

# Transponder-coded safety switches

Interlocking devices and guard locking devices



**EUCHNER**

More than safety.

# 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**

<b>General</b>	<b>4</b>	
Selection criteria	5	
Safety switches without guard locking	10	
Safety switches with guard locking	11	
Function expansion	12	
<b>System Family BP</b>	<b>14</b>	<b>BP</b>
Safety switch CES-I-BP-.-C07-...	16	
Safety switch CTM-.BI-BP-...	18	
<b>System Family BR</b>	<b>22</b>	<b>BR</b>
Safety switch CES-I-BR-.-C07-...	24	
Safety switch CTM-.BI-BR-...	28	
BR/IO-Link Gateway GWY-CB	32	
Safety relay ESM-CB with integrated BR/IO-Link Gateway	34	
<b>System Family A</b>	<b>36</b>	<b>A</b>
Safety switch CES-A-.5...	38	
<b>System Family AP/AY</b>	<b>40</b>	<b>AP/AY</b>
Safety switch CES-AP-C01-...	42	
Safety switch CES-AP-C.2-...	44	
Safety switch CES-I-AP-.-C04-...	48	
Safety switch CES-I-AP-.-C14-...	52	
Safety switch CEM-I2-AY-.-C40-...	54	
Variable magnetic guard locking CEM-M2-C60-...	58	
Safety switch CTP-...-AP-...	60	
Safety switch CET.-AP-...	72	
<b>System Family AR</b>	<b>80</b>	<b>AR</b>
Safety switch CES-AR-C01-...	82	
Safety switch CES-AR-C.2-...	84	
Safety switch CES-I-AR-.-C04-...	88	
Safety switch CES-I-AR-.-C14-...	92	
Safety switch CEM-I2-AR-.-C40-...	94	
Safety switch CTP-L.-AR-...	98	
Safety switch CET.-AR-...	106	
AR evaluation unit CES-AR-AES-12	116	
<b>Accessories</b>	<b>118</b>	
Connection material	120	
Bolts	136	
Fixing material	142	
Miscellaneous accessories	144	
<b>Index</b>	<b>148</b>	
Index by item designation	148	
Index by order number	152	

## 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 (RFID) 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.

### Internal evaluation

Transponder signals are evaluated in the field, not in the control cabinet. All devices in this catalog have internal evaluation.

### 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.

**You will find more information on these devices in the catalog Transponder-Coded Safety Systems with External Evaluation or at [www.euchner.com](http://www.euchner.com).**

## The advantages of transponder-coded safety switches

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

- Maximum protection against tampering due to uniquely coded actuator
- Highest safety category and Performance Level (PL) according to EN ISO 13849-1

- Depending on the application, a device with a suitable actuating range can be selected
- The large actuating range offers greater door guide tolerance
- The actuator can be rotated within the read head's actuating range
- Less sensitive to dirt on the surface
- Largely insensitive to vibration and shock
- Can be used in harsh environments
- Suitable for areas with increased hygiene requirements

## Type examinations and approvals

EUCHNER is allowed to perform 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

### System families

#### System family A

**A** System family A is characterized by the ability to switch through clock pulses from safe control systems via its semiconductor outputs.

The clock pulses at the control system outputs do not have to be switched off. Up to 3 devices can be connected in series.

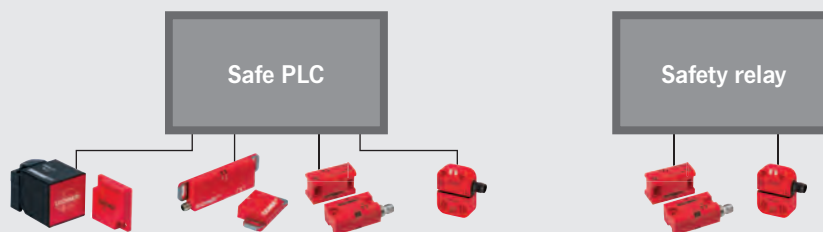
#### System family AP/BP

**AP BP** System family AP/BP is intended to be used for separate operation. The devices are particularly suitable for the connection of safety evaluation units and safety control systems that require short test pulses. Some versions have been optimized for connection to decentralized peripheral systems, such as the ET200pro series from Siemens. The AP/BP devices generate test pulses at the safety outputs for short

circuit monitoring. Due to the little wiring work required, AP/BP devices represent a low-cost solution.

On devices from system family BP, EUCHNER IO-Link Gateways can be used to read process and device data from the switch and transfer them to an IO-Link master in real time. Devices with communication capability are identified by the INDUSTRY 4.0 READY logo.

#### Connection examples



#### System family AY

**AY** AY devices are intended to be used for separate operation. The AY devices generate test pulses on the safety outputs for short circuit

monitoring. The test pulses are longer than on AP devices.

#### System family AR

**AR** In the AR version, up to 20 devices belonging to the AR system family can be connected in series. Category 4/PL e is achieved for series connections with up to 20 devices. The AR devices generate test pulses on the safety outputs for short circuit monitoring.

to the AR evaluation unit. If the evaluation unit is used, the monitoring signals can be evaluated as well. Instead of the Y-plug connectors, it is also possible to use a passive distribution module.

With this device, safety and status signals are collected together in the field and forwarded to the control system.

#### 2 different connection options are available:

##### ■ Series connection in the field

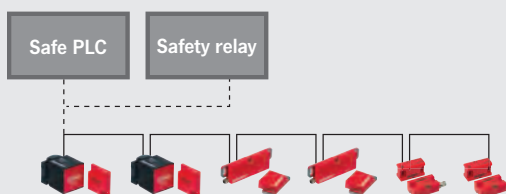
For field wiring, EUCHNER offers the option of using M12 plugs and Y-distributors to connect together several AR devices. The safety outputs of the last switch can be connected either directly to a control system or

##### ■ Series connection in the control cabinet

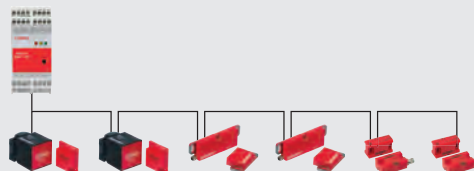
Wiring takes place in the control cabinet. All information about the status of individual AR devices can be forwarded directly to the control system.

#### Examples for series connection in the field

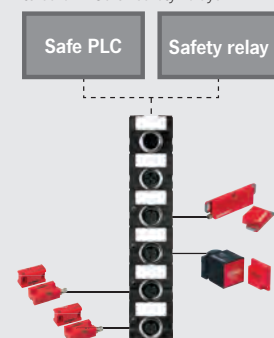
Series connection with Y-distributors and connection to safe PLCs or safety relays



Series connection with Y-distributors and connection to AR evaluation unit



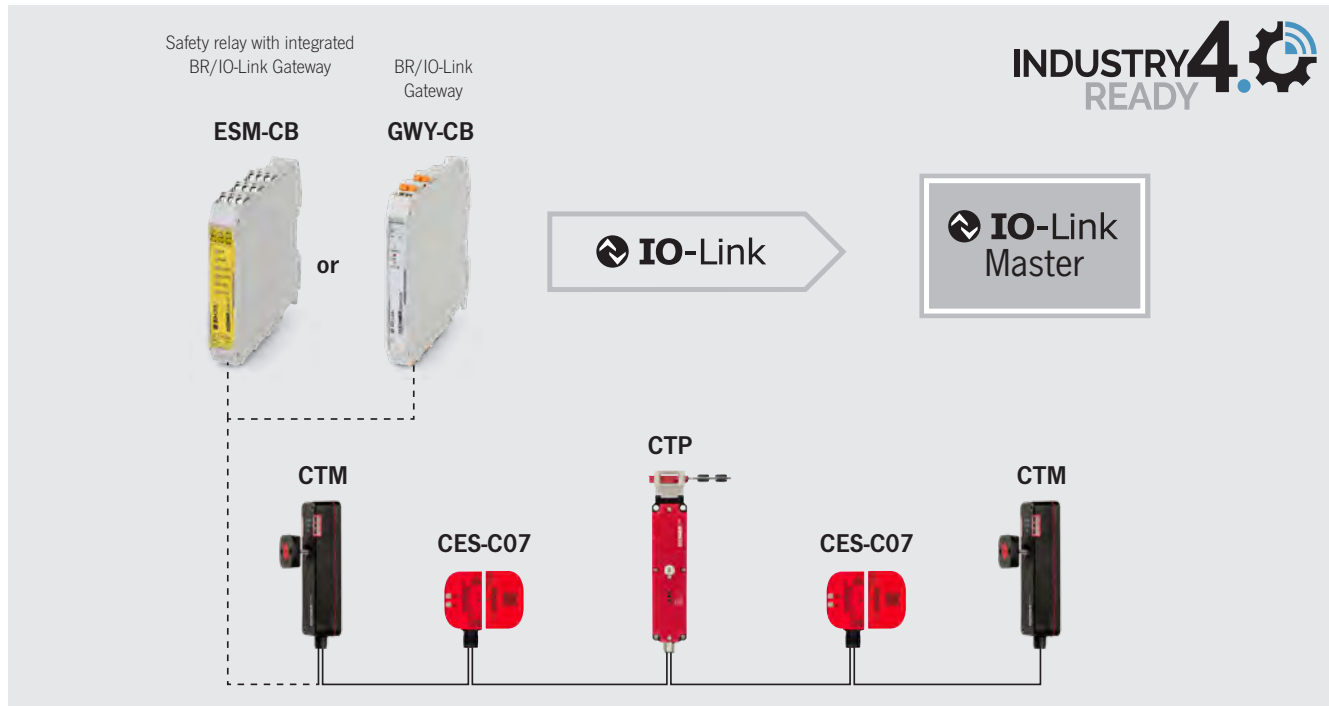
Series connection with passive distribution modules and connection to safe PLCs or safety relays



## System family BR

**BR** In the BR version, up to 20 devices belonging to the BR system family can be connected in series. EUCHNER IO-Link Gateways can be used to read process and device data from the switch and transfer them to an IO-Link master in real time. Devices with communication capability are identified by the INDUSTRY 4.0 READY logo.

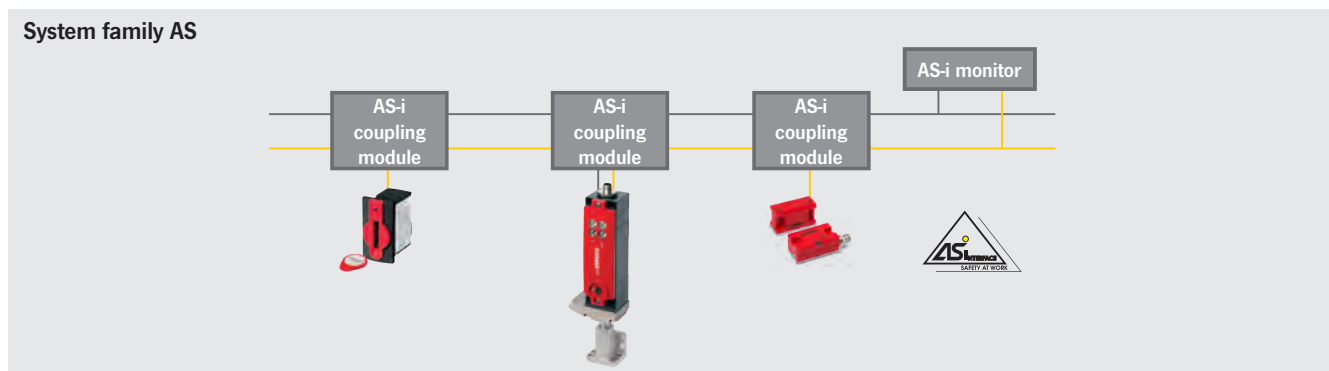
Category 4/PL e is achieved for series connections with up to 20 devices. The BR devices generate brief test pulses of 0.3 ms duration at the safety outputs for short circuit monitoring. A mix of AR and BR devices must not be used in a switch chain.



## System family AS (AS-Interface Safety at Work)

**AS** Version with integrated AS-Interface. The safety switch is connected directly to the ribbon cable via an AS-i coupling module. The wiring work is therefore reduced to a minimum, as all information on the safety switch is made available to the control system via the AS-Interface. **You**

will find more information on devices with AS-Interface in the catalog **Safety Switches with AS-Interface** or at [www.euchner.com](http://www.euchner.com).



## 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 safety switch. During the teach-in operation, the actuator code is assigned to the safety switch. This code is saved in the safety switch. Whenever an actuator is read, the safety switch compares the code just read with the code last saved. The actuator is detected and the safety outputs/status signals are switched only if the two bit patterns are identical. The number of possible teach-in operations is dependent of the safety switch used. Only the last actuator taught-in is detected. Unicode evaluation provides a high level of protection against tampering.

### Fixcode evaluation

With fixcode version devices, an actuator is permanently assigned to the device. The device can be operated only with this one actuator. No additional actuators can be taught in.

- With AP/AR devices, the teach-in operation is performed at EUCHNER prior to delivery.
- With BP/BR devices, the teach-in operation is performed on-site at the customer's premises. Each actuator approved for the devices is assigned to the switch by a one-time teach-in operation. Another teach-in operation is not possible.

### Multicode evaluation

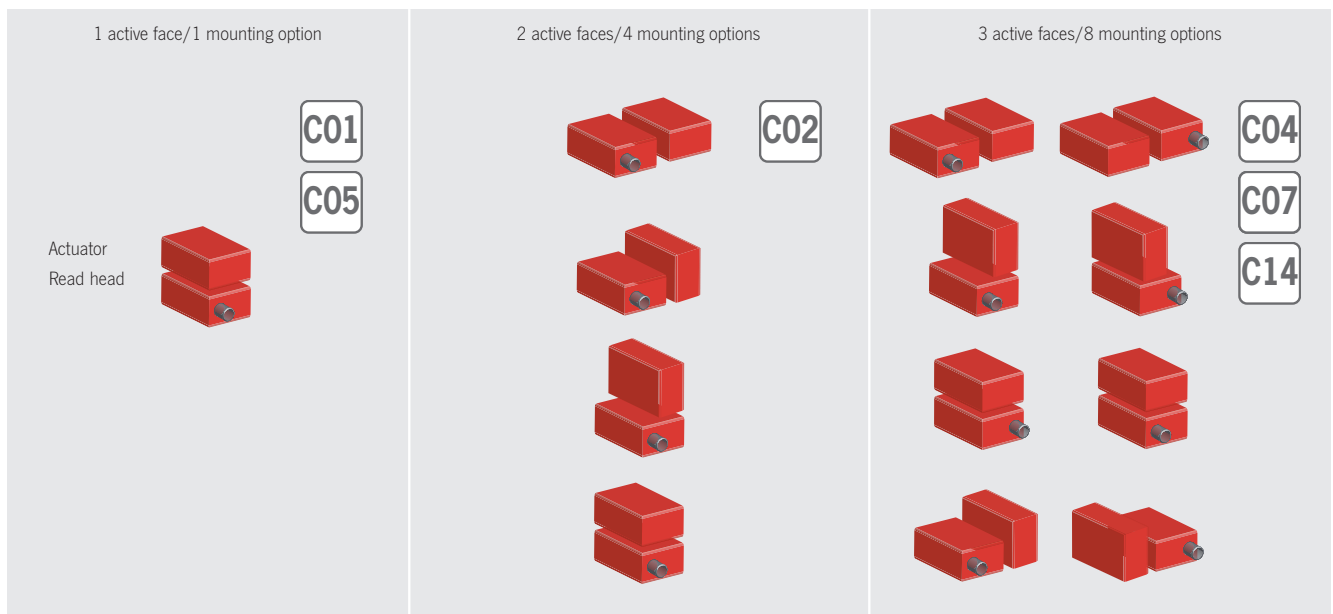
Unlike systems with unique code evaluation, a specific actuator code is not requested with multicode devices, instead it is only checked whether the actuator is of a suitable type that can be detected by the system (multicode detection). There is no exact comparison of the actuator code with a code saved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

## 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 switch define these distances. The faces must be parallel to each other on approach.

### Approach directions

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.

### Operating distances, release distance and hysteresis

On moving an actuator toward a switch, a switching signal is triggered on reaching the operating distances. 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 distances and the 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

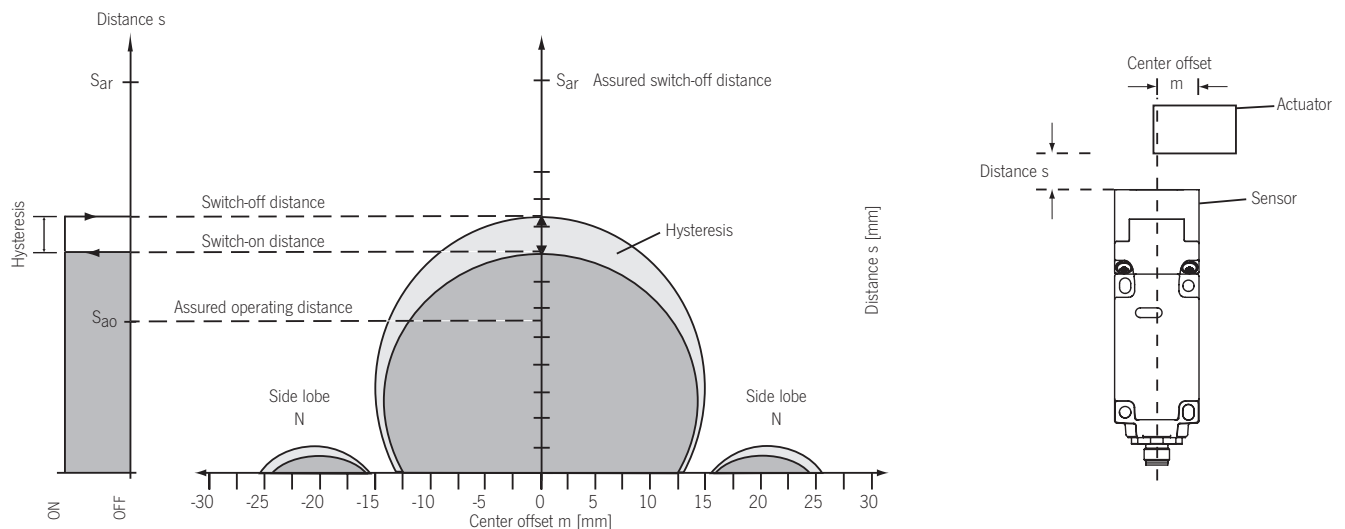
The device detects if the actuator wanders out of the actuating range, and indicates that the actuator is in the limit range by flashing the STATE LED. This allows the safety door to be readjusted in time.

### 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.





## Interlocking devices and guard locking devices

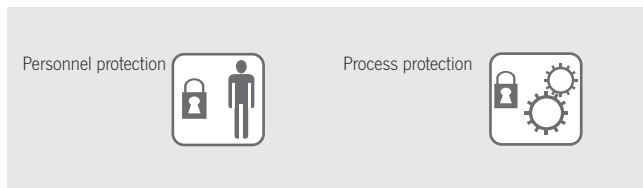
### Interlocking devices

Interlocking devices according to EN ISO 14119 are used for reliable monitoring of the position of a guard or the position of a machine component. The safety outputs switch off as soon as the guard is opened or the safe position is left.

### Guard locking devices for the protection of personnel or processes

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 devices for process protection are not reliably monitored guard locking devices. 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 device such as a locking pin is moved to prevent the actuator from being pulled out (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 three guard locking principles:

Guard locking principle	Principle of operation	
	Electromechanical guard locking	Magnetic guard locking
<b>Closed-circuit current principle</b>	Guard locking actuated by spring force and released by power-ON	
<b>Open-circuit current principle</b>	Guard locking actuated by power-ON and released by spring force	Guard locking actuated by power-ON and released by power-OFF
<b>Bistable guard locking</b>	Guard locking actuated by power-ON and released by power-ON	

## Safety switches without guard locking

### C01

- ▶ Compact, square design, standard housing (EN 60947-5-2)
- ▶ 1 active face; can be repositioned in 5 directions
- ▶ Large actuating range
- ▶ Degree of protection IP67

C01 AP AR



### C02

- ▶ Narrow, elongated design
- ▶ 2 active faces
- ▶ Direct mounting on aluminum profiles
- ▶ Large temperature range
- ▶ Degree of protection IP67/IP69/IP69K

C02 AP AR



### C04

- ▶ Small design
- ▶ 3 active faces
- ▶ Degree of protection IP67/IP69/IP69K
- ▶ ATEX version available

C04 AP AR AS



### C14

- ▶ Small design
- ▶ 3 active faces
- ▶ Degree of protection IP67/IP69/IP69K
- ▶ Encapsulated with epoxy resin and therefore suitable for aggressive media

C14 AP AR



### C05

- ▶ Standard housing (EN 60947-5-2)
- ▶ 1 active face; can be repositioned in 5 directions
- ▶ Very large actuating range
- ▶ Degree of protection IP67
- ▶ ATEX version available

C05 A



### C07

- ▶ Small design
- ▶ 3 active faces
- ▶ Degree of protection IP67/IP69/IP69K

C07 BP BR



### CTP-I

- ▶ 3 approach directions; head can be rotated in 90° steps
- ▶ Degree of protection IP67/IP69/IP69K
- ▶ Extraction force 20 N
- ▶ With integrated lock (depending on version)
- ▶ Version with emergency stop available

CTP-I AP



## Safety switches with guard locking

### CEM-C40

- ▶ Magnetic guard locking for process protection
- ▶ Guard locking solenoid and evaluation electronics in one housing
- ▶ Locking force of 600 N
- ▶ Adjustable adhesive force

CEM  
C40

AY



### CEM-C60

- ▶ Magnetic guard locking for process protection
- ▶ Variable system
- ▶ Flexibly combinable with safety switches CES-C04 / C07
- ▶ Locking force of 650 N

CEM  
C60

AP

AR



### CTP

- ▶ Guard locking for personnel protection according to EN 14119
- ▶ Degree of protection IP67/IP69/IP69K
- ▶ Mounting compatible with the EUCHNER safety switches TP, STP and STA
- ▶ 3 approach directions; head can be rotated in 90° steps
- ▶ High locking force of 3,900 N
- ▶ Stainless-steel version available

CTP

AP

AR

AS



### CET

- ▶ Guard locking for personnel protection according to EN 14119
- ▶ Very high locking force up to 6,500 N
- ▶ 2 safety outputs (semiconductor outputs)
- ▶ Head can be rotated in 90° steps
- ▶ Degree of protection IP67
- ▶ Metal housing
- ▶ Actuator guide with large freedom of movement
- ▶ 2-channel solenoid control permissible
- ▶ Connection via plug connectors

CET

AP

AR

AS



### CTM

- ▶ Guard locking for personnel protection according to EN 14119
- ▶ Compact size
- ▶ Bistable guard locking principle
- ▶ Degree of protection IP67/IP69/IP69K
- ▶ Locking force of 1,300 N
- ▶ Process and device data can be read via IO-Link
- ▶ Hygienic version available

CTM

BP

BR



## 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)

In the event of malfunctions, guard locking can be released with the auxiliary release irrespective of the state of the solenoid.

#### Emergency release (2)

Permits opening of a locked guard from outside the danger zone without tools.

#### Escape release (3)

Permits opening of a locked guard from the danger zone without tools.

#### Wire front release (4)

Release via a pull wire. Depending on the type of attachment, the wire front release can be used as emergency release or escape release.



### 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.

Lockout bars are available in two versions:

- ▶ Lockout bar permanently mounted on the device
- ▶ Removable lockout bar for blocking the switch head or the actuator



## Versatile accessories

### Bolts

Bolts function as follows: the bolt tongue mechanically guides the actuator when it is inserted into the safety switch actuating 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 safety switch is fitted to the frame. The bolt absorbs forces that act on the switch and the actuator and that could damage the switch and actuator. There are bolts for many safety switches from EUCHNER, some as a set with pre-assembled safety switch.

### Function expansions that can be retrofitted

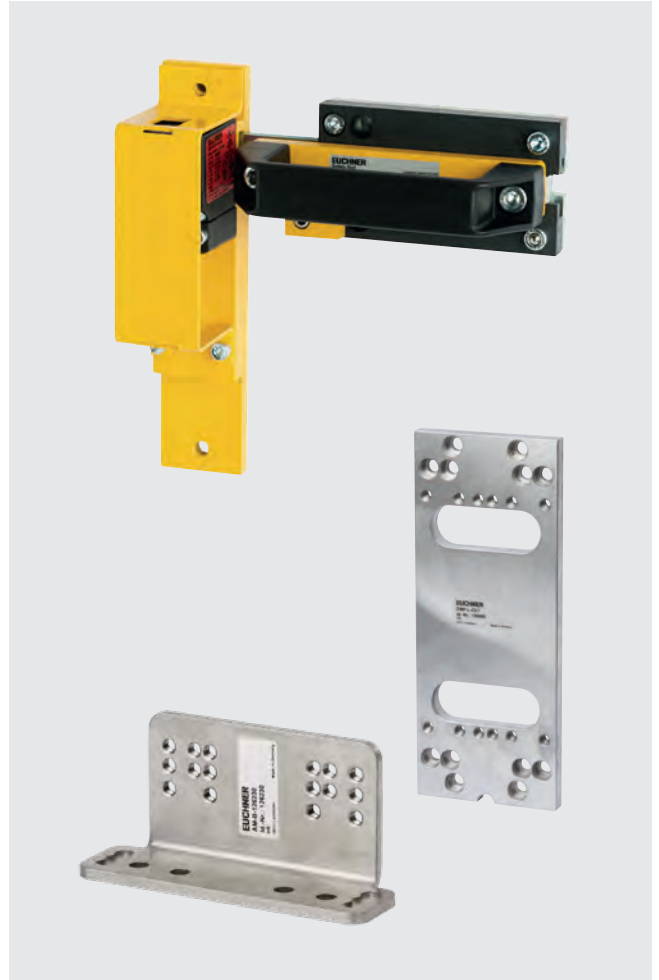
For some devices there are function expansions that can be retrofitted, e.g. manual releases, cover plates, insertion funnels, lockout bars and much more. You can find suitable accessories for your device very simply at [www.euchner.com](http://www.euchner.com).

### 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).





## »Communicating safety switches for the requirements of tomorrow – Industry 4.0 ready«

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- ▶ Safety switches for separate operation
- ▶ Industry 4.0-compatible communication and expanded diagnostics in combination with IO-Link Gateway GWY-CB or safety relay with integrated IO-Link Gateway ESM-CB
- ▶ Direct connection to IP67 field modules for various decentralized peripheral systems (depending on version)
- ▶ Two safe semiconductor outputs
- ▶ Extremely short risk time
- ▶ Own pulsing for short circuit detection
- ▶ Connection via plug connectors
- ▶ Cable lengths up to 200 m possible
- ▶ PL e / category 4 according to EN ISO 13849-1

System  
family

**BP**

**BP**



CES

**C07**



CTM

**CTM**

**Safety switch CES-I-BP-.-C07-...**



- ▶ **Communicating safety switch**
- ▶ **Industry 4.0 ready**
- ▶ **Small design**
- ▶ **3 active faces**
- ▶ **Diagnostics via 2 LEDs**
- ▶ **Limit-range indication**
- ▶ **Degree of protection IP65/IP67/IP69/IP69K**
- ▶ **Mounting distance 22 mm (industrial standard)**
- ▶ **Simple to convert for guard locking with magnetic guard locking CEM-C60**

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Industry 4.0 ready**

The switch can communicate in combination with an EUCHNER IO-Link Gateway, and sends process and device data to higher-level control systems. Comprehensive diagnostic messages enable rapid and targeted troubleshooting.

**Housing material**

The switch is suitable for use in the food industry (ECOLAB material resistance test).

**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.

**Connection to IP67 field modules**

Devices with M12 plug connector, 5-pin, without monitoring output are optimized for direct connection to field modules, such as ET200pro from Siemens or comparable devices from other manufacturers.

**LED indicator**

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

**Additional connections**

**OD/C** Door position monitoring output and communication connection to an EUCHNER IO-Link Gateway

**Further information**

- ▶ For dimension drawings, see p. 17
- ▶ For accessories and spare parts, see p. 17
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**

**Safety switch**

Series	Version	Order no./item	
CES-I-BP-U-C07-... Unicode	Without monitoring output	<b>162815</b> CES-I-BP-U-C07-SI-162815	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 monitoring output	<b>160080</b> CES-I-BP-U-C07-SB-160080	
CES-I-BP-M-C07-... Multicode	Without monitoring output	<b>162813</b> CES-I-BP-M-C07-SI-162813	
	With monitoring output	<b>160076</b> CES-I-BP-M-C07-SB-160076	

**Actuator**



Series	Design	Typ. actuating range [mm]	Order no./item	
CES-A-BDN-06	Ø6 x 26	16	<b>158210</b> CES-A-BDN-06-158210	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-BTN-07	40 x 26	13	<b>156230</b> CES-A-BTN-07-156230	



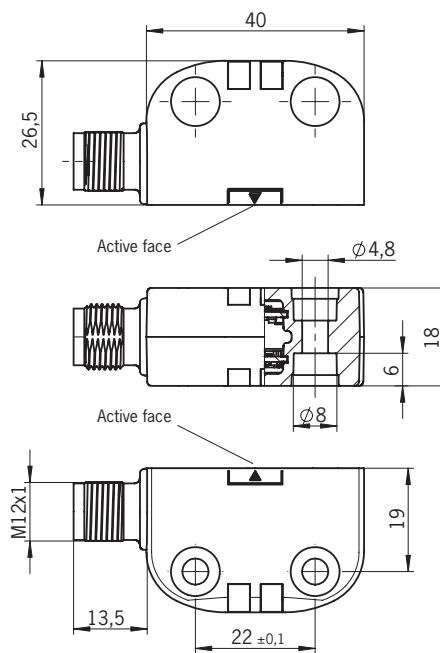
Function expansion with CEM-C60, see page 58.



**Accessories**

Type	Version			
Connection material	Connecting cable with plug connector 	<b>M12</b>	<b>8 pin</b>	Page 126
Fixing material	Safety screws			Page 144

**Dimension drawing**



**Terminal assignment**

With monitoring output	Without monitoring output (pin 5 not used)	Designation	Function
1	1	UB	Operating voltage, 24 V DC
2	2	FO1A	Safety output, channel A
3	3	0V	Ground 0 V DC
4	4	FO1B	Safety output, channel B
5	-	OD/C	Door position monitoring output/communication

**Safety switch CTM-.BI-BP-... with guard locking**



INDUSTRY  
**4.0**  
READY



- ▶ Communicating safety switch
- ▶ Industry 4.0 ready
- ▶ Safety switch with guard locking
- ▶ Locking force up to 1,300 N
- ▶ Diagnostics via 3 LEDs
- ▶ Hygienic version available

**Notice**

The device is only allowed to be operated in conjunction with the actuators A-B-A1-A1-....

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Industry 4.0 ready**

The switch can communicate in combination with an EUCHNER IO-Link Gateway, and sends process and device data to higher-level control systems. Comprehensive diagnostic messages enable rapid and targeted troubleshooting.

**Guard locking types**

**LBI BiState**

Control input for guard locking. This type of guard locking has a function to prevent the activated guard locking from being deactivated during a power failure.

**CBI Bistate**

The device can be configured with the aid of the function actuators. Guard lock monitoring is switched on or off depending on the taught-in function actuator.

**Auxiliary release (optional)**

Some devices have an auxiliary release (see ordering table).

**LED indicator**

- STATE** Status
- LOCK** Guard locking
- DIA** Diagnostics

**Additional connections**

- OD/C** Door position monitoring output and communication connection to an EUCHNER IO-Link Gateway
- OI** Diagnostic monitoring output
- OL** Guard lock monitoring output

**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**

**CTM-.BI-BP-...-SA-... with plug connectors M12**


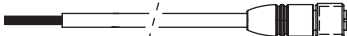
 Order no./item	Coding U = unicode M = multicode	Auxiliary release	Adhesive force [N]	Hygienic version	Guard locking Personnel/process protection	For wiring diagram, see page 31		
<b>CTM-LBI</b>								
BiState								
<b>166087</b> CTM-LBI-BP-U-AZ-SA-166087	U	●	25			<b>A</b>	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .	
<b>166088</b> CTM-LBI-BP-M-AZ-SA-166088	M	●	25			<b>A</b>		
<b>166089</b> CTM-LBI-BP-U-AZ-SA-166089	U	●	25			<b>B</b>		
<b>166090</b> CTM-LBI-BP-U-AZ-SA-166090	M	●	25			<b>B</b>		
<b>CTM-CBI</b>								
BiState								
<b>165897</b> CTM-CBI-BP-U-AZ-SA-165897	U	●	25			<b>B</b>		

**Actuator**

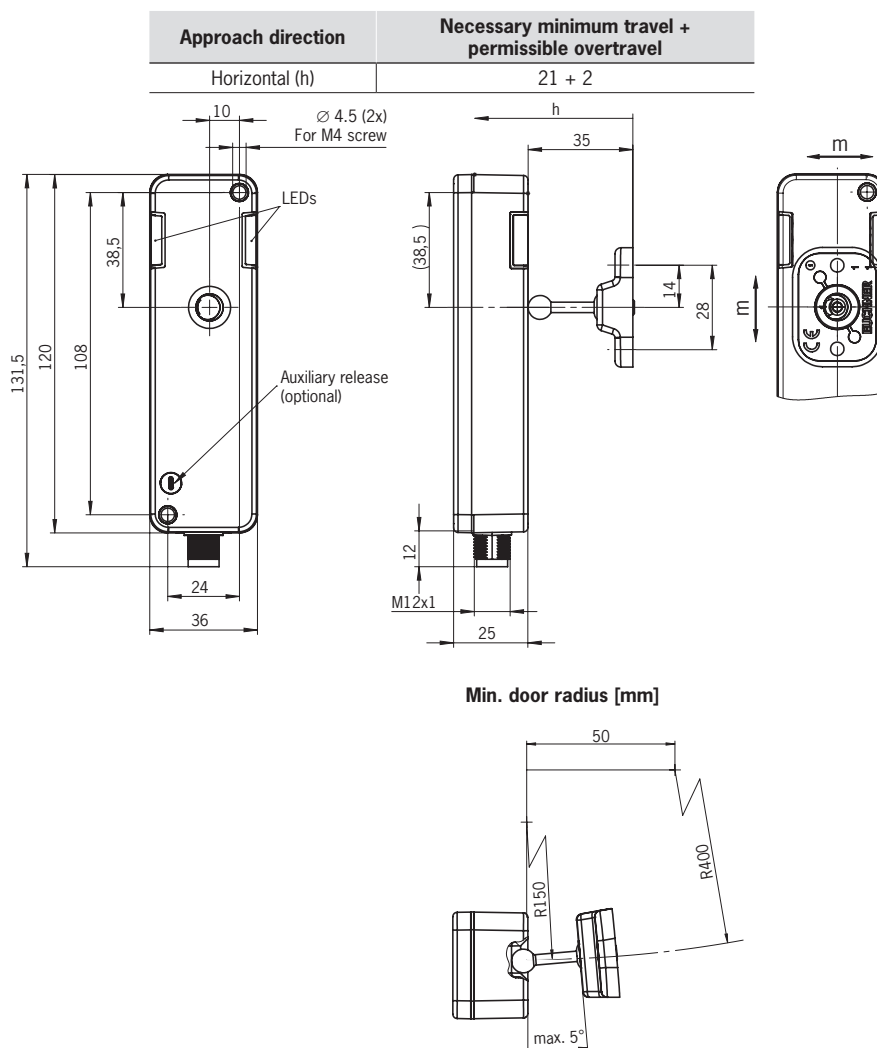
Series	Design	Color	Order no./item	
<b>A-B-A1-A1-...</b>	Standard	BK/RD	<b>161642</b> A-B-A1-A1-161642	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .
	<b>P</b> Hygienic version	BK/BU	<b>161643</b> A-B-A1-A1-P-161643	
<b>SB-0.-A1-A1-... 1)</b>	L configuration	BK/RD	<b>165895</b> S-B-08-A1-A1-165895	
	I configuration		<b>165896</b> S-B-09-A1-A1-165896	

1) Only in combination with CTM-CBI-BP-U-AZ-SA-165897

**Accessories**

Type	Version	
<b>Connection material</b>	Connecting cable with plug connector  <b>M12</b> <b>8 pin</b>	Page 123
<b>Fixing material</b>	Safety screws	Page 144

**Dimension drawing**



M12 8 pin

## Terminal assignment

**A** M12 8 pin Wiring diagram A

Pin	Designation	Function
1	IMP	Solenoid control input, 24 V DC
2	UB	Electronics and solenoid operating voltage, 24 V DC
3	FO1A	Safety output, channel A
4	FO1B	Safety output, channel B
5	OI	Diagnostic monitoring output
6	OD/C	Door position monitoring output/communication
7	OVUB	Electronics and solenoid operating voltage, 0 V DC
8	IMM	Solenoid control input, 0 V DC

**B** M12 8 pin Wiring diagram B

Pin	Designation	Function
1	IMP	Solenoid control input, 24 V DC
2	UB	Electronics and solenoid operating voltage, 24 V DC
3	FO1A	Safety output, channel A
4	FO1B	Safety output, channel B
5	OI	Diagnostic monitoring output
6	OD/C	Door position monitoring output/communication
7	OL	Guard lock monitoring output
8	OVUB	Electronics and solenoid operating voltage, 0 V DC





## »Communication at 4.0 level – always up to date in series connection as well.«

- ▶ Can be connected in series with all BR devices (up to 20 devices)
- ▶ Quick connection via M12 connectors (depending on version)
- ▶ Evaluation via safety control systems
- ▶ Industry 4.0-compatible communication and expanded diagnostics in combination with IO-Link Gateway GWY-CB or safety relay with integrated IO-Link Gateway ESM-CB
- ▶ Two safe semiconductor outputs
- ▶ Extremely short risk time
- ▶ Own pulsing for short circuit detection
- ▶ PL e / category 4 according to EN ISO 13849-1 for up to 20 devices
- ▶ Switch chains with cable lengths up to 200 m possible



CES

**C07**



CTM

**CTM**



ESM

**ESM**



GWY

**GWY**

**Safety switch CES-I-BR-.-C07-...**



INDUSTRY  
**4.0**  
READY



- ▶ **Communicating safety switch**
- ▶ **Industry 4.0 ready**
- ▶ **Small design**
- ▶ **3 active faces**
- ▶ **Diagnostics via 2 LEDs**
- ▶ **Limit-range indication**
- ▶ **Degree of protection IP65/IP67/IP69/IP69K**
- ▶ **Mounting distance 22 mm (industrial standard)**

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Industry 4.0 ready**

The switch can communicate in combination with an EUCHNER IO-Link Gateway, and sends process and device data to higher-level control systems. Comprehensive diagnostic messages enable rapid and targeted troubleshooting.

**Housing material**

The switch is suitable for use in the food industry (ECOLAB material resistance test).

**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.

**LED indicator**

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

**Additional connections**

**OD/C** Door position monitoring output and communication connection to an EUCHNER IO-Link Gateway

**Further information**

- ▶ For dimension drawings, see p. 25
- ▶ For accessories and spare parts, see p. 25
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**

**Safety switch**

Series	Version	Order no./item	
CES-I-BR-U-C07-... Unicode	M12 8 pin	<b>157920</b> CES-I-BR-U-C07-SA-157920	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-I-BR-M-C07-... Multicode	M12 8 pin	<b>156233</b> CES-I-BR-M-C07-SA-156233	

**Actuator**


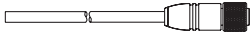


Series	Design	Typ. actuating range [mm]	Order no./item	
CES-A-BDN-06	Ø6 x 26	16	<b>158210</b> CES-A-BDN-06-158210	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .
CES-A-BTN-07	40 x 26	13	<b>156230</b> CES-A-BTN-C07-156230	



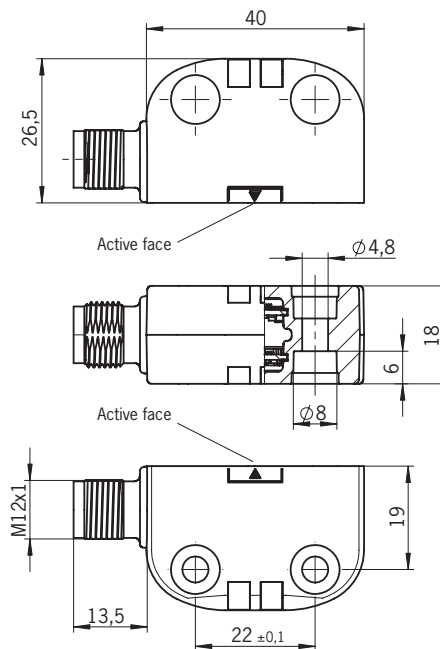
Function expansion with CEM-C60, see page 58.



**Accessories**

Type	Version	
<b>Connection material</b>	Connecting cable with plug connector 	<b>M12</b> <b>8 pin</b> Page 126
	Strapping plug/Y-distributor 	<b>M12</b> Page 128
	Passive distribution module 	<b>M12</b> Page 129
<b>Fixing material</b>	Safety screws	Page 144

**Dimension drawing**



**Terminal assignment**

Pin	Designation	Function
1	F11B	Enable input, channel B
2	UB	Operating voltage, 24 V DC
3	FO1A	Safety output, channel A
4	FO1B	Safety output, channel B
5	OD/C	Door position monitoring output/communication
6	F11A	Enable input, channel A
7	0V	Ground 0 V DC
8	-	n.c.

**Safety switch CES-I-BR-S-C07-...**



- ▶ **Communicating safety switch for reliable monitoring of several positions**
- ▶ **Suitable for several actuators with the same coding**
- ▶ **Industry 4.0 ready**
- ▶ **Small design**
- ▶ **3 active faces**
- ▶ **Diagnostics via 2 LEDs**
- ▶ **Limit-range indication**
- ▶ **Degree of protection IP65/IP67/IP69/IP69K**
- ▶ **Mounting distance 22 mm (industrial standard)**

**Details**

The safety switch is used for reliable monitoring of several positions. Identically coded actuators are mounted at each of the positions to be monitored. If a permissible code is detected, the safety outputs are switched.

**Applications**

- ▶ Rotary tables and turntables
- ▶ Safety revolving doors
- ▶ Machine slides with several stopping positions
- ▶ High-speed doors
- ▶ Safeguarding non-fixed covers

**Available coding options**

- ▶ Unicode evaluation

**Industry 4.0 ready**

The switch can communicate in combination with an EUCHNER IO-Link Gateway, and sends process and device data to higher-level control systems. Comprehensive diagnostic messages enable rapid and targeted troubleshooting.

**Actuator**

The actuators intended for the switch are available as packaging units consisting of several identically coded actuators. The switch can be put into operation only using the actuators belonging to the same packaging unit. No additional actuators can be taught-in.

Prior to setup, the code of an actuator from the packaging unit is taught-in by the safety switch in a teach-in operation. The switch thereby accepts all actuators from this package.

**Housing material**

The switch is suitable for use in the food industry (ECOLAB material resistance test).

**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.

**LED indicator**

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

**Additional connections**

**OD/C** Door position monitoring output and communication connection to an EUCHNER IO-Link Gateway

**Further information**

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

**Ordering table**

**Safety switch**

Series	Version	Order no./item	
CES-I-BR-S-C07-... Unicode		<b>165914</b> CES-I-BR-S-C07-SA-165914	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> .


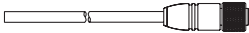


**Actuator**

Series	Design	Typ. actuating range [mm]	Packaging unit [qty.]	Order no./item	
S-C07-04-...		40 x 26	13	<b>165928</b> S-C07-04-V02-165928	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>166488</b> S-C07-04-V03-166488	

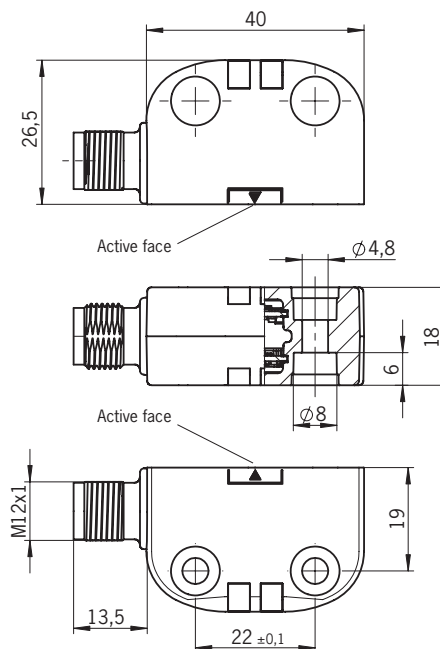


Function expansion with CEM-C60, see page 58.

**Accessories**

Type	Version	
<b>Connection material</b>	Connecting cable with plug connector 	<b>M12</b> <b>8 pin</b> Page 126
	Strapping plug/Y-distributor 	<b>M12</b> Page 128
	Passive distribution module 	<b>M12</b> Page 129
<b>Fixing material</b>	Safety screws	Page 144

**Dimension drawing**



**Terminal assignment**

Pin	Designation	Function
1	FI1B	Enable input, channel B
2	UB	Operating voltage, 24 V DC
3	FO1A	Safety output, channel A
4	FO1B	Safety output, channel B
5	OD/C	Door position monitoring output/communication
6	FI1A	Enable input, channel A
7	0V	Ground 0 V DC
8	–	n.c.

**Safety switch CTM-.BI-BR-... with guard locking**



INDUSTRY  
**4.0**  
READY



- ▶ **Communicating safety switch**
- ▶ **Industry 4.0 ready**
- ▶ **Safety switch with guard locking**
- ▶ **Locking force up to 1,300 N**
- ▶ **Diagnostics via 3 LEDs**
- ▶ **Hygienic version available**

**Notice**

The device is only allowed to be operated in conjunction with the actuators A-B-A1-A1-....

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Industry 4.0 ready**

The switch can communicate in combination with an EUCHNER IO-Link Gateway, and sends process and device data to higher-level control systems. Comprehensive diagnostic messages enable rapid and targeted troubleshooting.

**Guard locking types**

**LBI BiState**

Control input for guard locking. This type of guard locking has a function to prevent the activated guard locking from being deactivated during a power failure.

**Auxiliary release (optional)**

Some devices have an auxiliary release (see ordering table).

**LED indicator**

- STATE** Status
- LOCK** Guard locking
- DIA** Diagnostics

**Additional connections**

- OD/C** Door position monitoring output and communication connection to an EUCHNER IO-Link Gateway
- OI** Diagnostic monitoring output
- OL** Guard lock monitoring output

**Further information**







- ▶ For dimension drawings, see p. 30
- ▶ For accessories and spare parts, see p. 29
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**



CTM-.BI-BR-...-SA-... with plug connectors M12, 8-pin

 Order no./item	Coding U = unicode M = multicode	Auxiliary release	Adhesive force [N]	Hygienic version	Guard locking Personnel/process protection	For wiring diagram, see page 31	
<b>CTM-LBI</b> BiState							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>161638</b> CTM-LBI-BR-U-AZ-SA-161638	U	●	50				
<b>161639</b> CTM-LBI-BR-U-AZ-SA-161639	U	●	25				
<b>161496</b> CTM-LBI-BR-U-ZZ-SAP-161496	U		50	●			
<b>161640</b> CTM-LBI-BR-U-ZZ-SAP-161640	U		25	●			
<b>165517</b> CTM-LBI-BR-MAZ-SA-165517	M	●	25				


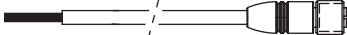



**CTM-BI-BR-...-SP-... with plug connectors M12, 12-pin**

 Order no./item	Coding U = unicode M = multicode	Auxiliary release	Adhesive force [N]	Hygienic version	Guard locking Personnel/process protection	For wiring diagram, see page 31	
<b>CTM-LBI</b> BiState							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>166091</b> CTM-LBI-BR-U-AZ-SP-166091	U		25				
<b>166092</b> CTM-LBI-BR-MAZ-SP-166092	M		25				

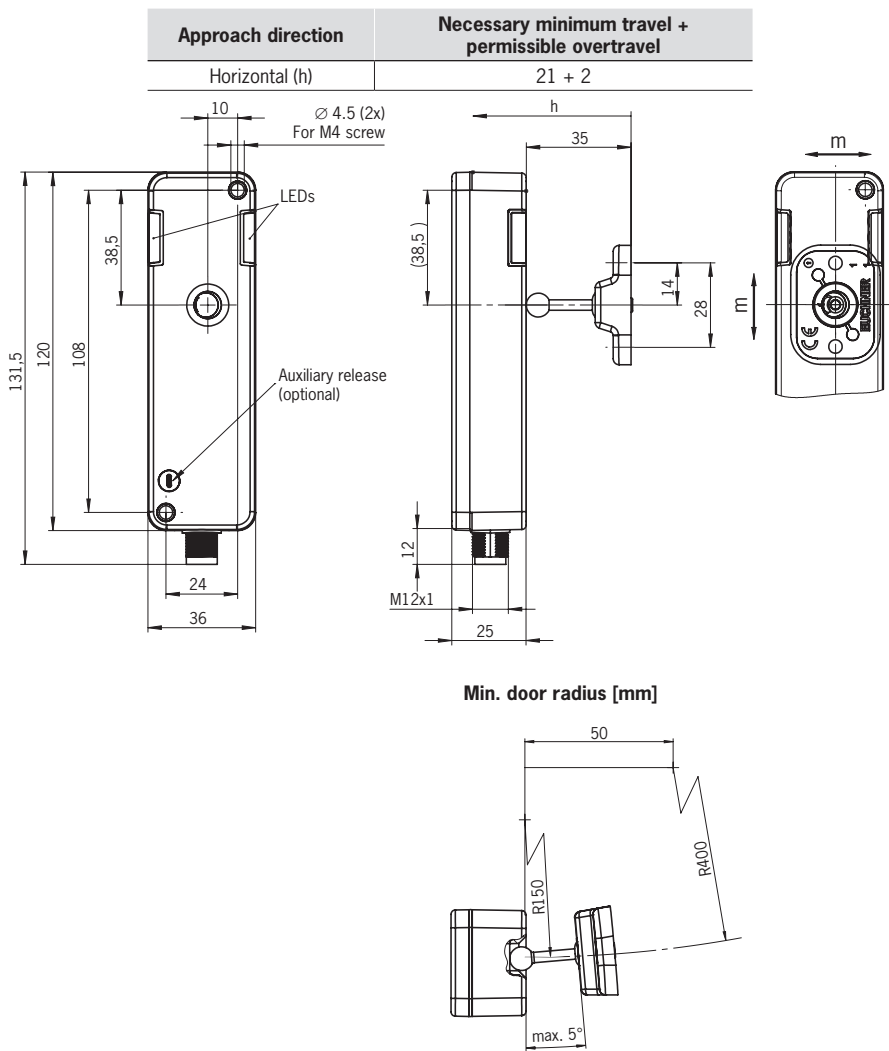
**Actuator**

Series	Design	Color	Order no./item	
<b>A-B-A1-A1-...</b>	 Standard  <b>P</b> Hygienic version	BK/RD  BK/BU	<b>161642</b> A-B-A1-A1-161642  <b>161643</b> A-B-A1-A1-P-161643	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  	Page 123
	Strapping plug/Y-distributor 	Page 128
	Passive distribution module 	Page 129
<b>Fixing material</b>	Safety screws	Page 144

**Dimension drawing**



**Terminal assignment**

**A** M12 8 pin **Wiring diagram A**

Pin	Designation	Function
1	FI1B	Enable input, channel B
2	UB	Electronics and solenoid operating voltage, 24 V DC
3	F01A	Safety output, channel A
4	F01B	Safety output, channel B
5	OD/C	Door position monitoring output/communication
6	FI1A	Enable input, channel A
7	OVUB	Electronics and solenoid operating voltage, 0 V DC
8	IMP	Solenoid control input, 24 V DC

**B** M12 12 pin **Wiring diagram B**

Pin	Designation	Function
1	UB	Electronics and solenoid operating voltage, 24 V DC
2	FI1A	Enable input, channel A
3	OVUB	Electronics and solenoid operating voltage, 0 V DC
4	F01A	Safety output, channel A
5	OD/C	Door position monitoring output/communication
6	FI1B	Enable input, channel B
7	F01B	Safety output, channel B
8	RST	Reset input
9	OL	Guard lock monitoring output
10	IMP	Solenoid control input, 24 V DC
11	OI	Diagnostic monitoring output
12	IMM	Solenoid control input, 0 V DC

**BR/IO-Link Gateway GWY-CB**



- ▶ **Transfer of process and device data to a higher-level control system via IO-Link**
- ▶ **Compact version measuring only 12.5 mm in width**
- ▶ **Process-data transfer in real time**
- ▶ **Minimal wiring effort**

**Details**

Data can be read from a BP safety switch or a BR safety switch chain using the IO-Link Gateway. Process data are cyclically sent to the control system via IO-Link. These data include all status signals, such as the position of the door or guard locking, and the indication of whether a switch is out of adjustment. The process data are available in the control system within 200 ms, enabling the data to be used for automation. Moreover, acyclical services can be used to collect environmental data such as the switch temperature, the applied voltage and other values.

**LED indicator**

- DIA** Diagnostic message
- BR/FC** BR communication/error codes
- IO-Link** IO-Link communication

**Further information**

- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).
- ▶ You will find information on the series connection of BR devices on page 6.

**Ordering table**

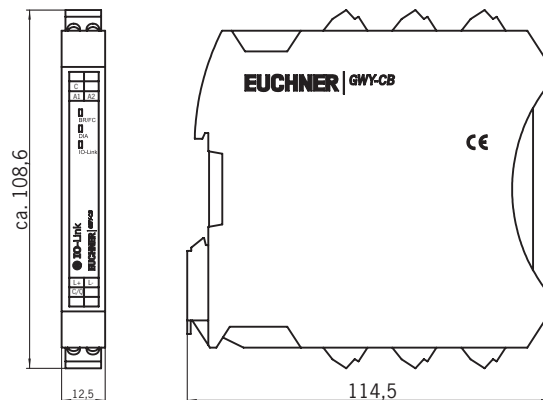
BR/IO-Link Gateway

Series	Order no./item	
GWY-CB-...	<b>165049</b> GWY-CB-1-BR-IO-165049	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> .

**Which safety switches can be connected?**

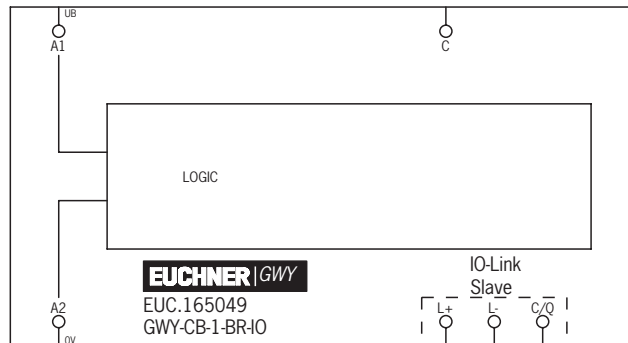
BR/IO-Link Gateway	Safety switch
<b>165049</b> GWY-CB-1-BR-IO-165049	Series CES-C07
	Series CTM

**Dimension drawing**





**Block diagram**



**Terminal assignment**

Connection	Designation	Function
	<b>A1</b>	Operating voltage, 24 V DC
C	<b>A2</b>	Ground 0 V DC
A1 A2	<b>C</b>	Safety switch communication
BR/FC DIA IO-Link	<b>C/Q</b>	IO-Link switching and communication line
<b>IO-Link</b> <b>EUCHNER</b>   GWY-CB	<b>L+ / L-</b>	Power supply for IOL master IO-Link
L+ L-		
C/Q		

**Safety relay ESM-CB**  
with integrated BR/IO-Link Gateway



- ▶ Evaluation unit, safety relay and IO-Link Gateway in a single device
- ▶ Connection option for two safety circuits
- ▶ 2 safety inputs for up to 20 safety switches with BR communication
- ▶ Compact version measuring only 18 mm in width
- ▶ Transfer of process and device data to a higher-level control system via IO-Link
- ▶ Process-data transfer in real time

**Details**

Two safety circuits can be connected to the input side. Equipment such as an emergency stop chain and mechanical safety switches can be connected to one safety circuit. EUCHNER safety switches from system family BP or BR can be connected to the second safety circuit.

**IO-Link Gateway**

Data can be read from safety switches with BR communication using the IO-Link Gateway. Process data are cyclically sent to the control system via IO-Link. These data include all status signals, such as the position of the door or guard locking, and the indication of whether a switch is out of adjustment. The process data are available in the control system within 200 ms, enabling the data to be used for automation.

Moreover, acyclical services can be used to collect environmental data such as the switch temperature, the applied voltage and other values.

**Space for more**

- ▶ Start input for automatic start or a monitored start button
- ▶ Monitoring of downstream relays or contactors (feedback loop)
- ▶ Simultaneity monitoring to monitor safety components over time

- ▶ Short circuit monitoring to detect short circuits between the connecting cables and to shut down the outputs or prevent relay starting if necessary
- ▶ Earth fault/ground fault monitoring to detect short circuits between the connecting cables and earth or ground and to shut down the outputs or prevent relay starting if necessary.

**LED indicator**

- DIA** Diagnostic message
- STATE 1** Status of sensor circuit S1
- STATE 2** Status of sensor circuit S2
- K1/K2** Status of safety circuits K1 and K2
- IO-Link** IO-Link communication

**Further information**

- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).
- ▶ You will find information on the series connection of BR devices on page 6.

**Ordering table**

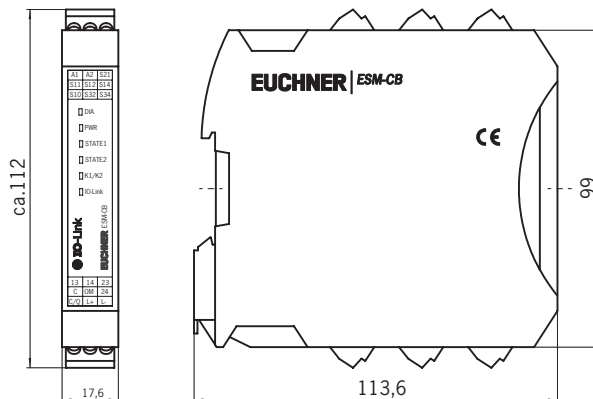
Safety relay with integrated IO-Link Gateway

Series	Order no./item	
ESM-CB-...	<b>158875</b> ESM-CB-AZ-FI2-BR-IO-158875	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> .

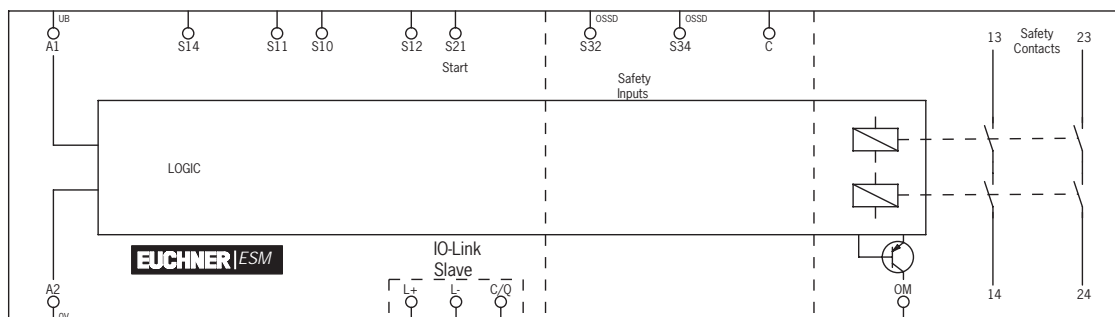
**Which safety switches can be connected?**

Safety relay	Safety switch
<b>158875</b> ESM-CB-AZ-FI2-BR-IO-158875	Series CES-C07
	Series CTM

**Dimension drawing**



**Block diagram**



**Terminal assignment**

Connection	Designation	Function
A1	<b>A1</b>	Operating voltage, 24 V DC
A2	<b>A2</b>	Ground 0 V DC
S10	<b>S10</b>	Supply input for S14
S11	<b>S11</b>	Supply output for S12 and S21
S12	<b>S12</b>	Sensor circuit S1 input (channel 1)
S14	<b>S14</b>	Sensor circuit S1 input (channel 2)
S21	<b>S21</b>	Input for start circuit
S32	<b>S32</b>	OSSD sensor circuit S2 input (channel 1), input for FO1A from BR series connection
S34	<b>S34</b>	OSSD sensor circuit S2 input (channel 2), input for FO1B from BR series connection
13/14	<b>13/14</b>	Safety contact, non-time-delay
23/24	<b>23/24</b>	Safety contact, non-time-delay
C	<b>C</b>	Safety switch communication
OM	<b>OM</b>	Digital monitoring output
C/Q	<b>C/Q</b>	IO-Link switching and communication line
L+/L-	<b>L+/L-</b>	IO-Link supply

»Connect pulsed signals via the safe semiconductor outputs on up to three safety switches in series.«

---

- ▶ Suitable for switching pulsed signals
- ▶ Very large actuating range
- ▶ Two safe semiconductor outputs
- ▶ Monitoring output (depending on version)
- ▶ Series connection of up to 3 devices possible
- ▶ Cable lengths up to 300 m possible
- ▶ ATEX version available
- ▶ PL e / category 3 or 4 according to EN ISO 13849-1

System  
family

**A**



**Safety switch CES-A-.5...**



- ▶ **Standard housing (EN 60947-5-2)**
- ▶ **1 active face; can be repositioned in 5 directions**
- ▶ **Diagnostics via 2 LEDs**
- ▶ **Large actuating range**
- ▶ **PL e/category 3 or 4**
- ▶ **ATEX version available**

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

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

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

- ▶ CES-A-C5E-01, category 3/PL e according to EN ISO 13849-1
- ▶ CES-A-C5H-01/CES-A-W5H-01, category 4/PL e according to EN ISO 13849-1

**LED indicator**

**STATE** Status  
**OUT/ERROR** Status of safety outputs/diagnostics (combined)

**Additional connections**

**OUT** Monitoring output (semiconductor)

**ATEX version**

There is a version of this device for use in potentially explosive atmospheres. For explosion protection, see marking in the ordering table.

**Important:** Use only ATEX actuators for ATEX devices.

**Notice**

On devices with unicode evaluation, the number of teach-in operations is restricted to eight.

**Further information**

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

**Ordering table**

**Safety switch**

Series	Version	Order no./item	
CES-A-C5... Unicode	 	<b>077750</b> CES-A-C5E-01	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>091458</b> CES-A-C5H-01	
CES-A-W5... Multicode		<b>097525</b> CES-A-W5H-01	
CES-A-C5H-01-EX Unicode		<b>097945</b> <sup>1)</sup> CES-A-C5H-01-EX	

1) II3G Ex ic ec IIB T5 Gc X, II3D Ex ic tc IIIc T90°C Dc X


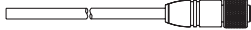

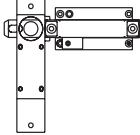
**Actuator**

Series	Design	Typ. actuating range [mm]	Order no./item	
CES-A-BPA	 40 x 40	22	<b>098775</b> CES-A-BPA	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	20	<b>071840</b> CES-A-BBA	
CES-A-BCA	 Material: PE-HD 42 x 25	20	<b>088786</b> CES-A-BCA	
CES-A-BPA-EX-102125	 40 x 40	22	<b>102125</b> CES-A-BPA-EX-102125	
CES-A-BBA-EX-098158	 42 x 25	20	<b>098158</b> CES-A-BBA-EX-098158	

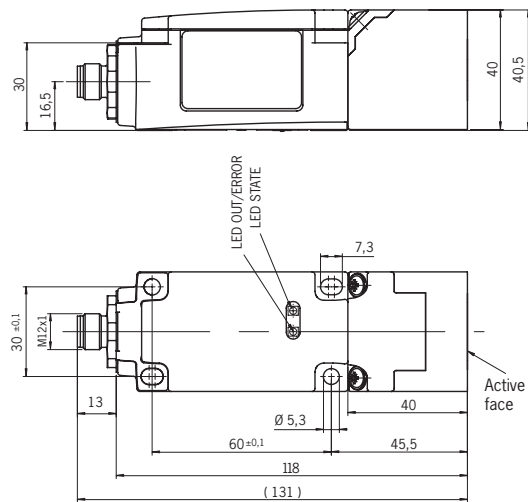
M12 8 pin

C05

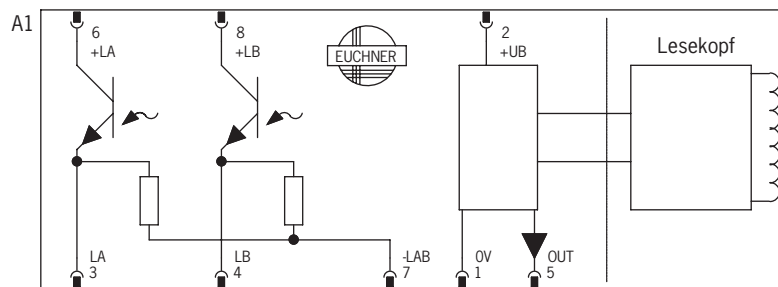
## Accessories

Type	Version	
Connection material	Connecting cable with plug connector 	 Page 130
Bolts	Bolts for housing design C05 	Page 136
Fixing material	Safety screws	Page 144

## Dimension drawing



## Block diagram



## Terminal assignment

Pin	Designation	Function
1	OV	Ground 0 V DC
2	+UB	Operating voltage, 24 V DC
3	LA	Safety output, channel A
4	LB	Safety output, channel B
5	OUT	Door position monitoring output
6	+LA	Safety input, channel A
7	-LAB	Common ground for channel A and channel B inputs
8	+LB	Safety input, channel B

»Developed with a focus  
on the essentials – a lot of  
safety with little effort.«

---

- ▶ Safety switches for separate operation
- ▶ Direct connection to IP67 field modules for various decentralized peripheral systems (depending on version)
- ▶ Two safe semiconductor outputs
- ▶ Own pulsing for short circuit detection
- ▶ Connection via plug connectors
- ▶ Cable lengths up to 200 m possible
- ▶ PL e / category 4 according to EN ISO 13849-1
- ▶ Large selection of devices



System  
family

**AP/AY**



CES

**C01**



CES

**C02**



CES

**C04**



CES

**C14**



CEM

**CEM  
C40**



CEM

**CEM  
C60**



CTP

**CTP**



CET

**CET**

AP/AY

**Safety switch CES-AP-C01-...**



- ▶ **1 active face; can be repositioned in 5 directions**
- ▶ **Large actuating range**
- ▶ **Limit-range indication**
- ▶ **Diagnostics via 2 LEDs**
- ▶ **Standard housing according to EN 60947-5-2**
- ▶ **Degree of protection IP67**

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**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.

**Connection to IP67 field modules**

Devices with M12 plug connector, 5-pin, without monitoring output are optimized for direct connection to field modules, such as ET200pro from Siemens or comparable devices from other manufacturers.

**LED indicator**

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

**Additional connections**

**DIA** Diagnostic monitoring output (semiconductor)  
**RST** Reset input

**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**

**Safety switch**

Series	Version	Order no./item	
CES-AP-C01-AH-... Unicode	<div style="display: flex; align-items: center; gap: 10px;"> <div style="border: 1px solid black; padding: 2px;">5 pin</div> <div style="border: 1px solid black; padding: 2px;">Without monitoring output</div> </div>	<b>111145</b> CES-AP-C01-AH-SB-111145	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-AP-C01-CH-... Multicode		<b>111708</b> CES-AP-C01-CH-SB-111708	
CES-AP-C01-CH-SB Multicode		<b>106798</b> CES-AP-C01-CH-SB-106798	
CES-AP-C01-CH-SA Multicode		<b>100250</b> <sup>1)</sup> CES-AP-C01-CH-SA-100250	

1) German Social Accident Insurance approval

**Actuator**

Series	Design	Typ. actuating range [mm]	Order no./item	
CES-A-BRN	80 x 40	27	<b>100251</b> CES-A-BRN-100251	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-BPA	40 x 40	22	<b>098775</b> CES-A-BPA	
CES-A-BBA	42 x 25	18	<b>071840</b> CES-A-BBA	
CES-A-BCA	42 x 25 Material: PE-HD	18	<b>088786</b> CES-A-BCA	
CES-A-BDA-18	Ø18	19	<b>156935</b> CES-A-BDA-18	

M12



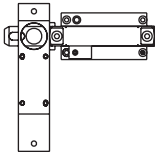
5 pin

M12

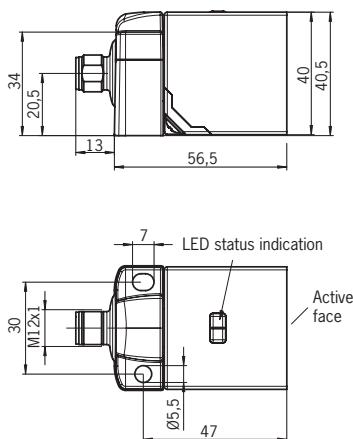
8 pin

C01

## Accessories

Type	Version	
Connection material	Connecting cable with plug connector 	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; padding: 2px 5px; margin-right: 10px;">M12</div> <div style="border: 1px solid black; border-radius: 50%; padding: 2px 5px; margin-right: 10px;">5 pin</div> </div> Page 123
		<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; padding: 2px 5px; margin-right: 10px;">M12</div> <div style="border: 1px solid black; border-radius: 50%; padding: 2px 5px; margin-right: 10px;">8 pin</div> </div> Page 126
Bolts	Bolts for housing design C01 	Page 136
Fixing material	Safety screws	Page 144

## Dimension drawing



## Terminal assignment

8 pin	5 pin		Designation	Function
	With monitoring output	Without monitoring output (pin 5 not used)		
1	–	–	–	n.c.
2	1	1	UB	Operating voltage, 24 V DC
3	2	2	OA	Safety output, channel A
4	4	4	OB	Safety output, channel B
5	5	–	DIA	Diagnostic monitoring output
6	–	–	–	n.c.
7	3	3	OV	Ground 0 V DC
8	–	–	RST	Reset input

**Safety switch CES-AP-C.2-...**



- ▶ **Diagnostics via 2 LEDs**
- ▶ **2 active faces**
- ▶ **Limit-range indication**
- ▶ **Direct mounting on aluminum profiles**
- ▶ **Large temperature range (depending on version)**
- ▶ **Reinforcement plates and safety screws included**
- ▶ **Degree of protection IP67/IP69/IP69K**

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**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.

**Connection to IP67 field modules**

Devices with M12 plug connector, 5-pin, without monitoring output are optimized for direct connection to field modules, such as ET200pro from Siemens or comparable devices from other manufacturers.

**Large temperature range**

Devices with connecting cable and flying lead have a temperature range from -40 °C to +65 °C (with rigid cable laying).

**LED indicator**

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

**Additional connections**

**OUT** Monitoring output (semiconductor); not present on all versions.

**Further information**






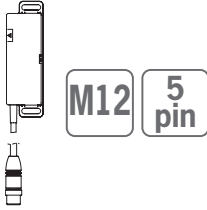






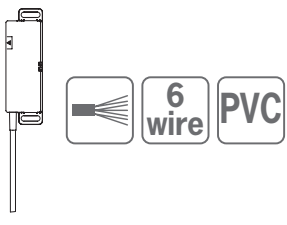



- ▶ For dimension drawings, see p. 46
- ▶ For accessories and spare parts, see p. 46
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**

**Safety switch**




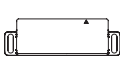

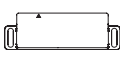


Series	Version	Door hinge <sup>1)</sup>	Order no./item	
CES-AP-C.2-AH-... Unicode		With monitoring output	<b>105295</b> CES-AP-CR2-AH-SF-105295	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .
		Without monitoring output	<b>105294</b> CES-AP-CL2-AH-SF-105294	
		With monitoring output	<b>106552</b> CES-AP-CR2-AH-SB-106552	
		Without monitoring output	<b>106553</b> CES-AP-CL2-AH-SB-106553	
		Without monitoring output	<b>111748</b> CES-AP-CR2-AH-SB-111748	
		Without monitoring output	<b>111747</b> CES-AP-CL2-AH-SB-111747	
		5m With monitoring output	<b>105601</b> CES-AP-CR2-AH-L05-105601	
		5m Without monitoring output	<b>105603</b> CES-AP-CL2-AH-L05-105603	
		10m With monitoring output	<b>106191</b> CES-AP-CR2-AH-L10-106191	
		10m Without monitoring output	<b>106192</b> CES-AP-CL2-AH-L10-106192	

1) Applies to the following orientation: connection/cable outlet pointing downward


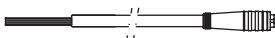
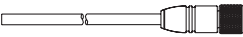
Series	Version	Door hinge <sup>1)</sup>	Order no./item	
<b>CES-AP-C.2-CH-...</b> Multicode	 <b>click 6 pin</b>	With monitoring output	 <b>100775</b> CES-AP-CR2-CH-SF-100775	  For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .
			 <b>104509</b> CES-AP-CL2-CH-SF-104509	
	 <b>M12 5 pin</b>	With monitoring output	 <b>106550</b> CES-AP-CR2-CH-SB-106550	
			 <b>106551</b> CES-AP-CL2-CH-SB-106551	
		Without monitoring output	 <b>109168</b> CES-AP-CR2-CH-SB-109168	
			 <b>109167</b> CES-AP-CL2-CH-SB-109167	
	 <b>PVC 2m</b>	With monitoring output	 <b>123922</b> CES-AP-CR2-CH-SB-123922	
		 <b>6 wire PVC</b>	With monitoring output	
	 <b>105602</b> CES-AP-CL2-CH-L05-105602			
	With monitoring output		 <b>106189</b> CES-AP-CR2-CH-L10-106189	
 <b>106190</b> CES-AP-CL2-CH-L10-106190				

1) Applies to the following orientation: connection/cable outlet pointing downward

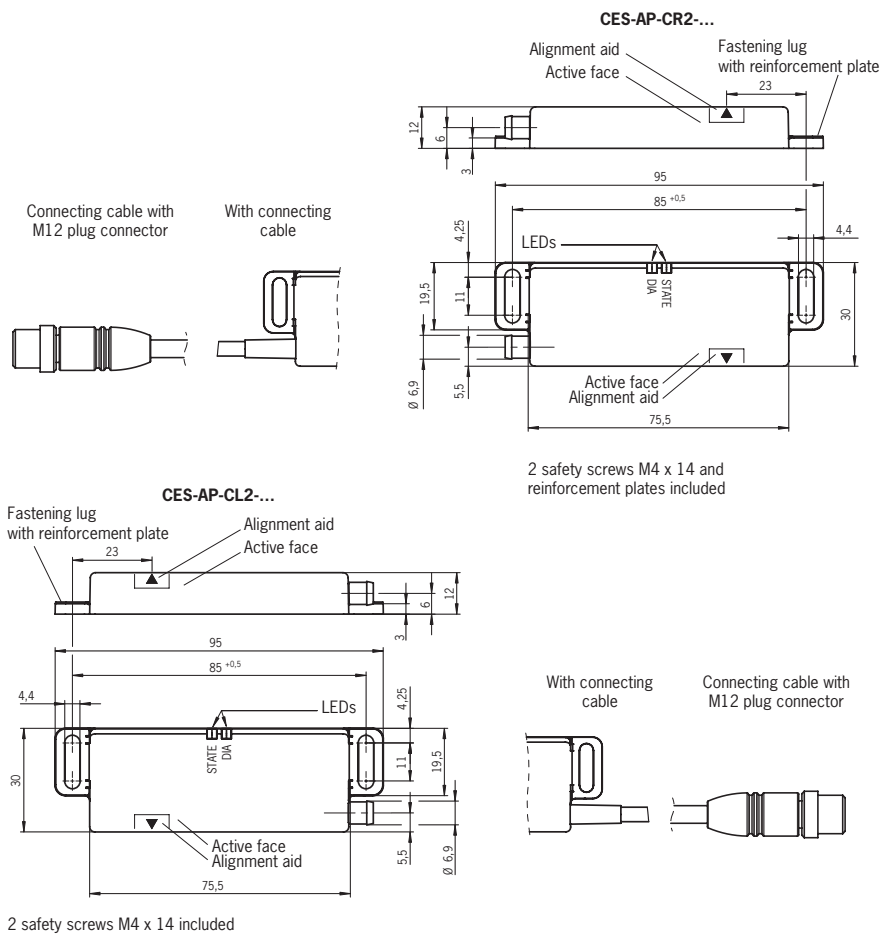
**Actuator**

Series	Design	Typ. actuating range [mm]	Order no./item	
<b>CES-A-BDN-06</b>	 Ø6 x 26	19	<b>104730</b> CES-A-BDN-06-104730	  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-A-BLN-...</b>	 95 x 30 	15	<b>100776</b> CES-A-BLN-R2-100776	
	 95 x 30 	15	<b>104510</b> CES-A-BLN-L2-104510	
	 55 x 30 Independent of the door hinge	15	<b>103450</b> CES-A-BLN-U2-103450	

**Accessories**

Type	Version	
Connection material	Connecting cable with plug connector  <span>click</span> <span>6 pin</span>	Page 120
	Connecting cable with plug connector  <span>M12</span> <span>5 pin</span>	Page 123
Fixing material	Safety screws	Page 144

**Dimension drawing**





C02

**Terminal assignment**

6 pin 6 wire		5 pin		Designation	Function	Conductor coloring
With monitoring output	With monitoring output	Without monitoring output (pin 5 not used)				
1	1	1		UB	Operating voltage, 24 V DC	BN
2	2	2		OA	Safety output, channel A	WH
3	3	3		OV	Ground 0 V DC	BU
4	4	4		OB	Safety output, channel B	BK
5	5	-		OUT	Door position monitoring output	GY
6	-	-		-	n.c.	PK

**Safety switch CES-I-AP-.-C04-...**



- ▶ **Small design**
- ▶ **3 active faces**
- ▶ **Diagnostics via 2 LEDs**
- ▶ **Limit-range indication**
- ▶ **Degree of protection IP67**
- ▶ **Mounting distance 32 mm (EUCHNER standard)**
- ▶ **ATEX protective cover (optional)**
- ▶ **Function expansion with magnetic guard locking CEM-C60**
- ▶ **Version with integrated AS-Interface Safety at Work available, see [www.euchner.com](http://www.euchner.com)**

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**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.

**Connection to IP67 field modules**

Devices with M12 plug connector, 5-pin, without monitoring output are optimized for direct connection to field modules, such as ET200pro from Siemens or comparable devices from other manufacturers.

**Rubber support**

A rubber support is included with each switch and actuator and is intended to prevent the accumulation of soiling in the area of the mounting holes.

**LED indicator**

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

**Additional connections**

**OD** Monitoring output (semiconductor); not present on all versions

**ATEX protective cover**

Housing guard AM-C-C04-EX-137528 is required for use in potentially explosive atmospheres. See accessories on p. 50.

**Further information**










- ▶ For dimension drawings, see p. 50
- ▶ For accessories and spare parts, see p. 50
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**








**Safety switch**

Series	Version	Order no./item	
CES-I-AP-U-C04-... Unicode	<b>M8</b> <b>4 pin</b> Without monitoring output	<b>115324</b> CES-I-AP-U-C04-SK-115324	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>M12</b> <b>5 pin</b> <b>PUR</b> <b>0,1m</b> Without monitoring output	<b>115150</b> CES-I-AP-U-C04-USI-115150	
	<b>M12</b> <b>5 pin</b> <b>PUR</b> <b>0,22m</b> With monitoring output	<b>116502</b> CES-I-AP-U-C04-USB-116502	
	<b>M12</b> <b>5 pin</b> <b>PUR</b> <b>5m</b> With monitoring output	<b>116503</b> CES-I-AP-U-C04-U05-116503	
	<b>5 wire</b> <b>PUR</b> <b>10m</b> With monitoring output	<b>116504</b> CES-I-AP-U-C04-U10-116504	
	<b>5 wire</b> <b>PUR</b> <b>20m</b> With monitoring output	<b>116505</b> CES-I-AP-U-C04-U20-116505	



Series	Version	Order no./item	
CES-I-AP-M-C04-... Multicode	 <b>M8</b> <b>4 pin</b> Without monitoring output	<b>117325</b> CES-I-AP-M-C04-SK-117325	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>M12</b> <b>5 pin</b> <b>PUR</b> <b>0,1m</b> Without monitoring output	<b>117323</b> CES-I-AP-M-C04-USI-117323	
	 <b>M12</b> <b>5 pin</b> <b>PUR</b> <b>0,22m</b> With monitoring output	<b>117324</b> CES-I-AP-M-C04-USB-117324	
	 <b>M12</b> <b>5 pin</b> <b>PUR</b> <b>1,5m</b> Without monitoring output	<b>160832</b> CES-I-AP-M-C04-USI-160832	
	 <b>M12</b> <b>5 pin</b> <b>PUR</b> <b>2m</b> Without monitoring output	<b>162592</b> CES-I-AP-M-C04-USI-162592	
	 <b>M12</b> <b>5 pin</b> <b>PUR</b> <b>5m</b> With monitoring output	<b>117328</b> CES-I-AP-M-C04-U05-117328	
	 <b>M12</b> <b>5 pin</b> <b>PUR</b> <b>10m</b> With monitoring output	<b>117329</b> CES-I-AP-M-C04-U10-117329	
	 <b>M12</b> <b>5 pin</b> <b>PUR</b> <b>20m</b> With monitoring output	<b>117330</b> CES-I-AP-M-C04-U20-117330	


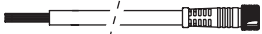
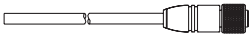
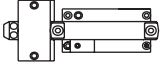
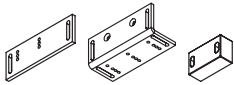



**Actuator**

Series	Design	Typ. actuating range [mm]	Order no./item	
<b>CES-A-BDN-06</b>	 Ø6 x 26	19	<b>104730</b> CES-A-BDN-06-104730	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> .
	 Ø6 x 38	26	<b>161742</b> CES-A-BDN-06-161742	
<b>CES-A-BBN-C04</b>	 42 x 25	15	<b>115271</b> CES-A-BBN-C04-115271	
<b>CES-A-BBN-161502</b>	 42 x 25	26	<b>161502</b> CES-A-BBN-161502	
 <b>CES-A-BBN-C04-EX-137527</b>	 42 x 25	15	<b>137527</b> CES-A-BBN-C04-EX-137527	

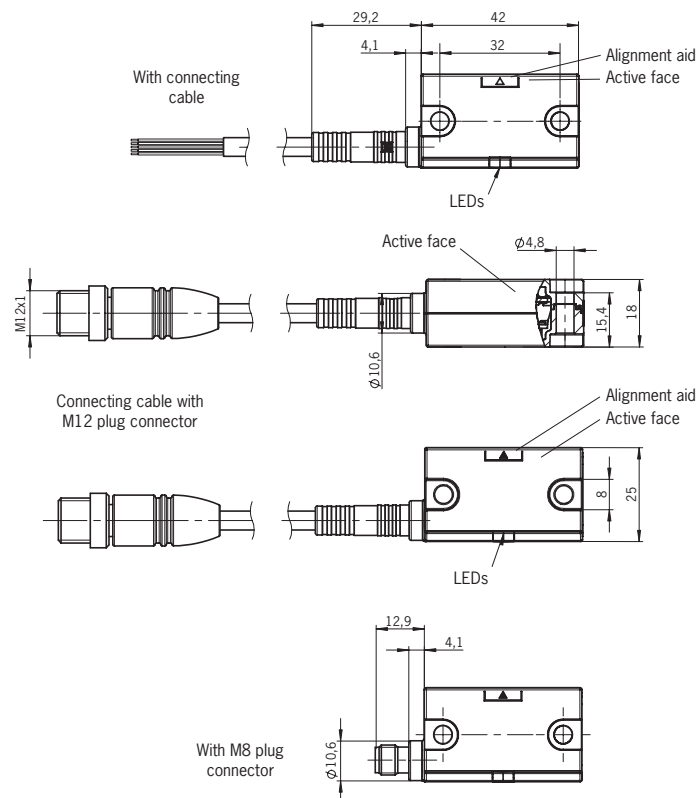


Function expansion with CEM-C60, see page 58.

**Accessories**

Type	Version	
<b>Connection material</b>	Connecting cable with plug connector  <b>M8</b> <b>4 pin</b>	Page 121
	Connecting cable with plug connector  <b>M12</b> <b>5 pin</b>	Page 123
<b>Bolts</b>	Bolts for housing design C04 	Page 138
<b>Fixing material</b>	Mounting sets 	Page 142
	Safety screws 	Page 144
 <b>Housing guard</b>	Housing guard ATEX for switches 	Page 144

**Dimension drawing**



Rubber support included with switch and actuator



C04

**Terminal assignment**

5 pin 4 wire With monitoring output	5 pin Without monitoring output (pin 5 not used)	4 pin Without monitoring output	Designation	Function	Conductor coloring
1	1	1	UB	Operating voltage, 24 V DC	BN
2	2	2	F01A	Safety output, channel A	WH
3	3	3	0V	Ground 0 V DC	BU
4	4	4	F01B	Safety output, channel B	BK
5	-	-	OD	Door position monitoring output	GY

**Safety switch CES-I-AP-.-C14-...**



- ▶ Safety switch CES-C04 encapsulated in epoxy resin
- ▶ Very high resistance to aggressive media
- ▶ 3 active faces
- ▶ Diagnostic LEDs are easily visible through the transparent sleeve
- ▶ Large actuating range in frontal and lateral approach directions
- ▶ Degree of protection IP65/IP67/IP69/IP69K

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Housing material**

The epoxy resin housing material is suitable for use in the food industry (ECOLAB material resistance test).

**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.

**LED indicator**

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

**Additional connections**

**OD** Monitoring output (semiconductor)

**Further information**

- ▶ For dimension drawings, see p. 53
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**

**Safety switch**

Series	Version	Order no./item	
CES-I-AP-U-C14-... Unicode	With monitoring output	<b>158632</b> CES-I-AP-U-C14-U20-158632	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-I-AP-M-C14-... Multicode	With monitoring output	<b>158631</b> CES-I-AP-M-C14-U20-158631	

**Actuator**

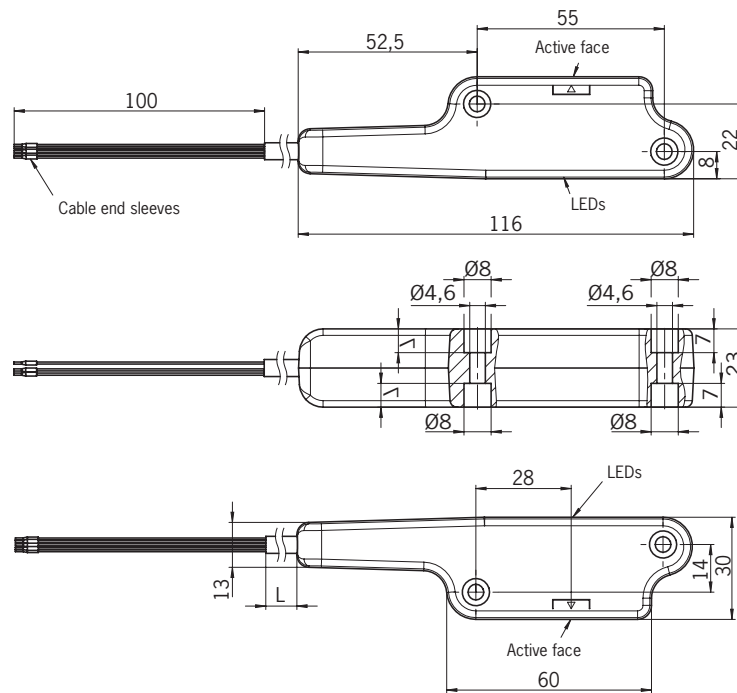
Series	Design	Typ. actuating range [mm]	Order no./item	
<b>CES-A-BBN-C14</b> encapsulated with epoxy resin	72 x 30	24	<b>160441</b> CES-A-BBN-C14-160441	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .



5  
wire

C14

**Dimension drawing**



**Terminal assignment**

Conductor coloring	Designation	Function
BN	UB	Operating voltage, 24 V DC
WH	F01A	Safety output, channel A
BU	0V	Ground 0 V DC
BK	F01B	Safety output, channel B
GY	OD	Door position monitoring output

**Safety switch CEM-I2-AY-.C40-...  
with guard locking for process protection**



- ▶ Safety switch with guard locking for process protection
- ▶ Locking force 600 N
- ▶ Diagnostics via 4 LEDs
- ▶ Adjustable adhesive force (with guard locking inactive)
- ▶ Limit range indication for transponder and anchor plate

**Notice**

The safety switch CEM-I2-AY-.C40-... is only allowed to be operated in conjunction with the actuator A-C40.

**Details**

**Available coding options**

- ▶ Unicode evaluation

**Adjustable adhesive force**

The adhesive force can be set in steps of 0 N, approx. 30 N and approx. 50 N (delivery state) with the aid of a parametrization key (order no. 125481). The adhesive force is active if guard locking is inactive. The operating voltage  $U_0$  must be present for this purpose.

**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. The device also signals if the guard locking force is less than 400 N on switching on.

**LED indicator**

<b>POWER</b>	Operating voltage
<b>STATE</b>	Status
<b>DIA</b>	Diagnostics
<b>LOCK</b>	Guard locking

**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**

**Safety switch**

Series	Version	Monitoring outputs	Order no./item	
CEM-I2-AY-... Unicode	<b>M12</b> <b>8 pin</b>	<b>PNP</b>	<b>128103</b> CEM-I2-AY-U-C40-SA-128103	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>NPN</b>	<b>157549</b> CEM-I2-AY-U-C40-LZ-SA-157549	

**Actuator**

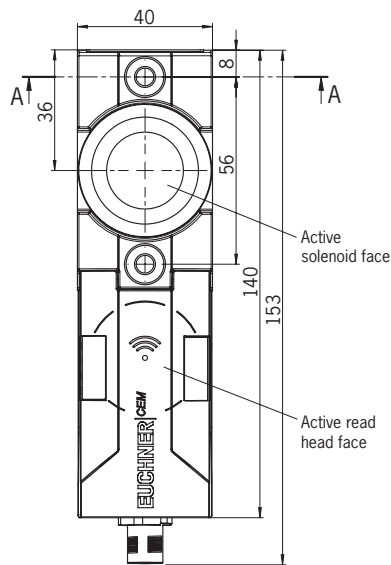
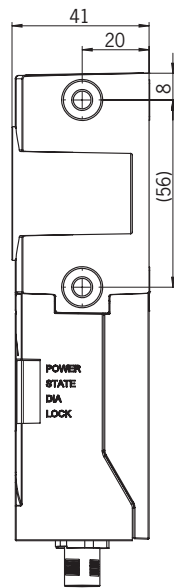
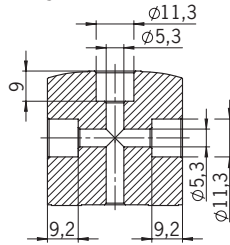
Series	Design	Order no./item	
A-C40	Adjustable in transverse direction	<b>113869</b> A-C40-113869	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .
	Adjustable in longitudinal direction	<b>158436</b> A-C40-158436	
Parameterization key		<b>125481</b> A-TI-001-125481	

**Accessories**

Type	Version	
Connection material	Connecting cable with plug connector <b>M12</b> <b>8 pin</b>	Page 126
Fixing material	Mounting bracket 	Page 142
	Safety screws	Page 144
Miscellaneous accessories	Lockout bar 	Page 144

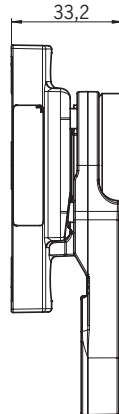
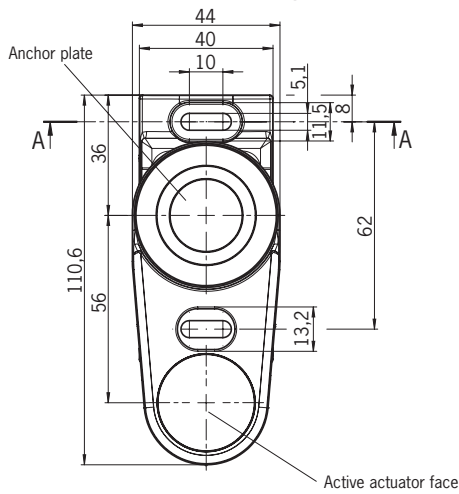
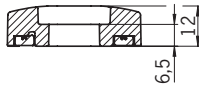
**Dimension drawing**

**Safety switch**

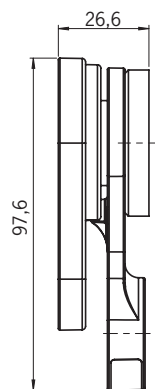
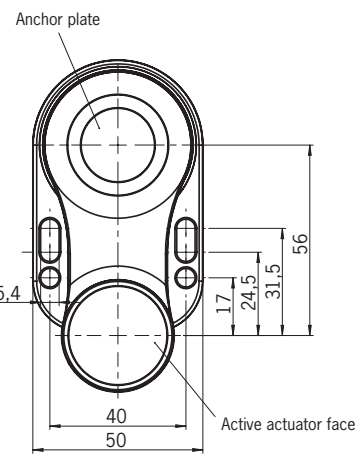


**Actuator  
A-C40-113869**

A-A



**Actuator  
A-C40-158436**



M12 8 pin

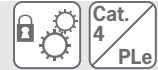
**Terminal assignment**

Pin	Designation	Function
1	IMP	Control input of solenoid, 24 V DC
2	UB	Operating voltage of electronics and solenoid, 24 V DC
3	F01A	Safety output, channel A
4	F01B	Safety output, channel B
5	OI	Diagnostic monitoring output
6	OT	Door position monitoring output
7	OL	Guard locking monitoring output
8	OVUB	Operating voltage of electronics and solenoid, 0 V DC





**Variable magnetic guard locking CEM-M2-C60-...**



- ▶ Electromagnetic guard locking for process protection
- ▶ Modular system: function expansion for safety switches of series CES-C04 / CES-C07
- ▶ Locking force 650 N
- ▶ Nickel-plated solenoid surface is highly resistant to corrosion
- ▶ Integrated permanent magnet with 30 N adhesive force (optional)
- ▶ Connection via plug connector M12

**Notice**

The magnetic guard locking CEM-C60 may be operated only in combination with the actuators A-C60-A1 or A-C60-B1.

**Details**

**Function expansion**

The safety switch is mounted on the guard locking solenoid and is used for reliable detection of the door position. The modular design enables great flexibility when it comes to selecting the suitable safety switch and the corresponding connection variant.

**Integrated permanent magnet (optional)**

The guard locking solenoid prevents the safety door from being opened unintentionally. Even when the solenoid is switched off, the integrated permanent magnet keeps the door closed with an adhesive force of 30 N.

**LED indicator**

**Yellow LED** Solenoid operating voltage

**Further information**

- ▶ For dimension drawings, see p. 59
- ▶ For accessories and spare parts, see p. 58
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).
- ▶ You will find information on the series connection of AR devices on page 5.

**Ordering table**

**Magnetic guard locking**

Series	Version	Order no./item	
CEM-M2-C60-...	Plug connector on left, with permanent magnet	<b>161320</b> CEM-M2-C60-PZ-SE-161320	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> .
	Plug connector on left, without permanent magnet	<b>163252</b> CEM-M2-C60-KZ-SE-163252	
	Plug connector on right, with permanent magnet	<b>165746</b> CEM-M2-C60-PZ-SE-165746	

**Actuator**

Series	Design	Use	Order no./item	
A-C60-...		For safety switches CES-...-C04-...	<b>161322</b> A-C60-A1-161322	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 safety switches CES-...-C07-...	<b>165281</b> A-C60-B1-162581	

**Accessories**

Type	Version	
Connection material	Connecting cable with plug connector 	Page 123
	Y-distributor CEM-M2-C60 to CES-AP/BP 	Page 135
Fixing material	Safety screws	Page 144

M12

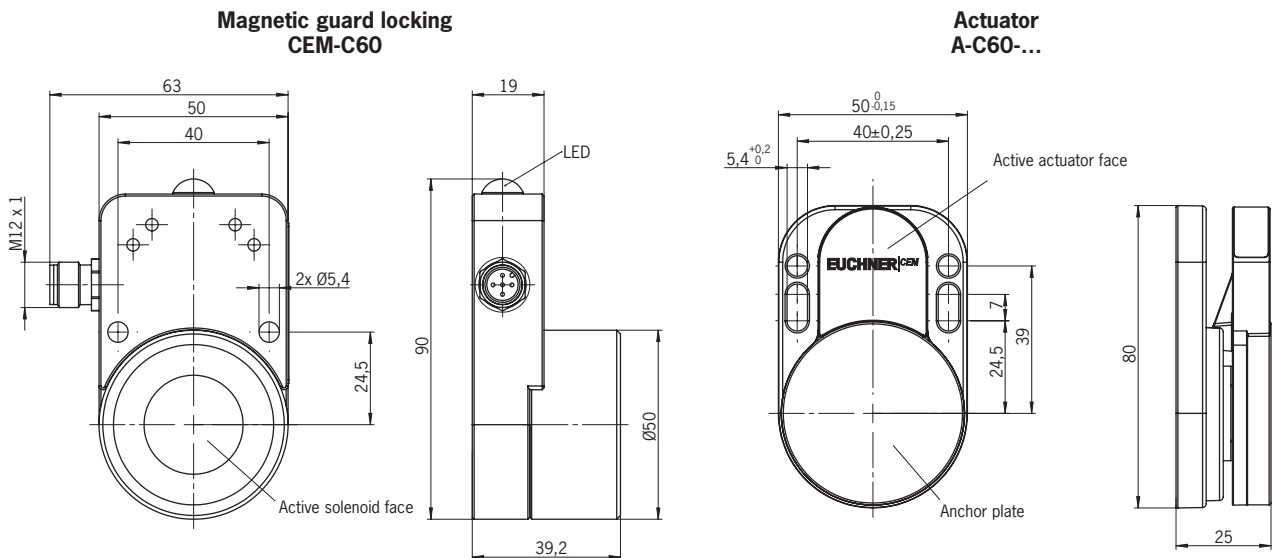
5 pin

M12

8 pin

CEMI

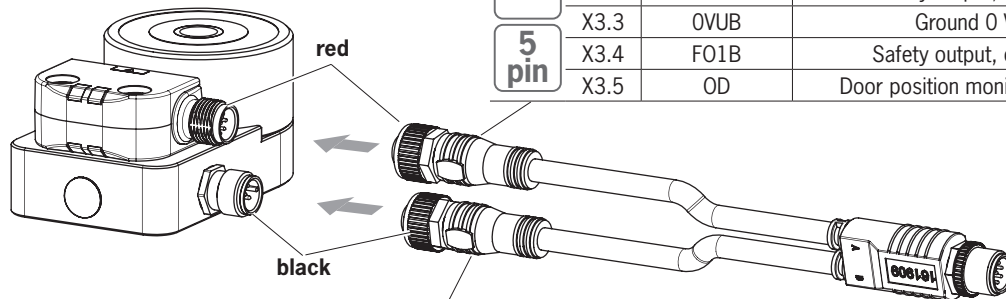
## Dimension drawing



## Terminal assignment for Y-distributor

### Connection of safety switch CES-I-BP (red socket)

Pin	Designation	Function
X3.1	UB	Operating voltage, 24 V DC
X3.2	F01A	Safety output, channel A
X3.3	OVUB	Ground 0 V DC
X3.4	F01B	Safety output, channel B
X3.5	OD	Door position monitoring output



### Connection of guard locking solenoid CEM-M2-C60-... (black socket)

Pin	Designation	Function
X2.1	-	n.c.
X2.2	-	n.c.
X2.3	OVUCM	Solenoid operating voltage, 0 V DC
X2.4	UCM	Solenoid operating voltage, 24 V DC
X2.5	-	n.c.

### Y-distributor (plug)

Pin	Designation	Function
X1.1	UCM	Solenoid operating voltage, 24 V DC
X1.2	UB	Operating voltage, 24 V DC
X1.3	F01A	Safety output, channel A
X1.4	F01B	Safety output, channel B
X1.5	OD	Door position monitoring output
X1.6	-	n.c.
X1.7	OVUB	Operating voltage ground, 0 V DC
X1.8	OVUCM	Solenoid ground, 0 V DC

**Safety switch CTP-...-AP-...  
with guard locking**



- ▶ **Safety switch with guard locking**
  - ▶ **Locking force up to 3,900 N**
  - ▶ **Diagnostics via 3 LEDs**
  - ▶ **ATEX version available**
  - ▶ **Version with integrated AS-Interface**
- Safety at Work available, see [www.euchner.com](http://www.euchner.com)**

**Notice**

The device is only allowed to be operated in conjunction with the actuators A-C-H-....

**Details**

**Approach direction**



Head can be rotated in 90° steps

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Guard locking types**

- L1 Closed-circuit current principle**  
Guard locking by spring force. Release by applying voltage to the guard locking solenoid.
- L2 Open-circuit current principle**  
Guard locking by solenoid force. Activation of the guard locking by applying voltage to the guard locking solenoid.
- LBI BiState**  
Control input for guard locking. This type of guard locking has a function to prevent
  - persons from unintentionally locking themselves inside if the safety door is open in case of a power failure and if the machine is switched off.
  - the deactivation of activated guard locking in case of a power failure.
- I1** As for L1, but without guard lock monitoring. Guard locking for process protection only.
- I2** As for L2, but without guard lock monitoring. Guard locking for process protection only.
- I** Without guard locking.

**Auxiliary release**

Included with all versions as standard.

**Escape release (optional)**

Some devices have an escape release. The escape release can be extended with the aid of the support brackets supplied.

**Retrofittable releases**

Devices with auxiliary release can be retrofitted with various release functions (see accessories).

**Extended version**

With integrated control elements (optional)

**Stainless-steel version**

Devices with robust stainless-steel components for harsh ambient conditions. They comply with the IP67/IP69/IP69K degree of protection. ECOLAB certificate available.

**ATEX version**

There is a version of this device for use in potentially explosive atmospheres. For explosion protection, see marking in the ordering table.

**Important:** Use only ATEX actuators for ATEX devices.

**Connection to IP67 field modules**

Devices with plug connector SII (2 x M12, 5-pin) are optimized for direct connection to field modules, such as ET200pro from Siemens or comparable devices from other manufacturers.

**LED indicator**

<b>STATE</b>	Status
<b>LOCK</b>	Guard locking
<b>DIA</b>	Diagnostics

**Additional connections**






<b>OD</b>	Door position monitoring output
<b>OI</b>	Diagnostic monitoring output
<b>OL</b>	Guard locking monitoring output

**Further information**




- ▶ For dimension drawings, see p. 66
- ▶ For accessories and spare parts, see p. 65
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**



















**CTP-L.-AP-...-SII-... with 2 plug connectors M12**

 Order no./item	<b>Coding</b> U = unicode M = multicode	<b>Escape release</b>	<b>Guard locking</b> Personnel/process protection	<b>For wiring diagram,</b> see page 67	
<b>CTP-L1</b> Closed-circuit current principle					
<b>124468</b> CTP-L1-AP-U-HA-AZ-SII-124468	U				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>127640</b> CTP-L1-AP-U-HA-AE-SII-127640	U	●			
<b>129477</b> CTP-L1-AP-U-HA-AZ-SII-129477	U				
<b>129478</b> CTP-L1-AP-U-HA-AE-SII-129478	U	●			

**CTP-I.-AP-...-SBB-... with 2 plug connectors M12**





 Order no./item	<b>Coding</b> U = unicode M = multicode	<b>Escape release</b>	<b>Control elements</b>	<b>Guard locking</b> Personnel/process protection	<b>For wiring diagram,</b> see page 67	
<b>CTP-I</b> Without guard locking						
<b>159614</b> CTP-I-AP-U-HA-ZZE-SBB-159614	U		Emergency stop			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> .

**CTP...-AP-...-SA-... with plug connector M12**






 Order no./item	Coding U = unicode M = multicode	Escape release	Guard locking Personnel/process protection	For wiring diagram, see page 67	
<b>CTP-L1</b> Closed-circuit current principle					
<b>124225</b> CTP-L1-AP-U-HA-AZ-SA-124225	U				
<b>126912</b> CTP-L1-AP-U-HA-AE-SA-126912	U				
<b>127727</b> CTP-L1-AP-U-HA-AZ-SA-127727	U				
<b>128484</b> CTP-L1-AP-U-HA-AE-SA-128484	U				
<b>124727</b> CTP-L1-AP-M-HA-AZ-SA-124727	M				
<b>163003</b> CTP-L1-AP-M-HA-AE-SA-163003	M				
<b>CTP-L2</b> Open-circuit current principle					
<b>124728</b> CTP-L2-AP-U-HA-AZ-SA-124728	U				
<b>136841</b> CTP-L2-AP-U-HA-AE-SA-136841	U				
<b>124729</b> CTP-L2-AP-M-HA-AZ-SA-124729	M				
<b>CTP-LBI</b> BiState					
<b>127798</b> CTP-LBI-AP-U-HA-AZ-SA-127798	U				
<b>CTP-I1</b> Process protection guard locking, closed-circuit current principle					
<b>136595</b> CTP-I1-AP-U-HA-AEC-SA-136595	U				
<b>CTP-I2</b> Process protection guard locking, open- circuit current principle					
<b>126258</b> CTP-I2-AP-U-HA-AZC-SA-126258	U				
<b>CTP-I</b> Without guard locking					
<b>136732</b> CTP-I-AP-U-HA-ZZ-SA-136732	U				

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

**CTP...-AP...-SA... with plug connector M12, stainless-steel version**










 Order no./item	Coding U = unicode M = multicode	Escape release	Guard locking Personnel/process protection	For wiring diagram, see page 67	
<b>CTP-L1</b> Closed-circuit current principle					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>157111</b> CTP-L1-AP-U-HA-AZS-SA-157111	U				
<b>157112</b> CTP-L1-AP-U-HA-AES-SA-157112	U	●			

**CTP...-AP...-SA-EX... with plug connector M12**










 Order no./item	Coding U = unicode M = multicode	Escape release	Guard locking Personnel/process protection	For wiring diagram, see page 67	
<b>CTP-L1</b> Closed-circuit current principle					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>136675</b> <sup>1)</sup> CTP-L1-AP-U-HA-AZ-SA-EX-136675	U				
<b>129512</b> <sup>1)</sup> CTP-L1-AP-U-HA-AZ-SA-EX-129512	U				
<b>156240</b> <sup>1)</sup> CTP-L1-AP-U-HA-AE-SA-EX-156240	U	●			

1) II3G Ex ec IIB T4 Gc X / II3D Ex tc IIIC T110°C Dc X














**CTP...-AP...-SH... with plug connector M23**

 Order no./item	Coding U = unicode M = multicode	Escape release	Guard locking Personnel/process protection	For wiring diagram, see page 67	
<b>CTP-L1</b> Closed-circuit current principle					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>123364</b> CTP-L1-AP-U-HA-AZ-SH-123364	U				
<b>123375</b> CTP-L1-AP-U-HA-AE-SH-123375	U	●			
<b>123365</b> CTP-L1-AP-M-HA-AZ-SH-123365	M				
<b>123376</b> CTP-L1-AP-M-HA-AE-SH-123376	M	●			
<b>CTP-L2</b> Open-circuit current principle					
<b>123370</b> CTP-L2-AP-U-HA-AZ-SH-123370	U				
<b>123371</b> CTP-L2-AP-M-HA-AZ-SH-123371	M				

**CTP...-AP...-SH... with plug connector M23, Extended version**

 Order no./item	Coding U = unicode M = multicode	Escape release	Control elements	Guard locking Personnel/process protection	For wiring diagram, see page 67		
<b>CTP-L1</b> Closed-circuit current principle							
<b>137342</b> CTP-L1-AP-U-HA-AEE-SH-137342	U		2 pushbuttons (illuminated)			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>156056</b> CTP-L1-AP-U-HA-AZE-SH-156056	U		Emergency stop, 2 pushbuttons (illuminated)				
<b>CTP-L2</b> Open-circuit current principle							
<b>158402</b> CTP-L2-AP-U-HA-AZE-SH-158402	U		2 pushbuttons (illuminated)				


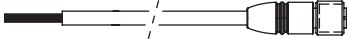

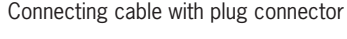

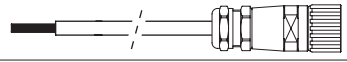

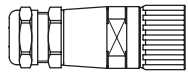

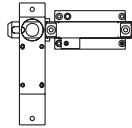








**Actuator**

Series	Design	Order no./item	
<b>A-C-H...</b>	 Straight	<b>126015</b> A-C-H-G-SST-126015	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> .
	 Stainless steel, straight	<b>157696</b> A-C-H-G-SSS-157696	
	  Straight	<b>136826</b> A-C-H-G-LS-EX-136826	
	 Bent, upward <sup>1)</sup>	<b>122667</b> A-C-H-W-SST-122667	
	 Bent, downward <sup>1)</sup>	<b>122668</b> A-C-H-W-SST-122668	
	  <sup>1)</sup>	<b>122671</b> A-C-H-RL-LS-122671	
	Hinged actuators  <sup>1)</sup>	<b>122672</b> A-C-H-RR-LS-122672	
	  <sup>1)</sup>	<b>122675</b> A-C-H-RO-LS-122675	
	Hinged actuators  <sup>1)</sup>	<b>122676</b> A-C-H-RU-LS-122676	

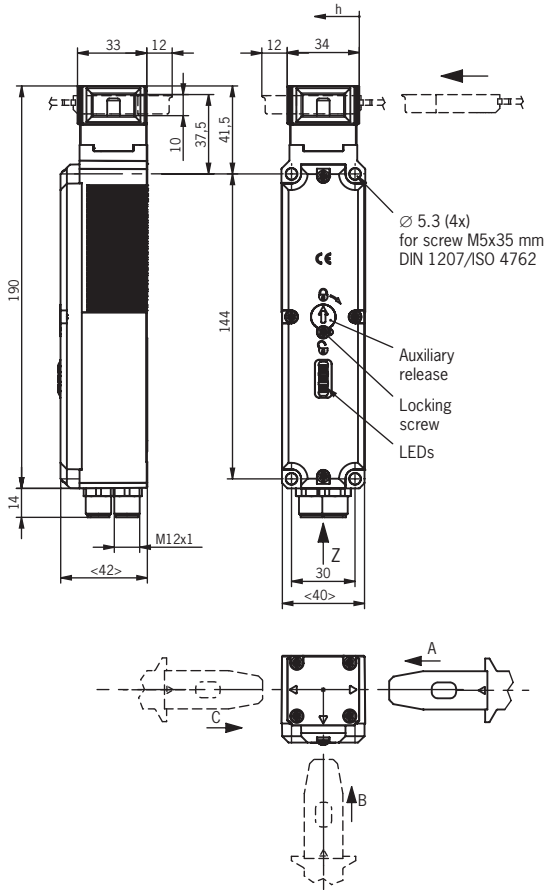
1) Applies to the following orientation: connection/cable outlet pointing downward



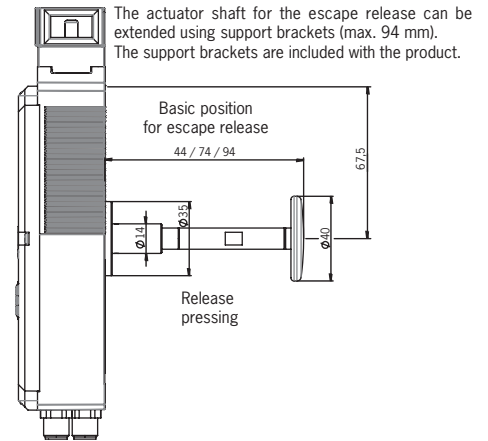
**Accessories**

Type	Version	
<b>Connection material</b>	Connecting cable with plug connector 	 Page 123
	Connecting cable with plug connector 	 Page 126
	Connecting cable with plug connector 	 Page 131/132
<b>Bolts</b>	Female plug (for self-assembly) 	 Page 133
<b>Fixing material</b>	Bolts for housing design CTP 	Page 139
<b>Miscellaneous accessories</b>	Mounting plates 	Page 142
<b>Miscellaneous accessories</b>	Safety screws 	Page 144
<b>Miscellaneous accessories</b>	Auxiliary key release 	Page 144 f.
<b>Miscellaneous accessories</b>	Release 	
<b>Miscellaneous accessories</b>	Emergency release 	
<b>Miscellaneous accessories</b>	Wire front release (bowden) 	
<b>Miscellaneous accessories</b>	Handle for wire front release 	
<b>Miscellaneous accessories</b>	Lockout bar 	

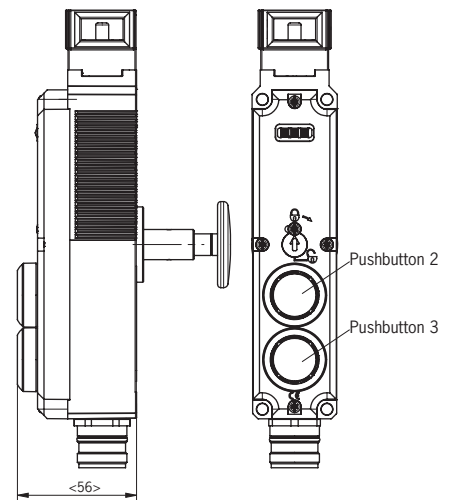
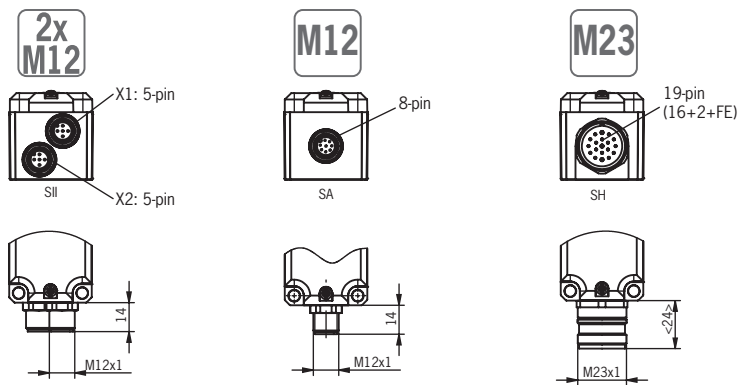
**Dimension drawing**



**With escape release**



**Extended version**



You can find the dimension drawing for version CTP-EX with escape release and for the stainless-steel version by entering the order number for the product at [www.euchner.com](http://www.euchner.com)

2x  
M12

5  
pin

**Terminal assignment**

**A** 2x M12 5 pin **Wiring diagram A**

Pin	Designation	Function
X 1.1	UB	Operating voltage of electronics, 24 V DC
X 1.2	F01A	Safety output, channel A
X 1.3	0VUB	Operating voltage of electronics, 0 V DC
X 1.4	F01B	Safety output, channel B
X 1.5	–	n.c.
X 2.1	–	n.c.
X 2.2	–	n.c.
X 2.3	IMM	Operating voltage of solenoid, 0 V DC
X 2.4	IMP	Operating voltage of solenoid, 24 V DC
X 2.5	–	n.c.

**B** 2x M12 5 pin **Wiring diagram B**

Pin	Designation	Function
X 1.1	UB	Operating voltage of electronics, 24 V DC
X 1.2	F01A	Safety output, channel A
X 1.3	0VUB	Operating voltage of electronics, 0 V DC
X 1.4	F01B	Safety output, channel B
X 1.5	–	n.c.
X 2.1	–	n.c.
X 2.2	OD	Door position monitoring output
X 2.3	IMM	Operating voltage of solenoid, 0 V DC
X 2.4	IMP	Operating voltage of solenoid, 24 V DC
X 2.5	–	n.c.

**C** 2x M12 5 pin **Wiring diagram C**

Pin	Designation	Function
X 1.1	UB	Operating voltage of electronics, 24 V DC
X 1.2	F01A	Safety output, channel A
X 1.3	0VUB	Operating voltage of electronics, 0 V DC
X 1.4	F01B	Safety output, channel B
X 1.5	–	n.c.
X 2.1	S1.A1	Emergency stop (channel A contact 1)
X 2.2	S1.B1	Emergency stop (channel B contact 1)
X 2.3	–	n.c.
X 2.4	S1.A2	Emergency stop (channel A contact 2)
X 2.5	S1.B2	Emergency stop (channel B contact 2)

M12 8 pin

## D M12 8 pin Wiring diagram D

Pin	Designation	Function
1	IMP	Operating voltage of solenoid, 24 V DC
2	UB	Operating voltage of electronics, 24 V DC
3	FO1A	Safety output, channel A
4	FO1B	Safety output, channel B
5	OI	Diagnostic monitoring output
6	OD	Door position monitoring output
7	OVUB	Operating voltage of electronics, 0 V DC
8	IMM	Operating voltage of solenoid, 0 V DC

## E M12 8 pin Wiring diagram E

Pin	Designation	Function
1	IMP	Operating voltage of solenoid, 24 V DC
2	UB	Operating voltage of electronics, 24 V DC
3	FO1A	Safety output, channel A
4	FO1B	Safety output, channel B
5	OI	Diagnostic monitoring output
6	OD	Door position monitoring output
7	OL	Guard locking monitoring output
8	OV	Operating voltage of electronics and solenoid, 0 V DC

## F M12 8 pin Wiring diagram F

Pin	Designation	Function
1	IMP	Operating voltage of solenoid, 24 V DC
2	UB	Operating voltage of electronics, 24 V DC
3	FO1A	Safety output, channel A
4	FO1B	Safety output, channel B
5	OI	Diagnostic monitoring output
6	OD	Door position monitoring output
7	OL	Guard locking monitoring output
8	OV	Operating voltage of electronics and solenoid, 0 V DC

## G M12 8 pin Wiring diagram G

Pin	Designation	Function
1	–	n.c.
2	UB	Operating voltage of electronics, 24 V DC
3	FO1A	Safety output, channel A
4	FO1B	Safety output, channel B
5	OI	Diagnostic monitoring output
6	OD	Door position monitoring output
7	OV	Operating voltage of electronics and solenoid, 0 V DC
8	–	n.c.

**M23** **19 pin**

**H** **M23** **19 pin** **Wiring diagram H**

Pin	Designation	Function
1	IMP	Operating voltage of solenoid, 24 V DC
2	–	n.c.
3	–	n.c.
4	F01A	Safety output, channel A
5	F01B	Safety output, channel B
6	UB	Operating voltage of electronics, 24 V DC
7	RST	Reset input
8	OD	Door position monitoring output
9	OI	Diagnostic monitoring output
10	OL	Guard locking monitoring output
11	–	n.c.
12	FE	Function earth
13	–	n.c.
14	–	n.c.
15	–	n.c.
16	–	n.c.
17	–	n.c.
18	IMM	Operating voltage of solenoid, 0 V DC
19	OVUB	Operating voltage of electronics, 0 V DC

**I** **M23** **19 pin** **Wiring diagram I**

Pin	Designation	Function
1	IMP	Operating voltage of solenoid, 24 V DC
2	–	n.c.
3	–	n.c.
4	F01A	Safety output, channel A
5	F01B	Safety output, channel B
6	UB	Operating voltage of electronics, 24 V DC
7	RST	Reset input
8	OD	Door position monitoring output
9	OI	Diagnostic monitoring output
10	OL	Guard locking monitoring output
11	–	n.c.
12	FE	Function earth
13	IMM	Operating voltage of solenoid, 0 V DC
14	–	n.c.
15	S2	Pushbutton 2
16	H2	LED 2
17	S3	Pushbutton 3
18	H3	LED 3
19	OVUB	Operating voltage of electronics, 0 V DC

M23 19 pin

J M23 19 pin Wiring diagram J

Pin	Designation	Function
1	IMP	Operating voltage of solenoid, 24 V DC
2	IMM	Operating voltage of solenoid, 0 V DC
3	S1.C	Emergency stop (monitoring contact)
4	FO1A	Safety output, channel A
5	FO1B	Safety output, channel B
6	UB	Operating voltage of electronics, 24 V DC
7	RST	Reset input
8	OD	Door position monitoring output
9	OI	Diagnostic monitoring output
10	S1.A1	Emergency stop (channel A contact 1)
11	S1.A2	Emergency stop (channel A contact 2)
12	FE	Function earth
13	S1.B1	Emergency stop (channel B contact 1)
14	S1.B2	Emergency stop (channel B contact 2)
15	S2	Pushbutton 2
16	H2	LED 2
17	S3	Pushbutton 3
18	H3	LED 3
19	OVUB	Operating voltage of electronics, 0 V DC



**Safety switch CET.-AP-...  
with guard locking**



- ▶ Safety switch with guard locking
  - ▶ Locking force up to 6,500 N
  - ▶ Metal housing
  - ▶ Diagnostics via 4 LEDs
  - ▶ Degree of protection IP67
  - ▶ Actuator guide with large freedom of movement
  - ▶ 2-channel solenoid control permissible
  - ▶ Connection via plug connectors
  - ▶ Version with integrated AS-Interface
- Safety at Work available, see [www.euchner.com](http://www.euchner.com)**

**Notice**

The device is only allowed to be operated in conjunction with the actuator CET-A-....

**Details**

**Approach direction**



Head can be rotated in 90° steps

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Guard locking types**

- CET3 Closed-circuit current principle**  
Guard locking by spring force. Release by applying voltage to the guard locking solenoid. Monitoring of the door position: The door position monitoring output OUT D is set to HIGH as soon as the actuator is above the extended plunger (state: door closed, guard locking not active). The output OUT D also remains set when guard locking is active.
- CET4 Open-circuit current principle**  
Guard locking by applying voltage to the guard locking solenoid. Release by spring force. Monitoring of the door position: The door position monitoring output OUT D is set to HIGH as soon as the actuator is above the extended plunger (state: door closed, guard locking not active). The output OUT D also remains set when guard locking is active.

**Teach-in input (optional)**

Some devices with unicode evaluation have a teach-in input. These devices can be taught-in only if the teach-in input has the corresponding circuit. In this way, the protection against tampering is additionally increased.

**Auxiliary release**

Included with all versions as standard.

**Escape release (optional)**

Some devices have an escape release (see ordering table).

**Wire front release (optional)**

The wire front release permits remote unlocking of the guard locking via a pull wire. Flexible routing of the pull wire permits release of the guard locking in inaccessible installation situations.

**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 146).

**LED indicator**

- STATE** Status
- DIA** Diagnostics
- LED 1 red** see wiring diagram
- LED 2 green** see wiring diagram

**Additional connections (depending on version)**

- OUT** Monitoring output (semiconductor)
- OUT D** Door position monitoring output
- DIA** Diagnostic monitoring output







**Further information**

- ▶ For dimension drawings, see p. 76
- ▶ For accessories and spare parts, see p. 75
- ▶ 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-AP-...-SI-... with 2 plug connectors M12, without door position monitoring output, for connection to decentralized peripheral equipment**

 Order no./item	Coding U = unicode M = multicode	Ramp	Teach-in input	Feedback loop	Escape release	Wire front release (L1) <sup>1)</sup>	For wiring diagram, see page 78	
<b>CET3</b>								
Closed-circuit current principle								
<b>111346</b>	U							 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> .
CET3-AP-CRA-AH-50X-SI-111346								
<b>121367</b>	U					5 m		
CET3-AP-CRA-AH-50X-SI-C2290-121367								
<b>114073</b>	U					75 mm		
CET3-AP-CRA-AH-50F-SI-114073								
<b>157408</b>	U					105 mm		
CET3-AP-CRA-AH-50F-SI-C2312-157408								
<b>CET4</b>								
Open-circuit current principle								
<b>112082</b>	U							
CET4-AP-CRA-AH-50X-SI-112082								








1) L1 = sleeve length; rope length = L1 + 1 m. Important: Handle must be ordered separately (see accessories, page 144).

**CET-AP-...-SI-... with 2 plug connectors M12, with door position monitoring output**

 Order no./item	Coding U = unicode M = multicode	Ramp	Teach-in input	Feedback loop	Escape release	Wire front release (L1) <sup>1)</sup>	For wiring diagram, see page 78	
<b>CET3</b>								
Closed-circuit current principle								
<b>124589</b>	U							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> .
CET3-AP-CRA-AH-50X-SI-C2438-124589								
<b>124594</b>	U				75 mm			
CET3-AP-CRA-AH-50F-SI-C2438-127594								
<b>CET4</b>								
Open-circuit current principle								
<b>126763</b>	U							
CET4-AP-CRA-AH-50X-SI-C2438-126763								
<b>161577</b>	U					3 m		
CET4-AP-CRA-AH-50X-SI-C2509-161577								

1) L1 = sleeve length; rope length = L1 + 1 m. Important: Handle must be ordered separately (see accessories, page 144).





**CET-AP-...-SA-... with plug connector M12, with door position monitoring output**

 Order no./item	Coding U = unicode M = multicode	Ramp	Teach-in input	Feedback loop	Escape release	Wire front release (L1) <sup>1)</sup>	For wiring diagram, see page 78	
<b>CET3</b> Closed-circuit current principle								
<b>122398</b> CET3-AP-CRA-AH-50X-SA-122389	U							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>161524</b> <sup>2)</sup> CET3-AP-CRA-AH-50X-SF-161524	U							
<b>121579</b> CET3-AP-CRA-CH-50X-SA-121579	M							
<b>124601</b> CET3-AP-CRA-AH-50F-SA-124601	U				75 mm			
<b>157287</b> CET3-AP-CRA-CH-50F-SA-C2312-157287	M				105 mm			
<b>122406</b> CET3-AP-CRA-AH-50X-SA-122406	U							
<b>122409</b> CET3-AP-CRA-CH-50X-SA-122409	M							
<b>CET4</b> Open-circuit current principle								
<b>122415</b> CET4-AP-CRA-AH-50X-SA-122415	U							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>122413</b> CET4-AP-CRA-CH-50X-SA-122413	M							
<b>161178</b> CET4-AP-CRA-CH-50F-SA-161178	M				75 mm			

1) L1 = sleeve length; rope length = L1 + 1 m. Important: Handle must be ordered separately (see accessories, page 144).



2) Adjustable M12 plug connector, can be rotated by 360°.

**CET-AP-...-SH-... with plug connector M23, with door position monitoring output**


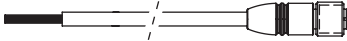
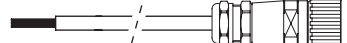
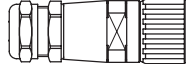
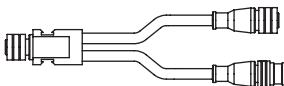
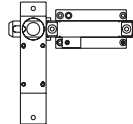

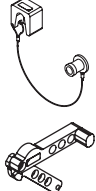





 Order no./item	Coding U = unicode M = multicode	Ramp	Teach-in input	Feedback loop	Escape release	Wire front release (L1) <sup>1)</sup>	For wiring diagram, see page 79	
<b>CET3</b> Closed-circuit current principle								
<b>119106</b> CET3-AP-CRA-AH-50F-SH-C2312-119106	U		●		105 mm			For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .

1) L1 = sleeve length; rope length = L1 + 1 m. Important: Handle must be ordered separately (see accessories, page 144).

**Actuator**

Series	Design	Order no./item	
<b>CET-A-BWK-50X</b>		<b>096327</b> 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> .

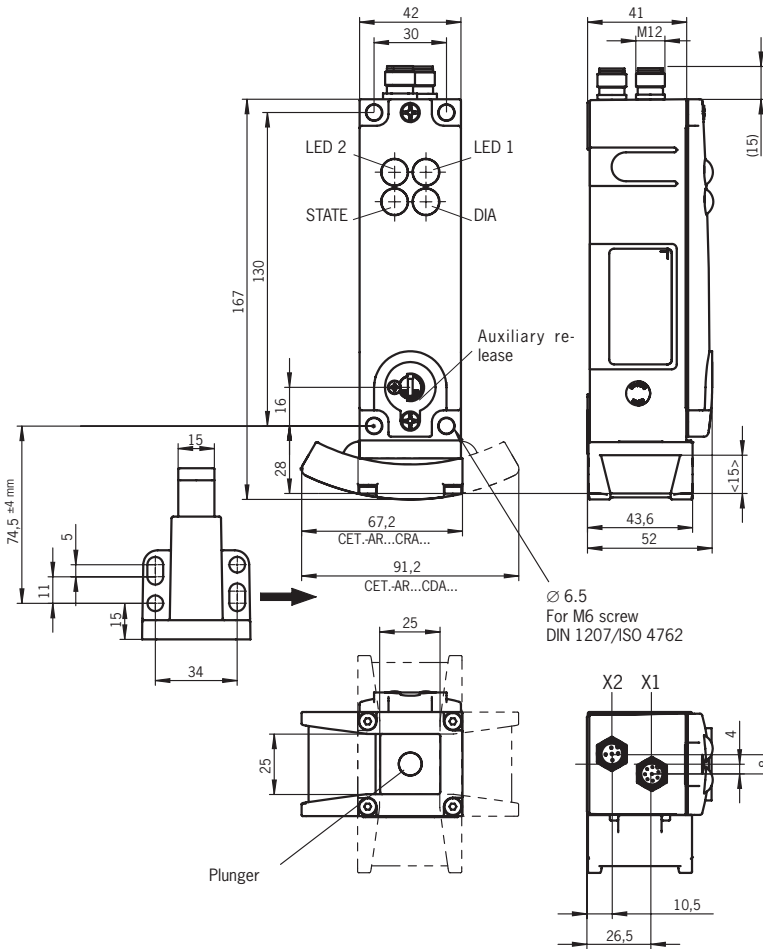
**Accessories**

Type	Version	
<p><b>Connection material</b></p>	<p>Connecting cable with plug connector</p>  <p>M12</p> <p>5 pin</p>	Page 123 f.
	<p>Connecting cable with plug connector</p>  <p>M23</p> <p>8 pin</p>	Page 126
	<p>Female plug (for self-assembly)</p>  <p>M23</p> <p>19 pin</p>	Page 131/132
	<p><b>Y-distributor for connection to IP67 field modules</b> For AP devices with plug connectors 2 x M12, 5-pin, with monitoring output (e.g. CET-AP with wiring diagram B) for connection to field modules with socket M12, 5-pin.</p>  <p>M12 (socket)</p> <p>5 pin</p> <p>2x M12 (plug)</p>	Page 133
	<p><b>Bolts</b></p>	<p>Bolts for housing design CET</p> 
<p><b>Fixing material</b></p>	<p>Mounting plates</p> 	Page 139
	<p>Safety screws</p>	Page 142
<p><b>Miscellaneous accessories</b></p>	<p>Lockout bar</p> 	Page 144 f.
	<p>Auxiliary key release</p> 	
	<p>Emergency release</p> 	
	<p>Cover</p> 	
	<p>Double ramp</p> 	
	<p>Handle for wire front release</p> 	

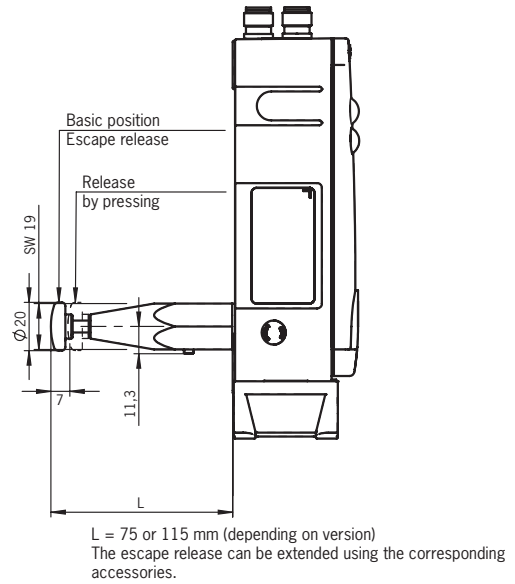
**Dimension drawing**

**2x  
M12**

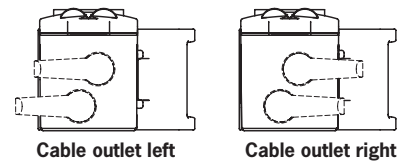
**With 2 plug connectors M12**



**With escape release**

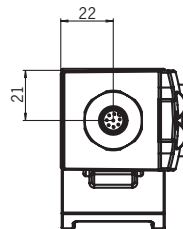


**With angle connectors**

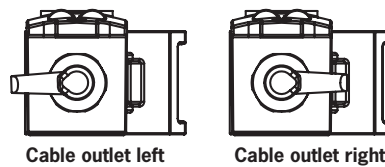


**M12**

**With 1 plug connector M12**



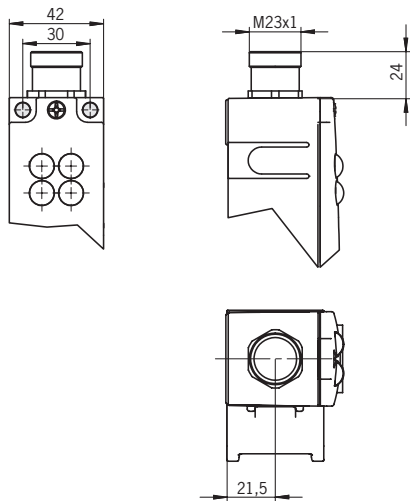
**With angle connectors**



**M23**

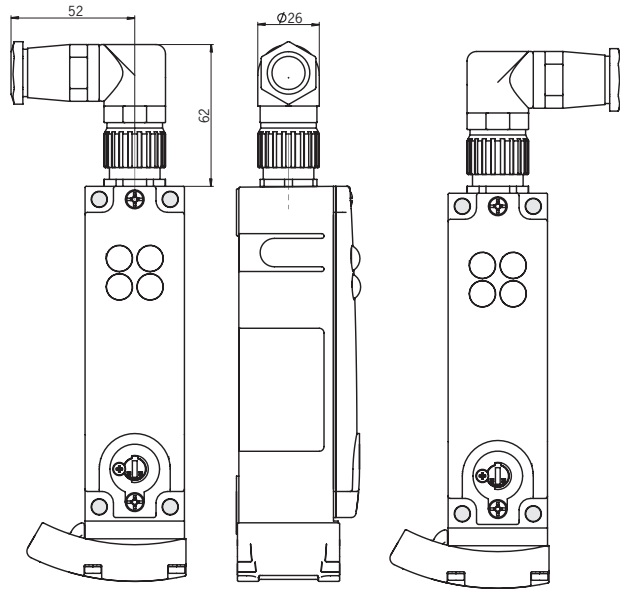
**With plug connector M23**

**Dimensions with plug connector M23**



**Cable outlet left**

**Cable outlet right**

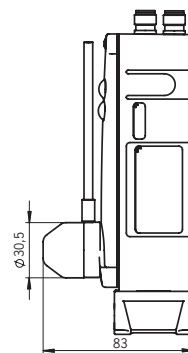
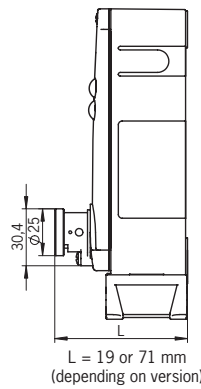
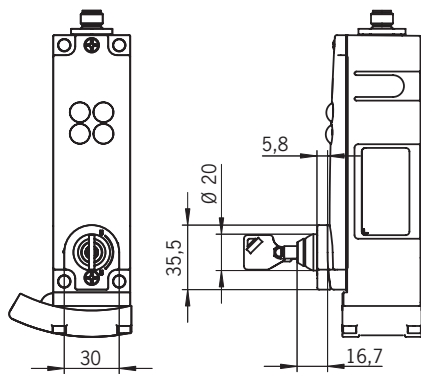


**Versions with manual release options**

**With auxiliary key release**

**With emergency release**

**With wire front release**





## Terminal assignment

**A** **B** **2x M12** **5 pin** Wiring diagrams A and B

Pin	Designation	Function	2x M12	
			A	B
X 1.1	UB	Operating voltage of electronics, 24 V DC	●	●
X 1.2	OA	Safety output, channel A	●	●
X 1.3	OVUB	Operating voltage of electronics, 0 V DC	●	●
X 1.4	OB	Safety output, channel B	●	●
X 1.5	-	n.c.	●	●
X 2.1	-	n.c.	●	●
X 2.2	-	n.c. (for connection to decentralized peripheral equipment)	●	●
	OUT D	Door position monitoring output		●
X 2.3	OVUCM	Operating voltage of solenoid, 0 V DC	●	●
X 2.4	UCM	Operating voltage of solenoid, 24 V DC	●	●
X 2.5	-	n.c.	●	●

**C** **D** **M12** **8 pin** Wiring diagrams C and D

Pin	Designation	Function	M12	
			C	D
1	UCM	Operating voltage of solenoid, 24 V DC	●	●
2	UB	Operating voltage of electronics, 24 V DC	●	●
3	OA	Safety output, channel A	●	●
4	OB	Safety output, channel B	●	●
5	OUT	Guard locking monitoring output	●	
	DIA	Diagnostic monitoring output		●
6	OUT D	Door position monitoring output	●	●
7	OVUB	Operating voltage of electronics, 0 V DC	●	●
8	OVUCM	Operating voltage of solenoid, 0 V DC	●	●

**M23** **19**  
pin

**CET**

**E** **M23** **19**  
pin **Wiring diagram E**

Pin	Designation	Function
1	UCM	Operating voltage of solenoid, 24 V DC
2	–	n.c.
3	–	n.c.
4	OA	Safety output, channel A
5	OB	Safety output, channel B
6	UB	Operating voltage of electronics, 24 V DC
7	RST	Reset input
8	OUT D	Door position monitoring output
9	–	n.c.
10	OUT	Guard locking monitoring output
11	–	n.c.
12	FE	Function earth
13	J	Teach-in input
14	–	n.c.
15	–	n.c.
16	–	n.c.
17	–	n.c.
18	OVUCM	Operating voltage of solenoid, 0 V DC
19	OVUB	Operating voltage of electronics, 0 V DC

»Minimum effort for large installations with a large number of safety doors.«

---

- ▶ Can be connected in series with all AR devices (up to 20 devices)
- ▶ Quick connection via M12 connectors (depending on version)
- ▶ Evaluation via safety control systems or an AR evaluation unit (depending on version)
- ▶ Two safe semiconductor outputs
- ▶ Own pulsing for short circuit detection
- ▶ PL e / category 4 according to EN ISO 13849-1 for up to 20 devices
- ▶ Switch chains with cable lengths up to 200 m possible
- ▶ Large selection of devices





CES

**C01**



CES

**C02**



CES

**C04**



CES

**C14**



CEM

**CEM  
C40**



CTP

**CTP**



CET

**CET**



CES

**CES**

**Safety switch CES-AR-C01-...**



- ▶ Up to 20 switches in series
- ▶ 1 active face; can be repositioned in 5 directions
- ▶ Diagnostics via 2 LEDs
- ▶ Large actuating range
- ▶ Standard housing according to EN 60947-5-2
- ▶ Limit-range indication

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation
- ▶ Fixcode evaluation

**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.

**LED indicator**

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

**Additional connections**

**OUT** Monitoring output (semiconductor)  
**RST** Reset input

**Further information**

- ▶ For dimension drawings, see p. 83
- ▶ For accessories and spare parts, see p. 83
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).
- ▶ You will find information on the series connection of AR devices on page 5.

**Ordering table**


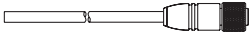


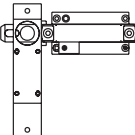
**Safety switch**

Series	Version	Order no./item	
CES-AR-C01-AH-SA Unicode	<div style="display: flex; gap: 10px;"> <div style="border: 1px solid black; padding: 2px;">M12</div> <div style="border: 1px solid black; padding: 2px;">8 pin</div> </div>	<b>098941</b> CES-AR-C01-AH-SA	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-AR-C01-CH-SA Multicode		<b>098942</b> CES-AR-C01-CH-SA	
CES-AR-C01-EH-SA Fixcode (actuator CES-A-BPA  included)		<b>098582</b> CES-AR-C01-EH-SA	

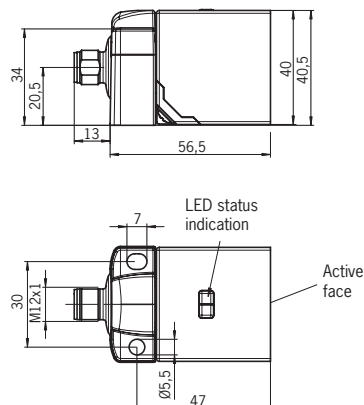
**Actuator**

Series	Design	Typ. actuating range [mm]	Order no./item	
CES-A-BRN	80 x 40	27	<b>100251</b> CES-A-BRN-100251	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-BPA	40 x 40	22	<b>098775</b> CES-A-BPA	
CES-A-BBA	42 x 25	18	<b>071840</b> CES-A-BBA	
CES-A-BCA	42 x 25 Material: PE-HD	18	<b>088786</b> CES-A-BCA	
CES-A-BDA-18	Ø18	19	<b>156935</b> CES-A-BDA-18	

## Accessories

Type	Version	
Connection material	Connecting cable with plug connector 	M12 8 pin Page 126
	Strapping plug/Y-distributor 	M12 Page 128
	Passive distribution module 	M12 Page 129
Bolts	Bolts for housing design C01 	Page 136
Fixing material	Safety screws	Page 144

## Dimension drawing



## Terminal assignment

Pin	Designation	Function
1	IB	Enable input, channel B
2	UB	Operating voltage, 24 V DC
3	OA	Safety output, channel A
4	OB	Safety output, channel B
5	OUT	Door position monitoring output
6	IA	Enable input, channel A
7	0V	Ground 0 V DC
8	RST	Reset input

**Safety switch CES-AR-C.2-...**



- ▶ **Diagnostics via 2 LEDs**
- ▶ **2 active faces**
- ▶ **Limit-range indication**
- ▶ **Simple mounting on aluminum profiles**
- ▶ **Large temperature range (depending on version)**
- ▶ **Reinforcement plates and safety screws included**

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**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.

**Large temperature range**

Devices with connecting cable and flying lead have a temperature range from -30 °C to +65 °C (with rigid cable laying).

**LED indicator**

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

**Additional connections**

**OUT** Monitoring output (semiconductor)  
**RST** Reset input

**Further information**





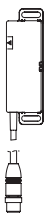




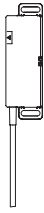




- ▶ For dimension drawings, see p. 86
- ▶ For accessories and spare parts, see p. 86
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).
- ▶ You will find information on the series connection of AR devices on page 5.

**Ordering table**

**Safety switch**



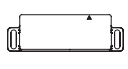
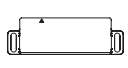

Series	Version	Door hinge <sup>1)</sup>	Order no./item		
CES-AR-C.2-AH-... Unicode			<b>105751</b> CES-AR-CR2-AH-SG-105751	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .	
			<b>105753</b> CES-AR-CL2-AH-SG-105753		
			<b>105746</b> CES-AR-CR2-AH-SA-105746		
			<b>105748</b> CES-AR-CL2-AH-SA-105748		
		5m			<b>109046</b> CES-AR-CR2-AH-L05-109046
					<b>109047</b> CES-AR-CL2-AH-L05-109047
		10m			<b>109050</b> CES-AR-CR2-AH-L10-109050
					<b>109051</b> CES-AR-CL2-AH-L10-109051

1) Applies to the following orientation: connection/cable outlet pointing downward


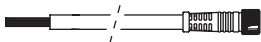
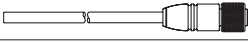


Series	Version	Door hinge <sup>1)</sup>	Order no./item		
CES-AR-C.2-CH-... Multicode	 <b>M8</b> <b>8 pin</b>		<b>105750</b> CES-AR-CR2-CH-SG-105750	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .	
			<b>105752</b> CES-AR-CL2-CH-SG-105752		
	 <b>M12</b> <b>8 pin</b> <b>PUR</b>	<b>0,15m</b>			<b>115792</b> CES-AR-CR2-CH-SA-115792
					<b>115793</b> CES-AR-CL2-CH-SA-115793
		<b>1m</b>			<b>105745</b> CES-AR-CR2-CH-SA-105745
					<b>105747</b> CES-AR-CL2-CH-SA-105747
	 <b>8 wire</b> <b>PUR</b>	<b>5m</b>			<b>109044</b> CES-AR-CR2-CH-L05-109044
					<b>109045</b> CES-AR-CL2-CH-L05-109045
		<b>10m</b>			<b>109048</b> CES-AR-CR2-CH-L10-109048
					<b>109049</b> CES-AR-CL2-CH-L10-109049

1) Applies to the following orientation: connection/cable outlet pointing downward

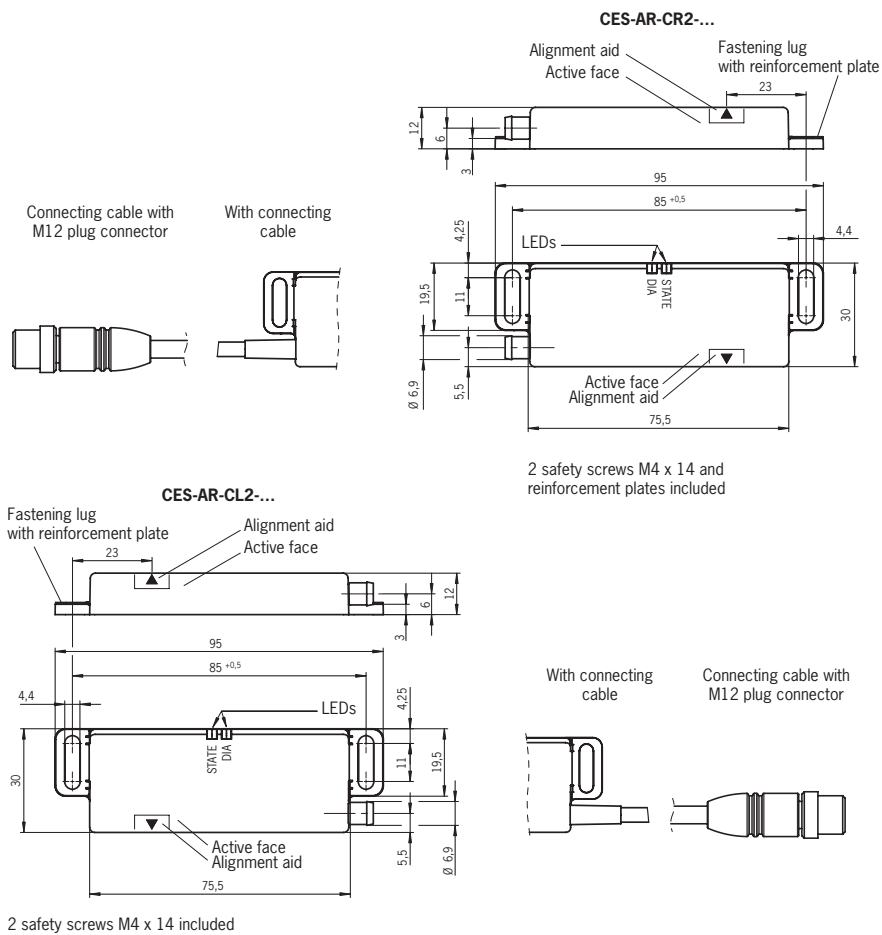
**Actuator**

Series	Design	Typ. actuating range [mm]	Order no./item	
CES-A-BDN-06	 Ø6 x 26	19	<b>104730</b> CES-A-BDN-06-104730	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-BLN-...	 95 x 30	15	<b>100776</b> CES-A-BLN-R2-100776	
	 55 x 30 Independent of the door hinge	15	<b>104510</b> CES-A-BLN-L2-104510	
	 55 x 30 Independent of the door hinge	15	<b>103450</b> CES-A-BLN-U2-103450	

**Accessories**

Type	Version		
<b>Connection material</b>	Connecting cable with plug connector 	<b>M8</b> <b>8 pin</b>	Page 122
	Connecting cable with plug connector 	<b>M12</b> <b>8 pin</b>	Page 126
	Strapping plug/Y-distributor 	<b>M12</b>	Page 128
	Passive distribution module 	<b>M12</b>	Page 129
<b>Fixing material</b>	Safety screws	Page 144	

**Dimension drawing**



M8

8  
pin

M12

8  
pin



8  
wire

C02

**Terminal assignment**

Pin	Designation	Function	Conductor coloring
1	IB	Enable input, channel B	WH
2	UB	Operating voltage, 24 V DC	BN
3	OA	Safety output, channel A	GN
4	OB	Safety output, channel B	YE
5	OUT	Door position monitoring output	GY
6	IA	Enable input, channel A	PK
7	OV	Ground 0 V DC	BU
8	RST	Reset input	RD

**Safety switch CES-I-AR-.-C04-...**



- ▶ **Small design**
- ▶ **3 active faces**
- ▶ **Diagnostics via 2 LEDs**
- ▶ **Limit-range indication**
- ▶ **Rubber support for protection against soiling**
- ▶ **Mounting distance 32 mm (EUCHNER standard)**
- ▶ **ATEX protective cover (optional)**

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation
- ▶ Fixcode evaluation

**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.

**Rubber support**

A rubber support is included with each switch and actuator and is intended to prevent the accumulation of soiling in the area of the mounting holes.

**LED indicator**

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

**ATEX protective cover**

Housing guard AM-C-C04-EX-137528 is required for use in potentially explosive atmospheres. See accessories on p. 90.

**Further information**








- ▶ For dimension drawings, see p. 90
- ▶ For accessories and spare parts, see p. 90
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).
- ▶ You will find information on the series connection of AR devices on page 5.

**Ordering table**

**Safety switch**








Series	Version	Order no./item	
CES-I-AR-U-C04-... Unicode	<b>M8</b> <b>8 pin</b>	<b>119469</b> CES-I-AR-U-C04-SG-119469	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>M12</b> <b>8 pin</b> <b>PUR</b> <b>1m</b>	<b>119473</b> CES-I-AR-U-C04-USA-119473	
	<b>5m</b>	<b>119470</b> CES-I-AR-U-C04-U05-119470	
	<b>8 wire</b> <b>PUR</b> <b>10m</b>	<b>119471</b> CES-I-AR-U-C04-U10-119471	
	<b>20m</b>	<b>119472</b> CES-I-AR-U-C04-U20-119472	



Series	Version	Order no./item	
CES-I-AR-M-C04-... Multicode	 M8 8 pin	<b>119474</b> CES-I-AR-M-C04-SG-119474	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> .
	 M12 8 pin PUR 1m	<b>119479</b> CES-I-AR-M-C04-USA-119479	
	 5m	<b>119475</b> CES-I-AR-M-C04-U05-119475	
	 8 wire PUR 10m	<b>119476</b> CES-I-AR-M-C04-U10-119476	
	 20m	<b>119477</b> CES-I-AR-M-C04-U20-119477	
CES-I-AR-F-C04-... <sup>1)</sup> Fixcode	 M8 8 pin	<b>161679</b> CES-I-AR-F-C04-SG-161679	

1) Actuator CES-A-BBN-C04 included


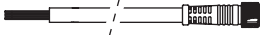
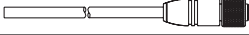


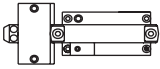
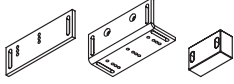



**Actuator**

Series	Design	Typ. actuating range [mm]	Order no./item	
CES-A-BDN-06	 Ø6 x 26	19	<b>104730</b> CES-A-BDN-06-104730	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> .
	 Ø6 x 38	26	<b>161742</b> CES-A-BDN-06-161742	
CES-A-BBN-C04	 42 x 25	15	<b>115271</b> CES-A-BBN-C04-115271	
CES-A-BBN-161502	 42 x 25	26	<b>161502</b> CES-A-BBN-161502	
 CES-A-BBN-C04-EX-137527	 42 x 25	15	<b>137527</b> CES-A-BBN-C04-EX-137527	

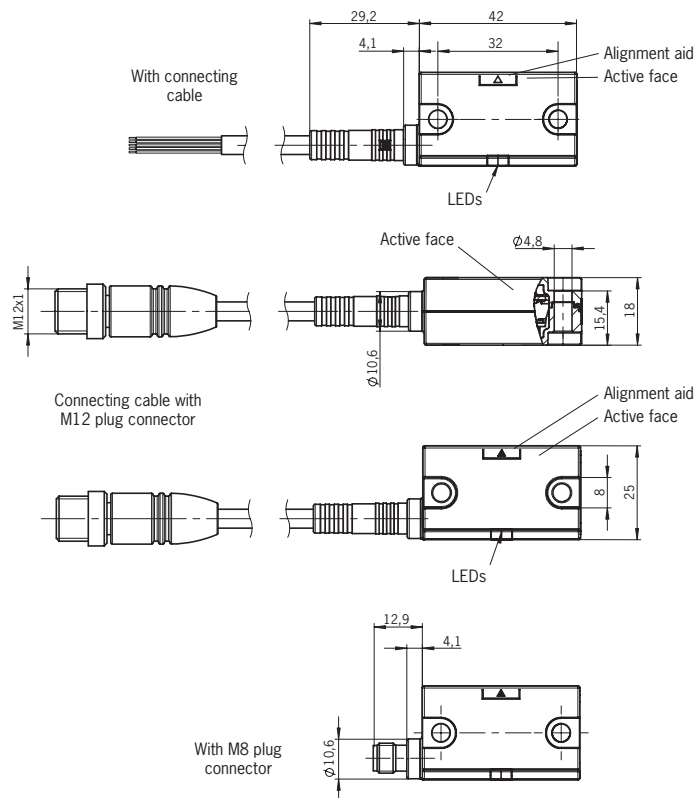


Function expansion with CEM-C60, see page 58.

**Accessories**

Type	Version	
<b>Connection material</b>	Connecting cable with plug connector 	<b>M8</b> <b>8 pin</b> Page 122
	Connecting cable with plug connector 	<b>M12</b> <b>8 pin</b> Page 126
	Strapping plug/Y-distributor 	<b>M12</b> Page 128
	Passive distribution module 	<b>M12</b> Page 129
<b>Bolts</b>	Bolts for housing design C04 	Page 138
<b>Fixing material</b>	Mounting sets 	Page 142
	Safety screws 	Page 144
 <b>Housing guard</b>	Housing guard ATEX for switches 	Page 144

**Dimension drawing**



Rubber support included with switch and actuator



C04

**Terminal assignment**

Pin	Designation	Function	Conductor coloring
1	F11B	Enable input, channel B	WH
2	UB	Operating voltage, 24 V DC	BN
3	F01A	Safety output, channel A	GN
4	F01B	Safety output, channel B	YE
5	OD	Door position monitoring output	GY
6	F11A	Enable input, channel A	PK
7	0V	Ground 0 V DC	BU
8	RST	Reset input	RD

**Safety switch CES-I-AR-.-C14-...**



- ▶ Safety switch CES-C04 encapsulated in epoxy resin
- ▶ Very high resistance to aggressive media
- ▶ 3 active faces
- ▶ Diagnostic LEDs are easily visible through the transparent sleeve
- ▶ Large actuating range in frontal and lateral approach directions
- ▶ Degree of protection IP65/IP67/IP69/IP69K

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Housing material**

The epoxy resin housing material is suitable for use in the food industry (ECOLAB material resistance test).

**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.

**LED indicator**

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

**Additional connections**

**OD** Monitoring output (semiconductor)

**Further information**

- ▶ For dimension drawings, see p. 93
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).

**Ordering table**

**Safety switch**

Series	Version	Order no./item	
CES-I-AR-M-C14-... Multicode	With monitoring output	<b>162596</b> CES-I-AR-M-C14-U20-162596	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**

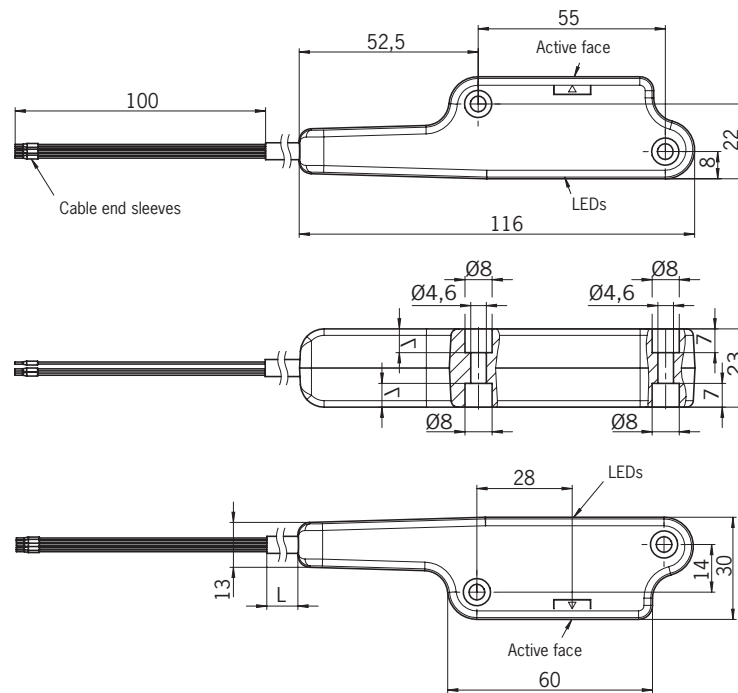
Series	Design	Typ. actuating range [mm]	Order no./item	
<b>CES-A-BBN-C14</b> encapsulated with epoxy resin	72 x 30	24	<b>160441</b> CES-A-BBN-C14-160441	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .



8  
wire

C14

**Dimension drawing**



**Terminal assignment**

Conductor coloring	Designation	Function
WH	F11B	Enable input, channel B
BN	UB	Operating voltage, 24 V DC
GN	F01A	Safety output, channel A
YE	F01B	Safety output, channel B
GY	OD	Door position monitoring output
PK	F11A	Enable input, channel A
BU	0V	Ground 0 V DC
RD	RST	Reset input

**Safety switch CEM-I2-AR-.C40-...  
with guard locking for process protection**



- ▶ Safety switch with guard locking for process protection
- ▶ Locking force 600 N
- ▶ Diagnostics via 4 LEDs
- ▶ Adjustable adhesive force (with guard locking inactive)
- ▶ Limit range indication for transponder and anchor plate

**Notice**

The safety switch CEM-I2-AR-.C40-... is only allowed to be operated in conjunction with the actuator A-C40.

**Details**

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Adjustable adhesive force**

The adhesive force can be set in steps of 0 N, approx. 30 N and approx. 50 N (delivery state) with the aid of a parametrization key (order no. 125481). The adhesive force is active if guard locking is inactive. The operating voltage  $U_g$  must be present for this purpose.

**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. The device also signals if the guard locking force is less than 400 N on switching on.

**LED indicator**

<b>POWER</b>	Operating voltage
<b>STATE</b>	Status
<b>DIA</b>	Diagnostics
<b>LOCK</b>	Guard locking

**Further information**

- ▶ For dimension drawings, see p. 95
- ▶ For accessories and spare parts, see p. 94
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).
- ▶ You will find information on the series connection of AR devices on page 5.

**Ordering table**

**Safety switch**

Series	Version	Order no./item	
CEM-I2-AR-... Unicode	 <b>M23</b> <b>19 pin</b>	<b>124937</b> CEM-I2-AR-U-C40-SH-124937	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-I2-AR-... Multicode		<b>113739</b> CEM-I2-AR-M-C40-SH-113739	

**Actuator**

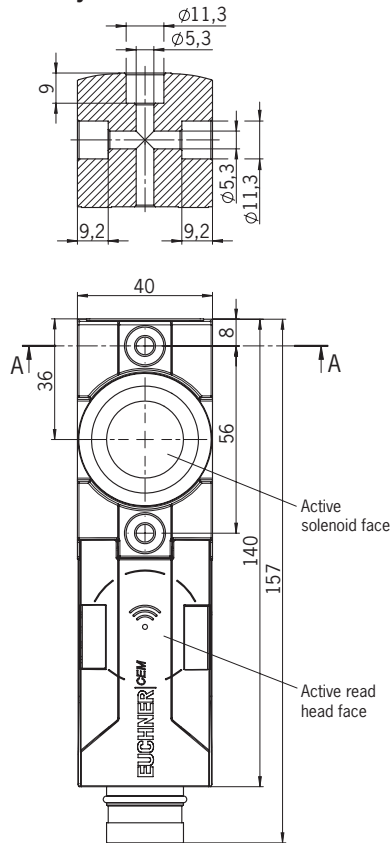
Series	Design	Order no./item	
<b>A-C40</b>	 Adjustable in transverse direction	<b>113869</b> A-C40-113869	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .
	 Adjustable in longitudinal direction	<b>158436</b> A-C40-158436	
<b>Parameterization key</b>		<b>125481</b> A-TI-001-125481	

**Accessories**

Type	Version	
<b>Connection material</b>	Connecting cable with plug connector  <b>M23</b> <b>19 pin</b>	Page 131
	Female plug (for self-assembly)  <b>M23</b> <b>19 pin</b>	Page 133
<b>Fixing material</b>	Mounting bracket 	Page 142
	Safety screws	Page 144
<b>Miscellaneous accessories</b>	Lockout bar 	Page 144

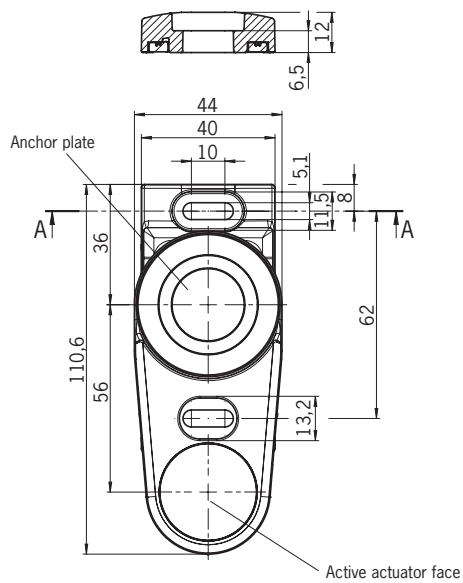
**Dimension drawing**

**Safety switch**

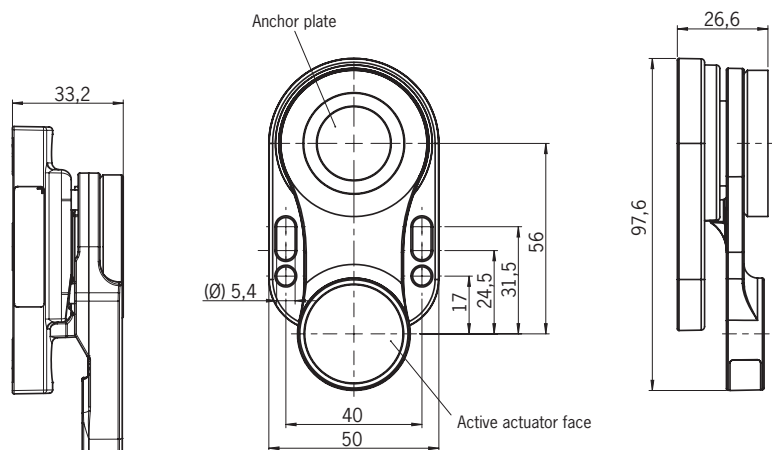


**Actuator A-C40-113869**

A-A



**Actuator A-C40-158436**



M23 19  
pin

## Terminal assignment

Pin	Designation	Function
1	IMP	Operating voltage of solenoid, 24 V DC
2	FI1A	Enable input, channel A
3	FI1B	Enable input, channel B
4	FO1A	Safety output, channel A
5	FO1B	Safety output, channel B
6	UB	Operating voltage of electronics, 24 V DC
7	RST	Reset input
8	OT	Door position monitoring output
9	OI	Diagnostic monitoring output
10	OL	Guard locking monitoring output
11	-	n.c.
12	FE	Function earth (must be connected to meet the EMC requirements)
13	-	n.c.
14	-	n.c.
15	-	n.c.
16	-	n.c.
17	-	n.c.
18	-	n.c.
19	OVUB	Operating voltage of electronics, 0 V DC





**Safety switch CTP-L-AR-...  
with guard locking**



- ▶ Safety switch with guard locking
- ▶ Locking force up to 3,900 N
- ▶ Diagnostics via 3 LEDs

**Notice**

The device is only allowed to be operated in conjunction with the actuators A-C-H-....

**Details**

**Approach direction**



Head can be rotated in 90° steps

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**Guard locking types**

**L1 Closed-circuit current principle**

Guard locking by spring force. Release by applying voltage to the guard locking solenoid.

**L2 Open-circuit current principle**

Guard locking by solenoid force. Activation of the guard locking by applying voltage to the guard locking solenoid.

**I2** As for L2, but without guard lock monitoring. Guard locking for process protection only.

**Auxiliary release**

Included with all versions as standard.

**Escape release (optional)**

Some devices have an escape release. The escape release can be extended with the aid of the support brackets supplied.

**Retrofittable releases**

Devices with auxiliary release can be retrofitted with various release functions (see accessories).

**Extended version**

With integrated control elements (optional)

**Stainless-steel version**

Devices with robust stainless-steel components for harsh ambient conditions. They comply with the IP67/IP69/IP69K degree of protection. ECOLAB certificate available.

**LED indicator**

<b>STATE</b>	Status
<b>LOCK</b>	Guard locking
<b>DIA</b>	Diagnostics

**Additional connections**

<b>OD</b>	Door position monitoring output
<b>OI</b>	Diagnostic monitoring output
<b>OL</b>	Guard locking monitoring output







**Further information**

- ▶ For dimension drawings, see p. 103
- ▶ For accessories and spare parts, see p. 102
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).
- ▶ You will find information on the series connection of AR devices on page 5.





1) German Social Accident Insurance approval pending

**Ordering table**







**CTP-L.-AR-...-SAB-... with 2 plug connectors M12**

 Order no./item	Coding U = unicode M = multicode	Escape release	Guard locking Personnel/process protection	For wiring diagram, see page 104		
<b>CTP-L1</b>						
Closed-circuit current principle						
<b>122812</b> CTP-L1-AR-U-HA-AZ-SAB-122812	U				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>122813</b> CTP-L1-AR-U-HA-AE-SAB-122813	U	●				
<b>123307</b> CTP-L1-AR-M-HA-AZ-SAB-123307	M					
<b>123308</b> CTP-L1-AR-M-HA-AE-SAB-123308	M	●				
<b>CTP-L2</b>						
Open-circuit current principle						
<b>122814</b> CTP-L2-AR-U-HA-AZ-SAB-122814	U					
<b>123361</b> CTP-L2-AR-M-HA-AZ-SAB-123361	M					









**CTP-..-AR-...-SAB-... with 2 plug connectors M12, stainless-steel version**

 Order no./item	Coding U = unicode M = multicode	Escape release	Guard locking Personnel/process protection	For wiring diagram, see page 67	
<b>CTP-L1</b>					
Closed-circuit current principle					
<b>160862</b> CTP-L1-AR-U-HA-AZS-SAB-160862	U				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>157816</b> CTP-L1-AR-M-HA-AES-SAB-157816	M				





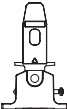


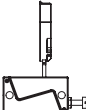


**CTP-L-AR-...-SH-... with plug connector M23**

 Order no./item	Coding U = unicode M = multicode	Escape release	Guard locking Personnel/process protection	For wiring diagram, see page 104		
<b>CTP-L1</b>						
Closed-circuit current principle						
<b>123362</b> CTP-L1-AR-U-HA-AZ-SH-123362	U				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>123373</b> CTP-L1-AR-U-HA-AE-SH-123373	U	●				
<b>123363</b> CTP-L1-AR-M-HA-AZ-SH-123363	M					
<b>123374</b> CTP-L1-AR-M-HA-AE-SH-123374	M	●				
<b>CTP-L2</b>						
Open-circuit current principle						
<b>123366</b> CTP-L2-AR-U-HA-AZ-SH-123366	U					
<b>123369</b> CTP-L2-AR-M-HA-AZ-SH-123369	M					

**CTP-L-AR-...-SH-... plug connector M23, Extended version**


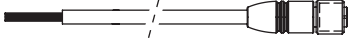

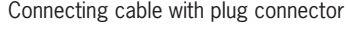

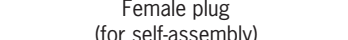

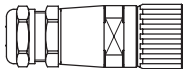

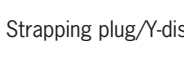

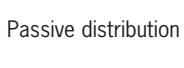

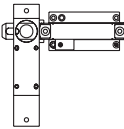







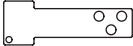
 Order no./item	Coding U = unicode M = multicode	Escape release	Control elements	Guard locking Personnel/process protection	For wiring diagram, see page 104		
<b>CTP-L1</b>							
Closed-circuit current principle							
<b>137341</b> CTP-L1-AR-U-HA-AZE-SH-137341	U		2 pushbuttons (illuminated)			For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .	
<b>126874</b> CTP-L1-AR-U-HA-AZE-SH-126874	U		Emergency stop, 2 pushbuttons (illuminated)				
<b>137164</b> CTP-L1-AR-U-HA-AEE-SH-137164	U	●	Emergency stop, 2 pushbuttons (illuminated)				
<b>CTP-L2</b>							
Open-circuit current principle							
<b>137165</b> CTP-L2-AR-U-HA-AZE-SH-137165	U		Emergency stop, 2 pushbuttons (illuminated)				
<b>159112</b> CTP-L2-AR-U-HA-AEE-SH-159112	U	●	Emergency stop, 2 pushbuttons (illuminated)				

**Actuator**

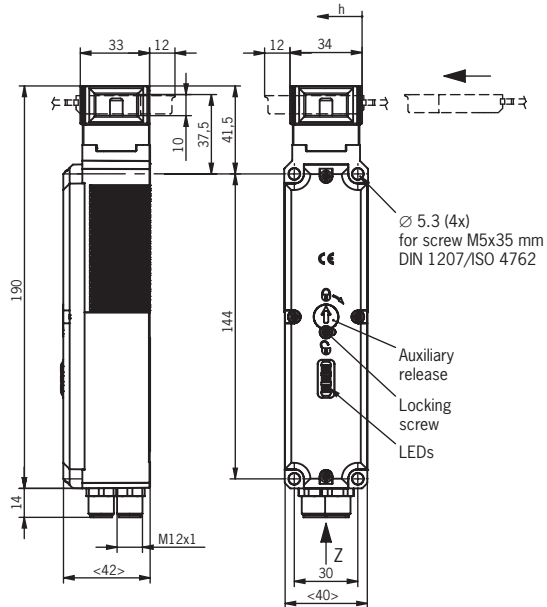
Series	Design	Order no./item		
<b>A-C-H...</b>	 Straight	<b>126015</b> A-C-H-G-SST-126015	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .	
	 Stainless steel, straight	<b>157696</b> A-C-H-G-SSS-157696		
		Bent, upward <sup>1)</sup>		<b>122667</b> A-C-H-W-SST-122667
		Bent, downward <sup>1)</sup>		<b>122668</b> A-C-H-W-SST-122668
	 Hinged actuators	 <sup>1)</sup>		<b>122671</b> A-C-HRL-LS-122671
		 <sup>1)</sup>		<b>122672</b> A-C-HRR-LS-122672
	 Hinged actuators	 <sup>1)</sup>		<b>122675</b> A-C-HRO-LS-122675
		 <sup>1)</sup>		<b>122676</b> A-C-HRU-LS-122676

1) Applies to the following orientation: connection/cable outlet pointing downward

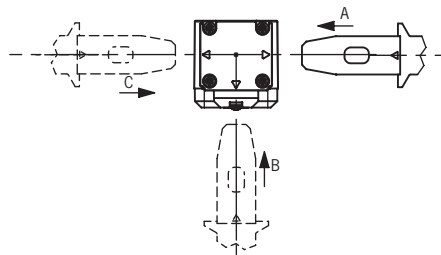
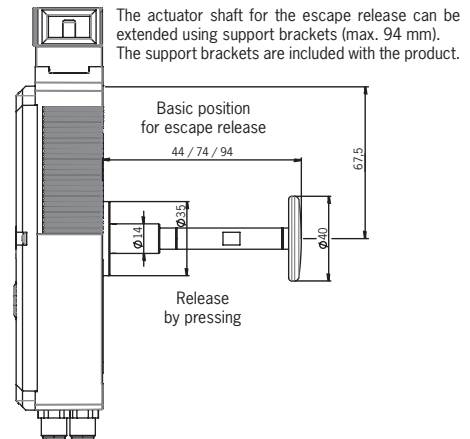
**Accessories**

Type	Version		
<b>Connection material</b>	Connecting cable with plug connector 		Page 123
	Connecting cable with plug connector 		Page 126
	Connecting cable with plug connector 		Page 131/132
	Female plug (for self-assembly) 		Page 133
	Strapping plug/Y-distributor 		Page 128
	Passive distribution module 		Page 129
<b>Bolts</b>	Bolts for housing design CTP 		Page 139
<b>Fixing material</b>	Mounting plates 		Page 142
	Safety screws 		Page 144
<b>Miscellaneous accessories</b>	Auxiliary key release 		Page 144 f.
	Release 		
	Emergency release 		
	Wire front release (bowden) 		
	Handle for wire front release 		
	Lockout bar 		

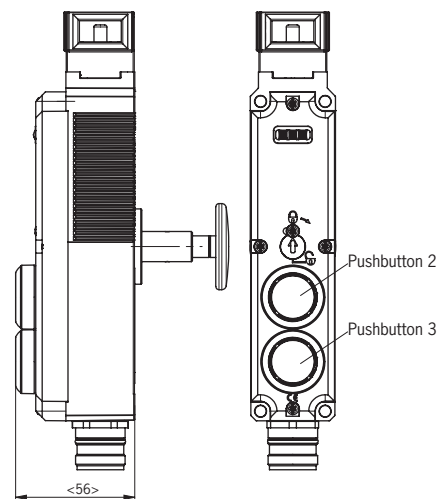
**Dimension drawing**



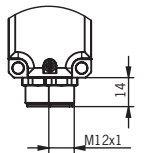
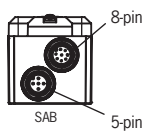
**With escape release**



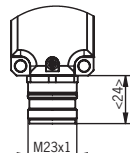
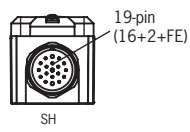
**Extended version**



2x M12



M23



You can find the dimension drawing for the stainless-steel version by entering the order number for the product at [www.euchner.com](http://www.euchner.com)

2x  
M125  
pin8  
pin

M23

19  
pin

## Terminal assignment

A

2x  
M125  
pin8  
pin

Wiring diagram A

Pin	Designation	Function
X 1.1	FI1B	Enable input, channel B
X 1.2	UB	Operating voltage of electronics, 24 V DC
X 1.3	FO1A	Safety output, channel A
X 1.4	FO1B	Safety output, channel B
X 1.5	OL	Guard locking monitoring output
X 1.6	FI1A	Enable input, channel A
X 1.7	OVUB	Operating voltage of electronics, 0 V DC
X 1.8	RST	Reset input
X 2.1	IMM	Operating voltage of solenoid, 0 V DC
X 2.2	OD	Door position monitoring output
X 2.3	OI	Diagnostic monitoring output
X 2.4	IMP	Operating voltage of solenoid, 24 V DC
X 2.5	–	n.c.

B

M23

19  
pin

Wiring diagram B

Pin	Designation	Function
1	IMP	Operating voltage of solenoid, 24 V DC
2	FI1A	Enable input, channel A
3	FI1B	Enable input, channel B
4	FO1A	Safety output, channel A
5	FO1B	Safety output, channel B
6	UB	Operating voltage of electronics, 24 V DC
7	RST	Reset input
8	OD	Door position monitoring output
9	OI	Diagnostic monitoring output
10	OL	Guard locking monitoring output
11	–	n.c.
12	FE	Function earth (must be connected to meet the EMC requirements)
13	–	n.c.
14	–	n.c.
15	–	n.c.
16	–	n.c.
17	–	n.c.
18	IMM	Operating voltage of solenoid, 0 V DC
19	OVUB	Operating voltage of electronics, 0 V DC



**M23** **19 pin**

**CTP**

**C** **M23** **19 pin** **Wiring diagram C**

Pin	Designation	Function
1	IMP	Operating voltage of solenoid, 24 V DC
2	F11A	Enable input, channel A
3	F11B	Enable input, channel B
4	F01A	Safety output, channel A
5	F01B	Safety output, channel B
6	UB	Operating voltage of electronics, 24 V DC
7	RST	Reset input
8	OD	Door position monitoring output
9	OI	Diagnostic monitoring output
10	OL	Guard locking monitoring output
11	-	n.c.
12	FE	Function earth (must be connected to meet the EMC requirements)
13	IMM	Operating voltage of solenoid, 0 V DC
14	-	n.c.
15	S2	Pushbutton 2
16	H2	LED 2
17	S3	Pushbutton 3
18	H3	LED 3
19	OVUB	Operating voltage of electronics, 0 V DC

**D** **M23** **19 pin** **Wiring diagram D**

Pin	Designation	Function
1	IMP	Operating voltage of solenoid, 24 V DC
2	F11A	Enable input, channel A
3	F11B	Enable input, channel B
4	F01A	Safety output, channel A
5	F01B	Safety output, channel B
6	UB	Operating voltage of electronics, 24 V DC
7	RST	Reset input
8	OD	Door position monitoring output
9	OI	Diagnostic monitoring output
10	S1.A1	Emergency stop (channel A contact 1)
11	S1.A2	Emergency stop (channel A contact 2)
12	FE	Function earth
13	S1.B1	Emergency stop (channel B contact 1)
14	S1.B2	Emergency stop (channel B contact 2)
15	S2	Pushbutton 2
16	H2	LED 2
17	S3	Pushbutton 3
18	H3	LED 3
19	OV	Operating voltage of electronics and solenoid, 0 V DC

**Safety switch CET.-AR-...  
with guard locking**



- ▶ **Safety switch with guard locking**
- ▶ **Locking force up to 6,500 N**
- ▶ **Metal housing**
- ▶ **Diagnostics via 4 LEDs**

**Notice**

The device is only allowed to be operated in conjunction with the actuator CET-A-....

**Details**

**Approach direction**



Head can be rotated in 90° steps

**Available coding options**

- ▶ Unicode evaluation
- ▶ Multicode evaluation

**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 solenoid force. Activation of the guard locking by applying voltage to the guard locking solenoid.

**CET3** Function as for CET1-AR, but here the door position is monitored as well. The door position monitoring output OUT D is set to HIGH as soon as the actuator is above the extended plunger (state: door closed, guard locking not active). The output OUT D also remains set when guard locking is active.

**CET4** Function as for CET2-AR, but here the door position is monitored as well. The door position monitoring output OUT D is set to HIGH as soon as the actuator is above the extended plunger (state: door closed, guard locking not active). The output OUT D also remains set when guard locking is active.

**Auxiliary release**

Included with all versions as standard.

**Escape release (optional)**

Some devices have an escape release (see ordering table).

**Wire front release (optional)**

The wire front release permits remote unlocking of the guard locking via a pull wire. Flexible routing of the pull wire permits release of the guard locking in inaccessible installation situations.

**Teach-in input (optional)**

Some devices with unicode evaluation have a teach-in input. These devices can be taught-in only if the teach-in input has the corresponding circuit. In this way, the protection against tampering is additionally increased.

**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 146).

**Feedback loop (optional)**

Versions with feedback loop permit monitoring of downstream devices (e.g. contactors). Additionally, a start button can be integrated.

**LED indicator**

- STATE** Status
- DIA** Diagnostics
- LED 1 red** see wiring diagram
- LED 2 green** see wiring diagram

**Additional connections**






- OUT** Monitoring output (semiconductor)
- OUT D** Door position monitoring output (only CET3/4)
- RST** Reset input

**Further information**

- ▶ For dimension drawings, see p. 112
- ▶ For accessories and spare parts, see p. 111
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).
- ▶ You will find information on the series connection of AR devices on page 5.

**Ordering table**













CET-AR-...-SG-... with 2 plug connectors M12, without door position monitoring output

<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">2x M12</div> <div style="border: 1px solid black; padding: 2px;">5 pin</div> <div style="border: 1px solid black; padding: 2px;">8 pin</div> </div> Order no./item	Coding U = unicode M = multicode	Ramp	Teach-in input	Feedback loop	Function earth	Escape release	Wire front release (L1) <sup>1)</sup>	For wiring diagram, see page 114	
<b>CET1</b>									
Closed-circuit current principle									
<b>106275</b> CET1-AR-CDA-AH-50X-SG-106275	U		●						<b>A</b>
<b>106616</b> CET1-AR-CRA-AH-50A-SG-106616	U			●		75 mm			
<b>106159</b> CET1-AR-CRA-AH-50F-SG-106159	U		●			75 mm			
<b>105802</b> CET1-AR-CRA-AH-50S-SG-105802	U			●					
<b>103418</b> CET1-AR-CRA-AH-50X-SG-103418	U			●					
<b>110241</b> CET1-AR-CRA-CH-50F-SG-110241	M					75 mm			
<b>105764</b> CET1-AR-CRA-CH-50S-SG-105764	M			●					
<b>105763</b> CET1-AR-CRA-CH-50X-SG-105763	M								
<b>109015</b> CET1-AR-CRA-CH-50X-SG-C2290-109015	M					●	3 m		
<b>109231</b> CET1-AR-CDA-CH-50X-SG-109231	M								
<b>CET2</b>									
Open-circuit current principle									
<b>109075</b> CET2-AR-CRA-AH-50S-SG-109075	U			●				<b>A</b>	
<b>110240</b> CET2-AR-CRA-AH-50X-SG-110240	U		●						
<b>109941</b> CET2-AR-CRA-CH-50F-SG-C2312-109941	M						105 mm		
<b>110082</b> CET2-AR-CRA-CH-50X-SG-110082	M								

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









1) L1 = sleeve length; rope length = L1 + 1 m. Important: Handle must be ordered separately (see accessories, page 144).

**CET-AR-...-SG-... with 2 plug connectors M12, with door position monitoring output**

 Order no./item	Coding U = unicode M = multicode	Ramp	Teach-in input	Feedback loop	Function earth	Escape release	Wire front release (L1) <sup>1)</sup>	For wiring diagram, see page 114		
<b>CET3</b> Closed-circuit current principle										
<b>110114</b> CET3-AR-CRA-CH-50X-SG-C2290-110114	M				●		3 m		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>110906</b> CET3-AR-CRA-CH-50X-SG-110906	M				●					
<b>110907</b> CET3-AR-CRA-CH-50F-SG-110907	M				●	75 mm				
<b>109401</b> CET3-AR-CRA-AH-50X-SG-109401	U			●						
<b>113139</b> CET3-AR-CRA-AH-50X-SG-C2290-113139	U			●						3 m
<b>113965</b> CET3-AR-CRA-AH-50F-SG-113965	U			●			75 mm			
<b>112992</b> CET3-AR-CRA-CH-50S-SG-112992	M				●					
<b>114090</b> CET3-AR-CDA-CH-50F-SG-114090	M									
<b>CET4</b> Open-circuit current principle										
<b>111683</b> CET4-AR-CRA-AH-50X-SG-111683	U		●							
<b>128193</b> CET4-AR-CRA-AH-50X-SG-C2290-128193	U		●				3 m			
<b>111684</b> CET4-AR-CRA-CH-50X-SG-111684	M									
<b>114650</b> CET4-AR-CRA-CH-50F-SG-114650	M					75 mm				
<b>113081</b> CET4-AR-CRA-CH-50S-SG-113081	M			●						
<b>114712</b> CET4-AR-CDA-CH-50X-SG-114712	M									
<b>162555</b> CET4-AR-CRA-AH-50X-SG-C2355-162555	U									
<b>113609</b> CET4-AR-CRA-CH-50X-SG-C2355-113609	M									

1) L1 = sleeve length; rope length = L1 + 1 m. Important: Handle must be ordered separately (see accessories, page 144).







**CET-AR-...-SH-... with plug connector M23, without door position monitoring output**

 Order no./item	Coding U = unicode M = multicode	Ramp	Teach-in input	Feedback loop	Function earth	Escape release	Wire front release (L1) <sup>1)</sup>	For wiring diagram, see page 115	
<b>CET1</b> Closed-circuit current principle									
<b>110203</b> CET1-AR-CRA-AH-50X-SH-110203	U		●		●				
<b>113022</b> CET1-AR-CRA-AH-50X-SH-C2290-113022	U		●		●		3 m		
<b>110943</b> CET1-AR-CRA-AH-50F-SH-C2312-110943	U		●		●	105 mm			
<b>110204</b> CET1-AR-CRA-CH-50X-SH-110204	M				●				
<b>124104</b> CET1-AR-CRA-CH-50F-SH-C2312-124104	M				●	105 mm			
<b>113255</b> CET1-AR-CDA-CH-50X-SH-113255	M				●				
<b>CET2</b> Open-circuit current principle									
<b>110205</b> CET2-AR-CRA-AH-50X-SH-110205	U		●		●				
<b>110206</b> CET2-AR-CRA-CH-50X-SH-110206	M				●				

1) L1 = sleeve length; rope length = L1 + 1 m. Important: Handle must be ordered separately (see accessories, page 144).



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

**CET-AR-...-SH-... with plug connector M23, with door position monitoring output**


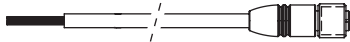
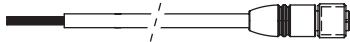
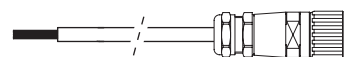
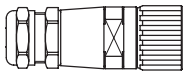
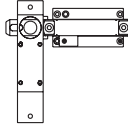







 Order no./item	Coding U = unicode M = multicode	Ramp	Teach-in input	Feedback loop	Function earth	Escape release	Wire front release (L1) <sup>1)</sup>	For wiring diagram, see page 115	
<b>CET3</b> Closed-circuit current principle									
<b>110103</b> CET3-AR-CRA-AH-50X-SH-110103	U		●		●				For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .
<b>111725</b> CET3-AR-CRA-AH-50F-SH-C2312-111725	U		●		●	105 mm			
<b>113024</b> CET3-AR-CRA-AH-50X-SH-C2290-113024	U		●		●		3 m		
<b>113023</b> CET3-AR-CRA-AH-50F-SH-C2353-113023	U		●		●	105 mm	3 m		
<b>114088</b> CET3-AR-CRA-AH-50X-SH-C2290-114088	U		●		●		5 m		
<b>113148</b> CET3-AR-CRA-AH-50F-SH-113148	U		●		●	75 mm			
<b>115202</b> CET3-AR-CRA-AH-50X-SH-C2375-115202	U				●				
<b>110104</b> CET3-AR-CRA-CH-50X-SH-110104	M				●				
<b>CET4</b> Open-circuit current principle									
<b>110201</b> CET4-AR-CRA-AH-50X-SH-110201	U		●		●				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>116285</b> CET4-AR-CRA-AH-50F-SH-116285	U		●		●	75 mm			
<b>110202</b> CET4-AR-CRA-CH-50X-SH-110202	M				●				

1) L1 = sleeve length; rope length = L1 + 1 m. Important: Handle must be ordered separately (see accessories, page 144).

**Actuator**

Series	Design	Order no./item	
<b>CET-A-BWK-50X</b>		<b>096327</b> 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> .

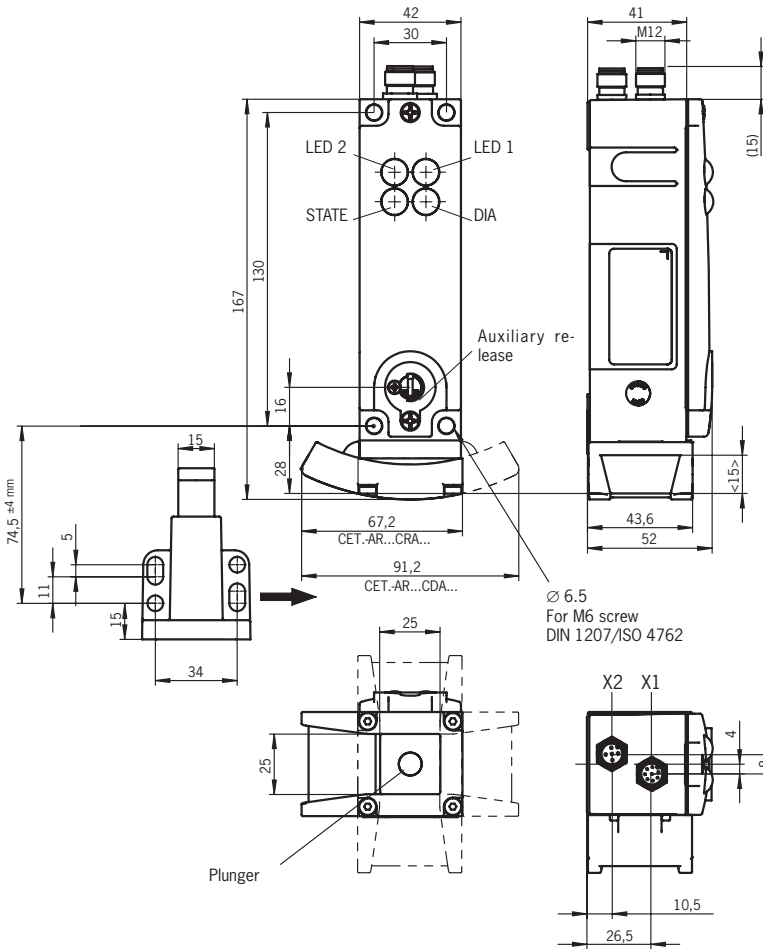
**Accessories**

Type	Version	
<p><b>Connection material</b></p>	<p>Connecting cable with plug connector</p> 	<p>5 pin</p> <p>M12</p> <p>Page 123</p>
	<p>Connecting cable with plug connector</p> 	<p>8 pin</p> <p>M12</p> <p>Page 126</p>
	<p>Connecting cable with plug connector</p> 	<p>19 pin</p> <p>M23</p> <p>Page 131/132</p>
	<p>Female plug (for self-assembly)</p> 	<p>19 pin</p> <p>M23</p> <p>Page 133</p>
	<p>Strapping plug/Y-distributor</p>	<p>M12</p> <p>Page 128</p>
	<p>Passive distribution module</p>	<p>M12</p> <p>Page 129</p>
<p><b>Bolts</b></p>	<p>Bolts for housing design CET</p> 	<p>Page 139</p>
<p><b>Fixing material</b></p>	<p>Mounting plates</p> 	<p>Page 142</p>
	<p>Safety screws</p>	<p>Page 144</p>
<p><b>Miscellaneous accessories</b></p>	<p>Lockout bar</p> 	<p>Page 144 f.</p>
	<p>Auxiliary key release</p> 	
	<p>Emergency release</p> 	
	<p>Cover</p> 	
	<p>Double ramp</p> 	
	<p>Handle for wire front release</p> 	

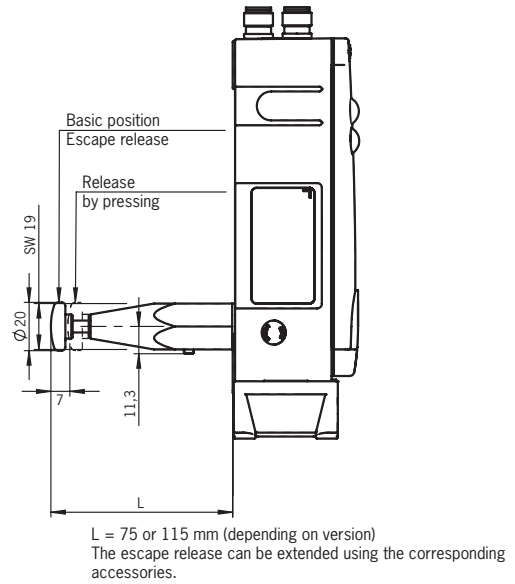
**Dimension drawing**

**2x  
M12**

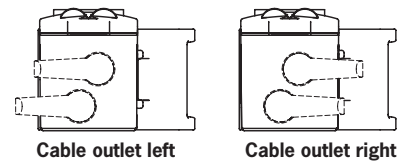
**With 2 plug connectors M12**



**With escape release**

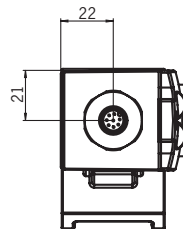


**With angle connectors**

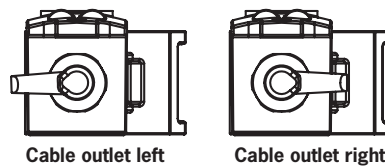


**M12**

**With 1 plug connector M12**



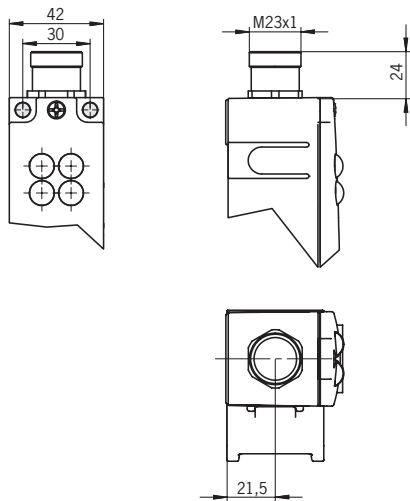
**With angle connectors**





**M23**

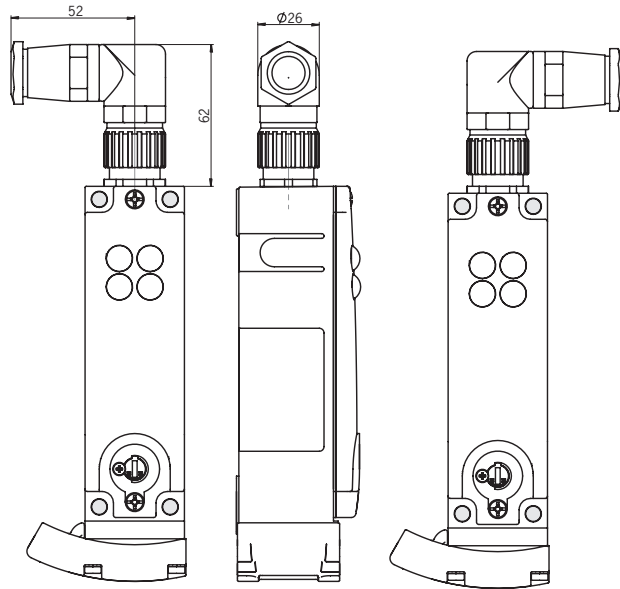
**Dimensions with plug connector M23**



**With plug connector M23**

**Cable outlet left**

**Cable outlet right**

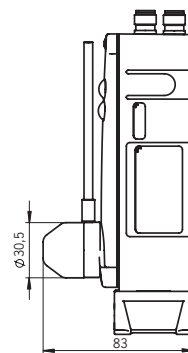
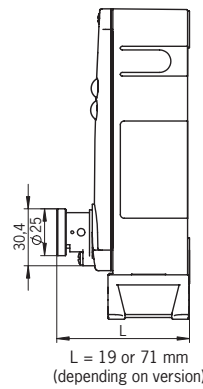
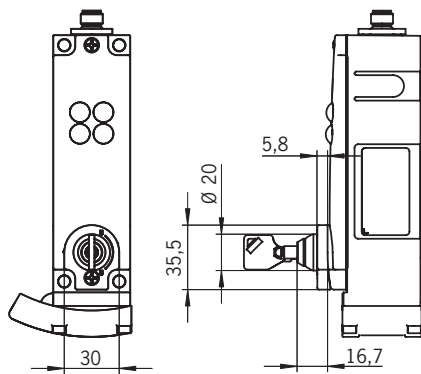


**Versions with manual release options**

**With auxiliary key release**

**With emergency release**

**With wire front release**



2x M12	5 pin	8 pin
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## Terminal assignment

A	...	C
---	-----	---

 Wiring diagrams A to C

Pin	Designation	Function	2x M12		
			A	B	C
X 1.1	IB	Enable input, channel B	●	●	●
X 1.2	UB	Operating voltage of electronics, 24 V DC	●	●	●
X 1.3	OA	Safety output, channel A	●	●	●
X 1.4	OB	Safety output, channel B	●	●	●
X 1.5	OUT	Guard locking monitoring output	●	●	●
X 1.6	IA	Enable input, channel A	●	●	●
X 1.7	OVUB	Operating voltage of electronics, 0 V DC	●	●	●
X 1.8	RST	Reset input	●	●	●
X 2.1	OVUCM	Operating voltage of solenoid, 0 V DC	●	●	●
X 2.2	LED 1	LED 1 red, freely configurable, 24 V DC	●		
	OUT D	Door position monitoring output (indication on LED 2)	● <sup>1)</sup>		
X 2.3	LED 1	LED 1 red, freely configurable, 24 V DC		●	
	LED 2	LED 2 green, freely configurable, 24 V DC	●		
	OUT	Guard locking monitoring output			●
X 2.4	UCM	Operating voltage of solenoid, 24 V DC	●	●	●
X 2.5	J	Version with teach-in input	●	●	
	Y	Version with feedback loop	●	●	
	-	Version without feedback loop, without teach-in input and without function earth	●	●	●
	FE	Function earth	● <sup>1)</sup>	●	

1) Only for order no.109015

**M23** **19**  
pin

**CET**

**D** ... **E** **Wiring diagrams D and E**

Pin	Designation	Function	M23	
			D	E
1	UCM	Operating voltage of solenoid, 24 V DC	●	●
2	IA	Enable input, channel A	●	●
3	IB	Enable input, channel B	●	●
4	OA	Safety output, channel A	●	●
5	OB	Safety output, channel B	●	●
6	UB	Operating voltage of electronics, 24 V DC	●	●
7	RST	Reset input	●	●
8	OUT D	Door position monitoring output (only CET3-AR and CET4-AR)		●
9	-	n.c.	●	●
10	OUT	Guard locking monitoring output	●	●
11	-	n.c.	●	●
12	FE	Function earth	●	●
13	J	Version with teach-in input	●	●
	Y	Version with feedback loop	●	●
	-	Version without feedback loop and without teach-in input	●	●
14	-	n.c.	●	●
15	LED 1	LED 1 red, freely configurable, 24 V DC	●	●
16	LED 2	LED 2 green, freely configurable, 24 V DC	●	●
17	-	n.c.	●	●
18	OVUCM	Operating voltage of solenoid, 0 V DC	●	●
19	OVUB	Operating voltage of electronics, 0 V DC	●	●

**AR evaluation unit CES-AR-AES-12**



- ▶ **Central evaluation of an AR switch chain**
- ▶ **Status of each individual switch can be recognized**
- ▶ **For switch chains of up to 12 devices**
- ▶ **Four individual safe relay contacts**

**Details**

The AR evaluation unit is used to evaluate the individual safety switches in an AR switch chain and to reliably interrupt a safety circuit. The unit has two inputs for the connection of an AR switch chain. The safety contacts are switched as a function of the input signals. Downstream parts of the safety circuit can be monitored using a feedback loop.

The switching states of the connected safety switches can be signaled by means of monitoring outputs (see table Terminal assignment p. 117). If the actuator on one of the safety switches in the switch chain is moved out of the actuating range, the AR evaluation unit opens its contacts and the corresponding monitoring output is reset. The system is designed so that failures will not result in the loss of the safety function. The occurrence of failures is detected by cyclic self-monitoring at the latest at the next demand to close the safety contacts. The system can be started either manually using a start button or automatically.

**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:
- ▶ Category 4 / PL e according to EN ISO 13849-1
  - ▶ Each safety path is independently safe.

**LED indicator**

- STATE** Device status
- DIA** Fault display
- OUT** Switch chain status

**Notice**

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

**Further information**

- ▶ For dimension drawings, see p. 117
- ▶ For accessories and spare parts, see p. 116
- ▶ For detailed information, enter the order number for the product in the search box at [www.euchner.com](http://www.euchner.com).
- ▶ You will find information on the series connection of AR devices on page 5.

**Ordering table**

**AR evaluation unit**

Series	Order no./item	
CES-AR-AES-12 Unicode	098225 CES-AR-AES-12	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> .

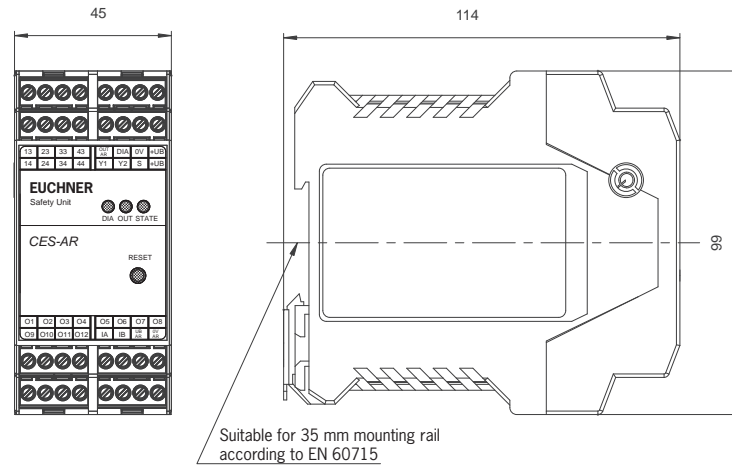
**Accessories**

Type	Version	
Connection material	Connection kits for AR evaluation unit CES-AR-AES-12	Page 134

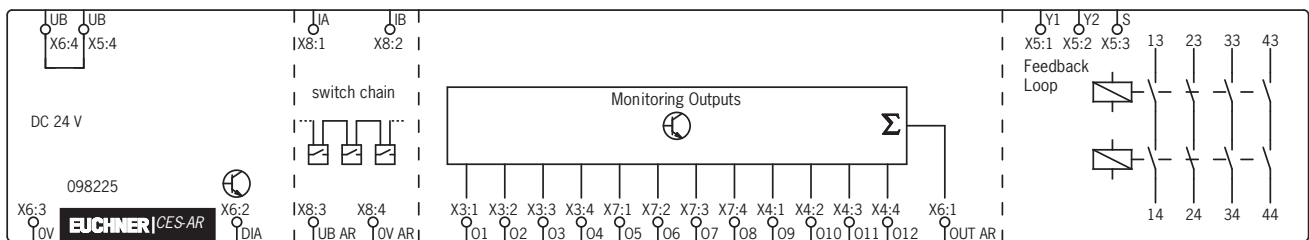
**Which safety switches can be connected?**

AR evaluation unit	Safety switch
098225 CES-AR-AES-12	<b>CES-AR-C01...</b> from V1.1.2 (see type label on the device)
	<b>CES-AR-CR2...</b> from V1.1.2 (see type label on the device)
	<b>CES-AR-CL2...</b> from V1.1.2 (see type label on the device)
	<b>CES-I.-AR-C04</b> from V1.0.1 (see type label on the device)
	<b>CET1/2-AR...</b> from V1.1.2 (see type label on the device)
	<b>CET3/4-AR...</b> from V1.0.0 (see type label on the device)
	<b>CTP-AR</b>

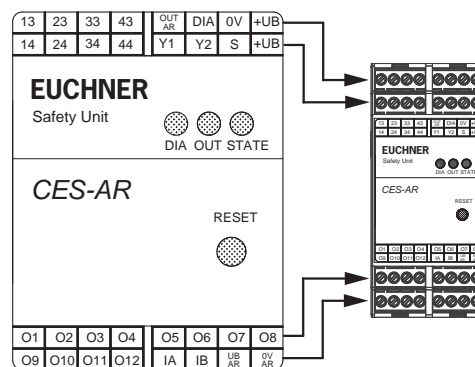
## Dimension drawing



## Block diagram



## Terminal assignment



Several monitoring outputs are occupied depending on the switch type, e.g. one monitoring output for the door position and one for the guard locking status. The table below shows how many monitoring outputs the individual safety switches occupy.

Series	Number (type) of monitoring outputs	Maximum number of switches that can be connected
CES-AR	1 (door position or diagnostics)	12
CET1/2-AR	1 (status of guard locking)	12
CET3/4-AR CTP-AR	2 (first monitoring output: door position, second monitoring output: status of guard locking)	6

»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 switch as complete solution.
- ▶ Function expansions – increase the possible applications with additional functions such as releases, lockout bars, etc.



Connection material


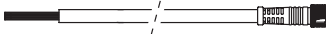
click 6 pin PVC

**Connecting cables with snap-on catch**

For the connection of:

CES-AP-C.2-.-SF



Version	Order no./item	
<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p>click</p> <p>6 pin</p> <p>PVC</p> </div> <div> <p>Connecting cable with female plug, flying lead, 6 x 0.14 mm<sup>2</sup></p>  </div> </div>	<b>5m</b>	<p><b>103556</b> C-R08F06-06X014PV05,0-ES-103556</p>
	<b>10m</b>	<p><b>103557</b> C-R08F06-06X014PV10,0-ES-103557</p>
	<b>15m</b>	<p><b>103558</b> C-R08F06-06X014PV15,0-ES-103558</p>
	<b>20m</b>	<p><b>103559</b> C-R08F06-06X014PV20,0-ES-103559</p>
	<b>25m</b>	<p><b>103560</b> C-R08F06-06X014PV25,0-ES-103560</p>

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



## Connecting cables with plug connector

For the connection of:

CES-IAP-.C04-SK



The following applies to the device installation orientation shown:

Cable outlet C (left)

Cable outlet A (right)



Version	Cable outlet	Order no./item		
<p><b>M8</b> <b>4 pin</b> <b>PVC</b></p> <p>Connecting cable with female plug, flying lead, 4 x 0.25 mm<sup>2</sup></p>		<p><b>2m</b> - C-M08F04-04X025PV02,0-ES-088812</p> <p><b>5m</b> - C-M08F04-04X025PV05,0-ES-088813</p> <p><b>10m</b> - C-M08F04-04X025PV10,0-ES-088814</p> <p><b>15m</b> - C-M08F04-04X025PV15,0-ES-088815</p> <p><b>25m</b> - C-M08F04-04X025PV25,0-ES-095035</p> <p><b>50m</b> - C-M08F04-04X025PV50,0-ES-097100</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>C</b>	<p><b>10m</b> - C-M08F04-04X025PV10,0-ES-084703</p>		
	<p><b>M8</b> <b>4 pin</b> <b>PUR</b></p> <p>Connecting cable with female plug, flying lead, 4 x 0.34 mm<sup>2</sup></p>			<p><b>5m</b> - C-M08F04-04X034PU05,0-ES-116049</p> <p><b>10m</b> - C-M08F04-04X034PU10,0-ES-116050</p> <p><b>20m</b> - C-M08F04-04X034PU20,0-ES-116051</p> <p><b>50m</b> - C-M08F04-04X034PU50,0-ES-120241</p>

**Connecting cables with plug connector**

For the connection of:

CES-AR-C.2...-SG




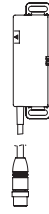


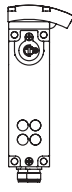

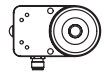

CES-I-AR.-C04-SG


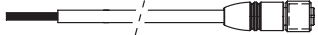
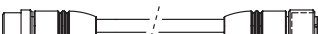



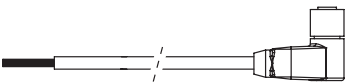
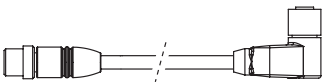
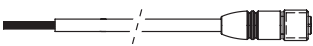
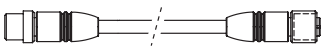
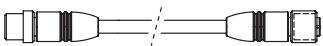
Version		Order no./item	
<b>M8</b> <b>8 pin</b> <b>PVC</b>	<b>Connecting cable with female plug, flying lead, 8 x 0.14 mm<sup>2</sup></b> 	<b>5m</b> <b>110933</b> C-M08F08-08X014PV05,0-ES-110933	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .
		<b>10m</b> <b>110934</b> C-M08F08-08X014PV10,0-ES-110934	
		<b>15m</b> <b>110935</b> C-M08F08-08X014PV15,0-ES-110935	
		<b>20m</b> <b>111603</b> C-M08F08-08X014PV20,0-ES-111603	
<b>M8</b> <b>8 pin</b> <b>PUR</b>	<b>Connecting cable with female plug, flying lead, 8 x 0.14 mm<sup>2</sup></b> 	<b>5m</b> <b>106671</b> C-M08F08-08X014PU05,0-ES-106671	
		<b>10m</b> <b>106672</b> C-M08F08-08X014PU10,0-ES-106672	
		<b>20m</b> <b>106673</b> C-M08F08-08X014PU20,0-ES-106673	

## Connecting cables with plug connector

For the connection of:


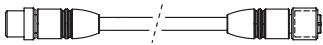
<p>CES-AP-C01...-SB</p> 	<p>CES-AP-C.2...-SB</p> 	<p>CES-AP...-USB CES-AP...-USI</p> 	<p>CTP...AP...-SII CTP...AP...-SBB CTP...AR...-SAB</p> 	<p>CET-AP...-SI CET-AR...-SG</p>  <p>CES-IP...-C07-SI CES-IP...-C07-SB</p> 	<p>CEM...-C60...-SE</p> 
<p>Plug connector can be adjusted in 6 orientations</p>	<p>Terminal plug not aligned. Cable outlet not defined</p>	<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, 5 x 0.34 mm<sup>2</sup></p>  <p>M12 5 pin PVC</p>	5m	<p><b>100183</b> C-M12F05-05X034PV05,0-MA-100183</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>
	10m	<p><b>100184</b> C-M12F05-05X034PV10,0-MA-100184</p>	
	20m	<p><b>100185</b> C-M12F05-05X034PV20,0-MA-100185</p>	
	50m	<p><b>156064</b> C-M12F05-05X034PV50,0-MA-156064</p>	
<p>Extension, plug connectors at both ends for connection to decentralized peripheral equipment</p> 	5m	<p><b>100180</b> C-M12F05-05X034PV05,0-M12M05-100180</p>	
	10m	<p><b>100181</b> C-M12F05-05X034PV10,0-M12M05-100181</p>	
	20m	<p><b>100182</b> C-M12F05-05X034PV20,0-M12M05-100182</p>	

Version	Cable outlet	Order no./item	
<b>Connecting cable with female plug, flying lead, 5 x 0.25 mm<sup>2</sup></b> 	<b>10m</b>	<b>C</b> 113190 C-M12F05-05X025PU10,0-MA-113190	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>A</b> 113187 C-M12F05-05X025PU10,0-MA-113187	
<b>Extension, plug connectors at both ends for connection to decentralized peripheral equipment</b> 	<b>10m</b>	<b>C</b> 115566 C-M12F05-05X025PU10,0-M12M05-115566	
		<b>A</b> 115565 C-M12F05-05X025PU10,0-M12M05-115565	
<b>Connecting cable with female plug, flying lead, 5 x 0.34 mm<sup>2</sup></b> 	<b>5m</b>	- 113620 C-M12F05-05X034PU05,0-MA-113620	
	<b>10m</b>	- 113640 C-M12F05-05X034PU10,0-MA-113640	
	<b>20m</b>	- 113682 C-M12F05-05X034PU20,0-MA-113682	
	<b>30m</b>	- 122784 C-M12F05-05X034PU30,0-MA-122784	
<b>Extension, black cable, plug connectors at both ends for connection to decentralized peripheral equipment</b> 	<b>5m</b>	- 119932 C-M12F05-05X034PU05,0-M12M05-119932	
	<b>10m</b>	- 119947 C-M12F05-05X034PU10,0-M12M05-119947	
	<b>20m</b>	- 119971 C-M12F05-05X034PU20,0-M12M05-119971	
<b>Extension, gray cable, plug connectors at both ends for connection to decentralized peripheral equipment</b> 	<b>1m</b>	- 159355 C-M12F05-05X034PU1,0-M12M05-159355	
	<b>1,5m</b>	- 159356 C-M12F05-05X034PU1,5-M12M05-159356	
	<b>3m</b>	- 159357 C-M12F05-05X034PU3,0-M12M05-159357	
	<b>5m</b>	- 159358 C-M12F05-05X034PU5,0-M12M05-159358	
	<b>8m</b>	- 159359 C-M12F05-05X034PU8,0-M12M05-159359	
	<b>10m</b>	- 159360 C-M12F05-05X034PU10,0-M12M05-159360	
	<b>15m</b>	- 159361 C-M12F05-05X034PU15,0-M12M05-159361	


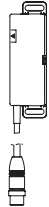


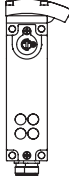


M12  
5 pin  
PUR


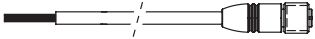
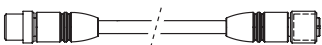
M12  
5 pin  
PUR


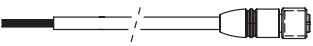
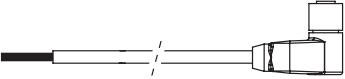
Version	Cable outlet	Order no./item	
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>M12</b></p> <p><b>5 pin</b></p> <p><b>PUR</b></p> </div> <div style="text-align: center;"> <p><b>Extension, yellow cable, plug connectors at both ends</b> for connection to decentralized peripheral equipment</p>  </div> </div>	0,22m	- C-M12F05-05X034PU0,22-M12M05-163573	<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>
	1m	- C-M12F05-05X034PU1,0-M12M05-159362	
	1,5m	- C-M12F05-05X034PU1,5-M12M05-159363	
	3m	- C-M12F05-05X034PU3,0-M12M05-159364	
	5m	- C-M12F05-05X034PU5,0-M12M05-159365	
	8m	- C-M12F05-05X034PU8,0-M12M05-159919	
	10m	- C-M12F05-05X034PU10,0-M12M05-159920	
	15m	- C-M12F05-05X034PU15,0-M12M05-159921	

**Connecting cables with plug connector**

For the connection of:

<p>CES-AP-C01...-SA CES-AR-C01...-SA</p> 	<p>CES-AR-C.2...-SA</p> 	<p>CES-AR-.C04-USA</p> 	<p>CTP...AP...-SA CTP...AR...-SAB</p> 	<p>CET-AP...-SA CET-AR...-SG</p> 	<p>CEM...AY...-SA</p> 
<p>Plug connector can be adjusted in 6 orientations</p>	<p>Terminal plug not aligned. Cable outlet not defined</p>		<p>The following applies to the device installation orientation shown:</p> <p>Cable outlet C (left)      Cable outlet A (right)</p> 		

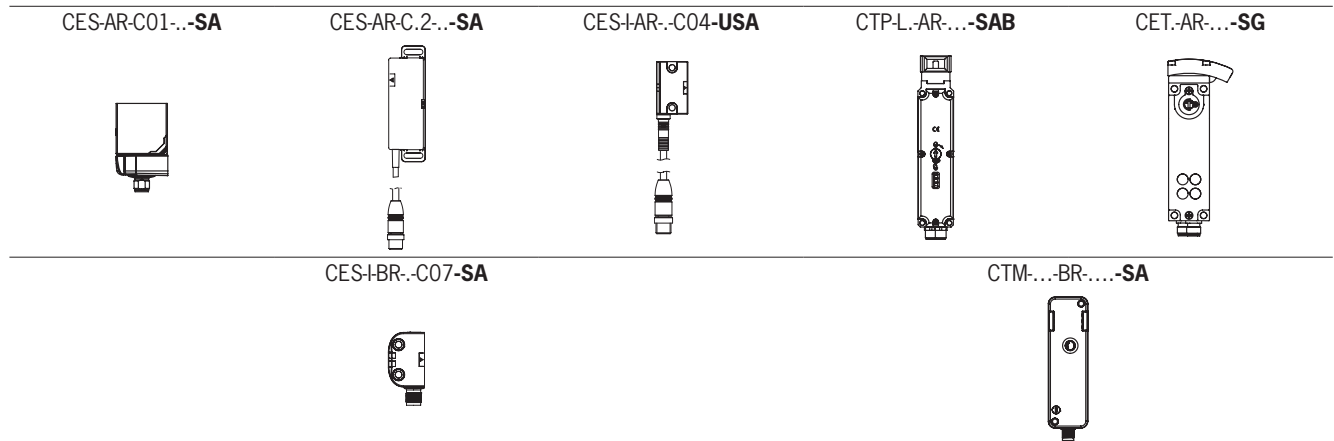
Version	Cable outlet	Order no./item	
<p>Connecting cable with female plug, flying lead, 8 x 0.25 mm<sup>2</sup></p> 	5m	<p><b>100177</b> C-M12F08-08X025PV05,0-MA-100177</p>	<p>For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a>.</p>
	10m	<p><b>100178</b> C-M12F08-08X025PV10,0-MA-100178</p>	
	20m	<p><b>100179</b> C-M12F08-08X025PV20,0-MA-100179</p>	
	30m	<p><b>115116</b> C-M12F08-08X025PV30,0-MA-115116</p>	
	40m	<p><b>156065</b> C-M12F08-08X025PV40,0-MA-156065</p>	
<p>Extension, plug connectors at both ends</p> 	1m	<p><b>123430</b> C-M12M08-08X025PV01,0-M12F08-123430</p>	
	2m	<p><b>123431</b> C-M12M08-08X025PV02,0-M12F08-123431</p>	
	5m	<p><b>123432</b> C-M12M08-08X025PV05,0-M12F08-123432</p>	
	10m	<p><b>123433</b> C-M12M08-08X025PV10,0-M12F08-123433</p>	

Version		Cable outlet	Order no./item	
<p>M12</p> <p>8 pin</p> <p>PUR</p>	<p>Connecting cable with female plug, flying lead, 8 x 0.25 mm<sup>2</sup></p> 	5m	<p><b>115112</b> C-M12F08-08X025PU05,0-MA-115112</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>
		10m	<p><b>115113</b> C-M12F08-08X025PU10,0-MA-115113</p>	
		20m	<p><b>115114</b> C-M12F08-08X025PU20,0-MA-115114</p>	
		30m	<p><b>115257</b> C-M12F08-08X025PU30,0-MA-115257</p>	
<p>M12</p> <p>8 pin</p> <p>PUR</p>	<p>Connecting cable with female plug, flying lead, 8 x 0.25 mm<sup>2</sup></p> 	C	<p><b>113189</b> C-M12F08-08X025PU10,0-MA-113189</p>	
		A	<p><b>113188</b> C-M12F08-08X025PU10,0-MA-113188</p>	
		C	<p><b>120999</b> C-M12F08-08X025PU20,0-MA-120999</p>	
		A	<p><b>120998</b> C-M12F08-08X025PU20,0-MA-120998</p>	

**Strapping plug/Y-distributors**

For the series connection of devices from the output families AR and BR

For the connection of:



Version		Order no.		
M12 AR	<p><b>Strapping plug</b> for AR series connection with Y-distributors (male plug)</p>	<p><b>097645</b> AC-SP-SJ-097645</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>Series connection of AR/BR devices without IO-Link evaluation</b></p>				
M12	<p>8 pin 1x <b>Y-distributor M12 with connecting cable</b> 0,2m</p>	<p><b>111696</b> AC-YD-V0,2-SBB-111696</p>		
M12	<p>5 pin 2x </p>	<p><b>112395</b> AC-YD-V1,0-SBB-112395</p>		
AR BR	<p>8 pin 1x <b>Y-distributor M12</b></p>	<p><b>097627</b> AC-YD-SBB-097627</p>		
	<p>5 pin 2x Not suitable for CTP-AR! Instead please use a Y-distributor with connecting cable (see above)</p>			
<p><b>Series connection of BR devices with IO-Link evaluation</b></p>				
M12	<p>8 pin 1x <b>Y-distributor M12 with connecting cable</b> 0,2m</p>	<p><b>158192</b> AC-YD-V0,2-SBB-158192</p>		
BR	<p>5 pin 2x </p>	<p><b>158193</b> AC-YD-V1,0-SBB-158193</p>		
IO-Link	<p>8 pin 1x <b>Y-distributor M12</b></p>	<p><b>157913</b> AC-YD-SBB-157913</p>		
	<p>5 pin 2x </p>			



## Passive distribution module

For the series connection of devices from the output family AR

For the connection of:

CES-AR-C01-...-SA



CES-AR-C.2-...-SA



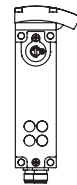
CES-I-AR-...-C04-USA



CTP-L-AR-...-SAB

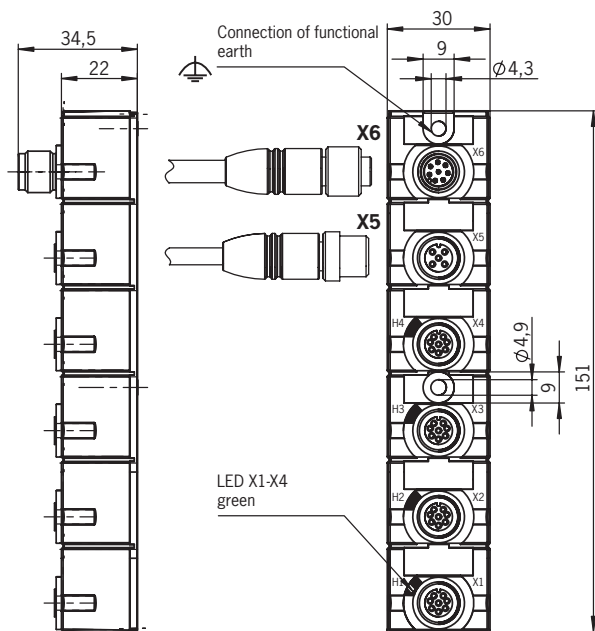


CET-AR-...-SG

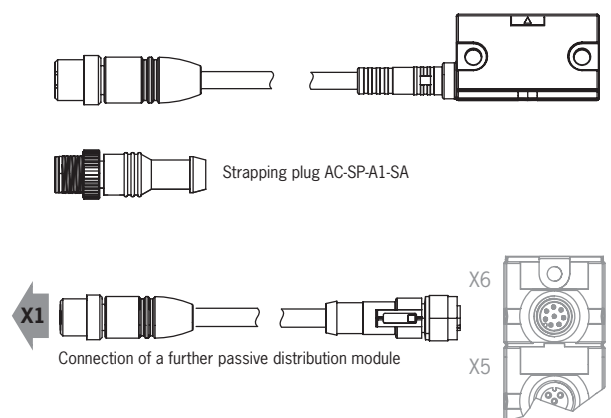


Version		Order no.	
<div style="border: 1px solid black; padding: 2px; display: inline-block;">M12</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">AR</div>	<div style="border: 1px solid black; padding: 2px; display: inline-block;">8 pin</div> 5x  <div style="border: 1px solid black; padding: 2px; display: inline-block;">5 pin</div> 1x	<p><b>120861</b> AC-DP-04-SAA-120861</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>Passive distribution module</b></p> <p><b>Strapping plug</b> for bypassing unused connections on the passive distribution module (male plug)</p>	<p><b>123340</b> AC-SP-A1-SA-123340</p>	

### Dimension drawing and connection options



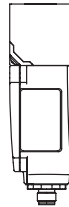
Connection	Use
X1 ... X4	- Connection of AR devices (CES-AR, CET-AR, ...) or - Bypassing using strapping plug if connection is not used or - Connection of a further passive distribution module ( <b>important</b> : only on X1)
X5	Provision of the status signals for all connected AR devices
X6	Operating voltage for the AR devices and transmission of the safety signals





**Screened connecting cables with plug connector**

For the connection of:

CESA-.5



Version		Order no./item	
<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p>M12</p> <p>8 pin</p> <p>PVC</p> </div> <div> <p>Connecting cable with female plug, screened <sup>1)</sup>, 8 x 0.25 mm<sup>2</sup></p>  </div> </div>	5m	<p><b>077751</b> C-M12F08-08X025PV05,0-GA-077751</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>
	10m	<p><b>077752</b> C-M12F08-08X025PV10,0-GA-077752</p>	
	15m	<p><b>077753</b> C-M12F08-08X025PV15,0-GA-077753</p>	
	20m	<p><b>077871</b> C-M12F08-08X025PV20,0-GA-077871</p>	
	25m	<p><b>077872</b> C-M12F08-08X025PV25,0-GA-077872</p>	
	50m	<p><b>077873</b> C-M12F08-08X025PV50,0-GA-077873</p>	

1) The screen on the connecting cable is connected to the plug housing.

## Connecting cable with straight plug connector

For the connection of:

CEM-...AR-...-SH



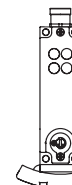
CTP-...AP-...-SH


CTP-...AR-...-SH



CET-AP-...-SH

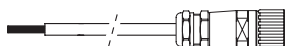
CET-AR-...-SH



Version	Order no./item	
1,5m	<b>092761</b> C-M23F19-19XDIFPU01,5-MA-092761	<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>
3m	<b>092816</b> C-M23F19-19XDIFPU03,0-MA-092816	
6m	<b>077014</b> C-M23F19-19XDIFPU06,0-MA-077014	
8m	<b>077015</b> C-M23F19-19XDIFPU08,0-MA-077015	
10m	<b>092898</b> C-M23F19-19XDIFPU10,0-MA-092898	
15m	<b>077016</b> C-M23F19-19XDIFPU15,0-MA-077016	
20m	<b>092726</b> C-M23F19-19XDIFPU20,0-MA-092726	
25m	<b>092727</b> C-M23F19-19XDIFPU25,0-MA-092727	
30m	<b>095993</b> C-M23F19-19XDIFPU30,0-MA-095993	
40m	<b>102490</b> C-M23F19-19XDIFPU40,0-MA-102490	

M23  
19 pin  
PUR

Connecting cable with female plug, flying lead



**Connecting cable with angled plug connector**

For the connection of:

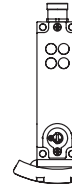
CEM-...-AR-...-SH



CTP-...-AP-...-SH  
CTP-...-AR-...-SH



CET-AP-...-SH  
CET-AR-...-SH



The following applies to the device installation orientation shown:

Cable outlet C (left)

Cable outlet A (right)



Version	Order no./item Cable outlet			
	C	A		
<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p>M23</p> <p>19 pin</p> <p>PUR</p> </div> <div> <p>Female connector angled, with cable, halogen free</p> </div> </div>	1,5m	<p><b>092906</b> C-M23F19-19XDIFPU01,5- MA-092906</p>	<p><b>092907</b> C-M23F19-19XDIFPU01,5- MA-092907</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>
	3m	<p><b>092908</b> C-M23F19-19XDIFPU03,0- MA-092908</p>	<p><b>092909</b> C-M23F19-19XDIFPU03,0- MA-092909</p>	
	6m	<p><b>077018</b> C-M23F19-19XDIFPU06,0- MA-077018</p>	<p><b>085194</b> C-M23F19-19XDIFPU06,0- MA-085194</p>	
	8m	<p><b>077019</b> C-M23F19-19XDIFPU08,0- MA-077019</p>	<p><b>085195</b> C-M23F19-19XDIFPU08,0- MA-085195</p>	
	10m	<p><b>092901</b> C-M23F19-19XDIFPU10,0- MA-092901</p>	<p><b>092902</b> C-M23F19-19XDIFPU10,0- MA-092902</p>	
	15m	<p><b>077020</b> C-M23F19-19XDIFPU15,0- MA-077020</p>	<p><b>085196</b> C-M23F19-19XDIFPU15,0- MA-085196</p>	
	20m	<p><b>092910</b> C-M23F19-19XDIFPU20,0- MA-092910</p>	<p><b>092911</b> C-M23F19-19XDIFPU20,0- MA-092911</p>	
	25m	<p><b>092912</b> C-M23F19-19XDIFPU25,0- MA-092912</p>	<p><b>092913</b> C-M23F19-19XDIFPU25,0- MA-092913</p>	

## Female plug M23

For the connection of:

CEM...AR...-SH



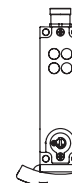
CTP...AP...-SH


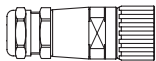
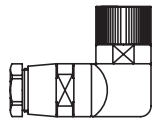
CTP...AR...-SH



CET-AP...-SH

CET-AR...-SH





Version	Comment	Order no.	
<b>Female plug straight</b> (for self-assembly) 	<b>EF</b> Female plug For conductor cross-section 19 x 0.75 - 1 mm <sup>2</sup>	<b>074616</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>EF-C1825</b> Female plug For conductor cross-section 16 x 0.25 - 0.5 mm <sup>2</sup> + 3 x 0.75 - 1 mm <sup>2</sup>	<b>077025</b>	
<b>Female connector angled</b> (for self-assembly) 	<b>WF</b> Female connector angled For conductor cross-section 19 x 0.75 - 1 mm <sup>2</sup>	<b>074617</b>	
	<b>WF-C1825</b> Female connector angled For conductor cross-section 16 x 0.25 - 0.5 mm <sup>2</sup> + 3 x 0.75 - 1 mm <sup>2</sup>	<b>077026</b>	
<b>Replacement crimp contacts</b>	For female plugs <b>EF</b> and <b>WF</b> Conductor cross-section 19 x 0.75 - 1 mm <sup>2</sup>	<b>094309</b>	
	For female plugs <b>EF-C1825</b> and <b>WF-C1825</b> Conductor cross-section 16 x 0.25 - 0.5 mm <sup>2</sup> + 3 x 0.75 - 1 mm <sup>2</sup>	<b>094310</b>	

M23  
19 pin





**Connection kits**

For connection to AR evaluation unit CES-AR-AES-12

Version	Comment	Order no.	
 <b>Connection kits</b> for evaluation unit CES-AR-AES-12	Plug-in screw terminals	<b>104776</b> CES-EA-TC-AK08-104776	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> .
	Plug-in spring terminals	<b>112629</b> CES-EA-TC-KK08-112629	




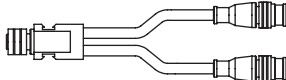



**Teach-in adapter**

For connection to safety switch CET


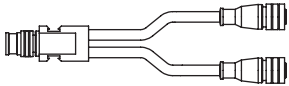
Version	Comment	Order no.	
 <b>Teach-in adapter</b> AC-TA-A-...	 For safety switch CET1-AR/CET3-AR	<b>125496</b> AC-TA-A1-SG-125496	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .
		For safety switch CET2-AR/CET4-AR	
	 For safety switch CET1/CET3	<b>122748</b> AC-TA-A1-SH-122748	
		For safety switch CET2/CET4	

**Y-distributor for connection to IP67 field modules**

Y-distributor for AP devices with plug connectors 2 x M12, 5-pin, with monitoring output (e.g. CET-AP with wiring diagram B) for connection to field modules with sockets M12, 5-pin. The Y-distributor makes it possible to operate the guard locking solenoid via a safe output module and to route the monitoring contact OUT D to an input module on a control system.


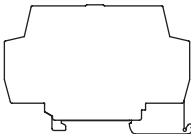
Designation	Version	Order no.	
  <b>Y-distributor</b> for connection to IP67 field modules 	 (socket)  (plug)  5 pin	<b>124516</b> AC-YD-V0,2-SBB-124516	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .

**Y-distributor for connection of CEM-M2-C60 and CES-AP/BP**

Designation		Version	Order no.	
<div style="border: 1px solid black; padding: 2px; display: inline-block;">2x M12</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">AP</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">BP</div>	<p>Y-distributor for connection of a guard locking solenoid CEM-M2-C60 to a safety switch CES-AP/BP</p> 	<div style="border: 1px solid black; padding: 2px; display: inline-block;">M12</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">8 pin</div> (plug)	<p><b>161909</b> AC-YD-U0,2-SBB-161909</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>
		<div style="border: 1px solid black; padding: 2px; display: inline-block;">2x M12</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">5 pin</div> (socket)		

**Filter module for the connection of switchgear with OSSD outputs**

The test pulses of safety inputs F11A and F11B for short circuit monitoring are filtered out at the outputs F01A\* and F01B\* to such an extent that the downstream control system can no longer detect them. Owing to smoothing of the test pulses at safety inputs F11A/F11B, short circuit monitoring will no longer be effective downstream of the filter module. Ruling out short circuits downstream of safety outputs F01A\*/F01B\* requires laying the cables with protection or mounting in the control cabinet of the control system.

Designation		Order no.	
<div style="border: 1px solid black; padding: 2px; display: inline-block;">AP</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">AR</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">BP</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">BR</div>	<p>Filter module for the connection of switchgear with OSSD outputs</p>  <p>For 35 mm mounting rail</p>	<p><b>127460</b> AC-FM-AR-127460</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>

**Bolts**

C01 C05

**Bolts for housing design C01/C05**

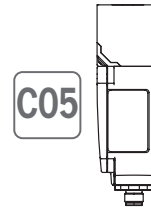
**Notice:** The actuators are included with these bolts.


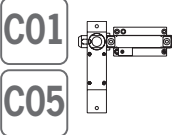
**For mounting:**

CES-AP-C01-...  
CES-AR-C01-...



CESA-5...


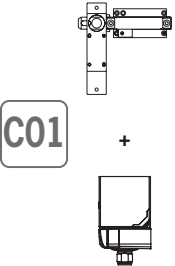


Designation	Detent mechanism/ door gap	Material	Version	Order no.	
 <b>C01</b> <b>C05</b>	<b>Bolts CES-A-C</b> Closed position: ball detent mechanism Open position: none/ door gap: 15 mm	Steel	For doors hinged on the right or left	<b>082220</b>	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .
	<b>Bolts CES-A-C/F</b> Closed position: ball detent mechanism Open position: detent knob/ door gap: 15 mm	Steel	Emergency release lever, for doors hinged on the right or left	<b>098357</b>	



**Bolt sets (complete with switch)**

**Notice:** The actuators are included with these bolts.

Designation	Detent mechanism/ door gap	Material	Version	Order no.	
 <p><b>C01</b> + <b>Bolts CES-AC...C01</b></p>	Closed position: ball detent mechanism/ door gap: 7 mm	Steel	Bolt with pre-assembled safety switch CES-AR-C01-AH-SA-098941 for doors hinged on the right or left	<b>109358</b>	<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>
	Closed position: ball detent mechanism/ door gap: 7 mm	Steel	Bolt with pre-assembled safety switch CES-AP-C01-AH-SB-111145 for doors hinged on the right or left	<b>113986</b>	
	Closed position: ball detent mechanism Open position: detent knob/ door gap: 15 mm	Steel	Bolt with pre-assembled safety switch CES-AR-C01-AH-SA-098941 and safety plate <sup>1)</sup> for doors hinged on the right or left	<b>104028</b>	
	Closed position: ball detent mechanism Open position: detent knob/ door gap: 15 mm	Steel	Bolt with pre-assembled safety switch CES-AR-C01-AH-SA-098941 and safety plate <sup>1)</sup> for doors hinged on the right or left, emergency release lever	<b>105619</b>	
	Closed position: ball detent mechanism Open position: detent knob/ door gap: 7 mm	Steel	Bolt with pre-assembled safety switch CES-AP-C01-AH-SB-111145 and safety plate for doors hinged on the right or left, emergency release lever	<b>124401</b>	
	Closed position: ball detent mechanism Open position: detent knob/ door gap: 15 mm	Steel	Bolt with pre-assembled safety switch CES-AP-C01-AH-SB-111145 and safety plate <sup>1)</sup> for doors hinged on the right or left, emergency release lever	<b>116246</b>	
	Closed position: ball detent mechanism Open position: detent knob/ door gap: 15 mm	Steel	Bolt with pre-assembled safety switch CES-AP-C01-CH-SB-111708 and safety plate <sup>1)</sup> for doors hinged on the right or left, emergency release lever	<b>115732</b>	
	Closed position: ball detent mechanism/ door gap: 15 mm	Steel	Bolt with pre-assembled safety switch <sup>1)</sup> CES-AP-C01-CH-SB-106798 for doors hinged on the right or left	<b>110355</b>	
	Closed position: ball detent mechanism/ door gap: 15 mm	Steel	Bolt with pre-assembled safety switch <sup>1)</sup> CES-AP-C01-CH-SB-111708 for doors hinged on the right or left	<b>110354</b>	

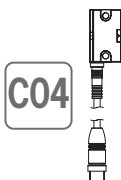
1) The safety plate prevents the use of a padlock in closed bolt position.


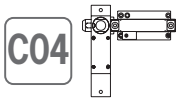
**Bolts for housing design C04**

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

**For mounting:**

CES-AP-.-C04-...  
CES-AR-.-C04-...



Designation	Detent mechanism/ door gap	Material	Version	Order no.	
 <b>Bolts BTC-CES04-...</b>	Closed position: spring catch Open position: none/ door gap: 7 mm	Aluminum	For doors hinged on the right and left; can be locked in open position with padlocks	<b>121646</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> .
	Closed position: spring catch Open position: detent knob/ door gap: 7 mm	Aluminum	Emergency release lever, for doors hinged on the right and left; can be locked in open position with padlocks	<b>123583</b>	

**Bolts for housing design CTP**

**Notice:** The actuators are included with the bolts CTP-... and BTC-.... Order actuator separately for the bolts BTM-UNIP-S-TH-... (for suitable actuators, see page 140).

**For mounting:**

CTP-...-...


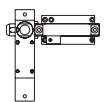


Designation	Detent mechanism/ door gap	Material	Version	Order no.	
<b>Bolts CTP-AC</b>	None/ door gap: 15 mm	Steel	For doors hinged on the right and left; can be locked in open position with padlocks	<b>123653</b>	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .
<b>Bolts CTP-ACF</b>	Closed position: none Open position: detent knob/ door gap: 15 mm	Steel	Emergency release lever, for doors hinged on the right and left; can be locked in open position with padlocks	<b>123655</b>	
<b>Bolts CTP-AC-C2308</b>	None/ door gap: 15 mm	Steel	For doors hinged on the right and left; Bolt can be opened outward and inward (no end stop).	<b>137354</b>	
<b>Bolts BTC-CTP-S-TH-00-X</b>	None/ door gap: 15 mm	Die-cast aluminum	For doors hinged on the right and left; can be locked in open position with padlocks	<b>123659</b>	
<b>Bolts BTC-CTP-S-TH-01-F</b>	Closed position: none Open position: detent knob/ door gap: 15 mm	Die-cast aluminum	Emergency release lever, for doors hinged on the right and left; can be locked in open position with padlocks	<b>123660</b>	
<b>Bolts BTM-UNIP-S-TH-00-X-159951</b> <small>1)</small>	None / door gap: 15 mm	Steel	For doors hinged on the right and left; can be locked in open position with padlocks	<b>159951</b>	
<b>Bolts BTM-UNIP-S-TH-01-F-164196</b> <small>1)</small>	Closed position: none Open position: detent knob/ door gap: 15 mm	Steel	Emergency release lever, for doors hinged on the right and left; can be locked in open position with padlocks	<b>164196</b>	
<b>Bolts CTP-GFK</b>	None/ door gap: 7 mm	Plastic	For doors hinged on the right and left; can be locked in open position with padlocks	<b>123657</b>	

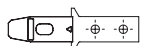


1) Please order actuator separately. For suitable actuators, see page 140.



Designation	Detent mechanism/ door gap	Material	Version	Order no.	
  <p><b>Bolts CTP-GFK-F</b></p> <p><b>Switch bracket</b></p>	Closed position: none Open position: detent knob/ door gap: 7 mm	Plastic	Emergency release lever, for doors hinged on the right and left; can be locked in open position with padlocks	<b>123658</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> .
	–	Plastic	For safety switch CTP	<b>096613</b>	

**Actuator for bolt BTM-UNIP-S-TH...**

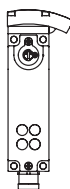
Series	Design	Order no./item	
<b>A-C-H-G-LS-122677</b>	 <p>Straight</p>	<p><b>122677</b> A-C-H-G-LS-122677</p>	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com</a> .


**Bolts for housing design CET**

**Notice:** - Actuators are **not** included with these bolts.  
 - Cover AM-C-124721 (protection against tampering) for CET actuators included.

**For mounting:**

CET.-A.-...


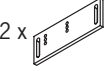
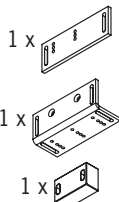





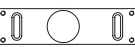









Designation	Detent mechanism/ door gap	Material	Version	Order no.	
<b>Bolts CET-A-C</b>	None/ door gap: 15 mm	Steel	For doors hinged on the right or left	<b>104309</b>	For detailed information, enter the order number for the product in the search box at <a href="http://www.euchner.com">www.euchner.com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



## Fixing material

## Mounting sets/mounting plates

Series	Use	Order no./item	
<b>Mounting set AM-SET-PP</b>  2 x	For safety switch and actuator design C04  Set comprising: 2 x mounting plates	<b>119690</b> AM-SET-PP-119690	<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>Mounting set AM-SET-PPB</b>  1 x 1 x 1 x	For safety switch and actuator design C04  Set comprising: 1 x mounting plate 1 x angle mounting plate 1 x spacer	<b>119694</b> AM-SET-PPB-119694	
<b>Mounting bracket AM-B-126230</b> 	For actuator CEM-...-C40	<b>126230</b> AM-B-126230	
<b>Mounting bracket AM-B-126231</b> 	For safety switch CEM-...-C40	<b>126231</b> AM-B-126231	
<b>Angle mounting plate EMP-SB</b> 	For safety switch CTP	<b>093456</b> EMP-SB	
<b>Mounting plate EMP-B2</b> 	For actuator CTP	<b>093458</b> EMP-B2	
<b>Mounting plate EMP-B1</b> 	For actuator CTP and actuator CET	<b>093457</b> EMP-B1	
<b>Mounting plate AM-P</b> 	For safety switch CTP	<b>126026</b> AM-P-126026	

Series	Use	Order no./item	
<b>Mounting plate EMP-L-CET</b> 	For safety switch CET	<b>106695</b> EMP-L-CET	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>Mounting plate EMP-B-CET</b> 	For actuator CET	<b>106694</b> EMP-B-CET	
<b>Mounting plate EMP-B1</b> 	For actuator CTP and actuator CET	<b>093457</b> EMP-B1	
<b>Mounting plate AM-P</b> 	For safety switch CET	<b>126399</b> AM-P-126399	
<b>Mounting plate AM-P</b> 	For actuator CET	<b>126400</b> AM-P-126400	
<b>Mounting plate with handle</b> 	Can be combined with mounting plates AM-P-126399 and AM-P-126400	<b>126398</b> AM-P-126398	

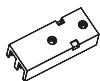





## Miscellaneous accessories








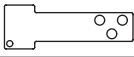



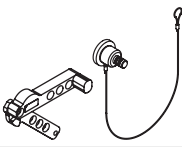




## Safety screws

Fixing material/screw size	Screw head diameter	Version/use	Packaging unit [qty.]	Order no.
Safety screws, stainless steel <b>M4 x 14</b>	7 mm	Actuators CES-A-BBA, CES-A-BCA	20	<b>071863</b> M4X14-NIRO/V20
Safety screws, stainless steel <b>M4 x 14</b>	10 mm	Safety switch CES...C.2, actuator CES-A-BLN-2 and actuator CTP (straight/angled)	100	<b>086232</b> M4X14-NIRO/V100
Safety screws, stainless steel <b>M4 x 20</b>	7 mm	Safety switch CES...C04/C07 and actuator CES-A...C04/C07	20	<b>116978</b> M4X20-NIRO/V20
Safety screws, stainless steel <b>M5 x 10</b>	10 mm	Safety switch CES...C01, actuator CES-A-BPA and hinged actuator CTP (left/right)	100	<b>073455</b> M5X10-NIRO/V100
Safety screws, galvanized steel <b>M5 x 16</b>	10 mm	Actuator CES-A-BRN, CET-A-BWK, A-C40 and A-C60	100	<b>073456</b> M5X16/V100
Safety screws, galvanized steel <b>M5 x 25</b>	10 mm	Hinged actuator CTP (top/bottom)	100	<b>073457</b> M5X25/V100
Plastic inserts for hexagon socket screws <b>M5/SW4</b>	–	Safety switch with guard locking	18	<b>161344</b> AM-C-SW4-V3-161344
Plastic inserts for hexagon socket screws <b>M6/SW5</b>	–	Safety switch with guard locking	18	<b>161348</b> AM-C-SW5-V3-161348

## Miscellaneous accessories

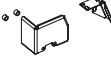





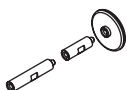
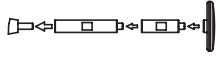
Designation	Use	Version	Order no.
<b>C04</b> ATEX housing guard 	For safety switch CES-C04	–	<b>137528</b> AM-C-C04-EX-137528
<b>C07</b> Covers 	For safety switch CES-C07 and actuator CES-A-BTN-C07	–	<b>161164</b>
<b>C40</b> Lockout bar 	For safety switch design C40	–	<b>123625</b> AE-L-C40-123625
<b>CTP</b> Auxiliary key release 	For safety switch CTP	Identical locking, Incl. 2 keys	<b>086236</b>
		Identical locking, Key can be removed only in <i>Unlocked</i> position, Incl. 2 keys	<b>109212</b>
		Unique locking, Incl. 2 keys	<b>084177</b>
		Identical locking, Key can be removed in <i>Locked</i> position, Incl. 2 keys	<b>121917</b>
<b>Replacement key</b>	For auxiliary key release, identical locking	2 keys, identical locking	<b>099434</b>

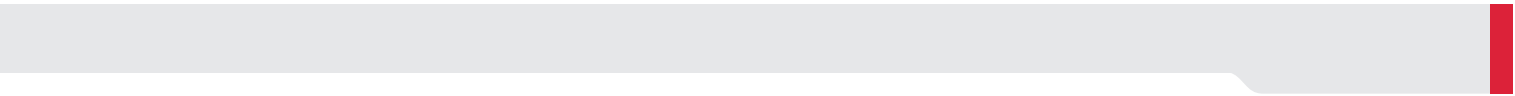


Designation	Use	Version	Order no.
<b>Release</b> 	For safety switch CTP	Resetting	<b>103110</b>
<b>Emergency release</b> 	For safety switch CTP	–	<b>099877</b>
<b>Lead seal kit</b> 	For emergency release	–	<b>087256</b>
<b>Wire front release (bowden)</b> 	For safety switch CTP	Resetting, sheath length 2 m (rope length 6 m)	<b>097747</b> AE-B-A1-02,0F-097747
		Resetting, sheath length 3 m (rope length 6 m)	<b>111233</b> AE-B-A1-03,0F-111233
<b>Handle for wire front release</b> 	Suitable for all safety switches with wire front release (bowden)		<b>099795</b> AY-HDL-099795
			<b>124204</b> AY-HDL-124204
<b>Lockout bar</b> 	For safety switch CTP	–	<b>123411</b> AE-L-C-H-123411
<b>Lockout bar</b> 	For actuator CET	Suitable for shackle diameter 5 mm - 6 mm	<b>122609</b> AE-L-CET-122609
<b>Lockout bar</b> 	For actuator CET	Suitable for shackle diameter 5 mm - 9 mm	<b>156429</b> AE-L-CET-156429
<b>Holder for lockout bar</b> 	For lockout bar AE-L-CET-156420	Including wire rope and ring to hang the wire rope onto the lockout bar	<b>156338</b> AY-CHN-A1-156338
<b>Lockout bar + holder set</b> 	For actuator CET	Suitable for shackle diameter 5 mm - 9 mm. Holder including wire rope and ring to hang the wire rope onto the lockout bar.	<b>155865</b> AE-SET-LCHN-A1-155865
<b>Auxiliary key release</b> 	For safety switch CET	Identical locking, including 2 keys	<b>098850</b>
<b>Replacement key</b> 	For auxiliary key release, identical locking	2 keys, identical locking	<b>099434</b>
<b>Emergency release</b> 	For safety switch CET	Latching in both positions, installation height 19 mm	<b>103714</b> AE-M-CET-103714
		Latching in both positions, installation height 70 mm	<b>159080</b> AE-M-CET-159080
<b>Lead seal kit</b> 	For emergency release	–	<b>087256</b>

CTP

CET

Designation	Use	Version	Order no.
<b>Cover</b> 	For safety switch CET and actuator CET	Door hinge right	<b>098808</b>
		Door hinge left	<b>098807</b>
<b>Cover</b> 	For actuator CET	Horizontal and vertical mounting option on the actuator, suitable for fixing screws M5 x 16	<b>124979</b> AM-C-124979
<b>Double ramp</b> 	For safety switch CET	-	<b>114091</b> CET-DR
<b>CET</b> <b>Handle for wire front release</b> 	Suitable for all safety switches with wire front release (bowden)		<b>099795</b> AY-HDL-099795
			<b>124204</b> AY-HDL-124204
<b>Extension for escape release</b> 	For safety switch CET		<b>127377</b> AF-E-80-127377



## Index by item designation

Item	Order no.	Page	Item	Order no.	Page
A-B-A1-A1-161642	161642	19, 29	Bolt CES-A-C/F	098357	136
A-B-A1-A1-P-161643	161643	19, 29	Bolt CET-A-C	104309	141
A-C-H-G-LS-122677	122677	140	Bolt CET-A-C/F	106172	141
A-C-H-G-LS-EX-136826	136826	64	Bolt CET-A-C/F C2282	106350	141
A-C-H-G-SSS-157696	157696	64, 101	Bolt CET-A-C-C2308	109672	141
A-C-H-G-SST-126015	126015	64, 101	Bolt CTP-AC	123653	139
A-C-H-RL-LS-122671	122671	64, 101	Bolt CTP-AC-C2308	137354	139
A-C-H-RO-LS-122675	122675	64, 101	Bolt CTP-ACF	123655	139
A-C-H-RR-LS-122672	122672	64, 101	Bolt CTP-GFK	123657	139
A-C-H-RU-LS-122676	122676	64, 101	Bolt CTP-GFK-F	123658	140
A-C-H-W-SST-122667	122667	64, 101	C-M08F04-04X025PV02,0-ES-088812	088812	121
A-C-H-W-SST-122668	122668	64, 101	C-M08F04-04X025PV05,0-ES-088813	088813	121
A-C40-113869	113869	54, 94	C-M08F04-04X025PV10,0-ES-084703	084703	121
A-C40-158436	158436	54, 94	C-M08F04-04X025PV10,0-ES-088814	088814	121
A-C60-A1-161322	161322	58	C-M08F04-04X025PV15,0-ES-088815	088815	121
A-C60-B1-162581	162581	58	C-M08F04-04X025PV25,0-ES-095035	095035	121
A-TI001-125481	125481	54, 94	C-M08F04-04X025PV50,0-ES-097100	097100	121
AC-DP-04-SAA-120861	120861	129	C-M08F04-04X034PU05,0-ES-116049	116049	121
AC-FM-AR-127460	127460	135	C-M08F04-04X034PU10,0-ES-116050	116050	121
AC-SP-A1-SA-123340	123340	129	C-M08F04-04X034PU20,0-ES-116051	116051	121
AC-SP-SJ-097645	097645	128	C-M08F04-04X034PU50,0-ES-120241	120241	121
AC-TA-A1-SG-125496	125496	134	C-M08F08-08X014PU05,0-ES-106671	106671	122
AC-TA-A1-SH-122748	122748	134	C-M08F08-08X014PU10,0-ES-106672	106672	122
AC-TA-A2-SG-125497	125497	134	C-M08F08-08X014PU20,0-ES-106673	106673	122
AC-TA-A2-SH-122749	122749	134	C-M08F08-08X014PV05,0-ES-110933	110933	122
AC-YD-SBB-097627	097627	128	C-M08F08-08X014PV10,0-ES-110934	110934	122
AC-YD-SBB-157913	157913	128	C-M08F08-08X014PV15,0-ES-110935	110935	122
AC-YD-U0,2-SBB-161909	161909	135	C-M08F08-08X014PV20,0-ES-111603	111603	122
AC-YD-V0,2-SBB-111696	111696	128	C-M12F05-05X025PU10,0-M12M05-115565	115565	124
AC-YD-V0,2-SBB-124516	124516	134	C-M12F05-05X025PU10,0-M12M05-115566	115566	124
AC-YD-V0,2-SBB-158192	158192	128	C-M12F05-05X025PU10,0-MA-113187	113187	124
AC-YD-V1,0-SBB-112395	112395	128	C-M12F05-05X025PU10,0-MA-113190	113190	124
AC-YD-V1,0-SBB-158193	158193	128	C-M12F05-05X034PU0,22-M12M05-163573	163573	125
AE L CET 156429	156429	145	C-M12F05-05X034PU05,0-M12M05-119932	119932	124
AE SET LCHN A1 155865	155865	145	C-M12F05-05X034PU05,0-MA-113620	113620	124
AE-B-A1-02,0-F-097747	097747	145	C-M12F05-05X034PU1,0-M12M05-159355	159355	124
AE-B-A1-03,0-F-111233	111233	145	C-M12F05-05X034PU1,0-M12M05-159362	159362	125
AE-L-C-H-123411	123411	145	C-M12F05-05X034PU1,5-M12M05-159356	159356	124
AE-L-C40-123625	123625	144	C-M12F05-05X034PU1,5-M12M05-159363	159363	125
AE-L-CET-122609	122609	145	C-M12F05-05X034PU10,0-M12M05-119947	119947	124
AE-M-CET-103714	103714	145	C-M12F05-05X034PU10,0-M12M05-159360	159360	124
AE-M-CET-159080	159080	145	C-M12F05-05X034PU10,0-M12M05-159920	159920	125
AF-E-80-127377	127377	146	C-M12F05-05X034PU10,0-MA-113640	113640	124
AMB-126230	126230	142	C-M12F05-05X034PU15,0-M12M05-159361	159361	124
AMB-126231	126231	142	C-M12F05-05X034PU15,0-M12M05-159921	159921	125
AMC-124979	124979	146	C-M12F05-05X034PU20,0-M12M05-119971	119971	124
AMC-C04-EX-137528	137528	144	C-M12F05-05X034PU20,0-MA-113682	113682	124
AMC-SW4-V3-161344	161344	144	C-M12F05-05X034PU3,0-M12M05-159357	159357	124
AMC-SW5-V3-161348	161348	144	C-M12F05-05X034PU3,0-M12M05-159364	159364	125
AMP-126026	126026	142	C-M12F05-05X034PU30,0-MA-122784	122784	124
AMP-126398	126398	143	C-M12F05-05X034PU5,0-M12M05-159358	159358	124
AMP-126399	126399	143	C-M12F05-05X034PU5,0-M12M05-159365	159365	125
AMP-126400	126400	143	C-M12F05-05X034PU8,0-M12M05-159359	159359	124
AM-SET-PP-119690	119690	142	C-M12F05-05X034PU8,0-M12M05-159919	159919	125
AM-SET-PPB-119694	119694	142	C-M12F05-05X034PV05,0-M12M05-100180	100180	123
AY CHN A1 156338	156338	145	C-M12F05-05X034PV05,0-MA-100183	100183	123
AY-HDL-099795	099795	145, 146	C-M12F05-05X034PV10,0-M12M05-100181	100181	123
AY-HDL-124204	124204	145, 146	C-M12F05-05X034PV10,0-MA-100184	100184	123
Bolt BTC-CTP-S-TH00-X	123659	139	C-M12F05-05X034PV20,0-M12M05-100182	100182	123
Bolt BTC-CTP-S-TH01-F	123660	139	C-M12F05-05X034PV20,0-MA-100185	100185	123
Bolt BTM-UNIP-S-TH00-X-159951	159951	139	C-M12F05-05X034PV50,0-MA-156064	156064	123
Bolt BTM-UNIP-S-TH01-F-164196	164196	139	C-M12F08-08X025PU05,0-MA-115112	115112	127
Bolt CES-A-C	082220	136	C-M12F08-08X025PU10,0-MA-113188	113188	127

Item	Order no.	Page
C-M12F08-08X025PU10,0-MA-113189	113189	127
C-M12F08-08X025PU10,0-MA-115113	115113	127
C-M12F08-08X025PU20,0-MA-115114	115114	127
C-M12F08-08X025PU20,0-MA-120998	120998	127
C-M12F08-08X025PU20,0-MA-120999	120999	127
C-M12F08-08X025PU30,0-MA-115257	115257	127
C-M12F08-08X025PV05,0-GA-077751	077751	130
C-M12F08-08X025PV05,0-MA-100177	100177	126
C-M12F08-08X025PV10,0-GA-077752	077752	130
C-M12F08-08X025PV10,0-MA-100178	100178	126
C-M12F08-08X025PV15,0-GA-077753	077753	130
C-M12F08-08X025PV20,0-GA-077871	077871	130
C-M12F08-08X025PV20,0-MA-100179	100179	126
C-M12F08-08X025PV25,0-GA-077872	077872	130
C-M12F08-08X025PV30,0-MA-115116	115116	126
C-M12F08-08X025PV40,0-MA-156065	156065	126
C-M12F08-08X025PV50,0-GA-077873	077873	130
C-M12M08-08X025PV01,0-M12F08-123430	123430	126
C-M12M08-08X025PV02,0-M12F08-123431	123431	126
C-M12M08-08X025PV05,0-M12F08-123432	123432	126
C-M12M08-08X025PV10,0-M12F08-123433	123433	126
C-M23F19-19XDIFPU01,5-MA-092761	092761	131
C-M23F19-19XDIFPU01,5-MA-092906	092906	132
C-M23F19-19XDIFPU01,5-MA-092907	092907	132
C-M23F19-19XDIFPU03,0-MA-092816	092816	131
C-M23F19-19XDIFPU03,0-MA-092908	092908	132
C-M23F19-19XDIFPU03,0-MA-092909	092909	132
C-M23F19-19XDIFPU06,0-MA-077014	077014	131
C-M23F19-19XDIFPU06,0-MA-077018	077018	132
C-M23F19-19XDIFPU06,0-MA-085194	085194	132
C-M23F19-19XDIFPU08,0-MA-077015	077015	131
C-M23F19-19XDIFPU08,0-MA-077019	077019	132
C-M23F19-19XDIFPU08,0-MA-085195	085195	132
C-M23F19-19XDIFPU10,0-MA-092898	092898	131
C-M23F19-19XDIFPU10,0-MA-092901	092901	132
C-M23F19-19XDIFPU10,0-MA-092902	092902	132
C-M23F19-19XDIFPU15,0-MA-077016	077016	131
C-M23F19-19XDIFPU15,0-MA-077020	077020	132
C-M23F19-19XDIFPU15,0-MA-085196	085196	132
C-M23F19-19XDIFPU20,0-MA-092726	092726	131
C-M23F19-19XDIFPU20,0-MA-092910	092910	132
C-M23F19-19XDIFPU20,0-MA-092911	092911	132
C-M23F19-19XDIFPU25,0-MA-092727	092727	131
C-M23F19-19XDIFPU25,0-MA-092912	092912	132
C-M23F19-19XDIFPU25,0-MA-092913	092913	132
C-M23F19-19XDIFPU30,0-MA-095993	095993	131
C-M23F19-19XDIFPU40,0-MA-102490	102490	131
C-R08F06-06X014PV05,0-ES-103556	103556	120
C-R08F06-06X014PV10,0-ES-103557	103557	120
C-R08F06-06X014PV15,0-ES-103558	103558	120
C-R08F06-06X014PV20,0-ES-103559	103559	120
C-R08F06-06X014PV25,0-ES-103560	103560	120
CEM2-AR-M-C40-SH-113739	113739	94
CEM2-AR-U-C40-SH-124937	124937	94
CEM2-AY-U-C40-LZ-SA-157549	157549	54
CEM2-AY-U-C40-SA-128103	128103	54
CEM2-C60-KZ-SE-163252	163252	58
CEM2-C60-PZ-SE-161320	161320	58
CEM2-C60-PZ-SE-165746	165746	58
CES-A-BBA	071840	38, 42, 82
CES-A-BBA-EX-098158	098158	38
CES-A-BBN-161502	161502	49, 89

Item	Order no.	Page
CES-A-BBN-C04-115271	115271	49, 89
CES-A-BBN-C04-EX-137527	137527	49, 89
CES-A-BBN-C14-160441	160441	52, 92
CES-A-BCA	088786	38, 42, 82
CES-A-BDA 18	156935	42, 82
CES-A-BDN-06-104730	104730	45, 49, 85, 89
CES-A-BDN-06-158210	158210	16, 24
CES-A-BDN-06-161742	161742	49, 89
CES-A-BLNL2-104510	104510	45, 85
CES-A-BLN-R2-100776	100776	45, 85
CES-A-BLN-U2-103450	103450	45, 85
CES-A-BPA	098775	38, 42, 82
CES-A-BPA-EX-102125	102125	38
CES-A-BRN-100251	100251	42, 82
CES-A-BTN-C07-156230	156230	16, 24
CES-A-C5E-01	077750	38
CES-A-C5H-01	091458	38
CES-A-C5H-01-EX	097945	38
CES-A-W5H-01	097525	38
CES-AP-C01-AH-SB-111145	111145	42
CES-AP-C01-CH-SA-100250	100250	42
CES-AP-C01-CH-SB-106798	106798	42
CES-AP-C01-CH-SB-111708	111708	42
CES-AP-CL2-AH-L05-105603	105603	44
CES-AP-CL2-AH-L10-106192	106192	44
CES-AP-CL2-AH-SB-106553	106553	44
CES-AP-CL2-AH-SB-111747	111747	44
CES-AP-CL2-AH-SF-105294	105294	44
CES-AP-CL2-CH-L05-105602	105602	45
CES-AP-CL2-CH-L10-106190	106190	45
CES-AP-CL2-CH-SB-106551	106551	45
CES-AP-CL2-CH-SB-109167	109167	45
CES-AP-CL2-CH-SF-104509	104509	45
CES-AP-CR2-AH-L05-105601	105601	44
CES-AP-CR2-AH-L10-106191	106191	44
CES-AP-CR2-AH-SB-106552	106552	44
CES-AP-CR2-AH-SB-111748	111748	44
CES-AP-CR2-AH-SF-105295	105295	44
CES-AP-CR2-CH-L05-105600	105600	45
CES-AP-CR2-CH-L10-106189	106189	45
CES-AP-CR2-CH-SB-106550	106550	45
CES-AP-CR2-CH-SB-109168	109168	45
CES-AP-CR2-CH-SB-123922	123922	45
CES-AP-CR2-CH-SF-100775	100775	45
CES-AR-AES-12	098225	116
CES-AR-C01-AH-SA	098941	82
CES-AR-C01-CH-SA	098942	82
CES-AR-C01-EH-SA	098582	82
CES-AR-CL2-AH-L05-109047	109047	84
CES-AR-CL2-AH-L10-109051	109051	84
CES-AR-CL2-AH-SA-105748	105748	84
CES-AR-CL2-AH-SG-105753	105753	84
CES-AR-CL2-CH-L05-109045	109045	85
CES-AR-CL2-CH-L10-109049	109049	85
CES-AR-CL2-CH-SA-105747	105747	85
CES-AR-CL2-CH-SA-115793	115793	85
CES-AR-CL2-CH-SG-105752	105752	85
CES-AR-CR2-AH-L05-109046	109046	84
CES-AR-CR2-AH-L10-109050	109050	84
CES-AR-CR2-AH-SA-105746	105746	84

Item	Order no.	Page
CES-AR-CR2-AH-SG-105751	105751	84
CES-AR-CR2-CH-L05-109044	109044	85
CES-AR-CR2-CH-L10-109048	109048	85
CES-AR-CR2-CH-SA-105745	105745	85
CES-AR-CR2-CH-SA-115792	115792	85
CES-AR-CR2-CH-SG-105750	105750	85
CES-EA-TC-AK08-104776	104776	134
CES-EA-TC-KK08-112629	112629	134
CES-AP-M-C04-SK-117325	117325	49
CES-AP-M-C04-U05-117328	117328	49
CES-AP-M-C04-U10-117329	117329	49
CES-AP-M-C04-U20-117330	117330	49
CES-AP-M-C04-USB-117324	117324	49
CES-AP-M-C04-USI-117323	117323	49
CES-AP-M-C04-USI-160832	160832	49
CES-AP-M-C04-USI-162592	162592	49
CES-AP-M-C14-U20-158631	158631	52
CES-AP-U-C04-SK-115324	115324	48
CES-AP-U-C04-U05-116503	116503	48
CES-AP-U-C04-U10-116504	116504	48
CES-AP-U-C04-U20-116505	116505	48
CES-AP-U-C04-USB-116502	116502	48
CES-AP-U-C04-USI-115150	115150	48
CES-AP-U-C14-U20-158632	158632	52
CES-AR-F-C04-SG-161679	161679	89
CES-AR-M-C04-SG-119474	119474	89
CES-AR-M-C04-U05-119475	119475	89
CES-AR-M-C04-U10-119476	119476	89
CES-AR-M-C04-U20-119477	119477	89
CES-AR-M-C04-USA-119479	119479	89
CES-AR-M-C14-U20-162596	162596	92
CES-AR-U-C04-SG-119469	119469	88
CES-AR-U-C04-U05-119470	119470	88
CES-AR-U-C04-U10-119471	119471	88
CES-AR-U-C04-U20-119472	119472	88
CES-AR-U-C04-USA-119473	119473	88
CES-AP-M-C07-SB-160076	160076	16
CES-AP-M-C07-SI-162813	162813	16
CES-AP-U-C07-SB-160080	160080	16
CES-AP-U-C07-SI-162815	162815	16
CES-AP-M-C07-SA-156233	156233	24
CES-AP-S-C07-SA-165914	165914	26
CES-AP-U-C07-SA-157920	157920	24
CET-A-BWK-50X	096327	74, 110
CET-DR	114091	146
CET1-AR-CDA-AH-50X-SG-106275	106275	107
CET1-AR-CDA-CH-50X-SG-109231	109231	107
CET1-AR-CDA-CH-50X-SH-113255	113255	109
CET1-AR-CRA-AH-50A-SG-106616	106616	107
CET1-AR-CRA-AH-50F-SG-106159	106159	107
CET1-AR-CRA-AH-50F-SHC2312-110943	110943	109
CET1-AR-CRA-AH-50S-SG-105802	105802	107
CET1-AR-CRA-AH-50X-SG-103418	103418	107
CET1-AR-CRA-AH-50X-SH-110203	110203	109
CET1-AR-CRA-AH-50X-SHC2290-113022	113022	109
CET1-AR-CRA-CH-50F-SG-110241	110241	107
CET1-AR-CRA-CH-50F-SHC2312-124104	124104	109
CET1-AR-CRA-CH-50S-SG-105764	105764	107
CET1-AR-CRA-CH-50X-SG-105763	105763	107
CET1-AR-CRA-CH-50X-SG-C2290-109015	109015	107
CET1-AR-CRA-CH-50X-SH-110204	110204	109
CET2-AR-CRA-AH-50S-SG-109075	109075	107
CET2-AR-CRA-AH-50X-SG-110240	110240	107

Item	Order no.	Page
CET2-AR-CRA-AH-50X-SH-110205	110205	109
CET2-AR-CRA-CH-50F-SG-C2312-109941	109941	107
CET2-AR-CRA-CH-50X-SG-110082	110082	107
CET2-AR-CRA-CH-50X-SH-110206	110206	109
CET3-AP-CRA-AH-50F-SA-124601	124601	74
CET3-AP-CRA-AH-50F-SHC2312-119106	119106	74
CET3-AP-CRA-AH-50F-SI-114073	114073	73
CET3-AP-CRA-AH-50F-SI-C2312-157408	157408	73
CET3-AP-CRA-AH-50F-SI-C2438-127594	124594	73
CET3-AP-CRA-AH-50X-SA-122389	122398	74
CET3-AP-CRA-AH-50X-SA-122406	122406	74
CET3-AP-CRA-AH-50X-SF-161524	161524	74
CET3-AP-CRA-AH-50X-SI-111346	111346	73
CET3-AP-CRA-AH-50X-SI-C2290-121367	121367	73
CET3-AP-CRA-AH-50X-SI-C2438-124589	124589	73
CET3-AP-CRA-CH-50F-SA-C2312-157287	157287	74
CET3-AP-CRA-CH-50X-SA-121579	121579	74
CET3-AP-CRA-CH-50X-SA-122409	122409	74
CET3-AR-CDA-CH-50F-SG-114090	114090	108
CET3-AR-CRA-AH-50F-SG-113965	113965	108
CET3-AR-CRA-AH-50F-SH-113148	113148	110
CET3-AR-CRA-AH-50F-SHC2312-111725	111725	110
CET3-AR-CRA-AH-50F-SHC2353-113023	113023	110
CET3-AR-CRA-AH-50X-SG-109401	109401	108
CET3-AR-CRA-AH-50X-SG-C2290-113139	113139	108
CET3-AR-CRA-AH-50X-SH-110103	110103	110
CET3-AR-CRA-AH-50X-SHC2290-113024	113024	110
CET3-AR-CRA-AH-50X-SHC2290-114088	114088	110
CET3-AR-CRA-AH-50X-SHC2375-115202	115202	110
CET3-AR-CRA-CH-50F-SG-110907	110907	108
CET3-AR-CRA-CH-50S-SG-112992	112992	108
CET3-AR-CRA-CH-50X-SG-110906	110906	108
CET3-AR-CRA-CH-50X-SG-C2290-110114	110114	108
CET3-AR-CRA-CH-50X-SH-110104	110104	110
CET4-AP-CRA-AH-50X-SA-122415	122415	74
CET4-AP-CRA-AH-50X-SI-112082	112082	73
CET4-AP-CRA-AH-50X-SI-C2438-126763	126763	73
CET4-AP-CRA-AH-50X-SI-C2509-161577	161577	73
CET4-AP-CRA-CH-50F-SA-161178	161178	74
CET4-AP-CRA-CH-50X-SA-122413	122413	74
CET4-AR-CDA-CH-50X-SG-114712	114712	108
CET4-AR-CRA-AH-50F-SH-116285	116285	110
CET4-AR-CRA-AH-50X-SG-111683	111683	108
CET4-AR-CRA-AH-50X-SG-C2290-128193	128193	108
CET4-AR-CRA-AH-50X-SG-C2355-162555	162555	108
CET4-AR-CRA-AH-50X-SH-110201	110201	110
CET4-AR-CRA-CH-50F-SG-114650	114650	108
CET4-AR-CRA-CH-50S-SG-113081	113081	108
CET4-AR-CRA-CH-50X-SG-111684	111684	108
CET4-AR-CRA-CH-50X-SG-C2355-113609	113609	108
CET4-AR-CRA-CH-50X-SH-110202	110202	110
CTM-CBI-BP-U-AZ-SA-165897	165897	18
CTM-LBI-BP-U-AZ-SA-166088	166088	18
CTM-LBI-BP-U-AZ-SA-166087	166087	18
CTM-LBI-BP-U-AZ-SA-166089	166089	18
CTM-LBI-BP-U-AZ-SA-166090	166090	18
CTM-LBI-BR-U-AZ-SA-165517	165517	28
CTM-LBI-BR-U-AZ-SA-166092	166092	29
CTM-LBI-BR-U-AZ-SA-161638	161638	28
CTM-LBI-BR-U-AZ-SA-161639	161639	28
CTM-LBI-BR-U-AZ-SP-166091	166091	29
CTM-LBI-BR-U-ZZ-SA-P-161496	161496	28
CTM-LBI-BR-U-ZZ-SA-P-161640	161640	28

Item	Order no.	Page	Item	Order no.	Page
CTP-I-AP-U-HA-ZZ-SA-136732	136732	62	M5X25/V100	073457	144
CTP-I-AP-U-HA-ZZE-SBB-159614	159614	61	S-B-08-A1-A1-165895	165895	19
CTP-I1-AP-U-HA-AEC-SA-136595	136595	62	S-B-09-A1-A1-165896	165896	19
CTP-I2-AP-U-HA-AZC-SA-126258	126258	62	S-C07-04-V02-165928	165928	26
CTP-L1-AP-M-HA-AE-SA-163003	163003	62	S-C07-04-V03-166488	166488	26
CTP-L1-AP-M-HA-AE-SH-123376	123376	63	Switch bracket	096613	140
CTP-L1-AP-M-HA-AZ-SA-124727	124727	62			
CTP-L1-AP-M-HA-AZ-SH-123365	123365	63			
CTP-L1-AP-U-HA-AE-SA-126912	126912	62			
CTP-L1-AP-U-HA-AE-SA-128484	128484	62			
CTP-L1-AP-U-HA-AE-SA-EX-156240	156240	63			
CTP-L1-AP-U-HA-AE-SH-123375	123375	63			
CTP-L1-AP-U-HA-AE-SII-127640	127640	61			
CTP-L1-AP-U-HA-AE-SII-129478	129478	61			
CTP-L1-AP-U-HA-AEE-SH-137342	137342	64			
CTP-L1-AP-U-HA-AES-SA-157112	157112	63			
CTP-L1-AP-U-HA-AZ-SA-EX-129512	129512	63			
CTP-L1-AP-U-HA-AZ-SA-124225	124225	62			
CTP-L1-AP-U-HA-AZ-SA-127727	127727	62			
CTP-L1-AP-U-HA-AZ-SA-EX-136675	136675	63			
CTP-L1-AP-U-HA-AZ-SH-123364	123364	63			
CTP-L1-AP-U-HA-AZ-SII-124468	124468	61			
CTP-L1-AP-U-HA-AZ-SII-129477	129477	61			
CTP-L1-AP-U-HA-AZE-SH-156056	156056	64			
CTP-L1-AP-U-HA-AZS-SA-157111	157111	63			
CTP-L1-AR-M-HA-AE-SAB-123308	123308	99			
CTP-L1-AR-M-HA-AE-SH-123374	123374	100			
CTP-L1-AR-M-HA-AES-SAB-157816	157816	99			
CTP-L1-AR-M-HA-AZ-SAB-123307	123307	99			
CTP-L1-AR-M-HA-AZ-SH-123363	123363	100			
CTP-L1-AR-U-HA-AE-SAB-122813	122813	99			
CTP-L1-AR-U-HA-AE-SH-123373	123373	100			
CTP-L1-AR-U-HA-AEE-SH-137164	137164	100			
CTP-L1-AR-U-HA-AZ-SAB-122812	122812	99			
CTP-L1-AR-U-HA-AZ-SH-123362	123362	100			
CTP-L1-AR-U-HA-AZE-SH-126874	126874	100			
CTP-L1-AR-U-HA-AZE-SH-137341	137341	100			
CTP-L1-AR-U-HA-AZS-SAB-160862	160862	99			
CTP-L2-AP-M-HA-AZ-SA-124729	124729	62			
CTP-L2-AP-M-HA-AZ-SH-123371	123371	63			
CTP-L2-AP-U-HA-AE-SA-136841	136841	62			
CTP-L2-AP-U-HA-AZ-SA-124728	124728	62			
CTP-L2-AP-U-HA-AZ-SH-123370	123370	63			
CTP-L2-AP-U-HA-AZE-SH-158402	158402	64			
CTP-L2-AR-M-HA-AZ-SAB-123361	123361	99			
CTP-L2-AR-M-HA-AZ-SH-123369	123369	100			
CTP-L2-AR-U-HA-AEE-SH-159112	159112	100			
CTP-L2-AR-U-HA-AZ-SAB-122814	122814	99			
CTP-L2-AR-U-HA-AZ-SH-123366	123366	100			
CTP-L2-AR-U-HA-AZE-SH-137165	137165	100			
CTP-LBI-AP-U-HA-AZ-SA-127798	127798	62			
EMP-B-CET	106694	143			
EMP-B1	093457	142, 143			
EMP-B2	093458	142			
EMP-L-CET	106695	143			
EMP-SB	093456	142			
ESM-CB-AZ-FI2-BR-IO-158875	158875	34			
GWY-CB-1-BR-IO-165049	165049	32			
M4X14-NIRO/V100	086232	144			
M4X14-NIRO/V20	071863	144			
M4X20-NIRO/V20	116978	144			
M5X10-NIRO/V100	073455	144			
M5X16/V100	073456	144			

## Index by order number

Order no.	Item	Page
071840	CES-A-BBA	38, 42, 82
071863	M4X14-NIRO/V20	144
073455	M5X10-NIRO/V100	144
073456	M5X16/V100	144
073457	M5X25/V100	144
074616		133
074617		133
077014	C-M23F19-19XDIFPU06,0-MA-077014	131
077015	C-M23F19-19XDIFPU08,0-MA-077015	131
077016	C-M23F19-19XDIFPU15,0-MA-077016	131
077018	C-M23F19-19XDIFPU06,0-MA-077018	132
077019	C-M23F19-19XDIFPU08,0-MA-077019	132
077020	C-M23F19-19XDIFPU15,0-MA-077020	132
077025		133
077026		133
077750	CES-A-C5E-01	38
077751	C-M12F08-08X025PV05,0-GA-077751	130
077752	C-M12F08-08X025PV10,0-GA-077752	130
077753	C-M12F08-08X025PV15,0-GA-077753	130
077871	C-M12F08-08X025PV20,0-GA-077871	130
077872	C-M12F08-08X025PV25,0-GA-077872	130
077873	C-M12F08-08X025PV50,0-GA-077873	130
082220	Bolt CES-A-C	136
084177		144
084703	C-M08F04-04X025PV10,0-ES-084703	121
085194	C-M23F19-19XDIFPU06,0-MA-085194	132
085195	C-M23F19-19XDIFPU08,0-MA-085195	132
085196	C-M23F19-19XDIFPU15,0-MA-085196	132
086232	M4X14-NIRO/V100	144
086236		144
087256		145
088786	CES-A-BCA	38, 42, 82
088812	C-M08F04-04X025PV02,0-ES-088812	121
088813	C-M08F04-04X025PV05,0-ES-088813	121
088814	C-M08F04-04X025PV10,0-ES-088814	121
088815	C-M08F04-04X025PV15,0-ES-088815	121
091458	CES-A-C5H-01	38
092726	C-M23F19-19XDIFPU20,0-MA-092726	131
092727	C-M23F19-19XDIFPU25,0-MA-092727	131
092761	C-M23F19-19XDIFPU01,5-MA-092761	131
092816	C-M23F19-19XDIFPU03,0-MA-092816	131
092898	C-M23F19-19XDIFPU10,0-MA-092898	131
092901	C-M23F19-19XDIFPU10,0-MA-092901	132
092902	C-M23F19-19XDIFPU10,0-MA-092902	132
092906	C-M23F19-19XDIFPU01,5-MA-092906	132
092907	C-M23F19-19XDIFPU01,5-MA-092907	132
092908	C-M23F19-19XDIFPU03,0-MA-092908	132
092909	C-M23F19-19XDIFPU03,0-MA-092909	132
092910	C-M23F19-19XDIFPU20,0-MA-092910	132
092911	C-M23F19-19XDIFPU20,0-MA-092911	132
092912	C-M23F19-19XDIFPU25,0-MA-092912	132
092913	C-M23F19-19XDIFPU25,0-MA-092913	132
093456	EMP-SB	142
093457	EMP-B1	142, 143
093458	EMP-B2	142
094309		133
094310		133
095035	C-M08F04-04X025PV25,0-ES-095035	121
095993	C-M23F19-19XDIFPU30,0-MA-095993	131
096327	CET-A-BWK-50X	74, 110
096613	Switch bracket	140

Order no.	Item	Page
097100	C-M08F04-04X025PV50,0-ES-097100	121
097525	CES-A-W5H-01	38
097627	AC-YD-SBB-097627	128
097645	AC-SP-SJ-097645	128
097747	AE-B-A1-02,0-F-097747	145
097945	CES-A-C5H-01-EX	38
098158	CES-A-BBA-EX-098158	38
098225	CES-AR-AES-12	116
098357	Bolt CES-A-C/F	136
098582	CES-AR-C01-EH-SA	82
098775	CES-A-BPA	38, 42, 82
098807		146
098808		146
098850		145
098941	CES-AR-C01-AH-SA	82
098942	CES-AR-C01-CH-SA	82
099434		144, 145
099795	AY-HDL-099795	145, 146
099877		145
100177	C-M12F08-08X025PV05,0-MA-100177	126
100178	C-M12F08-08X025PV10,0-MA-100178	126
100179	C-M12F08-08X025PV20,0-MA-100179	126
100180	C-M12F05-05X034PV05,0-M12M05-100180	123
100181	C-M12F05-05X034PV10,0-M12M05-100181	123
100182	C-M12F05-05X034PV20,0-M12M05-100182	123
100183	C-M12F05-05X034PV05,0-MA-100183	123
100184	C-M12F05-05X034PV10,0-MA-100184	123
100185	C-M12F05-05X034PV20,0-MA-100185	123
100250	CES-AP-C01-CH-SA-100250	42
100251	CES-A-BRN-100251	42, 82
100775	CES-AP-CR2-CH-SF-100775	45
100776	CES-A-BLN-R2-100776	45, 85
102125	CES-A-BPA-EX-102125	38
102490	C-M23F19-19XDIFPU40,0-MA-102490	131
103110		145
103418	CET1-AR-CRA-AH-50X-SG-103418	107
103450	CES-A-BLN-U2-103450	45, 85
103556	C-R08F06-06X014PV05,0-ES-103556	120
103557	C-R08F06-06X014PV10,0-ES-103557	120
103558	C-R08F06-06X014PV15,0-ES-103558	120
103559	C-R08F06-06X014PV20,0-ES-103559	120
103560	C-R08F06-06X014PV25,0-ES-103560	120
103714	AE-M-CET-103714	145
104028		137
104309	Bolt CET-A-C	141
104509	CES-AP-CL2-CH-SF-104509	45
104510	CES-A-BLN-L2-104510	45, 85
104730	CES-A-BDN-06-104730	45, 49, 85, 89
104776	CES-EA-TC-AK08-104776	134
105294	CES-AP-CL2-AH-SF-105294	44
105295	CES-AP-CR2-AH-SF-105295	44
105600	CES-AP-CR2-CH-L05-105600	45
105601	CES-AP-CR2-AH-L05-105601	44
105602	CES-AP-CL2-CH-L05-105602	45
105603	CES-AP-CL2-AH-L05-105603	44
105619		137
105745	CES-AR-CR2-CH-SA-105745	85
105746	CES-AR-CR2-AH-SA-105746	84
105747	CES-AR-CL2-CH-SA-105747	85
105748	CES-AR-CL2-AH-SA-105748	84
105750	CES-AR-CR2-CH-SG-105750	85



Order no.	Item	Page	Order no.	Item	Page
105751	CES-AR-CR2-AH-SG-105751	84	111145	CES-AP-C01-AH-SB-111145	42
105752	CES-AR-CL2-CH-SG-105752	85	111233	AE-B-A1-03,0F-111233	145
105753	CES-AR-CL2-AH-SG-105753	84	111346	CET3-AP-CRA-AH-50X-SH-111346	73
105763	CET1-AR-CRA-CH-50X-SG-105763	107	111603	C-M08F08-08X014PV20,0-ES-111603	122
105764	CET1-AR-CRA-CH-50S-SG-105764	107	111683	CET4-AR-CRA-AH-50X-SG-111683	108
105802	CET1-AR-CRA-AH-50S-SG-105802	107	111684	CET4-AR-CRA-CH-50X-SG-111684	108
106159	CET1-AR-CRA-AH-50F-SG-106159	107	111696	AC-YD-V0,2-SBB-111696	128
106172	Bolt CET-A-C/F	141	111708	CES-AP-C01-CH-SB-111708	42
106189	CES-AP-CR2-CH-L10-106189	45	111725	CET3-AR-CRA-AH-50F-SH-C2312-111725	110
106190	CES-AP-CL2-CH-L10-106190	45	111747	CES-AP-CL2-AH-SB-111747	44
106191	CES-AP-CR2-AH-L10-106191	44	111748	CES-AP-CR2-AH-SB-111748	44
106192	CES-AP-CL2-AH-L10-106192	44	112082	CET4-AP-CRA-AH-50X-SH-112082	73
106275	CET1-AR-CDA-AH-50X-SG-106275	107	112395	AC-YD-V1,0-SBB-112395	128
106350	Bolt CET-A-C/F C2282	141	112629	CES-EA-TC-KK08-112629	134
106550	CES-AP-CR2-CH-SB-106550	45	112992	CET3-AR-CRA-CH-50S-SG-112992	108
106551	CES-AP-CL2-CH-SB-106551	45	113022	CET1-AR-CRA-AH-50X-SH-C2290-113022	109
106552	CES-AP-CR2-AH-SB-106552	44	113023	CET3-AR-CRA-AH-50F-SH-C2353-113023	110
106553	CES-AP-CL2-AH-SB-106553	44	113024	CET3-AR-CRA-AH-50X-SH-C2290-113024	110
106616	CET1-AR-CRA-AH-50A-SG-106616	107	113081	CET4-AR-CRA-CH-50S-SG-113081	108
106671	C-M08F08-08X014PU05,0-ES-106671	122	113139	CET3-AR-CRA-AH-50X-SG-C2290-113139	108
106672	C-M08F08-08X014PU10,0-ES-106672	122	113148	CET3-AR-CRA-AH-50F-SH-113148	110
106673	C-M08F08-08X014PU20,0-ES-106673	122	113187	C-M12F05-05X025PU10,0-MA-113187	124
106694	EMP-B-CET	143	113188	C-M12F08-08X025PU10,0-MA-113188	127
106695	EMP-L-CET	143	113189	C-M12F08-08X025PU10,0-MA-113189	127
106798	CES-AP-C01-CH-SB-106798	42	113190	C-M12F05-05X025PU10,0-MA-113190	124
109015	CET1-AR-CRA-CH-50X-SG-C2290-109015	107	113255	CET1-AR-CDA-CH-50X-SH-113255	109
109044	CES-AR-CR2-CH-L05-109044	85	113609	CET4-AR-CRA-CH-50X-SG-C2355-113609	108
109045	CES-AR-CL2-CH-L05-109045	85	113620	C-M12F05-05X034PU05,0-MA-113620	124
109046	CES-AR-CR2-AH-L05-109046	84	113640	C-M12F05-05X034PU10,0-MA-113640	124
109047	CES-AR-CL2-AH-L05-109047	84	113682	C-M12F05-05X034PU20,0-MA-113682	124
109048	CES-AR-CR2-CH-L10-109048	85	113739	CEM-I2-AR-M-C40-SH-113739	94
109049	CES-AR-CL2-CH-L10-109049	85	113869	A-C40-113869	54, 94
109050	CES-AR-CR2-AH-L10-109050	84	113965	CET3-AR-CRA-AH-50F-SG-113965	108
109051	CES-AR-CL2-AH-L10-109051	84	113986		137
109075	CET2-AR-CRA-AH-50S-SG-109075	107	114073	CET3-AP-CRA-AH-50F-SH-114073	73
109167	CES-AP-CL2-CH-SB-109167	45	114088	CET3-AR-CRA-AH-50X-SH-C2290-114088	110
109168	CES-AP-CR2-CH-SB-109168	45	114090	CET3-AR-CDA-CH-50F-SG-114090	108
109212		144	114091	CET-DR	146
109231	CET1-AR-CDA-CH-50X-SG-109231	107	114650	CET4-AR-CRA-CH-50F-SG-114650	108
109358		137	114712	CET4-AR-CDA-CH-50X-SG-114712	108
109401	CET3-AR-CRA-AH-50X-SG-109401	108	115112	C-M12F08-08X025PU05,0-MA-115112	127
109672	Bolt CET-A-C-C2308	141	115113	C-M12F08-08X025PU10,0-MA-115113	127
109941	CET2-AR-CRA-CH-50F-SG-C2312-109941	107	115114	C-M12F08-08X025PU20,0-MA-115114	127
110082	CET2-AR-CRA-CH-50X-SG-110082	107	115116	C-M12F08-08X025PV30,0-MA-115116	126
110103	CET3-AR-CRA-AH-50X-SH-110103	110	115150	CES-IAP-U-C04-USI-115150	48
110104	CET3-AR-CRA-CH-50X-SH-110104	110	115202	CET3-AR-CRA-AH-50X-SH-C2375-115202	110
110114	CET3-AR-CRA-CH-50X-SG-C2290-110114	108	115257	C-M12F08-08X025PU30,0-MA-115257	127
110201	CET4-AR-CRA-AH-50X-SH-110201	110	115271	CES-A-BBN-C04-115271	49, 89
110202	CET4-AR-CRA-CH-50X-SH-110202	110	115324	CES-IAP-U-C04-SK-115324	48
110203	CET1-AR-CRA-AH-50X-SH-110203	109	115565	C-M12F05-05X025PU10,0-M12M05-115565	124
110204	CET1-AR-CRA-CH-50X-SH-110204	109	115566	C-M12F05-05X025PU10,0-M12M05-115566	124
110205	CET2-AR-CRA-AH-50X-SH-110205	109	115732		137
110206	CET2-AR-CRA-CH-50X-SH-110206	109	115792	CES-AR-CR2-CH-SA-115792	85
110240	CET2-AR-CRA-AH-50X-SG-110240	107	115793	CES-AR-CL2-CH-SA-115793	85
110241	CET1-AR-CRA-CH-50F-SG-110241	107	116049	C-M08F04-04X034PU05,0-ES-116049	121
110354		137	116050	C-M08F04-04X034PU10,0-ES-116050	121
110355		137	116051	C-M08F04-04X034PU20,0-ES-116051	121
110906	CET3-AR-CRA-CH-50X-SG-110906	108	116246		137
110907	CET3-AR-CRA-CH-50F-SG-110907	108	116285	CET4-AR-CRA-AH-50F-SH-116285	110
110933	C-M08F08-08X014PV05,0-ES-110933	122	116502	CES-IAP-U-C04-USB-116502	48
110934	C-M08F08-08X014PV10,0-ES-110934	122	116503	CES-IAP-U-C04-U05-116503	48
110935	C-M08F08-08X014PV15,0-ES-110935	122	116504	CES-IAP-U-C04-U10-116504	48
110943	CET1-AR-CRA-AH-50F-SH-C2312-110943	109	116505	CES-IAP-U-C04-U20-116505	48

Order no.	Item	Page
116978	M4X20-NIRO/V20	144
117323	CES-IAP-M-C04-USI-117323	49
117324	CES-IAP-M-C04-USB-117324	49
117325	CES-IAP-M-C04-SK-117325	49
117328	CES-IAP-M-C04-U05-117328	49
117329	CES-IAP-M-C04-U10-117329	49
117330	CES-IAP-M-C04-U20-117330	49
119106	CET3-AP-CRA-AH-50F-SH-C2312-119106	74
119469	CES-IAR-U-C04-SG-119469	88
119470	CES-IAR-U-C04-U05-119470	88
119471	CES-IAR-U-C04-U10-119471	88
119472	CES-IAR-U-C04-U20-119472	88
119473	CES-IAR-U-C04-USA-119473	88
119474	CES-IAR-M-C04-SG-119474	89
119475	CES-IAR-M-C04-U05-119475	89
119476	CES-IAR-M-C04-U10-119476	89
119477	CES-IAR-M-C04-U20-119477	89
119479	CES-IAR-M-C04-USA-119479	89
119690	AM-SET-PP-119690	142
119694	AM-SET-PPB-119694	142
119932	C-M12F05-05X034PU05,0-M12M05-119932	124
119947	C-M12F05-05X034PU10,0-M12M05-119947	124
119971	C-M12F05-05X034PU20,0-M12M05-119971	124
120241	C-M08F04-04X034PU50,0-ES-120241	121
120861	AC-DP-04-SAA-120861	129
120998	C-M12F08-08X025PU20,0-MA-120998	127
120999	C-M12F08-08X025PU20,0-MA-120999	127
121367	CET3-AP-CRA-AH-50X-SI-C2290-121367	73
121579	CET3-AP-CRA-CH-50X-SA-121579	74
121646		138
121917		144
122398	CET3-AP-CRA-AH-50X-SA-122389	74
122406	CET3-AP-CRA-AH-50X-SA-122406	74
122409	CET3-AP-CRA-CH-50X-SA-122409	74
122413	CET4-AP-CRA-CH-50X-SA-122413	74
122415	CET4-AP-CRA-AH-50X-SA-122415	74
122609	AE-L-CET-122609	145
122667	A-C-H-W-SST-122667	64, 101
122668	A-C-H-W-SST-122668	64, 101
122671	A-C-H-R-L-S-122671	64, 101
122672	A-C-H-R-R-L-S-122672	64, 101
122675	A-C-H-R-O-L-S-122675	64, 101
122676	A-C-H-R-U-L-S-122676	64, 101
122677	A-C-H-G-L-S-122677	140
122748	AC-TA-A1-SH-122748	134
122749	AC-TA-A2-SH-122749	134
122784	C-M12F05-05X034PU30,0-MA-122784	124
122812	CTP-L1-AR-U-HA-AZ-SAB-122812	99
122813	CTP-L1-AR-U-HA-AE-SAB-122813	99
122814	CTP-L2-AR-U-HA-AZ-SAB-122814	99
123307	CTP-L1-AR-M-HA-AZ-SAB-123307	99
123308	CTP-L1-AR-M-HA-AE-SAB-123308	99
123340	AC-SP-A1-SA-123340	129
123361	CTP-L2-AR-M-HA-AZ-SAB-123361	99
123362	CTP-L1-AR-U-HA-AZ-SH-123362	100
123363	CTP-L1-AR-M-HA-AZ-SH-123363	100
123364	CTP-L1-AP-U-HA-AZ-SH-123364	63
123365	CTP-L1-AP-M-HA-AZ-SH-123365	63
123366	CTP-L2-AR-U-HA-AZ-SH-123366	100
123369	CTP-L2-AR-M-HA-AZ-SH-123369	100
123370	CTP-L2-AP-U-HA-AZ-SH-123370	63
123371	CTP-L2-AP-M-HA-AZ-SH-123371	63
123373	CTP-L1-AR-U-HA-AE-SH-123373	100

Order no.	Item	Page
123374	CTP-L1-AR-M-HA-AE-SH-123374	100
123375	CTP-L1-AP-U-HA-AE-SH-123375	63
123376	CTP-L1-AP-M-HA-AE-SH-123376	63
123411	AE-L-C-H-123411	145
123430	C-M12M08-08X025PV01,0-M12F08-123430	126
123431	C-M12M08-08X025PV02,0-M12F08-123431	126
123432	C-M12M08-08X025PV05,0-M12F08-123432	126
123433	C-M12M08-08X025PV10,0-M12F08-123433	126
123583		138
123625	AE-L-C40-123625	144
123653	Bolt CTP-AC	139
123655	Bolt CTP-ACF	139
123657	Bolt CTP-GFK	139
123658	Bolt CTP-GFK-F	140
123659	Bolt BTC-CTP-S-TH-00-X	139
123660	Bolt BTC-CTP-S-TH-01-F	139
123922	CES-AP-CR2-CH-SB-123922	45
124104	CET1-AR-CRA-CH-50F-SH-C2312-124104	109
124204	AY-HDL-124204	145, 146
124225	CTP-L1-AP-U-HA-AZ-SA-124225	62
124401		137
124468	CTP-L1-AP-U-HA-AZ-SII-124468	61
124516	AC-YD-VO,2-SBB-124516	134
124589	CET3-AP-CRA-AH-50X-SIC2438-124589	73
124594	CET3-AP-CRA-AH-50F-SIC2438-124594	73
124601	CET3-AP-CRA-AH-50F-SA-124601	74
124727	CTP-L1-AP-M-HA-AZ-SA-124727	62
124728	CTP-L2-AP-U-HA-AZ-SA-124728	62
124729	CTP-L2-AP-M-HA-AZ-SA-124729	62
124937	CEM12-AR-U-C40-SH-124937	94
124979	AM-C-124979	146
125481	A-TI-001-125481	54, 94
125496	AC-TA-A1-SG-125496	134
125497	AC-TA-A2-SG-125497	134
126015	A-C-H-G-SST-126015	64, 101
126026	AMP-126026	142
126230	AM-B-126230	142
126231	AM-B-126231	142
126258	CTP12-AP-U-HA-AZC-SA-126258	62
126398	AMP-126398	143
126399	AMP-126399	143
126400	AMP-126400	143
126763	CET4-AP-CRA-AH-50X-SIC2438-126763	73
126874	CTP-L1-AR-U-HA-AZE-SH-126874	100
126912	CTP-L1-AP-U-HA-AE-SA-126912	62
127377	AF-E-80-127377	146
127460	AC-FM-AR-127460	135
127640	CTP-L1-AP-U-HA-AE-SII-127640	61
127727	CTP-L1-AP-U-HA-AZ-SA-127727	62
127798	CTP-LBI-AP-U-HA-AZ-SA-127798	62
128103	CEM12-AY-U-C40-SA-128103	54
128193	CET4-AR-CRA-AH-50X-SG-C2290-128193	108
128484	CTP-L1-AP-U-HA-AE-SA-128484	62
129477	CTP-L1-AP-U-HA-AZ-SII-129477	61
129478	CTP-L1-AP-U-HA-AE-SII-129478	61
129512	CTP-L1-AP-U-HA-AZ-SA-EX-129512	63
136595	CTP11-AP-U-HA-AEC-SA-136595	62
136675	CTP-L1-AP-U-HA-AZ-SA-EX-136675	63
136732	CTP1AP-U-HA-ZZ-SA-136732	62
136826	A-C-H-G-L-S-EX-136826	64
136841	CTP-L2-AP-U-HA-AE-SA-136841	62
137164	CTP-L1-AR-U-HA-AEE-SH-137164	100
137165	CTP-L2-AR-U-HA-AZE-SH-137165	100

Order no.	Item	Page	Order no.	Item	Page
137341	CTP-L1-AR-UHA-AZE-SH-137341	100	161524	CET3-AP-CRA-AH-50X-SF-161524	74
137342	CTP-L1-AP-UHA-AEE-SH-137342	64	161577	CET4-AP-CRA-AH-50X-SI-C2509-161577	73
137354	Bolt CTP-AC-C2308	139	161638	CTM-LBI-BR-U-AZ-SA-161638	28
137527	CES-A-BBN-C04-EX-137527	49, 89	161639	CTM-LBI-BR-U-AZ-SA-161639	28
137528	AM-C-C04-EX-137528	144	161640	CTM-LBI-BR-U-ZZ-SAP-161640	28
155865	AE SET LCHN A1 155865	145	161642	A-B-A1-A1-161642	19, 29
156056	CTP-L1-AP-UHA-AZE-SH-156056	64	161643	A-B-A1-A1-P-161643	19, 29
156064	C-M12F05-05X034PV50,0-MA-156064	123	161679	CES+AR-F-C04-SG-161679	89
156065	C-M12F08-08X025PV40,0-MA-156065	126	161742	CES-A-BDN-06-161742	49, 89
156230	CES-A-BTN-C07-156230	16, 24	161909	AC-YD-U0,2-SBB-161909	135
156233	CES+BR-M-C07-SA-156233	24	162555	CET4-AR-CRA-AH-50X-SG-C2355-162555	108
156240	CTP-L1-AP-UHA-AE-SA-EX-156240	63	162592	CES+AP-M-C04-USI-162592	49
156338	AY CHN A1 156338	145	162596	CES+AR-M-C14-U20-162596	92
156429	AE L CET 156429	145	162813	CES+BP-M-C07-SI-162813	16
156935	CES-A-BDA 18	42, 82	162815	CES+BP-U-C07-SI-162815	16
157111	CTP-L1-AP-UHA-AZS-SA-157111	63	163003	CTP-L1-AP-M-HA-AE-SA-163003	62
157112	CTP-L1-AP-UHA-AES-SA-157112	63	163252	CEM-M2-C60-KZ-SE-163252	58
157287	CET3-AP-CRA-CH-50F-SA-C2312-157287	74	163573	C-M12F05-05X034PU0,22-M12M05-163573	125
157408	CET3-AP-CRA-AH-50F-SI-C2312-157408	73	164196	Bolt BTM-UNIP-S-TH-01-F-164196	139
157549	CEM-I2-AY-U-C40-LZ-SA-157549	54	165049	GWY-CB-1-BR-IO-165049	32
157696	A-CH-G-SSS-157696	64, 101	165281	A-C60-B1-165281	58
157816	CTP-L1-AR-M-HA-AES-SAB-157816	99	165517	CTM-LBI-BR-MAZ-SA-165517	28
157913	AC-YD-SBB-157913	128	165746	CEM-M2-C60-PZ-SE-165746	58
157920	CES+BR-U-C07-SA-157920	24	165895	S-B-08-A1-A1-165895	19
158192	AC-YD-V0,2-SBB-158192	128	165896	S-B-09-A1-A1-165896	19
158193	AC-YD-V1,0-SBB-158193	128	165897	CTM-CBI-BP-U-AZ-SA-165897	18
158210	CES-A-BDN-06-158210	16, 24	165914	CES+BR-S-C07-SA-165914	26
158402	CTP-L2-AP-UHA-AZE-SH-158402	64	165928	S-C07-04-V02-165928	26
158436	A-C40-158436	54, 94	166087	CTM-LBI-BP-U-AZ-SA-166087	18
158631	CES+AP-M-C14-U20-158631	52	166088	CTM-LBI-BP-MAZ-SA-166088	18
158632	CES+AP-U-C14-U20-158632	52	166089	CTM-LBI-BP-U-AZ-SA-166089	18
158875	ESM-CB-AZ-FI2-BR-IO-158875	34	166090	CTM-LBI-BP-U-AZ-SA-166090	18
159080	AE-M-CET-159080	145	166091	CTM-LBI-BR-U-AZ-SP-166091	29
159112	CTP-L2-AR-UHA-AEE-SH-159112	100	166092	CTM-LBI-BR-MAZ-SP-166092	29
159355	C-M12F05-05X034PU1,0-M12M05-159355	124	166488	S-C07-04-V03-166488	26
159356	C-M12F05-05X034PU1,5-M12M05-159356	124			
159357	C-M12F05-05X034PU3,0-M12M05-159357	124			
159358	C-M12F05-05X034PU5,0-M12M05-159358	124			
159359	C-M12F05-05X034PU8,0-M12M05-159359	124			
159360	C-M12F05-05X034PU10,0-M12M05-159360	124			
159361	C-M12F05-05X034PU15,0-M12M05-159361	124			
159362	C-M12F05-05X034PU1,0-M12M05-159362	125			
159363	C-M12F05-05X034PU1,5-M12M05-159363	125			
159364	C-M12F05-05X034PU3,0-M12M05-159364	125			
159365	C-M12F05-05X034PU5,0-M12M05-159365	125			
159614	CTP+AP-UHA-ZZE-SBB-159614	61			
159919	C-M12F05-05X034PU8,0-M12M05-159919	125			
159920	C-M12F05-05X034PU10,0-M12M05-159920	125			
159921	C-M12F05-05X034PU15,0-M12M05-159921	125			
159951	Bolt BTM-UNIP-S-TH-00-X-159951	139			
160076	CES+BP-M-C07-SB-160076	16			
160080	CES+BP-U-C07-SB-160080	16			
160441	CES-A-BBN-C14-160441	52, 92			
160832	CES+AP-M-C04-USI-160832	49			
160862	CTP-L1-AR-UHA-AZS-SAB-160862	99			
161164		144			
161178	CET4-AP-CRA-CH-50F-SA-161178	74			
161320	CEM-M2-C60-PZ-SE-161320	58			
161322	A-C60-A1-161322	58			
161344	AM-C-SW4-V3-161344	144			
161348	AM-C-SW5-V3-161348	144			
161496	CTM-LBI-BR-U-ZZ-SA-P-161496	28			
161502	CES-A-BBN-161502	49, 89			

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