

Safety Switches with AS-Interface



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**

Safety Switches with AS-Interface

General	4
Safety Switches Type 1, Metal Housing	5
Safety switch NZ with integrated actuator	5
Safety Switches Type 2, Metal Housing	6
Safety switch NZ.VZ	6
Safety switch TZ with guard locking and guard lock monitoring	7
Safety switch TX with guard locking and guard lock monitoring	9
Safety switch STA with guard locking and guard lock monitoring	10
Safety Switches Type 2, Plastic Housing	12
Safety switch GP	12
Safety switch TP with guard locking	13
Safety switch STP with guard locking and guard lock monitoring	14
Safety switch STP-TW with guard locking and guard lock monitoring	15
Enabling switches ZSA and ZSB	16
Magnetically Coded Safety Switches CMS	17
Transponder-Coded Safety Switches	18
Key adapter CKS...AS	18
Safety switch CES-AS-C04	19
Safety switch CET with guard locking and guard lock monitoring	20
Safety switch CTP with guard locking and guard lock monitoring	21
Safety Monitors	22
Safety monitors SFM	22
Safe output SOM	23
Safety monitor GMOx With Integrated Gateway	24
Accessories for Safety Switches	25
Accessories for Monitors	26
Technical Data	28
Item Index	48

AS-Interface Safety at Work in safety engineering

AS-Interface (AS-i) is a low-level bus system that is used for the transfer of small data volumes. It is particularly suitable where digital signals must be collected in the field. The bus is very easy to set up and does not require any special programming tools. Simple address setting of the subscribers and an AS-i master are all that is needed.

Based on this AS-Interface for automating a machine, a safe bus system can be set up using a small safety control system (AS-i Safety at Work Monitor). Various versions of the control system are available on the market. Most control systems offer a connection to a higher-level bus such as PROFINET in addition to the connection to one or two AS-i bus systems.

Any safety components from various manufacturers can be connected to the AS-i bus. Device compatibility is always guaranteed. When connecting an AS-Interface Safety at Work device, it is important not only to ensure compatibility with the bus, but also to facilitate compliance with the Machinery Directive. AS-Interface certification ensures that the bus subscribers comply with the same standards that apply to the bus.

Safety engineering programming for the monitor is performed with the AsiMon software. Additionally, this software is used to make all settings required for the safety components in the monitor. AsiMon features a comprehensive diagnostic function for setup and for any required servicing use. The monitor thus represents the core of the entire safety system.

AS-i is based on very simple 2-wire technology, ruling out mistakes during wiring of an installation or machine. The diagnostic functions offered by the bus and monitor enable very rapid error detection if necessary. Consequently, setup can be performed directly after the planning phase and the creation of the safety engineering program.

The highly effective diagnostic function of the bus is also useful during operation. Should an error occur during operation, all states can be detected and displayed in the control system. Most EUCHNER safety switches have freely controllable visualization LEDs that can be used for an effective diagnostic function. Any installation standstills can thus be remedied quickly.

Operation of AS-Interface Safety at Work

Any required replacement of faulty components is very easy with AS-Interface Safety at Work. A faulty bus subscriber is removed from the bus during operation and a new, identical device (with address 0) is plugged onto the bus as a replacement. The AS-i Monitor sets up this device automatically at the push of a button. Devices can therefore be replaced quickly and without using a programming device. It is even possible to replace the monitor with a new device without the use of a computer. Here too, a new device and the *push of a button* are all that is needed to get the installation up and running again.

Thanks to the many advantages of AS-Interface Safety at Work and the large selection of different safety components, this system is also highly useful as an autonomous safety system within an installation that uses a higher-level fieldbus. In particular, AS-i Safety at Work is characterized by a simple but effective diagnostic function.

EUCHNER safety switches maximize all of the features that the bus has to offer. Safety switches with guard locking not only report the position of the movable guard to the control system, for example; they additionally distinguish and signal the position of the guard locking with respect to the door position. This enables complete visualization of the safety guard.

With EUCHNER switches, guard locking is controlled via the bus. The separate supply cable for the auxiliary power enables the guard locking to be activated as a safe channel as well. This is an important function, because control of guard locking is increasingly becoming relevant for safety.

Many switches have integral LEDs on the front; these LEDs can be freely controlled via the bus. On-site diagnostics can therefore be performed with the control system without the need for additional wiring.

Diverse safety components

EUCHNER offers a wide range of different safety engineering devices. These include everything from simple safety switches in plastic that serve as interlocks and a large selection of guard locking devices in plastic and metal to products based on the latest technological developments involving state-of-the-art transponder technology used in guard locking devices. One particularly noteworthy highlight is the access system CKS with qualified safety engineering, which enables the implementation of diverse applications up to PL e according to EN ISO 13849-1.

Safety switch NZ with integrated actuator



- ▶ Version A acc. to EN 50041 NZ.HS (steel roller \varnothing 18)
- ▶ Version C acc. to EN 50041 NZ.RS (steel roller \varnothing 12 mm)



Approach direction

Version A acc. to EN 50041 NZ.HS/NZ.PS



Horizontal
Switch head and lever arm can be adjusted in 90° steps.

Switching direction

Right, left or both sides.

Version C acc. to EN 50041 NZ.RS



Horizontal
Adjustable in 90° steps.

AS-Interface inputs

- ▶ **D0, D1** Positively driven contact 1
 - ▶ **D2, D3** Positively driven contact 2
- Evaluation is performed via a safety monitor.

AS-Interface outputs

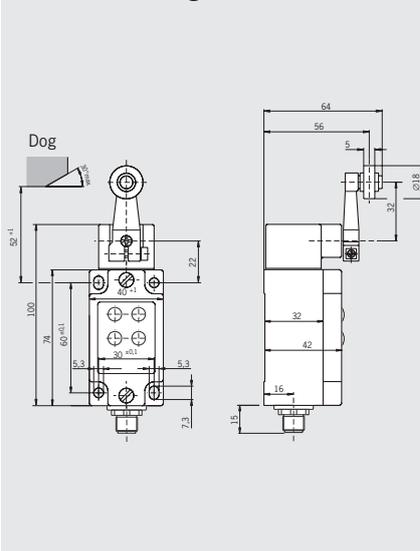
- ▶ **D1** Red LED
- ▶ **D2** Green LED

LED function display

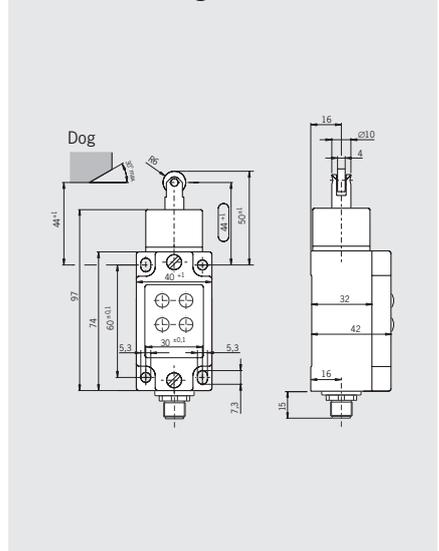
- ▶ The *Power* LED indicates the operating voltage on the bus.
- ▶ The *Fault* LED indicates if a fault has been detected on the AS-Interface bus.
- ▶ The green and the red LEDs can be controlled as required by the control system via the bus using bits D1 and D2.

Plug connector M12 4-pin

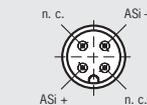
Dimension drawing for NZ.HS



Dimension drawing for NZ.RS



Connector assignment



View of connection side

Please order actuator and connection material separately.
For detailed information and suitable accessories, enter the order number for the product in the search box at www.euchner.com.

Ordering table

Series	Connection	Actuator	Switching element	Order no./item
NZ	SEM 4 Plug connector M12	HS Lever arm Steel roller \varnothing 18	2 NC \ominus	095201 NZ2HS-538SEM4AS1
		RS Roller plunger Steel roller \varnothing 12	2 NC \ominus	095046 NZ2RS-538SEM4AS1

Safety switch NZ.VZ

- ▶ Housing according to EN 50041



Approach direction

- ▶ Horizontal
- ▶ Adjustable in 90° steps.

AS-Interface inputs

- ▶ **D0, D1** Positively driven contact 1
 - ▶ **D2, D3** Positively driven contact 2
- Evaluation is performed via a safety monitor.

AS-Interface outputs

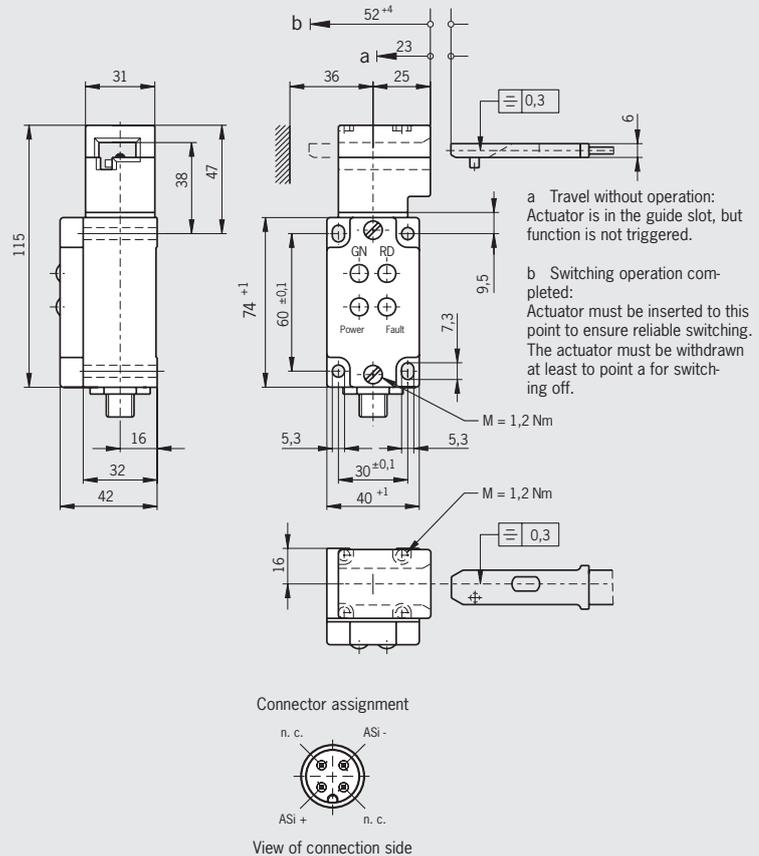
- ▶ **D1** Red LED
- ▶ **D2** Green LED

LED function display

- ▶ The *Power* LED indicates the operating voltage on the bus.
- ▶ The *Fault* LED indicates if a fault has been detected on the AS-Interface bus.
- ▶ The green and the red LEDs can be controlled as required by the control system via the bus using bits D1 and D2.

Plug connector M12 4-pin

Dimension drawing



Please order actuator and connection material separately. For detailed information and suitable accessories, enter the order number for the product in the search box at www.euchner.com.

Ordering table

Series	Connection	Actuator	Switching element	Order no./item
NZ	SEM 4 Plug connector M12	VZ Separate actuator	2 NC ⇄	090742 NZ2VZ-538ESEM4-AS1

Safety switch TZ with guard locking and guard lock monitoring



- ▶ Auxiliary release on the front
- ▶ Actuator head mounted on the left or right



Auxiliary release

This is used for releasing the guard locking with the aid of a tool. A seal and auxiliary tool are fitted to protect against tampering.

Guard locking types

- TZ1** Closed-circuit current principle, guard locking by spring force. Release by control of AS-i output O.
- TZ2** Open-circuit current principle, guard locking by control of AS-i output O. Release by spring force.

Control of the guard locking solenoid

The guard locking solenoid is controlled by the control system via AS-Interface system via AS-Interface bus bit D0. In addition, the 24V connection can be switched safely.

AS-Interface inputs

- ▶ **D0, D1** Door monitoring contact SK
 - ▶ **D2, D3** Solenoid monitoring contact ÜK
- Evaluation is performed via a safety monitor.

AS-Interface outputs

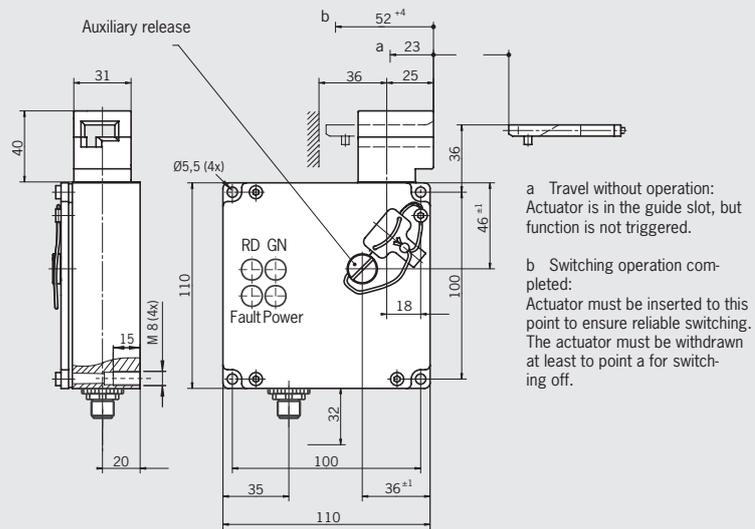
- ▶ **D0** Guard locking solenoid
- ▶ **D1** Red LED
- ▶ **D2** Green LED

LED function display

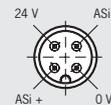
- ▶ The *Power* LED indicates the operating voltage on the bus.
- ▶ The *Fault* LED indicates if a fault has been detected on the AS-Interface bus.
- ▶ The green and the red LEDs can be controlled as required by the control system via the bus using bits D1 and D2.

Plug connector M12
4-pin

Dimension drawings (actuator head on the left is a mirror image)



Connector assignment



View of connection side

Please order actuator and connection material separately.
For detailed information and suitable accessories, enter the order number for the product in the search box at www.euchner.com.

Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Order no./item
TZ	SEM 4 Plug connector M12	1 mechanical	LE left	SK: 1 NC ⊕ ÜK: 1 NC ⊖	086140 TZ1LE024SEM4AS1
			RE right	SK: 1 NC ⊖ ÜK: 1 NC ⊕	086141 TZ1RE024SEM4AS1
		2 electrical	LE left	SK: 1 NC ⊕ ÜK: 1 NC ⊖	086990 TZ2LE024SEM4AS1
			RE right	SK: 1 NC ⊖ ÜK: 1 NC ⊕	086991 TZ2RE024SEM4AS1

Safety switch STA with guard locking and guard lock monitoring



- ▶ Auxiliary release on the front



Auxiliary release

This is used for releasing the guard locking with the aid of a tool.

Guard locking type

STA3 Closed-circuit current principle, guard locking by spring force. Release by control of AS-i output 0.

STA4 Open-circuit current principle, guard locking by control of AS-i output 0. Release by spring force.

Control of the guard locking solenoid

The guard locking solenoid is controlled by the control system via AS-Interface bus bit D0. In addition, the 24V connection can be switched safely.

AS-Interface inputs

- ▶ **D0, D1** Door monitoring contact SK
 - ▶ **D2, D3** Solenoid monitoring contact ÜK
- Evaluation is performed via a safety monitor.

AS-Interface outputs

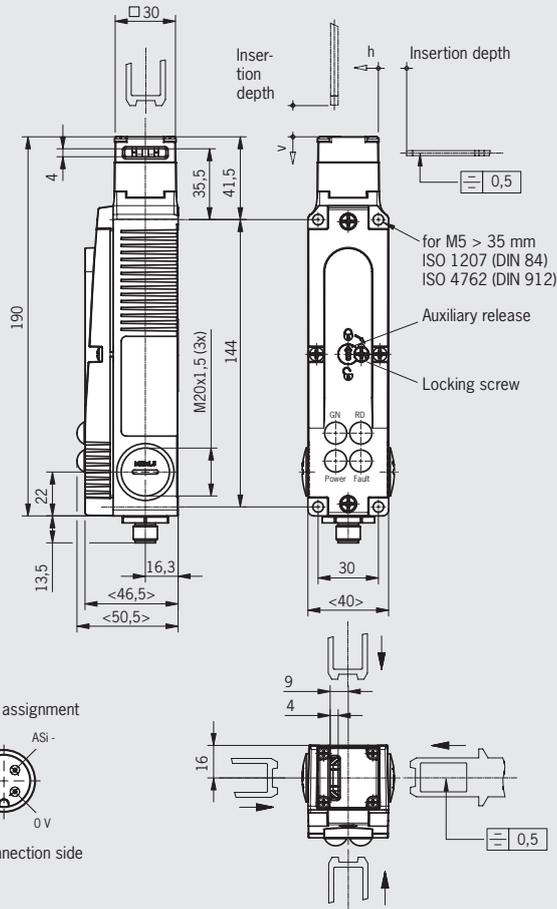
- ▶ **D0** Guard locking solenoid
- ▶ **D1** Red LED
- ▶ **D2** Green LED

LED function display

- ▶ The *Power* LED indicates the operating voltage on the bus.
- ▶ The *Fault* LED indicates if a fault has been detected on the AS-Interface bus.
- ▶ The green and the red LEDs can be controlled as required by the control system via the bus using bits D1 and D2.

Plug connector M12
4-pin

Dimension drawing



Please order actuator and connection material separately. For detailed information and suitable accessories, enter the order number for the product in the search box at www.euchner.com.

Ordering table

Series	Connection	Guard locking	Switching element	Order no./item
STA	SEM 4 Plug connector M12	3 mechanical	SK: 1 NC ⊖ ÜK: 1 NC ⊖	098993 STA3A-4141A024SEM4AS1
		4 electrical	SK: 1 NC ⊖ ÜK: 1 NC ⊖	105305 STA4A-4141A024SEM4AS1

Safety switches STA with guard locking and guard lock monitoring



- ▶ Escape release on the rear
- ▶ Auxiliary release on the front



Auxiliary release

This is used for releasing the guard locking with the aid of a tool.

Escape release (C1993, long actuator shaft)

This is used for manual release of guard locking from the danger zone without tools. With identification of On/Off position.

Guard locking type

STA3 Closed-circuit current principle, guard locking by spring force. Release by control of AS-i output 0.

Control of the guard locking solenoid

The guard locking solenoid is controlled by the control system via AS-Interface bus bit D0. In addition, the 24V connection can be switched safely.

AS-Interface inputs

- ▶ **D0, D1** Door monitoring contact SK
 - ▶ **D2, D3** Solenoid monitoring contact UK
- Evaluation is performed via a safety monitor.

AS-Interface outputs

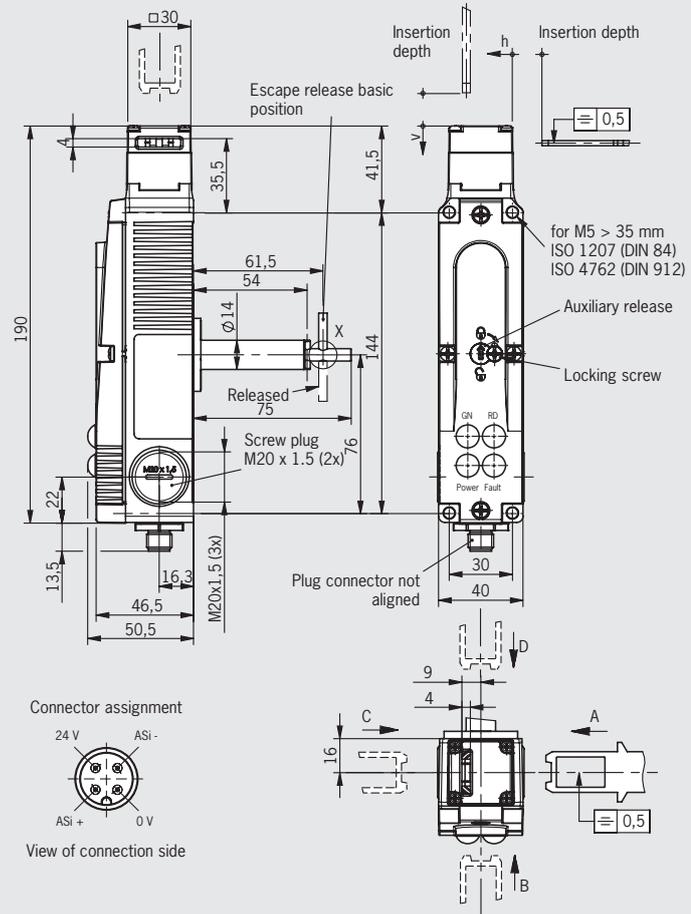
- ▶ **D0** Guard locking solenoid
- ▶ **D1** Red LED
- ▶ **D2** Green LED

LED function display

- ▶ The *Power* LED indicates the operating voltage on the bus.
- ▶ The *Fault* LED indicates if a fault has been detected on the AS-Interface bus.
- ▶ The green and the red LEDs can be controlled as required by the control system via the bus using bits D1 and D2.

Plug connector M12 4-pin

Dimension drawing



Please order actuator and connection material separately. For detailed information and suitable accessories, enter the order number for the product in the search box at www.euchner.com.

Ordering table

Series	Connection	Guard locking	Switching element	Order no./item
STA	SEM 4 Plug connector M12	3 mechanical	SK: 1 NC ⊖ UK: 1 NC ⊖	119732 STA3A-4141A024SEM4AS1C1993

Safety switch GP



- ▶ External LED function display optional



Approach direction



Can be adjusted horizontally and vertically in 90° steps.

AS-Interface inputs

- ▶ **D0, D1** Positively driven contact 1
 - ▶ **D2, D3** Positively driven contact 2
- Evaluation is performed via a safety monitor.

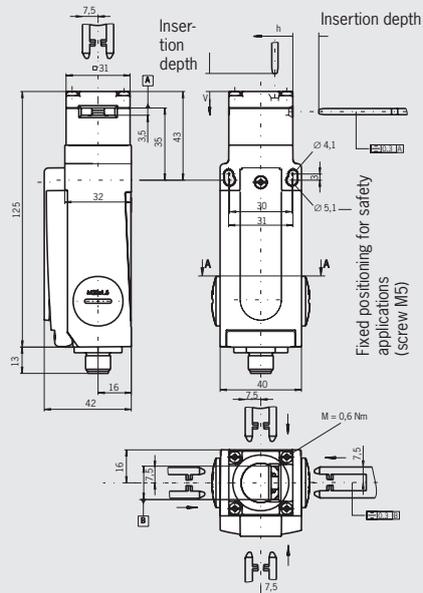
LED function display

Internal with open cover

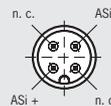
- ▶ The *Power* LED indicates the operating voltage on the bus.
- ▶ The *Fault* LED indicates if a fault has been detected on the AS-Interface bus.

GP, plug connector M12 4-pin

Dimension drawing



Connector assignment



View of connection side

Please order actuator and connection material separately.
For detailed information and suitable accessories, enter the order number for the product in the search box at www.euchner.com.

Ordering table

Series	Connection	Switching element	LED function display	Order no./item
GP	SEM 4 Plug connector M12	2 NC ⊖	internal	091193 GP3-538ASEM4AS1

Safety switch TP with guard locking



- ▶ Auxiliary release on the front
- ▶ Increased horizontal overtravel
- ▶ Optionally without guard lock monitoring



Auxiliary release

This is used for releasing the guard locking with the aid of a tool.

Guard locking types

TP3 Closed-circuit current principle, guard locking by spring force. Release by control of AS-i output O.

TP4 Open-circuit current principle, guard locking by control of AS-i output O. Release by spring force.

Control of the guard locking solenoid

The guard locking solenoid is controlled by the control system via AS-Interface bus bit D0. In addition, the 24V connection can be switched safely.

AS-Interface inputs, version AS1

- ▶ **D0, D1** Door monitoring contact SK
- ▶ **D2, D3** Solenoid monitoring contact ÜK

AS-Interface inputs, version AS2

- ▶ **D0, D1** Door monitoring contact SK 1
- ▶ **D2, D3** Door monitoring contact SK 2

Evaluation is performed via a safety monitor.

AS-Interface outputs

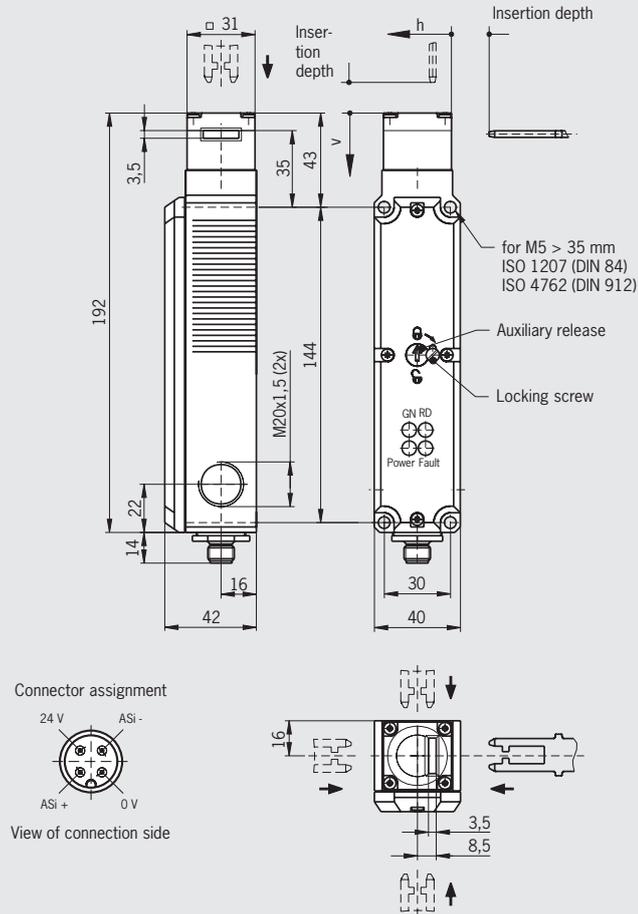
- ▶ **D0** Guard locking solenoid
- ▶ **D1** Red LED
- ▶ **D2** Green LED

LED function display

- ▶ The *Power* LED indicates the operating voltage on the bus.
- ▶ The *Fault* LED indicates if a fault has been detected on the AS-Interface bus.
- ▶ The green and the red LEDs can be controlled as required by the control system via the bus using bits D1 and D2.

Plug connector M12
4-pin

Dimension drawing



Please order actuator and connection material separately.
For detailed information and suitable accessories, enter the order number for the product in the search box at www.euchner.com.

Ordering table

Series	Connection	Guard locking	Switching element	Version	Order no./item
TP	SEM 4 Plug connector M12	3 mechanical	SK: 1 NC ⊖ ÜK: 1 NC ⊖	AS1 with guard lock monitoring	088256 TP3-4141A024SEM4AS1
		4 electrical	SK: 1 NC ⊖ ÜK: 1 NC ⊖	AS1 with guard lock monitoring	088257 TP4-4141A024SEM4AS1
			SK: 2 NC ⊖	AS2 without guard lock monitoring	091676 TP4-4141A024SEM4AS2

Safety switch STP with guard locking and guard lock monitoring



- ▶ Actuating head made of metal
- ▶ Auxiliary release on the front



Auxiliary release

This is used for releasing the guard locking with the aid of a tool.

Guard locking types

STP3 Closed-circuit current principle, guard locking by spring force. Release by control of AS-i output 0.

STP4 Open-circuit current principle, guard locking by control of AS-i output 0. Release by spring force.

Control of the guard locking solenoid

The guard locking solenoid is controlled by the control system via AS-Interface bus bit D0. In addition, the 24V connection can be switched safely.

AS-Interface inputs

- ▶ **D0, D1** Door monitoring contact SK
 - ▶ **D2, D3** Solenoid monitoring contact ÜK
- Evaluation is performed via a safety monitor.

AS-Interface outputs

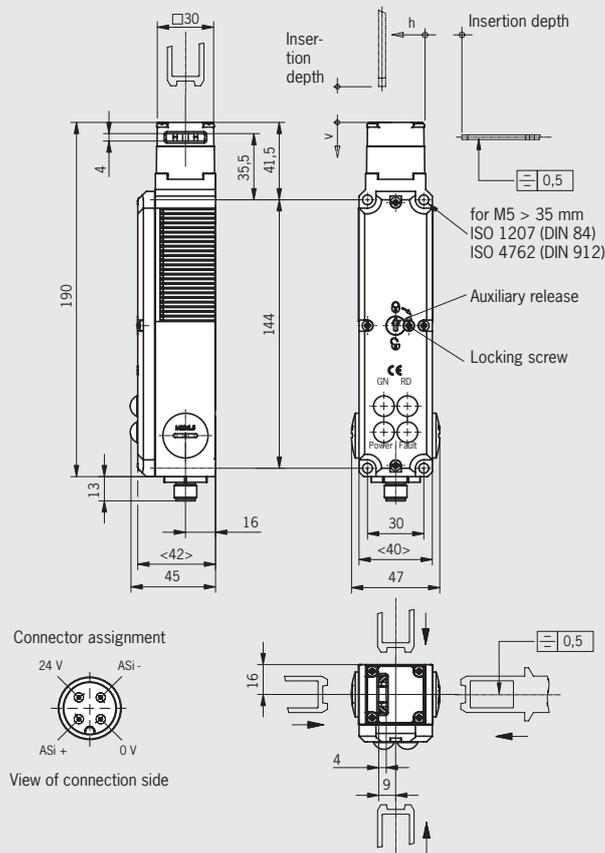
- ▶ **D0** Guard locking solenoid
- ▶ **D1** Red LED
- ▶ **D2** Green LED

LED function display

- ▶ The *Power* LED indicates the operating voltage on the bus.
- ▶ The *Fault* LED indicates if a fault has been detected on the AS-Interface bus.
- ▶ The green and the red LEDs can be controlled as required by the control system via the bus using bits D1 and D2.

Plug connector M12
4-pin

Dimension drawing



Please order actuator and connection material separately. For detailed information and suitable accessories, enter the order number for the product in the search box at www.euchner.com.

Ordering table

Series	Connection	Guard locking	Switching element	Order no./item
STP	SEM 4 Plug connector M12	3 mechanical	SK: 1 NC ⊕ ÜK: 1 NC ⊕	097790 STP3A-4141A024SEM4AS1
		4 electrical	SK: 1 NC ⊕ ÜK: 1 NC ⊕	097789 STP4A-4141A024SEM4AS1

Safety switch STP-TW with guard locking and guard lock monitoring



- ▶ Two actuating heads made of metal
- ▶ Auxiliary release on the front
- ▶ Auxiliary key release optional



Function

In the safe state, both actuators must be inserted into the switch head.

Auxiliary release

This is used for releasing the guard locking with the aid of a tool.

Guard locking types

STP-TW3 Closed-circuit current principle, guard locking by spring force. Release by control of AS-i output 0.

Control of the guard locking solenoid

The guard locking solenoid is controlled by the control system via AS-Interface bus bit D0. In addition, the 24V connection can be switched safely.

AS-Interface inputs

- ▶ **D0, D1** Door monitoring contact SK
 - ▶ **D2, D3** Solenoid monitoring contact ÜK
- Evaluation is performed via a safety monitor.

AS-Interface outputs

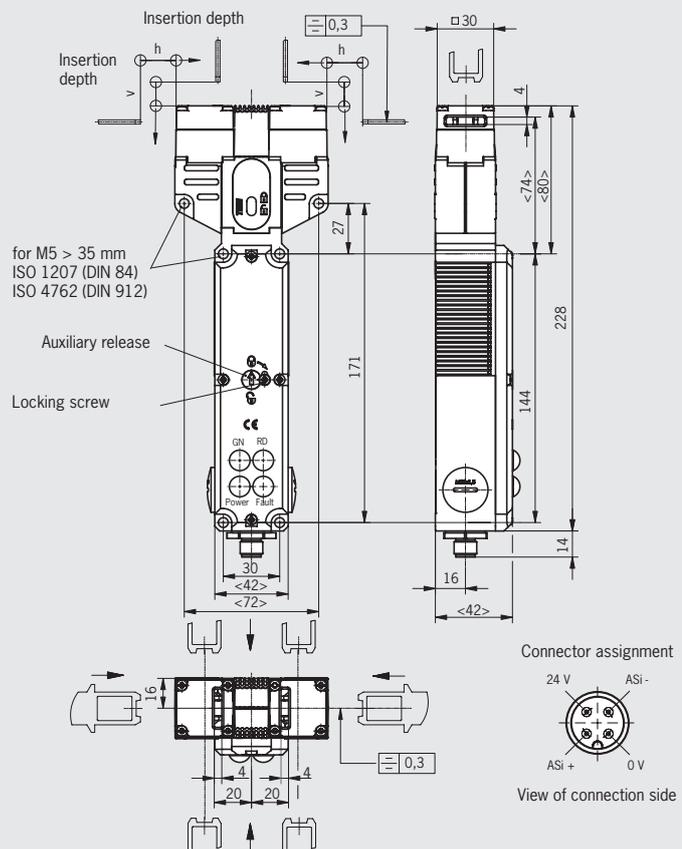
- ▶ **D0** Guard locking solenoid
- ▶ **D1** Red LED
- ▶ **D2** Green LED

LED function display

- ▶ The *Power* LED indicates the operating voltage on the bus.
- ▶ The *Fault* LED indicates if a fault has been detected on the AS-Interface bus.
- ▶ The green and the red LEDs can be controlled as required by the control system via the bus using bits D1 and D2.

Plug connector M12
4-pin

Dimension drawing



Please order actuator and connection material separately.
For detailed information and suitable accessories, enter the order number for the product in the search box at www.euchner.com.

Ordering table

Series	Connection	Guard locking	Switching element	Order no./item
STP-TW	SEM 4 Plug connector M12	3 mechanical	SK: 1 NC ⊕ ÜK: 1 NC ⊕	102354 STP-TW-3A-4141AC024SEM4AS1
		4 electrical	SK: 1 NC ⊕ ÜK: 1 NC ⊕	109813 STP-TW-4A-4141AC024SEM4AS1

Enabling switches ZSA and ZSB



- ▶ Housing G1
- ▶ 3-stage function
- ▶ Positively driven contacts
- ▶ Dual-channel version
- ▶ Optionally with 2 pushbuttons (+ and -)



3-stage function

Enabling function is active only in the second stage (center position, actuating point). Enabling is canceled when the pushbutton is released or pushed all the way down (panic function).

+ and - buttons

These pushbuttons can be configured individually. For example, for moving axes in positive or negative direction.

AS-Interface inputs

- ▶ **D0, D1** NO contact E1
- ▶ **D2, D3** NO contact E2

Evaluation is performed via a safety monitor.

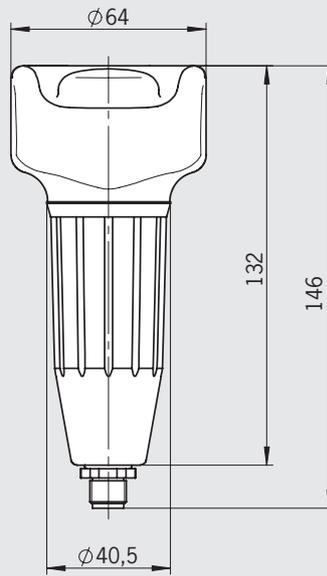
AS-Interface parameters

The pushbuttons (+ and -) are transferred when the AS-i parameters are read.

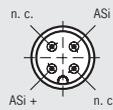
- ▶ **P0** Parameter bit, Plus button
- ▶ **P1** Parameter bit, Minus button

ZSA, 3-stage function Plug connector M12, 4-pin

Dimension drawings



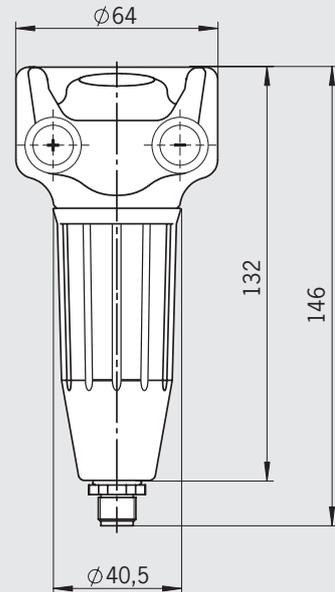
Connector assignment



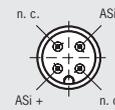
View of connection side

Please order actuator and connection material separately. For detailed information and suitable accessories, enter the order number for the product in the search box at www.euchner.com.

ZSB, 3-stage function Plug connector M12, 4-pin



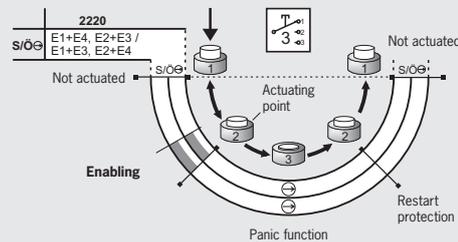
Connector assignment



View of connection side

Please order actuator and connection material separately. For detailed information and suitable accessories, enter the order number for the product in the search box at www.euchner.com.

Function sequence



Contact
 □ open
 ■ closed
 ■ closed, enabling

Ordering table

Series	Connection	Switching element	Switching element	Order no./item
G1 3-stage	SEM 4 Plug connector M12	2 NO 3-stage		091580 ZSA2B2CAS1
			2 pushbuttons (+ and -)	096703 ZSB2B7CAS1

Magnetically coded safety switch CMS...AS1

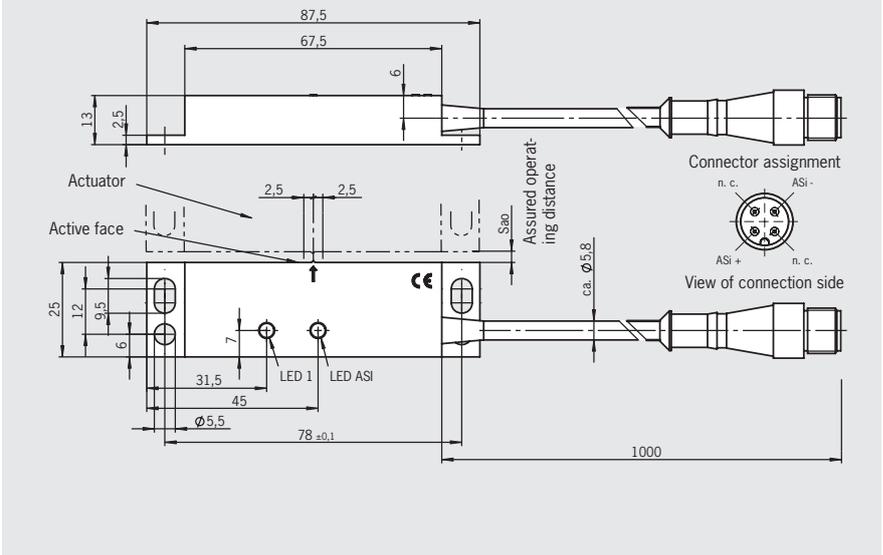


- ▶ Safety switch with integrated read head and integrated evaluation unit.
- ▶ LED diagnostic displays optional

Safety switch CMS-R-AZA-01PL-AS1 / actuator CMS-M-AC
 Plug connector M12, operating distance 9 mm



Dimension drawing



Actuator

An appropriate actuator to suit the safety switch selected is required. The dimensions of the actuators are the same as those of the safety switches, although the former have no connecting cable.

AS-Interface inputs

- ▶ **D0 - D3** Switch actuated/open
 Evaluation is performed via a safety monitor.

AS-Interface outputs

- ▶ **D1** LED 1 on read head
 (only CMS-R-AZA...)

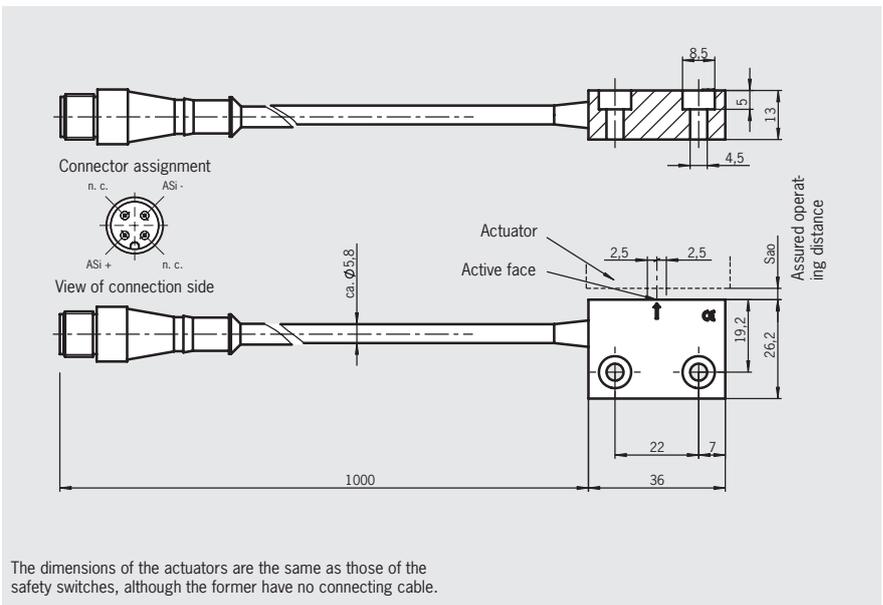
LED function display (only CMS-R-AZA...)

- ▶ The ASI LED (dual red/green LED) displays the colors red, green and yellow. The status of the switch and the bus is indicated via this LED.
- ▶ LED 1 can be connected via the AS-Interface bus, e.g. to indicate the door state.

Principle of operation

Reed contacts are installed in the CMS safety switch. The contact blades on the reed contacts are closed under the influence of the magnetic field from the actuator. The safety switch reacts only to a corresponding mating component, i.e. a certain actuator is assigned to each safety switch.

Safety switch CMS-R-BZB-01P-AS1 / actuator CMS-M-BH
 Plug connector M12, operating distance 7 mm



Ordering table

Series	Connection	LED	Assured operating distance S_{ao} [mm]	Order no./item	
				Safety switch	Related actuator
CMS	Connecting cable PUR, length 1 m, with plug connector M12	•	9	105090 CMS-AZA-01PL-AS1	084592 CMS-M-AC
		–	7	105094 CMS-RBZB-01P-AS1	092025 CMS-M-BH



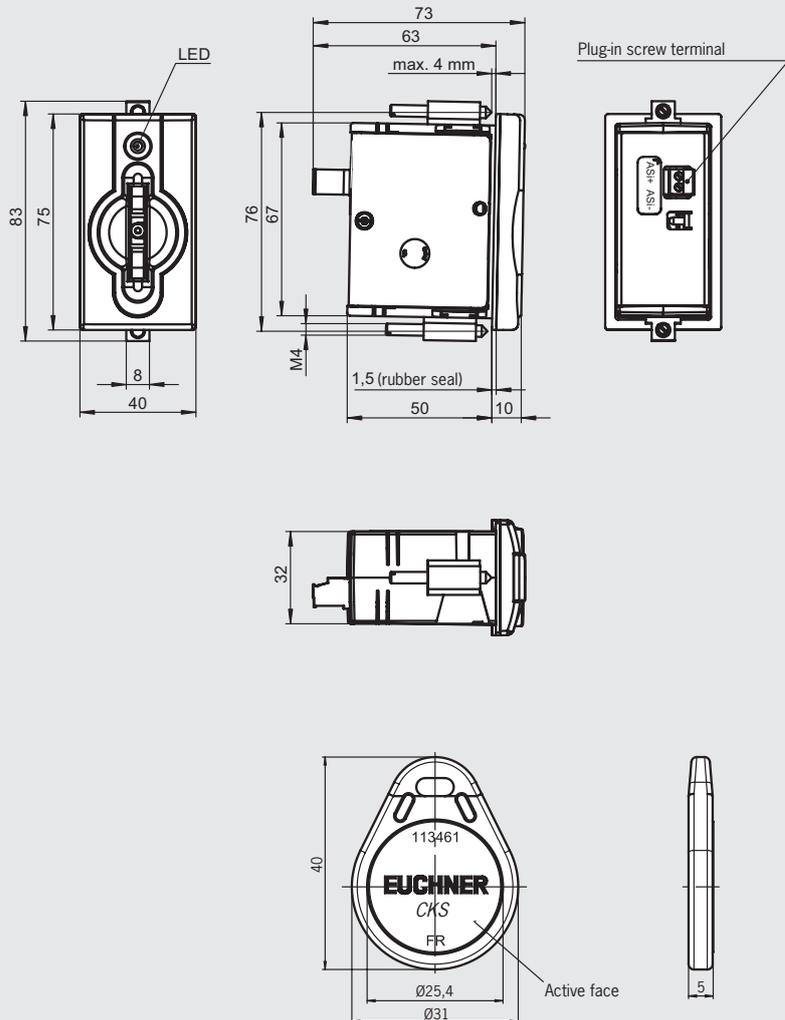
Key adapter CKS...AS

- ▶ Key adapter with integrated CES read head
- ▶ Integrated diagnostic LEDs
- ▶ Up to category 4 / PL e according to EN ISO 13849-1



Key adapter CKS...AS
Plug-in screw terminal, 2-pin

Dimension drawing



Unicode evaluation

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

AS-Interface inputs

- ▶ Key inserted:
D0, D1, D2, D3 Code sequence
- ▶ Key withdrawn:
D0, D1, D2, D3 Zero sequence

Evaluation is performed via a safety monitor.

LED indicator

- ▶ Green: key inserted
- ▶ Yellow: readiness for operation
- ▶ Red: error

Ordering table

Series	Connection	Description	Order no./item
CKS	Plug-in screw terminal, 2-pin	Key adapter CKS with AS-Interface	123592 CKS-KAS2A-U-C20-PC-123592
		Key CKS, red	113461 CKS-ABK1-RD-113461

Safety switch CES-AS-C04



- ▶ Very compact design with 3 active faces
- ▶ Integrated diagnostic LEDs
- ▶ Up to category 4 / PL e according to EN ISO 13849-1



Unicode evaluation

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

Multicode evaluation

The safety switch recognizes all EUCHNER actuators as valid actuators.

AS-Interface inputs

- ▶ **DO - D3** Door monitoring contact

Evaluation is performed via a safety monitor.

LED indicator

- ▶ STATE green
- ▶ DIA red

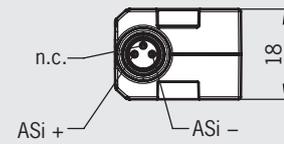
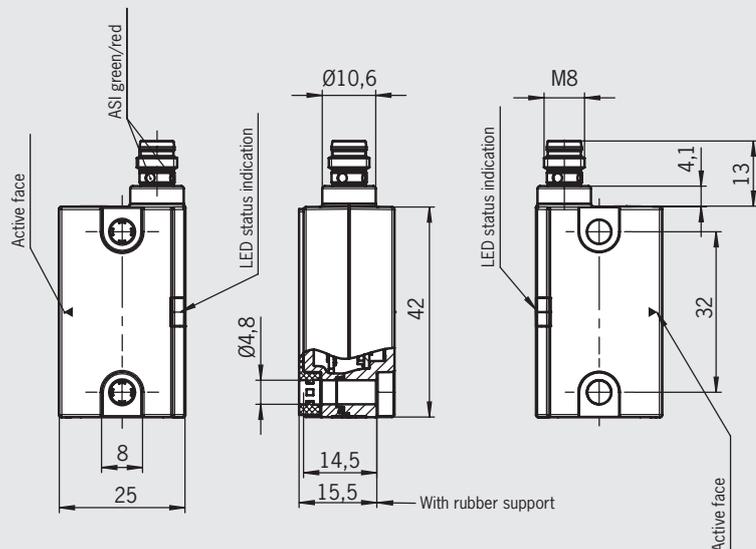
ASi LED in plug

- ▶ Green: indicates operating voltage on the bus.
- ▶ Red: indicates if a fault has been detected on the AS-Interface bus.

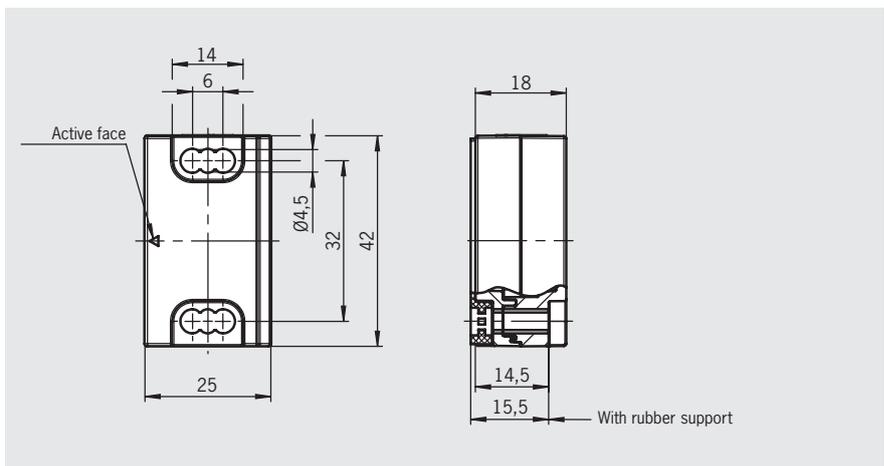
Safety switch CES-AS-C04

Plug connector M8, 3-pin

Dimension drawing



Actuator CES-A-BBN-C04



Ordering table

Series	Connection	Description	Coding	Order no./item
CES	Plug connector M8, 3-pin	Safety switch with AS-Interface	Unicode	120547 CES+AS2A-U-C04-SC-120547
			Multicode	120546 CES+AS2A-M-C04-SC-120546
		Actuator		115271 CES-A-BBN-C04-115271

Safety switch CET with guard locking and guard lock monitoring



- ▶ Safety switch with guard locking and integrated evaluation electronics
- ▶ Locking force up to 6,500 N
- ▶ Up to category 4 / PL e according to EN ISO 13849-1



Unicode evaluation

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

Guard locking types

CET3 Closed-circuit current principle, guard locking by spring force. Release by control of AS-i output 0.

CET4 Open-circuit current principle, guard locking by control of AS-i output 0. Release by spring force.

Control of the guard locking solenoid

The guard locking solenoid is controlled by the control system via AS-Interface bus bit D0.

AS-Interface inputs

- ▶ **D0, D1** Door monitoring
- ▶ **D2, D3** Guard lock monitoring

Evaluation is performed via a safety monitor.

AS-Interface outputs

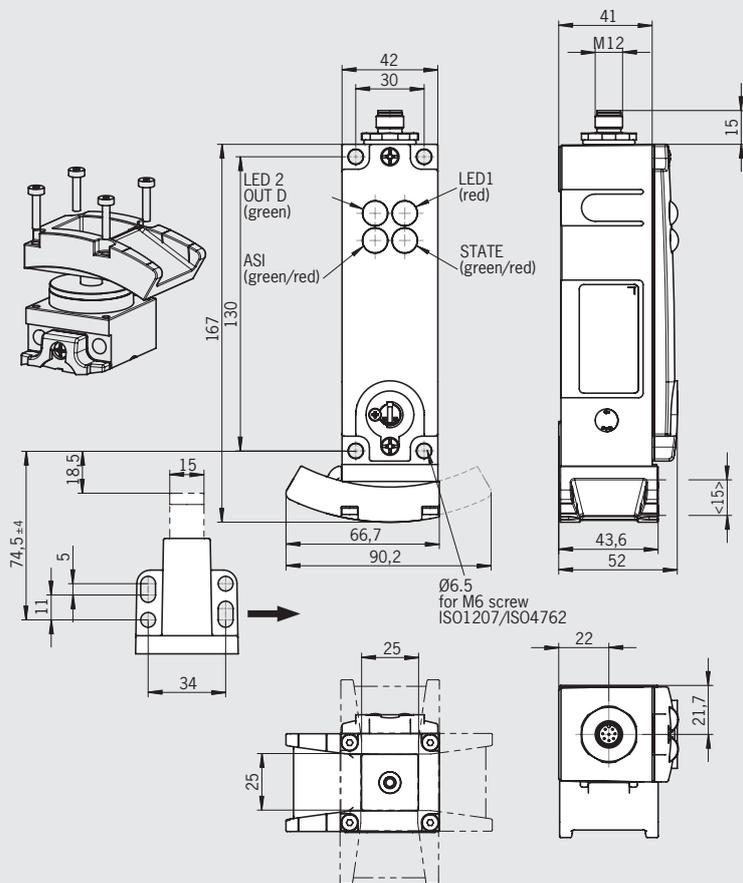
- ▶ **D0** Guard locking
- ▶ **D1** Red LED
- ▶ **D2** Green LED

LED function display

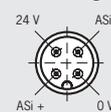
- ▶ The *ASi* LED indicates the operating voltage on the bus.
- ▶ The *State* LED indicates if a fault has been detected on the AS-Interface bus.

Plug connector M12 4-pin

Dimension drawing



Connector assignment



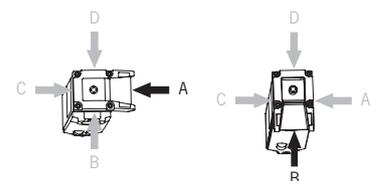
View of connection side

Please order actuator and connection material separately. For detailed information and suitable accessories, enter the order number for the product in the search box at www.euchner.com.

- ▶ The green and the red LEDs can be controlled as required by the control system via the bus using bits D1 and D2.

Approach direction

- ▶ Horizontal
- ▶ Adjustable in 90° steps.



Ordering table

Series	Connection	Guard locking	Coding	Approach direction (delivery state)	Order no./item
CET	SEM 4 Plug connector M12	3 mechanical	Unicode	A	111214 CET3-AS-CRA-AB-50X-SJ-AS1-111214
		4 electrical	Unicode	A	113631 CET4-AS-CRA-AB-50X-SJ-AS1-113631
			Unicode	B	120008 CET4-AS-CRB-AB-50X-1-120008

Safety switch CTP with guard locking and guard lock monitoring



- ▶ Safety switch with guard locking and integrated evaluation electronics
- ▶ Locking force up to 2,600 N
- ▶ Up to category 4 / PL e according to EN ISO 13849-1



Unicode evaluation

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

Escape release

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

Guard locking types

- CTP-L1** Closed-circuit current principle, guard locking actuated by spring force applied and power-ON released.
- CTP-L2** Open-circuit current principle, guard locking by power-ON applied and spring released.

Control of the guard locking solenoid

The guard locking solenoid can be controlled via AS-Interface bus bit D0 or via the auxiliary power.

AS-Interface inputs

- ▶ **D0, D1** Door monitoring
- ▶ **D2, D3** Guard lock monitoring

Evaluation is performed via a safety monitor.

AS-Interface outputs

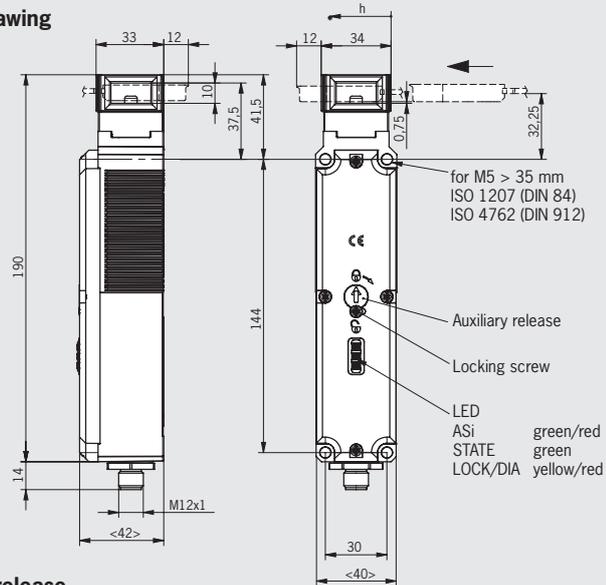
- ▶ **D0** Guard locking

LED function display

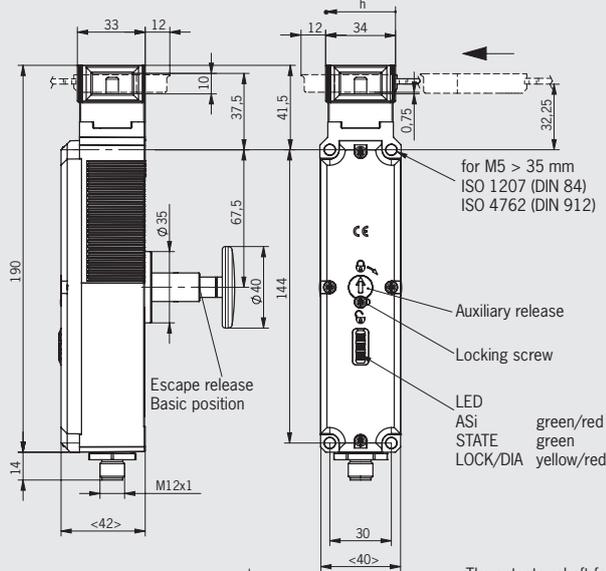
- ▶ The ASI LED indicates the state of the ASI bus.
- ▶ The STATE LED indicates the state of the switch.
- ▶ The LOCK/DIA LED indicates if the door is locked and whether a fault has been detected in the switch.

Plug connector M12 4-pin

Dimension drawing

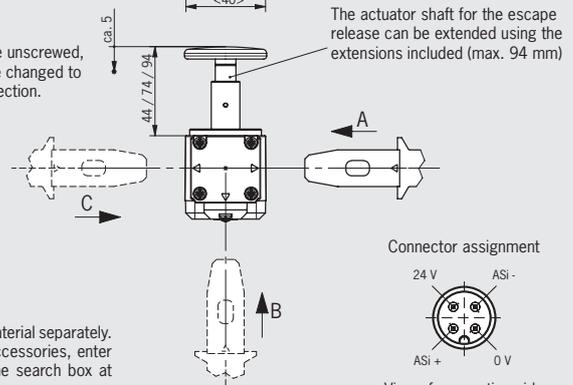


With escape release



Actuating directions

After the fixing screws are unscrewed, the actuating head can be changed to the required approach direction.



Please order actuator and connection material separately. For detailed information and suitable accessories, enter the order number for the product in the search box at www.euchner.com.

Ordering table

Series	Connection	Guard locking	Coding	Version	Order no./item
CTP	SEM 4 Plug connector M12	1 mechanical	Unicode		124987 CTP-L1-AS1B-UHA-AZ-SJ-124987
		2 electrical	Unicode	with escape release	126644 CTP-L1-AS1B-UHA-AE-SJ-126644
					124988 CTP-L2-AS1B-UHA-AZ-SJ-124988

AS-Interface Safety at Work safety monitors SFM



- ▶ Dual-channel
- ▶ Start inputs
- ▶ Monitoring outputs
- ▶ Adjustable time-delay



OSSD (Output Signal Switching Device)
Two OSSDs with 4 NC contacts.

Monitoring contacts
One monitoring contact per channel.

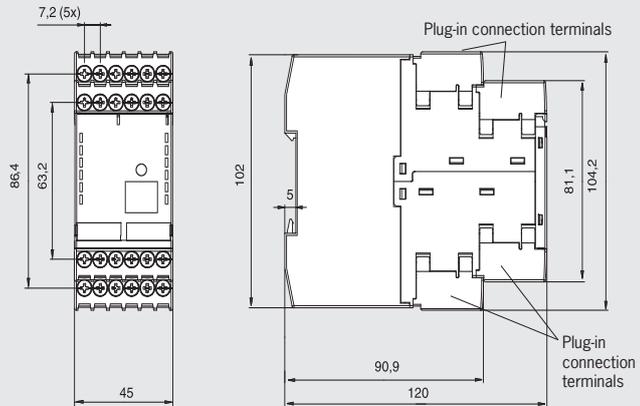
Inputs
Two freely selectable inputs per channel. These can be programmed as a start input or feedback loop, for example.

Logic functions
Programmable with AsiMon software. All safety components can be programmed with different functions as inputs. Various logic and memory functions are available for programming. The monitors SFM-B02 can replace older SFM-A devices and single-channel devices.

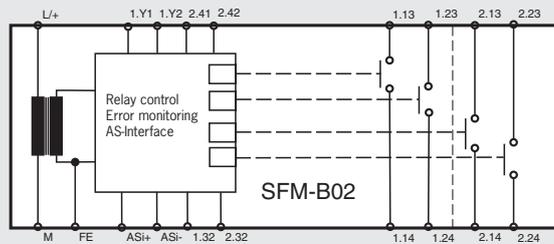
Notice: The monitor SFM-B02 can replace all monitors SFM-A01, SFM-A02 and SFM-B01 that are no longer available.

Safety monitors SFM

Dimension drawing



Block diagram



For terminal assignment, see Technical Data page 44

Ordering table

Series	Version	Number of AS-i outputs	Channels	Order no./item
SFM	B Expanded	0	2	087891 SFM-B02

AS-Interface Safety at Work safe output SOM



- ▶ 1 redundant OSSD
- ▶ Control by GMOx
- ▶ Control by machine control
- ▶ Up to 4 inputs
- ▶ Diagnostics via AS-Interface



OSSD (Output Signal Switching Device)

The OSSD is of redundant design according to category 4 EN ISO 13849-1. Safety-related control is via the bus by a suitable monitor, for example by a GMOx. Operational switching is also possible directly by the control system with appropriate parameter settings.

Inputs and outputs

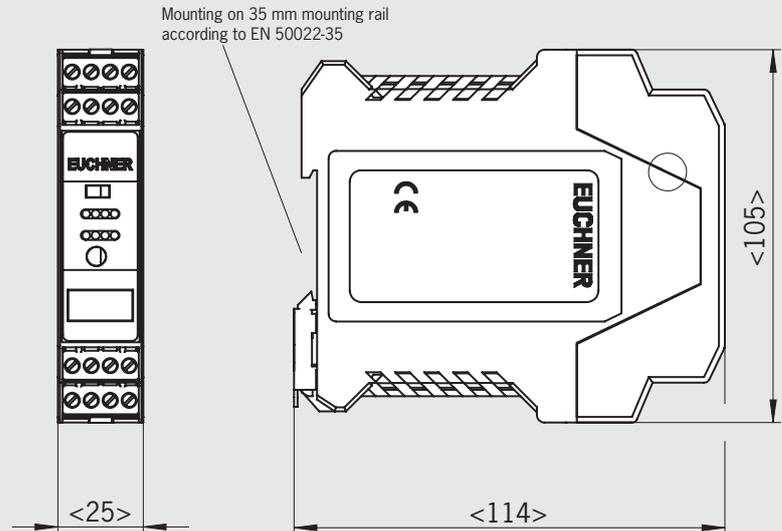
A feedback loop can be connected directly to the SOM. Depending on the parameter settings, further inputs and outputs can also be used.

LED function display

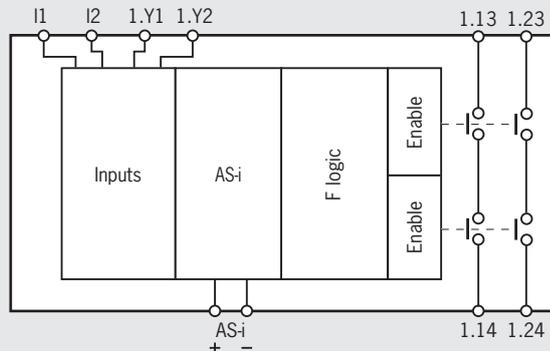
- ▶ **PWR** Green, AS-Interface voltage
- ▶ **ASi** Red, bus communication
- ▶ **OUT** Yellow, state of OSSD
- ▶ **ALARM** Red, can be set as required by control system
- ▶ **I1...I3** State of the corresponding input
- ▶ **1.Y1** State of the input

Safe output SOM

Dimension drawing



Block diagram



Ordering table

Series	Inputs	Outputs	OSSDs	Order no./item
SOM	4	0	1	103489 SOM-4E-0A-C1

AS-Interface Safety at Work safety monitor with integrated Gateway GMOx



- ▶ One or two AS-i masters
- ▶ Display and pushbuttons for diagnostics and adjustment
- ▶ Memory card for different programs
- ▶ Adjustable time-delay
- ▶ 16 OSSDs



Gateway to PROFIBUS

For connection to a PROFIBUS DP as a slave.

AS-i master function

Operates as the master for one or two AS-i buses according to specification 3.0. Detection of earth fault, double addressing and EMC problems. Rapid setup with the display without PC. Direct display of faults with plain-text messages. Comprehensive AS-i diagnostics integrated.

OSSDs (Output Signal Switching Devices), AS-i outputs

- ▶ Two OSSDs with two redundant normally closed contacts each
- ▶ Two OSSDs with semiconductor outputs
- ▶ 12 additional safe AS-i outputs can be controlled

Inputs

- ▶ 4 inputs, freely selectable

Logic functions

Programmable with AsiMon software. All safety components can be programmed with different functions as inputs. The inputs can be linked with AND or OR gates or via logic functions such as FlipFlop, switch-on delay, OFF time or pulses. Different programs can be stored on a memory card.

AS-Interface monitor

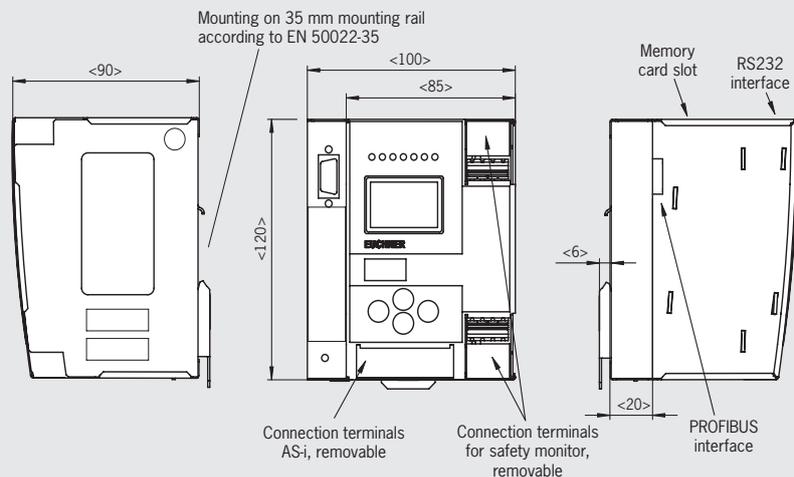
The monitor controls two AS-i circuits with up to 62 safe slaves and up to 16 outputs.

Display and pushbuttons

The display is used to operate the gateway functionality as well as the monitor at the same time. The diagnostic and maintenance functions can also be launched with the display without a PC. Incorporated security functions allow the programmed functionality to be protected and monitored.

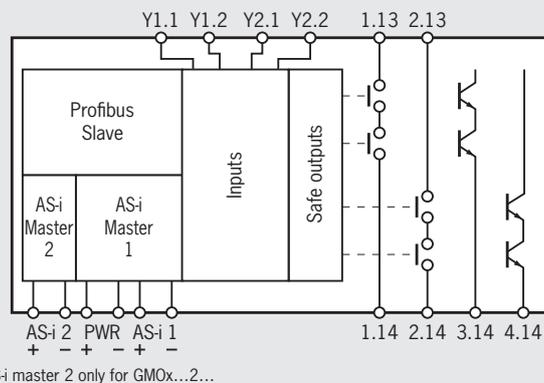
Safety monitor GMOx

Dimension drawing



Please order connection kit separately, see page 26

Block diagram



For terminal assignment, see Technical Data page 46

Important: A connection kit must be ordered for each safety monitor (see page 26).

Ordering table

Series	Bus connection	AS-i master	Number of AS-i outputs	OSSDs	Order no./item
GMOx	PR PROFIBUS	1	16	4 + 12 external	103267 GMOX-PR-12DN-C16
		2	16	4 + 12 external	103302 GMOX-PR-22DN-C16

Accessories

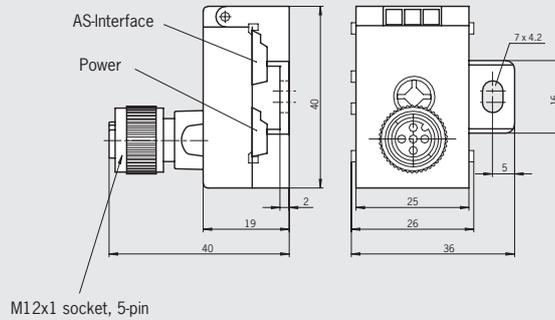
- ▶ Passive bus coupling module BCM-A-P2...



For connection of components with integrated AS-Interface and M12 plug connector to the AS-Interface ribbon cables. Both the bus and auxiliary power are converted from the ribbon cable to an M12 socket. The coupling module is suitable for safety components and for standard components. It is particularly suitable for EUCHNER safety switches with guard locking.

Passive bus coupling module BCM-A-P2...

Dimension drawing



Ordering table

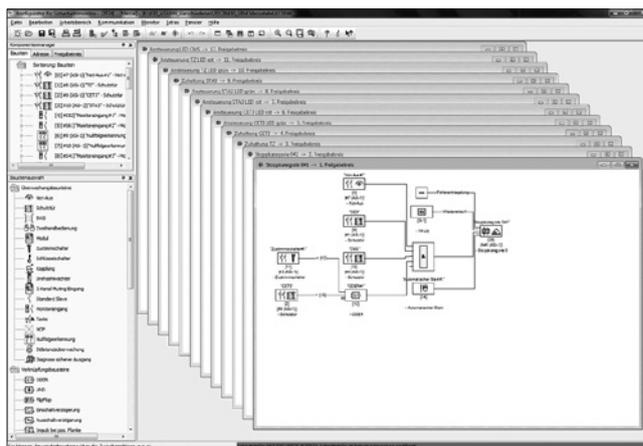
Version	Connections	Order no./item
BCM-A-P2	AS-Interface ribbon cable, auxiliary power ribbon cable M12 socket	105756 BCM-A-P2-SEM4-1
Connecting cable M12 with straight plug connectors, length 1 m, PUR		089420 C-M12M04-04X075PU01,0-M12F04-089420

Accessories and software for monitors SFM and GMOx

The software is required for programming the EUCHNER safety monitors. All safety monitors can be programmed with the same software. A Windows®-equipped PC is required. All Safety at Work manuals in various languages are included on the CD.

The cable set SFM or the cable GMOx is required to connect the PC. The cable set SFM includes a transfer cable for direct read-out from monitor to monitor.

Additional memory cards can be ordered for the gateway monitors GMOx.



Ordering table

Version	Suitability	Order no./item
AsiMon Configuration software	For all AS-Interfaces Safety at Work safety monitors	088053 AsiMon SW
Cable set SFM ¹⁾	For all monitors SFM...	087299 Cable set SFM
Connection kit Cage-clamp terminals GMOx	For Gateway monitors GMOx	100256 ZMO-ZB-KK8-M
Programming cable GMOx	For Gateway monitors GMOx	100437 ZMO-ZB-PGK
1 memory card	For Gateway monitors GMOx	103580 ZMO-ZB-MB1

1) For programming and exchange

Safety switch NZ

HS



RS



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
B10D	2 x 10 ⁷ operating cycles	

Switch



Parameter	Value		Unit
Housing material	Anodized die-cast alloy		
Mechanical life	30 x 10 ⁶ operating cycles		
Ambient temperature	- 25 ... +70		°C
Degree of contamination (external, acc. to EN 60947-1)	3 (industrial)		
Installation orientation	Any		
Weight	Approx. 0.35		kg
Approach speed, max. ¹⁾ , depending on actuator	HS 60	RS 20	m/min
Approach speed, min.	0.1	0.1	m/min
Actuating force, min.	15	30	N

AS-Interface connection



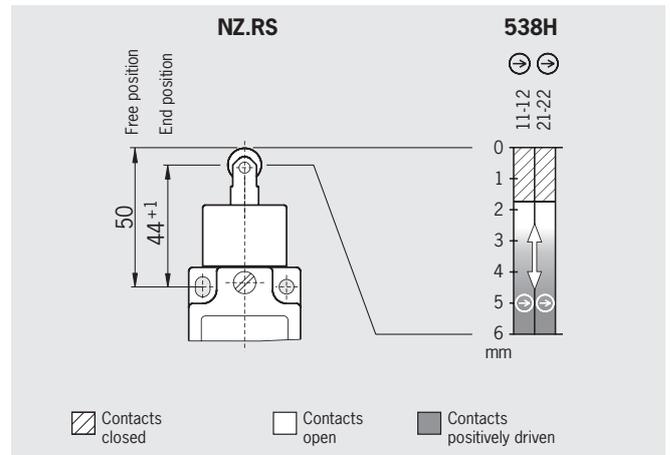
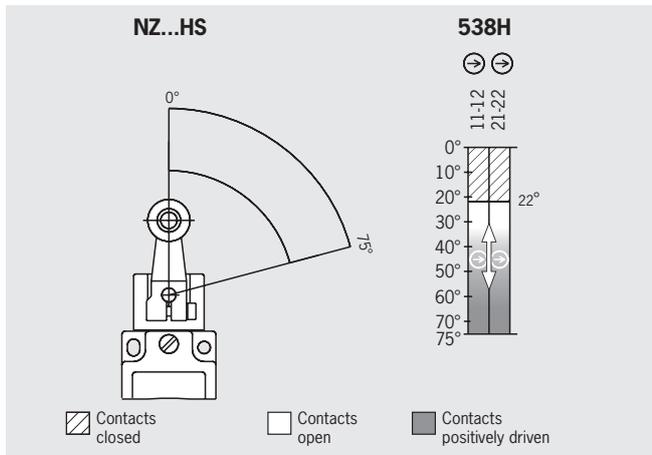
Parameter	Value		Unit
Connection	Plug connector		
Version	M12 (4-pin)		
Degree of protection	IP67 ²⁾		
Switching principle	Slow-action switching contact 2 NC ⊕		
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard) and IEC 62026		
AS-Interface data			
Acc. to AS-Interface specification 2.1	EA code: 7	ID code: B	
Operating voltage, AS-Interface	22.5 ... 31.6		V DC
Total current consumption, max.	45		mA
Valid AS-Interface addresses	1 - 31		
AS-Interface inputs			
Acc. to AS-Interface Safety at Work			
Positively driven contact 1	D0, D1		
Positively driven contact 2	D2, D3		
AS-Interface outputs			
D0 and D3	Not used		
D1	Red LED, 1 = LED on		
D2	Green LED, 1 = LED on		
AS-Interface Power LED	Green, AS-Interface voltage present		
AS-Interface Fault LED	Red, offline phase or address 0		

- 1) The specified approach speed applies in conjunction with EUCHNER trip dogs at an approach angle of 30°. At a smaller approach angle, this approach speed can be exceeded.
 2) Screwed tight with the related plug connector

Travel diagram
NZ.HS



Travel diagram
NZ.RS



Safety switch NZ.VZ



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
B10D	4.5 x 10 ⁶ operating cycles	

Switch



Parameter	Value	Unit
Housing material	Anodized die-cast alloy	
Mechanical life	2 x 10 ⁶ operating cycles	
Ambient temperature	-25 ... +70	°C
Weight	Approx. 0.3	kg
Approach speed, max.	20	m/min
Approach speed, min.	0.1	m/min
Actuating force	35	N
Extraction force	35	N
Retention force	8	N

AS-Interface connection



Parameter	Value	Unit
Connection	Plug connector	
Version	M12 (4-pin)	
Degree of protection	IP67 ²⁾	
Switching principle	Slow-action switching contact 2 NC ☹	
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard) and IEC 62026	
AS-Interface data		
Acc. to AS-Interface specification 2.1	EA code: 7	ID code: B
Total current consumption, max.	45	mA
Valid AS-Interface addresses	1 - 31	
AS-Interface inputs		
Acc. to AS-Interface Safety at Work		
Positively driven contact 1	D0, D1	
Positively driven contact 2	D2, D3	
AS-Interface outputs		
D0 and D3	Not used	
D1	Red LED, 1 = LED on	
D2	Green LED, 1 = LED on	
AS-Interface Power LED	Green, AS-Interface voltage present	
AS-Interface Fault LED	Red, offline phase or address 0	

2) Screwed tight with the related plug connector

Safety switch TZ with guard locking and guard lock monitoring



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
B10D	3 x 10 ⁶ operating cycles	

Switch



Parameter	Value	Unit
Housing material	Anodized die-cast alloy	
Mechanical life	1 x 10 ⁶ operating cycles	
Ambient temperature	- 25 ... +55	°C
Weight	Approx. 1.2	kg
Approach speed, max.	20	m/min
Actuating force	35	N
Extraction force	30	N
Retention force	10	N
Locking force, max.	2,000	N
Locking force F _{ZH} acc. to EN ISO 14119	1,500	N
Guard locking solenoid		
Solenoid operating voltage (auxiliary voltage on black AS-Interface cable)	24 V +10 / -15% Power supply unit with electrical isolation (IEC 60742, PELV)	V DC
Solenoid operating current	350	mA
Duty cycle	100	%

AS-Interface connection



Parameter	Value	Unit
Connection	Plug connector	
Version	M12 (4-pin)	
Degree of protection	IP67 ²⁾	
Switching principle SK, UK	Slow-action switching contact 1 NC contact each ⊖	
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard) and IEC 62026	
AS-Interface data		
Acc. to AS-Interface specification 2.1	EA code: 7 ID code: B	
Total current consumption, max.	45	mA
Valid AS-Interface addresses	1 - 31	
AS-Interface inputs		
Positively driven contact 1	Acc. to AS-Interface Safety at Work D0, D1	
Positively driven contact 2	D2, D3	
AS-Interface outputs		
D0	Guard locking solenoid, 1 = solenoid energized	
D1	Red LED, 1 = LED on	
D2	Green LED, 1 = LED on	
AS-Interface Power LED	Green, AS-Interface voltage present	
AS-Interface Fault LED	Red, offline phase or address 0	

2) Screwed tight with the related plug connector

Safety switch TX with guard locking and guard lock monitoring



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
B10D	6 x 10 ⁶ operating cycles	

Switch



Parameter	Value	Unit
Housing material	Die-cast alloy, cathodically dipped	
Mechanical life	> 1 x 10 ⁶ operating cycles	
Ambient temperature	-20 ... +50	°C
Weight	Approx. 0.8	kg
Degree of contamination (external, acc. to EN 60947-1)	3 (industrial)	
Installation orientation	Any	
Approach speed, max.	20	m/min
Actuation frequency	1,200	1/h
Actuating force	35	N
Extraction force	35	N
Retention force	20	N
Locking force, max.	1,700	N
Locking force F _{zh} acc. to EN ISO 14119	1,300	N
Insertion depth	Standard actuator	Overtravel actuator
Required insertion depth S _{min}	32	32
Maximum insertion depth S _{max}	33	40
Actuator travel (in the locked state)	6	13
Guard locking solenoid		
Solenoid operating voltage (auxiliary voltage on black AS-Interface cable)	24 V +10 / -15% Power supply unit with electrical isolation (IEC 60742, PELV)	V DC
Solenoid operating current	300	mA
Duty cycle	100	%

AS-Interface connection



Parameter	Value	Unit
Connection	Plug connector	
Version	M12 (4-pin)	
Degree of protection	IP67 ²⁾	
Switching principle	Slow-action switching contact 2 NC ⊕	
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard) and IEC 62026	
AS-Interface data		
Acc. to AS-Interface specification 2.1	EA code: 7	ID code: B
Operating voltage, AS-Interface	22.5 ... 31.6	V DC
Total current consumption, max.	45	mA
Valid AS-Interface addresses	1 - 31	
AS-Interface inputs		
Acc. to AS-Interface Safety at Work		
Door monitoring contact SK	D0, D1	
Solenoid monitoring contact UK	D2, D3	
AS-Interface outputs		
D0	Guard locking solenoid, 1 = solenoid energized	
D1	Red LED, 1 = LED on	
D2	Green LED, 1 = LED on	
AS-Interface Power LED	Green, AS-Interface voltage present	
AS-Interface Fault LED	Red, offline phase or address 0	

2) Screwed tight with the related plug connector

Safety switch STA with guard locking and guard lock monitoring



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
B10D	11.5 x 10 ⁶ operating cycles	

Switch



Parameter	Value	Unit	
Housing material	Die-cast alloy		
Mechanical life	1 x 10 ⁶ operating cycles		
Ambient temperature	- 20 ... +55	°C	
Weight	Approx. 0.6	kg	
Degree of contamination (external, acc. to EN 60947-1)	3 (industrial)		
Installation orientation	Any		
Approach speed, max.	20	m/min	
Actuation frequency	1,200	1/h	
Actuating force	35	N	
Extraction force (not locked)	30	N	
Retention force	20	N	
Locking force	Max. 3,000	N	
Locking force F _{ZH} according to EN ISO 14119	2,300	N	
Insertion depth (necessary minimum travel + permissible overtravel)	Actuator S standard	Actuator L for insertion funnel	
Lateral approach direction (h)	24.5 + 5	28.5 + 5	mm
Approach direction from above (v)	24.5 + 5	28.5 + 5	mm
Guard locking solenoid			
Solenoid operating voltage (auxiliary voltage on black AS-Interface cable)	24 +10 / -15% Power supply unit with electrical isolation (IEC 60742, PELV)	V DC	
Solenoid operating current	300	mA	
Duty cycle	100	%	

AS-Interface connection



Parameter	Value	Unit
Connection	Plug connector	
Version	M12 (4-pin)	
Degree of protection	IP67 ²⁾	
Switching principle	Slow-action switching contact 1 NC contact each ⊖	
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard) and IEC 62026	
AS-Interface data		
Acc. to AS-Interface specification 2.1	EA code: 7	ID code: B
Operating voltage, AS-Interface	22.5 ... 31.6	V DC
Total current consumption, max.	45	mA
Valid AS-Interface addresses	1 - 31	
AS-Interface inputs		
Acc. to AS-Interface Safety at Work		
Door monitoring contact SK	D0, D1	
Solenoid monitoring contact UK	D2, D3	
AS-Interface outputs		
D0	Guard locking solenoid, 1 = solenoid energized	
D1	Red LED, 1 = LED on	
D2	Green LED, 1 = LED on	
AS-Interface Power LED	Green, AS-Interface voltage present	
AS-Interface Fault LED	Red, offline phase or address 0	

2) Screwed tight with the related plug connector

Safety switch GP



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
B10D	3 x 10 ⁶ operating cycles	

Switch



Parameter	Value		Unit
Housing material	Reinforced thermoplastic		
Mechanical life	2 x 10 ⁶ operating cycles		
Ambient temperature	-20 ... +55		°C
Weight	Approx. 0.16		kg
Approach speed, max.	20		m/min
Actuating force	10		N
Extraction force	20		N
Retention force	2		N
Insertion depth (necessary minimum travel + permissible overtravel)	Actuator S standard	Actuator L overtravel	
Lateral approach direction (h)	28 + 2	28 + 7	mm
Approach direction from above (v)	29.5 + 1.5	29.5 + 7	mm

AS-Interface connection



Parameter	Value		Unit
Connection	Plug connector		
Version	M12 (4-pin)		
Degree of protection	IP67 ²⁾		
Switching principle	Slow-action switching contact 2 NC ⊖		
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard) and IEC 62026		
AS-Interface data			
Acc. to AS-Interface specification 2.1	EA code: 7	ID code: B	
Total current consumption, max.	45		mA
Valid AS-Interface addresses	1 - 31		
AS-Interface inputs			
Acc. to AS-Interface Safety at Work			
Positively driven contact 1	D0, D1		
Positively driven contact 2	D2, D3		
AS-Interface Power LED	Green, AS-Interface voltage present		
AS-Interface Fault LED	Red, offline phase or address 0		

2) Screwed tight with the related plug connector

Safety switch TP with guard locking and guard lock monitoring



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
B10D	3 x 10 ⁶ operating cycles	

Switch



Parameter	Value	Unit
Housing material	Reinforced thermoplastic	
Mechanical life	1 x 10 ⁶ operating cycles	
Ambient temperature	-20 ... +55	°C
Weight	Approx. 0.5	kg
Approach speed, max.	20	m/min
Actuating force	10	N
Extraction force (not locked)	20	N
Retention force	10	N
Locking force, max.	1,300	N
Locking force F _Z , acc. to EN ISO 14119	1,000	N
Insertion depth (necessary minimum travel + permissible overtravel)	Actuator S standard	Actuator L for insertion funnel
Lateral approach direction (h)	28 + 2	28 + 7
Approach direction from above (v)	29.5 + 1.5	-
Guard locking solenoid		
Solenoid operating voltage (auxiliary voltage on black AS-Interface cable)	24 V +10 / -15% Power supply unit with electrical isolation (IEC 60742, PELV)	V DC
Solenoid operating current	300	mA
Duty cycle	100	%

AS-Interface connection



Parameter	Value	Unit
Connection	Plug connector	
Version	M12 (4-pin)	
Degree of protection	IP67 ²⁾	
Switching principle	Slow-action switching contact 1 NC contact each ⊖	
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard) and IEC 62026	
AS-Interface data		
Acc. to AS-Interface specification 2.1	EA code: 7	ID code: B
Total current consumption, max.	45	mA
Valid AS-Interface addresses	1 - 31	
AS-Interface inputs		
Acc. to AS-Interface Safety at Work		
Version AS1	D0, D1	▶ Door monitoring contact SK
	D2, D3	▶ Solenoid monitoring contact UK
Version AS2	D0, D1	▶ Positively driven contact SK 1
	D2, D3	▶ Positively driven contact SK 2
AS-Interface outputs		
D0	Guard locking solenoid, 1 = solenoid energized	
D1	Red LED, 1 = LED on	
D2	Green LED, 1 = LED on	
AS-Interface Power LED	Green, AS-Interface voltage present	
AS-Interface Fault LED	Red, offline phase or address 0	

2) Screwed tight with the related plug connector

Safety switches STP with guard locking and guard lock monitoring



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
B10D	5 x 10 ⁶ operating cycles	

Switch



Parameter	Value	Unit	
Material	Housing Actuating head Cam in actuating head	Reinforced thermoplastic Die-cast aluminum Stainless steel	
Mechanical life	1 x 10 ⁶ operating cycles		
Ambient temperature	-20 ... +55	°C	
Weight	Approx. 0.5	kg	
Degree of contamination (external, acc. to EN 60947-1)	3 (industrial)		
Installation orientation	Any		
Approach speed, max.	20	m/min	
Actuating force	35	N	
Extraction force (not locked)	30	N	
Retention force	20	N	
Actuation frequency	1,200	1/h	
Locking force F _{max}			
Straight actuator with bush F _S	2,500	N	
Bent actuator with bush F _S	1,500	N	
Locking force F _{Zh} according to EN ISO 14119	2,000	N	
Insertion depth (necessary minimum travel + permissible overtravel)	Actuator S standard	Actuator L for insertion funnel	
Lateral approach direction (h)	24.5 + 5	28.5 + 5	mm
Approach direction from above (v)	24.5 + 5	28.5 + 5	mm
Guard locking solenoid			
Solenoid operating voltage (auxiliary voltage on black AS-Interface cable)	24 +10 / -15% Power supply unit with electrical isolation (IEC 60742, PELV)	V DC	
Solenoid operating current	300	mA	
Duty cycle	100	%	

AS-Interface connection



Parameter	Value	Unit
Connection	Plug connector	
Version	M12 (4-pin)	
Degree of protection	IP67 ²⁾	
Switching principle	Slow-action switching contact 1 NC contact each ⇄	
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard) and IEC 62026	
AS-Interface data		
Acc. to AS-Interface specification 2.1	EA code: 7	ID code: B
Total current consumption, max.	45	mA
Solenoid supply via auxiliary power	400	
Solenoid supply via AS-i	1 - 31	
Valid AS-Interface addresses	1 - 31	
AS-Interface inputs		
Door monitoring contact SK	Acc. to AS-Interface Safety at Work	
Solenoid monitoring contact UK	D0, D1	
AS-Interface outputs		
D0	Guard locking solenoid, 1 = solenoid energized	
D1	Red LED, 1 = LED on	
D2	Green LED, 1 = LED on	
AS-Interface Power LED	Green, AS-Interface voltage present	
AS-Interface Fault LED	Red, offline phase or address 0	

2) Screwed tight with the related plug connector

Safety switch STP-TW with guard locking and guard lock monitoring



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
B10D	4.5 x 10 ⁶ operating cycles	

Switch



Parameter	Value	Unit
Material		
Housing	Reinforced thermoplastic	
Actuating head	Die-cast aluminum	
Cam in actuating head	Stainless steel	
Mechanical life	1 x 10 ⁶ operating cycles	
Ambient temperature	-20 ... +55	°C
Weight	Approx. 0.5	kg
Approach speed, max.	20	m/min
Actuating force	35	N
Extraction force (not locked)	30	N
Retention force	20	N
Locking force, max.	2,500	N
Locking force F _{ZH} , acc. to EN ISO 14119	2,000	N
Insertion depth (necessary minimum travel + permissible overtravel)	Actuator S standard	
Lateral approach direction (h)	24.5 + 5	mm
Approach direction from above (v)	24.5 + 5	mm
Guard locking solenoid		
Solenoid operating voltage (auxiliary voltage on black AS-Interface cable)	24 V +10 / -15% Power supply unit with electrical isolation (IEC 60742, PELV)	V DC
Solenoid operating current	300	mA
Duty cycle	100	%

AS-Interface connection



Parameter	Value	Unit
Connection	Plug connector	
Version	M12 (4-pin)	
Degree of protection	IP67 ²⁾	
Switching principle	Slow-action switching contact 1 NC contact each ⊖	
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard) and IEC 62026	
AS-Interface data		
Acc. to AS-Interface specification 2.1	EA code: 7 ID code: B	
Total current consumption, max.	45	mA
Valid AS-Interface addresses	1 - 31	
AS-Interface inputs		
Acc. to AS-Interface Safety at Work		
Door monitoring contact SK	D0, D1	
Solenoid monitoring contact UK	D2, D3	
AS-Interface outputs		
D0	Guard locking solenoid, 1 = solenoid energized	
D1	Red LED, 1 = LED on	
D2	Green LED, 1 = LED on	
AS-Interface Power LED	Green, AS-Interface voltage present	
AS-Interface Fault LED	Red, offline phase or address 0	

2) Screwed tight with the related plug connector

Enabling switches ZSA and ZSB



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
B10D	1 x 10 ⁸ operating cycles	

Hand-held version G1

Parameter	Value	Unit
Housing material	Polyamide, black	
Protective cap material	CR (neoprene), black	
Ambient temperature	-5 ... +50	°C
Weight	Approx. 0.5 (without cable)	kg

AS-Interface connection



Parameter	Value	Unit
Connection	Plug connector	
Version	M12 (4-pin)	
Degree of protection	IP67 ²⁾ / IP65 with pushbuttons ²⁾	
Switching principle	Slow-action contact elements 2 NO	
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard) and IEC 62026	
AS-Interface data		
Acc. to AS-Interface specification 2.1	EA code: 0 ID code: B	
Total current consumption, max.	45	mA
Valid AS-Interface addresses	1 - 31	
AS-Interface inputs		
NO contact E1	D0, D1	
NO contact E2	D2, D3	
Plus button (only ZSB)	Parameter bit P0	
Minus button (only ZSB)	Parameter bit P1	

2) Screwed tight with the related plug connector

Non-contact safety switches CMS



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
Category	3	
Performance Level (PL)	e	
PFHb	4.29×10^{-8}	
Mission time	20	years

Evaluation unit

Parameter	Value	Unit
Read head		
Housing material	Reinforced thermoplastic (PPS)	
Ambient temperature	-25 ... +60	°C
Degree of protection	IP67	
Installation orientation	Any, alignment with actuator should be kept in mind (markings)	
Connection	Connecting cable with M12 plug connector	
Cable length	1	m
Cable material	PUR	
Method of operation	Magnetic, reed contact	
Mechanical life	100×10^6 operating cycles	
Vibration resistance	10 ... 55 Hz, amplitude 1 mm	
Shock resistance	30 g / 11 ms	
Actuator		
Housing material	Reinforced thermoplastic (PPS)	
Ambient temperature	-20 ... +60	°C
Degree of protection	IP67	
Installation orientation	Any, alignment with read head should be kept in mind (markings)	
Method of operation	Magnetic	
Vibration resistance	10 ... 55 Hz, amplitude 1 mm	
Shock resistance	30 g / 11 ms	
Distances with read head		
	CMS...AZA...	CMS...BZB...
Operating distance S_{ao}	9	7
Assured release distance S_{ar}	70	40
Center offset m between actuator and read head	± 2.5 at a distance of $s = 3$	
Times		
Max. time-delay from state change	5	ms

AS-Interface connection

Parameter			Value	Unit
AS-Interface data				
Acc. to AS-Interface specification 3.2	CMS-R-AZA...	EA code: 7	ID code: B	
	CMS-R-BZB...	EA code: 0	ID code: B	
Operating voltage, AS-Interface	26.5 ... 31.5			V DC
Total current consumption, max.	30			mA
Valid AS-Interface addresses	1 - 31			
AS-Interface inputs				
Acc. to AS-Interface Safety at Work				
Switch actuated	D0 ... D3, code sequence			
Switch open	D0 ... D3, zero sequence			
AS-Interface outputs (only CMS-R-AZA)				
Output D1	LED, 1 = LED on			

Key adapter CKS...AS



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
Category	4	
Performance Level (PL)	e	
PFHb	4.5×10^{-9}	
Mission time	20	years

Key adapter

Parameter	Value	Unit
Housing material	PA6-GF30, black	
Fixing screw tightening torque	0.25 ... 0.35	Nm
Dimensions	75 x 40 x 73	mm
Weight	0.13	kg
Ambient temperature	-10 ... +65	°C
Degree of protection	IP67 in mounted condition (only access side)	
Safety class	III	
Degree of contamination	2	
Installation orientation	On the front	
Connection	Screw terminal, 2-pin	
Shock and vibration resistance	Acc. to EN 60947-5-3	
Ready delay	0.5	s
Risk time	Max. 260	ms
Turn-on time	Max. 300	ms

AS-Interface connection



Parameter	Value	Unit
LED indicator	Green: key inserted Yellow: ready for operation Red: error	
AS-Interface data	EA code: 7 ID code: B	
AS-i operating voltage	19 ... 31.6	V DC
Total current consumption, max.	50	mA
Valid AS-Interface addresses	1 - 31	
AS-Interface inputs	Acc. to AS-Interface Safety at Work	
Influenced by key	D0 - D3	

Key

Parameter	Value	Unit
Housing material	PVC plastic	
Dimensions	42 x 25 x 18	mm
Weight	4	g
Ambient temperature	-20 ... +70	°C
Degree of protection	IP67	
Power supply	Inductive via key adapter	

Safety switch CES-AS-C04



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
Category	4	
Performance Level (PL)	e	
PFHb	4.5×10^9	
Mission time	20	years

Switch



Parameter	Value	Unit
Housing material	PBT plastic	
Rubber-support material	NBR	
Fixing screw tightening torque	Max. 0.8	Nm
Dimensions	42 x 25 x 18	mm
Weight	4	g
Ambient temperature at $U_b = DC 30 V$	-25 ... +65	°C
Degree of protection	IP67	
Safety class	III	
Degree of contamination	3	
Installation orientation	Any	
Mounting distance between 2 switches or 2 actuators	min. 80 mm	mm
Connection	M8 plug connector, 3-pin	
The following applies to the approval according to UL	Operation only with UL Class 2 power supply	
Resilience to vibration	Acc. to EN IEC 60947-5-2	
Switching frequency	1	Hz
Ready delay	0.5	s
Risk time acc. to EN 60947-5-3	Max. 260	ms
Turn-on time of safety outputs	Max. 300	ms

AS-Interface connection



Parameter	Value	Unit
AS-Interface data	EA code: 0	ID code: B
AS-i operating voltage	19 ... 31.6	V DC
Total current consumption	Max. 50	mA
Valid AS-Interface addresses	1 - 31	
AS-Interface inputs	Acc. to AS-Interface Safety at Work	
Door monitoring contact	D0 - D3	

Actuator

Parameter	Value	Unit
Housing material	PBT plastic	
Dimensions	42 x 25 x 18	mm
Weight	3	g
Ambient temperature	-40 ... +65	°C
Degree of protection	IP67 / IP69K	
Installation orientation	Active face opposite read head	
Power supply	Inductive via read head	

Safety switch CET-AS1 with guard locking and integrated evaluation electronics



Reliability values acc. to EN ISO 13849-1		Value	
Parameter	Monitoring of guard locking and the guard position	Control of guard locking	Unit
Category	4	B	
Performance Level (PL)	e	b	
PFH _b	3.1×10^{-9}	4.23×10^{-6}	
Mission time	20	20	years

Switch/evaluation electronics		Value	
Parameter			Unit
Material	Ramp	Stainless steel	
	Switch housing	Die-cast aluminum	
Installation orientation		Any (recommendation: switch head downward)	
Mechanical life		1×10^6	
Ambient temperature		-20 ... +55	°C
Weight		Approx. 1	kg
Actuator approach speed, max.		20	m/min
Locking force, max.		6,500	N
Locking force F_{zh} acc. to EN ISO 14119		5,000	N
Degrees of freedom X, Y, Z		X, Y ± 5 ; Z ± 4	mm
Guard locking solenoid			
Solenoid operating voltage (auxiliary voltage on black AS-Interface cable)		24 V +10 / -15% Power supply unit with electrical isolation (IEC 60742, PELV)	V DC
Current consumption		50	mA
Solenoid current consumption I_{CM}		400	

AS-Interface connection		Value	
Parameter			Unit
Connection		Plug connector	
Version		M12 (4-pin)	
Degree of protection		IP67 ²⁾	
Switching principle		Slow-action switching contact 1 NC contact each \odot	
EMC protection requirements		Acc. to EN 50295 (AS-Interface standard) and IEC 62026	
AS-Interface data			
Acc. to AS-Interface specification 2.1		EA code: 7	ID code: B
Total current consumption		Max. 30	mA
Valid AS-Interface addresses		1 - 31	
AS-Interface inputs			
Acc. to AS-Interface Safety at Work			
Door monitoring contact SK		D0, D1	
Solenoid monitoring contact UK		D2, D3	
AS-Interface outputs			
D0		Guard locking solenoid, 1 = solenoid energized	
D1		Red LED, 1 = LED on	
D2		Green LED, 1 = LED on	

2) Screwed tight with the related plug connector

Safety switch CTP-L.-AS1 with guard locking and integrated evaluation electronics



Reliability values according to EN ISO 13849-1

Parameter	Value	Unit
Category	4	
Performance Level (PL)	e	
PFHb	4.3×10^{-9}	
Mission time	20	years

Switch/evaluation electronics



Parameter	Value	Unit
Material	Die-cast zinc	
Switch head	Reinforced thermoplastic	
Switch housing		
Installation orientation	Any	
Degree of protection	IP67 / IP69 ²⁾	
Safety class acc. to EN IEC 61140	III	
Mechanical life	1×10^6	
Ambient temperature at UB = 24 V	-20 ... +55	°C
Actuator approach speed, max.	20	m/min
Actuating/extraction/retention force at 20 °C	10 / 20 / 20	N
Overtravel	5	mm
Locking force $F_{max}^{1)}$	3,900	N
Locking force F_{Zh} acc. to EN ISO 14119	$F_{Zh} = F_{max} / 1.3 = 3,000$	N
Weight	Approx. 0.42	kg
Connection	Plug connector M12, 4-pin	
The following applies to the approval according to UL	Operation only with UL Class 2 power supply or equivalent measures	
Ready delay	Max. 1	s
Switching frequency	Max. 0.5	Hz
Risk time	Max. 260	ms
Turn-on time	Max. 400	ms
Solenoid		
Solenoid operating voltage (auxiliary voltage on black AS-Interface cable)	24 V +10 / -15% Power supply unit with electrical isolation (IEC 60742, PELV)	V DC
Current consumption with auxiliary voltage	400	mA
Duty cycle	100	%

AS-Interface connection



Parameter	Value	Unit
Switching principle	Slow-action switching contact 1 NC contact each \ominus	
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard) and IEC 62026	
AS-Interface data		
Acc. to AS-Interface specification 2.1	EA code: 7 ID code: B	
AS-i operating voltage	26.5 ... 31.6	V DC
Total current consumption	Max. 50	mA
Valid AS-Interface addresses	1 - 31	
AS-Interface inputs	Acc. to AS-Interface Safety at Work	
Influenced by door position	D0, D1	
Influenced by guard locking	D2, D3	
AS-Interface outputs		
Guard locking solenoid	D0, 1 = Solenoid energized	

1) Applies only in combination with straight actuators.

2) Screwed tight with the related plug connector

Safety monitors SFM



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
Category	4	
Performance Level (PL)	e	
PFHb	9.1×10^{-9}	
Mission time	20	years

SFM-B02



Parameter	Value	Unit
Housing material	Polyamide PA 6.6	
Dimensions	45 x 105 x 120	mm
Weight	Approx. 0.45	kg
Ambient temperature	-20 ... +60	°C
Mounting	35 mm mounting rail according to DIN EN 60715 TH35	
Operating voltage U_b	24+15% / -15% Power supply unit with electrical isolation (IEC 60742, PELV)	V DC
Residual ripple	< 15%	
Rated operating current I_b	200	mA
Response time	< 40	ms
Switch-on delay	< 10	s
Connection		
Connection	Connection terminals	
Connection terminals	0.14 ... 2.5	mm ²
Degree of protection	IP20	
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard)	
Inputs		
Start	Optocoupler input, active high PNP transistor output, 200 mA, short-circuit and reverse polarity protection	
Feedback loop	Optocoupler input, active high Input current approx. 10 mA at 24 V DC	
Outputs		
Monitoring outputs	4 monitoring outputs PNP transistor output, 200 mA, short-circuit and reverse polarity protection	
OSSDs	2 relay outputs	
Max. contact load	1 A DC-13 at 24 V DC / 3 A AC-15 at 230 V AC	
Continuous thermal current	3 A per output circuit	
External fuse, max.	4 A medium slow-blow	
Overvoltage category	3 for rated operating voltage, 300 V AC according to VDE 0110 Part 1	
AS-Interface data		
Acc. to AS-Interface specification 3.2	EA code: 7	ID code: B
Operating voltage, AS-Interface	18.5 ... 31.6	V
Total current consumption, max.	45	mA

Terminal assignment

SFM-B02

1.13	1.23	1.Y1	2.13	2.Y1
⊗	⊗	⊗	⊗	⊗
⊗	⊗	⊗	⊗	⊗
+	-	1.Y2		2.Y2
AS+				

L+	M	1.32		2.32
⊗	⊗	⊗	⊗	⊗
⊗	⊗	⊗	⊗	⊗
1.14	1.24	FE	2.14	2.24
⊗	⊗	⊗	⊗	⊗

- AS-Interface + ▶ Connection to AS-Interface bus
- AS-Interface - ▶ Connection to AS-Interface bus
- L + ▶ 24 V DC
- M ▶ GND / reference ground
- FE ▶ Functional earth
- 1.Y1 ▶ EDM / feedback loop 1
- 1.Y2 ▶ Start input 1
- 1.13 ▶ Safety output 1.13
- 1.14 ▶ Safety output 1.14
- 1.23 ▶ Safety output 1.23
- 1.24 ▶ Safety output 1.24
- 1.32 ▶ Monitoring output 1
- 2.Y1 ▶ EDM / feedback loop 2
- 2.Y2 ▶ Start input 2
- 2.13 ▶ Safety output 2.13
- 2.14 ▶ Safety output 2.14
- 2.23 ▶ Safety output 2.23
- 2.24 ▶ Safety output 2.24
- 2.32 ▶ Monitoring output 2

AS-Interface Safety at Work safe output SOM



Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
Category	4	
Performance Level (PL)	e	
PFHb	3.3×10^9	
Mission time	20	years

SOM



Parameter	Value	Unit
Housing material	Polyamide PA 6.6	
Dimensions	22.5 x 105 x 114	mm
Weight	Approx. 0.2	kg
Ambient temperature	0 ... +55	°C
Storage temperature	-25 ... +85	°C
Mounting	35 mm mounting rail according to DIN EN 60715 TH35	
Supply current for sensors	100	mA
Rated insulation voltage U_i	6	kV
Connection		
Connection	Plug-in screw terminals	
Connection terminals	0.14 ... 2.5	mm ²
Degree of protection	IP20	
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard)	
Inputs	2 conventional + 2 EDM	
Outputs	Relay (2 redundant)	
AS-Interface data		
Acc. to AS-Interface specification 3.2	EA code: 7	ID code: F
Operating voltage, AS-Interface	18.5 ... 31.6	V
Total current consumption, max.	45	mA

Safety monitors GMOx



Reliability values acc. to EN ISO 13849-1

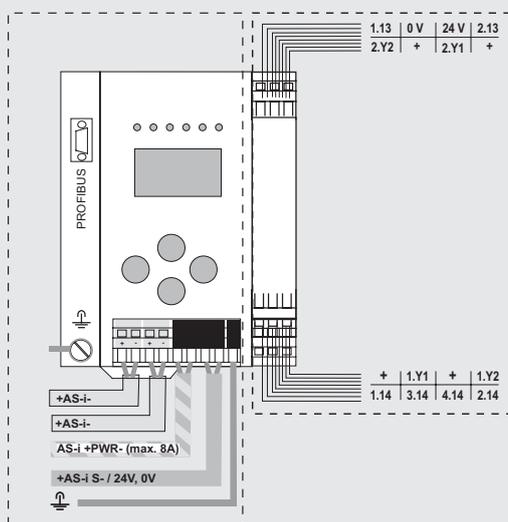
Parameter	Value	Unit
Category	4	
Performance Level (PL)	e	
PFHb	5.36×10^9	
Mission time	20	years

GMOx



Parameter	Value	Unit
Housing material	Stainless steel	
Dimensions	120 x 96 x 100	mm
Weight	0.8	kg
Ambient temperature	0 ... +55	°C
Permissible shock and vibration load	according to EN 61131-2	
Operating voltage (AS-i voltage)	30	V DC
Operating current (from AS-i circuit)	300	mA
Rated insulation voltage U_i	500	V
Standards	EN 61000-6-2, EN 61000-6-4, EN 62061 (SIL 3), IEC 61508, EN ISO 13849-1 (PL e)	
Connection		
Connection	Plug-in connection terminals	
Degree of protection	IP20	
Display and control elements		
LEDs	8 (4 inputs, 4 outputs, AUX) 7 (power, PROFIBUS, config error, U AS-i, AS-i active, pgr enable, prj mode)	
Pushbutton	4	
PROFIBUS interface		
Transfer rates	9.6 ... 12,000	
DP functions	Mapping of the AS-i slaves as I/O process data in the PROFIBUS; complete diagnostics and configuration via PROFIBUS DP master	
Safety monitor interface		
Switch-on delay	< 10	s
Response delay	< 40	ms
Inputs	2 x EDM, 2 x start	
OSSDs	2 relay contacts, 2 semiconductor	
Card slot	Memory card to store the configuration data	
Serial interface	RS232	

Terminal assignment



Bus coupling module BCM



BCM-A-P2-SEM4-1

Parameter	Value	Unit
Housing material	Reinforced thermoplastic	
Degree of protection (mating connector inserted)	IP67 on single insertion of the cable	
Ambient temperature	-20...+70	°C
Installation orientation	Any	
Weight	Approx. 30	g
Voltage, max.	36	V DC
Current, max.	4	A
Rated insulation voltage U _i , AS-Interface to Power	200	V
Mounting	Screw mounting (1 x M6)	
Connection		
AS-Interface and auxiliary power	AS-i ribbon cable	
Cable 1	AS-Interface bus ribbon cable (AS-Interface +, AS-Interface -)	
Cable 2	Power ribbon cable (+24 V, 0 V)	
Safety switch	M12 socket	

Index by item designation

Item	Order no.	Page
AsiMon SW	088053	26
BCM-A-P2-SEM4-1	105756	25
C-M12M04-04X075PU01,0-M12F04-089420	089420	25
Cable set SFM	087299	26
CES-A-BBN-C04-115271	115271	19
CES-IAS2A-M-C04-SC-120546	120546	19
CES-IAS2A-U-C04-SC-120547	120547	19
CET3-AS-CRA-AB-50X-SJ-AS1-111214	111214	20
CET4-AS-CRA-AB-50X-SJ-AS1-113631	113631	20
CET4-AS-CRB-AB-50X-1-120008	120008	20
CKS-A-BK1-RD-113461	113461	18
CKS-K-AS2A-U-C20-PC-123592	123592	18
CMS-MAC	084592	17
CMS-MBH	092025	17
CMS-R-AZA-01PL-AS1	105090	17
CMS-R-BZB-01P-AS1	105094	17
CTP-L1-AS1B-U-HAAE-SJ-126644	126644	21
CTP-L1-AS1B-U-HAAZ-SJ-124987	124987	21
CTP-L2-AS1B-U-HAAZ-SJ-124988	124988	21
GMOX-PR-12DN-C16	103267	24
GMOX-PR-22DN-C16	103302	24
GP3-538ASEM4AS1	091193	12
NZ2HS-538SEM4AS1	095201	5
NZ2RS-538SEM4AS1	095046	5
NZ2VZ-538ESEM4-AS1	090742	6
SFM-B02	087891	22
SOM-4E-OA-C1	103489	23
STA3A-4141A024SEM4AS1	098993	10
STA3A-4141A024SEM4AS1C1993	119732	11
STA4A-4141A024SEM4AS1	105305	10
STP-TW-3A-4141AC024SEM4AS1	102354	15
STP-TW-4A-4141AC024SEM4AS1	109813	15
STP3A-4141A024SEM4AS1	097790	14
STP4A-4141A024SEM4AS1	097789	14
TP3-4141A024SEM4AS1	088256	13
TP4-4141A024SEM4AS1	088257	13
TP4-4141A024SEM4AS2	091676	13
TX1B-A024SEM4AS1	094403	9
TZ1LE024SEM4AS1	086140	7
TZ1LE024SEM4AS1-C1815	094422	8
TZ1RE024SEM4AS1	086141	7
TZ1RE024SEM4AS1-C1815	094423	8
TZ2LE024SEM4AS1	086990	7
TZ2RE024SEM4AS1	086991	7
ZMO-ZB-KK8-M	100256	26
ZMO-ZB-MB1	103580	26
ZMO-ZB-PGK	100437	26
ZSA2B2CAS1	091580	16
ZSB2B7CAS1	096703	16

Index by order number

Order no.	Item	Page
084592	CMS-MAC	17
086140	TZ1LE024SEM4AS1	7
086141	TZ1RE024SEM4AS1	7
086990	TZ2LE024SEM4AS1	7
086991	TZ2RE024SEM4AS1	7
087299	Cable set SFM	26
087891	SFM-B02	22
088053	AsiMon SW	26
088256	TP3-4141A024SEM4AS1	13
088257	TP4-4141A024SEM4AS1	13
089420	C-M12M04-04X075PU01,0-M12F04-089420	25
090742	NZ2VZ-538ESEM4-AS1	6
091193	GP3-538ASEM4AS1	12
091580	ZSA2B2CAS1	16
091676	TP4-4141A024SEM4AS2	13
092025	CMS-MBH	17
094403	TX1B-A024SEM4AS1	9
094422	TZ1LE024SEM4AS1-C1815	8
094423	TZ1RE024SEM4AS1-C1815	8
095046	NZ2RS-538SEM4AS1	5
095201	NZ2HS-538SEM4AS1	5
096703	ZSB2B7CAS1	16
097789	STP4A-4141A024SEM4AS1	14
097790	STP3A-4141A024SEM4AS1	14
098993	STA3A-4141A024SEM4AS1	10
100256	ZMO-ZB-KK8-M	26
100437	ZMO-ZB-PGK	26
102354	STP-TW-3A-4141AC024SEM4AS1	15
103267	GMOX-PR-12DN-C16	24
103302	GMOX-PR-22DN-C16	24
103489	SOM-4E-OA-C1	23
103580	ZMO-ZB-MB1	26
105090	CMS-R-AZA-01PL-AS1	17
105094	CMS-R-BZB-01P-AS1	17
105305	STA4A-4141A024SEM4AS1	10
105756	BCM-A-P2-SEM4-1	25
109813	STP-TW-4A-4141AC024SEM4AS1	15
111214	CET3-AS-CRA-AB-50X-SJ-AS1-111214	20
113461	CKS-A-BK1-RD-113461	18
113631	CET4-AS-CRA-AB-50X-SJ-AS1-113631	20
115271	CES-A-BBN-C04-115271	19
119732	STA3A-4141A024SEM4AS1C1993	11
120008	CET4-AS-CRB-AB-50X-1-120008	20
120546	CES-IAS2A-M-C04-SC-120546	19
120547	CES-IAS2A-U-C04-SC-120547	19
123592	CKS-K-AS2A-U-C20-PC-123592	18
124987	CTP-L1-AS1B-U-HAAZ-SJ-124987	21
124988	CTP-L2-AS1B-U-HAAZ-SJ-124988	21
126644	CTP-L1-AS1B-U-HAAE-SJ-126644	21

Representatives

International

Austria

EUCHNER GmbH
Aumühlweg 17-19/Halle 1C
2544 Leobersdorf
Tel. +43 720 010 200
Fax +43 720 010 200-20
info@euchner.at

Benelux

EUCHNER (BENELUX) BV
Visschersbuurt 23
3356 AE Papendrecht
Tel. +31 78 615-4766
Fax +31 78 615-4311
info@euchner.nl

Brazil

EUCHNER Com.Comp.
Eletronicos Ltda.
Av. Prof. Luiz Ignácio Anhaia Mello,
no. 4387
Vila Graciosa
São Paulo - SP - Brasil
CEP 03295-000
Tel. +55 11 29182200
Fax +55 11 23010613
euchner@euchner.com.br

Canada

EUCHNER Canada Inc.
2105 Fasan Drive
Oldcastle, ON NOR 1L0
Tel. +1 519 800-8397
Fax +1 519 737-0314
sales@euchner.ca

China

EUCHNER (Shanghai)
Trading Co., Ltd.
No. 15 building,
No. 68 Zhongchuan Road,
Songjiang
Shanghai, 201613, P.R.C
Tel. +86 21 5774-7090
Fax +86 21 5774-7599
info@euchner.com.cn

Czech Republic

EUCHNER electric s.r.o.
Trnkova 3069/117h
628 00 Brno
Tel. +420 533 443-150
Fax +420 533 443-153
info@euchner.cz

France

EUCHNER France S.A.R.L.
Parc d'Affaires des Bellevues
Allée Rosa Luxembourg
Bâtiment le Colorado
95610 ERAGNY sur OISE
Tel. +33 1 3909-9090
Fax +33 1 3909-9099
info@euchner.fr

Hungary

EUCHNER Magyarország Kft.
FSD Park 2,
2045 Törökbálint
Tel. +36 1 919 0855
Fax +36 1 919 0857
info@euchner.hu

India

EUCHNER (India) Pvt. Ltd.
401, Bremen Business Center,
City Survey No. 2562,
University Road
Aundh, Pune - 411007
Tel. +91 20 64016384
Fax +91 20 55885148
info@euchner.in

Italy

TRITECNICA SpA
Viale Lazio 26
20135 Milano
Tel. +39 02 541941
Fax +39 02 55810474
info@tritecnica.it

Japan

EUCHNER Co., Ltd.
1269-1 Komakiharashinden,
Komaki-shi, Aichi-ken
485-0012, Japan
Tel. +81 568 74 5237
Fax +81 568 74 5238
info@euchner.jp

Korea

EUCHNER Korea Co., Ltd.
115 Gasan Digital 2 - Ro
(Gasan-dong, Daeryung
Technotown 3rd Rm 810)
153 - 803 Kumchon-Gu, Seoul
Tel. +82 2 2107-3500
Fax +82 2 2107-3999
info@euchner.co.kr

Mexico

EUCHNER México S de RL de CV
Conjunto Industrial PK Co.
Carretera Estatal 431 km. 1+300
Ejido El Colorado, El Marqués
76246 Querétaro, México
Tel. +52 442 402 1485
Fax +52 442 402 1486
info@euchner.mx

Poland

EUCHNER Sp. z o.o.
Krańskięskiego 29
40-019 Katowice
Tel. +48 32 252 20 15
Fax +48 32 252 20 13
info@euchner.pl

Spain

EUCHNER, S.L.
Gurutzezi 12 - Local 1
Poligono Belartza
20018 San Sebastian
Tel. +34 943 316-760
Fax +34 943 316-405
info@euchner.es

Switzerland

EUCHNER AG
Falknisstrasse 9a
7320 Sargans
Tel. +41 81 720-4590
Fax +41 81 720-4599
info@euchner.ch

Turkey

EUCHNER Endüstriyel Emniyet
Teknolojileri Ltd. Şti.
Hattat Bahattin Sok.
Ceylan Apt. No. 13/A
Göztepe Mah.
34730 Kadıköy / İstanbul
Tel. +90 216 359-5656
Fax +90 216 359-5660
info@euchner.com.tr

United Kingdom

EUCHNER (UK) Ltd.
Unit 2 Petre Drive,
Sheffield
South Yorkshire
S4 7PZ
Tel. +44 114 2560123
Fax +44 114 2425333
sales@euchner.co.uk

USA

EUCHNER USA Inc.
6723 Lyons Street
East Syracuse, NY 13057
Tel. +1 315 701-0315
Fax +1 315 701-0319
info@euchner-usa.com

EUCHNER USA Inc.
Detroit Office
130 Hampton Circle
Rochester Hills, MI 48307
Tel. +1 248 537-1092
Fax +1 248 537-1095
info@euchner-usa.com

Germany

Augsburg

EUCHNER GmbH + Co. KG
Ingenieur- und Vertriebsbüro
Julius-Spokojny-Weg 8
86153 Augsburg
Tel. +49 821 56786540
Fax +49 821 56786541
peter.klopper@euchner.de

Berlin

EUCHNER GmbH + Co. KG
Ingenieur- und Vertriebsbüro
Ulmenstraße 115a
12621 Berlin
Tel. +49 30 50508214
Fax +49 30 56582139
alexander.walz@euchner.de

Chemnitz

EUCHNER GmbH + Co. KG
Ingenieur- und Vertriebsbüro
Am Vogelherd 2
09627 Bobritzsch-Hilbersdorf
Tel. +49 37325 906000
Fax +49 37325 906004
jens.zehrtner@euchner.de

Düsseldorf

EUCHNER GmbH + Co. KG
Ingenieur- und Vertriebsbüro
Tippgarten 3
59427 Unna
Tel. +49 2308 9337284
Fax +49 2308 9337285
christian.schimke@euchner.de

Essen

Thomas Kreißl
fördern - steuern - regeln
Hackenbergang 8a
45133 Essen
Tel. +49 201 84266-0
Fax +49 201 84266-66
info@kreisslessen.de

Freiburg

EUCHNER GmbH + Co. KG
Ingenieur- und Vertriebsbüro
Steige 5
79206 Breisach
Tel. +49 7664 403833
Fax +49 7664 403834
peter.seifert@euchner.de

Lübeck

EUCHNER GmbH + Co. KG
Ingenieur- und Vertriebsbüro
Am Stadtrand 13
23556 Lübeck
Tel. +49 451 88048371
Fax +49 451 88184364
martin.pape@euchner.de

Nürnberg

EUCHNER GmbH + Co. KG
Ingenieur- und Vertriebsbüro
Steiner Straße 22a
90522 Oberasbach
Tel. +49 911 6693829
Fax +49 911 6696722
raff.paulus@euchner.de

Stuttgart

EUCHNER GmbH + Co. KG
Ingenieur- und Vertriebsbüro
Kohlhammerstraße 16
70771 Leinfelden-Echterdingen
Tel. +49 711 7597-0
Fax +49 711 7597-303
oliver.laier@euchner.de
uwe.kupka@euchner.de

Wiesbaden

EUCHNER GmbH + Co. KG
Ingenieur- und Vertriebsbüro
Adolfsallee 3
65185 Wiesbaden
Tel. +49 611 98817644
Fax +49 611 98895071
giancarlo.pasquesi@euchner.de



EUCHNER

More than safety.



Support hotline

You have technical questions about our products or how they can be used?
For further questions please contact your local sales representative.



Comprehensive download area

You are looking for more information about our products?
You can simply and quickly download operating instructions, CAD or ePLAN data and accompanying software for our products at www.euchner.com.



Customer-specific solutions

You need a specific solution or have a special requirement?
Please contact us. We can manufacture your custom product even in small quantities.



EUCHNER near you

You are looking for a contact at your location? Along with the headquarters in Leinfelden-Echterdingen, the worldwide sales network includes 18 subsidiaries and numerous representatives in Germany and abroad – you will definitely also find us near you.

www.euchner.com

EUCHNER GmbH + Co. KG

Kohlhammerstraße 16
70771 Leinfelden-Echterdingen
Germany
Tel. +49 711 7597-0
Fax +49 711 753316
info@euchner.de
www.euchner.com

EUCHNER

More than safety.