

### FEATURES

- Subminiature size (19.8×11.1×6.4 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
  - Expansion of low-level circuit type
  - We offer a Au clad 2-ply contact type (for small loads) that we developed specifically for small current and voltage loads in the range of 1 mA to 100 mA and 5 V to 30 V.
  - UL/CSA/VDE/SEMKO approved (AS for Au-clad twin layer, VDE and SEMKO are not approved.)
- \* Based on the protective construction classification of IEC, items which satisfy the test requirements are denoted with an IP designation.

### TYPICAL APPLICATIONS

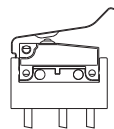
- Automotive
- Home appliances (vacuum cleaner, air purifier)
- Others (gas cooking range)

### ORDERING INFORMATION

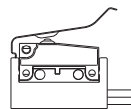
Ex. ABS 1 1 1 0 4 0 3

Type of switch	Wire and terminal position	Terminal	Contact arrangement	Actuator	Operating force by pin plunger (max.)	Contact*	Agency standard
ABS: Turquoise switch S type	1: Straight type 4: Right angle 5: Left angle	1: .110 quick-connect terminal 4: Solder terminal 5: PC board terminal 6: Wire leads	1: SPDT	0: Pin plunger 1: Short hinge lever 2: Hinge lever 3: Long hinge lever 4: Simulated roller lever 6: Roller lever 8: Leaf lever	4: 0.98 N 5: 1.47 N	0: AgNi alloy 1: Au-clad triple layer 4: Au-clad double layer	3: UL/CSA/VDE/SEMKO (AgNi alloy contact, Au-clad triple layer type) 9: UL/CSA (Au-clad double layer type)

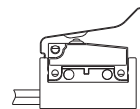
Remarks: 1. Standard packing: Dust protected type 100 pcs./carton, 1,000 pcs./case; Immersion protected type 50 pcs./case.  
2. Leaf lever is only available for wire leads type  
3. As for wire position:



Straight type



Wire opposite to the actuator side type (Right angle)



Wire actuator side type (Left angle)

4. Not every combination is available. Please refer to the following table, "PRODUCT TYPES".

\* Contact

0: AgNi alloy



1: Au-clad triple layer



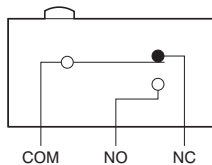
4: Au-clad double layer



# ABS1,4,5

## CONTACT ARRANGEMENT

### 1. SPDT



## PRODUCT TYPES

Dust protected type

AgNi alloy

Actuator	Operating force max.	.110 quick-connect terminal	Solder terminal	PC board terminal		
				Terminal position		
				Straight	Right angle	Left angle
Pin plunger	0.98 N	ABS1110403	ABS1410403	ABS1510403	ABS4510403	ABS5510403
	1.47 N	ABS1110503	ABS1410503	ABS1510503	ABS4510503	ABS5510503
Short hinge lever	0.39 N	ABS1111403	ABS1411403	ABS1511403	ABS4511403	ABS5511403
	0.59 N	ABS1111503	ABS1411503	ABS1511503	ABS4511503	ABS5511503
Hinge lever	0.34 N	ABS1112403	ABS1412403	ABS1512403	ABS4512403	ABS5512403
	0.54 N	ABS1112503	ABS1412503	ABS1512503	ABS4512503	ABS5512503
Long hinge lever	0.25 N	ABS1113403	ABS1413403	ABS1513403	ABS4513403	ABS5513403
	0.44 N	ABS1113503	ABS1413503	ABS1513503	ABS4513503	ABS5513503
Simulated roller lever	0.34 N	ABS1114403	ABS1414403	ABS1514403	ABS4514403	ABS5514403
	0.54 N	ABS1114503	ABS1414503	ABS1514503	ABS4514503	ABS5514503
Roller lever	0.39 N	ABS1116403	ABS1416403	ABS1516403	ABS4516403	ABS5516403
	0.59 N	ABS1116503	ABS1416503	ABS1516503	ABS4516503	ABS5516503

### Au-clad triple layer

Actuator	Operating force max.	.110 quick-connect terminal	Solder terminal	PC board terminal		
				Terminal position		
				Straight	Right angle	Left angle
Pin plunger	0.98 N	ABS1110413	ABS1410413	ABS1510413	ABS4510413	ABS5510413
	1.47 N	ABS1110513	ABS1410513	ABS1510513	ABS4510513	ABS5510513
Short hinge lever	0.39 N	ABS1111413	ABS1411413	ABS1511413	ABS4511413	ABS5511413
	0.59 N	ABS1111513	ABS1411513	ABS1511513	ABS4511513	ABS5511513
Hinge lever	0.34 N	ABS1112413	ABS1412413	ABS1512413	ABS4512413	ABS5512413
	0.54 N	ABS1112513	ABS1412513	ABS1512513	ABS4512513	ABS5512513
Long hinge lever	0.25 N	ABS1113413	ABS1413413	ABS1513413	ABS4513413	ABS5513413
	0.44 N	ABS1113513	ABS1413513	ABS1513513	ABS4513513	ABS5513513
Simulated roller lever	0.34 N	ABS1114413	ABS1414413	ABS1514413	ABS4514413	ABS5514413
	0.54 N	ABS1114513	ABS1414513	ABS1514513	ABS4514513	ABS5514513
Roller lever	0.39 N	ABS1116413	ABS1416413	ABS1516413	ABS4516413	ABS5516413
	0.59 N	ABS1116513	ABS1416513	ABS1516513	ABS4516513	ABS5516513

### Au-clad double layer

Actuator	Operating force max.	.110 quick-connect terminal	Solder terminal	PC board terminal		
				Terminal position		
				Straight	Right angle	Left angle
Pin plunger	0.98 N	ABS1110449	ABS1410449	ABS1510449	ABS4510449	ABS5510449
	1.47 N	ABS1110549	ABS1410549	ABS1510549	ABS4510549	ABS5510549
Short hinge lever	0.39 N	ABS1111449	ABS1411449	ABS1511449	ABS4511449	ABS5511449
	0.59 N	ABS1111549	ABS1411549	ABS1511549	ABS4511549	ABS5511549
Hinge lever	0.34 N	ABS1112449	ABS1412449	ABS1512449	ABS4512449	ABS5512449
	0.54 N	ABS1112549	ABS1412549	ABS1512549	ABS4512549	ABS5512549
Long hinge lever	0.25 N	ABS1113449	ABS1413449	ABS1513449	ABS4513449	ABS5513449
	0.44 N	ABS1113549	ABS1413549	ABS1513549	ABS4513549	ABS5513549
Simulated roller lever	0.34 N	ABS1114449	ABS1414449	ABS1514449	ABS4514449	ABS5514449
	0.54 N	ABS1114549	ABS1414549	ABS1514549	ABS4514549	ABS5514549
Roller lever	0.39 N	ABS1116449	ABS1416449	ABS1516449	ABS4516449	ABS5516449
	0.59 N	ABS1116549	ABS1416549	ABS1516549	ABS4516549	ABS5516549

\* Agency standard: Please refer to "Ordering information".

## SPECIFICATIONS

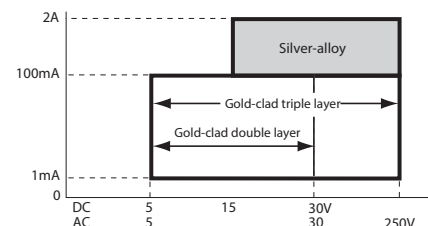
### 1. Contact rating

Voltage	AgNi alloy contact type		Au-clad contact type	
			Au-clad triple layer	Au-clad twin layer
	Resistive load	Inductive load	Resistive load	
125 V AC	2 A	2 A	0.1 A	—
250 V AC	2 A	2 A	0.1 A	—
30 V DC	2 A	2 A	0.1 A	0.1 A
125 V DC	0.4 A	0.05 A	—	—

#### Low-level circuit rating (Au-clad contact type)

Rated voltage	Resistive load
6 V DC	5 mA
12 V DC	2 mA
24 V DC	1 mA

Recommended contact material chart classified by load voltage & current (reference)



Remarks: If the contact is being used in the constant low-level circuit load range, the Au-clad twin layer contact is recommended. If there is a danger of the current being less than 0.5 A, for instance if the contact is being turned on and off, the Au-clad triple layer type is recommended.

### 2. Characteristics

Mechanical life (O.T.: Specified value)	Leaf lever	Min. $5 \times 10^5$ (at 60 cpm)
	Other types	Min. $5 \times 10^6$ (at 60 cpm)
Electrical life at rated load (O.T.: Max.)	AgNi alloy contact type	Min. $5 \times 10^4$ (at 20 cpm)
	Au-clad contact type	Min. $2 \times 10^5$ (at 20 cpm)
Insulation resistance	Min. 100 M $\Omega$ (at 500 V DC insulation resistance meter)	
Dielectric strength	Between non-continuous terminals	1,000 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 ms)	
Shock resistance (pin plunger type)	Min. 294 m/s <sup>2</sup> (contact opening max. 1 ms)	
Contact resistance (initial)	AgNi alloy 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)	0.1 to 500 mm/s	
Max. operating cycle rate (at no load)	120 cpm	
Ambient temperature	-40°C to +85°C	
Unit weight	Approx. 2 g (IP50 type)	
Water resistance	IP67 (wire leads type)	

### 3. Operating characteristics

Type of actuator	Operating force, Max.		Release force, Min.		Pretravel, Max. mm	Movement differential, Max. mm	Overtravel, Min. mm	Operating position, mm
Pin plunger	0.98N	1.47N	0.15N	0.20N	0.6	0.1	0.4	8.4±0.3
Short hinge lever	0.39N	0.59N	0.034N	0.039N	2.5	0.5	0.8	8.8±0.8
Hinge lever	0.34N	0.54N	0.029N	0.034N	2.8	0.8	1.2	8.8±0.8
Long hinge lever	0.25N	0.44N	0.025N	0.029N	3.5	1.0	1.6	8.8±1.2
Simulated roller lever	0.34N	0.54N	0.029N	0.034N	2.8	0.8	1.2	11.65±0.8
Roller lever	0.39N	0.59N	0.034N	0.039N	2.5	0.5	0.8	14.5±0.8
Leaf lever	0.88N	1.08N	0.17N	0.20N	4.5	1.0	2.5	14.5±1.5

# ABS1,4,5

## 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](#).

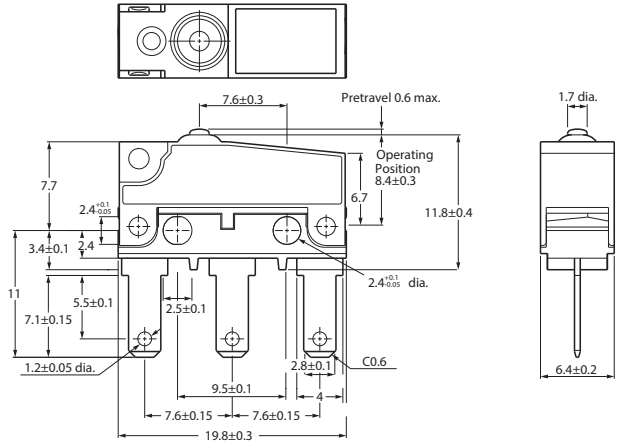
### 1. Dust protected type

1-(1) .110 quick-connect terminal

Pin plunger

mm General tolerance:  $\pm 0.25$

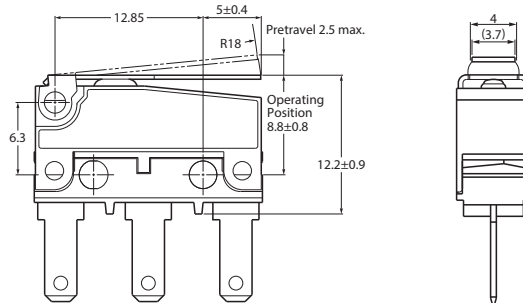
**CAD Data**



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±0.3
	Distance from stand-off, mm	11.8±0.4

### Short hinge lever

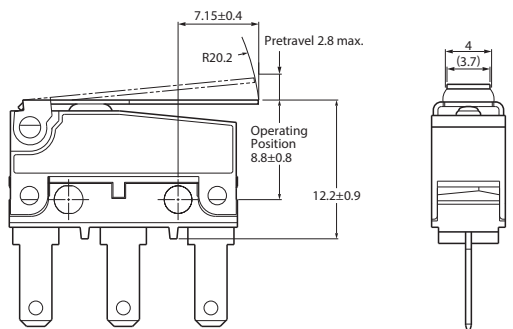
**CAD Data**



Pretravel, max. mm	2.5	
Movement differential, max. mm	0.5	
Overtravel, min. mm	0.8	
Operating position	Distance from mounting hole, mm	8.8±0.8
	Distance from stand-off, mm	12.2±0.9

### Hinge lever

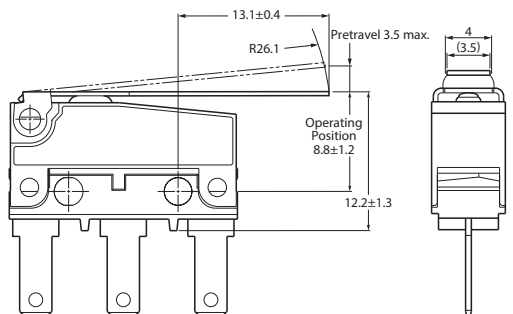
**CAD Data**



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
	Distance from stand-off, mm	12.2±0.9

### Long hinge lever

**CAD Data**

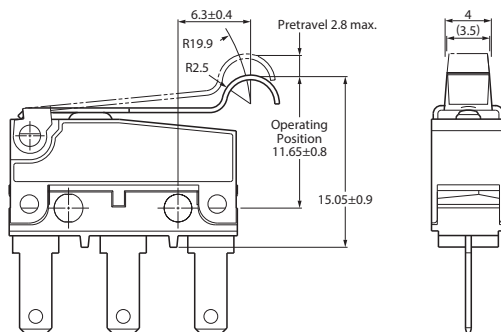


Pretravel, max. mm	3.5	
Movement differential, max. mm	1	
Overtravel, min. mm	1.6	
Operating position	Distance from mounting hole, mm	8.8±1.2
	Distance from stand-off, mm	12.2±1.3

## Simulated roller lever

mm General tolerance:  $\pm 0.25$

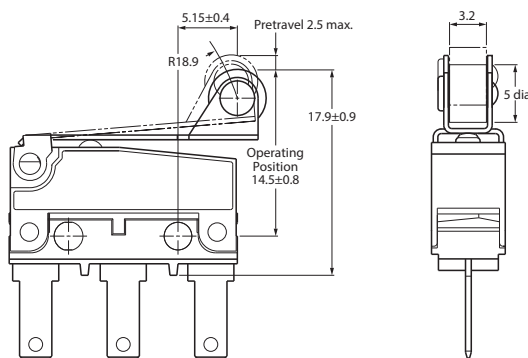
### CAD Data



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±0.8
	Distance from stand-off, mm	15.05±0.9

## Roller lever

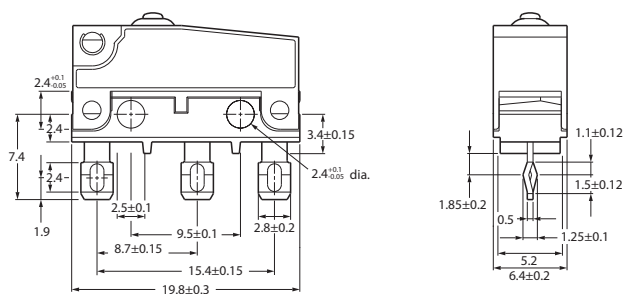
### CAD Data



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±0.8
	Distance from stand-off, mm	17.9±0.9

## 1-(2) Solder terminal

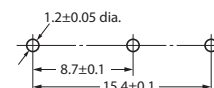
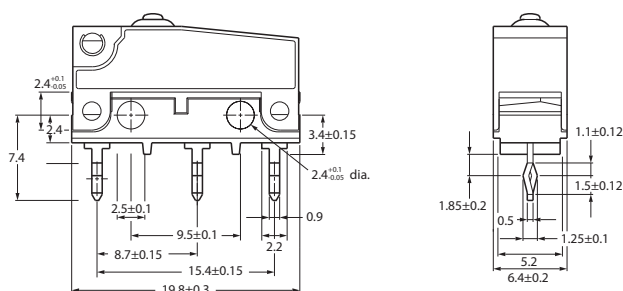
### CAD Data



Remarks: Dimensions of the actuator types are the same as those of corresponding .110 quick-connect terminal types.

## 1-(3) PC board terminal Straight type

### CAD Data



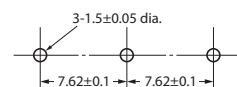
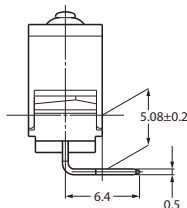
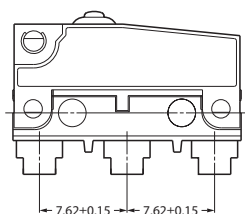
Remarks: Dimensions of the actuator types are the same as those of corresponding .110 quick-connect terminal types.

# ABS1,4,5

Right angle type

mm General tolerance:  $\pm 0.25$

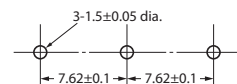
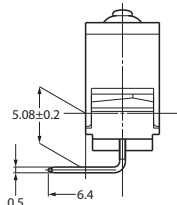
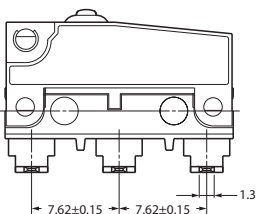
**CAD Data**



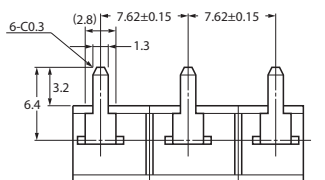
Remarks: Dimensions of the actuator types are the same as those of corresponding .110 quick-connect terminal types.

Left angle type

**CAD Data**



Remarks: Dimensions of the actuator types are the same as those of corresponding .110 quick-connect terminal types.



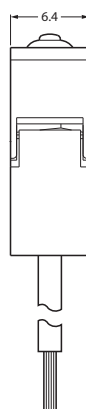
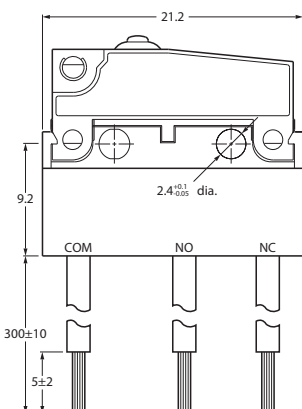
## 2. Immersion protected type

Wire leads

Pin plunger

Straight type

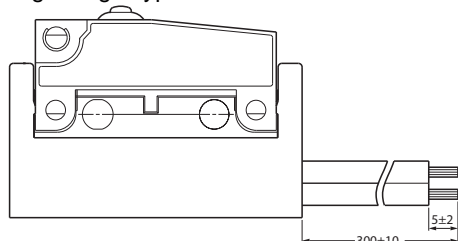
**CAD Data**



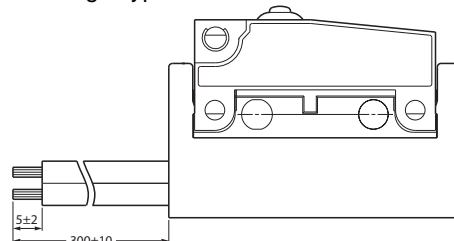
Thickness of the lead wire: 0.5 mm<sup>2</sup>  
 UL/CSA approved type and Right/Left angle type:  
 AWG #20  
 Color of the lead wire:  
 COM... Black  
 N.C. ... Red  
 N.O. ... White

Remarks: 1. Other dimensions are the same as those of .110 quick-connect terminal types.  
 2. Dimensions of the actuator types are the same as those of corresponding .110 quick-connect terminal types.

Right angle type

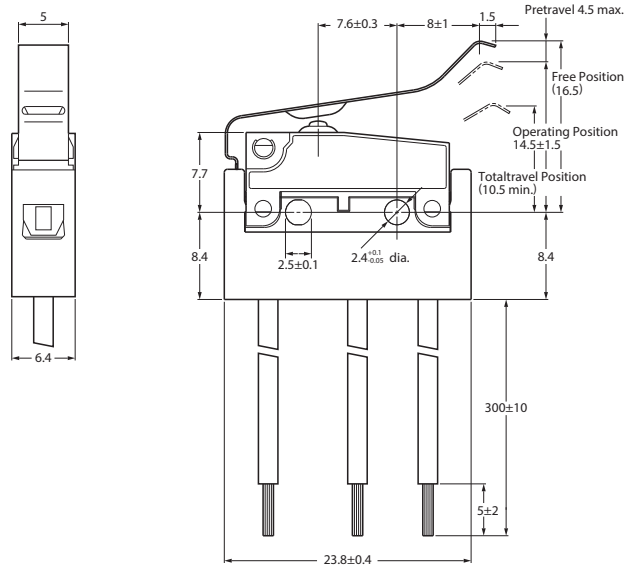
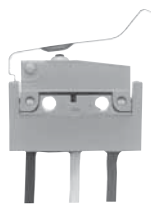


Left angle type



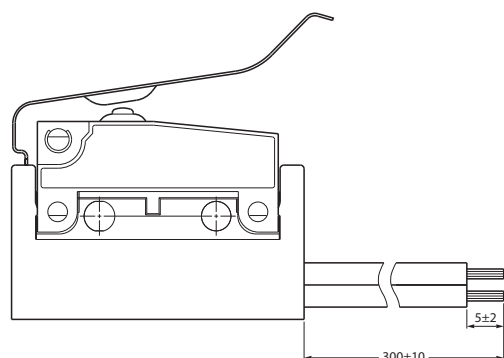
Leaf lever  
Straight type

**CAD Data**



Thickness of the lead wire: 0.5 mm<sup>2</sup>  
UL/CSA approved type and Right/Left angle type:  
AWG #20  
Color of the lead wire:  
COM ... Black  
N.C. ... Red  
N.O. ... White

Right angle type



Left angle type

