



Insert switch



Limit switch

Description

Insert switch with connection cores

This switching element can be universally used for switching, controlling and regulating operations within Ex-areas. The insert switch is audited by the PTB according to the latest EC guideline 94/9/EC. Devices equipped with these insert switches have to be approved by a testing authority, the switch itself needs not be retested.

The cores are cast-in at the back of the switch. Their standard length is 500 mm; other lengths are available on request. To connect the cores we recommend the miniterminals from BARTEC.

Limit switch with connection cable

The limit switches have been developed for Ex-areas where safe and reliable signalling is required, for example on pumps, petrol pumps, as well as in mechanical and high-tec engineering. The switches must be mounted into the respective devices or systems in such a way as to guarantee mechanical protection. No further tests are required. The connection cable is cast in on the back of the switch. For the connection in Ex-areas BARTEC provides a large variety of terminals and terminal boxes.

Explosion protection

Ex protection type

Insert switch	Ex II 2G Ex d IIC
	Ex I M2 Ex d I
Limit switch	Ex II 2G Ex d IIC T6
	Ex II 2D Ex DA21 IP 66 T 80 °C

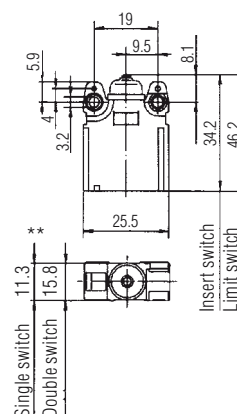
Certifications

Insert switch	PTB 98 ATEX 1032 U
	IECEx PTB 07.0040 U
Limit switch	PTB 00 ATEX 1093 X
	IBExU01ATEX1007 X
	IECEx PTB 07.0045 X

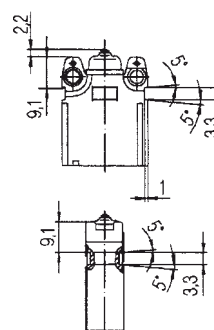
Ambient temperature

- 20 °C to +40 °C (-55 °C to +75 °C)
- 20 °C to +75 °C for DustEx
- 55 °C on request

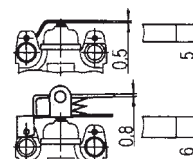
Dimensions in mm



Clip-on pockets



Lever widths





Technical data

Ex d insert switch/limit switch

EN 60947-5-1

EN 60947-1

Protection class

IEC/EN 60529:IP 66

Electrical data for control switch in accordance with DIN EN 60947-5-1

Rated operating voltage AC 400 V

Utilization category

AC-15 2 A 400 V

DC-13 0.15 A 250 V

Isolation voltage 400 V

(further electrical data on request)

Electrical data for switch

Rated current

AC 2 A 400 V

AC 7 A 250 V

DC 0.5 A 250 V

(further electrical data on request)

Ambient temperature +40 °C

AC switching capacity

	ohmic load	inductive load $\cos \varphi = 0,6$
400 V	3 A	2 A
250 V	5 A	3 A
30 V	7 A	5 A

DC switching capacity

	ohmic load	inductive load $L/R = 3 \mu s$
250 V	0.4 A	0.03 A
30 V	7 A	5 A

Tightening torque of fixing screws

0.6 Nm

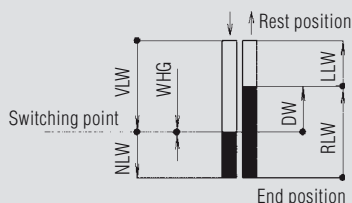
Rating of gold-coated contacts

Voltage: min. 5 V/max. 30 V

Current: min. 4 mA/max. 400 mA

- the product of voltage and current should not exceed 0.12 VA
- for alternating current these values have to be interpreted as peak values

Contact Travels



Contact break distance $2 \times \geq 0.3 \text{ mm}$

Contact travels (in mm)

Pretravel	VLW	max. 0.9
Overtravel	NLW	min. 0.5
Differential value	DW	max. 0.45
Release travel	RLW	0.9
Release travel	LLW	0.1 to 0.45
Repeat accuracy WHG (for repetitive actuation)		± 0.02

Service life

mechanical	$> 2 \times 10^6$
electrical	dependent on load
max. switching rate	1000 operations/h

Switching actuation force

Single-break switch	max. 2.0 N
Double-break switch	max. 3.6 N

Reset force

Single-break switch	min. 0.4 N
Double-break switch	min. 0.8 N
Operating rate	$\geq 10 \mu\text{m/sec.}$

Electrical connection

- Insert switch: cores 4 GAF 0.75
- Limit switch:
cable H05VV-F 0.75/A05VV-F 0.75
(other cables on request)

Conductor diameter

2-wire $6.1 \pm 0.3 \text{ mm}$

3-wire $6.6 \pm 0.3 \text{ mm}$

4-wire $6.7 \pm 0.3 \text{ mm}$

6-wire $8.9 \pm 0.3 \text{ mm}$

Contact element

snap-action contact element (double-break) as, normally-open, normally-closed, changeover contact as well as N/O + N/C contacts for circuits with equal potentials.

Contact material

Silver or gold-coated contacts
(all contact elements have a standard protective gold-coating as standard)

Double-break switch (switch options)

- simultaneous switch sequence:*
chamber I and II almost simultaneous
- defined switch sequence:*
chamber I switches mechanically safe 0.03 up to 0.3 mm before chamber II

Weight

- Insert switch with 500 mm cores:
single-break switch 35 g,
double-break switch 70 g
- Limit switch with 3 m cable:
single-break switch 210 g,
double-break switch 415 g

Housing material

plastic (thermoplastics)

Plunger/additional actuator

stainless steel

Technical data subject to change without notice.



Selection chart Single-break switch

Type of contact		Additional actuator*			
Switch chamber 1	Code no.	Options	Code no.	Options	Code no.
	10	without additional actuator	00		44
			01		45
			02		46
			03		47
	20		04		48
			21		49
			22		61
			23		62
	30		24		63
			41		64
			42		66
			43		73
	40		51		73
			52		73
			53		73
			54		73

➔ **Complete order no.** 07- 511- /

Please enter code number.

Length of connection cores in 100 mm
e.g. 5 = 500 mm

Length of connection cable in meters
e.g. 3 = 3 m

Please specify greater lengths in plain text, code no. = 0

Contact material

1	Silver
3	Gold-coated contacts

Insert switch with connection cores	1
Limit switch with connection cable	2

* Dimensions for additional actuator are reference values

** When packing several switches, these dimensions are reduced to 11 mm resp. 15.5 mm

() Code for connection cable



Selection chart Double-break switch

Type of contact			Additional actuator*				
simultaneous switch sequence	Switch chamber 1	Switch chamber 2	Code no.	Varianten	Code no.	Varianten	Code no.
			11	without additional actuator	00		44
					01		
			21		02		45
					03		
			22		04		46
					21		47
			33				
			44		22		48
	defined switch sequence					1A	
			1A				49
			2A		24		61
							62
			2B		41		63
							64
			3C		42		66
					43		73
			4D				

➔ **Complete order no.** 07- 511- /

Please enter code number.

Length of connection cores

5 = 500 mm

Length of connection cable

3 = 3 m

Please specify other lengths in plain text, code no. = 0

Contact material

1 Silver

3 Gold-coated contacts

Insert switch
with connection cores

1

Limit switch
with connection cable

2

* Dimensions for additional actuator are reference values

** When packing several switches, these dimensions are reduced to 11 mm resp. 15.5 mm