IE-FPOZ2EE0020MSJOSJO-X	1	1273430200

**Note**

**Accessories**

Marking tags	
Wire and cable markers. ø 4.7 - 7.4 mm	
Wire and cable markers. ø 5.8 - 7.8 mm	

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001

**Note**

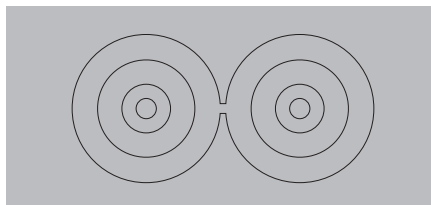
**Note**

**Assembled cables**

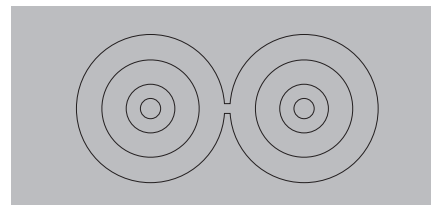
**CabinetLine FO patch cable**

- Multi-mode glass fibre optics
- LSZH Casing

**SC-Duplex / SC-Duplex**



**ST / ST**



**Technical data**

Product type
Cable layout
Sheath diameter
Material sheath
Sheathing colour
Category
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals
<b>Note</b>

Patch cable, duplex clip included
ZIPCORD
2.8 * 5.7 mm
LSZH
orange
-20 °C...70 °C
...
...
<b>Note</b>

Patch cable
ZIPCORD
2.8 * 5.7 mm
LSZH
orange
-20 °C...70 °C
...
...
<b>Note</b>

**Ordering data**

Core 50 µm, OM2	
0.5 m	
1.0 m	
2.0 m	
3.0 m	
5.0 m	
10.0 m	
Core 62.5 µm, OM1	
0.5 m	
1.0 m	
2.0 m	
3.0 m	
5.0 m	
10.0 m	
Core 50 µm, OM4	
0.5 m	
1.0 m	
1.5 m	
2.0 m	
3.0 m	
5.0 m	
<b>Note</b>	

Type	Qty.	Order No.
IE-FM5Z2L00005DSDOSDO-X	1	1433970005
IE-FM5Z2L00001MSDOSDO-X	1	1433970010
IE-FM5Z2L00002MSDOSDO-X	1	1433970020
IE-FM5Z2L00003MSDOSDO-X	1	1433970030
IE-FM5Z2L00005MSDOSDO-X	1	1433970050
IE-FM5Z2L00010MSDOSDO-X	1	1433970100
IE-FM6Z2L00005DSDOSDO-X	1	1433960005
IE-FM6Z2L00001MSDOSDO-X	1	1433960010
IE-FM6Z2L00002MSDOSDO-X	1	1433960020
IE-FM6Z2L00003MSDOSDO-X	1	1433960030
IE-FM6Z2L00005MSDOSDO-X	1	1433960050
IE-FM6Z2L00010MSDOSDO-X	1	1433960100
<b>Note</b>		

Type	Qty.	Order No.
IE-FM5Z2L00005DSTOSTO-X	1	1433990005
IE-FM5Z2L00001MSTOSTO-X	1	1433990010
IE-FM5Z2L00002MSTOSTO-X	1	1433990020
IE-FM5Z2L00003MSTOSTO-X	1	1433990030
IE-FM5Z2L00005MSTOSTO-X	1	1433990050
IE-FM5Z2L00010MSTOSTO-X	1	1433990100
IE-FM6Z2L00005DSTOSTO-X	1	1433980005
IE-FM6Z2L00001MSTOSTO-X	1	1433980010
IE-FM6Z2L00002MSTOSTO-X	1	1433980020
IE-FM6Z2L00003MSTOSTO-X	1	1433980030
IE-FM6Z2L00005MSTOSTO-X	1	1433980050
IE-FM6Z2L00010MSTOSTO-X	1	1433980100
<b>Note</b>		

**Accessories**

Marking tags	Wire and cable markers. ø 4.7 - 7.4 mm
	Wire and cable markers. ø 5.8 - 7.8 mm
<b>Note</b>	

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
<b>Note</b>		

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
<b>Note</b>		

## Assembled cables - FO patch cable

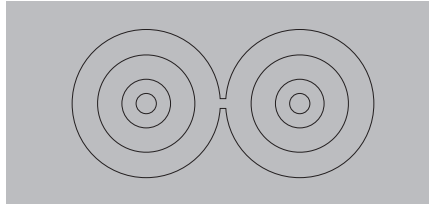
### Assembled cables

#### CabinetLine FO patch cable

- Multi-mode glass fibre optics
- LSZH Casing

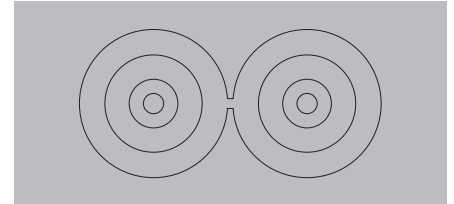
### LC-Duplex / LC-Duplex

OM1 / OM2



### LC-Duplex / LC-Duplex

OM4



#### Technical data

Product type
Cable layout
Sheath diameter
Material sheath
Sheathing colour
Category
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals

**Note**

Patch cable, duplex clip included
ZIPCORD
2.0 * 4.1 mm
LSZH
orange
-20 °C...70 °C
...
...

**Note**

Patch cable, duplex clip included
ZIPCORD
2 * 1.5 mm
LSZH
Magenta
-20 °C...70 °C
...
...

**Note**

#### Ordering data

Core 50 µm, OM2	
0.5 m	
1.0 m	
2.0 m	
3.0 m	
5.0 m	
10.0 m	
Core 62.5 µm, OM1	
0.5 m	
1.0 m	
2.0 m	
3.0 m	
5.0 m	
10.0 m	
Core 50 µm, OM4	
0.5 m	
1.0 m	
1.5 m	
2.0 m	
3.0 m	
5.0 m	

**Note**

Type	Qty.	Order No.
IE-FM5Z2L00005DL0LDO-X	1	1433940005
IE-FM5Z2L00001MLD0LDO-X	1	1433940010
IE-FM5Z2L00002MLD0LDO-X	1	1433940020
IE-FM5Z2L00003MLD0LDO-X	1	1433940030
IE-FM5Z2L00005MLD0LDO-X	1	1433940050
IE-FM5Z2L00010MLD0LDO-X	1	1433940100
<hr/>		
IE-FM6Z2L00005DL0LDO-X	1	1433930005
IE-FM6Z2L00001MLD0LDO-X	1	1433930010
IE-FM6Z2L00002MLD0LDO-X	1	1433930020
IE-FM6Z2L00003MLD0LDO-X	1	1433930030
IE-FM6Z2L00005MLD0LDO-X	1	1433930050
IE-FM6Z2L00010MLD0LDO-X	1	1433930100
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IE-FM5Z2LM0005LD0LDO-X	1	2903650005
IE-FM5Z2LM0010LD0LDO-X	1	2903650010
IE-FM5Z2LM0015LD0LDO-X	1	2903650015
IE-FM5Z2LM0020LD0LDO-X	1	2903650020
IE-FM5Z2LM0030LD0LDO-X	1	2903650030
IE-FM5Z2LM0050LD0LDO-X	1	2903650050

Type	Qty.	Order No.
IE-FM5Z2LM0005LD0LDO-X	1	2903650005
IE-FM5Z2LM0010LD0LDO-X	1	2903650010
IE-FM5Z2LM0015LD0LDO-X	1	2903650015
IE-FM5Z2LM0020LD0LDO-X	1	2903650020
IE-FM5Z2LM0030LD0LDO-X	1	2903650030
IE-FM5Z2LM0050LD0LDO-X	1	2903650050

#### Accessories

<b>Marking tags</b>	Wire and cable markers. ø 4.7 - 7.4 mm
	Wire and cable markers. ø 5.8 - 7.8 mm

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001

**Note**

**Note**

**Note**

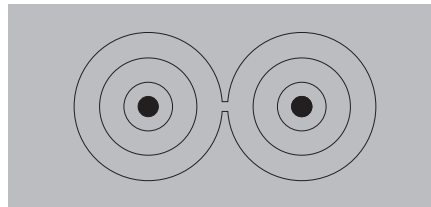


**Assembled cables**

**CabinetLine FO patch cable**

- Single-mode glass fibre optics
- LSZH Casing

**LC-Duplex / LC-Duplex**



**Technical data**

Product type
Cable layout
Sheath diameter
Material sheath
Sheathing colour
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals
<b>Note</b>

Patch cable, duplex clip included
ZIPCORD
2.0 * 4.1 mm
LSZH
yellow
-20 °C...70 °C
...
...
<b>Note</b>

**Ordering data**

Core 9 µm. OS2	
0.5 m	
1.0 m	
2.0 m	
3.0 m	
5.0 m	
10.0 m	
<b>Note</b>	

Type	Qty.	Order No.
IE-FSMZ2LY0005DLDO-X	1	1433950005
IE-FSMZ2LY0001MLDO-X	1	1433950010
IE-FSMZ2LY0002MLDO-X	1	1433950020
IE-FSMZ2LY0003MLDO-X	1	1433950030
IE-FSMZ2LY0005MLDO-X	1	1433950050
IE-FSMZ2LY0010MLDO-X	1	1433950100
<b>Note</b>		

**Accessories**

Marking tags	
Wire and cable markers. ø 4.7 - 7.4 mm	
Wire and cable markers. ø 5.8 - 7.8 mm	
<b>Note</b>	

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
<b>Note</b>		

**Note**

**Note**



**Assembled cables - FO patch cable**

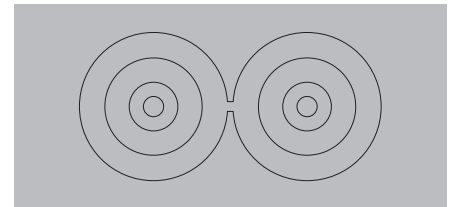
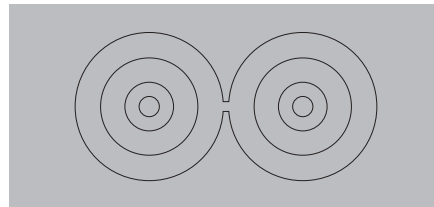
**Assembled cable**

**FO patch cable**

- Multimode glass optical fibre
- PVC outer cladding

**SC-Duplex / SC-Duplex**

**ST / ST**



**Technical data**

Product type
Cable layout
Sheath diameter
Material sheath
Sheathing colour
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals
Note

Pre-assembled patch cable, crossover
ZIPCORD
3*6 mm
PVC
orange
-5 °C...75 °C
-5 °C...50 °C
-25 °C...75 °C
Note

Patch cable
ZIPCORD
3*6 mm
PVC
orange
-5 °C...75 °C
-5 °C...50 °C
-25 °C...75 °C
Note

**Ordering data**

Core 50 µm, OM2	
1.0 m	
2.0 m	
3.0 m	
5.0 m	
10.0 m	
Core 62.5 µm, OM1	
1.0 m	
2.0 m	
3.0 m	
5.0 m	
10.0 m	
Note	

Type	Qty.	Order No.
IE-FM5Z2V00001MSD0SD0X	1	8813300000
IE-FM5Z2V00002MSD0SD0X	1	8813310000
IE-FM5Z2V00003MSD0SD0X	1	8813320000
IE-FM5Z2V00005MSD0SD0X	1	8876350050
IE-FM5Z2V00010MSD0SD0X	1	8876350100
IE-FM6Z2V00001MSD0SD0X	1	8813330000
IE-FM6Z2V00002MSD0SD0X	1	8813340000
IE-FM6Z2V00003MSD0SD0X	1	8813350000
IE-FM6Z2V00005MSD0SD0X	1	8876360050
IE-FM6Z2V00010MSD0SD0X	1	8876360100
Note		

Type	Qty.	Order No.
IE-FM5Z2V00001MST0ST0X	1	8876370010
IE-FM5Z2V00002MST0ST0X	1	8876370020
IE-FM5Z2V00003MST0ST0X	1	8876370030
IE-FM5Z2V00005MST0ST0X	1	8876370050
IE-FM5Z2V00010MST0ST0X	1	8876370100
IE-FM6Z2V00001MST0ST0X	1	8813270000
IE-FM6Z2V00002MST0ST0X	1	8813280000
IE-FM6Z2V00003MST0ST0X	1	8813290000
IE-FM6Z2V00005MST0ST0X	1	8876380050
IE-FM6Z2V00010MST0ST0X	1	8876380100
Note		

**Accessories**

Marking tags	
Wire and cable markers. ø 4.7 - 7.4 mm	
Wire and cable markers. ø 5.8 - 7.8 mm	
Note	

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
Note		

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001
Note		

Note
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Note
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Note
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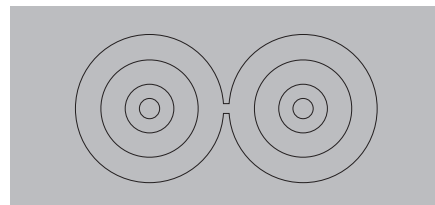
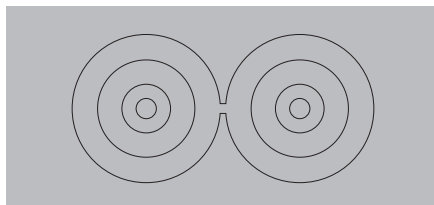
**Assembled cable**  
**FO patch cable**

- Multi-mode glass fibre optics
- PVC cover

**ST / SC-Duplex**



**LC-Duplex / LC-Duplex**



**Technical data**

Product type  
Cable layout  
Sheath diameter  
Material sheath  
Sheathing colour  
Ambient temperature (operational)  
Installation temperature  
Storage temperature  
Approvals

Pre-assembled patch cable, crossover  
ZIPCORD  
3\*6 mm  
PVC  
orange  
-5 °C...75 °C  
-5 °C...50 °C  
-25 °C...75 °C

Pre-assembled patch cable, crossover  
ZIPCORD  
3\*6 mm  
PVC  
orange  
-5 °C...75 °C  
-5 °C...50 °C  
-25 °C...75 °C

**Note**

**Ordering data**

Core 50 µm, OM2	
	1.0 m
	2.0 m
	5.0 m
	10.0 m
Core 62.5 µm, OM1	
	1.0 m
	2.0 m

Type	Qty.	Order No.
IE-FM5Z2V00002MSTOSDOX	1	8813390000
IE-FM6Z2V00002MSTOSDOX	1	8813400000

Type	Qty.	Order No.
IE-FM5Z2V00001MLDOLD0X	1	1276880000
IE-FM5Z2V00002MLDOLD0X	1	1062570000
IE-FM5Z2V00005MLDOLD0X	1	1062550000
IE-FM5Z2V00010MLDOLD0X	1	1062580000
IE-FM6Z2V00001MLDOLD0X	1	1296450000

**Note**

**Accessories**

Marking tags	
	Wire and cable markers. ø 4.7 - 7.4 mm
	Wire and cable markers. ø 5.8 - 7.8 mm

Type	Qty.	Order No.
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001

Type	Qty.	Order No.
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001

**Note**

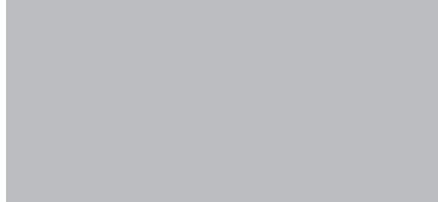
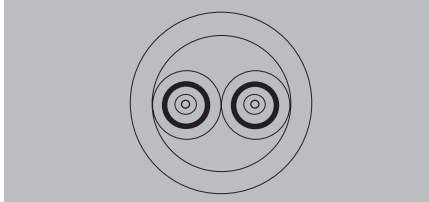
**Assembled cables - FO dragline cable**

**Assembled cables**

**FO dragline cable**

- Multimode glass optical fibre

**LC-Duplex / LC-Duplex**



**Technical data**

Product type  
Version connector left / Version connector right  
Cable layout  
Sheath diameter  
Material sheath  
Sheathing colour  
Ambient temperature (operational)  
Installation temperature  
Storage temperature  
Approvals

Dragline cable  
LC-Duplex IP 20 / LC-Duplex IP 20  
Break-out dragline  
6 mm  
PUR  
black  
-40 °C...80 °C  
-20 °C...60 °C  
-40 °C...80 °C

**Note**



**Ordering data**

Core 62.5 µm, OM1	
	5.0 m
	20.0 m
	50.0 m
Core 50 µm, OM2	
	10.0 m
	50.0 m
	100.0 m

Type	Qty.	Order No.
IE-FM6D2UE0005MLDOLD0X	1	1220930000
IE-FM6D2UE0020MLDOLD0X	1	1174830000
IE-FM6D2UE0050MLDOLD0X	1	8993220000
IE-FM5D2UE0010MLDOLD0X	1	8979020000
IE-FM5D2UE0050MLDOLD0X	1	8979040000
IE-FM5D2UE0100MLDOLD0X	1	8979030000

**Note**



**Accessories**

Marking tags	
	Wire and cable markers. ø 4.7 - 7.4 mm
	Wire and cable markers. ø 5.8 - 7.8 mm

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001

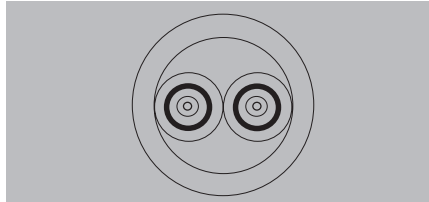
**Note**



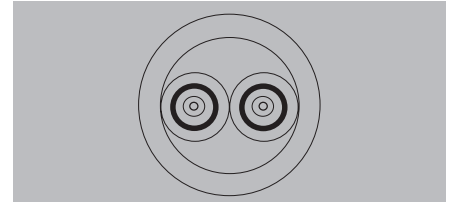
**Assembled cable**  
**FO dragline cable**

- Multimode glass optical fibre

**SC-Duplex / SC-Duplex**



**ST / ST**



**Technical data**

Product type
Cable layout
Sheath diameter
Material sheath
Sheathing colour
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals

Dragline cable
Break-out dragline
6 mm
PUR
black
-40 °C...80 °C
-20 °C...60 °C
-40 °C...80 °C

Dragline cable
Break-out dragline
6 mm
PUR
black
-40 °C...80 °C
-20 °C...60 °C
-40 °C...80 °C

**Note**

**Ordering data**

Core 50 µm, OM2	
1.0 m	
3.0 m	
5.0 m	
10.0 m	
50.0 m	
100.0 m	

Core 62.5 µm, OM1	
1.0 m	
3.0 m	
5.0 m	
10.0 m	
50.0 m	
100.0 m	

**Note**

Type	Qty.	Order No.
IE-FM5D2UE0001MSDOSDOX	1	8876430010
IE-FM5D2UE0003MSDOSDOX	1	8876430030
IE-FM5D2UE0005MSDOSDOX	1	8876430050
IE-FM5D2UE0010MSDOSDOX	1	8876430100
IE-FM5D2UE0050MSDOSDOX	1	8876430500
IE-FM5D2UE0100MSDOSDOX	1	8876431000

IE-FM6D2UE0001MSDOSDOX	1	8876440010
IE-FM6D2UE0003MSDOSDOX	1	8876440030
IE-FM6D2UE0005MSDOSDOX	1	8876440050
IE-FM6D2UE0010MSDOSDOX	1	8876440100
IE-FM6D2UE0050MSDOSDOX	1	8876440500
IE-FM6D2UE0100MSDOSDOX	1	8876441000

Type	Qty.	Order No.
IE-FM5D2UE0001MSTOSTOX	1	8876450010
IE-FM5D2UE0003MSTOSTOX	1	8876450030
IE-FM5D2UE0005MSTOSTOX	1	8876450050
IE-FM5D2UE0010MSTOSTOX	1	8876450100
IE-FM5D2UE0050MSTOSTOX	1	8876450500
IE-FM5D2UE0100MSTOSTOX	1	8876451000

IE-FM6D2UE0001MSTOSTOX	1	8876460010
IE-FM6D2UE0003MSTOSTOX	1	8876460030
IE-FM6D2UE0005MSTOSTOX	1	8876460050
IE-FM6D2UE0010MSTOSTOX	1	8876460100
IE-FM6D2UE0100MSTOSTOX	1	8876461000

**Accessories**

Marking tags	
Wire and cable markers. ø 4.7 - 7.4 mm	
Wire and cable markers. ø 5.8 - 7.8 mm	

Type	Qty.	Order No.
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001

Type	Qty.	Order No.
VT SF 5/21 MC NE WS VO	160	1689470001
VT SF 6/21 MC NE WS VO	160	1730560001

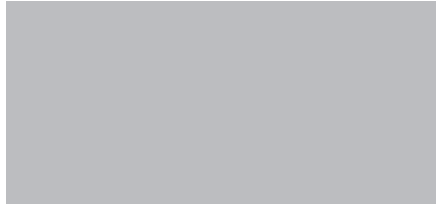
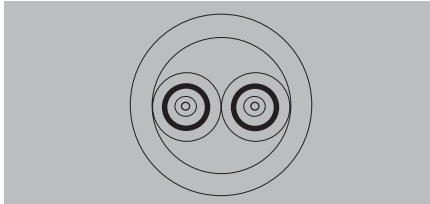
**Note**

**Assembled cables - FO dragline cable**

**Assembled cables  
FO dragline cable with extended  
temperature range**

- Multimode glass optical fibre

**SC-Duplex IP67**



**Technical data**

Product type
Cable layout
Version connector left / Version connector right
Sheath diameter
Material sheath
Sheathing colour
Fibre type
Bandwidth
Attenuation
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals

Dragline cable
Break-out dragline
SC IP 67 bayonet V01 metal / SC IP 67 bayonet V01 metal
7.5-8 mm
PUR
black
GOF, Multimode, OM1
200 MHz*km at 850 nm, 500 MHz*km at 1300 nm
2.7 dB/km at 850 nm, ≤ 0.5 dB/km at 1300 nm
-40 °C...85 °C
-55 °C...60 °C
-55 °C...85 °C

**Note**

**Ordering data**

<b>Core 62.5 µm, OM1</b>
100.0 m
180.0 m
200.0 m
250.0 m
300.0 m
350.0 m
500.0 m

Type	Qty.	Order No.
IE-FM6C2UE0100MSD1SD1X	1	1318011000
IE-FM6C2UE0180MSD1SD1X	1	1318011800
IE-FM6C2UE0200MSD1SD1X	1	1318012000
IE-FM6C2UE0250MSD1SD1X	1	1318012500
IE-FM6C2UE0300MSD1SD1X	1	1318013000
IE-FM6C2UE0350MSD1SD1X	1	1318013500
IE-FM6C2UE0500MSD1SD1X	1	1318015000

**Note**

**Accessories**

<b>Marking tags</b>
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001

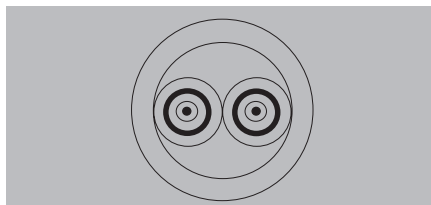
**Note**

**Assembled cables**

**FO dragline cable**

- Singlemode glass optical fibre

**SC-Duplex IP67**



**Technical data**

Product type
Cable layout
Version connector left / Version connector right
Sheath diameter
Material sheath
Sheathing colour
Fibre type
Bandwidth
Insertion loss
Attenuation
Ambient temperature (operational)
Installation temperature
Storage temperature
Approvals

Dragline cable
Break-out dragline
SC IP 67 PushPull V14 metal / SC IP 67 PushPull V14 metal
6 mm
PUR
black
Singlemode, OS 2
≤ 0.5 dB
≤0.4 dB/km at 1310 nm
-40 °C...80 °C
-20 °C...60 °C
-40 °C...80 °C

**Note**

**Note**

**Ordering data**

<b>Core 9 µm. OS2</b>
5.0 m
20.0 m
25.0 m
40.0 m

Type	Qty.	Order No.
IE-FSMD2UE0005MSDESDEX	1	1449420050
IE-FSMD2UE0020MSDESDEX	1	1449420200
IE-FSMD2UE0025MSDESDEX	1	1449420250
IE-FSMD2UE0040MSDESDEX	1	1449420400

**Note**

**Accessories**

<b>Marking tags</b>
Wire and cable markers. ø 4.7 - 7.4 mm
Wire and cable markers. ø 5.8 - 7.8 mm

Type	Qty.	Order No.
VT SF 5/21 MC NE WS V0	160	1689470001
VT SF 6/21 MC NE WS V0	160	1730560001

**Note**

**Note**







# Passive components

## Overview of accessories

<b>Accessories – Passive components</b>	Introduction	R.2
	Cable connector	R.3
	Copper cabling tools	R.4
	Fibre-optic cabling tools	R.13
	General tools	R.18
	Cable Entry System – Cabtite	R.20
	Cable guiding	R.29
	Protective caps	R.30
	Inkjet printer	R.31
	Markers for cables and <b>STEADYTEC</b> <sup>®</sup>	R.33
	Surge protection for data interfaces	R.34

# Overview of accessories

## Everything from a single source

### Cable connector



Connection, repair or extension of Industrial Ethernet cables to Cat.7<sub>A</sub>

- fieldattachable with IDC connection technology
- Specified for class F<sub>A</sub>
- IP67

### Cable guiding



Cable bender to guide patch cables safely and without cable breakage or data loss by 90° angles

### Copper cabling tools

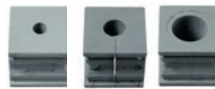


For assembling

- RJ45 crimp
- Hybrid insert

for stripping to test the wiring

### Cabletie



System-based cable entry

- Cable entry strips
- Cable grommets

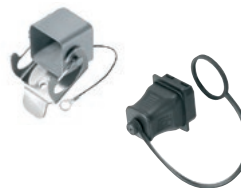
### Fibre-optic cabling tools



For assembling

- SCRJ-POF
- SC-GOF
- ST-GOF

### Protective caps



to protect all IE-LINE connectors with **STEADYTEC**® technology

### General tools



For pressing conductors into IDC terminals and pressing RJ45 contacts

- Indentation tool
- Pressing tool

### Marker



For identifying conductors, plugs and devices

- Line markers
- Housing and plug marker

### Surge protection for data interfaces

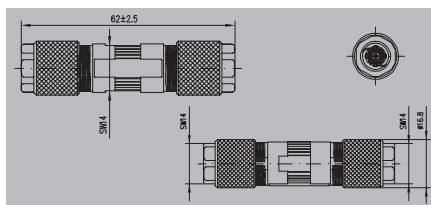


For the protection of Cat. 5 and Cat. 6 data lines - also in PoE and PoE + applications

R

Cable connector class 7

Cable connector



Technical data

Category	
Protection degree	
Connection 1 / 2	
Housing main material	
Ambient temperature (operational)	
Current-carrying capacity at 50 °C	
Rated voltage	
Insulation strength	
Shielding	
Connection diameter, flexible, min. / max.	
Connection cross-section, flexible, min. / max.	
Connection diameter, solid, min. / max.	
Connection cross-section, solid, min. / max.	
Insulation cross-section, max.	
Sheath diameter min. / max.	
Approvals	
<b>Note</b>	

Class F <sub>A</sub> (ISO/IEC11801 2011) with cat. 7 <sub>A</sub> Cable	
IP67	
IDC / IDC	
Zinc diecast	
-40 °C...85 °C	
0.5 A @ 40 °C	
63 V	
100 MΩ	
360° all-round enclosure	
0.48 mm / 0.76 mm	
AWG 26 / AWG 22	
0.4 / 0.64	
AWG 24 / AWG 22	
1.6 mm	
5 mm / 9.7 mm	
EAC	
<b>Note</b>	

Ordering data

<b>Note</b>
-------------

Type	Qty.	Order No.
IE-CC-8W-FA-IP67	1	1499940000

Accessories

<b>Note</b>
-------------

Type	Qty.	Order No.

<b>Note</b>
-------------

<b>Note</b>
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**Pressing tools**

- Pressing tool for modular plug connectors of the WE system (Western Electric and DEC)
- Ratchet for precise crimping
- Release option in the event of incorrect operation

**3 functions:**

- Pressing of plug connectors
- Pressing of enclosure shielding
- Crimping of cable shielding

**TT 8 RS MP 8**



For 8-pole shielded RJ45 plugs

- AWG 27...24

Pressing of IDC contacts



Pressing of shielded enclosures



Crimping of shielded cable



**Technical data**

<b>Description of contact</b>
Number of poles
<b>Tool data</b>
Width
Weight
<b>Note</b>

<b>TT 8 RS MP 8</b>
8
255 mm
1251 g

**Ordering data**

<b>Version</b>
<b>Note</b>

Type	Qty.	Order No.
TT 8 RS MP 8	1	<b>9202800000</b>
A large selection of RJ 45 connectors can be found in our current Industrial Ethernet Catalogue		

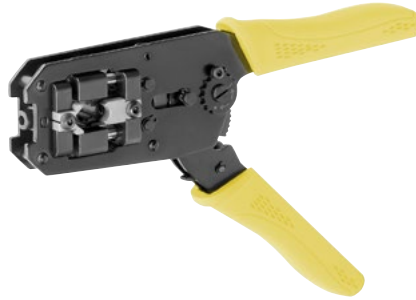


**Copper cabling tools**

**Pressing tools**

- Press (punch-down) tool for Ethernet connectors
- Ratchet for precise crimping
- Release option in the event of incorrect operation

**IE-CWZ-RJ45-TH-P**



For 4-pole shielded RJ45 plug

- AWG 23...22



**R**

**Technical data**

<b>Description of contact</b>	
No. of poles	
<b>Tool data</b>	
Length	mm
Weight	g
<b>Note</b>	

<b>IE-CWZ-RJ45-TH-P</b>	
No. of poles	4
Length	250
Weight	570
<b>Note</b>	

**Ordering data**

<b>Version</b>	
<b>Note</b>	

Type	Qty.	Order No.
IE-CWZ-RJ45-TH-P	1	2614210000
<b>Note</b>		

**Pressing tools**

- Pressing tool for pressing together both housing parts for field attachable RJ45 plugs and modules

**PWZ RJ45**



For field attachable RJ45 plugs and modules



**Technical data**

Tool data	
Width	mm
Weight	g
Note	

PWZ RJ45	
Width	205
Weight	367
Note	

**Ordering data**

Version	
Note	

Type	Qty.	Order No.
PWZ RJ45	1	1118040000
Note		



**Copper cabling tools**

**Cable Tester**

Test devices for testing Ethernet cables, including remote box

**LAN USB TESTER**



- Indication of connection errors:  
 Connection error  
 Interrupt  
 Short-circuit  
 Permutation
- Network cable tester for LAN and USB connections



**IE-CT**



- Indication of connection errors:  
 Connection error  
 Interrupt  
 Short-circuit  
 Permutation  
 Wire mix-up (split pair)  
 External voltage
- External voltage resistance: 80 V AC / DC

**R**

**Technical data**

Display	
Supply	
Type of connection	
Remote box dimensions	
Remote box weight	
Length / Width / Height	mm
Weight	
<b>Note</b>	

LED
9 V battery
RJ45, USB A, USB B
65 x 28 x 27 mm
30 g
135 / 65 / 27
174 g

7-segment display
9 V battery
RJ45
30 x 68 x 23 mm
31 g
140 / 70 / 36
185 g

**Ordering data**

<b>Version</b>
<b>Note</b>

Type	Qty.	Order No.
LAN USB TESTER	1	9205400000
Battery, accessories and bag included in delivery.		

Type	Qty.	Order No.
IE-CT	1	8808420000
Battery, accessories and bag included in delivery. Spare IE-CT: 1506880000		





## Copper cabling tools

### Cutting tools

- The cutting blade design for different cable sizes increases the quality of the cuts for smaller cross-sections
- Not suitable for steel wires, steel-armoured cables, aluminium alloys and hard-drawn copper conductors!
- Cutting without deformation of the conductor
- Do not cut live conductors
- Individually tested protective insulation, 1000V, VDE and GS tested in accordance with EN/IEC 60900
- Optimised handle ergonomics
- Minimal hand force required

### KT 8



### KT 12



-  max. 8 mm
-  max. 16 mm<sup>2</sup>
-  max. 16 mm<sup>2</sup>
-  max. 16 mm<sup>2</sup>

-  max. 12 mm
-  max. 16 mm<sup>2</sup>
-  max. 25 mm<sup>2</sup>
-  max. 35 mm<sup>2</sup>



### Technical data

#### Max. cutting performance, copper cable

- Copper cable - solid, max.
- Copper cable - stranded, max.
- Copper cable - flexible, max.
- Copper cable, max. diameter

#### Max. cutting performance, aluminium cable

- Stranded aluminium cable, max (mm<sup>2</sup>)
- Stranded aluminium cable, max. diameter
- Single-core aluminium cable, max.(mm<sup>2</sup>)

#### Data / telephone / control cable

- Data / telephone / control cable, max. Ø

#### Tool data

- Depth / Width / Height
- Weight

#### Note

#### KT8

- 16 mm<sup>2</sup> / 6 AWG
- 16 mm<sup>2</sup> / 6 AWG
- 16 mm<sup>2</sup> / 6 AWG
- 8 mm

- 16 mm<sup>2</sup> / 6 AWG
- 8 mm
- 16 mm<sup>2</sup>

- 8 mm

- 30 / 185 / 65,5 mm
- 180 g

Tool closed

#### KT12

- 16 mm<sup>2</sup> / 6 AWG
- 25 mm<sup>2</sup> / 3 AWG
- 35 mm<sup>2</sup> / 2 AWG
- 12 mm

- 25 mm<sup>2</sup> / 6 AWG
- 8 mm
- 25 mm<sup>2</sup>

- 12 mm

- 30 / 225 / 63,5 mm
- 300 g

Tool closed

### Ordering data

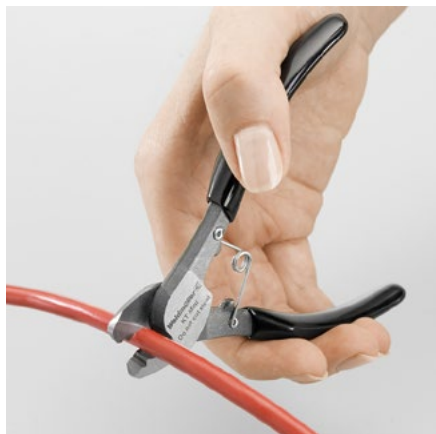
#### Version

Type	Qty.	Order No.
KT 8	1	9002650000

Type	Qty.	Order No.
KT 12	1	9002660000

#### Note

KT Mini



<b>KTMINI</b>
35 mm <sup>2</sup> / 2 AWG
25 mm <sup>2</sup> / 4 AWG
16 mm <sup>2</sup> / 6 AWG
25 mm <sup>2</sup> / 4 AWG
7 mm
9.5 / 42 / 120 mm
91 g

Type	Qty.	Order No.
KT MINI	1	2876460000

R

## Copper cabling tools

**SEE ESD 120****Electronic ESD diagonal-cutting pliers with pointed head**

- Hard wire (spring wire or steel nails):  
0.2 mm/AWG 32
- Semi-hard wire (iron or nails):  
1.0 mm/AWG 18
- Soft wire (copper or aluminium):  
1.5 mm/AWG 15

**Ordering data**

Type	Qty.	Order No.
SEE ESD 120	1	9205130000

**Technical data**

Weight 90 g

**SEE ESD 125****Electronic ESD diagonal-cutting pliers with oval head**

- Semi-hard wire (iron or nails):  
0.3 mm/AWG 29
- Soft wire (copper or aluminium):  
1.5 mm/AWG 15

**Ordering data**

Type	Qty.	Order No.
SEE ESD 125	1	9204750000

**Technical data**

Weight 90 g

**FZE ESD 130****Electronic ESD flat-nosed pliers****Ordering data**

Type	Qty.	Order No.
FZE ESD 130	1	9204760000

**Technical data**

Weight 90 g

**SZE ESD 130****Electronic ESD Snipe-nosed pliers****Ordering data**

Type	Qty.	Order No.
SZE ESD 130	1	9204770000

**Technical data**

Weight 90 g

**SVSE ESD 130****Electronic ESD angle-cutting pliers**

- Hard wire (spring wire or steel nails):  
0.6 mm/AWG 22
- Semi-hard wire (iron or nails):  
1.0 mm/AWG 18
- Soft wire (copper or aluminium):  
1.2 mm/AWG 16

**Ordering data**

Type	Qty.	Order No.
SVSE ESD 130	1	9205140000

**Technical data**

Weight 90 g

**SUPER CUT****Electronic diagonal-cutting pliers**

- Soft wire (copper or aluminium):  
1.2 mm/AWG 16

**Ordering data**

Type	Qty.	Order No.
SUPER CUT	1	9205150000

**Technical data**

Weight 78 g

**KOF SET ESD****Electronic ESD case set**

Contents:

- Diagonal-cutting pliers
- Snipe-nosed pliers
- Flat-nose pliers
- Angle-cutting pliers

**Ordering data**

Type	Qty.	Order No.
KOF SET ESD	1	9205210000

**Technical data**

Weight 547 g



### Crimping tools

Cutting, stripping and crimping tools for processing POF fibres in compliance with IEC 60793-2 A4A fibres (1000 µm/980 µm POF)

- Multifunction tool for POF fibres
- Processing the duplex POF fibres
- Stripping tool for processing POF fibres and cables
- The new set of blades for POF cables makes stripping the outer covering and the POF fibres simple
- Cable shears specially designed for aramid fibres
- Only for cutting aramid fibres (strain relief in fibre-optic cables)

### Tool-Set IE-POF



#### Contents:

- Assortment case PSC 80
- Kevlar scissors for aramid fibres
- Multifunction tool HTX-IE-POF
- Stripping tool multi-stripax® IE-POF

### multi-stripax® POF



- Excellent stripping quality for industrial applications
- Specially shaped blades enable stripping of special types of insulation and conductor configurations
- Stripping length with end stop, adjustable from 2.3...30 mm
- Very versatile thanks to interchangeable stripping units
- Stripping results reproduced accurately over and over again
- No damage to the conductor
- A long-lasting, reliable tool thanks to its sturdy design
- Integrated cutting function up to 6 mm<sup>2</sup>

### Technical data

Length / Width / Height	mm	241 / 338 / 79
Weight	g	1,800
<b>Note</b>		

Length / Width / Height	mm	250 / 85 / 40
Weight	g	250
<b>Note</b>		

Length / Width / Height	mm	250 / 85 / 40
Weight	g	250
<b>Note</b>		

### Ordering data

Version	
<b>Note</b>	

Type	Qty.	Order No.
TOOL SET IE-POF	1	1208930000
<b>Note</b>		

Type	Qty.	Order No.
MULTI-STRIPAX IE-POF	1	1208880000
<b>Note</b>		

### Accessories

Type	Qty.	Order No.
HTX-IE-POF	1	1208870000
MULTI-STRIPAX IE-POF	1	1208880000
KEVLAR SCISSORS	1	1208910000
<b>Note</b>		

Type	Qty.	Order No.
Replacement cutting blade	1	9203100000
Replacement stop set	1	9203070000
AIE MULTI-STRIPAX POF	1	1212770000
<b>Note</b>		

Type	Qty.	Order No.
Replacement cutting blade	1	9203100000
Replacement stop set	1	9203070000
AIE MULTI-STRIPAX POF	1	1212770000
<b>Note</b>		

**Fibre-optic cabling tools**

**Mounting tools**

- Release option in the event of incorrect operation
- With end stop for exact positioning of the contacts

**HTX-IE-POF**



- Only one tool needed for all SC-RJ plug processing steps
- For processing 1 mm thick polymer optical fibres, especially for the PROFINET and EtherNet/IP-SC-RJ connectors
- For stripping Duplex polymer optical fibres
- The plug is crimped and the polymer optical fibres are separated, all in a single step
- Cut surfaces do not need to be polished after cutting
- Locator for precise positioning of the SC-RJ plugs
- Ergonomic handles
- High repeat accuracy
- Ratchet for precise crimping

Three steps to produce IP67 connectors:  
 1) Strip the Duplex polymer optical fibres  
 2) Crimp and separate  
 3) Crimp the strain relief

**HTX-HTX-IE-POF-QA**



- Only one tool needed for all SC-RJ QA (reconnectable) plug processing steps
- For processing 1 mm thick polymer optical fibres, especially for the PROFINET and EtherNet/IP-SC-RJ connectors
- For stripping Duplex polymer optical fibres
- Cut surfaces do not need to be polished after cutting
- Locator for precise positioning of the SC-RJ plugs
- Ergonomic handles
- High repeat accuracy

Three steps to produce IP67 connectors:  
 1) Strip the Duplex polymer optical fibres  
 2) Tighten strain relief  
 3) Insert and Cutting

**R**

**Technical data**

Material data	
Length	mm
Weight	g
Note	

**Ordering data**

Version
Note

HTX-IE-POF		
Length	220	
Weight	450	
Note		

Type	Qty.	Order No.
HTX-IE-POF	1	1208870000
Note		

HTX-HTX-IE-POF-QA		
Length	220	
Weight	450	
Note		

Type	Qty.	Order No.
HTX-HTX-IE-POF-QA	1	2602860000
Note		

**Kevlar Scissor**

- Cable shears specially designed for aramid fibres

**SCISSOR Kevlar**



- Only for cutting aramid fibres (strain relief in fibre-optic cables)
- Do not use for other materials
- Special blade geometry
- Blades ground
- With teeth on the cutting edge
- Riveted joint
- Hand-friendly, impact-resistant plastic handles

**Technical data**

Material data	
Length	mm
Weight	g
Note	

SCISSORS KEVLAR
147
100
Note

**Ordering data**

Version
Note

Type	Qty.	Order No.
SCISSORS KEVLAR	1	1208910000
Note		



**Fibre-optic cabling tools**

**Crimping tool for other contacts**

- Ratchet for precise crimping
- Release option in the event of incorrect operation
- With end stop for exact positioning of the contacts
- Contact and insulation are crimped in one step

**HTF HYB**

0.08...1.0 mm<sup>2</sup>



For Weidmüller hybrid sockets and pins

- ~AWG 28...AWG 17



**R**

**Technical data**

Description of contact	
Type of contact	
Crimping range	mm <sup>2</sup>
Crimping range 1 (with multiple crimping positions)	mm <sup>2</sup>
Crimping range 2 (with multiple crimping positions)	mm <sup>2</sup>
Crimping range 3 (with multiple crimping positions)	mm <sup>2</sup>
Tool data	
Length	mm
Weight	g
Note	

HTF HYB		
Hybrid sockets / plugs		
		0.08...1
		0.08...0.2
		0.2...0.5
		0.75...1

**Ordering data**

Version
Note

Type	Qty.	Order No.
HTF HYB	1	1119580000



**Special stripping tools**

- Quick and accurate stripping
- No need to adjust cutting depth
- No damage to inner conductors

**LWL-stripax®**



Stripping and cutting tool for plastic fibre-optic cables with 1-mm diameter inner conductor

- Stripping length adjustable via end stop
- Automatic opening of the clamping jaws after stripping

**Technical data**

Max. stripping performance	
Cable type	-
Conductor diameter, min. / max.	-
Stripping length, max.	-
Tool data	
Width	mm
Height	mm
Weight	g
Note	

M-D-STRIPAX LWL	
POF conductor with an inner conductor of 1 mm Ø	
Stripping length, max.	7.5
Width	82
Height	135
Weight	110
Note	
POF: polymer optical fibre	

**Ordering data**

Version
Note

Type	Qty.	Order No.
M-D-STRIPAX LWL	1	9003750000
Note		

**Accessories**

Note

Type	Qty.	Order No.
Spare stripping blades	1	9003760000
Note		



**General tools**

**Incision tool for twisted-pair cable**

For connecting twisted-pair cable to terminal rails with IDC contacts e.g. in main and floor distributors, and in modular wall junction boxes for structured building cabling.

**PDT**



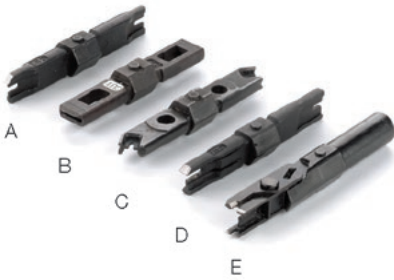
**IE-FISP-V4**



The punch-down tool has the following features:

- Mechanics made from metal components
- Adjustable pressing force for conductor sizes AWG 20 to AWG 28
- Different blades for connector blocks of type 110 from AT&T, type 66, type LSA Plus from Krone (Standard and scissors cutting function) as well as for telephone outlets 630A6
- Incision blades with 2 functions: incision or incision with cutting off of remaining conductor
- Storage compartment for one blade

Fastening tool for the hexagon cap nut from **STEADYTEC®** V4 flange and FrontCom® Micro.



- A = PD blade 110
- B = PD blade 66
- C = PD blade 630
- D = PD blade Krone LSA (standard)
- E = PD blade Krone LSA (scissor)

**Technical data**

Length / Width / Height	mm
Weight	g
<b>Note</b>	

<b>PUNCH DOWN TOOL PDT</b>		
Length / Width / Height	160 / 37 / 29	
Weight	142	
<b>Note</b>		

<b>Fixing tool</b>		
Length / Width / Height	115 / 28 / 28	
Weight	21	
<b>Note</b>		

**Ordering data**

<b>Version</b>
<b>Note</b>

Type	Qty.	Order No.
PUNCH DOWN TOOL PDT	1	9013970000
(without blade)		

Type	Qty.	Order No.
IE-FISP-V4	2	9204370000

**Accessories**

<b>Note</b>
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Type	Qty.	Order No.
PD blade Krone LSA Plus (scissor)	1	9014050000
PD blade 110	1	9013960000
PD blade 630	1	9013990000
PD blade 66	1	9013980000
PD blade Krone LSA Plus (standard)	1	9014000000

Type	Qty.	Order No.

### Hydraulic sheet holes

Incl. accessories:

- 1 HSS pre-drill Ø 10 mm
- 1 tension bolt Ø 19 mm
- 1 tension bolt Ø 19 x 9.5 mm
- 1 spacer nut set (3-part)
- 1 bridge

### IE-KO-HAT



- Pressure relief valve protects against overloading
- Cylinder head angled at 90°
- Angled head can be rotated through 360°
- Ergonomic handle springs back automatically
- The waste piece no longer becomes jammed thanks to 3-fold splitter
- Hydraulic punch made of high-strength aluminium (approx. 40% weight saving)
- Service life greatly reduced when stainless steel sheets are used

### Technical data

<b>Max. steel-sheet punching performance</b>
Round holes from 1 to Ø 85 mm
Round holes from 2 to Ø 64 mm
Square holes up to
Rectangular holes up to
<b>Max. stainless steel sheet punching performance</b>
Round holes from 3 to Ø 64 mm
<b>Tool data</b>
Depth / Width / Height
Weight
Punching force
Max. operating pressure
<b>Note</b>

<b>IE-KO-HAT</b>
2,0 mm F = 370 N/mm <sup>2</sup>
3,0 mm F = 370 N/mm <sup>2</sup>
68 x 68 mm; 2,0 mm F = 370 N/mm <sup>2</sup>
36 x 112 mm; 2,0 mm F = 370 N/mm <sup>2</sup>
2,5 mm F = 600 N/mm <sup>2</sup>
70 / 290 / 120 mm
1,9 kg
75 kN
650 bar

### Ordering data

<b>Version</b>
<b>Note</b>

Type	Qty.	Order No.
IE-KO-HAT	1	1966810000

### Accessories

Tension bolt
Tension bolts
Pre-drill
<b>Note</b>

Type	Qty.	Order No.
KOHS 19	1	9205010000
KOHS 9.5+19	1	9205000000
KOPD 10.0	1	9205020000

Splitting stamp on the next page

### Custom stamp for Industrial Ethernet connections and FrontCom® Vario (Single Frame)



Type	Description	Dimensions	Qty.	Order No.
IE-KOK-V1	Custom shape for Bajonet 01 metal	Diameter 27 mm x 1 side 25.9 mm	1	1966780000
IE-KOK-V4	Custom shape for Push Pull V04 plastic	Diameter 23.2 mm x 2 sides 20.2 mm	1	1966790000
IE-KOK-V5	Custom shape for RockStar® V05 metal	22.0 x 22.0 mm	1	9204790000
IE-KOK-HAT	Custom shape for FrontCom® Vario Single Frame	91.0 x 52.0 mm	1	2008410000



Tension bolt KOHS 19



Tension bolts KOHS 9.5+19



Pre-drill KOPD 10.0

## Cable Entry System – Cabtite

### Cabtite SE - Sealing element small



Cable grommets for ASI cables

The Cabtite SE sealing elements are used in the frame or in the separable cable gland. The conical design allows easy installation, reliably seals gaps and provides strain relief in accordance with DIN EN 62444. For installation, the sealing elements are pressed into the snap-in inlays previously fitted in the frame or, in the case of the divisible cable gland, are placed between the cable gland half-shells. Various sealing elements with different cable diameters and geometries are available.

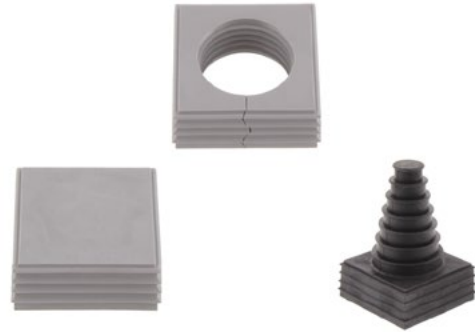
#### Technical data

Material	TPE
Halogen / Silicone	No / No
Operating temperature, min.	Light Grey: -40 °C; Deep black: -40 °C
Operating temperature, max.	Light Grey: 90 °C; Deep black: 120 °C
UL 94 flammability rating	Light Grey: V-0; Deep black: HB
<b>Note</b>	

#### Ordering data

Type	Clamping range	Qty.	Deep black Order No.	Light Grey Order No.
<b>Individual sealing elements</b>				
CABTITE SE 1.5-2 SML	1.5...2 mm	10	2584780000	2583360000
CABTITE SE 2-3 SML	2...3 mm	10	2584760000	2583380000
CABTITE SE 3-4 SML	3...4 mm	10	2584730000	2583400000
CABTITE SE 4-5 SML	4...5 mm	10	2584680000	2583440000
CABTITE SE 5-6 SML	5...6 mm	10	2584710000	2583450000
CABTITE SE 6-7 SML	6...7 mm	10	2584690000	2583460000
CABTITE SE 7-8 SML	7...8 mm	10	2584670000	2584660000
CABTITE SE 8-9 SML	8...9 mm	10	2584330000	2584650000
CABTITE SE 9-10 SML	9...10 mm	10	2584080000	2584630000
CABTITE SE 10-11 SML	10...11 mm	10	2584060000	2584610000
CABTITE SE 11-12 SML	11...12 mm	10	2584040000	2584600000
CABTITE SE 12-13 SML	12...13 mm	10	2584020000	2584590000
CABTITE SE 13-14 SML	13...14 mm	10	2584000000	2584570000
CABTITE SE 14-15 SML	14...15 mm	10	2583980000	2584560000
CABTITE SE 15-16 SML	15...16 mm	10	2583960000	2584550000
<b>Special geometry ASI</b>				
CABTITE SE 1/ASI SML		10	2583530000	2584810000
CABTITE SE 2/ASI SML		10	2583520000	2584800000
<b>Multiple sealing element</b>				
CABTITE SE 2/4-5 SML	4...5 mm	10	2583620000	2584900000
CABTITE SE 2/5-6 SML	5...6 mm	10	2583610000	2584890000
CABTITE SE 2/7 SML	7...8 mm	10	2583550000	2584830000
CABTITE SE 2/8 SML	8...9 mm	10	2583540000	2584820000
CABTITE SE 3/5-6 SML	5...6 mm	10	2652280000	2652290000
CABTITE SE 4/2-3 SML	2...3 mm	10	2583590000	2584870000
CABTITE SE 4/3-4 SML	3...4 mm	10	2583580000	2584860000
CABTITE SE 4/4-5 SML	4...5 mm	10	2583560000	2584840000
<b>Cone sealing element</b>				
CABTITE CSE 2-11 SML	2...11 mm	10	2583510000	
<b>Blind plugs</b>				
CABTITE BSE SML		10	2584790000	2583350000
<b>Note</b>				

### Cabtite SE - sealing elements large



Blanking plugs

Cone sealing element

The Cabtite SE sealing elements in large design are identical in construction to those in small design. However, they can accommodate cables with a larger outer diameter.

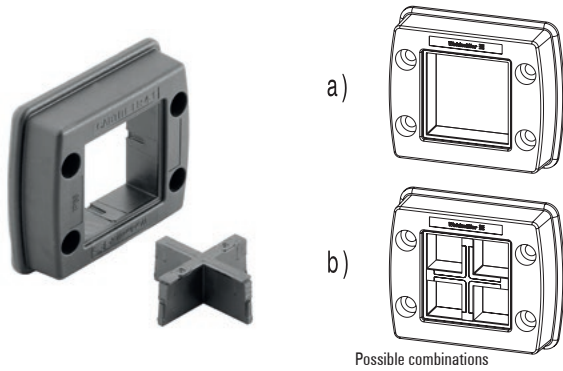
#### Technical data

Material	TPE
Halogen / Silicone	No / No
Operating temperature, min.	Deep black: -40 °C; Light Grey: -40 °C
Operating temperature, max.	Deep black: 120 °C; Light Grey: 90 °C
UL 94 flammability rating	Deep black: HB; Light Grey: V-0
<b>Note</b>	

#### Ordering data

Type	Clamping range	Qty.	Deep black Order No.	Light Grey Order No.
<b>Individual sealing elements</b>				
CABTITE SE 14-15 LRG	14...15 mm	10	2583880000	2584510000
CABTITE SE 15-16 LRG	15...16 mm	10	2583860000	2584500000
CABTITE SE 16-17 LRG	16...17 mm	10	2583850000	2584490000
CABTITE SE 17-18 LRG	17...18 mm	10	2583840000	2584480000
CABTITE SE 18-19 LRG	18...19 mm	10	2583830000	2584470000
CABTITE SE 19-20 LRG	19...20 mm	10	2583810000	2584460000
CABTITE SE 20-21 LRG	20...21 mm	10	2583790000	2584450000
CABTITE SE 21-22 LRG	21...22 mm	10	2583770000	2584440000
CABTITE SE 22-23 LRG	22...23 mm	10	2583750000	2584430000
CABTITE SE 23-24 LRG	23...24 mm	10	2583730000	2584420000
CABTITE SE 24-25 LRG	24...25 mm	10	2583710000	2584410000
CABTITE SE 25-26 LRG	25...26 mm	10	2583700000	2584400000
CABTITE SE 26-27 LRG	26...27 mm	10	2583690000	2584390000
CABTITE SE 27-28 LRG	27...28 mm	10	2583680000	2584370000
CABTITE SE 28-29 LRG	28...29 mm	10	2583670000	2584350000
CABTITE SE 29-30 LRG	29...30 mm	10	2583660000	2584380000
CABTITE SE 30-31 LRG	30...31 mm	10	2583650000	2584360000
CABTITE SE 31-32 LRG	31...32 mm	10	2583640000	2584340000
CABTITE SE 32-33 LRG	32...33 mm	10	2583630000	2584920000
CABTITE SE 33-34 LRG	33...34 mm	10	2595510000	2584910000
CABTITE SE 34-35 LRG	34...35 mm	10	2595520000	2595530000
<b>Cone sealing element</b>				
CABTITE CSE 7-24 LRG	7...24 mm	10	2583500000	
<b>Blind plugs</b>				
CABTITE BSE LRG		10	2583900000	2584520000
<b>Note</b>				

**Cabtite FR - CABTITE FR 4-1 BK SET**



Possible combinations

The one-piece frame, consisting of a dimensionally stable, fibreglass-reinforced plastic, is quick and easy to assemble. The foamed, captive seal guarantees a high degree of impermeability to IP66, even with painted or rough surfaces. The frame sets contain the appropriate Rastinlays to realize the individual configuration (see above a or b) of small and large sealing elements. The sealing elements are not included in the frame set and must be selected to match the cable diameter.

**Technical data**

Material	Polyamide, glass fibre-reinforced
Colour	Deep black
Operating temperature	-40...120 °C
Protection class / Protection class (UL)	IP66 / Type 12, Type 4X
UL 94 flammability rating	V-0
<b>Note</b>	

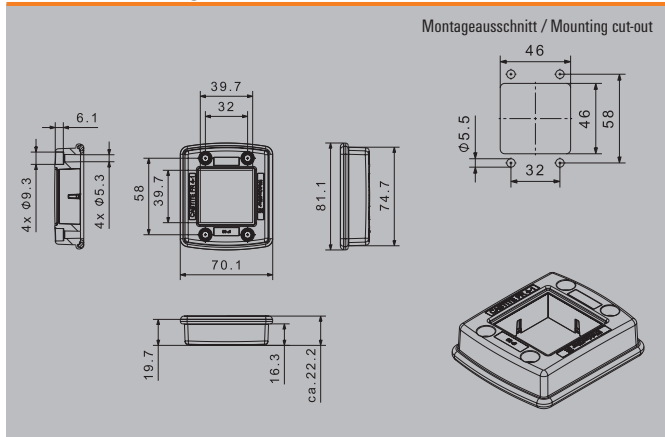
**Ordering data**

Type	Qty.	Order No.
<b>Set</b>		
CABTITE FR 4-1 BK SET	1	2583780000
<b>Single frame (without snap-in inlay)</b>		
CABTITE FR 4-1 BK	1	2583490000
<b>Note</b>	The individual frames do not contain any Rastinlays or sealing elements.	

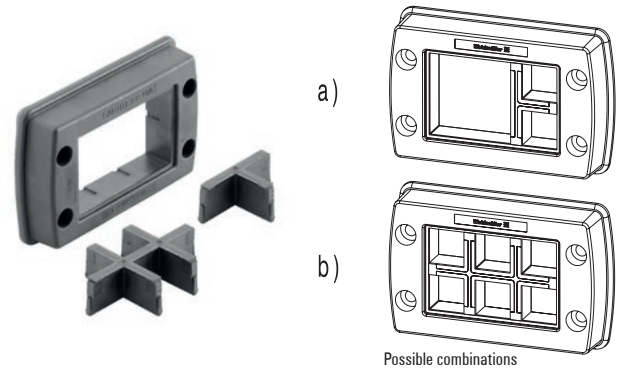
**Accessories**

Product type	Type	Qty.	Order No.
Locking frame (inside)	CABTITE FRL 4-1 BK	10	2584260000
Operating tool	CABTITE TOOL ATSE PA	1	2637360000
Mounting screw set	CABTITE SC M5X25 SET	1	2635120000
<b>Note</b>			

**Dimensioned drawing**



**Cabtite FR - CABTITE FR 10/6 BK SET**



Possible combinations

The one-piece frame, consisting of a dimensionally stable, fibreglass-reinforced plastic, is quick and easy to assemble. The foamed, captive seal guarantees a high degree of impermeability to IP66, even with painted or rough surfaces. The frame sets contain the appropriate Rastinlays to realize the individual configuration (see above a or b) of small and large sealing elements. The sealing elements are not included in the frame set and must be selected to match the cable diameter.

**Technical data**

Material	Polyamide, glass fibre-reinforced
Colour	Deep black
Operating temperature	-40...120 °C
Protection class / Protection class (UL)	IP66 / Type 12, Type 4X
UL 94 flammability rating	V-0
<b>Note</b>	

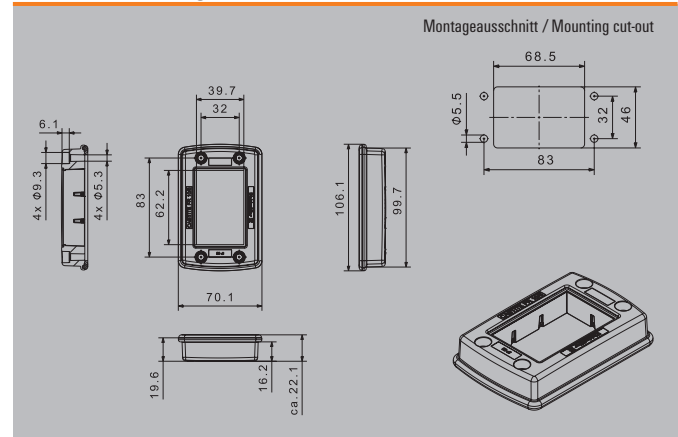
**Ordering data**

Type	Qty.	Order No.
<b>Set</b>		
CABTITE FR 10/6 BK SET	1	2583760000
<b>Single frame (without snap-in inlay)</b>		
CABTITE FR 10/6 BK	1	2583480000
<b>Note</b>	The individual frames do not contain any Rastinlays or sealing elements.	

**Accessories**

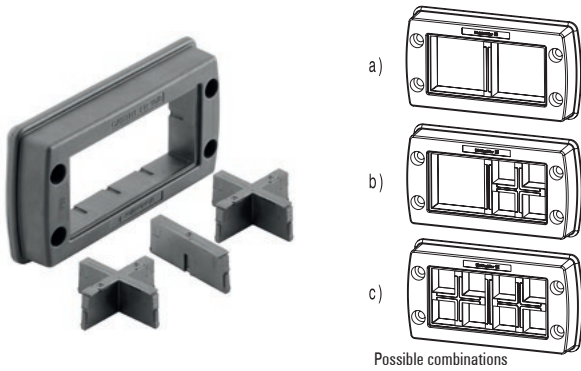
Product type	Type	Qty.	Order No.
Locking frame (inside)	CABTITE FRL 10/6 BK	10	2584240000
Operating tool	CABTITE TOOL ATSE PA	1	2637360000
Mounting screw set	CABTITE SC M5X25 SET	1	2635120000
<b>Note</b>			

**Dimensioned drawing**



## Cable Entry System – Cabtite

### Cabtite FR - CABTITE FR 16/8 BK SET



Possible combinations

The one-piece frame, consisting of a dimensionally stable, fibreglass-reinforced plastic, is quick and easy to assemble. The foamed, captive seal guarantees a high degree of impermeability to IP66, even with painted or rough surfaces. The frame sets contain the appropriate Rastinlays to realize the individual configuration (see above a, b or c) of small and large sealing elements. The sealing elements are not included in the frame set and must be selected to match the cable diameters.

#### Technical data

Material	Polyamide, glass fibre-reinforced
Colour	Deep black
Operating temperature	-40...120 °C
Protection class / Protection class (UL)	IP66 / Type 12, Type 4X
UL 94 flammability rating	V-0
<b>Note</b>	

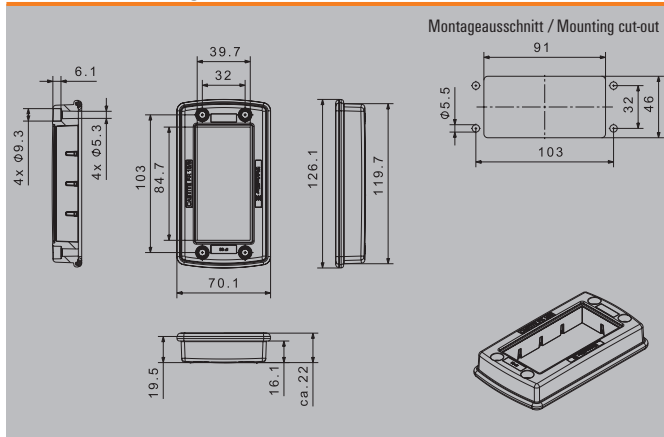
#### Ordering data

Type	Qty.	Order No.
<b>Set</b>		
CABTITE FR 16/8 BK SET	1	2583740000
<b>Single frame (without snap-in inlay)</b>		
CABTITE FR 16/8 BK	1	2583470000
<b>Note</b>	The individual frames do not contain any Rastinlays or sealing elements.	

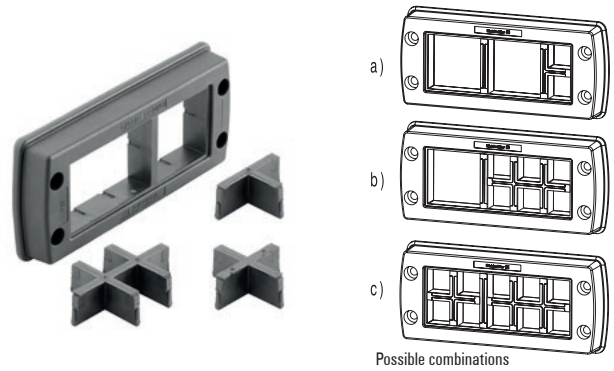
#### Accessories

Product type	Type	Qty.	Order No.
Locking frame (inside)	CABTITE FRL 16/8 BK	10	2584220000
Operating tool	CABTITE TOOL ATSE PA	1	2637360000
Mounting screw set	CABTITE SC M5X25 SET	1	2635120000
<b>Note</b>			

#### Dimensioned drawing



### Cabtite FR - CABTITE FR 24/10 BK SET



Possible combinations

The one-piece frame, consisting of a dimensionally stable, fibreglass-reinforced plastic, is quick and easy to assemble. The foamed, captive seal guarantees a high degree of impermeability to IP66, even with painted or rough surfaces. The frame sets contain the appropriate Rastinlays to realize the individual configuration (see above a, b or c) of small and large sealing elements. The sealing elements are not included in the frame set and must be selected to match the cable diameters.

#### Technical data

Material	Polyamide, glass fibre-reinforced
Colour	Deep black
Operating temperature	-40...120 °C
Protection class / Protection class (UL)	IP66 / Type 12, Type 4X
UL 94 flammability rating	V-0
<b>Note</b>	

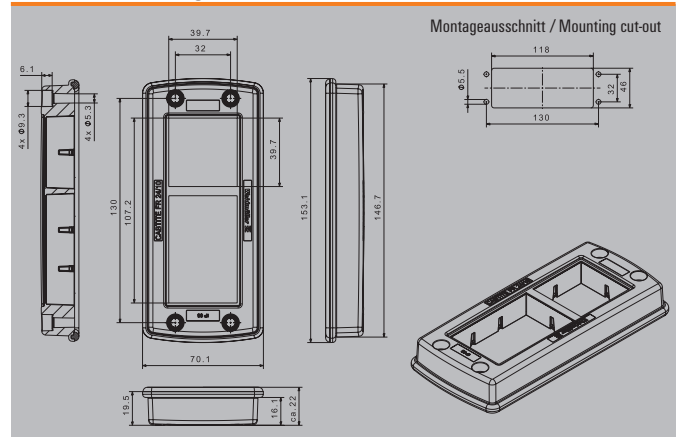
#### Ordering data

Type	Qty.	Order No.
<b>Set</b>		
CABTITE FR 24/10 BK SET	1	2583720000
<b>Single frame (without snap-in inlay)</b>		
CABTITE FR 24/10 BK	1	2583800000
<b>Note</b>	The individual frames do not contain any Rastinlays or sealing elements.	

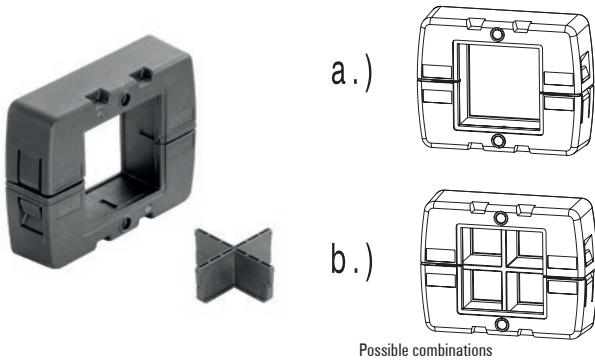
#### Accessories

Product type	Type	Qty.	Order No.
Locking frame (inside)	CABTITE FRL 24/10 BK	10	2584210000
Operating tool	CABTITE TOOL ATSE PA	1	2637360000
Mounting screw set	CABTITE SC M5X25 SET	1	2635120000
<b>Note</b>			

#### Dimensioned drawing



**Cabtite FT - CABTITE FRFT 4-1 SET**



Possible combinations

The frame, consisting of a dimensionally stable, fibreglass-reinforced plastic, is quick and easy to assemble, the sealing elements are mounted from the outside. The captive seal guarantees a high degree of impermeability to IP66, even with painted or rough surfaces. The frame sets contain the appropriate Rastinlays to realize the individual configuration (see above a or b) of small and large sealing elements. The sealing elements are not included in the frame set and must be selected to match the cable diameter.

**Technical data**

Material	Polyamide, glass fibre-reinforced
Colour	Deep black
Operating temperature	-40...120 °C
Protection class / Protection class (UL)	IP66 / Type 12, Type 4X
UL 94 flammability rating	V-0
<b>Note</b>	

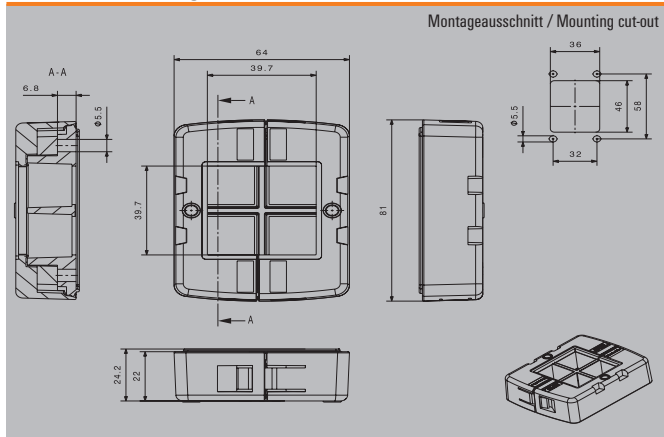
**Ordering data**

Type	Qty.	Order No.
<b>Set</b>		
CABTITE FRFT 4-1 SET	1	2891470000
<b>Single frame (without snap-in inlay)</b>		
CABTITE FRFT 4-1	1	2891450000
<b>Note</b>	The individual frames do not contain any Rastinlays or sealing elements.	

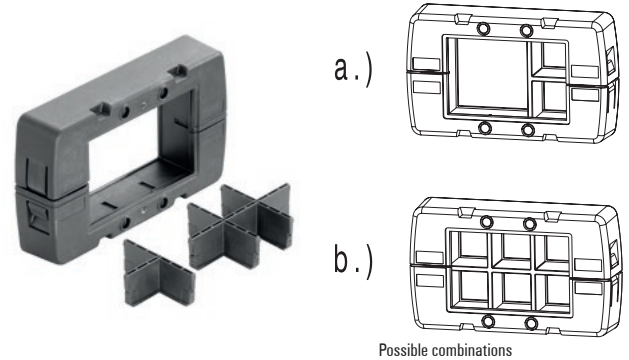
**Accessories**

Product type	Type	Qty.	Order No.
Locking frame (outside)	CABTITE OFRL BK	20	2907560000
Operating tool	CABTITE TOOL ATSE PA	1	2637360000
Mounting screw set	CABTITE SC M5X25 SET	1	2635120000
<b>Note</b>			

**Dimensioned drawing**



**Cabtite FT - CABTITE FRFT 10/6 SET**



Possible combinations

The frame, consisting of a dimensionally stable, fibreglass-reinforced plastic, is quick and easy to assemble, the sealing elements are mounted from the outside. The captive seal guarantees a high degree of impermeability to IP66, even with painted or rough surfaces. The frame sets contain the appropriate Rastinlays to realize the individual configuration (see above a or b) of small and large sealing elements. The sealing elements are not included in the frame set and must be selected to match the cable diameter.

**Technical data**

Material	Polyamide, glass fibre-reinforced
Colour	Deep black
Operating temperature	-40...120 °C
Protection class / Protection class (UL)	IP66 / Type 12, Type 4X
UL 94 flammability rating	V-0
<b>Note</b>	

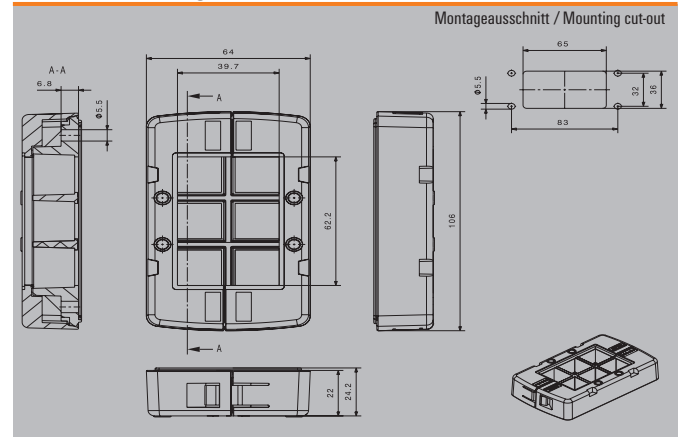
**Ordering data**

Type	Qty.	Order No.
<b>Set</b>		
CABTITE FRFT 10/6 SET	1	2891500000
<b>Single frame (without snap-in inlay)</b>		
CABTITE FRFT 10/6	1	2891480000
<b>Note</b>	The individual frames do not contain any Rastinlays or sealing elements.	

**Accessories**

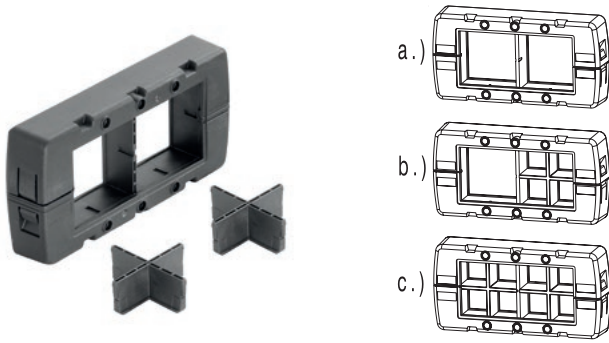
Product type	Type	Qty.	Order No.
Locking frame (outside)	CABTITE OFRL BK	20	2907560000
Operating tool	CABTITE TOOL ATSE PA	1	2637360000
Mounting screw set	CABTITE SC M5X25 SET	1	2635120000
<b>Note</b>			

**Dimensioned drawing**



## Cable Entry System – Cabtite

### Cabtite FT - CABTITE FRFT 16/8 SET



Possible combinations

The frame, consisting of a dimensionally stable, fibreglass-reinforced plastic, is quick and easy to assemble, the sealing elements are mounted from the outside. The captive seal guarantees a high degree of impermeability to IP66, even with painted or rough surfaces. The frame sets contain the appropriate Rastinlays to realize the individual configuration (see above a or b) of small and large sealing elements. The sealing elements are not included in the frame set and must be selected to match the cable diameter.

#### Technical data

Material	Polyamide, glass fibre-reinforced
Colour	Deep black
Operating temperature	-40...120 °C
Protection class / Protection class (UL)	IP66 / Type 12, Type 4X
UL 94 flammability rating	V-0
<b>Note</b>	

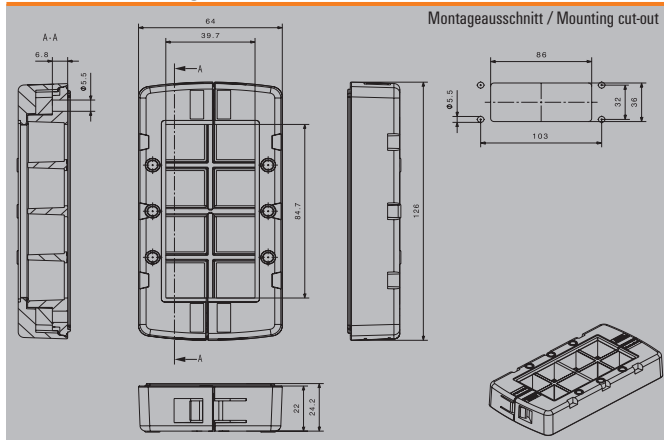
#### Ordering data

Type	Qty.	Order No.
<b>Set</b>		
CABTITE FRFT 16/8 SET	1	2891530000
<b>Single frame (without snap-in inlay)</b>		
CABTITE FRFT 16/8	1	2891510000
<b>Note</b>	The individual frames do not contain any Rastinlays or sealing elements.	

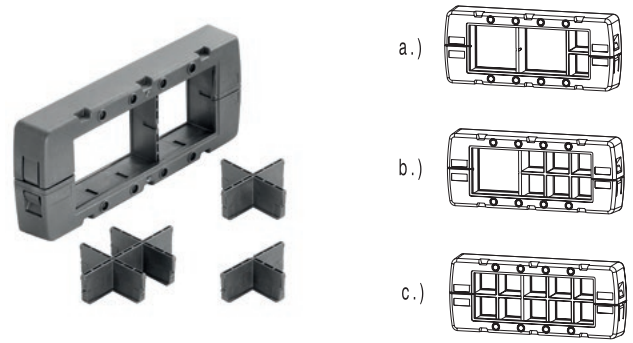
#### Accessories

Product type	Type	Qty.	Order No.
Locking frame (outside)	CABTITE OFRL BK	20	2907560000
Operating tool	CABTITE TOOL ATSE PA	1	2637360000
Mounting screw set	CABTITE SC M5X25 SET	1	2635120000
<b>Note</b>			

#### Dimensioned drawing



### Cabtite FT - CABTITE FRFT 24/10 SET



Possible combinations

The frame, consisting of a dimensionally stable, fibreglass-reinforced plastic, is quick and easy to assemble, the sealing elements are mounted from the outside. The captive seal guarantees a high degree of impermeability to IP66, even with painted or rough surfaces. The frame sets contain the appropriate Rastinlays to realize the individual configuration (see above a or b) of small and large sealing elements. The sealing elements are not included in the frame set and must be selected to match the cable diameter.

#### Technical data

Material	Polyamide, glass fibre-reinforced
Colour	Deep black
Operating temperature	-40...120 °C
Protection class / Protection class (UL)	IP66 / Type 12, Type 4X
UL 94 flammability rating	V-0
<b>Note</b>	

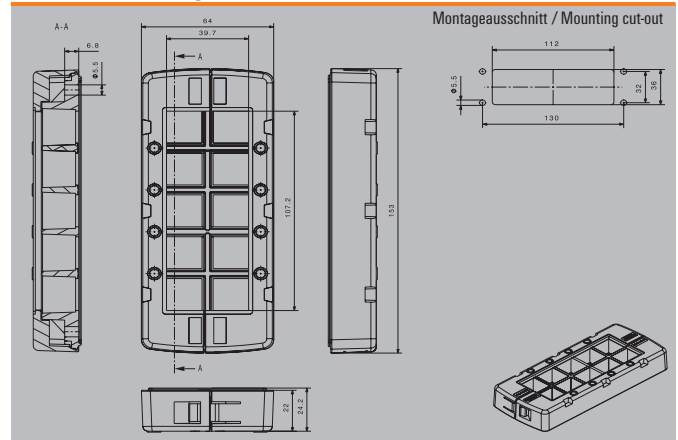
#### Ordering data

Type	Qty.	Order No.
<b>Set</b>		
CABTITE FRFT 24/10 SET	1	2891560000
<b>Single frame (without snap-in inlay)</b>		
CABTITE FRFT 24/10	1	2891540000
<b>Note</b>	The individual frames do not contain any Rastinlays or sealing elements.	

#### Accessories

Product type	Type	Qty.	Order No.
Locking frame (outside)	CABTITE OFRL BK	20	2907560000
Operating tool	CABTITE TOOL ATSE PA	1	2637360000
Mounting screw set	CABTITE SC M5X25 SET	1	2635120000
<b>Note</b>			

#### Dimensioned drawing





### Cabtite CGS - separable cable gland



Spare counter nut

For metric through holes from M20 to M63, the Cabtite cable entry system offers separable cable glands for cables with and without plugs. In case of maintenance or changes in the system, pre-assembled cables with diameters from 2 to 35 mm can be quickly and safely inserted into switch cabinets or housings. After inserting the sealing elements (Cabtite SE), the two halves of the cable gland are simply snapped together. A likewise separable lock nut on the inside of the cabinet ensures a secure and firm hold.

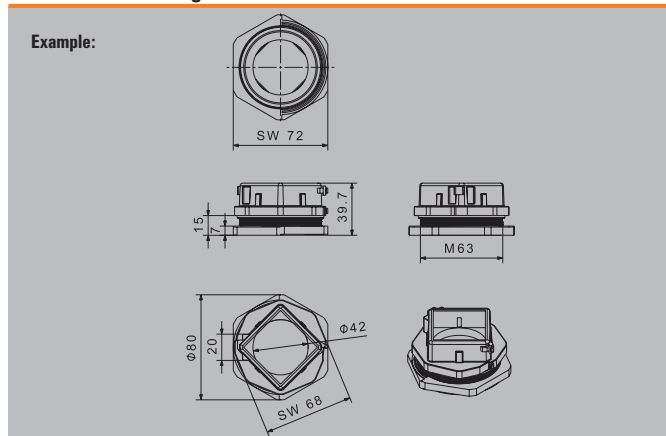
#### Technical data

Material	Polyamide, glass fibre-reinforced
Colour	Deep black
Operating temperature	-40...120 °C
Protection class / Protection class (UL)	IP66 /
UL 94 flammability rating	V-0
<b>Note</b>	

#### Ordering data

Type	Qty.	Order No.
<b>Divisible cable gland*</b>		
CABTITE CGS M20 BK	10	2584200000
CABTITE CGS M25 BK	10	2584180000
CABTITE CGS M32 BK	10	2584160000
CABTITE CGS M40 BK	5	2584150000
CABTITE CGS M50 BK	5	2584130000
CABTITE CGS M63 BK	5	2584120000
<b>Articulated locknut</b>		
CABTITE LNS M20 BK	10	2584110000
CABTITE LNS M25 BK	10	2584090000
CABTITE LNS M32 BK	10	2584070000
CABTITE LNS M40 BK	5	2584050000
CABTITE LNS M50 BK	5	2584030000
CABTITE LNS M63 BK	5	2584010000
<b>Rastinly for M40-M63**</b>		
CABTITE GI X BK	5	2584290000
<b>Note</b> *The cable glands are supplied with a locknut. **The snap-in insert is required to install 4 small sealing elements in the cable gland.		

#### Dimensioned drawing



### Cabtite GI - Rastinlay



The insertable snap-in inlay allows the frame openings/cable glands to be configured as required for the small or large sealing elements used. Thus the Cabtite cable entry system can be variably configured for different requirements (cables, lines, hoses, pneumatic and hydraulic lines).

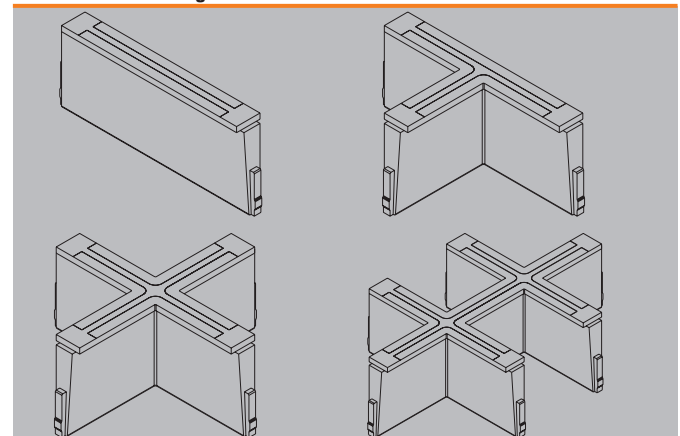
#### Technical data

Material	Polyamide, glass fibre-reinforced
Colour	Deep black
Operating temperature	-40...120 °C
Protection class / Protection class (UL)	IP66 /
UL 94 flammability rating	V-0
<b>Note</b>	

#### Ordering data

Type	Qty.	Order No.
CABTITE GI I BK	5	2584320000
CABTITE GI T BK	5	2584300000
CABTITE GI H BK	5	2584270000
<b>Rastinly for M40-M63**</b>		
CABTITE GI X BK	5	2584290000
<b>Note</b> **The locking inlay is required to install 4 small sealing elements in the cable gland.		

#### Dimensioned drawing



**Cable Entry System – Cabtite**

**CABTITE CR - Cable support strips (EMC)**



In combination with a large number of different shield connection clamps (KLBÜ), the shield connection rails enable practical, uncomplicated and fast shielding of cables.

**Technical data**

Material	Steel, galvanized
Colour	silver

**Note**

**Ordering data**

Type	Qty.	Order No.
CABTITE CR 4/1 EMV	10	2583950000
CABTITE CR 10/6 EMV	10	2583930000
CABTITE CR 16/8 EMV	10	2583910000
CABTITE CR 24/10 EMV	10	2583890000

**Note**

**CABTITE BP - Blanking plug**



The blind plugs are used for the safe closing of unneeded cable passages in the sealing elements.

**Technical data**

Material	Polyamide
Colour	white
Operating temperature	-40...120 °C

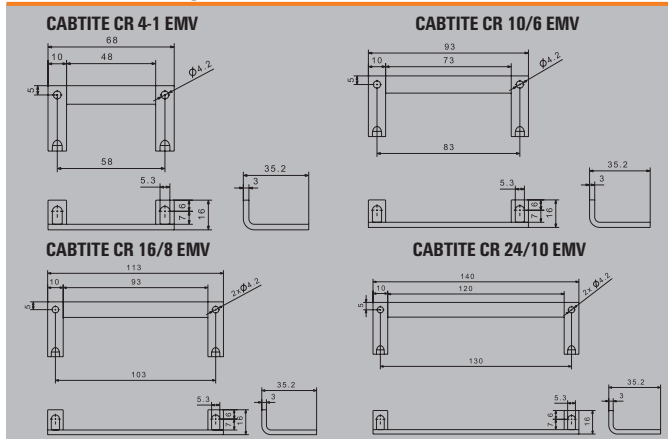
**Note**

**Ordering data**

Type	Qty.	Order No.
CABTITE BP 2MM PA	25	2652300000
CABTITE BP 3MM PA	25	2652310000
CABTITE BP 4MM PA	25	2652320000
CABTITE BP 5MM PA	25	2652330000
CABTITE BP 6MM PA	25	2652340000
CABTITE BP 7MM PA	25	2652350000
CABTITE BP 8MM PA	25	2652360000
CABTITE BP 9MM PA	25	2652370000
CABTITE BP 10MM PA	25	2652380000
CABTITE BP 12MM PA	25	2652400000
CABTITE BP 13MM PA	25	2652410000
CABTITE BP 14MM PA	25	2652420000
CABTITE BP 17MM PA	25	2652430000

**Note**

**Dimensioned drawing**



**IP54 Snap version**



Insert cables and wires without plugs into control cabinets, enclosures or machines easily and in the smallest possible space. The tool-free IP54 snap-in version of the cable entry plates is tested according to DIN EN 60529 and made of UL94 V-0 certified TPE material.

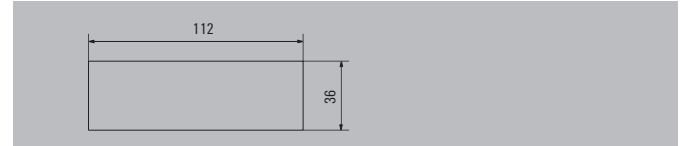
**Technical data**

Material	TPE
Colour	grey
Operating temperature	-40...90 °C
Protection class	IP54
UL 94 flammability rating	V-0
<b>Note</b>	

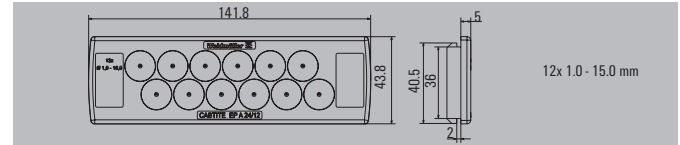
**Ordering data**

Type	Qty.	Order No.
<b>Type A - for wall thicknesses 1.5 - 2.5 mm</b>		
CABTITE EP A 24/12 GY	10	2743540000
CABTITE EP A 24/14 GY	10	2743550000
CABTITE EP A 24/17 GY	10	2743560000
CABTITE EP A 24/18 GY	10	2743570000
CABTITE EP A 24/19 GY	10	2743580000
CABTITE EP A 24/26 GY	10	2743590000
CABTITE EP A 24/42 GY	10	2743600000
CABTITE EP A 24/48 GY	10	2743610000
CABTITE EP A 24/50 GY	10	2743620000
<b>Type B - for wall thicknesses 2.5 - 4 mm</b>		
CABTITE EP B 24/12 GY	10	2743630000
CABTITE EP B 24/14 GY	10	2743640000
CABTITE EP B 24/17 GY	10	2743650000
CABTITE EP B 24/18 GY	10	2743660000
CABTITE EP B 24/19 GY	10	2743670000
CABTITE EP B 24/26 GY	10	2743680000
CABTITE EP B 24/42 GY	10	2743690000
CABTITE EP B 24/48 GY	10	2743700000
CABTITE EP B 24/50 GY	10	2743710000
<b>Note</b>		

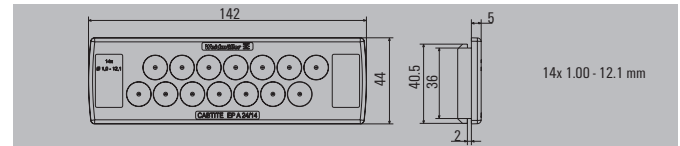
**Mounting Cut-out / Montageausschnitt**



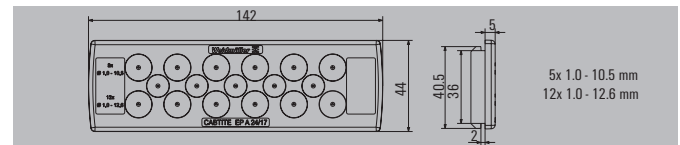
**CABTITE EP ... 24/12 GY**



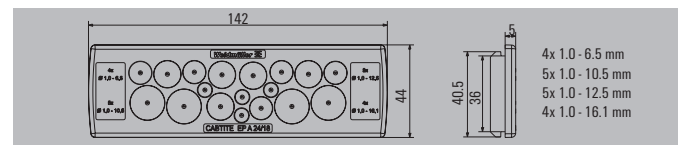
**CABTITE EP ... 24/14 GY**



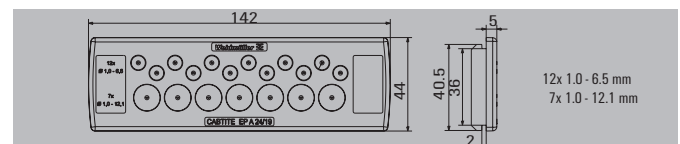
**CABTITE EP ... 24/17 GY**



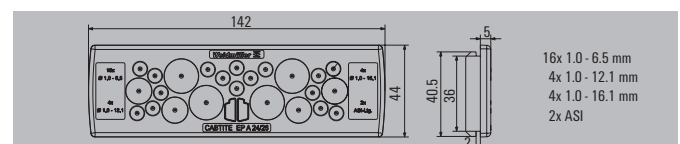
**CABTITE EP ... 24/18 GY**



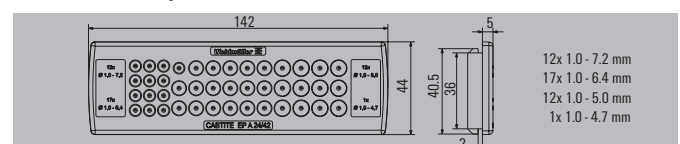
**CABTITE EP ... 24/19 GY**



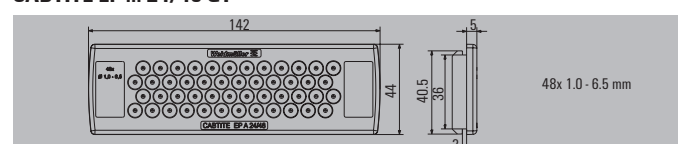
**CABTITE EP ... 24/26 GY**



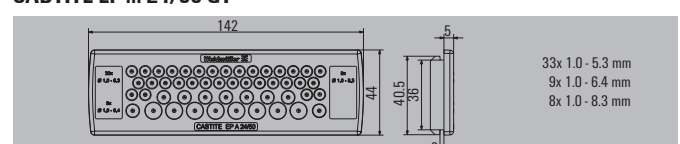
**CABTITE EP ... 24/42 GY**



**CABTITE EP ... 24/48 GY**



**CABTITE EP ... 24/50 GY**



## Cable Entry System – Cabtite

### IP66 Screw version



Insert cables and wires without plugs into control cabinets, enclosures or machines easily and in the smallest possible space. The IP66 screw version of the cable entry plates is tested according to DIN EN 60529 and made of UL94 V-0 certified TPE material with a hard plastic core.

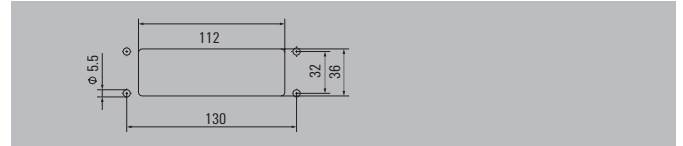
#### Technical data

Material	TPE
Colour	grey
Operating temperature	-40...90 °C
Protection class	IP66
UL 94 flammability rating	V-0
<b>Note</b>	

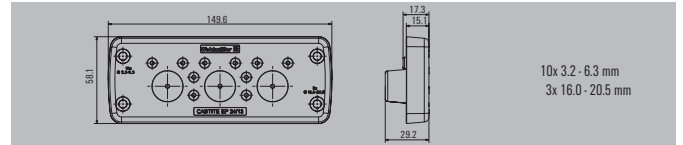
#### Ordering data

Type	Qty.	Order No.
CABTITE EP 24/13 GY	10	2779310000
CABTITE EP 24/14 GY	10	2779320000
CABTITE EP 24/16 GY	10	2779330000
CABTITE EP 24/16-1 GY	10	2779340000
CABTITE EP 24/17 GY	10	2779350000
CABTITE EP 24/20 GY	10	2779360000
CABTITE EP 24/21 GY	10	2779370000
CABTITE EP 24/32 GY	10	2779380000
<b>Note</b>		

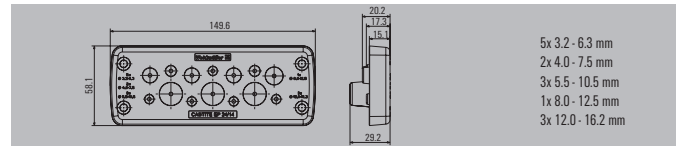
### Mounting Cut-out / Montageausschnitt



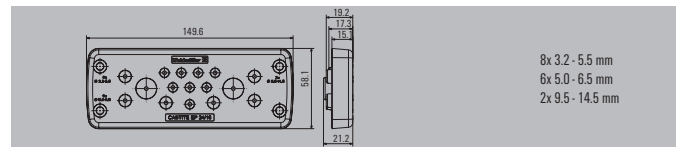
#### CABTITE EP 24/13



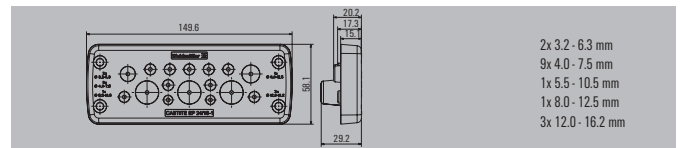
#### CABTITE EP 24/14



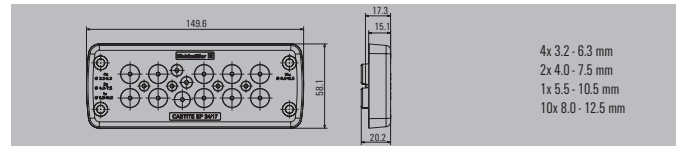
#### CABTITE EP 24/16



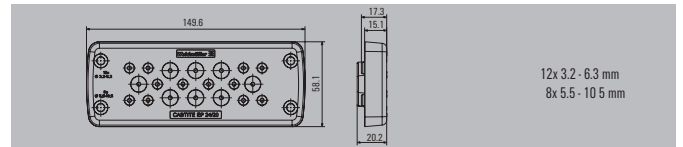
#### CABTITE EP 24/16-1



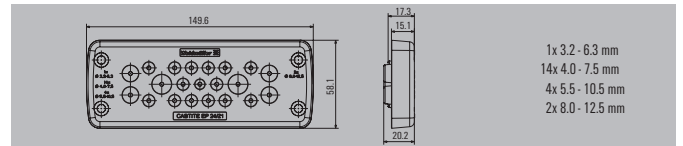
#### CABTITE EP 24/17



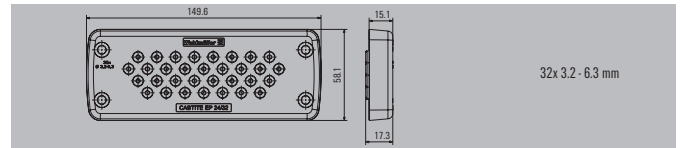
#### CABTITE EP 24/20



#### CABTITE EP 24/21



#### CABTITE EP 24/32



### Cable Bender

Cable bender to guide patch cables safely and without cable breakage or data loss by 90° angles

### Cable bender



#### Technical data

Cable bending radius	90 °
Colour	black
Temperature range	-25 °C...85 °C
Sheath diameter, min.	5.5 mm
Sheath diameter, max.	6.5 mm

#### Hinweis

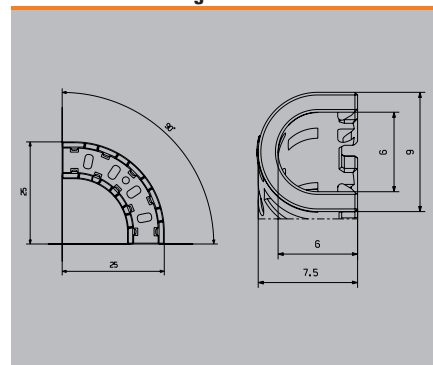
#### Ordering data

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#### Note

Type	Qty.	Order No.
IE-CABLE-BENDER-90	50	2704480000

#### Dimensioned drawings



**Protective caps**

**Dust-protection plugs for protecting empty ports**

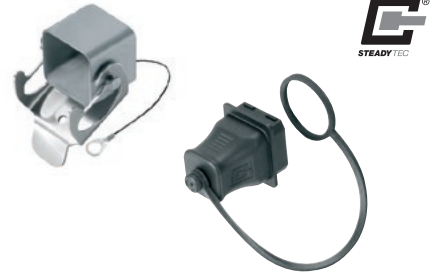
- RJ45
- **STEADYTEC**® variants
- M12

**Dust Cap RJ45**



- Dust Cap RJ45 with finger grip

**Protective caps IP67**



- Protective caps for all **STEADYTEC**® variants and for M12 plug-in connectors

**Ordering data**

Type	Qty.	Order No.
IE-DPC	100	8813490000
Note		

Type	Qty.	Order No.
V1 Bayonet plug	10	1965690000
V1 Bayonet flange	10	1965700000
V4 PushPull plug	10	1963890000
V4 PushPull flange	10	1963900000
V5 HDC plug	10	1968920000
V5 HDC flange	10	1968930000
V14 PushPull plug	10	1058280000
V14 PushPull flange	10	1058310000
PushPull Power flange	10	1068930000
M12 plug	1	2330260000
M12 flange	1	8425960000
Note		

Type	Qty.	Order No.
V1 Bayonet plug	10	1965690000
V1 Bayonet flange	10	1965700000
V4 PushPull plug	10	1963890000
V4 PushPull flange	10	1963900000
V5 HDC plug	10	1968920000
V5 HDC flange	10	1968930000
V14 PushPull plug	10	1058280000
V14 PushPull flange	10	1058310000
PushPull Power flange	10	1068930000
M12 plug	1	2330260000
M12 flange	1	8425960000
Note		

R

# PrintJet CONNECT

## The networked high-performance printer for efficient and high-quality markings

### Your direct connection to the optimal marking process

The PrintJet CONNECT is the consistent further development of our tried-and-tested PrintJet series. Focusing on the modern needs of industry and panel building, it combines maximum process and cost efficiency with intelligent networking and complete data consistency. For example, you can use existing data directly in the marking process – for working more efficiently and with a minimal error rate. The PrintJet CONNECT is part of the Weidmüller marking system consisting of software, markers and printers. It has an extremely durable industrial print head and has been specially optimised for fast working speed and high throughput.

### Your advantages at a glance:

- Perfect printing results every time
- Fast handling of large volumes
- High level of automation thanks to magazine capacity of 50 MultiCards
- Durable and robust markers thanks to thermal fixing
- User-friendly operation thanks to intuitive touch display
- Flexible connection possibilities
- Simple function monitoring on the device



The new 7" touch colour display with a multitude of new functions ensures optimal operation.



Whether LAN, WLAN or USB: the PrintJet CONNECT offers a wide connectivity spectrum.

### Technical data

	Description
Intended use	Printing Weidmüller MultiCards and MetalliCards
Technology	Inkjet procedure with integrated thermal fixing unit
Feed	Automatic magazine for max. 30 MultiCards Individual feed for MetalliCards and MultiCards
Removal	Automatic dispenser magazine for up to 50 MultiCards
Fuses	10 ATH 240/120 V
Application site	Office conditions
Ambient temperature	10 °C – 35 °C 0 °F – 95 °F
Dimensions	Length including output rail: approx. 1.133 mm (44,60") Length not including output rail: approx. 930 mm (36,60") Width: 590 mm (23,20") Height: 454 mm (17,90")
Weight	63 kg with packaging 38 kg without packaging
Ink system	Colour system – black, cyan, magenta, yellow
Included in delivery	<ul style="list-style-type: none"> <li>• PrintJet CONNECT</li> <li>• Mains cable</li> <li>• LAN cable</li> <li>• USB cable</li> <li>• WIFI stick</li> <li>• one MultiCard DEK 5/5</li> <li>• DVD with M-Print® PRO software</li> <li>• Quick start guide</li> <li>• Operating manual</li> <li>• Ink set PJ CON INK SET</li> <li>• 2 PrintJet cleaner cloths</li> </ul> <p>The ink cartridges are not installed in the printer.</p>

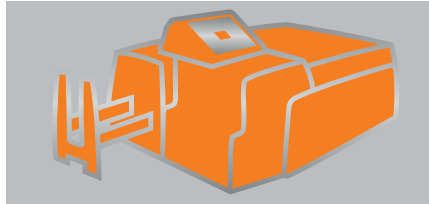


High magazine capacity for loading and dispensing of up to 50 MultiCards.

**Inkjet printer**

**Ink-jet printer**

**PrintJet CONNECT**



**Technical data**

EAN	4064675016922
Depth	930 mm
Width	590 mm
Height	454 mm
Net weight	38 kg
Printing method	Ink jet technology
Printer driver / Operating system	Windows 7, Windows 8, Windows 8.1, Windows 10
Printing speed	Depends on printing quality
Print quality	300 dpi, 600 dpi, 1200 dpi
Marker type	MultiCard, MetalliCard
Interface	USB, LAN, Wi-Fi
Fueling system	Ink cartridge, CMYK
Voltage supply	230 V AC / 16 A, 115 V AC / 20 A
Software	M-Print® PRO
<b>Note</b>	

**Ordering data**

Type	Qty.	Order No.
PRINTJET CONNECT	1	2715590000
<b>Note</b>		

**Accessories**

PrintJet CONNECT		Type	Qty.	Order No.
	Software	M-PRINT PRO	1	1905490000
	Ink set	PJ CON INK SET	1	2715600000
	Cyan ink	PJ CON INK C	1	2715610000
	Magenta ink	PJ CON INK M	1	2715620000
	Yellow ink	PJ CON INK Y	1	2715630000
	Black ink	PJ CON INK K	1	2715640000
	Fluid set	PJ CON FLUID SET	1	2715650000
	Ink collecting tray	PJ CON WASTE PAD	1	2715660000
	Textile cover	PJ ADV TEXTILE COVER	1	2592960000
	WiFi Stick	PJ CON WIFI STICK	1	2715680000
PrintJet ADVANCED				
	Ink collecting tray	PJ ADV TNAW	1	1338710000
	Cyan ink	PJ ADV TNTK INK C	1	1338680000
	Magenta ink	PJ ADV TNTK INK M	1	1338670000
	Yellow ink	PJ ADV TNTK INK Y	1	1338650000
	Black ink	PJ ADV TNTK INK K	1	1338690000
	Ink set	PJ ADV TNTK INK SET	1	1338720000
<b>Note</b>				

R



**Markers for cables and wires**



SlimFix V0 for cables and wires

- Ø 4.7 to 6.8 mm SF5/21
- Ø 5.8 to 8.5 mm SF6/21

**Ordering data**

Type	Qty.	Order No.
VT SF 5/21 NE WS V0	160	1689470001
VT SF 6/21 NE WS V0	160	1730560001

Note: Can be printed with PrintJet PRO.

**Accessories**

Type	Qty.	Order No.

**Markers for IE-Line **STEADYTEC®****



MultiCard ESG 9/11 K for IE-Line **STEADYTEC®**

- 9 x 11 mm
- White

**Ordering data**

Type	Qty.	Order No.
ESG 9/11 K MC NE WS	200	1857440000

Note: Can be printed with PrintJet PRO.

**Accessories**

Type	Qty.	Order No.

**TM-I for pre-assembled M12 cables**



MultiCard markers for labelling transparent M12 TM-I sleeves

- Tag length: 18 mm
- Tag width: 4 mm

**Ordering data**

Type	Qty.	Order No.
TM-I 18 MC NE WS	320	1718431044
TM-I 18 MC NE GE	320	1718431687

Note: Can be printed with PrintJet PRO.

**Accessories**

Type	Qty.	Order No.
TM 4/12 HF/HB Length 12 mm	500	1719840000
TM 4/18 HF/HB Length 18 mm	500	1719850000

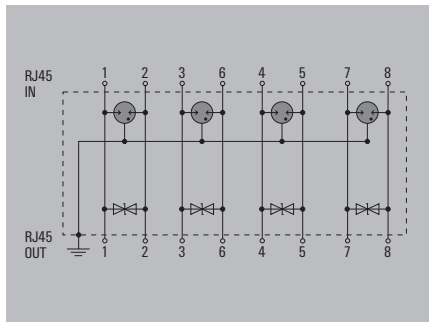
Note: Can be printed with PrintJet PRO.

**Surge protection for data interfaces**

**V DATA Cat. 6 - surge protection for 8 wires with RJ45 socket**

- RJ45 connection
- All 4 lines are protected
- Robust and compact metal housing
- Suitable for Cat. 5 (to 100 MHz) and Cat. 6 to 250 MHz (class E)
- Suitable for PoE (IEEE 802.3af) and PoE + (IEEE 802.3at)

**V DATA CAT6**



**R**

**Technical data**

Requirements category acc. to IEC 61643-21  
 Surge current-carrying capacity C2  
 Surge current-carrying capacity D1  
 Discharge current  $I_n$  (8/20  $\mu$ s) wire-wire/wire-PE/GND-PE  
 Discharge  $I_{max}$  (8/20  $\mu$ s) wire-wire/wire-PE/GND-PE  
 Lightning test  $I_{imp}$  (10/350  $\mu$ s) wire-wire/wire-PE/GND-PE  
 Type of connection  
 Storage temperature  
 Ambient temperature (operational)  
 Protection degree  
 Rated voltage (AC)  
 Rated current  
 Insertion loss at 250 MHz  
 Protection level  $U_p$  typical

**Approvals**

Standards

**Dimensions of complete module (arrester + base element)**

Height x width x depth

**Note**

C2, D1  
 10 kA  
 1 kA 10/350  $\mu$ s  
 150 A / 1,25 kA  
 10 kA / 5 kA  
 1 kA / 1 kA  
 RJ45-Port  
 -40 ... +85 °C  
 -40 ... +80 °C  
 IP20  
 48 V  
 1 A  
 $\leq$  1 dB at 250 MHz  
 $\leq$  550 V

According to IEC61643-21

75 / 19 / 46 mm

Can also be used for Cat.5 applications

**Ordering data**

**Note**

Type	Qty.	Order No.
VDATA CAT6	1 ST	1348590000

# Service and support

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# Our expertise for your requirements

## Service connects – worldwide



Automation technology functions are becoming more complex in a globally-oriented world facing ambitious targets in terms of energy efficiency and smart production. We are your equal partners for the best connections in Industrial Connectivity.

Our personal support answers all questions reliably and expertly. During planning, installation or operation our service and support offer is your best companion.

In short: Weidmüller's global service combines our expertise with your requirements.

V



**Your way to our service**  
[www.weidmueller.com/service](http://www.weidmueller.com/service)

# Engineering services and customised products

Automation engineering and connectivity consulting belongs to our services as well as assembly of engineered products. We also support the process from the idea to the product with our Weidmüller Configurator and the Configure-to-Order process.



## Consulting and engineering

The challenge for you is reducing costs and increasing efficiency. This requires intelligent, individual solutions. Whether it is modified products, pre-fitted mounting rails or complete small cabinets – our application centres provide a highly qualified custom-made engineering and production service.



## Connectivity Consulting

Increase your competitiveness - supported by our experts. Our drive is to optimise your competitiveness. That's why our team of experts supports you in significantly increasing your efficiency in electrical machine design and control cabinet construction. With proven products and services from the Weidmüller portfolio – and with the experience gained from over 300 projects worldwide.



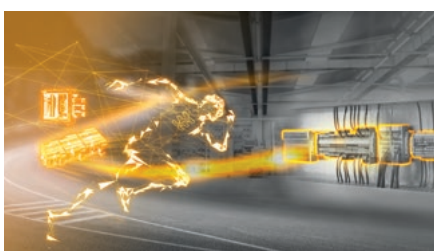
## Assembled terminal rails - Flexibly designed to suit your requirements

Your processes in panel building have to be fast, flexible and productive. This is the only way you can cut your costs and increase efficiency. Depending on the application in question, you will have different requirements with respect to the engineering service, delivery speed and flexibility to be provided.



## Modified and assembled enclosures - Competitive advantages included

To compete internationally, your plants need to satisfy high standards of safety, quality and performance. The smart combination of consultation, application expertise and industry know-how is our key to finding a custom-fit solution for your application. Reduce costs and increase efficiency.



## Fast Delivery Service - Your ideas deserve a quick realisation

Obtain offers 24/7 and within minutes, including directly orderable article numbers with our Fast Delivery Service. The Weidmüller Configurator (WMC) for planning and configuration is key for consistent processes. Dispatch your orders in 5 days. Assemble individual terminal strips and enclosures from batch size 1!

# Your ticket to the world of digital service

## easyConnect – Your Industrial Service Platform



Our cloud-based platform is your ticket to the world of digital services from Weidmüller, and the intuitive and future-proof tool for your way to the Industrial IoT. Realise your use cases easily, consistently and without any relevant prior knowledge, thanks to the perfect interaction of platform, devices and diverse software services.

As an open, modular and perfectly integrable system, the platform is your enabler for a wide range of use cases. Increase your efficiency and unleash your full innovation potential with easyConnect.

V



### Interested in using easyConnect?

Learn how to get started with easyConnect step-by-step.

[www.weidmueller.com/easyconnect](http://www.weidmueller.com/easyconnect)

## Why should you use easyConnect?

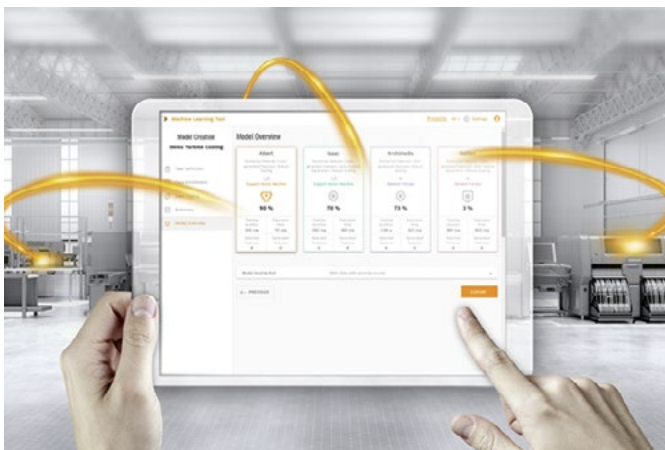
- You want to enter your digital transformation step-by-step?
- You want to make the step into Industrial IOT, but have no or little IT expertise?
- You want to use your digital data for smart & scalable services?
- You want to offer digital services (such as customised dashboard) to your customers?
- You want to improve your service offering and efficiency, e.g. through remote access?
- You feel Weidmüller's digital services are interesting, but you have „your cloud“ already?



Weidmüller comes up with the solution: easyConnect, the new digitalisation platform. It bundles Weidmüller's digital services at one place in the cloud and connects them with various Weidmüller devices.

With easyConnect you start digitalising your application step-by-step without ballast in a secure way.

## The following services are initially available on easyConnect:



### Device management

Adding and managing cloud-connected devices is typically the first step in any Industrial IoT use case.

### Asset management

The asset management service is a modelling tool that allows users to model their assets and processes and link them to relevant time series data.

### Remote access (u-link)

u-link guarantees a quick and secure access to machines and plants while also allowing for efficient management.

### Data visualisation

easyConnect data visualisation services enable users to view, monitor and display live and historical data.

### AutoML

With Weidmüller Industrial AutoML, you can optimize operations, increase product quality and develop new business models by benefiting from advanced analytics.

## Expand the possibilities of our products

Our Support Center provides you with comprehensive, clear and personal assistance



Receive fast and intuitive support to get the most out of our products in your application. In our new Support Center you can search or navigate to the many application notes, product information, video tutorials or software downloads of our products.

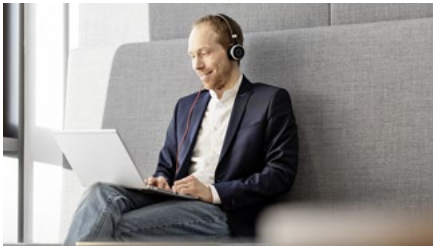
- **Everything at a glance** – One central support hub, where all relevant information is available
- **Powerful search** – Provides filter functions for various types of information and products
- **Different views and navigations** – Content provided in views product information, engineering support or software downloads
- **More than 170,000 downloads** – Application notes, video tutorials, templates and examples, user documentation, engineering data, ...
- **Personal contact** – Direct access to your personal technical contact in your country



Explore the world of our new Support Center  
[support.weidmueller.com](https://support.weidmueller.com)



## Additional support services



### Training and Webinars

Stay tuned in a world that is accelerating. In our entertaining interactive webinars, we offer you the opportunity to learn about new products and technology topics and to interact with our experts.



### Repairs and replacement parts

We offer repair and components for our Workplace Solutions as well as assistance for other Weidmüller products. Find out how our experts can help you with your repair request.



### Security advisory board

Our Product Security Incident Response Team (PSIRT) continuously informs you about possible security-related vulnerabilities of our products.



### Engineering data

For the quick integration of our products into your design, there are a lot of digital product data for engineering systems like EPLAN, Zuken E3.series, WSCAD and many others available for download.



### Product change notifications

Technical modifications of our products always available online.



### Technical product catalogues

Technical data for our entire program in Industrial Connectivity for download in PDF-format.

## From the idea to the finished solution

# Weidmüller Configurator: intuitive, uncomplicated & fast digital engineering

Digital engineering can be so easy – with the Weidmüller Configurator!

It's a **free to use** software application to easily configure industrial solutions. It features more than **12,000 articles** from multiple product families including rail-mounted components, industrial and ex-certified enclosures, Heavy Duty Connectors, remote I/O-systems and PCB connectors.

Unleash the full power of digital engineering:

Our application wizards help you choose the right articles.

Place, mark or modify them to your needs and get your solution **visualized in 3D** – what you see is what you get!

Our promise: Speed up your solution planning process by up to 70%!

### Your benefits:

- **Proven configuration designs in real 3D:** The plausibility and collision check with the complete digital documentation ensures that you can rely 100% on your configuration.
- **Seamless E-CAD Roundtrip:** Interfaces enable the simple exchange of product data between the WMC and all common engineering tools, such as Zuken E3 or EPLAN Electric P8.
- **Sample Service & Fast Delivery Service:** to support your design-in process, we offer a **3-day sample service** for many products. Inquire them directly online – for free!  
You want your solution right away? Our **Fast Delivery Service** guarantees delivery of individually assembled terminal strips or enclosures within a few days.

### Get started online now!

The Weidmüller Configurator makes solution planning easy. Visit our website for more information, tutorials and download it for free:



[www.weidmueller.com/wmc](http://www.weidmueller.com/wmc)

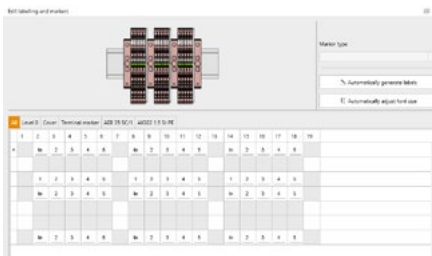


or register on [easyconnect.weidmueller.com](http://easyconnect.weidmueller.com) and use it online.



**Wizards:**

Design complete applications within few clicks – even without detailed product knowledge – for signal wiring, load monitoring, instrument transformers, enclosures, remote I/O-systems and many more.



**Assistants:**

Finalize your solutions with supporting assistants to add cross-connectors, markers or colors and verify the faultlessness. Automatic modes save valuable time!



**1-click documentation:**

Get assembly drawings for production – only 1 click. Bill of material – only 1 click. The complete solution documentation including all component data sheets – you’re right, only 1 click!



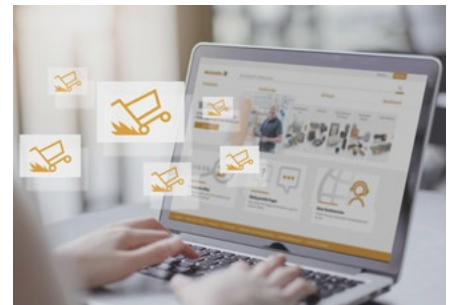
# Digital ordering options

## Your digital ordering options at Weidmüller

Find and easily select the products you need, with convenient ordering: as your Partner in Industrial Connectivity, we know what counts in purchasing. That is why we offer you a variety of options for ordering products from us and optimising your purchasing processes to meet your individual requirements and your workflow. The choice is yours.

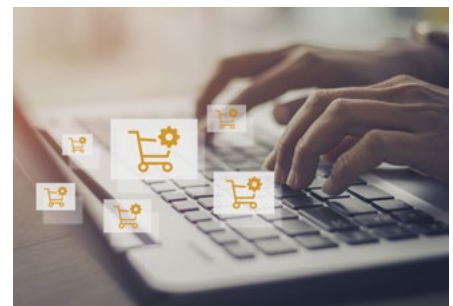
### Order via the Weidmüller eShop

Our eShop offers you access to the complete Weidmüller product range around the clock – directly from a PC, tablet, or smartphone. The intuitive user guidance supports you as you select from over 50,000 products. Technical data, prices, and availabilities are available at any time. The shopping basket with check out function lets you place an order in seconds. Convenient additional functions like CSV upload, order history, reports, or custom order templates make your ordering processes even more efficient.



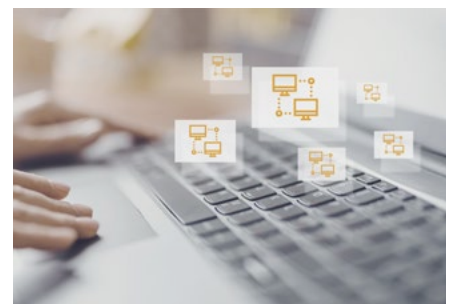
### Order via the OCI interface

The Open Catalogue Interface (OCI) facilitates the exchange of data between your enterprise resource planning system and our eShop. This means that our eShop is integrated into your system via an OCI interface, so you have access to our complete product catalogue from your enterprise resource planning system. You can filter and select products, place them in your shopping basket and place direct orders without changing your software application. The open OCI standard is supported worldwide from a variety of software providers.



### Order via the EDI interface

Our Electronic Data Interchange (EDI) also offers you the option of ordering our products directly from your enterprise resource planning system. All order data is transmitted automatically to our system and processed immediately. Orders, order confirmations, invoices, and delivery notices are transmitted lightning fast. This helps you make your purchasing processes even more efficient.



We will be glad to advise you on which solutions are suitable for you and how implementation is possible.

**Get in touch with us**

[www.weidmueller.com/digital-order](http://www.weidmueller.com/digital-order)

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IE-BI-USB-A	1019570000	M.9	IE-BS-V14M-RJ45-C	1012310000	J.8	IE-C5DD4UG0015MSSMCS-E	1059330015	P.42	IE-C5DD4UG0300CSDCS-E	2706210300	P.58
IE-BI-USB-A	1019570000	M.10	IE-BS-V14M-RJ45-C	1012310000	N.5	IE-C5DD4UG0020A20A20-E	1173030020	P.36	IE-C5DD4UG0300CSU20-E	2706250300	P.60
IE-BI-USB-A	1019570000	M.11	IE-BS-V14M-RJ45-FJA	1012320000	N.4	IE-C5DD4UG0020A2EA2E-X	1376510020	P.36	IE-C5DD4UG0300CSXXX-E	2706150300	P.56
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IE-BI-USB-A	1019570000	M.15	IE-BS-V14M-RJ45-FJP	1085260000	N.4	IE-C5DD4UG0020A0A0A0-E	2047310020	P.37	IE-C5DD4UG0300SAXXX-E	2706260300	P.56
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IE-BI-USB-AB	1131380000	M.6	IE-BS-V14M-SCRJ-MM-C	1058120000	N.11	IE-C5DD4UG0025A0A0A0-E	2047310025	P.37	IE-C5DE4UP0015PCAPSA-E	2717810015	P.55
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IE-BI-USB-AB	1131380000	M.15	IE-C5AS4VG-100	8899000000	P.5	IE-C5DD4UG0030DCA20A-E	2706220030	P.59	IE-C5DE4UP0015PSAXXX-E	2717760030	P.53
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IE-BI-HYB-P.0,2-300	1135160000	O.6	IE-C5AS4VG-500	2763430000	P.17	IE-C5DD4UG0030DSCSDS-E	2706210030	P.58	IE-C5DE4UP0015PCSPSS-E	2717790030	P.54
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IE-BI-HYB-P.0,5-300	1096150000	N.8	IE-C5CS8UG-100	8813160000	P.5	IE-C5DD4UG0030DSCSXXX-E	2706150030	P.56	IE-C5DE4UP0015PCSPSS-E	2717760030	P.53
IE-BI-HYB-P.0,5-300	1096150000	N.54	IE-C5CS8UG-100	8813160000	P.8	IE-C5DD4UG0030DSAXXX-E	2706160030	P.57	IE-C5DE4UP0015PCSPSS-E	2717740030	P.52
IE-BI-HYB-P.0,5-300	1096150000	O.6	IE-C5CS8UG-500	2762870000	J.13	IE-C5DD4UG0030DSAXXX-E	2706260030	P.56	IE-C5DE4UP0015PCAPCA-E	2717800050	P.55
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IE-BI-HYB-P.0,75-300	1068970000	N.54	IE-C5CS8VG-100	8813150000	J.13	IE-C5DD4UG0030MCSA20-E	1044470030	P.43	IE-C5DE4UP0015PCSPCS-E	2717780050	P.54
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IE-BP-V01P	1965700000	N.14	IE-C5CS8VG-500	2763440000	J.13	IE-C5DD4UG0030MCSXXX-E	1025940030	P.43	IE-C5DE4UP0015PCSPSS-E	2717760050	P.53
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IE-BP-V04P	1963900000	N.22	IE-C5DB4RE0015MCSMCA-E	1059940015	P.63	IE-C5DD4UG0050A2EA2E-X	1119730050	J.9	IE-C5DE4UP0015PCSPCS-E	2717780050	P.54
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IE-C5DHAG-500	2763460000	P.19	IE-C5ES8VG0010N40N40-G-K6KV	2814800010	P.33	IE-C6FP8LE0015M40M40-E	1251610015	P.24	IE-C6KS8VG0015XCSCXX-E	1398070015	P.48
IE-C5DS4UG0005MBSA20-E	1234750005	P.46	IE-C5ES8VG0015M40M40-G	1166020015	P.31	IE-C6FP8LE0020M40M40-E	1251610020	P.24	IE-C6KS8VG0015XCSCXX-E	1449470015	P.48
IE-C5DS4UG0005MBSA20-E	1244130005	P.46	IE-C5ES8VG0015N40N40-G-K6KV	2814800015	P.33	IE-C6FP8LE0025M40M40-E	1251610025	P.24	IE-C6KS8VG0030XCSCXX-E	1398070030	P.48
IE-C5DS4UG0005MBSA20-E	1234770005	P.47	IE-C5ES8VG0020M40M40-G	1166020020	P.31	IE-C6FP8LE0030M40M40-E	1251610030	P.24	IE-C6KS8VG0030XCSCXX-E	1449470030	P.48
IE-C5DS4UG0010MBSA20-E	1234750010	P.46	IE-C5ES8VG0020N40N40-G-K6KV	2814800020	P.33	IE-C6FP8LE0100M40M40-E	1251610100	P.24	IE-C6KS8VG0050XCSCXX-E	1398070050	P.48
IE-C5DS4UG0010MBSA20-E	1244130010	P.46	IE-C5ES8VG0030M40M40-G	1166020030	P.31	IE-C6FP8LE0150M40M40-E	1251610150	P.24	IE-C6KS8VG0050XCSCXX-E	1449470050	P.48
IE-C5DS4UG0010MBSA20-E	1234770010	P.47	IE-C5ES8VG0050M40M40-G	1166020050	P.31	IE-C6FP8LE0200M40M40-E	1251610200	P.24	IE-C6KS8VG0100XCSCXX-E	1398070100	P.48
IE-C5DS4UG0015MBSA20-E	1234750015	P.46	IE-C5ES8VG0100M40M40-G	1166020100	P.31	IE-C6FP8LE0250M40M40-E	1251610250	P.24	IE-C6KS8VG0100XCSCXX-E	1449470100	P.48
IE-C5DS4UG0015MBSA20-E	1244130015	P.46	IE-C5ES8VG0150M40M40-G	1166020150	P.31	IE-C6FP8LE0300M40M40-E	1251590002	P.25	IE-C7BS8UG-100	8813140000	P.5
IE-C5DS4UG0015MBSA20-E	1234770015	P.47	IE-C5ES8VG0200M40M40-G	1166020200	P.31	IE-C6FP8LE0350M40M40-E	1251590005	P.25	IE-C7BS8UG-100	8813140000	P.9
IE-C5DS4UG0020MBSA20-E	1234750020	P.46	IE-C5ES8VG0030N40N40-G-K6KV	2814850003	P.34	IE-C6FP8LE0400M40M40-E	1251590010	P.25	IE-C7BS8UG-600	2763530000	P.5
IE-C5DS4UG0020MBSA20-E	1244130020	P.46	IE-C5ES8VG0050N40N40-G-K6KV	2814850005	P.34	IE-C6FP8LE0500M40M40-E	1251590015	P.25	IE-C7BS8UG-600	2763530000	P.9
IE-C5DS4UG0020MBSA20-E	1234770020	P.47	IE-C5ES8VG0000N40N40-G-K6KV	2814850010	P.34	IE-C6FP8LE0600M40M40-E	1251590020	P.25	IE-C7BS8UG-100	8813130000	P.5
IE-C5DS4UG0050MBSA20-E	1234750005	P.46	IE-C5ES8VG0010N40N40-G-K6KV	2814850010	P.34	IE-C6FP8LE0700M40M40-E	1251590020	P.25	IE-C7BS8UG-100	8813130000	P.9
IE-C5DS4UG0050MBSA20-E	1244130005	P.46	IE-C5ES8VG0015N40N40-G-K6KV	2814850015	P.34	IE-C6FP8LE0800M40M40-E	1251590030	P.25	IE-C7BS8UG-100	2763540000	P.5
IE-C5DS4UG0050MBSA20-E	1244130005	P.46	IE-C5ES8VG0020N40N40-G-K6KV	2814850020	P.34	IE-C6FP8LE0900M40M40-E	1251590030	P.25	IE-C7BS8UG-100	2763540000	P.9
IE-C5DS4UG0050MBSA20-E	1234770005	P.47	IE-C5IT4UG-100	2764770000	P.5	IE-C6FP8LE1000M40M40-E	1251590100	P.25	IE-C7BS8UG-500	2763540000	P.9
IE-C5DS4VG-100	8898990000	J.9	IE-C5IT4UG-100	2764770000	P.18	IE-C6FP8LE1050M40M40-E	1251590150	P.25	IE-C7BS8UG-100	8813180000	P.5
IE-C5DS4VG-100	8898990000	P.5	IE-C5IT4UG-500	2763520000	J.9	IE-C6FP8LE1100M40M40-E	1251590200	P.25	IE-C7BS8UG-100	8813180000	P.11
IE-C5DS4VG-100	8898990000	P.17	IE-C5IT4UG-500	2763520000	P.5	IE-C6FP8LE1200M40M40-E	1251590200	P.25	IE-C7BS8UG-500	2763550000	P.5
IE-C5DS4VG-500	2763470000	J.9	IE-C5IT4UG-500	2763520000	P.18	IE-C6FP8LE1250M40M40-E	1251590250	P.25	IE-C7BS8UG-500	2763550000	P.11
IE-C5DS4VG-500	2763470000	P.5	IE-C5IT4UG-500	2763520000	P.18	IE-C6FP8LE1300M40M40-E	1251590250	P.25	IE-C7BS8UG-500	2763550000	P.11
IE-C5DS4VG-500	2763470000	P.17	IE-C5IT4UG60010B2EB2E-X	1312690010	P.39	IE-C6FP8LE1350M40M40-E	1251590250	P.25	IE-C7BS8UG-500	8813170000	P.5
IE-C5DS4VG-500	2763470000	P.17	IE-C5IT4UG60020B2EB2E-X	1312690020	P.39	IE-C6FP8LE1400M40M40-E	1251590250	P.25	IE-C7BS8UG-500	8813170000	P.11
IE-C5DS4VG0005A60A60-E	1522100005	P.37	IE-C5IT4UG60030B2EB2E-X	1312690030	P.39	IE-C6FP8LE1500M40M40-E	1251590250	P.25	IE-C7BS8UG-500	2763560000	P.11
IE-C5DS4VG0010A60A60-E	1522100010	J.8	IE-C5IT4UG60050B2EB2E-X	1312690050	P.39	IE-C6FP8LE1600M40M40-E	1251590250	P.25	IE-C7BS8UG-500	2763560000	P.5
IE-C5DS4VG0010A60A60-E	1522100010	P.37	IE-C5IT4UG60100B2EB2E-X	1312690100	P.39	IE-C6FP8LE1700M40M40-E	1251590250	P.25	IE-C7BS8UG-500	2763560000	P.14
IE-C5DS4VG0015A60A60-E	1522100015	P.37	IE-C6EL8UG6010U40XC3-E	1457580010	P.50	IE-C6FP8LE1800M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.12
IE-C5DS4VG0020A60A60-E	1522100020	P.37	IE-C6EL8UG6020U40XC3-E	1457580020	P.50	IE-C6FP8LE1900M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5DS4VG0025A60A60-E	1522100025	P.37	IE-C6EL8UG6030U40XC3-E	1457580030	P.50	IE-C6FP8LE2000M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.11
IE-C5DS4VG0030A60A60-E	1522100030	J.8	IE-C6EL8UG6005U40XC3-E	1457580050	P.50	IE-C6FP8LE2100M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.12
IE-C5DS4VG0030A60A60-E	1522100030	P.37	IE-C6EL8UG6010U40XC3-E	1457580100	P.50	IE-C6FP8LE2200M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5DS4VG0040A60A60-E	1522100040	P.37	IE-C6EL8UG60120U40XC3-E	1457580120	P.50	IE-C6FP8LE2300M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5DS4VG0050A60A60-E	1522100050	J.8	IE-C6FP8LB0002M40M40-B	1165900002	P.24	IE-C6FP8LE2400M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5DS4VG0050A60A60-E	1522100050	P.37	IE-C6FP8LB0005M40M40-B	1165900005	P.24	IE-C6FP8LE2500M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5DS4VG0075A60A60-E	1522100075	P.37	IE-C6FP8LB0010M40M40-B	1165900010	P.24	IE-C6FP8LE2600M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5DS4VG0100A60A60-E	1522100100	J.8	IE-C6FP8LB0015M40M40-B	1165900015	P.24	IE-C6FP8LE2700M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.14
IE-C5DS4VG0100A60A60-E	1522100100	P.37	IE-C6FP8LB0020M40M40-B	1165900020	P.24	IE-C6FP8LE2800M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5DS4VG0150A60A60-E	1522100150	P.37	IE-C6FP8LB0030M40M40-B	1165900030	P.24	IE-C6FP8LE2900M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.15
IE-C5DS4VG0200A60A60-E	1522100200	P.37	IE-C6FP8LB0050M40M40-B	1165900050	P.24	IE-C6FP8LE3000M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ED8UB-100	8960670000	P.5	IE-C6FP8LB0100M40M40-B	1165900100	P.24	IE-C6FP8LE3100M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5ED8UB-100	8960670000	P.16	IE-C6FP8LB0150M40M40-B	1165900150	P.24	IE-C6FP8LE3200M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ED8UB-1000	2781880000	P.5	IE-C6FP8LB0200M40M40-B	1165900200	P.24	IE-C6FP8LE3300M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.15
IE-C5ED8UB-1000	2781880000	P.16	IE-C6FP8LB0250M40M40-B	1165900250	P.24	IE-C6FP8LE3400M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ED8UB-500	2763480000	P.5	IE-C6FP8LD0002M40M40-D	1165940002	P.23	IE-C6FP8LE3500M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5ED8UB-500	2763480000	P.16	IE-C6FP8LD0003X40X40-Y	1312160003	P.30	IE-C6FP8LE3600M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ED8UG-100	8813210000	P.5	IE-C6FP8LD0004X40X40-Y	1312160004	P.30	IE-C6FP8LE3700M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5ED8UG-100	8813210000	P.16	IE-C6FP8LD0005M40L40-D	2703320005	P.29	IE-C6FP8LE3800M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ED8UG-1000	2781890000	P.5	IE-C6FP8LD0005M40M40-D	1165940005	P.23	IE-C6FP8LE3900M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5ED8UG-1000	2781890000	P.16	IE-C6FP8LD0005M40R40-D	2703330005	P.29	IE-C6FP8LE4000M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ED8UG-500	2763490000	P.5	IE-C6FP8LD0005M40V40-D	1248280005	P.28	IE-C6FP8LE4100M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5ED8UG-500	2763490000	P.16	IE-C6FP8LD0005M40W40-D	1233160005	P.28	IE-C6FP8LE4200M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ES8UG-100	8813200000	J.13	IE-C6FP8LD0005M40X40-Y	1312160005	P.28	IE-C6FP8LE4300M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5ES8UG-100	8813200000	P.5	IE-C6FP8LD0010M40L40-D	2703320010	P.29	IE-C6FP8LE4400M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ES8UG-100	8813200000	P.16	IE-C6FP8LD0010M40Q40-D	1165940010	P.23	IE-C6FP8LE4500M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5ES8UG-1000	2781890000	P.5	IE-C6FP8LD0010M40R40-D	2703330010	P.29	IE-C6FP8LE4600M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ES8UG-1000	2781890000	P.16	IE-C6FP8LD0010M40V40-D	1248280010	P.28	IE-C6FP8LE4700M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5ES8UG-500	2763500000	J.13	IE-C6FP8LD0010M40W40-D	1233160010	P.28	IE-C6FP8LE4800M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ES8UG-500	2763500000	P.5	IE-C6FP8LD0010X40X40-Y	1312160010	P.30	IE-C6FP8LE4900M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5ES8UG0005M40M40-G	1166000005	P.13	IE-C6FP8LD0012M40L40-D	2703320012	P.29	IE-C6FP8LE5000M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ES8UG0010B41B41-E	1068680000	J.13	IE-C6FP8LD0012M40R40-D	2703330012	P.29	IE-C6FP8LE5100M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5ES8UG0010B41B41-E	1068680000	P.51	IE-C6FP8LD0012M40V40-D	2703330012	P.29	IE-C6FP8LE5200M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ES8UG0010B41B41-E	1068680000	P.51	IE-C6FP8LD0012M40W40-D	2703330012	P.29	IE-C6FP8LE5300M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5ES8UG0010M40M40-G	1166000010	P.13	IE-C6FP8LD0012M40X40-Y	1312160020	P.28	IE-C6FP8LE5400M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ES8UG0010P41P41-E	1106010000	J.13	IE-C6FP8LD0012M40Q40-D	1233160012	P.28	IE-C6FP8LE5500M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5ES8UG0010P41P41-E	1106010000	P.51	IE-C6FP8LD0015M40L40-D	2703320015	P.29	IE-C6FP8LE5600M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ES8UG0015M40M40-G	1166000015	P.13	IE-C6FP8LD0015M40Q40-D	1165940015	P.23	IE-C6FP8LE5700M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13
IE-C5ES8UG0020B41B41-E	1068680000	J.13	IE-C6FP8LD0015M40R40-D	2703330015	P.29	IE-C6FP8LE5800M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.5
IE-C5ES8UG0020B41B41-E	1068680000	P.51	IE-C6FP8LD0015M40V40-D	1248280015	P.28	IE-C6FP8LE5900M40M40-E	1251590250	P.25	IE-C7BS8UG-500	1326540000	P.13





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IEOP-V04P-1S	1045780000	0.13	IE-PP-V14P	1058280000	N.3	IE-S1DS2VE0030T01T01-E	2725850030	K.8	IE-SWB-08-8TX	1286560000	B.10
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IE-IP67	8808380000	N.27	IE-PP-V14P	1058280000	N.10	IE-S1DS2VE0030T01T01-E	2725850050	K.8	IE-SWB-08-6TX-2SCS	2682210000	B.17
IE-P63	8813100000	L.8	IE-PP-V14P	1058280000	R.30	IE-S1DS2VE0050T01T01-E	2725850050	P.20	IE-SWB-08-6TX-2SCS	2682130000	B.4
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IE-PCB-M12X-S-90	2168220000	N.48	IE-PS-M12X-90-P-TH	2702710000	N.43	IE-S1DS2VE0100T01T01-E	2725850100	K.8	IE-SWB-08-6TX-2SCS	2682180000	B.5
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IE-PCB-SPE-P-90V2.1-THR RL	2726010000	L.3	IE-PS-M12X-S-FH	1516330000	N.42	IE-S1DS2VE0150T01T01-E	2725850150	K.8	IE-SWB-08-8POE	2682380000	B.14
IE-PCB-SPE-P-90V2.1-THR-YG/YG RL	2795120000	K.18	IE-PS-RJ45-FH-180-A-1.1	1992850000	L.5	IE-S1DS2VE0150T01T01-E	2725850150	P.20	IE-SWB-08-8TX	2682140000	B.4
IE-PCB-SPE-P-90V2.1-THR-YG/YG RL	2795120000	L.3	IE-PS-RJ45-FH-180-A-1.1-CG	2703440000	L.5	IE-S1DS2VE0150T01T01-E	2726050150	K.9	IE-SWB-08-6TX-2GESP	2682240000	B.19
IE-PCB-SPM-P-180-SMD	2795110000	K.21	IE-PS-RJ45-FH-180-A-1.6	1992820000	L.5	IE-S1DS2VE0150T01T01-E	2726050150	P.21	IE-SWB-10-8GTPOE-2GESFP	2682410000	B.22
IE-PCB-SPM-P-180-SMD	2795110000	N.31	IE-PS-RJ45-FH-180-A-1.6-CG	2703390000	L.5	IE-S1DS2VE0200T01T01-E	2726050200	K.9	IE-SWB-16-14TX-2FESFP	2682160000	B.6
IE-PCB-SPM-P-180-THR	2735920000	K.21	IE-PS-RJ45-FH-180-B-1.1	1992860000	L.5	IE-S1DS2VE0200T01T01-E	2726050200	P.21	IE-SWB-16-16TX	2682150000	B.6
IE-PCB-SPM-P-180-THR	2735920000	N.31	IE-PS-RJ45-FH-180-B-1.1-CG	2703460000	L.5	IE-S1DS2VE0400T01T01-E	2725850400	K.8	IE-SWB-18-16TX-2GC	2682200000	B.16
IE-PCB-SPM-P-90-THR	2795100000	K.21	IE-PS-RJ45-FH-180-B-1.6	1992830000	L.5	IE-S1DS2VE0400T01T01-E	2725850400	P.20	IE-SWB-18-16TX-2GC	2682190000	B.7
IE-PCB-SPM-P-90-THR	2795100000	N.31	IE-PS-RJ45-FH-180-B-1.6-CG	2703410000	L.5	IE-S1DS2VE0400T01T01-E	2726050400	K.9	IE-SWB-16-75M12	1504410000	B.13
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IE-PCBR-M12X-S-180	1427670000	N.47	IE-PS-RJ45-FH-180-P-1.6-CG	2703420000	L.7	IE-S1ES2LE-500	2924370000	K.12	IE-SWB-13-SL28MHV	2875580000	C.36
IE-PCBR2-M12X-S-180	1444850000	N.47	IE-PS-RJ45-FH-90-A-1.1	1518080000	L.6	IE-S1ES2LE-500	2924370000	P.5	IE-SWB-13-SL28MHV	2875590000	C.37
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IE-PH-RJ45-TH-BU	1962470000	L.8	IE-PS-RJ45-FH-90-B-1.6	1992890000	L.6	IE-S1ES2UE-500	2924360000	P.5	IE-SWB-PL16M-16TX	1241100000	C.16
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IE-PI-RJ45-FH-B-1.1	1992930000	L.5	IE-PS-V01M-RJ45-TH	1963140000	N.12	IE-SFP-10GLXLC-T	1286720000	L.7	IE-SWB-SL02-2GESFP+	2779210000	C.42
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1522100040	IE-C5DS4V60040A60A60-E	P.37
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1522100100	IE-C5DS4V60100A60A60-E	J.8
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2584730000	CABTITE SE 3-4 SML BK	R.20
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2584780000	CABTITE SE 1.5-2 SML BK	R.20
2584790000	CABTITE BSE SML BK	R.20
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2584810000	CABTITE SE 1/ASI SML GY	R.20
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2584830000	CABTITE SE 2/7 SML GY	R.20
2584840000	CABTITE SE 4/4-5 SML GY	R.20
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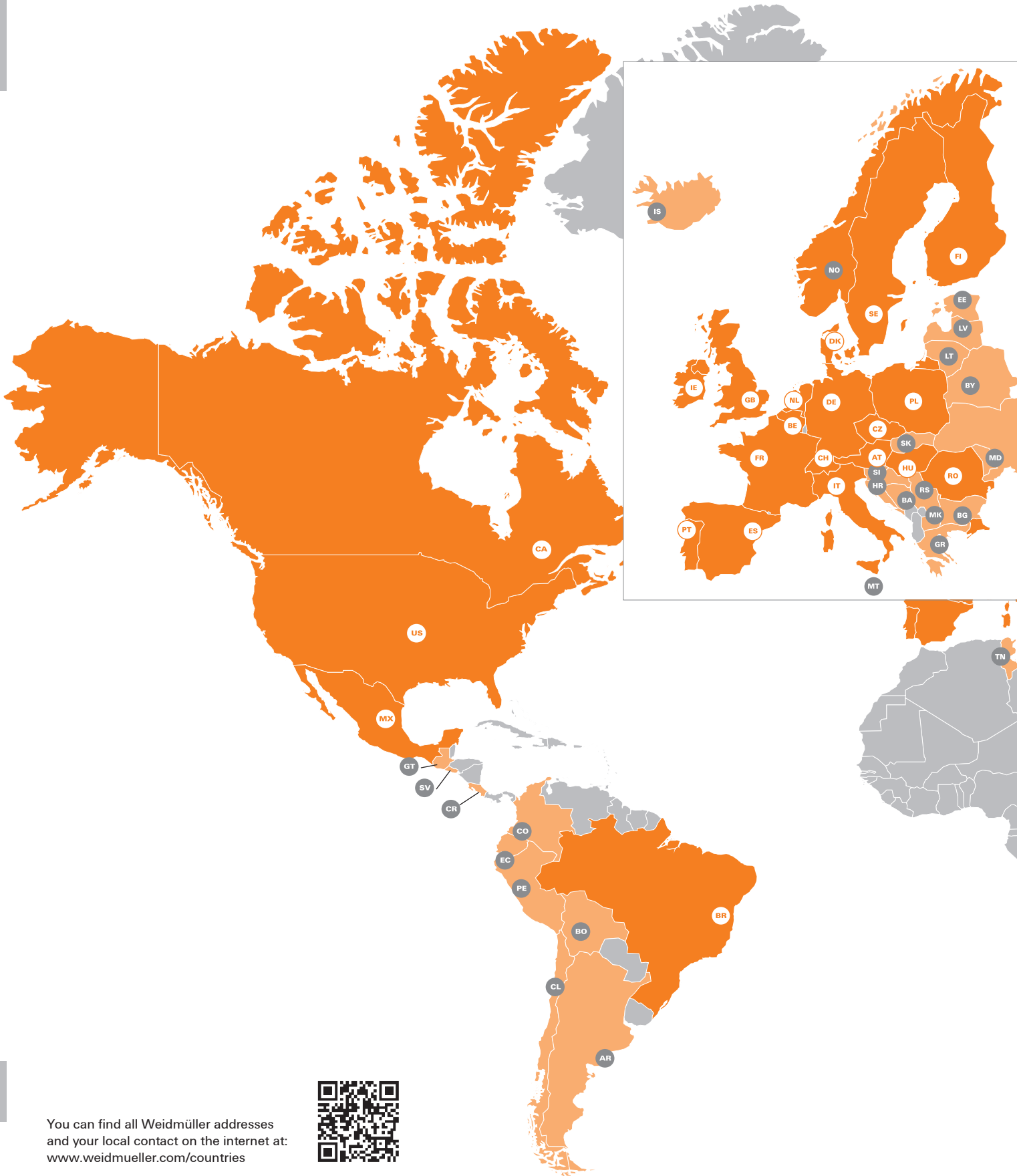
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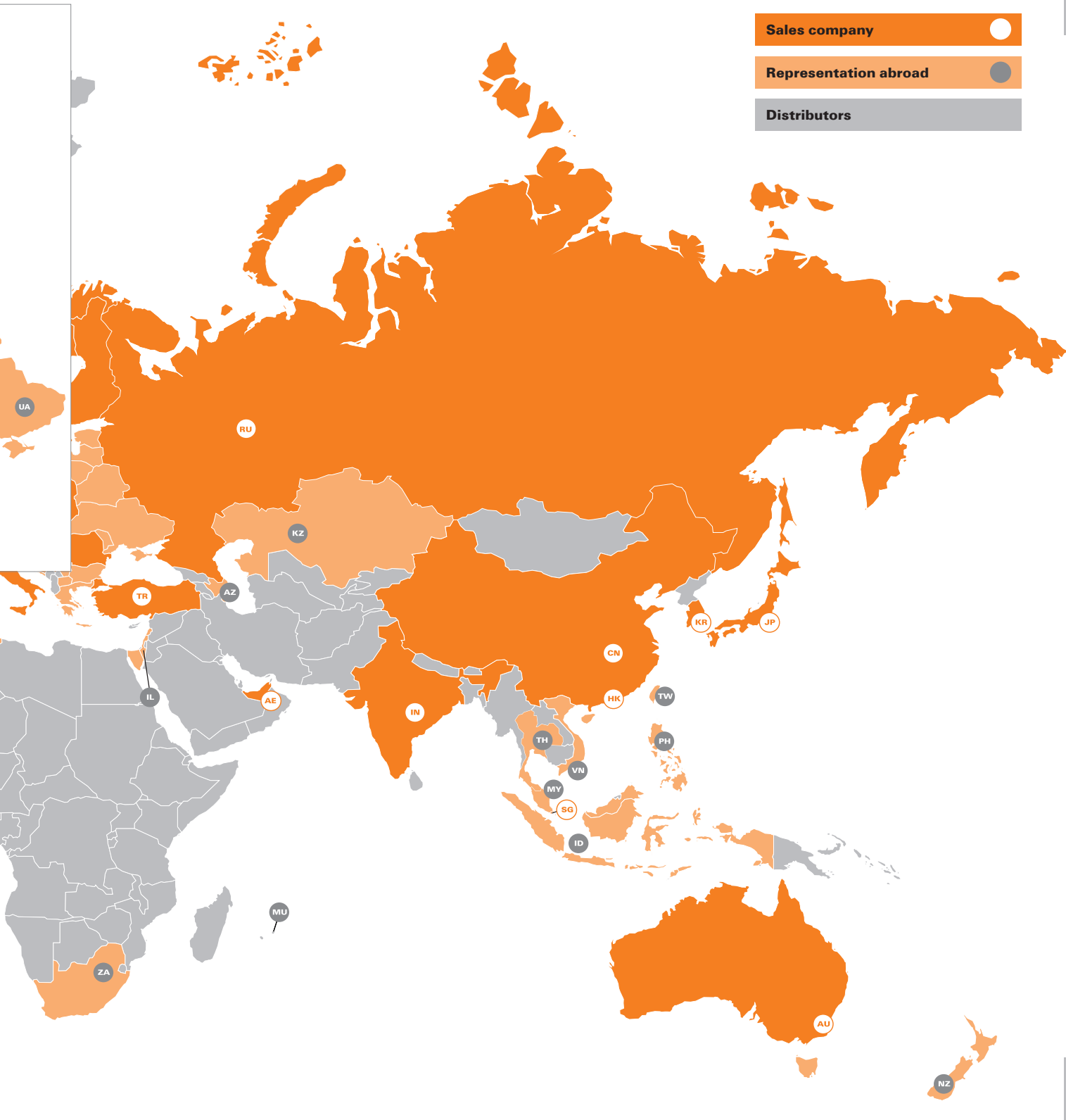
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Weidmüller Interface GmbH & Co. KG  
Klingenbergstraße 26  
32758 Detmold, Germany  
T +49 5231 14-0  
F +49 5231 14-292083  
[www.weidmueller.com](http://www.weidmueller.com)

Personal support can  
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