

CET1-AR-CRA-CH-50X-SG-105763 (ORDER NO. 105763)

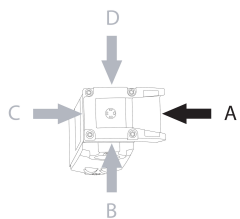
Non-contact safety switch CET-AR-..., M12

- ▶ 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 2 plug connectors M12
- ▶ Multicode
- ▶ 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.

Multicode evaluation unit

Every suitable actuator is detected by the switch.

Solenoid operating voltage

- ▶ DC 24 V +10% -15%

Guard locking type

CET1 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 freely configurable

LED 2 gn freely configurable

Additional connections

OUT Monitoring output (semiconductor)

RST Reset input

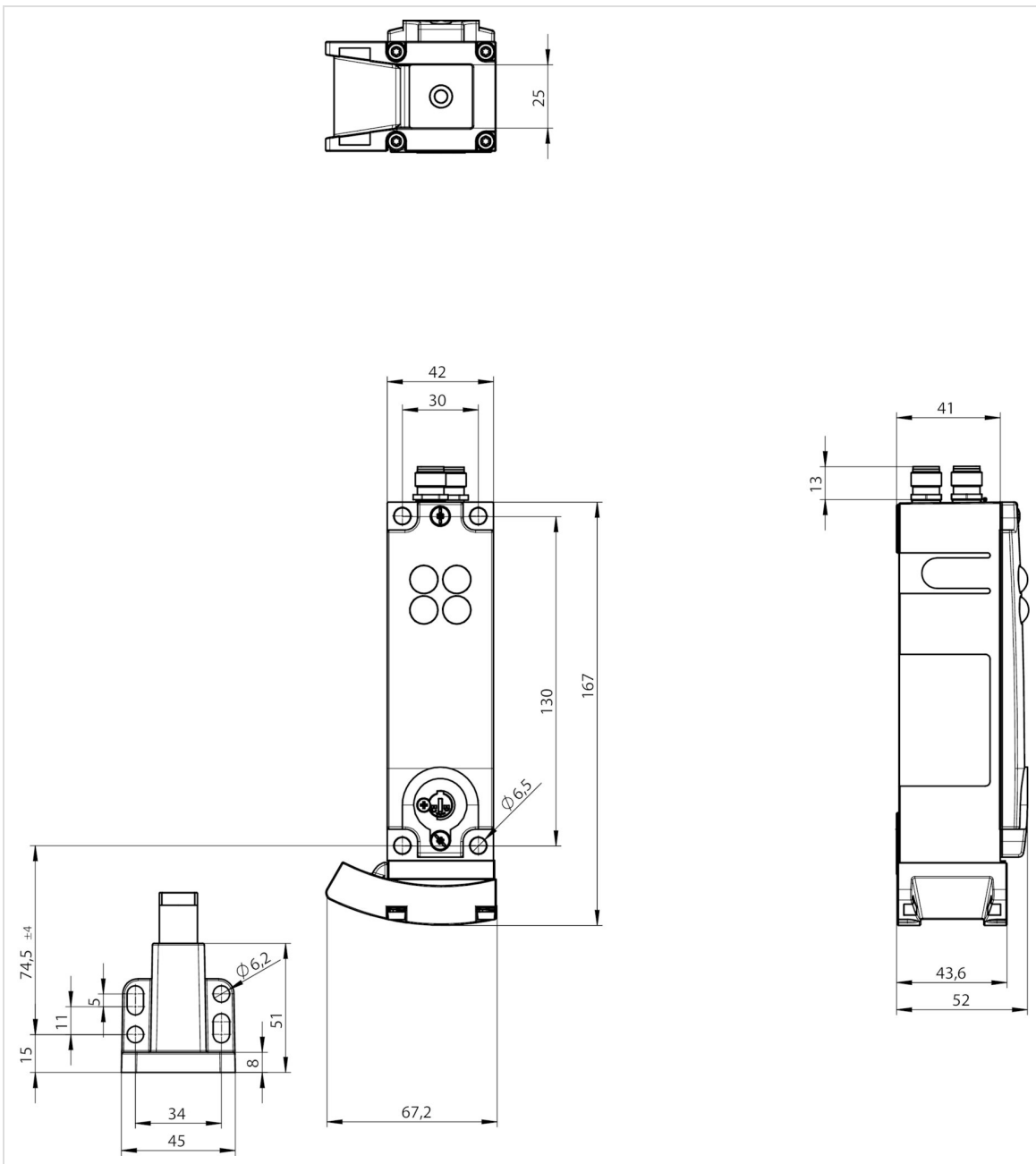
Category according to EN ISO 13849-1

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

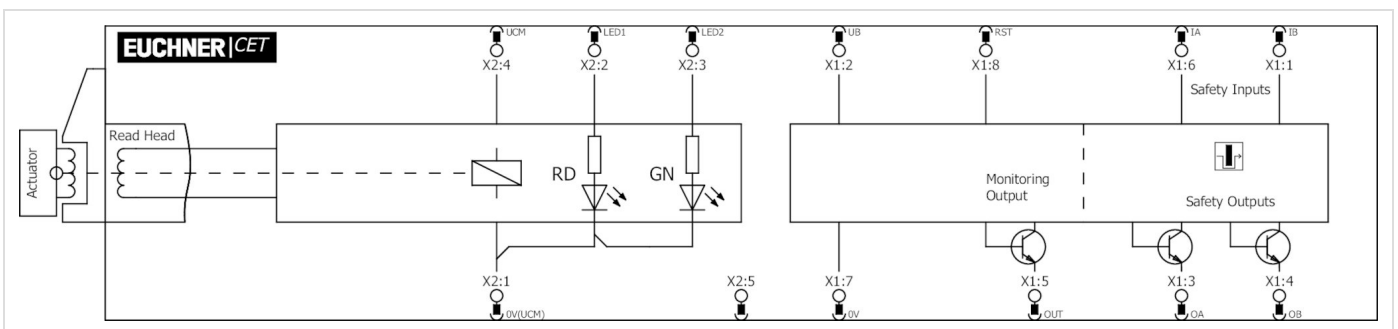
- ▶ Category 4/PL e according to EN ISO 13849-1
- ▶ The stated safety characteristics apply to any installation orientations of the safety switch.

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

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	1×10^6
Installation orientation	Any (Preferably head downward)
Ready delay	10 s
Switching frequency	max.0,5 Hz
Connection	2 plug connectors M12, 5 and 8-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
	LED1, LED2 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 (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
Safety class	
	EN IEC 61140 III

Switching load	According to UL	24V DC, class 2 (For alternatives see operating instructions)
Safety outputs OA/OB		
Extension of risk time according to EN 60947-5-3 per device		max.5 ms
Type of output		Semiconductor outputs, p-switching, short circuit-proof
Output voltage	High U(OA,OB)	UB-1,5V ... UB V DC (Values at a switching current of 50mA without taking into account the cable lengths)
	Low U(OA,OB)	0 ... 1 V DC
Output current	per safety output	1 ... 200 mA
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	Safety outputs	400 ms
Discrepancy time	Both safety outputs	max.10 ms
Monitoring output OUT		
Type of output		Semiconductor output, p-switching, short circuit-proof
Output voltage	OUT	0,8xUB ... UB V DC
Output current	OUT	1 ... 50 mA

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 (LEDs have the same ground potential as the guard locking solenoid.)	
Performance Level	Depending on external control of guard locking (LEDs have the same ground potential as the guard locking solenoid.)	
PFH _D	Depending on external control of guard locking (LEDs have the same ground potential as the guard locking solenoid.)	
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

Bridging plug M12



097645
AC-SP-SJ-097645

- ▶ Strapping plug
- ▶ M12 male plug, 4-pin

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 angled plug connector M12, 8-pin, 10m



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



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

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



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)
- ▶ PUR cable
- ▶ Cable length 20 m
- ▶ With flying lead

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



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

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



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

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

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



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

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



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

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

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



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

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



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

- ▶ M12 female plug, 8-pin
- ▶ Straight plug connector
- ▶ PUR 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

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)

Passive distribution module



120861
AC-DP-04-SA-120861

- ▶ Connection of up to 4 CES-AR, CET-AR, CTP-AR and ESL-AR
- ▶ LEDs for the indication of the door position on each port
- ▶ Can be connected in series

Y-distributor M12 with connecting cable, without IO-Link evaluation



111696
AC-YD-V0,2-SBB-111696

- ▶ For series connection of AR/BR safety switches in switch chains without IO-Link evaluation
- ▶ Y-distributor M12 with connecting cable, 2 x 5-pin, 1 x 8-pin
- ▶ Straight plug connector



112395
AC-YD-V1,0-SBB-112395

- ▶ PVC cable
- ▶ Cable length 0.2 m
- ▶ For series connection of AR/BR safety switches in switch chains without IO-Link evaluation
- ▶ Y-distributor M12 with connecting cable, 2 x 5-pin, 1 x 8-pin
- ▶ Straight plug connector
- ▶ PVC cable
- ▶ Cable length 1 m

Y-distributor M12 without IO-Link evaluation



097627
AC-YD-SBB-097627

- ▶ For series connection of AR/BR safety switches in switch chains without IO-Link evaluation
- ▶ Y-distributor M12, 2 x 5-pin, 1 x 8-pin
- ▶ Straight plug connector

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

- ▶ Cover for read heads / safety switches



CET ABDECKUNG RECHTS

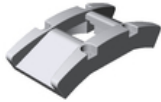
- CET and actuators CET
- ▶ For approach direction A



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



HE-L-CET-100429

- ▶ Can be secured with padlocks

Mechanical key release for CET read head/switch



098850
SCHLUESSEL-HILFSENTRIEGLUNG

- ▶ 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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