

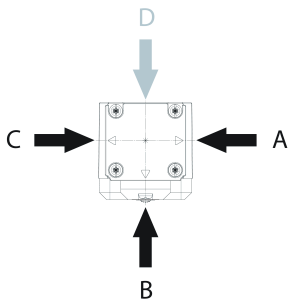
## CTP-L1-AP-U-HA-AE-SII-129478 (Order no. 129478)

### 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)



### 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.

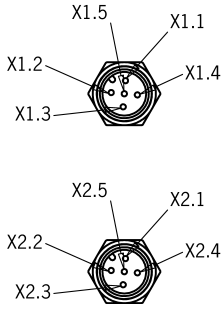
### Guard locking type

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

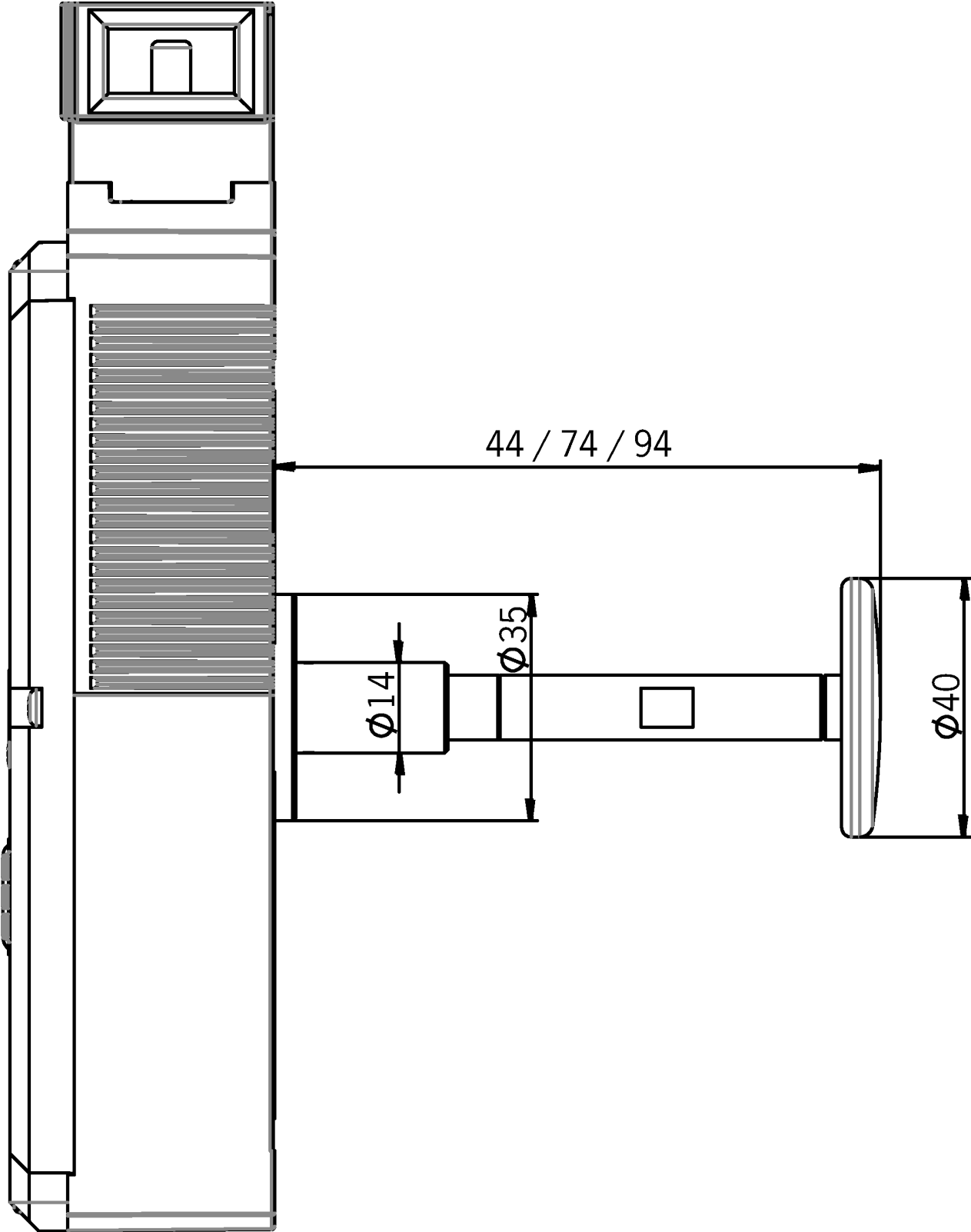
### Escape release

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

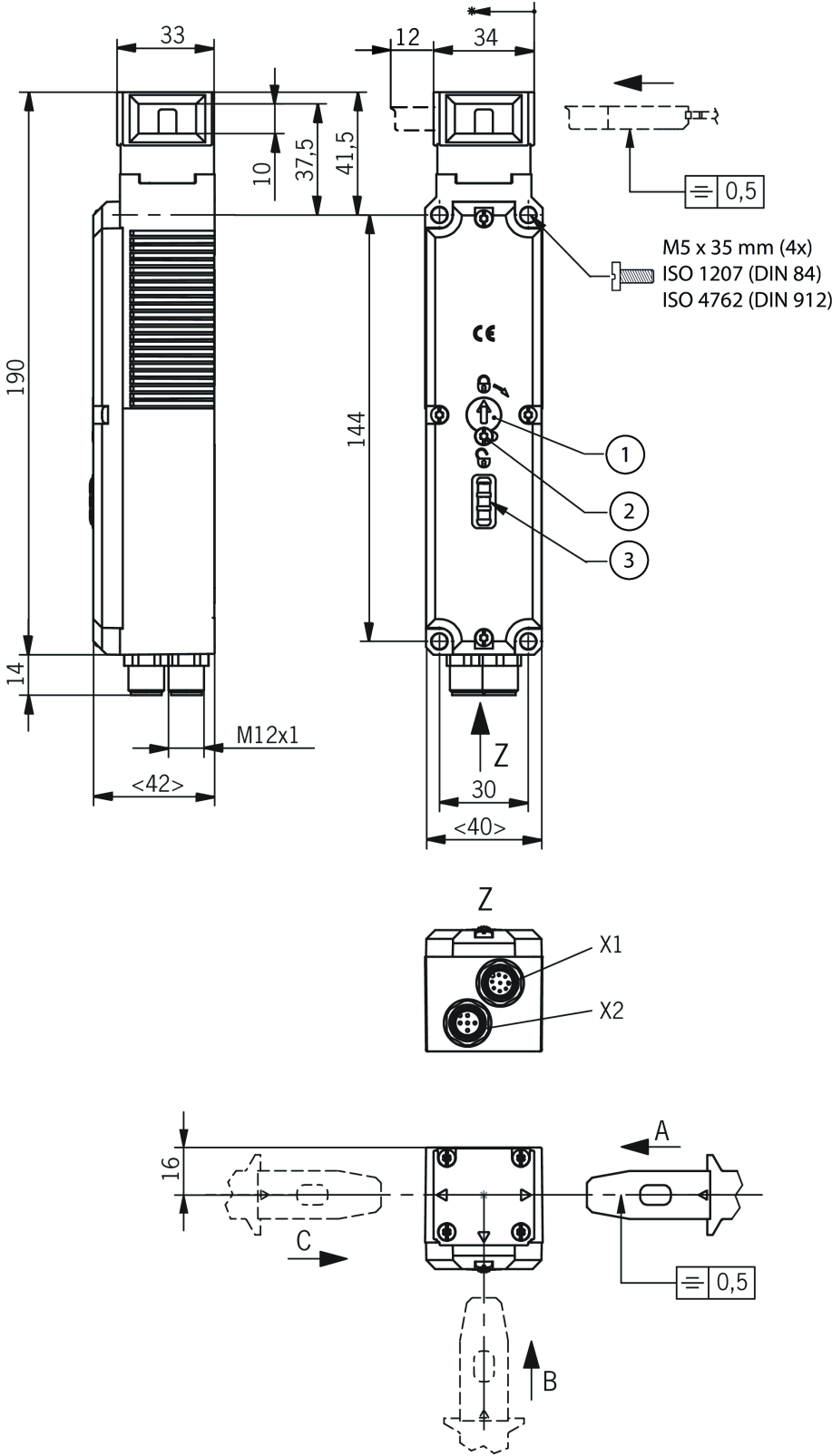
## Connector assignment

Plug connector (view of connection side)	Pin	Designation	Function	Connecting cable conductor coloring
 <p>The diagram shows two circular plug connectors. The top connector, labeled X1, has five pins labeled X1.1 through X1.5. The bottom connector, labeled X2, has five pins labeled X2.1 through X2.5.</p>	X 1.1	UB	Operating voltage of AP electronics, 24 V DC	BN
	X 1.2	FO1A	Safety output, channel 1	WH
	X 1.3	0 V UB	AP electronics operating voltage, 0 V	BU
	X 1.4	FO1B	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

Dimensional drawings



**Dimensional drawings**



- 1 Auxiliary release
- 2 Locking screw
- 3 LEDs

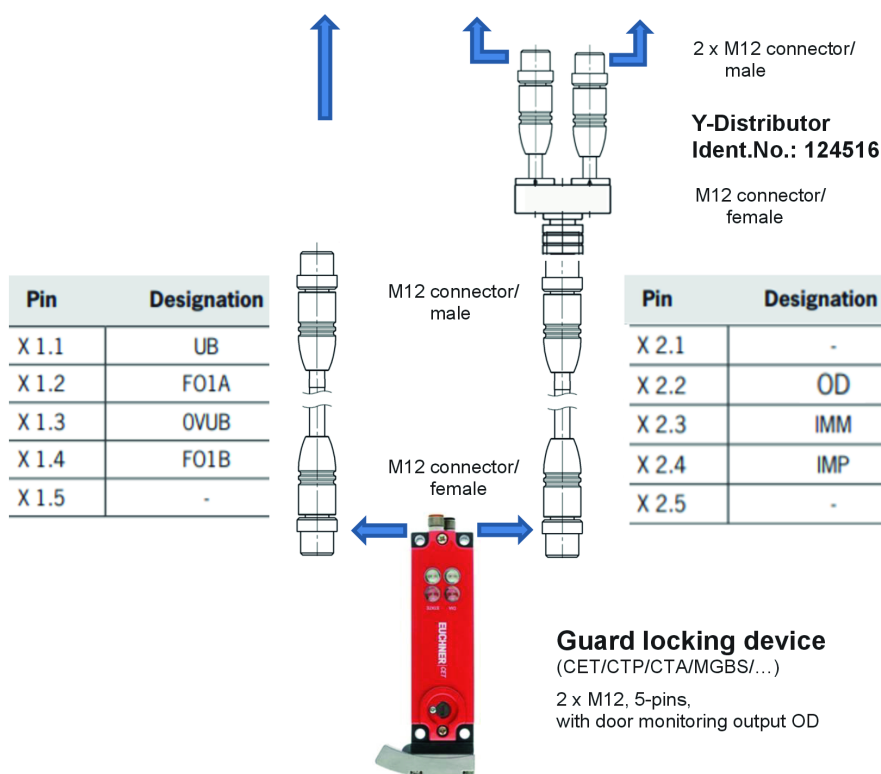
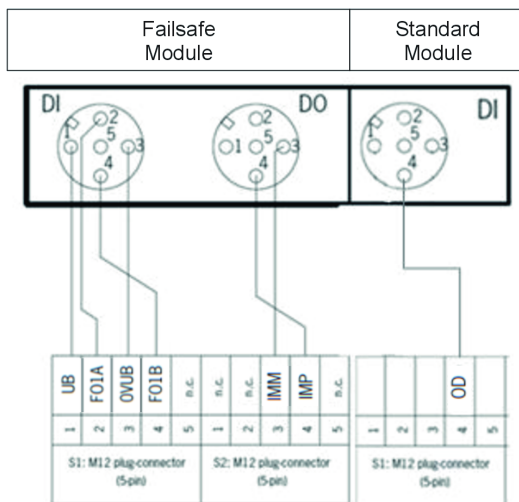
## Connection examples

### Wiring Diagram

Guard locking device with door monitoring output OD, connected to a IP67 modul (ET200pro / Siemens)

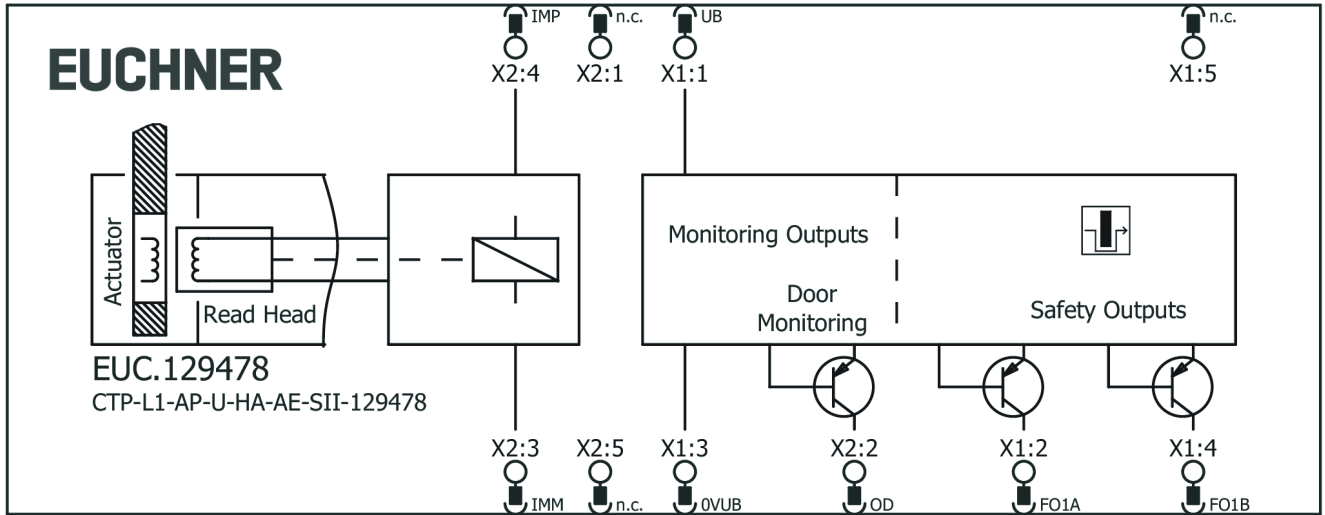
## EUCHNER

More than safety.



E.Wächter / 1.6.2021

## 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
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Rated insulation voltage $U_i$	50 V
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Rated impulse withstand voltage $U_{imp}$	0.5 kV
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Operating voltage DC	
	$U_{UB}$ 24 V DC -15% ... +15% reverse polarity protected, regulated, residual ripple < 5%, PELV

EMC protection requirements	Acc. to EN IEC 60947-5-3
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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% ... +10% reverse polarity protected, regulated, residual ripple < 5%, PELV

Solenoid duty cycle	100 %
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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. 100 ms
Degree of contamination (external, according to EN 60947-1)	3
<b>Monitoring output OD</b>	
Output type	p-switching, short circuit-proof
Output voltage	$0.8 \times U_B \dots U_B$ V DC
Switching current	1 ... 50 mA
<b>Safety outputs FO1A / FO1B</b>	
Output type	2 semiconductor outputs, p-switching, short circuit-proof
Output voltage	
	LOW $U(FO1A) / U(FO1B)$ 0 ... 1 V DC
	HIGH $U(FO1A) / U(FO1B)$ $U_B - 1.5 \dots U_B$ V DC
Discrepancy time	
	both safety outputs max. 10 ms Acc. to EN IEC 60947-5-3
Turn-on time	max. 400 ms
Off-state current $I_r$	max. 0.25 mA
Switching current	
	per safety output FO1A / FO1B 1 ... 150 mA
<b>Mechanical values and environment</b>	
Approach speed	max. 20 m/min
Connection type	2 plug connectors M12, 5-pin + pin 5 not used
Extraction force	20 N
Ready delay	max. 1 s
Actuating force	10 N
Installation orientation	any



Switching frequency	max. 0.5 Hz
Mechanical life	1 x 10 <sup>6</sup>
Overtravel	5 mm
Retention force	20 N
Shock and vibration resistance	Acc. to EN IEC 60947-5-3
Degree of protection	IP67/IP69/IP69K (screwed tight plug connector/mating component)
Ambient temperature	
	at U <sub>B</sub> = 24 V DC -20 ... +55 °C
Material	
	Safety switch housing Reinforced thermoplastic
	Switch head cover Die-cast zinc
Locking force F <sub>max</sub>	3900 N
Locking force F <sub>Zh</sub>	3000 N (Fzh = Fmax/1.3, 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 <sub>D</sub>	4.1 x 10 <sup>-9</sup>

### 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	Escape release actuated by pushing

## Downloads

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

<https://www.euchner.de/en-us/a/129478/?#downloads-tab>

## Ordering data

Ordernumber	129478
Item designation	CTP-L1-AP-U-HA-AE-SII-129478
Gross weight	0,8kg
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 CTP/CTA



**126015**

A-C-H-G-SST-126015

- ▶ Straight actuator
- ▶ Two safety screws included

### 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 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 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

## 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

## Connection accessories

### 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

## Function expansion

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



**099877**  
AE-M-A1-99877

### Extension of the escape release CET / CTP / CTA / MGBS



**127377**  
AF-E-80-127377

- ▶ Extension of the escape release by 30, 50 or 80 mm

### 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)

## 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