

## CET3-AP-CRA-AH-50F-SI-114073 (ORDER NO. 114073)

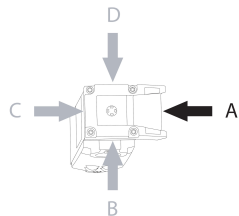
Non-contact safety switch CET-AP-..., with escape release for connection to decentralized peripheral systems

- ▶ Safety switch with guard locking and integrated evaluation electronics
- ▶ Locking force up to 6,500 N
- ▶ Direct connection to decentralized peripheral systems (e.g. ET200pro)
- ▶ Short circuit monitoring
- ▶ 2 safety outputs (semiconductor outputs)
- ▶ Category 4/PL e according to EN ISO 13849-1
- ▶ With 2 plug connectors M12
- ▶ Unicode
- ▶ Indication of the door position by LED
- ▶ Escape release, 75 mm long
- ▶ Approach direction A (delivery state)



### Description

#### Approach direction



Figure

Horizontal

Can be adjusted in 90° steps

#### Safety Switch

The device may be operated only in conjunction with the actuator CET-A-....

**Important:** The actuator must be ordered separately.

#### 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.

#### Solenoid operating voltage

- ▶ DC 24 V +10% -15%

## Guard locking type

CET3 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the guard locking solenoid.

## LED function display

LED State Status LED

LED DIA Diagnostic LED

LED 1 rd illuminates when the solenoid is energized

LED 2 gn illuminates when door is closed

## Category according to EN ISO 13849-1

Due to two redundantly designed semiconductor outputs (safety outputs) with internal monitoring suitable for:

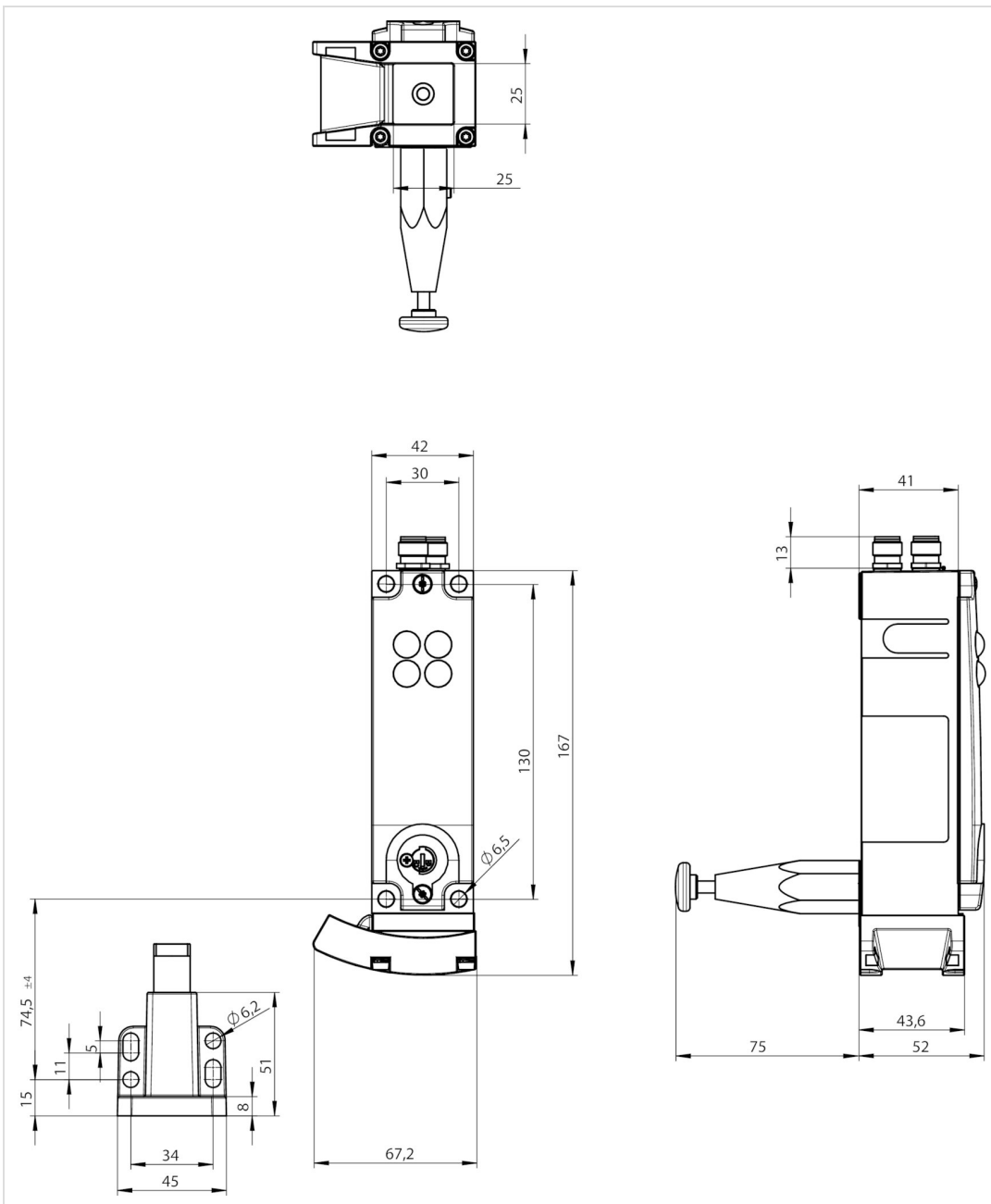
- ▶ Category 4/PL e according to EN ISO 13849-1
- ▶ The stated safety characteristics apply to any installation orientations of the safety switch.

**Important:** To achieve the stated category in accordance with EN ISO 13849-1, both safety outputs (OA and OB) must be evaluated.

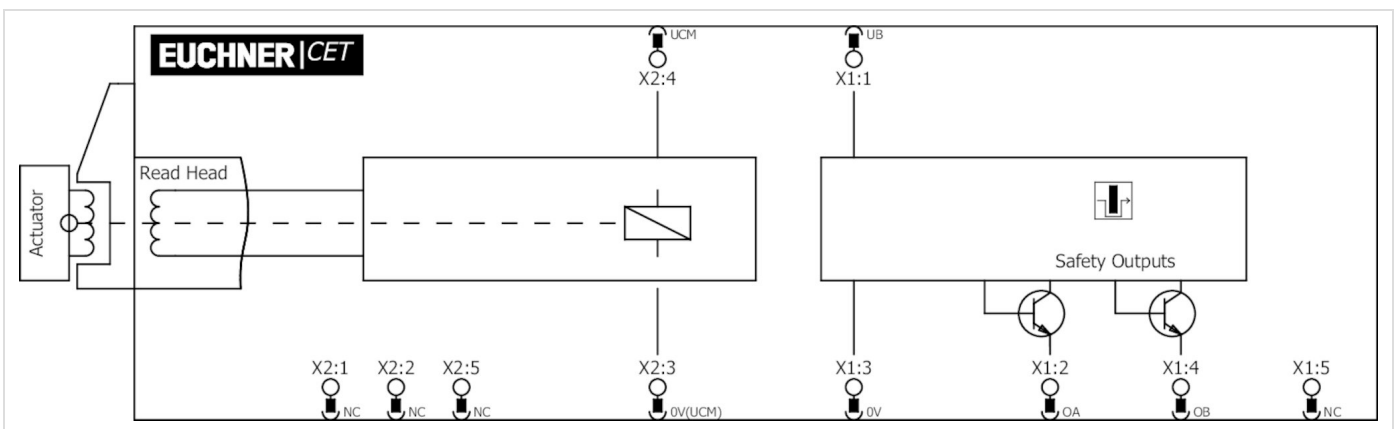
## Escape release

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

## Dimension drawing



### Block diagram



### Wiring diagram



|                                |   |
|--------------------------------|---|
| Shock and vibration resistance | In acc. with EN 60947-5-3                               |
| Degree of freedom X            | ±5 mm   |
| Degree of freedom Y            | ±5 mm   |
| Degree of freedom Z            | ±4 mm   |
| Housing material               |   |
|                                | Safety switch housing Die-cast aluminum                 |
|                                | Slide Stainless steel                                   |
| Weight                         |   |
|                                | Net 1 kg  |
| Ambient temperature            |   |
|                                | At $U_B = 24V$ DC -20 ... 55 °C                         |
| Degree of protection           | IP67<br>(Screwed tight plug connector/mating component) |
| Mechanical life                | 1 x 10 <sup>6</sup>                                     |
| Installation orientation       | Any<br>(Preferably head downward)                       |
| Ready delay                    | 1 s   |
| Switching frequency            | max.0,5 Hz  |
| Connection                     | 2 plug connectors M12, 5-pin                            |
| Approach speed                 | max.20 m/min  |
| Guard locking principle        | Closed-circuit current principle                        |
| Locking force $F_{max}$        | 6500 N  |
| Locking force $F_{Zh}$         | 5000 N  |

## Electrical connection ratings

## Operating voltage DC

$U_B$  24 V DC -15% ... 15% Reverse polarity protected, regulated, residual ripple < 5%, PELV

LED 24 V DC -15% ... 10%

## Current consumption

$I_{CM}$  450 mA

$I_B$  80 mA

## Utilization category acc. to EN 60947-5-2

DC-13 24V 200mA  
(Caution: outputs must be protected with a free-wheeling diode in case of inductive loads)

## Solenoid operating voltage DC

$U_{CM}$  24 V DC -15% ... +10% Reverse polarity protected, regulated, residual ripple < 5%, PELV

## Fusing

External (solenoid operating voltage  $U_{CM}$ ) 0,5 ... 8 A

External (operating voltage  $U_B$ ) 0,25 ... 8 A

## Connection rating

Solenoid 11 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

Connecting cable 30V DC, 2A  
(For UL requirement UL category code (CYJV/CYJV7))

## Safety class

EN IEC 61140 III

## Switching load

According to UL 24V DC, class 2  
(For alternatives see operating instructions)

### Safety outputs OA/OB

Type of output 2 semiconductor outputs, p-switching, short circuit-proof

## Switching current

Per safety output OA / OB 1 ... 200 mA

## Output voltage

Low  $U(OA) / U(OB)$  0 ... 1 V DC

High  $U(OA) / U(OB)$   $U_B - 1,5V$  ...  $U_B$  V DC

Off-state current  $I_r$  max.0,25 mA

## Risk time according to EN 60947-5-3

Single device max.400 ms

Turn-on time 400 ms

## Discrepancy time

Both safety outputs max.10 ms

## Work area

### Repeat accuracy R

According to EN 60947-5-2 10 %

## Other

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

### Monitoring of guard locking and the safety guard position

|                                     |   |
|-------------------------------------|---|
| Category                            |   |
|                                     | Any installation orientation 4                      |
| Performance Level                   | PL e  |
| PFH <sub>D</sub>                    |   |
|                                     | Any installation orientation 3.1 x 10 <sup>-9</sup> |
| <b>Control of the guard locking</b> |   |
| Category                            | Depending on external control of guard locking      |
| Performance Level                   | Depending on external control of guard locking      |
| PFH <sub>D</sub>                    | Depending on external control of guard locking      |
| Mission time                        | 20 y  |

## Accessories

### Actuator

#### Actuator CET-A-BWK-50X



**096327**  
CET-A-BWK-50X

- ▶ Actuator for read head/safety switch CET
- ▶ Four safety screws M5x16 included

### Bolt

#### Bolt CET-A-C/F with escape release



**106172**  
RIEGEL CET-A-C/F

- ▶ Steel bolt
- ▶ For doors hinged on the left or right
- ▶ In combination with CET with escape release
- ▶ Detent knob in open position
- ▶ Can be locked in open position with padlocks



**106350**  
RIEGEL CET-A-C/F-C2282

- ▶ Steel bolt
- ▶ Stainless steel guide strip
- ▶ For doors hinged on the left or right
- ▶ In combination with CET with escape release
- ▶ Detent knob in open position
- ▶ Can be locked in open position with padlocks

### 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

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

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

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

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

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**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

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



**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

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



**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

## 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



**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

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



**100184**

- ▶ M12 female plug, 5-pin



**100104**  
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

### Connection 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

### 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)

### Function expansion

#### Cover for actuator CET



**124979**  
AM-C-124979

- ▶ Cover for actuator CET
- ▶ Horizontal and vertical fastening option on the actuator
- ▶ Mounting using 4 screws M5x16 (included with the actuator)
- ▶ Suitable for combination with the lockout bar for CET actuator AE-L-CET-156429

#### Cover for read head and actuator CET



**098808**  
CET ABDECKUNG RECHTS

- ▶ Cover for read heads / safety switches CET and actuators CET
- ▶ For approach direction A

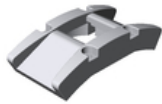


**098807**  
CET ABDECKUNG LINKS

- ▶ Cover for read heads / safety switches CET and actuators CET
- ▶ For approach direction C

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### Double ramp for safety switch/read head CET



**114091**  
CET-DR

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### Emergency unlocking for CET



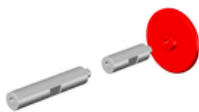
**103714**  
AE-M-CET-103714



**159080**  
AE-M-CET-159080

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### Extension of the escape release CET



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

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

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### Holder for lockout mechanism CET actuator



**156338**  
Y-CHN-A1-156338

- ▶ Holder (incl. wire rope) for lockout bar CET

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### Lockout bar and holder for CET actuators



**155865**  
AE-SET-LCHN-A1-155865

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

## Lockout mechanism for CET actuator

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**122609**  
AE-L-CET-122609

- ▶ Prevents unintentional closing of the door
- ▶ Can be secured with padlocks
- ▶ Not suitable in combination with cover AM-C for actuator CET



**156429**  
AE-L-CET-156429

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

## Mechanical key release for CET read head/switch

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**098850**  
SCHLUESSEL-HILFSENTRIEGELUNG

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

## 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 plate EM-P actuator for safety switch CET

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**126400**  
AM-P-126400

- ▶ Mounting plate for CET actuator
- ▶ Suitable for mounting on aluminum profiles of width 30/40/50 mm
- ▶ Suitable for the mounting plates AM-P-126399 and AM-P-126398

## Mounting plate EM-P handle for safety switch CET

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**126398**  
AM-P-126398

- ▶ Mounting plate with handle (handle included)
- ▶ For hinged or sliding doors
- ▶ Horizontal and vertical assembly circuits possible
- ▶ Suitable for aluminum profiles of width 30/40/50 mm
- ▶ Suitable for the CET mounting plates AM-P-126399 and AM-P-126400

## Mounting plate EM-P switch for safety switch CET

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**126399**  
AM-P-126399

- ▶ Mounting plate for CET read heads/switches
- ▶ Direct mounting on aluminum profiles of width 30/40/50 mm
- ▶ Suitable for the mounting plates AM-P-126400 and AM-P-126398

## Mounting plate EMP-B-... for actuator CET

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**106694**  
EMP-B-CET

- ▶ Mounting plate for actuator CET for hinged or sliding doors
- ▶ Suitable for aluminum profiles 40 ... 45 mm
- ▶ Horizontal and vertical mounting
- ▶ Made of aluminum

## Mounting plate EMP-L-... for CET read head/switches


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**106695**  
EMP-L-CET


- ▶ Mounting plate for CET read heads/switches
- ▶ For hinged or sliding doors
- ▶ Suitable for aluminum profiles 40 ... 45 mm
- ▶ Horizontal and vertical mounting
- ▶ Suitable for CET with escape release

## Contacts

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