# Operating Instructions

## Precision Single Hole Fixing Limit Switches EGM/EGT with Snap-Action Switching Contacts

EUCHNER

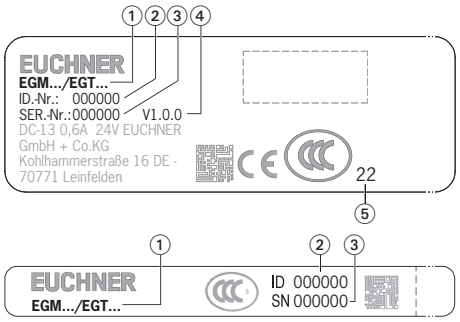
## Scope

These operating instructions are valid for all EGM/EGT with snap-action switching contacts. These operating instructions, the document *Safety information* and any available data sheet form the complete user information for your device.

**Important!**

Make sure to use the operating instructions valid for your product version. The version numbers can be found on the type label of your product. Please contact the EUCHNER service team if you have any questions.

**Safety switch type label**




① Item designation
② Item number
③ Serial number
④ Version
⑤ Year of manufacture

## 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 (MAN20001598) | (this document) | |
| Declaration of conformity | Declaration of conformity | |
| Any additions to the operating instructions | Take any associated additions to the operating instructions or data sheets into account. | |

**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. or the order number for the device in the search box.

## Correct use

Thanks to their round design and simple, single-hole mounting, precision single hole fixing limit switches are suitable for installation directly at the locations to be monitored. Exact adjustment is permitted by means of the precision metric thread.

Correct use includes compliance with the relevant requirements for installation and operation, in particular

- EN IEC 60204-1
- EN ISO 12100

**Important!**

- If a data sheet is included with the product, the information on the data sheet applies in case of discrepancies with the operating instructions.

## Incorrect use

- Precision single hole fixing limit switches with snap-action switching contacts must not be used in safety circuits.
- Single hole fixing limit switches must not be used as an end stop.

## Function

Precision single hole fixing limit switches are used for positioning and control applications in mechanical and systems engineering.

The switching contacts are actuated when the actuating element is moved from the free position to the end position.

## Switching states

The detailed switching states for your switch can be found in the wiring diagrams. All available switching elements are described there.

Please refer to the data sheets for additional special versions of switching elements.

## Mounting

**NOTICE**

Device damage due to improper mounting and unsuitable ambient conditions.

- Mounting must be performed only by authorized personnel.
- Precision single hole fixing limit switches and actuators must not be used as an end stop.
- Protect the precision single hole fixing limit switch against damage.
- The specified IP degree of protection is applicable only if the housing screws, cable entries and plug connectors are properly tightened. Observe the tightening torques.

## Protection against environmental effects

- Mask plunger, plunger guide and type label during painting work!

## Electrical connection

**Important!**

- Strip the insulation from the ends of the individual wires over a length of $6^{\pm 1}$ mm to ensure a safe contact.

**The following information applies to devices with plug connector:**

- Check that the plug connector is sealed.

## Function test

**Mechanical function test**

- The actuating element must move easily.
- Actuate plunger and check the switching functions.

**Electrical function test**

- Check correct function sequence.

## Inspection and service

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

- Correct switching function
- Secure mounting of all components
- Precise adjustment of trip dogs in relation to single hole fixing limit switches
- Damage, heavy contamination, dirt and wear
- Loose plug connectors and cable connections.

## 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.

## Notes about UL requirements

**The following information applies to devices with plug connector:**

This device is intended to be used with a Class 2 power source in accordance with UL1310. Connecting cables for safety switches installed at the place of use must be separated from all moving and permanently installed cables and un-insulated active elements of other parts of the system that operate at a voltage of over 150 V. A constant clearance of 50.8 mm must be maintained. This does not apply if the moving cables are equipped with suitable insulation materials that possess an identical or higher dielectric strength compared to the other relevant parts of the system.

## Declaration of conformity

The product complies with the requirements according to

- Machinery Directive 2006/42/EC (until January 19, 2027)
- Machinery Regulation (EU) 2023/1230 (from January 20, 2027)

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

## Service

If servicing is required, please contact:

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70771 Leinfelden-Echterdingen
Germany

**Service telephone**:
+49 711 7597-500

**E-mail**:
support@euchner.de

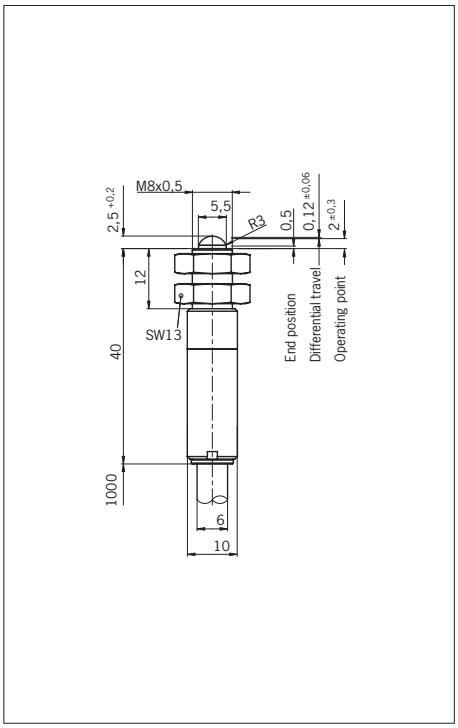
**Internet**:
www.euchner.com

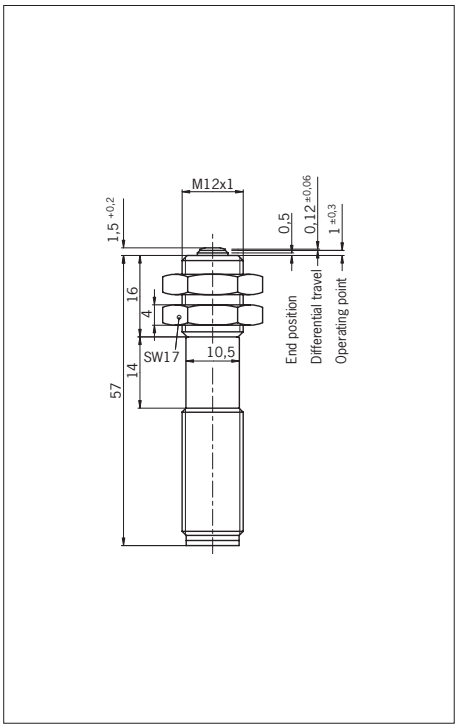
## Technical data

| Type | | | EGM8-1000C2396 | EGM12SEM4 |
|---|---|---|---|---|
| Housing material | | | Stainless steel | Stainless steel |
| Degree of protection | | | IP65 | IP65 [1] |
| Ambient temperature | | [°C] | -20 [2] ... +80 | -20 ... +85 |
| Plunger type | | | Rounded plunger | Flat plunger |
| Approach speed, max. | | [m/min] | 8 | 8 |
| Approach speed, min. | | [m/min] | 0.01 | 0.01 |
| Mechanical life (axial actuation) | | | 1 x $10^6$ operating cycles | 1 x $10^6$ operating cycles |
| Operating point accuracy [3] | | [mm] | ± 0.01 | ± 0.01 |
| Actuating force (end position) | | [N] | Approx. 16 | Approx. 16 |
| Switching frequency, max. | | [1/min] | 30 | 30 |
| Switching element | | | Snap-action switching contact | Snap-action switching contact |
| Switching contact | | | 1 changeover contact | 1 changeover contact |
| Contact material | | | Fine silver, gold plated | Silver alloy, gold plated |
| Rated insulation voltage $U_i$ | | [V] | 250 ⧈ | 50 |
| Rated impulse withstand voltage $U_{imp}$ | | [kV] | 2.5 | 1.5 |
| Utilization category | | | AC-15 $U_e$ 230 V $I_e$ 0.5 A<br>DC-13 $U_e$ 24 V $I_e$ 0.6 A | AC-15 $U_e$ 50 V $I_e$ 0.5 A<br>DC-13 $U_e$ 24 V $I_e$ 0.6 A |
| Switching current, min. | at 2 V | [mA] | – | – |
| | at 24 V | [mA] | 10 | 10 |
| Switching voltage, min. | | [V DC] | 12 | 12 |
| Short circuit protection (control circuit fuse) | | [A gG] | 2 | 2 |
| Connection | | | PUR cable 3 x 0.5 mm² | Plug connector M12 |

1) Mating connector inserted and screwed tight.
2) Cable hard wired.
3) The reproducible operating point accuracy relates to axial actuation, after run-in of approx. 2,000 operating cycles.

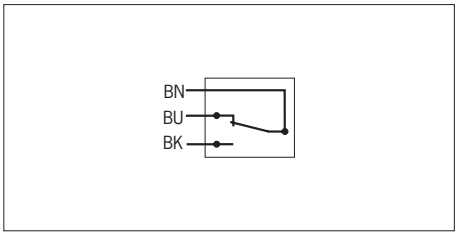
## Dimension drawings

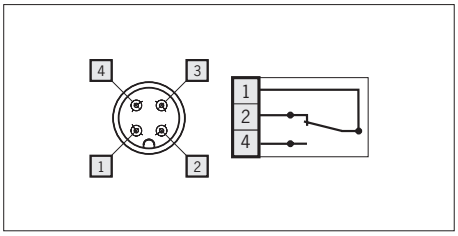



## Wiring diagrams

(Illustration: plunger in free position)



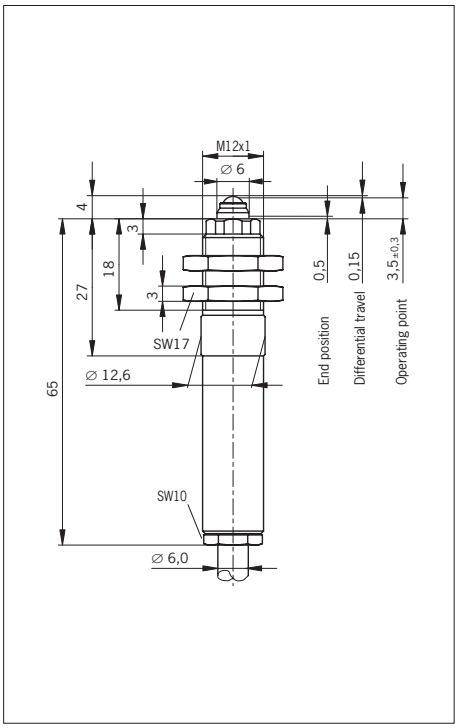



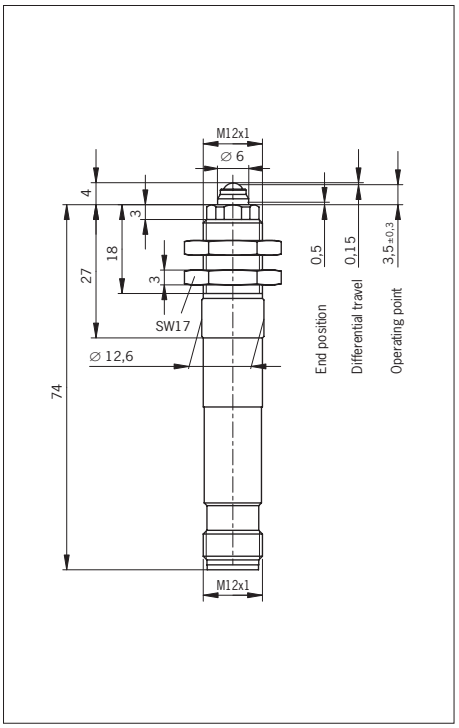
## Technical data

| Type | | | EGT1M12-... | EGT1M12SEM4 |
|---|---|---|---|---|
| Housing material | | | Brass, nickel plated | Stainless steel |
| Degree of protection | | | IP67 | IP67 [1] |
| Ambient temperature | | [°C] | -25 [2] ... +80 | -25 ... +80 |
| Plunger type | | | Ball plunger | Ball plunger |
| Approach speed, max. | | [m/min] | 8 | 8 |
| Approach speed, min. | | [m/min] | 0.01 | 0.01 |
| Mechanical life (axial actuation) | | | 1 x $10^6$ operating cycles | 1 x $10^6$ operating cycles |
| Operating point accuracy [3] | | [mm] | ± 0.01 | ± 0.01 |
| Actuating force (end position) | | [N] | Approx. 20 | Approx. 20 |
| Switching frequency, max. | | [1/min] | 30 | 30 |
| Switching element | | | Snap-action switching contact | Snap-action switching contact |
| Switching contact | | | 1 changeover contact | 1 changeover contact |
| Contact material | | | Silver alloy, gold plated | Silver alloy, gold plated |
| Rated insulation voltage $U_i$ | | [V] | 250 | 50 |
| Rated impulse withstand voltage $U_{imp}$ | | [kV] | 2.5 | 2.5 |
| Utilization category | | | AC-15 $U_e$ 230 V $I_e$ 0.5 A<br>DC-13 $U_e$ 24 V $I_e$ 0.6 A | AC-15 $U_e$ 50 V $I_e$ 0.5 A<br>DC-13 $U_e$ 24 V $I_e$ 0.6 A |
| Switching current, min. | at 2 V | [mA] | – | – |
| | at 24 V | [mA] | 10 | 10 |
| Switching voltage, min. | | [V DC] | 12 | 12 |
| Short circuit protection (control circuit fuse) | | [A gG] | 2 | 2 |
| Connection | | | PUR cable 4 x 0.5 mm² | Plug connector M12 |

1) Mating connector inserted and screwed tight.
2) Cable hard wired.
3) The reproducible operating point accuracy relates to axial actuation, after run-in of approx. 2,000 operating cycles.

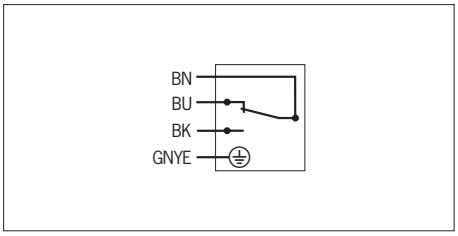
## Dimension drawings

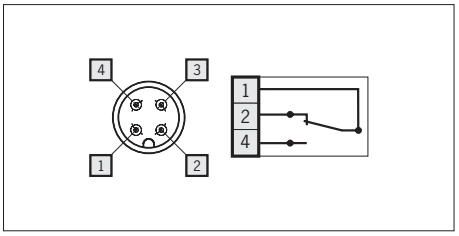



## Wiring diagrams

(Illustration: plunger in free position)



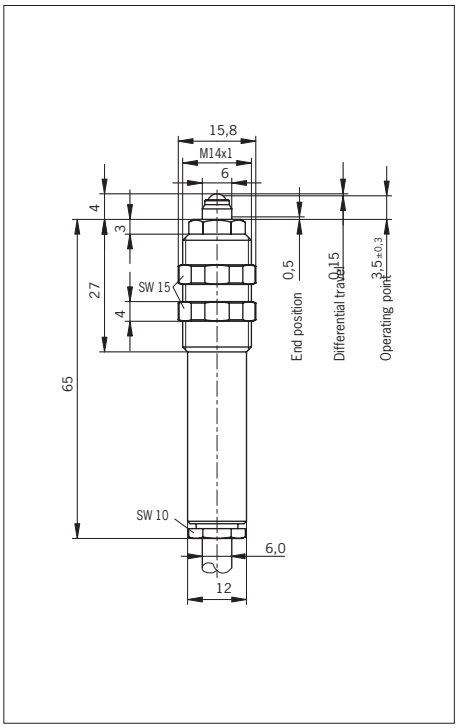



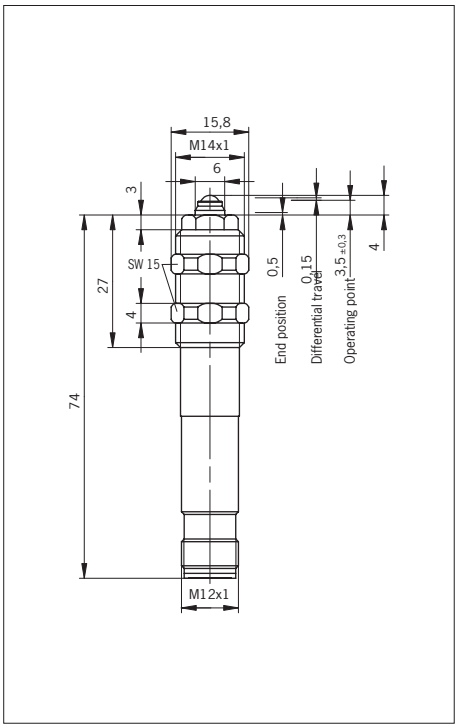
## Technical data

| Type | | | EGT1-... | EGT1SEM4 |
|---|---|---|---|---|
| Housing material | | | Brass, nickel plated | Stainless steel |
| Degree of protection | | | IP67 | IP67 [1] |
| Ambient temperature | | [°C] | -25 [2] ... +80 | -25 ... +80 |
| Plunger type | | | Ball plunger | Ball plunger |
| Approach speed, max. | | [m/min] | 8 | 8 |
| Approach speed, min. | | [m/min] | 0.01 | 0.01 |
| Mechanical life (axial actuation) | | | 1 x $10^6$ operating cycles | 1 x $10^6$ operating cycles |
| Operating point accuracy [3] | | [mm] | ± 0.01 | ± 0.01 |
| Actuating force (end position) | | [N] | Approx. 20 | Approx. 20 |
| Switching frequency, max. | | [1/min] | 30 | 30 |
| Switching element | | | Snap-action switching contact | Snap-action switching contact |
| Switching contact | | | 1 changeover contact | 1 changeover contact |
| Contact material | | | Silver alloy, gold plated | Silver alloy, gold plated |
| Rated insulation voltage $U_i$ | | [V] | 250 | 50 |
| Rated impulse withstand voltage $U_{imp}$ | | [kV] | 2.5 | 2.5 |
| Utilization category | | | AC-15 $U_e$ 230 V $I_e$ 0.5 A<br>DC-13 $U_e$ 24 V $I_e$ 0.6 A | AC-15 $U_e$ 50 V $I_e$ 0.5 A<br>DC-13 $U_e$ 24 V $I_e$ 0.6 A |
| Switching current, min. | at 2 V | [mA] | – | – |
| | at 24 V | [mA] | 10 | 10 |
| Switching voltage, min. | | [V DC] | 12 | 12 |
| Short circuit protection (control circuit fuse) | | [A gG] | 2 | 2 |
| Connection | | | PUR cable 4 x 0.5 mm² | Plug connector M12 |

1) Mating connector inserted and screwed tight.
2) Cable hard wired.
3) The reproducible operating point accuracy relates to axial actuation, after run-in of approx. 2,000 operating cycles.

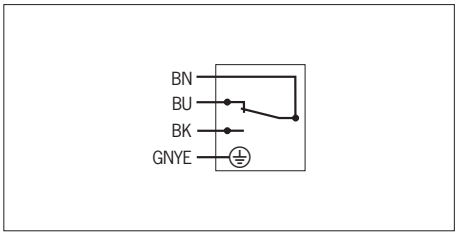
## Dimension drawings

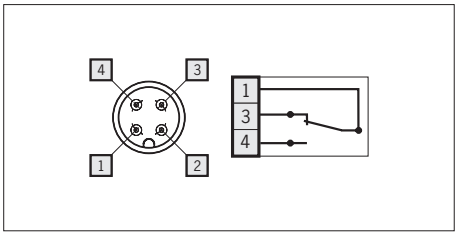



## Wiring diagrams

(Illustration: plunger in free position)



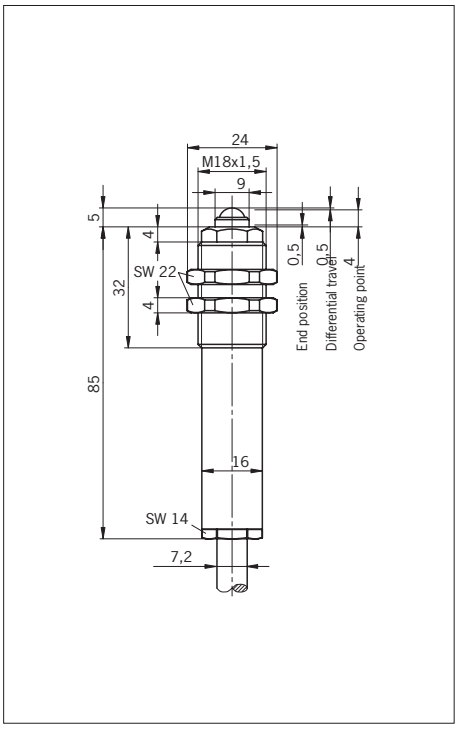



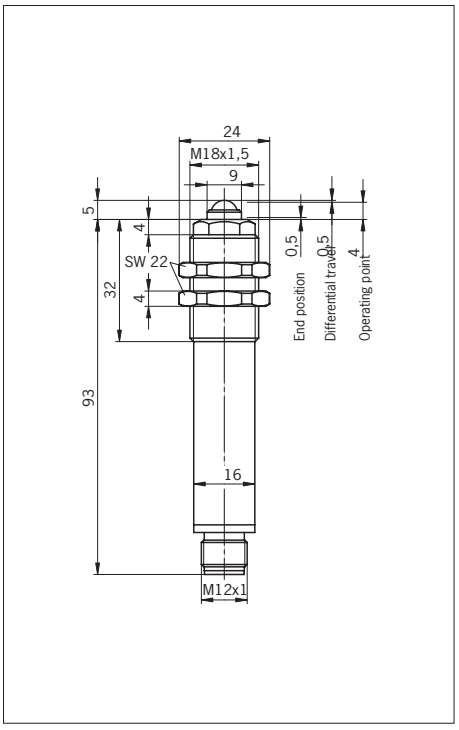
## Technical data

| Type | | | EGT2-... | EGT2SEM4 |
|---|---|---|---|---|
| Housing material | | | Brass, nickel plated | Stainless steel |
| Degree of protection | | | IP67 | IP67 [1] |
| Ambient temperature | | [°C] | 5 [2] ... +60 | -25 ... +80 |
| Plunger type | | | Ball plunger | Ball plunger |
| Approach speed, max. | | [m/min] | 10 | 10 |
| Approach speed, min. | | [m/min] | 0.01 | 0.01 |
| Mechanical life (axial actuation) | | | 1 x $10^6$ operating cycles | 1 x $10^6$ operating cycles |
| Operating point accuracy [3] | | [mm] | ± 0.01 | ± 0.01 |
| Actuating force (end position) | | [N] | Approx. 24 | Approx. 24 |
| Switching frequency, max. | | [1/min] | – | – |
| Switching element | | | Snap-action switching contact | Snap-action switching contact |
| Switching contact | | | 1 NC and 1 NO | 1 NC and 1 NO |
| Contact material | | | Fine silver, gold plated | Fine silver, gold plated |
| Rated insulation voltage $U_i$ | | [V] | 250 | 50 |
| Rated impulse withstand voltage $U_{imp}$ | | [kV] | 2.5 | 2.5 |
| Utilization category | | | AC-15 $U_e$ 230 V $I_e$ 2 A<br>DC-13 $U_e$ 24 V $I_e$ 1 A | AC-15 $U_e$ 30 V $I_e$ 2 A<br>DC-13 $U_e$ 24 V $I_e$ 1 A |
| Switching current, min. | at 2 V | [mA] | 10 | – |
| | at 24 V | [mA] | – | 10 |
| Switching voltage, min. | | [V DC] | 12 | 12 |
| Short circuit protection (control circuit fuse) | | [A gG] | 2 | 2 |
| Connection | | | PUR cable 5 x 0.75 mm² | Plug connector M12 |

1) Mating connector inserted and screwed tight.
2) Cable hard wired.
3) The reproducible operating point accuracy relates to axial actuation, after run-in of approx. 2,000 operating cycles.

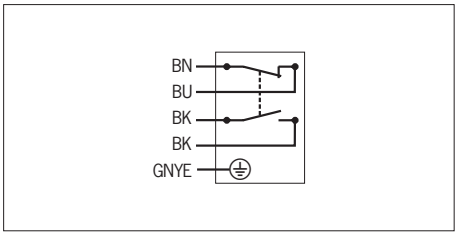
## Dimension drawings

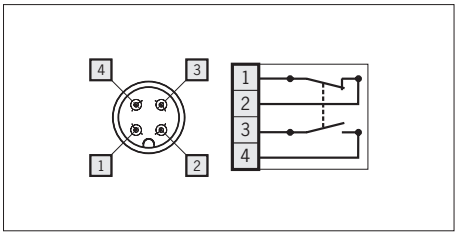



## Wiring diagrams

(Illustration: plunger in free position)



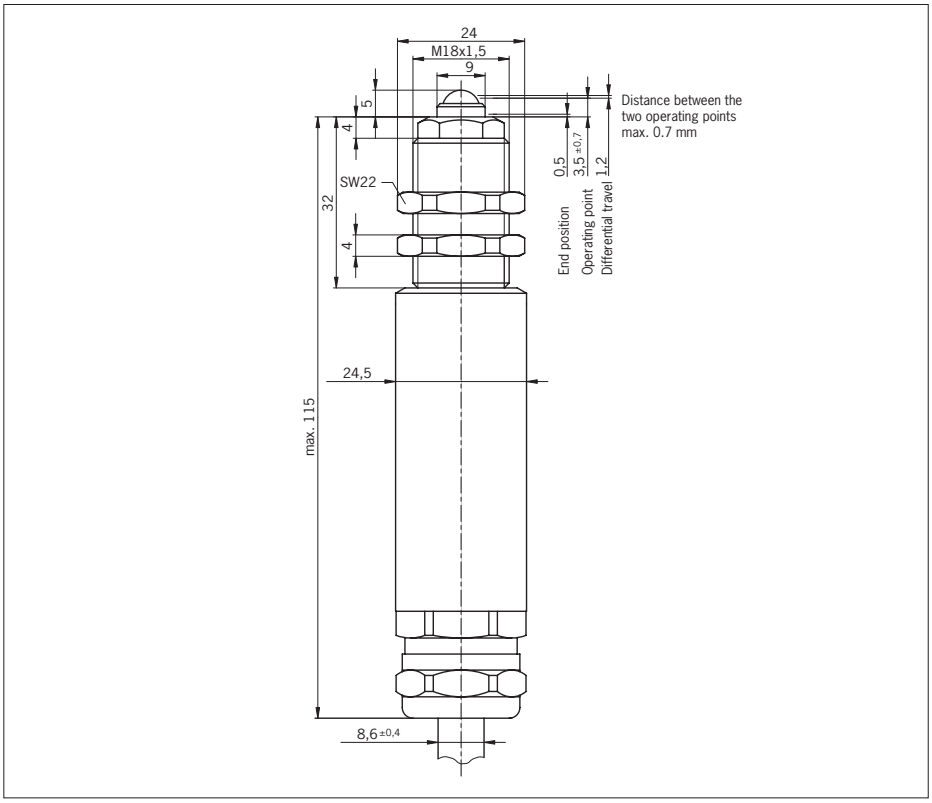



## Technical data

| Type | | | EGT4-... |
|---|---|---|---|
| Housing material | | | Brass, nickel plated |
| Degree of protection | | | IP67 |
| Ambient temperature | | [°C] | 5 [1] ... +60 |
| Plunger type | | | Ball plunger |
| Approach speed, max. | | [m/min] | 10 |
| Approach speed, min. | | [m/min] | 0.01 |
| Mechanical life (axial actuation) | | | 1 x $10^6$ operating cycles |
| Operating point accuracy [2] | | [mm] | ± 0.01 |
| Actuating force (end position) | | [N] | Approx. 24 |
| Switching frequency, max. | | [1/min] | – |
| Switching element | | | Snap-action switching contact |
| Switching contact | | | 1 NC and 1 NO |
| Contact material | | | Fine silver, gold plated |
| Rated insulation voltage $U_i$ | | [V] | 250 |
| Rated impulse withstand voltage $U_{imp}$ | | [kV] | 2.5 |
| Utilization category | | | AC-15 $U_e$ 230 V $I_e$ 2 A<br>DC-13 $U_e$ 24 V $I_e$ 1 A |
| Switching current, min. | at 2 V | [mA] | 10 |
| | at 24 V | [mA] | – |
| Switching voltage, min. | | [V DC] | 12 |
| Short circuit protection (control circuit fuse) | | [A gG] | 2 |
| Connection | | | PUR cable 5 x 0.75 mm² |

1) Cable hard wired.
2) The reproducible operating point accuracy relates to axial actuation, after run-in of approx. 2,000 operating cycles.

## Dimension drawings




## Wiring diagrams

(Illustration: plunger in free position)