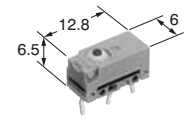


### FEATURES



Dust protected type



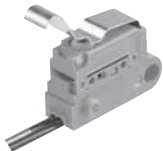
(Mounting hole 2.3mm type)



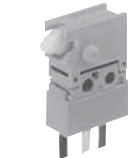
Immersion protected type (wire leads bottom type)



(Mounting hole 2.3mm type)



Immersion protected (wire leads side type)



Long stroke type

- **Ultra-miniature size (12.8×6.5×6 mm)**
- **Sealed construction for use in adverse environment-Sealed construction by epoxy resin and rubber cap greatly reduces possible miscontact due to contaminants such as dust. Conforming to IP67\* of IEC protective construction classification**
- **Elastomer double molding technology, an industry first and ultrasonic swaging technology contribute to uniform sealing in high production quantities**
- **UL/CSA approved (Except the long stroke type of ABJ2 and the side wire leads type.)**
- **Long stroke type is available**  
Since the repeatability is excellent and the play distance (overtravel) from the operating position is ample, the task of performing adjustments during installation is easy.  
Operating position accuracy  $\pm 0.4$  mm  
Overtravel= Min. 2.0 mm  
As wide range of high pressure is achieved, a stable reliability is ensured
- **Leaf lever side wire leads type added. We now offer two types.**  
M3 type installation hole  
Fixed pin type
- **Based on the protective construction classification of IEC, items which satisfy the test requirements are denoted with an IP designation**

### TYPICAL APPLICATIONS

- Industrial use video jack
- Automotive (ex. Device for opening and shutting of automobile doors)

### ORDERING INFORMATION

(If Agency standard required, please refer to the "with Agency standard type". See next page.)

Ex. ABJ 1 4 1 0 4 0

Type of switch	Size of mounting hole	Terminal	Contact arrangement	Actuator	Operating force by pin plunger (max.)	Contact
ABJ: Turquoise switch J type	1: 1.2 mm 2: 2.3 mm 3: 3 mm 4: Fixed pin (right side pin) type Fixed pin (left side pin) type	4: Solder terminal 5: PC board terminal 6: Wire leads (bottom type) 7: Wire leads (right side type) 8: Wire leads (left side type)	1: SPDT 2: SPST-NC (Wire leads type only) 3: SPST-NO (Wire leads type only)	0: Pin plunger 2: Hinge lever 4: Simulated roller lever 6: Roller lever 8: Leaf lever (Mounting hole 3 mm lead wire type only) L: Long stroke type	4: 1.23 N 6: 1.96 N 7: 2.45 N (Long stroke type only)	0: AgNi alloy 1: AgNi alloy + Au-clad

Remarks: 1. Standard packing: Dust protected type 100 pcs./carton, 2,000 pcs./case; Immersion protected type 50 pcs./case.  
2. Not every combination is available. Please refer to the following table, "PRODUCT TYPES".

# ABJ1,2,3,4,5

With Agency standard type

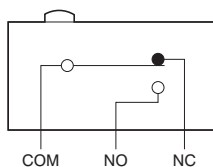
Ex. ABJ 1 4 1 0 4 0 9

Type of switch	Size of mounting hole	Terminal	Contact arrangement	Actuator	Operating force by pin plunger (max.)	Contact	Agency standard
ABJ: Turquoise switch J type	1: 1.2 mm 2: 2.3 mm 3: 3 mm	4: Solder terminal 5: PC board terminal 6: Wire leads (bottom type)	1: SPDT 2: SPST-NC (Wire leads type only) 3: SPST-NO (Wire leads type only)	0: Pin plunger 2: Hinge lever 4: Simulated roller lever 6: Roller lever 8: Leaf lever (Mounting hole 3 mm lead wire type only)	4: 1.23 N 6: 1.96 N	0: AgNi alloy 1: AgNi alloy + Au-clad	9: UL/CSA $6 \times 10^3$ rated (Except wire leads type)

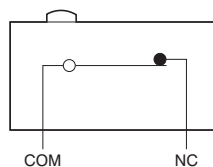
Remarks: 1. Standard packing: Dust protected type 100 pcs./carton, 2,000 pcs./case; Immersion protected type 50 pcs./case.  
2. Not every combination is available. Please refer to the following table, "PRODUCT TYPES".

## CONTACT ARRANGEMENT

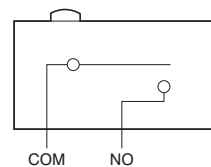
1. SPDT



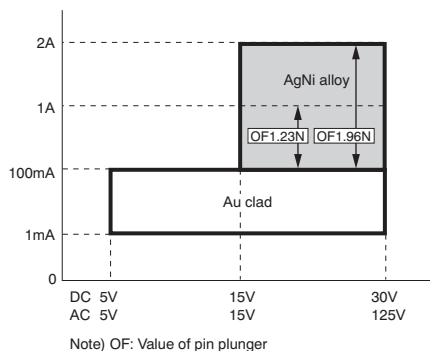
2. SPST-NC (Wire leads type only)



3. SPST-NO (Wire leads type only)



## APPLICABLE CURRENT RANGE (reference)



**PRODUCT TYPES****1. Dust protected type (Terminal type)**

Mounting hole 1.2mm type / Mounting hole 2.3mm type

AgNi alloy

Actuator	Operating force Max.	Mounting hole 1.2 mm type		Mounting hole 2.3 mm type
		Solder terminal	PC board terminal	Solder terminal
Pin plunger	1.23 N	ABJ1410409	ABJ1510409	ABJ2410409
	1.96 N	ABJ1410609	ABJ1510609	ABJ2410609
Hinge lever	0.39 N	ABJ1412409	ABJ1512409	ABJ2412409
	0.64 N	ABJ1412609	ABJ1512609	ABJ2412609
Simulated roller lever	0.39 N	ABJ1414409	ABJ1514409	ABJ2414409
	0.64 N	ABJ1414609	ABJ1514609	ABJ2414609
Roller lever	0.39 N	ABJ1416409	ABJ1516409	ABJ2416409
	0.64 N	ABJ1416609	ABJ1516609	ABJ2416609

AgNi alloy + Au-clad

Actuator	Operating force Max.	Mounting hole 1.2 mm type		Mounting hole 2.3 mm type
		Solder terminal	PC board terminal	Solder terminal
Pin plunger	1.23 N	ABJ1410419	ABJ1510419	ABJ2410419
	1.96 N	ABJ1410619	ABJ1510619	ABJ2410619
Hinge lever	0.39 N	ABJ1412419	ABJ1512419	ABJ2412419
	0.64 N	ABJ1412619	ABJ1512619	ABJ2412619
Simulated roller lever	0.39 N	ABJ1414419	ABJ1514419	ABJ2414419
	0.64 N	ABJ1414619	ABJ1514619	ABJ2414619
Roller lever	0.39 N	ABJ1416419	ABJ1516419	ABJ2416419
	0.64 N	ABJ1416619	ABJ1516619	ABJ2416619

**2-(1). Immersion protected type (Bottom wire leads type)**

Mounting hole 1.2mm type

AgNi alloy

Actuator	Operating force Max.	Mounting hole 1.2 mm type		
		SPDT	SPST-NC	SPST-NO
Pin plunger	1.23 N	ABJ161040	ABJ162040	ABJ163040
	1.96 N	ABJ161060	ABJ162060	ABJ163060
Hinge lever	0.39 N	ABJ161240	ABJ162240	ABJ163240
	0.64 N	ABJ161260	ABJ162260	ABJ163260
Simulated roller lever	0.39 N	ABJ161440	ABJ162440	ABJ163440
	0.64 N	ABJ161460	ABJ162460	ABJ163460
Roller lever	0.39 N	ABJ161640	ABJ162640	ABJ163640
	0.64 N	ABJ161660	ABJ162660	ABJ163660

AgNi alloy + Au-clad

Actuator	Operating force Max.	Mounting hole 1.2 mm type		
		SPDT	SPST-NC	SPST-NO
Pin plunger	1.23 N	ABJ161041	ABJ162041	ABJ163041
	1.96 N	ABJ161061	ABJ162061	ABJ163061
Hinge lever	0.39 N	ABJ161241	ABJ162241	ABJ163241
	0.64 N	ABJ161261	ABJ162261	ABJ163261
Simulated roller lever	0.39 N	ABJ161441	ABJ162441	ABJ163441
	0.64 N	ABJ161461	ABJ162461	ABJ163461
Roller lever	0.39 N	ABJ161641	ABJ162641	ABJ163641
	0.64 N	ABJ161661	ABJ162661	ABJ163661

# ABJ1,2,3,4,5

Mounting hole 2.3mm type  
AgNi alloy

Actuator	Operating force Max.	Mounting hole 2.3 mm type		
		SPDT	SPST-NC	SPST-NO
Pin plunger	1.23 N	ABJ261040	ABJ262040	ABJ263040
	1.96 N	ABJ261060	ABJ262060	ABJ263060
Hinge lever	0.39 N	ABJ261240	ABJ262240	ABJ263240
	0.64 N	ABJ261260	ABJ262260	ABJ263260
Simulated roller lever	0.39 N	ABJ261440	ABJ262440	ABJ263440
	0.64 N	ABJ261460	ABJ262460	ABJ263460
Roller lever	0.39 N	ABJ261640	ABJ262640	ABJ263640
	0.64 N	ABJ261660	ABJ262660	ABJ263660

AgNi alloy + Au-clad

Actuator	Operating force Max.	Mounting hole 2.3 mm type		
		SPDT	SPST-NC	SPST-NO
Pin plunger	1.23 N	ABJ261041	ABJ262041	ABJ263041
	1.96 N	ABJ261061	ABJ262061	ABJ263061
Hinge lever	0.39 N	ABJ261241	ABJ262241	ABJ263241
	0.64 N	ABJ261261	ABJ262261	ABJ263261
Simulated roller lever	0.39 N	ABJ261441	ABJ262241	ABJ263441
	0.64 N	ABJ261461	ABJ262461	ABJ263461
Roller lever	0.39 N	ABJ261641	ABJ262641	ABJ263641
	0.64 N	ABJ261661	ABJ262661	ABJ263661

Mounting hole 3mm type (Leaf lever type)  
AgNi alloy

Actuator	Operating force Max.	Mounting hole 3 mm type		
		SPDT	SPST-NC	SPST-NO
Leaf lever	0.98 N	ABJ361840	ABJ362840	ABJ363840
	1.27 N	ABJ361860	ABJ362860	ABJ363860

AgNi alloy + Au-clad

Actuator	Operating force Max.	Mounting hole 3 mm type		
		SPDT	SPST-NC	SPST-NO
Leaf lever	0.98 N	ABJ361841	ABJ362841	ABJ363841
	1.27 N	ABJ361861	ABJ362861	ABJ363861

## 2-(2). Immersion protected type (Side wire leads type)

Fixed pin (right side pin) type  
AgNi alloy

Actuator	Operating force Max.	Wire leads direction	Wire leads type	
			SPST-NC	SPST-NO
Leaf lever	1.27 N	Right	ABJ472840	ABJ473840
	1.27 N	Left	ABJ482840	—
	1.76 N	Right	ABJ472860	ABJ473860
	1.76 N	Left	ABJ482860	—

AgNi alloy + Au-clad

Actuator	Operating force Max.	Wire leads direction	Wire leads type	
			SPST-NC	SPST-NO
Leaf lever	1.27 N	Right	ABJ472841	ABJ473841
	1.27 N	Left	ABJ482841	—
	1.76 N	Right	ABJ472861	ABJ473861
	1.76 N	Left	ABJ482861	—

Fixed pin (left side pin) type  
AgNi alloy

Actuator	Operating force Max.	Wire leads direction	Wire leads type	
			SPST-NC	SPST-NO
Leaf lever	1.27 N	Right	ABJ572840	ABJ573840
	1.27 N	Left	ABJ582840	—
	1.76 N	Right	ABJ572860	ABJ573860
	1.76 N	Left	ABJ582860	—

AgNi alloy + Au-clad

Actuator	Operating force Max.	Wire leads direction	Wire leads type	
			SPST-NC	SPST-NO
Leaf lever	1.27 N	Right	ABJ572841	ABJ573841
	1.27 N	Left	ABJ582841	—
	1.76 N	Right	ABJ572861	ABJ573861
	1.76 N	Left	ABJ582861	—

Mounting hole 3mm type  
AgNi alloy

Actuator	Operating force Max.	Wire leads direction	Wire leads type	
			SPST-NC	SPST-NO
Leaf lever	1.27 N	Left	ABJ382840	—
	1.76 N		ABJ382860	—

AgNi alloy + Au-clad

Actuator	Operating force Max.	Wire leads direction	Wire leads type	
			SPST-NC	SPST-NO
Leaf lever	1.27 N	Left	ABJ382841	—
	1.76 N		ABJ382861	—

**3. Immersion protected type (Bottom wire leads type) Long stroke type**

Mounting hole 2.3mm type

AgNi alloy

Actuator	Operating force Max.	Mounting hole 2.3 mm type		
		SPDT	SPST-NC	SPST-NO
Pin plunger (Horizontal)	2.45 N	*ABJ261L70	ABJ262L70	ABJ263L70

AgNi alloy + Au-clad

Actuator	Operating force Max.	Mounting hole 2.3 mm type		
		SPDT	SPST-NC	SPST-NO
Pin plunger (Horizontal)	2.45 N	*ABJ261L71	ABJ262L71	ABJ263L71

**SPECIFICATIONS**

**1. Contact rating**

Type	Operating force Max.	Standard rating	Low-level circuit rating
AgNi alloy contact	1.76 N, 1.96 N	2 A 125 V AC 2 A 30 V DC	—
	1.23 N, 1.27 N	1 A 125 V AC 1 A 30 V DC	—
Long stroke type AgNi alloy contact	2.45 N	1 A 125 V AC 1 A 30 V DC	—
AgNi alloy + Au-clad contact	1.23 N, 1.27 N 1.76 N, 1.96 N	0.1 A 125 V AC 0.1 A 30 V DC	5 mA 6 V DC 2 mA 12 V DC 1 mA 24 V DC
Long stroke type AgNi alloy + Au-clad contact	2.45 N	0.1 A 125 V AC 0.1 A 30 V DC	5 mA 6 V DC 2 mA 12 V DC 1 mA 24 V DC

# ABJ1,2,3,4,5

## 2. Characteristics

Mechanical life (O.T.: Specified value)	Leaf lever, Long stroke type	Min. $5 \times 10^5$ (at 60 cpm)
	Wire leads (right & left side type)	Min. $3 \times 10^5$ (at 60 cpm)
	Other types	Min. $10^6$ (at 60 cpm)
Electrical life at rated load (O.T.: max.)	AgNi alloy contact type	Min. $3 \times 10^4$ (at 20 cpm)
	AgNi alloy + Au-clad contact type	Min. $10^5$ (at 20 cpm)
Insulation resistance		Min. 100 M $\Omega$ (at 500 V DC insulation resistance meter)
Dielectric strength		
Between non-continuous terminals		600 Vrms
Between each terminal and other exposed metal parts		1,500 Vrms
Between each terminal and ground		1,500 Vrms
Vibration resistance (Pin plunger type)		10 to 55 Hz at single amplitude of 0.75 mm (Contact opening max. 1 msec.)
Shock resistance (Pin plunger type)		Min. 294 m/s <sup>2</sup> {30 G} (Contact opening max. 1 msec.)
Contact resistance (Initial)	Ag contact type	Dust protected type (IP50): Max. 50 m $\Omega$ Immersion protected type (IP67): Max. 100 m $\Omega$ (By voltage drop 1 A 6 to 8 V DC)
	Au-clad contact type	Dust protected type (IP50): Max. 100 m $\Omega$ Immersion protected type (IP67): Max. 150 m $\Omega$ (By voltage drop 0.1 A 6 to 8 V DC)
Allowable operating speed (at no load)		1 to 500 mm/sec.
Max. operating cycle rate (at no load)		Other type: 120 cpm Long stroke type: 60 cpm
Ambient temperature		-40°C to +85°C
Unit weight		Approx. 0.5 g (IP50 type)
Water resistance		IP67 (Wire leads type)

## 3. Operating characteristics

Type of actuator	8th digit of Part No.	Operating force, Max.	Release force, Min	Pretravel, Max. mm	Movement differential, Max. mm	Overtravel, Min. mm	Operating position, mm	
Pin plunger	4	1.23N	0.15N	0.6	0.12	0.25	Mounting hole: 1.2 5.5 $\pm$ 0.2	
	6	1.96N	0.25N				Mounting hole: 2.3 7.0 $\pm$ 0.2	
Hinge lever	4	0.39N	0.029N	3.0	0.5	0.5	Mounting hole: 1.2 6.8 $\pm$ 1.0	
	6	0.64N	0.049N				Mounting hole: 2.3 8.3 $\pm$ 1.0	
Simulated roller lever	4	0.39N	0.029N	3.0	0.5	0.5	Mounting hole: 1.2 9.8 $\pm$ 1.0	
	6	0.64N	0.049N				Mounting hole: 2.3 11.3 $\pm$ 1.0	
Roller lever	4	0.39N	0.029N	3.0	0.5	0.5	Mounting hole: 1.2 13.1 $\pm$ 1.0	
	6	0.64N	0.049N				Mounting hole: 2.3 14.6 $\pm$ 1.0	
Leaf lever	Wire leads bottom type	4	0.98N	0.20N	6.0	1.0	2.5	Mounting hole: 3.0 16.0 $\pm$ 2.0
		6	1.27N	0.29N	6.0	1.0	2.5	Mounting hole: 3.0 16.0 $\pm$ 2.0
	Wire leads side type	4	1.76N	0.26N	2.6	0.5	1.4	Fixed pin type 10.7 $\pm$ 0.7 Mounting hole: 3.0 16.25 $\pm$ 0.7
		6	1.27N	0.22N	2.6	0.5	1.4	Fixed pin type 10.7 $\pm$ 0.7 Mounting hole: 3.0 16.25 $\pm$ 0.7
Long stroke type	7	2.45N	0.20N	—	0.5	2.0	2.5 $\pm$ 0.4	

Note: The O.P. differs between the 1.2 mm and 2.3 mm dia. mounting hole types.

## DIMENSIONS

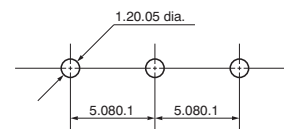
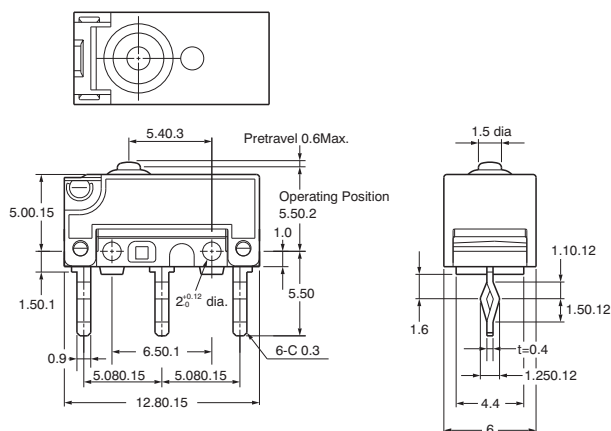
Interested in CAD data? You can obtain CAD data for all products with a **CAD Data** mark from your local Panasonic Electric Works representative.

mm General tolerance:  $\pm 0.25$

### 1. Dust protected type

1-(1) PC board terminal  
Mounting hole 1.2 mm type  
Pin plunger

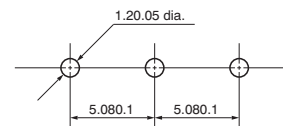
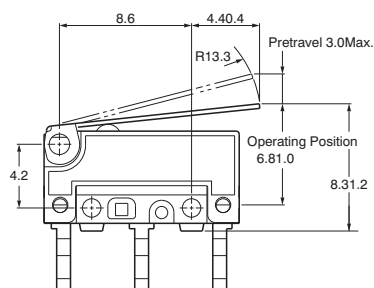
**CAD Data**



Pretravel, Max. mm	0.6	
Movement differential, Max. mm	0.12	
Overtravel, Min. mm	0.25	
Operating position	Distance from mounting hole, mm	5.5 $\pm$ 0.2
	Distance from stand-off, mm	7 $\pm$ 0.3

### Hinge lever

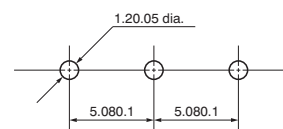
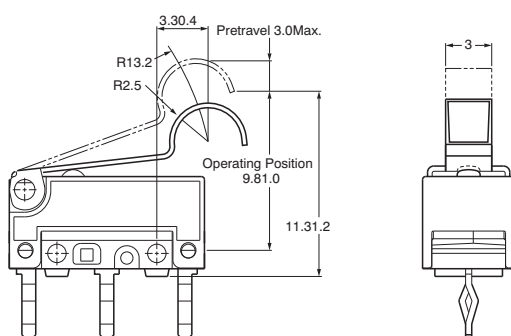
**CAD Data**



Pretravel, Max. mm	3.0	
Movement differential, Max. mm	0.5	
Overtravel, Min. mm	0.5	
Operating position	Distance from mounting hole, mm	6.8 $\pm$ 1.0
	Distance from stand-off, mm	8.3 $\pm$ 1.2

### Simulated roller lever

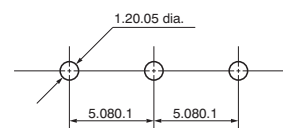
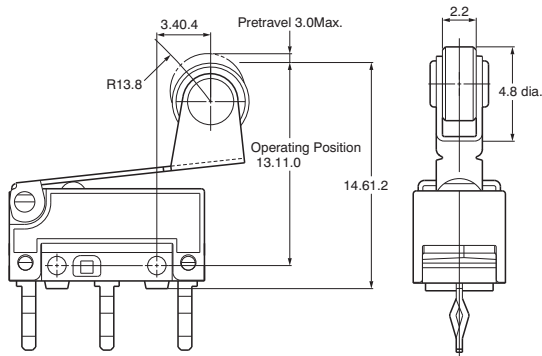
**CAD Data**



Pretravel, Max. mm	3.0	
Movement differential, Max. mm	0.5	
Overtravel, Min. mm	0.5	
Operating position	Distance from mounting hole, mm	9.8 $\pm$ 1.0
	Distance from stand-off, mm	11.3 $\pm$ 1.2

### Roller lever

**CAD Data**



Pretravel, Max. mm	3.0	
Movement differential, Max. mm	0.5	
Overtravel, Min. mm	0.5	
Operating position	Distance from mounting hole, mm	13.1 $\pm$ 1.0
	Distance from stand-off, mm	14.6 $\pm$ 1.0

# ABJ1,2,3,4,5

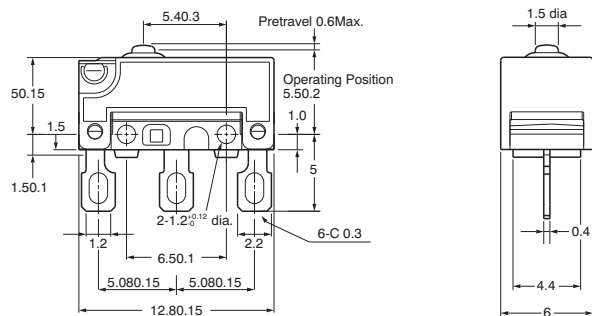
1-(2) Solder terminal

mm General tolerance:  $\pm 0.25$

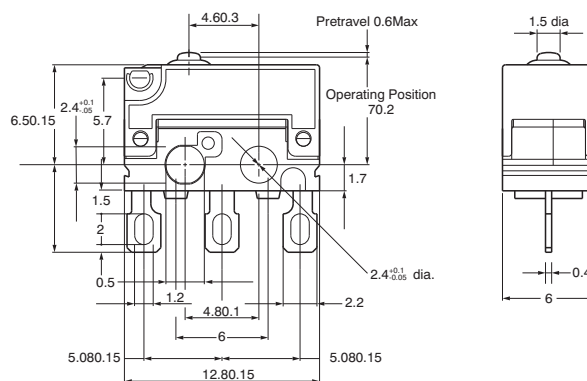
Pin plunger

**CAD Data**

Mounting hole: 1.2 mm



Mounting hole: 2.3 mm



Remarks: Dimensions of the actuator type are the same as corresponding PC board terminal types.

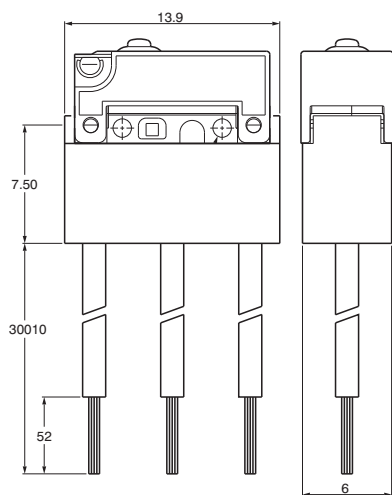
## 2. Immersion protected type

2-(1) Bottom wire leads type

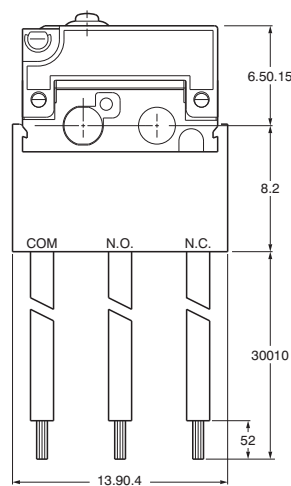
Pin plunger

**CAD Data**

Mounting hole: 1.2 mm



Mounting hole: 2.3 mm



Thickness of the lead wire: 0.3 mm<sup>2</sup>  
 UL/CSA approved type: AWG22  
 Color of the lead wire:  
 COM... Black  
 N.C. ... Red  
 N.O. ... White

Thickness of the lead wire: 0.3 mm<sup>2</sup>  
 UL/CSA approved type: AWG22  
 Color of the lead wire:  
 COM... Black  
 N.C. ... Red  
 N.O. ... White

Remarks: 1. As for M1.2 type, other dimensions are the same as those of corresponding PC board terminal types.

As for M2.3 type, other dimensions are the same as those of corresponding solder terminal types.

2. Dimensions of the actuator type are the same as corresponding PC board terminal types.



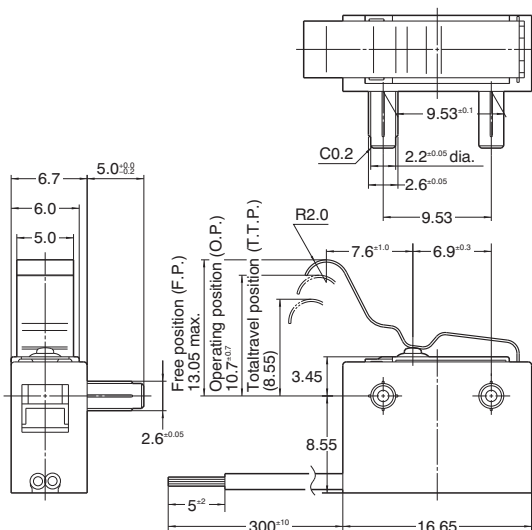
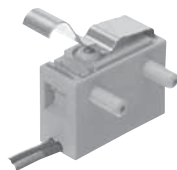


# ABJ1,2,3,4,5

Right side pin type  
Left wire leads type

mm General tolerance:  $\pm 0.25$

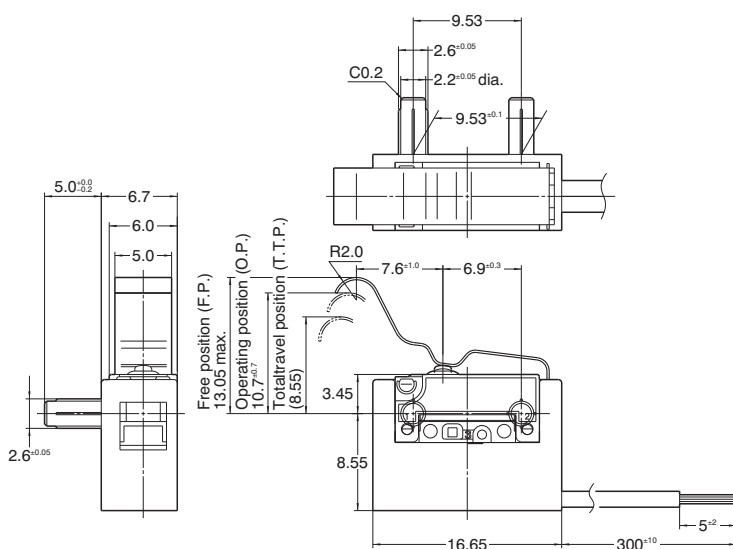
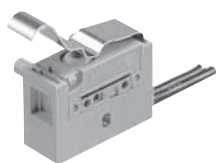
**CAD Data**



Pretravel, Max. mm	2.6	
Movement differential, Max. mm	0.5	
Overtravel, Min mm	1.4	
Operating position	Distance from mounting hole, mm	10.7 $\pm$ 0.7

Left side pin type  
Right wire leads type

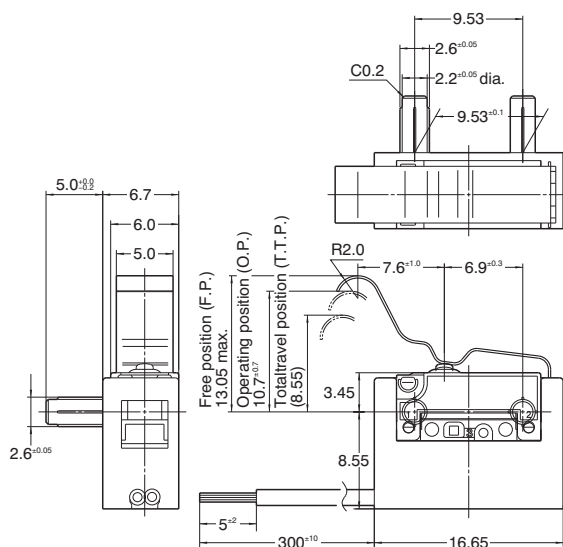
**CAD Data**



Pretravel, Max. mm	2.6	
Movement differential, Max. mm	0.5	
Overtravel, Min mm	1.4	
Operating position	Distance from mounting hole, mm	10.7 $\pm$ 0.7

Left side pin type  
Left wire leads type

**CAD Data**

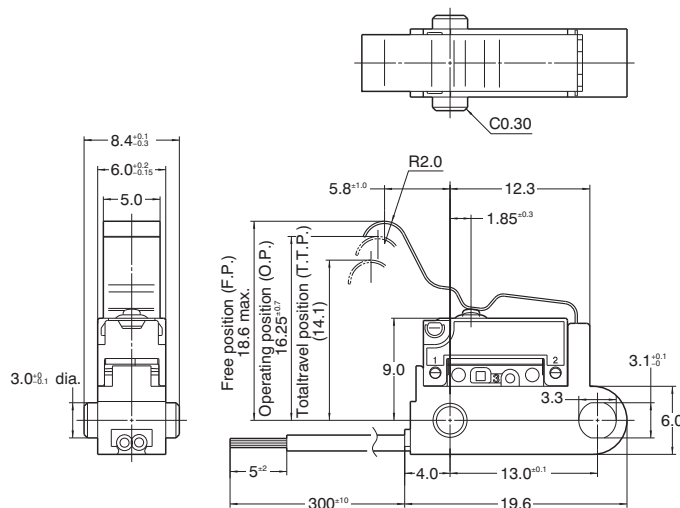
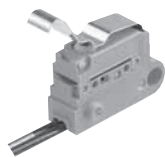


Pretravel, Max. mm	2.6	
Movement differential, Max. mm	0.5	
Overtravel, Min mm	1.4	
Operating position	Distance from mounting hole, mm	10.7 $\pm$ 0.7

Mounting hole 3mm type

mm General tolerance:  $\pm 0.25$

**CAD Data**

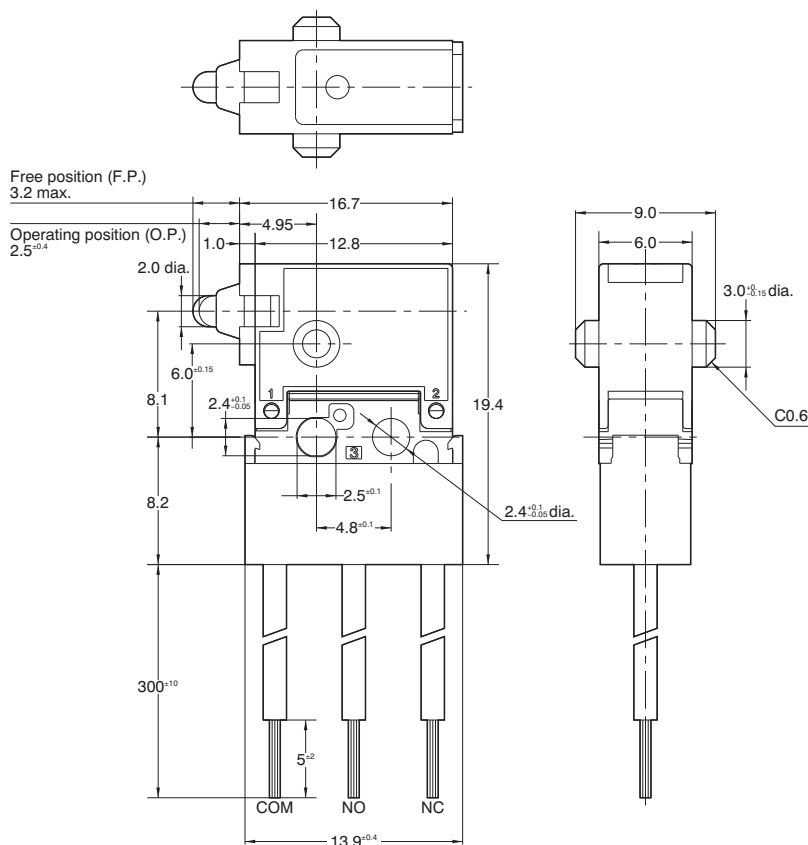


Pretravel, Max. mm		2.6
Movement differential, Max. mm		0.5
Overtravel, Min mm		1.4
Operating position	Distance from mounting hole, mm	16.25 $\pm$ 0.7

### 3. Immersion protected type (Bottom wire leads type) Long stroke type

Mounting hole: 2.3 mm

**CAD Data**



Movement differential, Max. mm		0.5
Overtravel, Min mm		2.0
Operating position		2.5 $\pm$ 0.4