COEVA GIRONA

E-T-A®
ENGINEERING TECHNOLOGY

The REX system – your all-in-one solution

DC 24 V protection and distribution

IO-Link

Modbus-RTU

The REX system –
your all-in-one solution

Supply

Overcurrent protection

Supply

Central power input in DC 24 V applications has never been so easy. Plus or minus supply, conventional or intelligent - the **EM12 modules** are a vital part of the **REX all-in-one solution.** They are tailor-made to the requirements of of machine and panel builders and no further accessories are required for the mechanical connection of the individual components. This helps save time and money!

Overcurrent protection

Modern overcurrent protection with globally unique features - this is the **REX12** electronic circuit protector. It is available as a single or double channelled model and can therefore ideally be adjusted to any application. In addition, it can electrically be connected by means of a connector arm without any further accessories. Conventional or smart - selective overcurrent protection can be so easy ...

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Power distribution

=

All-in-one solution

Power distribution

The **PM12-T** power distribution concept of the **REX** system can very easily be divided into two main groups. In the same system, the user can easily realise not only the +DC 24 V distribution, but also the minus distribution 0 V (GND).

All-in-one solution

E-T-A's compact and flexible **REX** system represents a comprehensive DC 24 V protection and distribution solution for machine and panel builders, under the headline »all in one«.

It is a perfectly matched system, completely obtained from one source. In spite of of the optimised functionalities, the REX12 product group requires amazingly few components while offering considerable time and cost savings.

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Your benefits

- **Increases machine uptime** – through clear failure detection, high transparency and remote diagnosis
- **Provides flexibility** through ease of assembly or disassembly, modular design and convenient adjustment
- **Saves 50 % time** – through innovative and flexible connection technology
- **Saves cost** – as no further accessories are required
- **Saves space** – because each module has a width of only 12.5 mm

The REX system – the supply modules

Also with IO-Link and Modbus-RTU connection

Supply

The **EM12** supply modules for the power input of the **REX** system are available in different versions, providing genuine flexibility with regard to costs and functionalities. Besides the conventional **EM12-T01-…** supply modules with integral group fault signalling by means of a relay contact, there are also the intelligent and communication-capable **EM12D-TIO-…** supply modules for **IO-Link** as well as **EM12D-TMB-…** for **Modbus-RTU**. They provide a great amount of diagnostic information about the superordinate **IO link** or **Modbus-RTU** master as a basis for proper remote maintenance.

In addition we have supply modules for further potential line entries. In this process the **EM12-T00-100-…** supply module connects all +DC 24 V points of supply. The **EM12-T00-200-…** supply module serves as a +DC 24 V disconnect terminal for the input of battery-buffered or even safety voltage potentials.

EM12-T00-000-DC24V-40A,
supply module, standard,
without auxiliary contacts

EM12-T01-001-DC24V-40A,
supply module, standard,
auxiliary contact N/O

EM12-TIO-000-DC24V-40A,
supply module, COM, IO link

EM12-TMB-000-DC24V-40A,
supply module, COM, Modbus-RTU
»***coming soon***«

EM12-T00-100-LINE-40A
supply module, mid/right,
LINE connected

EM12-T00-200-LINE-40A
supply module, centre,
LINE separated

At a glance

EM12 supply modules ensure flexibility in the planning process.

- Versions with in-built communication components significantly increase system transparency.
- All supply modules are designed for DC 24 V and a total current of 40 A

The REX system – the overcurrent protection

Cable protection in accordance with EN 60204-1

NEC Class2 to UL1310

Overcurrent protection

The **REX12** electronic circuit protector combines flexibility and compact design - in a single or double channel version, conventional or smart or even with **IO link** or **Modbus-RTU. REX12**, this means a space-saving and reliable protection, tailor-made for primary pulsed DC 24 V switch mode power supplies. The focus is on the stable operation of switch mode power supplies, on easy trouble-shooting and an unimpaired machine uptime. And what is more: no additional accessories are needed to connect the individual components electrically and mechanically. The **REX12** exactly meets the technical and economic requirements of the machine construction industry. The single-channelled circuit protector is available in all standard fxed current ratings from 1 A to 10 A. The double-channelled devices are available in the fixed current ratings 1 A, 2 A, 3 A, 4 A and 6 A as well as in adjustable versions from 1 A to 10 A.

The devices with fixed ratings allow standard-compliant cable protection to EN60204-1 – even with small cable cross sections. On the other hand, the adjustable version helps to significantly reduce the inventory.

REX12-TA1-107-DC24V-xA
standard, 1-channel, fixed current rating

REX12-TA2-107-DC24V-xA/xA
standard, 2-channel, fixed current ratings

REX12D-TA1-100-DC24V-xA
COM, 1-channel, fixed current rating

REX12D-TA2-100-DC24V-xA/xA
COM, 2-channel, fixed current ratings

REX12D-TE2-100-DC24V-1A-10A
COM+, 2-channel, variable current ratings,
coming soon

At a glance

- **REX12** circuit protectors ensure space-saving and reliable protection of primary pulsed DC 24 V switch mode power supplies.
- No further accessories are required for the electrical and mechanical connection of the circuit protectors.
- The devices are available with fixed as well as with adjustable current ratings.

The REX system – the power distribution

Power distribution

The power distribution concept of the **REX** system holds two main groups: In the same system, the user can easily realise not only the + DC 24 V distribution, but also the minus distribution 0 V (GND).

The new **PM12-T** distribution modules for the + DC 24 V distribution are mounted side by side with **REX12T** and electronic circuit protectors to be electrically connected with these. This increases the number of terminals, saves space and conventional distribtuion terminals are no longer required.

The 0 V potential is connected to the **EM12-T** supply module for GND and is then multiplied for DC 0 V (GND) by means of the **PM12-T** module. These components can also conveniently be connected and wired up. The distribution solution for DC 0 V is suitable for 40 A rated load. Rating of components is made easy for the design engineers. Complex design solutions to reduce cable cross sections from 10 mm² to 2.5 mm² are a thing of the past.

+ DC 24 V

PM12-T01-00-LOAD-20 A,
potential module, 10 terminals 2.5 mm²
1 x line entry, 9 x LOAD+

PM12-T02-00-LOAD-20 A,
potential module, 10 terminals 2.5 mm²
2 x line entry separate, 4 x LOAD+ each

0 V (GND)

EM12-T00-000-GND-40 A,
supply module, standard, GND – 0 V

EM12-T00-300-GND-40 A,
supply module, mid/right, GND – 0 V

PM12-T03-00-GND-20 A,
potential module, 10 terminals 2.5 mm²

At a glance

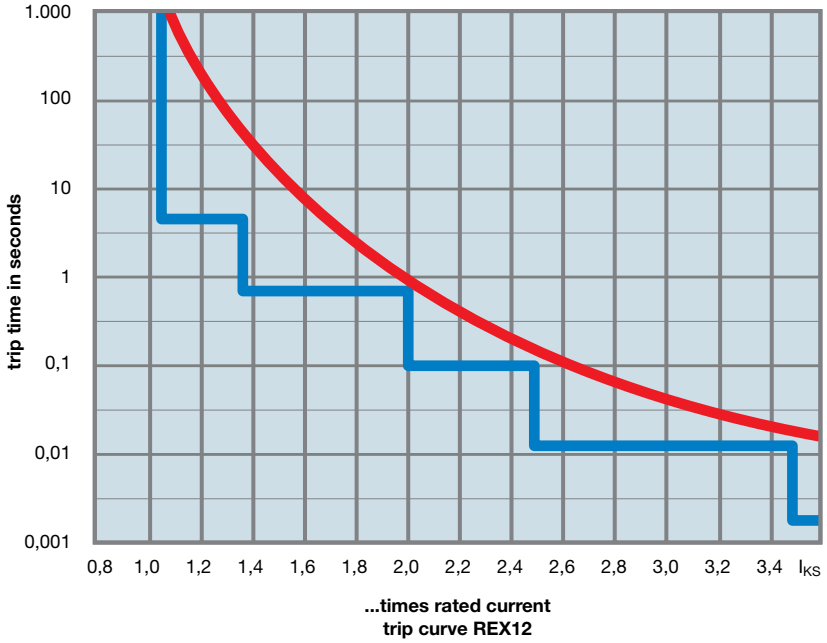
- +DC 24 V distribution and minus distribution 0 V (GND) can be realised in one and the same system.
- The **PM12-T** distribution modules multiply the number of terminals while significantly cutting space requirements

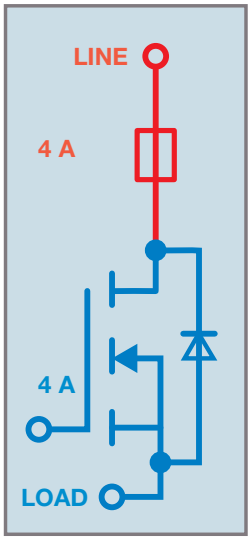
The REX system –
protecting while keeping the standard firmly in view ...

The internal **fail-safe element** in the shape of a blade fuse is adapted directly to the current rating of the corresponding circuit protector, thus ensuring ease of adjustment to the cable cross section.

Concretely, this means that the current rating of the protector and the rating of the fail-safe element are identical.

Thus the **REX12** rated 4 A holds a 4 A blade fuse to IEC 60127-4/2 and to UL248-14. Besides the UL508listed approval and NEC Class2, the **REX12** exclusively meets the requirements of cable protection to EN60204-1.





*Schematic diagram **REX12** with fixed current ratings*

blade fuse

semi-conductor

Apart from **UL508** and **NEC Class2** the **REX12 exclusively meets** the requirements of cable protection to **EN60204-1**

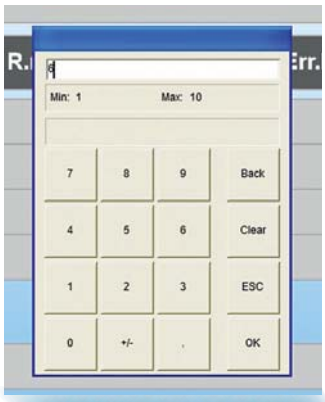
c UL us LISTED

NEC

DVE

... or flexible adjustment
via IO link and Modbus RTU

By means of the IO link Modbus RTU adjustment of the flexible solution becomes as simple as can be. The user can very easily adjust the **REX12D-TE-…** electronic circuit protector to the corresponding load conditions of the application. This additionally helps to significantly reduce storage costs.



Adjustment of: current rating 1 A to 10 A and warning limit 50 % to 100 %

IO-Link

Modbus-RTU

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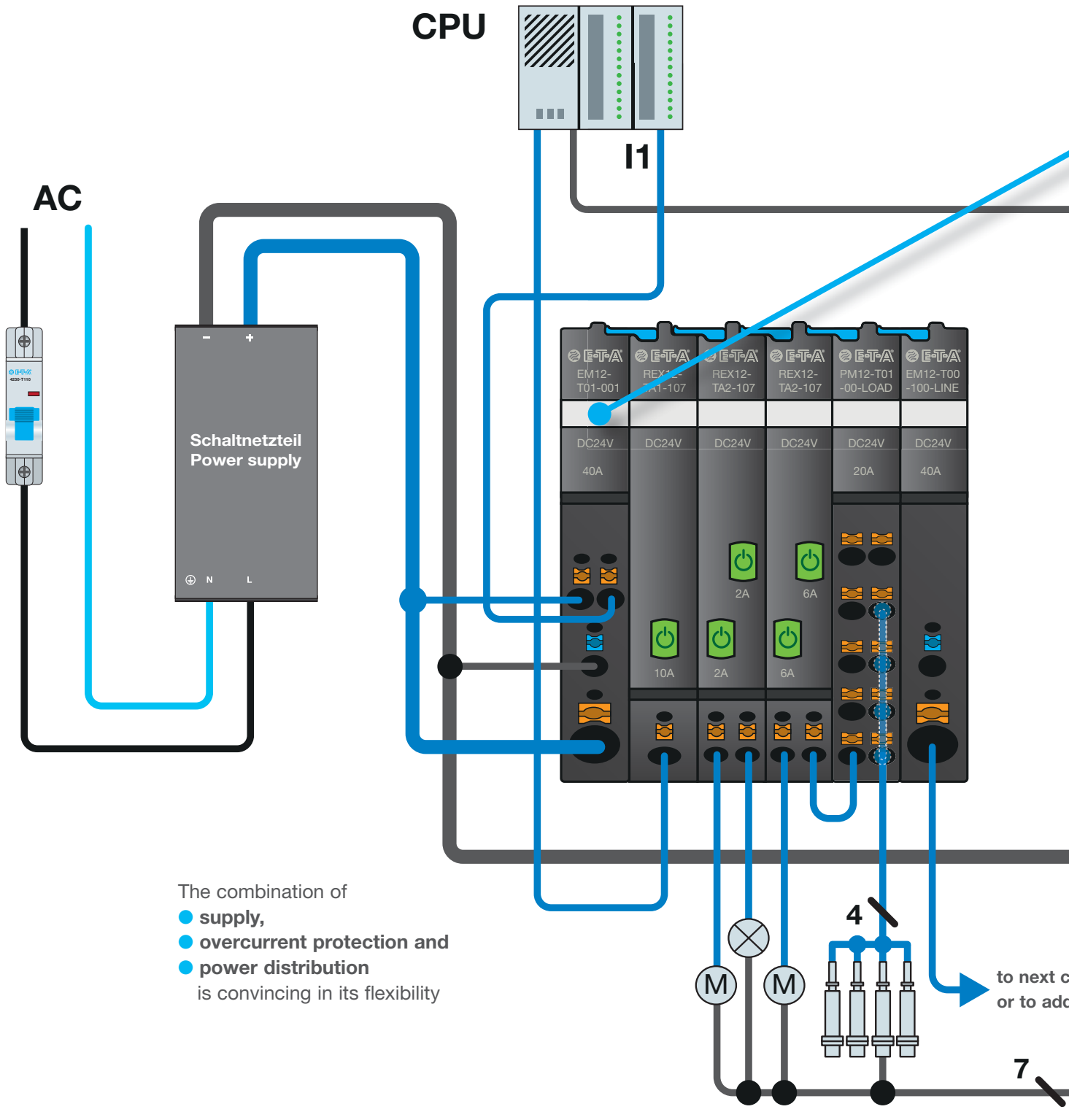
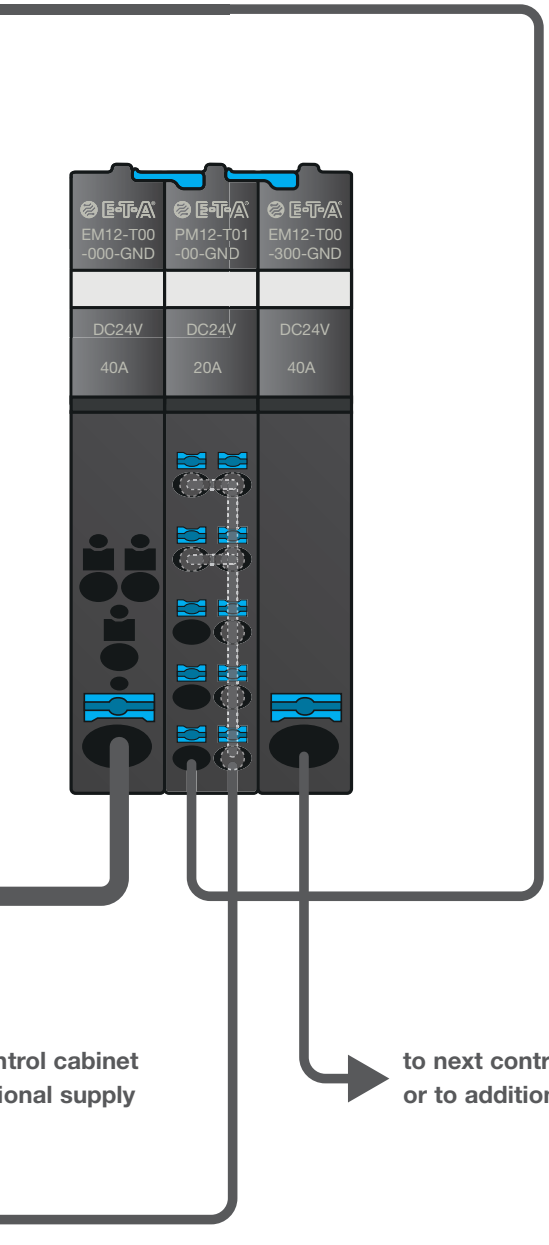
The REX system –
the application



The combination of
- **supply,**
- **overcurrent protection and**
- **power distribution**

is convincing in its flexibility

Also with IO-Link and Modbus RTU connection



The **REX12** system offers unrivalled ease of side-by-side mounting which allows upgrades at a later date.

Individual protectors can effortlessly be replaced.
Just open the left and right connector arm of the circuit protector and remove the unit in question. Put in a new unit, close the connector arm, done!

The **REX** system allows the customer to build up a very economic DC 24 V supply with a modular and cost-effective protection and distribution solution. Without any connection accessories and with minimum wiring time.

The **REX** system combines »power supply«, »overcurrent protection« and »power distribution« directly on the symmetrical rail.

To view product animation please scan the QR code

Product range
REX system

Type	EM12-T00-000-DC24V-40A	EM12-T01-001-DC24V-40A	EM12D-TIO-000-DC24V-40A	EM12D-TMB-000-DC24V-40A	EM12-T00-100-LINE4V-40A	EM12-200-L 40
				 »coming soon«		
Operating voltage range U_B	DC 24 V (18 ... 30 V)	●	●	●	●	●	●
	DC 0 V (0 ... 30 V)						
Trip curve	time-current characteristics						
Current rating fixed I_N	single channel: 1 A, 2 A, 3 A, 4 A, 6 A, 8 A, 10 A						
Current rating fixed I_N	double channel: 1 A/1 A, 2 A/2 A, 3 A/3 A, 4 A/4 A, 6 A/6 A						
Current rating variable I_N	double channel: 1 A ... 10 A						
Fail-safe element	= rated current (4 A electronic circuit = 4 A blade fuse)						
	= 15 A						
Warning limit	90 % of I_N						
	variable 50 % ...100 % of I_N						
Capacitive load	20,000 µF						
Total current	40 A	●	●	●	●	●	●
	20 A						
Signalling	multi-coloured LED			●	●		
	auxiliary contact		●				
Communication	IO link			●			
	Modbus RTU				●		
Temperature range	-25 °C ... +60 °C	●	●	●	●	●	●
space requirement per module	12.5 mm	●	●	●	●	●	●
Termination	push-in	●	●	●	●	●	●
Mounting method	DIN rail mounting	●	●	●	●	●	●
Approvals	UL2367	●	●	●	under preparation		●
	UL508listed	under preparation	●	●	under preparation		under pre
	UL1310, NEC Class2						
	UL1059					●	
Number of devices to be mounted with EM12		16 modules REX12	16 modules REX12	16 channels REX12	16 channels REX12		
Modules that can be combined		●	●			●	●
				●		●	●
					●	●	●

00- E-	REX12-TA1-107-DC24V-xA	REX12-TA2-107-DC24V-xA/xA	REX12D-TA1-100-DC24V-xA	REX12D-TA2-100-DC24V-xA/xA	REX12D-TE2-100-DC24V-1A-10A	PM12-T01-00-LOAD-20A	PM12-T02-00-LOAD-20A	EM12-T00-000-GND-40A	EM12-T00-300-GND-40A	PM12-T03-00-GND-20A
					 »*coming soon*«					
	●	●	●	●	●	●	●			
								●	●	●
	●	●	●	●	●					
	●		8 A and 10 A							
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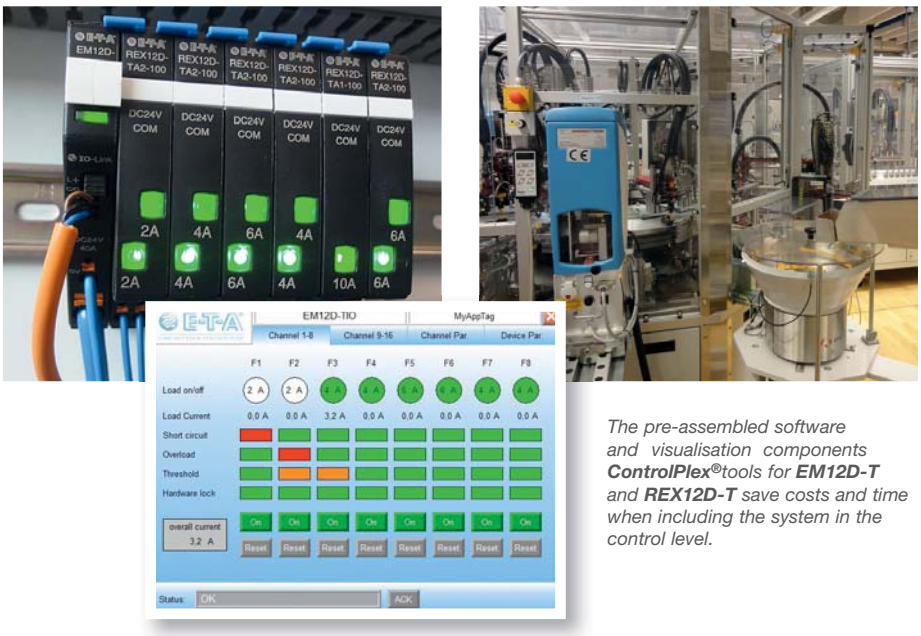
			●	●	●	●	●	●	●	●

Industry 4.0 –
Condition monitoring – predictive maintenance

A basic requirement of industry 4.0 is the storage and evaluation of all data gained from machines and systems. At the same time, they are the basis of solutions on the score of »condition monitoring« and »predictive maintenance«. E-T-A's **REX** system helps you exactly with regard to these subjects to improve machine transparency and consistency of the complete systems.

REX12
Ready for industry 4.0, condition monitoring and predictive maintenance

Status cyclical	● load output ON/OFF ● short circuit/overload ● low voltage ● limit value current ● circuit protector manually OFF
Control cyclical	● load output ON/OFF ● reset
Measuring values	● load current cyclical ● input voltage cyclical ● load voltage non-cyclical
Parameters non-cyclical	● current ratings ● limit value load current (50-100%)
Control non-cyclical	● reset error memory ● reset trip counter ● reset factory settings
Statistical information non-cyclical	● min./ max./ medium current ● min./ max./ medium voltage
Product informationnon-cyclical	● trip counter/trip reason ● serial number ● hardware/software version
Event message noncyclical	● device defect detected



*The pre-assembled software and visualisation components **ControlPlex**®tools for **EM12D-T** and **REX12D-T** save costs and time when including the system in the control level.*

E-T-A
ENGINEERING TECHNOLOGY

E-T-A Elektrotechnische Apparate GmbH
Industriestraße 2-8 · 90518 ALTDORF
GERMANY
Phone +49 9187 10-0 · Fax +49 9187 10-397
E-Mail: info@e-t-a.de · www.e-t-a.de

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