

## CTP-I2-AP-U-HA-AZC-SA-126258 (ORDER NO. 126258)

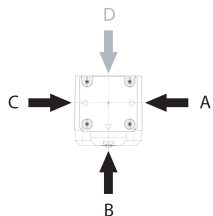
### Transponder-coded safety switch CTP-AP, M12

- ▶ Safety switch with guard locking and integrated evaluation electronics
- ▶ Guard locking suitable for process protection only
- ▶ Short circuit monitoring
- ▶ 2 safety outputs (semiconductor outputs)
- ▶ Up to category 4/PL e according to EN ISO 13849-1
- ▶ With plug connector M12
- ▶ Unicode
- ▶ Door monitoring output
- ▶ Approach directions A, B and C (delivery state)



### Description

#### Approach direction



Figure

Horizontal

Can be adjusted in 90° steps

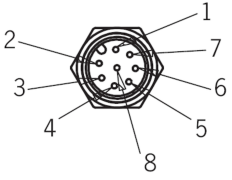
#### Unicode evaluation

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.

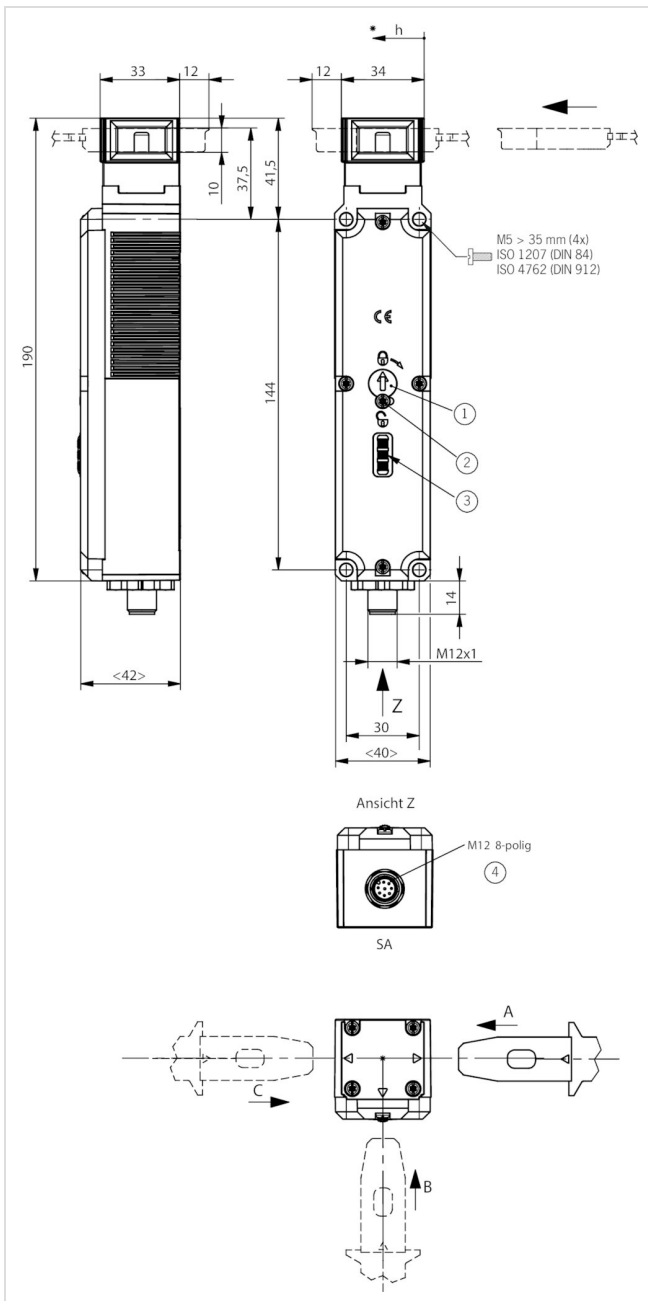
#### Guard locking type

CTP-I2 Guard locking actuated by power-ON applied and spring released (open-circuit current principle).

## Connector assignment

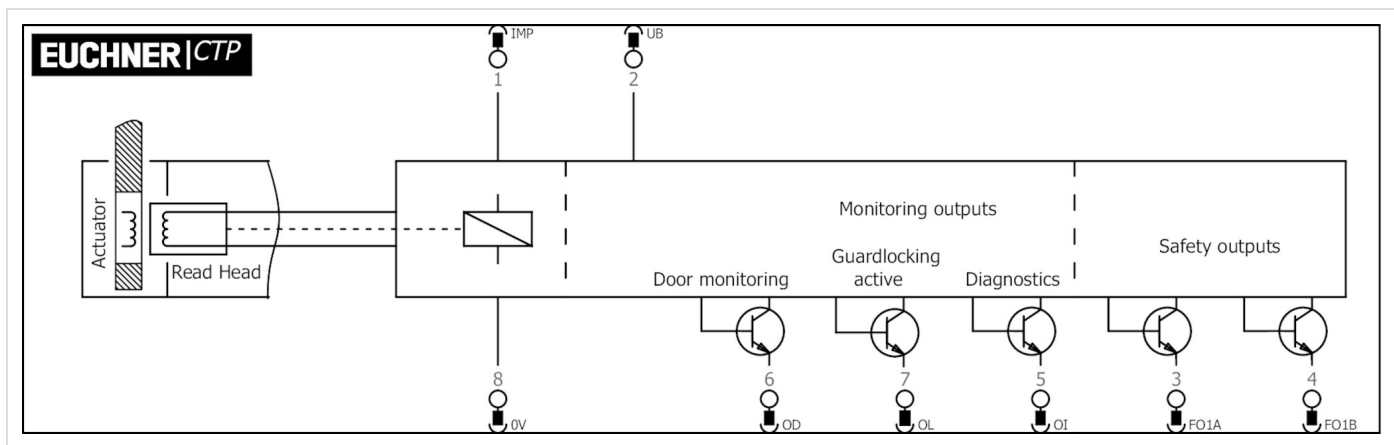
Plug connector (view of connection side)	Pin	Designation	Function	Conductor coloring of connecting cable
	1	IMP	Control input of guard locking solenoid, 24 V DC	WH
	2	UB	Operating voltage of AP electronics, 24 V DC	BN
	3	F01A	Safety output, channel 1	GN
	4	F01B	Safety output, channel 2	YE
	5	OI	Diagnostic output	GY
	6	OD	Door monitoring output	PK
	7	OL	Guard lock monitoring output	BU
	8	0 V	Operating voltage of AP electronics 0 V/control input of guard locking solenoid 0 V	RD

## Dimension drawing



- 1 Auxiliary release
- 2 Locking screw
- 3 LEDs
- 4 Plug connector aligned

## 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	$1 \times 10^6$
Installation orientation	Any
Ready delay	max.1 s
Switching frequency	max.0,5 Hz
Connection	1 plug connector M12, 8-pin
Approach speed	max.20 m/min
Guard locking principle	Open-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
<b>Electrical connection ratings</b>	
Test-pulse interval	min.100 ms
Test pulses	max.0,3 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 $I_{IMP}$ ) 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
Switching load	
	According to UL 24V DC, class 2 (Alternatively see operating instructions)
	<b>Safety outputs FO1A / FO1B</b>
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 $U(FO1A) / U(FO1B)$ $U_B - 1,5$ ... $U_B$ 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
	<b>Monitoring output OD</b>
Type of output	p-switching, short circuit-proof
Switching current	1 ... 50 mA
Output voltage	$0,8 \times U_B$ ... $U_B$ V DC
	<b>Monitoring output OI</b>
Type of output	p-switching, short circuit-proof
Switching current	1 ... 50 mA
Output voltage	$0,8 \times U_B$ ... $U_B$ V DC
	<b>Monitoring output OL</b>
Type of output	p-switching, short circuit-proof
Switching current	1 ... 50 mA
Output voltage	$0,8 \times U_B$ ... $U_B$ V DC

Output voltage

U<sub>OXUB</sub> ... UB V DC

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## 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<sub>D</sub>

4.1 x 10<sup>-9</sup>

Mission time

20 y

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## Accessories

### Actuator

## Bent actuator for safety switches CTP

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

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



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

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

## Hinged actuator for safety switch CTP

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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

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

- ▶ Straight actuator
- ▶ Two safety screws included

## Bolt

## Bolt BTC-CTP-S for safety switch CTP

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**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

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**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

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**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

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**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 angled plug connector M12, 8-pin, 10m

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**113188**  
C-M12F08-08X025PU10,0-MA-113188

- ▶ M12 female plug, 8-pin
- ▶ Angled plug connector
- ▶ Cable outlet A (right)
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ With flying lead



**113189**  
C-M12F08-08X025PU10,0-MA-113189

- ▶ M12 female plug, 8-pin
- ▶ Angled plug connector
- ▶ Cable outlet C (left)
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ With flying lead

### Connection cable with angled plug connector M12, 8-pin, 20m

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**120998**  
C-M12F08-08X025PU20,0-MA-120998

- ▶ M12 female plug, 8-pin
- ▶ Angled plug connector
- ▶ Cable outlet A (right)
- ▶ PUR cable
- ▶ Cable length 20 m
- ▶ With flying lead



**120999**  
C-M12F08-08X025PU20,0-MA-120999

- ▶ M12 female plug, 8-pin
- ▶ Angled plug connector
- ▶ Cable outlet C (left)





- ▶ Cable outlet C (only)
- ▶ PUR cable
- ▶ Cable length 20 m
- ▶ With flying lead

### Connection cable with plug connector M12, 8-pin, 5m



**115112**  
C-M12F08-08X025PU05,0-MA-115112

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 5 m
- ▶ With flying lead



**100177**  
C-M12F08-08X025PV05,0-MA-100177

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 5 m
- ▶ With flying lead

### Connection cable with plug connector M12, 8-pin, 10m



**115113**  
C-M12F08-08X025PU10,0-MA-115113

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ With flying lead



**100178**  
C-M12F08-08X025PV10,0-MA-100178

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 10 m
- ▶ With flying lead

### Connection cable with plug connector M12, 8-pin, 20m



**115114**  
C-M12F08-08X025PU20,0-MA-115114

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 20 m
- ▶ With flying lead



**100179**  
C-M12F08-08X025PV20,0-MA-100179

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 20 m
- ▶ With flying lead

### Connection cable with plug connector M12, 8-pin, 30m



**115257**  
C-M12F08-08X025PU30,0-MA-115257

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 30 m
- ▶ With flying lead



**115116**  
C-M12F08-08X025PV30,0-MA-115116

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 30 m
- ▶ With flying lead

## Function expansion

### Emergency unlocking for safety switches CTP/TP/STP

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**099877**  
NOTENTSPERRUNG TP/STP

### Handle for wire front release

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**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

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**084177**  
SCHLOSS TP  
VERSCHIEDENSCHLIESSEND

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



**086236**  
SCHLOSS TP GLEICHSCHLIESSEND

- ▶ Identical 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

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**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

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**103110**  
ENTRIEGELUNG RUECKSTELLEND  
TP/STP

## Wire front release

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**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)



**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)



**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)

## Mounting accessories

## Efficient protection against tampering for safety switch mounting

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**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

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**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

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**093457**  
EMP-B1

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

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**093458**  
EMP-B2

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

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**093456**  
EMP-SB

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

## Contacts

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