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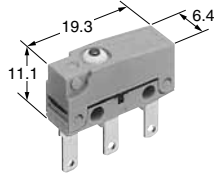


**Panasonic**  
ideas for life

**HIGH ENVIRONMENTAL  
RESISTANCE**

**TURQUOISE  
SWITCHES  
ABS TYPE**

### 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

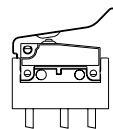
- Automotive
- Home appliances (vacuum cleaner, air purifier)
- Others (gas cooking range)

### ORDERING INFORMATION

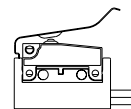
Ex. ABS 1 1 1 0 4 0

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 2: SPST-NC 3: SPST-NO	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/SEMKO (AgNi alloy contact, Au-clad triple layer type) 8: VDE/SEMKO (AgNi alloy contact, Au-clad triple layer type) 9: UL/CSA (Au-clad double layer type)

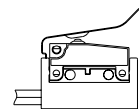
- Remarks: 1. Standard packing: Dust protected type 100 pcs./carton, 1,000 pcs./case; Immersion protected type 50 pcs./case.  
2. SPST-NC and SPST-NO are only available for wire leads type.  
3. Leaf lever is only available for wire leads type  
4. As for wire position:



Straight type



Wire opposite to the actuator side type (Right angle)



Wire actuator side type (Left angle)

5. 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

## PRODUCT TYPES

### 1. 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	ABS111040*	ABS141040*	ABS151040*	ABS451040*	ABS551040*
	1.47 N	ABS111050*	ABS141050*	ABS151050*	ABS451050*	ABS551050*
Short hinge lever	0.39 N	ABS111140*	ABS141140*	ABS151140*	ABS451140*	ABS551140*
	0.59 N	ABS111150*	ABS141150*	ABS151150*	ABS451150*	ABS551150*
Hinge lever	0.34 N	ABS111240*	ABS141240*	ABS151240*	ABS451240*	ABS551240*
	0.54 N	ABS111250*	ABS141250*	ABS151250*	ABS451250*	ABS551250*
Long hinge lever	0.25 N	ABS111340*	ABS141340*	ABS151340*	ABS451340*	ABS551340*
	0.44 N	ABS111350*	ABS141350*	ABS151350*	ABS451350*	ABS551350*
Simulated roller lever	0.34 N	ABS111440*	ABS141440*	ABS151440*	ABS451440*	ABS551440*
	0.54 N	ABS111450*	ABS141450*	ABS151450*	ABS451450*	ABS551450*
Roller lever	0.39 N	ABS111640*	ABS141640*	ABS151640*	ABS451640*	ABS551640*
	0.59 N	ABS111650*	ABS141650*	ABS151650*	ABS451650*	ABS551650*

### 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	ABS111041*	ABS141041*	ABS151041*	ABS451041*	ABS551041*
	1.47 N	ABS111051*	ABS141051*	ABS151051*	ABS451051*	ABS551051*
Short hinge lever	0.39 N	ABS111141*	ABS141141*	ABS151141*	ABS451141*	ABS551141*
	0.59 N	ABS111151*	ABS141151*	ABS151151*	ABS451151*	ABS551151*
Hinge lever	0.34 N	ABS111241*	ABS141241*	ABS151241*	ABS451241*	ABS551241*
	0.54 N	ABS111251*	ABS141251*	ABS151251*	ABS451251*	ABS551251*
Long hinge lever	0.25 N	ABS111341*	ABS141341*	ABS151341*	ABS451341*	ABS551341*
	0.44 N	ABS111351*	ABS141351*	ABS151351*	ABS451351*	ABS551351*
Simulated roller lever	0.34 N	ABS111441*	ABS141441*	ABS151441*	ABS451441*	ABS551441*
	0.54 N	ABS111451*	ABS141451*	ABS151451*	ABS451451*	ABS551451*
Roller lever	0.39 N	ABS111641*	ABS141641*	ABS151641*	ABS451641*	ABS551641*
	0.59 N	ABS111651*	ABS141651*	ABS151651*	ABS451651*	ABS551651*

### 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	ABS111044*	ABS141044*	ABS151044*	ABS451044*	ABS551044*
	1.47 N	ABS111054*	ABS141054*	ABS151054*	ABS451054*	ABS551054*
Short hinge lever	0.39 N	ABS111144*	ABS141144*	ABS151144*	ABS451144*	ABS551144*
	0.59 N	ABS111154*	ABS141154*	ABS151154*	ABS451154*	ABS551154*
Hinge lever	0.34 N	ABS111244*	ABS141244*	ABS151244*	ABS451244*	ABS551244*
	0.54 N	ABS111254*	ABS141254*	ABS151254*	ABS451254*	ABS551254*
Long hinge lever	0.25 N	ABS111344*	ABS141344*	ABS151344*	ABS451344*	ABS551344*
	0.44 N	ABS111354*	ABS141354*	ABS151354*	ABS451354*	ABS551354*
Simulated roller lever	0.34 N	ABS111444*	ABS141444*	ABS151444*	ABS451444*	ABS551444*
	0.54 N	ABS111454*	ABS141454*	ABS151454*	ABS451454*	ABS551454*
Roller lever	0.39 N	ABS111644*	ABS141644*	ABS151644*	ABS451644*	ABS551644*
	0.59 N	ABS111654*	ABS141654*	ABS151654*	ABS451654*	ABS551654*

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

**2. Immersion protected type (3 wire leads type SPDT)**

AgNi alloy

Actuator	Operating force Max.	SPDT		
		Straight	Wire position Right angle	Left angle
Pin plunger	0.98 N	ABS161040*	ABS461040*	ABS561040*
	1.47 N	ABS161050*	ABS461050*	ABS561050*
Short hinge lever	0.39 N	ABS161140*	ABS461140*	ABS561140*
	0.59 N	ABS161150*	ABS461150*	ABS561150*
Hinge lever	0.34 N	ABS161240*	ABS461240*	ABS561240*
	0.54 N	ABS161250*	ABS461250*	ABS561250*
Long hinge lever	0.25 N	ABS161340*	ABS461340*	ABS561340*
	0.44 N	ABS161350*	ABS461350*	ABS561350*
Simulated roller lever	0.34 N	ABS161440*	ABS461440*	ABS561440*
	0.54 N	ABS161450*	ABS461450*	ABS561450*
Roller lever	0.39 N	ABS161640*	ABS461640*	ABS561640*
	0.59 N	ABS161650*	ABS461650*	ABS561650*

**Au-clad triple layer**

Actuator	Operating force Max.	SPDT		
		Straight	Wire position Right angle	Left angle
Pin plunger	0.98 N	ABS161041*	ABS461041*	ABS561041*
	1.47 N	ABS161051*	ABS461051*	ABS561051*
Short hinge lever	0.39 N	ABS161141*	ABS461141*	ABS561141*
	0.59 N	ABS161151*	ABS461151*	ABS561151*
Hinge lever	0.34 N	ABS161241*	ABS461241*	ABS561241*
	0.54 N	ABS161251*	ABS461251*	ABS561251*
Long hinge lever	0.25 N	ABS161341*	ABS461341*	ABS561341*
	0.44 N	ABS161351*	ABS461351*	ABS561351*
Simulated roller lever	0.34 N	ABS161441*	ABS461441*	ABS561441*
	0.54 N	ABS161451*	ABS461451*	ABS561451*
Roller lever	0.39 N	ABS161641*	ABS461641*	ABS561641*
	0.59 N	ABS161651*	ABS461651*	ABS561651*

**Au-clad double layer**

Actuator	Operating force Max.	SPDT		
		Straight	Wire position Right angle	Left angle
Pin plunger	0.98 N	ABS161044*	ABS461044*	ABS561044*
	1.47 N	ABS161054*	ABS461054*	ABS561054*
Short hinge lever	0.39 N	ABS161144*	ABS461144*	ABS561144*
	0.59 N	ABS161154*	ABS461154*	ABS561154*
Hinge lever	0.34 N	ABS161244*	ABS461244*	ABS561244*
	0.54 N	ABS161254*	ABS461254*	ABS561254*
Long hinge lever	0.25 N	ABS161344*	ABS461344*	ABS561344*
	0.44 N	ABS161354*	ABS461354*	ABS561354*
Simulated roller lever	0.34 N	ABS161444*	ABS461444*	ABS561444*
	0.54 N	ABS161454*	ABS461454*	ABS561454*
Roller lever	0.39 N	ABS161644*	ABS461644*	ABS561644*
	0.59 N	ABS161654*	ABS461654*	ABS561654*

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

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## 3. Immersion protected type (2 wire leads type SPST-NC)

AgNi alloy

Actuator	Operating force Max.	SPST-NC		
		Straight	Wire position Right angle	Left angle
Pin plunger	0.98 N	ABS162040*	ABS462040*	ABS562040*
	1.47 N	ABS162050*	ABS462050*	ABS562050*
Short hinge lever	0.39 N	ABS162140*	ABS462140*	ABS562140*
	0.59 N	ABS162150*	ABS462150*	ABS562150*
Hinge lever	0.34 N	ABS162240*	ABS462240*	ABS562240*
	0.54 N	ABS162250*	ABS462250*	ABS562250*
Long hinge lever	0.25 N	ABS162340*	ABS462340*	ABS562340*
	0.44 N	ABS162350*	ABS462350*	ABS562350*
Simulated roller lever	0.34 N	ABS162440*	ABS462440*	ABS562440*
	0.54 N	ABS162450*	ABS462450*	ABS562450*
Roller lever	0.39 N	ABS162640*	ABS462640*	ABS562640*
	0.59 N	ABS162650*	ABS462650*	ABS562650*

### Au-clad triple layer

Actuator	Operating force Max.	SPST-NC		
		Straight	Wire position Right angle	Left angle
Pin plunger	0.98 N	ABS162041*	ABS462041*	ABS562041*
	1.47 N	ABS162051*	ABS462051*	ABS562051*
Short hinge lever	0.39 N	ABS162141*	ABS462141*	ABS562141*
	0.59 N	ABS162151*	ABS462151*	ABS562151*
Hinge lever	0.34 N	ABS162241*	ABS462241*	ABS562241*
	0.54 N	ABS162251*	ABS462251*	ABS562251*
Long hinge lever	0.25 N	ABS162341*	ABS462341*	ABS562341*
	0.44 N	ABS162351*	ABS462351*	ABS562351*
Simulated roller lever	0.34 N	ABS162441*	ABS462441*	ABS562441*
	0.54 N	ABS162451*	ABS462451*	ABS562451*
Roller lever	0.39 N	ABS162641*	ABS462641*	ABS562641*
	0.59 N	ABS162651*	ABS462651*	ABS562651*

### Au-clad double layer

Actuator	Operating force Max.	SPST-NC		
		Straight	Wire position Right angle	Left angle
Pin plunger	0.98 N	ABS162044*	ABS462044*	ABS562044*
	1.47 N	ABS162054*	ABS462054*	ABS562054*
Short hinge lever	0.39 N	ABS162144*	ABS462144*	ABS562144*
	0.59 N	ABS162154*	ABS462154*	ABS562154*
Hinge lever	0.34 N	ABS162244*	ABS462244*	ABS562244*
	0.54 N	ABS162254*	ABS462254*	ABS562254*
Long hinge lever	0.25 N	ABS162344*	ABS462344*	ABS562344*
	0.44 N	ABS162354*	ABS462354*	ABS562354*
Simulated roller lever	0.34 N	ABS162444*	ABS462444*	ABS562444*
	0.54 N	ABS162454*	ABS462454*	ABS562454*
Roller lever	0.39 N	ABS162644*	ABS462644*	ABS562644*
	0.59 N	ABS162654*	ABS462654*	ABS562654*

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



**4. Immersion protected type (2 wire leads type SPST-NO)**

AgNi alloy

Actuator	Operating force Max.	SPST-NO		
		Straight	Wire position	
			Right angle	Left angle
Pin plunger	0.98 N	ABS163040*	ABS463040*	ABS563040*
	1.47 N	ABS163050*	ABS463050*	ABS563050*
Short hinge lever	0.39 N	ABS163140*	ABS463140*	ABS563140*
	0.59 N	ABS163150*	ABS463150*	ABS563150*
Hinge lever	0.34 N	ABS163240*	ABS463240*	ABS563240*
	0.54 N	ABS163250*	ABS463250*	ABS563250*
Long hinge lever	0.25 N	ABS163340*	ABS463340*	ABS563340*
	0.44 N	ABS163350*	ABS463350*	ABS563350*
Simulated roller lever	0.34 N	ABS163440*	ABS463440*	ABS563440*
	0.54 N	ABS163450*	ABS463450*	ABS563450*
Roller lever	0.39 N	ABS163640*	ABS463640*	ABS563640*
	0.59 N	ABS163650*	ABS463650*	ABS563650*

**Au-clad triple layer**

Actuator	Operating force Max.	SPST-NO		
		Straight	Wire position	
			Right angle	Left angle
Pin plunger	0.98 N	ABS163041*	ABS463041*	ABS563041*
	1.47 N	ABS163051*	ABS463051*	ABS563051*
Short hinge lever	0.39 N	ABS163141*	ABS463141*	ABS563141*
	0.59 N	ABS163151*	ABS463151*	ABS563151*
Hinge lever	0.34 N	ABS163241*	ABS463241*	ABS563241*
	0.54 N	ABS163251*	ABS463251*	ABS563251*
Long hinge lever	0.25 N	ABS163341*	ABS463341*	ABS563341*
	0.44 N	ABS163351*	ABS463351*	ABS563351*
Simulated roller lever	0.34 N	ABS163441*	ABS463441*	ABS563441*
	0.54 N	ABS163451*	ABS463451*	ABS563451*
Roller lever	0.39 N	ABS163641*	ABS463641*	ABS563641*
	0.59 N	ABS163651*	ABS463651*	ABS563651*

**Au-clad double layer**

Actuator	Operating force Max.	SPST-NO		
		Straight	Wire position	
			Right angle	Left angle
Pin plunger	0.98 N	ABS163044*	ABS463044*	ABS563044*
	1.47 N	ABS163054*	ABS463054*	ABS563054*
Short hinge lever	0.39 N	ABS163144*	ABS463144*	ABS563144*
	0.59 N	ABS163154*	ABS463154*	ABS563154*
Hinge lever	0.34 N	ABS163244*	ABS463244*	ABS563244*
	0.54 N	ABS163254*	ABS463254*	ABS563254*
Long hinge lever	0.25 N	ABS163344*	ABS463344*	ABS563344*
	0.44 N	ABS163354*	ABS463354*	ABS563354*
Simulated roller lever	0.34 N	ABS163444*	ABS463444*	ABS563444*
	0.54 N	ABS163454*	ABS463454*	ABS563454*
Roller lever	0.39 N	ABS163644*	ABS463644*	ABS563644*
	0.59 N	ABS163654*	ABS463654*	ABS563654*

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

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## 5. Immersion protected type (3 wire leads type SPDT)

- Leaf lever type
- AgNi alloy

Actuator	Operating force Max.	SPDT		
		Straight	Wire position Right angle	Left angle
Leaf lever	0.88 N	ABS161840*	ABS461840*	ABS561840*
	1.08 N	ABS161850*	ABS461850*	ABS561850*

### Au-clad triple layer

Actuator	Operating force Max.	SPDT		
		Straight	Wire position Right angle	Left angle
Leaf lever	0.88 N	ABS161841*	ABS461841*	ABS561841*
	1.08 N	ABS161851*	ABS461851*	ABS561851*

### Au-clad double layer

Actuator	Operating force Max.	SPDT		
		Straight	Wire position Right angle	Left angle
Leaf lever	0.88 N	ABS161844*	ABS461844*	ABS561844*
	1.08 N	ABS161854*	ABS461854*	ABS561854*

## 6. Immersion protected type (2 wire leads type SPST-NC)

- Leaf lever type
- AgNi alloy

Actuator	Operating force Max.	SPST-NC		
		Straight	Wire position Right angle	Left angle
Leaf lever	0.88 N	ABS162840*	ABS462840*	ABS562840*
	1.08 N	ABS162850*	ABS462850*	ABS562850*

### Au-clad triple layer

Actuator	Operating force Max.	SPST-NC		
		Straight	Wire position Right angle	Left angle
Leaf lever	0.88 N	ABS162841*	ABS462841*	ABS562841*
	1.08 N	ABS162851*	ABS462851*	ABS562851*

### Au-clad double layer

Actuator	Operating force Max.	SPST-NC		
		Straight	Wire position Right angle	Left angle
Leaf lever	0.88 N	ABS162844*	ABS462844*	ABS562844*
	1.08 N	ABS162854*	ABS462854*	ABS562854*

## 7. Immersion protected type (2 wire leads type SPST-NO)

- Leaf lever type
- AgNi alloy

Actuator	Operating force Max.	SPST-NO		
		Straight	Wire position Right angle	Left angle
Leaf lever	0.88 N	ABS163840*	ABS463840*	ABS563840*
	1.08 N	ABS163850*	ABS463850*	ABS563850*

### Au-clad triple layer

Actuator	Operating force Max.	SPST-NO		
		Straight	Wire position Right angle	Left angle
Leaf lever	0.88 N	ABS163841*	ABS463841*	ABS563841*
	1.08 N	ABS163851*	ABS463851*	ABS563851*

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

## Au-clad double layer

Actuator	Operating force Max. gf	SPST-NO		
		Straight	Wire position Right angle	Left angle
Leaf lever	0.89 N	ABS163844*	ABS463844*	ABS563844*
	1.08 N	ABS163854*	ABS463854*	ABS563854*

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

## SPECIFICATIONS

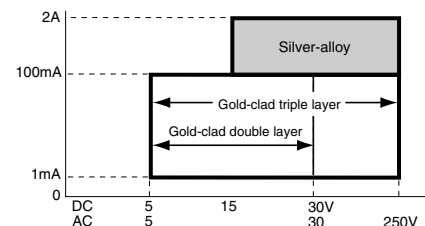
### 1. Contact rating

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 msec.)	
Shock resistance (Pin plunger type)	Min. 294 m/s <sup>2</sup> (Contact opening Max. 1 msec.)	
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/sec.	
Max. operating cycle rate (at no load)	120 cpm	
Ambient temperature	-40°C to +85°C	
Unit weight	Approx. 2 g (IP50 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
	0.98N	1.47N	0.15N	0.20N				
Pin plunger	0.39N	0.59N	0.034N	0.039N	0.6	0.1	0.4	8.4 $\pm$ 0.3
Short hinge lever	0.34N	0.54N	0.029N	0.034N	2.5	0.5	0.8	8.8 $\pm$ 0.8
Hinge lever	0.25N	0.44N	0.025N	0.029N	2.8	0.8	1.2	8.8 $\pm$ 0.8
Long hinge lever	0.34N	0.54N	0.029N	0.034N	3.5	1.0	1.6	8.8 $\pm$ 1.2
Simulated roller lever	0.39N	0.59N	0.034N	0.039N	2.8	0.8	1.2	11.65 $\pm$ 0.8
Roller lever	0.88N	1.08N	0.17N	0.20N	2.5	0.5	0.8	14.5 $\pm$ 0.8
Leaf lever	0.88N	1.08N	0.17N	0.20N	4.5	1.0	2.5	14.5 $\pm$ 1.5



# ABS1,4,5

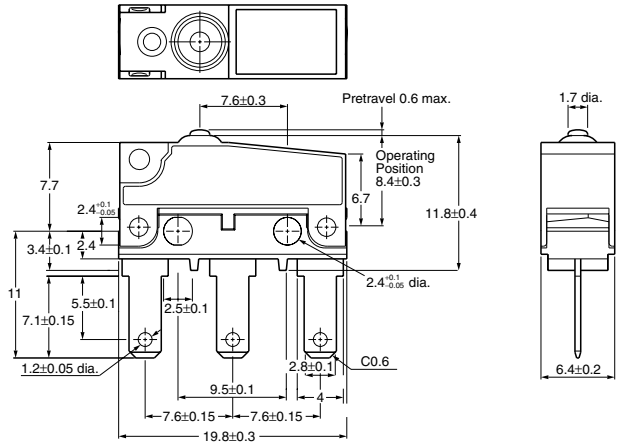
## DIMENSIONS

mm General tolerance:  $\pm 0.25$

### 1. Dust protected type

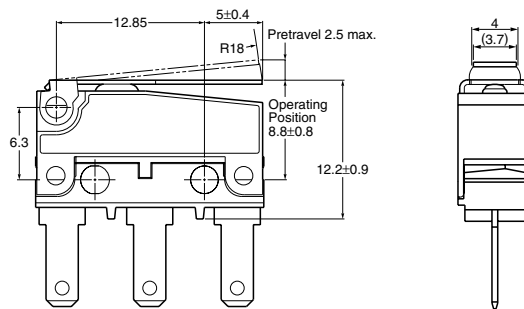
1-(1) .110 quick-connect terminal

Pin plunger



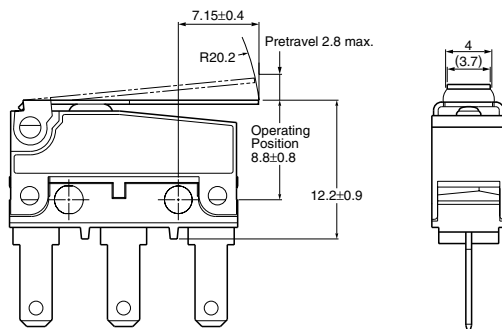
Pretravel, Max. mm		0.6
Movement differential, Max. mm		0.1
Overtravel, Min. mm		0.4
Operating position	Distance from mounting hole, mm	$8.4 \pm 0.3$
	Distance from stand-off, mm	$11.8 \pm 0.4$

### Short hinge lever



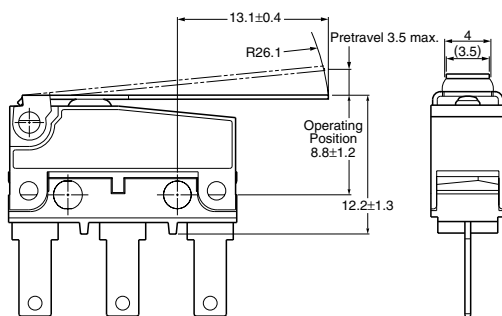
Pretravel, Max. mm		2.5
Movement differential, Max. mm		0.5
Overtravel, Min. mm		0.8
Operating position	Distance from mounting hole, mm	$8.8 \pm 0.8$
	Distance from stand-off, mm	$12.2 \pm 0.9$

### Hinge lever



Pretravel, Max. mm		2.8
Movement differential, Max. mm		0.8
Overtravel, Min. mm		1.2
Operating position	Distance from mounting hole, mm	$8.8 \pm 0.8$
	Distance from stand-off, mm	$12.2 \pm 0.9$

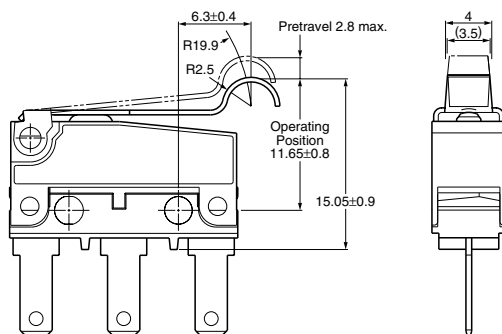
### Long hinge lever



Pretravel, Max. mm		3.5
Movement differential, Max. mm		1
Overtravel, Min. mm		1.6
Operating position	Distance from mounting hole, mm	$8.8 \pm 1.2$
	Distance from stand-off, mm	$12.2 \pm 1.3$

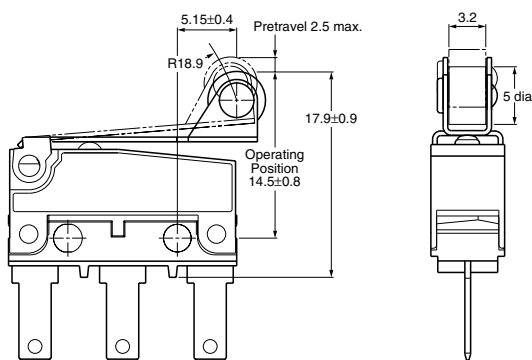
## Simulated roller lever

mm General tolerance:  $\pm 0.25$



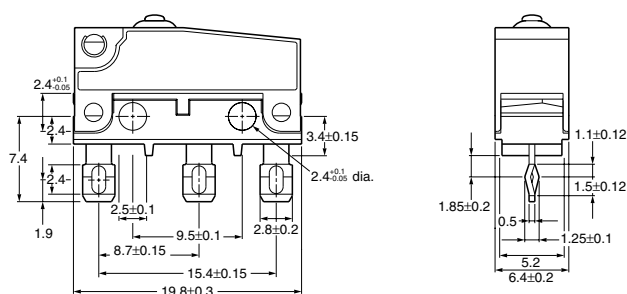
Pretravel, Max. mm		2.8
Movement differential, Max. mm		0.8
Overtravel, Min. mm		1.2
Operating position	Distance from mounting hole, mm	11.65±0.8
	Distance from stand-off, mm	15.05±0.9

## Roller lever



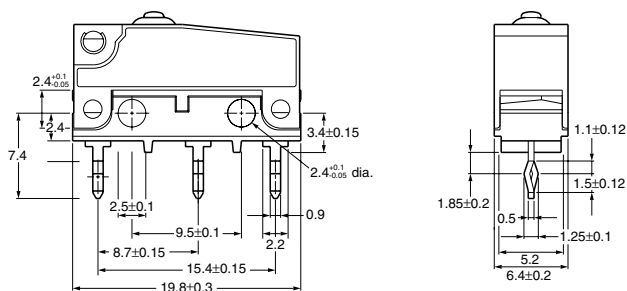
Pretravel, Max. mm		2.5
Movement differential, Max. mm		0.5
Overtravel, Min. mm		0.8
Operating position	Distance from mounting hole, mm	14.5±0.8
	Distance from stand-off, mm	17.9±0.9

## 1-(2) Solder terminal



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

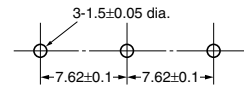
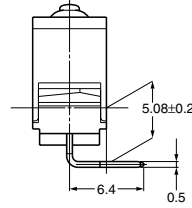
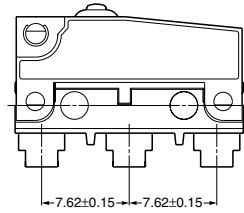


Remarks: Dimensions of the actuator types are the same as those of corresponding .110 quick-connect terminal types.

# ABS1,4,5

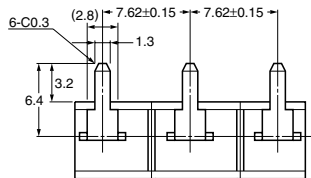
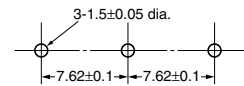
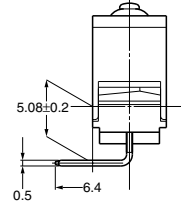
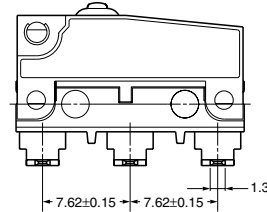
Right angle type

mm General tolerance:  $\pm 0.25$



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

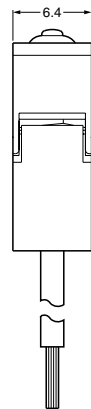
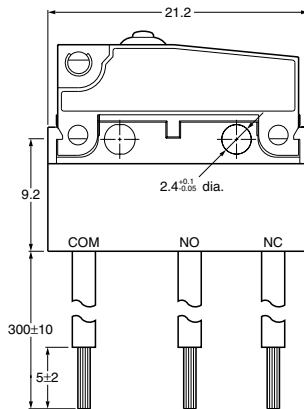
Left angle type



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

## 2. Immersion protected type

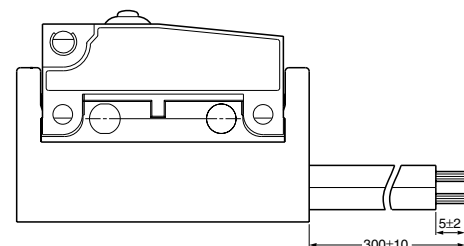
Wire leads  
Pin plunger  
Straight type



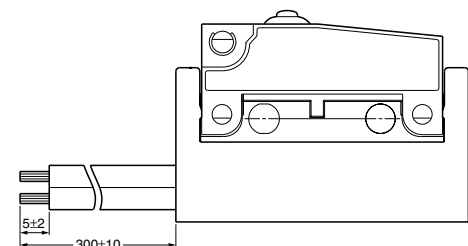
Thickness of the lead wire:  $0.5 \text{ mm}^2$   
UL/CSA approved type and Right/Left angle type:  
AWG #20  
Color of the lead wire:  
COM ... Black  
N.C. ... Red  
N.O. ... White

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.

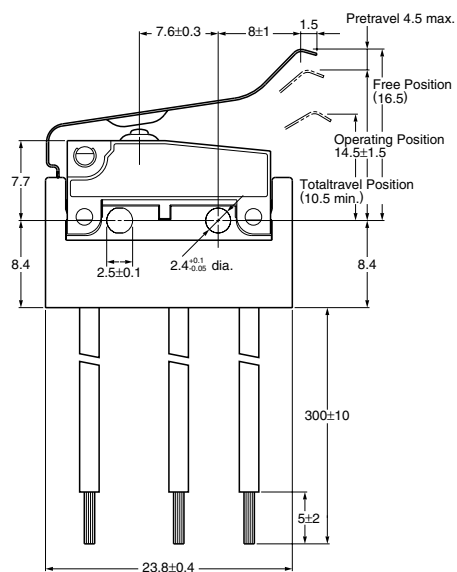
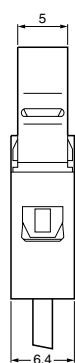
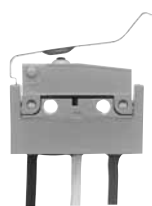
Right angle type



Left angle type

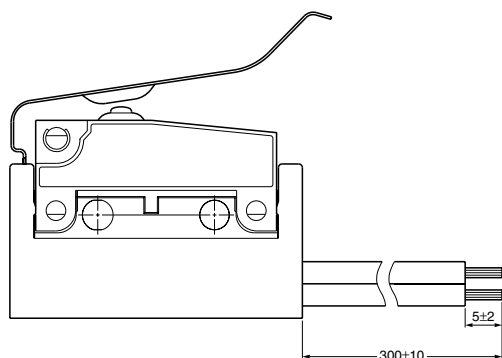


## Leaf lever Straight type



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

