

CTP-L1-AR-U-HA-AZ-SH-123362 (ORDER NO. 123362)

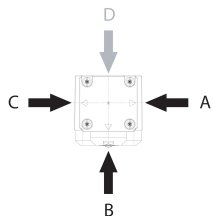
Transponder-coded safety switch CTP-AR, M23

- ▶ Safety switch with guard locking and integrated evaluation electronics
- ▶ Up to 20 switches in series
- ▶ Short circuit monitoring
- ▶ 2 safety outputs (semiconductor outputs)
- ▶ Up to category 4/PL e according to EN ISO 13849-1
- ▶ With plug connector M23
- ▶ Unicode
- ▶ Door monitoring output
- ▶ Approach directions A, B and C (delivery state)



Description

Approach direction



Figure

Horizontal

Can be adjusted in 90° steps

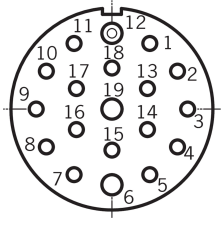


Unicode evaluation

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.

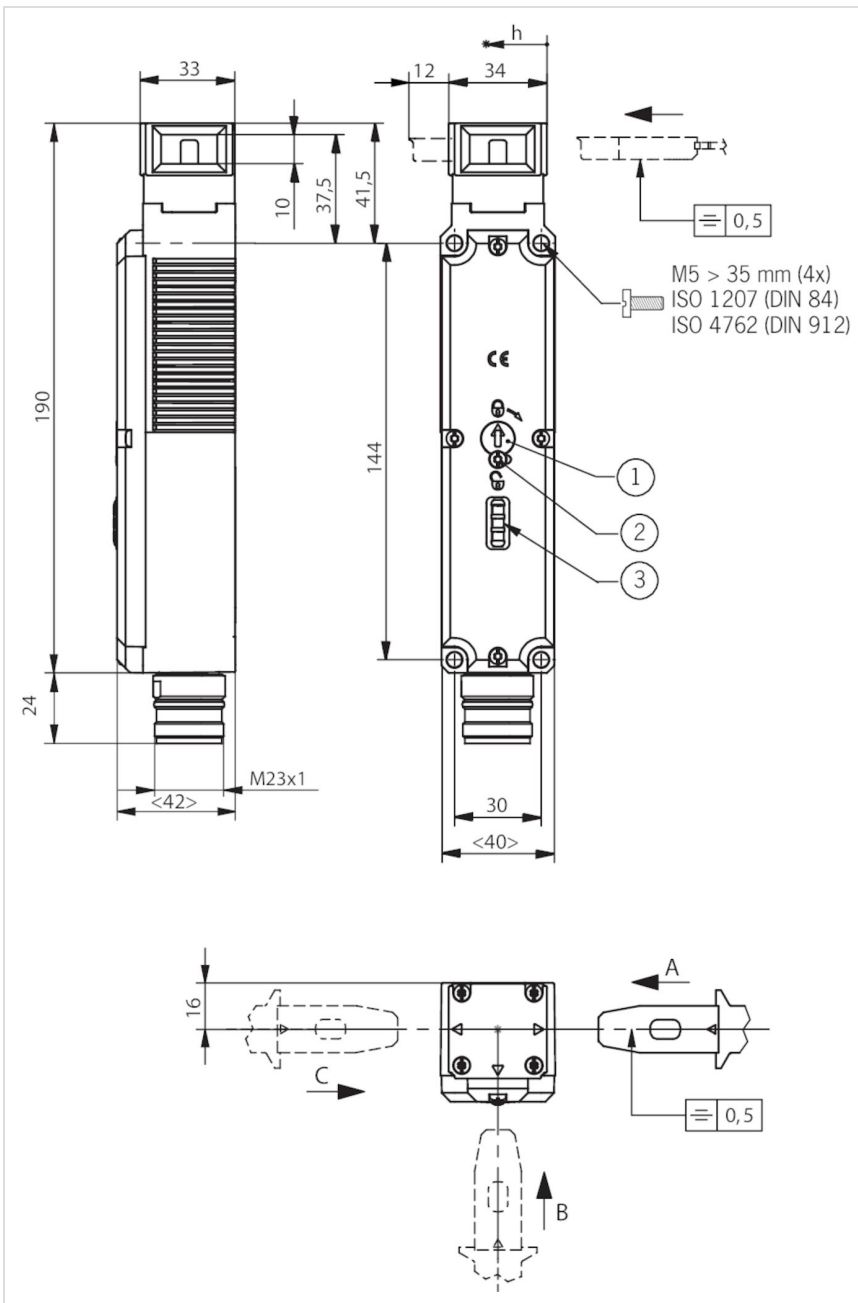
Guard locking type

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

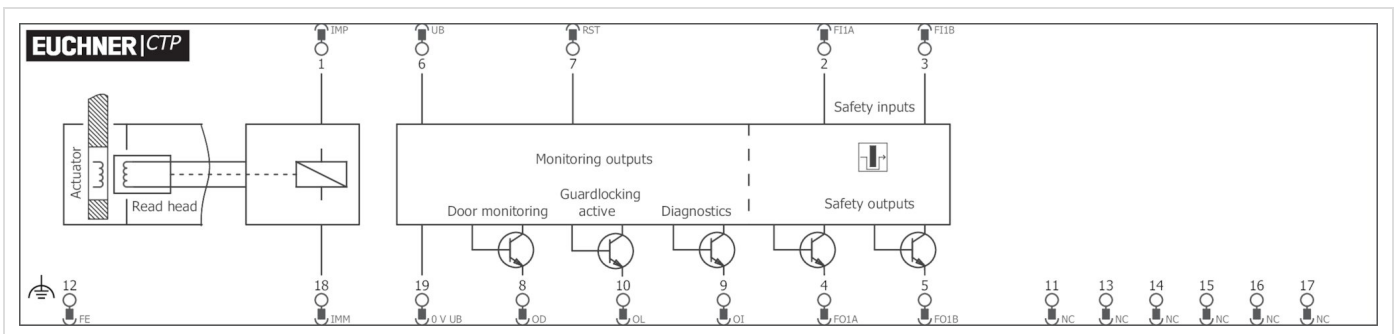
Connector assignment

Plug connector (view of connection side)	Pin	Designation	Function	Conductor coloring of connecting cable
	1	IMP	Operating voltage of guard locking solenoid, 24 V DC	VT
	2	FI1A	Enable input for channel 1	RD
	3	FI1B	Enable input for channel 2	GY
	4	F01A	Safety output, channel 1 	RD/BU
	5	F01B	Safety output, channel 2 	GN
	6	UB	Operating voltage of AR electronics, 24 V DC	BU
	7	RST	Reset input	GY/PK
	8	OD	Door monitoring output	GN/WH
	9	OI	Diagnostic output	YE/WH
	10	OL	Guard lock monitoring output	GY/WH
	11	-	n.c.	BK
	12	FE	Function earth (must be connected to meet the EMC requirements)	GN/YE
	13	-	n.c.	PK
	14	-	n.c.	BN/GY
	15	-	n.c.	BN/YE
	16	-	n.c.	BN/GN
	17	-	n.c.	WH
	18	IMM	Operating voltage of guard locking solenoid, 0 V	YE
	19	0 V UB	Operating voltage of AR electronics, 0 V	BN

Dimension drawing



Wiring diagram



Technical data

Approvals



Mechanical values and environment

Shock and vibration resistance	In acc. with EN 60947-5-3
Housing material	
	Safety switch housing Fiber glass reinforced thermoplastic
	Switch head cover Die-cast zinc
Weight	
	Net 0,42 kg
Ambient temperature	
	At $U_B = 24V$ DC -20 ... +55 °C
Degree of protection	IP67 (Screwed tight plug connector/mating component)
Mechanical life	1×10^6
Installation orientation	Any
Ready delay	8 s
Switching frequency	max.0,5 Hz
Connection	1 plug connector M23, 19-pin, RC18
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

Extension of risk time according to EN 60947-5-3 per device	max.5 ms
Test-pulse interval	min.140 ms
Test pulses	max.1,0 ms (Applies for a load with $C \leq 30nF$ and $R \leq 20k\Omega$)
Operating voltage DC	
	U_{UB} 24 V DC -15% ... 15% Reverse polarity protected, regulated, residual ripple < 5%, PELV
Current consumption	
	I_{UB} 40 mA
	I_{IMP} 400 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 (operating voltage U_B) 0,25 ... 8 A
	External (solenoid operating voltage I_{MP}) 0,5 ... 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
Risk time according to EN 60947-5-3	Single device max.260 ms
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(FO1A) / U(FO1B) 0 ... 1 V DC High U(FO1A) / U(FO1B) UB-1,5 ... UB 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 OL	
Type of output	p-switching, short circuit-proof
Switching current	1 ... 50 mA
Output voltage	0,8xUB ... UB V DC
Monitoring output OD	
Type of output	p-switching, short circuit-proof
Switching current	1 ... 50 mA
Output voltage	0,8xUB ... UB V DC
Monitoring output OI	
Type of output	p-switching, short circuit-proof
Switching current	1 ... 50 mA
Output voltage	0,8xUB ... UB V DC

Work area

Repeat accuracy R	According to EN 60947-5-2 10 %
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Other

For the approval acc. to UL the following applies	Operation only with UL class 2 power supply, or equivalent measures see operating instructions
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Reliability values according to EN ISO 13849-1

Performance Level	PL e
Category	4
PFH _D	4.1 x 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-S for safety switch CTP



123659
BTC-CTP-S-TH-00-X

- ▶ Aluminum bolt
- ▶ For doors hinged on the left or right
- ▶ Can be locked in open position with padlocks
- ▶ Actuator included

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



159951
BTM-UNIP-S-TH-00-X-159951

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

Bolt CTP-GFK for safety switch CTP



123657
RIEGEL CTP-GFK

- ▶ Fiber glass reinforced plastic bolt
- ▶ For doors hinged on the left or right
- ▶ Can be locked in open position with padlocks
- ▶ Actuator included

Bolts for safety switches series CTP



123653
RIEGEL CTP-AC-123653

- ▶ Steel bolt
- ▶ For doors hinged on the right or left
- ▶ Can be locked in open position with padlocks
- ▶ Actuator included

Connection material

Connection cable with plug connector M23 with option C1825, 1.5m, angled



092906
C-M23F19-19XDIFPU01,5-MA-092906

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 1.5 m
- ▶ With flying lead
- ▶ Cores color-coded



092907
C-M23F19-19XDIFPU01,5-MA-092907

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 1.5 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 1.5m, straight



092761
C-M23F19-19XDIFPU01,5-MA-092761

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 1.5 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 2m, angled

Connection cable with plug connector M23 with option C1825, 3m, angled



092908
C-M23F19-19XDIFPU03,0-MA-092908

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 3 m
- ▶ With flying lead
- ▶ Cores color-coded



092909
C-M23F19-19XDIFPU03,0-MA-092909

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 3 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 3m, straight



092816
C-M23F19-19XDIFPU03,0-MA-092816

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 3 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 6m, angled



085194
C-M23F19-19XDIFPU06,0-MA-085194

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 6 m
- ▶ With flying lead
- ▶ Cores color-coded



077018
C-M23F19-19XDIFPU06,0-MA-077018

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 6 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 6m, straight



077014
C-M23F19-19XDIFPU06,0-MA-077014

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 6 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 8m, angled



085195
C-M23F19-19XDIFPU08,0-MA-085195

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 8 m
- ▶ With flying lead
- ▶ Cores color-coded



077019
C-M23F19-19XDIFPU08,0-MA-077019

- ▶ RC18 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 8 m
- ▶ With flying lead

- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 8m, straight



077015
C-M23F19-19XDIFPU08,0-MA-077015

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 8 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 10m, angled



092902
C-M23F19-19XDIFPU10,0-MA-092902

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ With flying lead
- ▶ Cores color-coded



092901
C-M23F19-19XDIFPU10,0-MA-092901

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 10m, straight



092898
C-M23F19-19XDIFPU10,0-MA-092898

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 15m, angled



085196
C-M23F19-19XDIFPU15,0-MA-085196

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 15 m
- ▶ With flying lead
- ▶ Cores color-coded



077020
C-M23F19-19XDIFPU15,0-MA-077020

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 15 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 15m, straight



077016
C-M23F19-19XDIFPU15,0-MA-077016

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 15 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 20m, angled



092911
C-M23F19-19XDIFPU20,0-MA-092911

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector



- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 20 m
- ▶ With flying lead
- ▶ Cores color-coded



092910
C-M23F19-19XDIFPU20,0-MA-092910

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 20 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 20m, straight



092726
C-M23F19-19XDIFPU20,0-MA-092726

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 20 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 25m, angled



092913
C-M23F19-19XDIFPU25,0-MA-092913

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 25 m
- ▶ With flying lead

- ▶ Cores color-coded



092912
C-M23F19-19XDIFPU25,0-MA-092912

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 25 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 25m, straight



092727
C-M23F19-19XDIFPU25,0-MA-092727

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 25 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 30m, straight



095993
C-M23F19-19XDIFPU30,0-MA-095993

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 30 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 40m, straight



102490
C-M23F19-19XDIFPU40,0-MA-102490

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 40 m
- ▶ With flying lead
- ▶ Cores color-coded

Female connector RC18 angled with option C1825



077026
RC18WF-C1825

- ▶ Plug connector M23, angled
- ▶ Number of pins: 19-pin with shield spring

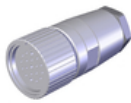
Female plug RC18 angled



074617
RC18WF

- ▶ Plug connector M23, angled
- ▶ Number of pins: 19-pin with shield spring

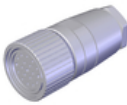
Female plug RC18 straight



074616
RC18EF

- ▶ Plug connector M23, straight
- ▶ Number of pins: 19-pin with shield spring

Female plug RC18 straight with option C1825



077025
RC18EF-C1825

- ▶ Plug connector M23, straight
- ▶ Number of pins: 19-pin with shield spring

Replacement crimp contacts for female connector RC18

094309
CRIMPKONTAKT BUCHSE RCF

- ▶ 19 crimp sockets
- ▶ Conductor cross-section 19 x 0.75 - 1 mm²
- ▶ For plug connector RC18

Replacement crimp contacts for female connector RC18 with option C1825

094310
CRIMPKONTAKT BUCHSE RCF-C1825

- ▶ 19 crimp sockets
- ▶ Conductor cross-section 16 x 0.25 - 0.5 mm² and 3 x 0.75 - 1 mm²
- ▶ For plug connector RC18..C1825

Function expansion

Emergency unlocking for safety switches CTP/TP/STP



099877
NOTENTSPERRUNG TP/STP

Handle for wire front release



099795
AY-HDL-099795

- ▶ Suitable for all wire front releases



124204
AY-HDL-124204

- ▶ Suitable for all wire front releases

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



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



109212
SCHLOSS TP GLEICHSCHLIESSEND
C2293

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



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



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

- ▶ Can be used as escape release or emergency release
- ▶ No automatic return

1

- ▶ Sheath length 2 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)



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)



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)



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)



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)



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)

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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