

**Scope**

These operating instructions apply to all precision single hole fixing limit switches 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. Please contact the EUCHNER service team if you have any questions.

**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](http://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 Switches 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<sup>±1</sup> 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

**Info:** The year of manufacture can be seen in the bottom 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 regulations are not followed, or if any servicing is not performed as required, liability will be excluded and the warranty void.

**Notes on UL requirements**

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

This device is intended to be used and applied with a Class 2 power supply 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.

The EU declaration of conformity can be found at [www.euchner.com](http://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:

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

**Service telephone:**

+49 711 7597-500

**E-mail:**

[support@euchner.de](mailto:support@euchner.de)

**Internet:**

[www.euchner.com](http://www.euchner.com)

**Technical data**

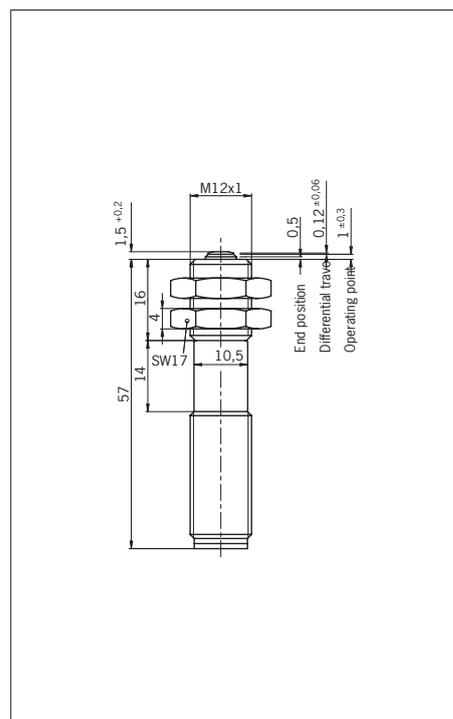
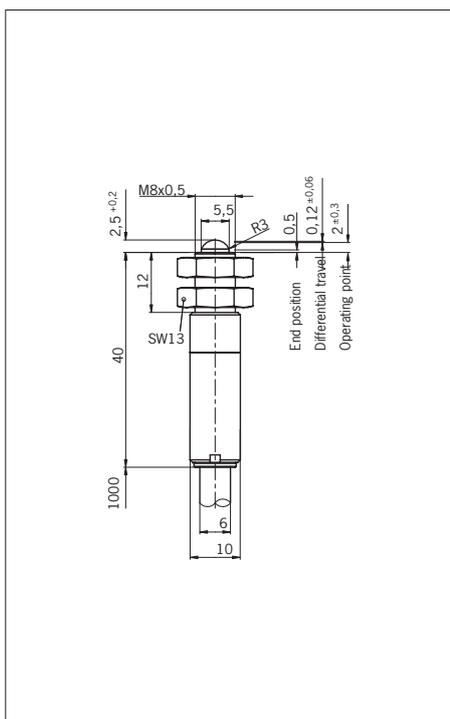
Type		EGM8-1000C2396	EGM12SEM4
Housing material		Stainless steel	Stainless steel
Degree of protection		IP65	IP65 <sup>1)</sup>
Ambient temperature	[°C]	-20 <sup>2)</sup> ... +80	-20 ... +85
Plunger type		Rounded plunger	Flat plunger
Approach speed, max.	[m/min]	8	8
Approach speed, min.	[m/min]	0.01	0.01
Mechanical life (axial actuation)		1 x 10 <sup>6</sup> operating cycles	1 x 10 <sup>6</sup> operating cycles
Operating point accuracy <sup>3)</sup>	[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 <sub>i</sub>	[V]	250 $\square$	50
Rated impulse withstand voltage U <sub>imp</sub>	[kV]	2.5	1.5
Utilization category acc. to EN IEC 60947-5-1		AC-15 U <sub>e</sub> 230 V I <sub>e</sub> 0.5 A DC-13 U <sub>e</sub> 24 V I <sub>e</sub> 0.6 A	AC-15 U <sub>e</sub> 50 V I <sub>e</sub> 0.5 A DC-13 U <sub>e</sub> 24 V I <sub>e</sub> 0.6 A
Switching current, min.,	at 2V [mA]	-	-
	at 24V [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 mm <sup>2</sup>	Plug connector M12

1) Mating connector inserted and screwed tight.

2) Cable hard wired.

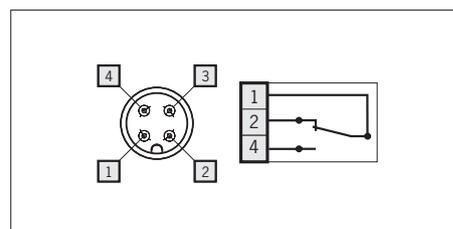
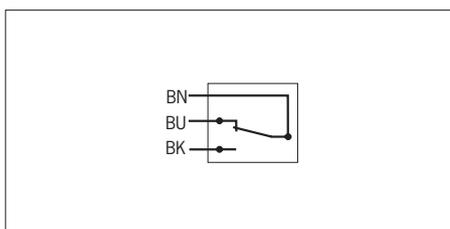
3) The reproducible operating point accuracy relates to axial actuation, after run-in of approx. 2,000 operating cycles.

**Dimension drawings**



**Wiring diagrams**

(Illustration: plunger in free position)



**Technical data**

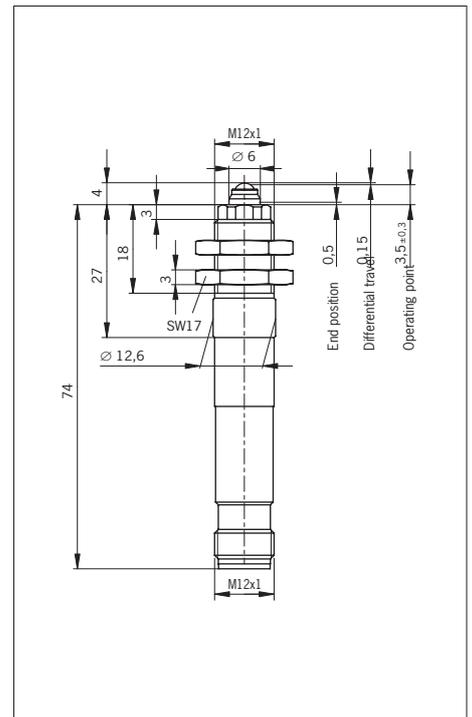
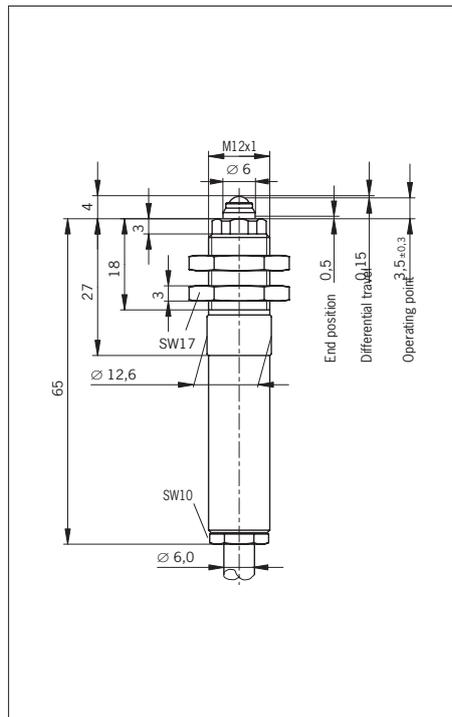
Type	EGT1M12-...	EGT1M12SEM4
Housing material	Brass, nickel plated	Stainless steel
Degree of protection	IP67	IP67 <sup>1)</sup>
Ambient temperature	[°C]	-25 <sup>2)</sup> ... +80
Plunger type	Ball plunger	Ball plunger
Approach speed, max.	[m/min]	8
Approach speed, min.	[m/min]	0.01
Mechanical life (axial actuation)	1 x 10 <sup>6</sup> operating cycles	1 x 10 <sup>6</sup> operating cycles
Operating point accuracy <sup>3)</sup>	[mm]	± 0.01
Actuating force (end position)	[N]	Approx. 20
Switching frequency, max.	[1/min]	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 <sub>i</sub>	[V]	250
Rated impulse withstand voltage U <sub>imp</sub>	[kV]	2.5
Utilization category acc. to IEC 60947-5-1	AC-15 U <sub>e</sub> 230 V I <sub>e</sub> 0.5 A DC-13 U <sub>e</sub> 24 V I <sub>e</sub> 0.6 A	AC-15 U <sub>e</sub> 50 V I <sub>e</sub> 0.5 A DC-13 U <sub>e</sub> 24 V I <sub>e</sub> 0.6 A
Switching current, min., at 2V	[mA]	-
at 24V	[mA]	10
Switching voltage, min.	[V DC]	12
Short circuit protection (control circuit fuse)	[A gG]	2
Connection	PUR cable 4 x 0.5 mm <sup>2</sup>	Plug connector M12

1) Mating connector inserted and screwed tight.

2) Cable hard wired.

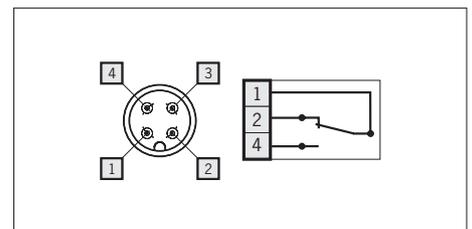
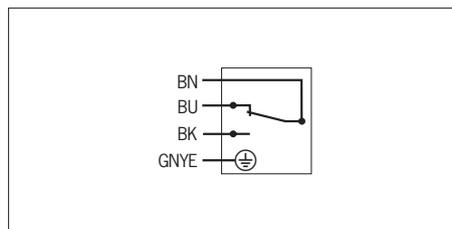
3) The reproducible operating point accuracy relates to axial actuation, after run-in of approx. 2,000 operating cycles.

**Dimension drawings**



**Wiring diagrams**

(Illustration: plunger in free position)



**Technical data**

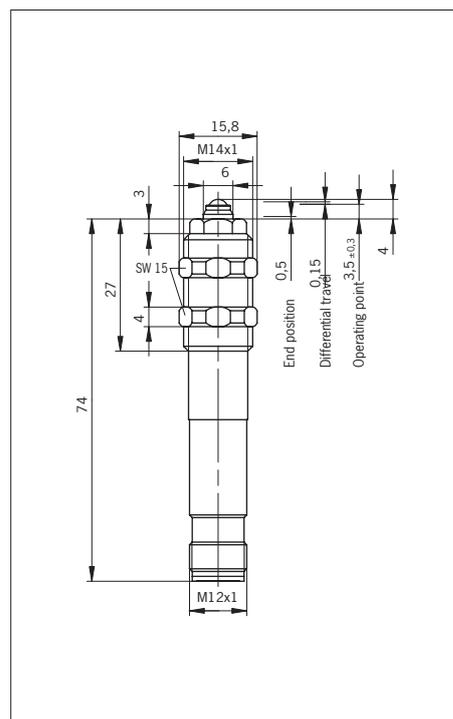
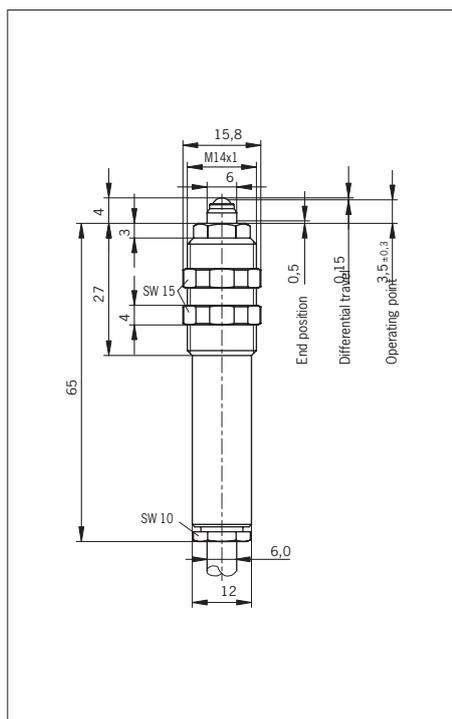
Type		EGT1-...	EGT1SEM4
Housing material		Brass, nickel plated	Stainless steel
Degree of protection		IP67	IP67 <sup>1)</sup>
Ambient temperature	[°C]	-25 <sup>2)</sup> ... +80	-25 ... +80
Plunger type		Ball plunger	Ball plunger
Approach speed, max.	[m/min]	8	8
Approach speed, min.	[m/min]	0.01	0.01
Mechanical life (axial actuation)		1 x 10 <sup>6</sup> operating cycles	1 x 10 <sup>6</sup> operating cycles
Operating point accuracy <sup>3)</sup>	[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 <sub>i</sub>	[V]	250	50
Rated impulse withstand voltage U <sub>imp</sub>	[kV]	2.5	2.5
Utilization category acc. to EN IEC 60947-5-1		AC-15 U <sub>e</sub> 230 V I <sub>e</sub> 0.5 A DC-13 U <sub>e</sub> 24 V I <sub>e</sub> 0.6 A	AC-15 U <sub>e</sub> 50 V I <sub>e</sub> 0.5 A DC-13 U <sub>e</sub> 24 V I <sub>e</sub> 0.6 A
Switching current, min.,	at 2V [mA] at 24V [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 mm <sup>2</sup>	Plug connector M12

1) Mating connector inserted and screwed tight.

2) Cable hard wired.

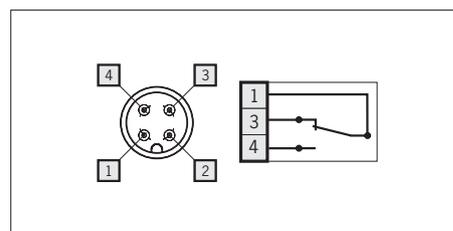
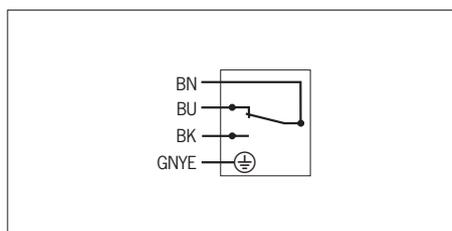
3) The reproducible operating point accuracy relates to axial actuation, after run-in of approx. 2,000 operating cycles.

**Dimension drawings**



**Wiring diagrams**

(Illustration: plunger in free position)



**Technical data**

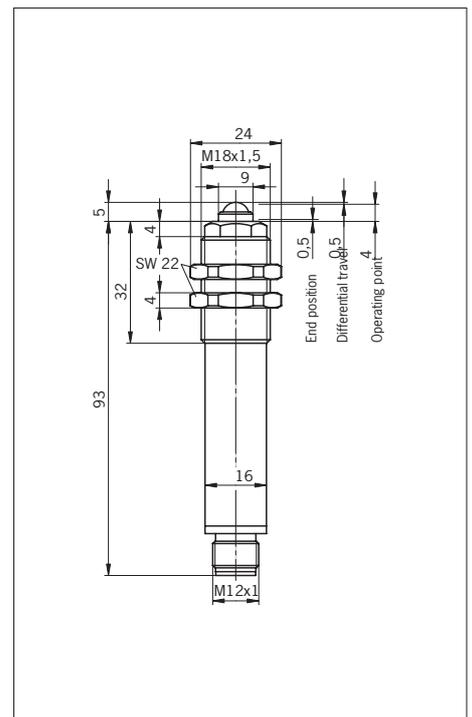
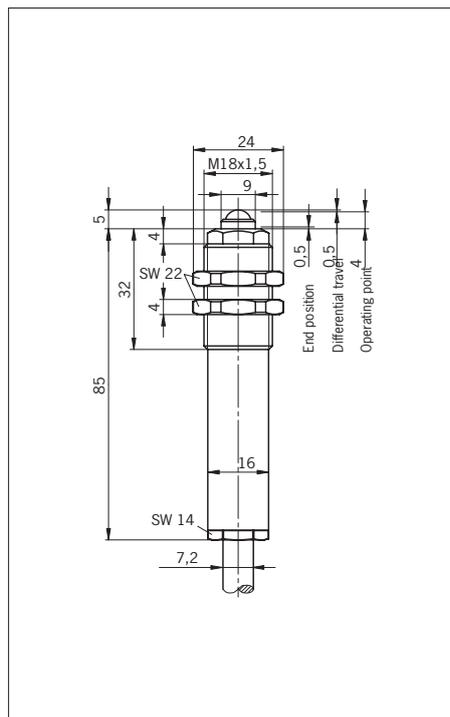
Type	EGT2-...	EGT2SEM4
Housing material	Brass, nickel plated	Stainless steel
Degree of protection	IP67	IP67 <sup>1)</sup>
Ambient temperature	[°C]	
	5 <sup>2)</sup> ... +60	-25 ... +80
Plunger type	Ball plunger	Ball plunger
Approach speed, max.	[m/min]	
	10	10
Approach speed, min.	[m/min]	
	0.01	0.01
Mechanical life (axial actuation)	1 x 10 <sup>6</sup> operating cycles	1 x 10 <sup>6</sup> operating cycles
Operating point accuracy <sup>3)</sup>	[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 <sub>i</sub>	[V]	
	250	50
Rated impulse withstand voltage U <sub>imp</sub>	[kV]	
	2.5	2.5
Utilization category acc. to EN IEC 60947-5-1	AC-15 U <sub>e</sub> 230 V I <sub>e</sub> 2 A DC-13 U <sub>e</sub> 24 V I <sub>e</sub> 1 A	AC-15 U <sub>e</sub> 30 V I <sub>e</sub> 2 A DC-13 U <sub>e</sub> 24 V I <sub>e</sub> 1 A
Switching current, min.,		
at 2V	[mA]	
	10	-
at 24V	[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 mm <sup>2</sup>	Plug connector M12

1) Mating connector inserted and screwed tight.

2) Cable hard wired.

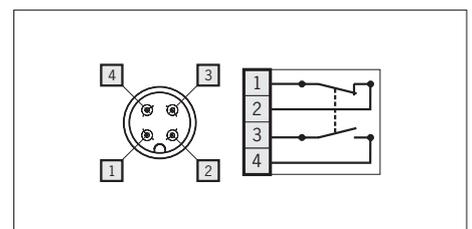
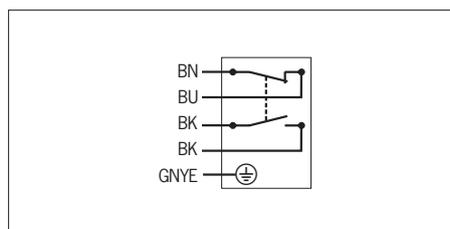
3) The reproducible operating point accuracy relates to axial actuation, after run-in of approx. 2,000 operating cycles.

**Dimension drawings**



**Wiring diagrams**

(Illustration: plunger in free position)



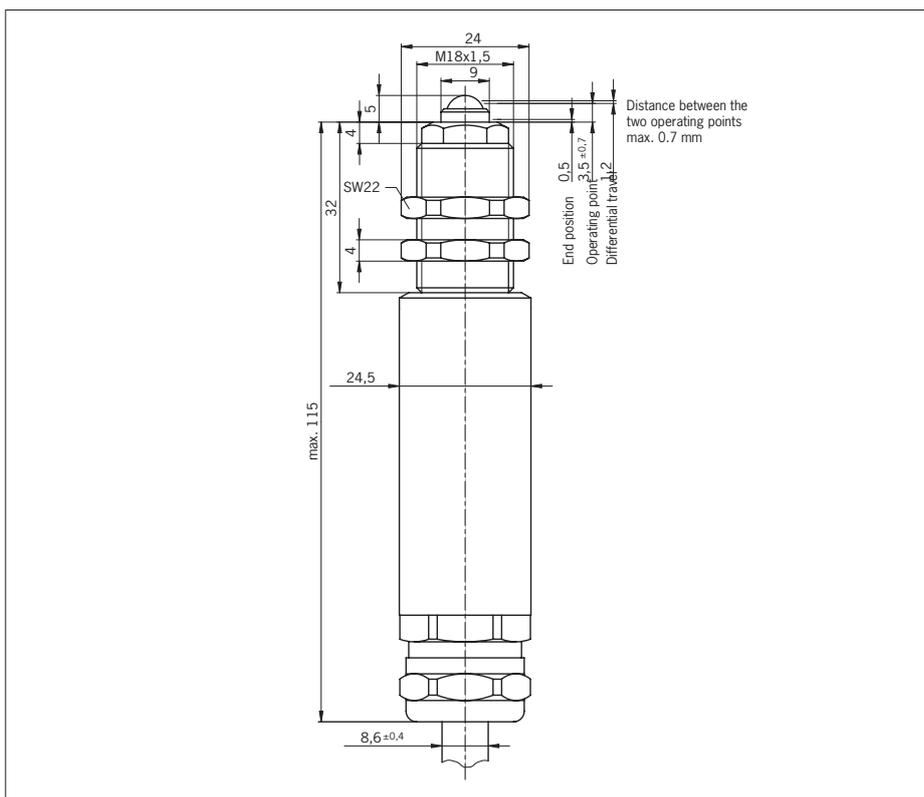
**Technical data**

Type	EGT4-...	
Housing material	Brass, nickel plated	
Degree of protection	IP67	
Ambient temperature	[°C]	5 <sup>1)</sup> ... +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 <sup>6</sup> operating cycles	
Operating point accuracy <sup>2)</sup>	[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 <sub>i</sub>	[V]	250
Rated impulse withstand voltage U <sub>imp</sub>	[kV]	2.5
Utilization category acc. to EN IEC 60947-5-1	AC-15 U <sub>e</sub> 230 V I <sub>e</sub> 2 A DC-13 U <sub>e</sub> 24 V I <sub>e</sub> 1 A	
Switching current, min.,	at 2V [mA]	10
	at 24V [mA]	-
Switching voltage, min.	[V DC]	12
Short circuit protection (control circuit fuse)	[A gG]	2
Connection	PUR cable 5 x 0.75 mm <sup>2</sup>	

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)

