

FEATURES

- Miniature size (33×15.9×10.3 mm) (1.299×.626×.406 inch)
- Sealed construction for use in adverse environment—Sealed construction by epoxy resin and rubber cap keeps off the cause of miscontact such as dust C forming to IP67* of IEC protective construction classification
- Elastomer double molding technology, an industry first and ultrasonic swag technology contribute to uniform seling in high production quantities
- UL/CSA/VDE/SEMKO approved

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

TYPICAL APPLICATIONS

- Automotives
- Agricultural devices
- Industrial equipment

ORDERING INFORMATION

Ex. ABV1 2 1 0 6 1

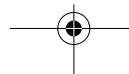
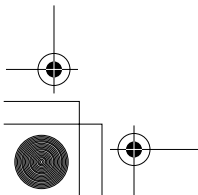
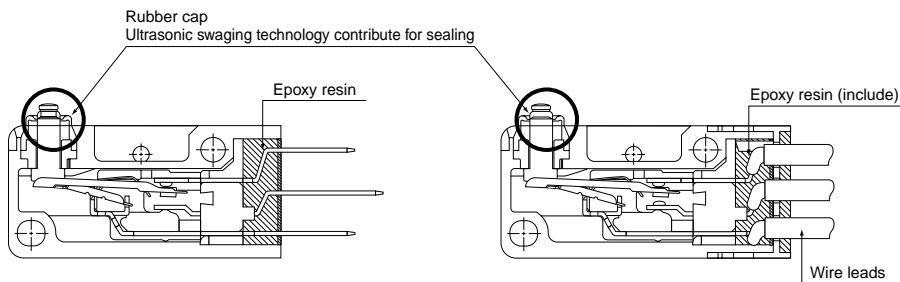
Type of switch	Terminal	Contact arrangement	Actuator	Operating force by pin plunger (max.)	Contact
ABV1: Turquoise switch V type	2: .187 quick-connect terminal 6: Wire leads	1: SPDT 2: SPST-NC 3: SPST-NO	0: Pin plunger 2: Hinge lever 4: Simulated roller lever 5: Short roller lever 6: Roller lever	4: 0.98 N {100 gf} 5: 1.96 N {200 gf} 6: 2.94 N {300 gf}	1: Gold-clad 0: Silver-ally

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

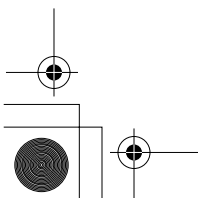
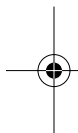
.187 quick-connect terminal

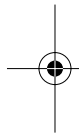
Wire leads



Contact	Actuator	Arrangement	Operating force, Max.	187 Quick-connect terminal	Wire Le
Silver-alloy	Pin plunger	SPDT	0.98 N {100 gf}	ABV121040	ABV161
			1.96 N {200 gf}	ABV121050	ABV161
			2.94 N {300 gf}	ABV121060	ABV161
		SPST-NC	0.98 N {100 gf}	ABV122040	ABV162
			1.96 N {200 gf}	ABV122050	ABV162
			2.94 N {300 gf}	ABV122060	ABV162
		SPST-NO	0.98 N {100 gf}	ABV123040	ABV163
			1.96 N {200 gf}	ABV123050	ABV163
			2.94 N {300 gf}	ABV123060	ABV163
	Hinge lever	SPDT	0.59 N {60 gf}	ABV121240	ABV161
			1.18 N {120 gf}	ABV121250	ABV161
			1.77 N {180 gf}	ABV121260	ABV161
		SPST-NC	0.59 N {60 gf}	ABV122240	ABV162
			1.18 N {120 gf}	ABV122250	ABV162
			1.77 N {180 gf}	ABV122260	ABV162
		SPST-NO	0.59 N {60 gf}	ABV123240	ABV163
			1.18 N {120 gf}	ABV123250	ABV163
			1.77 N {180 gf}	ABV123260	ABV163
	Simulated roller lever	SPDT	0.59 N {60 gf}	ABV121440	ABV161
			1.18 N {120 gf}	ABV121450	ABV161
			1.77 N {180 gf}	ABV121460	ABV161
		SPST-NC	0.59 N {60 gf}	ABV122440	ABV162
			1.18 N {120 gf}	ABV122450	ABV162
			1.77 N {180 gf}	ABV122460	ABV162
		SPST-NO	0.59 N {60 gf}	ABV123440	ABV163
			1.18 N {120 gf}	ABV123450	ABV163
			1.77 N {180 gf}	ABV123460	ABV163
	Short roller lever	SPDT	1.08 N {110 gf}	ABV121540	ABV161
			2.16 N {220 gf}	ABV121550	ABV161
			3.14 N {320 gf}	ABV121560	ABV161
		SPST-NC	1.08 N {110 gf}	ABV122540	ABV162
			2.16 N {220 gf}	ABV122550	ABV162
			3.14 N {320 gf}	ABV122560	ABV162
		SPST-NO	1.08 N {110 gf}	ABV123540	ABV163
			2.16 N {220 gf}	ABV123550	ABV163
			3.14 N {320 gf}	ABV123560	ABV163
	Roller lever	SPDT	0.59 N {60 gf}	ABV121640	ABV161
			1.18 N {120 gf}	ABV121650	ABV161
			1.77 N {180 gf}	ABV121660	ABV161
		SPST-NC	0.59 N {60 gf}	ABV122640	ABV162
			1.18 N {120 gf}	ABV122650	ABV162
			1.77 N {180 gf}	ABV122660	ABV162
SPST-NO		0.59 N {60 gf}	ABV123640	ABV163	
		1.18 N {120 gf}	ABV123650	ABV163	
		1.77 N {180 gf}	ABV136660	ABV163	

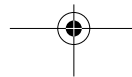
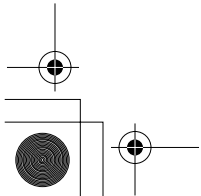
Remarks: When ordering UL/CSA approved types, please attach suffix "9" to the part number.
When ordering VDE/SEMKO approved types, please attach suffix "8" to the part number.





Gold-clad	Pin plunger	SPDT	0.98 N {100 gf}	ABV121041	ABV161041
			1.96 N {200 gf}	ABV121051	ABV161051
			2.94 N {300 gf}	ABV121061	ABV161061
		SPST-NC	0.98 N {100 gf}	ABV122041	ABV162041
			1.96 N {200 gf}	ABV122051	ABV162051
			2.94 N {300 gf}	ABV122061	ABV162061
		SPST-NO	0.98 N {100 gf}	ABV123041	ABV163041
			1.96 N {200 gf}	ABV123051	ABV163051
			2.94 N {300 gf}	ABV123061	ABV163061
	Hinge lever	SPDT	0.59 N {60 gf}	ABV121241	ABV161241
			1.18 N {120 gf}	ABV121251	ABV161251
			1.77 N {180 gf}	ABV121261	ABV161261
		SPST-NC	0.59 N {60 gf}	ABV122241	ABV162241
			1.18 N {120 gf}	ABV122251	ABV162251
			1.77 N {180 gf}	ABV122261	ABV162261
		SPST-NO	0.59 N {60 gf}	ABV123241	ABV163241
			1.18 N {120 gf}	ABV123251	ABV163251
			1.77 N {180 gf}	ABV123261	ABV163261
	Simulated roller lever	SPDT	0.59 N {60 gf}	ABV121441	ABV161441
			1.18 N {120 gf}	ABV121451	ABV161451
			1.77 N {180 gf}	ABV121461	ABV161461
		SPST-NC	0.59 N {60 gf}	ABV122441	ABV162441
			1.18 N {120 gf}	ABV122451	ABV162451
			1.77 N {180 gf}	ABV122461	ABV162461
		SPST-NO	0.59 N {60 gf}	ABV123441	ABV163441
			1.18 N {120 gf}	ABV123451	ABV163451
			1.77 N {180 gf}	ABV123461	ABV163461
	Short roller lever	SPDT	1.08 N {110 gf}	ABV121541	ABV161541
			2.16 N {220 gf}	ABV121551	ABV161551
			3.14 N {320 gf}	ABV121561	ABV161561
		SPST-NC	1.08 N {110 gf}	ABV122541	ABV162541
			2.16 N {220 gf}	ABV122551	ABV162551
			3.14 N {320 gf}	ABV122561	ABV162561
		SPST-NO	1.08 N {110 gf}	ABV123541	ABV163541
			2.16 N {220 gf}	ABV123551	ABV163551
			3.14 N {320 gf}	ABV123561	ABV163561
Roller lever	SPDT	0.59 N {60 gf}	ABV121641	ABV161641	
		1.18 N {120 gf}	ABV121651	ABV161651	
		1.77 N {180 gf}	ABV121661	ABV161661	
	SPST-NC	0.59 N {60 gf}	ABV122641	ABV162641	
		1.18 N {120 gf}	ABV122651	ABV162651	
		1.77 N {180 gf}	ABV122661	ABV162661	
	SPST-NO	0.59 N {60 gf}	ABV123641	ABV163641	
		1.18 N {120 gf}	ABV123651	ABV163651	
		1.77 N {180 gf}	ABV123661	ABV163661	

Remarks: When ordering UL/CSA approved types, please attach suffix "9" to the part number.
When ordering VDE/SEMKO approved types, please attach suffix "8" to the part number.



Gold-clad contact	3 A 250 V AC (O.F. 1.96 N {200gf}, 2.94 N {300gf}) 1 A 250 V AC (O.F. 0.98 N {100gf})	5 mA 6 V DC 2 mA 12 V DC 1 mA 24 V DC
Silver-alloy	5 A 250 V AC (O.F. 1.96 N {200gf}, 2.94 N {300gf}) 3 A 250 V AC (O.F. 0.98 N {100gf})	—

2. Characteristics

Mechanical life (O.T.: Specified value)	Min. 5×10^6 (at 60 cpm)	
Electrical life	Nominal rating (O.T.: Max.)	Min. 10^5 (at 20 cpm)
	Low-level rating (O.T.: Specified value)	Min. 10^6 (at 20 cpm)
Insulation resistance	Min. 100 M Ω (at 500 V DC insulation resistance meter)	
Dielectric strength	1,000 Vrms 2,000 Vrms 2,000 Vrms	
	Between non-continuous terminals	1,000 Vrms
	Between each terminal and other exposed metal parts	2,000 Vrms
	Between each terminal and ground	2,000 Vrms
Vibration resistance	10 to 55 Hz at single amplitude of 0.75 mm (Contact opening: max.)	
Shock resistance	Min. 294 m/s ² {30 G} (Contact opening: Max. 1 msec.)	
Contact resistance	Silver alloy contact type	Dust protected type (IP50): Max. 50 m Ω Immersion protected type (IP67): Max. 100 m Ω (By voltage drop 1 A 6 to 8 V DC)
	Gold-clad contact type	Dust protected type (IP50): Max. 50 m Ω Immersion protected type (IP67): Max. 100 m Ω (By voltage drop 0.1 A 6 to 8 V DC)
Allowable operating speed (at no load)	1 to 500 mm/sec.	
Ambient temperature (at no load)	-40°C to +85°C -40°F to +185°F	
Unit weight	Approx. 7 g .247 oz (IP50 type)	

3. Operating characteristics

Type of actuator	Operating force, Max.			Release force, Min.			Pretravel, Max. mm inch	Movement differential, Max. mm inch	Overtravel, Min. mm inch
	2.94N {300gf}	1.96N {200gf}	0.98N {100gf}	0.59N {60gf}	0.39N {40gf}	0.25N {25gf}			
Pin plunger	2.94N {300gf}	1.96N {200gf}	0.98N {100gf}	0.59N {60gf}	0.39N {40gf}	0.25N {25gf}	1.6 .063	0.4 .016	0.8 .031
Hinge lever	1.77N {180gf}	1.18N {120gf}	0.59N {60gf}	0.20N {20gf}	0.13N {13gf}	0.098N {10gf}	3.2 .126	1.2 .047	1.2 .047
Simulated roller lever	1.77N {180gf}	1.18N {120gf}	0.59N {60gf}	0.20N {20gf}	0.13N {13gf}	0.098N {10gf}	3.2 .126	1.2 .047	1.2 .047
Short roller lever	3.14N {320gf}	2.16N {220gf}	1.08N {110gf}	0.59N {60gf}	0.39N {40gf}	0.20N {20gf}	1.6 .063	0.5 .020	0.8 .031
Roller lever	1.77N {180gf}	1.18N {120gf}	0.59N {60gf}	0.20N {20gf}	0.13N {13gf}	0.098N {10gf}	3.2 .126	1.2 .047	1.2 .047

() : Low force type

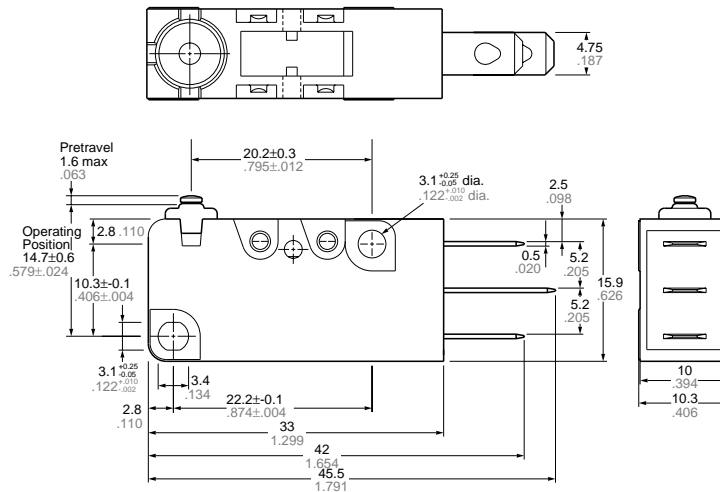
DIMENSIONS

mm inch General tolerance

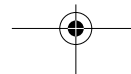
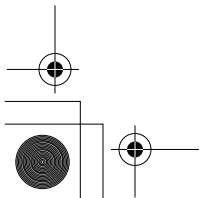
1. Dust protected type

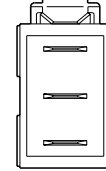
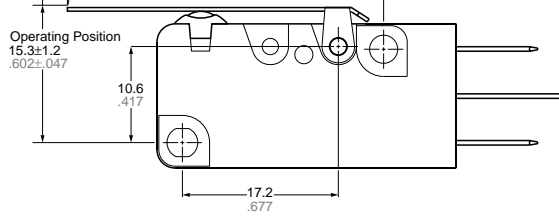
1-(1) .187 quick-connect terminal

Pin plunger



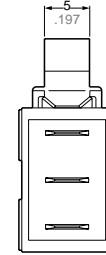
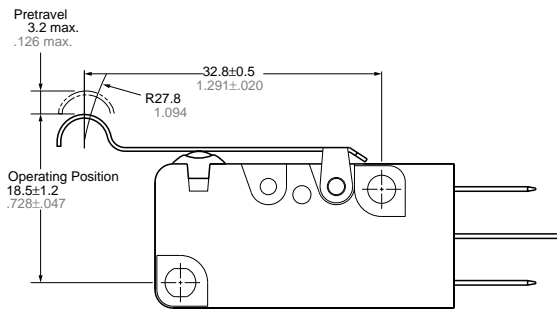
Pretravel, Max. mm inch
Movement differential, Max. mm inch
Overtravel, Min. mm inch
Operating position, mm inch





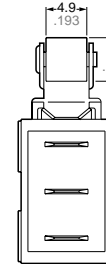
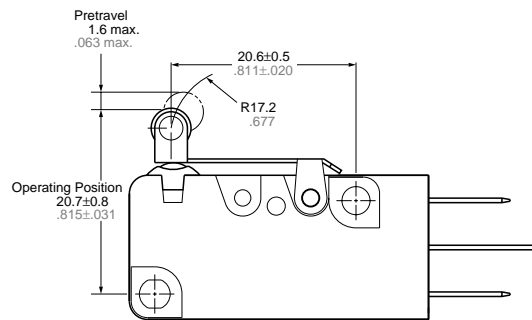
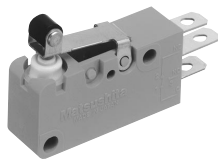
Pretravel, Max. mm inch	3.2 ± .1
Movement differential, Max. mm inch	1.2 ± .0
Overtravel, Min. mm inch	1.2 ± .0
Operating position, mm inch	15.3 ± .602 ± .047

Simulated roller lever

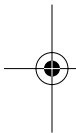


Pretravel, Max. mm inch	3.2 ± .1
Movement differential, Max. mm inch	1.2 ± .0
Overtravel, Min. mm inch	1.2 ± .0
Operating position, mm inch	18.5 ± .728 ± .047

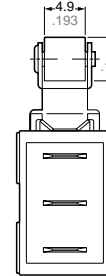
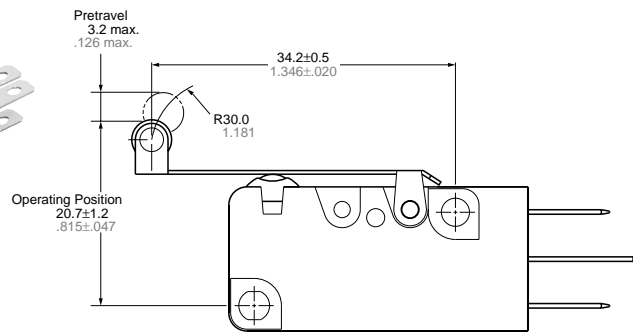
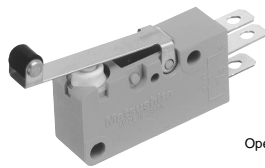
Short roller lever



Pretravel, Max. mm inch	1.6 ± .0
Movement differential, Max. mm (inch)	0.5 ± .0
Overtravel, Min. mm (inch)	0.8 ± .0
Operating position, mm inch	20.7 ± .815 ± .031



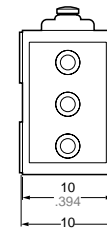
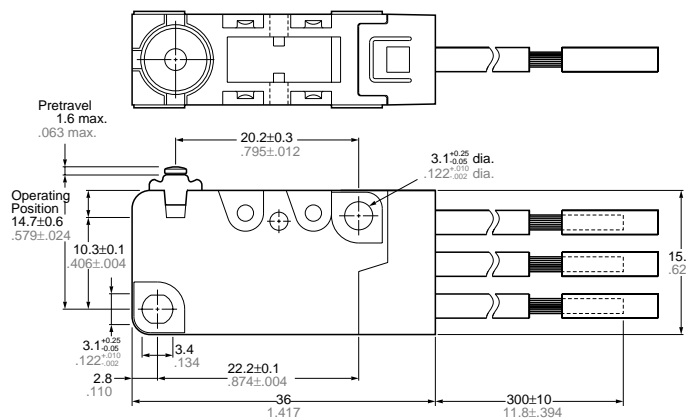
Roller lever



Pretravel, Max. mm inch	3.2 ± .1
Movement differential, Max. mm inch	1.2 ± .0
Overtravel, Min. mm (inch)	1.2 ± .0
Operating position, mm inch	20.7 ± .815 ± .047

2. Immersion protected type

Wire Leads



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

