

Miniature insert switch

Type 07-1501-****/****



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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 insert switches, type 07-1501-****/****, 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	CE 0044
Approved Body Number UKEX	UKAS 2503
ATEX/UKEX Ex protection type	Ⓜ II 2G Ex db IIC Gb Ⓜ I M2 Ex db I Mb
ATEX/UKEX certificate number	EPS 14 ATEX 1688 X CML 21 UKEX 1858 U
IECEX Ex protection type	Ex db IIC Gb Ex db I Mb
IECEX certificate number	IECEX EPS 14.0038 U
Ambient temperature range	The insert 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 insert 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

Technical data

Rated current / voltage	Type	Rated current / voltage
	07-1501-6****/****	5A / 250 V AC 5A / 0-15 V DC 3A / 15-30 V DC 0,25 A / 250 V DC
	07-1501-7****/****	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 insert 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 insert switch may only be used inside the specified temperature range. The miniature insert 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 insert switch may be used only if it is in a clean and undamaged condition. The miniature insert switch may not be used as mechanical stop. Technical modifications to the miniature insert switch are prohibited.

The miniature insert switch must be replaced after any short circuit that occurs in the main circuit because the miniature insert 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 insert 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



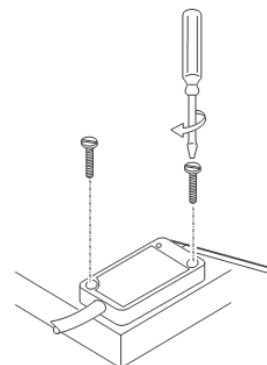
NOTICE

Property damage caused by impact energy.

- Miniature insert 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 insert switch is in perfect condition.
- Fasten the miniature insert switch with two M3 screws, recommended tightening torque = 0.6 Nm (0.04 lb.ft).



NOTE Miniature insert 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 insert switch is not damaged.
- The miniature insert 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 insert switch encapsulation is not damaged.

Operation



DANGER

Death or serious injury through improper use.

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

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

Fault Clearance

The miniature insert 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 insert 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 insert switch.

Disposal

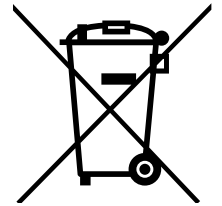
The miniature insert switch components contain metal and plastic parts.

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

Service address

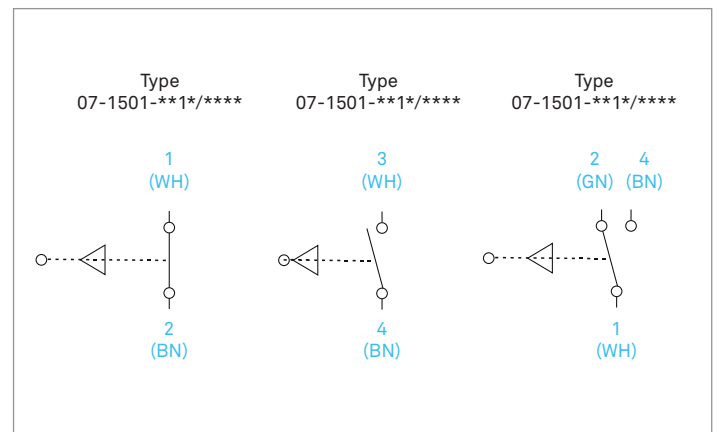
BARTEC GmbH
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97980 Bad Mergentheim
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Connection

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

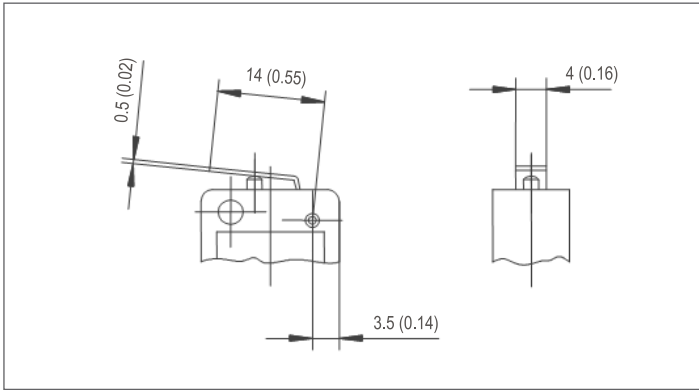


Key:

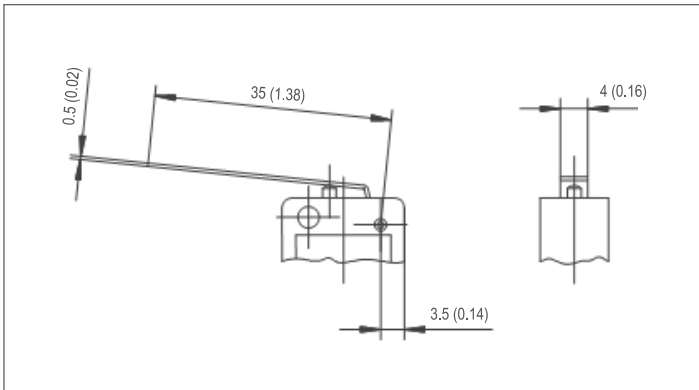
WH white core, **BN** brown core, **GN** green core

Actuator dimensions in mm (in)

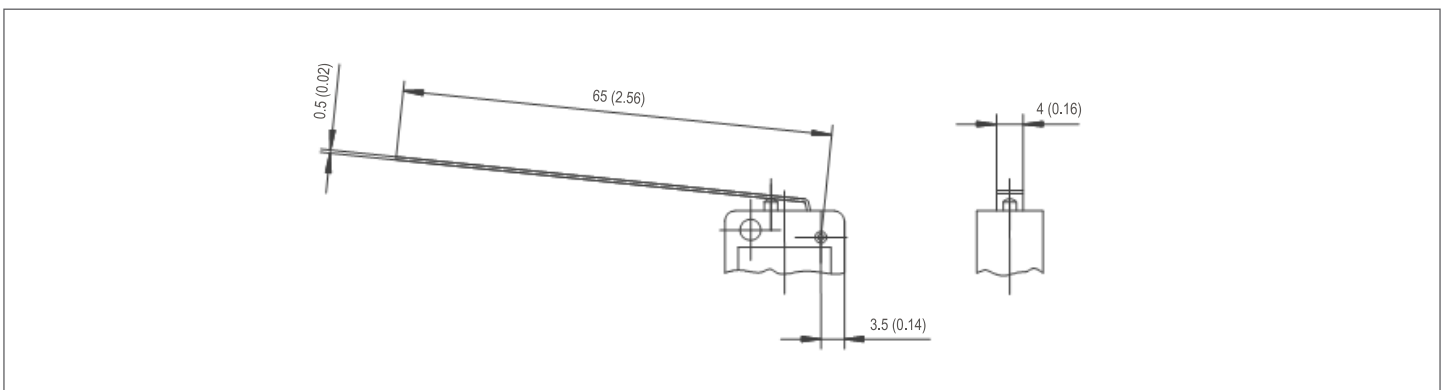
Type 07-1501-****/01



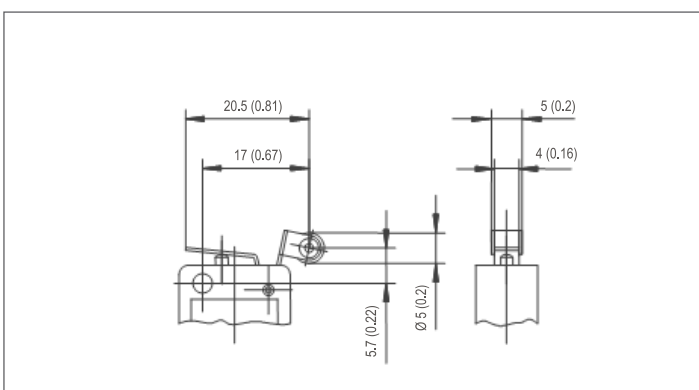
Type 07-1501-****/02



Type 07-1501-****/03

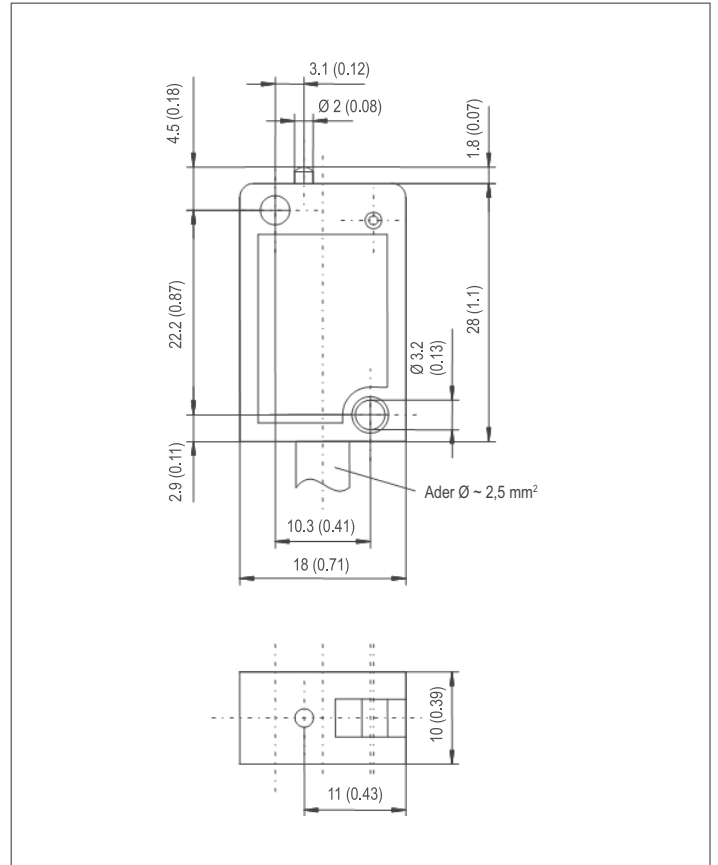


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Miniature insert switch

Dimensions in mm (in)



EU Konformitätsbescheinigung
 EU Attestation of Conformity
 Attestation UE de conformité



Nº 01-1501-7C0001_C

Wir	We	Nous
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 Germany

erklären in alleiniger Verantwortung, dass das Produkt Miniatur Einbauschalter	declare under our sole responsibility that the product Miniature insert switch	attestons sous notre seule responsabilité que le produit Microrupteur encastrable
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Typ 07-1501-**/******

auf das sich diese Erklärung bezieht den Anforderungen der folgen- den Richtlinien (RL) entspricht ATEX-Richtlinie 2014/34/EU RoHS-Richtlinie 2011/65/EU RoHS-Richtlinie 2015/863/EU und mit folgenden Normen oder nor- mativen 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 direc- tives (D) suivantes Directive ATEX 2014/34/UE Directive RoHS 2011/65/UE Directive RoHS 2015/863/UE et est conforme aux normes ou docu- ments 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-Baumuster- prüfung / Benannte Stelle	Procedure of EU-Type Examination / Notified Body	Procédure d'examen UE de type / Organisme Notifié
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EPS 14 ATEX 1688 U^(*), Issue 2
2004, Bureau Veritas Germany GmbH, 86842 Türkheim

(*) Die Ex-Komponente ist Teil eines elektrischen Betriebsmittels oder eines Moduls, gekennzeichnet mit dem Symbol „U“, das nicht für sich allein verwendet werden darf und über dessen Einbau in elektrische Betriebsmittel oder Systeme zur Verwendung in explosionsgefährdeten Bereichen gesondert entschieden werden muss. Merkmale dieser Komponente sowie die Bedingungen für ihren Einbau in Geräte und Schutzsysteme siehe Betriebsanleitung der Komponente.	(*) The Ex-component is a part of an electrical apparatus or a module, marked with the symbol "U", which is not intended to be used alone and requires additional consideration when incorporated into electrical apparatus or systems for use in explosive atmospheres. Characteristics and how the component must be incorporated into equipment or protective systems see operation manual of the component.	(*) Le composant Ex est partie de matériel électrique ou de module, marquée du symbol « U », ne devant pas être utilisée seule et nécessitant une certification complémentaire lorsqu'elle est incorporée a un matériel électrique ou à un système pour atmosphères explosives. Les caractéristiques du composant ainsi que les conditions d'incorporation dans des appareils ou des systèmes de protection regarde voir l'instruction d'emploi du composant.
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Bad Mergentheim, 22.10.2019


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