



# EUCHNER

More than safety.



Headquarters in Leinfelden-Echterdingen



Logistics center in Leinfelden-Echterdingen



Production location in Unterböhringen

## Internationally successful – the EUCHNER company

EUCHNER GmbH + Co. KG is a world-leading company in the area of industrial safety technology. EUCHNER has been developing and producing high-quality switching systems for mechanical and systems engineering for more than 60 years.

The medium-sized family-operated company based in Leinfelden, Germany, employs around 800 people around the world.

18 subsidiaries and other sales partners in Germany and abroad work for our international success on the market.

## Quality and innovation – the EUCHNER products

A look into the past shows EUCHNER to be a company with a great inventive spirit. We take the technological and ecological challenges of the future as an incentive for extraordinary product developments.

EUCHNER safety switches monitor safety doors on machines and installations, help to minimize dangers and risks and thereby reliably protect people and processes. Today, our products range from electromechanical and electronic components to intelligent integrated safety solutions. Safety for people, machines and products is one of our dominant themes.

We define future safety technology with the highest quality standards and reliable technology. Extraordinary solutions ensure the great satisfaction of our customers.

The product ranges are subdivided as follows:

- ▶ Transponder-coded Safety Switches
- ▶ Transponder-coded Safety Switches with guard locking
- ▶ Multifunctional Gate Box MGB
- ▶ Access management systems (Electronic-Key-System EKS)
- ▶ Electromechanical Safety Switches
- ▶ Magnetically coded Safety Switches
- ▶ Enabling Switches
- ▶ Safety Relays
- ▶ Emergency Stop Devices
- ▶ Hand-Held Pendant Stations and Handwheels
- ▶ Safety Switches with AS-Interface
- ▶ Joystick Switches
- ▶ Position Switches

 **made  
in  
Germany**

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## CES technology from the inventor of transponder-coded safety engineering – transponder-coded safety systems from EUCHNER

The transponder-coded safety systems from EUCHNER are modern interlocking devices or guard locking devices of type 4 for the protection of persons, machines and processes. They are based on non-contact transponder technology and consist of a coded actuator, a read head and evaluation electronics. In some systems, the read head and evaluation electronics form a self-contained unit. All safety functions are combined in a single component here (internal evaluation). With external evaluation, the actuator is read via a separate read head connected to an evaluation unit in the control cabinet or in the field.

### External evaluation

With external evaluation, the evaluation electronics for the transponder signals are accommodated in a separate housing. This separation minimizes the read head's size. This is particularly advantageous if the available space at the location to be protected is very limited. All components in this catalog are part of a system with external evaluation.

### Internal evaluation

Transponder signals are evaluated in the field, not in the control cabinet.

**You will find more information on these devices in the catalog for transponder-coded safety switches or at [www.euchner.com](http://www.euchner.com).**

## The advantages of transponder-coded safety systems

Transponder-coded safety systems from EUCHNER provide the following advantages:

- Maximum protection against tampering due to highly coded actuator
- Highest safety category and Performance Level (PL) according to EN ISO 13849-1
- More tolerance on the door guide

- Less susceptible to vibration and shock
- The actuator can be rotated within the read head's actuating range
- Insensitive to dirt on the surface
- Can be used in harsh environment
- Suitable for areas with increased hygiene requirements
- Depending on the application, a device with a suitable actuating range can be selected

## Type examinations and approvals

EUCHNER is allowed to undertake CE certification for almost all products without the involvement of a notified body, as EUCHNER is allowed to use the system for full quality assurance according to Annex X of the Machinery Directive. This procedure has been confirmed by TÜV Rheinland and is checked regularly. Nevertheless, additional type examinations are performed by a notified body such that an independent body again confirms that all laws and standards are met.

Many of the devices listed in this catalog have been tested, for instance by the German Social Accident Insurance association (DGUV), formerly the employers' liability insurance association (BG), and are given in the lists from the DGUV.

For countries outside the EU, approvals often are necessary for safety products. Many of the products are listed by Underwriters Laboratories (UL) or are marked according to the EurAsian Conformity (EAC) standard.

The approval symbols on the individual pages of the catalog indicate which tests and approvals are available and which body tested the devices. With the aid of the approval symbols listed below, you can quickly see which approvals are available for the related device:



**You will find further information on the topic of directives and standards in the Service area at [www.euchner.com](http://www.euchner.com).**

## Selection criteria

### Evaluation units

#### Control cabinet evaluation unit CES-AZ

 CES evaluation units combine transponder evaluation with a safety relay in a single device. Depending on version, up to four read heads can be connected. They feature two safety outputs and monitoring outputs for each connected read head, and they also possess connections for a monitored start button and feedback loop.

The safety outputs are switched via relay contacts and permit direct connection of contactors and loads up to 6 A. The devices are each available with unicode and multicode evaluation. The device status can be seen at any time via the indicator LEDs.

#### Field evaluation unit CES-FD

 This device permits evaluation in the field. The devices are particularly suitable for the connection of safety evaluation units and safety control systems that require short test pulses. The M12 plug connector makes it possible to forward the safety signals directly to an IP 67 field module in a decentral peripheral system, e.g. ET200pro from SIEMENS.

The safe semiconductor outputs have short circuit monitoring and correspond to the standard of the system family AP. The device status can be seen at any time via the indicator LEDs.

### Read heads

The read head is fastened to the fixed part of the guard and is connected to the evaluation unit via a two-core screened cable. The actuator fastened to the guard is moved towards the read head by closing the door. When the operating distance is reached, power is supplied to the actuator via the read head and the read head transfers the actuator's data to the evaluation unit.

Actuator and read head have a wide actuating range and a broad hysteresis. Misalignment of the door will therefore not result in the system switching off unintentionally. If the actuator is positioned exactly at the limit of the operating distance, vibration at the guard will not cause the machine to stop unintentionally.

EUCHNER provides read heads in a very wide range of designs, with and without guard locking.

#### Read heads without guard locking (interlocking)

 Interlocking is a feature that ensures a dangerous machine movement cannot be undertaken as long as a guard is open.

For this purpose EUCHNER has read heads that, in combination with the evaluation unit, safely detect whether the actuator is in the actuating range and the guard is closed.

#### Read heads with guard locking

 Guard locking is a feature that prevents the unintentional opening of a door as long as there is a hazard. For this purpose, EUCHNER has read heads with guard locking in its range. They function like any other CES read head, but also contain a guard locking mechanism.

Different safety levels can be achieved depending on the evaluation unit used. You will find exact information on the level of safety that can be achieved in the combinations tables for each product.

#### Key adapter CKS

 These devices represent a special type of read head. The CKS does not monitor the door position, but instead detects whether there is a CKS key in the device.

This safe key detection can prevent the starting of hazardous movements if the key is not inserted, for example. The possible applications are very wide ranging.

## Coding

Each transponder actuator features coding that far surpasses the requirements in EN ISO 14119 for a type 4 switch with high coding level. The code in an actuator cannot be reprogrammed.

### Unicode evaluation

With the unicode version, the actuators must be taught-in on the evaluation unit. During the teach-in operation, the actuator code is assigned to the evaluation unit. This code is saved in the evaluation unit. Whenever an actuator is read, the evaluation unit compares the code just read with the last code saved. Only if the two bit patterns are identical is the actuator detected and the enable paths are closed. The number of possible teach-in operations is dependent of the evaluation unit used. Only the last actuator taught-in is detected. Unicode detection provides a high level of protection against tampering.

### Fixcode evaluation

With fixcode devices, the teach-in operation is performed at EUCHNER prior to delivery. An actuator is permanently assigned to the device in this process. The device can be operated only with this one actuator. No additional actuators can be taught in.

### Multicode evaluation

Unlike systems with unicode evaluation, with multicode evaluation a specific actuator code is not requested, instead it is only checked whether the actuator is of a suitable type that can be detected by the system (multicode detection). There is no exact comparison of the actuator code with a code saved in the evaluation unit. As a result, a teach-in operation for the actuator is not necessary. Devices with multicode evaluation possess a low coding level.

## Operating distances and active face

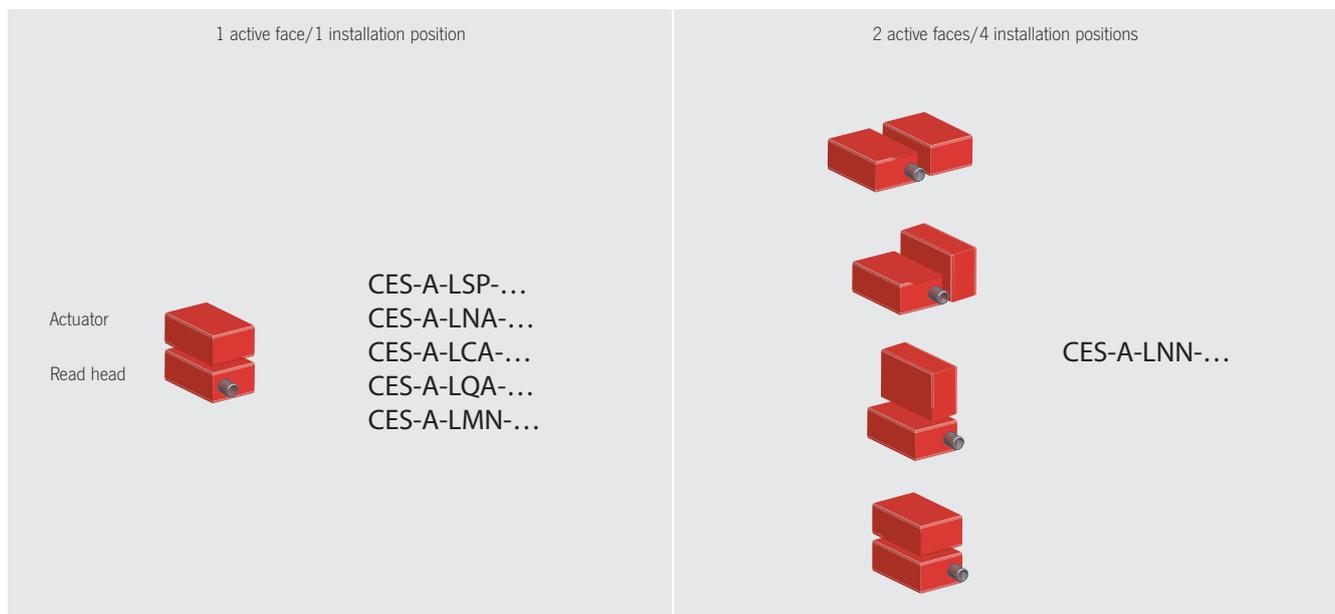
The operating distances indicate the distances between the actuator and sensor from which a switching operation is triggered. The active faces on the actuator and read head define these distances. The faces must be parallel to each other on approach.

### Installation position

Dependent on the housing design, the devices have one or more active faces and therefore one or more possible approach directions.

### The transponder field

Transponder-coded systems operate using electromagnetic fields. These fields differ depending on the design of the device.



## The transponder field

Transponder-coded systems operate using electromagnetic fields. These fields differ depending on the design of the device.

## Operating distance, release distance and hysteresis

On moving an actuator toward a switch, a switching signal is triggered on reaching the operating distance. The actuator is detected and the safety outputs are switched on.

If the actuator is removed again from the field, the safety outputs are switched off again on reaching the release distance. As the operating distance and release distance are different, there is a switching hysteresis. The larger the switching hysteresis, the less sensitive the system is to vibration.

## Typical operating distances

Each system has typical and assured operating distances. The assured operating distances are defined in the EN 60947-5-3 standard and are briefly explained in the following.

The information in the catalog corresponds to the typical operating distances.

## Assured operating distances $s_{ao}$

According to EN 60947-5-3, the assured operating distances are the distances from the active sensor face within which the presence of the actuator is correctly detected under all defined environmental conditions and manufacturing tolerances.

## Assured release distance $s_{ar}$

According to EN 60947-5-3, the assured release distance is the distance from the active sensor face outside which the actuator is no longer detected under any environmental conditions, manufacturing tolerances and fault conditions, so that the system switches off.

## Limit-range indication

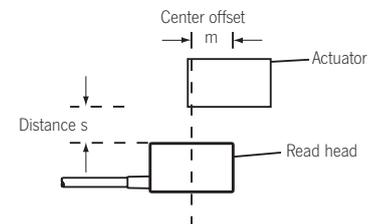
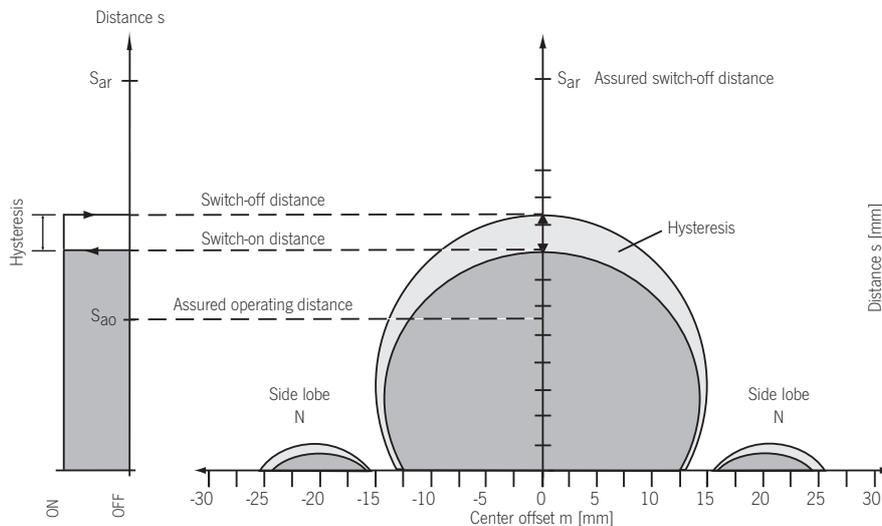
The device detects if the actuator wanders out of the actuating range and indicates that the actuator is in the limit range by flashing the STATE LED. This allows the safety door to be readjusted in time.

## Side lobes

Transponder fields in general comprise a main field and secondary fields (so-called side lobes). The secondary fields are significantly smaller than the main field and are to the side of the main field. A transponder is also read if it is in a secondary field. This effect is undesirable and on the very close, side approach of an actuator causes problems because the actuator is read before it has reached the main field (and therefore the intended position).

## Surrounding material and installation depth

The operating distances are reduced by flush, recessed installation in the surrounding material. This effect is stronger with a metallic surrounding material than with plastic, for example. Completely encapsulated installation in metal in which the active face on the transponder is covered is generally not possible, as the field is attenuated excessively.

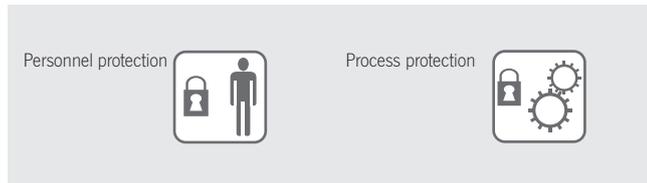


## Guard locking type

### Process protection or personnel protection?

As per EN ISO 14119, guard locking for personnel protection requires continuous monitoring of the guard locking function. On opening or failure of the guard locking, the safety outputs must be switched off.

Any guard locking for personnel protection can also be used as guard locking for process protection.



Guard locking for process protection is not monitored. The safety function of these devices is limited to position monitoring for the safety door. Monitoring the guard locking state is not part of the safety function.

### Principle of operation of guard locking

EUCHNER offers two guard locking methods:

#### ■ Electromechanical guard locking

Here a guard locking pin is moved, which prevents the removal of the actuator (form locking).

#### ■ Magnetic guard locking

Here, the actuator is held in place by the magnetic attraction force on the guard locking solenoid (force locking).

### Guard locking principle

EUCHNER offers two guard locking principles:

| Guard locking method            | Closed-circuit current principle                                | Open-circuit current principle                                  |
|---------------------------------|---|---|
| Electromechanical guard locking | Guard locking actuated by spring force and released by power-ON | Guard locking actuated by power-ON and released by spring force |
| Magnetic guard locking          |   | Guard locking actuated by power-ON and released by power-OFF    |

## Evaluation units

### CES-AZ

- ▶ Evaluation of signals in the control cabinet
- ▶ Versions for the connection of one, two or four read heads
- ▶ Integrated safety relay
- ▶ Two relay safety outputs (relay contacts)
- ▶ PL e/category 4 according to EN ISO 13849-1
- ▶ Unicode and multicode variants available



### CES-FD

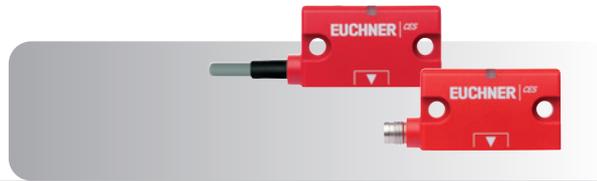
- ▶ Evaluation of signals in the field
- ▶ Connection of a CES read head or a CKS key adapter via plug connector
- ▶ Familiar EUCHNER AP interface
- ▶ Direct connection to IP67 field modules for various decentralized peripheral systems
- ▶ PL e/category 4 according to EN ISO 13849-1
- ▶ Unicode and multicode variants available



## Read heads without guard locking

### CES-A-LNN

- ▶ Cube-shaped design 42 x 25 mm
- ▶ 2 active faces
- ▶ LED for indicating the door position
- ▶ Degree of protection IP67
- ▶ M8 plug connector/connecting cable



### CES-A-LNA

- ▶ Cube-shaped design 42 x 25 mm
- ▶ One active face
- ▶ Degree of protection IP 67/IP 69/IP 69K
- ▶ Version with increased resilience to aggressive media
- ▶ M8 plug connector/connecting cable



### CES-A-LQA

- ▶ Square design 50 x 50 mm
- ▶ One active face
- ▶ Large tolerance for center offset
- ▶ Degree of protection IP67
- ▶ M8 plug connector



### CES-A-LSP

- ▶ Very flat design
- ▶ Optimized for profile mounting
- ▶ One active face
- ▶ LED for indicating the door position
- ▶ Degree of protection IP67
- ▶ Connecting cable



### CES-A-LMN

- ▶ Cylindrical design M12
- ▶ One active face
- ▶ Suitable for pressure ranges up to 10 bar
- ▶ Large temperature range
- ▶ Degree of protection IP67/IP69/IP69K
- ▶ M8 plug connector



## Read heads with guard locking

### CEM-A

- ▶ Magnetic guard locking for process protection
- ▶ Locking force 650 N or 1000 N
- ▶ Version with adjustable adhesive force (acts with guard locking inactive)
- ▶ Degree of protection IP67
- ▶ LED indicator (voltage at solenoid)



### CET-AX

- ▶ Guard locking for personnel protection according to EN 14119
- ▶ Very high locking force up to 6500 N
- ▶ Head can be rotated in 90° steps
- ▶ Actuator guide with large freedom of movement
- ▶ Metal housing
- ▶ Degree of protection IP67
- ▶ LED indicator (guard locking position)
- ▶ M8/M12 plug connector



## Key adapter CKS

### **CKS**

- ▶ Key adapter with integrated CES read head
- ▶ Safe detection of the CKS key in the key adapter
- ▶ M8 plug connector
- ▶ For installation in control panel



## Function expansion

Due to the large selection of accessories and parts that can be retrofitted, additional or expanded functions are possible. You will find an overview of the accessories available in the section of the catalog on the related device.

### Release functions

Some situations require guard locking to be released manually (e.g. malfunctions or an emergency). The following release functions are available for EUCHNER devices:

#### Auxiliary release and auxiliary key release (1)

Option for manual guard locking release using a tool or key from outside danger area in the event of a malfunction.

#### Escape release (2)

Option for manual guard locking release to leave the danger area from the escape side (danger area) without tools.

#### Emergency release (3)

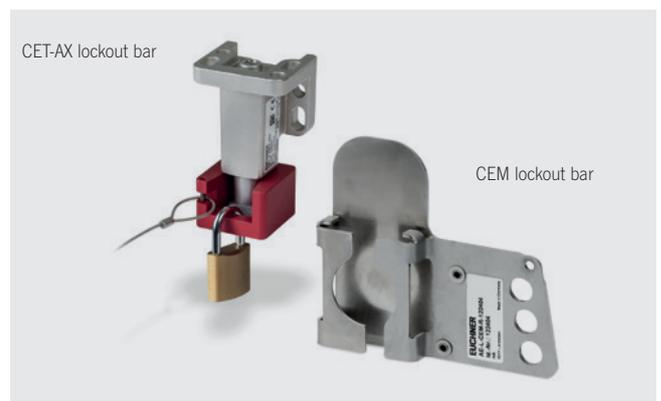
Option for manual guard locking release without tools from the access side (outside the danger area) in case of danger. The emergency release mechanism must be returned to the locked state manually.



### Lockout bar

The lockout bar can be used to prevent maintenance personnel from being unintentionally locked in the danger zone, for example. In locked position, the lockout bar prevents activation of guard locking. The lockout bar can be secured in locked position using padlocks.

A removable lockout bar that blocks the switch head or the actuator is available for this purpose.



## Versatile accessories

### Bolts

Bolts function as follows: the bolt tongue mechanically guides the actuator when it is inserted into the actuating head on the read head. The bolt mounted on the door frame comprises a protruding bolt tongue, the handle and the actuator, mounted offset somewhat to the rear. The switch bracket with the read head is fitted to the frame. The bolt absorbs forces that act on the read head and the actuator and that could damage the read head and actuator.

There are bolts for many read heads from EUCHNER. Some as a set with pre-assembled read head and actuator.

### Function expansions that can be retrofitted

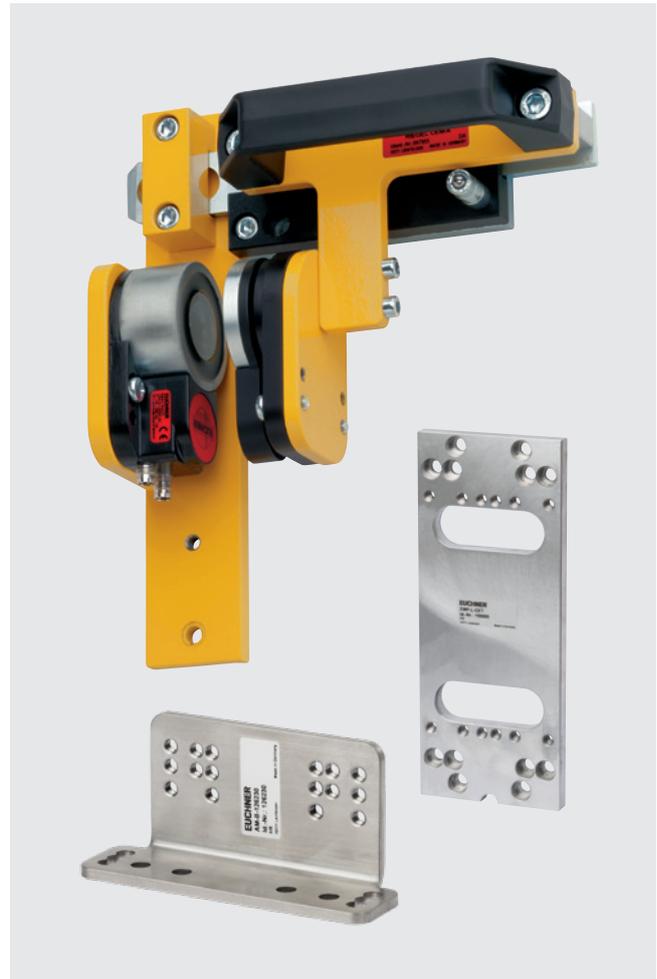
For some devices there are function expansions that can be retrofitted, e.g. manual releases, cover plates, lockout bars and much more. You can find suitable accessories for your device very simply at [www.euchner.com](http://www.euchner.com).

### Connection material

EUCHNER offers a large selection of connecting cables, plug connectors and other connection accessories. You can find suitable accessories for your device very simply at [www.euchner.com](http://www.euchner.com).

### Installation material

EUCHNER offers mounting plates and brackets for many devices for a wide variety of mounting situations. You can find suitable accessories for your device very simply at [www.euchner.com](http://www.euchner.com).





## »Evaluation and safety relay in one device – cost-effective solution for up to 4 safety doors.«

---

- ▶ Evaluation of transponder signals in the control cabinet
- ▶ Up to 4 read heads can be connected
- ▶ Two pairs of safe relay contacts
- ▶ Start button and feedback loop can be connected
- ▶ Plug-in connection terminals
- ▶ PL e/category 4 according to EN ISO 13849-1

Evaluation  
unit

**AZ**

**AZ**



CES  
CET  
CEM  
CKS



**Evaluation unit CES-AZ-.ES-01B**



- ▶ 1 read head can be connected
- ▶ 2 safety outputs (relay contacts with 2 internally connected NO contacts per output)
- ▶ Start button and feedback loop can be connected
- ▶ Plug-in connection terminals

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Guard lock monitoring**

Evaluation units in the series CES-AZ also make it possible to use read heads with integrated guard locking for personnel protection during overtraveling machine movements. For suitable read heads, please refer to the ordering table below.

**Category according to EN ISO 13849-1**

Due to two redundant safety paths (relay contacts) with 2 internal, monitored normally open contacts per safety path, suitable for:

- ▶ PL e/category 4 according to EN ISO 13849-1

Each safety path is independently safe.

**LED indicator**

- STATE** Status LED
- DIA** Diagnostics LED
- OUT** Safety output status

**Additional connections**

- TST** Input for self-test
- O1** Monitoring output (semiconductor)
- DIA** Diagnostic monitoring output
- Y1, Y2** Feedback loop
- S** Start button connection (monitoring of the falling edge)

**Notice**

- ▶ The plug-in connection terminals are not included and must be ordered separately.

**Further information**

- ▶ For dimension drawings, see p. 19
- ▶ For accessories and spare parts, see p. 19
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

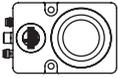
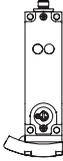
**Ordering table**

**Evaluation unit**

| Series   | Version                  | Order no./item                         |  |
|--|--------------------------|--|--|
| <b>CES-AZ-AES-01B</b><br>Unicode                             | <br>p-switching          | <b>104770</b><br>CES-AZ-AES-01B        | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
| <b>CES-AZ-UES-01B</b><br>Multicode                           |                          | <b>105139</b><br>CES-AZ-UES-01B        |  |
| <b>Connection kits</b><br>for evaluation unit CES-AZ-...-01B | Plug-in screw terminals  | <b>104756</b><br>CES-EA-TC-AK04-104756 |  |
|  | Plug-in spring terminals | <b>112631</b><br>CES-EA-TC-KK04-112631 |  |

**Read heads**

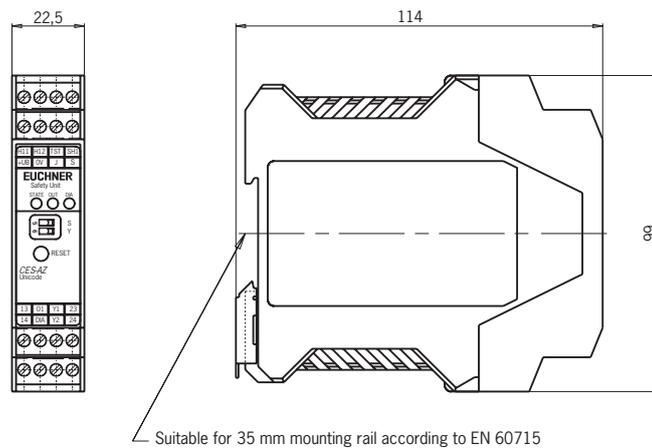
| Series               | Design | Guard locking | Typ. operating distance [mm] |         |
|----------------------|--------|---------------|------------------------------|---------|
| <b>CES-A-LNN-...</b> |        | –             | 15                           | Page 30 |
|                      |        | –             | 15                           |         |
| <b>CES-A-LNA-...</b> |        | –             | 15                           | Page 32 |
|                      |        | –             | 15                           |         |
| <b>CES-A-LCA-...</b> |        | –             | 15                           | Page 32 |
| <b>CES-A-LQA-...</b> |        | –             | 23                           | Page 34 |
| <b>CES-A-LSP-...</b> |        | –             | 20                           | Page 36 |
|                      |        | –             | 20                           |         |
| <b>CES-A-LMN-...</b> |        | –             | 5                            | Page 38 |
| <b>CKS-A-...</b>     |        | –             | –                            | Page 60 |

| Series     | Design  | Guard locking   | Typ. operating distance [mm] |  |
|------------|---|---|------------------------------|---|
| CEM-A-...  |  |  | -                            | Page 42   |
|            |  |   |                              |   |
| CET-AX-... |  |  | -                            | Page 52   |

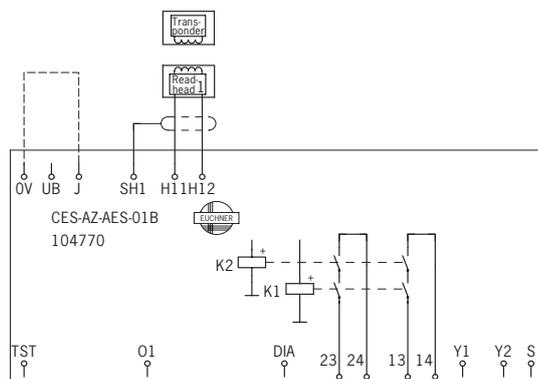
**Accessories**

| Type  | Version                  |  |
|---|--------------------------|---|
| <b>PM-SCL</b><br>Inrush current limiting module | For CES evaluation units | Page 72   |

**Dimension drawing**



**Block diagram**



**Evaluation unit CES-AZ-.ES-02B**



- ▶ 2 read heads can be connected
- ▶ 2 safety outputs (relay contacts with 2 internally connected NO contacts per output)
- ▶ Start button and feedback loop can be connected
- ▶ Plug-in connection terminals

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Guard lock monitoring**

Evaluation units in the series CES-AZ also make it possible to use read heads with integrated guard locking for personnel protection during overtraveling machine movements. For suitable read heads, please refer to the ordering table below.

**Category according to EN ISO 13849-1**

Due to two redundant safety paths (relay contacts) with 2 internal, monitored normally open contacts per safety path, suitable for:

- ▶ PL e/category 4 according to EN ISO 13849-1

Each safety path is independently safe.

**LED indicator**

- STATE** Status LED
- DIA** Diagnostics LED
- OUT** Safety output status

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- Y1, Y2** Feedback loop
- S** Start button connection (monitoring of the falling edge)

**Notice**

- ▶ The plug-in connection terminals are not included and must be ordered separately.

**Further information**

- ▶ For dimension drawings, see p. 21
- ▶ For accessories and spare parts, see p. 21
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

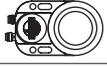
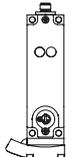
**Ordering table**

**Evaluation unit**

| Series   | Version                  | Order no./item                         |  |
|--|--------------------------|--|--|
| CES-AZ-AES-02B<br>Unicode                                    | <br>p-switching          | <b>104775</b><br>CES-AZ-AES-02B        | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
| CES-AZ-UES-02B<br>Multicode                                  |                          | <b>105140</b><br>CES-AZ-UES-02B        |  |
| <b>Connection kits</b><br>for evaluation unit CES-AZ-...-02B | Plug-in screw terminals  | <b>104771</b><br>CES-EA-TC-AK06-104771 |  |
|  | Plug-in spring terminals | <b>112630</b><br>CES-EA-TC-KK06-112630 |  |

**Read heads**

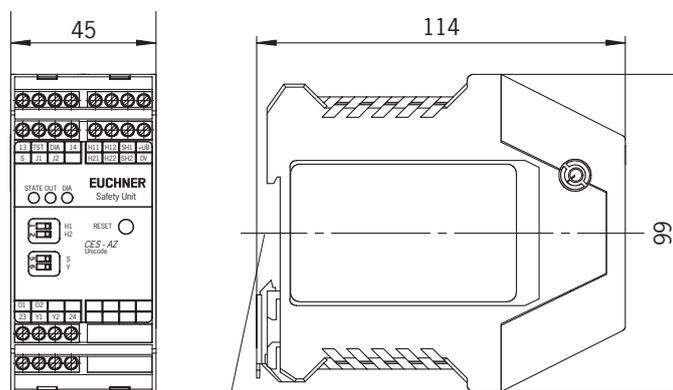
| Series        | Design | Guard locking | Typ. operating distance [mm] |         |
|---------------|--------|---------------|------------------------------|---------|
| CES-A-LNN-... |        | -             | 15                           | Page 30 |
|               |        | -             | 15                           |         |
| CES-A-LNA-... |        | -             | 15                           | Page 32 |
|               |        | -             | 15                           |         |
| CES-A-LCA-... |        | -             | 15                           | Page 32 |
| CES-A-LQA-... |        | -             | 23                           | Page 34 |
| CES-A-LSP-... |        | -             | 20                           | Page 36 |
|               |        | -             |                              |         |
| CES-A-LMN-... |        | -             | 5                            | Page 38 |
| CKS-A-...     |        | -             | -                            | Page 60 |

| Series     | Design  | Guard locking   | Typ. operating distance [mm] |  |
|------------|---|---|------------------------------|---|
| CEM-A-...  |  |  | -                            | Page 42   |
|            |  |   |                              |   |
| CET-AX-... |  |  | -                            | Page 52   |

**Accessories**

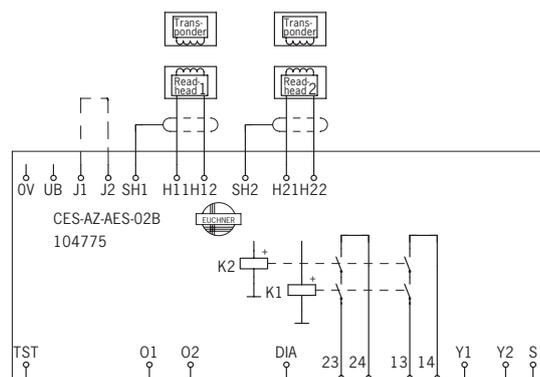
| Type  | Version                  |  |
|---|--------------------------|---|
| <b>PM-SCL</b><br>Inrush current limiting module | For CES evaluation units | Page 72   |

**Dimension drawing**



Suitable for 35 mm mounting rail according to EN 60715

**Block diagram**



**Evaluation unit CES-AZ-.ES-04B**



- ▶ 4 read heads can be connected
- ▶ 2 safety outputs (relay contacts with 2 internally connected NO contacts per output)
- ▶ Start button and feedback loop can be connected
- ▶ Plug-in connection terminals

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Guard lock monitoring**

Evaluation units in the series CES-AZ also make it possible to use read heads with integrated guard locking for personnel protection during overtraveling machine movements. For suitable read heads, please refer to the ordering table below.

**Category according to EN ISO 13849-1**

Due to two redundant safety paths (relay contacts) with 2 internal, monitored normally open contacts per safety path, suitable for:

- ▶ PL e/category 4 according to EN ISO 13849-1

Each safety path is independently safe.

**LED indicator**

- STATE** Status LED
- DIA** Diagnostics LED
- OUT** Safety output status

**Additional connections**

- TST** Input for self-test
- O1...O4** Monitoring outputs (semiconductor)
- DIA** Diagnostic monitoring output
- Y1, Y2** Feedback loop
- S** Start button connection (monitoring of the falling edge)

**Notice**

- ▶ The plug-in connection terminals are not included and must be ordered separately.

**Further information**

- ▶ For dimension drawings, see p. 23
- ▶ For accessories and spare parts, see p. 23
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**

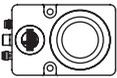
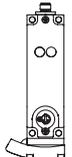
**Evaluation unit**

| Series   | Version                        | Order no./item                                |  |
|--|--------------------------------|---|--|
| <b>CES-AZ-AES-04B</b><br>Unicode                             | Monitoring outputs p-switching | <b>104780</b><br>CES-AZ-AES-04B               | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
| <b>CES-AZ-ALS-04B</b><br>Unicode                             | Monitoring outputs n-switching | <b>113090</b> <sup>1)</sup><br>CES-AZ-ALS-04B |  |
| <b>CES-AZ-UES-04B</b><br>Multicode                           | Monitoring outputs p-switching | <b>105141</b><br>CES-AZ-UES-04B               |  |
| <b>Connection kits</b><br>for evaluation unit CES-AZ-...-04B | Plug-in screw terminals        | <b>104776</b><br>CES-EA-TC-AK08-104776        |  |
|  | Plug-in spring terminals       | <b>112629</b><br>CES-EA-TC-KK08-112629        |  |

1) No UL or German Social Accident Insurance approval

**Read heads**

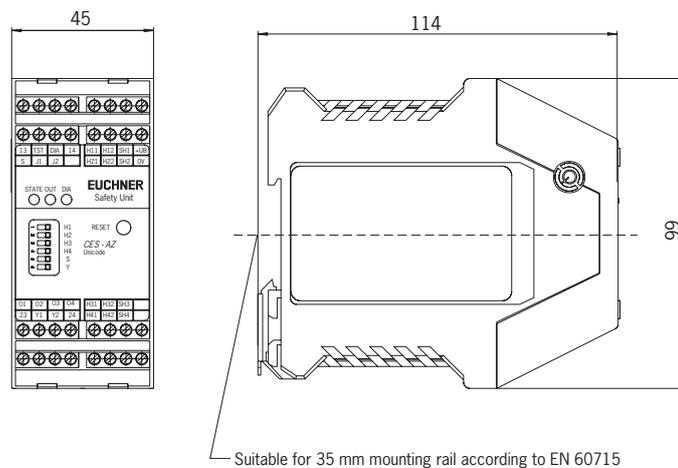
| Series               | Design | Guard locking | Typ. operating distance [mm] |         |
|----------------------|--------|---------------|------------------------------|---------|
| <b>CES-A-LNN-...</b> |        | -             | 15                           | Page 30 |
|                      |        | -             | 15                           |         |
| <b>CES-A-LNA-...</b> |        | -             | 15                           | Page 32 |
|                      |        | -             | 15                           |         |
| <b>CES-A-LCA-...</b> |        | -             | 15                           | Page 32 |
| <b>CES-A-LQA-...</b> |        | -             | 23                           | Page 34 |
| <b>CES-A-LSP-...</b> |        | -             | 20                           | Page 36 |
|                      |        | -             |                              |         |
| <b>CES-A-LMN-...</b> |        | -             | 5                            | Page 38 |
| <b>CKS-A-...</b>     |        | -             | -                            | Page 60 |

| Series     | Design  | Guard locking   | Typ. operating distance [mm] |  |
|------------|---|---|------------------------------|---|
| CEM-A-...  |  |  | -                            | Page 42   |
|            |  |   |                              |   |
| CET-AX-... |  |  | -                            | Page 52   |

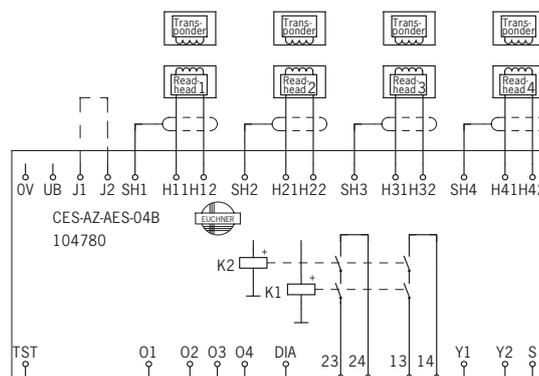
**Accessories**

| Type  | Version                  |  |
|---|--------------------------|---|
| <b>PM-SCL</b><br>Inrush current limiting module | For CES evaluation units | Page 72   |

**Dimension drawing**



**Block diagram**



»Evaluation and forwarding of the signals to the control system directly in the field – ideal for field-based connection concepts.«

---

- ▶ Evaluation of transponder signals in the field
- ▶ For one read head
- ▶ Direct connection to IP67 field modules for various decentralized peripheral systems
- ▶ Two safe semiconductor outputs (EUCHNER system family AP)
- ▶ Minimal wiring effort
- ▶ Own pulsing for short circuit detection
- ▶ Small space requirement
- ▶ PL e/category 4 according to EN ISO 13849-1

Field  
evaluation  
unit



CES  
CKS



1

**Field evaluation unit CES-FD-AP-...**



- ▶ Connection of a CES read head or a CKS key adapter
- ▶ Evaluation of signals in the field
- ▶ Connection to the ET200s and ET200pro
- ▶ Familiar EUCHNER AP interface
- ▶ Limit-range indication

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Short circuit monitoring**

The switch generates its own clock signal on the output lines FO1A/FO1B.

Pay attention to this aspect when connecting to control systems and relays.

**Category according to EN ISO 13849-1**

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

- ▶ PL e/category 4 according to EN ISO 13849-1

**LED indicator**

**STATE** Status LED  
**DIA** Diagnostics LED

**Further information**

- ▶ For dimension drawings, see p. 27
- ▶ For accessories and spare parts, see p. 26
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**

**Field evaluation unit**

| Series                          | Version                    |                           | Order no./item                             |  |
|---------------------------------|----------------------------|---------------------------|--|--|
| CES-FD-AP-U-01-...<br>Unicode   | <b>A</b>                   | <b>B</b>                  | <b>119865</b><br>CES-FD-AP-U-01-USI-119865 | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
| CES-FD-AP-M-01-...<br>Multicode | <b>M12</b><br><b>5 pin</b> | <b>M8</b><br><b>3 pin</b> | <b>115534</b><br>CES-FD-AP-M-01-USI-115534 |  |

**Read heads**

| Series        | Design | Guard locking | Typ. operating distance [mm] |         |
|---------------|--------|---------------|------------------------------|---------|
| CES-A-LMN-... |        | -             | 5                            | Page 38 |
| CKS-A-...     |        | -             | -                            | Page 60 |

**Accessories**

| Type                       | Version                              |                            |         |
|----------------------------|--------------------------------------|----------------------------|---------|
| <b>Connection material</b> | Connecting cable with plug connector | <b>M12</b><br><b>5 pin</b> | Page 69 |
|                            | Extension for read head connection   | <b>M8</b><br><b>3 pin</b>  | Page 64 |

M12

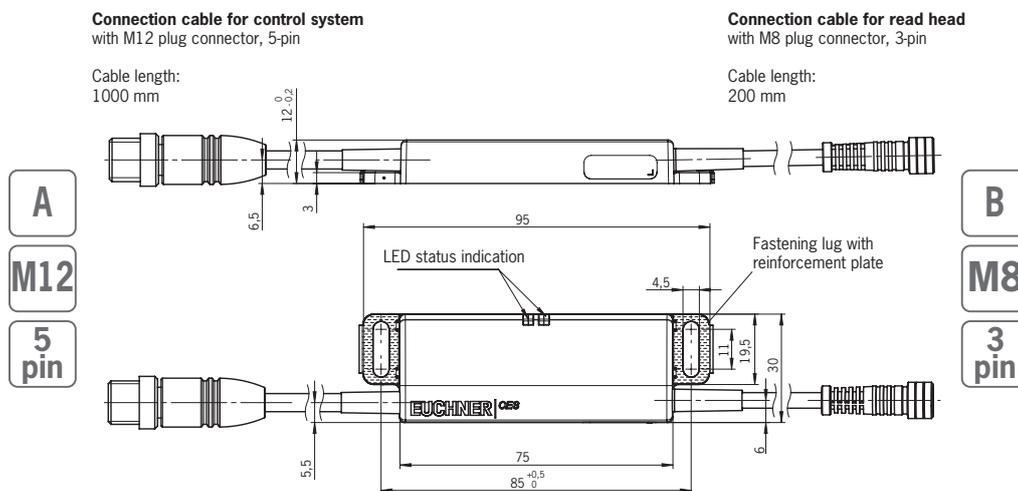
5 pin

M8

3 pin

FD

## Dimension drawing



## Terminal assignment

| <b>A</b><br><b>M12</b><br><b>5 pin</b> | Pin  | Designation | Function                   | Conductor coloring |
|--|--|-------------|----------------------------|--------------------|
|  | Without monitoring output (pin 5 not used) |             |                            |                    |
|  | 1  | UB          | Operating voltage, 24 V DC | BN                 |
|  | 2  | FO1A        | Safety output, channel A   | WH                 |
|  | 3  | 0V          | Ground 0 V DC              | BU                 |
|  | 4  | FO1B        | Safety output, channel B   | BK                 |
|  | –  | –           | –                          | GY                 |
| <b>B</b><br><b>M8</b><br><b>3 pin</b>  | Pin  | Designation | Function                   | Conductor coloring |
|  | 1  | H1          | Data line                  | BN                 |
|  | 2  | H2          | Data line                  | WH                 |
|  | 3  | SH          | Shield                     | –                  |

»Large selection of read heads – find the right sensor for every purpose.«

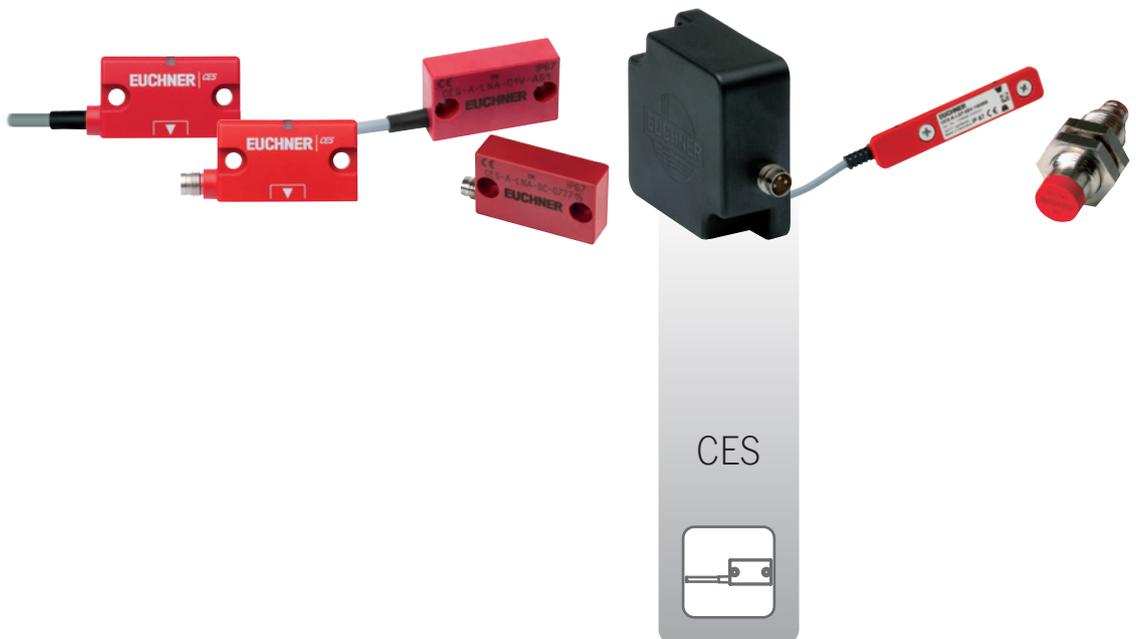
---

- ▶ Read heads optimized for special applications
- ▶ Evaluation of different actuator designs
- ▶ Numerous combination options
- ▶ Various actuating ranges
- ▶ With either plug connector or fixed connecting cable
- ▶ LED for the indication of the door position (depending on version)

Read  
heads

CES

CES



**Read head CES-A-LNN-...**



**Details**

**Combination options**

See ordering table below.

**Notice**

▶ Actuators must be ordered separately.

**Further information**

- ▶ For dimension drawings, see p. 31
- ▶ For accessories and spare parts, see p. 31
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

- ▶ Cube-shaped design 42 x 25 mm
- ▶ Mounting compatible with series CES-A-LNA/LCA
- ▶ LED for indicating the door position
- ▶ Two active faces

**Ordering table**

**Read head**

| Series        | Version |         | Order no./item                                |  |
|---------------|---------|---------|---|--|
| CES-A-LNN-... |         | 42 x 25 | <b>5m</b><br>CES-A-LNN-05V-106602             | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
|               |         |         | <b>PVC</b> <b>10m</b><br>CES-A-LNN-10V-113294 |  |
|               |         | 42 x 25 | <b>M8</b> <b>3 pin</b><br>CES-A-LNN-SC-106601 |  |

**Actuator**

| Series    | Design  | Typ. operating distance [mm] | Order no./item                       |  |
|-----------|---------|------------------------------|--------------------------------------|--|
| CES-A-BBN | 42 x 25 | 15                           | <b>106600</b><br>CES-A-BBN-106600    | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
| CES-A-BDN | Ø6 x 26 | 19                           | <b>104730</b><br>CES-A-BDN-06-104730 |  |

**Accessories**

| Type                       | Version                              |                        |         |
|----------------------------|--------------------------------------|------------------------|---------|
| <b>Connection material</b> | Connecting cable with plug connector | <b>M8</b> <b>3 pin</b> | Page 64 |
| <b>Fixing material</b>     | Safety screws                        |                        | Page 77 |



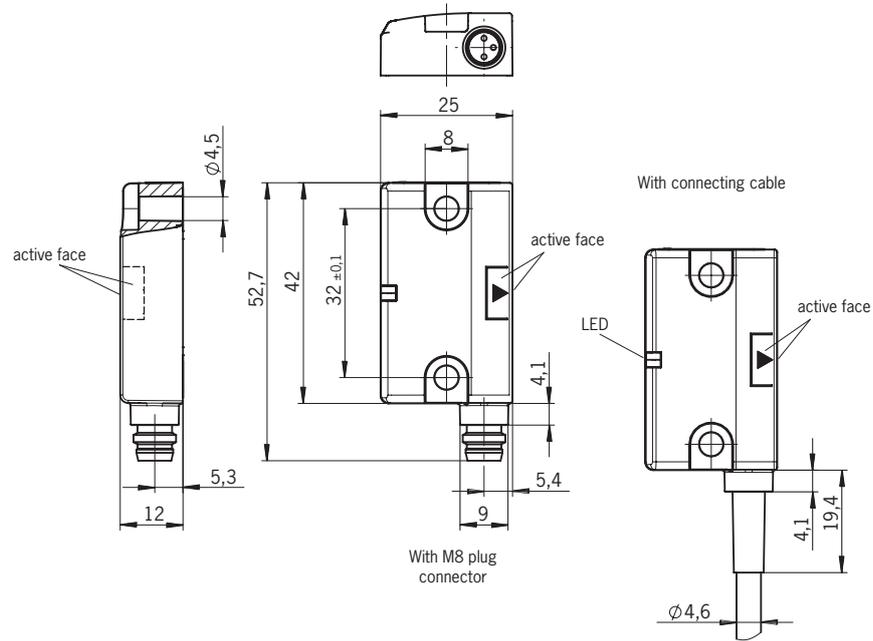
**3**  
pin

**M8**

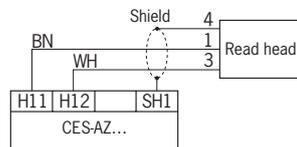
**3**  
pin

CES

**Dimension drawing**



**Terminal assignment**



**Read head CES-A-LCA-.../CES-A-LNA-...**



**Details**

**Combination options**  
See ordering table below.

**Notice**

▶ Actuators must be ordered separately.

**Further information**

- ▶ For dimension drawings, see p. 33
- ▶ For accessories and spare parts, see p. 33
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

- ▶ Cube-shaped design 42 x 25 mm
- ▶ Version with plug connector suitable for snap-action and screw terminals
- ▶ One active face

**Ordering table**

Read head

| Series        | Version                                  | Order no./item |  |                                |
|---------------|--|----------------|--|--------------------------------|
| CES-A-LCA-... | 42 x 25<br>Material: PE-HD <sup>1)</sup> | 10m<br>PVC     | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |                                |
|               | CES-A-LNA-...                            | 42 x 25        |  | 5m                             |
| 10m           |  |                |  | <b>071846</b><br>CES-A-LNA-10V |
| PVC 15m       |  |                |  | <b>071847</b><br>CES-A-LNA-15V |
| 25m           |  |                |  | <b>071975</b><br>CES-A-LNA-25V |
| 5m            |  |                |  | <b>077806</b><br>CES-A-LNA-05P |
| 10m           |  |                |  | <b>077807</b><br>CES-A-LNA-10P |
| PUR 15m       |  |                |  | <b>084682</b><br>CES-A-LNA-15P |
| 42 x 25       |  |                |  | M8 3 pin                       |

1) Suitable for use in aggressive media (e.g. acids, alkalines)



3 pin

M8

3 pin

# CES

## Actuator

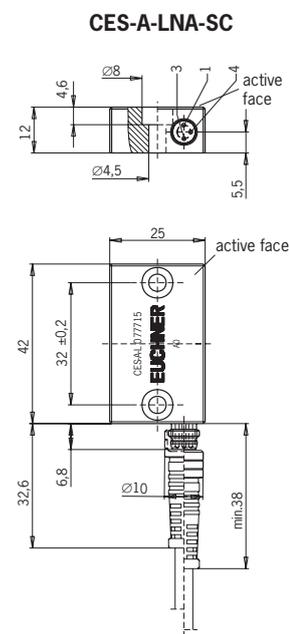
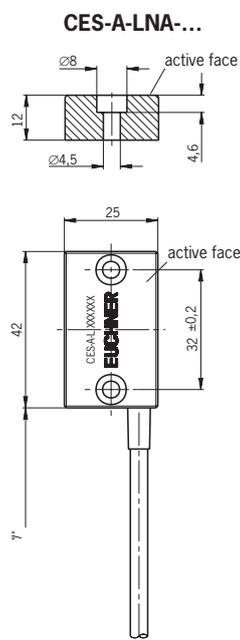
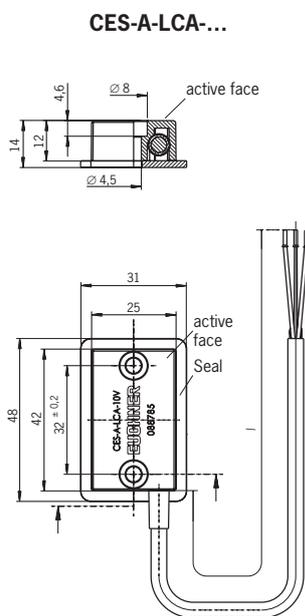
| Series       | Design                                   | Typ. operating distance [mm] | Order no./item                |  |
|--------------|--|------------------------------|-------------------------------|--|
| CES-A-BCA    | 42 x 25<br>Material: PE-HD <sup>1)</sup> | 15                           | <b>088786</b><br>CES-A-BCA    | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
| CES-A-BBA    | 42 x 25                                  |                              | <b>071840</b><br>CES-A-BBA    |  |
| CES-A-BDA    | Ø20                                      | 16                           | <b>084720</b><br>CES-A-BDA-20 |  |
| CES-A-BDA-18 | Ø18                                      | 16                           | <b>156935</b><br>CES-A-BDA-18 |  |

1) Suitable for use in aggressive media (e.g. acids, alkalines)

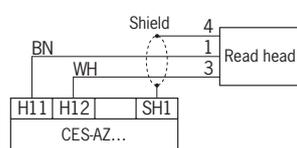
## Accessories

| Type                | Version                                  |                                   |
|---------------------|--|-----------------------------------|
| Connection material | Connecting cable with plug connector<br> | <b>M8</b> <b>3 pin</b><br>Page 64 |
| Bolts               | Bolts for read head CES-A LNA-...<br>    | Page 74                           |
| Fixing material     | Safety screws                            | Page 77                           |

## Dimension drawing



## Terminal assignment



**Read head CES-A-LQA-...**



**Details**

**Combination options**

See ordering table below.

**Notice**

▶ Actuators must be ordered separately.

**Further information**

- ▶ For dimension drawings, see p. 35
- ▶ For accessories and spare parts, see p. 34
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

- ▶ Cube-shaped design 50 x 50 mm
- ▶ M8 plug connector (snap-action and screw terminals)
- ▶ Large tolerance for center offset
- ▶ One active face

**Ordering table**

**Read head**

| Series        | Version |                        | Order no./item                |  |
|---------------|---------|------------------------|-------------------------------|--|
| CES-A-LQA-... | 50 x 50 | <b>M8</b> <b>3 pin</b> | <b>095650</b><br>CES-A-LQA-SC | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |

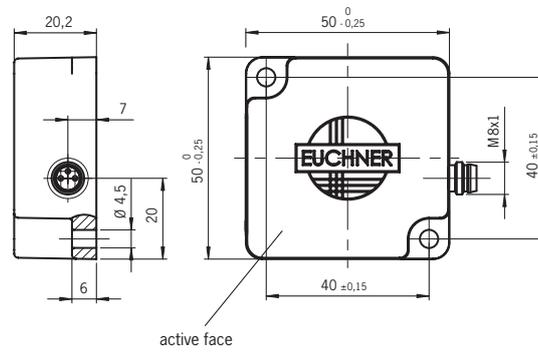
**Actuator**

| Series    | Design  | Typ. operating distance [mm] | Order no./item             |  |
|-----------|---------|------------------------------|----------------------------|--|
| CES-A-BQA | 50 x 50 | 23                           | <b>098108</b><br>CES-A-BQA | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
| CES-A-BBA | 42 x 25 | 15                           | <b>071840</b><br>CES-A-BBA |  |

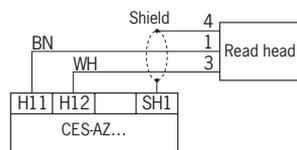
**Accessories**

| Type                       | Version                                  |                        |         |
|----------------------------|--|------------------------|---------|
| <b>Connection material</b> | Connecting cable with plug connector<br> | <b>M8</b> <b>3 pin</b> | Page 64 |
| <b>Fixing material</b>     | Safety screws                            |                        | Page 77 |

**Dimension drawing**



**Terminal assignment**



**Read head CES-A-LSP-...**



**Details**

**Combination options**

See ordering table below.

**Notice**

▶ Actuators must be ordered separately.

**Further information**

- ▶ For dimension drawings, see p. 37
- ▶ For accessories and spare parts, see p. 37
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

- ▶ Optimized for aluminum profile mounting
- ▶ LED for indicating the door position
- ▶ One active face

**Ordering table**

**Read head**

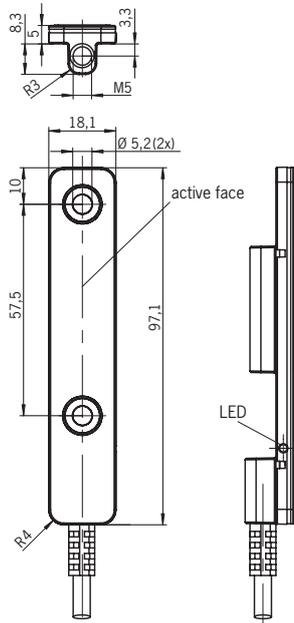
| Series        | Version   | Order no./item                                |  |
|---------------|---|---|--|
| CES-A-LSP-... |  <span style="margin-left: 20px;">97 x 18</span>  | <p><b>104966</b><br/>CES-A-LSP-05V-104966</p> | <p>For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a>.</p> |

**Actuator**

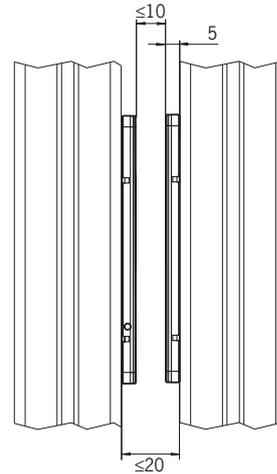
| Series    | Design  | Typ. operating distance [mm] | Order no./item                            |  |
|-----------|---|------------------------------|---|--|
| CES-A-BSP |  <span style="margin-left: 20px;">97 x 18</span> | 20                           | <p><b>104970</b><br/>CES-A-BSP-104970</p> | <p>For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a>.</p> |



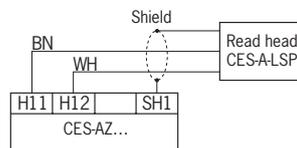
**Dimension drawing**



Mounting distance for CES-A-LSP...



**Terminal assignment**



**Read head CES-A-LMN-...**



**Details**

**Combination options**

See ordering table below.

**Notice**

- ▶ Maximum permissible cable length 15 m
- ▶ Actuators must be ordered separately.

**Further information**

- ▶ For dimension drawings, see p. 39
- ▶ For accessories and spare parts, see p. 38
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

- ▶ Cylindrical design M12
- ▶ M8 plug connector (snap-action and screw terminals)
- ▶ One active face

**Ordering table**

**Read head**

| Series        | Version   | Order no./item                |  |
|---------------|---|-------------------------------|--|
| CES-A-LMN-... | <br>M12 x 1 <div style="display: flex; gap: 10px;"> <div style="border: 1px solid black; padding: 2px; font-weight: bold;">M8</div> <div style="border: 1px solid black; padding: 2px; font-weight: bold;">3 pin</div> </div> | <b>077790</b><br>CES-A-LMN-SC | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |

**Actuator**

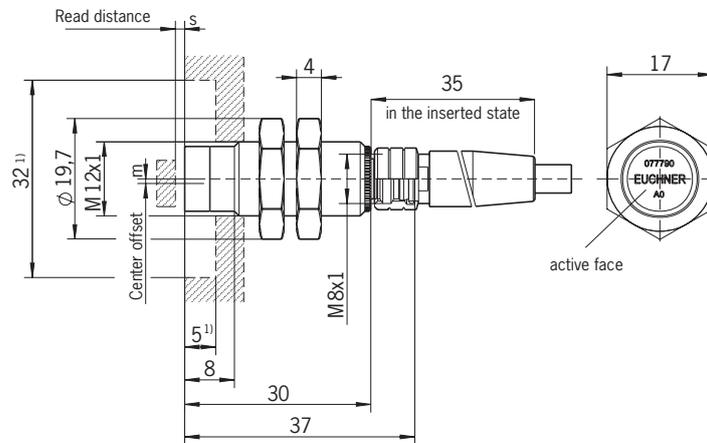
| Series    | Design         | Typ. operating distance [mm] | Order no./item             |  |
|-----------|----------------|------------------------------|----------------------------|--|
| CES-A-BMB | <br>M12 x 0.75 | 5                            | <b>077791</b><br>CES-A-BMB | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |

**Accessories**

| Type                | Version   |         |
|---------------------|---|---------|
| Connection material | Connecting cable with plug connector <sup>1)</sup><br><div style="display: flex; gap: 10px;"> <div style="border: 1px solid black; padding: 2px; font-weight: bold;">M8</div> <div style="border: 1px solid black; padding: 2px; font-weight: bold;">3 pin</div> </div> | Page 64 |

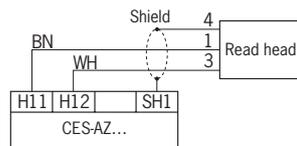
1) Maximum permissible cable length 15 m.

**Dimension drawing**



1) Metal-free zone

**Terminal assignment**



## »Unmonitored magnetic guard locking for process protection.«

---

- ▶ Very rugged construction
- ▶ Guard locking and door stop in one
- ▶ Locking force 650 N or 1000 N (depending on version)
- ▶ Adjustable adhesive force (depending on version)
- ▶ With and without remanence (depending on version)
- ▶ Spring-mounted anchor plate for the actuator
- ▶ LED for the indication of the door position (depending on version)

Read  
head

CEM



CEM

CEM



**Read head CEM-A-LE05...**  
with unmonitored guard locking for process protection



- ▶ Read head with guard locking without guard lock monitoring
- ▶ Locking force 650 N
- ▶ With and without remanence
- ▶ With permanent magnet (optional)

**Details**

**Without remanence**

Read heads without remanence are de-magnetized when the solenoid is switched off. As a consequence soiling due to adhering metal chips is reduced.

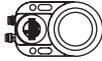
For this purpose the operating voltage  $U_B$  must always be applied.

**Further information**

- ▶ For dimension drawings, see p. 43
- ▶ For accessories and spare parts, see p. 43
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**

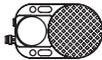
**Read head**

| Series        | Version   | Order no./item                             |  |
|---------------|---|--|--|
| CEM-A-LE05... |  50 x 80 | With remanence                             | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
|               |   | With remanence and permanent magnet (30 N) |  |
|               |   | Without remanence                          |  |
|               |   | <b>094800</b><br>CEM-A-LE05K-S2            |  |
|               |   | <b>158763</b><br>CEM-A-LE05K-S2-P          |  |
|               |   | <b>095792</b><br>CEM-A-LE05R-S2            |  |

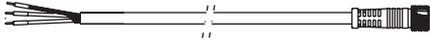
**Actuator**

| Series     | Design  | Order no./item              |  |
|------------|---|-----------------------------|--|
| CEM-A-BE05 |  50 x 80 | <b>094805</b><br>CEM-A-BE05 | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |

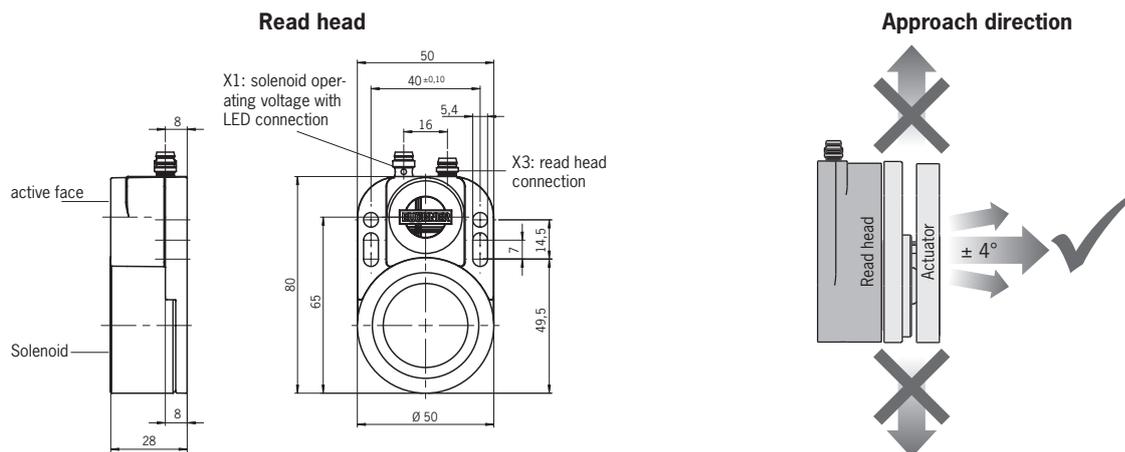
**Solenoid (without read head)**

| Series      | Design  | Order no./item                         |  |
|-------------|---|--|--|
| CEM-A-ME05K |  50 x 80 | <b>109755</b><br>CEM-A-ME05K-S1-109755 | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |

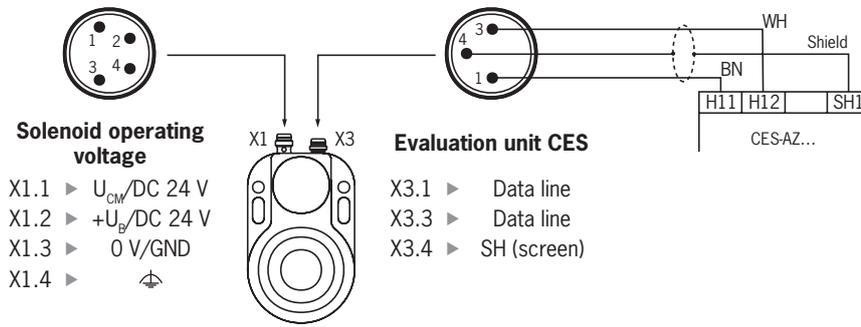
**Accessories**

| Type                             | Version   |  |
|----------------------------------|---|---|
| <b>Connection material</b>       | Connecting cable with plug connector<br>                       | <b>M8</b> <b>3 pin</b><br>Page 64   |
|                                  |   | <b>M8</b> <b>4 pin</b><br>Page 66   |
| <b>Bolts</b>                     | Bolts for read heads CEM  | Page 74   |
| <b>Fixing material</b>           | Mounting plates<br>  | Page 76   |
|                                  | Safety screws for actuators   | Page 77   |
| <b>Miscellaneous accessories</b> | Lockout bar CEM<br>(mounting on the actuator CEM-A-BE05)<br> | Page 64   |

**Dimension drawing**

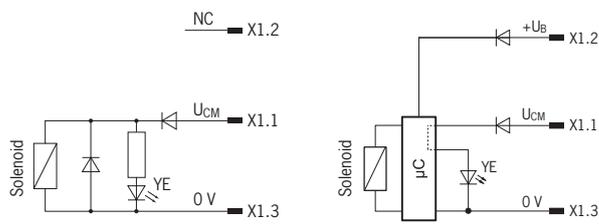


**Terminal assignment**



CEM-A-LE05K-S2  
CEM-A-ME05K-S1-109755

CEM-A-LE05R-S2



Circuit diagram, connection of solenoid operating voltage, plug X1  
A free-wheeling diode is already integrated into each CEM



**Read head CEM-A-LE05H-S2**  
with unmonitored guard locking for process protection



- ▶ Read head with guard locking without guard lock monitoring
- ▶ Locking force 650 N
- ▶ Adjustable adhesive force

**Details**

**Adjustable adhesive force**

This version has an adhesive force also with the guard locking switched off. In this way it is intended, for example, to prevent the safety door from opening due to vibration or similar. The adhesive force can be adjusted using a programming adapter to 70 N, 110 N (factory setting) or 150 N.

**Further information**

- ▶ For dimension drawings, see p. 47
- ▶ For accessories and spare parts, see p. 46
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**

**Read head**

| Series           | Version  | Order no./item                    |  |
|------------------|--|-----------------------------------|--|
| CEM-A-LE05...    | 50 x 80<br>With adjustable adhesive force (factory setting: 110 N) | <b>104606</b><br>CEM-A-LE05H-S2   | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
| CEM-A-ZPS-110013 | Programming adapter for setting the adhesive force                 | <b>110013</b><br>CEM-A-ZPS-110013 |  |

**Actuator**

| Series     | Design  | Order no./item              |  |
|------------|---------|-----------------------------|--|
| CEM-A-BE05 | 50 x 80 | <b>094805</b><br>CEM-A-BE05 | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |

**Accessories**

| Type                      | Version   |                                |
|---------------------------|---|--------------------------------|
| Connection material       | Connecting cable with plug connector<br>                  | <b>M8</b> <b>3 pin</b> Page 64 |
|                           |   | <b>M8</b> <b>4 pin</b> Page 66 |
| Bolts                     | Bolts for read heads CEM                                  | Page 74                        |
| Fixing material           | Mounting plates<br>                                       | Page 76                        |
|                           | Safety screws for actuators                               | Page 77                        |
| Miscellaneous accessories | Lockout bar CEM (mounting on the actuator CEM-A-BE05)<br> | Page 64                        |

M8

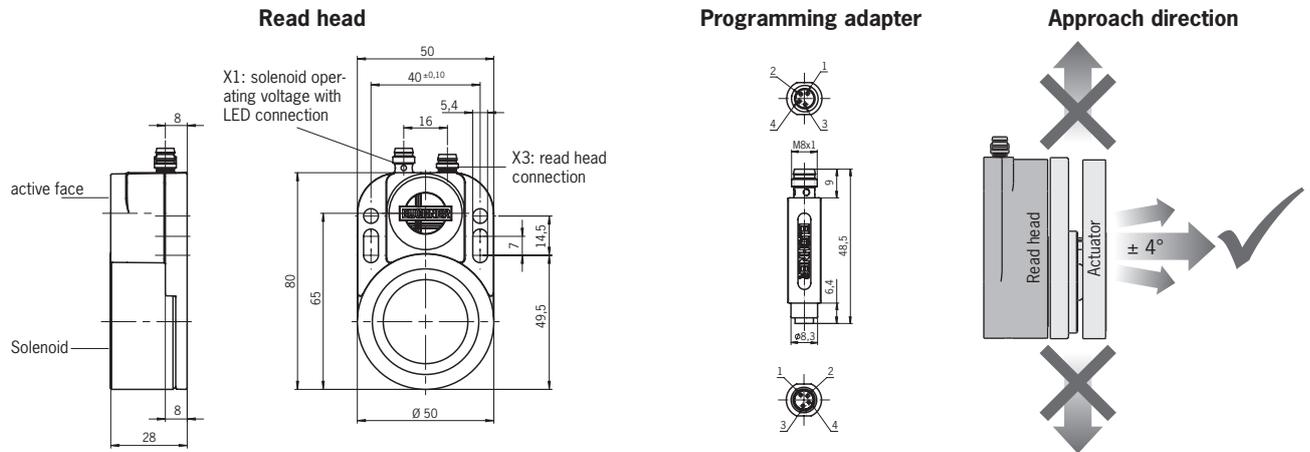
3 pin

M8

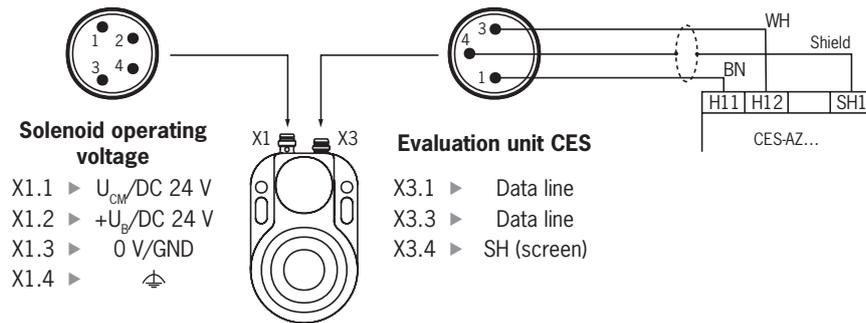
4 pin

CEMI

## Dimension drawing



## Terminal assignment



CEM-A-LE05H-S2



Circuit diagram, connection of solenoid operating voltage, plug X1  
A free-wheeling diode is already integrated into each CEM

**Read head CEM-A-LH10...**  
with unmonitored guard locking for process protection



- ▶ Read head with guard locking without guard lock monitoring
- ▶ Locking force 1000 N
- ▶ With and without remanence

**Details**

**Without remanence**

Read heads without remanence are de-magnetized when the solenoid is switched off. As a consequence soiling due to adhering metal chips is reduced.

For this purpose the operating voltage  $U_B$  must always be applied.

**Further information**

- ▶ For dimension drawings, see p. 49
- ▶ For accessories and spare parts, see p. 48
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**

**Read head**

| Series        | Version |         |                   | Order no./item                  |  |
|---------------|---------|---------|-------------------|---------------------------------|--|
| CEM-A-LH10... |         | 65 x 95 | With remanence    | <b>095170</b><br>CEM-A-LH10K-S3 | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
|               |         |         | Without remanence | <b>095793</b><br>CEM-A-LH10R-S3 |  |

**Actuator**

| Series     | Design | Order no./item                         |  |
|------------|--------|--|--|
| CEM-A-BH10 |        | 65 x 95<br><b>095175</b><br>CEM-A-BH10 | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |

**Accessories**

| Type                | Version   |                                   |
|---------------------|---|-----------------------------------|
| Connection material | Connecting cable with plug connector<br>              | <b>M8</b> <b>3 pin</b><br>Page 64 |
|                     | Connecting cable with male plug for LED indicator<br> | <b>M8</b> <b>4 pin</b><br>Page 66 |
|                     |   | <b>M8</b> <b>4 pin</b><br>Page 68 |
| Fixing material     | Safety screws for actuators                           | Page 77                           |

M8

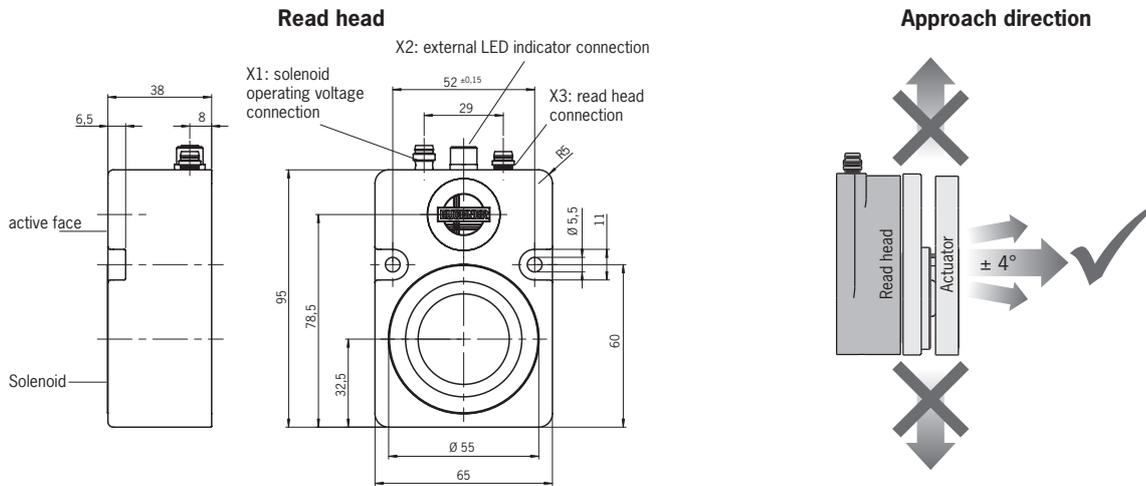
3 pin

M8

4 pin

CEMI

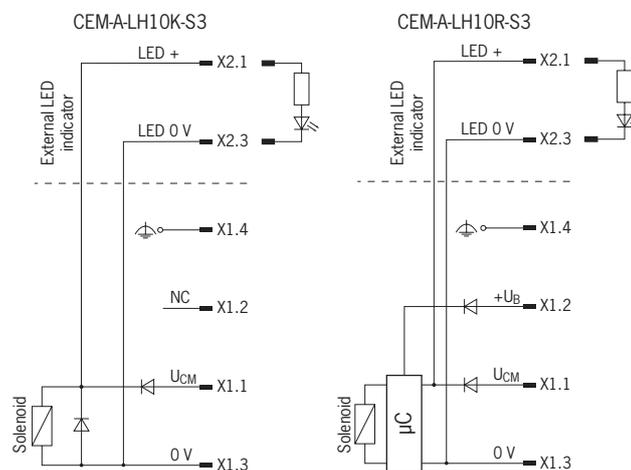
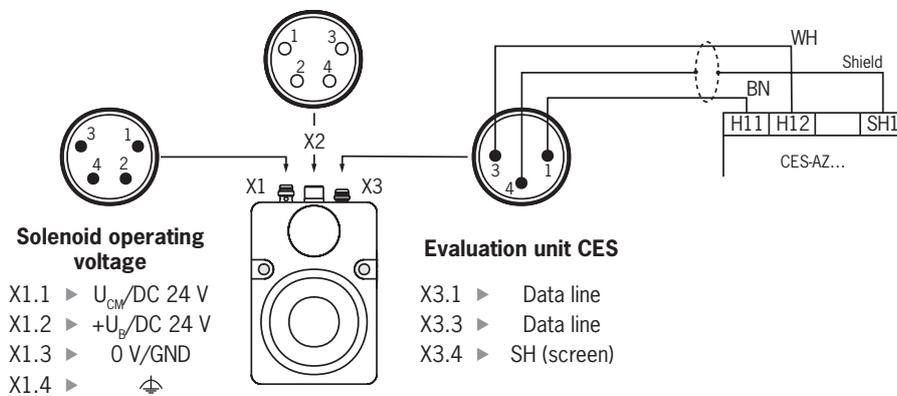
## Dimension drawing



## Terminal assignment

### External LED indicator connection

- X2.1 ▶ LED +
- X2.2 ▶ -
- X2.3 ▶ LED 0 V
- X2.4 ▶ -



Circuit diagram, connection of solenoid operating voltage, plug S1  
 A free-wheeling diode is already integrated into each CEM

## »Guard locking for personnel protection.«

---

- ▶ Locking force 6500 N
- ▶ Robust metal housing
- ▶ No precise door adjustment necessary
- ▶ Two LED indicators

Read  
head

**CET**



**CET**

**Read head CET.-AX-...**  
with guard locking for personnel protection



- ▶ Read head with guard locking and guard lock monitoring
- ▶ Locking force up to 6500 N
- ▶ Dual-channel control of the guard locking solenoid possible

**Notice**

- ▶ Actuators must be ordered separately.

**Details**

**Approach direction**



Head can be rotated in 90° steps

**Category according to EN ISO 13849-1**

The category is dependent on the installation position:

| Installation orientation | Category/PL   |
|--------------------------|---------------|
|                          | Cat. 3<br>PLe |
|                          | Cat. 4<br>PLe |

**Guard locking types**

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

**Auxiliary release**

Included with all versions as standard.

**Escape release (optional)**

Some devices have an escape release (see ordering table).  
The escape release can be extended by 30/50/80 mm when the accessory AF-E-80-127377 is used.

**Lockout bar (optional)**

The lockout bar can be used to prevent maintenance personnel from being unintentionally locked in the danger zone, for example. In locked position, the lockout bar prevents activation of guard locking. The lockout bar can be secured in locked position with up to three locks.

**Double ramp**

Versions with double ramp can be approached from two sides.

Devices with double ramp are also suitable for applications in which the switch must be "passed over." E.g. on doors that can be opened inwards and outwards. The double ramp can be retrofitted (see accessories page 64).

**LED indicator**

- LED red** see wiring diagram
- LED green** see wiring diagram

**Further information**

- ▶ For dimension drawings, see p. 55
- ▶ For accessories and spare parts, see p. 54
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**

**CET-AX-...-SA/SE/SF-... with plug connector M12**

| <br>Order no./item | Ramp  | Escape release | Two LEDs<br>(one freely configurable) | Two LEDs<br>(two freely configurable) | For wiring diagram,<br>see page 56  |
|---|---|----------------|---------------------------------------|---------------------------------------|---|
| <b>CET1</b><br>Closed-circuit current principle   |   |                |                                       |                                       |   |
| <b>095735</b><br>CET1-AX-LRA-00-50X-SA  |    | 75 mm          | ●                                     |                                       |    |
| <b>102161</b><br>CET1-AX-LRA-00-50F-SA  |   |                | ●                                     |                                       |   |
| <b>104051</b> <sup>1)</sup><br>CET1-AX-LRA-00-50X-SF  |   |                | ●                                     |                                       |   |
| <b>104062</b><br>CET1-AX-LRA-00-50L-SA  |   |                |                                       | ●                                     |    |
| <b>100399</b><br>CET1-AX-LDA-00-50X-SE  |  |                | ●                                     |                                       |  |
| <b>CET2</b><br>Open-circuit current principle   |   |                |                                       |                                       |   |
| <b>106039</b> <sup>2)</sup><br>CET2-AX-LRA-00-50X-SA  |  |                | ●                                     |                                       |  |

1) Plug connector can be rotated by 360°

2) No German Social Accident Insurance or UL approval

**CET-AX-...-SC with two plug connectors M8**

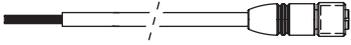
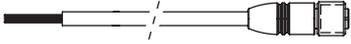
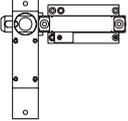
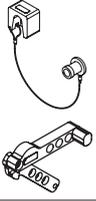
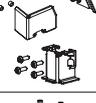
| <br>Order no./item | Ramp  | Escape release | Two LEDs<br>(one freely configurable) | Two LEDs<br>(two freely configurable) | For wiring diagram,<br>see page 56  |
|---|---|----------------|---------------------------------------|---------------------------------------|---|
| <b>CET1</b><br>Closed-circuit current principle   |   |                |                                       |                                       |   |
| <b>102988</b><br>CET1-AX-LRA-00-50X-SC  |  |                | ●                                     |                                       |  |
| <b>CET2</b><br>Open-circuit current principle   |   |                |                                       |                                       |   |
| <b>109932</b> <sup>1)</sup><br>CET2-AX-LRA-00-50X-SC  |  |                | ●                                     |                                       |  |

1) No German Social Accident Insurance or UL approval

**Actuator**

| Series        | Design  | Order no./item                 |   |
|---------------|---|--------------------------------|--|
| CET-A-BWK-50X |  | <b>096327</b><br>CET-A-BWK-50X | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |

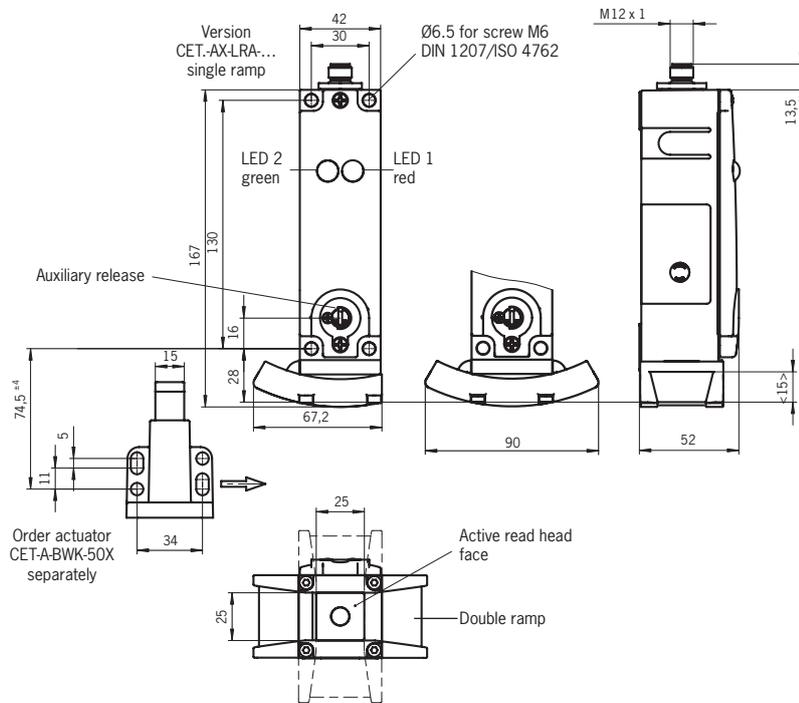
**Accessories**

| Type                             | Version   |  |
|----------------------------------|---|---|
| <b>Connection material</b>       | Connecting cable with plug connector<br>   | <b>M8</b> <b>3 pin</b> Page 64  |
|                                  | Connecting cable with plug connector<br>   | <b>M8</b> <b>4 pin</b> Page 66  |
|                                  | Connecting cable with plug connector<br> | <b>M12</b> <b>8 pin</b> Page 70   |
| <b>Bolts</b>                     | Bolts for housing design CET<br>         | Page 75   |
| <b>Fixing material</b>           | Mounting plates<br>                     | Page 76   |
|                                  | Safety screws for actuators   | Page 77   |
| <b>Miscellaneous accessories</b> | Lockout bar<br>                         | Page 64   |
|                                  | Auxiliary key release<br>               |   |
|                                  | Emergency release<br>                   |   |
|                                  | Cover<br>                               |   |
|                                  | Double ramp<br>                         |   |
|                                  | Extension for escape release<br>        |   |

**Dimension drawing**

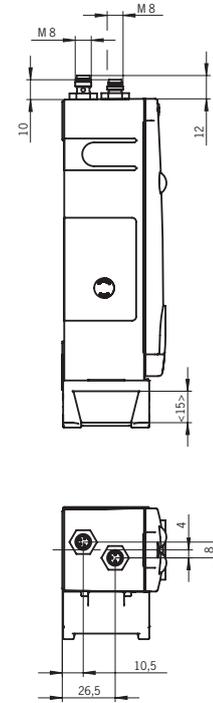
**M12**

**With plug connector M12**

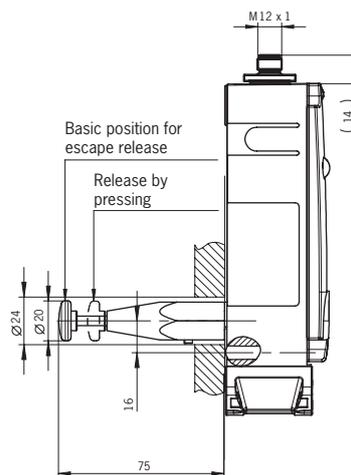


**2x M8**

**With two plug connectors M8**



**With escape release**



M12

8  
pin2x  
M83  
pin4  
pin**Terminal assignment**

A

B

M12

Wiring diagrams A and B

| Pin | Designation | Function   | M12 |   |
|-----|-------------|--|-----|---|
|     |             |  | A   | B |
| 1   | H1          | Read head data line  | ●   | ● |
| 2   | H2          | Read head data line  | ●   | ● |
| 3   | SH          | Data line screen   | ●   | ● |
| 4   | LED 2       | Freely configurable, 24 V                                  | ●   | ● |
| 5   | 0V LED 2    | 0V LED 2   | ●   |   |
|     | LED 1       | Freely configurable, 24 V                                  |     | ● |
| 6   | UCM         | Guard locking solenoid operating voltage, 24 V DC          | ●   | ● |
| 7   | 0 V/GND     | Guard locking solenoid operating voltage, 0 V DC           | ●   |   |
|     |             | Guard locking solenoid operating voltage, 0 V DC and LED 1 |     | ● |
| 8   | Housing     | Housing  | ●   | ● |

C

2x  
M8

Wiring diagram C

| Pin   | Designation | Function   |
|-------|-------------|--|
| X 1.1 | H1          | Read head data line  |
| X 1.3 | H2          | Read head data line  |
| X 1.4 | SH          | Data line screen   |
| X 2.1 | UCM         | Guard locking solenoid operating voltage, 24 V DC / LED 1  |
| X 2.2 | 0V LED 2    | 0V LED 2   |
| X 2.3 | 0 V/GND     | Guard locking solenoid operating voltage, 0 V DC and LED 1 |
| X 2.4 | LED 2       | Freely configurable, 24 V                                  |



# »Safe Electronic-Key-System CKS – safe entry into installations.«

---

- ▶ **Key inserted / key removed** states are reliably detected
- ▶ LED for status indication
- ▶ Varied use, e.g. function as a lockout system, authorization for selecting operating modes, key transfer system, etc.
- ▶ PL e/category 4 according to EN ISO 13849-1

Key  
adapter

**CKS**



**CKS**

## Key adapter CKS



- ▶ Key adapter with integrated CES read head
- ▶ LED indicator
- ▶ Simple connection via plug connector M8
- ▶ High degree of protection IP67
- ▶ Inserted key is held by spring clip
- ▶ Version with integrated AS-Interface Safety at Work available

### Details

#### Combination options

Connection to evaluation unit CES / CES-FD required. See actuator ordering table below.

**Important:** Key adapter CKS must not be used as a lockout bar in combination with multicode evaluation.

### Notice

The key is not included with the key adapter and must be ordered separately.

### Further information

- ▶ For dimension drawings, see p. 61
- ▶ For accessories and spare parts, see p. 60
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

## Ordering table

### Key adapter

| Series    | Version | Cover   | Order no./item                         |  |
|-----------|---------|---|--|--|
| CKS-A-... |         | <div style="border: 1px solid black; padding: 2px; display: inline-block;">M8</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">3 pin</div> | red<br>113130<br>CKS-A-L1B-SC-113130   | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
|           |         |   | black<br>158081<br>CKS-A-L1B-SC-158081 |  |

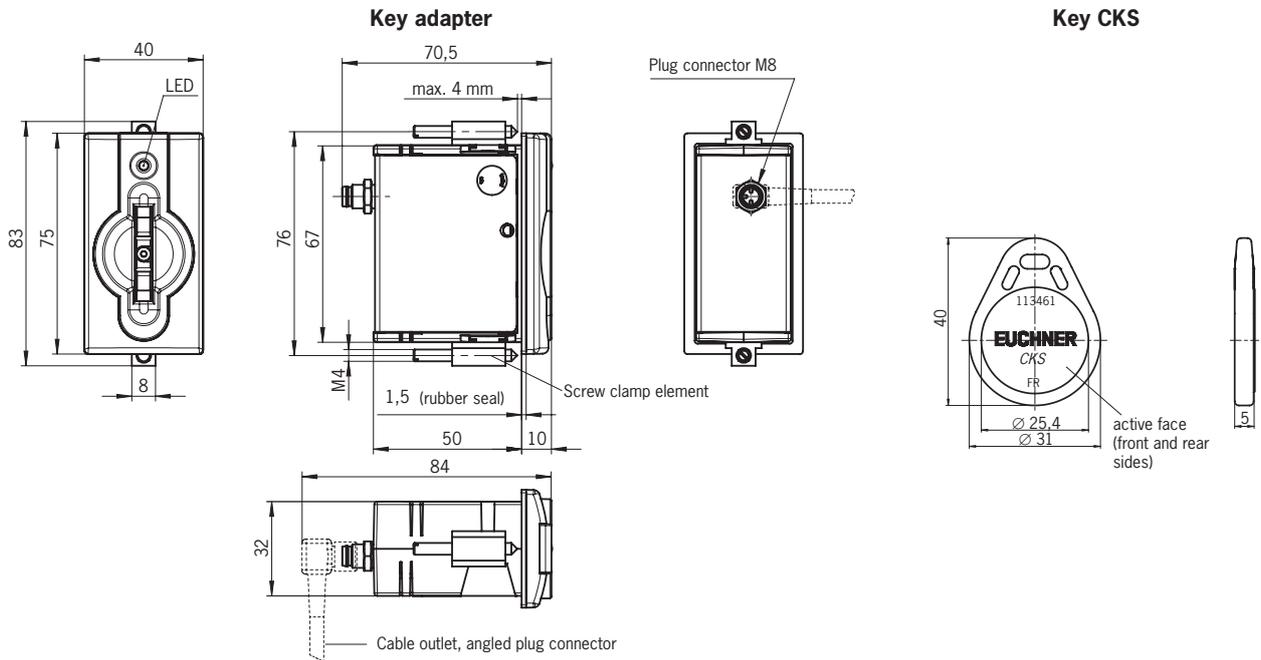
### Key

| Series        | Design | Color                                   | Order no./item   |  |
|---------------|--------|---|--|--|
| CKS-A-BK1-... |        | red<br>113461<br>CKS-A-BK1-RD-113461    | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |  |
|               |        | black<br>157843<br>CKS-A-BK1-BK-157843  |  |  |
|               |        | blue<br>165637<br>CKS-A-BK1-BU-165637   |  |  |
|               |        | yellow<br>165971<br>CKS-A-BK1-YE-165971 |  |  |

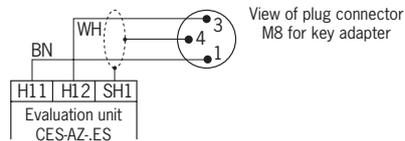
### Accessories

| Type                | Version  |         |
|---------------------|--|---------|
| Connection material | Connecting cable with plug connector<br><div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 20px;">M8</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">3 pin</div> | Page 64 |
| Lens set            |  | Page 79 |

## Dimension drawing



## Terminal assignment



»Exploit all the advantages –  
with well thought-out  
original accessories from  
EUCHNER.«

---

- ▶ Connection material – connect safely and easily; no long search for cables and plug connectors.
- ▶ Fixing material – secure and easy installation for many installation situations.
- ▶ Bolts and bolt sets – door handle and mounting plate in one.  
Complete sets comprising bolt and read head as complete solution.
- ▶ Function expansions – increase the possible applications with additional functions such as releases, lockout bars, etc.



**Connection material**

M8 3 pin PVC

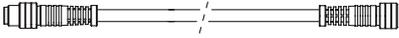
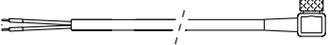
**Connecting cables with plug connector**

For the connection of:

|               |                            |   |                |              |               |
|---------------|----------------------------|---|----------------|--------------|---------------|
| CES-FD-AP-... | CEM-ALH10...               | CET-AX-...-SC   | CES-ALN-...-SC | CEM-ALE05... | CKS-AL-...-SC |
|               |                            |   |                |              |               |
| -             | Plug connector not aligned | <p>The following applies to the device installation orientation shown:</p> <p>Cable outlet C (left)      Cable outlet A (right)</p> |                |              |               |

| Version  | Cable outlet | Order no./item |  |
|--|--------------|----------------|--|
| <p>Connecting cable with female plug, flying lead, 2 x 0.25 mm<sup>2</sup>, screened</p> | 3m           | -              | <p>For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a>.</p> |
|  | 5m           | -              |  |
|  | 10m          | -              |  |
|  | 20m          | -              |  |
|  | 25m          | -              |  |
| <p>Connecting cable with female plug, flying lead, 2 x 0.25 mm<sup>2</sup>, screened</p> | 10m          | C              |  |
|  | 25m          | C              |  |

M8  
3 pin  
PVC

| Version  | Cable outlet | Order no./item                                      |   |
|--|--------------|---|--|
| <b>Extension for read head cable</b><br>  | 0,4m         | <b>115464</b><br>C-M08M03-02X025PU0,4-M08F03-115464 | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
|  | 5m           | <b>084762</b><br>C-M08F03-02X025PU05,0-ES-084762    |  |
| <b>Connecting cable with female plug, flying lead, 2 x 0.25 mm<sup>2</sup>, screened</b><br>  | 10m          | <b>084763</b><br>C-M08F03-02X025PU10,0-ES-084763    |  |
|  | 15m          | <b>084764</b><br>C-M08F03-02X025PU15,0-ES-084764    |  |
|  | 20m          | <b>084765</b><br>C-M08F03-02X025PU20,0-ES-084765    |  |
|  | 25m          | <b>084766</b><br>C-M08F03-02X025PU25,0-ES-084766    |  |
|  |              |   |  |
| <b>Connecting cable with female plug, flying lead, 2 x 0.25 mm<sup>2</sup>, screened</b><br> | 10m          | <b>098590</b><br>C-M08F03-02X025PU10,0-ES-098590    |  |
|  | 25m          | <b>120280</b><br>C-M08F03-02X025PU25,0-ES-120280    |  |

M8  
3 pin  
PUR

**Connecting cables with plug connector**

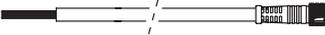
For solenoid operating voltage, read heads

For the connection of:

|  |             |                            |               |
|--|-------------|----------------------------|---------------|
| CEM-A-LE05...  | CEM-A-ME05K | CEM-A-LH10...              | CET-AX-...-SC |
|  |             |                            |               |
| <p>The following applies to the device installation orientation shown:</p> <p style="text-align: center;">Cable outlet C (left)      Cable outlet A (right)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <br/> <span style="border: 1px solid black; padding: 2px;">C</span> </div> <div style="text-align: center;"> <br/> <span style="border: 1px solid black; padding: 2px;">A</span> </div> </div> |             | Plug connector not aligned |               |

| Version   | Cable outlet  | Order no./item  |  |
|---|---|---|--|
| <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <div style="border: 1px solid black; padding: 2px; width: 30px; text-align: center;">M8</div> <div style="border: 1px solid black; padding: 2px; width: 30px; text-align: center;">4 pin</div> <div style="border: 1px solid black; padding: 2px; width: 30px; text-align: center;">PVC</div> </div> <div> <p>Connecting cable with female plug, flying lead, 4 x 0.25 mm<sup>2</sup></p> </div> </div> | <span style="border: 1px solid black; border-radius: 50%; padding: 5px;">2m</span>  | -   | <p><b>088812</b><br/>C-M08F04-04X025PV02,0-ES-088812</p> |
|   | <span style="border: 1px solid black; border-radius: 50%; padding: 5px;">5m</span>  | -   | <p><b>088813</b><br/>C-M08F04-04X025PV05,0-ES-088813</p> |
|   | <span style="border: 1px solid black; border-radius: 50%; padding: 5px;">10m</span> | -   | <p><b>088814</b><br/>C-M08F04-04X025PV10,0-ES-088814</p> |
|   | <span style="border: 1px solid black; border-radius: 50%; padding: 5px;">15m</span> | -   | <p><b>088815</b><br/>C-M08F04-04X025PV15,0-ES-088815</p> |
|   | <span style="border: 1px solid black; border-radius: 50%; padding: 5px;">25m</span> | -   | <p><b>095035</b><br/>C-M08F04-04X025PV25,0-ES-095035</p> |
| <span style="border: 1px solid black; border-radius: 50%; padding: 5px;">50m</span>   | -   | <p><b>097100</b><br/>C-M08F04-04X025PV50,0-ES-097100</p>                          |  |
| <p>Connecting cable with female plug, flying lead, 4 x 0.25 mm<sup>2</sup></p>  | <span style="border: 1px solid black; border-radius: 50%; padding: 5px;">10m</span> | <span style="border: 1px solid black; border-radius: 50%; padding: 5px;">A</span> | <p><b>084703</b><br/>C-M08F04-04X025PV10,0-ES-084703</p> |

For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

| Version   |            | Cable outlet | Order no./item   |   |
|---|------------|--------------|--|--|
| <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p><b>M8</b></p> <p><b>4 pin</b></p> <p><b>PUR</b></p> </div> <div> <p><b>Connecting cable with female plug, flying lead, 4 x 0.34 mm<sup>2</sup></b></p>  </div> </div> | <b>5m</b>  | -            | <p><b>116049</b><br/>C-M08F04-04X034PU05,0-ES-116049</p> | <p>For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a>.</p> |
|   | <b>10m</b> | -            | <p><b>116050</b><br/>C-M08F04-04X034PU10,0-ES-116050</p> |  |
|   | <b>20m</b> | -            | <p><b>116051</b><br/>C-M08F04-04X034PU20,0-ES-116051</p> |  |
|   | <b>50m</b> | -            | <p><b>120241</b><br/>C-M08F04-04X034PU50,0-ES-120241</p> |  |

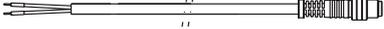
**Connecting cables with plug connector**

For LED indicator of read heads CEM

For the connection of:

CEM-A-LH10-...

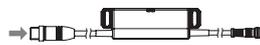


| Version  | Order no./item  |   |
|--|---|--|
| <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p><b>M8</b></p> <p><b>4 pin</b></p> <p><b>PVC</b></p> </div> <div style="text-align: center;"> <p>Connecting cable with male plug,<br/>flying lead,<br/>4 x 0.25 mm<sup>2</sup></p>  </div> <div style="margin-left: 10px; border: 1px solid black; border-radius: 5px; padding: 2px 5px;"> <p>10m</p> </div> </div> | <p><b>088843</b></p> <p>C-M08M04-04X025PV10,0-ES-088843</p> | <p>For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a>.</p> |

**Connecting cables with plug connector**

For the connection of:

CES-FD-AP-...



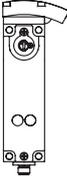
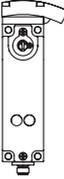
| Version  |     | Order no./item                                       |  |
|--|-----|--|--|
| <p><b>Connecting cable with female plug, flying lead, 5 x 0.34 mm<sup>2</sup>, screened</b></p>            | 5m  | <b>100183</b><br>C-M12F05-05X034PV05,0-MA-100183     | <p>For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a>.</p> |
|  | 10m | <b>100184</b><br>C-M12F05-05X034PV10,0-MA-100184     |  |
|  | 20m | <b>100185</b><br>C-M12F05-05X034PV20,0-MA-100185     |  |
|  | 50m | <b>156064</b><br>C-M12F05-05X034PV50,0-MA-156064     |  |
| <p><b>Extension, plug connectors at both ends for connection to decentralized peripheral equipment</b></p> | 5m  | <b>100180</b><br>C-M12F05-05X034PV05,0-M12M05-100180 |  |
|  | 10m | <b>100181</b><br>C-M12F05-05X034PV10,0-M12M05-100181 |  |
|  | 20m | <b>100182</b><br>C-M12F05-05X034PV20,0-M12M05-100182 |  |
| <p><b>Connecting cable with female plug, flying lead, 5 x 0.34 mm<sup>2</sup>, screened</b></p>            | 5m  | <b>113620</b><br>C-M12F05-05X034PU05,0-MA-113620     |  |
|  | 10m | <b>113640</b><br>C-M12F05-05X034PU10,0-MA-113640     |  |
|  | 20m | <b>113682</b><br>C-M12F05-05X034PU20,0-MA-113682     |  |
|  | 30m | <b>122784</b><br>C-M12F05-05X034PU30,0-MA-122784     |  |
| <p><b>Extension, plug connectors at both ends for connection to decentralized peripheral equipment</b></p> | 5m  | <b>119932</b><br>C-M12F05-05X034PU05,0-M12M05-119932 |  |
|  | 10m | <b>119947</b><br>C-M12F05-05X034PU10,0-M12M05-119947 |  |
|  | 20m | <b>119971</b><br>C-M12F05-05X034PU20,0-M12M05-119971 |  |

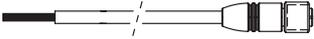
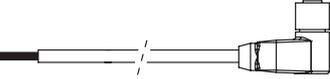
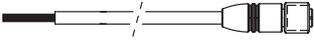
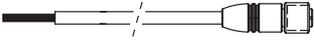
M12  
5 pin  
PVC

M12  
5 pin  
PUR

**Connecting cables with plug connector**

For the connection of:

|   |  |
|---|--|
| CET-AX-...-SA<br>CET-AX-...-SE<br> | CET-AX-...-SF<br> |
| Plug connector not aligned  | Plug connector can be rotated by 360°.   |

| Version  | Cable outlet | Order no./item |   |  |
|--|--------------|----------------|--|--|
| <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; width: 30px; text-align: center; margin-bottom: 5px;">M12</div> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; width: 30px; text-align: center; margin-bottom: 5px;">8 pin</div> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; width: 30px; text-align: center;">PVC</div> </div> <div> <p>Connecting cable with female plug, flying lead, 7 x 0.25 mm<sup>2</sup>, screened <sup>1)</sup></p>  </div> </div> | <b>10m</b>   | -              | <p><b>099633</b><br/>C-M12F08-07X025PV10,0-MA-099633</p>   |  |
|  | <b>20m</b>   | -              | <p><b>099634</b><br/>C-M12F08-07X025PV20,0-MA-099634</p>   |  |
|  | <b>25m</b>   | -              | <p><b>103115</b><br/>C-M12F08-07X025PV25,0-MA-103115</p>   |  |
| <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; width: 30px; text-align: center; margin-bottom: 5px;">M12</div> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; width: 30px; text-align: center; margin-bottom: 5px;">8 pin</div> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; width: 30px; text-align: center;">PUR</div> </div> <div> <p>Connecting cable with female plug, flying lead, 7 x 0.25 mm<sup>2</sup>, screened <sup>1)</sup></p>  </div> </div> | <b>10m</b>   | -              | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |  |
|  | <b>20m</b>   | -              |  | <p><b>100456</b><br/>C-M12F08-07X025PV10,0-MA-100456</p> |
| <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; width: 30px; text-align: center; margin-bottom: 5px;">M12</div> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; width: 30px; text-align: center; margin-bottom: 5px;">8 pin</div> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; width: 30px; text-align: center;">PUR</div> </div> <div> <p>Connecting cable with female plug, flying lead, 7 x 0.25 mm<sup>2</sup>, screened <sup>1)</sup></p>  </div> </div> | <b>10m</b>   | -              |  | <p><b>105071</b><br/>C-M12F08-07X025PV20,0-MA-105071</p> |
|  | <b>25m</b>   | -              |  | <p><b>102218</b><br/>C-M12F08-07X025PU10,0-MA-102218</p> |
| <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; width: 30px; text-align: center; margin-bottom: 5px;">M12</div> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; width: 30px; text-align: center; margin-bottom: 5px;">8 pin</div> <div style="border: 1px solid black; border-radius: 5px; padding: 2px; width: 30px; text-align: center;">PUR</div> </div> <div> <p>Connecting cable with female plug, flying lead, 7 x 0.25 mm<sup>2</sup>, screened <sup>1)</sup></p>  </div> </div> | <b>10m</b>   | -              |  | <p><b>103782</b><br/>C-M12F08-07X025PU25,0-MA-103782</p> |
|  | <b>25m</b>   | -              |  | <p><b>103782</b><br/>C-M12F08-07X025PU25,0-MA-103782</p> |

1) Two wires in the cable are screened

**Cables with coupling socket/female plug**

Cables for extending the read head connecting cable

For the connection of:

CES-AL-...



CEM-A-L-...



| Version  | Order no./item  |  |
|--|---|--|
| <p>Extension, female plug BS4C1851 at one end, flying lead, 2 x 0.25 mm<sup>2</sup>, screened</p>                                       | <p><b>103667</b><br/>C-M18F04-02X025PV01,5-ES-103667</p> <p>1,5m</p>    | <p>For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a>.</p> |
| <p>Extension, plug connectors at both ends, coupling socket KD4C1851/ cable socket M8 (3-pin), 2 x 0.25 mm<sup>2</sup>, screened</p>  | <p><b>103647</b><br/>C-M08F03-02X025PV15,0-M18M04-103647</p> <p>15m</p> |  |
| <p><b>M8</b></p> <p><b>3 pin</b></p>   | <p><b>128064</b><br/>C-M08F03-02X025PV18,0-M18M04-128064</p> <p>18m</p> |  |
|  | <p><b>163468</b><br/>C-M08F03-025PV20,0-M18M04-163468</p> <p>20m</p>    |  |

**Coupling socket/female plug**

Plug connector for extending the read head connecting cable

For the connection of:

CES-AL-...



CEM-A-L-...



| Version   | Comment   | Order no.                         |  |
|---|---|-----------------------------------|--|
| <p><b>Coupling socket</b></p>  | <p>Coupling socket for female plug BS4C1851</p> | <p><b>077434</b><br/>KD4C1851</p> | <p>For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a>.</p> |
| <p><b>Female plug</b></p>      | <p>Female plug for coupling socket KD4C1851</p> | <p><b>077435</b><br/>BS4C1851</p> |  |

**Inrush current limiting module PM-SCL**

Limits the switch-on current on CES evaluation units and in this way protects the switching contacts

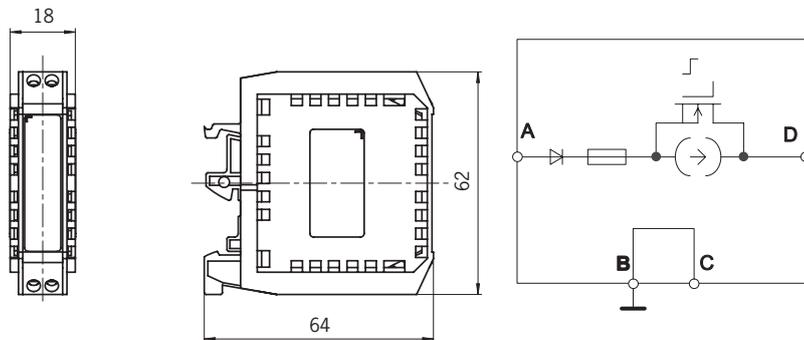
For the connection of:

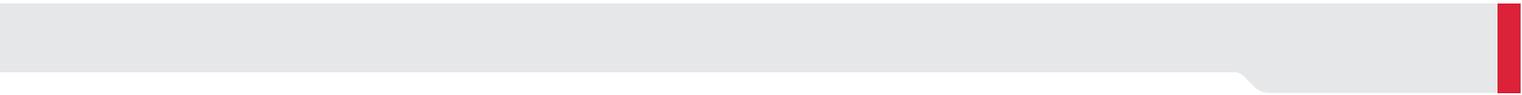
CES-AZ-...



| Version   | Order no.                      |   |
|---|--------------------------------|--|
| Inrush current limiting module <b>PM-SCL</b>  For CES evaluation units | <b>096945</b><br>PM-SCL-096945 | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |

**Dimension drawing and connection options**





**Bolts**



**Bolts for read heads CES**

**Notice:** On these bolts, the actuators are integrated into the bolt tongue and are included.

**For mounting:**

CES-ALNA...



| Designation | Detent mechanism/<br>door gap   | Material | Version   | Order no.                       |  |
|-------------|---|----------|---|---------------------------------|--|
|             | <b>Bolt CES-A-A</b><br>Closed position:<br>ball detent<br>mechanism<br>Open position:<br>none/<br>door gap:<br>15 mm          | Steel    | For doors hinged on the right or left   | <b>076487</b><br>BOLT CES-A-A   | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
|             | <b>Bolt CES-A-A/F</b><br>Closed position:<br>ball detent<br>mechanism<br>Open position:<br>detent knob/<br>door gap:<br>15 mm | Steel    | For doors hinged on the right or left, with lever for escape release from the danger area | <b>086173</b><br>BOLT CES-A-A/F |  |

**Bolts for read heads CEM**

**Notice:** Actuators are **not** included with these bolts.

**For mounting:**

CEM-A-LE05...



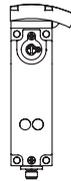
| Designation | Detent mechanism/<br>door gap | Material | Version                       | Order no.                   |  |
|-------------|-------------------------------|----------|-------------------------------|-----------------------------|--|
|             | None/<br>door gap:<br>15 mm   | Steel    | For doors hinged on the right | <b>097955</b><br>BOLT CEM-A | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
|             |                               |          | For doors hinged on the left  | <b>097957</b><br>BOLT CEM-C |  |

**Bolts for read head CET**

**Notice:** Actuators are **not** included with these bolts.  
Cover (protection against tampering) for CET actuators included.

**For mounting:**

CET.-AX-...

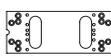


| Designation                 | Detent mechanism/<br>door gap  | Material                                   | Version  | Order no.                                |   |
|-----------------------------|--|--|--|--|--|
| <b>Bolt CET-A-C</b>         | None/<br>door gap:<br>15 mm  | Steel                                      | For doors hinged on the right or left  | <b>104309</b><br>BOLT CET-A-C            | For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> . |
| <b>Bolt CET-A-C/F</b>       | Closed position:<br>none<br>Open position:<br>detent knob/<br>door gap:<br>15 mm | Steel                                      | For doors hinged on the right or left, for CET with escape release                             | <b>106172</b><br>BOLT CET-A-C/F          |  |
| <b>Bolt CET-A-C/F-C2282</b> | Closed position:<br>none<br>Open position:<br>detent knob/<br>door gap:<br>15 mm | Steel, guide strip made of stainless steel | For doors hinged on the right or left, for CET with escape release                             | <b>106350</b><br>BOLT<br>CET-A-C/F-C2282 |  |
| <b>Bolt CET-A-C-C2308</b>   | None/<br>door gap:<br>15 mm  | Steel                                      | For doors hinged on the right or left.<br>Bolt can be opened outward and inward (no end stop). | <b>109672</b><br>BOLT<br>CET-A-C-C2308   |  |



## Fixing material

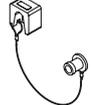
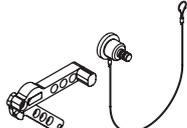
## Mounting sets/mounting plates

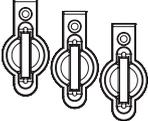
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|--|--|------------------------------|--|
|   | <b>Mounting plate EMP-L-CEM05</b><br> | For read head CEM-ALE05...   | <b>099425</b><br>EMP-L-CEM05   |
|  | <b>Mounting plate EMP-B-CEM05</b><br> | For actuator CEM-A-BE05...   | <b>100110</b><br>EMP-B-CEM05   |
|                                        | <b>Mounting plate EMP-L-CET</b><br>   | For read head CET-AX         | <b>106695</b><br>EMP-L-CET   |
|  | <b>Mounting plate EMP-B-CET</b><br>   | For actuator CET             | <b>106694</b><br>EMP-B-CET   |
|  | <b>Mounting plate EMP-B1</b><br>     | For actuator CET             | <b>093457</b><br>EMP-B1  |
|  | <b>Mounting plate AM-P</b><br>      | For read head CET-AX         | <b>126399</b><br>AM-P-126399   |
|  | <b>Mounting plate AM-P</b><br>      | For actuator CET             | <b>126400</b><br>AM-P-126400   |
| <b>Mounting plate with handle</b><br> | Can be combined with mounting plates AM-P-126399 and AM-P-126400   | <b>126398</b><br>AM-P-126398 | <p>For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a>.</p> |

**Safety screws**

| Fixing material/<br>screw size                                      | Version/use   | Packaging unit<br>[qty.] | Order no.                           |
|---|---|--------------------------|-------------------------------------|
| Safety screws,<br>stainless steel<br><b>M4 x 14</b><br>(small head) | Read heads CES-ALN..., CES-ALC...,<br>CES-A-LQ... and actuators<br>CES-ABB..., CES-ABCA, CES-ABQ... | 20                       | <b>071863</b><br>M4X14-NIRO/V20     |
| Safety screws,<br>stainless steel<br><b>M4 x 14</b><br>(large head) | Field evaluation unit CES-FD-AP...  | 100                      | <b>086232</b><br>M4X14-NIRO/V100    |
| Safety screws<br><b>M5 x 16</b>                                     | Read heads CEM-A-LE... and actuators<br>CET-A-BWK, CEM-A-B...                                       | 100                      | <b>073456</b><br>M5X16/V100         |
| Plastic inserts for hexagon socket screws<br><b>M5/SW4</b>          | Safety switch with guard locking  | 18                       | <b>161344</b><br>AM-C-SW4-V3-161344 |
| Plastic inserts for hexagon socket screws<br><b>M6/SW5</b>          | Safety switch with guard locking  | 18                       | <b>161348</b><br>AM-C-SW5-V3-161348 |

## Miscellaneous accessories

| Designation   | Use   | Version  | Order no.                              |
|---|---|--|--|
|  <b>Lockout bar</b><br>               | For actuator CEM-A-BE05                         | Suitable for 3x shackle diameter<br>4 ... 9 mm   | <b>122404</b><br>AE-L-BE05-R-122404    |
| <b>Lockout bar</b><br>   | For actuator CET                                | Suitable for shackle diameter<br>5 ... 6 mm  | <b>122609</b><br>AE-L-CET-122609       |
| <b>Lockout bar</b><br>   | For actuator CET                                | Suitable for shackle diameter<br>5 mm - 9 mm   | <b>156429</b><br>AE-L-CET-156429       |
| <b>Holder for lockout bar</b><br>  | For lockout bar AE-L-CET-156420                 | Including wire rope and ring to<br>hang the wire rope onto the<br>lockout bar  | <b>156338</b><br>AY-CHN-A1-156338      |
| <b>Lockout bar + holder<br/>set</b><br>  | For actuator CET                                | Suitable for shackle diameter<br>5 mm - 9 mm.<br>Holder including wire rope and<br>ring to hang the wire rope onto<br>the lockout bar. | <b>155865</b><br>AE-SET-LCHN-A1-155865 |
|  <b>Auxiliary key release</b><br> | For read head CET-AX                            | Identical locking, including two<br>keys   | <b>098850</b>                          |
| <b>Replacement key</b>  | For auxiliary key release, identical<br>locking | 2 keys, identical locking  | <b>099434</b>                          |
| <b>Emergency release</b><br>   | For read head CET-AX                            | Latching in both positions,<br>installation height 19 mm   | <b>103714</b><br>AE-M-CET-103714       |
|   |   | Latching in both positions,<br>installation height 70 mm   | <b>159080</b><br>AE-M-CET-159080       |
| <b>Lead seal kit</b>  | For emergency release                           | –  | <b>087256</b>                          |
| <b>Cover</b><br>   | For read head CET-AX<br>and actuator CET        | Door hinge right   | <b>098808</b>                          |
|   |   | Door hinge left  | <b>098807</b>                          |
| <b>Cover</b><br>   | For actuator CET                                | For horizontal and vertical<br>fastening on the actuator (suitable<br>for fixing screws M5 x 16)                                       | <b>124979</b><br>AM-C-124979           |
| <b>Double ramp</b><br>   | For read head CET-AX                            | –  | <b>114091</b><br>CET-DR                |
| <b>Extension for escape<br/>release</b><br>  | For read head CET-AX with escape<br>release     | Extension by 30/50/80 mm,<br>pushbutton Ø 40 mm  | <b>127377</b><br>AF-E-80-127377        |

| Designation   | Use  | Version   | Order no.  |
|---|--|---|--|
| <p data-bbox="347 338 432 360">Lens set</p>   | <p data-bbox="579 414 767 441">For key adapter CKS</p> | <p data-bbox="911 403 1075 454">Color set<br/>black, blue, yellow</p> | <p data-bbox="1225 403 1410 454"><b>165413</b><br/>AY-SET-CVR-165413</p> |

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| 106600    | CES-A-BBN-106600                    | 30   |
| 106601    | CES-A-LNN-SC-106601                 | 30   |
| 106602    | CES-A-LNN-05V-106602                | 30   |
| 106694    | EMP-B-CET                           | 76   |
| 106695    | EMP-L-CET                           | 76   |
| 109672    | BOLT CET-A-C-C2308                  | 75   |
| 109755    | CEM-A-ME05K-S1-109755               | 42   |
| 109932    | CET2-AX-LRA-00-50X-SC               | 53   |
| 112630    | CES-EA-TC-KK06-112630               | 20   |
| 112631    | CES-EA-TC-KK04-112631               | 18   |
| 113130    | CKS-A-L1B-SC-113130                 | 60   |
| 113294    | CES-A-LNN-10V-113294                | 30   |
| 113461    | CKS-A-BK1-RD-113461                 | 60   |
| 113620    | C-M12F05-05X034PU05,0-MA-113620     | 69   |
| 113640    | C-M12F05-05X034PU10,0-MA-113640     | 69   |
| 113682    | C-M12F05-05X034PU20,0-MA-113682     | 69   |
| 114091    | CET-DR                              | 78   |
| 115464    | C-M08M03-02X025PU0,4-M08F03-115464  | 65   |
| 115534    | CES-FD-AP-M-01-USI-115534           | 26   |
| 116049    | C-M08F04-04X034PU05,0-ES-116049     | 67   |
| 116050    | C-M08F04-04X034PU10,0-ES-116050     | 67   |
| 116051    | C-M08F04-04X034PU20,0-ES-116051     | 67   |
| 119865    | CES-FD-AP-U-01-USI-119865           | 26   |
| 119932    | C-M12F05-05X034PU05,0-M12M05-119932 | 69   |
| 119947    | C-M12F05-05X034PU10,0-M12M05-119947 | 69   |
| 119971    | C-M12F05-05X034PU20,0-M12M05-119971 | 69   |
| 120241    | C-M08F04-04X034PU50,0-ES-120241     | 67   |
| 120280    | C-M08F03-02X025PU25,0-ES-120280     | 65   |



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