# E-T-A REX12 Electronic Circuit Protector

## Description

The compact and flexible all-in-one solution REX consists of several perfectly matched components. It comprises the EM12-T supply module for the plus and minus potential via a single or double channel REX12-T electronic circuit protector which can be mounted side by side in any number and the PM12-T potential extension module for plus and minus multiplication. Connection of the only 12.5 mm wide modules is exclusively with push-in terminals which allow no-tool time-saving wiring.

The circuit protectors are placed on the symmetrical rail one after another in combination with EM12-T and PM12-T and are electrically connected by means of the built-in connector arm - no further accessories are required. The circuit protector REX12-T offers selective overcurrent protection by responding to short circuit or overload faster than the switch mode power supply. Capacitive loads of up to 20,000µF can be switched on without problems. The circuit protector is available in all standard fixed and adjustable current ratings from 1 A to 10 A. Besides the UL508listed approval and NEC Class2, the REX12-T also meets the requirements of cable protection to EN60204-1.


## Features

- Combination of supply modules, overcurrent protection and power distribution
- Selective load protection by means of electronic trip curve
- No accessories required for connecting the components
- Width per channel only 12.5 mm (1-channel) or 6.25 mm (2-channel)
- Fixed and adjustable current ratings 1A-10A
- Integral fail-safe element, adjusted to max. current rating
- Switching capacitive loads up to 20,000 µF
- Manual ON/OFF/reset momentary switch
- Clear status indication by means of LED and signal contact Si
- Connection via push-in terminals including orange press release buttons

## Benefits

- Saves cost – no further accessories required
- Saves 50 % time through innovative and flexible mounting and connection technology
- Saves space – with a width of only 12.5 mm per channel
- Provides flexibility through ease of mounting, disassembly and modular design
- Reduces storage costs because only one product is required for all current ratings

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## Preferred types – for more details on all configurations please see page 3

Preferred types are E-T-A products most frequently used by E-T-A customers. We manufacture E-T-A preferred types in particularly high volumes. Our preferred types are supplied at shorter lead times than non-standard versions.

## Preferred types

| Preferred types | Short description | Preferred ratings (A) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **REX12-TA1** | **1-channel** | **2** | **4** | **6** | **10** | **2/2** | **4/4** | **6/6** |
| REX12-TA1-107-DC24V- | | x | x | x | x | | | |
| **REX12-TA2** | **2-channel** | **2** | **4** | **6** | **10** | **2/2** | **4/4** | **6/6** |
| REX12-TA2-107-DC24V- | | | | | | x | x | x |
| **REX12D-TE2** | **2-channel, adjustable** | **1A-10A** | | | | | | |
| REX12D-TE2-100-DC24V- | | x | | | | | | |

## Approvals

NEC Class2

c UL us LISTED

## Data sheet

The current data sheet is available on our website: www.e-t-a.de/e359

## Compliances

RoHS REACH

## Technical data ($T_{amb}$ = +23 °C, $U_B$ = DC 24 V)

| | |
|---|---|
| **REX12-Txx-xxx circuit protectors** | |
| **REX12-TA1-107-DC24V-xA** | 1-channel |
| **REX12-TB1-107-DC24V-xA** | 1-channel |
| **REX12-TA2-107-DC24V-xA/xA** | 2-channel |
| **REX12D-TE2-100-DC24V-xA-xA** | 2-channel |

The REX12-TAx is operated in the standard mode with EM12-T. The REX12D-TE2 can be operated both with EM12D-T or EM12-T. The operating mode EM12D-T (COM mode) or EM12-T (standard) is recognised automatically. The following data exclusively refer to the standard mode.

| | |
|---|---|
| Operating voltage $U_B$ | DC 24 V (18...30 V) |
| Closed-circuit current $I_0$ | |
| REX12-Tx1 1-channel | in ON condition: typically 5 mA |
| REX12-TA2 2-channel | in ON condition: typically 8 mA |
| REX12D-TE2 1A-10A 2-channel | in ON condition: typically 12 mA |
| Reverse polarity protection | Yes |
| Power failure buffering time | up to 10 ms |
| Rated current $I_N$ | ratings: |
| REX12-Tx1 | 1 A, 2 A, 3 A, 4 A, 6 A, 8 A, 10 A |
| REX12-TA2 | 1 A/1 A, 2 A/2 A, 3 A/3 A, 4 A/4 A, 6 A/6 A |
| REX12D-TE2 | 1 A – 10 A Condition upon delivery max. current rating |
| Visual status indication by means of LED | green: Load circuit connected<br>green/orange<br>blinking: load current warning limit reached 90 %<br>orange: overload or short circuit until disconnection<br>red: - after disconnection due to overload or short circuit<br>- after undervoltage release of operating voltage in ON condition with autoreset<br>OFF: Device switched off by means of ON/OFF momentary switch or no operating voltage |

**Load circuit**

| | |
|---|---|
| Load output | power MOSFET switching output (plus switching) |
| Load current warning limit ($I_{WLimit}$) | typically 0.9 x $I_N$ |
| hysteresis | typically 5 % |
| Overload current disconnection ($I_{ÜL}$) with trip times ($t_{ÜL}$) | typically $I_{ÜL}$: $I_N$ x 1.05 $t_{ÜL}$: 3s<br>typically $I_{ÜL}$: $I_N$ x 1.35 $t_{ÜL}$: 0,5s<br>typically $I_{ÜL}$: $I_N$ x 2.00 $t_{ÜL}$: 0.1s<br>typically $I_{ÜL}$: $I_N$ x 2.50 $t_{ÜL}$: 0.012 s |
| short circuit trip time ($t_{SC}$) | typically at short circuit ($I_{SC}$) $t_{SC}$: 0.002 s[2]<br>see time/current characteristic |
| Influence of ambient temperature on overload disconnection and load current warning limit | see temperature factor table |
| Continuous Current IC | typically 0.8 x $I_N$<br>(Fail Safe Element is protected by REX12) |

Voltage drop in load circuit at $I_N$ and at $I_N$ 70 % for REX12-Txx between LINE+ and LOAD+

| | | | |
|---|---|---|---|
| $I_N$: 1 A (CL2) | typically 180 mV | $I_N$: 70 % | typically 125 mV |
| $I_N$: 2 A (CL2) | typically 110 mV | $I_N$: 70 % | typically 80 mV |
| $I_N$: 3 A | typically 120 mV | $I_N$: 70 % | typically 85 mV |
| $I_N$: 3 A-CL2 | typically 130 mV | $I_N$: 70 % | typically 90 mV |
| $I_N$: 4 A | typically 115 mV | $I_N$: 70 % | typically 80 mV |
| $I_N$: 4 A-CL2 | typically 180 mV | $I_N$: 70 % | typically 120 mV |
| $I_N$: 6 A | typically 170 mV | $I_N$: 70 % | typically 110 mV |
| $I_N$: 8 A | typically 160 mV | $I_N$: 70 % | typically 105 mV |
| $I_N$: 10 A | typically 180 mV | $I_N$: 70 % | typically120 mV |

2) depending on power source

## Technical data ($T_{amb}$ = +23 °C, $U_B$ = DC 24 V)

REX12D-TE2-100-DC24V-1A-10A

| | | | |
|---|---|---|---|
| $I_N$: 1 A | typically 30 mV | $I_N$: 70 % | typically 28 mV |
| $I_N$: 2 A | typically 39 mV | $I_N$: 70 % | typically 34 mV |
| $I_N$: 3 A | typically 48 mV | $I_N$: 70 % | typically 40 mV |
| $I_N$: 4 A | typically 57 mV | $I_N$: 70 % | typically 46 mV |
| $I_N$: 5 A | typically 66 mV | $I_N$: 70 % | typically 52 mV |
| $I_N$: 6 A | typically 74 mV | $I_N$: 70 % | typically 59 mV |
| $I_N$: 7 A | typically 83 mV | $I_N$: 70 % | typically 65 mV |
| $I_N$: 8 A | typically 92 mV | $I_N$: 70 % | typically 71 mV |
| $I_N$: 9 A | typically 101 mV | $I_N$: 70 % | typically 77 mV |
| $I_N$: 10 A | typically 110 mV | $I_N$: 70 % | typically 83 mV |

| | | |
|---|---|---|
| Fail-safe element integral blade fuse adjusted to related current rating $I_N$ | $I_N$: 1 A (CL2) | fail-safe $I_N$: 1 A |
| | $I_N$: 2 A (CL2) | fail-safe $I_N$: 2 A |
| | $I_N$: 3 A | fail-safe $I_N$: 3.15 A |
| | $I_N$: 3A-CL2 | fail-safe $I_N$: 4 A |
| | $I_N$: 4 A | fail-safe $I_N$: 4 A |
| | $I_N$: 4 A-CL2 | fail-safe $I_N$: 4 A |
| | $I_N$: 6 A | fail-safe $I_N$: 6.3 A |
| | $I_N$: 8 A | fail-safe $I_N$: 8 A |
| | $I_N$: 10 A | fail-safe $I_N$: 10 A |
| | $I_N$: 1 A/1 A (CL2) | fail-safe $I_N$: 1 A/1 A |
| | $I_N$: 2 A/2 A (CL2) | fail-safe $I_N$: 2 A/2 A |
| | $I_N$: 3 A/3 A | fail-safe $I_N$: 3.15A/3.15A |
| | $I_N$: 3 A/3 A-CL2 | fail-safe $I_N$: 4 A/4 A |
| | $I_N$: 4 A/4 A | fail-safe $I_N$: 4 A/4 A |
| | $I_N$: 4 A/4 A-CL2 | fail-safe $I_N$: 4 A/4 A |
| | $I_N$: 6 A/6 A | fail-safe $I_N$: 6.3 A/6.3 A |
| | $I_N$: 1 A-10 A | fail-safe $I_N$: 16 A |

| | |
|---|---|
| Operating voltage monitoring re. undervoltage | OFF at typically $U_B$ < 16.0 V<br>ON at typically $U_B$ > 19.0 V<br>hysteresis typically 2 V<br>with automatic OFF and ON switching |
| ON delay | |
| - with power ON | channel 1: typically 100 ms (REX12-TAx)<br>channel 2: typically 200 ms (REX12-TAx)<br>channel 1: typically 1,500 ms (REX12D-TE2)<br>channel 2: typically 1,600 ms (REX12D-TE2) |
| - when switching on with ON /OFF switch or | channel 1: typically 5 ms<br>channel 2: typically 100 ms |
| - after undervoltage | channel 1: typically 5 ms<br>channel 2: typically 5 ms |
| Disconnection of load circuit | - manually on the device with the ON/OFF momentary switch<br>- after an overload / short circuit disconnection with storage (no automatic reset)<br>- temporarily at undervoltage<br>- at no operating voltage |
| Switch-on of load circuit | |
| - momentary switch ON/OFF | device can only be switched on when operating voltage is applied |
| - applying operating voltage | The device starts up with the condition last stored. |

## Technical data ($T_{amb}$ = +23 °C, $U_B$ = DC 24 V)

| | |
|---|---|
| Enquire adjusted current rating with REX12D-TE2 | Enquiry of currently adjusted current rating, independent of the operating mode (COM or standard), possible for each channel directly on the REX12D-TE2<br>Enquiry mode is started by pushing the button between ≥ 2 seconds and < 5 seconds. After releasing the button, the LED is RED for 333 ms to indicate start of enquiry. Afterwards, the LED flashes ORANGE in a pulse/break ratio of 1/2 with a frequency of 1 Hz to indicate the adjusted current value. When the adjusted current rating is reached, signalling re-starts after the RED LED re-lights for 333 ms. The enquiry mode is left after the adjusted current rating was signalled 5 times or by pressing the button. Visual indication will now show again the current operating condition.<br>The enquiry mode is possible in all operating conditions (ON, OFF, UNDERVOLTAGE and TRIPPED). |
| Adjustment of current rating with | The adjustment mode directly on the REX12D-TE2 can only be activated in the REX12D-TE2 standard mode<br>The adjustment mode is started per channel by pushing the button for ≥ 5 seconds. After releasing the button, the LED is RED for 333 ms to indicate start of adjustment. The LED is blinking GREEN with a pulse/break ratio of 1/4 at a frequency of 0.6 Hz for visual indication. After reaching the max. adjustment value, signalling re-starts. Overrun of the max. adjustment value after 1 Ampere is indicated by the RED LED (333 ms). The current rating to be adjusted is adopted by pushing the button during the blinking period of 1 A up to the max. adjustment value. If for instance the button is pushed after the 7th illumination of the GREEN LED, 7A is adopted as current rating and visual indication again shows the current operating condition. If the button is not pressed, the adjustment mode is left after 5 times signalling the current rating range without a new current rating being adopted and the visual indication returns to current status indication.<br>The adjustment mode is possible in all operating conditions (ON, OFF, UNDERVOLTAGE and TRIPPED). |
| Reset function | a blocked load output (blocked by overload / short circuit) can externally be reset by the ON/OFF momentary switch |
| Leakage current in load circuit in OFF condition | typically <1 mA |
| Capacitive loads | up to 20,000 µF:<br>depending on: cable attenuation, power supply used, load current and current rating |
| Free-wheeling diode | external free-wheeling circuit at inductive load (rating according to load) |
| Parallel connection of several load outputs | not allowed |

## Technical data ($T_{amb}$ = +23 °C, $U_B$ = DC 24 V)

| | |
|---|---|
| **Status output SM** | status indicator in REX system |
| Electrical data | minus switching signal output<br>Group signalling is implemented in connection with EM12-T supply module |
| **Terminals LOAD+** | |
| Push-in terminal PT 2.5 | 0.14 mm² ... 2.5 mm² flexible<br>AWG24 – AWG14 rigid |
| stripping length | 8 mm ... 10 mm |
| Dimensions (w x h x d) | 12.5 x 80 x 98.5 mm |
| Mass | |
| REX12-TA1-xxx 1-channel | approx. 57 g |
| REX12-TB1-xxx 2-channel | approx. 60 g |
| REX12-TA2-xxx 2-channel | approx. 58 g |
| REX12D-TE2-xxx 2-channel | approx. 62 g |
| **General data REX / EM / PM** | |
| Housing material | moulded |
| Mounting | symmetrical rail to EN 60715-35x7.5 |
| Ambient temperature | -25 °C ... +60 °C T(without condensation, cf. EN 60204-1) |
| Storage temperature | -40 °C ... +70 °C |
| Mounting temperature | +5° ... +60 °C |
| Humidity | 96 hrs / 95% RH/40 °C to IEC 60068-2-78-Cab climate class 3K3 to EN 60721 |
| Altitude | 2,000 m above sea level<br>3,000 m above sea level up to +55 °C<br>4,000 m above sea level up to +50 °C |
| Operation pressure | 4 bar above atmospheric pressure |
| Corrosion | 96 hrs. in 5 % salt mist to only PM and EM accessories IEC 60068-2-11 test Ka |
| Vibration | 5 g test to IEC 60068-2-6, test Fc |
| Degree of protection operating area REX12: | (IEC 60529, DIN VDE 0470)<br>IP30 |
| terminal area EM, PM: | IP20 |
| EMC requirements (EMC directive, CE logo) | noise emission EN 61000-6-3<br>susceptibility: EN 61000-6-2 |
| Insulation co-ordination | (IEC 60934) 0.5 kV / pollution degree 2 |
| Dielectric strength | max. DC 30 V (load circuit) |
| Insulation resistance (OFF condition) | n/a, only electronic disconnection |
| Conformity | CE marking |

## Approvals and standards

| Approval authority | Standard | UL file no. | Voltage rating | Current rating range |
|---|---|---|---|---|
| UL | UL 2367 | E306740 | DC 24 V | 1 A…10 A |
| UL | UL 1310<br>NEC Class2 | E306740 | DC 24 V | 1 A, 2 A,<br>3 A, 4 A |
| UL | cULus508listed | E492388 | DC 24 V | 1 A…10 A |

PM and EM – Approvals of accessories see technical data of accessories

## Preferred types – a short explanation.

Preferred types are E-T-A products most frequently used by E-T-A customers. We manufacture E-T-A preferred types in particularly high volumes. Our preferred types are supplied at shorter lead times than non-standard versions.

## Preferred types

| Preferred types | Short description | Preferred ratings (A) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **REX12-TA1** | **1-channel** | **2** | **4** | **6** | **10** | **2/2** | **4/4** | **6/6** |
| REX12-TA1-107-DC24V- | | x | x | x | x | | | |
| **REX12-TA2** | **2-channel** | **2** | **4** | **6** | **10** | **2/2** | **4/4** | **6/6** |
| REX12-TA2-107-DC24V- | | | | | | x | x | x |
| **REX12D-TE2** | **2-channel, adjustable** | **1A-10A** | | | | | | |
| REX12D-TE2-100-DC24V- | | x | | | | | | |

## Ordering number code – REX12-T

**Type**
**REX12** Electronic circuit protector with PT connection technology
**Mounting method**
**T** rail mounting
**Design**
**A** 1 load output terminal per channel, fixed current ratings xA or xA/xA
**B** 2 load output terminals per channel, fixed current ratings xA (only 1 channel)
**Number of channels**
**1** 1 channel (only 1-channel)
**2** 2 channels
**Version**
**1** without physical isolation
**Signal input**
**0** without signal input
**Signal output**
**7** status output
**Operating voltage**
**DC 24 V** voltage rating DC 24 V
**Current rating**
1 A (only 1 channel, Class2)
2 A (only 1 channel, Class2)
3 A (only 1 channel)
4 A (only 1 channel)
6 A (only 1 channel)
8 A (only 1 channel)
10 A (only 1 channel)
1 A / 1 A (only 2 channels, Class2)
2 A / 2 A (only 2 channels, Class2)
3 A/3 A (only 2 channels)
4 A/4 A (only 2 channels)
6 A/6 A (only 2 channels)
**Approval**
CL2 Class2
(only 3A and 4A versions)

**REX12 - T A 1 - 1 0 7 - DC24V - 10 A** example of 1-channel
**REX12 - T A 2 - 1 0 7 - DC24V - 4A / 4A** - example of 2-channel

## Ordering number code – REX12D-TE2

**Type**
**REX12D** intelligent electronic circuit protector with PT connection technology
**Mounting method**
**T** rail mounting
**Design**
**E** 1 load output terminal, per channel, adjustable current ratings 1A-10A, standard and COM mode
**Number of channels**
**2** 2 channels
**Version**
**1** without physical isolation
**Signal input**
**0** without signal input
**Signal output**
**0** without signal output
**Operating voltage**
**DC 24 V** voltage rating DC 24 V
**Current rating**
1 A – 10 A (only 2 channels)

**REX12D-T E 2 - 1 0 0 - DC24V - 1 A-10 A** example

## Custom designed versions

Looking for a version you cannot find in our ordering number code? Please get in touch. We will be pleased to find a solution for you.

## Overview of ordering number codes

| | |
|---|---|
| Supply module | EM12-T00-000-DC24V-40A<br>EM12-T01-001-DC24V-40A |
| Circuit protectors:<br>1-channel | REX12-TA1-107-DC24V-1A (Class2)<br>REX12-TA1-107-DC24V-2A (Class2)<br>REX12-TA1-107-DC24V-3A<br>REX12-TA1-107-DC24V-3A-CL2 (Class2)<br>REX12-TA1-107-DC24V-4A<br>REX12-TA1-107-DC24V-4A-CL2 (Class2)<br>REX12-TA1-107-DC24V-6A<br>REX12-TA1-107-DC24V-8A<br>REX12-TA1-107-DC24V-10A |
| Circuit protectors:<br>1-channel<br>2 load output terminals | REX12-TB1-107-DC24V-1A (Class2)<br>REX12-TB1-107-DC24V-2A (Class2)<br>REX12-TB1-107-DC24V-3A<br>REX12-TB1-107-DC24V-3A-CL2 (Class2)<br>REX12-TB1-107-DC24V-4A<br>REX12-TB1-107-DC24V-4A- CL2 (Class2)<br>REX12-TB1-107-DC24V-6A<br>REX12-TB1-107-DC24V-8A<br>REX12-TB1-107-DC24V-10A |
| Circuit protectors:<br>2-channel | REX12-TA2-107-DC24V-1A/1A (Class2)<br>REX12-TA2-107-DC24V-2A/2A (Class2)<br>REX12-TA2-107-DC24V-3A/3A<br>REX12-TA2-107-DC24V-3A/3A-CL2 (Class2)<br>REX12-TA2-107-DC24V-4A/4A<br>REX12-TA2-107-DC24V-4A/4A-CL2 (Class2)<br>REX12-TA2-107-DC24V-6A/6A |
| Circuit protectors<br>2-channel, adjustable | REX12D-TE2-100-DC24V-1A-10A |
| Accessories | |
| Supply modules | EM12-T00-100-LINE-40A<br>EM12-T00-200-LINE-40A<br>EM12-T00-000-GND-40A<br>EM12-T00-300-GND-40A |
| Potential modules | PM12-T01-00-LOAD-20A<br>PM12-T02-00-LOAD-20A<br>PM12-T03-00-GND-20A |

## REX12-Quat-Pack-1A-10A electronic circuit protector

REX12-Quat-Pack-1A-10A

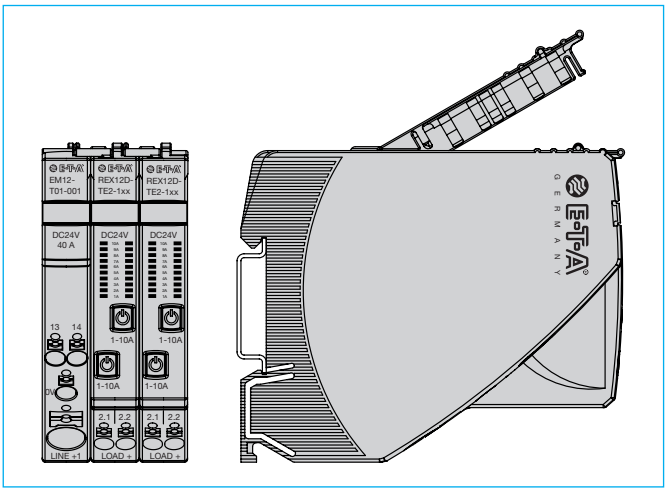
4-channel pack, selective load protection, voltage rating DC24V variable current ratings 1A-10A in 1A steps, rail mounting, installation width 37.5 mm, push-in connection technology, signalling with auxiliary contact N/O

Current ratings 4 x 1A-10A adjustable

A pack consists of
1 supply module, EM12-T01-001-DC24V-40A
2 circuit protectors, 2-channel, adjustable 1-10A, REX12D-TE2-100-DC24V-1A-10A

**Part number: X22378501**

## REX12-Quat-Pack-1A-10A

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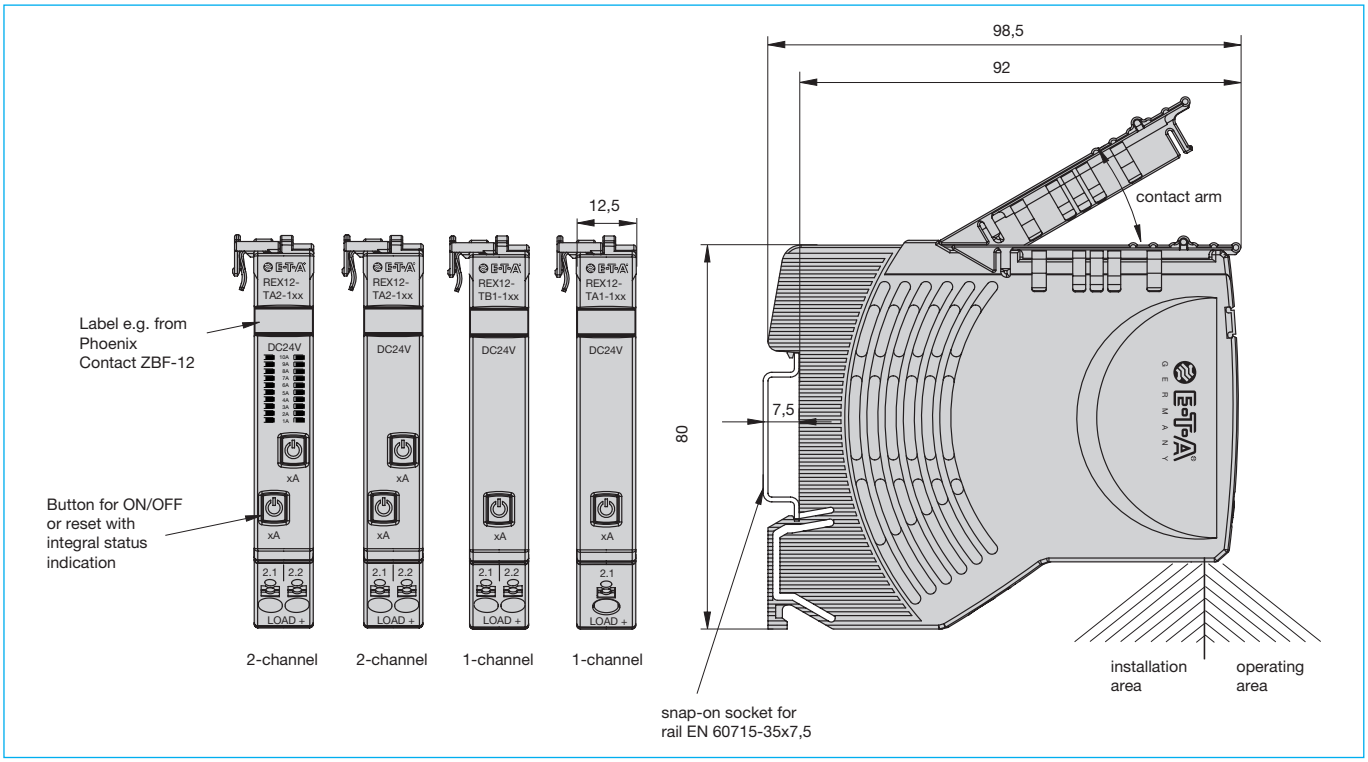
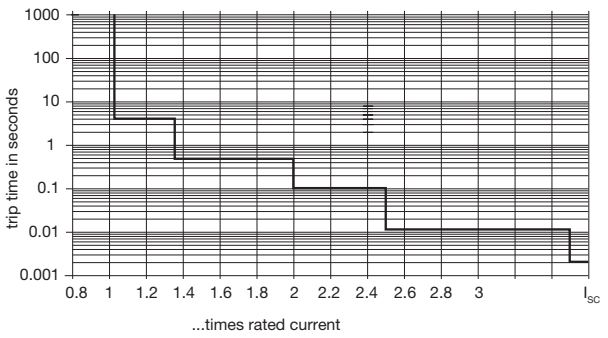
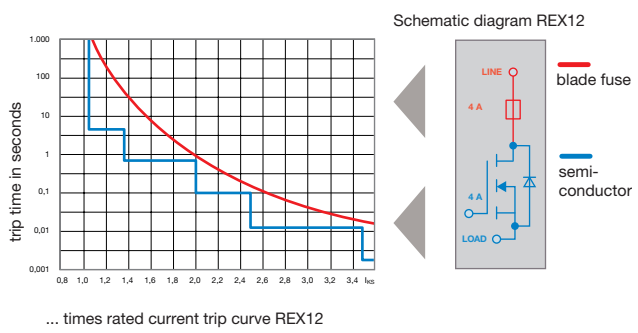
## Dimensions with connection diagram: REX12-TA1-xxx / REX12-TB1-xxx/ REX12-TA2-xxx / REX12D-TE2-xxx




## Time/current characteristic ($T_{amb}$ = +23 °C, $U_B$ = DC – 24 V)




## Basic trip curve and schematic diagram REX12




## Temperature factor / continuous duty

The time/current characteristic depends on the ambient temperature. In order to determine the max. load current, please multiply the current rating with the temperature factor and consider the factor for side-by-side mounting.

**Temperature factor table:**

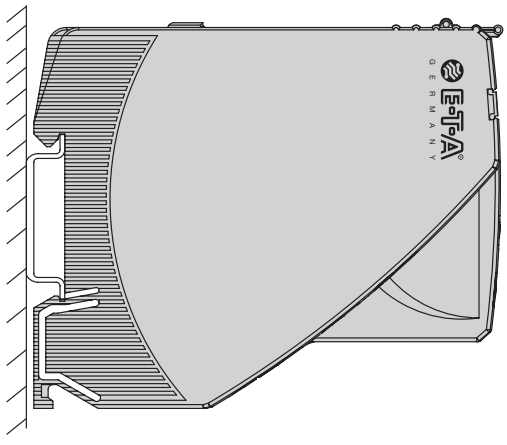
| ambient temperature [°C] | 0 | 10 | 23 | 40 | 50 | 60 |
|---|---|---|---|---|---|---|
| temperature factor | 1 | 1 | 1 | 0.95 | 0.90 | 0.85 |

**Note:**
When mounted side-by-side, the devices can carry max. 80 % of their rated load or a different rating has to be selected (see Technical Information on www.e-t-a.de/ti_d)

With high temperatures, the load current warning threshold “warn limit typically 0.9 x IN” will be reduced in accordance with the temperature factor.

Selection of current rating of the circuit protector ≤ rating of power supply.

## Mounting position REX... preferred mounting position horizontal



## Description – EM12-T supply module

The EM12-T supply module receives the DC 24 V supply voltage, e.g. from a switch mode power supply, and distributes it to the mounted circuit protectors via the integral connector arm of the REX12-T.

The potential-free auxiliary contact in the EM12-T indicates any detected failures through the circuit protector, e.g. to the superordinate control unit (CPU).

## Technical data ($T_{amb}$ = +23 °C, $U_B$ = DC 24 V)

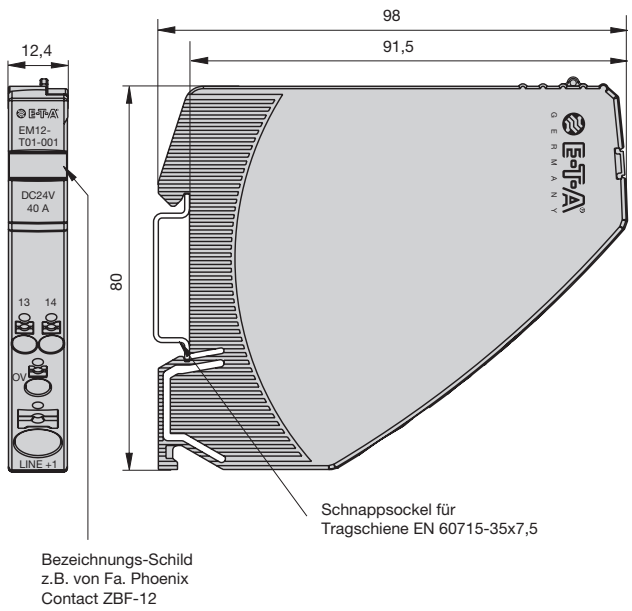
| | |
|---|---|
| Operating voltage $U_B$ | DC 24 V (18...30 V) |
| Operating current $I_B$ | max. 40 A |
| Reverse polarity protection | yes |
| **Signalling** | **only EM12-T01-001-DC24V-40A** |
| Quiescent current $I_0$ | typically 10 mA |
| Potential-free auxiliary change-over contact | max. DC 30 V / 0.5 A min. 10 V / 1 mA |
| Group signalling Si contact: Si (13) / Si (14) | auxiliary contact, make contact |
| normal condition: | auxiliary contact closed based on all protection modules<br>- when ON, load output connected<br>- when OFF, load output disconnected |
| fault condition: | auxiliary contact open based on one or more protection modules<br>- after overload or short circuit trip<br>- after undervoltage release of operating voltage in ON condition with autoreset<br>- at no operating voltage $U_B$ in supply module |
| Insulation co-ordination | 0.5 kV / pollution degree 2 |
| Power failure buffering time for Si | up to 10 ms |
| **Screw terminals** | **LINE+** |
| Push-in terminal PT 10 | 0.5 mm² ... 10 mm² flexible<br>AWG24 – AWG8 rigid |
| stripping length | 18 mm |
| **Screw terminals** | **0 V / Si 13 / Si 14** |
| Push-in terminal PT 2.5 | 0.14 mm² ... 2.5 mm² flexible<br>AWG24 – AWG14 rigid |
| stripping length | 8 mm ... 10 mm |
| Dimensions (w x h x d) | 12.5 x 80 x 98 mm |
| Mass | approx. 52 g |
| Circuit protectors to be mounted side-by-side<br>REX12-Tx1-x or<br>REX12-TA2-x or<br>REX12D-TE2 2-channel | max. 16 pcs |

## Ordering number code - EM12

**Type**
**EM12** supply module for REX12, with PT connection technology
**Mounting method**
**T** rail mounting
**Version: communication, interface**
**00** without signal
**01** analog signal
**Additional functionality**
**0** without
**Signal input**
**0** without signal input
**Signal output**
**0** without auxiliary contact
**1** signal make contact
**Operating voltage**
**DC 24 V** voltage rating DC 24 V
**Current rating**
**40 A**

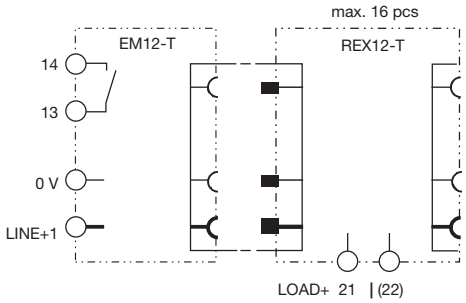
**EM12 - T 01 - 0 0 1 - DC 24 V - 40 A** example

## Dimensions EM12-T01-xxx supply module

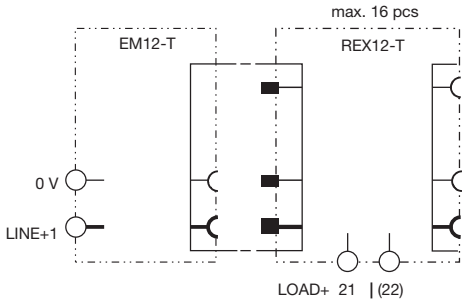



## Schematic diagram EM12-Txx-xxx with REX12-xx

**EM12-T01-001-DC24V-40A**




**EM12-T00-000-DC24V-40A**

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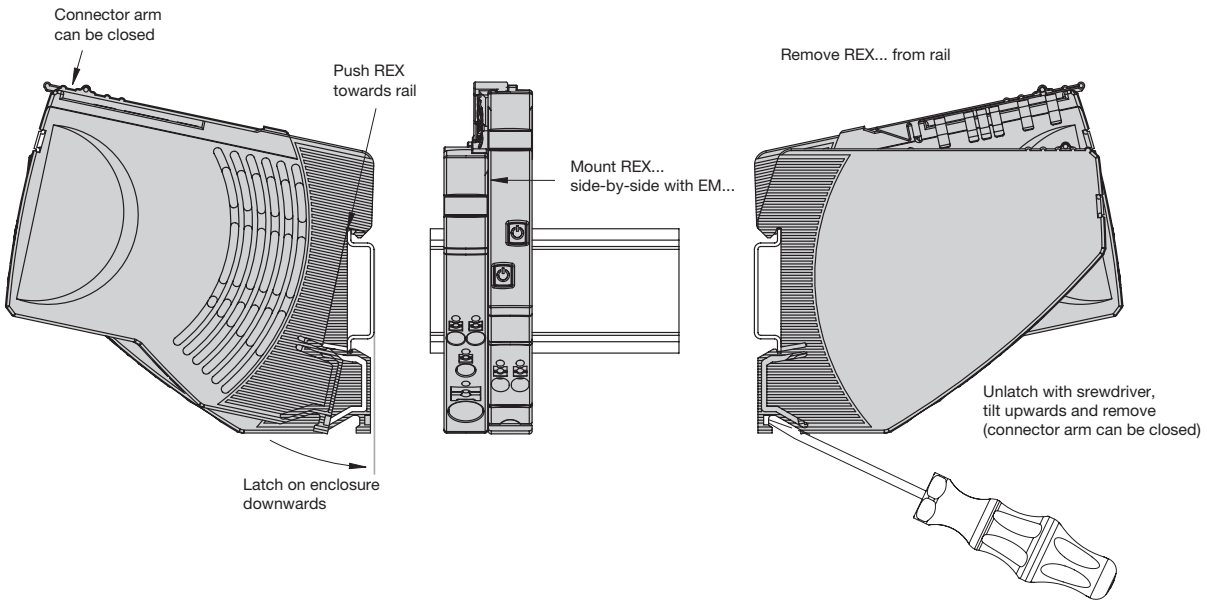
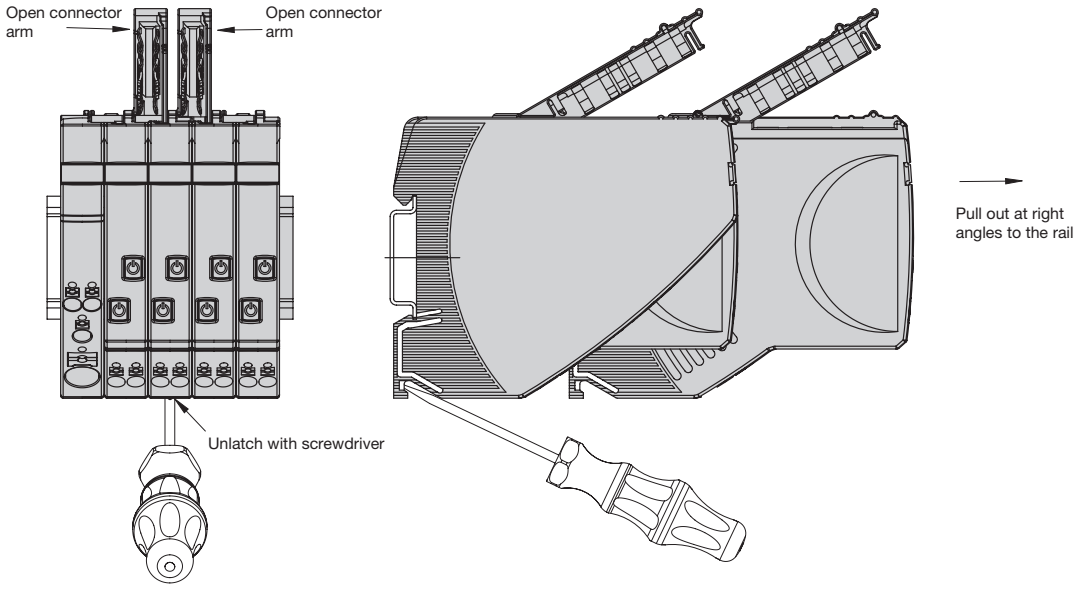
## Application example: REX... assembly/disassembly on symmetrical rail



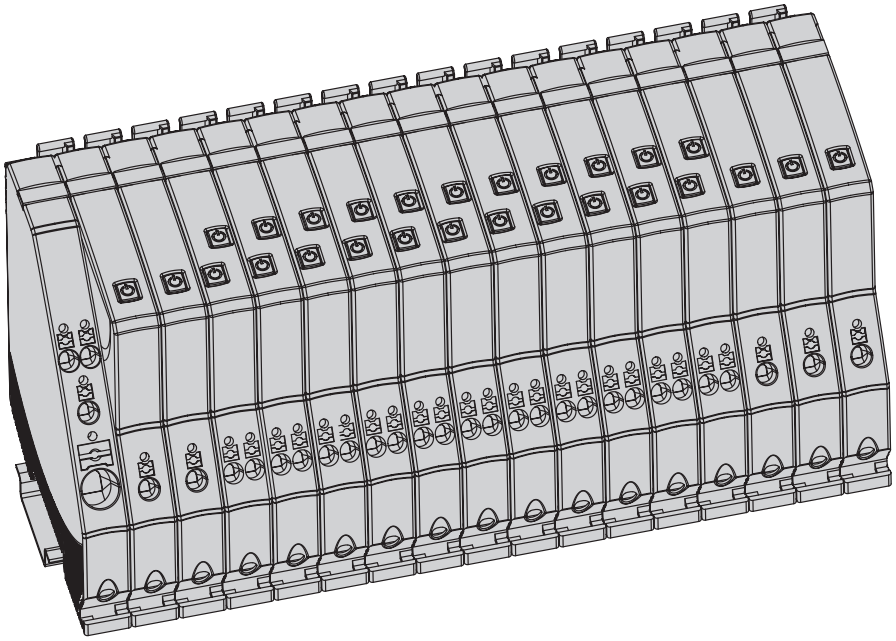

## Application example: REX... Replacement or disassembly



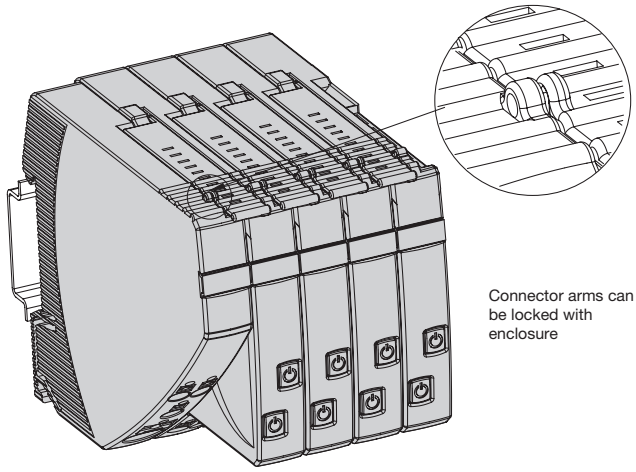

## Instructions for installation

Mounting or actuation of the REX connector arm must only be effected at dead-voltage. For start-up the REX connector arm must be closed.

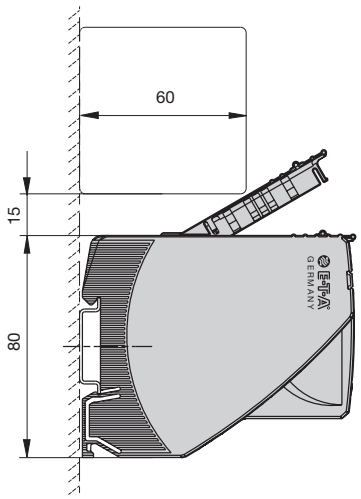
## Application example: EM12-T with REX12-TA1… and REX12-TA2…



## Application example: Locked connector arms




## Application example: REX12(D)-T… distance between cable duct and connector arm

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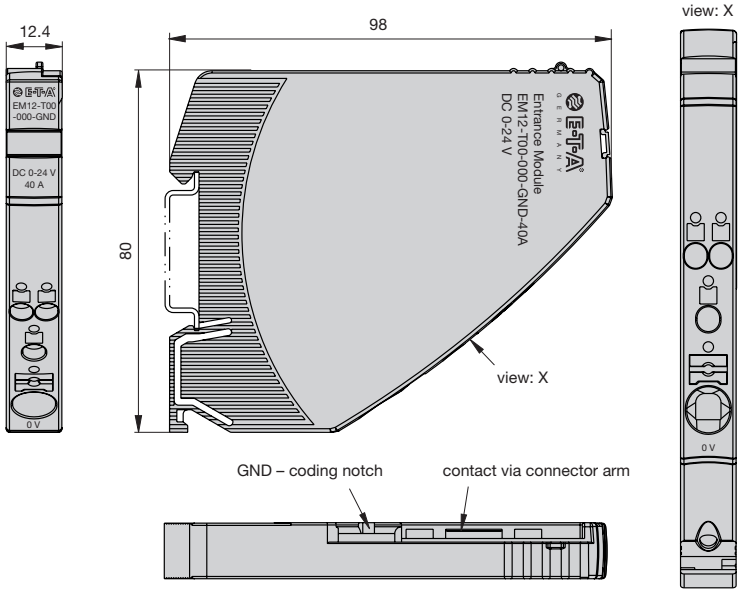
All information and data given on our products are accurate and reliable to the best of our knowledge, but E-T-A does not accept any responsibility for the use in applications which are not in accordance with the present specification. E-T-A reserves the right to change specifications at any time in the interest of improved design, performance and cost effectiveness, Dimensions are subject to change without notice. Please enquire for the latest dimensional drawing with tolerances if required. All dimensions, data, pictures and descriptions are for information only and are not binding. Amendments, errors and omissions excepted. Ordering codes of the products may differ from their marking.

## Accessories

### EM12-T00-000-GND-40A supply module left – 0V – GND

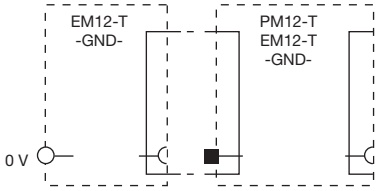



**Technical data**

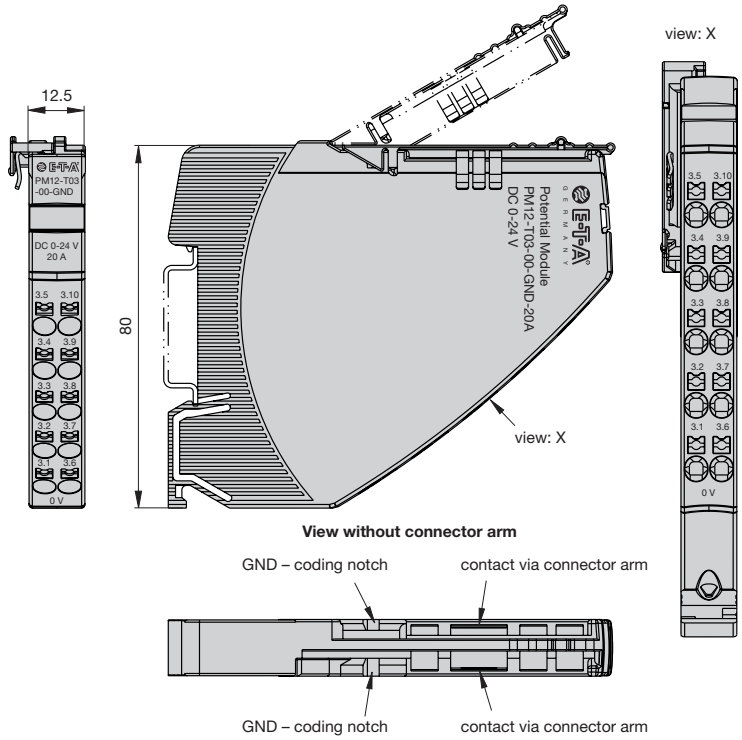
| | |
|---|---|
| Please observe general data of REX / EM / PM | |
| Operating voltage $U_B$ | 0 V – DC 24 V (0 ... 30 V) |
| Operating current $I_B$ | max. load 40 A |
| line terminal | 0 V – GND |
| Push-in terminal PT 10 | 0.5 mm² ... 10 mm² flexible<br>AWG24 – AWG8 rigid |
| stripping length | 18 mm |
| Dimensions (w x h x d) | 12.5 x 80 x 98 mm |
| Mass | approx. 40 g |
| Approvals | UL 1059, File # E335289 |

**Schematic diagram**

EM12-T00-000-GND-40A




### PM12-T03-00-GND-20A potential module – GND (10-way)

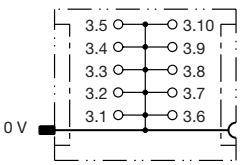



**Technical data**

| | |
|---|---|
| Please observe general data of REX / EM / PM | |
| Operating voltage $U_B$ | 0 V – DC 24 V (0 ... 30 V) |
| Operating current $I_B$ | max. load 20 A |
| line terminal | 0 V – GND |
| Push-in terminal PT 2.5 | 0.14 mm² ... 2.5 mm² flexible<br>AWG24 – AWG14 rigid |
| stripping length | 8 mm ... 10 mm |
| Dimensions (w x h x d) | 12.5 x 80 x 98 mm |
| Mass | approx. 52 g |
| Approvals | UL 1059, File # E335289 |

**Schematic diagram**

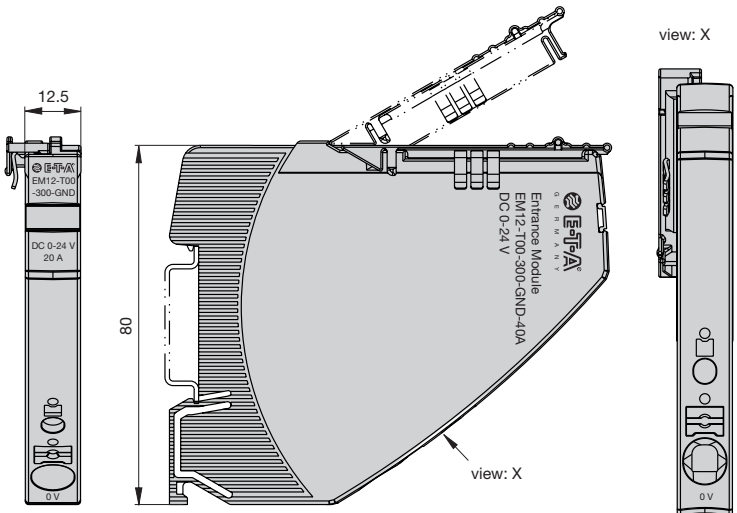
PM12-T03-00-GND-20A

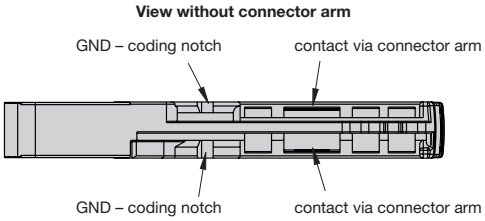



max. 10 A / terminal

## Accessories

### EM12-T00-300-GND-40A supply module centre/right – 0V – GND



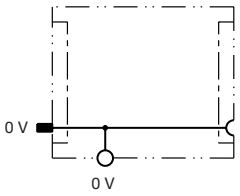




**Technical data**

| | |
|---|---|
| Please observe general data of REX / EM / PM | |
| Operating voltage $U_B$ | 0 V – DC 24 V (0 ... 30 V) |
| Operating current $I_B$ | max. load 40 A |
| line terminal | 0 V – GND |
| Push-in terminal PT 10 | 0.5 mm² ... 10 mm² flexible<br>AWG24 – AWG8 rigid |
| stripping length | 18 mm |
| Dimensions (w x h x d) | 12.5 x 80 x 98 mm |
| Mass | approx. 45 g |
| Approvals | UL 1059, File # E335289 |

**Schematic diagram**

EM12-T00-300-GND-40A

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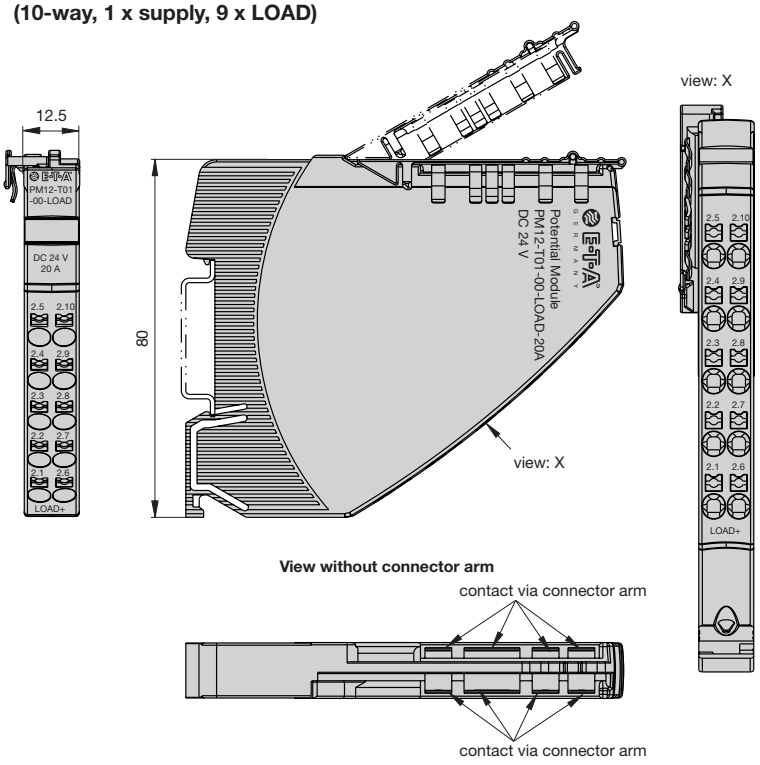
## Accessories

### PM12-T01-00-LOAD-20A potential module – LOAD (10-way, 1 x supply, 9 x LOAD)

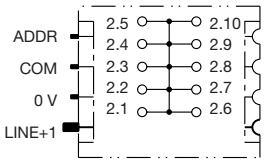



#### Technical data

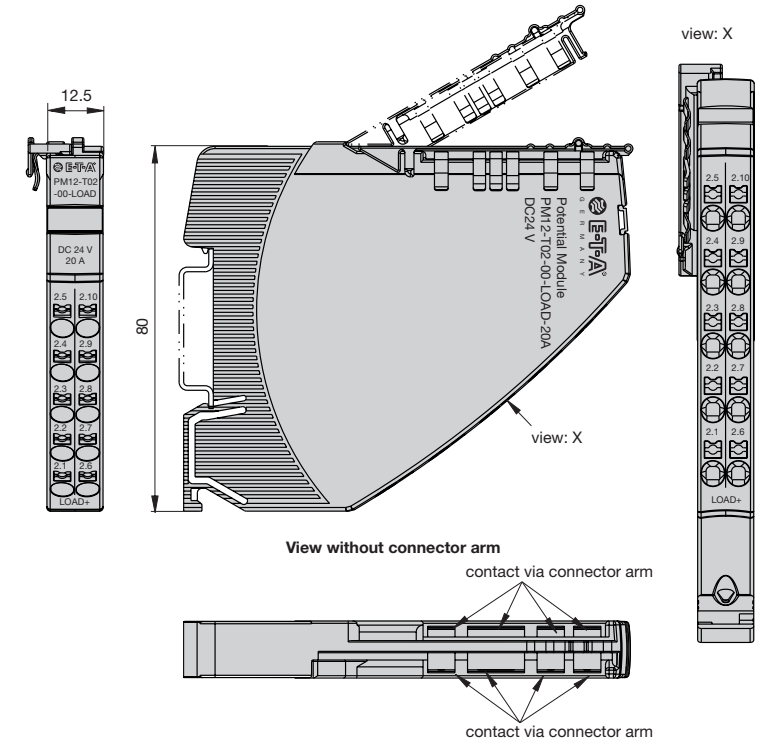
| | |
|---|---|
| Please observe general data of REX / EM / PM | |
| Operating voltage $U_B$ | DC 24 V (18...30 V) |
| Operating current $I_B$ | max. load 20 A |
| Insulation co-ordination | 0.8 kV / pollution degree 2 |
| Screw terminals | LOAD+ |
| Push-in terminal PT 2.5 | 0.14 mm² ... 2.5 mm² flexible<br>AWG24 – AWG14 rigid |
| stripping length | 8 mm ... 10 mm |
| Dimensions (w x h x d) | 12.5 x 80 x 98 mm |
| Mass | approx. 52 g |
| Approvals | UL 1059, File # E335289 |

#### Schematic diagram

PM12-T01-00-LOAD-20A




### PM12-T02-00-LOAD-20A potential module – LOAD (2 x 5-way, 1 x supply and 4 x LOAD each)

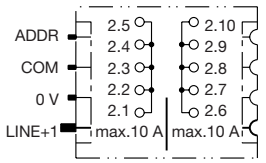



#### Technical data

| | |
|---|---|
| Please observe general data of REX / EM / PM | |
| Operating voltage $U_B$ | DC 24 V (18...30 V) |
| Operating current $I_B$ | max. load 20 A |
| Insulation co-ordination | 0.8 kV / pollution degree 2 |
| Screw terminals | LOAD+ |
| Push-in terminal PT 2.5 | 0.14 mm² ... 2.5 mm² flexible<br>AWG24 – AWG14 rigid |
| stripping length | 8 mm ... 10 mm |
| Dimensions (w x h x d) | 12.5 x 80 x 98 mm |
| Mass | approx. 52 g |
| Approvals | UL 1059, File # E335289 |

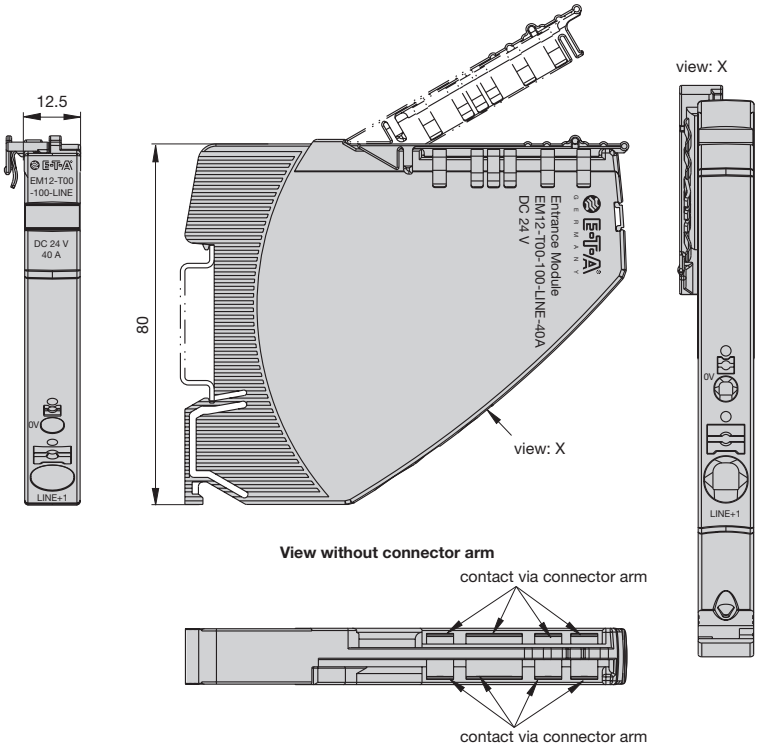
#### Schematic diagram

PM12-T02-00-LOAD-20A



## Accessories

### EM12-T00-100-LINE-40A supply module centre/right – LINE, LINE connected

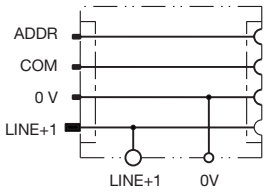



#### Technical data

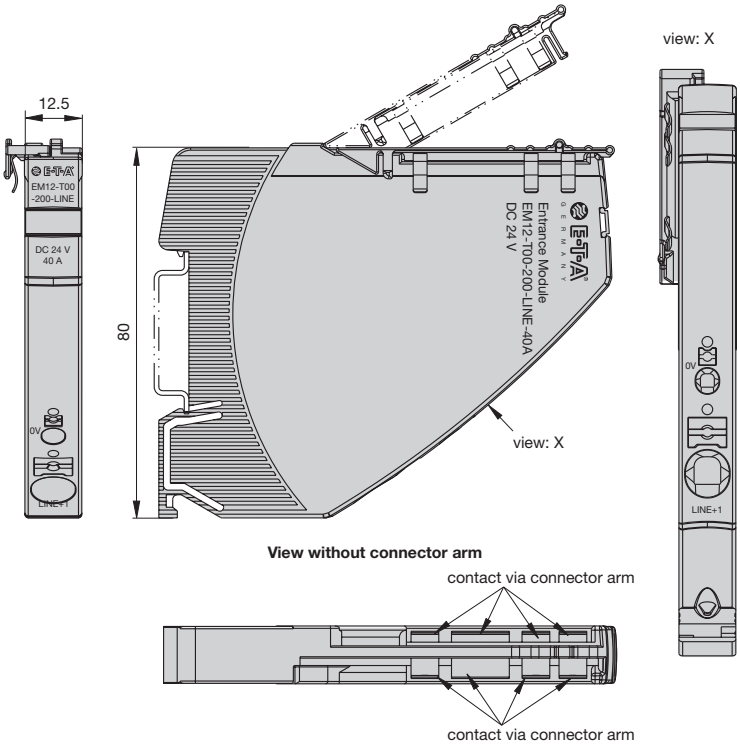
| | |
|---|---|
| Please observe general data of REX / EM / PM | |
| Operating voltage $U_B$ | DC 24 V (18...30 V) |
| Operating current $I_B$ | max. load 40 A |
| Insulation co-ordination | 0.8 kV / pollution degree 2 |
| **Screw terminals** | **LINE+1** |
| Push-in terminal PT 10<br>stripping length | 0.5 mm² ... 10 mm² flexible<br>AWG24 – AWG8 rigid<br>18 mm |
| **Screw terminals** | **0 V** |
| push-in terminal PT 2.5<br>Stripping length | 0.14mm² ... 2.5mm², flexible<br>AWG26 – AWG14 rigid<br>8 mm ... 10 mm |
| Dimensions (w x h x d) | 12.5 x 80 x 98 mm |
| Mass | approx. 52 g |
| Approvals | UL 1059, File # E335289 |

#### Schematic diagram

EM12-T00-100-LINE-40A




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

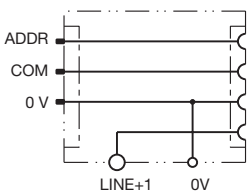



#### Technical data

| | |
|---|---|
| Please observe general data of REX / EM / PM | |
| Operating voltage $U_B$ | DC 24 V (18...30 V) |
| Operating current $I_B$ | max. load 40 A |
| Insulation co-ordination | 0.8 kV / pollution degree 2 |
| **Screw terminals** | **LINE+1** |
| Push-in terminal PT 10<br>stripping length | 0.5 mm² ... 10 mm², flexible<br>AWG24 – AWG8 rigid<br>18 mm |
| **Screw terminals** | **0 V** |
| Push-in terminal PT 2.5<br>stripping length | 0.14mm² ... 2.5mm², flexible<br>AWG24 – AWG14 rigid<br>8 mm ... 10 mm |
| Dimensions (w x h x d) | 12.5 x 80 x 98 mm |
| Mass | approx. 52 g |
| Approvals | UL 2367, File # E306740;<br>cULus508listed, File #<br>E492388; pending |

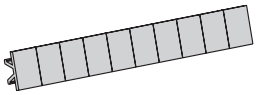
#### Schematic diagram

EM12-T00-200-LINE-40A



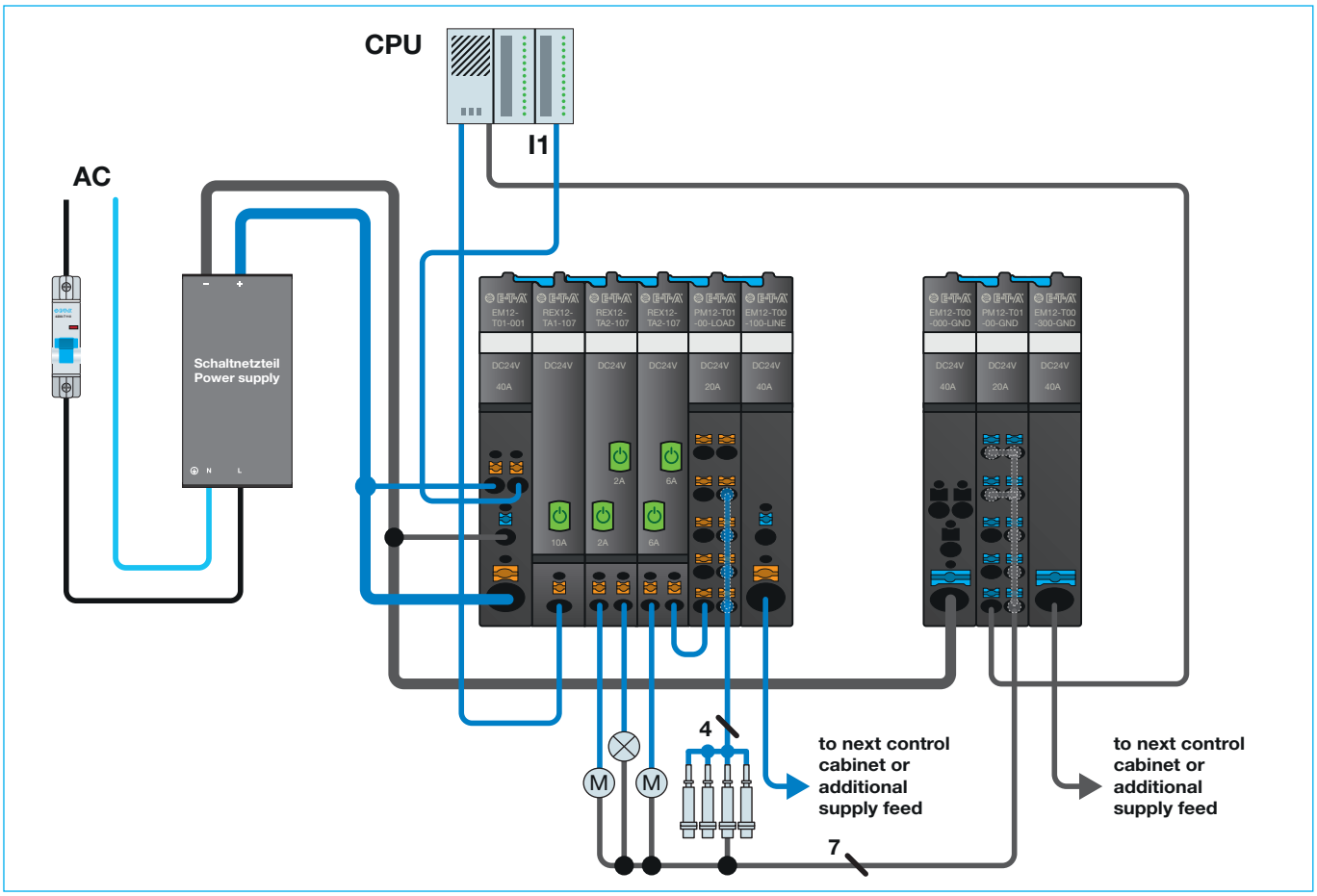
## Accessories

**Label**
Marking area 6 x 10 mm
**Part number Y 307 942 61**



Note: Please use 2 strips per EM12,
PM12 or REX12 module

## Application example: EM12-T ... with REX12-TAx... and PM12-...

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