

EUCHNER

Operating Instructions

Transponder-Coded Safety Switch with Guard Locking
CTP-L.-AS Unicode/Multicode

EN

Contents

1.	About this document	4
1.1.	Scope.....	4
1.2.	Target group	4
1.3.	Key to symbols.....	4
1.4.	Supplementary documents	4
2.	Correct use	5
3.	Description of the safety function	6
4.	Exclusion of liability and warranty	7
5.	General safety precautions	7
6.	Function	8
6.1.	Guard locking on version CTP-L1.....	8
6.2.	Guard locking on version CTP-L2.....	9
6.3.	Switching states	9
7.	Manual release	10
7.1.	Auxiliary release and auxiliary key release	10
7.1.1.	Actuating auxiliary release	10
7.1.2.	Actuating auxiliary key release	11
7.2.	Emergency release	11
7.2.1.	Actuating emergency release	11
7.3.	Escape release (optional)	12
7.3.1.	Actuating escape release	12
7.4.	Wire front release (bowden)	13
7.4.1.	Laying wire front release.....	13
8.	Changing the approach direction	14
9.	Mounting	15
10.	Electrical connection	16
10.1.	Notes about  us.....	16
10.2.	Setting the AS-Interface address	16
10.3.	Configuration in the AS-Interface safety monitor	16
10.3.1.	Dual-channel conditionally dependent.....	16
10.4.	AS-Interface status messages.....	17
10.5.	Safety in case of faults.....	17
10.6.	Connection of guard locking control	17
10.6.1.	Guard locking control by means of switching the auxiliary voltage	17
10.6.2.	Guard locking control via ASi bit DO (guard locking for process protection only)	17

11.	Setup	18
11.1.	LED displays	18
11.2.	Teaching-in actuator (only for unicode evaluation)	18
11.3.	Functional check.....	19
11.3.1.	Mechanical function test.....	19
11.3.2.	Electrical function test.....	19
12.	System status table	20
13.	Technical data	21
13.1.	Technical data for safety switch CTP-AS.....	21
13.1.1.	Typical system times.....	22
13.2.	Dimension drawing for safety switch CTP.....	22
13.2.1.	Dimension drawing for product versions V1.0.X and V1.1.X.....	22
13.2.2.	Dimension drawing for product version V1.2.X	23
13.2.3.	Dimension drawing for variants CTP.....	24
13.3.	Technical data for actuator CTP-... ..	25
13.3.1.	Dimension drawing for actuator CTP-.....	25
14.	Ordering information and accessories	28
15.	Inspection and service	28
16.	Service	28
17.	Declaration of conformity	28

1. About this document

1.1. Scope

These operating instructions are valid for all CTP-L.-AS... from version V1.0.X to version 1.2.X. These operating instructions, the document *Safety information* and any available data sheet form the complete user information for your device.

1.2. Target group

Design engineers and installation planners for safety devices on machines, as well as setup and servicing staff possessing special expertise in handling safety components.

1.3. Key to symbols

Symbol/depiction	Meaning
	Printed document
	Document is available for download at www.euchner.com
 Danger Warning Caution	Safety precautions Danger of death or severe injuries Warning about possible injuries Caution slight injuries possible
 NOTICE Important!	Notice about possible device damage Important information
Tip	Useful information

1.4. Supplementary documents

The overall documentation for this device consists of the following documents:

Document title (document number)	Contents	
Safety information (2525460)	Basic safety information	
Operating instructions (2124662)	(this document)	
Declaration of conformity	Declaration of conformity	
Possibly available data sheet	Item-specific information about deviations or additions	

	Important! Always read all documents to gain a complete overview of safe installation, setup and use of the device. The documents can be downloaded from www.euchner.com . For this purpose enter the doc. no. in the search box.
---	--

2. Correct use

Safety switches series CTP-L-... are operated as slaves on the safety bus AS-Interface Safety at Work and function as interlocking devices with guard locking solenoid (type 4). The device complies with the requirements according to EN IEC 60947-5-3. Devices with unicode evaluation possess a high coding level, devices with multicode evaluation possess a low coding level.

In combination with a movable guard and the machine control, this safety component prevents the guard from being opened while a dangerous machine function is being performed.

This means:

- › Starting commands that cause a dangerous machine function must become active only when the guard is closed and locked.
- › The guard locking must not be released until the dangerous machine function has ended.
- › Closing and locking a guard must not cause automatic starting of a dangerous machine function. A separate start command must be issued. For exceptions, refer to EN ISO 12100 or relevant C-standards.

Devices from this series are also suitable for process protection.

Before the device is used, a risk assessment must be performed on the machine, e.g. in accordance with the following standards:

- › EN ISO 13849-1
- › EN ISO 12100
- › IEC 62061

Correct use includes observing the relevant requirements for installation and operation, particularly based on the following standards:

- › EN ISO 13849-1
- › EN ISO 14119
- › EN 60204-1

The safety switch is allowed to be operated only in conjunction with the intended EUCHNER actuator and the related connection components from EUCHNER. On the use of different actuators or other connection components, EUCHNER provides no warranty for safe function.



Important!

- › The user is responsible for the proper integration of the device into a safe overall system. For this purpose, the overall system must be validated, e.g. in accordance with EN ISO 13849-2.
- › It is only allowed to use components that are permissible in accordance with the table below.

Table 1: Possible combinations for CTP components

Safety switch	Actuator	
	A-C-H...	
CTP-... Unicode/Multicode	●	
Key to symbols	●	Combination possible

3. Description of the safety function

Devices from this series feature the following safety functions:

Monitoring of guard locking and the position of the guard (interlocking device with guard locking according to EN ISO 14119)

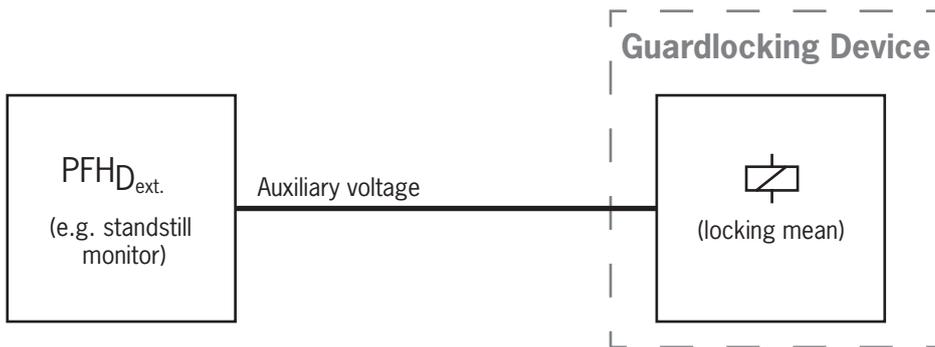
- Safety function (see chapter 6.3. *Switching states on page 9*):
 - When guard locking is released, no valid code sequence is sent (monitoring of the locking device).
 - When the guard is open, no valid code sequence is sent (monitoring of the door position).
 - Guard locking can be activated only when the actuator is located in the switch head (prevention of inadvertent locking position (faulty closure protection)).
- Safety characteristics: category, Performance Level, PFH_D (see chapter 13. *Technical data on page 21*).

Activation of guard locking by switching on/off the auxiliary voltage (applies only to guard locking devices according to the closed-circuit current principle)

If the device is used as guard locking for personnel protection, control of guard locking must be regarded as a safety function.

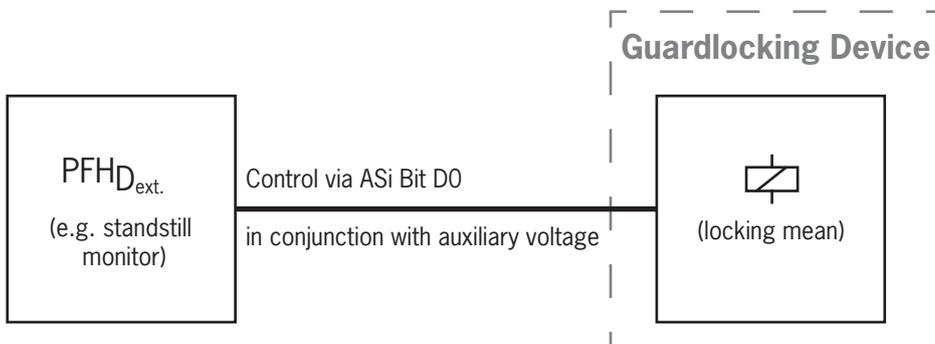
The device does not feature a safety characteristic for control of guard locking, because the guard locking solenoid is completely disconnected from outside the device via the auxiliary power (no control function within the device). It therefore does not contribute to the failure probability.

The safety level for the control of the guard locking is defined only by the external control (e.g. PFH_{D ext.} for the standstill monitor).



Control via ASi bit D0 (only for process protection) in conjunction with auxiliary voltage

Because control is via the non-safe bit D0, this control is only allowed to be used for process protection.



4. Exclusion of liability and warranty

In case of failure to comply with the conditions for correct use stated above, or if the safety regulations are not followed, or if any servicing is not performed as required, liability will be excluded and the warranty void.

5. General safety precautions

Safety switches fulfill personnel protection functions. Incorrect installation or tampering can lead to fatal injuries to personnel.

Check the safe function of the safeguard particularly

- › after any setup work
- › after the replacement of a system component
- › after an extended period without use
- › after every fault

Independent of these checks, the safe function of the safeguard should be checked at suitable intervals as part of the maintenance schedule.



WARNING

Danger to life due to improper installation or due to bypassing (tampering). Safety components fulfill a personnel protection function.

- › Safety components must not be bypassed, turned away, removed or otherwise rendered ineffective. On this topic pay attention in particular to the measures for reducing the possibility of bypassing according to EN ISO 14119:2013, section 7.
- › The switching operation must be triggered only by actuators designated for this purpose.
- › Prevent bypassing by means of replacement actuators (only for multicode evaluation). For this purpose, restrict access to actuators and to keys for releases, for example.
- › Mounting, electrical connection and setup only by authorized personnel possessing the following knowledge:
 - specialist knowledge in handling safety components
 - knowledge about the applicable EMC regulations
 - knowledge about the applicable regulations on operational safety and accident prevention



Important!

Prior to use, read the operating instructions and keep these in a safe place. Ensure the operating instructions are always available during mounting, setup and servicing. For this reason you should archive a printed copy of the operating instructions. You can download the operating instructions from www.euchner.com.

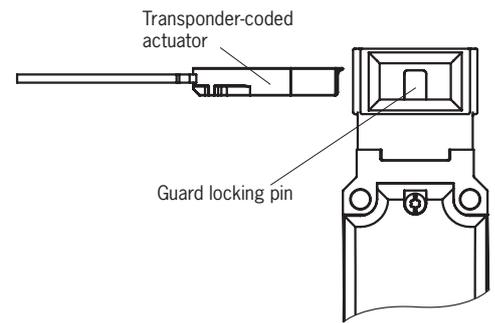
6. Function

The device permits the locking of movable guards.

The system consists of the following components: coded actuator (transponder) and switch.

Whether the device learns the complete actuator code (unicode) or not (multicode) depends on the respective version.

- › **Devices with unicode evaluation:** The actuator must be assigned to the safety switch by a teach-in operation so that it is detected by the system. This unambiguous assignment ensures a particularly high level of protection against tampering. The system thus possesses a high coding level.
- › **Devices with multicode evaluation:** Unlike systems with unicode evaluation, on multicode devices a specific code is not requested but instead it is only checked whether the actuator is of a type that can be detected by the system (multicode detection). There is no exact comparison of the actuator code with the taught-in code in the safety switch (unicode evaluation). The system possesses a low coding level.



When the guard is closed, the actuator is moved into the safety switch. When the operating distances are reached, power is supplied to the actuator by the switch and data are transferred.

If the guard is closed, guard locking is effective and the code is permissible, each CTP-AS transmits a switch-specific, unique safety code sequence with 8 x 4 bits via the AS-Interface bus.

The zero sequence is transmitted via the AS-Interface bus when the guard is unlocked.

In the event of a fault in the safety switch, the zero sequence is transmitted via the AS-Interface bus and the LOCK/DIA LED illuminates red. The occurrence of faults is detected at the latest on the next demand to close the safety outputs (e.g. on starting).

6.1. Guard locking on version CTP-L1

(guard locking actuated by spring force and released by power-ON)

Activating guard locking: Close guard; no auxiliary power at the solenoid and/or clear AS-Interface output bit D0.

Releasing guard locking: Apply auxiliary power to the solenoid and set AS-Interface output bit D0.

The spring-operated guard locking functions in accordance with the closed-circuit current principle. If auxiliary power is interrupted, guard locking remains active and the guard cannot be opened directly.



Important!

- › If the guard is open when the auxiliary power is interrupted and the guard is then closed, guard locking is activated. This can lead to persons being locked in unintentionally.
- › To ensure safe control of the guard locking, the auxiliary power must be shut down.

The actuator cannot be pulled out of the switch and the guard is locked as long as the guard locking pin is extended.

If the solenoid is controlled via the ASi bus and auxiliary power is applied to the solenoid, the guard locking pin is retracted and the actuator is released. The guard can be opened.

6.2. Guard locking on version CTP-L2

(guard locking actuated by power-ON and released by spring force)



Important!

- › Guard locking devices according to the open-circuit current principle are not intended for protecting personnel.
- › Use as guard locking for personnel protection is possible only in special cases, after strict assessment of the accident risk (see EN ISO 14119:2013, section 5.7.1)!

Activating guard locking: Apply auxiliary power to the solenoid and set AS-Interface output bit D0.

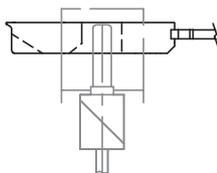
Releasing guard locking: No auxiliary power at the solenoid and/or clear AS-Interface output bit D0.

The magnetically actuated guard locking operates in accordance with the open-circuit current principle. If the solenoid is not controlled (D0=0) or if auxiliary power is switched off, guard locking is released and the guard can be opened directly!

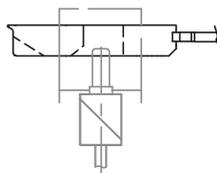
If the solenoid is controlled via the ASi bus (D0=1) and auxiliary power is applied to the solenoid, the guard locking pin is held in extended position and the guard is locked.

6.3. Switching states

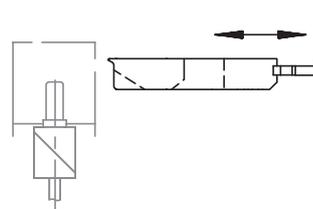
Guard closed and locked



Guard closed and not locked



Guard open



Programming	State	D0, D1	D2, D3	Monitor diagnostics
Dual-channel conditionally dependent	Guard closed and locked	Code sequence		Green
	Guard closed and not locked	Half-sequence	00	Yellow flashing
	Invalid state (guard open, guard locking active)	00	Half-sequence	Red flashing (monitoring of the invalid state)
	Guard open	00	00	Red
	Address 0 or communication disrupted	-		Gray

7. Manual release

Some situations require the guard locking to be released manually (e.g. malfunctions or an emergency). A function test must be performed after release.

More information on this topic can be found in the standard EN ISO 14119:2013, section 5.7.5.1. The device can feature the following release functions:

7.1. Auxiliary release and auxiliary key release

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

The zero sequence is sent via the ASi bus when the auxiliary release or the auxiliary key release is actuated.

Open the guard and close it again after resetting the auxiliary release or auxiliary key release. The device will then operate normally again.

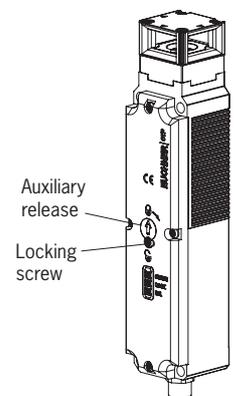


Important!

- › The actuator must not be under tensile stress during manual release.
- › The locking screw of the auxiliary release must be returned to its original position and sealed before putting into operation (with sealing lacquer, for example).
- › After use, reset the auxiliary release and screw in and seal the locking screw (with sealing lacquer, for example).
- › The auxiliary key release must not be used to lock the switch during servicing to prevent activation of guard locking, for example.
- › Loss of the release function due to mounting errors or damage during mounting.
- › Check the release function every time after mounting.
- › Observe the notes on any available data sheets.

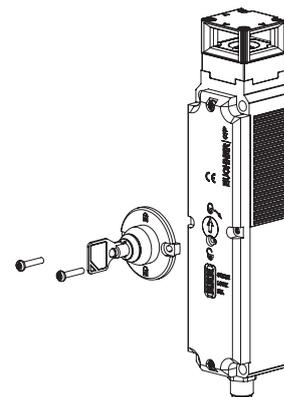
7.1.1. Actuating auxiliary release

1. Unscrew locking screw.
 2. Using a screwdriver, turn the auxiliary release to  in the direction of the arrow.
- ➔ Guard locking is released.



7.1.2. Actuating auxiliary key release

On devices with auxiliary key release (can be retrofitted), simply turn the key to release. Function as for auxiliary release. For mounting, see the auxiliary key release supplement.



7.2. Emergency release

This permits opening of a locked guard from outside the danger zone without tools. For mounting, see the mounting supplement.



Important!

- › It must be possible to operate the emergency release manually from outside the protected area without tools.
- › The emergency release must possess a marking indicating that it may be used only in an emergency.
- › The actuator must not be under tensile stress during manual release.
- › The emergency release must be sealed or the misuse of the release function must be prevented in the control system.
- › The release function meets all other requirements from EN ISO 14119.
- › The emergency release meets the requirements of Category B according to EN ISO 13849-1:2015.
- › Loss of the release function due to mounting errors or damage during mounting.
- › Check the release function every time after mounting.
- › Observe the notes on any available data sheets.

7.2.1. Actuating emergency release

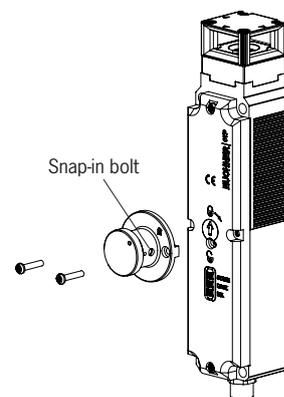
Turn the emergency release clockwise until it clicks into place.

➔ Guard locking is released.

To reset, press the snap-in bolt inward using a small screwdriver or similar tool and turn the emergency release back.

The zero sequence is sent via the ASi bus when the emergency release is actuated.

Open the guard and close it again after resetting the emergency release. The device will then operate normally again.



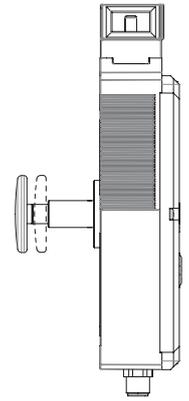
7.3. Escape release (optional)

This permits opening of a locked guard from the danger zone without tools (see chapter 13.2. *Dimension drawing for safety switch CTP... on page 22*).



Important!

- › It must be possible to actuate the escape release manually from inside the protected area without tools.
- › It must not be possible to reach the escape release from the outside.
- › The actuator must not be under tensile stress during manual release.
- › The escape release meets the requirements of Category B according to EN ISO 13849-1:2015.



7.3.1. Actuating escape release

Press the red release knob to the end stop.

➔ Guard locking is released.

Pull the knob out again to reset.

The half-sequence/zero sequence is sent via the ASi bus when the escape release is actuated.

Open the guard and close it again after resetting the escape release. The device will then operate normally again.

7.4. Wire front release (bowden)

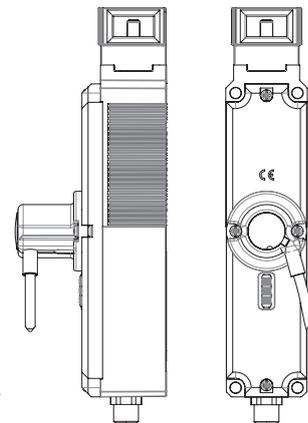
Release via a pull wire. Depending on the type of attachment, the wire front release can be used as an emergency release or escape release.

The following applies to non-latching wire front releases.

If the release is to be used as an emergency release, one of the following measures must be taken (see EN ISO 14119:2013, section 5.7.5.3):

- › Install the release so that it can be reset only with the aid of a tool.
- › Alternatively, resetting can be implemented at the control-system level, e.g. by means of a plausibility check (status of the transmitted code sequence/zero sequence does not match the guard locking control signal).

The emergency-release specifications in chapter 7.2 on Page 11 apply irrespective of this information.



Important!

- › The wire front release meets the requirements of Category B according to EN ISO 13849-1:2015.
- › The correct function depends on the laying of the pull wire and the attachment of the pull handle. The plant manufacturer is responsible for proper installation; the notes from chapter 7.4.1 must be observed.
- › The actuator must not be under tensile stress during manual release.

7.4.1. Laying wire front release



Important!

- › Loss of the release function due to mounting errors, damage or wear.
- › Check the release function every time after mounting.
- › When routing the wire front release, ensure that it operates smoothly.
- › Observe the min. bending radius (100 mm) and minimize the number of bends.
- › The switch is not allowed to be opened.
- › Please observe notes on the corresponding data sheets.

8. Changing the approach direction

The approach direction needs to be changed only if the switch is to be approached from the rear.

Proceed as follows:

1. Remove the screws from the safety switch.
2. Set the required direction.
3. Tighten the screws with a torque of 1.2 Nm.

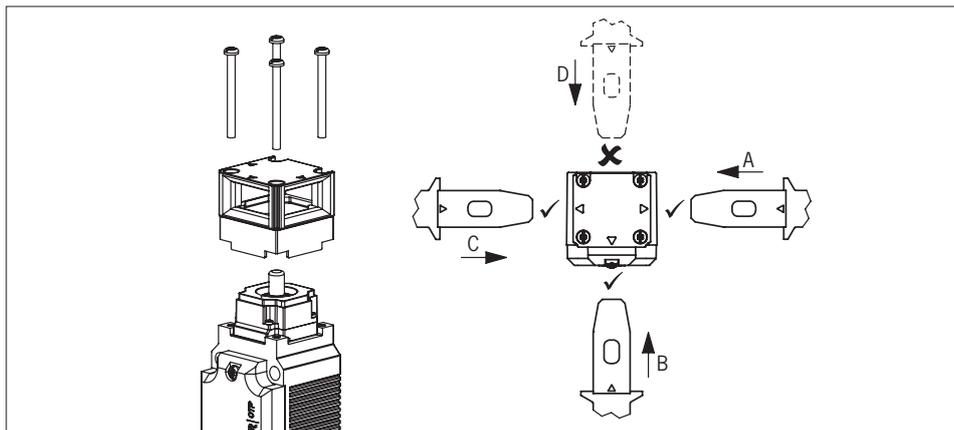


Fig. 1: Changing the approach direction

9. Mounting



CAUTION

Safety switches must not be bypassed (bridging of contacts), turned away, removed or otherwise rendered ineffective.

- › Observe EN ISO 14119:2013, section 7, for information about reducing the possibilities for bypassing an interlocking device.



NOTICE

Risk of damage to equipment and malfunctions as a result of incorrect installation.

- › Safety switches and actuators must not be used as an end stop.
- › Observe EN ISO 14119:2013, sections 5.2 and 5.3, for information about mounting the safety switch and the actuator.
- › Protect the switch head against damage, as well as penetrating foreign objects such as swarf, sand and blasting shot, etc.
- › Observe the min. door radii (see chapter 13.3.1. *Dimension drawing for actuator CTP-... on page 25*).
- › Observe the tightening torque for mounting the switch (max.1.4 Nm).
- › The locking screw of the auxiliary release must be returned to its original position and sealed before putting into operation (with sealing lacquer, for example).

A clearance of 12 mm must be maintained around the actuator head (see Fig. 2).

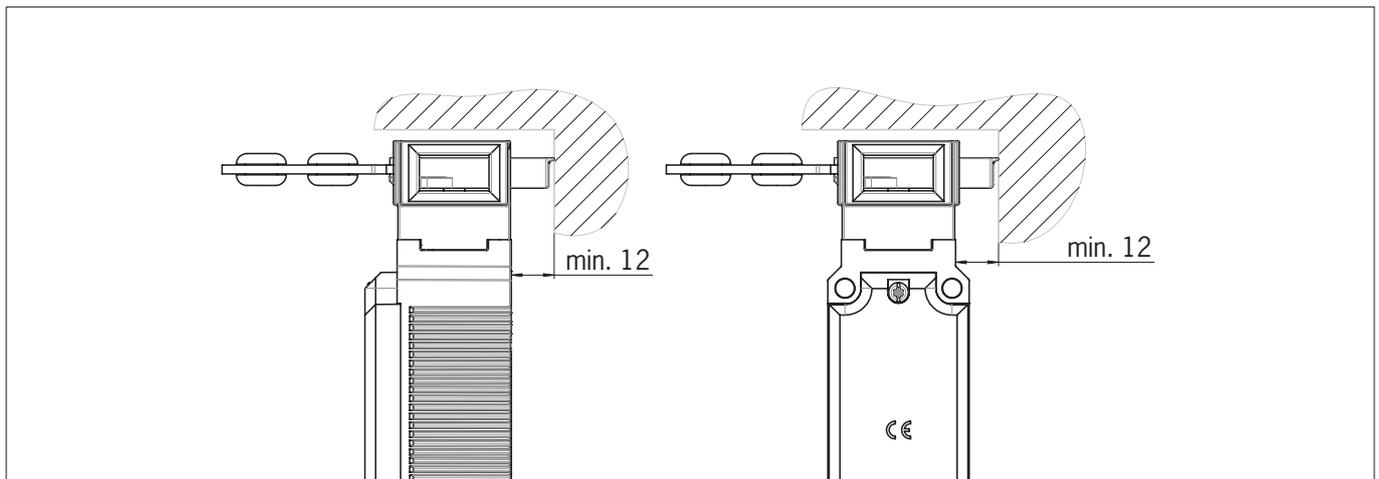


Fig. 2: Actuator head clearance

10. Electrical connection

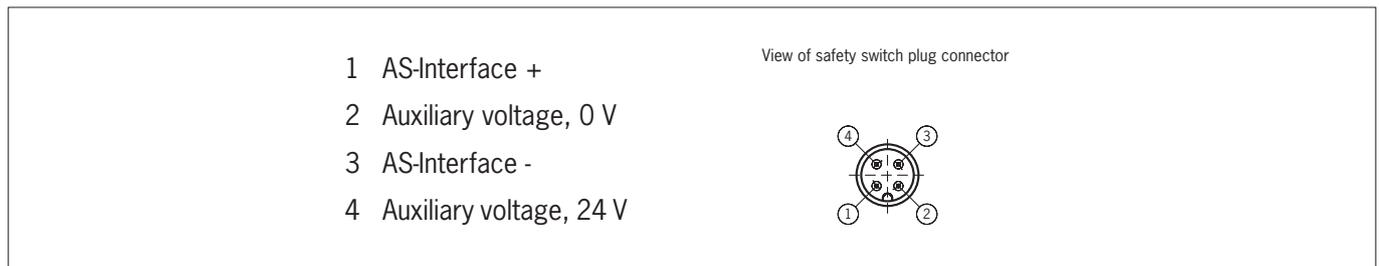


Fig. 3: Terminal assignment, AS-Interface M12 plug connector

10.1. Notes about



Important!

- This device is intended to be used with a Class 2 power source in accordance with UL1310. As an alternative an LV/C (Limited Voltage/Current) power source with the following properties can be used:
 - This device shall be used with a suitable isolating source in conjunction with a fuse in accordance with UL248. The fuse shall be rated max. 3.3 A and be installed in the max. 30 V DC power supply to the device in order to limit the available current to comply with the UL requirements. Please note possibly lower connection ratings for your device (refer to the technical data).
- For use and application as per the requirements of UL ¹⁾ a connecting cable listed under the UL category code CYJV/7, min. 24 AWG, min. 80 °C, must be used.

1) Note on the scope of the UL approval: the devices have been tested as per the requirements of UL508 and CSA/C22.2 no. 14 (protection against electric shock and fire).

10.2. Setting the AS-Interface address

The address can be set prior to or after mounting.

The AS-Interface address of the safety switch is set using an AS-Interface programming device. Addresses 1 to 31 are valid.

The unit is programmed by connecting the programming device to the M12 plug connector of the safety switch with a programming cable.

Address 0 is the default setting on delivery (the AS-Interface LED flashes alternately red/yellow).

10.3. Configuration in the AS-Interface safety monitor

(see operating instructions for the AS-Interface safety monitor)

10.3.1. Dual-channel conditionally dependent

Cat.
4

The safety switch is configured in the AS-Interface safety monitor with the AS-Interface address set as follows, for example:

- Dual-channel conditionally dependent
- Independent: In-1

10.4. AS-Interface status messages

A dual LED (red/green) displays the colors red, green and yellow. The following table provides assistance with troubleshooting.

State ASI LED	Explanation
Green	Normal operation
Red	No data exchange between master and slave Cause: - Master in STOP mode - Slave not in LPS - Slave with wrong IO/ID
Red/yellow alternately flashing	No data exchange between master and slave Cause: slave address=0
Red/green alternately flashing	Device fault in the slave. Contact the manufacturer.
Red flashing	

10.5. Safety in case of faults

The ASi power supply and the auxiliary voltage are reverse polarity protected.

10.6. Connection of guard locking control

10.6.1. Guard locking control by means of switching the auxiliary voltage

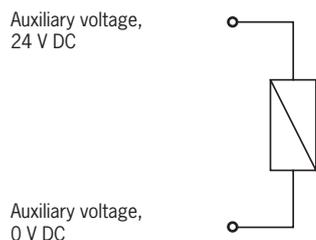


Fig. 4: Connection example: guard locking control by means of switching the auxiliary voltage

10.6.2. Guard locking control via ASi bit D0 (guard locking for process protection only)

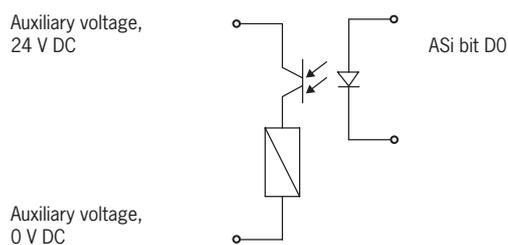


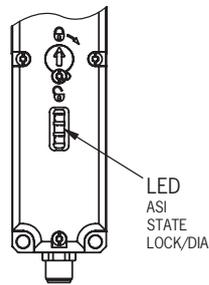
Fig. 5: Connection example of guard locking control via ASi bit D0 (guard locking for process protection only)

11. Setup

11.1. LED displays

You will find a detailed description of the signal functions in chapter 12. *System status table on page 20.*

LED	Color
ASI	Green/red
STATE	Green
LOCK/DIA	Yellow/red



11.2. Teaching-in actuator (only for unicode evaluation)

The actuator must be allocated to the safety switch using a teach-in function before the system forms a functional unit.

The half-sequence is output during a teach-in operation. The number of possible teach-in operations is unlimited.



Tip!

Prior to switching on, close the guard on which the actuator to be taught-in is installed. The teach-in operation starts immediately after switching on.



Important!

- › The teach-in operation can be performed only if the device does not have any internal fault.
- › Devices in the condition as supplied remain in teach-in standby state until they have successfully taught-in the first actuator. Once taught-in, switches remain in the teach-in standby state for approx. 3 min. after each switch-on.
- › The safety switch disables the code of the preceding device if teach-in is carried out for a new actuator. Teach-in is not possible again immediately for this device if a new teach-in operation is carried out. The disabled code is released again in the safety switch only after a third code has been taught-in.
- › The safety switch can be operated only with the last actuator taught-in.
- › If the switch detects the actuator that was most recently taught-in when in the teach-in standby state, this state is ended immediately and the switch changes to normal operation.
- › The actuator to be taught-in is not activated if it is within the actuating range for less than 30 s.

1. Establish teach-in standby:

- Devices in the condition as supplied: unlimited teach-in standby after switching on
- Switch already taught-in: teach-in standby is available for approx. 3 min after switching on

➔ Teach-in standby indication, STATE LED flashes 3x repeatedly.

2. Insert the actuator during teach-in standby.

➔ The automatic teach-in operation starts (duration approx. 30 s).

During the teach-in operation the STATE LED flashes (approx. 1 Hz).

Alternate flashing of the STATE and LOCK/DIA LEDs acknowledges the successful teach-in operation.

Teach-in errors are indicated by the illumination of the red LOCK/DIA LED and a flashing code on the green STATE LED (see chapter 12. *System status table on page 20*).

3. Switch off operating voltage (min. 3 s).

➔ The code of the actuator that was just taught-in is activated in the safety switch.

4. Switch on operating voltage.

➔ The device operates normally.

11.3. Functional check



WARNING

Danger of fatal injury as a result of faults in installation and the functional check.

- › Before carrying out the functional check, make sure that there are no persons in the danger zone.
- › Observe the valid accident prevention regulations.

11.3.1. Mechanical function test

The actuator must slide easily into the actuating head. Close the guard several times to check the function. For devices with mechanical release (emergency release or escape release), the correct function of the release must be checked as well.

11.3.2. Electrical function test

After installation and after any fault, the safety function must be fully checked. Proceed as follows:

1. Switch on operating voltage.
 - ➔ The machine must not start automatically.
 - ➔ The safety switch carries out a self-test. The green STATE LED then flashes at regular intervals.
2. Close all guards. In case of guard locking by solenoid force: activate guard locking.
 - ➔ The machine must not start automatically. It must not be possible to open the guard.
 - ➔ The green STATE LED and the yellow LOCK/DIA LED are illuminated continuously.
3. Enable operation in the control system.
 - ➔ It must not be possible to deactivate guard locking as long as operation is enabled.
4. Disable operation in the control system and deactivate guard locking.
 - ➔ The guard must remain locked until there is no longer any risk of injury.
 - ➔ It must not be possible to start the machine as long as guard locking is deactivated.

Repeat steps 2 - 4 for each guard.

12. System status table

The dual LOCK/DIA LED displays the colors red and yellow. Depending on the state, both colors can flash alternately.

Operating mode	Actuator/door position	LED indicator Output			State
		STATE (green)	LOCK/DIA (red)	LOCK/DIA (yellow)	
Normal operation	closed		○		Normal operation, door closed and locked
	closed	1 x in-verse	○	○	Normal operation, door closed and not locked
	open	1 x	○	○	Normal operation, door open
Teach-in operation (only unicode)	X	3 x	○	○	Device in teach-in standby
	closed	1 Hz	○	○	Teach-in operation
	X	↔		○	Positive acknowledgment after completion of teach-in operation
Fault display	X	1 x		○	Error in the teach-in operation (only unicode) Actuator removed from the actuating range prior to the end of the teach-in operation or faulty actuator detected
	X	3 x		○	Read error (e.g. actuator faulty)
	X	5 x		○	Disabled actuator detected
	X	○		X	Internal error

Key to symbols	○		LED not illuminated
			LED illuminated
	1 x in-verse		LED illuminated, briefly goes off 1 x
	1 Hz		LED flashes at 1 Hz
	3 x		LED flashes three times, and this is then repeated
	↔		LEDs flash alternately
	X		Any state

After the cause has been remedied, faults can generally be reset by opening and closing the guard. If the fault is still displayed afterward, use the reset function or briefly interrupt the power supply. Contact the manufacturer if the fault could not be reset after restarting.



Important!

If you do not find the displayed device status in the system status table, this indicates an internal device fault. In this case, you should contact the manufacturer.

13. Technical data



NOTICE

If a data sheet is available for the product, the information on the data sheet applies.

13.1. Technical data for safety switch CTP-AS

Parameter	Value			Unit
	min.	typ.	max.	
General				
Material - Switch head - Switch housing	Die-cast zinc Reinforced thermoplastic			
Installation orientation	Any			
Degree of protection	IP67/IP69/IP69K (screwed tight with the related mating connector)			
Safety class acc. to EN IEC 61558	III			
Degree of contamination	3			
Mechanical life	1 x 10 ⁶ operating cycles			
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
Locking force F _{max} ¹⁾	3,900			N
Locking force F _{Zh} ¹⁾ 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 acc. to UL	Operation only with UL class 2 power supply or equivalent measures			
Shock and vibration resistance	Acc. to EN 60947-5-3			
EMC protection requirements	Acc. to EN 60947-5-3			
Ready delay	-	-	1	s
Risk time	-	-	260	ms
Turn-on time	-	-	400	ms
Frequency band	120 ... 130			kHz
Rated insulation voltage U _i	-	-	50	V
Rated impulse withstand voltage U _{imp}	-	-	0.5	kV
Solenoid				
Auxiliary voltage	24 +10%/-15% (PELV)			V DC
Current consumption with auxiliary voltage	400			mA
Duty cycle	100			%
AS-Interface data		EA code: 7	ID code: B	
AS-i operating voltage	26.5	-	31.6	V DC
Total current consumption from AS-i	CTP...AS.A	-	450	mA
	CTP...AS.B	-	50	
Valid AS-Interface addresses	1 - 31			
AS-Interface inputs		Acc. to ASi Safety at Work		
Influenced by door position	CTP...AS1..	D0, D1		
	CTP...AS2..	D0, D1, D2, D3		
Influenced by guard locking	CTP...AS1..	D2, D3		
	CTP...AS2..	D0, D1, D2, D3		
AS-Interface outputs				
Guard locking solenoid	D0 (1 = solenoid energized)			
Reliability values acc. to EN ISO 13849-1²⁾				
Mission time	20			years
Monitoring of guard locking and the guard position				
Category	4			
Performance Level (PL)	e			
PFH _D	4.1 x 10 ⁻⁹ /h			
Control of guard locking				
Category	Depends on external control			
Performance Level (PL)	(applies only to guard locking devices according to the closed-circuit current principle)			
PFH _D				

1) Dependent on the actuator used.

2) Refer to the declaration of conformity in chapter 17 for the issue date.

13.1.1. Typical system times

Refer to the technical data for the exact values.

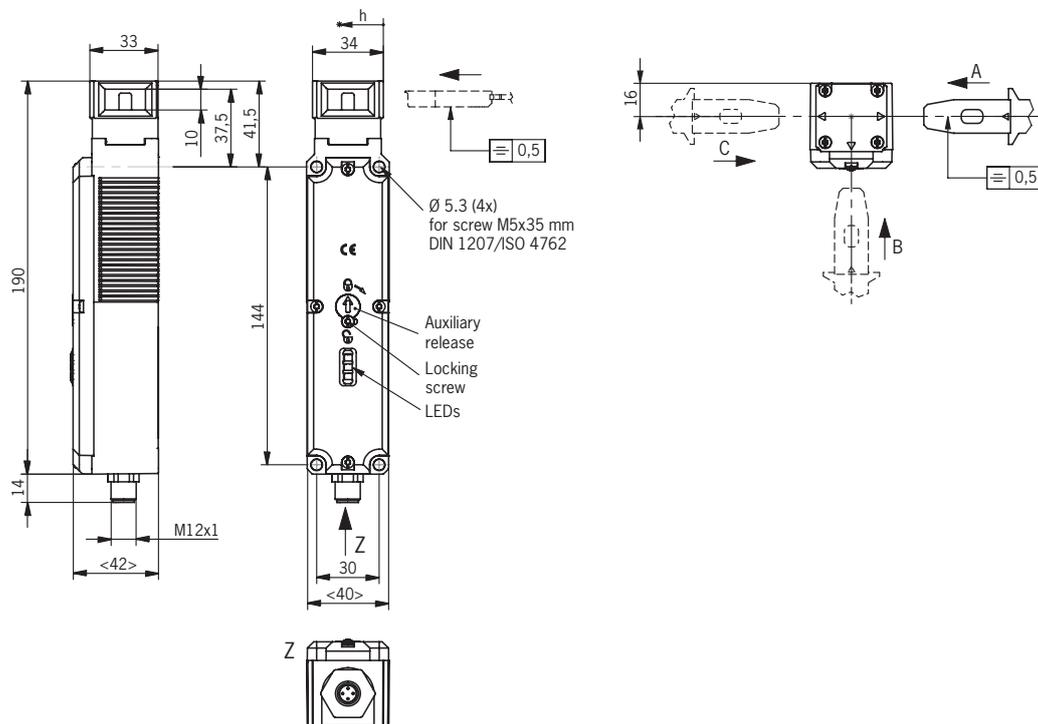
Ready delay: After switch-on, the device carries out a self-test. The system is ready for operation only after this time.

Turn-on time of safety outputs: The max. reaction time t_{on} is the time from the moment when the guard is locked to the moment when the safety outputs switch on.

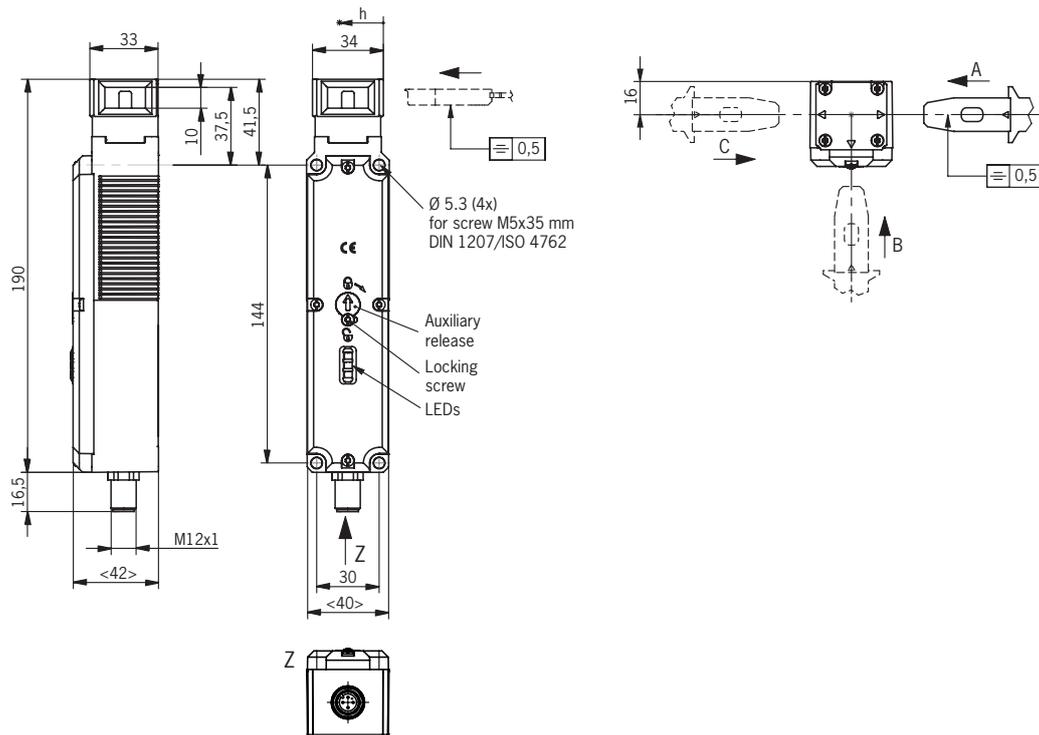
Risk time according to EN 60947-5-3: If an actuator moves outside the actuating range, transmission of the code sequence on the corresponding safety switch is deactivated at the latest after the risk time.

13.2. Dimension drawing for safety switch CTP...

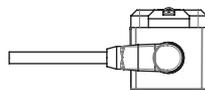
13.2.1. Dimension drawing for product versions V1.0.X and V1.1.X



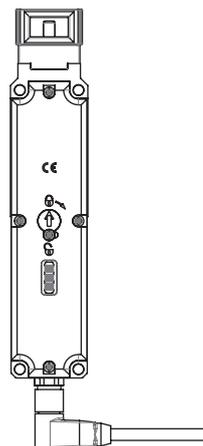
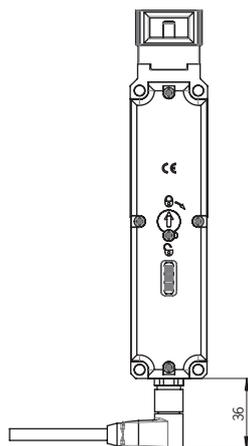
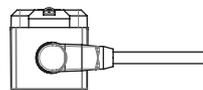
13.2.2. Dimension drawing for product version V1.2.X



Cable outlet C

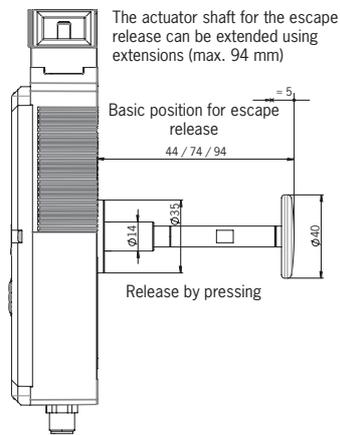


Cable outlet A

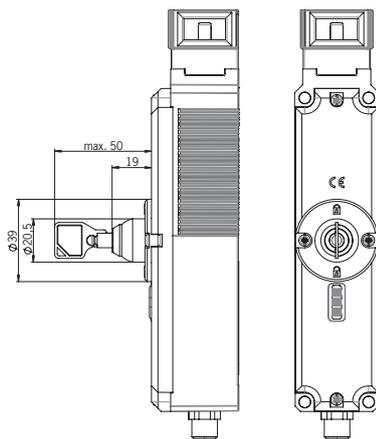


13.2.3. Dimension drawing for variants CTP...

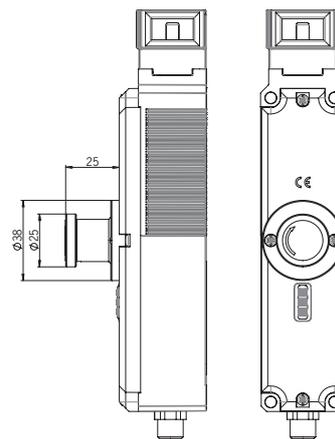
With escape release



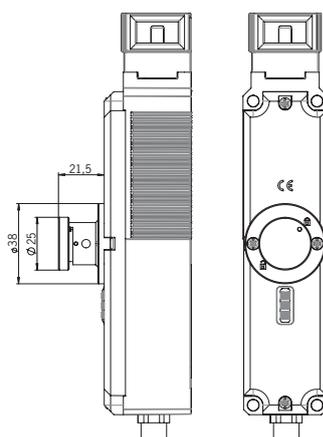
With auxiliary key release



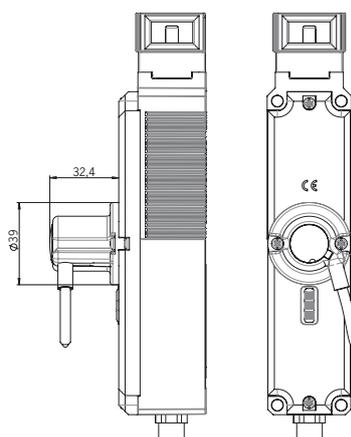
With auxiliary release



With emergency release



With wire front release (bowden)



	Dimension drawing	Min. door radius [mm]	Order no./item
Bent actuators			<p>122667 A-CH-W-SST-122667</p>
			<p>122668 A-CH-W-SST-122668</p>

Dimension drawing	Min. door radius [mm]	Order no./item
		<p>X = 53 mm (122671, 122672) X = 49 mm (122669, 122670)</p>
		<p>X = 41 mm (122673, 122674) X = 45 mm (122675, 122676)</p>
		<p>X = 41 mm (122673, 122674) X = 45 mm (122675, 122676)</p>

Hinged actuators



Tip!

Safety screws are included with the actuator.

14. Ordering information and accessories



Tip!

Suitable accessories, e.g. cables or assembly material, can be found at www.euchner.com. To order, enter the order number of your item in the search box and open the item view. Accessories that can be combined with the item are listed in *Accessories*.

15. Inspection and service



WARNING

Danger of severe injuries due to the loss of the safety function.

- › If damage or wear is found, the complete switch and actuator assembly must be replaced. Replacement of individual parts or assemblies is not permitted.
- › Check the device for proper function at regular intervals and after every fault. For information about possible time intervals, refer to EN ISO 14119:2013, section 8.2.

Regular inspection of the following is necessary to ensure trouble-free long-term operation:

- › Check the switching function (see chapter 11.3. *Functional check on page 19*)
- › Check all additional functions (e.g. escape release, lockout bar, etc.)
- › Check the secure mounting of the devices and the connections
- › Check for contamination

No servicing is required. Repairs to the device are only allowed to be made by the manufacturer.



NOTICE

The year of manufacture is given in the laser marking at the bottom right corner. The current version number in the format (V X.X.X) can also be found on the device.

16. Service

If servicing is required, please contact:

EUCHNER GmbH + Co. KG
Kohlhammerstraße 16
70771 Leinfelden-Echterdingen
Germany

Service telephone:
+49 711 7597-500

E-mail:
support@euchner.de

Internet:
www.euchner.com

17. Declaration of conformity

The declaration of conformity is part of the operating instructions.

The complete EU declaration of conformity can also be found at www.euchner.com. Enter the order number of your device in the search box. The document is available under *Downloads*.

Euchner GmbH + Co. KG
Kohlhammerstraße 16
70771 Leinfelden-Echterdingen
Germany
info@euchner.de
www.euchner.com

Edition:
2124662-07-05/23
Title:
Operating Instructions Transponder-Coded Safety Switch
CTP-L-AS
(translation of the original operating instructions)
Copyright:
© EUCHNER GmbH + Co. KG, 05/2023

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.