

ABS1,4,5

<h1>NAIS</h1>	HIGH ENVIRONMENTAL RESISTANCE	TURQUOISE SWITCHES S TYPE (ABS)
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FEATURES

- Subminiature size (19.8×11.1×6.4 mm) (.780×.437×.252 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. 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
 - UL/CSA/VDE/SEMKO approved
(AS for gold-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

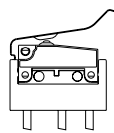
- Automotives
- Home appliances (vacuum cleaner, air purifier)
- Others (gas cookingrange, water vallet)

ORDERING INFORMATION

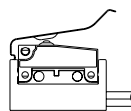
Ex. ABS 1 1 1 0 4 0

Type of switch	Wire and terminal position	Terminal	Contact arrangement	Actuator	Operating force by pin plunger (max.)	Contact
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	3: 75 gf 2.646 oz 4: 100 gf 3.527 oz 5: 150 gf 5.291 oz	0: Silver-alloy 1: Gold-clad triple layer 4: Gold-clad double layer

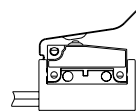
- Remarks: 1. Standard packing: Dust protected type 100 pcs./carton, 1,000 pcs./case; Immersion protected type 50 pcs./case.
 2. SPST-NC and SPST-NO are only available for wire leads type.
 3. Leaf lever is only available for wire leads type
 4. 75 g oprating force is only available for gold-clad contact.
 5. As for wire position:



Straight type



Wire opposite to the actuator side type (Right angle)



Wire actuator side type (Left angle)

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

PRODUCT TYPES**1. Dust protected type**

Silver alloy

Actuator	Operating force Max. gf oz	.110 quick-connect terminal	Solder terminal	PC board terminal		
				Straight	Right angle	Left angle
Pin plunger	100 3.527	ABS111040	ABS141040	ABS151040	ABS451040	ABS551040
	150 5.291	ABS111050	ABS141050	ABS151050	ABS451050	ABS551050
Short hinge lever	40 1.441	ABS111140	ABS141140	ABS151140	ABS451140	ABS551140
	60 2.116	ABS111150	ABS141150	ABS151150	ABS451150	ABS551150
Hinge lever	35 1.235	ABS111240	ABS141240	ABS151240	ABS451240	ABS551240
	55 1.940	ABS111250	ABS141250	ABS151250	ABS451250	ABS551250
Long hinge lever	25 .882	ABS111340	ABS141340	ABS151340	ABS451340	ABS551340
	45 1.587	ABS111350	ABS141350	ABS151350	ABS451350	ABS551350
Simulated roller lever	35 1.235	ABS111440	ABS141440	ABS151440	ABS451440	ABS551440
	55 1.940	ABS111450	ABS141450	ABS151450	ABS451450	ABS551450
Roller lever	40 1.441	ABS111640	ABS141640	ABS151640	ABS451640	ABS551640
	60 2.116	ABS111650	ABS141650	ABS151650	ABS451650	ABS551650

Gold-clad triple layer

Actuator	Operating force Max. gf oz	.110 quick-connect terminal	Solder terminal	PC board terminal		
				Straight	Right angle	Left angle
Pin plunger	75 2.646	ABS111031	ABS141031	ABS151031	ABS451031	ABS551031
	100 3.527	ABS111041	ABS141041	ABS151041	ABS451041	ABS551041
	150 5.291	ABS111051	ABS141051	ABS151051	ABS451051	ABS551051
Short hinge lever	30 1.058	ABS111131	ABS141131	ABS151131	ABS451131	ABS551131
	40 1.441	ABS111141	ABS141141	ABS151141	ABS451141	ABS551141
	60 2.116	ABS111151	ABS141151	ABS151151	ABS451151	ABS551151
Hinge lever	28 .988	ABS111231	ABS141231	ABS151231	ABS451231	ABS551231
	35 1.235	ABS111241	ABS141241	ABS151241	ABS451241	ABS551241
	55 1.940	ABS111251	ABS141251	ABS151251	ABS451251	ABS551251
Long hinge lever	23 .811	ABS111331	ABS141331	ABS151331	ABS451331	ABS551331
	25 .882	ABS111341	ABS141341	ABS151341	ABS451341	ABS551341
	45 1.587	ABS111351	ABS141351	ABS151351	ABS451351	ABS551351
Simulated roller lever	28 .888	ABS111431	ABS141431	ABS151431	ABS451431	ABS551431
	35 1.235	ABS111441	ABS141441	ABS151441	ABS451441	ABS551441
	55 1.940	ABS111451	ABS141451	ABS151451	ABS451451	ABS551451
Roller lever	30 1.058	ABS111631	ABS141631	ABS151631	ABS451631	ABS551631
	40 1.441	ABS111641	ABS141641	ABS151641	ABS451641	ABS551641
	60 2.116	ABS111651	ABS141651	ABS151651	ABS451651	ABS551651

Gold-clad double layer

Actuator	Operating force Max. gf oz	.110 quick-connect terminal	Solder terminal	PC board terminal		
				Straight	Right angle	Left angle
Pin plunger	75 2.646	ABS111034	ABS141034	ABS151034	ABS451034	ABS551034
	100 3.527	ABS111044	ABS141044	ABS151044	ABS451044	ABS551044
	150 5.291	ABS111054	ABS141054	ABS151054	ABS451054	ABS551054
Short hinge lever	30 1.058	ABS111134	ABS141134	ABS151134	ABS451134	ABS551134
	40 1.441	ABS111144	ABS141144	ABS151144	ABS451144	ABS551144
	60 2.116	ABS111154	ABS141154	ABS151154	ABS451154	ABS551154
Hinge lever	28 .988	ABS111234	ABS141234	ABS151234	ABS451234	ABS551234
	35 1.235	ABS111244	ABS141244	ABS151244	ABS451244	ABS551244
	55 1.940	ABS111254	ABS141254	ABS151254	ABS451254	ABS551254
Long hinge lever	23 .811	ABS111334	ABS141334	ABS151334	ABS451334	ABS551334
	25 .882	ABS111344	ABS141344	ABS151344	ABS451344	ABS551344
	45 1.587	ABS111354	ABS141354	ABS151354	ABS451354	ABS551354
Simulated roller lever	28 .988	ABS111434	ABS141434	ABS151434	ABS451434	ABS551434
	35 1.235	ABS111444	ABS141444	ABS151444	ABS451444	ABS551444
	55 1.940	ABS111454	ABS141454	ABS151454	ABS451454	ABS551454
Roller lever	30 1.058	ABS111634	ABS141634	ABS151634	ABS451634	ABS551634
	40 1.441	ABS111644	ABS141644	ABS151644	ABS451644	ABS551644
	60 2.116	ABS111654	ABS141654	ABS151654	ABS451654	ABS551654

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.

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

Silver alloy

Actuator	Operating force Max. gf oz	SPDT		
		Straight	Wire position Right angle	Left angle
Pin plunger	100 3.527	ABS161040	ABS461040	ABS561040
	150 5.291	ABS161050	ABS461050	ABS561050
Short hinge lever	40 1.441	ABS161140	ABS461140	ABS561140
	60 2.116	ABS161150	ABS461150	ABS561150
Hinge lever	35 1.235	ABS161240	ABS461240	ABS561240
	55 1.940	ABS161250	ABS461250	ABS561250
Long hinge lever	25 882	ABS161340	ABS461340	ABS561340
	45 1.587	ABS161350	ABS461350	ABS561350
Simulated roller lever	35 1.235	ABS161440	ABS461440	ABS561440
	55 1.940	ABS161450	ABS461450	ABS561450
Roller lever	40 1.441	ABS161640	ABS461640	ABS561640
	60 2.116	ABS161650	ABS461650	ABS561650

Gold-clad triple layer

Actuator	Operating force Max. gf oz	SPDT		
		Straight	Wire position Right angle	Left angle
Pin plunger	75 2.646	ABS161031	ABS461031	ABS561031
	100 3.527	ABS161041	ABS461041	ABS561041
	150 5.291	ABS161051	ABS461051	ABS561051
Short hinge lever	30 1.058	ABS161131	ABS461131	ABS561131
	40 1.441	ABS161141	ABS461141	ABS561141
	60 2.116	ABS161151	ABS461151	ABS561151
Hinge lever	28 988	ABS161231	ABS461231	ABS561231
	35 1.235	ABS161241	ABS461241	ABS561241
	55 1.940	ABS161251	ABS461251	ABS561251
Long hinge lever	23 811	ABS161331	ABS461331	ABS561331
	25 822	ABS161341	ABS461341	ABS561341
	45 1.587	ABS161351	ABS461351	ABS561351
Simulated roller lever	28 888	ABS161431	ABS461431	ABS561431
	35 1.235	ABS161441	ABS461441	ABS561441
	55 1.940	ABS161451	ABS461451	ABS561451
Roller lever	30 1.058	ABS161631	ABS461631	ABS561631
	40 1.441	ABS161641	ABS461641	ABS561641
	60 2.116	ABS161651	ABS461651	ABS561651

Gold-clad double layer

Actuator	Operating force Max. gf oz	SPDT		
		Straight	Wire position Right angle	Left angle
Pin plunger	75 2.646	ABS161034	ABS461034	ABS561034
	100 3.527	ABS161044	ABS461044	ABS561044
	150 5.291	ABS161054	ABS461054	ABS561054
Short hinge lever	30 1.058	ABS161134	ABS461134	ABS561134
	40 1.441	ABS161144	ABS461144	ABS561144
	60 2.116	ABS161154	ABS461154	ABS561154
Hinge lever	28 988	ABS161234	ABS461234	ABS561234
	35 1.235	ABS161244	ABS461244	ABS561244
	55 1.940	ABS161254	ABS461254	ABS561254
Long hinge lever	23 811	ABS161334	ABS461334	ABS561334
	25 882	ABS161344	ABS461344	ABS561344
	45 1.587	ABS161354	ABS461354	ABS561354
Simulated roller lever	28 988	ABS161434	ABS461434	ABS561434
	35 1.235	ABS161444	ABS461444	ABS561444
	55 1.940	ABS161454	ABS461454	ABS561454
Roller lever	30 1.058	ABS161634	ABS461634	ABS561634
	40 1.441	ABS161644	ABS461644	ABS561644
	60 2.116	ABS161654	ABS461654	ABS561654

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.

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

Silver alloy

Actuator	Operating force Max. gf oz	SPST-NC		
		Straight	Wire position Right angle	Left angle
Pin plunger	100 3.527	ABS162040	ABS462040	ABS562040
	150 5.291	ABS162050	ABS462050	ABS562050
Short hinge lever	40 1.441	ABS162140	ABS462140	ABS562140
	60 2.116	ABS162150	ABS462150	ABS562150
Hinge lever	35 1.235	ABS162240	ABS462240	ABS562240
	55 1.940	ABS162250	ABS462250	ABS562250
Long hinge lever	25 882	ABS162340	ABS462340	ABS562340
	45 1.587	ABS162350	ABS462350	ABS562350
Simulated roller lever	35 1.235	ABS162440	ABS462440	ABS562440
	55 1.940	ABS162450	ABS462450	ABS562450
Roller lever	40 1.441	ABS162640	ABS462640	ABS562640
	60 2.116	ABS162650	ABS462650	ABS562650

Gold-clad triple layer

Actuator	Operating force Max. gf oz	SPST-NC		
		Straight	Wire position Right angle	Left angle
Pin plunger	75 2.646	ABS162031	ABS462031	ABS562031
	100 3.527	ABS162041	ABS462041	ABS562041
	150 5.291	ABS162051	ABS462051	ABS562051
Short hinge lever	30 1.058	ABS162131	ABS462131	ABS562131
	40 1.441	ABS162141	ABS462141	ABS562141
Hinge lever	60 2.116	ABS162151	ABS462151	ABS562151
	28 988	ABS162231	ABS462231	ABS562231
Hinge lever	35 1.235	ABS162241	ABS462241	ABS562241
	55 1.940	ABS162251	ABS462251	ABS562251
Long hinge lever	23 811	ABS162331	ABS462331	ABS562331
	25 822	ABS162341	ABS462341	ABS562341
	45 1.587	ABS162351	ABS462351	ABS562351
Simulated roller lever	28 888	ABS162431	ABS462431	ABS562431
	35 1.235	ABS162441	ABS462441	ABS562441
	55 1.940	ABS162451	ABS462451	ABS562451
Roller lever	30 1.058	ABS162631	ABS462631	ABS562631
	40 1.441	ABS162641	ABS462641	ABS562641
	60 2.116	ABS162651	ABS462651	ABS562651

Gold-clad double layer

Actuator	Operating force Max. gf oz	SPST-NC		
		Straight	Wire position Right angle	Left angle
Pin plunger	75 2.646	ABS162034	ABS462034	ABS562034
	100 3.527	ABS162044	ABS462044	ABS562044
	150 5.291	ABS162054	ABS462054	ABS562054
Short hinge lever	30 1.058	ABS162134	ABS462134	ABS562134
	40 1.441	ABS162144	ABS462144	ABS562144
	60 2.116	ABS162154	ABS462154	ABS562154
Hinge lever	28 988	ABS162234	ABS462234	ABS562234
	35 1.235	ABS162244	ABS462244	ABS562244
	55 1.940	ABS162254	ABS462254	ABS562254
Long hinge lever	23 811	ABS162334	ABS462334	ABS562334
	25 882	ABS162344	ABS462344	ABS562344
	45 1.587	ABS162354	ABS462354	ABS562354
Simulated roller lever	28 988	ABS162434	ABS462434	ABS562434
	35 1.235	ABS162444	ABS462444	ABS562444
	55 1.940	ABS162454	ABS462454	ABS562454
Roller lever	30 1.058	ABS162634	ABS462634	ABS562634
	40 1.441	ABS162644	ABS462644	ABS562644
	60 2.116	ABS162654	ABS462654	ABS562654

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.

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

Silver alloy

Actuator	Operating force Max. gf oz	SPST-NO		
		Wire position		
		Straight	Right angle	Left angle
Pin plunger	100 3.527	ABS163040	ABS463040	ABS563040
	150 5.291	ABS163050	ABS463050	ABS563050
Short hinge lever	40 1.441	ABS163140	ABS463140	ABS563140
	60 2.116	ABS163150	ABS463150	ABS563150
Hinge lever	35 1.235	ABS163240	ABS463240	ABS563240
	55 1.940	ABS163250	ABS463250	ABS563250
Long hinge lever	25 882	ABS163340	ABS463340	ABS563340
	45 1.587	ABS163350	ABS463350	ABS563350
Simulated roller lever	35 1.235	ABS163440	ABS463440	ABS563440
	55 1.940	ABS163450	ABS463450	ABS563450
Roller lever	40 1.441	ABS163640	ABS463640	ABS563640
	60 2.116	ABS163650	ABS463650	ABS563650

Gold-clad triple layer

Actuator	Operating force Max. gf oz	SPST-NO		
		Wire position		
		Straight	Right angle	Left angle
Pin plunger	75 2.646	ABS163031	ABS463031	ABS563031
	100 3.527	ABS163041	ABS463041	ABS563041
	150 5.291	ABS163051	ABS463051	ABS563051
Short hinge lever	30 1.058	ABS163131	ABS463131	ABS563131
	40 1.441	ABS163141	ABS463141	ABS563141
	60 2.116	ABS163151	ABS463151	ABS563151
Hinge lever	28 988	ABS163231	ABS463231	ABS563231
	35 1.235	ABS163241	ABS463241	ABS563241
	55 1.940	ABS163251	ABS463251	ABS563251
Long hinge lever	23 811	ABS163331	ABS463331	ABS563331
	25 822	ABS163341	ABS463341	ABS563341
	45 1.587	ABS163351	ABS463351	ABS563351
Simulated roller lever	28 888	ABS163431	ABS463431	ABS563431
	35 1.235	ABS163441	ABS463441	ABS563441
	55 1.940	ABS163451	ABS463451	ABS563451
Roller lever	30 1.058	ABS163631	ABS463631	ABS563631
	40 1.441	ABS163641	ABS463641	ABS563641
	60 2.116	ABS163651	ABS463651	ABS563651

Gold-clad double layer

Actuator	Operating force Max. gf oz	SPST-NO		
		Wire position		
		Straight	Right angle	Left angle
Pin plunger	75 2.646	ABS163034	ABS463034	ABS563034
	100 3.527	ABS163044	ABS463044	ABS563044
	150 5.291	ABS163054	ABS463054	ABS563054
Short hinge lever	30 1.058	ABS163134	ABS463134	ABS563134
	40 1.441	ABS163144	ABS463144	ABS563144
	60 2.116	ABS163154	ABS463154	ABS563154
Hinge lever	28 988	ABS163234	ABS463234	ABS563234
	35 1.235	ABS163244	ABS463244	ABS563244
	55 1.940	ABS163254	ABS463254	ABS563254
Long hinge lever	23 811	ABS163334	ABS463334	ABS563334
	25 882	ABS163344	ABS463344	ABS563344
	45 1.587	ABS163354	ABS463354	ABS563354
Simulated roller lever	28 988	ABS163434	ABS463434	ABS563434
	35 1.235	ABS163444	ABS463444	ABS563444
	55 1.940	ABS163454	ABS463454	ABS563454
Roller lever	30 1.058	ABS163634	ABS463634	ABS563634
	40 1.441	ABS163644	ABS463644	ABS563644
	60 2.116	ABS163654	ABS463654	ABS563654

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.

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

- Leaf lever type

Silver alloy

Actuator	Operating force Max. gf oz	SPDT		
		Straight	Right angle	Left angle
Leaf lever	90 3.175	ABS161840	ABS461840	ABS561840
	110 3.880	ABS161850	ABS461850	ABS561850

Gold-clad triple layer

Actuator	Operating force Max. gf oz	SPDT		
		Straight	Right angle	Left angle
Leaf lever	75 2.646	ABS161831	ABS461831	ABS561831
	90 3.175	ABS161841	ABS461841	ABS561841
	110 3.880	ABS161851	ABS461851	ABS561851

Gold-clad double layer

Actuator	Operating force Max. gf oz	SPDT		
		Straight	Right angle	Left angle
Leaf lever	75 2.646	ABS161834	ABS461834	ABS561834
	90 3.175	ABS161844	ABS461844	ABS561844
	110 3.880	ABS161854	ABS461854	ABS561854

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

- Leaf lever type

Silver alloy

Actuator	Operating force Max. gf oz	SPST-NC		
		Straight	Right angle	Left angle
Leaf lever	90 3.175	ABS162840	ABS462840	ABS562840
	110 3.880	ABS162850	ABS462850	ABS562850

Gold-clad triple layer

Actuator	Operating force Max. gf oz	SPST-NC		
		Straight	Right angle	Left angle
Leaf lever	75 2.646	ABS162831	ABS462831	ABS562831
	90 3.175	ABS162841	ABS462841	ABS562841
	110 3.880	ABS162851	ABS462851	ABS562851

Gold-clad double layer

Actuator	Operating force Max. gf oz	SPST-NC		
		Straight	Right angle	Left angle
Leaf lever	75 2.646	ABS162834	ABS462834	ABS562834
	90 3.175	ABS162844	ABS462844	ABS562844
	110 3.880	ABS162854	ABS462854	ABS562854

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

- Leaf lever type

Silver alloy

Actuator	Operating force Max. gf oz	SPST-NO		
		Straight	Right angle	Left angle
Leaf lever	90 3.175	ABS163840	ABS463840	ABS563840
	110 3.880	ABS163850	ABS463850	ABS563850

Gold-clad triple layer

Actuator	Operating force Max. gf oz	SPST-NO		
		Straight	Right angle	Left angle
Leaf lever	75 2.646	ABS163831	ABS463831	ABS563831
	90 3.175	ABS163841	ABS463841	ABS563841
	110 3.880	ABS163851	ABS463851	ABS563851

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.

ABS1,4,5

Gold-clad double layer

Actuator	Operating force Max. gf oz	SPST-NO		
		Straight	Right angle	Left angle
Leaf lever	75 2.646	ABS163834	ABS463834	ABS563834
	90 3.175	ABS163844	ABS463844	ABS563844
	110 3.880	ABS162854	ABS462854	ABS562854

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.

SPECIFICATIONS

1. Contact rating

Voltage	Silver alloy contact type		Gold-clad contact type	
			Gold-clad triple layer	Gold-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 (Gold-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



2. Characteristics

Mechanical life (O.T.: Specified value)	Leaf lever	Min. 5x10 ⁵ (at 60 cpm)
	Other types	Min. 5x10 ⁶ (at 60 cpm)
Electrical life at rated load (O.T.: Max.)	Silver alloy contact type	Min. 5x10 ⁴ (at 20 cpm)
	Gold-clad contact type	Min. 2x10 ⁵ (at 20 cpm)
Insulation resistance		Min. 100 MΩ (at 500 V DC)
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. 30 G (Contact opening Max. 1 msec.)
Contact resistance (Initial)	Silver 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)
	Gold-clad contact type	Dust protected type (IP50): Max. 100 mΩ Immersion protected type (IP67): Max. 150 mΩ (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 -40°F to +185°F
Ambient humidity		Max. 95% R.H.
Unit weight		Approx. 2 g .071 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	Operating position, mm inch
	0.74N {75gf}	0.98N {100gf}	1.47N {150gf}	0.098N {10gf}	0.15N {15gf}	0.20N {20gf}				
Pin plunger	0.74N {75gf}	0.98N {100gf}	1.47N {150gf}	0.098N {10gf}	0.15N {15gf}	0.20N {20gf}	0.6 .024	0.1 .004	0.4 .016	8.4±0.3 .331 ± .012
Short hinge lever	0.29N {30gf}	0.39N {40gf}	0.59N {60gf}	0.020N {2.0gf}	0.034N {3.5gf}	0.039N {4.0gf}	2.5 .098	0.5 .020	0.8 .031	8.8±0.8 .346 ± .031
Hinge lever	0.27N {28gf}	0.34N {35gf}	0.54N {55gf}	0.017N {1.70gf}	0.029N {3.0gf}	0.034N {3.5gf}	2.8 .110	0.8 .031	1.2 .047	8.8±0.8 .346 ± .031
Long hinge lever	0.23N {23gf}	0.25N {25gf}	0.44N {45gf}	0.015N {1.5gf}	0.025N {2.5gf}	0.029N {3.0gf}	3.5 .138	1.0 .039	1.6 .063	8.8±1.2 .346 ± .047
Simulated roller lever	0.27N {28gf}	0.34N {35gf}	0.54N {55gf}	0.017N {1.7gf}	0.029N {3.0gf}	0.034N {3.5gf}	2.8 .110	0.8 .031	1.2 .047	11.65±0.8 .459 ± .031
Roller lever	0.29N {30gf}	0.39N {40gf}	0.59N {60gf}	0.020N {2.0gf}	0.034N {3.5gf}	0.039N {4.0gf}	2.5 .098	0.5 .020	0.8 .031	14.5±0.8 .571 ± .031
Leaf lever	0.74N {75gf}	0.88N {90gf}	1.08N {110gf}	0.15N {15gf}	0.17N {17gf}	0.20N {20gf}	4.5 .177	1.0 .039	2.5 .098	14.5±1.5 .571 ± .059

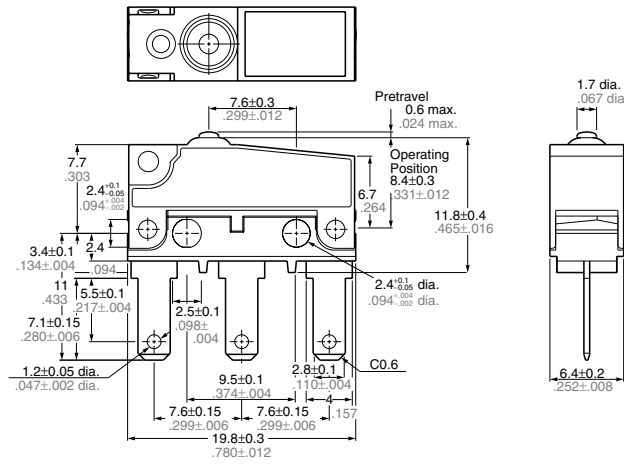
ABS1,4,5

mm inch General tolerance: $\pm 0.25 \pm .010$

DIMENSIONS

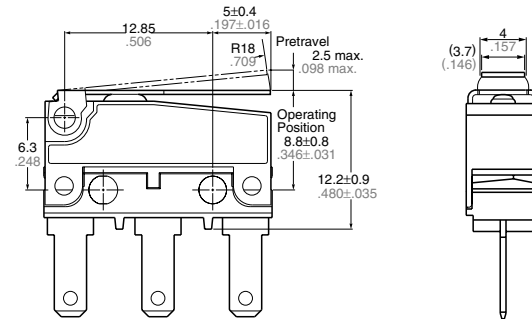
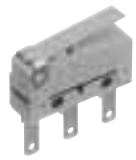
1. Dust protected type

1-(1) .110 quick-connect terminal
Pin plunger



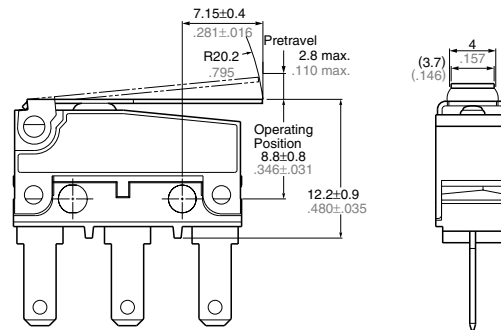
Pretravel, Max. mm inch		0.6 .024
Movement differential, Max. mm inch		0.1 .004
Overtravel, Min. mm inch		0.4 .016
Operating position	Distance from mounting hole, mm inch	8.4 ± 0.3 $.331 \pm .012$
	Distance from stand-off, mm inch	11.8 ± 0.4 $.465 \pm .016$

Short hinge lever



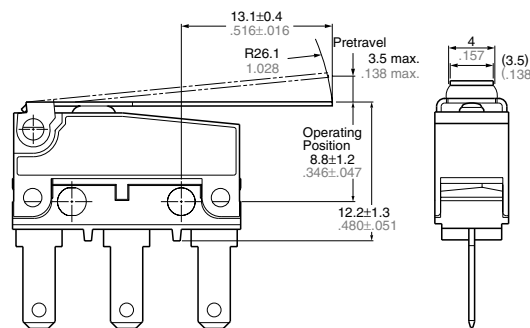
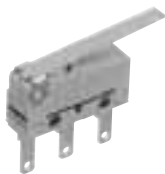
Pretravel, Max. mm inch		2.5 .098
Movement differential, Max. mm inch		0.5 .020
Overtravel, Min. mm inch		0.8 .031
Operating position	Distance from mounting hole, mm inch	8.8 ± 0.8 $.346 \pm .031$
	Distance from stand-off, mm inch	12.2 ± 0.9 $.480 \pm .035$

Hinge lever



Pretravel, Max. mm inch		2.8 .110
Movement differential, Max. mm inch		0.8 .031
Overtravel, Min. mm inch		1.2 .047
Operating position	Distance from mounting hole, mm inch	8.8 ± 0.8 $.346 \pm .031$
	Distance from stand-off, mm inch	12.2 ± 0.9 $.480 \pm .035$

Long hinge lever

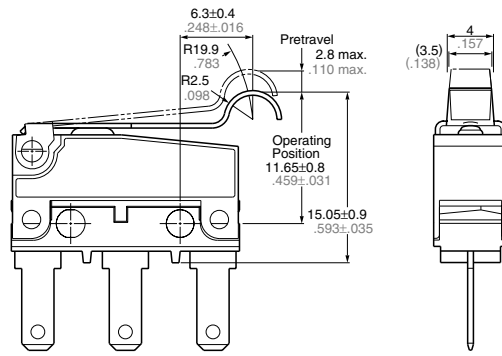
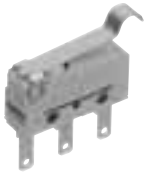


Pretravel, Max. mm inch		3.5 .138
Movement differential, Max. mm inch		1 .039
Overtravel, Min. mm inch		1.6 .063
Operating position	Distance from mounting hole, mm inch	8.8 ± 1.2 $.346 \pm .047$
	Distance from stand-off, mm inch	12.2 ± 1.3 $.480 \pm .051$

ABS1,4,5

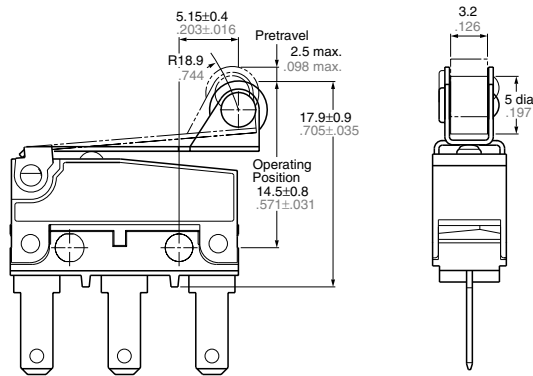
Simulated roller lever

mm inch General tolerance: $\pm 0.25 \pm .010$



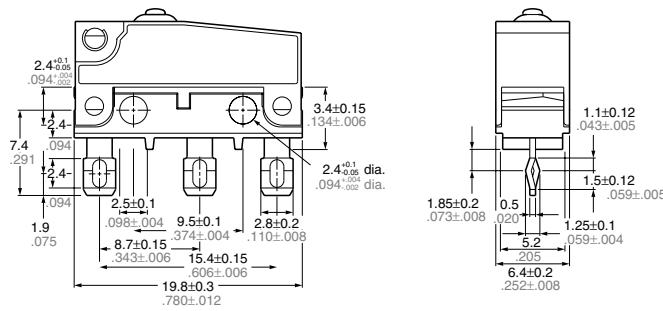
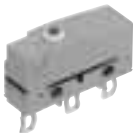
Pretravel, Max. mm inch	2.8 .110	
Movement differential, Max. mm inch	0.8 .031	
Overtravel, Min. mm inch	1.2 .047	
Operating position	Distance from mounting hole, mm inch	11.65±0.8 .459 ± .031
	Distance from stand-off, mm inch	15.05±0.9 .593 ± .035

Roller lever



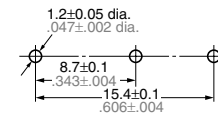
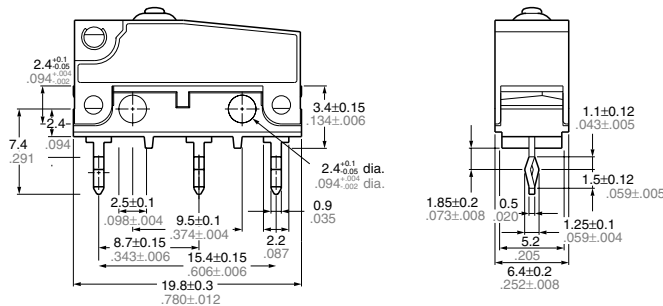
Pretravel, Max. mm inch	2.5 .098	
Movement differential, Max. mm inch	0.5 .020	
Overtravel, Min. mm inch	0.8 .031	
Operating position	Distance from mounting hole, mm inch	14.5±0.8 .571 ± .031
	Distance from stand-off, mm inch	17.9±0.9 .705 ± .035

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

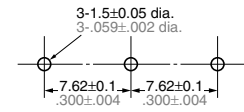
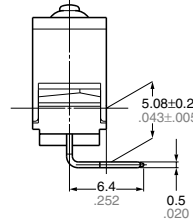
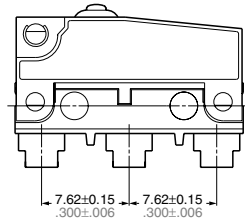


Remarks: Dimensions of the actuator types are the same as those of corresponding .110 quick-connect terminal types.

ABS1,4,5

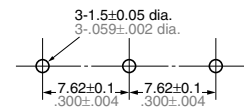
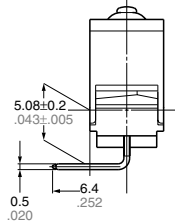
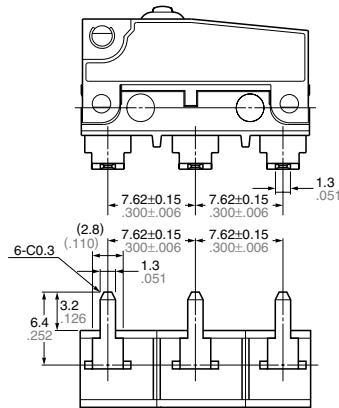
Right angle type

mm inch General tolerance: $\pm 0.25 \pm .010$



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

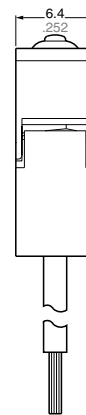
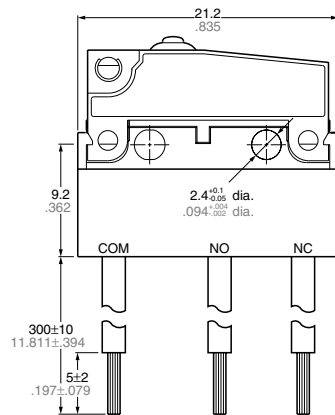
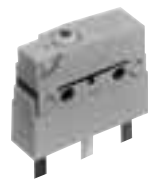
Left angle type



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

2. Immersion protected type

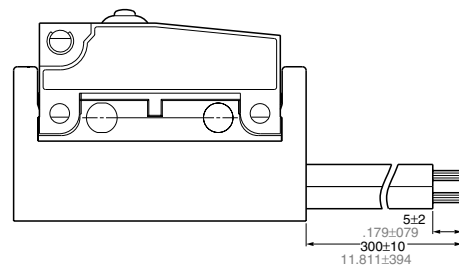
Wire leads
Pin plunger
Straight type



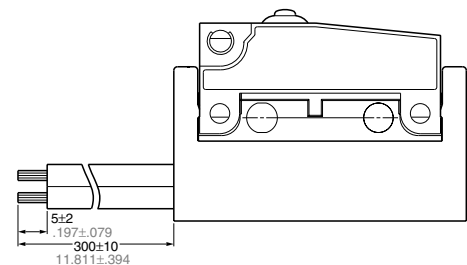
Thickness of the lead wire: 0.5 mm²
UL/CSA approved type and Right/Left angle type:
AWG #20
Color of the lead wire:
COM ... Black
N.C. ... Red
N.O. ... White

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



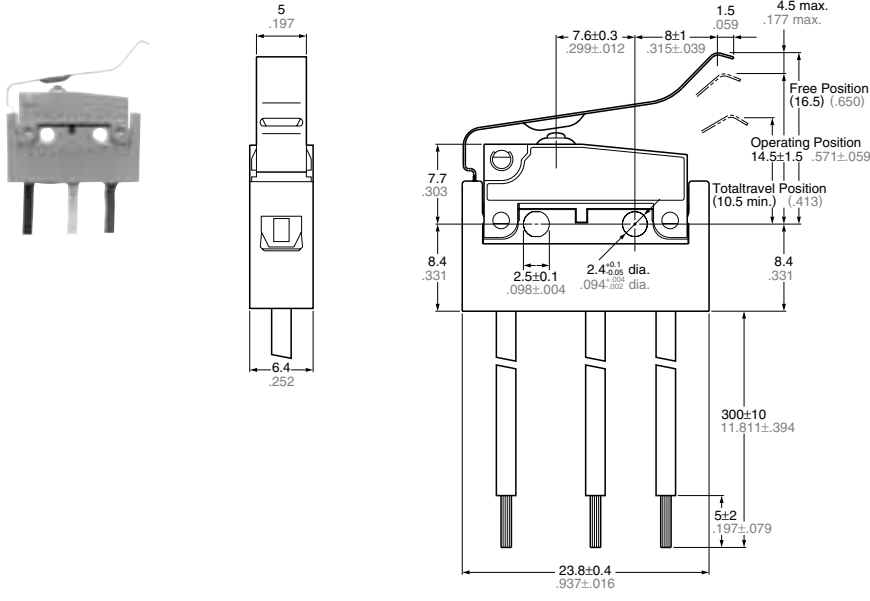
Left angle type



ABS1,4,5

Leaf lever
Straight type

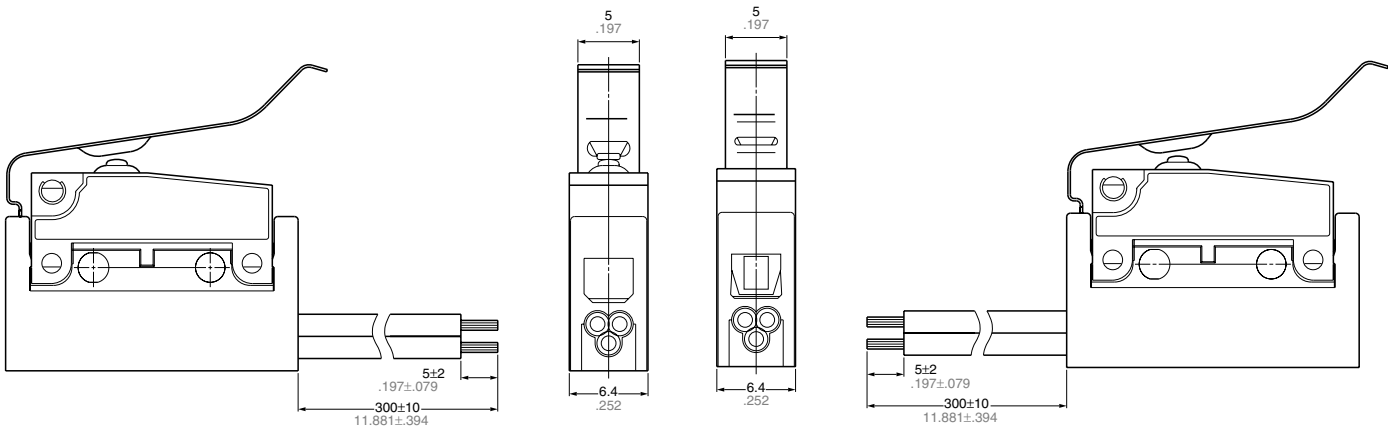
mm inch General tolerance: $\pm 0.25 \pm .010$



Thickness of the lead wire: 0.5 mm²
 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



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