

Correct use

Series CKS key adapters are operated in combination with an evaluation unit in the system family CES-AZ-ES-... or CES-FD-...

This safety component allows dangerous machine movements to be undertaken as long as a valid key is inserted. A stop command is triggered if the key is removed during the dangerous machine function.

Before use, a risk assessment must be performed on the machine, e.g. in accordance with:

- ▶ EN ISO 13849-1, Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design
- ▶ EN ISO 12100, Safety of machinery – General principles for design – Risk assessment and risk reduction
- ▶ IEC 62061, Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems.

Correct use includes observing the relevant requirements for installation and operation, e.g.

- ▶ EN ISO 13849-1, Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design
- ▶ EN 60204-1, Safety of machinery. Electrical equipment of machines. General requirements.

The key adapter must be used only in conjunction with the designated CKS keys from EUCHNER. On the use of different keys, 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.
- ▶ Correct use requires observing the permissible operating parameters (see section "Technical data").
- ▶ If a product data sheet is included with the product, the information on the data sheet applies in case of discrepancies with the operating instructions.

Exclusion of liability and warranty

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

Safety precautions

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

Check the safe function of the safety guard 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 safety guard 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 perform a personal protection function.

- ▶ The switching operation may be triggered only by keys specially designated for this purpose.
- ▶ The key must be completely pulled out of the key adapter in order to switch the safety circuit off safely.

▶ 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 occupational safety and accident prevention.
- ▶ Use as a lockout mechanism only in combination with unicode evaluation units.

Function

The key adapter CKS can be used as a lockout mechanism, for example. As soon as the key is in the key adapter, the LED on the key adapter illuminates white and data transmission to the evaluation unit begins. The read code is compared with the taught-in code in the evaluation unit. Each delivered key possesses a unique electronic coding and so is a unique element in the system used.

The code of a key cannot be reprogrammed.

When the key is removed from the key adapter, the white LED goes out, the outputs of the CES evaluation unit are switched off and the machine cannot be started.

In the event of a fault in the key adapter, the outputs of the CES evaluation units will be switched off.

Mounting

NOTICE

- ▶ The key adapter must not be opened.
- ▶ To achieve the degree of protection IP 67, it is necessary to install the key adapter in a clean, flat metal plate at least 2 mm thick and to tighten the screws with a tightening torque of 0.25 ... 0.35 Nm.
- ▶ The device may be damaged if the tightening torque applied exceeds 0.35 Nm.
- ▶ A suitable strain relief must be provided for the connection cables in order to avoid damage to the connection sockets or malfunctions.

The key adapter is intended for mounting in control panels with a cut-out measuring 33 mm x 68 mm according to DIN 43700. The device is fastened using screw clamp elements from the rear side of the panel.

1. Insert the key adapter, with seal already bonded in place, into the mounting cut-out from the front.
2. Insert screw clamp elements in the housing of the key adapter from the side up to the stop and tighten with 0.25 ... 0.35 Nm.
3. After mounting, again check the key adapter for firm seating and correct sealing of the front panel.

Protection against environmental effects

Remove dirt from the key and the key adapter using a soft cloth and solvent-free, non-abrasive cleaning agents.

Cover the key adapter and the key during painting work.

Electrical connection

⚠ WARNING

- ▶ The key adapter CKS must be used only with a suitable EUCHNER connection cable. The connection cable contains two screened cores to transmit the signals from the key adapter to the evaluation unit.
- ▶ All the electrical connections must either be isolated from the mains supply by a safety transformer according to IEC EN 61558-2-6 with limited output voltage in the event of a fault, or by other equivalent isolation measures.
- ▶ For terminal assignment, see Figure 1.
- ▶ For detailed information, see the operating instructions for the evaluation unit used.

Setup and functional check

Observe the information in the operating instructions for the respective evaluation unit during setup.

⚠ WARNING

- Danger of fatal injuries 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 area.
- ▶ Observe the valid accident prevention regulations.

Teach-in function for the key

See manual of the related evaluation unit.

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 CES evaluation unit carries out a self-test.
2. Insert key.
 - ▶ The LED illuminates white.
3. Enable operation in the control system.
4. Remove key.
 - ▶ The machine must switch off and it must not be possible to start it as long as a key is not inserted.
 - ▶ The LED goes out.

Repeat steps 2 ... 4 for each key adapter.

Inspection and service

⚠ WARNING

- Loss of the safety function because of damage to the system.
- ▶ In case of damage, the entire device must be replaced.
- ▶ Only accessories or spare parts that can be ordered from EUCHNER may be replaced.

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

- ▶ Check the switching function
- ▶ Check the secure fastening 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 can be seen in the lower right corner of the type label.

Exclusion of liability and warranty

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

EC declaration of conformity

The manufacturer named below herewith declares that the product fulfills the provisions of the directive(s) listed below and that the related standards have been applied.

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

Directives applied:

► Machinery Directive 2006/42/EC

Standards applied:

► EN 60947-5-1:2004 + Cor.:2005 + A1:2009

► EN 14119:2013

The original EC declaration of conformity can also be found at: www.euchner.com

Service

If service support is required, please contact:

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www.euchner.com

Technical data

Parameter	Value
Housing material	Plastic (PA 6 GF30)
Weight	0.13 kg
Degree of protection acc. to IEC 60529	IP 67 in mounted condition
Installation position	On the front panel
Mounting cut-out acc. to DIN 43700	33 x 68 mm
Ambient temperature	-20 ... +70 °C
Operating distance ¹⁾	
Assured switch-off dist. s_{ar}	35 mm
Assured switch-on dist. s_{ao}	2 mm
Switching hysteresis	1 mm
Connection to evaluation unit	Plug connector M8 (male socket, 3-pin)

Max. cable length in combination with evaluation unit

- CES-AZ 25 m

- CES-FD 0.7 m

LED indicator White: "valid key recognized"

Key	
Housing material	Plastic (PC)
Weight	0.004 kg
Degree of protection acc. to IEC 60529	IP 67
Ambient temperature	-20 ... +70 °C
Power supply	Inductive via read head

1) Referred to the stop of the inserted key

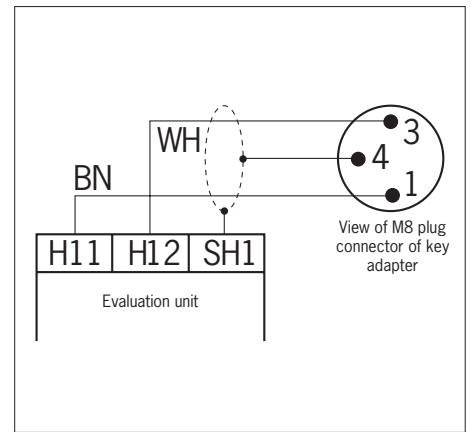


Figure 1: Terminal assignment

For installation in a control panel you must provide a cut-out 33 mm x 68 mm according to DIN 43700.

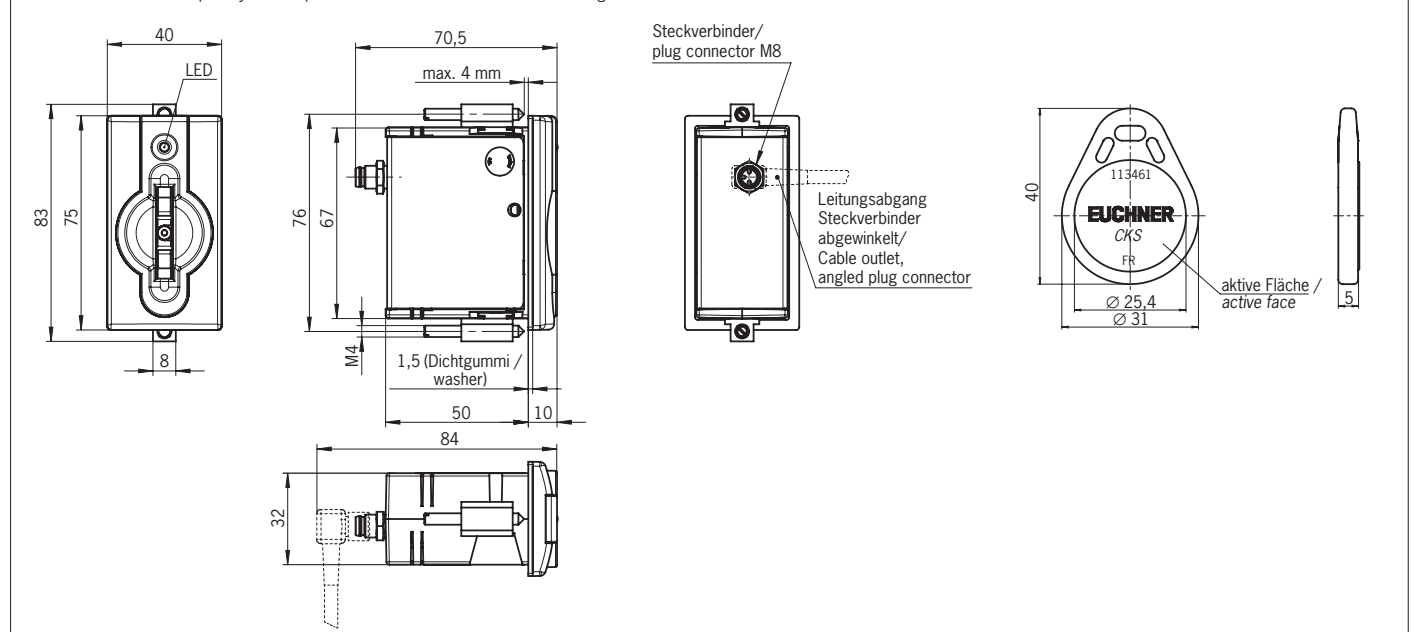


Figure 2: Dimension drawing