Description

Electronic circuit protector type ESX10 is designed to ensure **selective** disconnection of DC 24 V load systems.

DC 24 V power supplies, which are widely used in industry today, will shut down the output in the event of an overload with the result that one faulty load in the system can lead to complete disconnection of all loads. As well as an unidentified failure this also means stoppage of the whole system.

Through **selective** disconnection the ESX10 responds much faster to overload or short circuit conditions than the switch-mode power supply. This is achieved by active current limitation. The ESX10 limits the highest possible current to values between 1.3 to 1.8 times the selected rated current of the circuit protector. Thus it is possible to switch on **capacitive loads of up to 20,000 µF** lamp loads, but they are disconnected only in the event of an overload or short circuit.

For optimal alignment with the characteristics of the application the current rating of the ESX10 can be selected in fixed values from 0.5 A...12 A. Failure and status indication are provided by a multicolour LED and an integral short-circuit-proof status output or a potential-free signal contact.

The ESX10, with a width of only 12.5 mm, can be plugged into the E-T-A power distribution socket Module 17plus ensuring ease of installation and saving space in control cabinets.

Upon detection of overload or short circuit in the load circuit, the MOSFET of the load output will be blocked to interrupt the current flow. The MOSFET and the load circuit may be re-activated via the remote electronic reset input or manually by means of the ON/OFF button. When starting up the system, the load circuit may also be manually disconnected.

Features

- Selective load protection, electronic trip characteristics.
- Active current limitation for safe connection of capacitive loads up to 20,000 µF and on overload/short circuit.
- Current ratings 0.5 A...12 A.
- Reliable overload disconnection with 1.1 x I_N plus, even with long load lines or small cable cross sections (see table 3).
- Manual ON/OFF button (S1).
- Control input IN+ for remote ON/OFF signal (option).
- Clear status and failure indication through LED, status output SF or Si contact F.
- Electronic reset input RE (option).
- Integral fail-safe element.
- Width per unit only 12.5 mm.
- Plug-in mounting utilising power distribution system Module 17plus or SVSxx optionally (see product group Power distribution systems)

Approvals

Authority	Voltage rating	Current ratings
UL 2367	DC 24 V	0.5...12 A
UL 508	DC 24 V	0.5...12 A
CSA C22.2 No: 14	DC 24 V	0.5...12 A

Attention:
- The user should ensure that the cable cross sections of the relevant load circuit are suitable for the current rating of the ESX10 used.
- Automatic start-up of machinery after shut down must be prevented (Machinery Directive 98/37/EG and EN 60204-1). In the event of a short circuit or overload the load circuit will be disconnected electronically by the ESX10.

ESX10

Technical data ($T_{ambient}$ = 25 °C, operating voltage U_S = DC 24 V)

Operating data		
Operating voltage U_S		DC 24 V (18...32 V)
Current rating I_N		fixed current ratings: 0.5 A, 1 A, 2 A, 3 A, 4 A, 6 A, 8 A, 10 A, 12 A
Closed current I_0		ON condition: typically 20...30 mA depending on signal output
Status indication by means of		● multicolour LED:
	GREEN:	unit is ON, power-MOSFET is switched on - status output SF ON, supplies + DC 24 V
	ORANGE:	in the event of overload or short circuit until electronic disconnection
	RED:	- unit electronically disconnected - load circuit/Power-MOSFET OFF
	OFF:	- manually switched off (S1 = OFF) or device is dead - undervoltage (U_S < 8 V) - after switch-on till the end of the delay period
		● status output SF (option) ● potential-free signal contact F (option) ● ON/OFF/ condition of switch S1
Load circuit		
Load output		Power-MOSFET switching output (high side switch)
Overload disconnection		typically 1.1 x I_N (1.05...1.35 x I_N)
Short-circuit current I_K		active current limitation (see table 1)
Trip time for electronic disconnection		see time/current characteristics typically 3 s at I_{Load} > 1.1 x I_N typically 3 s...100 ms at I_{Load} > 1.8 x I_N (or 1.5 x I_N/1.3 x I_N)
Temperature disconnection		internal temperature monitoring with electronic disconnection
Low voltage monitoring load output		with hysteresis, no reset necessary load “OFF” at U_S < 8 V
Starting delay t_{start}		typically 0.5 sec after every switch-on and after applying U_S
Disconnection of load circuit		electronic disconnection
Free-wheeling circuit		external free-wheeling diode recommended with inductive load
Several load outputs must not be connected in parallel		

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Technical data ($T_{ambient}$ = 25°C, operating voltage U_S = DC 24 V)

Status output SF	**ESX10-104/-106/-124/-127**
Electrical data	plus-switching signal output, connects U_S to terminal 12 of module 17plus nominal data: DC 24 V / max. 0.2 A (short circuit proof) status output is internally connected to GND with a 10 kOhm resistor
Status OUT	ESX10-104/-106/ -124 (signal status OUT), at U_S = +24 V +24 V = S1 is ON, load output connected through 0V = S1 is ON, load output blocked and/or switch S1 is OFF
Status $\overline{\text{OUT}}$	ESX10-127 (signal status OUT inverted), at U_S = +24 V +24 V = S1 is ON, load output blocked, red LED lighted 0 V = S1 is ON, load output connected through and/or switch S1 is in OFF position
OFF condition	0 V level at status output when: ● switch S1 is in ON position, but device is still in switch-on delay ● switch S1 is OFF, or control signal OFF, device is switched off ● no operating voltage U_S
Signal output F	**ESX10-101/-102/-103/-105/-106/-115/-125**
Electrical data	potential-free signal contact max. DC 30 V/0.5 A, min. 10 V/10 mA
ON condition LED green	voltage U_S applied, switch S1 is in ON position no overload, no short circuit
OFF condition LED off	● device switched off (switch S1 is in OFF position) ● no voltage U_S applied
Fault condition LED orange	overload condition > 1.1 x I_N up to electronic disconnection
Fault condition LED red	electronic disconnection upon overload or short circuit
	device switched off with control signal (switch S1 is in ON position)
ESX10-101	single signal, make contact contact SC/SO-SI open
ESX10-102	single signal, break contact contact SC/SO-SI closed
ESX10-103	group signal change-over contact contact SC-SO open, SC-SI closed
ESX10-105/-106/-115/-125	group signal, make contact contact SC-SO open
Fault	signal output fault conditions: ● no operating voltage U_S ● ON/OFF switch S1 is in OFF position ● red LED lighted (electronic disconnection)

Table 1: voltage drop, current limitation, max. load current

current rating I_N	typically voltage drop U_{ON} at I_N	active current limitation (typically)	max. load current at 100 % ON duty T_U = 40 °C	T_U = 50 °C
0.5 A	70 mV	1.8 x I_N	0.5 A	0.5 A
1 A	80 mV	1.8 x I_N	1 A	1 A
2 A	130 mV	1.8 x I_N	2 A	2 A
3 A	80 mV	1.8 x I_N	3 A	3 A
4 A	100 mV	1.8 x I_N	4 A	4 A
6 A	130 mV	1.8 x I_N	6 A	5 A
8 A	120 mV	1.5 x I_N	8 A	7 A
10 A	150 mV	1.5 x I_N	10 A	9 A
12 A	180 mV	1.3 x I_N	12 A	10.8 A

Attention: when mounted side-by-side without convection the ESX10-0.. should not carry more than 80 % of its rated load with 100 % ON duty due to thermal effects.

Technical data ($T_{ambient}$ = 25°C, operating voltage U_S = DC 24 V)

Reset input RE	**ESX10-124/-125/-127**
Electrical data	voltage: max. + DC 32 V high > DC 8 V ≤ DC 32 V low ≤ DC 3 V > 0 V power consumption typically 2.6 mA (+DC 24 V) min. pulse duration typically 10 ms
Reset signal RE (= terminal 13,14 or 12 of Module 17plus)	The electronically blocked ESX10-124/-127 may remotely be reset via an external momentary switch due to the falling edge of a +24 V pulse.
Caution: unused slots have to be fitted with jumpers	The reset signal will be fed in terminal 13, 14 or 12 of Module 17plus and is internally pre-wired. The reset simultaneously affects all blocked ESX10-124/-127 channels of the power distribution system, all switched on ESX10-124/-127 channels remain unaffected. With type ESX10-125 the reset only affects the device concerned. By connecting the individual terminals 12 of the Module 17plus a joint reset signal for all ESX10-125 may be generated.
Control input IN+	**ESX10-115**
Electrical data	see reset input RE
Control signal IN+	+24 V level (HIGH): device will be switched on by a remote ON/OFF signal 0 V level (LOW): device will be switched off by a remote ON/OFF signal
Switch S1 ON/OFF	unit can only be switched on with S1 if a HIGH level is applied to IN+
General data	
Fail-safe element:	backup fuse for ESX10 not required because of the integral redundant fail-safe element
Blade terminals	6.3 mm to DIN 46244-A6.3-0.8
Housing	moulded
Mounting	plug-in mounting utilising power distribution system Module 17plus or SVSxx
Ambient temperature	0...+50 °C (without condensation, see EN 60204-1)
Storage temperature	-20...+70 °C
Humidity	96 hrs/95 % RH/40 °C to IEC 60068-2-78, test Cab. climate class 3K3 to EN 60721
Vibration	3 g, test to IEC 60068-2-6 test Fc
Degree of protection	housing: IP30 DIN 40050 terminals: IP00 DIN 40050
EMC (EMC directive, CE logo)	emission: EN 61000-6-3 susceptibility: EN 61000-6-2
Insulation co-ordination (IEC 60934)	0.5 kV/2 pollution degree 2 re-inforced insulation in operating area
dielectric strength	max. DC 32 V (load circuit)
Insulation resistance (OFF condition)	n/a, only electronic disconnection
Approvals	UL 2367, File # E306740 Solid State Overcurrent Protectors UL 508, File # E322549 CSA C22.2 No: 14, File 16186 CE logo
Dimensions (W x H x D)	12.5 x 70 x 60 mm
Mass	approx. 40 g

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Ordering information

Type No.						
ESX10	Electronic Circuit Protector for DC 24 V applications					
	Version					
	1	standard, without physical isolation in the event of a failure				
		Signal input				
		0	without signal input			
		1	with control input IN+, only ESX10-115			
		2	with reset input RE, only ESX10-124, ESX10-125, ESX10-127			
			Signal outputs			
			0	without, only ESX10-100		
			1	signal output F (single signal, N/O), only ESX10-101		
			2	signal output F (single signal, N/C), only ESX10-102		
			3	signal output F (group signal, change-over), only ESX10-103		
			4	status output SF (+24 V = OK), only ESX10-104, ESX10-124		
			5	signal output F (group signal, N/O), ESX10-105, ESX10-115, ESX10-125		
			6	signal output F (group signal, N/O), status output SF +24 V = OK, only ESX10-106		
			7	status output inverted, 0 V = OK, only ESX10-127		
				Operating voltage		
				DC 24 V	rated voltage DC 24 V	
					Current rating	
					0.5 A	
					1 A	
					2 A	
					3 A	
					4 A	
					6 A	
					8 A	
					10 A	
					12 A	
ESX10 -	1	0	5	DC 24 V -	6 A	ordering example

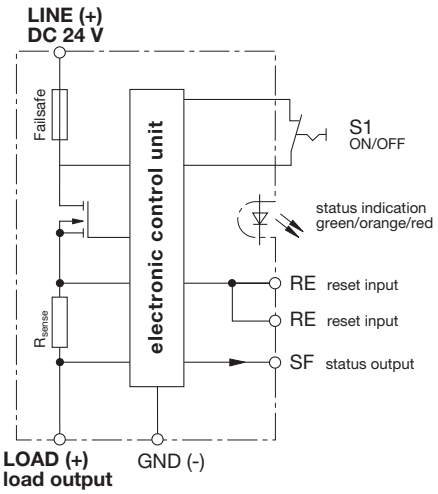
Description of ESX10 signal inputs and outputs (wiring diagrams) see next page.

Please note:

- The user should ensure that the cable cross sections of the relvant load circuit are suitable for the current rating of the ESX10 used.
- Automatic start-up of machinery after shut down must be prevented (Machinery Directive 98/37/EG and EN 60204-1). In the event of a short circuit or overload the load circuit will be disconnected electronically by the ESX10.

Schematic diagram ESX10-124

ESX10-124-...



Terminal wiring diagram ESX10-124

ESX10

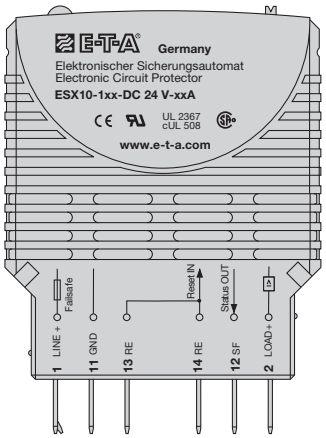


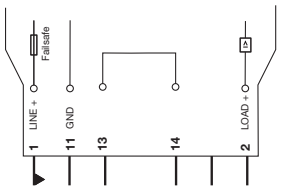
Table 2: ESX10 - product version

version	signal input		signal output					
			signal output F				status output SF	
ESX10 -...	control input ON/OFF +24 V Control IN+	reset input +24 V RE	single signal N/O	single signal N/C	group signal N/O	group signal change-over	status OUT +24 V = OK	status $\overline{\text{OUT}}$ 0 V = OK
-100								
-101			x					
-102				x				
-103						x		
-104							x	
-105					x			
-106					x		x	
-115	x				x			
-124		x					x	
-125		x			x			
-127		x						x

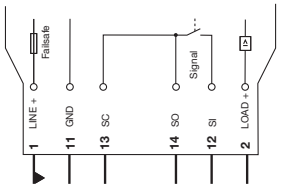
ESX10 Signal inputs / outputs (wiring diagram)

ESX10 signal inputs / outputs (wiring diagrams)
Signal contacts are shown in the OFF or fault condition.

ESX10-100
without signal input/output

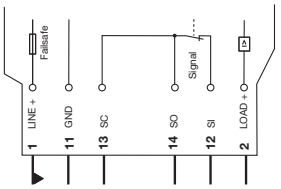


ESX10-101
without signal input
with signal output F (single signal, N/O)



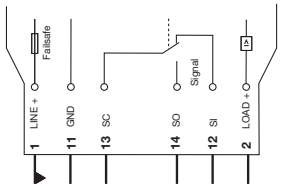
operating condition: SC/SO-SI closed
fault condition: SC/SO-SI open

ESX10-102
without signal input
with signal output F (single signal, N/C)



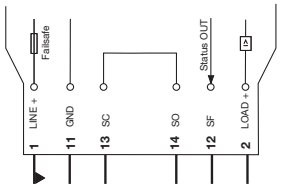
operating condition: SC/SO-SI open
fault condition: SC/SO-SI closed

ESX10-103
without signal input
with signal output F (group signal, change-over)



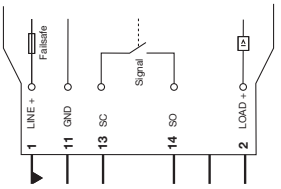
operating condition: SC/SO closed, SC-SI open
fault condition: SC/SO open, SC-SI closed

ESX10-104
without signal input
with status output SF (+24 V = load output ON)



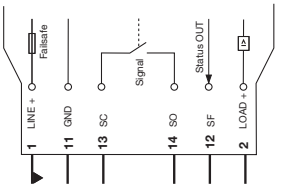
operating condition: SF +24 V = OK
fault condition: SF 0V

ESX10-105
without signal input
with signal output F (group signal, N/O)



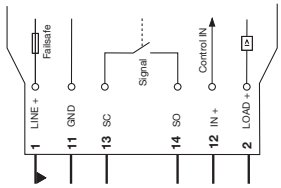
operating condition: SC-SO closed
fault condition: SC-SO open

ESX10-106
without signal input
with signal output F (group signal, N/O)
with status output SF (+24 V = load output ON)



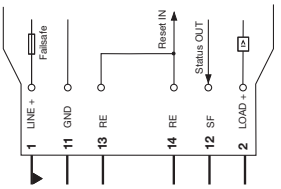
operating condition: SC-SO closed
fault condition: SC-SO open

ESX10-115-...
with control input IN+ (+DC 24 V)
with signal output F (group signal, N/O)



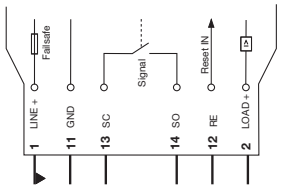
operating condition: SC-SO closed
fault condition: SC-SO open

ESX10-124-...
with reset input RE (+DC 24 V↓)
with status output SF (+24V = load output ON)



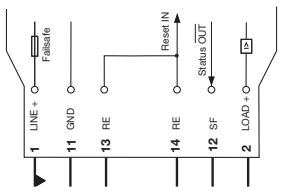
operating condition: SF +24V = OK
fault condition: SF 0V

ESX10-125-...
with reset input RE (+DC 24 V↓)
with signal output F (group signal, N/O)



operating condition: SC-SO closed
fault condition: SC-SO open

ESX10-127-...
with reset input RE (+DC 24 V↓)
with status output SF inverted, 0V = load output ON



operating condition: SF 0V = OK
fault condition: SF +24 V

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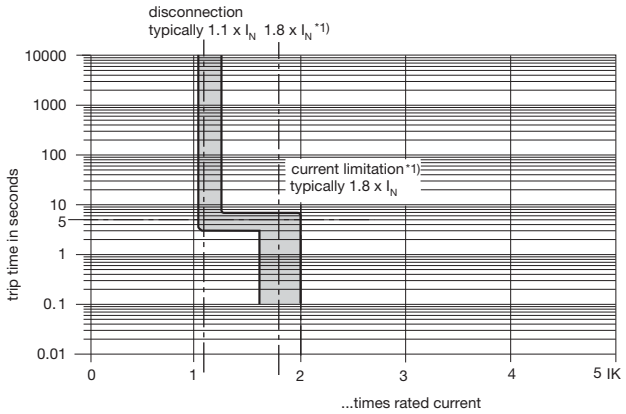
Time/Current characteristic curve (T_A = 25 °C)



- The trip time is typically 3 s in the range between 1.1 and 1.8 x I_N *1).
- Electronic current limitation occurs at typically 1.8 x I_N *1) which means that under all overload conditions (independent of the power supply and the resistance of the load circuit) the max. overload before disconnection will not exceed 1.8 x I_N *1) times the current rating. Trip time is between 100 ms (short circuit current I_K) and 3 sec (at overload with high line attenuation).
- Without this current limitation a considerably higher overload current would flow in the event of an overload or short circuit.

*1) current limitation typically 1.8 x I_N times rated current at I_N = 0.5 A...6 A
current limitation typically 1.5 x I_N times rated current at I_N = 8 A or 10 A
current limitation typically 1.3 x I_N times rated current at I_N = 12 A

Table 3: Reliable trip of ESX10

Reliable trip of ESX10 with different cable lengths and cross sections

Resistivity of copper ρ_0 = 0.0178 (Ohm x mm²) / m

U_S = DC 19.2 V (= 80 % v. 24 V) — voltage drop of ESX10 and tolerance of trip point (typically 1.1 x I_N = 1.05 ... **1.35 x I_N**) have been taken into account.

ESX10-selected rating I_N (in A) →	**3**	**6**
e. g. trip current I_{ab} = 1.25 x I_N (in A) →	3.75	7.5 → **ESX10 trips after 3 s**
R_{max} in Ohm = (U_S / I_{ab}) - 0.050 →	**5.07**	**2.51**

The ESX10 reliably trips from 0 Ohm to max. circuitry resistance R_{max}

Cable cross section **A** in mm² →	0.14	0.25	0.34	0.5	0.75	1	1.5
cable length **L** in meter (= single length) ↓	**cable resistance in Ohm = (R_0 x 2 x L) / A** ↓						
5	1.27	0.71	0.52	0.36	0.24	0.18	0.12
10	2.54	1.42	1.05	0.71	0.47	0.36	0.24
15	3.81	2.14	1.57	1.07	0.71	0.53	0.36
20	5.09	2.85	2.09	1.42	0.95	0.71	0.47
25	6.36	3.56	2.62	1.78	1.19	0.89	0.59
30	7.63	4.27	3.14	2.14	1.42	1.07	0.71
35	8.90	4.98	3.66	2.49	1.66	1.25	0.83
40	10.17	5.70	4.19	2.85	1.90	1.42	0.95
45	11.44	6.41	4.71	3.20	2.14	1.60	1.07
50	12.71	7.12	5.24	3.56	2.37	1.78	1.19
75	19.07	10.68	7.85	5.34	3.56	2.67	1.78
100	25.34	14.24	10.47	7.12	4.75	3.56	2.37
125	31.79	17.80	13.09	8.90	5.93	4.45	2.97
150	38.14	21.36	15.71	10.68	7.12	5.34	3.56
175	44.50	24.92	18.32	12.46	8.31	6.23	4.15
200	50.86	28.48	20.94	14.24	9.49	7.12	4.75
225	57.21	32.04	23.56	16.02	10.68	8.01	5.34
250	63.57	35.60	26.18	17.80	11.87	8.90	5.93

Example 1: max. length at 1.5 mm² and 3 A → **214 m**

Example 2: max. length at 1.5 mm² and 6 A → **106 m**

Example 3: mixed wiring: R1 = 40 m in 1.5 mm² and R2 = 5 m in 0.25 mm²:
(Control cabinet – sensor/actuator level) R1 = 0.95 Ohm, R2 = 0.71 Ohm **Total (R1 + R2) = 1.66 Ohm**

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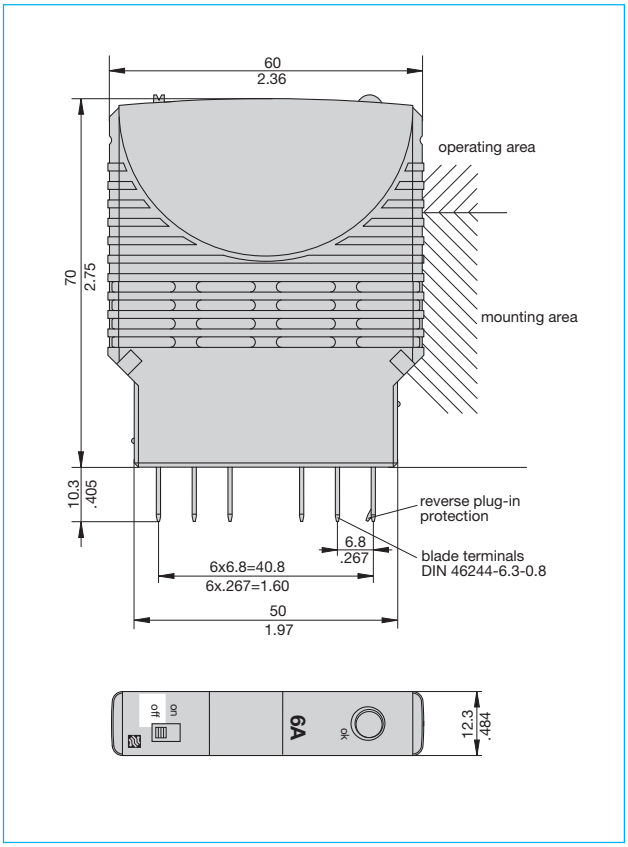
Dimensions



This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

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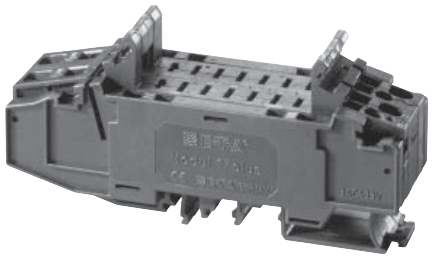
All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

Accessories for ESX10

Description

Module 17plus is a power distribution system for use with electronic circuit protectors ESX10.
Each module accommodates two protectors with an individual housing width of only 12.5 mm and fits onto all industry standard mounting rails.
The two-way modules can be interconnected to provide as many ways as required with a terminal block fitted at each end for connection of signalling circuits. A distribution busbar can be fitted on the supply side of the modules (positive pole) though each pole of multipole circuit breakers must be individually connected.
Electrical connections are by means of spring-loaded terminals. The reference potential for the ESX10 (GND pin 11) is also looped through and connected to the terminal blocks at the sides.
The integral status output SF of the ESX10-104/-106/-124/-127 can be tapped at terminal 12 of the relevant channel (single signalisation).
The reset input RE may be connected via terminal 13 or 14 (ESX10-124/-127) or terminal 12 (ESX10-125). The integral control input IN+ of ESX10-115 is connected via terminal 12.
Depending on the version a potential-free signal contact is available (ESX10-101/-102/-103/-104/-105/-106/-115/-125).

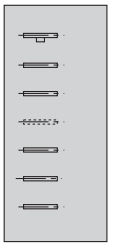


17plus

Ordering information

17PLUS-Q02-00	Module 17plus, centre piece, two-way
17PLUS-QA0-LR	one each left- and right-side terminal block for supply feed from the side by means of screw terminal, connection of signalisation etc.

Pin configuration, fitted with ESX10-124 (Example)



ESX10-124	Modul 17 plus	
LINE (+)	(1)	operating voltage PLUS, DC 24 V
GND	(11)	operating voltage MINUS
RE	(13)	reset input RE
RE	(14)	reset input RE
SF	(12)	status output SF
LOAD (+)	(2)	protected load output

Approvals

Authority	Voltage ratings	Current ratings
UL 60950	AC 250 V; DC 80 V	50 A

Technical data

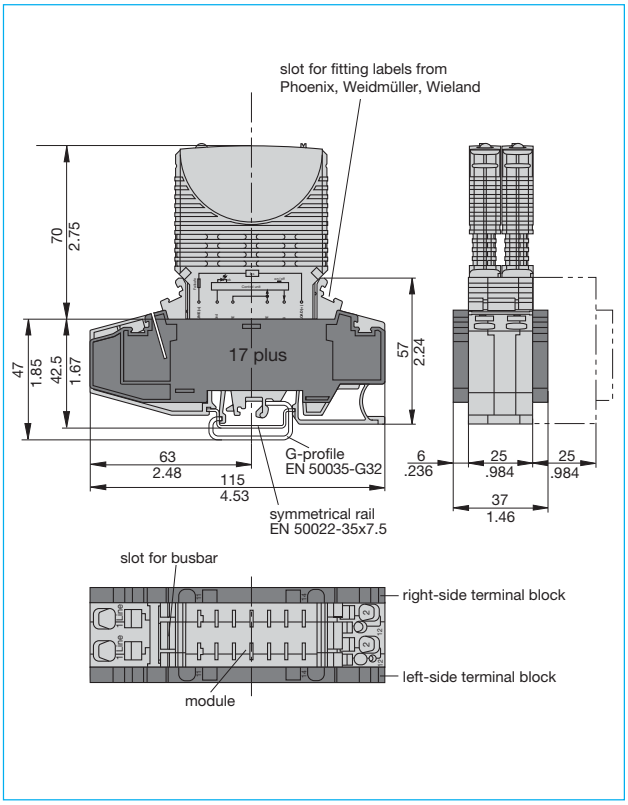
Connection	Spring-loaded terminals for solid conductors and stranded cables with and without wire end ferrules. Please use appropriate screw driver size (SD) for removing the spring loaded terminals.

cable	cross section of connecting cable	screw driver	stripped length
Line feed (1)	1.5-10 mm²	3 (1.0 x 5.5)	12 mm
Load output (2)	0.25-4 mm²	1 (0.6 x 3.5)	12 mm
Signalisation terminals (11, 13, 14)	0.25-2.5 mm²	1 (0,6 x 3.5)	10 mm
Signalisation terminal (12)	0.25-1.5 mm²	0 (0.4 x 2.5)	9 mm

Voltage rating (without ESX10)	AC 250 V; 3 AC 433 V; DC 65 V
Current rating (without ESX10)	
LINE feed (1)	50 A
LOAD output (2)	25 A
Reference potential GND (11)	10 A
single signal (12)	1 A (with ESX10: 0.5 A)
Group signal /(13-14)	1 A (with ESX10: 0.5 A)
Internal resistance values (without ESX10)	
LINE-LOAD (1-2)	≤ 5 mΩ
Group signal (13-14) per module	≤ 8 mΩ per pole +5 mΩ for each additional module
Vibration	5 g (57-500 Hz) ± 0.38 mm (10-57 Hz), to IEC 60068-2-6, test Fc, 10 frequency cycles/axis
Shock	25 g (11 ms) to IEC 60068-2-27, test Ea 11 ms half sine
Corrosion	96 hours at 5 % salt mist, to IEC 60068-2-11, test Ka
Humidity	240 hours at 95 % RH to IEC 60068-2-78, test Cab
Dielectric strength of Module 17plus (without ESX10)	
between main circuits (without busbar):	1,500 V
main circuit to auxiliary circuit:	1,500 V
between auxiliary circuits:	1,500 V
Mass: Module 17plus (centre piece)	approx. 85 g
terminal blocks (pair)	approx. 30 g

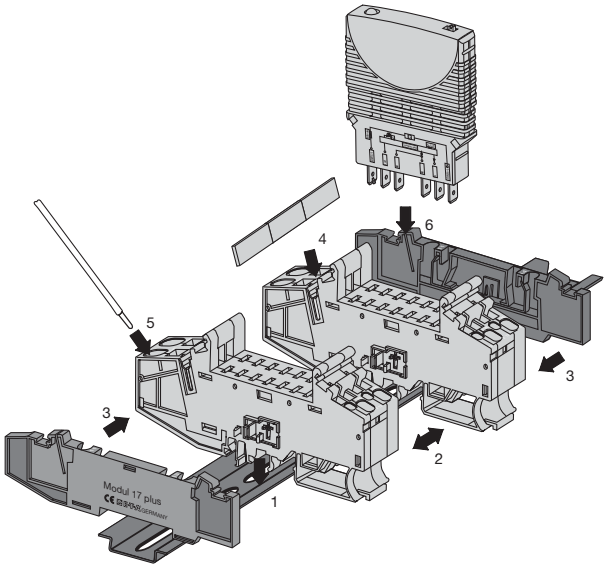
5

Dimensions

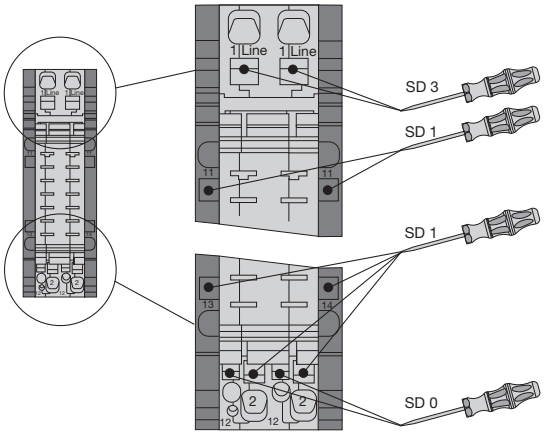


This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Installation example



Installation:
1 Clip modules onto DIN rails.
2 Push modules together (side-by-side).
3 Snap on right-side and left-side terminal blocks.
4 Cut busbar to required length and fit on supply side of the modules.
5 Connect line feed with spring-loaded terminals.
6 Plug in ESX10.

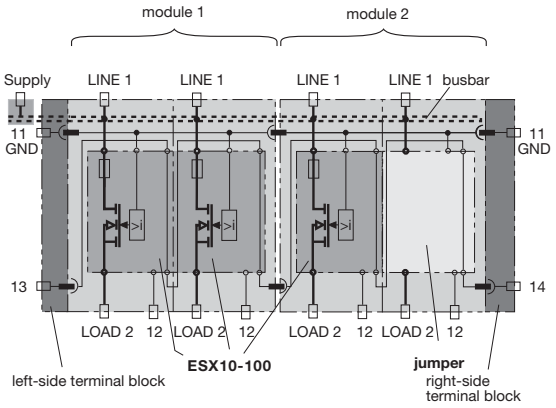


Connection and disconnection of cables with screw driver

5

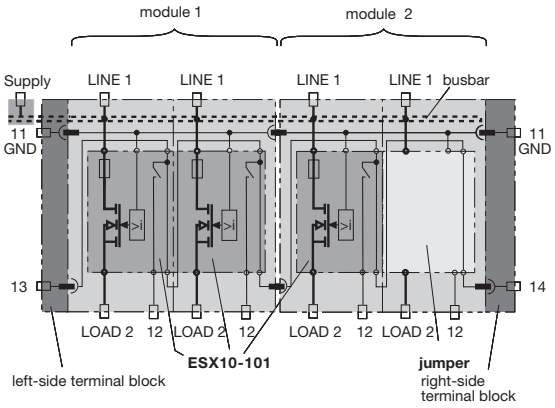
Connection diagram for ESX10-...

Module 17plus with ESX10-100



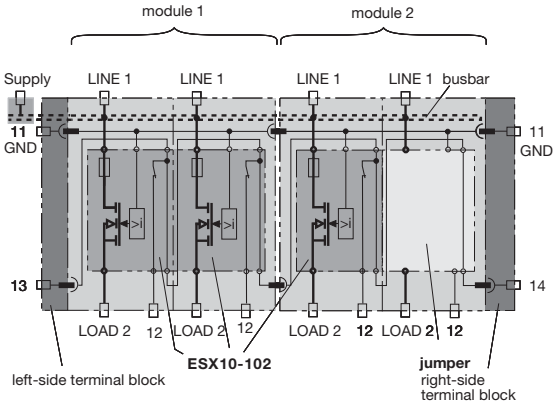
11 GND
13, 14 looped through

Module 17plus with ESX10-101



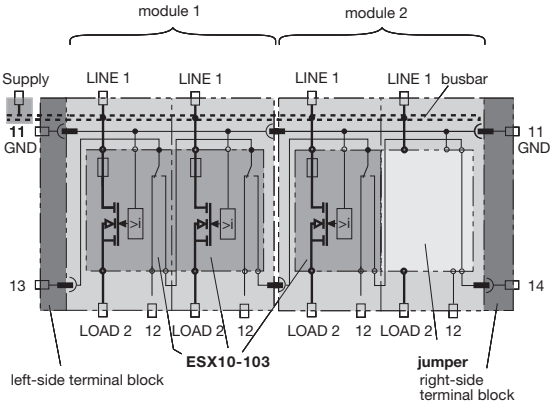
11 GND
12 output single signalisation per channel (N/O)
13, 14 feed single signalisation

Module 17plus with ESX10-102



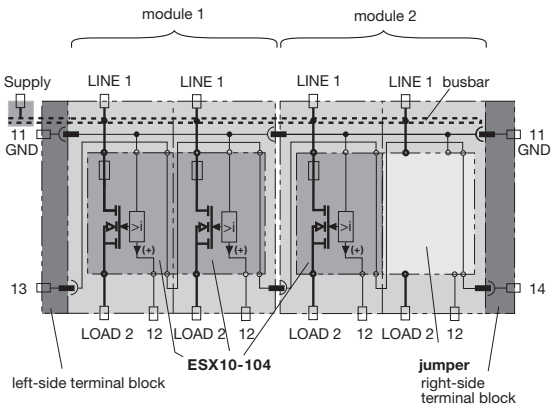
11 GND
12 output single signalisation per channel (N/C)
13, 14 feed single signalisation

Module 17plus with ESX10-103



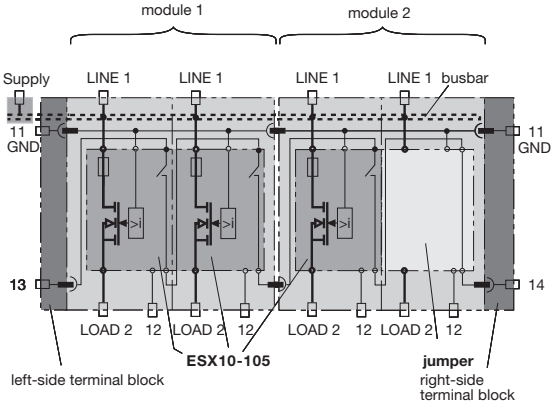
11 GND
12, 13, 14 terminal group signalisation (change-over)
(13-12 N/C, 13-14 N/O)

Module 17plus with ESX10-104



11 GND
12 status indication SF +24V=OK
13, 14 looped through

Module 17plus with ESX10-105



11 GND
13, 14 terminal group signalisation (N/O)

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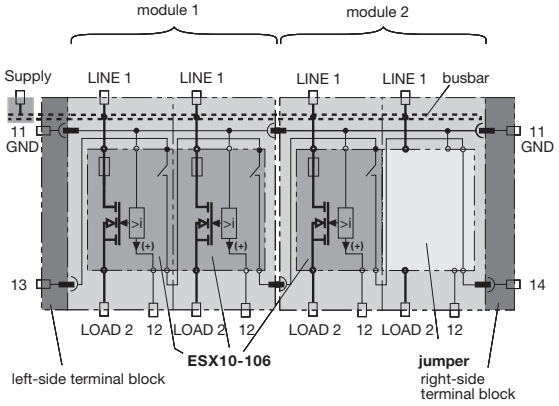
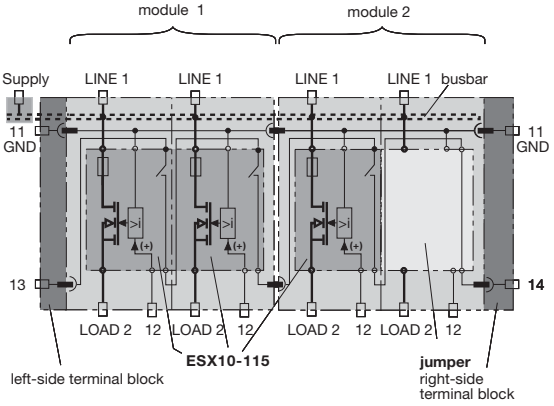
Connection diagram for ESX10-...

Module 17plus with ESX10-106



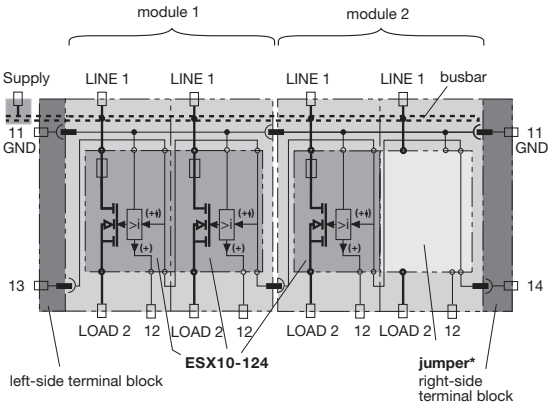
11 GND
12 status indication SF +24V=OK
13, 14 terminal group signalisation (N/O)

Module 17plus with ESX10-115



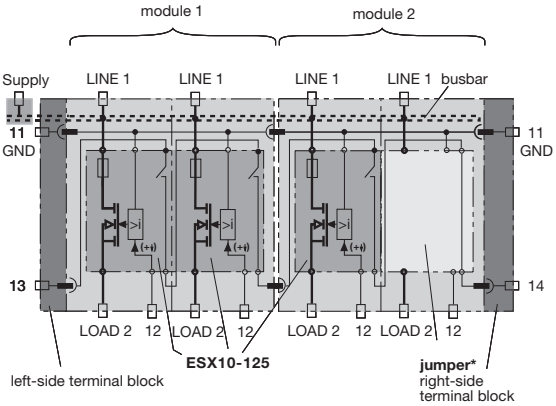
11 GND
12 terminal control signal ON (+24V DC)
13, 14 terminal group signalisation (N/O)

Module 17plus with ESX10-124



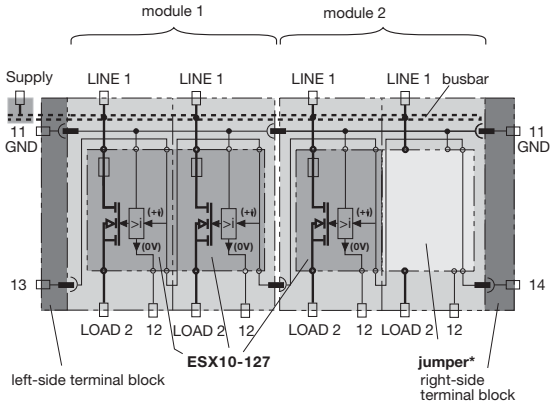
11 GND
12 status indication SF +24V=OK
13, 14 reset input RE (group reset), +24V falling edge
*Caution: unused slots have to be fitted with jumpers

Module 17plus with ESX10-125



11 GND
12 reset input RE (single reset), +24V falling edge
13, 14 terminal group signalisation (N/O)
*Caution: unused slots have to be fitted with jumpers

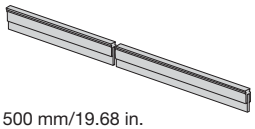
Module 17plus with ESX10-127



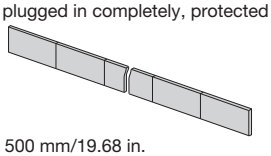
11 GND
12 status indication SF inverted, 0V=OK
13, 14 reset input RE (group reset), +24V falling edge
*Caution: unused slots have to be fitted with jumpers

Accessories for ESX10

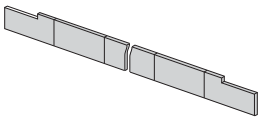
Busbar 32 A
X 222 005 01 blue insulation, 500 mm/19.68 in.
X 222 005 02 red insulation, 500 mm/19.68 in.
X 222 005 03 grey insulation, 500 mm/19.68 in.
"up to 32 A continuous load"



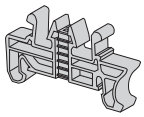
Busbar 50 A
Y 307 016 01 non-insulated, 500 mm/19.68 in.
"up to 50 A continuous load; plugged in completely, protected against brush contact"



Busbar 50 A
Y 307 016 11 non-insulated, 500 mm/19.68 in.
"up to 50 A continuous load"



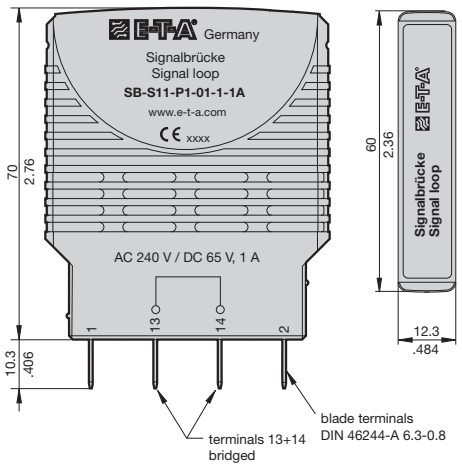
End bracket
X 222 004 01
Width 10 mm



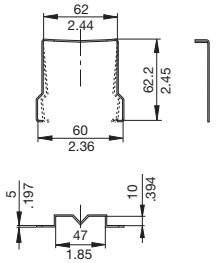
Screw terminal for busbar
X 211 156 01 non insulated

Jumper
SB-S11-P1-01-1-1A

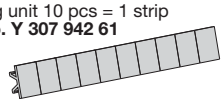
top view



Retaining clip for electronic circuit breaker typ ESX10
Y 308 729 01



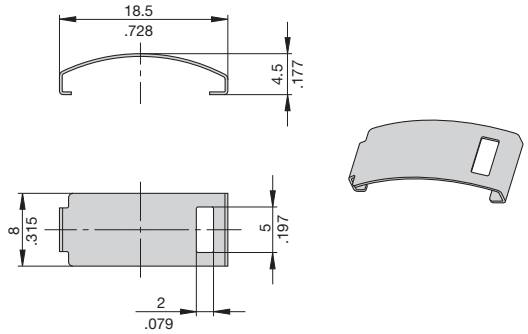
Labels
marking area 6 x 10 mm
(packing unit 10 pcs = 1 strip
part. no. Y 307 942 61



This is a metric design and millimeter dimensions take precedence (mm / inch)

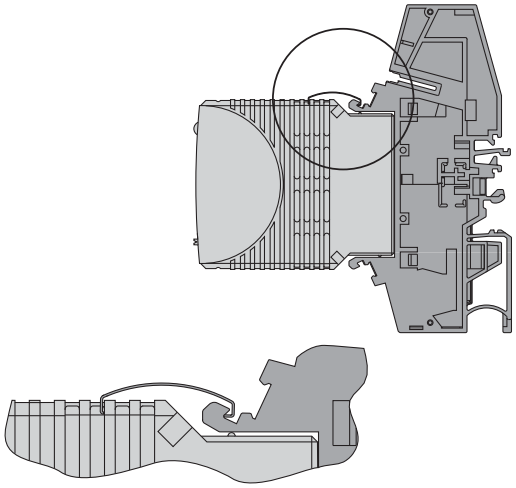
Accessories for ESX10

Retaining clip Y 307 754 01

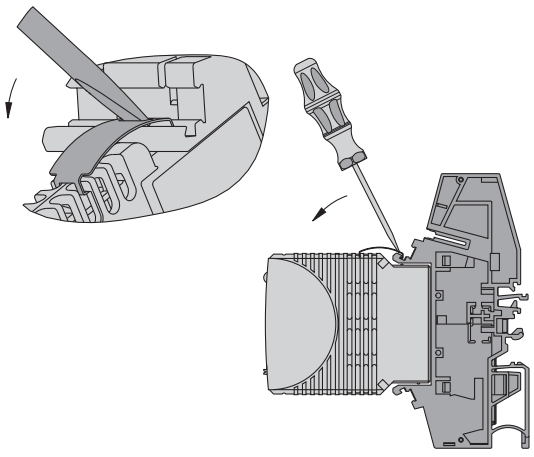


Mounting of retaining clip

ESX10 with retaining clip **Y 307 754 01**
for power distribution system module 17plus



Removal of retaining clip **Y 307 754 01**



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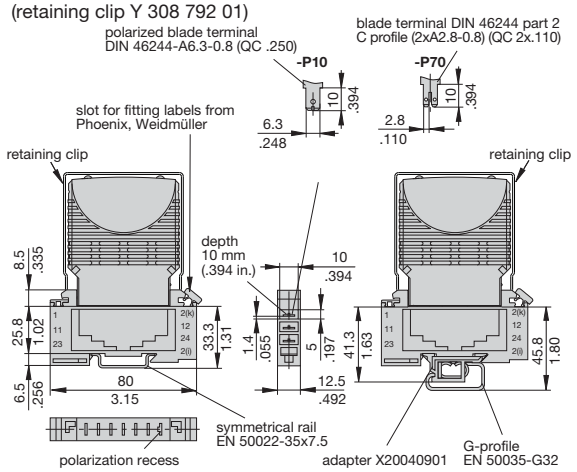
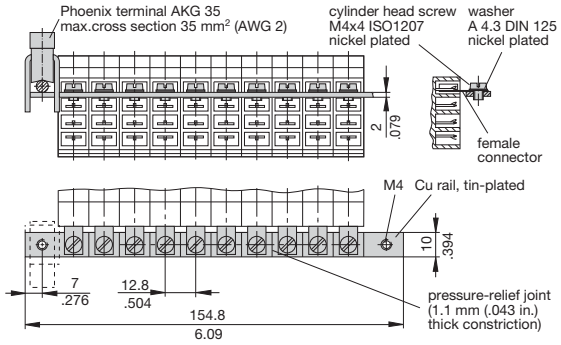
Accessories for ESX10

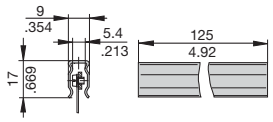
Single mounting sockets (with adapter)
(up to 16 A max. load)
17-P10-Si **17-P10-Si-20025**
17-P70-Si **17-P70-Si-20025**
(retaining clip Y 308 792 01)



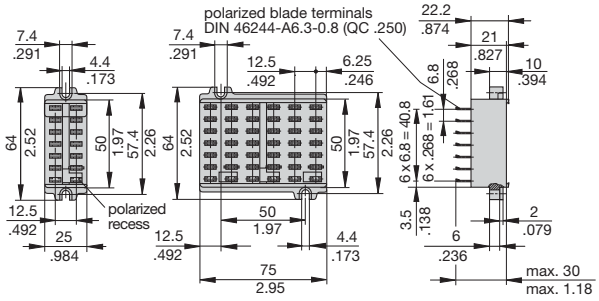
Busbar (10-way) (supplied as a complete package)
for type 17 socket
(for max. 100 A continuous load),
more positions available on request
X 211 157 01 with terminal
X 211 157 02 without terminal



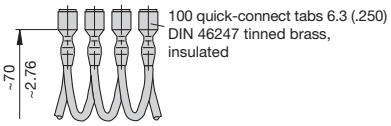
Insulating sleeving for busbar (10-way)
Y 303 824 01



2-way mounting socket **6-way mounting socket**
23-P10-Si **63-P10-Si**
(retaining clip Y 300 581 03 available on request)



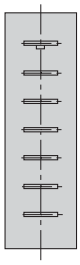
Connector bus links -P10
X 210 588 01/ 1.5 mm², (AWG 16), brown (up to 13 A max. load)
X 210 588 02/ 2.5 mm², (AWG 14), black (up to 20 A max. load)
X 210 588 03/ 2.5 mm², (AWG 14), red (up to 20 A max. load)
X 210 588 04/ 2.5 mm², (AWG 14), blau (up to 20 A max. load)



Pin selection, fitted with ESX10-124 (Example)

ESX10-124 17-P10-Si

LINE (+)	[2(k)]
GND	[12]
RE	[24]
	[2(i)]
RE	[23]
SF	[11]
LOAD (+)	[1]



This is a metric design and millimeter dimensions take precedence (mm / inch)

Table 4: ESX10-... - Pin assignment 17-P10-Si

17-P10-Si	ESX10-										
Pins	**-100**	**-101**	**-102**	**-103**	**-104**	**-105**	**-106**	**-115**	**-124**	**-125**	**-127**
[2(k)]	LINE (+) DC +24 V	LINE (+) DC +24 V	LINE (+) DC +24 V	LINE (+) DC +24 V	LINE (+) DC +24 V	LINE (+) DC +24 V	LINE (+) DC +24 V	LINE (+) DC +24 V	LINE (+) DC +24 V	LINE (+) DC +24 V	LINE (+) DC +24 V
[12]	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND
[24]		single SF N/O terminal	single SF N/C terminal	group SF changeover terminal		group SF N/O	group SF N/O	group SF N/O	reset IN+ +24 V↓	group SF N/O	reset IN+ +24 V ↓
[2(i)]	not assigned	not assigned	not assigned	not assigned	not assigned	not assigned	not assigned	not assigned	not assigned	not assigned	not assigned
[23]		single SF N/O terminal	single SF N/C terminal	group SF changeover N/O		group SF N/O	group SF N/O	group SF N/O	reset IN+ +24 V ↓	group SF N/O	reset IN+ +24 V ↓
[11]		single SF N/O output	single SF N/C output	group SF changeover N/C	status OUT +24 V = OK		status OUT +24 V = OK	control signal IN+ +24 V = ON	status OUT +24 V = OK	reset IN+ +24 V ↓	status $\overline{\text{OUT}}$ +0 V = OK
[1]	LOAD (+)	LOAD (+)	LOAD (+)	LOAD (+)	LOAD (+)	LOAD (+)	LOAD (+)	LOAD (+)	LOAD (+)	LOAD (+)	LOAD (+)