

CTP-L1-AP-U-HA-AE-SII-129478 (ORDER NO. 129478)

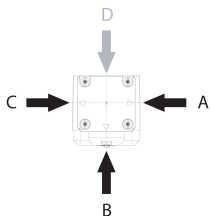
Transponder-coded safety switch CTP-AP, 2 x M12, with escape release

- ▶ Safety switch with guard locking and integrated evaluation electronics
- ▶ Direct connection to decentralized peripheral systems (e.g. ET200pro)
- ▶ Short circuit monitoring
- ▶ 2 safety outputs (semiconductor outputs)
- ▶ Up to category 4/PL e according to EN ISO 13849-1
- ▶ With 2 plug connectors M12
- ▶ Unicode
- ▶ Door monitoring output
- ▶ With escape release
- ▶ Approach directions A, B and C (delivery state)



Description

Approach direction



Figure

Horizontal

Can be adjusted in 90° steps

Unicode evaluation

Each actuator is highly coded (unicode). The switch detects only taught-in actuators. Additional actuators can be taught-in. Only the last actuator taught-in is detected.

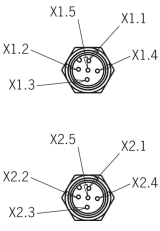


Guard locking type

CTP-L1 Guard locking actuated by spring force applied and power-ON released (closed-circuit current principle)

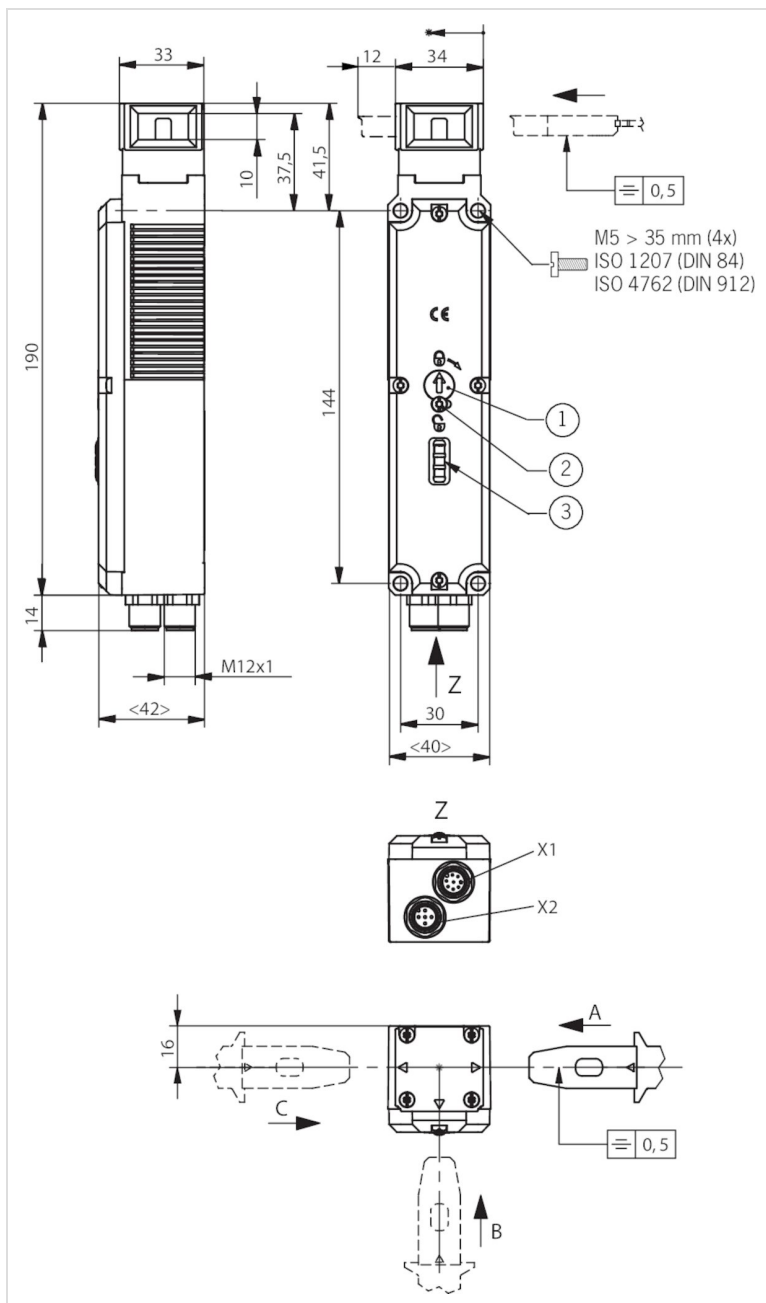
Escape release

This is used for manual release of guard locking from the danger zone without tools.

Connector assignment

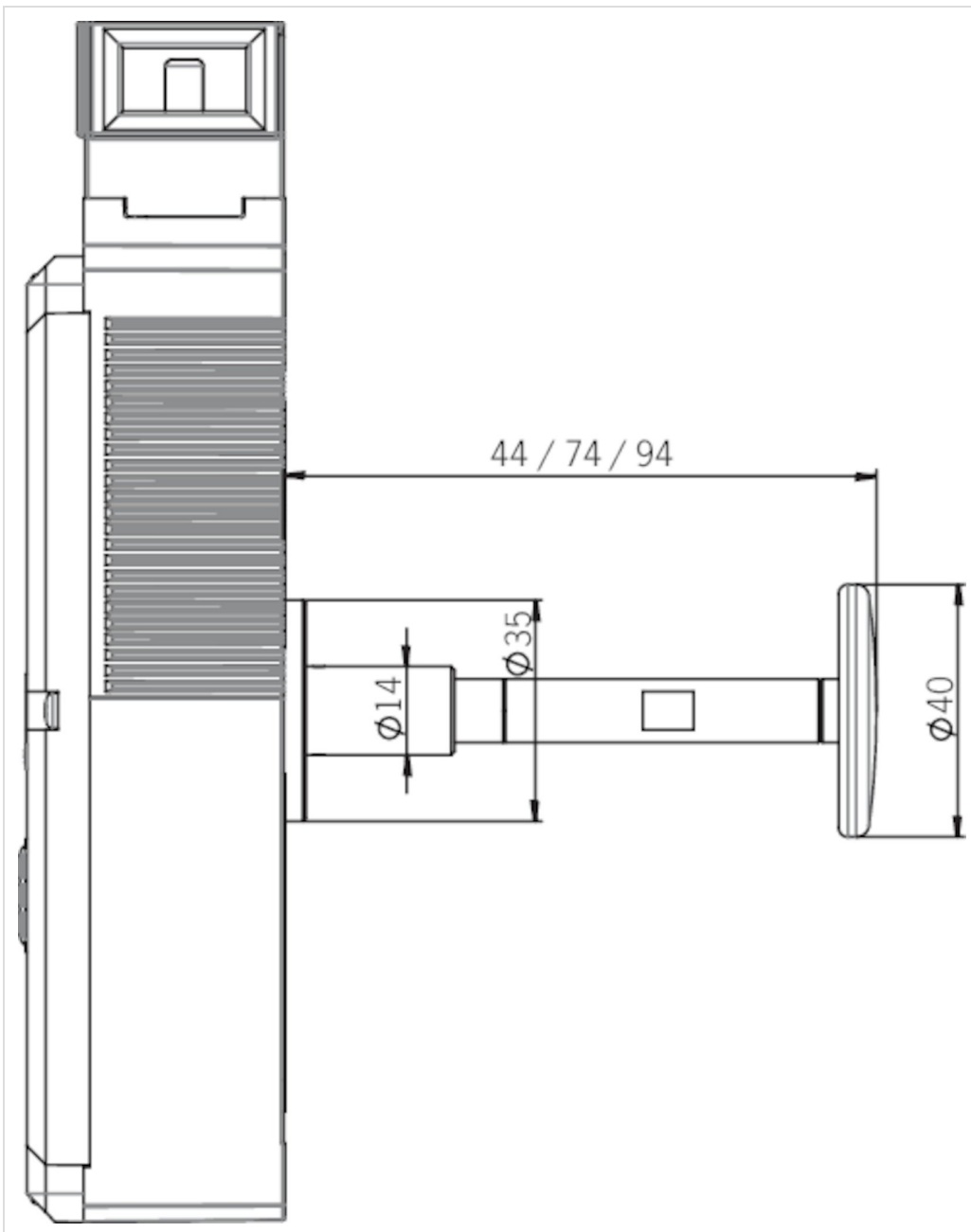
Plug connector (view of connection side)	Pin	Designation	Function	Conductor coloring of connecting cable
	X 1.1	UB	Operating voltage of AP electronics, 24 V DC	BN
	X 1.2	F01A	Safety output, channel 1 	WH
	X 1.3	0 V UB	Operating voltage of AP electronics, 0 V	BU
	X 1.4	F01B	Safety output, channel 2 	BK
	X 1.5	-	Not used	GY
	X 2.1	-	Not used	BN
	X 2.2	OD	Door monitoring output	WH
	X 2.3	IMM	Control input of guard locking solenoid, 0 V	BU
	X 2.4	IMP	Control input of guard locking solenoid, 24 V DC	BK
	X 2.5	-	Not used	GY

Dimension drawing

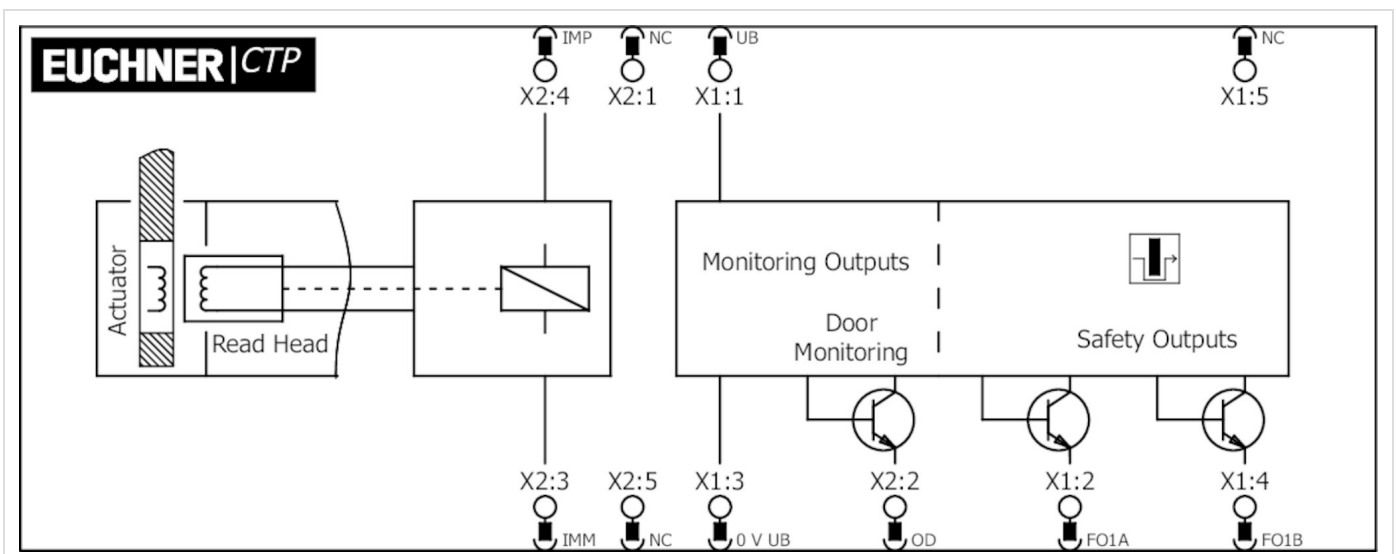


- 1 Auxiliary release
- 2 Locking screw
- 3 LEDs

Dimension drawing



Wiring diagram



Technical data

Approvals



Mechanical values and environment

Shock and vibration resistance	In acc. with EN 60947-5-3
Housing material	
Switch head cover	Die-cast zinc
Safety switch housing	Fiber glass reinforced thermoplastic
Weight	
Net	0,42 kg
Ambient temperature	
At $U_B = 24V$ DC	-20 ... +55 °C
Degree of protection	IP67/IP69/IP69K (Screwed tight plug connector/mating component)
Mechanical life	1 x 10 ⁶
Installation orientation	Any
Ready delay	max.1 s
Switching frequency	max.0,5 Hz
Connection	2 plug connectors M12, 5-pin + pin 5 not used
Approach speed	max.20 m/min
Guard locking principle	Closed-circuit current principle
Locking force F_{max}	3900 N
Locking force F_{Zh}	3000 N ($F_{Zh} = F_{max}/1.3$ Depending on the actuator used)
Retention force	20 N
Extraction force	20 N
Actuating force	10 N
Overtravel	5 mm

Electrical connection ratings

Test-pulse interval	min.100 ms
Test pulses	max.0,3 ms (Applies for a load with $C \leq 30\text{nF}$ and $R \leq 20\text{k}\Omega$)
Operating voltage DC	
	U_{UB} 24 V DC -15% ... 15% Reverse polarity protected, regulated, residual ripple < 5%, PELV
Current consumption	
	I_{IMP} 400 mA
	I_{UB} 40 mA
Utilization category acc. to EN 60947-5-2	
	DC-13 24V 150mA (Caution: outputs must be protected with a free-wheeling diode in case of inductive loads)
Solenoid operating voltage DC	
	U_{IMP} 24 V DC -15% ... +10% Reverse polarity protected, regulated, residual ripple < 5%, PELV
Fusing	
External (solenoid operating voltage IMP)	0,5 ... 8 A
External (operating voltage UB)	0,25 ... 8 A
Rated insulation voltage U_i	50 V
Rated impulse withstand voltage U_{imp}	0,5 kV
Connection rating	6 W
EMC protection requirements	In acc. with EN IEC 60947-5-3
Solenoid duty cycle	100 %
Degree of contamination (external, according to EN 60947-1)	3
Safety class	
	EN IEC 61140 III
Switching load	
	According to UL 24V DC, class 2 (Alternatively see operating instructions)
	Safety outputs FO1A / FO1B
Type of output	2 semiconductor outputs, p-switching, short circuit-proof
Switching current	
	Per safety output FO1A / FO1B 1 ... 150 mA
Output voltage	
	LOW $U(\text{FO1A}) / U(\text{FO1B})$ 0 ... 1 V DC
	HIGH $U(\text{FO1A}) / U(\text{FO1B})$ $U_B - 1,5 \dots U_B$ V DC
Off-state current I_r	max.0,25 mA
Turn-on time	max.400 ms
Discrepancy time	
	Both safety outputs max.10 ms In acc. with EN IEC 60947-5-3
	Monitoring output OD
Type of output	p-switching, short circuit-proof
Switching current	1 ... 50 mA
Output voltage	$0,8 \times U_B \dots U_B$ V DC

Work area

Repeat accuracy R

According to EN 60947-5-2 10 %

Other

Additional feature

Escape release actuated by pushing

For the approval acc. to UL the following applies

Operation only with UL class 2 power supply, or equivalent measures see operating instructions

Reliability values according to EN ISO 13849-1

Performance Level

PL e

Category

4

PFH_D

4.1×10^{-9}

Mission time

20 y

Accessories

Actuator

Bent actuator for safety switches CTP



122667
A-C-H-W-SST-122667

- ▶ Actuator bent at top
 - ▶ Two safety screws included
-



122668
A-C-H-W-SST-122668

- ▶ Actuator bent at bottom
 - ▶ Two safety screws included
-

Hinged actuator for safety switch CTP



122675
A-C-H-RO-LS-122675

- ▶ Hinged actuator for doors hinged at the top
 - ▶ Two safety screws included
-



122676
A-C-H-RU-LS-122676

- ▶ Hinged actuator for doors hinged at the bottom
 - ▶ Two safety screws included
-



122671
A-C-H-RL-LS-122671

- ▶ Hinged actuator for doors hinged on the left
 - ▶ Two safety screws included
-



122672
A-C-H-RR-LS-122672

- ▶ Hinged actuator for doors hinged on the right
 - ▶ Two safety screws included
-

Straight actuator for safety switch CTP



126015
A-C-H-G-SST-126015

- ▶ Straight actuator
 - ▶ Two safety screws included
-

Bolt

Bolt BTC-CTP with escape release for safety switch CTP



123660
BTC-CTP-S-TH-01-F

- ▶ Aluminum bolt
- ▶ For doors hinged on the left or right
- ▶ Lever for escape release from the danger zone
- ▶ Pushbutton in open position
- ▶ Can be locked in open position with padlocks
- ▶ Actuator included

Bolt BTM-UNIP-S... with escape release for safety switches TP, STP, STA and CTP



164196
BTM-UNIP-S-TH-01-F-164196

- ▶ Steel bolt
- ▶ For doors hinged on the left or right
- ▶ Can be locked in open position with padlocks
- ▶ Actuator not included

Bolt CTP-GFK-F with escape release for safety switch CTP



123658
RIEGEL CTP-GFK-F

- ▶ Fiber glass reinforced plastic bolt
- ▶ For doors hinged on the left or right
- ▶ Lever for escape release from the danger zone
- ▶ Detent knob in open position
- ▶ Can be locked in open position with padlocks
- ▶ Actuator included

Bolts with escape release for safety switch CTP



123655
RIEGEL CTP-ACF-123655

- ▶ Steel bolt
- ▶ Lever for escape release from the danger zone
- ▶ For doors hinged on the right or left
- ▶ Detent knob in open position
- ▶ Can be locked in open position with padlocks
- ▶ Actuator included

Connection material

Connecting cable with 2 plug connectors M12, 5-pin, 0.22 m, AIDA standard



163573
C-M12F05-05X034PU0,22-M12M05-163573

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard
- ▶ PUR cable, sheath color yellow
- ▶ Cable length 0.22 m

Connecting cable with two plug connectors M12, 5-pin, 1 m, AIDA standard



159362
C-M12F05-05X034PU01,0-M12M05-159362

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard
- ▶ PUR cable, sheath color yellow
- ▶ Cable length 1 m



159355
C-M12F05-05X034PU01,0-M12M05-159355

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA

standard

- ▶ PUR cable, sheath color gray
- ▶ Cable length 1 m

Connecting cable with two plug connectors M12, 5-pin, 1.5m, AIDA standard



159363
C-M12F05-05X034PU01,5-M12M05-159363

- ▶ M12 female plug to M12 plug connector, 5-pin
 - ▶ Straight female plug and plug connector
 - ▶ Connecting cable according to AIDA standard
 - ▶ PUR cable, sheath color yellow
 - ▶ Cable length 1.5 m
-



159356
C-M12F05-05X034PU01,5-M12M05-159356

- ▶ M12 female plug to M12 plug connector, 5-pin
 - ▶ Straight female plug and plug connector
 - ▶ Connecting cable according to AIDA standard
 - ▶ PUR cable, sheath color gray
 - ▶ Cable length 1.5 m
-

Connecting cable with two plug connectors M12, 5-pin, 3m, AIDA standard



159364
C-M12F05-05X034PU03,0-M12M05-159364

- ▶ M12 female plug to M12 plug connector, 5-pin
 - ▶ Straight female plug and plug connector
 - ▶ Connecting cable according to AIDA standard
 - ▶ PUR cable, sheath color yellow
 - ▶ Cable length 3 m
-



159357
C-M12F05-05X034PU03,0-M12M05-159357

- ▶ M12 female plug to M12 plug connector, 5-pin
 - ▶ Straight female plug and plug connector
 - ▶ Connecting cable according to AIDA standard
 - ▶ PUR cable, sheath color gray
 - ▶ Cable length 3 m
-

Connecting cable with two plug connectors M12, 5-pin, 5m, AIDA standard



159365
C-M12F05-05X034PU05,0-M12M05-159365

- ▶ M12 female plug to M12 plug connector, 5-pin
 - ▶ Straight female plug and plug connector
 - ▶ Connecting cable according to AIDA standard
 - ▶ PUR cable, sheath color yellow
 - ▶ Cable length 5 m
-



159358
C-M12F05-05X034PU05,0-M12M05-159358

- ▶ M12 female plug to M12 plug connector, 5-pin
 - ▶ Straight female plug and plug connector
 - ▶ Connecting cable according to AIDA standard
 - ▶ PUR cable, sheath color gray
 - ▶ Cable length 5 m
-

Connecting cable with two plug connectors M12, 5-pin, 8m, AIDA standard



159919
C-M12F05-05X034PU08,0-M12M05-159919

- ▶ M12 female plug to M12 plug connector, 5-pin
 - ▶ Straight female plug and plug connector
 - ▶ Connecting cable according to AIDA standard
 - ▶ PUR cable, sheath color yellow
 - ▶ Cable length 8 m
-



159359
C-M12F05-05X034PU08,0-M12M05-159359

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard

standard

- ▶ PUR cable, sheath color gray
- ▶ Cable length 8 m

Connecting cable with two plug connectors M12, 5-pin, 10m, AIDA standard



159920
C-M12F05-05X034PU10,0-M12M05-159920

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard
- ▶ PUR cable, sheath color yellow
- ▶ Cable length 10 m



159360
C-M12F05-05X034PU10,0-M12M05-159360

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard
- ▶ PUR cable, sheath color gray
- ▶ Cable length 10 m

Connecting cable with two plug connectors M12, 5-pin, 15m, AIDA standard



159921
C-M12F05-05X034PU15,0-M12M05-159921

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard
- ▶ PUR cable, sheath color yellow
- ▶ Cable length 15 m



159361
C-M12F05-05X034PU15,0-M12M05-159361

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ Connecting cable according to AIDA standard
- ▶ PUR cable, sheath color gray
- ▶ Cable length 15 m

Connection cable with 2 plug connectors M12, 5-pin, 5m



119932
C-M12F05-05X034PU05,0-M12M05-119932

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ PUR cable
- ▶ Cable length 5 m



100180
C-M12F05-05X034PV05,0-M12M05-100180

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ PVC cable
- ▶ Cable length 5 m

Connection cable with 2 plug connectors M12, 5-pin, 10m



119947
C-M12F05-05X034PU10,0-M12M05-119947

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ PUR cable
- ▶ Cable length 10 m



100181
C-M12F05-05X034PV10,0-M12M05-100181

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ PVC cable
- ▶ Cable length 10 m

- ▶ Cable length 10 m

Connection cable with 2 plug connectors M12, 5-pin, 20m



119971
C-M12F05-05X034PU20,0-M12M05-119971

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ PUR cable
- ▶ Cable length 20 m



100182
C-M12F05-05X034PV20,0-M12M05-100182

- ▶ M12 female plug to M12 plug connector, 5-pin
- ▶ Straight female plug and plug connector
- ▶ PVC cable
- ▶ Cable length 20 m

Connection cable with angled plug connector M12, 5-pin, 10m



113187
C-M12F05-05X025PU10,0-MA-113187

- ▶ M12 female plug, 5-pin
- ▶ Angled plug connector
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ Cable exit A (right)
- ▶ With flying lead



113190
C-M12F05-05X025PU10,0-MA-113190

- ▶ M12 female plug, 5-pin
- ▶ Angled plug connector
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ Cable exit C (left)
- ▶ With flying lead

Connection cable with straight plug connector M12, 5-pin, 5m



113620
C-M12F05-05X034PU05,0-MA-113620

- ▶ M12 female plug, 5-pin
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 5 m
- ▶ With flying lead



100183
C-M12F05-05X034PV05,0-MA-100183

- ▶ M12 female plug, 5-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 5 m
- ▶ With flying lead

Connection cable with straight plug connector M12, 5-pin, 10m



113640
C-M12F05-05X034PU10,0-MA-113640

- ▶ M12 female plug, 5-pin
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ With flying lead



100184
C-M12F05-05X034PV10,0-MA-100184

- ▶ M12 female plug, 5-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 10 m
- ▶ With flying lead

Connection cable with straight plug connector M12, 5-pin, 20 m



113682
C-M12F05-05X034PU20,0-MA-113682

- ▶ M12 female plug, 5-pin
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 20 m
- ▶ With flying lead



100185
C-M12F05-05X034PV20,0-MA-100185

- ▶ M12 female plug, 5-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 20 m
- ▶ With flying lead

Connection cable with straight plug connector M12, 5-pin, 30 m



122784
C-M12F05-05X034PU30,0-MA-122784

- ▶ M12 female plug, 5-pin
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 30 m
- ▶ With flying lead

M12 extension PUR 5-pin, plug connectors at both ends, 10m



115565
C-M12F05-05X025PU10,0-M12M05-115565

- ▶ M12 female plug, 5-pin (angled) to M12 plug connector (straight)
- ▶ plug connectors at both ends
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ With cable exit A (right)



115566
C-M12F05-05X025PU10,0-M12M05-115566

- ▶ M12 female plug, 5-pin (angled) to M12 plug connector (straight)
- ▶ plug connectors at both ends
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ With cable exit C (left)

Y-distributor M12 with connection cable, 5-pin



124516
AC-YD-V0,2-SBB-124516

- ▶ Y-distributor M12 with connecting cable, 5-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 0.29 m

Function expansion

Emergency unlocking for safety switches CTP/TP/STP



099877
NOTENTSPERRUNG TP/STP

Handle for wire front release



124204
AY-HDL-124204

- ▶ Suitable for all wire front releases



099795
AY-HDL-099795

- ▶ Suitable for all wire front releases

Lock for auxiliary release for safety switches CTP/TP/STP



109212
SCHLOSS TP GLEICHSCHLIESSEND
C2293

- ▶ Identical locking
- ▶ Key can be removed only in "unlocked" position



086236
SCHLOSS TP GLEICHSCHLIESSEND

- ▶ Identical locking
- ▶ Key removable in "unlocked" and "locked" positions



084177
SCHLOSS TP
VERSCHIEDENSCHLIESSEND

- ▶ Lock unique locking
- ▶ Key removable in "unlocked" and "locked" positions



121917
SCHLOSS TP GLEICHSCHLIESSEND
C2416

- ▶ Identical locking
- ▶ Key removable in "locked" position

Lockout mechanism CTP



123411
AE-L-C-H-123411

- ▶ Prevents unintentional closing of the door
- ▶ Can be secured with padlocks

Release with automatic reset for safety switches CTP/TP/STP



103110
ENTRIEGELUNG RUECKSTELLEND
TP/STP

Wire front release



124770
AE-B-A1-06,0-F-124770

- ▶ Can be used as escape release or emergency release
 - ▶ Automatic return
 - ▶ Rope length 6 m (without sheath)
-



096230
AE-B-A1-02,0-096230

- ▶ Can be used as escape release or emergency release
- ▶ No automatic return
- ▶ Sheath length 2 m (rope length 6 m)



125582
AE-B-A1-06,0-125582

- ▶ Can be used as escape release or emergency release
- ▶ No automatic return
- ▶ Rope length 6 m (without sheath)



098314
AE-B-A1-04,0-098314

- ▶ Can be used as escape release or emergency release
- ▶ No automatic return
- ▶ Sheath length 4 m (rope length 6 m)



098313
AE-B-A1-03,0-098313

- ▶ Can be used as escape release or emergency release
- ▶ No automatic return
- ▶ Sheath length 3 m (rope length 6 m)



097747
AE-B-A1-02,0-F-097747

- ▶ Can be used as escape release or emergency release
- ▶ Automatic return
- ▶ Sheath length 2 m (rope length 6 m)



111233
AE-B-A1-03,0-F-111233

- ▶ Can be used as escape release or emergency release
- ▶ Automatic return
- ▶ Sheath length 3 m (rope length 6 m)

Mounting accessories

Efficient protection against tampering for safety switch mounting



161344
AM-C-SW4-V3-161344

- ▶ Plastic inserts for hexagon socket screws a/f 4
- ▶ Efficient protection against tampering for safety switch mounting
- ▶ The packaging includes inserts for 18 screws



161348
AM-C-SW5-V3-161348

- ▶ Plastic inserts for hexagon socket screws a/f 5
- ▶ Efficient protection against tampering for safety switch mounting
- ▶ The packaging includes inserts for 18 screws

Mounting plates AM-P for safety switches CTP



126026
AM-P-126026

- ▶ For vertical and horizontal mounting of safety switch CTP

Mounting plates EMP-B1 for actuators for safety switches CTP, TP...A, STA, STP, TX and TZ



093457
EMP-B1

Mounting plates EMP-B2 for actuators for safety switches CTP, TP...A, STA, STP, TX and TZ



093458
EMP-B2

Mounting plates EMP-SB for safety switches CTP, TP...A, STA, STP and TX



093456
EMP-SB

- ▶ For vertical and horizontal mounting of safety switches TP...A, STA, STP and TX

Contacts

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