

**ITEM 110943 CET1-AR-CRA-AH-50F-SH-C2312-110943**

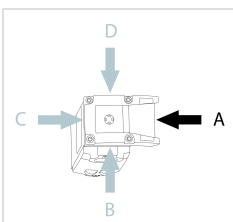
Description	Technical data	Accessories	Downloads
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**Features**

- › Safety switch with guard locking and integrated evaluation electronics
- › Locking force up to 6500 N
- › Up to 20 switches in series
- › Short circuit monitoring
- › 2 safety outputs (semiconductor outputs)
- › Up to category 4/PL e according to EN ISO 13849-1
- › With plug connector M23 (RC18)
- › Unicode
- › Teach-in input
- › Escape release, 105 mm long
- › Approach direction A (default setting on delivery)

**Approach direction**



› Figure

Horizontal  
Can be adjusted in 90° steps

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## Safety switch

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

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

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## Unicode evaluation

Each actuator is unique. The switch detects only taught-in actuators. Additional actuators can be taught in. Only the last actuator taught in is detected.

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## Solenoid operating voltage

› DC 24 V +10% -15%

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## Guard locking type

**CET1 Closed-circuit current principle**, guard locking by spring force.  
Release by applying voltage to the guard locking solenoid.

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## LED function display

**LED State** Status LED

**LED DIA** Diagnostic LED

**LED 1 rd** freely configurable

**LED 2 gn** freely configurable

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## Additional connections

**OUT** Monitoring output (semiconductor)

**RST** Reset input

**J** Teach-in input

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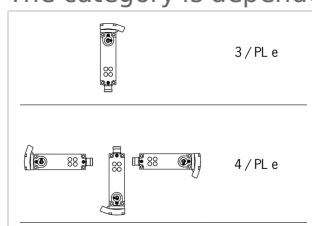
## Category according to EN ISO 13849-1

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

› Category 4/PL e according to EN ISO 13849-1

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

The category is dependent on the installation position of the safety switch:



› Figure

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## Escape release

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

## 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 <sup>[1]</sup>
Mechanical life		$1 \times 10^6$
Installation position		Any <sup>[2]</sup>
Degree of freedom		
	X	±5 mm
	Y	±5 mm
	Z	±4 mm
Ready delay		10 s
Switching frequency		max.0,5 Hz
Connection		1 plug connector M23, 19-pin, RC18
Approach speed		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
	$I_{CM}$	480 mA
Utilization category according to EN 60947-5-2		
	DC-13	24V 200mA <sup>[3]</sup>
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 ... 2 A
	External (operating voltage $U_{CM}$ )	0,5 ... 8 A
Power consumption		
	Solenoid	max.12 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 [4]
		<b>Safety outputs OA/OB</b>
Type of output		Semiconductor outputs, p-switching, short circuit-proof
Output voltage		
	High $U(OA,OB)$	$U_B - 1,5V \dots U_B$ V DC [5]
	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
	Delay per device	5 ms
Switch-on time		
	Safety outputs	400 ms
Discrepancy time		
	Both safety outputs	max.10 ms
		<b>Teach-in input J</b>
Input voltage		
	High	15 ... 27,6 V DC
	Low	0 ... 1 V DC
		<b>Monitoring output OUT</b>
Type of output		Semiconductor output, p-switching, short circuit-proof
Output voltage		
	OUT	$0,8xU_B \dots U_B$ V DC
Output current		
	OUT	1 ... 50 mA

## Operating distance

Repeat accuracy R		
	According to EN 60947-5-2	10 %

## Miscellaneous

C number	C2312	Extended escape release
For the approval according to UL the following applies		Operation only with UL class 2 power supply, or equivalent measures see operating instructions

## Reliability values acc. to EN ISO 13849-1

		Monitoring of guard locking and the safety guard position
Category		
	Head upward	3
	Head downward or horizontal	4
Performance Level		PL e
PFHD		
	Head upward	$4.29 \times 10^{-8}$
	Head downward or horizontal	$3.1 \times 10^{-9}$
		Control of the guard locking
Category		Depending on external control of guard locking <b>[6]</b>
Performance Level		Depending on external control of guard locking <b>[7]</b>
PFHD		Depending on external control of guard locking <b>[8]</b>
<hr/>		
Mission time		20 y

**[1]** Screwed tight plug connector/mating component

**[2]** Preferably head downward

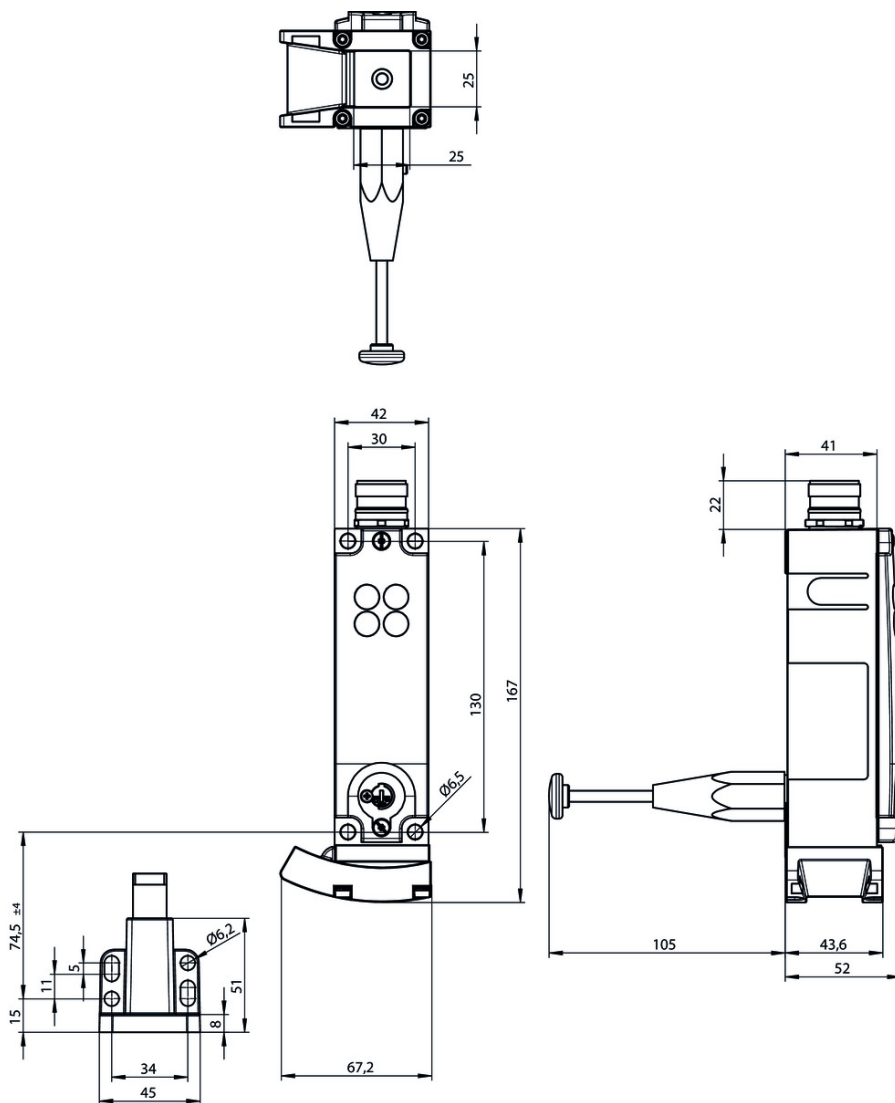
**[3]** Caution: outputs must be protected with a free-wheeling diode in case of inductive loads

**[4]** For alternatives see operating instructions

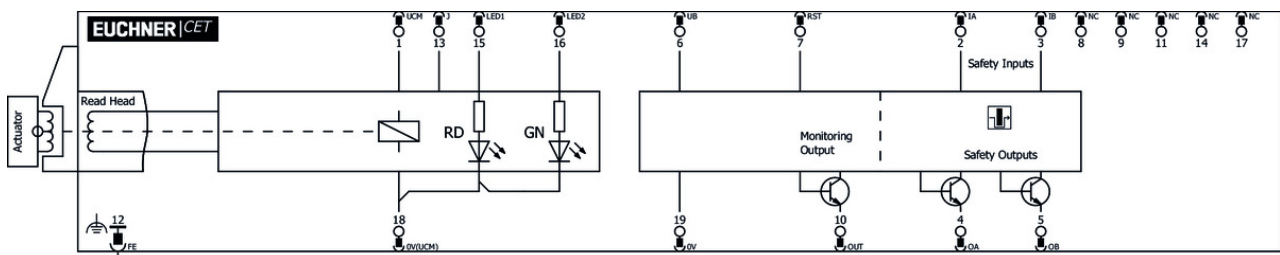
**[5]** Values at a switching current of 50mA without taking into account the cable lengths

**[6, 7, 8]** Teach-in input and LEDs have the same ground potential as the guard locking solenoid

## Dimension drawing



## Block diagram



## Connection material

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



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

### ✓ Features

- › 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



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

✓ Features

- › 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

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



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

✓ Features

- › 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



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

✓ Features

- › 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

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



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

✓ Features

- › 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



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

✓ Features

- › 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
- 

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



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

▼ Features

- › 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
- 



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

▼ Features

- › 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
- 

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



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

▼ Features

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



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

▼ Features

- › 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
- 

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

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

▼ Features





- › 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



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

▣ Features

- › 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

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



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

▣ Features

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



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

▣ Features

- › 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, 1.5m, angled



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

▣ Features

- › 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



- ▼ Features
    - › 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, 30m, straight



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

- ▼ Features
    - › 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, 20m, straight



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

- ▼ Features
    - › 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, straight



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

- ▼ Features
    - › 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, 10m, straight



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

- ▼ Features
    - › 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, straight



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

▼ Features

- › 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, 1.5m, straight



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

▼ Features

- › 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, straight



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

▼ Features

- › 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, straight



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

▼ Features

- › 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, straight



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

▼ Features

- › M23 plug connector, 18-pin + PE
- › Straight plug connector
- › PUR cable
- › Cable length 8 m
- › With flying lead

- › Cores color-coded
- 

▼ Female plug RC18 angled



**074617** RC18WF

▼ Features

- › Plug connector M23, angled
  - › Number of pins: 19-pin with screen bonding clamp
- 

▼ Female plug RC18 straight



**074616** RC18EF

▼ Features

- › Plug connector M23, straight
  - › Number of pins: 19-pin with screen bonding clamp
- 

▼ Female plug RC18 straight with option C1825



**077025** RC18EF-C1825

▼ Features

- › Plug connector M23, straight
  - › Number of pins: 19-pin with screen bonding clamp
- 

▼ Female connector RC18 angled with option C1825



**077026** RC18WF-C1825

▼ Features

- › Plug connector M23, angled
  - › Number of pins: 19-pin with screen bonding clamp
- 

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



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

▼ Features

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

## Function expansion

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▼ Cover for read head and actuator CET



**098808** CET ABDECKUNG RECHTS

▼ Features

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



### **098807** CET ABDECKUNG LINKS

#### ✓ Features

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

### ✓ Emergency unlocking for CET



### **103714** NOTENTSPERRUNG CET

### ✓ Mechanical key release for CET read head/switch



### **098850** SCHLUESSEL-HILFSENTRIEGELUNG

#### ✓ Features

- › Identical locking
- › Key removable in “unlocked” and “locked” positions

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



### **114091** CET-DR

### ✓ Teach-in adapter for CET 1/3



### **122748** AC-TA-A1-SH-122748

#### ✓ Features

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

### ✓ Cover for actuator CET



### **124979** AM-C-124979

#### ✓ Features

- › Cover for actuator CET
- › Horizontal and vertical fastening option on the actuator
- › Mounting using 4 screws M5x16 (included with the actuator)
- › Not suitable in combination with lockout bar for actuator CET

### ✓ Lockout mechanism for CET actuator



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

#### ✓ Features

- › 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

#### ✓ Features

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

▼ Extension of the escape release CET



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

▼ Features

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

▼ Holder for lockout mechanism CET actuator



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

▼ Features

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

▼ Lockout bar and holder for CET actuators



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

▼ Features

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

## Mounting accessories

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



**106695** EMP-L-CET

▼ Features

- › 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
- 

▼ Mounting plate EM-P actuator for safety switch CET



**126400** AM-P-126400

▼ Features

- › 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 switch for safety switch CET



**126399** AM-P-126399

▼ Features

- › 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

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▼ Mounting plate EM-P handle for safety switch CET



**126398** AM-P-126398

▼ Features

- › 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 EMP-B-... for actuator CET



**106694** EMP-B-CET

▼ Features

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

## Bolt

▼ Bolt CET-A-C/F with escape release



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

▼ Features

- › 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

▼ Features

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

## Actuator

▼ Actuator CET-A-BWK-50X





















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

▼ Features



















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

## Instructions

### Bezpečnostní informace CET (-AR/-AP)

	Doc. no.	Version	Language	Download
Sicherheitsinformation CET (-AR/-AP)	105517	14-01/17		 0.7 MB
Información de seguridad CET (-AR/-AP)				
Information de sécurité CET (-AR/-AP)				
Informazioni sulla sicurezza CET (-AR/-AP)				
Safety Information CET (-AR/-AP)				
Bezpečnostní informace CET (-AR/-AP)	105517	14-01/17		 0.2 MB
Informação de segurança CET (-AR/-AP)	105517	14-01/17		 0.2 MB
Güvenlik bilgisi CET (-AR/-AP)	105517	14-01/17		 0.3 MB
安全情報 CET (-AR/-AP)	105517	14-01/17		 0.6 MB
Информация о безопасности CET (-AR/-AP)	105517	14-01/17		 0.3 MB
安全信息 CET (-AR/-AP)	105517	14-01/17		 0.3 MB


### Návod k použití Bezpečnostní spínač s kódovaným transpondérem a jištěním ochranného krytu CET.-AR-... (Unicode/Multicode)









	Doc. no.	Version	Language	Download
Betriebsanleitung Transpondercodierter Sicherheitsschalter mit Zuhaltung CET.-AR-... (Uni-/Multicode)	2110788	12-07/18		 3.3 MB
Mode d'emploi Interrupteur de sécurité à codage par transpondeur avec interverrouillage CET.-AR-... (uni-/multicode)	2110788	12-07/18		 3.3 MB
Manual de instrucciones Interruptor de seguridad con codificación por transponder con bloqueo CET.-AR-... (Unicode/Multicode)	2110788	12-07/18		 3.3 MB
Návod k použití Bezpečnostní spínač s kódovaným transpondérem a jištěním ochranného krytu CET.-AR-... (Unicode/Multicode)	2110788	12-07/18		 3.6 MB
Operating Instructions Transponder-Coded Safety Switch With Guard Locking CET.-AR-... (Unicode/Multicode)	2110788	12-07/18		 3.3 MB
Istruzioni di impiego Finecorsa di sicurezza con codifica a transponder con meccanismo di ritenuta CET.-AR-... (Unicode/Multicode)	2110788	12-07/18		 3.3 MB
操作指示書トランスポンダー型コード化安全スイッチ CET.-AR-... (ユニコード/マルチコード)	2110788	12-07/18		 3.7 MB
Návod na prevádzku Bezpečnostný spínač kódovaný transpondérom s istením CET.-AR-... (Uni-/Multicode)	2110788	12-07/18		 3.5 MB
İşletim kılavuzu Kapalı tutmalı CET.-AR-... (Uni-/Multicode)	2110788	12-07/18		 3.7 MB



使用说明书应答机编码安全开关 CET.-AR-... (特殊/通用编码)	2110788	12-07/18		 3.7 MB
Инструкция по эксплуатации Транспондерный предохранительный выключатель с защитной блокировкой CET.-AR-... (Uni-/Multicode)	2110788	12-07/18		 3.8 MB





## Catalogs

-  Transpondercodierte Sicherheitsschalter - Verriegelungseinrichtungen und Zuhaltungen  
 Transponder-coded safety switches - Interlocking devices and guard locking devices  
 Interruptores de seguridad con codificación por transponder - Dispositivos de enclavamiento y bloqueos  
 Interrupteurs de sécurité à codage par transpondeur - Dispositifs de verrouillage et interverrouillages

	Doc. no.	Version	Language	Download
Transpondercodierte Sicherheitsschalter - Verriegelungseinrichtungen und Zuhaltungen	127594	02-01/18		 5.2 MB
Interrupteurs de sécurité à codage par transpondeur - Dispositifs de verrouillage et interverrouillages	137558	02-01/18		 5.2 MB
Interruptores de seguridad con codificación por transponder - Dispositivos de enclavamiento y bloqueos	137560	02-01/18		 5.2 MB
Transponder-coded safety switches - Interlocking devices and guard locking devices	127595	02-01/18		 5.1 MB

## Declaration of conformity

-  EU-Konformitätserklärung

	Doc. no.	Version	Language	Download
EU-Konformitätserklärung Declaración UE de conformidad Déclaration UE de conformité Dichiarazione di conformità EU declaration of conformity	2110802	10-01/17	    	 0.3 MB

## CAD data

CAD data for this item on TraceParts