



Panasonic
ideas for life

**HIGH CAPACITY,
LONG LIFE
SUBMINIATURE SWITCH**

**AVM3□□□P (PS)
SWITCHES**



RoHS compliant

FEATURES

- 10.1 Amp. high contact capacity is available
- Long life
- Precise operating position ($\pm 0.25\text{mm}$: Pin plunger type)
- Flux-resistant construction with integrally molded terminals
- In-line terminals make soldering works easy
- UL/CSA approved

TYPICAL APPLICATIONS

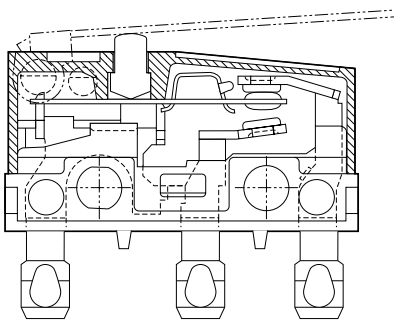
- Heaters
- Electric rice cookers
- Copiers
- Printers
- Facsimiles
- Vending machines
- Measuring equipment
- Audio equipment

ORDERING INFORMATION

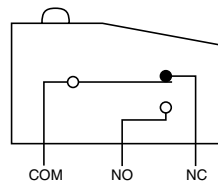
Ex. AVM3 1 0 5 P 9

| Type of switch | Terminals | Actuators | Operating force by pin plunger, max. | Capacity | Agency standard |
|----------------|--|---|--------------------------------------|---------------------------|-----------------|
| PS switch | 1: Self-standing solder terminal with guard 2: Self-standing solder terminal without guard 3: Self-standing solder terminal with opposite side guard 4: Self-standing PC terminal | 0: Pin plunger 1: Short hinge lever 2: Hinge lever 3: Long hinge lever 4: Simulated roller lever 5: Roller lever | 5: 1.47 N | P: High capacity (10.1 A) | 9: UL/CSA |

CONSTRUCTION

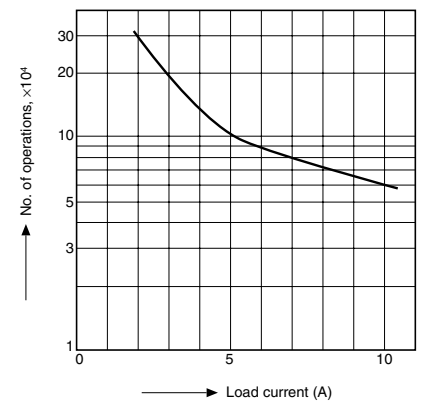


CONTACT ARRANGEMENT: SPDT



DATA

Electrical life curve



PRODUCT TYPES

| Contact | Actuator | Part No. | | | |
|-----------|------------------------|-------------------------------|------------|--------------------------|---------------------------|
| | | Self-standing solder terminal | | | Self-standing PC terminal |
| | | Without guard | With guard | With opposite side guard | |
| Gold-clad | Pin plunger | AVM3205P9 | AVM3105P9 | AVM3305P9 | AVM3405P9 |
| | Short hinge lever | AVM3215P9 | AVM3115P9 | AVM3315P9 | AVM3415P9 |
| | Hinge lever | AVM3225P9 | AVM3125P9 | AVM3325P9 | AVM3425P9 |
| | Long hinge lever | AVM3235P9 | AVM3135P9 | AVM3335P9 | AVM3435P9 |
| | Simulated roller lever | AVM3245P9 | AVM3145P9 | AVM3345P9 | AVM3445P9 |
| | Roller lever | AVM3255P9 | AVM3155P9 | AVM3355P9 | AVM3455P9 |

SPECIFICATIONS

1. Contact rating

| | |
|----------------------------|----------------|
| Resistive load (cos φ ≅ 1) | 10.1A, 250V AC |
|----------------------------|----------------|

2. Characteristics

| | | |
|--|---|---|
| Expected life | Electrical | Min. 5 × 10 ⁴ (at 20 cpm) (O.T. max.) |
| | Mechanical | Min. 3 × 10 ⁷ (O.T.: Specified value), at 60 cpm |
| Dielectric strength | Between terminals | 1,000 Vrms for 1 min. (at 10 mA) |
| | Between terminals and other exposed metal parts | 2,000 Vrms for 1 min. (at 10 mA) |
| | Between terminals and ground | 2,000 Vrms for 1 min. (at 10 mA) |
| Insulation resistance | | Min. 100MΩ (at 500V DC) |
| Contact resistance (initial) | | Max. 50mΩ (By voltage drop, 1A 6 to 8V DC) |
| Allowable operating speed (at no load) | | 0.1 to 1,000 mm/sec. |
| Max. operating cycle rate (at no load) | | 300 cpm |
| Ambient temperature | | -25 to +85°C (Not freezing below 0°C) |
| Unit weight | | Approx. 2g |
| Contact material | | AgNi alloy |

3. Operating characteristics

| Actuator | Operating force, Max. | Release force, Min. | Pretravel, Max. mm | Movement differential, Max. mm | Overtravel, Min. mm | Operating position mm |
|------------------------|-----------------------|---------------------|--------------------|--------------------------------|---------------------|-----------------------|
| Pin plunger | 1.47 N | 0.20 N | 0.6 mm | 0.1 mm | 0.4 mm | 8.4±0.25 mm |
| Short hinge lever | 0.59 N | 0.039 N | 2.5 mm | 0.5 mm | 0.8 mm | 8.8±0.8 mm |
| Hinge lever | 0.54 N | 0.034 N | 2.8 mm | 0.8 mm | 1.2 mm | 8.8±0.8 mm |
| Long hinge lever | 0.44 N | 0.029 N | 3.5 mm | 1.0 mm | 1.6 mm | 8.8±1.2 mm |
| Simulated roller lever | 0.54 N | 0.034 N | 2.8 mm | 0.8 mm | 1.2 mm | 11.65±0.8 mm |
| Roller lever | 0.59 N | 0.039 N | 2.5 mm | 0.5 mm | 0.8 mm | 14.5±0.8 mm |

DIMENSIONS

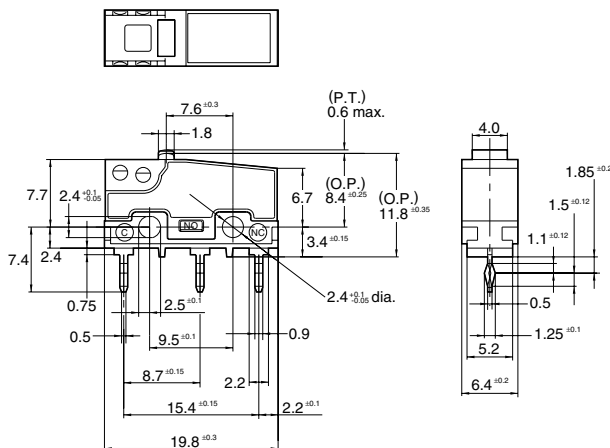
The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://industrial.panasonic.com/ac/e>

1. Self-standing PC terminal (Without guard)

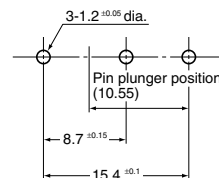
mm General tolerance: ±0.25

Pin plunger

CAD Data



PC board pattern

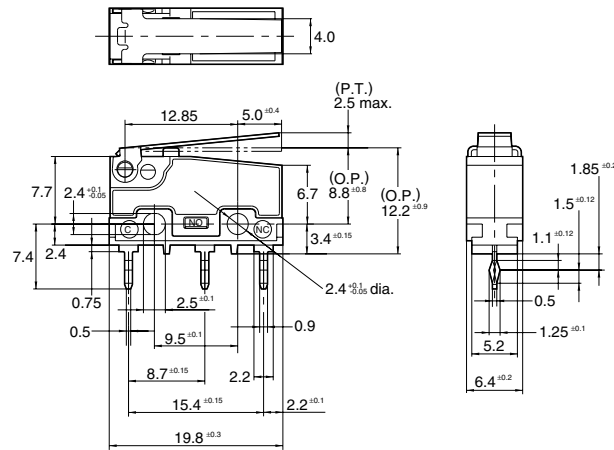


| | | |
|--------------------------------|---------------------------------|----------|
| Pretravel, Max. mm | | 0.6 |
| Movement differential, Max. mm | | 0.1 |
| Overtravel, Min. mm | | 0.4 |
| Operating position | Distance from mounting hole, mm | 8.4±0.25 |

Short hinge lever

mm General tolerance: ±0.25

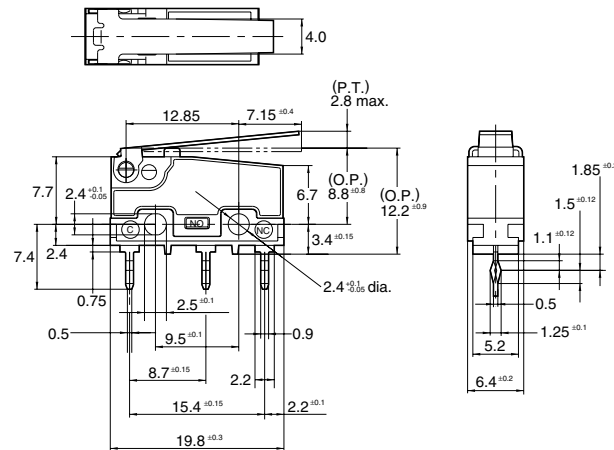
CAD Data



| | | |
|--------------------------------|---------------------------------|---------|
| Pretravel, Max. mm | | 2.5 |
| Movement differential, Max. mm | | 0.5 |
| Overtravel, Min mm | | 0.8 |
| Operating position | Distance from mounting hole, mm | 8.8±0.8 |

Hinge lever

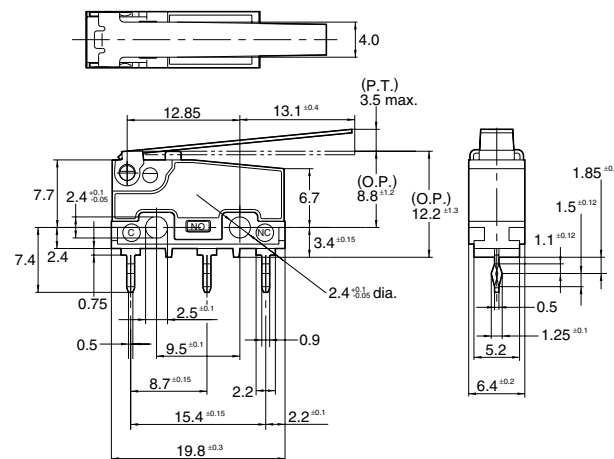
CAD Data



| | | |
|--------------------------------|---------------------------------|---------|
| Pretravel, Max. mm | | 2.8 |
| Movement differential, Max. mm | | 0.8 |
| Overtravel, Min mm | | 1.2 |
| Operating position | Distance from mounting hole, mm | 8.8±0.8 |

Long hinge lever

CAD Data



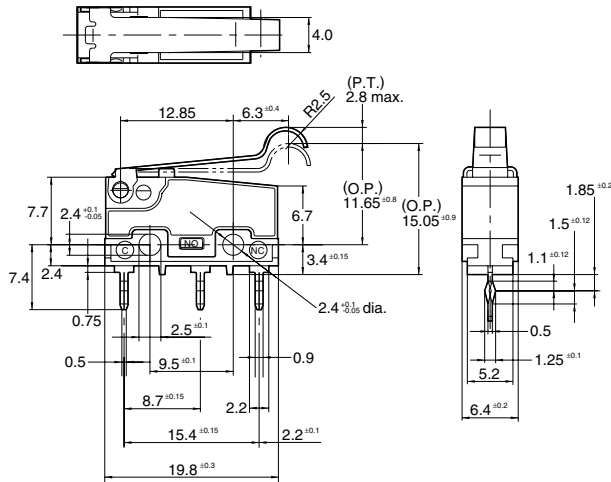
| | | |
|--------------------------------|---------------------------------|---------|
| Pretravel, Max. mm | | 3.5 |
| Movement differential, Max. mm | | 1.0 |
| Overtravel, Min mm | | 1.6 |
| Operating position | Distance from mounting hole, mm | 8.8±1.2 |

AVM3□□□P

Simulated roller lever

mm General tolerance: ± 0.25

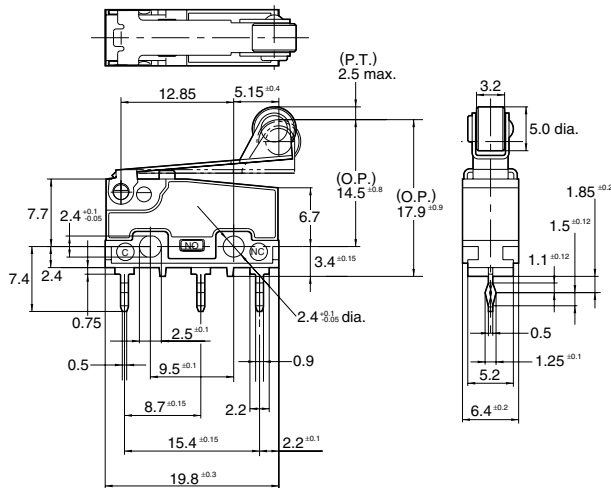
CAD Data



| | | |
|--------------------------------|---------------------------------|-----------------|
| Pretravel, Max. mm | | 2.8 |
| Movement differential, Max. mm | | 0.8 |
| Overtravel, Min mm | | 1.2 |
| Operating position | Distance from mounting hole, mm | 11.65 \pm 0.8 |

Roller lever

CAD Data

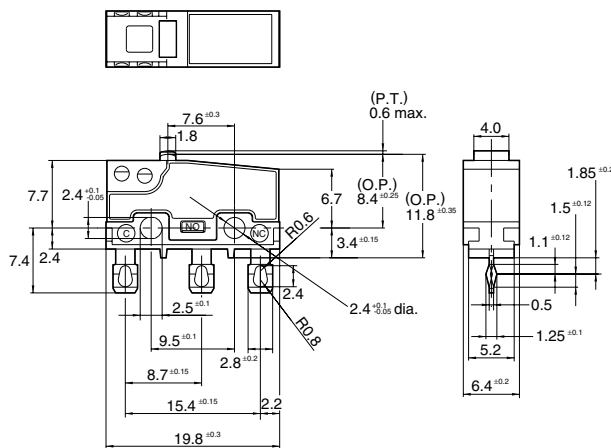


| | | |
|--------------------------------|---------------------------------|----------------|
| Pretravel, Max. mm | | 2.5 |
| Movement differential, Max. mm | | 0.5 |
| Overtravel, Min mm | | 0.8 |
| Operating position | Distance from mounting hole, mm | 14.5 \pm 0.8 |

2. Self-standing solder terminal

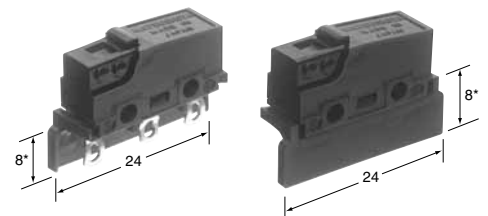
Pin plunger

CAD Data



With guard

With opposite side guard



* The height from the center of mounting hole to the edge of guard.

NOTES

1. Fastening of the switch body

1) Use flat filister head M2.3 screws to mount switches with less than a 0.29 N·m torque. Use of screws washers or adhesive lock is recommended to prevent loosening of the screws.

2) Check insulation distance between ground and each terminal.

3) When the operation object is in the free position, force should not be applied directly to the actuator or pin plunger from vertical direction to the switch.

4) In setting the movement after operation, the over-travel should be set more than 70% as a standard. Setting the movement at less than 70% of O.T. may cause troubles such as miscontact and welding due to small contact force of the switch.

5) For a lever type, the force from the reverse and side to the operation direction should not be applied.

2. Soldering operations

Manual soldering should be accomplished within 3 seconds with max. 350°C iron.

Care should be taken not to apply force to the terminals during soldering.

Terminal portions must not be moved in min. 1 minute after soldering.

Also no tensile strength of lead wires should be applied to terminals.

3. Selection of the switch

When specifying the switch, allow $\pm 20\%$ to the listed operating characteristics.

4. Environment

Avoid using the switches in the following conditions;

- In corrosive gases, such as silicon gas
- In a dusty environment

5. Cautions regarding use

When switching low-level circuits (6V DC 5mA, 12V DC 2mA, 24V DC 1mA), AV, AV3/AVT3, AVL3 Au clad contact type switches are recommended. When used to switch inductive loads (relays, solenoids, buzzers, etc.), it is recommended that a proper spark quench circuit is inserted in the switch to prevent contact faults caused by electric arcs. Care should be taken that occurrence in AC load possibly shorten the expected life.

6. Quality check under actual loading conditions

To assure reliability, check the switch under actual loading conditions. Avoid any situation that may adversely affect switching performance.