

FEATURES

- **Miniature size (33×15.9×10.3 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/VDE/SEMKO approved**

* Based on the protective construction classification of IEC, items which satisfy the test requirements are denoted with an IP designation.

TYPICAL APPLICATIONS

- **Automotive**
- **Agricultural devices**
- **Industrial equipment**

ORDERING INFORMATION

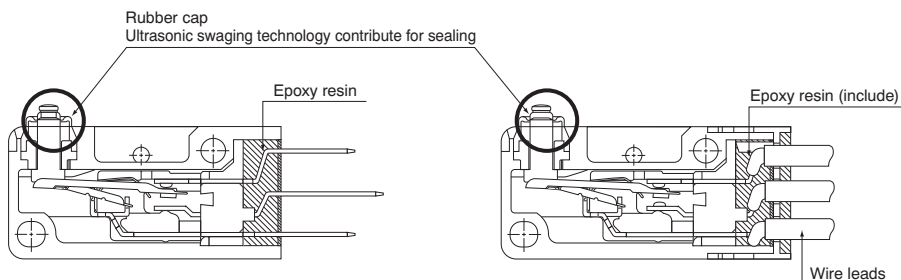
Ex.								
ABV1		2	1	0	4	1	3	R
Type of switch	Terminal	Contact arrangement	Actuator	Operating force by pin plunger (max.)		Contact	Agency standard	Short roller lever
ABV1: Turquoise switch V type	2: .187 quick-connect terminal 6: Wire leads	1: SPDT 2: SPST-NC 3: SPST-NO	0: Pin plunger 2: Hinge lever 4: Simulated roller lever 5: Short roller lever 6: Roller lever	4: 0.98 N 5: 1.96 N		0: AgNi alloy 1: AgNi alloy + Au-clad	3: UL/CSA/VDE/ SEMKO	R: Improved short roller lever

Remarks: 1. Standard packing: Dust protected type 50 pcs./carton, 500 pcs./case; Immersion protected type 50 pcs./case.
2. Not every combination is available. Please refer to the following table, "PRODUCT TYPES".

CONSTRUCTION

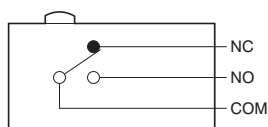
.187 quick-connect terminal

Wire leads

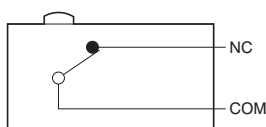


CONTACT ARRANGEMENT

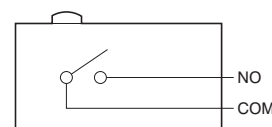
1. SPDT



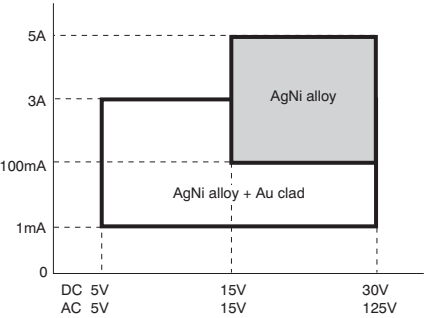
2. SPST-NC



3. SPST-NO



APPLICABLE CURRENT RANGE (Reference only)



PRODUCT TYPES

AgNi alloy

Contact	Actuator	Contact Arrangement	Operating force, Max.	187 Quick-connect terminal	Wire Leads
AgNi alloy	Pin plunger	SPDT	0.98 N	ABV1210403	ABV1610403
			1.96 N	ABV1210503	ABV1610503
		SPST-NC	0.98 N	ABV1220403	ABV1620403
			1.96 N	ABV1220503	ABV1620503
		SPST-NO	0.98 N	ABV1230403	ABV1630403
			1.96 N	ABV1230503	ABV1630503
	Hinge lever	SPDT	0.59 N	ABV1212403	ABV1612403
			1.18 N	ABV1212503	ABV1612503
		SPST-NC	0.59 N	ABV1222403	ABV1622403
			1.18 N	ABV1222503	ABV1622503
		SPST-NO	0.59 N	ABV1232403	ABV1632403
			1.18 N	ABV1232503	ABV1632503
	Simulated roller lever	SPDT	0.59 N	ABV1214403	ABV1614403
			1.18 N	ABV1214503	ABV1614503
		SPST-NC	0.59 N	ABV1224403	ABV1624403
			1.18 N	ABV1224503	ABV1624503
		SPST-NO	0.59 N	ABV1234403	ABV1634403
			1.18 N	ABV1234503	ABV1634503
	Short roller lever	SPDT	1.08 N	ABV1215403R	ABV1615403R
			2.16 N	ABV1215503R	ABV1615503R
		SPST-NC	1.08 N	ABV1225403R	ABV1625403R
			2.16 N	ABV1225503R	ABV1625503R
		SPST-NO	1.08 N	ABV1235403R	ABV1635403R
			2.16 N	ABV1235503R	ABV1635503R
	Roller lever	SPDT	0.59 N	ABV1216403	ABV1616403
			1.18 N	ABV1216503	ABV1616503
		SPST-NC	0.59 N	ABV1226403	ABV1626403
			1.18 N	ABV1226503	ABV1626503
		SPST-NO	0.59 N	ABV1236403	ABV1636403
			1.18 N	ABV1236503	ABV1636503

AgNi alloy + Au-clad

Contact	Actuator	Contact Arrangement	Operating force, Max.	187 Quick-connect terminal	Wire Leads
AgNi alloy + Au-clad	Pin plunger	SPDT	0.98 N	ABV1210413	ABV1610413
			1.96 N	ABV1210513	ABV1610513
		SPST-NC	0.98 N	ABV1220413	ABV1620413
			1.96 N	ABV1220513	ABV1620513
		SPST-NO	0.98 N	ABV1230413	ABV1630413
			1.96 N	ABV1230513	ABV1630513
	Hinge lever	SPDT	0.59 N	ABV1212413	ABV1612413
			1.18 N	ABV1212513	ABV1612513
		SPST-NC	0.59 N	ABV1222413	ABV1622413
			1.18 N	ABV1222513	ABV1622513
		SPST-NO	0.59 N	ABV1232413	ABV1632413
			1.18 N	ABV1232513	ABV1632513
	Simulated roller lever	SPDT	0.59 N	ABV1214413	ABV1614413
			1.18 N	ABV1214513	ABV1614513
		SPST-NC	0.59 N	ABV1224413	ABV1624413
			1.18 N	ABV1224513	ABV1624513
		SPST-NO	0.59 N	ABV1234413	ABV1634413
			1.18 N	ABV1234513	ABV1634513
	Short roller lever	SPDT	1.08 N	ABV1215413R	ABV1615413R
			2.16 N	ABV1215513R	ABV1615513R
		SPST-NC	1.08 N	ABV1225413R	ABV1625413R
			2.16 N	ABV1225513R	ABV1625513R
		SPST-NO	1.08 N	ABV1235413R	ABV1635413R
			2.16 N	ABV1235513R	ABV1635513R
	Roller lever	SPDT	0.59 N	ABV1216413	ABV1616413
			1.18 N	ABV1216513	ABV1616513
		SPST-NC	0.59 N	ABV1226413	ABV1626413
			1.18 N	ABV1226513	ABV1626513
		SPST-NO	0.59 N	ABV1236413	ABV1636413
			1.18 N	ABV1236513	ABV1636513

SPECIFICATIONS

1. Contact rating

Type	Standard rating	Low-level rating
AgNi alloy + Au-clad contact	3 A 250 V AC (O.F. 1.96 N) 1 A 250 V AC (O.F. 0.98 N)	5 mA 6 V DC 2 mA 12 V DC 1 mA 24 V DC
AgNi alloy	5 A 250 V AC (O.F. 1.96 N) 3 A 250 V AC (O.F. 0.98 N)	—

2. Characteristics

Mechanical life (O.T.: Specified value)		Min. 5x10 ⁵ (at 60 cpm)
Electrical life	Nominal rating (O.T.: Max.)	Min. 10 ⁵ (at 20 cpm)*1
	Low-level rating (O.T.: Specified value)	Min. 10 ⁶ (at 20 cpm)
Insulation resistance		Min. 100 MΩ (at 500 V DC insulation resistance meter)
Dielectric strength		1,000 Vrms 2,000 Vrms 2,000 Vrms
Between non-continuous terminals		
Between each terminal and other exposed metal parts		
Between each terminal and ground		
Vibration resistance		10 to 55 Hz at single amplitude of 0.75 mm (Contact opening: max. 1 msec.)
Shock resistance		Min. 294 m/s ² (Contact opening: Max. 1 msec.)
Contact resistance	AgNi alloy contact type	Dust protected type (IP50): Max. 50 mΩ Immersion protected type (IP67): Max. 100 mΩ (By voltage drop 1 A 6 to 8 V DC)
	AgNi alloy + Au-clad contact type	Dust protected type (IP50): Max. 50 mΩ Immersion protected type (IP67): Max. 100 mΩ (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)		120 cpm
Ambient temperature (at no load)		−40°C to +85°C
Unit weight		Approx. 7 g (IP50 type)
Water resistance		IP67 (Wire leads type)

Note: *1 O.F. 0.98N type is Min 5 × 10⁵ (at 20 com)

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
	8th digit of Part No.	5	4	5	4			
Pin plunger		1.96N	0.98N	0.39N	0.25N	1.6	0.4	14.7±0.6
Hinge lever		1.18N	0.59N	0.13N	0.098N	3.2	1.2	15.3±1.2
Simulated roller lever		1.18N	0.59N	0.13N	0.098N	3.2	1.2	18.5±1.2
Short roller lever		2.16N	1.08N	0.39N	0.20N	1.6	0.5	20.7±0.8
Roller lever		1.18N	0.59N	0.13N	0.098N	3.2	1.2	20.7±1.2

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](#).

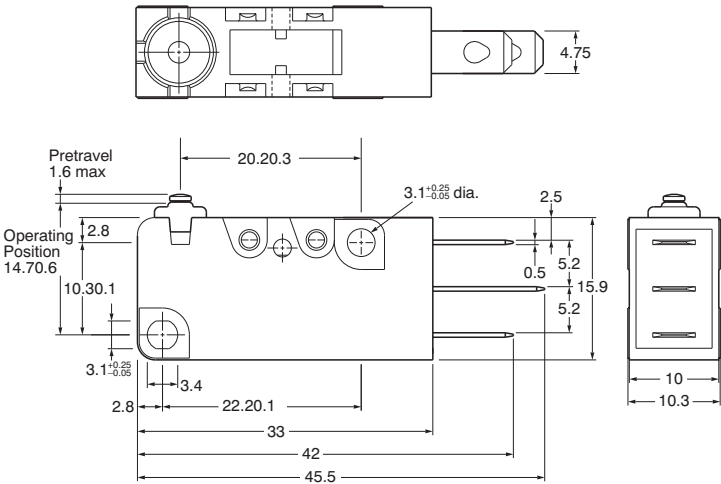
1. Dust protected type

1-(1) .187 quick-connect terminal

mm General tolerance: ±0.4

Pin plunger

CAD Data

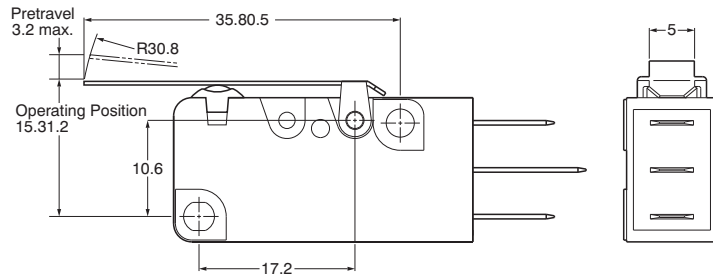


Pretravel, Max. mm	1.6
Movement differential, Max. mm	0.4
Overtravel, Min. mm	0.8
Operating position, mm	14.7±0.6

Hinge lever

mm General tolerance: ± 0.25

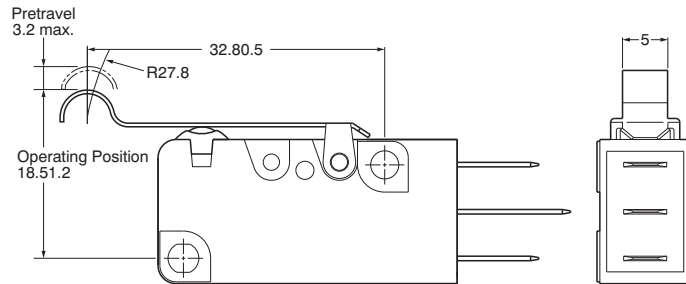
CAD Data



Pretravel, Max. mm	3.2
Movement differential, Max. mm	1.2
Overtravel, Min. mm	1.2
Operating position, mm	15.3±1.2

Simulated roller lever

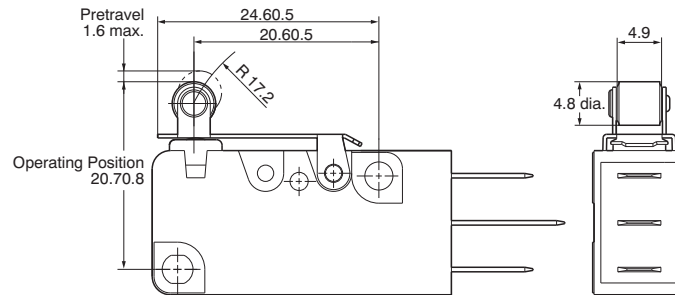
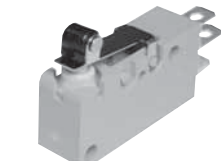
CAD Data



Pretravel, Max. mm	3.2
Movement differential, Max. mm	1.2
Overtravel, Min. mm	1.2
Operating position, mm	18.5±1.2

Short roller lever

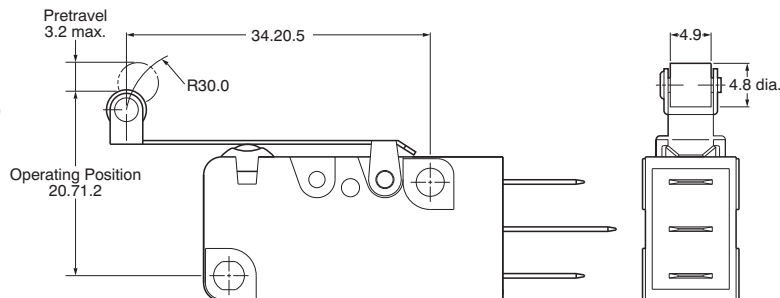
CAD Data



Pretravel, Max. mm	1.6
Movement differential, Max. mm	0.5
Overtravel, Min. mm	0.8
Operating position, mm	20.7±0.8

Roller lever

CAD Data

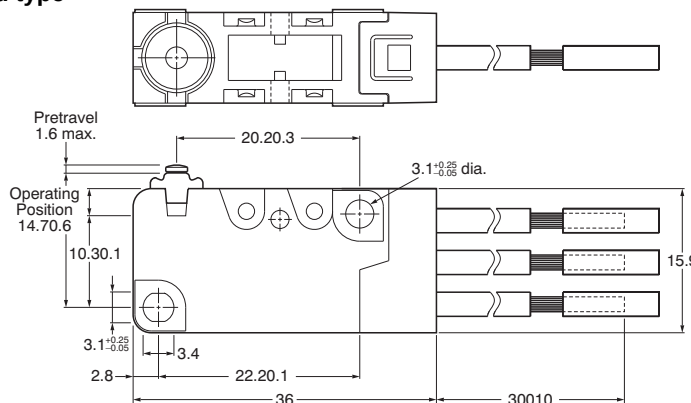


Pretravel, Max. mm	3.2
Movement differential, Max. mm	1.2
Overtravel, Min. mm	1.2
Operating position, mm	20.7±1.2

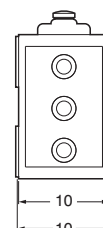
2. Immersion protected type

Wire Leads

CAD Data



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



Thickness of the lead wire:
Standard type: 0.75mm²
UL/CSA approved type:
AWG #18
Color of the lead wire
COM ...black
N.C. ...red
N.O. ...white