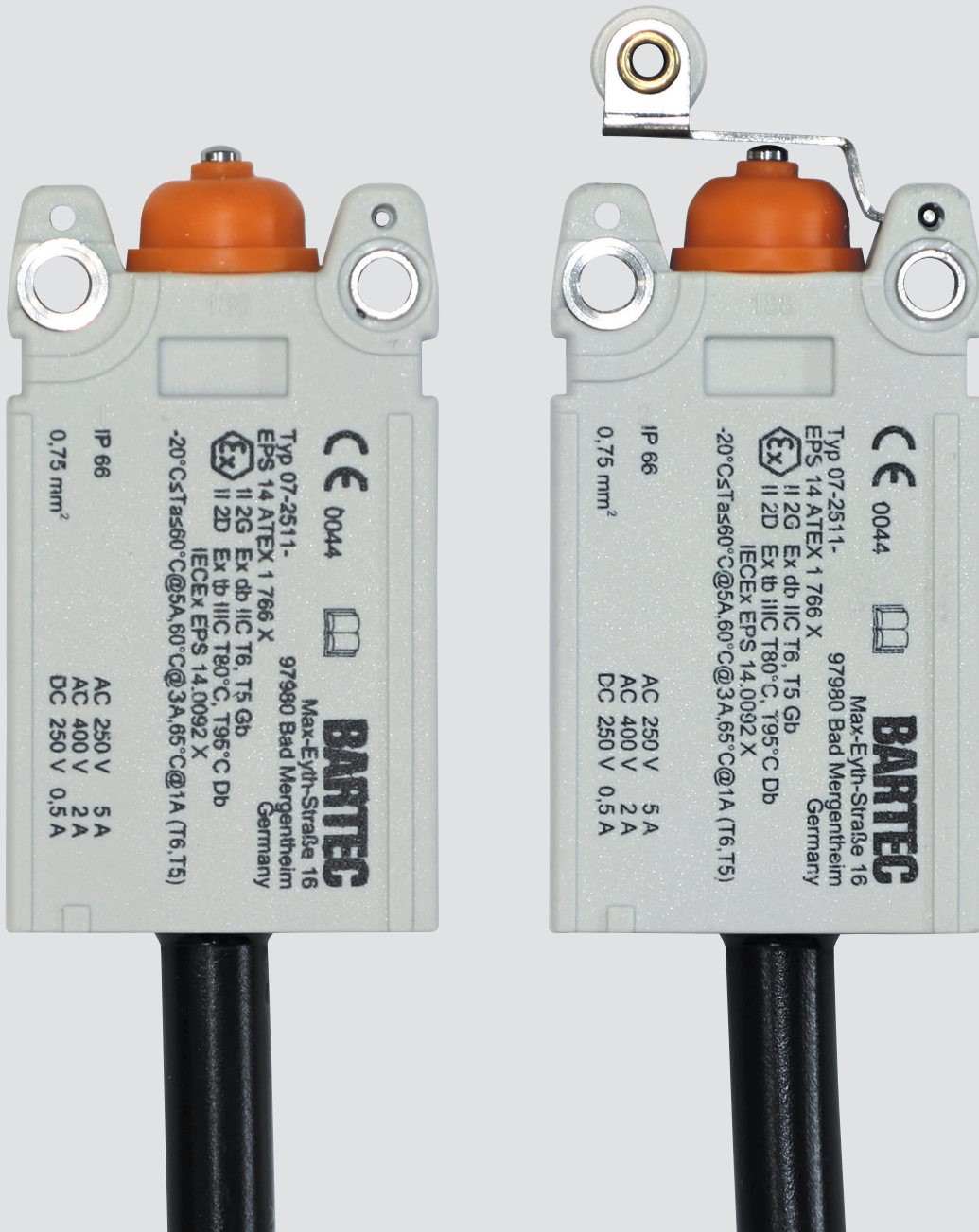


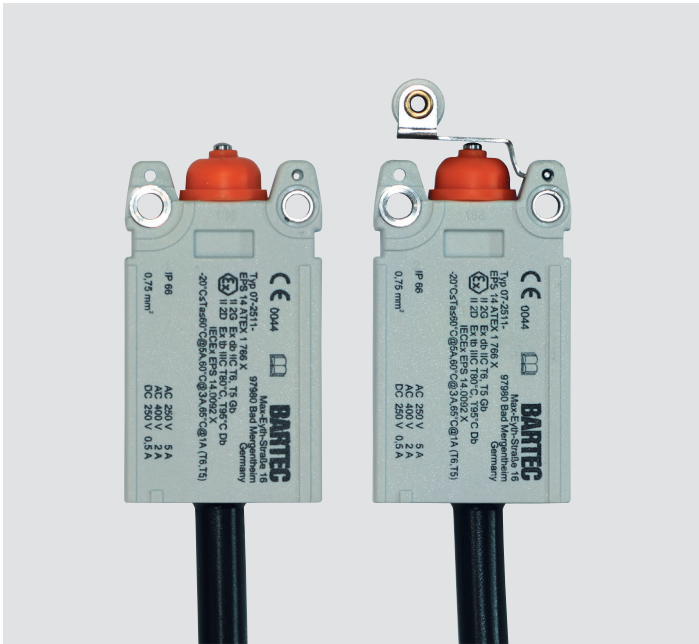
## Limit switch

Types 07-2511-\*\*\*\*/\*\*\*\* and 07-2581-\*\*\*\*/\*\*\*\*



# Limit switch

Types 07-2511-\*\*\*\*/\*\*\*\* and 07-2581-\*\*\*\*/\*\*\*\*



## Notes on the instructions

When working in potentially explosive atmospheres, the safety of persons and systems depends on compliance with the relevant safety regulations. Persons responsible for installation and maintenance have a special responsibility.

This requires a precise knowledge of the applicable rules and regulations. The instructions summarize the most important safety measures and must be read by all persons working with the product so that they are familiar with the correct handling of the product.

The instructions must be kept in a safe place and must be available for the entire life of the product.

## Description

These limit switches, type 07-2511-\*\*\*\*/\*\*\*\* and 07-2581-\*\*\*\*/\*\*\*\*, are used wherever safe and reliable signal transmission is required. Areas of use include e.g. petrol pumps, pumps in general and the construction of machinery and instruments.

The standard version of the switch contains fine silver contacts. Gold-plated fine-silver contacts are available for particularly low voltage and currents. As a basic rule, all contact elements have protective gold plating.

The connecting cable is cast in at the back. The length of the connecting cable is variable.

The limit switches are available as single-switch variants (type 07-25\*1-\*\*\*0/\*\*\*\*) or double-switch variants (type 07-25\*1-\*\*\*y/\*\*\*\* with  $y \neq 0$ ).

The switching sequence in double-break switches can be selected at will:

- Chambers I and II switch almost simultaneously
- Chamber I switches 0.1 to 0.3 mm (0.004 to 0.01 in) before chamber II.

## Explosion protection

ATEX	EX II 2G Ex db IIC T6, T5 Gb EX II 2D Ex tb IIIC T80°C, T95°C Db CE 0044
Certifications	EPS 14 ATEX 1 766 X
IECEX	Ex db IIC T6, T5 Gb Ex tb IIIC T80°C, T95°C Db
Certifications	IECEX EPS 14.0092X
Ambient temperature	The switches are dependent on the current load, cable cross section and type of cable can be used at different ambient temperatures in temperature classes T6 and T5. The details can be found in the limit switch marking. min. Ambient temperature: -20 °C (-4 °F) to +xxx °C* Type 07-25*1-1***/****, 07-25*1-3***/**** -60 °C (-76 °F) to +xxx °C* Type 07-25*1-7***/****, 07-25*1-8***/**** * max. Ambient temperature see table on page 4.
Approved for Zones	1, 2 and 21, 22

## Technical data

Protection class	IP66 (IEC/EN 60529)
Enclosure material	Plastic (thermoplastic)
Plunger/ additional actuator	Stainless steel Actuator variants, see data sheet
Weight	with 3-metre (9.84 ft) cable: single-break switches 210 g (0,46 lb) double-break switches 415 g (0,91 lb)
Connection	see page 3
Electrical load silver-plated contacts	AC 250 V, 7 A; AC 400 V, 2 A; DC 250 V, 0,5 A Type 07-2511-1***/**** 07-2511-7***/**** 07-2581-1***/**** 07-2581-7***/****
Electrical load gold-plated contacts	Min. DC 2,4V - 50 mA Max. DC 30V - 4 mA Type 07-2511-3***/**** 07-2511-8***/**** 07-2581-3***/**** 07-2581-8***/****
	The value of current and voltage must not exceed 0.12 VA. For alternating current, these values are not to be interpreted as peak values.

<b>Contact options</b>	<p><b>Type 07-2511-****/****:</b> 1 and 2 changeover contacts resp. or 1 NC contact and/or 1 NO contact, NC and NO contacts at same voltage potential</p> <p><b>Type 07-2581-****/****:</b> 1 and 2 NC contacts with forced entry</p>
<b>Switching rate</b>	Max. 1000/h
<b>Switching actuation force</b>	<p>Single-break switch: max. 2.0 N</p> <p>Double-break switch: max. 3.6 N</p>
<b>Reset force</b>	<p>Single-break switch: min. 0.4 N</p> <p>Double-break switch: min. 0.8 N</p>
<b>Contact travel</b>	<p>Pretravel VLW: max. 0.9 mm (0.04 in)</p> <p>Overtravel NLW: min. 0.5 mm (0.02 in)</p> <p>Reset travel RLW: 0.9 mm (0.04 in)</p> <p>Differential DW: max. 0.45 mm (0.02 in)</p> <p>Free travel LLW: 0,1 to 0.45 mm (0.004 to 0.02 in)</p>
<b>Service life</b>	<p>Mechanical: &gt; 2 x 10<sup>6</sup> switching cycles</p> <p>Electrical: depending on load</p>

## Safety instructions

The limit switches were developed to perform safety-related functions as part of a complete system or machine. A complete safety-related system usually contains sensors, evaluation units, signaling devices and concepts for safe shutdowns. It is the responsibility of the manufacturer of a plant or machine to ensure the correct overall function.

Utilisation in areas other than those specified or the modification of the product by anyone other than the manufacturer will exempt BARTEC from liability for defects or any further liability.

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

The limit switch may be used only within the specified temperature range. Unprotected, incorrect installation can cause malfunctioning and the loss of explosion protection.

The limit switch may be operated only if it is clean and not damaged in any way.

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

see the EU Declaration of Conformity 01-2511-7C0001

## Assembly and Commissioning



### NOTICE

**Damage to the limit switch due to incorrect transport or incorrect storage.**

- Transport and storage only permitted in original packaging.

## Assembly, installation and commissioning



### WARNING

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

- Work on assembly, disassembly, installation and commissioning may only be carried out by authorised specialist personnel.
- When installing or operating explosion-protected electrical systems, the relevant installation and operating regulations must be observed.

## Assembly/disassembly



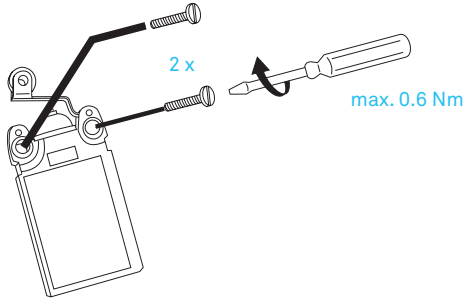
### NOTICE

**Material damage due to impact energy.**

- The limit switch must be protected against the risk of high mechanical hazards by a protective device or protective cover which at least meets the requirements of IEC/EN 60079-0, Table 13b, Group II. This protective device may e.g. a grid hood or a housing (without danger of electrostatic charge).

Before commissioning check that:

- Use suitable tools.
- Check limit switch for perfect condition.
- Secure the limit switch with two M3 screws (recommended tightening torque = 0.6 Nm (0.04 lb.ft)).
- Install the limit switch so that it is protected against impact energy.



**NOTE** If the switches are mounted outdoors, they may need to be fitted into an outer enclosure with an adequate protection class.

## Installation

Pay attention when connecting the conductor:

- Use a suitable crimping tool for crimping ferrules to ensure a constant quality of the crimping.
- Carry out conductor connection carefully.
- The individual wires must not be damaged during installation.



**NOTE** The quality of the connection-cable has to be so chosen that it meets the thermal and mechanical requirements in the field of application. Contact types and cable markings, see page 3. Actuator variants, see data sheet.

## Commissioning

Before commissioning check that:

- The device has been installed correctly.
- The device is not damaged.
- That there is no foreign matter obstructing the actuating travel.
- The junction box is clean.
- The connection has been made properly.
- The cables have been laid correctly.
- The switch enclosure is not damaged.
- All screws are tightened securely.



**NOTE** The temperature ranges are given for “fixed and immobile installation of the lines”.

## Operation



### DANGER

#### Death or risk of injury due to improper use.

- Operate the limit switches only within the application limits / ranges of use applicable to them so that the temperature classes in the end application are maintained (see pages 1 and 4).



**NOTE** If the actuated switch insert is interrupted, it is recommended to switch the switch at regular intervals (at least once a month).

## Maintenance and Fault Clearance



### WARNING

#### Risk of serious injury due to incorrect procedure.

- Maintenance and troubleshooting work may only be carried out by authorised specialists.
- IEC/EN 60079-17 must be observed. It is recommended to draw up a maintenance plan according to this standard.

## Maintenance



### WARNING

#### Serious accidents due to damaged components.

- Check limit switches and cables regularly for cracks, damage and tight fit.

The operator of the limit switch has to must keep it in good condition, operate it properly, monitor it and clean it regularly. The limit switch enclosure must be checked regularly for cracks and damage.

## Fault Clearance

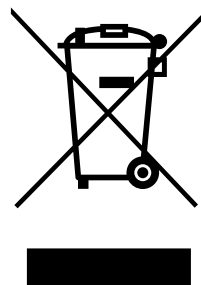
The limit switch is defective if the switching unit does not perform switching functions or the actuator does not activate the switching unit any longer. Defective limit switches cannot be repaired; they must be replaced.

## Accessories, Spare Parts

For connection in Ex areas, BARTEC offers a wide range of terminal boxes.

## Disposal

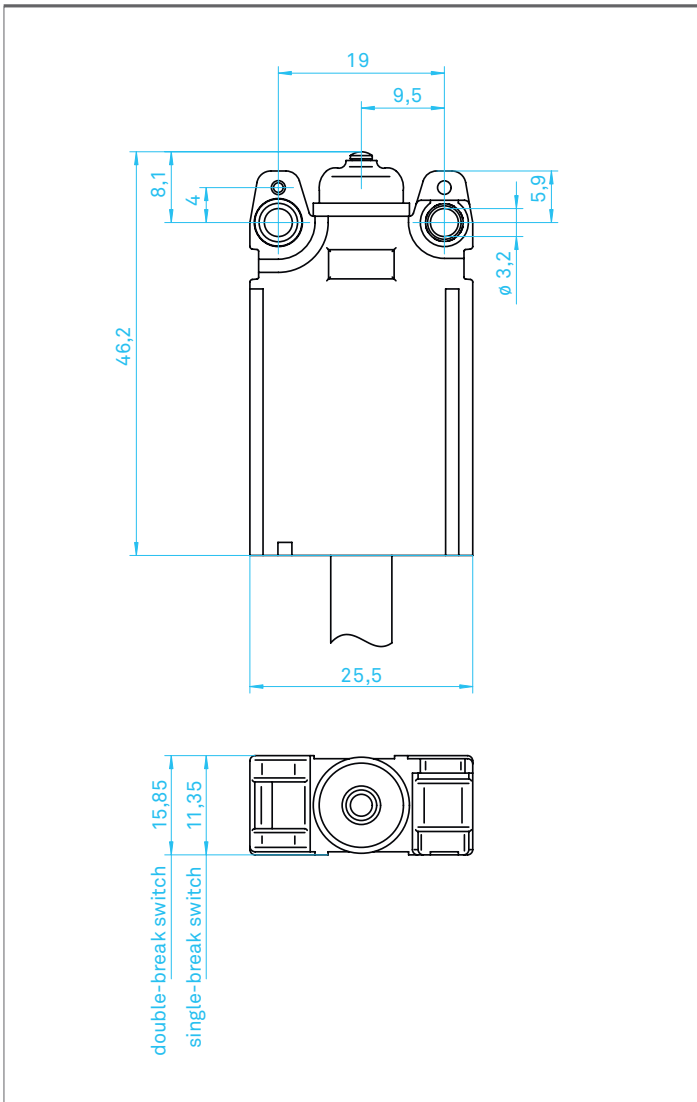
The components in the switch module contain metal and plastic parts. The statutory requirements for disposing of electronic scrap must be observed therefore (e.g. disposal by an approved disposal company).



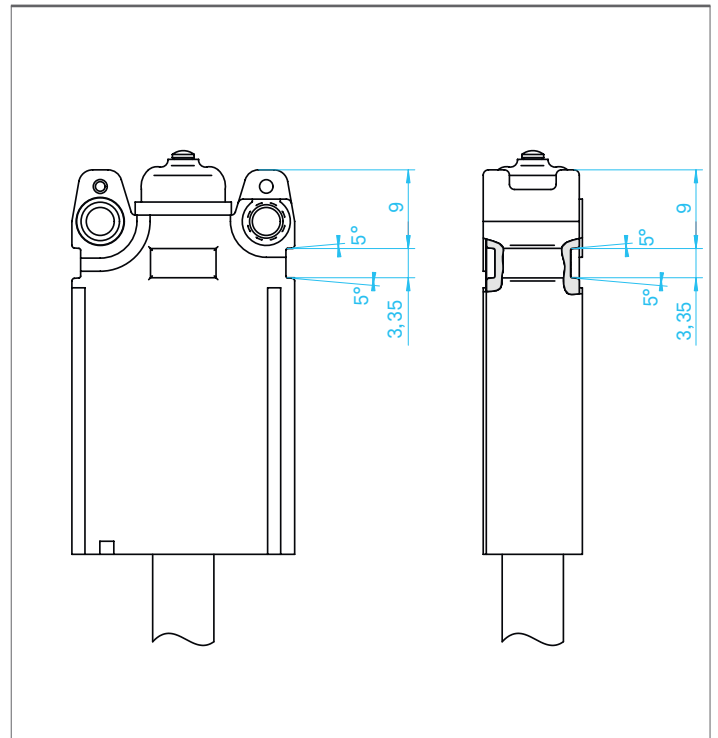
## Service address

BARTEC GmbH  
 Max-Eyth-Str. 16  
 97980 Bad Mergentheim  
 Germany  
 Phone: +49 7931 597-0  
 Fax: +49 7931 597-119

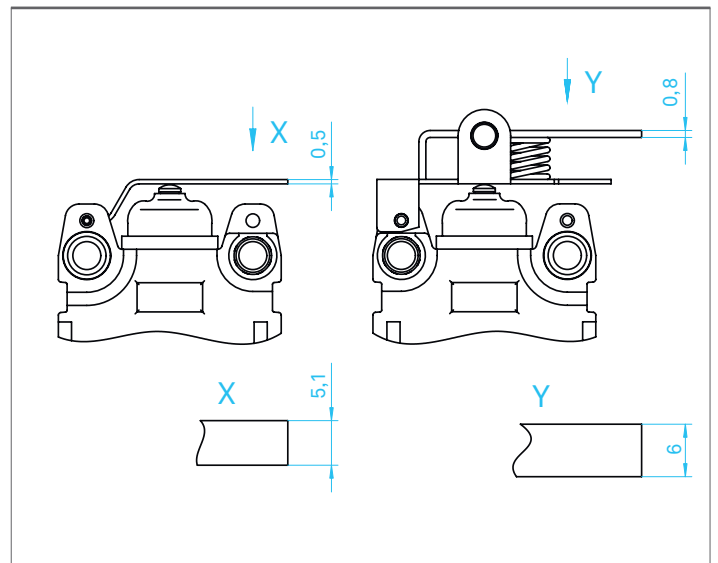
## Dimensions in mm



## Clip-on pockets



## Lever widths

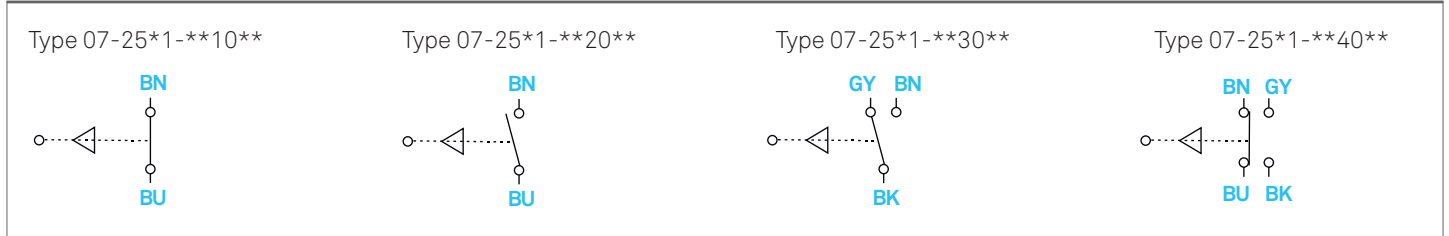


## Connection

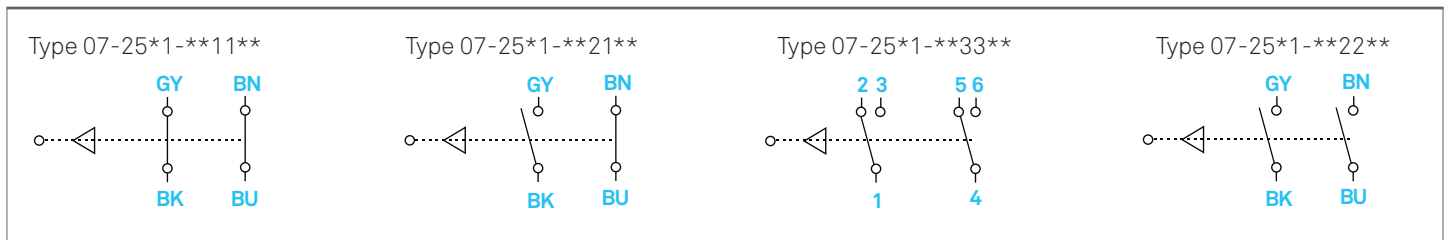
Key:

**BK** black core, **BN** brown core, **BU** blue core, **GY** grey core

### Connection single-break switch (Type 07-25\*1-\*\*\*0/\*\*\*\*)



### Connection double-break switch (Type 07-25\*1-\*\*\*y/\*\*\*\* mit $y \neq 0$ )



**NOTE** The limit switches are suitable for use in temperature classes T6 and T5 depending on the current load, cable cross section and type of cable at different ambient temperatures.

Marking Limit switch	Temperature class	Ta max@Load current		
		≤ 1A	≤ 3A	≤ 5A

#### Single-break switch: Type 07-2511-\*\*\*0/\*\*\*\*, Type 07-2581-\*\*\*0/\*\*\*\*

$xx^{\circ}C^* \leq Ta \leq 50^{\circ}C@5A, 50^{\circ}C@3A, 55^{\circ}C@1A$ (T6, T5) 0,75 mm <sup>2</sup>	T6	55 °C (131 °F)	50 °C (122 °F)	50 °C (122 °F)
	T5			
$xx^{\circ}C^* \leq Ta \leq 60^{\circ}C@5A, 60^{\circ}C@3A, 65^{\circ}C@1A$ (T6, T5) 0,75 mm <sup>2</sup>	T6	65 °C (149 °F)	60 °C (140 °F)	60 °C (140 °F)
	T5			
$xx^{\circ}C^* \leq Ta \leq 65^{\circ}C@5A, 70^{\circ}C@3A, 75^{\circ}C@1A$ (T6)	T6	75 °C (167 °F)	70 °C (158 °F)	65 °C (149 °F)
	T5			70 °C (158 °F)
$xx^{\circ}C^* \leq Ta \leq 65^{\circ}C@5A, 70^{\circ}C@3A, 75^{\circ}C@1A$ (T6)	T6	75 °C (167 °F)	70 °C (158 °F)	65 °C (149 °F)
	T5			90 °C (194 °F)
$xx^{\circ}C^* \leq Ta \leq 80^{\circ}C@5A, 85^{\circ}C@3A, 90^{\circ}C@1A$ (T5) 0,75 mm <sup>2</sup>	T6	75 °C (167 °F)	70 °C (158 °F)	65 °C (149 °F)
	T5			90 °C (194 °F)

#### double-break switch: Type 07-2511-\*\*\*y/\*\*\*\*, Type 07-2581-\*\*\*y/\*\*\*\* with $y \neq 0$

$xx^{\circ}C^* \leq Ta \leq 40^{\circ}C@5A, 50^{\circ}C@3A, 55^{\circ}C@1A$ (T6, T5) 0,75 mm <sup>2</sup>	T6	55 °C (131 °F)	50 °C (122 °F)	40 °C (xxx °F)
	T5			
$xx^{\circ}C^* \leq Ta \leq 50^{\circ}C@5A, 60^{\circ}C@3A, 65^{\circ}C@1A$ (T6, T5) 0,75 mm <sup>2</sup>	T6	65 °C (149 °F)	60 °C (140 °F)	50 °C (122 °F)
	T5			
$xx^{\circ}C^* \leq Ta \leq 60^{\circ}C@5A, 70^{\circ}C@3A, 75^{\circ}C@1A$ (T6, T5) 0,75 mm <sup>2</sup>	T6	75 °C (167 °F)	70 °C (158 °F)	60 °C (140 °F)
	T5			
$xx^{\circ}C^* \leq Ta \leq 60^{\circ}C@5A, 70^{\circ}C@3A, 75^{\circ}C@1A$ (T6)	T6	75 °C (167 °F)	70 °C (158 °F)	60 °C (140 °F)
	T5			

\*min. Ambient temperature



Wir	We	Nous
<b>BARTEC GmbH</b> Max-Eyth-Straße 16 97980 Bad Mergentheim Germany		
erklären in alleiniger Verantwortung, dass das Produkt  <b>Endschalter            Positionsschalter</b>	declare under our sole responsibility that the product  <b>Limit Switch            Position switch</b>	attestons sous notre seule responsabilité que le produit  <b>Fin de course            Interrupteur de position</b>

**Limit Switch Typ: 07-2511-\*\*\*\*/\*\*\*\*; 07-2581-\*\*\*\*/\*\*\*\*;  
 Position Switch Typ: 07-291\*-\*\*\*\*/\*\*\*\***

auf das sich diese Erklärung bezieht den Anforderungen der folgen- den <b>Richtlinien (RL)</b> entspricht <b>ATEX-Richtlinie 2014/34/EU</b> <b>RoHS-Richtlinie 2011/65/EU</b> <b>RoHS-Richtlinie 2015/863/EU</b> und mit folgenden Normen oder nor- mativen Dokumenten übereinstimmt	to which this declaration relates is in accordance with the provision of the following <b>directives (D)</b> <b>ATEX-Directive 2014/34/EU</b> <b>RoHS-Directive 2011/65/EU</b> <b>RoHS-Directive 2015/863/EU</b> and is in conformity with the following standards or other normative documents	se référant à cette attestation correspond aux dispositions des <b>directives (D)</b> suivantes <b>Directive ATEX 2014/34/UE</b> <b>Directive RoHS 2011/65/UE</b> <b>Directive RoHS 2015/863/UE</b> 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 60079-31:2014**  
**EN 60529:1991**  
**+ A1:2000 + A2:2013**  
**EN 60947-1:2007 +**  
**A1:2011 + A2:2014**  
**EN 60947-5-1:2017**

<b>Verfahren der EU-Baumuster-            prüfung / Benannte Stelle</b>	<b>Procedure of EU-Type Examination /            Notified Body</b>	<b>Procédure d'examen UE de type /            Organisme Notifié</b>
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**CE 0044**

Bad Mergentheim, 17.02.2020

  
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