



EWELLIX

EWELLIX Limit Switch

CAXE

User Manual

We pioneer motion

SCHAEFFLER

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1 About the manual

1.1 Information in this user manual

This manual provides important information on how to work with the device safely and efficiently.

The manual is part of the device, must always be kept in the device's direct proximity and should be available for personnel to read at any time. All personnel working with the device must read and understand this manual before starting any work. Strict compliance with all specified safety notes and instructions is a basic requirement for safety at work.

Moreover, the accident prevention guidelines and general safety regulations applicable at the place of use of the device must also be complied with.

1.2 Symbols

Safety precautions are identified by symbols and signal words as shown. The signal words indicate the severity of the hazard and the chance it could occur. Follow these safety precautions and act cautiously in order to avoid accidents, personal injury and damage to property.

The warning and hazard symbols are defined in accordance with ANSI Z535.6-2011.

1 Warning and hazard symbols

Signs and descriptions

| | |
|--|--|
|  DANGER | In case of non-compliance, death or serious injury will occur. |
|  WARNING | In case of non-compliance, death or serious injury may occur. |
|  CAUTION | In case of non-compliance, minor or slight injury may occur. |
|  NOTICE | In case of non-compliance, damage or malfunctions in the product or the adjacent construction may occur. |

1.3 Signs

The warning, prohibition, and mandatory signs are defined in accordance with DIN EN ISO 7010 or DIN 4844-2.

2 Warning, prohibition, and mandatory signs

Signs and descriptions

| | |
|---|----------------------------|
|  | General warning |
|  | Electrical voltage warning |
|  | Observe the manual |
|  | Wear protective gloves |
|  | Wear safety shoes |
|  | Wear eye protection |

Signs and descriptions

| | |
|---|------------------------|
|  | Wear ear protection |
|  | Wear head protection |
|  | General mandatory sign |

1.4 Availability



A current version of this manual can be found at:

<https://www.schaeffler.de/std/222FC>

Ensure that this manual is always complete and legible and is available to all persons engaged in transporting, fitting, dismantling, commissioning, operating, or maintaining the product.

Keep the manual in a safe place for immediate reference.

1.5 Legal notices

The information in this manual reflects the status at the time of publication.

Unauthorized modifications to or improper use of the product are not permitted. Schaeffler accepts no liability in these cases.

1.6 Images

The images in this manual may be schematic representations and may differ from the delivered device.

2 General safety regulations

This section provides an overview of all essential safety aspects for optimum personal protection as well as safe and trouble-free operation. Failure to observe this manual and the safety instructions contained herein may result in significant hazards and potentially lead to serious injury or death.

2.1 Intended use

Limit switch CAXE is designed for use in the following applications and under the following conditions:

- Industrial environment, process industry and domestic applications
- ambient temperature during operation: -20 °C to $+70\text{ °C}$
- Limit switch CAXE is designed for actuators that can use the special protective tube mentioned in this manual.

2.2 Qualified personnel

Operator duties:

- Ensure that only qualified and authorized personnel carry out the activities described in these instructions.
- Ensure that personal protective equipment is used.

Qualified personnel meet the following criteria:

- Product knowledge, e.g. by receiving training on how to use the product
- are fully familiar with the contents of this manual and, in particular, with all of the safety instructions
- are familiar with the relevant country-specific regulations

2.3 Hazards

Danger to life from electric current

Touching live parts poses an immediate danger to life. Damage to insulation or individual components can also pose a danger to life. Therefore, observe the following:

- Work on the electrical system may only be performed by professional electricians.
- Before performing any work on the electrical system, disconnect the machine from the power supply.
- Before maintenance, cleaning, or repair work, disconnect the power supply and secure it against reconnection.

3 Scope of delivery

- Limit switch

4 Product description

The EWELLIX limit switch CAXE is based on 2 complementary (NO/NC) proximity switches mounted on a special protection tube to indicate the end positions of the actuator. When combined with actuator controllers or other PLC controllers, the limit switch enables the stroke to be set to any desired length.

- For use with CAXE, the front attachment G3 must be selected.
- It is recommended that the limit switch be positioned at least 10 mm from the end stop to avoid mechanical failure.
- The limit switch is robust and resistant to vibrations and mechanical shocks

☐3 Suitable linear actuators

| Limit switch | Linear actuator | | | | |
|--------------|-----------------|-------|-------|--------|--------|
| | CAR22 | CAR32 | CAR40 | CAT32B | CARN32 |
| CAXE | ✓ | ✓ | ✓ | ✓ | ✓ |

✓ suitable

5 Assembly

Mounting may only be carried out by qualified personnel.

The limit switch is designed for simple attachment to defined actuators ▶8 | 3.

The limit switches must be properly adjusted to eliminate the risk of the actuator colliding with the mechanical end stops.

It is recommended that the installer maintain a minimum distance of 10 mm from the end stop to avoid mechanical failures caused by motor overrun and the response time of the control system.

For easy installation, prepare the actuator with the limit switches before installing the actuator at its final location. Installing the limit switch in existing systems is only recommended if the actuator can first be removed.

1. Mount the profile (9) on the actuator and tighten the set screws (10) and the nut (11) on the actuator's front attachment.
2. For each limit switch, insert the switch mounting (1), followed by the locking plate (2), the washer (3), and the locking nut (4) into the T-slot.
3. Place the limit switches (5) on the protection tube and adjust the positions.
4. Tighten the locking nut (4) with a maximum of 0.6 Nm to fasten the limit switch to the protection tube.
5. Secure the cable grommet (6) in the designated slot of the protection shell (7).
6. Pull the cables through the cable grommet (6). Avoid an excessively small cable bending radius (min. radius 15 mm).
7. Fit the end cover (8).
8. Snap the protection shell (7) onto the profile (9).

1 Components of the CAXE limit switch



001D11D5

| | | | |
|----|--|----|---------------------------------------|
| 1 | Switch mounting (2×) | 2 | Locking plate (2×) |
| 3 | Washer (2×) | 4 | Locking nut (2×) |
| 5 | Sensor element, limit switch with cable (2×) | 6 | Cable grommet |
| 7 | Protection shell | 8 | End cover |
| 9 | Profile with mounted limit switch rod | 10 | Screw set mounted on the profile (2×) |
| 11 | Nut with spacer and washer; CAXE 40: 2× washer | | |

6 Installation

Only qualified personnel may start up the system.

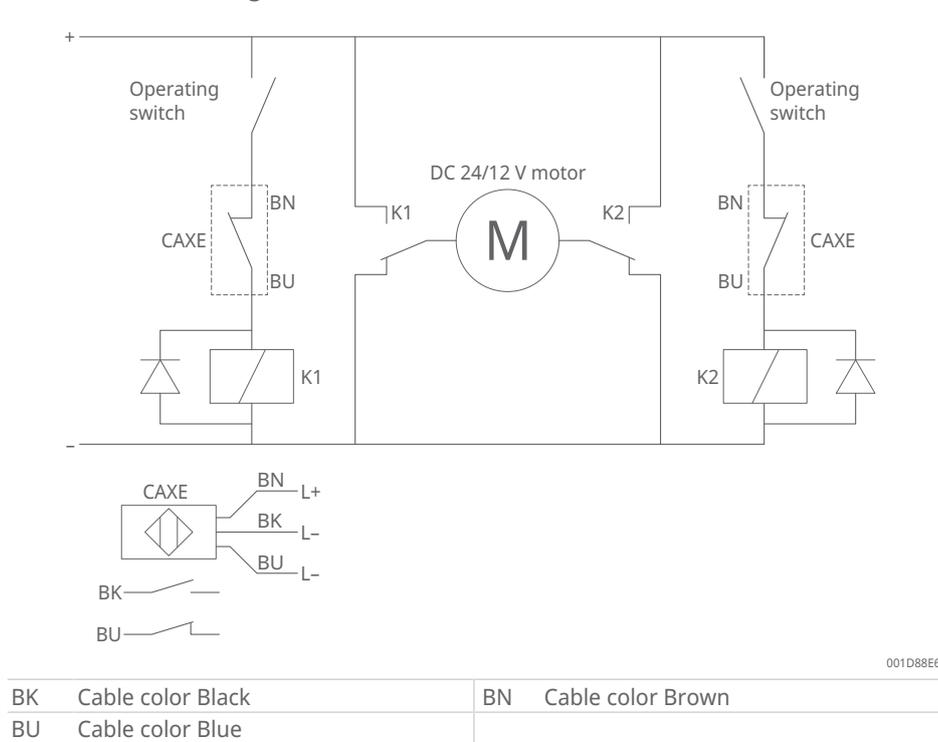
Never connect the limit switches to an AC power supply.

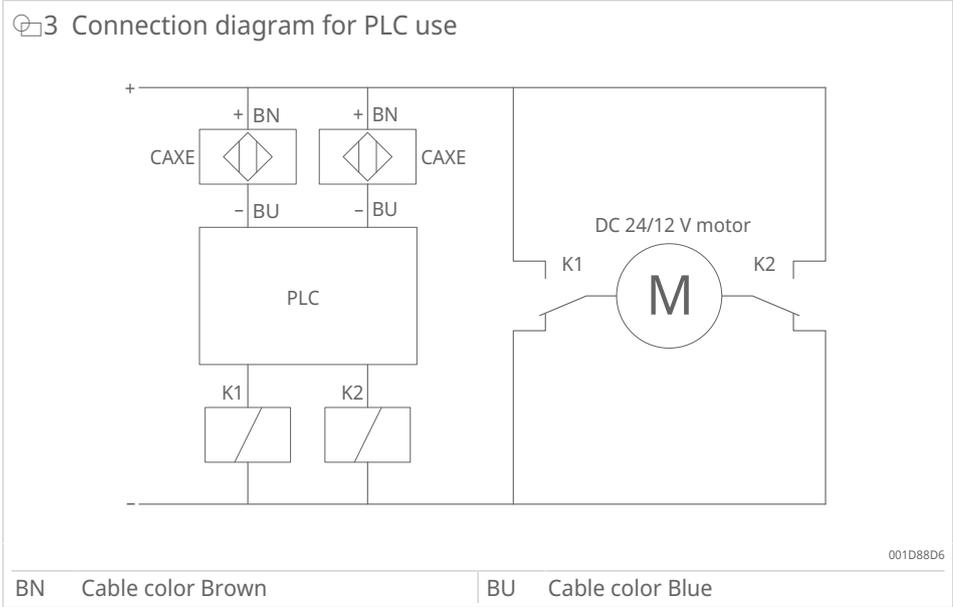
! The sensor has no overload protection and no reverse polarity protection.

As an additional precautionary measure, a fuse rated ≤ 0.1 AF (fast-acting) can be connected in series with each limit switch. This protects the limit switches from damage caused by overcurrent.

1. Use suitable safety equipment.
2. Disconnect the power supply for the actuator before installation.
3. Make sure that the actuator is not under load or voltage.
4. The power supply must comply with the technical specifications ►16 | 10
5. Connect the limit switch according to the connection diagram.

2 Connection diagram





7 Operation

- ✓ commissioning completed
- switch on the power supply

 If the actuator is used in temperatures below 0 °C apply a thin layer of lubricant on the switch rod to avoid moisture build-up and ice build-up.

8 Maintenance

Maintenance work and repairs may only be carried out by qualified personnel.

1. Disconnect the power supply for the actuator before maintenance work and repairs.
2. Make sure that the actuator is not under load or voltage.
3. Use suitable safety equipment.

⚠ DANGER



Risk of fatal injury from unauthorized reconnection of the power supply

Risk of fatal injury to persons in the hazard area due to moving parts or electric shock if the power supply is switched on without authorization during work on the system and causes the system to restart.

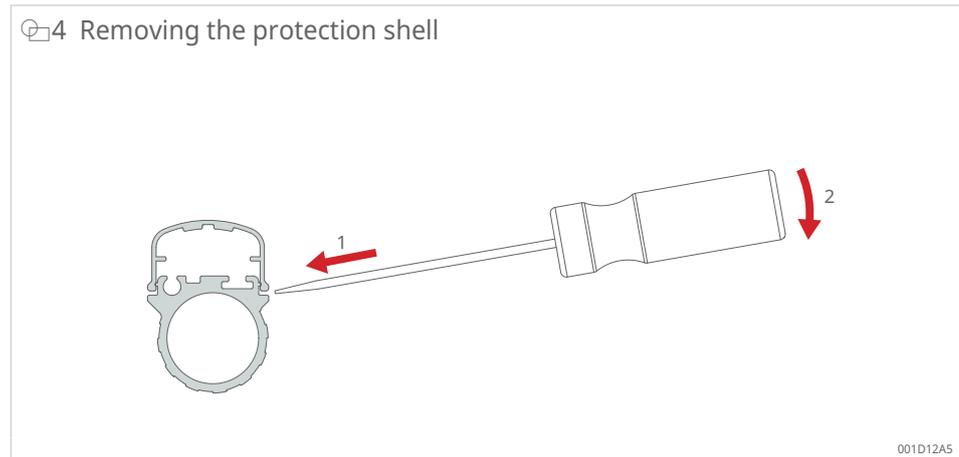
- Before starting work, switch off the system and secure it against reconnection.

📅 4 Maintenance plan

| Activity | Monthly | Annually |
|---|---------|----------|
| Check the device for visible damage | ✓ | |
| Check cables for damage and replace them if necessary | ✓ | |
| Functional test | ✓ | |
| Check electrical connections | | ✓ |

To open the CAXE for any required maintenance work, remove the protection shell.

🔧 4 Removing the protection shell



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9 Disposal

If no return or disposal agreement is in place, disassembled components must be recycled.

⚠ CAUTION



Incorrect disposal

Incorrect disposal may cause environmental damage.

- ▶ Electronic waste, electronic components, lubricants, and other additives are subject to hazardous waste regulations and may only be disposed of by authorized specialist companies.

Observe the local regulations for disposal.

For information on environmentally sound disposal, contact your local authorities or specialist companies.

1. Dispose of metal and plastic parts at an appropriate recycling facility.
2. Sort remaining components by material and dispose of them in accordance with locally applicable occupational safety and environmental protection regulations.

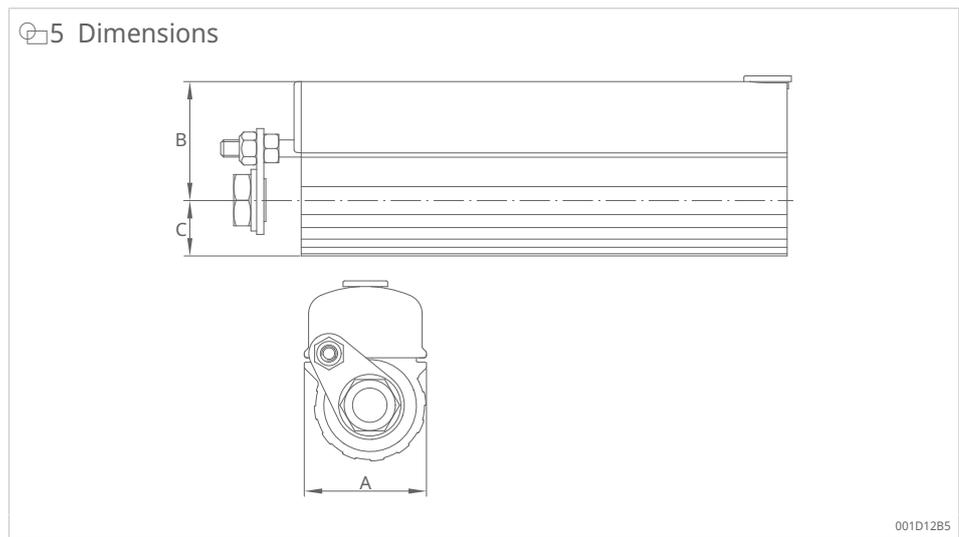
10 Technical data

5 Technical data, CAXE

| Characteristic | Unit | CAXE |
|---------------------------------|-----------------|--|
| Power supply | - | DC |
| Operating voltage | V | 5 ... 30 |
| Current max. | mA | 100 |
| Protection class | - | III |
| Voltage drop | V | < 5 |
| Electrical function | - | NC: normally closed NO: normally open |
| Response time | ms | 0.3 |
| Release time | ms | 0.6 |
| Operating temperature | °C | -20 ... +70 |
| Sensor element protection type | - | IP67 |
| Vibration/shock, sensor element | - | According to IEC 60947-5-1 |
| Cable length L | mm | 2000 |
| Cable diameter D | mm | 3 |
| Cable material | - | PUR |
| Cable cross-section | mm ² | 3 × 0.14 |

10

! The sensor has no overload protection and no reverse polarity protection.



6 Dimensions

| Limit switch | A | B | C |
|--------------|------|----|----|
| CAXE 22 | 42.5 | 37 | 14 |
| CAXE 32 | 47.5 | 40 | 20 |
| CAXE 32B | 47.5 | 40 | 20 |
| CAXE 40 | 46 | 46 | 23 |

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