Intelligent Power Distribution – the REX system
System transparency and remote access
In plant engineering and construction, the various equipment for protection of the DC 24 V power supply is often located apart from each other. Therefore, many users wish to have a centralised control unit of a plant with a decentralised structure. E-T-A's EM12D-TMB supply module offers ideal conditions for a reliable and transparent protection of the power supply.

Modbus-RTU is considered a very robust interface. Therefore the EM12D-TMB supply module is able to communicate with Modbus-RTU over long distances and to send important system data to the superordinate control unit. The user has remote access to the different circuit protectors and he has a permanent overview of the current system conditions.
Increasing machine uptime to have a machinery that keeps producing on an invariably high level is in the focus of machine and panel builders. The IO link system offers unrivalled system transparency through quick implementation, a great number of available components and the transmission of measuring values and status information.

It allows early detection of fault conditions on the machinery and prevention of unexpected standstills. The EM12D-TMB supply module has an IO link interface. Status information and important measuring values of up to 16 channels are transmitted via this interface to the IO link master. The IO link master is able to collect the information of the entire DC 24 V power supply and to transmit it to the superordinate control unit with only one port.

... versatile and transparent via IO link for the machine building industry.

Your benefits

- **Increases machine uptime** – through clear failure detection, high transparency and remote diagnosis
- **Quick trouble-shooting** – via remote access and information transmission
- **Saves 50 % time** – through innovative and flexible connection technology
- **Saves cost** – as no further accessories are required
- **Saves space** – because each module is only 12.5 mm wide
The REX system – your all-in-one solution

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 distribution terminals are no longer required.

Overcurrent protection

The REX12 electronic circuit protector combines flexibility and compact design - in single or double channel versions, 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. No other accessories are required for the electrical and mechanical connection of the circuit protectors.

The REX12 exactly meets the technical and economic requirements of machine and panel builders. The single-channelled circuit protector is available in all standard fixed 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 adjustable REX12D-TE product version reduces inventory and allows a quick reaction to changing system conditions.

Via IO link and Modbus-RTU the device offers adjustment of the current ratings between 1 A and 10 A. The user receives information at an early stage about fault conditions in the system via the parameterisable warning limit. This reduces unplanned standstills and increases machine uptime.
Remote access allows control and monitoring of the electronic circuit protectors from a control room. Quick connection or reconnection of the load circuits is enabled remotely. In the event of temporary failures, e.g. simultaneous switch-on of several loads and a possible resulting overcurrent trip, the load circuit can quickly be re-started via the remote control of the circuit protector. This is particularly advantageous with extensive systems and reduces system downtimes significantly.
E-T-A’s REX system offers the user a precise overview of the DC 24 V power supply via data logging and transmission of measuring values and status information to the superordinate control unit. The user immediately receives a signal in the event of changing system conditions and corresponding current consumption. He is then able to detect possible failures at an early stage and can react in anticipation. Maintenance activities and replacement of defective parts can be planned in advance and system downtimes can be reduced. The REX system also allows comparison of measuring values of different systems - an interesting tool for process optimisation.
Industry 4.0 with the REX system: condition monitoring – predictive maintenance

E-T-A’s intelligent REX system offers:
- Overcurrent protection
- Power distribution of load circuits
- Monitoring
- Parameterisation
- Communication via IO link and Modbus RTU

The EM12D-T supply module transmits a variety of diagnostic information to the superordinate control unit, including input voltage, load voltage, load current, limit values and various adjustment options of the circuit protector such as rated current limit value.

The pre-set software and visualisation components ControlPlex® Tools for EM12D-T and REX12D-T save time and costs when being included in the control level.