

Read head CET-AX-...

- ▶ Read head with guard locking and guard lock monitoring
- ▶ Up to category 4
- ▶ High locking forces up to 6500 N
- ▶ Integrated transponder coding
- ▶ Metal housing

Design and functionality

With the read head CET, EUCHNER provides monitored guard locking based on non-contact transponder technology. This means that the switch can also be used on systems with overtravelling machine movements for the personal protection.

When closing the safety guard (hinged or sliding door), the spring-loaded transponder in the actuator is inserted into the recess on the read head.

The read head detects the closed safety guard in its guard locked position. The CES evaluation electronics enables the safety circuit when the safety guard is locked.

When the moving parts of the machine come to a standstill, the solenoid integrated into the read head can be activated by a safe standstill monitor or by a timer relay. The solenoid's plunger then raises the spring-loaded transponder, which allows the safety guard to be opened.

Use of the read head even in extremely harsh environments

Due to the extremely robust metal housing, the switch is suitable for the harshest ambient conditions and when guard locked achieves a locking force of 6500 N - a characteristic that is advantageous particularly for heavy doors.

With the safety guard closed, the CET provides around ± 5 mm of freedom of movement in all 3 directions (x, y, z direction) - even if the safety guard drops over time it will not be necessary to re-adjust the actuator.

The insertion slide can be rotated in 90° steps. As a result the switch is suitable for doors hinged on the right and left.

Different versions

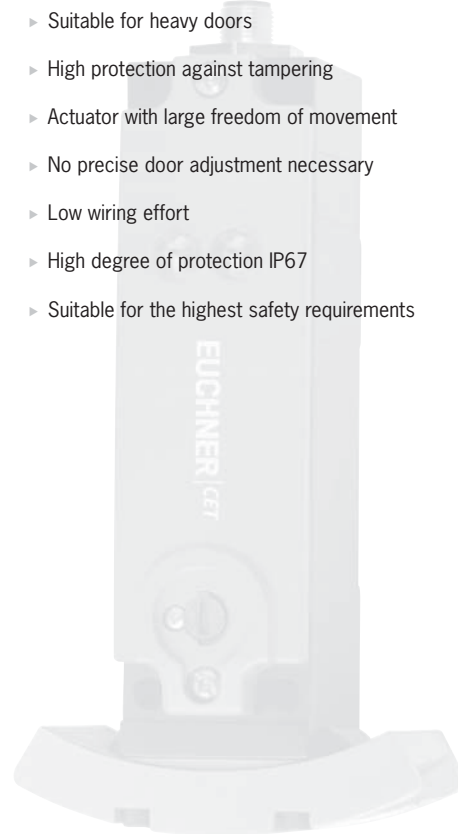
Along with the standard version with a single insertion slide, there is also the CET with a double insertion slide that is perfectly suited to swing doors and rotary tables. That is, wherever the approach is from two sides and where the read head must also be "passed over".

As an option, EUCHNER also offers versions with escape release. This feature enables people locked in to open the locked safety guard from the inside in an emergency.

The range is supplemented by versions with different plug variants and freely configurable LED control.

Your advantages

- ▶ Robust die-cast zinc housing for harsh environments
- ▶ Suitable for heavy doors
- ▶ High protection against tampering
- ▶ Actuator with large freedom of movement
- ▶ No precise door adjustment necessary
- ▶ Low wiring effort
- ▶ High degree of protection IP67
- ▶ Suitable for the highest safety requirements





Read head CET-AX-... with guard locking and guard lock monitoring

- ▶ Read head with guard locking
- ▶ Locking force up to 6500 N
- ▶ Up to category 4 / PL e according to EN ISO 13849-1



For possible combinations see page 63

Approach direction



Horizontal
Can be adjusted in 90° steps

Mechanical release

Is used for releasing the guard locking with the aid of a tool. The mechanical release must be sealed to prevent tampering (for example with sealing lacquer).

Escape release (optional)

Is used for the manual release of the guard locking from within the danger area without tools.

Solenoid operating voltage

- ▶ DC 24 V +10%, -15%

Guard locking types

- ▶ **CET1** Closed-circuit current principle
Release by applying voltage to the interlocking solenoid.
- ▶ **CET2** Open-circuit current principle
Guard locking by applying voltage to the interlocking solenoid.
Release by spring force.

LED function display

- ▶ **LED red** illuminates when solenoid switched on or freely configurable
- ▶ **LED green** freely configurable

Category in accordance with EN ISO 13849-1

The category in accordance with EN ISO 13849-1 is dependent on the evaluation unit used and on the installation position (see possible combinations on page 63).

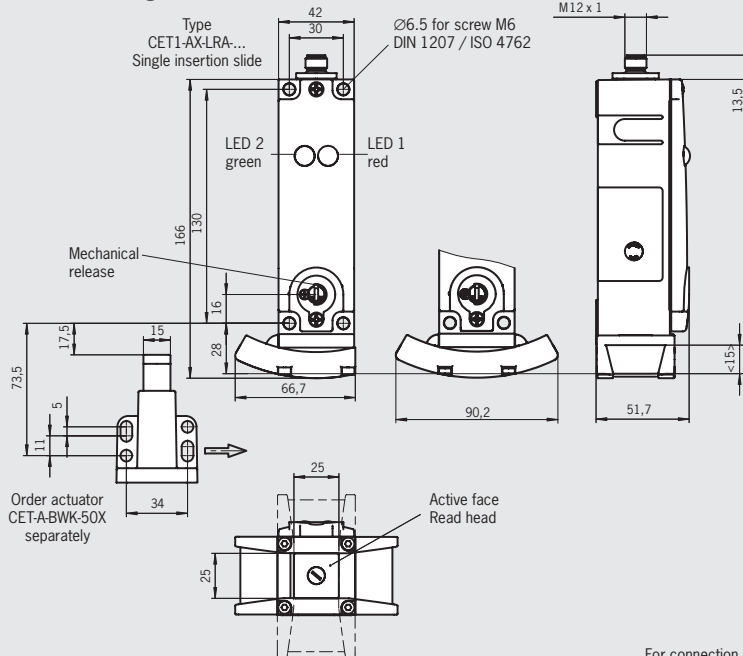
Notes

- ▶ Special EUCHNER connection cables are required for the connection (see page 65/66/68). Please take into account in the order!
- ▶ The read head CET is only allowed to be operated in conjunction with the actuator CET-A-BWK-50X. The actuator must be ordered separately.

Ordering table see page 62.

Read head CET... With plug connector M12

Dimension drawing

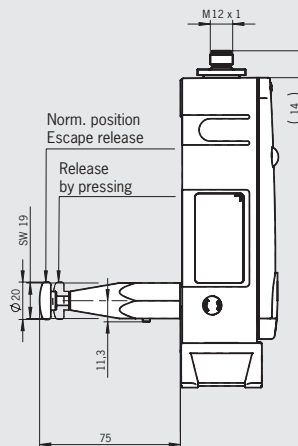


For connection cables see page 68

Read head CET... with escape release

Dimension drawing

Order no.
102 161
103 750

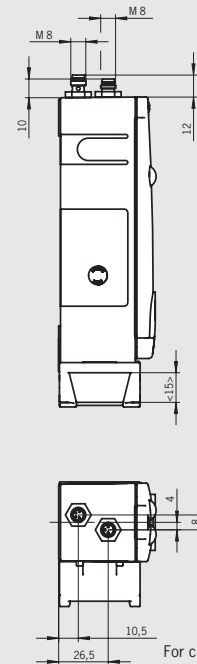


For connection cables see page 68

Read head CET... with 2 plug connectors M8

Dimension drawing

Order no.
102 988
103 444

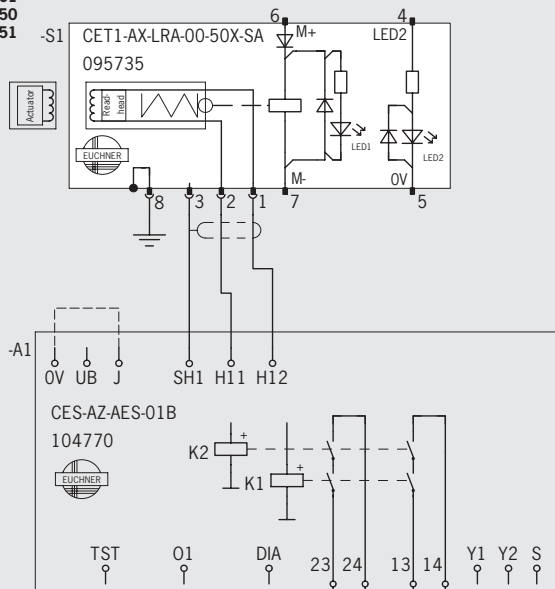


For connection cables see page 65/66

Wiring diagrams

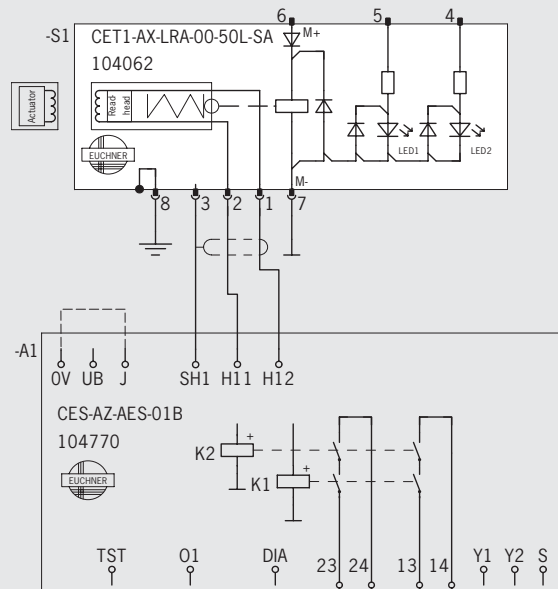
Order no.
095 735
100 399
102 161
103 750
104 051

With plug connector M12



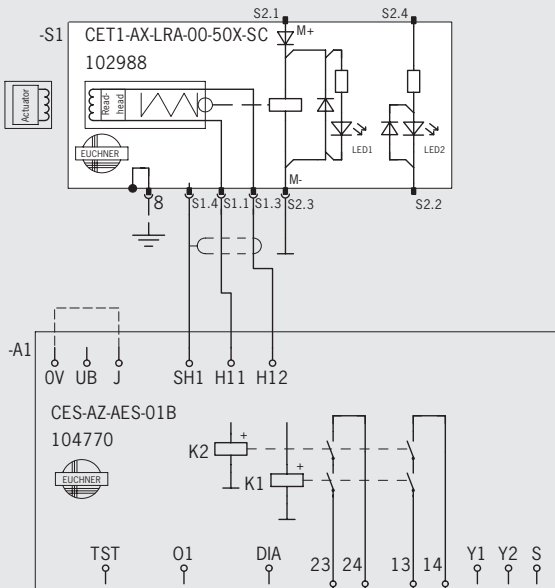
Order no.
104 062

With plug connector M12 and
2 freely configurable LEDs

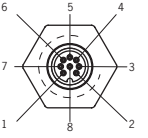
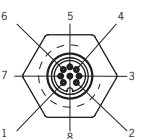
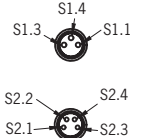


Order no.
102 988
103 444

With 2 plug connectors M8



Pin assignment

Read head	Plug connectors (view of connection side)	PIN	Function	Wire color connection cable*
CET1-AX-LRA-00-50X-SA 095 735 CET1-AX-LDA-00-50X-SE 100 399 CET1-AX-LRA-00-50F-SA 102 161 CET1-AX-LDA-00-50F-SA 103 750 CET1-AX-LRA-00-50X-SF 104 051	With plug connector M12  For connection cable see page 68	1	Read head data wire	BN
		2	Read head data wire	WH
		3	SH, data wire screen	(Screen)
		4	LED 2 freely configurable, 24 V	YE
		5	OV	GY
		6	M+, U _B /24 V solenoid	PK
		7	M-, 0 V/GND solenoid	BU
		8	Housing	RD
CET1-AX-LRA-00-50L-SA 104 062	With plug connector M12 and 2 freely configurable LEDs  For connection cable see page 68	1	Read head data wire	BN
		2	Read head data wire	WH
		3	SH, data wire screen	(Screen)
		4	LED 2 freely configurable, 24 V	YE
		5	LED 1 freely configurable, 24 V	GY
		6	M+, U _B /24 V solenoid	PK
		7	M-, 0 V/GND solenoid and LEDs	BU
		8	Housing	RD
CET1-AX-LRA-00-50X-SC 102 988 CET1-AX-LDA-00-50X-SC 103 444	With 2 plug connectors M8  For connection cable see page 65/66	S 1.1	Read head data wire	BN
		S 1.3	Read head data wire	WH
		S 1.4	SH, data wire screen	BU
		S 2.1	M+, U _B /24 V solenoid	BN
		S 2.2	OV	WH
		S 2.3	M-, 0 V/GND solenoid	BU
		S 2.4	LED 2 freely configurable, 24 V	BK

* Only for standard EUCHNER connection cable

Ordering table

Order no. / item	Closed-circuit current principle	Open-circuit current principle	Plug connector M12	2 plug connectors M8	Single insertion slide	Double insertion slide	Escape release	2 LEDs (1 freely configurable)	2 LEDs (2 freely configurable)
095 735 CET1-AX-LRA-00-50X-SA	●		●		●			●	
100 399 CET1-AX-LDA-00-50X-SE	●		●			●		●	
104 051 CET1-AX-LRA-00-50X-SF	●		● ¹⁾		●			●	
104 062 CET1-AX-LRA-00-50L-SA	●		●		●				●
102 161 CET1-AX-LRA-00-50F-SA	●		●		●		●	●	
103 750 CET1-AX-LDA-00-50F-SA	●		●			●	●	●	
102 988 CET1-AX-LRA-00-50X-SC	●			●	●			●	
103 444 CET1-AX-LDA-00-50X-SC	●			●		●		●	
096 327 CET-A-BWK-50X	Actuator, locking force 6500 N (safety screws included)								
073 456 M5x16/V100	Safety screws M5 x 16 for actuators (replacement), packaging unit: 100 pcs.								

1) Plug connector can be rotated by 360°.

Technical data read head CET...

Safety switch

Parameter	Value			Unit
	min.	typ.	max.	
General				
Material, slide	Stainless steel			
Material, read head housing	Die-cast aluminum			
Installation position	Any (recommendation: actuating head downward)			
Degree of protection according to IEC 60529	IP67 (screwed tight with the related mating connector)			
Mechanical life	1 x 10 ⁶ operating cycles			
Ambient temperature	-20	-	+55	°C
Approach speed, max.	20			m/min
Locking force max.	6500			N
Locking force F _{zh} in accordance with test principles GS-ET-19	$F_{zh} = \frac{F_{max}}{1.3} = 5000$			
Weight	Approx. 1.0			kg
Freedom of movement X, Y, Z (in guard locked position)	± 5			mm
Switch-on distance	2			mm
Switching frequency	1 Hz (This value can vary depending on the evaluation unit used. See system documentation of the instructions for the related evaluation unit)			
Connection	M12 plug connector, 8-pin			
Rated insulation voltage U _i	50			V
Rated impulse withstand voltage U _{imp}	1.5			kV
Solenoid				
Connection	Reverse polarity protected			
Solenoid operating voltage	24 +10%, -15%			V DC
Solenoid power consumption	10			W
Duty cycle	100			%

Actuator

Parameter	Value			Unit
	min.	typ.	max.	
General				
Housing material	Stainless steel			
Installation position	Active face opposite read head			
Degree of protection according to IEC 60529	IP67			
Mechanical life	1 x 10 ⁶ operating cycles			
Ambient temperature	-20	-	+55	°C
Locking force max.	6500			N
Weight	Approx. 0.25			kg
Stroke max.	15			mm
Power supply	Inductive, via read head			

LED


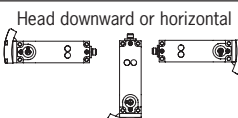
Parameter	Value			Unit
	min.	typ.	max.	
General				
Connection voltage	24 ± 15%			V
Current consumption max.	6			mA

Important:

The maximum safety category that can be achieved in accordance with EN ISO 13849-1 is dependent on the installation position of the safety switch and the evaluation unit used. Pay attention to the table below during the selection of the evaluation unit.

Possible combinations

(extract only, you will find further possible combinations in the system manual for the evaluation unit used)

Read head/ order number	Evaluation unit/ order number	Installation position	Achievable category and PL according to EN ISO 13849-1
CET-AX-...	CES-AZ-ES-...	Head upward 	3 / PL e In this installation position the PFHd value of the system (evaluation unit + read head) reduces to 4.29 x 10 ⁻⁸
		Head downward or horizontal 	4 / PL e In this installation position the PFHd value for the system (evaluation unit + read head) is the same as that for the evaluation unit