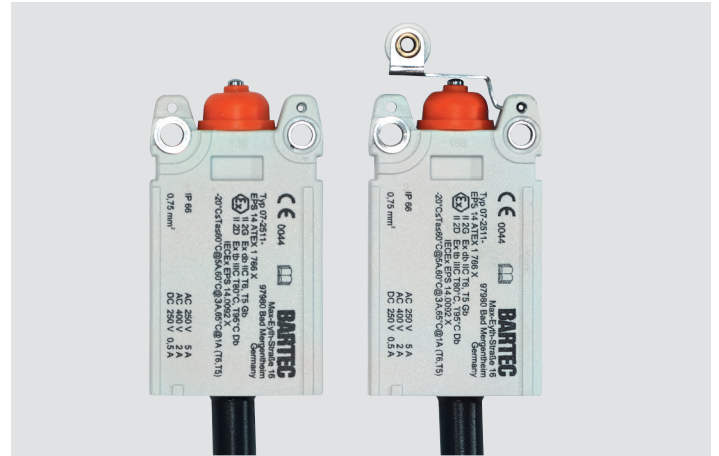


Insert switch/limit switch



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 to the latest ATEX-Directive 2014/34/EU. Devices equipped with these insert switches have to be approved by a testing authority, the switch itself needs not be retested. The cable 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-tech 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

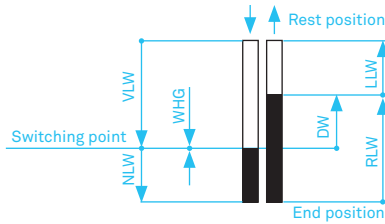
| Limit switch | |
|--|---|
| ATEX | Ex II 2G Ex db IIC T6, T5 Gb Ex II 2D Ex tb IIIC T80°C, T95°C Db |
| Certification | EPS 14 ATEX 1 766 X |
| IECEX | Ex db IIC T6, T5 Gb Ex tb IIIC T80 °C, T95 °C Db |
| Certification | IECEX EPS 14.0092 X |
| Other approvals and certificates, bartec.com | |
| Insert switch | |
| ATEX | Ex II 2G Ex db IIC Gb Ex I M2 Ex db I Mb |
| Certification | EPS 14 ATEX 1 765 U |
| IECEX | Ex db IIC Gb Ex db I Mb |
| Certification | IECEX EPS 14.0091 U |
| Other approvals and certificates, bartec.com | |
| Ambient temperature | -60 °C to +100 °C depending on the type and materials used |
| Ambient temperature limit switches | T6 to max. +75 °C depending on the rated current |
| Protection class | IP 66 (IEC/EN 60529) |

Technical data

| Ex d insert switch/limit switch DIN EN 60947-5-1/DIN EN 60947-1 | | | |
|--|--|--|--------------|
| Electrical data for control switch in accordance with DIN EN 60947-5-1 | Rated operating voltage | AC 400 V | |
| | Utilization category | AC-15 4 A 250 V AC-15 2 A 400 V DC-13 0.15 A 250 V | |
| | Isolation voltage | 400 V | |
| | Ambient temperature | +40 °C | |
| AC switching capacity | ohmic load | inductive load | cos φ = 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 μs |
| | | 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 | Min. DC 2,4V - 50 mA Max. DC 30V - 4 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 | | |

Insert switch/limit switch

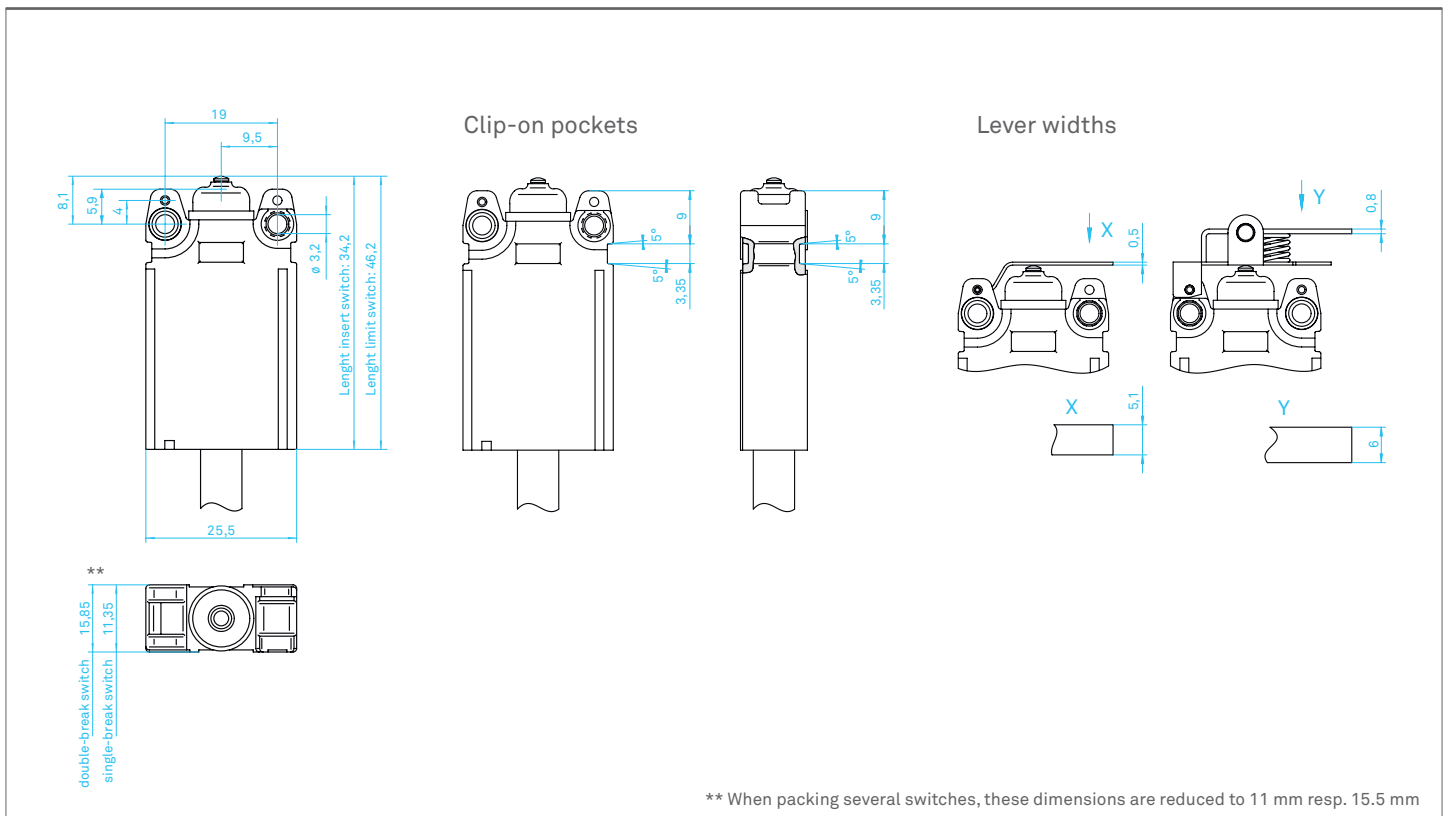
Contact Travels



| Contact travels (in mm) | | |
|---|-----|----------------------|
| Pretravel | VLW | max. 0.9 |
| Overtravel | NLW | min. 0.5 |
| Differential value | DW | max. 0.45 |
| Reset travel | RLW | 0.9 |
| No-load travel | LLW | 0.1 bis 0.45 |
| Repeat accuracy WHG (for repetitive actuation) | | ± 0.02 |
| Service life | | |
| mechanical | | >2 x 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 | | > 10 µm/sec. |

| | | |
|---|--|------------------------------|
| Contact break distance | 2 x ≥ 0.3 mm | |
| Electrical connection | Insert switch cores 0.75 mm ² | L07G-K/Radox |
| | Limit switch cable 0.75 mm ² | H05VV-F/A05VV-F/ BETAflam |
| | other cores and cables on request | |
| Conductor diameter | 2-wire 6.1 ± 0.3 mm 3-wire 6.6 ± 0.3 mm 4-wire 6.7 ± 0.3 mm 6-wire 8.9 ± 0.3 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) | |
| electrical | dependent on load | |
| Plunger/additional actuator | stainless steel | |

Dimensions in mm



Selection chart Single-break switch

| DD | Type of contact | EE | Additional actuator* | EE | Additional actuator* |
|----|-----------------|----|-----------------------------|----|----------------------|
| 10 | | 00 | without additional actuator | 44 | |
| | | 01 | | 45 | |
| 20 | | 02 | | 46 | |
| | | 03 | | 47 | |
| 30 | | 04 | | 48 | |
| | | 21 | | 49 | |
| 40 | | 22 | | 61 | plastic roller |
| | | 23 | | 62 | metal roller |
| 40 | | 24 | | 63 | plastic roller |
| | | 41 | | 64 | metal roller |
| | | 42 | | 66 | |
| 40 | | 43 | | 73 | adjusting screw |

Complete order no**
Please enter code number.

0 7 - * 5 1 1 - * * * * / * *

A B C D D E E

| A | 1 – Insert switch with connection cores 2 – Limit switch with connection cable | | | | | | | | | | |
|------------------|---|------------------|---------------------------------------|------------|------------------|----------|------------------|------------|------------------|----------|------------------|
| B | <table border="0"> <tr> <th>Contact material</th> <th>Ambient temperature (T_a)</th> </tr> <tr> <td>1 – Silver</td> <td>-20 °C to +60 °C</td> </tr> <tr> <td>3 – Gold</td> <td>-20 °C to +60 °C</td> </tr> <tr> <td>7 – Silver</td> <td>-60 °C to +75 °C</td> </tr> <tr> <td>8 – Gold</td> <td>-60 °C to +75 °C</td> </tr> </table> | Contact material | Ambient temperature (T _a) | 1 – Silver | -20 °C to +60 °C | 3 – Gold | -20 °C to +60 °C | 7 – Silver | -60 °C to +75 °C | 8 – Gold | -60 °C to +75 °C |
| Contact material | Ambient temperature (T _a) | | | | | | | | | | |
| 1 – Silver | -20 °C to +60 °C | | | | | | | | | | |
| 3 – Gold | -20 °C to +60 °C | | | | | | | | | | |
| 7 – Silver | -60 °C to +75 °C | | | | | | | | | | |
| 8 – Gold | -60 °C to +75 °C | | | | | | | | | | |

| | |
|---|--|
| C | Length of connection cores 5 – 500 mm |
| | Length of connection cores 3 – 3m |
| | 0 – Please specify greater lengths in plain text |

() Code for connection cable
* Dimensions for additional actuator are reference values
** Standard product printing: ATEX and IECEx marking. Other international imprints obtainable on request. Please specify in plain text.

Selection chart Double-break switch

| Type of contact | | Additional actuator* | Additional actuator* |
|-----------------------------|--|--------------------------------|----------------------|
| DD | Switch chamber 1 / Switch chamber 2 | EE Options | EE Options |
| not defined switch sequence | 11 12 (GY) 22 (BN) 11 (BK) 21 (BU) | 00 without additional actuator | 44 |
| | 21 14 (GY) 22 (BN) 13 (BK) 21 (BU) | 01 | 45 |
| | 22 14 (GY) 24 (BN) 13 (BK) 23 (BU) | 02 | 46 |
| defined switch sequence | 33 12 (2) 14 (3) 22 (5) 24 (6) 11 (1) 21 (4) | 03 | 47 |
| | 1A 12 (GY) 22 (BN) 11 (BK) 21 (BU) | 04 | 48 |
| | 2A 14 (GY) 22 (BN) 13 (BK) 21 (BU) | 21 | 49 |
| | 2B 14 (GY) 24 (BN) 13 (BK) 23 (BU) | 22 | 61 plastic roller |
| | 3C 12 (2) 14 (3) 22 (5) 24 (6) 11 (1) 21 (4) | 23 | 62 metal roller |
| | | 24 | 63 plastic roller |
| | | 41 | 64 metal roller |
| | 42 | 66 | |
| | 43 | 73 adjusting screw | |

Complete order no**
Please enter code number.

0 7 - * 5 1 1 - * * * * / * *

A B C D D E E

| A | 1 - Insert switch with connection cores 2 - Limit switch with connection cable | | | | | | | | | | |
|------------------|---|------------------|---------------------------------------|------------|------------------|----------|------------------|------------|------------------|----------|------------------|
| B | <table border="0"> <tr> <th>Contact material</th> <th>Ambient temperature (T_a)</th> </tr> <tr> <td>1 - Silver</td> <td>-20 °C to +60 °C</td> </tr> <tr> <td>3 - Gold</td> <td>-20 °C to +60 °C</td> </tr> <tr> <td>7 - Silver</td> <td>-60 °C to +75 °C</td> </tr> <tr> <td>8 - Gold</td> <td>-60 °C to +75 °C</td> </tr> </table> | Contact material | Ambient temperature (T _a) | 1 - Silver | -20 °C to +60 °C | 3 - Gold | -20 °C to +60 °C | 7 - Silver | -60 °C to +75 °C | 8 - Gold | -60 °C to +75 °C |
| Contact material | Ambient temperature (T _a) | | | | | | | | | | |
| 1 - Silver | -20 °C to +60 °C | | | | | | | | | | |
| 3 - Gold | -20 °C to +60 °C | | | | | | | | | | |
| 7 - Silver | -60 °C to +75 °C | | | | | | | | | | |
| 8 - Gold | -60 °C to +75 °C | | | | | | | | | | |

| | |
|---|--|
| C | Length of connection cores 5 - 500 mm |
| | Length of connection cores 3 - 3m |
| | 0 - Please specify greater lengths in plain text |

() Code for connection cable
* Dimensions for additional actuator are reference values
** Standard product printing: ATEX and IECEx marking. Other international imprints obtainable on request. Please specify in plain text.