EUCHNER

Operating Instructions

Transponder-Coded Safety Switch With Guard Locking

CTP-AR Unicode/Multicode

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Contents

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1. About this document

1.1. Scope

These operating instructions are valid for all CTP-L.-AR… from version V1.0.0. These operating instructions, the document *Safety information* and any enclosed 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 (2123041)	(this document)	
Possibly enclosed 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 interlocking devices with guard locking solenoid (type 4). 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.

Connection of several devices in an AR switch chain is permitted only using devices intended for series connection in an AR switch chain. Check this in the instructions of the device in question.

A maximum of 20 safety switches are allowed to be operated in a switch chain.

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

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NOTICE

For information about combination with an AR evaluation unit, please refer to chapter *10.10. Connection of several CTP-AR in a switch chain on page 24*.

3. Description of the safety function

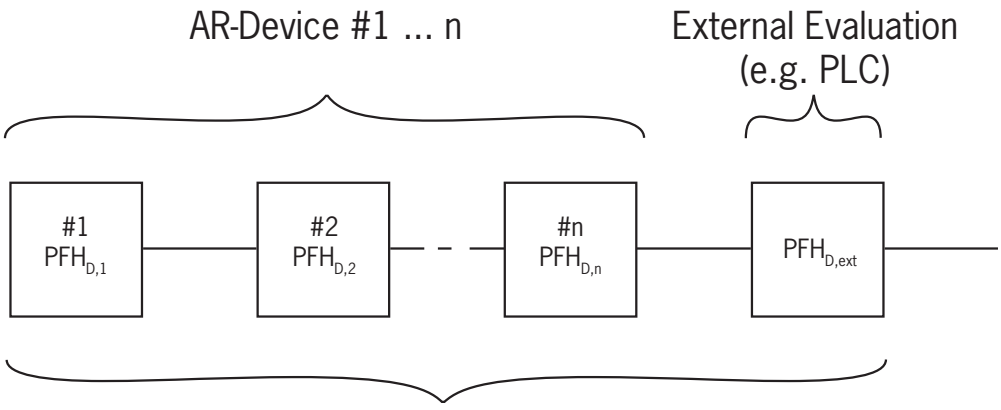
Devices from this series feature the following safety functions:

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

- Safety function (see chapter *6.8. Switching states on page 10*):
  - The safety outputs are switched off when guard locking is released (monitoring of the locking element).
  - The safety outputs are switched off when the guard is open (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)).
  - The following additionally applies in an AR series connection: the safety outputs are switched on only when the device receives a corresponding signal from its predecessor in the chain.
- Safety characteristics: category, Performance Level, PFH_D (see chapter *13. Technical data on page 34*).

NOTICE

You can regard the complete AR device chain as one subsystem during calculation. The following calculation method applies to the PFH_D value:



$$PFH_D \text{ ges} = \sum_{k=1}^{n} PFH_{D,k} + PFH_{D,ext}$$

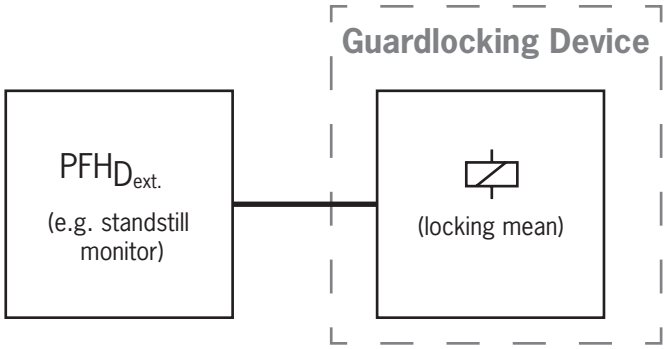
Alternatively, the simplified method according to section 6.3 of EN 13849-1:2015 can be used for calculation.

Control of guard locking

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

The device does not feature a safety characteristic for the control of the guard locking, because the guard locking solenoid is completely disconnected from outside the device (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).



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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 personnel protection functions.

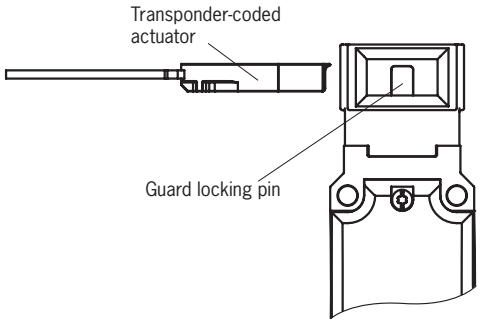
- Safety components must not be bypassed, turned away, removed or otherwise rendered ineffective. On this topic pay attention in particular to the measures for reducing the possibility of bypassing according to EN ISO 14119:2013, section 7.
- The switching operation must be triggered only by actuators 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 evaluation). 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 distance is reached, power is supplied to the actuator by the switch and data are transferred.

If a permissible code is detected, the safety outputs are switched on.

The safety outputs and the monitoring output (OL) are switched off when the guard is unlocked.

In the event of a fault in the safety switch, the safety outputs are switched off and the 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 lock monitoring

All versions feature two safe outputs for monitoring guard locking. The safety outputs (FO1A and FO1B) are switched off when guard locking is released.

6.2. Door position monitoring output (OD)

The door position monitoring output is switched on as soon as the actuator is inserted into the switch head (state: guard closed and not locked). The door position monitoring output also remains switched on when guard locking is active.

6.3. Diagnostic monitoring output (OI)

The diagnostic monitoring output is switched on in the event of a fault (switch-on condition as for DIA LED).

6.4. Guard lock monitoring output (OL)

The guard lock monitoring output is switched on when guard locking is active.

6.5. Version CTP Extended

Devices in the Extended version contain additional controls/indicators in the housing cover. Please refer to the enclosed data sheet for further information.

6.6. Guard locking on version CTP-L1

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

Activating guard locking: close guard; no voltage at the solenoid.

Releasing guard locking: apply voltage to the solenoid.

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

ⓘ	**Important!** If the guard is open when the power supply is interrupted and is then closed, guard locking is activated. This can lead to persons being locked in unintentionally.

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

If a voltage is applied to the guard locking solenoid, the guard locking pin is retracted and the actuator is released. The guard can be opened.

6.7. Guard locking on version CTP-L2

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

Important!

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 voltage to the solenoid.

Releasing guard locking: disconnect voltage from the solenoid.

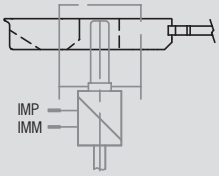
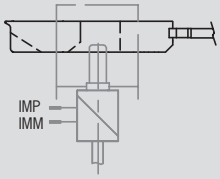
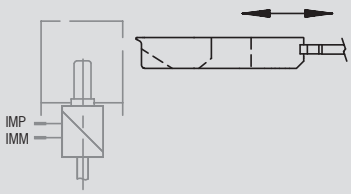
The magnetically actuated guard locking operates in accordance with the open-circuit current principle. If the voltage is interrupted at the solenoid, the guard locking is released and the guard can be opened directly.

The guard can be opened as long as no voltage is applied to the guard locking solenoid.

If a voltage is applied to the guard locking solenoid, the guard locking pin is held in the extended position and the guard is locked.

6.8. Switching states

The detailed switching states for your switch can be found in the system status table. All safety outputs, monitoring outputs and display LEDs are described there.

	Guard closed and locked	**Guard closed and not locked**	**Guard open**
			
Voltage on guard locking solenoid CTP-L1	off	on	(irrelevant)
Voltage on guard locking solenoid CTP-L2	on	off	(irrelevant)
Safety outputs FO1A and FO1B	on	off	off
Guard lock monitoring output OL	on	off	off
Door position monitoring output OD	on	on	off

7. Manual release

Important!

No further release functions can be retrofitted on Extended variants with control elements in position 1 (S1) and position 2 (S2).

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

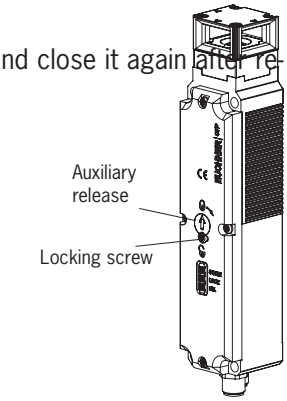
More information on this topic can be found in the standard EN ISO 14119:2013, section 5.7.5.1. The device can feature the following release functions:

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.

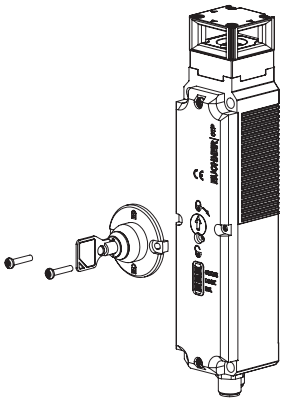
The safety outputs ⊣ are switched off when the auxiliary release is actuated. Use the safety outputs ⊣ to generate a stop command.

The monitoring output OL is switched off; OD can assume an undefined state. 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.
- After use, reset the auxiliary release and screw in and seal the locking screw (e.g. with sealing lacquer).
- 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.
- Please observe the notes on any enclosed 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.

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7.2. Emergency release

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

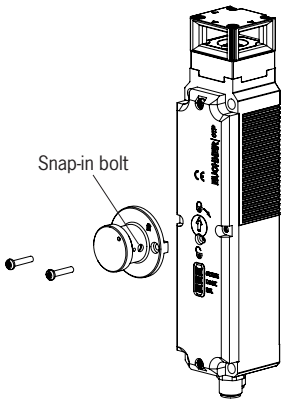
Important!

- 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.
- Please observe the notes on any enclosed data sheets.

7.2.1. Actuating emergency release

- Turn the emergency release clockwise until it clicks into place.

➡ Guard locking is released.



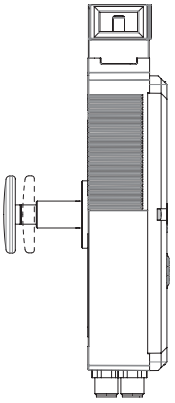
To reset, press the snap-in bolt inward using a small screwdriver or similar tool and turn the emergency release back.

The safety outputs ⊣ are switched off when the emergency release is actuated. Use the safety outputs ⊣ to generate a stop command.

The monitoring output OL is switched off; OD can assume an undefined state. Open the guard and close it again after resetting the emergency release. The device will then operate normally again.

7.3. Escape release (optional)

Permits opening of a locked guard from the danger zone without tools (see chapter *13.3. Dimension drawing for safety switch CTP… on page 37*).



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

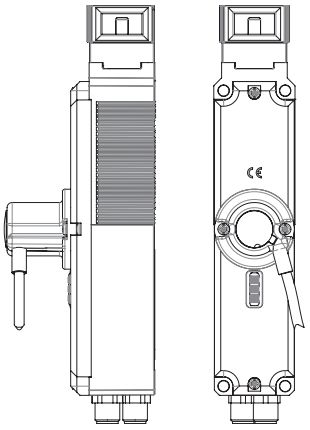
➡ Guard locking is released.

Pull the knob out again to reset.

The safety outputs ⊣ are switched off when the escape release is actuated. Use the safety outputs ⊣ to generate a stop command.

The monitoring output OL is switched off; OD can assume an undefined state. 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 realized at the control-system level by means of a plausibility check (status of the safety outputs does not match the guard locking control signal), for example.

The emergency-release specifications in chapter *7.2* on *Page 12* 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, and this is the responsibility of the plant manufacturer.
- 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.
- Observe the notes on the enclosed data sheets.

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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

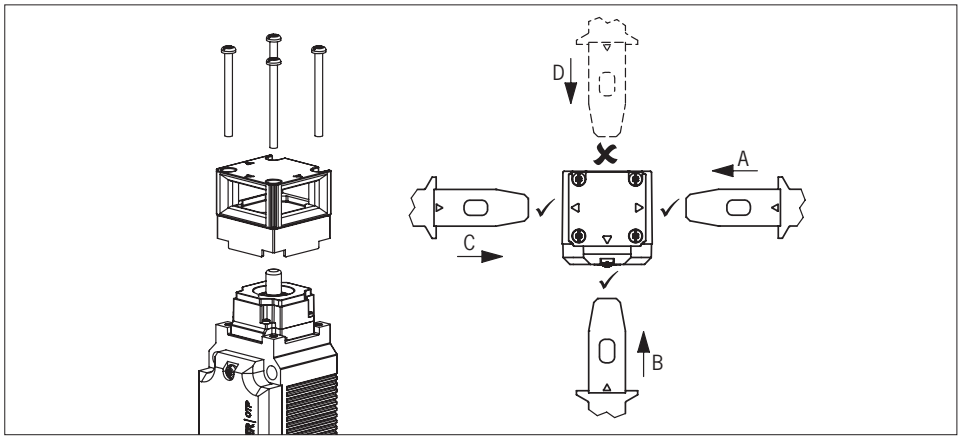

Figure 1: Changing the approach direction

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.

CAUTION

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 14119:2014, sections 5.2 and 5.3, for information about mounting the safety switch and the actuator. The following specifications must be observed:
  - Mounting with screws of property class 8.8 or higher.
  - The minimum screw diameter is 4 mm.
  - Secure the fixing material against loosening (e.g. by means of medium-strength positive screw locking).
- 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 *13.4.1. Dimension drawing for actuator CTP-... on page 39*).
- Observe the tightening torque for mounting the switch (max.1.4 Nm).

Device damage or malfunctions caused by material changes due to the environment.

- In accordance with section 6.3 of EN ISO 14119:2014, the environmental influences (e.g. direct UV radiation or corrosion) must be checked before a guard locking device is used.
- Contact EUCHNER if you have any questions about environmental influences or about use in aggressive environments.

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

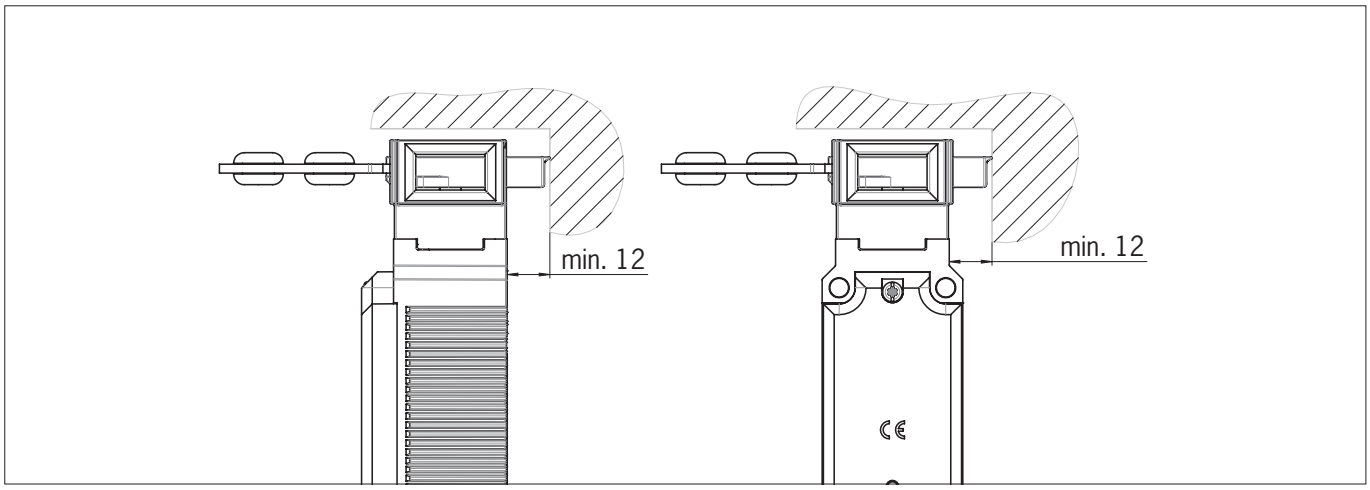

Figure 2: Actuator head clearance

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10. Electrical connection

The following connection options are available:

- Separate operation
- Series connection with Y-distributors from EUCHNER (only with M12 plug connector)
- Series connection, e.g. with wiring in the control cabinet
- Operation on an AR evaluation unit (only for CTP Extended).

WARNING

In the event of a fault, loss of the safety function due to incorrect connection.

- To ensure safety, both safety outputs (FO1A and FO1B) must always be evaluated.
- Monitoring outputs must not be used as safety outputs.
- Lay the connecting cables with protection to prevent the risk of short circuits.

CAUTION

Risk of damage to equipment or malfunctions as a result of incorrect connection.

- The power supply for the evaluation electronics is electrically isolated from the power supply for the guard locking solenoid.
- Do not use a control system with pulsing or switch off the pulsing function in your control system. The device generates its own test pulses on the output lines FO1A/FO1B. A downstream control system must tolerate these test pulses, which may be up to 1 ms long on AR devices. The test pulses on AR devices are also output when the safety outputs are switched off. Depending on the inertia of the downstream device (control system, relay, etc.), this can lead to short switching processes.
- The inputs on an evaluation unit connected must be positive-switching, as the two outputs on the safety switch deliver a level of +24 V in the switched-on state.
- All the electrical connections must either be isolated from the mains supply by a safety transformer according to IEC 61558-2-6 with limited output voltage in the event of a fault, or by other equivalent isolation measures (PELV).
- All electrical outputs must have an adequate protective circuit for inductive loads. The outputs must be protected with a free-wheeling diode for this purpose. RC interference suppression units must not be used.
- Power devices which are a powerful source of interference must be installed in a separate location away from the input and output circuits for signal processing. The cable routing for safety circuits should be as far away as possible from the cables of the power circuits.
- To avoid EMC interference, the physical environmental and operating conditions at the installation site of the device must comply with the requirements according to the standard EN 60204-1:2006, section 4.4.2 (EMC).

CAUTION

Pay attention to any interference fields from devices such as frequency converters or induction heating systems. Observe the EMC instructions in the manuals from the respective manufacturer.

Important!

If the device does not appear to function when operating voltage is applied (e.g. green STATE LED does not flash), the safety switch must be returned unopened to the manufacturer.

10.1. Notes about c UL us

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 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. Safety in case of faults

- The operating voltage UB and the solenoid voltage IMP are reverse polarity protected.
- The safety outputs FO1A/FO1B are short circuit-proof.
- A short circuit between FO1A and FO1B is detected by the switch.
- A short circuit in the cable can be excluded by laying the cable with protection.

10.3. Fuse protection for power supply

The power supply must be provided with fuse protection depending on the number of switches and the current required for the outputs. The following rules apply:

Max. current consumption of an individual switch I_{max}

I_{max} = I_{UB} + $I_{FO1A+FO1B}$ + I_{OL} + I_{OD}

I_{UB} = Switch operating current (40 mA)

I_{OL}/I_{OD} = Load current of monitoring outputs (max. 50 mA per monitoring output)

$I_{FO1A+FO1B}$ = Load current of safety outputs FO1A + FO1B (2 x max. 150 mA)

Max. current consumption of a switch chain Σ I_{max}

$\Sigma I_{max} = I_{FO1A+FO1B} + n \times (I_{UB} + I_{OL} + I_{OD})$

n = Number of connected switches

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10.4. Requirements for connecting cables

CAUTION

Risk of damage to equipment or malfunctions as a result of incorrect connecting cables.

- Use connection components and connecting cables from EUCHNER.
- On the use of other connection components, the requirements in the following table apply. EUCHNER provides no warranty for safe function in case of failure to comply with these requirements.

Observe the following requirements with respect to the connecting cables:

For safety switch CTP-...-AR-...-SAB-... with plug connectors 2 x M12

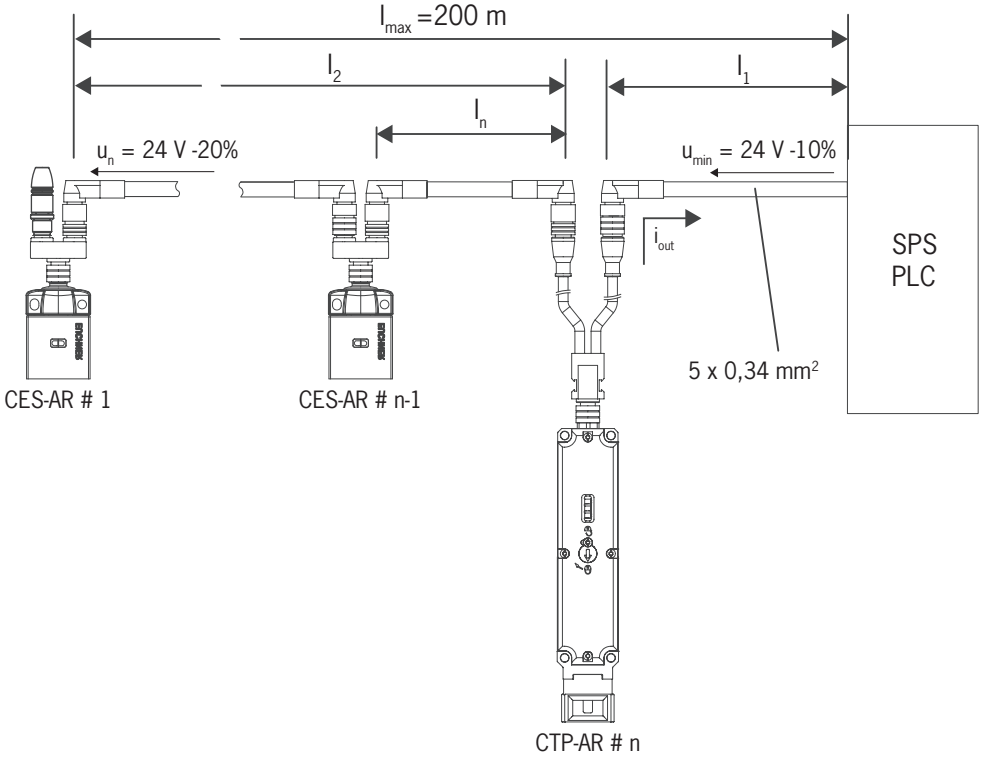
Parameter	Value	Unit
Conductor cross-section, min.	0.25	mm^2
R max.	60	Ω/km
C max.	120	nF/km
L max.	0.65	mH/km
Recommended cable type	LIYY 8 x 0.25 mm^2 or 5 x 0.34 mm^2	

For safety switch CTP-...-AR-...-SH-... with plug connector M23 (RC18)

Parameter	Value	Unit
Conductor cross-section, min.	0.25	mm^2
R max.	60	Ω/km
C max.	120	nF/km
L max.	0.65	mH/km
Recommended cable type	LIFY11Y min. 19-core	

10.5. Maximum cable lengths

Switch chains are permitted up to a maximum overall cable length of 200 m taking into account the voltage drop as a result of the cable resistance (see table below with example data and case example).



n Max. number of switches	$I_{FO1A/FO1B}$ (mA) Possible output current per channel FO1A/FO1B	l_1 (m) Max. cable length from the last switch to the control system
5	10	150
	25	100
	50	80
	100	50
	150	25
6	10	120
	25	90
	50	70
	100	50
	150	25
10	10	70
	25	60
	50	50
	100	40
	150	25

EN

10.5.1. Determining cable lengths using the example table

Example: 6 switches are to be used in series. Cabling with a length of 40 m is routed from a safety relay in the control cabinet to the last switch (#6). Cables with a length of 20 m each are connected between the individual CES-AR/CTP-L1-… safety switches.

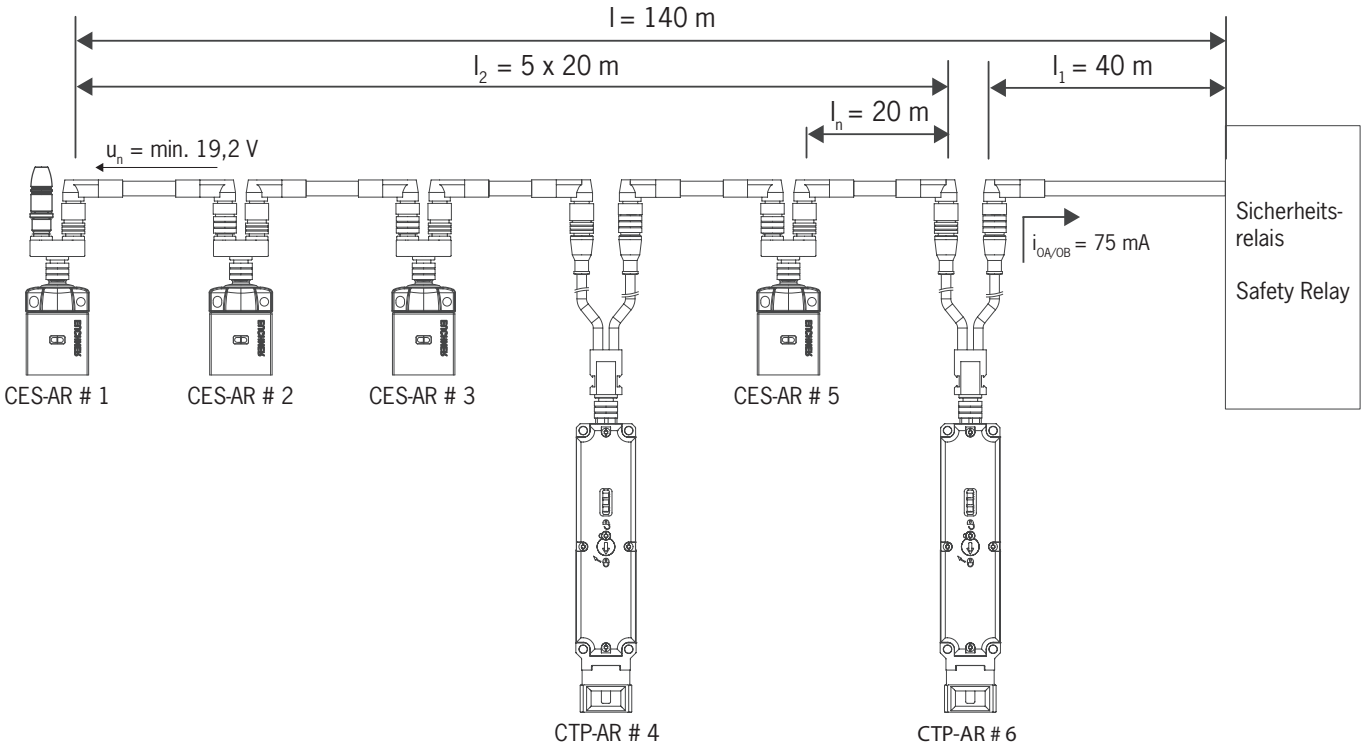


Figure 3: Circuit example with six CES-AR/CTP-L1-…

A safety relay is connected downstream that consumes 75 mA at each of the two safety inputs. This operates over the whole temperature range with a voltage of 19.2 V (corresponds to 24 V -20%).

All the relevant values can now be determined using the example table:

1. Select the corresponding section in the column n (max. number of switches). In this case: 6 switches.
2. In the column $I_{FO1A/FO1B}$ (possible output current per channel FO1A/FO1B), find a current greater than or equal to 75 mA. In this case: 100 mA.

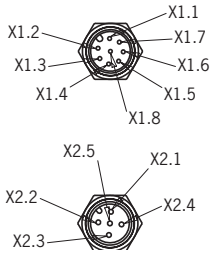
➡ It is then possible to determine the maximum cable length from the last switch (#6) to the control system from column l_1. In this case, a length of 50 m is permitted.

Result: The desired cable length l_1 of 40 m is below the permitted value from the table. The overall length of the switch chain l_{max} of 140 m is less than the maximum value of 200 m.

➡ The planned application is therefore functional in this form.

10.6. Connector assignment of safety switch CTP-...-AR-...-SAB-... with plug connectors 2 x M12

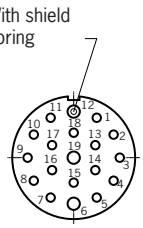
Wiring diagram A

Plug connector (view of connection side)	Pin	Designation	Function	Conductor coloring of connecting cable [1]
2 x M12 	X 1.1	FI1B	Enable input, channel B	WH
	X 1.2	UB	Electronics operating voltage, 24 V DC	BN
	X 1.3	FO1A	Safety output, channel A	GN
	X 1.4	FO1B	Safety output, channel B	YE
	X 1.5	OL	Guard lock monitoring output	GY
	X 1.6	FI1A	Enable input, channel A	PK
	X 1.7	0VUB	Electronics operating voltage, 0 V DC	BU
	X 1.8	RST	Reset input	RD
	X 2.1	IMM	Solenoid operating voltage, 0 V DC	BN
	X 2.2	OD	Door position monitoring output	WH
	X 2.3	OI	Diagnostic monitoring output	BU
	X 2.4	IMP	Solenoid operating voltage, 24 V DC	BK
	X 2.5	-	n. c.	GY

1) Only for standard EUCHNER connecting cable.

10.7. Connector assignment of safety switch CTP-...-AR-...-SH-... with plug connector M23 (RC18)

Wiring diagram B

Plug connector (view of connection side)	Pin	Designation	Function	Conductor coloring of connecting cable [1]
M23 (RC18) With shield spring 	1	IMP	Solenoid operating voltage, 24 V DC	VT
	2	FI1A	Enable input, channel A	RD
	3	FI1B	Enable input, channel B	GY
	4	FO1A	Safety output, channel A	RD/BU
	5	FO1B	Safety output, channel B	GN
	6	UB	Electronics operating voltage, 24 V DC	BU
	7	RST	Reset input	GY/PK
	8	OD	Door position monitoring output	GN/WH
	9	OI	Diagnostic monitoring output	YE/WH
	10	OL	Guard lock monitoring output	GY/WH
	11	-	n.c.	BK
	12	FE	Function earth (must be connected to meet the EMC requirements)	GN/YE
	13	-	n.c.	PK
	14	-	n.c.	BN/GY
	15	-	n.c.	BN/YE
	16	-	n.c.	BN/GN
	17	-	n.c.	WH
	18	IMM	Solenoid operating voltage, 0 V DC	YE
	19	0VUB	Electronics operating voltage, 0 V DC	BN

1) Only for standard EUCHNER connecting cable.

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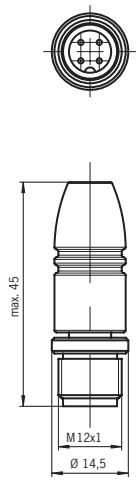
10.8. Connector assignment of Y-distributor

(Only for version with plug connectors 2 x M12)

Connector assignment of safety switch CTP-L1-... (plug X1, 8-pin plug) and Y-distributor (8-pin socket)

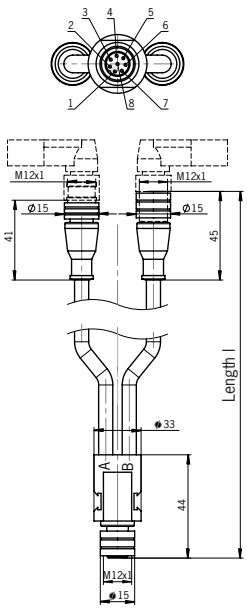
Pin	Function
X1.1	FI1B
X1.2	UB
X1.3	FO1A
X1.4	FO1B
X1.5	OL
X1.6	FI1A
X1.7	0 V
X1.8	RST

Strapping plug 097645
4-pin, plug
(figure similar)



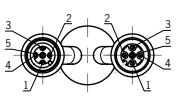
Y-distributor with connecting cable 111696 or 112395

Socket



Order no.	Length l [mm]
111696	200
112395	1,000

Pin Socket



Pin	Function
X2.1	UB
X2.2	FO1A
X2.3	0 V
X2.4	FO1B
X2.5	RST

Pin	Function
X3.1	UB
X3.2	FI1A
X3.3	0 V
X3.4	FI1B
X3.5	RST

10.9. Connection of a single CTP-AR

If a single CTP-AR is used, connect the switch as shown in *Figure 4*. The monitoring outputs can be routed to a control system.

The switches can be reset via the RST input. To do this, a voltage of 24 V is applied to the RST input for at least 3 s. The RST input must be connected to 0 V if it is not used.

WARNING

In the event of a fault, loss of the safety function due to incorrect connection.

- To ensure safety, both safety outputs (FO1A and FO1B) must always be evaluated.

Important!

- The example shows only an excerpt that is relevant for connection of the CTP system. The example illustrated here does not show complete system planning. The user is responsible for safe integration into the overall system. Detailed application examples can be found at www.euchner.com. Simply enter the order number of your switch in the search box. You will find all available connection examples for the device in *Downloads*.

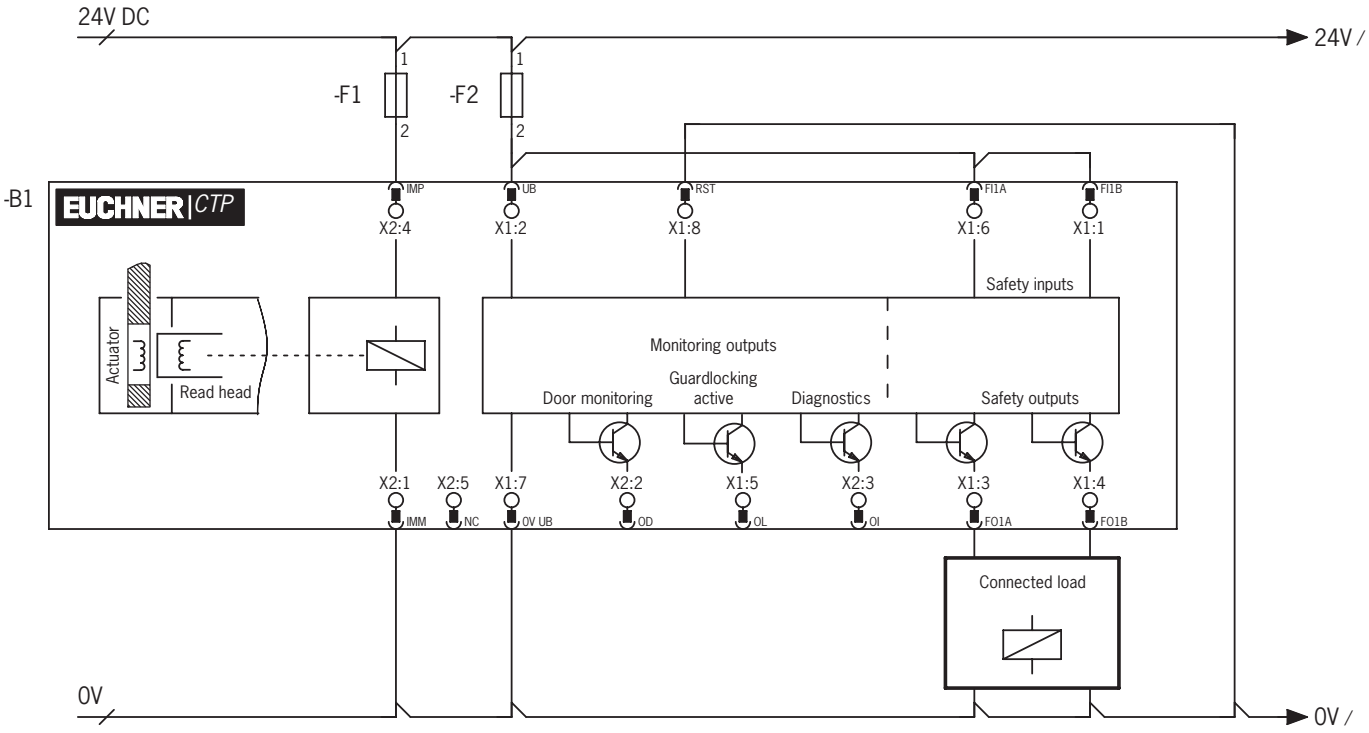


Figure 4: Connection example for separate operation, version with plug connectors 2xM12

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10.10. Connection of several CTP-AR in a switch chain

Important!

- An AR switch chain may contain a maximum of 20 safety switches.
- The example shows only an excerpt that is relevant for connection of the CTP system. The example illustrated here does not show complete system planning. The user is responsible for safe integration into the overall system. Detailed application examples can be found at www.euchner.com. Simply enter the order number of your switch in the search box. You will find all available connection examples for the device in *Downloads*.
- For information about the safety assessment for AR switch chains, see chapter *3. Description of the safety function on page 6*.

The series connection is shown here based on the example of the version with plug connectors 2 x M12. The series connection of the version with plug connector RC18 has similar behavior, but is realized using additional terminals in a control cabinet.

The switches in the version with plug connectors 2 x M12 are connected one after the other with the aid of pre-assembled connecting cables and Y-distributors. If a guard is opened or if a fault occurs on one of the switches, the system shuts down the machine. A higher level control system cannot, however, detect which guard is open or on which switch a fault has occurred with this connection technology.

The safety outputs ⊣ are permanently assigned to the respective safety inputs of the downstream switch. FO1A must be routed to FI1A and FO1B to FI1B. If the connections are interchanged (e.g. FO1A to FI1B), the device will switch to the fault state.

Always use the RST input in series connections. All switches in a chain can be reset at the same time with this reset input. To do this, a voltage of 24 V must be applied to the RST input for at least 3 s. If the RST input is not used in your application, it should be connected to 0 V.

Note the following on this aspect:

- A common signal must be used for all switches in the chain. This can be a changeover switch or the output of a control system. A pushbutton is not suitable because the reset must always be connected to GND during operation (see switch S2 in *Figure 5 on page 25*).
- Reset must always be performed simultaneously for all switches of the chain.

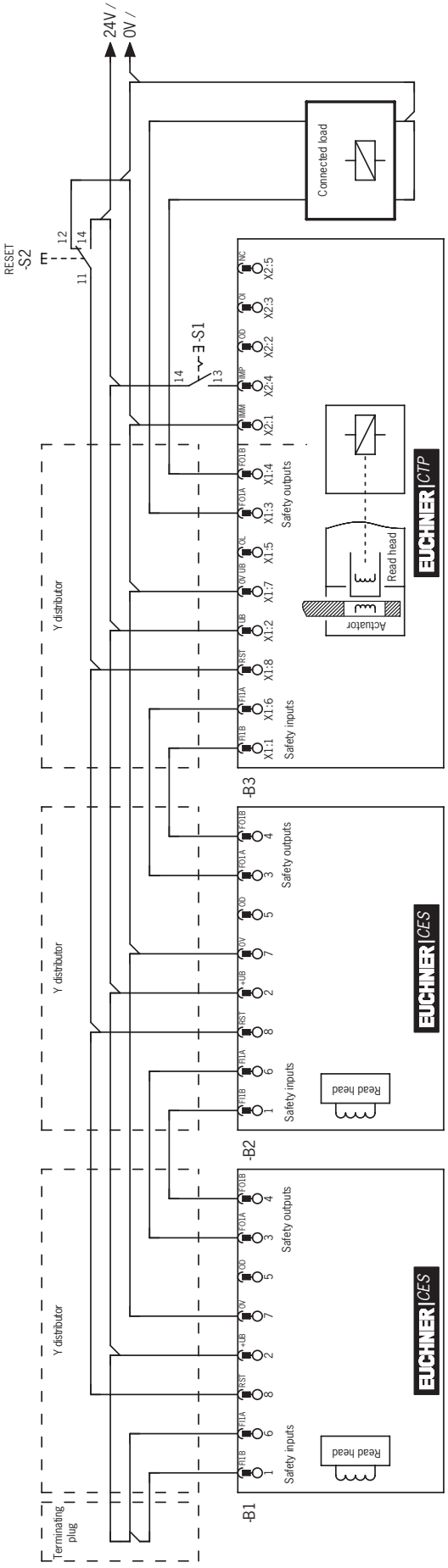

Figure 5: Connection example for operation in a CES-AR switch chain

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10.11. Information on operation on an AR evaluation unit

The devices can be operated on an AR evaluation unit.

Refer to the operating instructions for the relevant AR evaluation unit for more information.

Each of the devices occupies two monitoring outputs on the AR evaluation unit. The first monitoring output signals the guard position (HIGH when the guard is closed). The second monitoring output signals the position of guard locking (HIGH when guard locking is active).

NOTICE

Devices in the Extended version cannot be used with AR evaluation units.

10.12. Notes on operation with safe control systems

Please observe the following requirements for connection to safe control systems:

- Use a common power supply for the control system and the connected safety switches.
- A pulsed power supply must not be used for UB. Tap the supply voltage directly from the power supply unit. If the power supply is connected to a terminal of a safe control system, this output must provide sufficient electrical current.
- Always connect inputs FI1A and FI1B directly to a power supply unit or to outputs FO1A and FO1B of another EUCHNER AR device (series connection). Pulsed signals must not be present at inputs FI1A and FI1B.
- The safety outputs (FO1A and FO1B) can be connected to the safe inputs of a control system. Prerequisite: the input must be suitable for pulsed safety signals (OSSD signals, e.g. from light grids). The control system must tolerate test pulses on the input signals. This normally can be set up by parameter assignment in the control system. Observe the notes of the control system manufacturer. For the pulse duration of your safety switch, refer to chapter *13. Technical data on page 34*.
- The following applies to single-channel control of guard locking:
  The guard locking (IMM) and the control system must have the same ground.
- For dual-channel control of the solenoid voltage by safe outputs of a control system, the following points must be observed (see also *Figure 6 on page 27*):
  - If possible, switch off the pulsing of the outputs in the control system.
  - Pulses up to a length of max. 5 ms are tolerated.

A detailed example of connecting and setting the parameters of the control system is available for many devices at www.euchner.com in the area *Download/Applications/CTP*. The features of the respective device are dealt with there in greater detail.

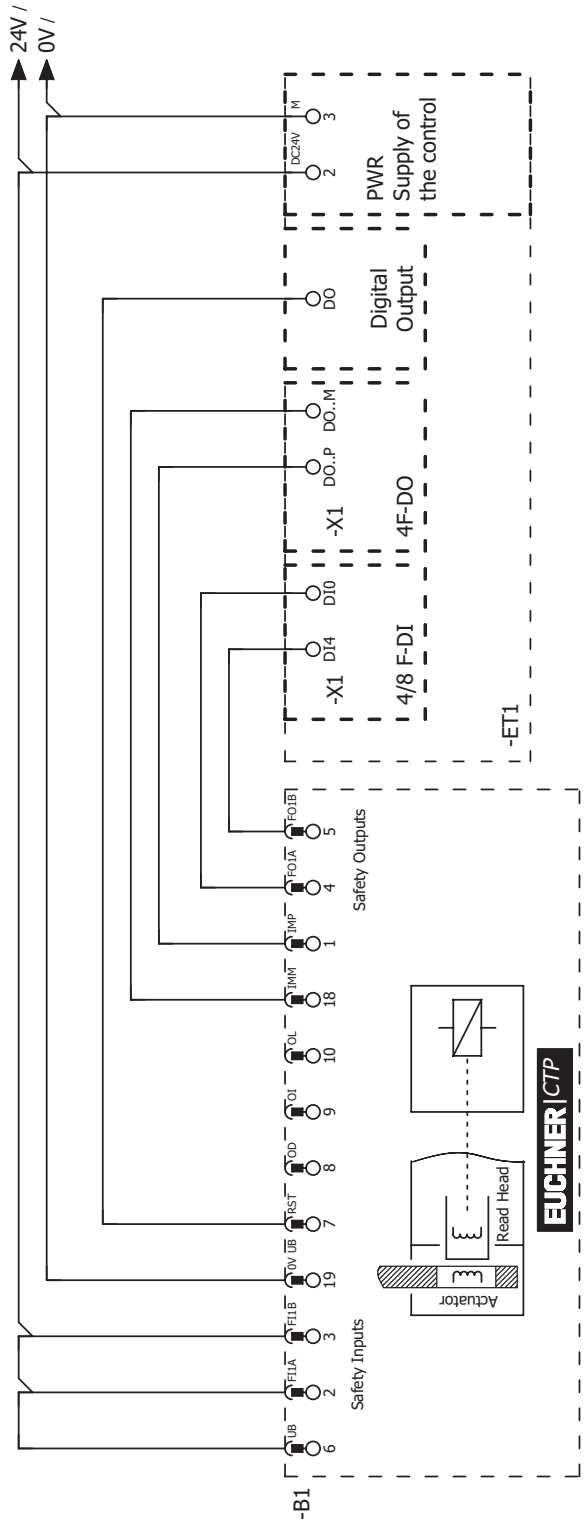

Figure 6: Connection example for the connection to ET200

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10.13. Connection of guard locking control

10.13.1. Guard locking control for variants with IMM connection

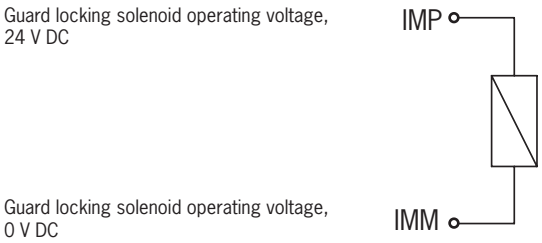


Figure 7: Connection example with IMM connection

10.13.2. Guard locking control for variants without IMM connection

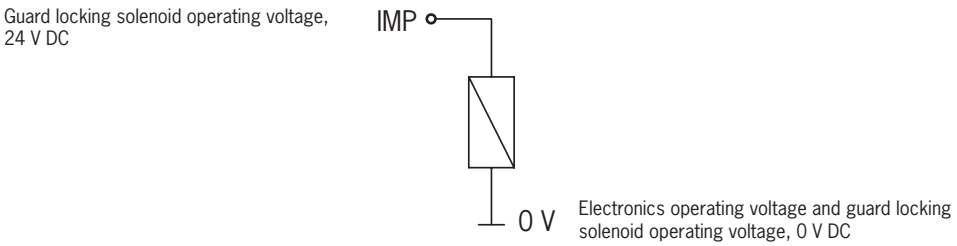


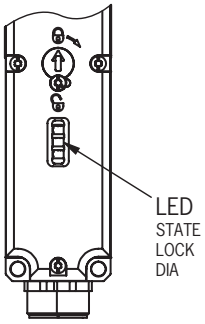
Figure 8: Connection example without IMM connection

11. Setup

11.1. LED displays

You will find a detailed description of the signal functions in chapter *12. System status table on page 32.*

LED	Color
STATE	green
LOCK	yellow
DIA	red



11.2. Teach-in function for 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.

During a teach-in operation, the safety outputs are switched off, i.e. the system is in the safe state.

The teach-in operation is fully automatic. 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. This feature simplifies above all teach-in with series connections and on large installations.

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.

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11.2.1. Actuator teach-in

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 DIA LEDs acknowledges the successful teach-in operation.
Teach-in errors are indicated by the illumination of the red DIA LED and a flashing code on the green STATE LED (see chapter *12. System status table on page 32*).

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

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

4. Switch on operating voltage UB.

➡ The device operates normally.

11.2.2. Teach-in function with series connection, replacing and teaching in device

It is recommended not to teach-in the actuators in the series connection but to teach them in one by one instead. Teach-in in a series connection works analogously to separate operation in principle. It is a prerequisite that the steps below are followed. Further steps might have to be observed for mixed switch chains (e.g. for chains with CES and CET). Observe the operating instructions for the other devices in the chain for this purpose.

Work on the wiring (e.g. during device replacement) should generally be performed in a de-energized state. On certain systems, it is nevertheless necessary to perform this work and subsequent teach-in during ongoing operation.

The RST input must be connected as shown in *Figure 5 on page 25* to permit this.

Proceed as follows:

1. Open the guard on which the switch or actuator is to be replaced.
2. Mount the new switch or actuator and prepare it for the teach-in operation (see chapter *11.2.1. Actuator teach-in on page 30*).
3. Close all guards in the chain and activate guard locking.
4. Actuate the reset for at least 3 s (24 V on RST).

➡ On the safety switch that is positioned at a new actuator, the green LED flashes at approx. 1 Hz and the actuator is taught-in. This takes approx. 30 s. Do not switch off during this time and do not actuate reset! The teach-in operation is complete when the STATE and DIA LEDs flash alternately.

5. Actuate the reset for at least 3 s (24 V on RST).

➡ The system restarts and then continues to function in normal operation.

11.3. Functional check

⚠	**WARNING** Danger of fatal injury as a result of faults in installation and 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 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 flashes for 10 s at 5 Hz. 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 illuminates 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 the guard locking is deactivated.

Repeat steps 2 - 4 for each guard.

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12. System status table

Operating mode	Actuator/door position	Safety outputs FO1A and FO1B	Guard lock monitoring output OL	Door position monitoring output OD	LED indicator Output: STATE (green)	LED indicator Output: DIA (red) and diagnostic monitoring output OI	LOCK (yellow)	State
Self-test	X	off	off	off	✳ 5 Hz (10 s)	○	○	Self-test after power-up
Normal operation	closed	on	on	on	✳	○	✳	Normal operation, door closed and locked
	closed	off	on	on	✳ 1 x inverse	○	✳	Normal operation, door closed and locked, safety outputs not switched because: - Preceding device in the switch chain signals *door open* (only with series connection)
	closed	off	off	on	✳ 1 x inverse	○	○	Normal operation, door closed and **not** locked
	open	off	off	off	✳ 1 x	○	○	Normal operation, door open
Teach-in operation (only unicode)	open	off	off	off	✳ 3 x	○	○	Device in teach-in standby
	closed	off	X	on	✳ 1 Hz	○	○	Teach-in operation
	X	off	X	X	✳ ↔ ✳		○	Positive acknowledgment after completion of teach-in operation
Fault display	X	off	X	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	off	off	off	✳ 2 x	✳	○	Input fault (e.g. missing test pulses, illogical switch state from previous switch in the switch chain)
	X	off	off	off	✳ 3 x	✳	○	Read error (e.g. actuator faulty)
	X	off	off	off	✳ 4 x	✳	○	Output fault (e.g. short circuit, loss of switching ability)
	X	off	X	X	✳ 5 x	✳	○	Disabled actuator detected
	X	off	off	off	○	✳	X	Internal error

Key to symbols		
	○	LED not illuminated
	✳	LED illuminated
	✳ 1 x inverse	LED illuminated, briefly goes off 1 x
	✳ 5 Hz (10 s)	LED flashes for 10 s at 5 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 included with the product, the information on the data sheet applies.

13.1. Technical data for safety switch CTP-AR

Parameter		Value			Unit
		min.	typ.	max.	
General					
Material - Switch head - Switch housing			Die-cast zinc Reinforced thermoplastic		
Installation orientation			Any		
Degree of protection	with plug connector M12		IP67/IP69/IP69K		
	with plug connector M23		IP67		
			(screwed tight with the related mating connector)		
Safety class			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 (depending on version)			2 plug connectors M12, 5- and 8-pin / 1 plug connector M23, 19-pin (RC18)		
Operating voltage UB (reverse polarity protected, regulated, residual ripple < 5%)			24 ± 15% (PELV)		V DC
Current consumption I_{UB}			40		mA
For the approval acc. to UL the following applies			Operation only with UL Class 2 power supply or equivalent measures		
Switching load acc. to UL			DC 24 V, class 2		
External fuse (operating voltage UB) 2)		0.25	-	8	A
External fuse (solenoid operating voltage IMP) 2)		0.5	-	8	A
Rated insulation voltage U_i		-	-	50	V
Rated impulse withstand voltage U_{imp}		-	-	0.5	kV
Rated conditional short-circuit current			100		A
Resilience to vibration			Acc. to EN 60947-5-3		
EMC protection requirements			Acc. to EN 60947-5-3		
Ready delay		-	8	11	s
Risk time for single device		-	-	260	ms
Risk time delay per device			5		ms
Turn-on time		-	-	400	ms
Discrepancy time		-	-	10	ms
Test-pulse duration			1		ms
Frequency band			120 ... 130		kHz
Safety outputs FO1A/FO1B			2 semiconductor outputs, p-switching, short circuit-proof		
- Output voltage U_{FO1A}/U_{FO1B} 3)					
HIGH	U_{FO1A}/U_{FO1B}	UB - 1.5	-	UB	V DC
LOW	U_{FO1A}/U_{FO1B}	0	-	1	
Switching current per safety output		1	-	150	mA
Utilization category acc. to EN 60947-5-2			DC-13 24V 150 mA Caution: outputs must be protected with a free-wheeling diode in case of inductive loads		
Switching frequency 4)			0.5		Hz
Monitoring outputs OL, OI, OD			p-switching, short circuit-proof		
Output voltage		0.8 x UB	-	UB	V DC
Switching current		-	-	50	mA
Solenoid					
Solenoid operating voltage UIMP (reverse polarity protected, regulated, residual ripple < 5%)			DC 24 V -15%/+10%		
Solenoid current consumption I_{IMP}			400		mA
Connection rating			6		W
Duty cycle			100		%

Parameter	Value			Unit
	min.	typ.	max.	
Reliability values acc. to EN ISO 13849-1				
Mission time		20		years
Monitoring of guard locking and the guard position				
Category		4		
Performance Level (PL)		e		
PFH_D		4.1×10^{-9}/h		
Control of guard locking				
Category		Depends on external control		
Performance Level (PL)				
PFH_D				

1) Dependent on the actuator used.
2) Trip characteristic medium slow-blow.
3) Values at a switching current of 50 mA without taking into account the cable lengths.
4) Corresponds to the actuation frequency.

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.

Simultaneity monitoring of safety inputs FI1A/FI1B: If the safety inputs have different switching states for longer than a specific time, the safety outputs ⊣P (FO1A and FO1B) will be switched off. The device switches to the fault state.

Risk time according to EN 60947-5-3: If an actuator moves outside the actuating range, the safety outputs ⊣P (FO1A and FO1B) are switched off after the risk time at the latest.

If several devices are operated in a series connection, the risk time of the overall device chain will increase with each device added. Use the following calculation formula:

$t_r = t_{r,\,e} + (n \times t_l)$

t_r = Total risk time

$t_{r,\,e}$ = Risk time, single device (see technical data)

t_l = Risk time delay per device

n = Number of additional devices (total number -1)

Discrepancy time: The safety outputs ⊣P (FO1A and FO1B) switch with a slight time offset. They have the same signal state no later than after the discrepancy time.

Test pulses at the safety outputs: The device generates its own test pulses on the safety outputs ⊣P (FO1A and FO1B). A downstream control system must tolerate these test pulses.

This can usually be set up in the control systems by parameter assignment. If parameter assignment is not possible for your control system or if shorter test pulses are required, contact our support organization.

The test pulses are also output when the safety outputs are switched off.

EN

13.2. Radio frequency approvals

FCC ID: 2AJ58-05
IC: 22052-05

FCC/IC-Requirements

This device complies with part 15 of the FCC Rules and with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

1) This device may not cause harmful interference, and

2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority

to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Supplier's Declaration of Conformity
47 CFR § 2.1077 Compliance Information

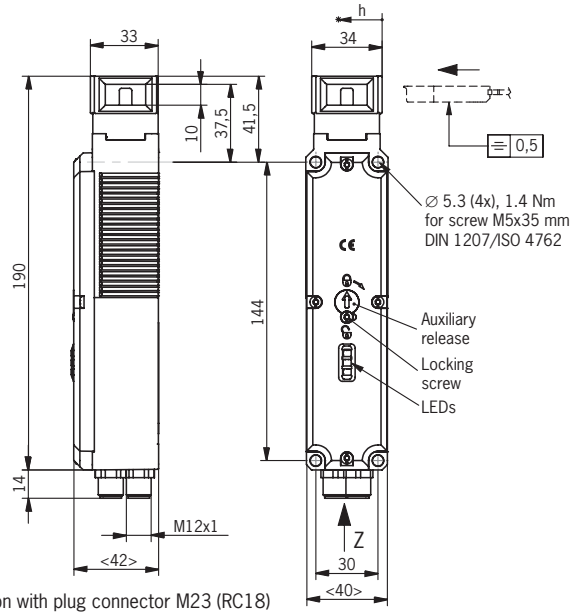
Unique Identifier:
CTP-I-AR SERIES
CTP-I1-AR SERIES
CTP-I2-AR SERIES
CTP-IBI-AR SERIES
CTP-L1-AR SERIES
CTP-L2-AR SERIES
CTP-LBI-AR SERIES
CTP-I-AP SERIES
CTP-I1-AP SERIES
CTP-I2-AP SERIES
CTP-IBI-AP SERIES
CTP-L1-AP SERIES
CTP-L2-AP SERIES
CTP-LBI-AP SERIES

Responsible Party – U.S. Contact Information
EUCHNER USA Inc.
6723 Lyons Street
East Syracuse, NY 13057

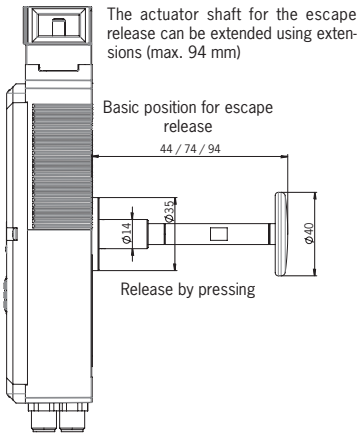
+1 315 701-0315
+1 315 701-0319
info(at)euchner-usa.com
http://www.euchner-usa.com

13.3. Dimension drawing for safety switch CTP...

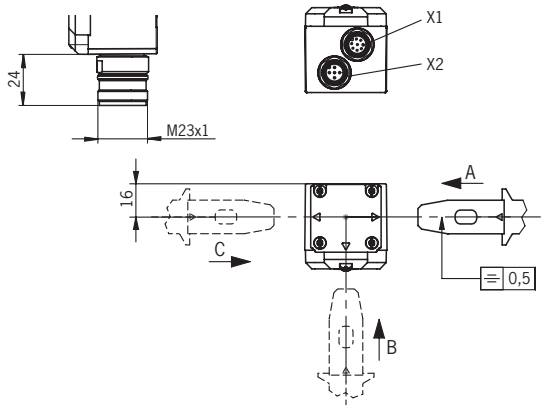
Version with plug connectors 2 x M12



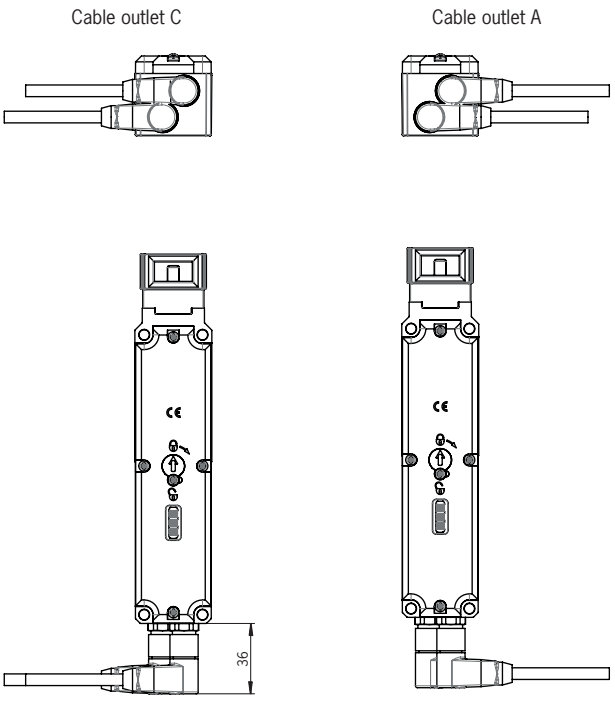
With escape release



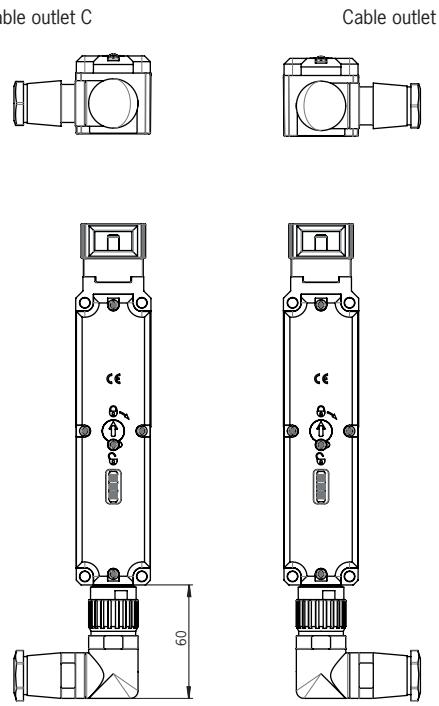
Version with plug connector M23 (RC18)



Plug connectors 2 x M12

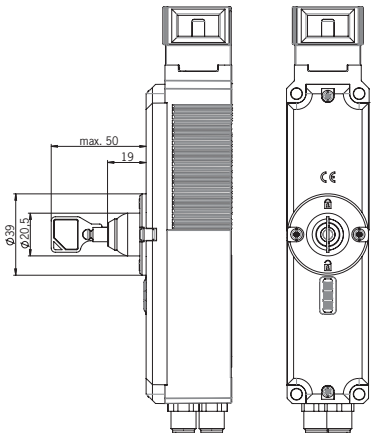


Plug connector M23

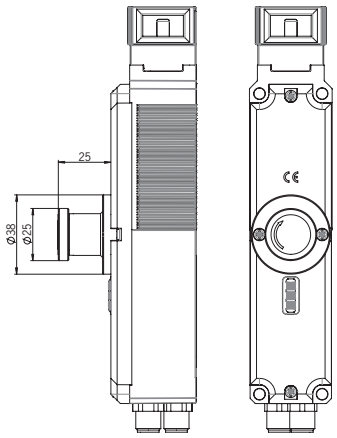


EN

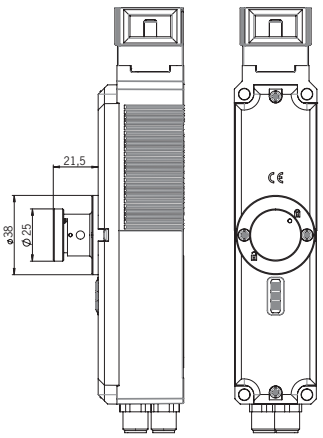
With auxiliary key release



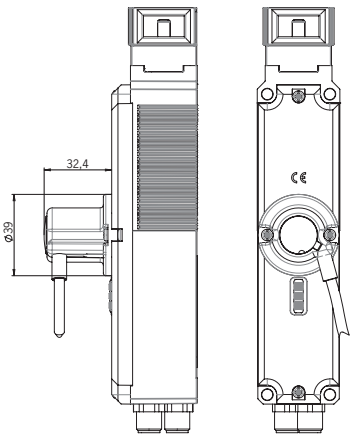
With release, automatic return



With emergency release



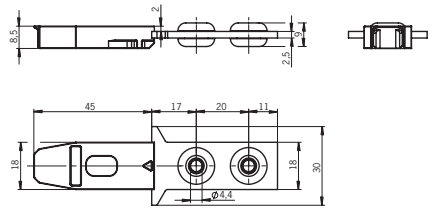
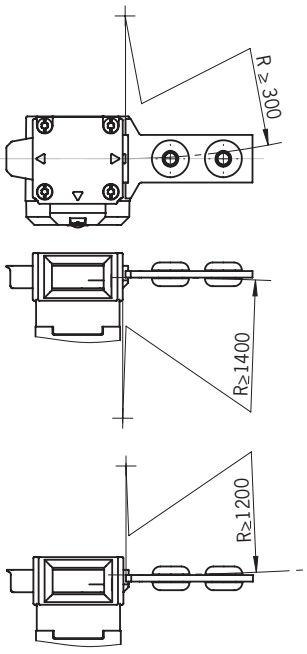
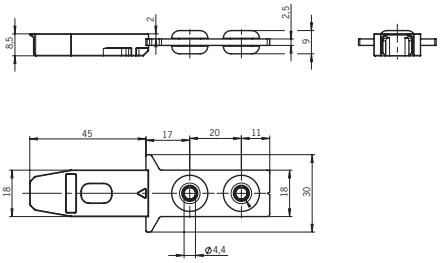
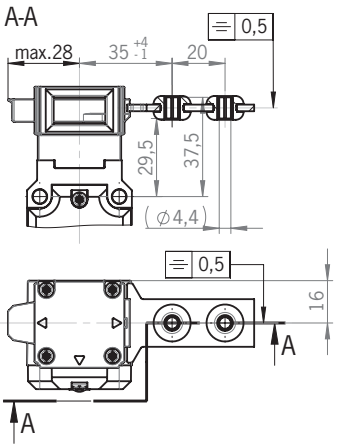
With wire front release



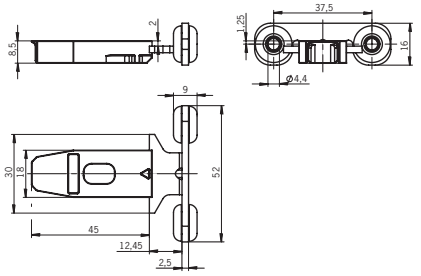
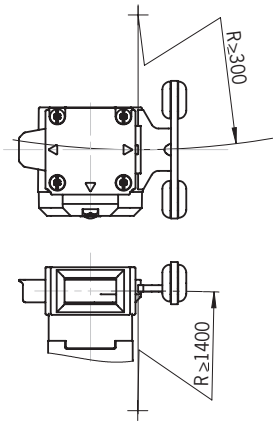
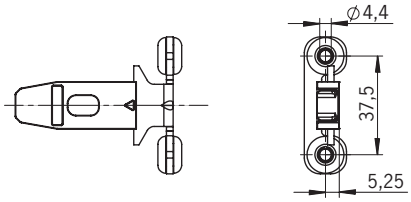
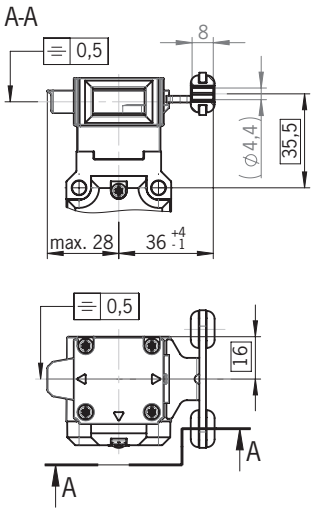
13.4. Technical data for actuator CTP-...

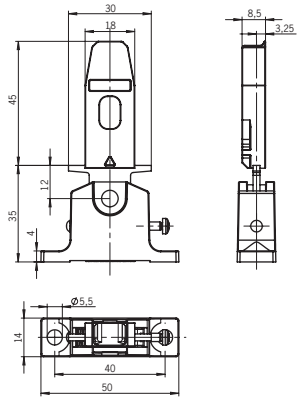
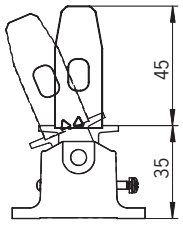
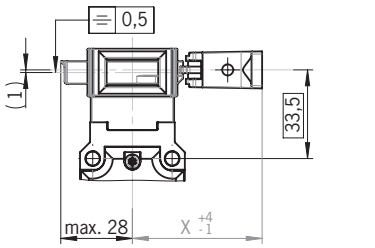
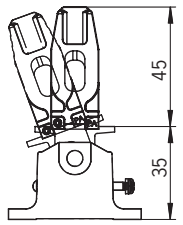
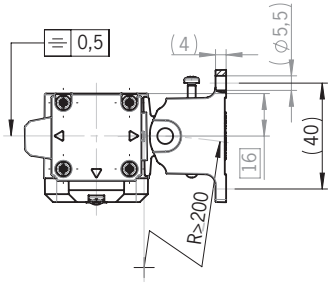
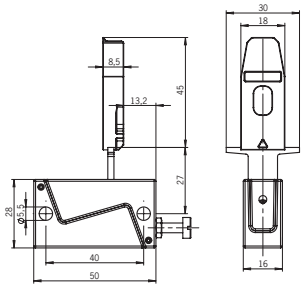
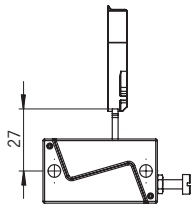
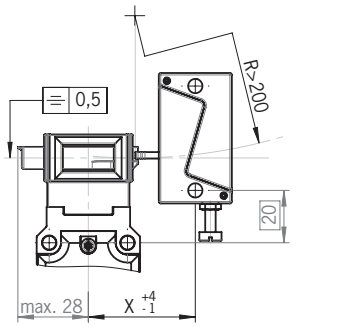
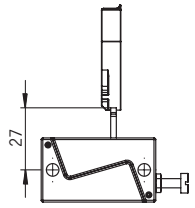
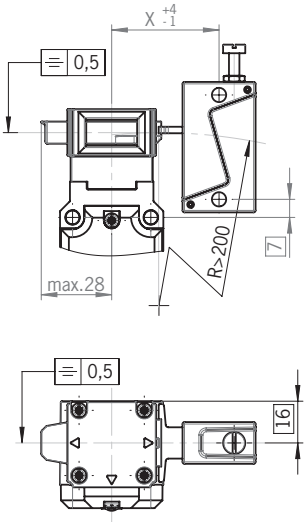
Parameter	Value			Unit
	min.	typ.	max.	
Housing material	Fiber reinforced plastic			
Weight	0.03 ... 0.06 (depending on version)			kg
Ambient temperature	-20	-	+55	°C
Degree of protection	IP67/IP69/IP69K			
Mechanical life	1 x 10^6			
Locking force, max. - Straight actuator 126015 (red) 122666 (black) - Hinged actuator - Bent actuator	 3,900 2,600 2,600 1,500			N
Installation orientation	Any			
Power supply	Inductive via read head			

13.4.1. Dimension drawing for actuator CTP-...

	Dimension drawing	Min. door radius [mm]	Order no./item
Straight actuators			**122666** A-C-H-G-SST-122666
			**126015** A-C-H-G-SST-126015

EN

	Dimension drawing	Min. door radius [mm]	Order no./item
Bent actuators	 bent, upward		**122667** A-C-H-W-SST-122667
	 bent, downward		**122668** A-C-H-W-SST-122668

	Dimension drawing		Min. door radius [mm]	Order no./item
Hinged actuators			 X = 53 mm (122671, 122672) X = 49 mm (122669, 122670)	**122671** A-C-H-RL-LS-122671
				**122672** A-C-H-RR-LS-122672
Hinged actuators			 X = 41 mm (122673, 122674) X = 45 mm (122675, 122676)	**122675** A-C-H-RO-LS-122675
Hinged actuators			X = 41 mm (122673, 122674) X = 45 mm (122675, 122676) 	**122676** A-C-H-RU-LS-122676

EN

Tip!

The actuator is supplied with screws that cannot easily be unscrewed with a tool.

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 31*)
- Check all additional functions (e.g. escape release, lockout bar, etc.)
- Check the secure mounting of the devices and the connections
- Check for soiling

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

CE

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EU-Konformitätserklärung
EU declaration of conformity
Déclaration UE de conformité
Dichiarazione di conformità UE
Declaración UE de conformidad

Original DE
Translation EN
Traduction FR
Traduzione IT
Traducción ES

2123042-08-07/20

Die nachfolgend aufgeführten Produkte sind konform mit den Anforderungen der folgenden Richtlinien (falls zutreffend):
The beneath listed products are in conformity with the requirements of the following directives (if applicable):
Les produits mentionnés ci-dessous sont conformes aux exigences imposées par les directives suivantes (si valable)
I prodotti sotto elencati sono conformi alle direttive sotto riportate (dove applicabili):
Los productos listados a continuación son conforme a los requisitos de las siguientes directivas (si fueran aplicables):

I:	Maschinenrichtlinie	2006/42/EG
	Machinery directive	*2006/42/EC*
	Directive Machines	*2006/42/CE*
	Direttiva Macchine	*2006/42/CE*
	Directiva de máquinas	*2006/42/CE*
II:	Funkanlagen-Richtlinie (RED)	2014/53/EU
	Radio equipment directive	*2014/53/EU*
	Directive équipement radioélectrique	*2014/53/UE*
	Direttiva apparecchiatura radio	*2014/53/UE*
	Directiva equipo radioeléctrico	*2014/53/UE*
III:	RoHS Richtlinie	2011/65/EU
	RoHS directive	*2011/65/EU*
	Directive de RoHS	*2011/65/UE*
	Direttiva RoHS	*2011/65/UE*
	Directiva RoHS	*2011/65/UE*

Die Schutzziele der Niederspannungsrichtlinie 2014/35/EU und EMV Richtlinie 2014/30/EU werden gemäß Artikel 3.1 der Funkanlagen-Richtlinie eingehalten.
The safety objectives of the Low-voltage directive 2014/35/EU and EMC Directive 2014/30/EU comply with article 3.1 of the Radio equipment directive.
Les objectifs de sécurité de la Directive basse tension 2014/35/UE et Directive de CEM 2014/30/EU sont conformes à l'article 3.1 de la Directive équipement radioélectrique.
Gli obiettivi di sicurezza della Direttiva bassa tensione 2014/35/UE e Direttiva CEM 2014/30/UE sono conformi a quanto riportato nell´articolo 3.1 della Direttiva apparecchiatura radio.
Los objetivos de seguridad de la Directiva de bajo voltaje 2014/35/UE y Directiva CEM 2014/30/UE cumplen con el artículo 3.1 de la Directiva equipo radioeléctrico.

Folgende Normen sind angewandt:	a:	EN 60947-5-3:2013	f:	EN IEC 63000:2018 (RoHS)
Following standards are used:	b:	EN ISO 14119:2013	g:	EN 50364:2018
Les normes suivantes sont appliquées:	c:	EN ISO 13849-1:2015	h:	EN 300 330 V2.1.1
Vengono applicate le seguenti norme:	d:	EN 62026-2:2013 (ASi)		
Se utilizan los siguientes estándares:	e:	EN 60947-5-5:1997/A2:2017		

Bezeichnung der Bauteile *Description of components* *Description des composants* *Descrizione dei componenti* *Descripción de componentes*	**Type** *Type* *Type* *Tipo* *Typo*	**Richtlinie** *Directives* *Directive* *Direttiva* *Directivas*	**Normen** *Standards* *Normes* *Norme* *Estándares*	**Zertifikats-Nr.** *No. of certificate* *Numéro du certificat* *Numero del certificato* *Número del certificado*
Sicherheitsschalter *Safety Switches*	CTP-...	I, II, III	a, b, c, f, g, h	UQS 123565, ET 18080 *
Interrupteurs de sécurité	CTP-..AS...	I, II, III	a, b, c, d, f, g, h	UQS 125542
Finecorsa di sicurezza *Interruptores de seguridad*	CTP-LBI...	I, II, III	a, b, c, f, g, h	UQS 127798
Sicherheitsschalter mit Not-Halt-Einrichtungen *Safety Switches with Emergency-Stop facilities* *Interrupteurs de sécurité avec appareillage arrêt d'urgence* *Finecorsa di sicurezza con dispositivi di arresto di emergenza* *Interruptores de seguridad con dispositivos de parada de emergencia*	CTP-...	I, II, III	a, b, c, e, f, g, h	UQS 123565
Betätiger *Actuator* *Actionneur* *Azionatore* *Actuador*	A-C-...	I, II, III	a, b, c, f, g, h	UQS 123565, ET 18080 *

* Benannte Stelle
Notified Body
Organisme notifié
Sede indicata
Entidad citada

0340
DGUV Test
Prüf- und Zertifizierungsstelle Elektrotechnik
Fachbereich ETEM
Gustav-Heinemann-Ufer 130
50968 Köln

07.07.2020 - NG -HB - Blatt/*Sheet/ Page/Pagina/ Página* 1
Vorlage Rev. 01
EUCHNER GmbH + Co. KG Kohlhammerstraße 16 70771 Leinfelden-Echterdingen Tel. +49/711/7597-0 Fax +49/711/753316 www.euchner.de info@euchner.de

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Genehmigung der umfassenden Qualitätssicherung (UQS) durch die benannte Stelle 0035
Approval of the full quality assurance system by the notified body 0035
Approbation du système d'assurance qualité complet par l'organisme notifié 0035
Approvazione del sistema di garanzia di qualità totale da parte dell'organismo notificato 0035
Aprobación del sistema de aseguramiento de calidad total por parte del organismo 0035 notificado

TÜV Rheinland Industrie Service GmbH
Alboinstr. 56
12103 Berlin
Germany

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller:
This declaration of conformity is issued under the sole responsibility of the manufacturer:
La présente déclaration de conformité est établie sous la seule responsabilité du fabricant:
La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante:
La presente declaración de conformidad se expide bajo la exclusiva responsabilidad del fabricante:

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

Leinfelden, Juli 2020

EUCHNER GmbH + Co. KG
Kohlhammerstraße 16
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Manager Electronic Development
Responsable Développement Électronique
Direttore Sviluppo Elettronica
D irector de desarrollo electrónico

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Responsabilità della documentazione
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