

CET3-AR-CRA-AH-50X-SH-110103 (ORDER NO. 110103)

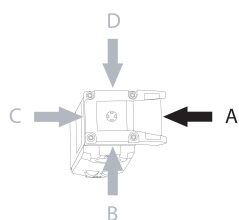
Non-contact safety switch CET-AR-..., RC18

- ▶ Safety switch with guard locking and integrated evaluation electronics
- ▶ Locking force up to 6,500 N
- ▶ Up to 20 switches in series
- ▶ Short circuit monitoring
- ▶ 2 safety outputs (semiconductor outputs)
- ▶ Category 4/PL e according to EN ISO 13849-1
- ▶ With plug connector M23 (RC18)
- ▶ Unicode
- ▶ Door monitoring output
- ▶ Teach-in input
- ▶ 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. The door position is also monitored. The door monitoring output OUT D is set to HIGH as soon as the actuator is above the extended plunger (state: door closed, guard locking not active). The output OUT D remains set also with guard locking active.

LED function display

LED State Status LED

LED DIA Diagnostic LED

LED 1 rd freely configurable

LED 2 gn freely configurable

Additional connections

OUT Monitoring output (semiconductor)

OUT D Door monitoring output

RST Reset input

J Teach-in input

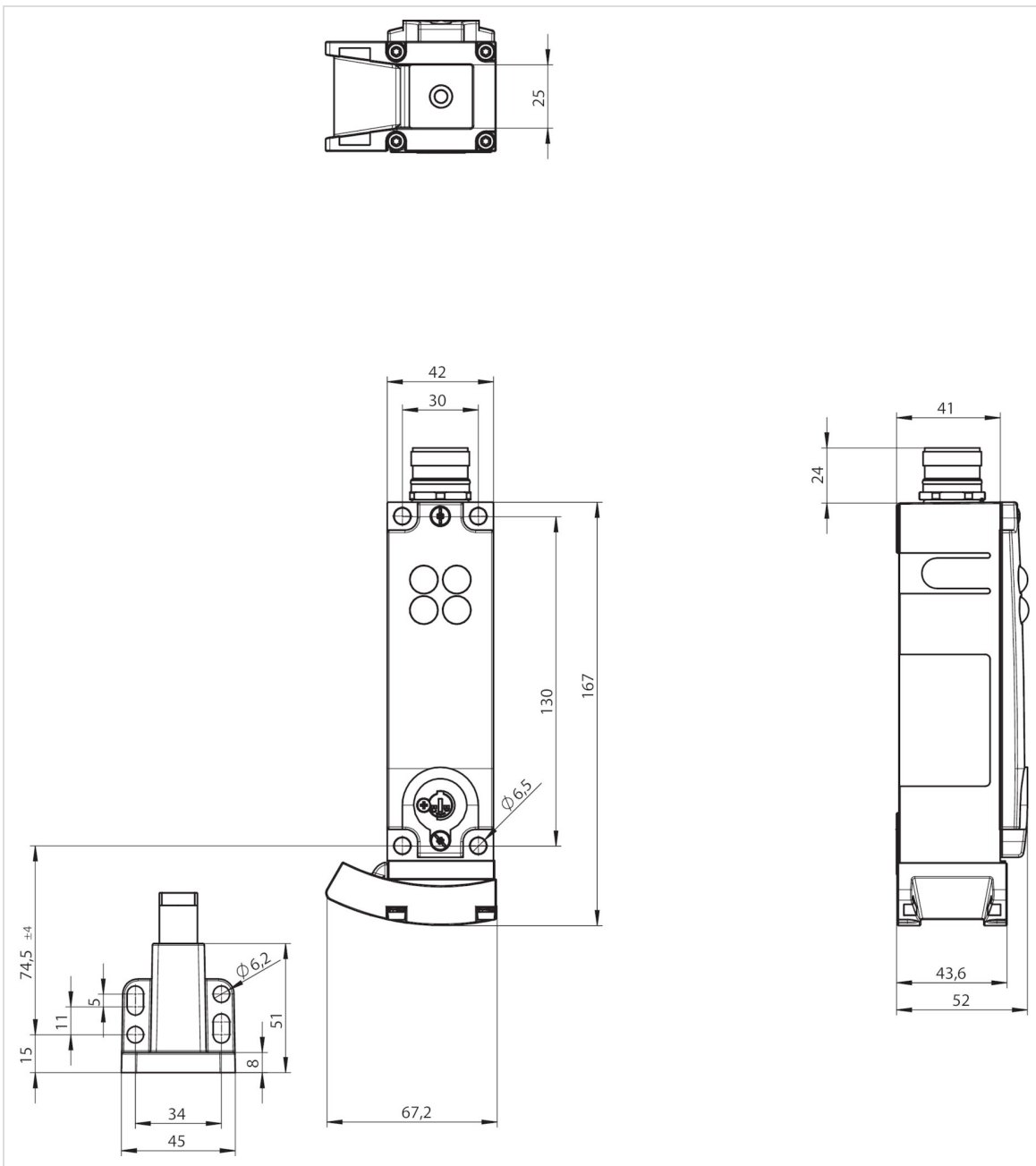
Category according to EN ISO 13849-1

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

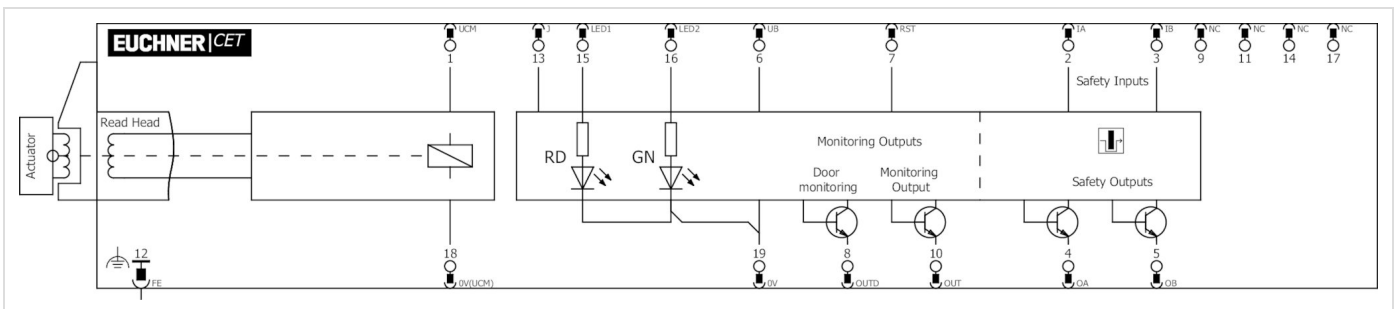
- ▶ Category 4/PL e according to EN ISO 13849-1
- ▶ The stated safety characteristics apply to any installation orientations of the safety switch.

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

Dimension drawing



Block diagram



Technical data

Approvals



Mechanical values and environment

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		IP65/IP67 (Screwed tight plug connector/mating component)
Mechanical life		1 x 10 ⁶
Installation orientation		Any (Preferably head downward)
Switching frequency		max.0,5 Hz
Connection		1 plug connector M23, 19-pin, RC18

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 (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
Safety class	EN IEC 61140	III
Switching load	According to UL	24V DC, class 2 (For alternatives see operating instructions)
		Monitoring output OUT
Type of output		p-switching, short circuit-proof
Switching current	OUT	1 ... 50 mA
Output voltage		

	OUT	0,8xUB ... UB V DC
Switching delay from state change		max.400 ms
	Monitoring output OUT D	
Type of output		p-switching, short circuit-proof
Switching current		
	OUT D	1 ... 50 mA
Output voltage		
	OUT D	0,8xUB ... UB V DC
Switching delay from state change		max.700 ms
	Safety outputs OA/OB	
Extension of risk time according to EN 60947-5-3 per device		max.5 ms
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)	UB-1,5V ... UB 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
	Teach-in input	
Input voltage		
	High	15 ... 27,6 V DC
	Low	0 ... 1 V DC

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

	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
	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
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

Connection cable with plug connector M23 with option C1825, 1.5m, angled



092906
C-M23F19-19XDIFPU01,5-MA-092906

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 1.5 m
- ▶ With flying lead
- ▶ Cores color-coded



092907
C-M23F19-19XDIFPU01,5-MA-092907

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 1.5 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 1.5m, straight



092761
C-M23F19-19XDIFPU01,5-MA-092761

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 1.5 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 3m, angled



092908
C-M23F19-19XDIFPU03,0-MA-092908

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 3 m



092909
C-M23F19-19XDIFPU03,0-MA-092909

- ▶ Cable length 3 m
- ▶ With flying lead
- ▶ Cores color-coded
- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 3 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 3m, straight



092816
C-M23F19-19XDIFPU03,0-MA-092816

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 3 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 6m, angled



077018
C-M23F19-19XDIFPU06,0-MA-077018

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 6 m
- ▶ With flying lead
- ▶ Cores color-coded



085194
C-M23F19-19XDIFPU06,0-MA-085194

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 6 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 6m, straight



077014
C-M23F19-19XDIFPU06,0-MA-077014

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 6 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 8m, angled



077019
C-M23F19-19XDIFPU08,0-MA-077019

- ▶ RC18 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 8 m
- ▶ With flying lead
- ▶ Cores color-coded



085195
C-M23F19-19XDIFPU08,0-MA-085195

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 8 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 8m, straight



077015
C-M23F19-19XDIFPU08,0-MA-077015

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable



- ▶ Cable length 8 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 10m, angled



092901
C-M23F19-19XDIFPU10,0-MA-092901

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ With flying lead
- ▶ Cores color-coded



092902
C-M23F19-19XDIFPU10,0-MA-092902

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 10m, straight



092898
C-M23F19-19XDIFPU10,0-MA-092898

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 10 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 15m, angled



077020
C-M23F19-19XDIFPU15,0-MA-077020

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 15 m
- ▶ With flying lead
- ▶ Cores color-coded



085196
C-M23F19-19XDIFPU15,0-MA-085196

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 15 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 15m, straight



077016
C-M23F19-19XDIFPU15,0-MA-077016

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 15 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 20m, angled



092910
C-M23F19-19XDIFPU20,0-MA-092910

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 20 m
- ▶ With flying lead
- ▶ Cores color-coded



092911
C-M23F19-19XDIFPU20,0-MA-092911

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector



C-M23F19-19XDIFPU20,0-MA-092911

- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 20 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 20m, straight



092726
C-M23F19-19XDIFPU20,0-MA-092726

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 20 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 25m, angled



092912
C-M23F19-19XDIFPU25,0-MA-092912

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit C (left)
- ▶ PUR cable
- ▶ Cable length 25 m
- ▶ With flying lead
- ▶ Cores color-coded



092913
C-M23F19-19XDIFPU25,0-MA-092913

- ▶ M23 plug connector, 18-pin + PE
- ▶ Angled plug connector
- ▶ Cable exit A (right)
- ▶ PUR cable
- ▶ Cable length 25 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 25m, straight



092727
C-M23F19-19XDIFPU25,0-MA-092727

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 25 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 30m, straight



095993
C-M23F19-19XDIFPU30,0-MA-095993

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 30 m
- ▶ With flying lead
- ▶ Cores color-coded

Connection cable with plug connector M23 with option C1825, 40m, straight



102490
C-M23F19-19XDIFPU40,0-MA-102490

- ▶ M23 plug connector, 18-pin + PE
- ▶ Straight plug connector
- ▶ PUR cable
- ▶ Cable length 40 m
- ▶ With flying lead
- ▶ Cores color-coded

Female connector RC18 angled with option C1825



077026
RC18WF-C1825

- ▶ Plug connector M23, angled
- ▶ Number of pins: 19-pin with shield spring

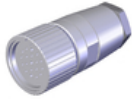
Female plug RC18 angled



074617
RC18WF

- ▶ Plug connector M23, angled
- ▶ Number of pins: 19-pin with shield spring

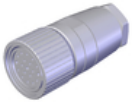
Female plug RC18 straight



074616
RC18EF

- ▶ Plug connector M23, straight
- ▶ Number of pins: 19-pin with shield spring

Female plug RC18 straight with option C1825



077025
RC18EF-C1825

- ▶ Plug connector M23, straight
- ▶ Number of pins: 19-pin with shield spring

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

Teach-in adapter for CET 1/3



122748
AC-TA-A1-SH-122748

- ▶ Teach-in adapter
- ▶ Optional accessories for teaching-in a new actuator for safety switch with M23 plug connector.

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

 EUCHNER GmbH + Co. KG
Kohlhammerstraße 16
70771 Leinfelden-Echterdingen

 +49 711 7597-0

 +49 711 753316

 [info\(at\)euchner.de](mailto:info(at)euchner.de)