

**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**

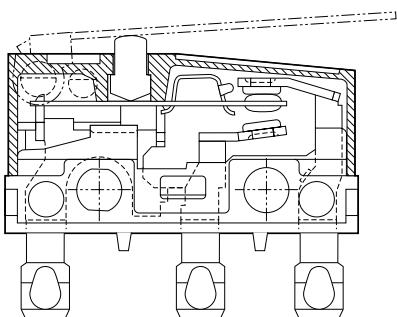
- Heaters
- Electric rice cookers
- Copiers
- Printers
- Facsimiles
- Vending machines
- Measuring equipment
- Audio equipment

**ORDERING INFORMATION**

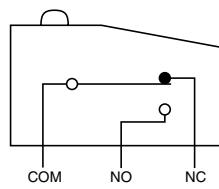
Ex. AVM3 **1** **0** **5** **P** **9**

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**

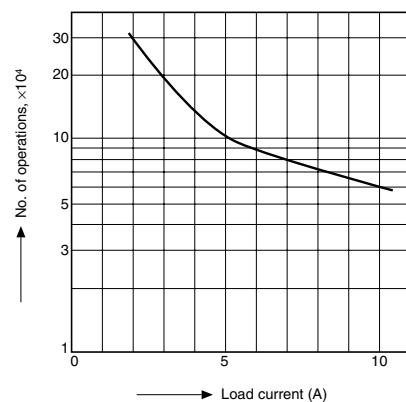


**CONTACT  
ARRANGEMENT: SPDT**



**DATA**

Electrical life curve



## AVM3□□□P

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### PRODUCT TYPES

Contact	Actuator	Part No.			Self-standing PC terminal	
		Self-standing solder 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 ( $\cos \phi = 1$ ) 10.1A, 250V AC

## 2. Characteristics

2. Characteristics		
Expected life	Electrical	Min. $5 \times 10^4$ (at 20 cpm) (O.T. max.)
	Mechanical	Min. $3 \times 10^7$ (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	Overttravel, 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

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## DIMENSIONS

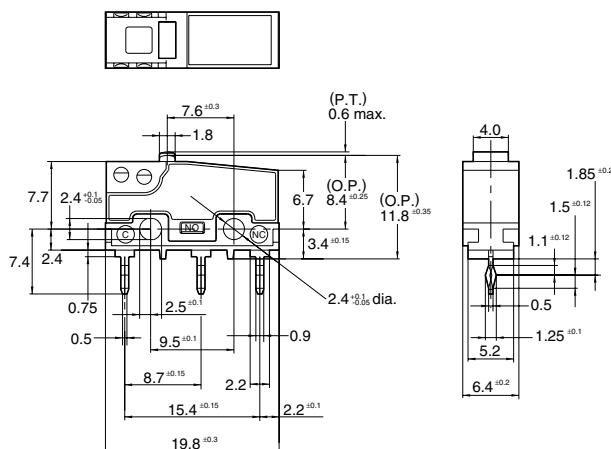
The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://industrial.panasonic.com/ac/e>

## 1. Self-standing PC terminal (Without guard)

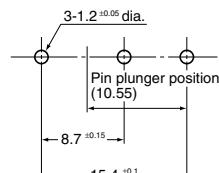
mm General tolerance:  $\pm 0.25$

## 1. Sch. Start

CAD Data



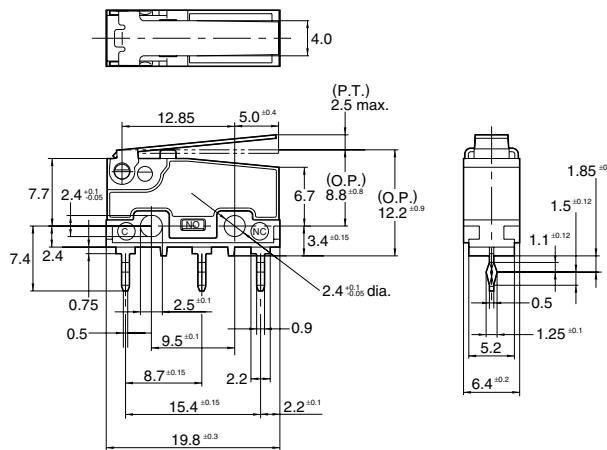
## PC board pattern



Pretravel, Max. mm	0.6
Movement differential, Max. mm	0.1
Overtravel, Min mm	0.4
Operating position	Distance from mounting hole, mm

### Short hinge lever

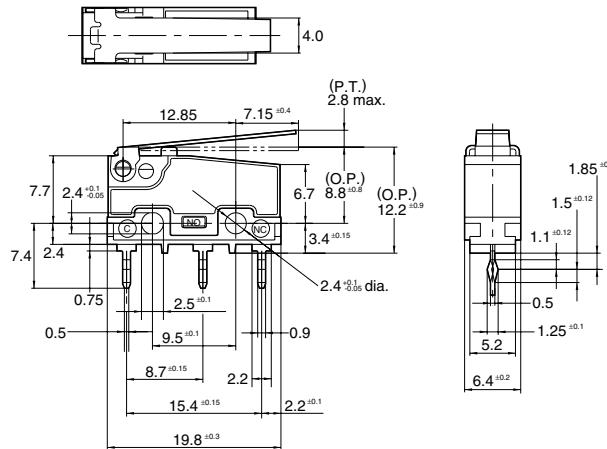
## CAD Data



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

## Hinge lever

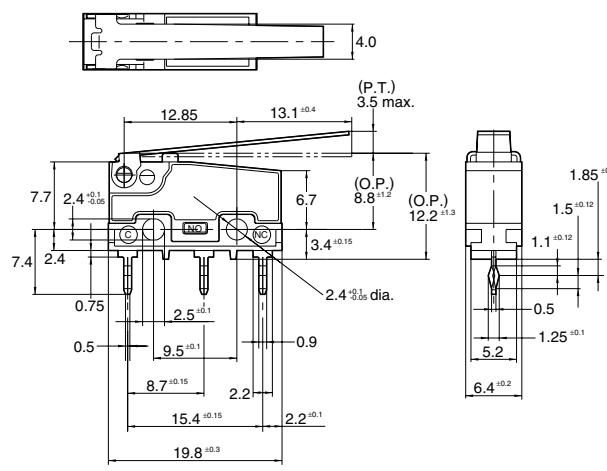
## CAD Data



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

## Long hinge lever

## CAD Data



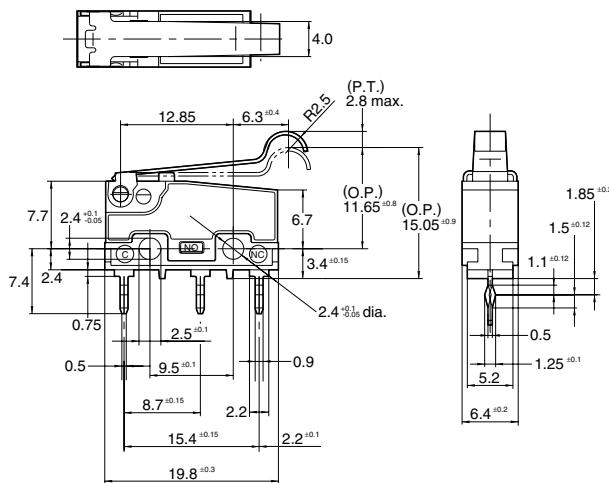
Pretravel, Max. mm	3.5
Movement differential, Max. mm	1.0
Overtravel, Min mm	1.6
Operating position	Distance from mounting hole, mm

# AVM3□□□P

Simulated roller lever

mm General tolerance:  $\pm 0.25$

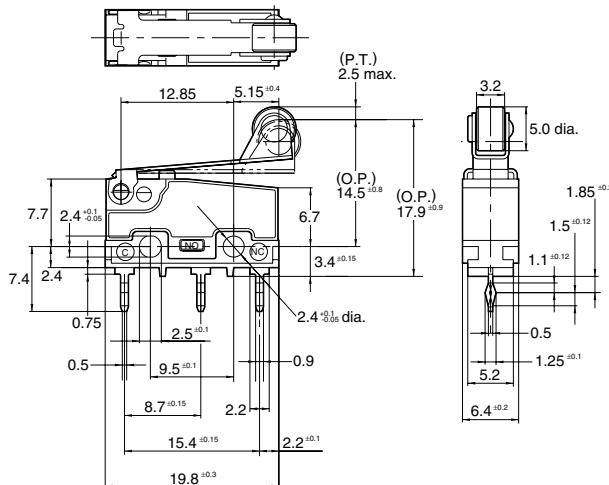
## CAD Data



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

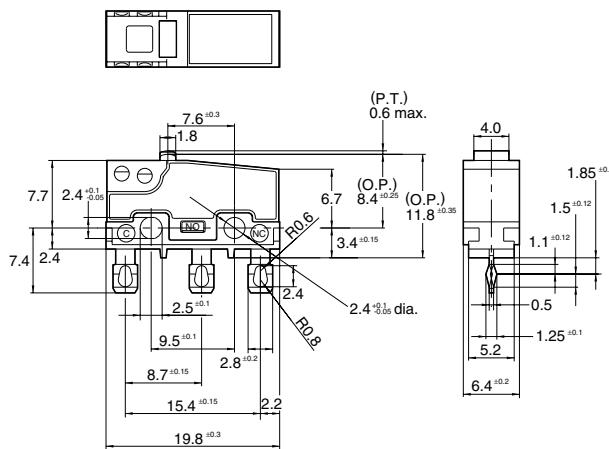


Pretravel, Max. mm	2.5
Movement differential, Max. mm	0.5
Overtravel, Min mm	0.8
Operating position	Distance from mounting hole, mm
	14.5 $\pm 0.8$

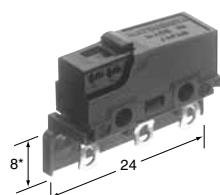
## 2. Self-standing solder terminal

Pin plunger

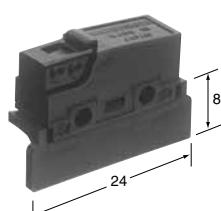
## CAD Data



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.

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[AVM3715619-A](#)