

Miniature Limit Switch

Type 07-2501-****/****



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Notes on the instructions

When working in hazardous areas, the safety of personnel and equipment depends on compliance with the relevant safety regulations. The people in charge of installation and maintenance bear a special responsibility. It is essential that they have an exact knowledge of the applicable rules and regulations.

The instructions provide a summary of the most important safety measures and must be read by everyone working with the product so that they will be familiar with the correct handling of the product.

The instructions have to be kept for future reference and must be available throughout the expected life of the product..

Description

The miniature limit switches, type 07-2501-****/****, are used in areas with limited space for a flameproof switching element.

These switches are particularly suitable for use in valves, thermostats, push switches, servo components, level meters and switching gear. The connection cable is potted in at the rear.

The standard version of the switch contains fine-silver contacts. Gold-plated contacts are available for particularly low voltages and currents.

The length of the connection cable can be varied.

Explosion protection

Notified Body Number ATEX	0044
Approved Body Number UKEX	2503
ATEX/UKEX Ex type of protection	Ⓜ II 2G Ex db IIC T6, T5 Gb
Certification ATEX	EPS 14 ATEX 1689X
Certification UKEX	EPS 22 UKEX 1350X
IECEx Ex type of protection	Ex db IIC T6, T5 Gb
Certification IECEx	IECEx EPS 14.0039 X
Ambient temperature range	The limit switches are used depending on the current load, cable cross-section and the type of the hose line at different ambient temperatures in the temperature classes T6 and T5. For details, see the marking of the limit switch. Can be used in T-Class T6 at: -60 °C ≤ Ta ≤ 65 °C: max. 5 A -60 °C ≤ Ta ≤ 70 °C: max. 3 A -60 °C ≤ Ta ≤ 75 °C: max. 1 A Can be used in T-Class T5 at: -60 °C ≤ Ta ≤ 80 °C: max. 5 A -60 °C ≤ Ta ≤ 85 °C: max. 3 A -60 °C ≤ Ta ≤ 90 °C: max. 1 A
Approved for zones	1 and 2
Other applicable documents	Delivery note

Technical data

Rated current / voltage	Type	Rated current / voltage
	07-2501-6****/****	5A / 250 V AC 5A / 0-15 V DC 3A / 15-30 V DC 0,25 A / 250 V DC
	07-2501-7****/****	0,4A / 30 V DC
Cross section	0,5 to 0,75 mm ²	
Contact options	1 N/C contact or 1 N/O contact or 1 change-over contact with the same potential	
Weight	With 3 m (9.84 ft) cable: approx. 160 g (0.35 lb)	
Switching rate	Max. 1000/h	
Operating force	Max. 1.4 N	
Release force	Min. 0.25 N	
Contact travels	Pretravel:	0.5 to 1.0 mm (0.02 to 0.04 in)
	Overtravel:	min. 0.2 mm (0.008 in)
	Release travel:	~0.55 mm (0.022 in)
	Differential travel:	max. 0.13 mm (0.005 in)
	No-load travel:	~0.5 mm (0.02 in)

Life cycle	Mechanical: >2 x 10 ⁶ switching cycles Electrical: Acc. to applied load
Enclosure material	Duroplast
Plunger / additional actuator	Stainless steel
Connection	See page 3

Safety instructions

The miniature limit switch has been developed in order to assume safety functions as a part of an entire plant or machine.

A complete safety system normally covers sensors, monitoring modules, indicator switches and concepts for safe disconnection. The responsibility taken by the manufacturer of a plant or machine implies to secure the correct general function.

The use in other than the within this operating instruction mentioned applications or the modification of the product through others than the manufacturer discharges BARTEC from the liability for defects and any other further warranties.

The generally applicable statutory rules and other binding directives relating to construction and operating of explosion protected electrical equipment must be adhered to.

The miniature limit switch may only be used inside the specified temperature range. The miniature limit switch must be protected from mechanical damage by a tested and certified protection device according to IEC/EN 60079-0. Unprotected, incorrect installation can cause malfunctioning and the loss of explosion protection.

The miniature limit switch may be used only if it is in a clean and undamaged condition. The miniature limit switch may not be used as mechanical stop. Technical modifications to the miniature limit switch are prohibited.

The miniature limit switch must be replaced after any short circuit that occurs in the main circuit because the miniature limit switch is a piece of encapsulated equipment, and it is therefore not possible to check the state of the switch contacts.

Marking

Particularly important points in these instructions are marked with a symbol:



DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a potentially hazardous situation which, if not avoided, may result in death or serious injury.



NOTICE indicates a potentially hazardous situation which, if not avoided, may result in property damage.



NOTE Important instructions and information on effective, economical and environmentally compatible handling.

Standards conformed to

Please see Declaration of Conformity.

Transport, Storage



NOTICE

Miniature limit switch damage through incorrect transport or incorrect storage.

- Transport and storage is permissible in original packaging only.

Assembly, Installation, and Commissioning



WARNING

Risk of serious injury due to incorrect proceedings.

- Only authorized and qualified personnel may do any of the assembly, disassembly, installation and commissioning work.
- The relevant installation and operating regulations must be observed when setting up or operating explosion-protected systems.

Assembly/disassembly



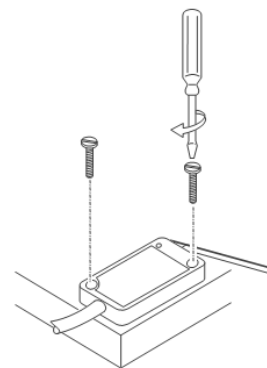
NOTICE

Property damage caused by impact energy.

- Miniature limit switches must be protected by a protective device, protective cover against the risk of high mechanical danger, which meets at least the requirements of EN 60079-0, Table 13b, Group II.

Check when assembling:

- Use appropriate tools.
- Check that the miniature limit switch is in perfect condition.
- Fasten the miniature limit switch with two M3 screws, recommended tightening torque = 0.6 Nm (0.04 lb.ft).



NOTE Miniature limit switches mounted outdoors must when exposed to weather conditions be fitted into enclosures with an adequate protection class.

Installation

Take care when connecting conductors:

- Always use suitable crimping tools when crimping the wire-end ferrules to ensure a consistent quality of pressing each time.
- Take care not to damage the individual wires when connecting the conductors.
- The cable has to be firmly installed.
- The minimum bending radius of the hose cable has to be kept.



NOTE Temperature ranges are specified for fixed and unmoved installed cables.

Terminal assignment, cable color codes, and actuator versions, see page 3.

Commissioning

Before commissioning check that:

- The miniature limit switch is not damaged.
- The miniature limit switch has been installed in compliance with regulations.
- There is no foreign matter obstructing the actuating travel.
- The junction box is clean.
- The connection has been established properly.
- The cable has been mounted properly.
- All screws are tightened securely.
- The miniature limit switch encapsulation is not damaged.

Operation



DANGER

Death or serious injury through improper use.

- The miniature limit switch may be operated only within the technical limits that apply to it (see page 1).

Maintenance and Fault Clearance



WARNING

Risk of serious injury due to incorrect procedure.

- Only authorized qualified personnel may do any of the work relating to maintenance and fault clearance.
- IEC/EN 60079-17 must be observed.

Maintenance Work



WARNING

Risk of serious accidents due to damaged parts.

- Check miniature limit switches and cables regularly for cracks and damage. Make sure that they are properly established.

The operator of the precision limit switch must keep it in good condition, operate it properly, monitor it and clean it regularly.

Fault Clearance

The miniature limit switch is defective if the switching unit does not perform the switching function or the actuator does not activate the switching unit any longer.

Defective miniature limit switches cannot be repaired; they must be replaced with original parts considering this operational instruction.

Accessories, Spare Parts

There are no accessories or spare parts for the miniature limit switch.

Disposal

The miniature limit switch components contain metal and plastic parts.

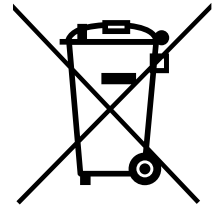
Therefore the statutory requirements for disposing of electronic scrap must be observed (e.g. disposal by an approved disposal company).

Service address

BARTEC GmbH
Max-Eyth-Str. 16
97980 Bad Mergentheim
Germany

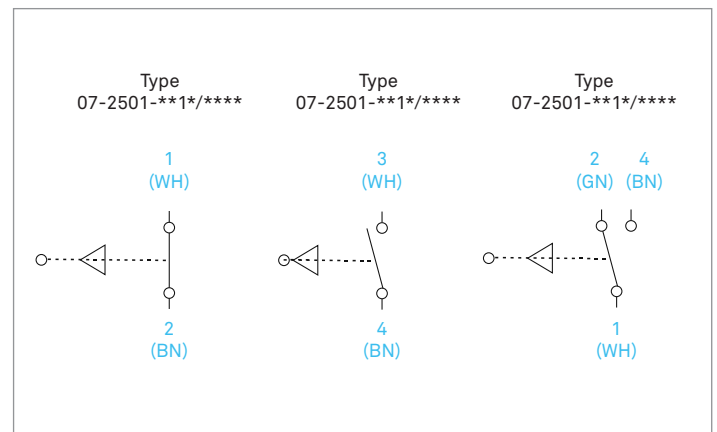
Phone: +49 7931 597-0

Fax: +49 7931 597-119



Connection

For hose cables e.g. LIYY, LSYY, Betaflam

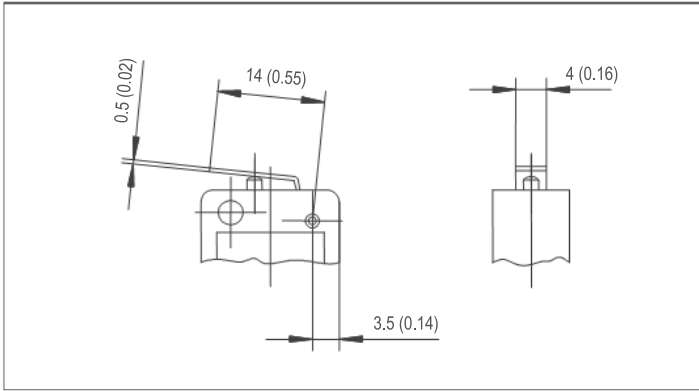


Key:

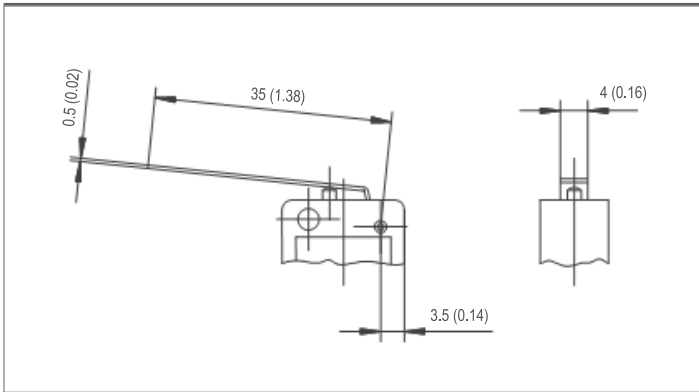
WH white core, **BN** brown core, **GN** green core

Actuator dimensions in mm (in)

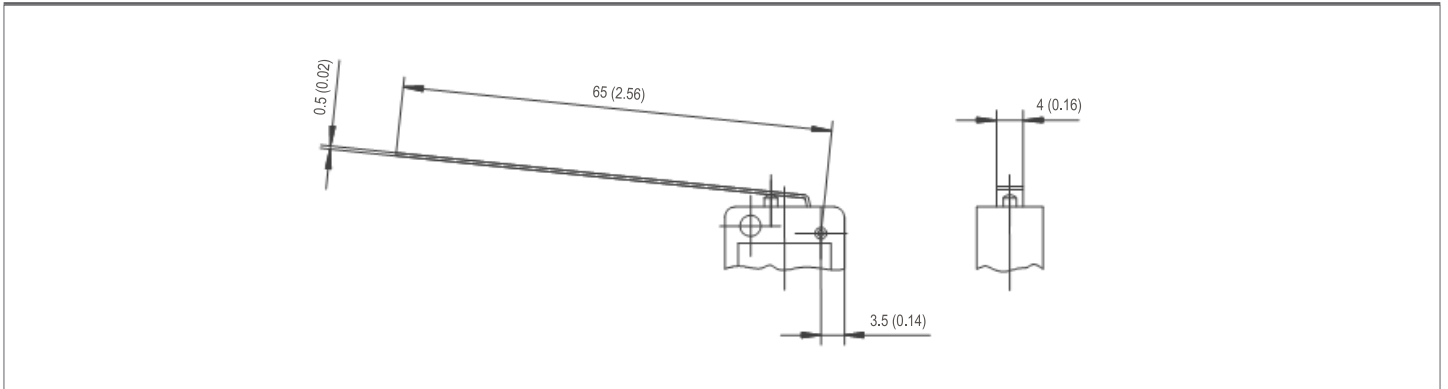
Type 07-2501-****/01



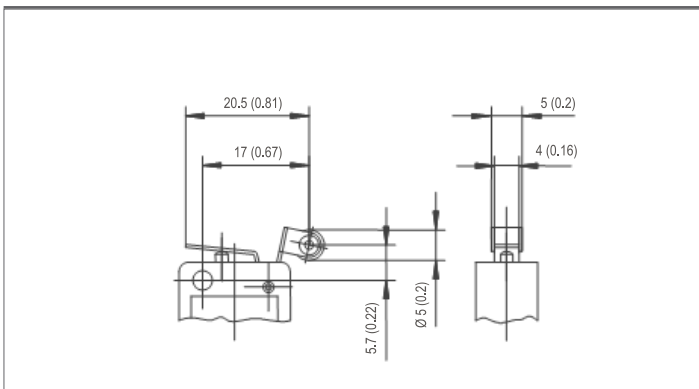
Type 07-2501-****/02



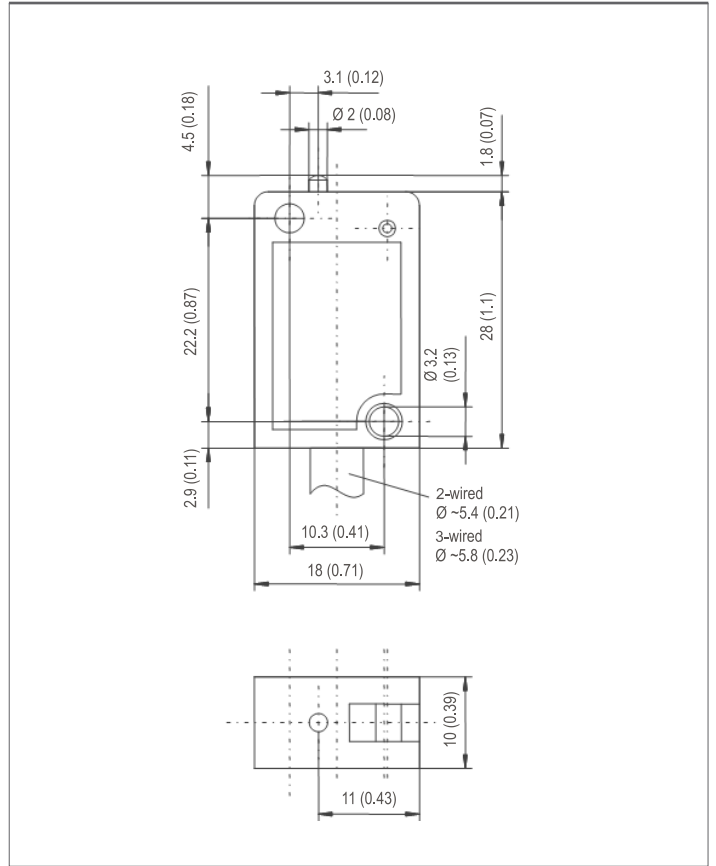
Type 07-2501-****/03



Type 07-2501-****/63



Miniature Limit Switch Dimensions in mm (in)





EU Konformitätserklärung
 EU Declaration of Conformity
 Déclaration UE de conformité
 № 01-2501-7C0001_C

Wir	We	Nous
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erklären in alleiniger Verantwortung, dass das Produkt Miniatur Endschalter	declare under our sole responsibility that the product Built-in switch mini	attestons sous notre seule responsabilité que le produit Interrupteur intégré mini
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Typ 07-2501-**/******

auf das sich diese Erklärung bezieht den Anforderungen der folgenden Richtlinien (RL) entspricht ATEX-Richtlinie 2014/34/EU RoHS-Richtlinie 2011/65/EU RoHS-Richtlinie 2015/863/EU und mit folgenden Normen oder normativen Dokumenten übereinstimmt	to which this declaration relates is in accordance with the provision of the following directives (D) ATEX-Directive 2014/34/EU RoHS-Directive 2011/65/EU RoHS-Directive 2015/863/EU and is in conformity with the following standards or other normative documents	se référant à cette attestation correspond aux dispositions des directives (D) suivantes Directive ATEX 2014/34/UE Directive RoHS 2011/65/UE Directive RoHS 2015/863/UE et est conforme aux normes ou documents normatifs ci-dessous
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EN IEC 60079-0:2018
EN 60079-1:2014
EN 60529:1991
+ A1:2000 + A2:2013
EN 60947-1:2007 +
A1:2011 + A2:2014
EN 60947-5-1:2017

Verfahren der EU-Baumusterprüfung / Benannte Stelle	Procedure of EU-Type Examination / Notified Body	Procédure d'examen UE de type / Organisme Notifié
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 2004, Bureau Veritas CPS Germany GmbH, Businesspark A96, 86842 Türkheim



Bad Mergentheim, 16.01.2020

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