

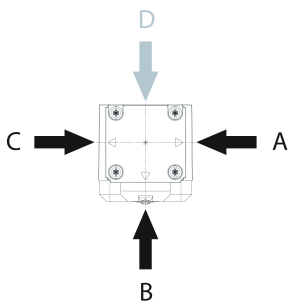
CTA-L1-BP-U-HA-AP-SII-170930 (Order no. 170930)

Transponder-coded safety switch CTA-BP, 2 x M12

- ▶ Safety switch with guard locking and integrated evaluation electronics
- ▶ Direct connection to decentralized peripheral systems (e.g. ET200pro)
- ▶ Communication functions in combination with an IO-Link Gateway GWY-CB or ESM-CB
- ▶ Short circuit monitoring
- ▶ 2 safety outputs (semiconductor outputs)
- ▶ Closed-circuit current principle
- ▶ Up to category 4 / PL e according to EN ISO 13849-1
- ▶ With 2 plug connectors M12
- ▶ Unicode
- ▶ Door monitoring output
- ▶ Approach directions A, B and C (delivery state)



Approach direction



Horizontal

Can be adjusted in 90° steps

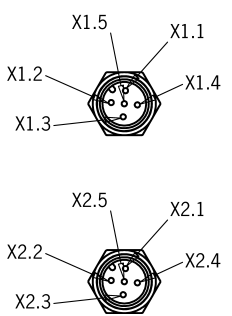
Unicode evaluation

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.

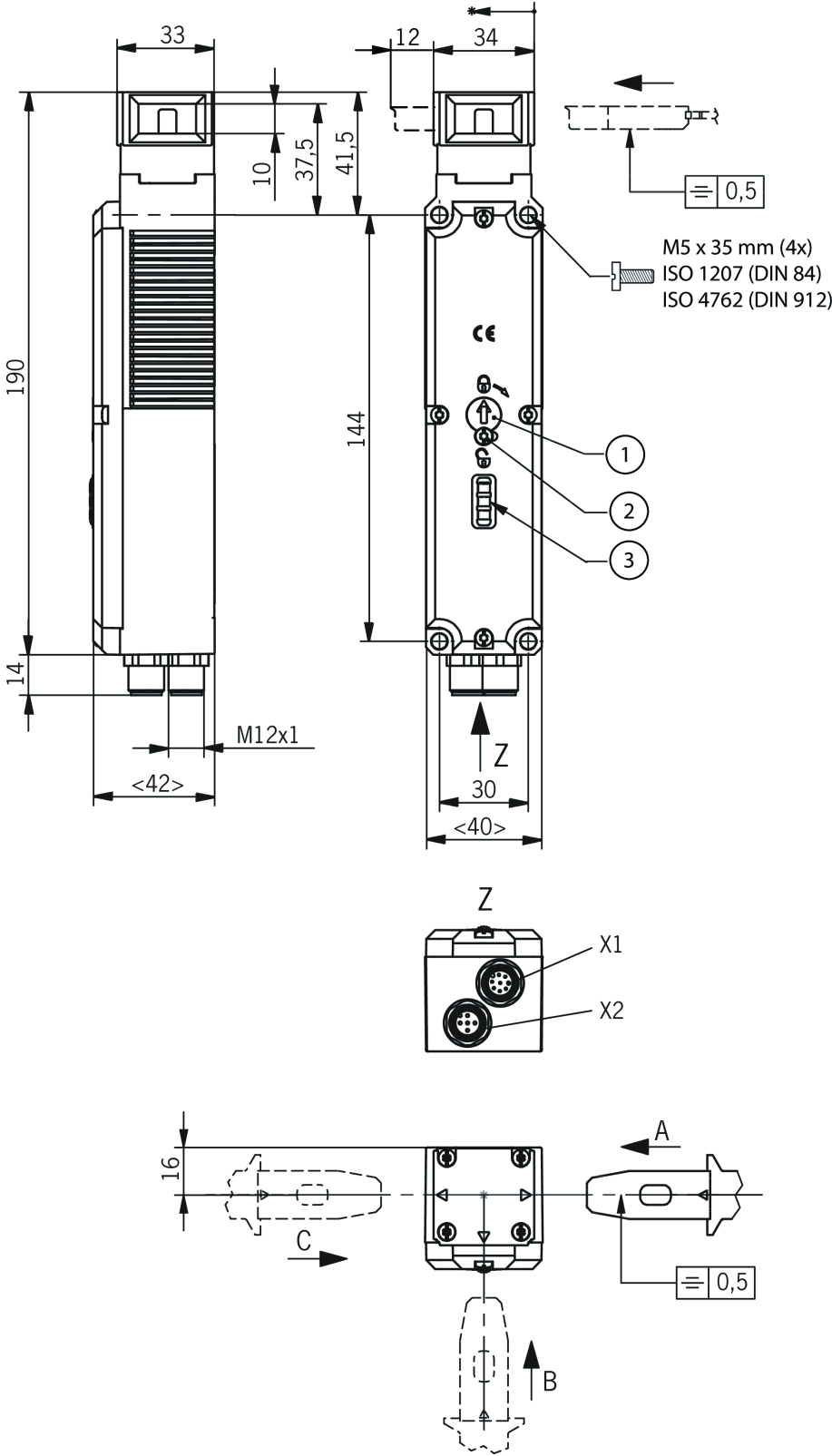
Guard locking type

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

Connector assignment

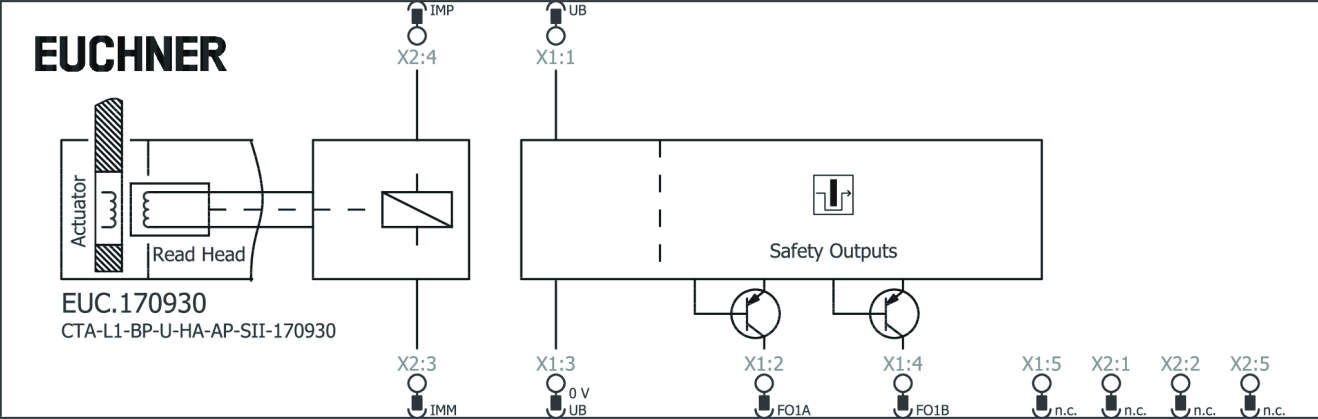
Plug connector (view of connection side)	Pin	Designation	Function	Connecting cable conductor coloring
	X 1.1	UB	Electronics operating voltage, 24 V DC	BN
	X 1.2	FO1A	Safety output, channel A	WH
	X 1.3	0 V UB	Electronics operating voltage, 0 V DC	BU
	X 1.4	FO1B	Safety output, channel B	BK
	X 1.5	-	n.c.	GY
	X 2.1	-	n.c.	BN
	X 2.2	-	n.c.	WH
	X 2.3	IMM	Solenoid operating voltage, 0 V DC	BU
	X 2.4	IMP	Solenoid operating voltage, 24 V DC	BK
	X 2.5	-	n.c.	GY

Dimensional drawings



- 1 Auxiliary release
- 2 Locking screw
- 3 LEDs

Connection examples



Technical data

Approvals



Workspace

Repeat accuracy R	
	according to EN 60947-5-2 10 %

Electrical connection values

Fuse	
external (solenoid operating voltage IMP)	0.5 ... 8 A
external (operating voltage UB)	0.25 ... 8 A
Power consumption	6 W
Rated insulation voltage U_i	50 V
Rated impulse withstand voltage U_{imp}	0.5 kV
Operating voltage DC	
	U_{UB} 24 V DC -15% ... +20% reverse polarity protected, regulated, residual ripple < 5%, PELV
EMC protection requirements	Acc. to EN IEC 60947-5-3
Utilization category	
	DC-13 24 V 150 mA (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% ... +20% reverse polarity protected, regulated, residual ripple < 5%, PELV
Solenoid duty cycle	100 %
Risk time according to EN 60947-5-3	max. 270 ms
Risk time according to EN 60947-5-3, extension for each additional device	max. 5 ms

Switching load

according to UL 24V DC, Class 2
(alternatively, see operating instructions)

Safety class

EN IEC 61140 III

Current consumption

I_{IMP} 400 mA

I_{UB} 40 mA

Test pulse duration

max. 0.3 ms

(Applies to a load with $C \leq 30$ nF and $R \leq 20$ kohm)

Test pulse interval

min. ca 100 ms

Degree of contamination (external, according to EN 60947-1)

3

Safety outputs FO1A / FO1B

Output type

2 semiconductor outputs, p-switching, short circuit-proof

Output voltage

HIGH $U(FO1A) / U(FO1B)$ $U_B - 1.5 \dots U_B$ V DC

LOW $U(FO1A) / U(FO1B)$ 0 ... 1 V DC

Discrepancy time

both safety outputs max. 10 ms Acc. to EN IEC 60947-5-3

Turn-on time

max. 150 ms

Off-state current I_r

max. 0.25 mA

Switching current

per safety output FO1A / FO1B 1 ... 150 mA

Mechanical values and environment

Approach speed

max. 20 m/min

Connection type

2 plug connectors M12, 5-pin + pin 5 not used

Extraction force

20 N

Ready delay

5 s

Actuating force

10 N

Installation orientation

any

Switching frequency

max. 0.5 Hz

Mechanical life	1 x 10 ⁶
Overtravel	5 mm
Retention force	20 N
Shock and vibration resistance	Acc. to EN IEC 60947-5-3
Degree of protection	IP65/IP67/IP69/IP69K (screwed tight plug connector/mating component)
Ambient temperature	
at U _B = 24 V DC	-20 ... +55 °C

Material

Safety switch housing	Die-cast zinc
Switch head cover	Die-cast zinc

Locking force F _{max}	8000 N
Locking force F _{Zh}	4000 N (F _{zh} = F _{max} /2, depending on the actuator used)
Guard locking principle	Closed-circuit current principle

Characteristic values according to EN ISO 13849-1 and EN IEC 62061

Mission time	20 y
Category	4
Performance Level	PL e
PFH _D	5.38 x 10 ⁻⁹

Miscellaneous

The following applies to the approval according to UL	Operation only with UL Class 2 power supply or equivalent measures; see operating instructions
---	--

Additional feature

Retrofit for escape release possible
with blind flange

Downloads

All documentation for this material can be found on our website:

<https://www.euchner.de/en-us/a/170930/?#downloads-tab>

Ordering data

Ordernumber	170930
Item designation	CTA-L1-BP-U-HA-AP-SII-170930
Gross weight	1,1kg
Customs tariff number	85365019000
ECLASS	27-27-24-05 Safety-related transponder switch with guardlocking

Accessories

Actuator

Bent actuator for safety switch CTP/CTA



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

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



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

- ▶ Bent actuator, bottom
- ▶ Two safety screws included

Hinged actuator for safety switch CTP/CTA



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



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

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



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

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

Straight actuator for safety switch CTA



165497
A-C-H-G-SSS-165497

- ▶ Straight actuator
- ▶ Two safety screws included
- ▶ Possible only in combination with CTA

Straight actuator for safety switch CTP/CTA



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

- ▶ Straight actuator
- ▶ Two safety screws 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 2 plug connectors M12, 5-pin, 1.5 m, AIDA standard



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



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

Connecting cable with 2 plug connectors M12, 5-pin, 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



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

Connecting cable with 2 plug connectors M12, 5-pin, 10 m, AIDA standard



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



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

Connecting cable with 2 plug connectors M12, 5-pin, 15 m, AIDA standard



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



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

Connecting cable with 2 plug connectors M12, 5-pin, 1 m, AIDA standard



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



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

Connecting cable with 2 plug connectors M12, 5-pin, 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



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

Connecting cable with 2 plug connectors M12, 5-pin, 3 m, AIDA standard



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



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

Connecting cable with 2 plug connectors M12, 5-pin, 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



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

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



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



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

Connecting cable with 2 plug connectors M12, 5-pin, 8 m, AIDA standard



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



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

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



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

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



100184

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

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



113640

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

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

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



100185

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

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



113682

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

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

Connecting 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

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



100183

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

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



113620

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

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

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



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 connecting 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

ESM

IO-Link Gateway with relay outputs for BP/BR switches



158875

ESM-CB-AZ-FI2-BR-IO-158875

- ▶ IO-Link device for reading process and device data of BP/BR safety switches and transferring them to a higher-level control system
- ▶ Control of guard locking of BP/BR switches, depending on the switch used
- ▶ Compact version measuring only 18 mm in width
- ▶ Rail mounting
- ▶ LED status indicators
- ▶ Sensor circuit 1: connection of single- or dual-channel safety switches with floating contacts; short circuit, earth fault and ground fault detection
- ▶ Sensor circuit 2: connection of 2 safety outputs for BP/BR switches
- ▶ Use as safety relay with two safe outputs
- ▶ Start button and feedback loop can be connected
- ▶ Safety relay: use up to category 4 according to EN ISO 13849-1

Function expansion

Emergency release for safety switch CTP/CTA/TP/STP/MGB2



099877

AE-M-A1-99877

Escape release for CTA, can be retrofitted



166545

AE-E-C-166545

- ▶ This is used for manual release of guard locking from the danger zone without tools
- ▶ Door knob signal red
- ▶ Extension pieces for thicker doors included



166546

AE-P-C-166546

- ▶ Cover cap for the escape release mounting surface
- ▶ Spare part

Handle for wire front release (bowden)



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 switch CTP/CTA/TP/STP



084177

AE-K-A1-DULK1-84177

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



086236
AE-K-A1-IULK1-86236

- ▶ Identical locking
- ▶ Key removable in “unlocked” and “locked” positions



109212
AE-K-A1-IUK2-109212

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



121917
AE-K-A1-ILK1-121917

- ▶ Identical locking
- ▶ Key removable in “locked” position

Lockout bar CTP/CTA



123411
AE-L-C-H-123411

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

Release with automatic reset for safety switch CTP/CTA/TP/STP/MGB2/MGBS



103110
AE-R-A1-103110

Wire front release (bowden)



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)



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)



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)



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)



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)



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)

GWY

IO-Link Gateway for BP/BR switches



165049
GWY-CB-1-BR-IO-165049

- ▶ IO-Link device for reading process and device data of BP/BR safety switches and transferring them to a higher-level control system
- ▶ Control of guard locking of BP/BR switches, depending on the switch used
- ▶ Compact version measuring only 12.5 mm in width
- ▶ Rail mounting
- ▶ LED status indicators

Metal bolt

Bolt BTC-CTP with escape release for safety switches CTP, CTA



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 BTC-CTP-S for safety switches CTP, CTA



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, CTP and CTA



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



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 for safety switch CTP, CTA



123653

RIEGEL CTP-AC-123653

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



137354

RIEGEL CTP-AC-C2308-137354

- ▶ Steel bolt
- ▶ For doors hinged on the right and left
- ▶ Can be locked in open position with padlocks
- ▶ Actuator included
- ▶ Bolt without door stop, suitable for swing doors

Bolt with escape release for safety switch CTP, CTA



123655

RIEGEL CTP-ACF-123655

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

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 switch CTP/CTA



126026

AM-P-126026

- ▶ For vertical and horizontal mounting of safety switch CTP/CTA

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



093457

EMP-B1

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



093458
EMP-B2

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



093456
EMP-SB

► For vertical and horizontal mounting of safety switches CTP, CTA, TP...A, STA, STP and TX