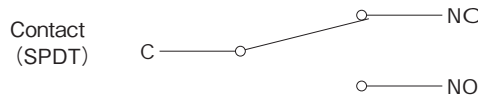


# VM Micro Switch

## Long Life, High current switch.

- Long life and high efficiency.
- We guarantee 2000V Dielectric Strength as it has the long creeping distance between terminals and earth.
- From many variations, you can select for any uses.  
 From low energy circuit (W/E Alloy #1 Cross-bar contact : 0.1A),  
 to high capacity (15A).  
 From 50g to 400g Operating Force : 4 kinds.  
 From lever type Actuators : 4 kinds.



## SPECIFICATIONS

### ● Silver/Gold plated silver contact

Type	VM-11P, VM-11PK	VM-21P, VM-21PK	VM-43P, VM-43PK
Electrical Rating	AC125V, 250V 15A (Res. Load)		AC125V, 250V 5A (Res. Load)
Insulation Resistance	More than 100MΩ, at DC 500V Megger		
Dielectric Strength	AC 1000V between NC and NO terminal AC 2000V <sup>*1</sup> between terminals and ground (Both 50/60Hz for 60 sec. at normal ambient temperature and humidity)		
Contact Resistance	Silver : Less than 15mΩ (at initial), at DC 6V 1A		
	Gold Plated Silver : Less than 50mΩ (at initial), Milliohmmeter		
Withstand Shock <sup>*2</sup>	30G (min.)		10G (min.)
Withstand Vibration <sup>*2</sup>	1.5mm double amplitude, frequency 10~55Hz in 2 hours		
Operating Speed <sup>*2</sup>	0.1mm/sec~1m/sec		
Operating Frequency	Under 300 times per min.		
Mechanical Life	2,000,000 operations (min.)	10,000,000 operations (min.)	
Electrical Life	100,000 operations (min. at rated load)		
Ambient Temperature	-15°C~70°C		
Ambient Humidity	80%RH (max.)		

\*1: Solder & Screw Terminals : AC 1500V

\*2: Shows specifications for Pin Plunger type.

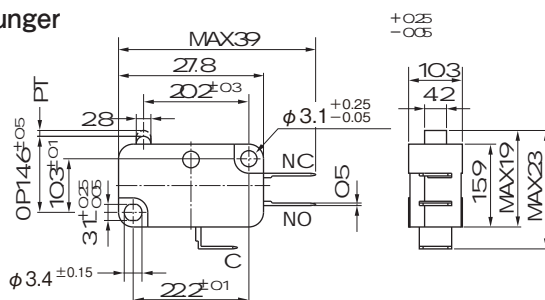
### ● W/E Alloy #1 Cross-bar Contact

Type	VM-3E VM-4E
Electrical Rating	AC125V 0.1A, DC30V 0.1A (Res. Load)
Dielectric Resistance	AC 600V between NC and NO terminal AC 1500V between terminals and ground
Contact Resistance	Less than 50mΩ (Initial) at DC6V 0.1A
Mechanical Life	10,000,000 operations (min.)
Electrical Life	100,000 operations (min. at rated load)

\*Other specs are the same as VM-43P (VM-4E)

## DIMENSIONS

### ● VM-□□P Pin Plunger

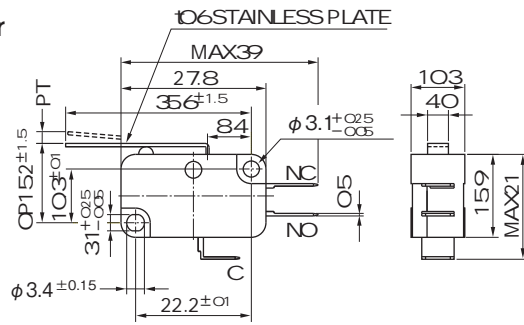


Type	Operating Characteristics				
	OF(g) Max.	RF(g) Min.	PT(mm) Max.	OT(mm) Min.	MD(mm) Max.
VM-1□P	3.92N (40gf)	0.98N (100gf)	1.5	O3	O4
VM-2□P	1.96N (200gf)	0.49N (50gf)	1.5	O3	O4
VM-3□P	0.98N (100gf)	0.29N (29gf)	1.5	O3	O4
VM-4□P	0.49N (50gf)	0.10N (10gf)	1.5	O3	O4

Tolerance : ±0.4mm

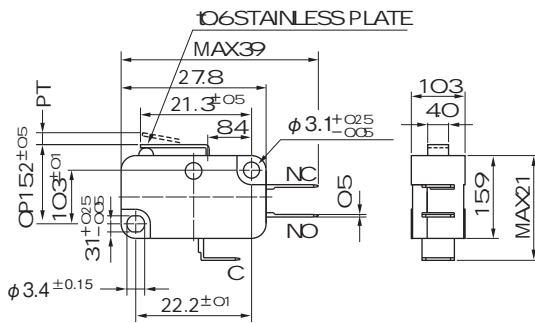
## DIMENSIONS

### VM-□□PDM1 Standard hinged lever



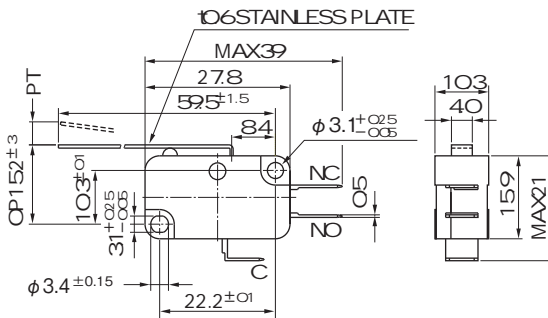
Type	Operating Characteristics				
	OF (g) Max.	RF (g) Min.	PT (mm) Max.	OT (mm) Min.	MD (mm) Max.
VM-1□PDM1	2.16N (220gf)	0.29N (30gf)	36	06	1.2
VM-2□PDM1	1.18N (120gf)	0.15N (15gf)	36	06	1.2
VM-3□PDM1	0.59N (60gf)	0.08N (8gf)	36	06	1.2
VM-4□PDM1	0.29N (30gf)	0.03N (3gf)	36	06	1.2

### VM-□□PDS1 Short hinged lever



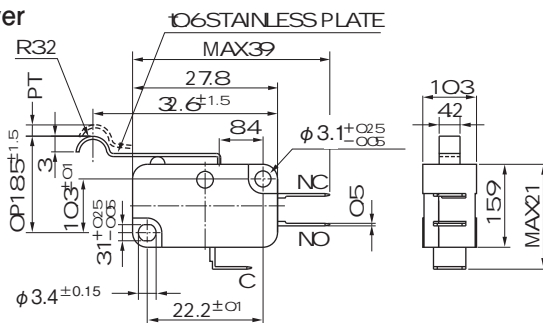
Type	Operating Characteristics				
	OF (g) Max.	RF (g) Min.	PT (mm) Max.	OT (mm) Min.	MD (mm) Max.
VM-1□PDS1	3.92N (400gf)	0.98N (100gf)	1.8	03	05
VM-2□PDS1	1.96N (200gf)	0.49N (50gf)	1.8	03	05
VM-3□PDS1	0.98N (100gf)	0.25N (25gf)	1.8	03	05
VM-4□PDS1	0.49N (50gf)	0.10N (10gf)	1.8	03	05

### VM-□□PDL1 Long hinged lever



Type	Operating Characteristics				
	OF (g) Max.	RF (g) Min.	PT (mm) Max.	OT (mm) Min.	MD (mm) Max.
VM-1□PDL1	1.18N (120gf)	0.20N (20gf)	7.4	1.2	2.2
VM-2□PDL1	0.59N (60gf)	0.10N (10gf)	7.4	1.2	2.2
VM-3□PDL1	0.29N (30gf)	0.05N (5gf)	7.4	1.2	2.2
VM-4□PDL1	0.15N (15gf)	0.02N (2gf)	7.4	1.2	2.2

### VM-□□PDM3 Simulated hinged lever



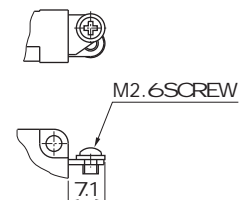
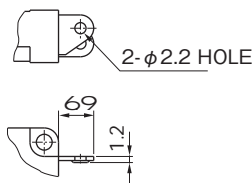
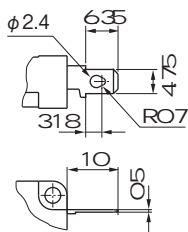
Type	Operating Characteristics				
	OF (g) Max.	RF (g) Min.	PT (mm) Max.	OT (mm) Min.	MD (mm) Max.
VM-1□PDM3	2.16N (220gf)	0.29N (30gf)	36	06	1.2
VM-2□PDM3	1.18N (120gf)	0.15N (15gf)	36	06	1.2
VM-3□PDM3	0.59N (60gf)	0.08N (8gf)	36	06	1.2
VM-4□PDM3	0.29N (30gf)	0.03N (3gf)	36	06	1.2

## TERMINALS/DIMENSIONS

● #187 Tab and Solder Terminal : Mark P

● Solder Terminal : No Mark

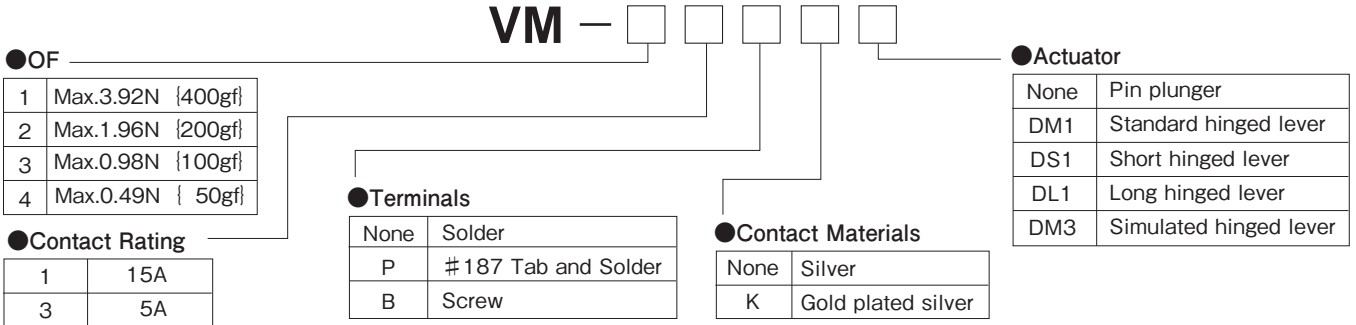
● Screw Terminal : Mark B



Tolerance : ±0.4mm

## ORDERING CODE

### ● Silver/Gold plated silver contact



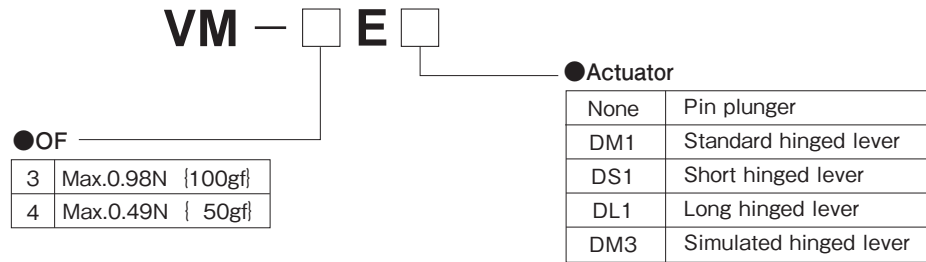
Note) VM-11□□□□, VM-21□□□□, VM-13□□□□, VM-23□□□□, VM-43□□□□

The above OF and Contact Rating combinations are available as Standard type, and the minimum order of other combinations are more than 500 pcs per order.

Following combinations can not be produced.

VM-31□□□□, VM-41□□□□, VM-42□□□□

### ● W/E Alloy #1 Cross-bar Contact



Note) Terminal for W/E Alloy #1 Cross-bar contact is #187 Tab/Solder terminal only.

## HANDLING HINTS

1. When soldering iron of max. 60W for a maximum of 5 seconds on any terminals be careful to ensure that the iron does not touch the switch body.
2. When fixing, use M3 screw and flat/spring washer and fix firmly. Moderate fixing torque is 0.588N-m {6kg-cm} .
3. When mounting on metal body, it is recommended to use insulation cloth between switch and panel.  
We provide exclusive insulation cloth for VM switch.