Panasonic
INDUSTRY

For detection: Seal Type Switches
Two circuits detection Switches,

# Two steps detection type

Product Catalog

IN Your Future

2024.12

For detection: Seal Type Switches

RoHS

# Two circuits detection Switches, Two steps detection type

## Just one switch can detect 2steps movement



Terminal type
( Solder terminal )



Terminal type
( Press fit terminal )



Wire leads type

### FEATURES

- Just one switch can detect 2steps movement
- Easy & simple mechanical design on your side
- Space saving of switch and actuator, compared to using two switches
- Wire saving and work saving compared to using two switches
- Customization of switch on off operating position is available

### TYPICAL APPLICATIONS

- Automotive: Door ajar detection to prevent pinching before door closing assist starts, etc.
- Home appliances: Door ajar detection to prevent pinching before door closing assist starts, etc.

## ORDERING INFORMATION ( PART NO. )

**ASQD1** □ □ □ □

- Mounting
  1: Without boss type
  6: Right 2 bosses type
  7: Left 2 bosses type
  8: Both sides 2 bosses type
- Terminal
  4 : Solder terminal
  E : Press fit terminal ( For t = 0.8 )
  F : Press fit terminal ( For t = 0.64 )
  6: Wire leads
- Type / Contact form
  B: Two steps detection type / Normally Closed type ( N.C. )
  C: Two steps detection type / Normally Open type ( N.O. )
- Actuator
  0: Pin plunger

Note) Not every combination is available. Please refer to the following table, " TYPES " .

## TYPES

| Terminal shape | Actuator | Right 2 boss type | | Left 2 boss type | | Both sides 2 bosses type | | Without boss type | |
|---|---|---|---|---|---|---|---|---|---|
| | | Normally close ( N.C. ) | Normally open ( N.O. ) | Normally close ( N.C. ) | Normally open ( N.O. ) | Normally close ( N.C. ) | Normally open ( N.O. ) | Normally close ( N.C. ) | Normally open ( N.O. ) |
| Solder terminal | Pin plunger | ASQD164B0 | ASQD164C0 | ASQD174B0 | ASQD174C0 | ASQD184B0 | ASQD184C0 | ASQD114B0 | ASQD114C0 |
| Press fit terminal ( For t = 0.8 ) | Pin plunger | ASQD16EB0 | ASQD16EC0 | ASQD17EB0 | ASQD17EC0 | ASQD18EB0 | ASQD18EC0 | ASQD11EB0 | ASQD11EC0 |
| Press fit terminal ( For t = 0.64 ) | Pin plunger | ASQD16FB0 | ASQD16FC0 | ASQD17FB0 | ASQD17FC0 | ASQD18FB0 | ASQD18FC0 | ASQD11FB0 | ASQD11FC0 |
| Wire leads | Pin plunger | ASQD166B0 | ASQD166C0 | ASQD176B0 | ASQD176C0 | ASQD186B0 | ASQD186C0 | — | — |


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## RATING

### ■ Contact rating

1 mA 5 V DC to 50 mA 16 V DC

### ■ Operation environment and conditions

| Item | Specifications |
|---|---|
| Ambient and storage temperature | −40 to +85 ℃ ( no freezing and condensing ) |
| Allowable operating speed | 30 to 500 mm/s |
| Max. operating cycle rate | 120 cpm |

Note) When switching at low and high speeds or under vibration, or in high-temperature, high-humidity environments, life and performance may be reduced significantly depending on the load capacity. Please consult us

### ■ Electrical characteristics

| Item | Specifications |
|---|---|
| Dielectric strength ( Initial ) | Between non-continuous terminals : 500 V rms for 1 min<br>Between each terminal and non-charging metal parts: 1,500 V rms for 1 min<br>Between each terminal and ground : 1,500 V rms for 1 min<br>( at detection current of 1 mA ) |
| Insulation resistance ( Initial ) | Min. 100 MΩ<br>( at 500 V DC insulation resistance meter ) ( Locations measured same as dielectric strength. ) |
| Voltage drop ( Initial ) | Max. 0.2 V ( by 50 mA 6 to 8 V DC ) |

### ■ Characteristics

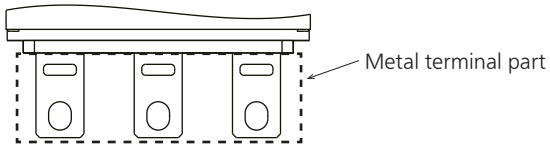
| Item | | Specifications | |
|---|---|---|---|
| Electrical switching life | 5 V DC 1 mA ( Resistive load ) | Min. $3 \times 10^5$ | Switching frequency: 20 times/min<br>Conduction ratio: 1:1<br>Plunger operation speed: 100 mm/s<br>Plunger switching position: Free Position ( FP ) ⇔ Total Travel Position ( TTP ) |
| | 16 V DC 50 mA ( Resistive load ) | Min. $3 \times 10^5$ | |
| Vibration resistance ( malfunction vibration resistance ) | | Single amplitude: 0.75 mm<br>Amplitude of vibration: 10 to 55 Hz ( 4 minutes cycle )<br>Direction and time: 30 minutes each in X, Y and Z directions | |
| | | Amplitude of vibration: 5 to 200 Hz ( 10 minutes cycle )<br>Acceleration: 43.1 $m/s^2$<br>Direction and time: 30 minutes each in X, Y and Z directions | |
| Shock resistance ( malfunction vibration resistance ) | | Shock value: 980 $m/s^2$<br>Direction and time: 5 times each in X, Y and Z directions | |
| Terminal strength | | Min. 6 N ( 1 min, each direction ) *Terminal deformation possible. | |
| Wire lead strength | | Min. 49 N ( Pull wire lead for 1 minute against switch body, wire lead shall not be cut. ) | |
| Heat resistance | | 85 ℃ 500 hours ( Pin-plunger position: Free position ) | |
| Cold resistance | | −40 ℃ 500 hours ( Pin-plunger position: Free position and Total travel position ) | |
| Humidity resistance | | 40 ℃ 95 % RH 500 hours ( Pin-plunger position: Free position and Total travel position ) | |
| Unit weight | | Approx. 1.1 g ( Terminal type ) ,<br>Approx. 6.8 g ( Wire leads type ) | |
| Protection grade | | IP67 ( except exposed terminal part of terminal type ) | |

Notes) As long as there are no particular designations, the following conditions apply to the test environment.
- Ambient temperature: 5 to 35 ℃
- Relative humidity : 25 to 85% RH
- Air pressure : 86 to 106 kPa


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## ■ Protection grade

1) IEC 60529 ( rating for outer shell protection ) : IP67
( Immersion protected ) *1
except metal terminal part ( See below drawing )




2) JIS D0203 ( method for testing moisture resistance and water resistance in automotive components ) :
Equivalent of D2 *2

*1: A concrete testing method is to check for any adverse effect on the structure after leaving it submerged for 30 minutes under 1 m of water ( with temperature difference between water and switch no larger than 5 ℃ ) .
*2: A concrete testing method is to check for any adverse effect on the structure after leaving it submerged for 10 minutes under 10 cm water ( with temperature difference between water and switch no larger than 30 ℃ ) .

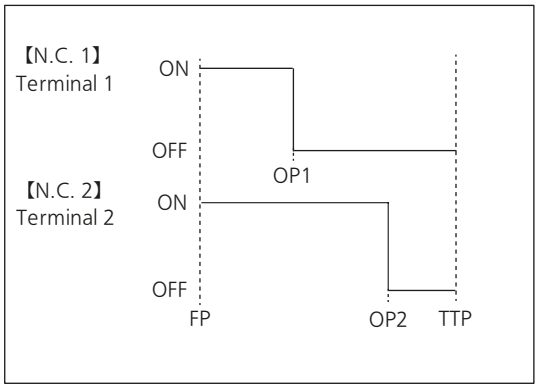
## ■ Operating characteristics

| Characteristics | Pin plunger | |
|---|---|---|
| | Right 2 bosses/Left 2 bosses/ Both sides 2 bosses type | Without boss type |
| Operating Force 1 ( OF 1 ) Max. | 1.6 N | 1.6 N |
| Operating Force 1 ( OF 2 ) Max. | 2.6 N | 2.6 N |
| Total Travel Force ( TF ) Max. ( Reference value ) | ( 4.2 N ) | ( 4.2 N ) |
| Free Position ( FP ) Max. | 10.1 mm | 11.55 mm |
| Operating Position 1 ( OP 1 ) | Initial : 9.45±0.25 mm<br>After test: 9.45±0.3 mm | Initial : 10.9±0.25 mm<br>After test: 10.9±0.3 mm |
| Release Position 1 ( RP 1 ) | Initial : 9.45±0.3 mm<br>After test: 9.45±0.35 mm | Initial : 10.9±0.3 mm<br>After test: 10.9±0.35 mm |
| Operating Position 2 ( OP 2 ) | Initial : 7.75±0.25 mm<br>After test: 7.75±0.3 mm | Initial : 9.2±0.25 mm<br>After test: 9.2±0.3 mm |
| Release Position 2 ( RP 2 ) | Initial : 7.75±0.3 mm<br>After test: 7.75±0.35 mm | Initial : 9.2±0.3 mm<br>After test: 9.2±0.35 mm |
| Over Travel 1 ( OT 1 ) | Initial : 2.9 mm<br>After test: 2.85 mm | Initial : 2.9 mm<br>After test: 2.85 mm |
| Over Travel 2 ( OT 2 ) | Initial : 1.2 mm<br>After test: 1.15 mm | Initial : 1.2 mm<br>After test: 1.15 mm |
| Total Travel Position ( TTP ) ( Reference value ) | ( 6.3 mm ) | ( 7.75 mm ) |

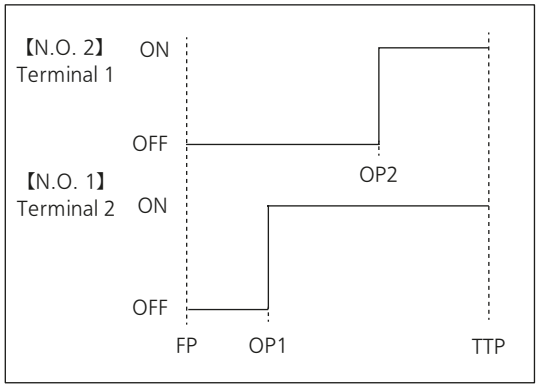
Note) The above indicates the characteristics when operating the actuator from the vertical direction.

## ■ Operating Chart

N.C. type




N.O. type





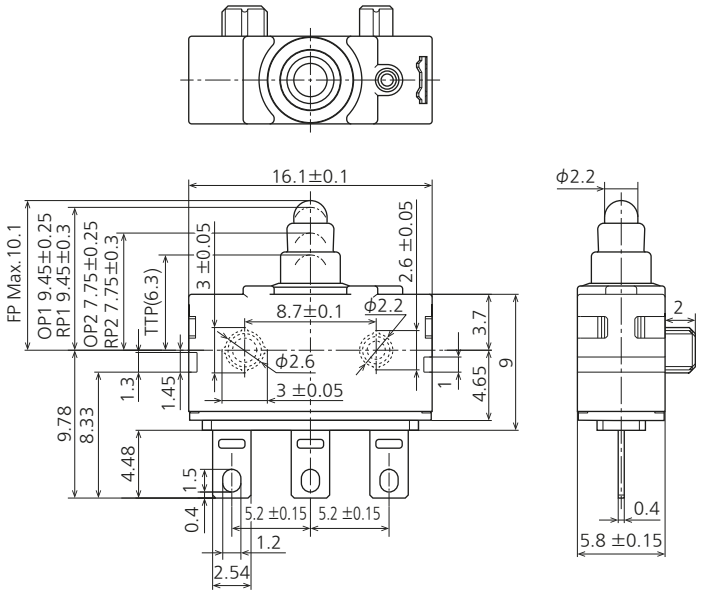
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## DIMENSIONS ( Unit: mm )

CAD The CAD data of the products with a " CAD " mark can be downloaded from our Website.

### ■ Pin plunger Solder terminal type Right 2 bosses type

CAD External dimensions

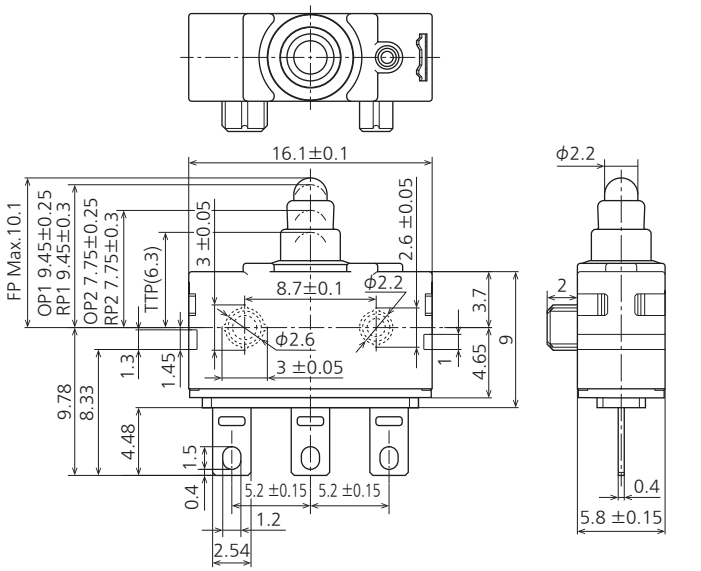



| | |
|---|---|
| Operating Force 1 ( OF 1 ) Max. | 1.6 N |
| Operating Force 1 ( OF 2 ) Max. | 2.6 N |
| Total Travel Force ( TF ) Max. ( Reference value ) | ( 4.2 N ) |
| Free Position ( FP ) Max. | 10.1 mm |
| Operating Position 1 ( OP 1 ) | Initial : 9.45±0.25 mm<br>After test: 9.45±0.3 mm |
| Release Position 1 ( RP 1 ) | Initial : 9.45±0.3 mm<br>After test: 9.45±0.35 mm |
| Operating Position 2 ( OP 2 ) | Initial : 7.75±0.25 mm<br>After test: 7.75±0.3 mm |
| Release Position 2 ( RP 2 ) | Initial : 7.75±0.3 mm<br>After test: 7.75±0.35 mm |
| Over Travel 1 ( OT 1 ) | Initial : 2.9 mm<br>After test: 2.85 mm |
| Over Travel 2 ( OT 2 ) | Initial : 1.2 mm<br>After test: 1.15 mm |
| Total Travel Position ( TTP ) ( Reference value ) | ( 6.3 mm ) |

General tolerance: ±0.25

### ■ Pin plunger Solder terminal type Left 2 bosses type

CAD External dimensions




| | |
|---|---|
| Operating Force 1 ( OF 1 ) Max. | 1.6 N |
| Operating Force 1 ( OF 2 ) Max. | 2.6 N |
| Total Travel Force ( TF ) Max. ( Reference value ) | ( 4.2 N ) |
| Free Position ( FP ) Max. | 10.1 mm |
| Operating Position 1 ( OP 1 ) | Initial : 9.45±0.25 mm<br>After test: 9.45±0.3 mm |
| Release Position 1 ( RP 1 ) | Initial : 9.45±0.3 mm<br>After test: 9.45±0.35 mm |
| Operating Position 2 ( OP 2 ) | Initial : 7.75±0.25 mm<br>After test: 7.75±0.3 mm |
| Release Position 2 ( RP 2 ) | Initial : 7.75±0.3 mm<br>After test: 7.75±0.35 mm |
| Over Travel 1 ( OT 1 ) | Initial : 2.9 mm<br>After test: 2.85 mm |
| Over Travel 2 ( OT 2 ) | Initial : 1.2 mm<br>After test: 1.15 mm |
| Total Travel Position ( TTP ) ( Reference value ) | ( 6.3 mm ) |

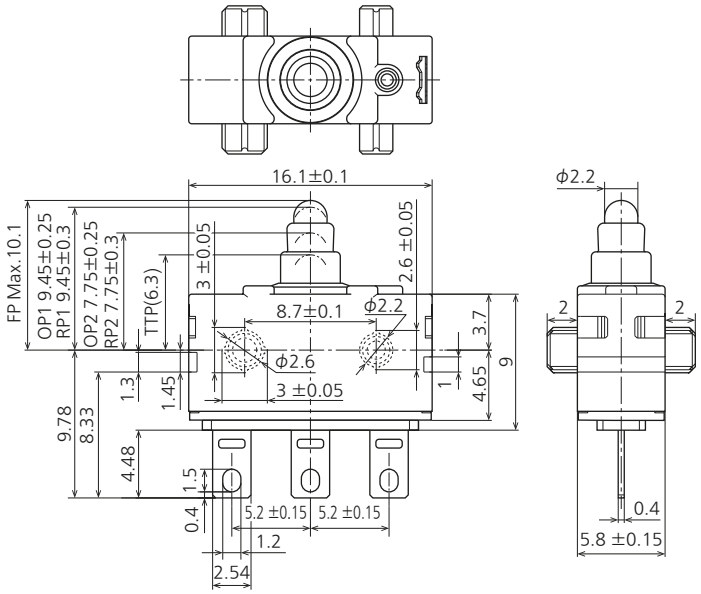
General tolerance: ±0.25


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## ■ Pin plunger Solder terminal type Both sides 2 bosses type

CAD

External dimensions



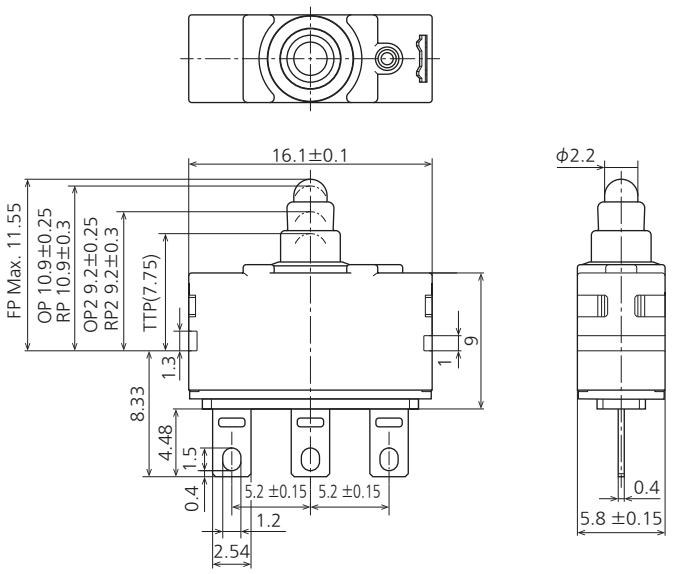

General tolerance: ±0.25

| | |
|---|---|
| Operating Force 1 ( OF 1 ) Max. | 1.6 N |
| Operating Force 1 ( OF 2 ) Max. | 2.6 N |
| Total Travel Force ( TF ) Max. ( Reference value ) | ( 4.2 N ) |
| Free Position ( FP ) Max. | 10.1 mm |
| Operating Position 1 ( OP 1 ) | Initial : 9.45±0.25 mm<br>After test: 9.45±0.3 mm |
| Release Position 1 ( RP 1 ) | Initial : 9.45±0.3 mm<br>After test: 9.45±0.35 mm |
| Operating Position 2 ( OP 2 ) | Initial : 7.75±0.25 mm<br>After test: 7.75±0.3 mm |
| Release Position 2 ( RP 2 ) | Initial : 7.75±0.3 mm<br>After test: 7.75±0.35 mm |
| Over Travel 1 ( OT 1 ) | Initial : 2.9 mm<br>After test: 2.85 mm |
| Over Travel 2 ( OT 2 ) | Initial : 1.2 mm<br>After test: 1.15 mm |
| Total Travel Position ( TTP ) ( Reference value ) | ( 6.3 mm ) |

## ■ Pin plunger Solder terminal type Without boss type

CAD

External dimensions




General tolerance: ±0.25

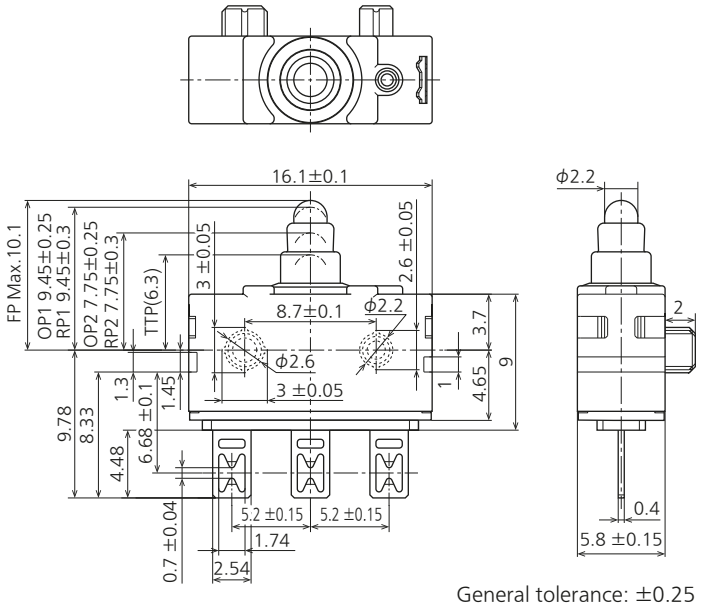
| | |
|---|---|
| Operating Force 1 ( OF 1 ) Max. | 1.6 N |
| Operating Force 1 ( OF 2 ) Max. | 2.6 N |
| Total Travel Force ( TF ) Max. ( Reference value ) | ( 4.2 N ) |
| Free Position ( FP ) Max. | 11.55 mm |
| Operating Position 1 ( OP 1 ) | Initial : 10.9±0.25 mm<br>After test: 10.9±0.3 mm |
| Release Position 1 ( RP 1 ) | Initial : 10.9±0.3 mm<br>After test: 10.9±0.35 mm |
| Operating Position 2 ( OP 2 ) | Initial : 9.2±0.25 mm<br>After test: 9.2±0.3 mm |
| Release Position 2 ( RP 2 ) | Initial : 9.2±0.3 mm<br>After test: 9.2±0.35 mm |
| Over Travel 1 ( OT 1 ) | Initial : 2.9 mm<br>After test: 2.85 mm |
| Over Travel 2 ( OT 2 ) | Initial : 1.2 mm<br>After test: 1.15 mm |
| Total Travel Position ( TTP ) ( Reference value ) | ( 7.75 mm ) |


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## ■ Pin plunger Press fit terminal type ( For t = 0.8 ) Right 2 bosses type

CAD

External dimensions



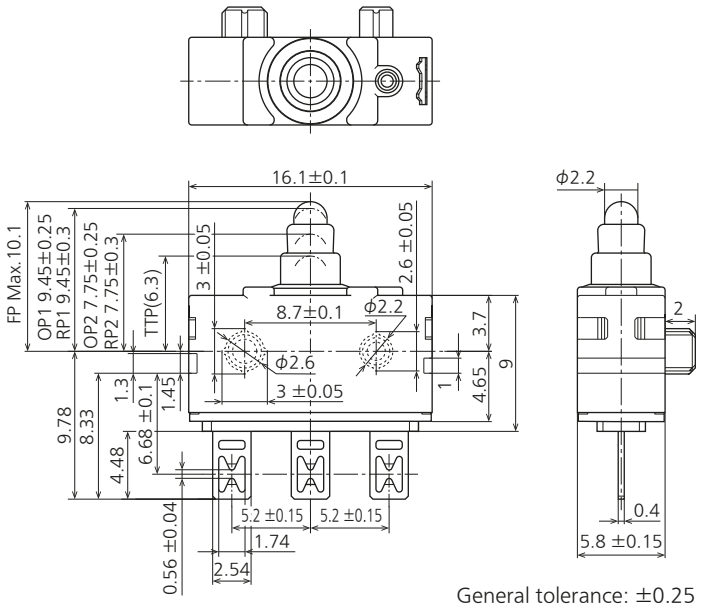

General tolerance: ±0.25

| | |
|---|---|
| Operating Force 1 ( OF 1 ) Max. | 1.6 N |
| Operating Force 1 ( OF 2 ) Max. | 2.6 N |
| Total Travel Force ( TF ) Max. ( Reference value ) | ( 4.2 N ) |
| Free Position ( FP ) Max. | 10.1 mm |
| Operating Position 1 ( OP 1 ) | Initial : 9.45±0.25 mm<br>After test: 9.45±0.3 mm |
| Release Position 1 ( RP 1 ) | Initial : 9.45±0.3 mm<br>After test: 9.45±0.35 mm |
| Operating Position 2 ( OP 2 ) | Initial : 7.75±0.25 mm<br>After test: 7.75±0.3 mm |
| Release Position 2 ( RP 2 ) | Initial : 7.75±0.3 mm<br>After test: 7.75±0.35 mm |
| Over Travel 1 ( OT 1 ) | Initial : 2.9 mm<br>After test: 2.85 mm |
| Over Travel 2 ( OT 2 ) | Initial : 1.2 mm<br>After test: 1.15 mm |
| Total Travel Position ( TTP ) ( Reference value ) | ( 6.3 mm ) |

## ■ Pin plunger Press fit terminal type ( For t = 0.64 ) Right 2 bosses type

CAD

External dimensions



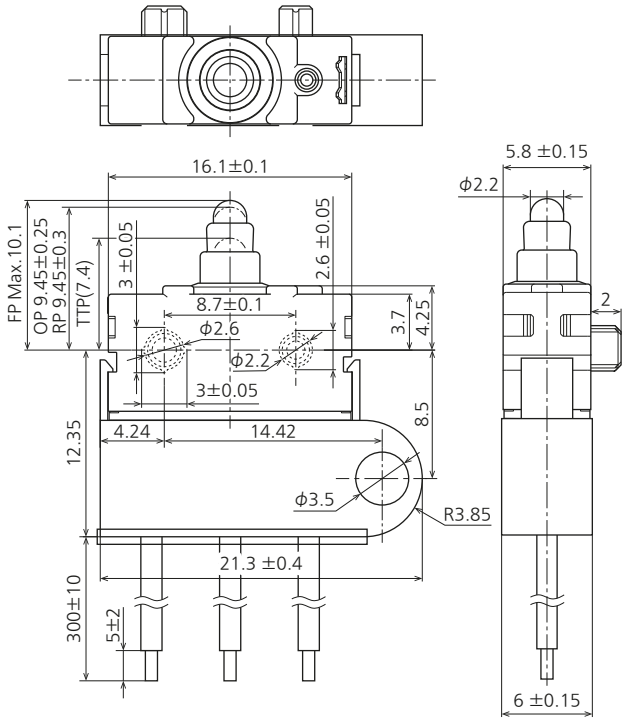

General tolerance: ±0.25

| | |
|---|---|
| Operating Force 1 ( OF 1 ) Max. | 1.6 N |
| Operating Force 1 ( OF 2 ) Max. | 2.6 N |
| Total Travel Force ( TF ) Max. ( Reference value ) | ( 4.2 N ) |
| Free Position ( FP ) Max. | 10.1 mm |
| Operating Position 1 ( OP 1 ) | Initial : 9.45±0.25 mm<br>After test: 9.45±0.3 mm |
| Release Position 1 ( RP 1 ) | Initial : 9.45±0.3 mm<br>After test: 9.45±0.35 mm |
| Operating Position 2 ( OP 2 ) | Initial : 7.75±0.25 mm<br>After test: 7.75±0.3 mm |
| Release Position 2 ( RP 2 ) | Initial : 7.75±0.3 mm<br>After test: 7.75±0.35 mm |
| Over Travel 1 ( OT 1 ) | Initial : 2.9 mm<br>After test: 2.85 mm |
| Over Travel 2 ( OT 2 ) | Initial : 1.2 mm<br>After test: 1.15 mm |
| Total Travel Position ( TTP ) ( Reference value ) | ( 6.3 mm ) |


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## ■ Pin plunger Wire leads type Right 2 bosses type

CAD External dimensions




General tolerance: ±0.25

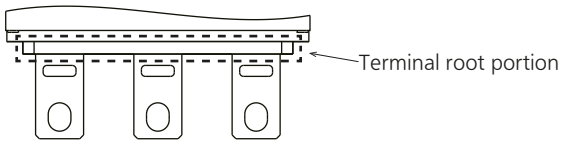
| | |
|---|---|
| Operating Force 1 ( OF 1 ) Max. | 1.6 N |
| Operating Force 1 ( OF 2 ) Max. | 2.6 N |
| Total Travel Force ( TF ) Max. ( Reference value ) | ( 4.2 N ) |
| Free Position ( FP ) Max. | 10.1 mm |
| Operating Position 1 ( OP 1 ) | Initial : 9.45±0.25 mm<br>After test: 9.45±0.3 mm |
| Release Position 1 ( RP 1 ) | Initial : 9.45±0.3 mm<br>After test: 9.45±0.35 mm |
| Operating Position 2 ( OP 2 ) | Initial : 7.75±0.25 mm<br>After test: 7.75±0.3 mm |
| Release Position 2 ( RP 2 ) | Initial : 7.75±0.3 mm<br>After test: 7.75±0.35 mm |
| Over Travel 1 ( OT 1 ) | Initial : 2.9 mm<br>After test: 2.85 mm |
| Over Travel 2 ( OT 2 ) | Initial : 1.2 mm<br>After test: 1.15 mm |
| Total Travel Position ( TTP ) ( Reference value ) | ( 6.3 mm ) |


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## CAUTIONS FOR USE

### ■ Soldering conditions

- In the case of solder terminal type.
  <IMPORTANT>The application of excessive heat upon the switch when soldering can cause degradation of switch operation.
  Therefore, be sure to keep within the conditions given below.
  And in case melted resin is found around the terminal root portion please do not use the switch as too much soldering heat might be applied.



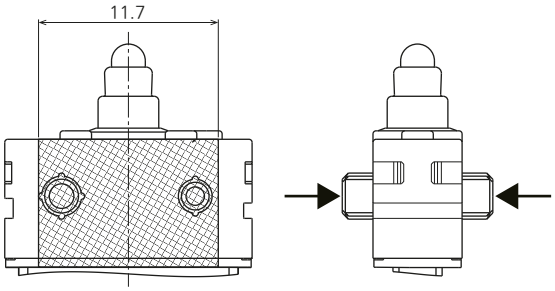

- Manual soldering
  Use soldering irons ( max. 350 ℃,within 3 seconds ) capable of temperature adjustment.
  This is to prevent deterioration due to soldering heat.
  Care should be taken not to apply force to the terminals during soldering. ( More than one second interval is required to apply heat at each terminal. ) Please consult us if you intend to use a soldering iron that exceeds 60 W.

- Automatic soldering
  Soldering must be done as following 260 ℃: within 6 seconds, 350 ℃: within 3 seconds.

- Don't push the plunger ( or lever ) on soldering state and after 30 seconds.

### ■ Mounting

- <IMPORTANT>Please avoid use in which load would be applied to the sides ( hatch part ( both sides ) shown right ) of the switch in the direction indicated by the arrows. This could cause erroneous operation.




- Be sure to maintain adequate insulating clearance between each terminal and ground.

- The positioning of the switch should be such that direct force is not applied to the pushbutton or actuator in its free position. The operating force to the pushbutton should only be applied in a perpendicular direction.

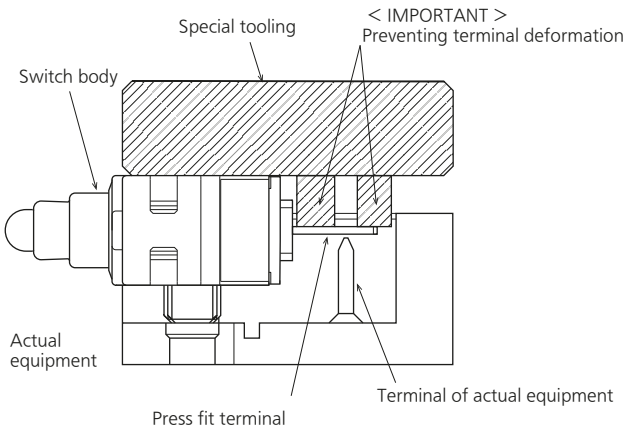
- When slanted press operation is applied to pin plunger type switches by an operation cam, the endurance life may greatly vary depending on the use of grease for sliding, operation angle, operating speed, operation frequency, press amount of the actual equipment in advance should be implemented.

- After mounting please make sure no pulling load will be applied to the switch terminals, wire lead.


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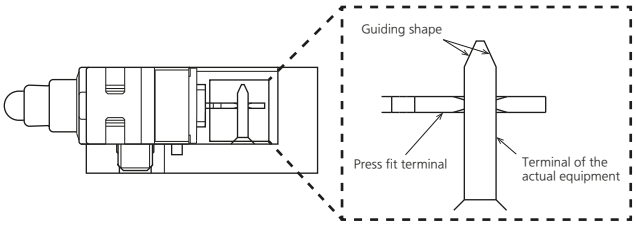
## ■ Mounting of press fit terminal type

- < IMPORTANT >To prevent damage of the switch body and deterioration of contact reliability due to the deformation of the press fit terminal, please be sure to keep the following conditions.
  1. The switch should be mounted by using the special tooling to keep the switch in the vertical state to the actual equipment and insert the terminal while supporting both the switch body and the terminal part ( Two places ) with the tooling ( Please see the below drawing ) .
  2. The switch is not the stopper of the tool.
  3. The insertion is allowed only one time. The switch and the terminal of the actual machine once inserted cannot be use because there is a risk of deterioration of contact reliability due to the sufficient contact pressure may not be secured.




- < IMPORTANT >Be sure to apply a sealing material to the terminal part, fix the switch completely and seal the terminal part to prevent deterioration of contact reliability in the connected part by the press fit terminal of the switch and the terminal of the actual equipment due to vibration, impact, humidity and gas. An unsealed switch should not be used. The hard type sealing material is recommended.
  Additionally, it is necessary to select a sealing material which does not cause sulfuration, oxidation sealing materials. For the selection of a sealing material, the sufficient verification by using the actual equipment should be implemented in advance.

- < IMPORTANT > The terminal on the actual machine side should be provided with a guiding shape.
  And the press fit terminal of the switch should be inserted deeper than the guiding shape of the terminal on the actual machine side.



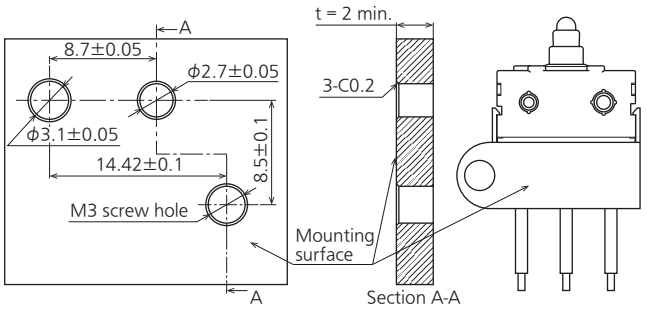

- < IMPORTANT > The contact reliability at terminal connecting portion may highly deteriorate because of the mounting shape and the terminal of the actual equipment, the material of the special tooling for insertion, and the insertion method of the switch.
  Please make sure to consult us if you consider using press fit terminal type, and the sufficient verification by using the actual equipment should be implemented in advance.


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## ■ Mounting of wire leads type

- < IMPORTANT > To secure the switch, please use M3 small screws on a flat surface and tighten using a maximum torque of 0.29 N • m. Be sure to verify the quality under actual conditions of use because the switch plastic might be deformed according to that the kind of the screw ( size of screw head etc. ) , the diameter of the washer and the presence of washer.
  And use of adhesive lock is recommended to prevent loosening of the screws. When using an adhesive, care should be taken not to apply the adhesive to the switch operating portion.

- Refer to the figure below for recommendation of mounting hole dimension.
  ※ In the case of right 2 bosses type.




- In the case of left 2 bosses type, recommendation of mounting hole dimension is mirror symmetry of the above figure.

- Please tighten the screws while the seal cover surface is in full contact with the mounting surface.

## ■ Cautions regarding the circuit

- < IMPORTANT > In order to prevent malfunction in set devices caused by bounce and chattering during the ON-OFF switch operation, please verify the validity of the circuit under actual operating conditions and temperature range.

- When switching inductive loads ( relays, solenoids, buzzers, etc. ) , it is recommended that contact protection element such as diode, varistor, etc., is introduced to prevent contact failure caused by electric discharge.

- Not only at actual equipment, but there also is a possibility of fusing current or deformation of contact according to the condition of inspection load circuit or evaluation circuit at the production line which may lead to temporary large current or inrush current. Thus, please take enough consideration with your circuit design and confirm that there will be no excessive load.

## ■ Please verify under actual conditions.

- Please assure the quality and reliability of the switch under the worst condition of the actual usage.

## ■ Selection of switch

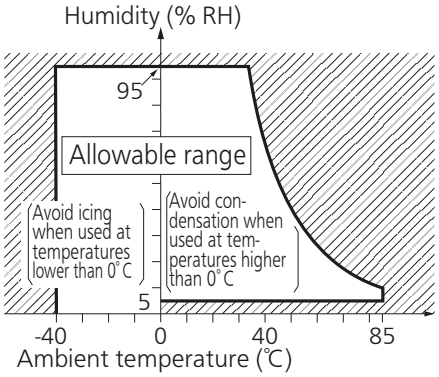
- Please make your selection so that there will be no problems even if the operating characteristics vary up to ±20 % from the standard values.

## ■ Oil-proof and chemical-proof characteristics

- The rubber cap swells when exposed to oil and chemicals. The extent of swelling will vary widely depending on the type and amount of oil and chemicals. Check with the actual oil or chemicals used. In particular, be aware that solvents such as freon, chlorine, toluene, alcohol etc., cannot be used.

## ■ Operation environment

- Although continuous operation of the switch is possible within the range of ambient temperature ( humidity ) , as the humidity range differs depending on the ambient temperature, the humidity range indicated below should be used. Continuous use near the limit of the range should be avoided. This temperature-humidity range does not guarantee permanent performance.





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## ■ Others

- < IMPORTANT >To prevent breakage of the sealing rubber cap due to contact, please handle the switch with care so that there is no contact with the rubber cap when handling the switch as it will affect the immersion proof of the switch.

- Please remember that this switch cannot be used under water. Also, pleased be warned that switching and sudden temperature changes with the presence of water droplets can cause seepage into the unit.

- When a source of silicone gas ( Silicone rubber, Silicone coating materials and silicone filling materials etc. ) is used around the switch, the silicone gas ( low molecular weight siloxane etc. ) may be produced.
  The produced silicone gas may penetrate the plastic case and enter the inside of switch.
  When the switch is kept and used in this condition, silicone compound may adhere to the switch contacts, is changed to the insulator and cause the contact failure.
  Please do not use any source of silicone gas around the switch.

- Do not use in areas where flammable or explosive gases from gasoline and thinner, etc., may be present.

- Do not exceed the total travel position ( TTP ) and press the actuator. This could cause operation failure. Also, when switching at high speed or under shock even within the operation limit, the working life may decrease.
  Therefore, please be sure to verify the quality under actual conditions of use.

- If the switch is used while the plunger is pressed all the time, failure to return the switch plunger may occur due to surrounding temperature and humidity, adherence of oils such as oil, grease, etc., solvents and chemicals.
  Please be sure to verify the quality under the actual use conditions.

- Please make considerations so that the switch does not become the stopper for the moving part.

- Do not use the switch which was dropped by mistakes when handling. If it is used, abnormal operation characteristics and sealing performance may occur.

- In case of applying coating to movable parts ( actuator, plunger, etc. ) , the quality of the product is not guaranteed because it may cause a product failure.

- Please do not wash the switch as failures may occur.

- Do not apply ultrasonic vibrations and high frequency vibration to a switch because it may have an impact on the characteristics of the switch.

- Please do not constantly apply a tensile load to wire leads when fixing them.

- Small black spots and scratches may occur on the surface of the product, but if there is no problem with the product performance, it will be shipped as a non-defective product.


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