



## Note on 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 precision limit switches, type 07-295-...30 are used for switching control and signal circuits. Actuator elements may be used as required.

The connection cable comes prewired, is equipped with a strain-relief device and safely cast into the enclosure.

The integrated basic switch has a single-pole changeover contact with high switching accuracy and a precise repeatability of the switching point.

The precision limit switches comply with the European standards for explosion protection IEC/EN 60079 and therefore are designed for almost all explosive areas.

## Explosion protection

### ATEX

#### Ex protection type

II 2G Ex d IIC T6 Gb

Ex tb IIIC T80°C Db

CE 0044

#### Certification

PTB 03 ATEX 1142 X

### IECEX

#### Ex protection type

Ex d IIC T6 Gb

Ex tb IIIC T80°C Db

#### Certification

IECEX EPS 12.0037X

### Max. ambient temperature

-20 °C to +60 °C

(-4 °F to +140 °F)

### Approved for zones

1, 2 and 21, 22

## Technical data

### Protection class

IP65 (IEC/EN 60529)

### Enclosure material

GD-AL - alloy

### Current carrying capacity

5 A 250 V AC (AC-15)

0.16 A 230 V DC (DC-13)

0.1 A 250 V AC

max. 25 VA for gold plated contacts

### Contact resistance

60 mΩ, measured at the end of the cable at a cable length of 1 metre (3.28 ft)

### Contact configuration

Change-over contact with single break

### Switching system

Snap action

### Connection type

H05VV-F cable;

4 x 0.75 mm<sup>2</sup> (18 AWG)

### Short-circuit protection

5 A gL/gG D fuse

### Switching cycles

Max. 1800 / h

### Switch point accuracy at repeated switching

± 0.1 mm (± 0.004 in)

### Contact gap

-

### Life cycle

Mechanical: > 1 million operations

Electrical: Acc. to applied load

### Vibration resistance

10 G at 10 to 2000 Hz

### Shock resistance / shock stability

50 G at a shock duration of 6 ms

### Plunger / actuator

Stainless steel;

plunger/actuator versions, see datasheet

## Safety Instructions

The described products have 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.

Moreover BARTEC does not assume any liability for recommendations made or implied by this description. From this description new claims for guarantee, warranty or liability cannot be derived beyond the general terms and conditions of delivery.

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.

When setting up or operating explosion-resistant electrical systems, the relevant installation and operating conditions must be adhered to.

The generally applicable statutory rules and other binding directives relating to workplace safety, accident prevention and environmental protection must be adhered to.

The precision limit switch may be used only if it is in a clean and undamaged condition.

The precision limit switch may not be used as mechanical stop.

Technical modifications to the precision limit switch are prohibited.

## Marking

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

### DANGER

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

### WARNING

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

### CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

### NOTICE

NOTICE is used to address practices not related to personal injury.

### Note

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

## Standards conformed to

IEC 60079-0:2007  
EN 60079-0:2009  
IEC 60079-1:2007  
EN 60079-1:2007  
IEC 60079-31:2008  
EN 60079-31:2009  
EN 60947-5-1:2004

## Transport, Storage

### NOTICE

**Precision 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.

## Assembly / Disassembly

### WARNING

**Risk of serious injury due to incorrect assembly.**

- IEC/EN 60079-14 has to be applied for the installation of electrical equipment in explosive areas

Before assembly make sure that the precision limit switch is not damaged.

The precision limit switches are protectively insulated by a metal housing and provided with a protective conductor (green-yellow). In addition there is a protective conductor connection provided at the outside of the housing.

The connection of this switch has to be fixed and laid in a way that it is protected against mechanical damages.

## Installation

### Note

Terminal assignment and cable color codes, see page 3. Refer to datasheet for plunger/actuator versions and contact diagram.

## Commissioning

Before commissioning, check that:

- The precision limit switch has been installed correctly.
- The precision limit switch is not damaged.
- No object in actuating stroke travel.
- All cables are mounted properly.
- All screws are tightened.
- The switch encapsulation is not damaged.

### Note

Temperature ranges and strain reliefs of the cables are specified for fixed installed cables.

## Operation

### DANGER

**Death or serious injury through improper use.**

- The precision 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 proceedings.**

- 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 precision 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 precision limit switch is defective if the switching unit does not perform switching functions any longer.

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

**Accessories, Spare Parts**

BARTEC offers a variety of terminal boxes for connection in hazardous areas, see BARTEC catalogue.

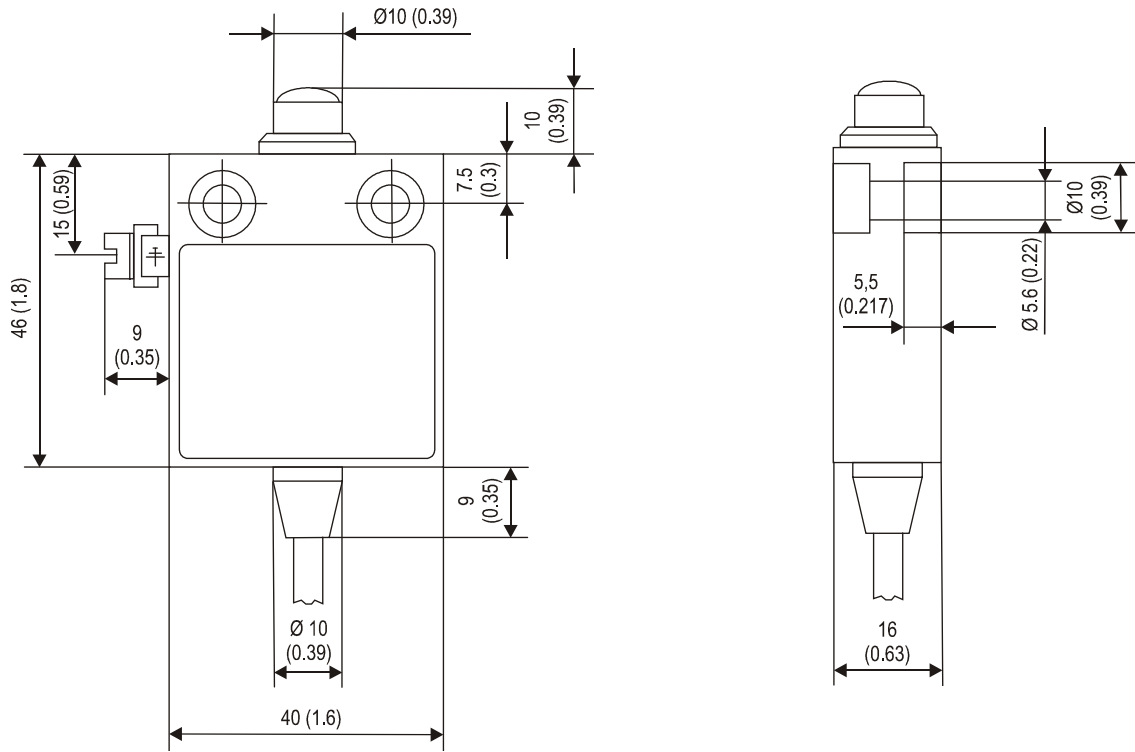
**Disposal**

The precision 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).

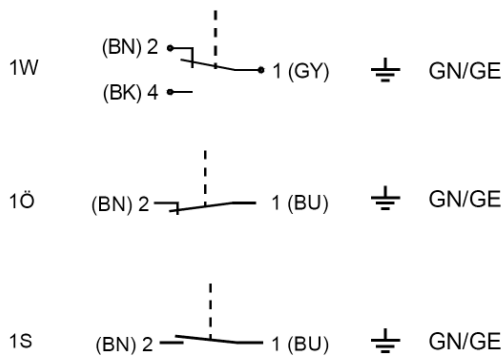
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 Tel.: +49 7931 597-0  
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**Dimensions in mm (in)**



**Terminal assignment**



**Explanation:**

- BK black core
- BN brown core
- BU blue core
- GY grey core
- GN/GE green yellow core

01-2950-7D0001/A-01/13-STVT-302248

Erklärung der Konformität  
Declaration of Conformity  
Attestation de conformité

N° 01-2950-7C0001

**BARTEC**

BARTEC GmbH  
Max-Eyth-Straße 16  
97980 Bad Mergentheim  
Germany



Wir We Nous

**BARTEC GmbH,**

erklären in alleiniger Verantwortung, dass das Produkt

declare under our sole responsibility that the product

attestons sous notre seule responsabilité que le produit

**Präzisions-  
grenztaster**

**Precision  
limit switch**

**Précision  
interrupteur-limiteur**

**Typ 07-295\*-\*\*30/\*\*\*\***

auf das sich diese Erklärung bezieht den Anforderungen der folgenden **Richtlinien (RL)** entspricht

to which this declaration relates is in accordance with the provision of the following **directives (D)**

se référant à cette attestation correspond aux dispositions des **directives (D)** suivantes

**ATEX-Richtlinie  
94/9/EG**

**ATEX-Directive  
94/9/EC**

**ATEX-Directive  
94/9/CE**

und mit folgenden Normen oder normativen Dokumenten übereinstimmt

and is in conformity with the following standards or other normative documents

et est conforme aux normes ou documents normatifs ci-dessous

**EN 60079-0:2009  
EN 60079-1 :2007**

**EN 60079-31 :2009  
EN 60947-5-1 :2004**

**EN 60529:1991+A1:2000**

**Kennzeichnung**

**Marking**

**Marquage**

**II 2 G Ex d IIC T6 Gb  
II 2 D Ex tb IIIC T80°C Db**

**Verfahren der EG-  
Baumusterprüfung /  
Benannte Stelle**

**Procedure of EC-  
Type Examination /  
Notified Body**

**Procédure d'examen  
CE de type /  
Organisme Notifié**

**PTB 03 ATEX 1142 X**

0102 PTB, Bundesallee 100, 38116 Braunschweig, D

**CE 0044**

Bad Mergentheim, den 21.03.2011

*W. Warmuth*  
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Geschäftsleitung / General Manager

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