



## Position switch

### Features

- Dimensions and mounting dimensions according to DIN EN 50041
- Electronic switching inserts with individually adjustable switching points
- Analog switching inserts can transmit through current or voltage paths
- All mechanical N/C contacts as positive opening operation contacts
- Actuating elements can be turned by 4 x 90°
- Model with Ex d "flameproof enclosure" type of protection

### Description

Position switches are used wherever movable parts on machinery and systems have to be positioned, controlled and monitored.

They control and facilitate signalling in switching gear or function as switches in regulating and control devices.

The flameproof encapsulated BARTEC position switches can be used in hazardous (potentially explosive) areas in Zones 1 and 2 in accordance with the certified explosion subgroups IIA, IIB and IIC and the temperature class T6 and in Zones 21 and 22 according to the certified maximum surface temperature.

### Position switch without actuator

#### ➔ Explosion protection

##### Ex protection type

- ⊕ II 2G Ex d IIC T6
- ⊕ II 2D Ex tD A21 IP65 T80 °C
- CE 0044

##### Certification

PTB 09 ATEX 1048 X

##### Ambient temperature

Operation -20 °C to +60 °C  
Storage, transport -20 °C to +80 °C

##### Approved for Zone

1 + 21 and 2 + 22

#### ➔ Technical data

##### Protection class

IP 66 (IEC/EN 60529)

##### Weight

approx. 160 g

#### ■ Mechanical switching unit

##### Rated insulation voltage

400 V

##### Rated operating voltage/current

AC 15	4 A	400 V
AC 15	6 A	24 V and 240 V
DC 13	3 A	24 V
DC 13	0.8 A	110 V
DC 13	0.3 A	220 V

##### Rated impulse strength

4 kV AC

##### Switching frequency

up to 6000/h depending on the type

##### Service life

mechanical max. 10<sup>6</sup> switching cycles  
depending on plunger operating angle/speed

#### ■ Electronic switching unit

##### Rated voltage

up to DC 30 V

##### Rated operating voltage/current

DC 12 V	0.015 A
DC 24 V	0.018 A
DC 30 V	0.019 A

##### Tightening torques

Lid screws max. 0.9 Nm  
Pressure screw 5 Nm

##### Enclosure/plunger material

Thermoplastic



**Actuator**

**➤ Technical data**

**Weight**

depending on the model

**Tightening torque**

Actuator screws 0.9 Nm

**Cable entries**

**➤ Technical data**

**Pressure screw**

M20 x 1.5

**Conductor diameter 5 to 8.4 mm**

Washer  
Outer diameter 18.3 mm  
Inner diameter 8.7 mm  
Thickness 1 mm

Sealing ring (fitted, without marking)

Outer diameter 18.5 mm  
Inner diameter 8.4 mm  
Height 13 mm

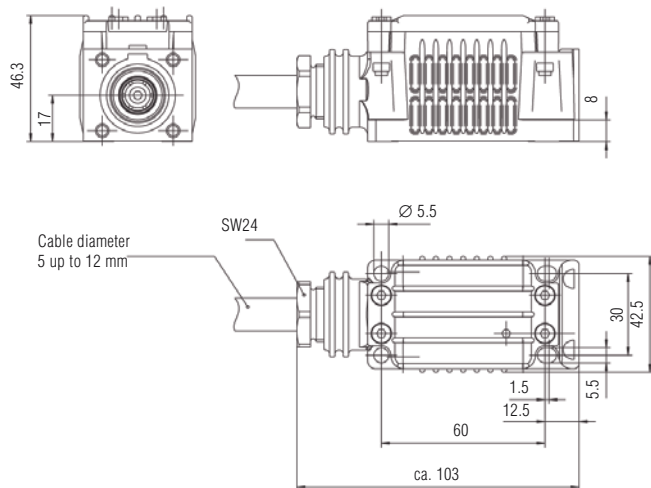
**Conductor diameter 8 to 12 mm**

Washer:  
Outer diameter 18.3 mm  
Inner diameter 12.2 mm  
Thickness 1 mm

Sealing ring (without marking)

Outer diameter 18.5 mm  
Inner diameter 11.7 mm  
Height 13 mm

**Dimensions**



**Selection chart**

Switching function	Type of contact	Code no.	Actuator	Code no.
Non-overlapping contact making	opening contact /Positive opening contact	<b>166</b>	Dome plunger S-AT4	<b>01</b>
non-overlapping contact making	N.O. contact/N.O. contact	<b>122</b>	Roller plunger RS-AT4	<b>03</b>
non-overlapping contact making	N.O. contact/Positive opening contact	<b>126</b>	Roller lever AR-AT4	<b>05</b>
overlapping contact making	N.O. contact/Positive opening contact	<b>226</b>	Pivoted lever R-AT4, Ø 18, HR 311	<b>09</b>
			Pivoted lever R-AT4, Ø 30, HR 416	<b>10</b>
Snap-action contact element	N.O. contact/Positive opening contact	<b>326</b>	Pivoted lever R-AT4, adjustable, HV	<b>13</b>
Switching point electronically adjustable	N.O. contacts/N.C. contact	<b>421</b>	Pivoted lever R-AT4, with rod, plastic HHK	<b>14</b>
Switching point electronically adjustable	N.C. contact/N.C. contact	<b>411</b>	Pivoted lever R-AT4, with rod, metal HHA	<b>15</b>
Analog switch 4 to 20 mA	electronic	<b>500</b>	Spring steel L=160	<b>16</b>
			Spring steel L=130	<b>17</b>
Analog switch 0 to 10 V	electronic	<b>600</b>	Special version	<b>99</b>

**➤ Complete order no.**

Please insert correct code.

**07-2931-1**    /



Position switch with dome plunger

**Dimensions**

**Switching forces, actuation torques, contact travel**

<b>07-2931-112201XX</b>	F = max. 20 N
<b>07-2931-112601XX</b>	F = max. 20 N
<b>07-2931-116601XX</b>	F = max. 20 N
<b>07-2931-122601XX</b>	F = max. 20 N
<b>07-2931-132601XX</b>	F = max. 20 N
<b>07-2931-141101XX</b>	F = max. 20 N
<b>07-2931-142101XX</b>	F = max. 20 N

■ Contact closed  
 □ Contact open  
 ■ Setting range  
 \*) Factory setting

Position switch with roller plunger

**Dimensions**

**Switching forces, actuation torques, contact travel**

<b>07-2931-112203XX</b>	F = max. 20 N
<b>07-2931-112603XX</b>	F = max. 20 N
<b>07-2931-116603XX</b>	F = max. 20 N
<b>07-2931-122603XX</b>	F = max. 20 N
<b>07-2931-132603XX</b>	F = max. 20 N
<b>07-2931-141103XX</b>	F = max. 20 N
<b>07-2931-142103XX</b>	F = max. 20 N

■ Contact closed  
 □ Contact open  
 ■ Setting range  
 \*) Factory setting

Position switch with roller lever

**Dimensions**

**Switching forces, actuation torques, contact travel**

<b>07-2931-112205XX</b>	F = max. 10 N
<b>07-2931-112605XX</b>	F = max. 10 N
<b>07-2931-116605XX</b>	F = max. 10 N
<b>07-2931-122605XX</b>	F = max. 10 N
<b>07-2931-132605XX</b>	F = max. 10 N
<b>07-2931-141105XX</b>	F = max. 10 N
<b>07-2931-142105XX</b>	F = max. 10 N

■ Contact closed  
 □ Contact open  
 ■ Setting range  
 \*) Factory setting

Position switch with pivoted lever

**Dimensions**

**Switching forces, actuation torques, contact travel**

<b>07-2931-112209-....12XX</b>	M = max. 0,35 Nm
<b>07-2931-112609-....12XX</b>	M = max. 0,35 Nm
<b>07-2931-116609-....12XX</b>	M = max. 0,35 Nm
<b>07-2931-122609-....12XX</b>	M = max. 0,35 Nm
<b>07-2931-132609-....12XX</b>	M = max. 0,35 Nm
<b>07-2931-141109-....12XX</b>	M = max. 0,35 Nm
<b>07-2931-142109-....12XX</b>	M = max. 0,35 Nm

■ Contact closed  
 □ Contact open  
 ■ Setting range  
 \*) Factory setting



Position switch with pivoted lever, adjustable

**Dimensions**

**Switching forces, actuation torques, contact travel**

<b>07-2931-112213XX</b>	M = max. 0,35 Nm
13-14 23-24	0° 60° 72° 35° NO NO
<b>07-2931-112613XX</b>	M = max. 0,35 Nm
13-14 21-22	0° 60° 72° 40° NO NC
<b>07-2931-116613XX</b>	M = max. 0,35 Nm
11-12 21-22	0° 40° 72° 40° NC NC
<b>07-2931-122613XX</b>	M = max. 0,35 Nm
15-16 27-28	0° 40° 72° 30° NC NO
<b>07-2931-132613XX</b>	M = max. 0,35 Nm
21-22 13-14 21-22 13-14	0° 40° 72° 25° → ←
<b>07-2931-141113XX</b>	M = max. 0,35 Nm
01 02	0° 20° 60° 72° 40° *)
<b>07-2931-142113XX</b>	M = max. 0,35 Nm
01 02	0° 20° 60° 72° 40° *)

■ Contact closed  
 □ Contact openly  
 ▨ Setting range  
 \*) Factory setting

Position switch with pivoted lever, with rod

**Dimensions**

**Switching forces, actuation torques, contact travel**

<b>07-2931-112214...15XX</b>	M = max. 0,35 Nm
13-14 23-24	0° 60° 72° 35° NO NO
<b>07-2931-112614...15XX</b>	M = max. 0,35 Nm
13-14 21-22	0° 60° 72° 40° NO NC
<b>07-2931-116614...15XX</b>	M = max. 0,35 Nm
11-12 21-22	0° 40° 72° 40° NC NC
<b>07-2931-122614...15XX</b>	M = max. 0,35 Nm
15-16 27-28	0° 40° 72° 30° NC NO
<b>07-2931-132614...15XX</b>	M = max. 0,35 Nm
21-22 13-14 21-22 13-14	0° 40° 72° 25° → ←
<b>07-2931-141114...15XX</b>	M = max. 0,35 Nm
01 02	0° 20° 60° 72° 40° *)
<b>07-2931-142114...15XX</b>	M = max. 0,35 Nm
01 02	0° 20° 60° 72° 40° *)

■ Contact closed  
 □ Contact openly  
 ▨ Setting range  
 \*) Factory setting

Position switch with spring steel, L = 160

**Dimensions**

**Switching forces, actuation torques, contact travel**

<b>07-2931-112216XX</b>	M = max. 0,35 Nm
13-14 23-24	0° 45° 72° 25° NO NO
<b>07-2931-112616XX</b>	M = max. 0,35 Nm
13-14 21-22	0° 45° 72° 30° NO NC
<b>07-2931-116616XX</b>	M = max. 0,35 Nm
11-12 21-22	0° 30° 72° 30° NC NC
<b>07-2931-122616XX</b>	M = max. 0,35 Nm
15-16 27-28	0° 30° 72° 20° NC NO
<b>07-2931-132616XX</b>	M = max. 0,35 Nm
21-22 13-14 21-22 13-14	0° 30° 72° 15° → ←
<b>07-2931-141116XX</b>	M = max. 0,35 Nm
01 02	0° 12° 55° 72° 30° *)
<b>07-2931-142116XX</b>	M = max. 0,35 Nm
01 02	0° 12° 55° 72° 30° *)

■ Contact closed  
 □ Contact openly  
 ▨ Setting range  
 \*) Factory setting

Position switch with spring steel, L = 130

**Dimensions**

**Switching forces, actuation torques, contact travel**

<b>07-2931-112217XX</b>	M = max. 0,35 Nm
13-14 23-24	0° 45° 72° 25° NO NO
<b>07-2931-112617XX</b>	M = max. 0,35 Nm
13-14 21-22	0° 45° 72° 30° NO NC
<b>07-2931-116617XX</b>	M = max. 0,35 Nm
11-12 21-22	0° 30° 72° 30° NC NC
<b>07-2931-122617XX</b>	M = max. 0,35 Nm
15-16 27-28	0° 30° 72° 20° NC NO
<b>07-2931-132617XX</b>	M = max. 0,35 Nm
21-22 13-14 21-22 13-14	0° 30° 72° 15° → ←
<b>07-2931-141117XX</b>	M = max. 0,35 Nm
01 02	0° 12° 55° 72° 30° *)
<b>07-2931-142117XX</b>	M = max. 0,35 Nm
01 02	0° 12° 55° 72° 30° *)

■ Contact closed  
 □ Contact openly  
 ▨ Setting range  
 \*) Factory setting