



**PROTECTION AND
POWER DISTRIBUTION
SOLUTIONS**
in materials handling



A COMPANY WITH A VISION

Welcome to E-T-A

Founded in 1948, E-T-A pioneered the development of precision performance circuit breakers for equipment protection and is now the market leader in the field of overcurrent protection and power distribution. We produce a wide range of circuit breakers and electronic circuit protectors, solid state relays and remote power controllers, power relays and system solutions for global markets in our production facilities in Germany, Tunisia, Indonesia and the USA.

One thing is always at the heart of our endeavours: E-T-A products provide protection. In everything we do, with each and every unit we produce that our customers install in their applications, we protect man and machine against the effects of overcurrent and short circuit.

For this purpose we offer mechanical and electronic solutions, single components or entire systems, standardised or customer-specific. We ensure that the current, without which our modern life is simply unthinkable, remains manageable. We ensure that it does not cause any damage in the event of a failure.

The protection of lives is at the core of our endeavours.

This is also a matter of value protection. We ensure that the equipment and systems where our solutions are installed do not get damaged by the consequences of overcurrent and short circuit. We ensure permanent function, smooth production and eventually the profitability of the target products. No matter if it is an assembly line, a chemical production plant, a machine tool or if it is only one component or an entire system including power supply.

We know that you want to offer your customers the best possible solution. You'll manage even better by using E-T-A's superior quality solutions. We hope we can support you with our products and make the world a little safer.

Please do not hesitate to get in touch.

Christian Kube
Geschäftsführer

Dr. Jennifer Sell
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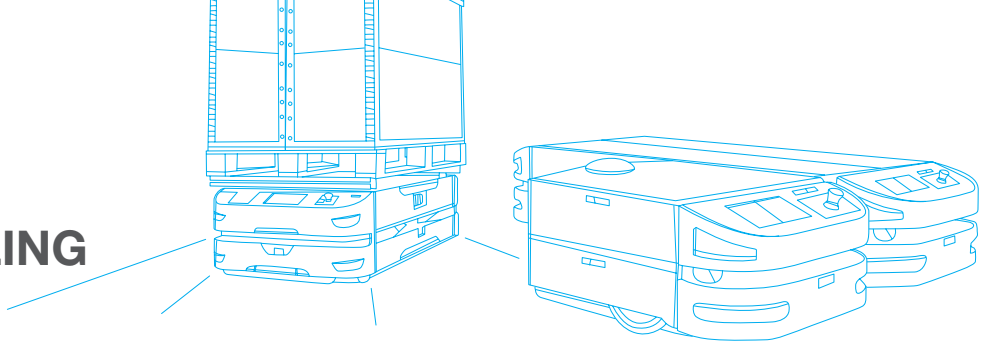
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MATERIALS HANDLING

General introduction



Intralogistics or materials handling comprises the organisation, control, implementation and optimisation of the internal flow of goods and materials and logistics, the flow of information and the handling of goods in industry, trade or public institutions.

source: VDMA

Requirements of permanent availability of storage, material flow and transportation solutions as well as of the transparency of the processes are constantly rising. The more automation technology is involved, the higher the requirements of the protection solutions.

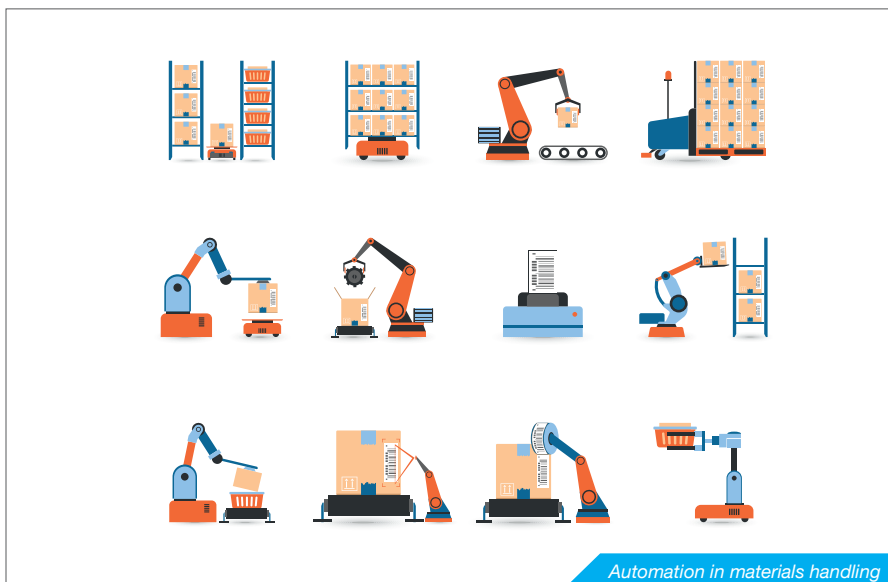
E-T-A offers suitable circuit breakers and comprehensive protection and distribution solutions, both for DC and AC circuits, to meet these requirements. Our core competence is smart tailor-made solutions for protection. This is especially true for the voltage ranges AC 120 V and 230/400 V and for protection of primary pulsed DC 12 V, DC 24 V and DC 48 V switch mode power supplies. Ensuring selectivity is a major goal.

Conventional MCBs installed downstream of a switch mode power supply do not instantaneously trip in the event of a failure due to the low overload capability of the SMPSs. During a short circuit, the power supply is overloaded and the output voltage breaks down. The DC 24 V supply of control units or sensors and actuators is no longer ensured. Electronic overcurrent protection made by E-T-A offers the necessary selectivity in the event of a failure and ensures stability of the supply voltage.

This significantly increases machine uptime. At the same time, it supports trouble-shooting in the event of a failure because the faulty path is clearly indicated.

If **ControlPlex®** intelligent electronic overcurrent protection is connected to a field bus system, diagnostic options with regard to condition monitoring and predictive maintenance are further enhanced.

Other system messages such as overload, short circuit, low voltage etc. increase system transparency and trouble-shooting is made significantly easier. E-T-A's products help increase availability and system transparency enormously.





PROTECTION – TIME AND SPACE SAVINGS – UPTIME

Power distribution solutions for industry 4.0 and IoT

PROTECTION

E-T-A makes your materials handling processes even more reliable. Are you looking for conventional or innovative protection solutions for applications in automation technology or for driverless transportation systems? E-T-A products are one step ahead of state-of-the-art.

They allow the next step towards industry 4.0. E-T-A's intelligent and smart solutions protect and distribute

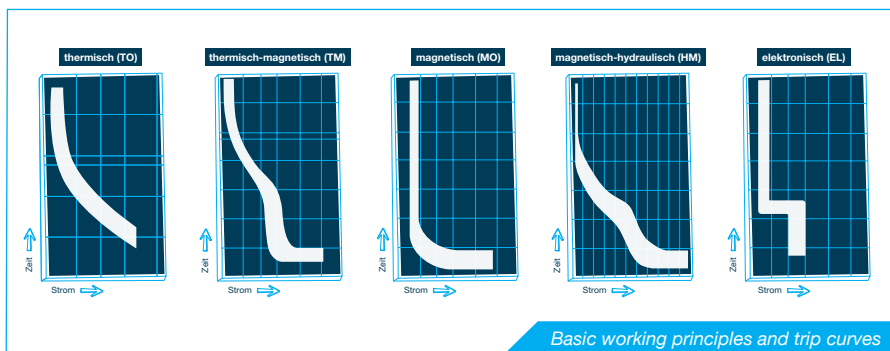
power supply professionally and help save space. They enable you to follow the modern trend of power distribution systems towards communication and networking with IO-Link, PROFINET, EtherCAT or EtherNet/IP.

THE DIFFERENCES

Which circuit breakers offer the best protection? In practice, overloads and short circuits occur frequently. Circuit breakers for equipment protection

protect your equipment against the consequences. E-T-A's experts know what's important when selecting the right circuit breaker.

We are pleased to support you with selection and adjustment of the required circuit breaker model for your application.

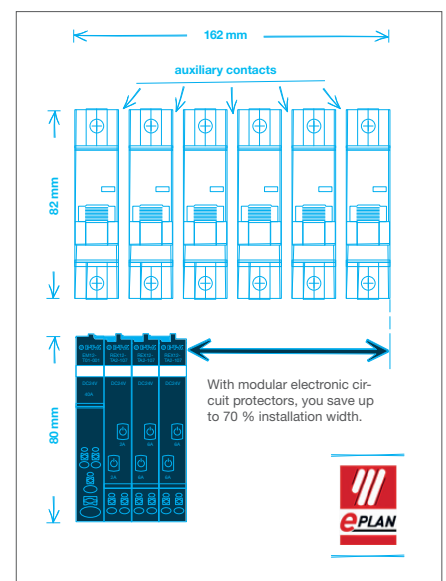


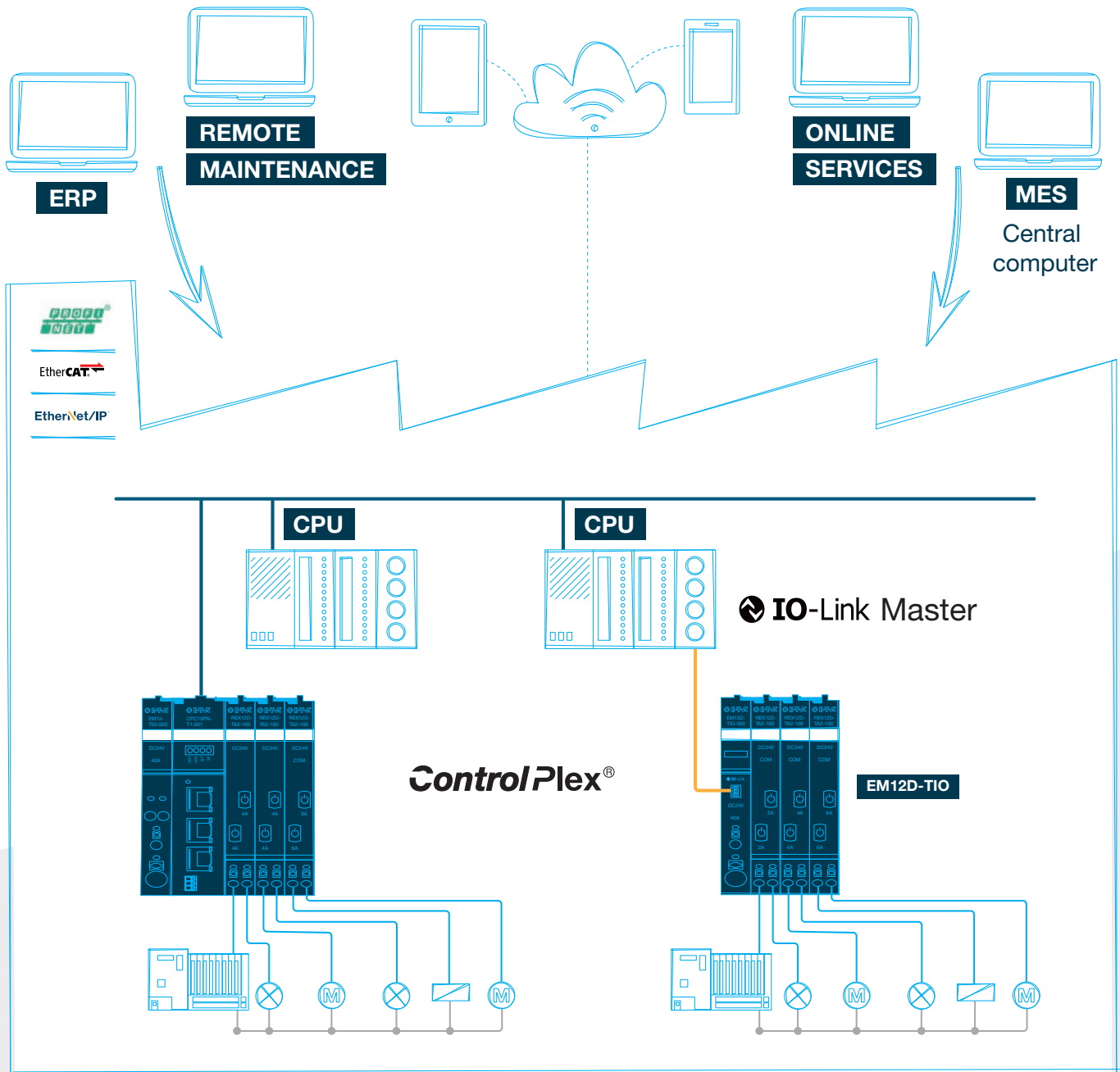
SPACE AND TIME SAVINGS

E-T-A systems for overcurrent protection feature an extremely compact and flexible design. The slim devices allow modular and time-saving wiring and your protection solutions can be adjusted to driverless transportation systems, shuttles and your centralised or decentralised automation solutions.

Saving space in control cabinets is a topical subject in machine construction and process control. Many end customers do not only wish to have smaller control cabinets, but also additional space in reserve of at least 20% to 30%. This allows later revisions or extensions.

With modular electronic circuit protectors, the user saves up to **70 % space in the control cabinet**. Easy mounting and wiring allows additional **time savings of 50 %** compared to conventional solutions. For ease of integration into an application, we can of course provide ePlan macros in EDS format.





INTELLIGENT OVERCURRENT PROTECTION INCREASES SYSTEM UPTIME

The E-T-A portfolio offers tailor-made solutions for your DC 24 V protection with electronic overcurrent protection and communication via IO-Link, PROFINET, EtherCAT or EtherNet/IP. Our circuit protectors offer superior quality in connection with smart communication and allow complete transparency of the DC 24 V power supply.

Remote diagnostic options and clear failure indication provide the necessary

information at an early stage to allow quick failure remedy and significantly increase system uptime.

NETWORK STRUCTURE

with ControlPlex® system Storage and evaluation of all data logged in machinery and plants is the precondition for industry 4.0 solutions in the range of condition monitoring and also predictive maintenance. Consistency significantly increases the transparency of plants and the goal is always to improve machine uptime. E-T-A's intelligent complete systems

support the user exactly with this requirement. The **ControlPlex®** product group ensures transparency in the area of the DC24V power supply, avoids nuisance tripping and increases production reliability of the plants.

Intelligent protection in connection with **ControlPlex®** offers a range of information for preventive maintenance and remote services.

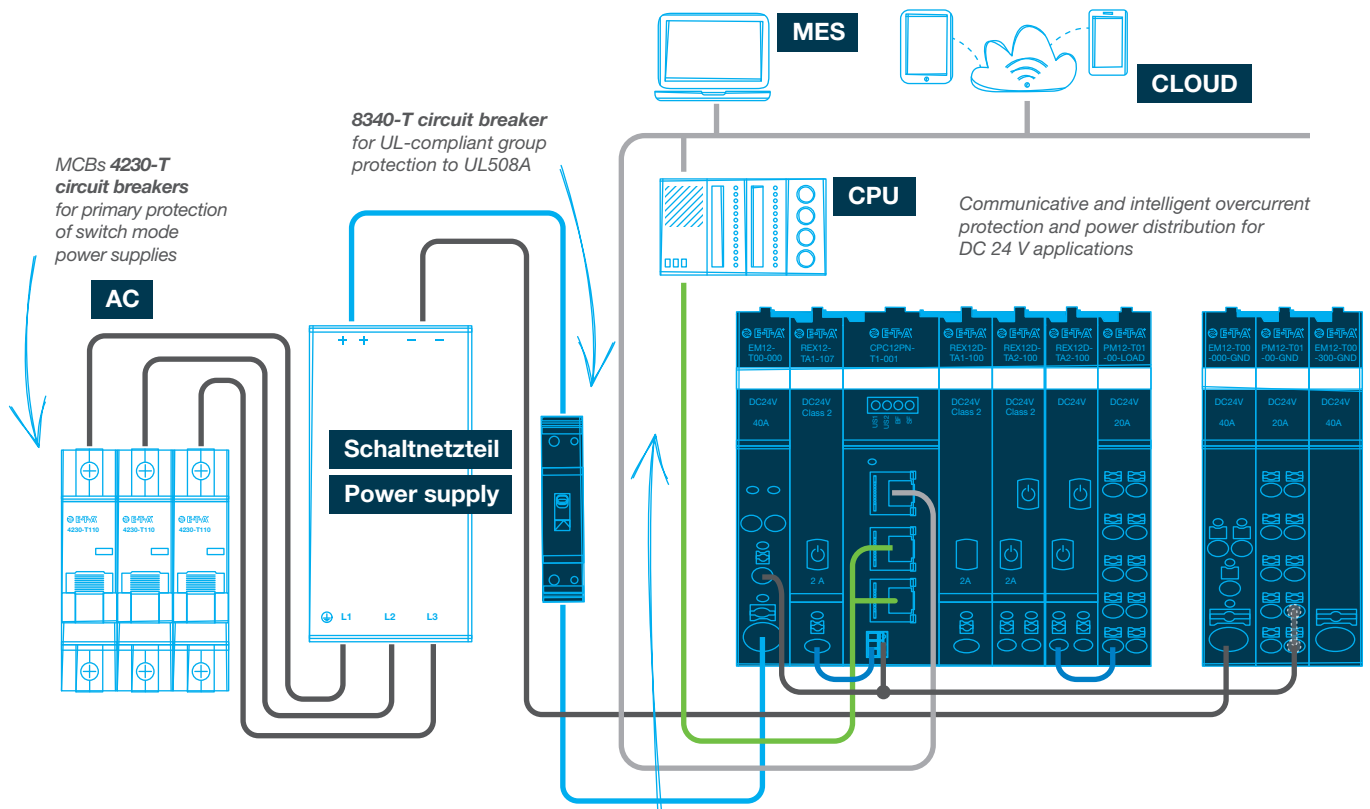


DESIGN OF A DC 24 V SUPPLY

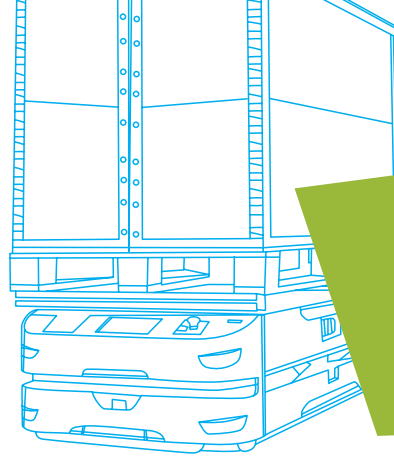
in a »decentralised control cabinet«

It is a major modern trend to transfer automation concepts and parts of their functions from the control level to the field level. This trend can no longer be stopped in industries like materials handling. It involves decentralisation and offers many advantages regarding engineering and costs. E-T-A's intelligent overcurrent protection and power distribution solutions additionally improve

transparency and remote diagnostics and help increase system availability even more. The products' slim design saves space and creates very compact and cost-efficient distribution solutions in the field.

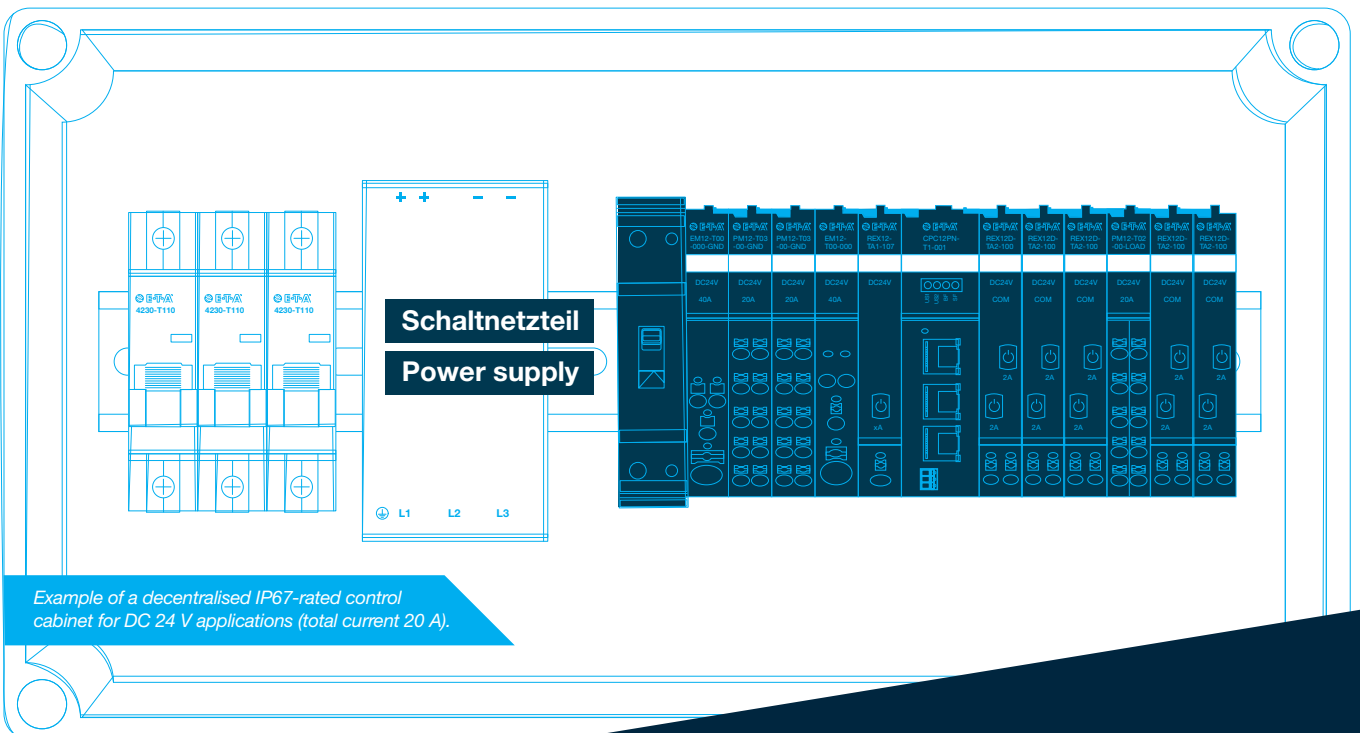


Schematic diagram of the decentralised control cabinet for DC 24 V applications

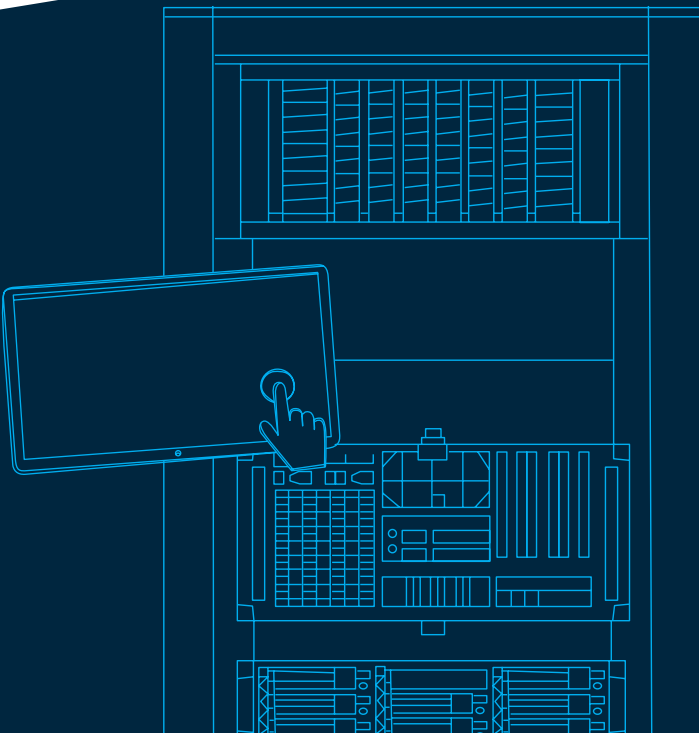


Automation

- Storage
- Conveying & transporting
- Order picking
- Handling



Example of a decentralised IP67-rated control cabinet for DC 24 V applications (total current 20 A).



YOUR BENEFITS

- **Enhanced system availability** through high transparency and remote diagnosis with connection to the superordinate control unit
- **Efficient space utilisation in the »decentralised control cabinet«** by compact module design that is only 12.5 mm wide – even with two channels
- **Cost-saving design** with a flexible and innovative mounting and connection technology without accessories

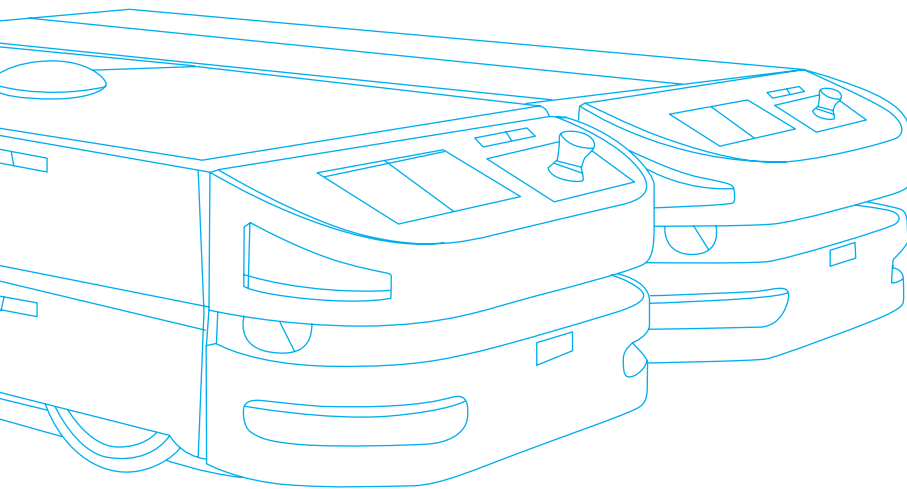
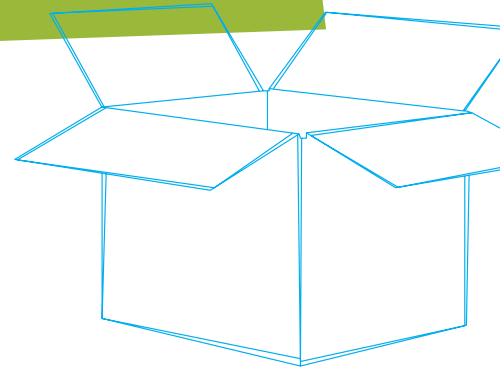
DESIGN OF A DC 24 V/DC 48 V SUPPLY

in a »centralised control cabinet«

Centralised distribution concepts and power distribution cabinets still have a rationale in process control. E-T-A's very flexible and modular solutions manage an extraordinary balancing act here and can therefore be used in both worlds without restrictions. We have the same goal also for centralised control cabinets: Maximum system availability with minimum space requirement.

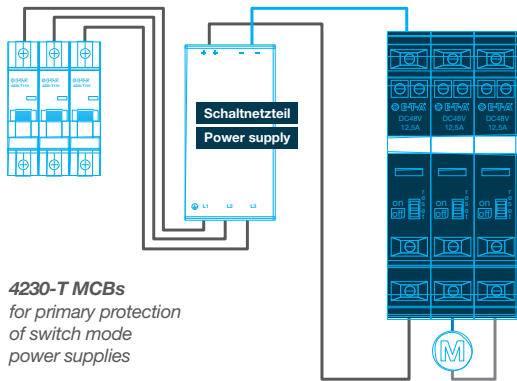
Automation

- Storage
- Conveying & transporting
- Order picking
- Handling



NEC Class2 to UL1310
up to 4 A

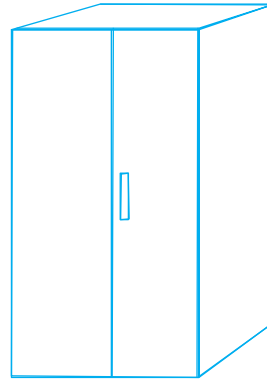
Overcurrent protection for DC 48 V



4230-T MCBs
for primary protection
of switch mode
power supplies

**ESX10-T electronic circuit
protectors** for the protection
of shuttle systems

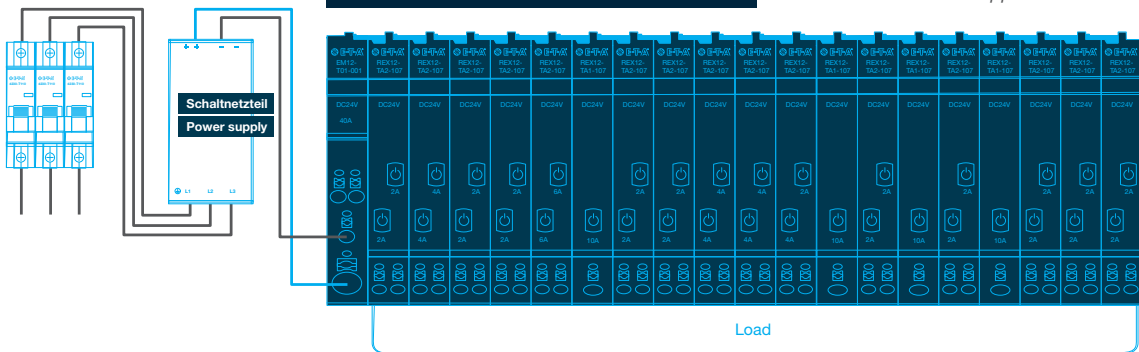
Centralised control cabinet



- Sensors
- Actuators
- PLC
- Drives
- etc.

Overcurrent protection for DC 24 V

Overcurrent protection and power
distribution for DC 24 V applications

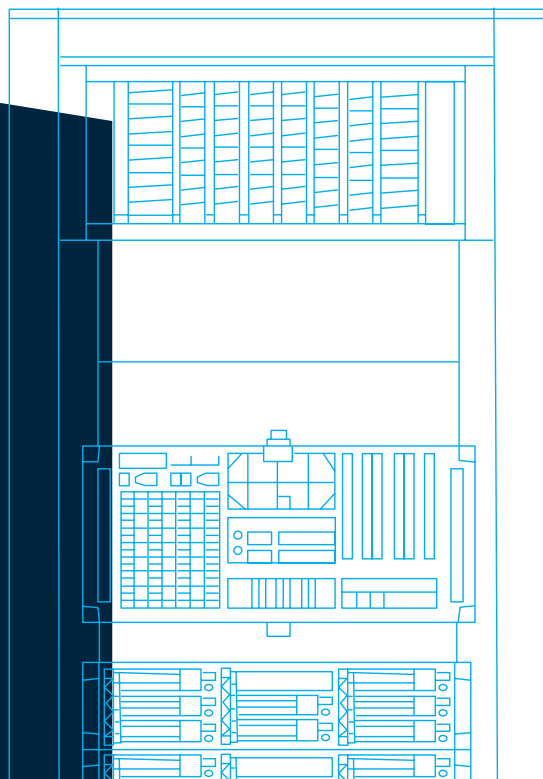


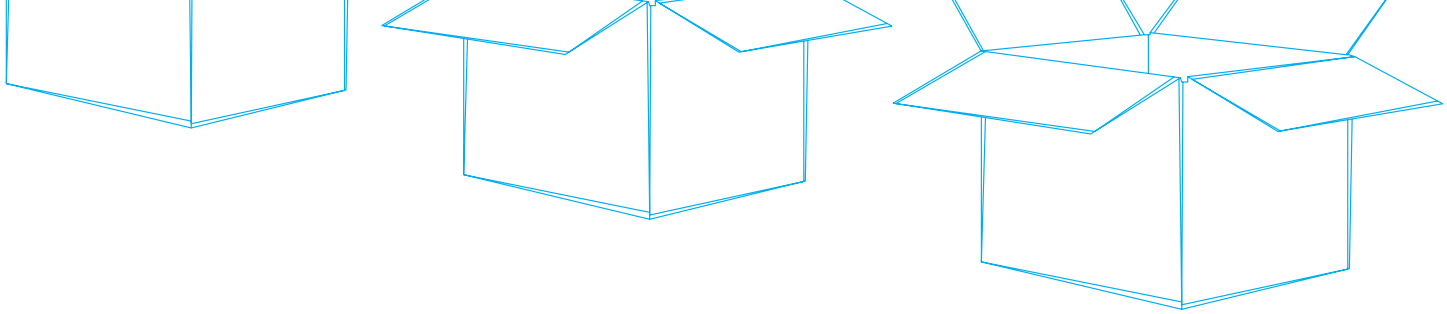
Schematic diagram of a DC 24 V/DC 48 V supply in a »centralised control cabinet«



YOUR BENEFITS

- **Cost-effective set-up** through a flexible and innovative mounting and connection technology without accessories
- **Minimum space requirement** through a compact module design with a width of only 12.5 mm, even with two channels
- **Enhanced system availability** through selectivity and quick trouble-shooting





SET-UP OF A

»automated guided vehicles«

COMPACT FLEXIBILITY

In the age of the fourth industrial revolution, flexible and quickly adjustable automation technology is of the utmost importance. More and more frequently, automated guided vehicles (AGVs) are used to ensure flexibility in production processes of materials handling. For a

smooth production process, it is necessary to increase uptime and performance of the autonomous robots even in restricted installation space. E-T-A's space-saving, modular design and its efficient protection solutions greatly support the system designers.



Automated Guided Vehicle AGV

- Conveying & transporting

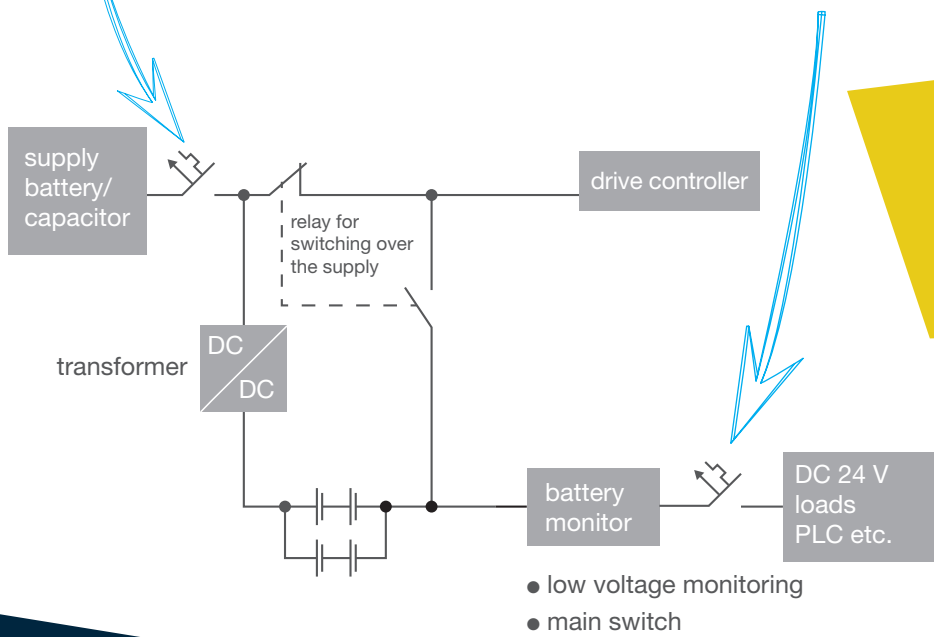




Overcurrent protection for DC 48 V Drive engineering

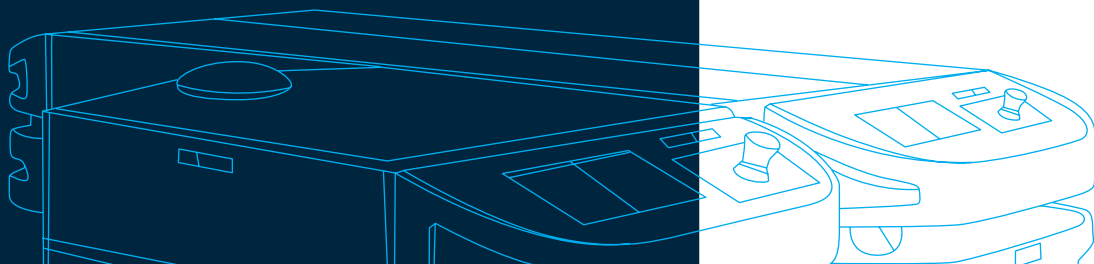
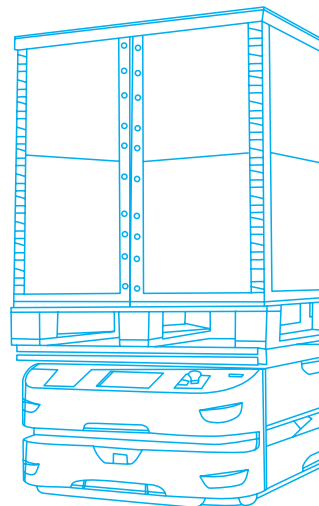


Overcurrent protection for DC 24 V Control engineering



YOUR BENEFITS

- **70 % less space required** thanks to slim modules with a width of only 12.5 mm
- **Reduced costs and time** through artless and modular mounting technology
- **Reduced downtimes** through selective protection and failure detection





PRODUCT RANGE

4230-T MCB



DESCRIPTION

Single or multipole track-mountable MCB with current ratings up to 63 A

VOLTAGE RANGE

AC 240 V/415 V, DC 80 V

- Compliance with all relevant standards
- Reduction of inventory
- Time savings through flexible systems

2210-T



DESCRIPTION

Single or multipole track-mountable thermal-magnetic circuit breaker with current ratings up to 32 A

VOLTAGE RANGE

DC 250 V/DC 65 V

- Space and weight savings through installation width of only 12.5 mm
- Reduced mounting time
- A range of approvals: VDE, UL, CSA, CCC, KC, GL

8340-T



DESCRIPTION

E-T-A's 8340-T hydraulic-magnetic circuit breaker features a robust trip mechanism and high vibration resistance

VOLTAGE RANGE

AC 240 V, DC 80 V

- Temperature-independent overcurrent and short circuit protection
- Robust design with high shock and vibration resistance

ESX10



DESCRIPTION

Current limiting, single channel, track-mountable electronic overcurrent protection for DC 12 V, DC 24 V and DC 48 V systems with ratings from 0.5 A to 25 A.

VOLTAGE RANGE

DC 12 V, DC 24 V, DC 48 V

- Selectivity and current limitation included
- Time savings through easy and quick wiring
- Stock reduction by using devices with adjustable current ratings
- Cost reduction through reduced wiring time and less storage area

DESCRIPTION

Electronic overcurrent protection for DC 24 V side-by-side mountable systems with single or double channel design with fixed current ratings from 1 - 20 A and adjustable ratings from 1 - 20 A and 1 - 4 A for NEC Class2 applications)

VOLTAGE RANGE

DC 24 V

- Cost-saving through a flexible and innovative mounting and connection technology without accessories
- Space-saving through a small width of only 12.5 mm for two channels
- Increases machine uptime by protecting the switch mode power supply

DESCRIPTION

Versatile communication via IO-Link, Modbus, PROFINET, EtherCAT and EtherNet/IP

VOLTAGE RANGE

DC 24 V

- Unrivalled machine uptime through permanent data logging and transmission for system transparency and remote diagnosis
- Highest flexibility through modular design
- Reduced costs and time through innovative connection technology

DESCRIPTION

Single pole and double pole thermal circuit breaker/switch combinations for snap-in or screw mounting with current ratings up to 20 A, e.g. for the use in robot control.

VOLTAGE RANGE

AC 240 V, DC 65 V

- Replaces a switch, two fuse holders, two fuses and connecting cables
- Mounting only a single component saves time
- The integral overcurrent protection saves space

DESCRIPTION

Single pole, plug-in type thermal circuit breaker in miniaturised design with switching function. Current ratings from 0.1 A to 10 A.

VOLTAGE RANGE

AC 250 V/DC 65 V

- Plug-in design provides flexibility
- Modularity through the use of various components and wiring modules
- Quick and easy wiring
- Increased system availability through reset with a push button.

REX12 / REX22D



REX12D / REX22D



3120-N



1180



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