NAiS

HIGH CAPACITY, LONG LIFE SUBMINIATURE SWITCH

PS (AVM3□□□P) SWITCHES



FEATURES

- **10.1 Amp. high contact capacity is available**
- **Long life**
- **H5recise operating position (±0.25mm: Pin plunger type)**
- **Flux-resistant construction with integrally molded terminals**
- **In-line terminals make soldering works easy**

TYPICAL APPLICATIONS

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

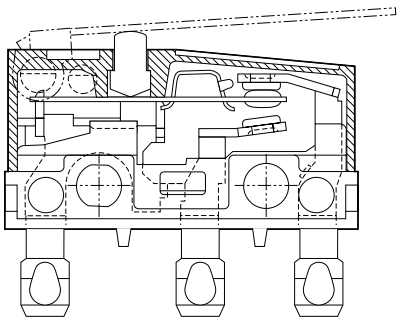
ORDERING INFORMATION

Ex. AVM3 [1] [0] [5] [P]

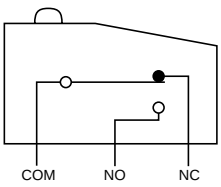
Type of switch	Terminals	Actuators	Operating force by pin plunger, max.	Capacity
PS switch	1: Self-standing solder terminal with guard 2: Self-standing solder terminal without guard 3: Self-standing solder terminal with opposite side guard 4: Self-standing PC terminal	0: Pin plunger 1: Short hinge lever 2: Hinge lever 3: Long hinge lever 4: Simulated roller lever 5: Roller lever	5: 1.47 N {150 gf}	P: High capacity (10.1 A)

Remarks: 1. When ordering UL/CSA approved types (rating: 6×10^3), add suffix 9 to the part No., for example, AVM3205P9.
2. When ordering SEMKO approved types, add suffix 8 to the part No., for example, AVM3205P8.

CONSTRUCTION

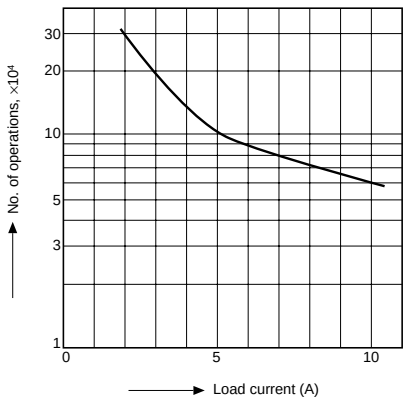


SCHEMATIC



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	AVM3205P	AVM3105P	AVM3305P	AVM3405P
	Short hinge lever	AVM3215P	AVM3115P	AVM3315P	AVM3415P
	Hinge lever	AVM3225P	AVM3125P	AVM3325P	AVM3425P
	Long hinge lever	AVM3235P	AVM3135P	AVM3335P	AVM3435P
	Simulated roller lever	AVM3245P	AVM3145P	AVM3345P	AVM3445P
	Roller lever	AVM3255P	AVM3155P	AVM3355P	AVM3455P

Remarks: 1. When ordering UL/CSA approved types (rating: 6×10^3), add suffix 9 to the part No., for example, AVM3205P9.
2. When ordering SEMKO approved types, add suffix 8 to the part No., for example, AVM3205P8.
3. Packing : Inner box 100 pcs, Outer box 1,000 pcs

SPECIFICATIONS

1. Contact rating

Resistive load (cos $\phi \fallingdotseq 1$)	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), Min. 10^7 (O.T. max.) at 60 cpm
Dielectric strength	Between terminals	1,000 Vrms for 1 min.
	Between terminals and other exposed metal parts	2,000 Vrms for 1 min.
	Between terminals and ground	2,000 Vrms for 1 min.
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 –13 to +155°F (Not freezing below 0°C 32°F)
Ambient humidity		Max. 85% R.H.
Unit weight		Approx. 2g .07oz

3. Operating characteristics

Actuator	Operating force, Max.	Release force, Min.	Pretravel, Max. mm inch	Movement differential, Max. mm inch	Overtravel, Min. mm inch	Operating position mm inch
Pin plunger	1.47 N {150 gf}	0.20 N {20 gf}	0.6 mm .024 inch	0.1 mm .004 inch	0.4 mm .016 inch	8.4±0.25 mm .331±.010 inch
Short hinge lever	0.59 N {60 gf}	0.039 N {4 gf}	2.5 mm .098 inch	0.5 mm .020 inch	0.8 mm .031 inch	8.8±0.8 mm .346±.031 inch
Hinge lever	0.54 N {55 gf}	0.034 N {3.5 gf}	2.8 mm .110 inch	0.8 mm .031 inch	1.2 mm .047 inch	8.8±0.8 mm .346±.031 inch
Long hinge lever	0.44 N {45 gf}	0.029 N {3 gf}	3.5 mm .138 inch	1.0 mm .039 inch	1.6 mm .063 inch	8.8±1.2 mm .346±.047 inch
Simulated roller lever	0.54 N {55 gf}	0.034 N {3.5 gf}	2.8 mm .110 inch	0.8 mm .031 inch	1.2 mm .047 inch	11.65±0.8 mm .459±.031 inch
Roller lever	0.59 N {60 gf}	0.039 N {4 gf}	2.5 mm .098 inch	0.5 mm .020 inch	0.8 mm .031 inch	14.5±0.8 mm .571±.031 inch

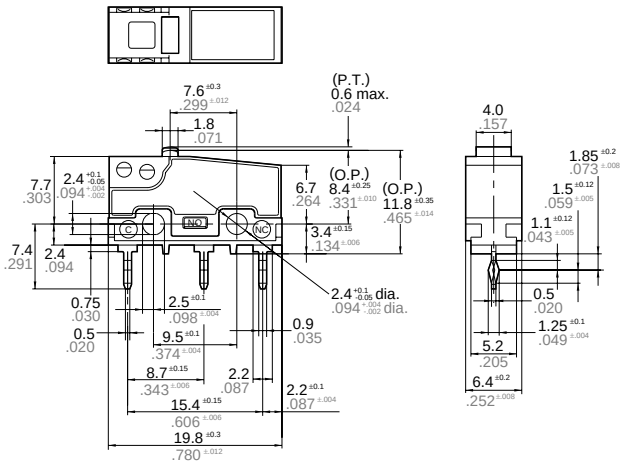
DIMENSIONS

mm inch General tolerance ±0.25 ±.010

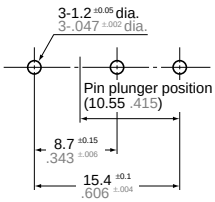
1. Self-standing PC terminal (Without guard)

Pin plunger





PC board pattern



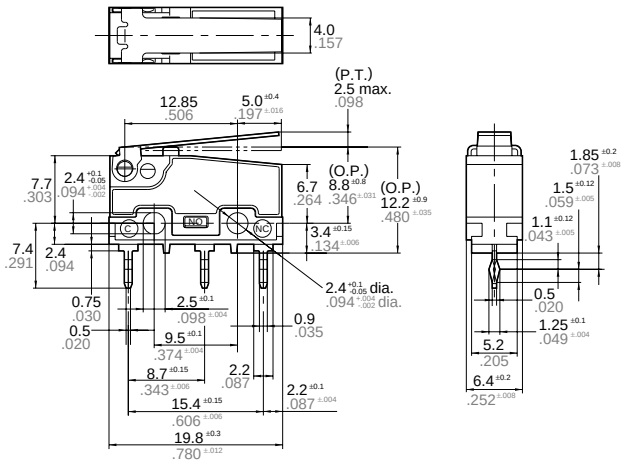
Pretravel, Max. mm inch		0.6 .024
Movement differential, Max. mm inch		0.1 .004
Overtravel, Min mm inch		0.4 .016
Operating position	Distance from mounting hole, mm inch	8.4±0.25 .331±.010

AVM3□□□P

Short hinge lever

mm inch General tolerance ±0.25 ±.010

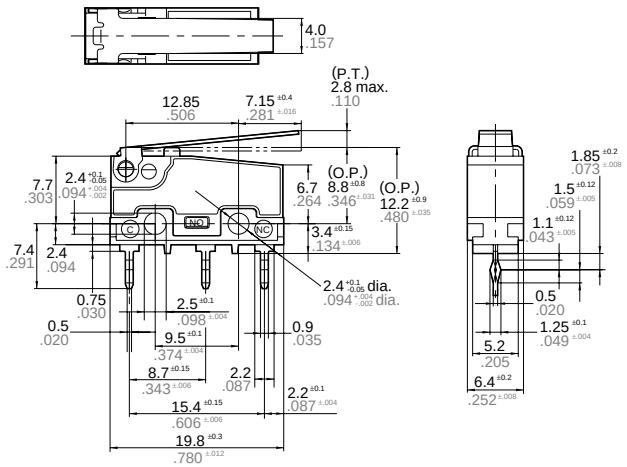




Pretravel, Max. mm inch		2.5 .098
Movement differential, Max. mm inch		0.5 .020
Overtravel, Min mm inch		0.8 .031
Operating position	Distance from mounting hole, mm inch	8.8±0.8 .346±.031

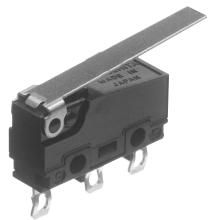
Hinge lever

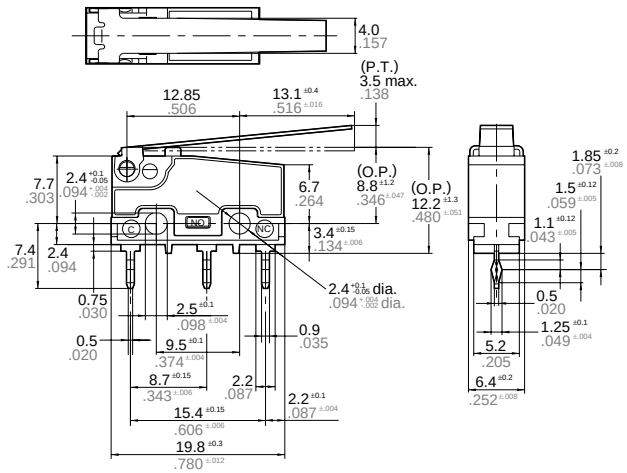




Pretravel, Max. mm inch		2.8 .110
Movement differential, Max. mm inch		0.8 .031
Overtravel, Min mm inch		1.2 .047
Operating position	Distance from mounting hole, mm inch	8.8±0.8 .346±.031

Long hinge lever

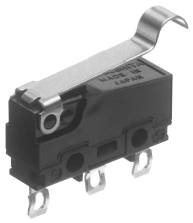


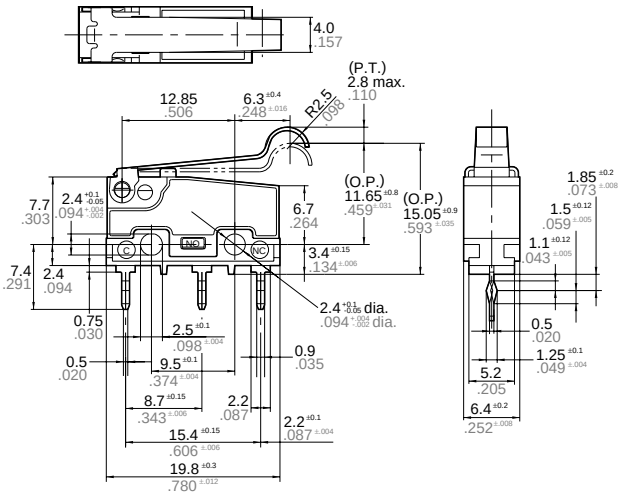


Pretravel, Max. mm inch		3.5 .138
Movement differential, Max. mm inch		1.0 .039
Overtravel, Min mm inch		1.6 .063
Operating position	Distance from mounting hole, mm inch	8.8±1.2 .346±.047

Simulated roller lever

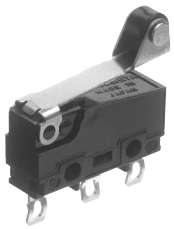
mm inch General tolerance ±0.25 ±.010

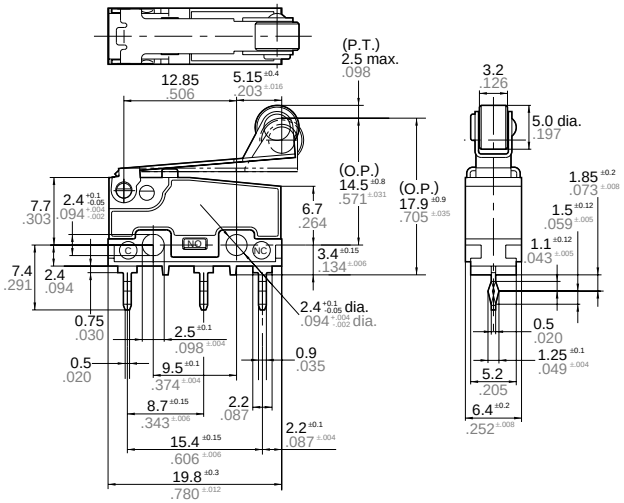




Pretravel, Max. mm inch		2.8 .110
Movement differential, Max. mm inch		0.8 .031
Overtravel, Min mm inch		1.2 .047
Operating position	Distance from mounting hole, mm inch	11.65±0.8 .459±.031

Roller lever



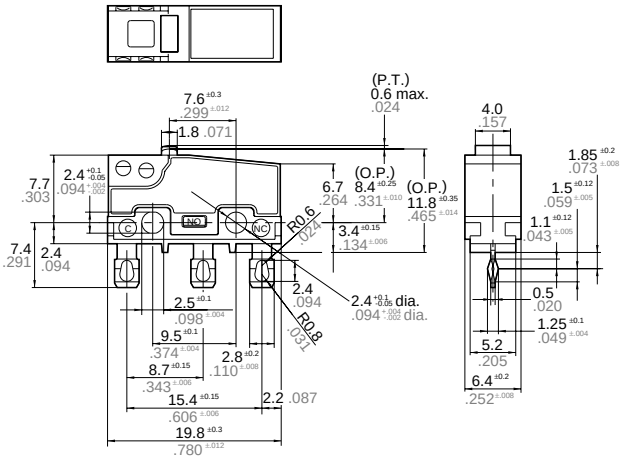


Pretravel, Max. mm inch		2.5 .098
Movement differential, Max. mm inch		0.5 .020
Overtravel, Min mm inch		0.8 .031
Operating position	Distance from mounting hole, mm inch	14.5±0.8 .571±.031

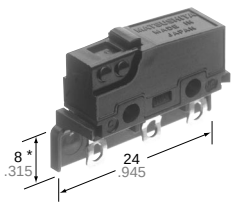
2. Self-standing solder terminal

Pin plunger

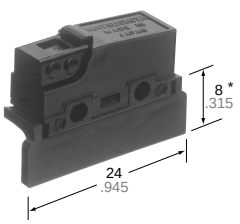




With guard



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 3kgf-cm 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

For manual soldering:

Soldering should be accomplished in less than 3 seconds, with a 60 watt iron. Care should be taken not to apply force to the terminal during soldering.

For automatic soldering:

Soldering should be done less than 6 seconds in 260°C 500°F soldering bath or less than 3 seconds in 350°C 662°F soldering bath.

Terminal portions should not be moved within 1 minute after soldering.

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

3. Selection of the switch

When specifying the switch, allow ±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), FS/FS-T 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.