

CET3-AP-CRA-AH-50X-SI-111346 (ORDER NO. 111346)

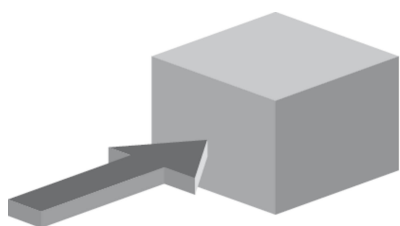
Non-contact safety switch CET-AP-..., for connection to decentralized peripheral systems

- ▶ 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
- ▶ 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:

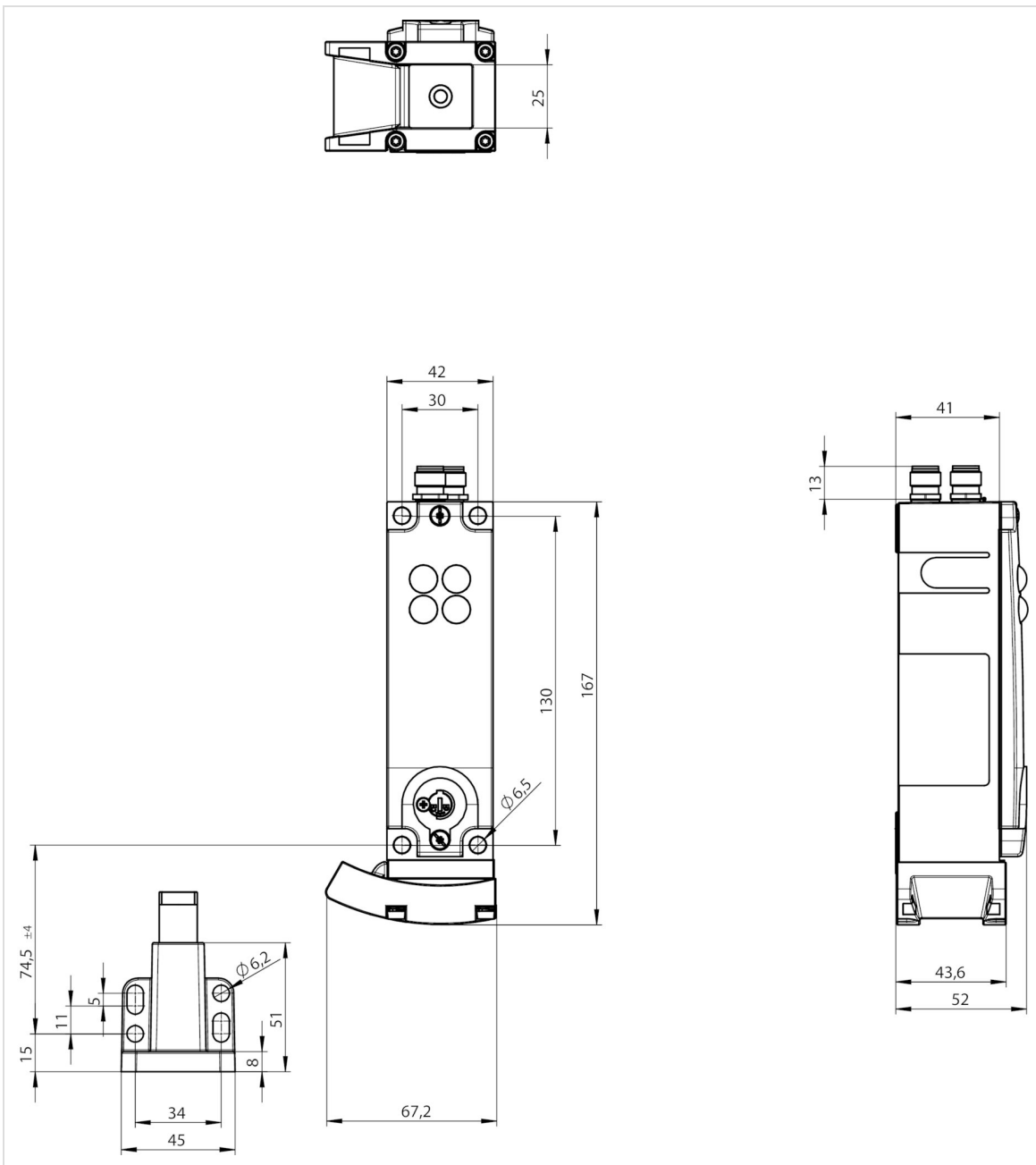
- ▶ Category 4/PL e according to EN ISO 13849-1
- ▶ The stated safety characteristics apply to any installation orientations of the safety switch.

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

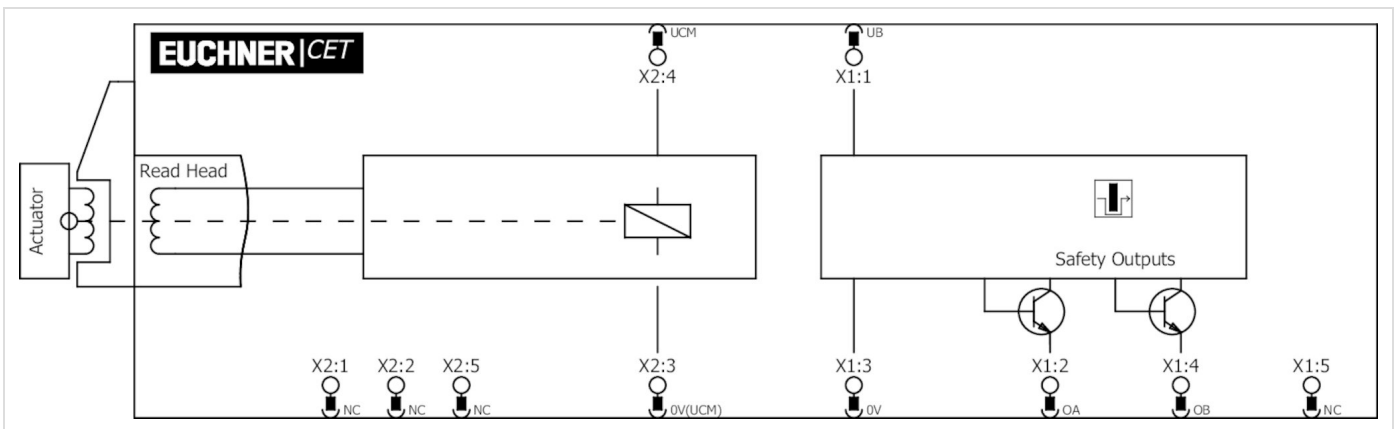
Connector assignment

Plug connector (view of connection side)	Pin	Designation	Function	Conductor coloring of connecting cable
	X 1.1	UB	Operating voltage, 24 V DC	BN
	X 1.2	OA	Safety output, channel 1	WH
	X 1.3	OV	Operating voltage, 0 V	BU
	X 1.4	OB	Safety output, channel 2	BK
	X 1.5	-	n.c.	GY
	X 2.1	-	n.c.	BN
	X 2.2	-	n.c.	WH
	X 2.3	OVUCM	OV solenoid	BU
	X 2.4	UCM	Operating voltage of guard locking solenoid, 24 V DC	BK
	X 2.5	-	n.c.	GY

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	
	Slide Stainless steel
	Safety switch housing Die-cast aluminum
Weight	
	Net 1 kg
Ambient temperature	
	At $U_B = 24V$ DC -20 ... 55 °C
Degree of protection	IP67 (Screwed tight plug connector/mating component)
Mechanical life	1 x 10 ⁶
Installation orientation	Any (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_B 80 mA

I_{CM} 450 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 (operating voltage U_B) 0,25 ... 8 A

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

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

Low $U(OA)$ / $U(OB)$ 0 ... 1 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 _D	
	Any installation orientation 3.1 x 10 ⁻⁹
Control of the guard locking	
Category	Depending on external control of guard locking
Performance Level	Depending on external control of guard locking
PFH _D	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



104309
RIEGEL CET-A-C

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

Bolt CET-A-C, for swing doors without stop



109672
RIEGEL CET-A-C-C2308

- ▶ Steel bolt
- ▶ In combination with CET
- ▶ For doors hinged on the left or right
- ▶ Can be locked in open position with padlocks
- ▶ Bolt without door stop, suitable for swing doors

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



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



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

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



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

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



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
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

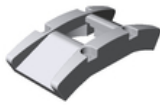
- ▶ Cover for read heads / safety switches CET and actuators CET
- ▶ For approach direction A



098807
CET ABDECKUNG LINKS

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

Double ramp for safety switch/read head CET



114091
CET-DR

Emergency unlocking for CET



103714
AE-M-CET-103714



159080
AE-M-CET-159080

Holder for lockout mechanism CET actuator



156338
Y-CHN-A1-156338

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

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



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



098850
SCHLUESSEL-HILFSENTRIEGELUNG

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

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 plate EM-P actuator for safety switch CET



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



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



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



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





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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