

Interactive Catalog Replaces Catalog Pages

Honeywell Sensing and Control has replaced the PDF product catalog with the new **Interactive Catalog**. The **Interactive Catalog** is a power search tool that makes it easier to find product information. It includes more installation, application, and technical information than ever before.



**Click this icon to try the new
Interactive Catalog.**

Sensing and Control

Honeywell Inc.

11 West Spring Street

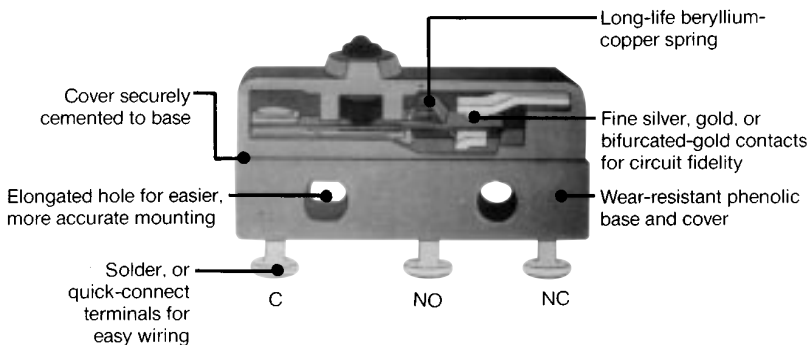
Freeport, Illinois 61032

Basic Switches

Subminiature

SM Series

CUT-A-WAY SM SUBMINIATURE BASIC SWITCH



AVAILABLE TERMINALS

Various terminals are available for most listings. These include: the T and T2 for wrap-around soldering of leadwires; solder terminals for solder connections; H58 terminals and H4 series terminals provide easy quick-connect installation; H2 type, round wire wrap or PC terminals; H6 rectangular wire wrap terminals are also available. Other quick-connect terminals of the Series H types are available. Contact the 800 number for ordering information.

GENERAL INFORMATION

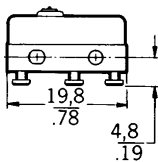
SM subminiature switches are slightly larger than the SX switches. These switches combine small size and light weight with ample electrical capacity, precision operation and long life. Unless otherwise noted, all listings have silver contacts.

FEATURES

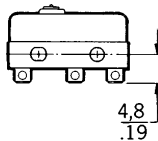
- Low operating force to 2 ounces maximum
- Sensitive differential travel as low as .001 inch (0,025 mm) maximum
- Power load switching capability available to 11 amps (VAC) – silver contacts
- Motor load handling capacity to 1/4 hp (VAC)
- Optional gold contacts for low energy applications
- Optional bifurcated gold contacts for maximum reliability
- Long mechanical life
 - 11SM Series 10,000,000 operations
 - 1SM/41SM Series 80,000 operations
 - Bifurcated contacts 1,000,000 operations
- All at 95% survival
- Standard temperature range –65° to +185°F (–54 to 85°C)
- High temperature construction available for use to +400°F (204°C) for 100 hours
- Variety of integral and auxiliary actuators
- Choice of several terminal styles
- Military Standard construction available with three listings on the MIL-S-8805 qualified products list
- UL recognized File #E12252, CSA certified File #LR41372

Mounting Torque:
2.3 inch pounds max.

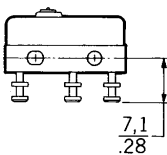
T



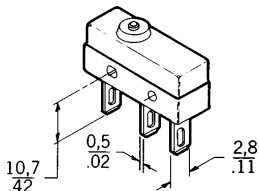
SOLDER



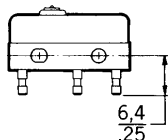
T2



H4

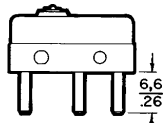


H58



Mates with Amp Inc. Part No. 640024-1 Std.

H2



Dimensions shown are for reference only

Key: 0,0 = mm
0.00 = inches

This section covers only **38** of our most popular SM Series catalog listings. If you don't find what you're looking for, it's likely one of the approximately **500** other active SM listings will meet your needs. Contact the 800 number.

Basic Switches
Subminiature

SM Series

Characteristics: O.F. — Operating Force; R.F. — Release Force; P.T. — Pretravel; O.T. — Overtravel; D.T. — Differential Travel; O.P. — Operating Position.

ORDER GUIDE by ascending electrical capability

PIN PLUNGERS



Dim. Dwg. Fig. 1

Catalog Listing	Recommended For	Electrical Data And UL Code Page 20	O.F. newtons ounces	R.F. min. newtons ounces	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	O.P.* mm inches
11SM1077-T	Gold alloy contacts	.1 Amp P	0,83-1,39 3-5	0,28 1	0,51 .020	0,13 .005	0,1 .004	8,38 .330
12SM604-T	Bifurcated gold contacts, reduced rating	.1 Amp P	0,83-1,39 3-5	0,28 1	0,51 .020	0,076 .003	0,1 .004	8,38 .330
11SM23-T	Application requiring gold contacts	1 Amp N	0,83-1,39 3-5	0,28 1	0,51 .020	0,13 .005	0,1 .004	8,38 .330
12SM4-T	Best reliability (Bifurcated gold contacts)	1 Amp N	0,83-1,39 3-5	0,28 1	0,51 .020	0,076 .003	0,1 .004	8,38 .330
11SM701-T	Lower force	4 Amps S	0,56 2	0,14 .5	0,51 .020	0,13 .005	0,051 .002	8,38 .330
11SM1-T	Most applications	5 Amps J	0,83-1,39 3-5	0,28 1	0,51 .020	0,13 .005	0,1 .004	8,38 .330
11SM3-T	Operating in temperatures to +250°F (121°C)	5 Amps J	0,83-1,39 3-5	0,28 1	0,51 .020	0,13 .005	0,1 .004	8,38 .330
11SM244-T	Operating in temperatures to +400°F (204°C) 100 hrs.	5 Amps *	0,83-1,39 3-5	0,28 1	0,51 .020	0,13 .005	0,1 .004	8,38 .330
11SM401-T	Less differential travel	5 Amps K	0,97 3.5 max.	0,28 1	0,51 .020	0,13 .005	0,025 .001	8,38 .330
21SM284-T2 (MS25085-2)	MIL-S-8805 application requirements	5 Amps R	0,83-1,39 3-5	0,28 1	0,76 .030	0,13 .005	0,1 .004	8,38 .330
21SM284 (MS25085-1)	MIL-S-8805 application requirements, solder terminals	5 Amps R	0,83-1,39 3-5	0,28 1	0,76 .030	0,13 .005	0,1 .004	8,38 .330
22SM1-T	Best stability under varying humidity	5 Amps J	0,83-1,39 3-5	0,28 1	0,51 .020	0,13 .005	0,1 .004	8,38 .330
41SM1-T	Up to 11 ampere 1/4 hp (AC) load handling	11 Amps M	0,83-1,39 3-5	0,28 1	0,76 .030	0,13 .005	0,1 .004	8,38 .330

*For electrical data call 1-800-537-6945

411SM1	Sealed plunger construction	5 Amps K	0,83-2,09 3-7.5	0,28 1	0,51 .020	0,13 .005	0,1 .004	8,38 .330
411SM23	As above with gold contacts	1 Amp N	0,83-2,09 3-7.5	0,28 1	0,51 .020	0,13 .005	0,1 .004	8,38 .330

Except where stated * ±0,38mm
±.015 in.

Miniature/
Subminiature

Basic Switches

Subminiature

SM Series

Characteristics: O.F. — Operating Force; R.F. — Release Force; P.T. — Pretravel; O.T. — Overtravel; D.T. — Differential Travel; O.P. — Operating Position.

ORDER GUIDE

INTEGRAL LEVERS



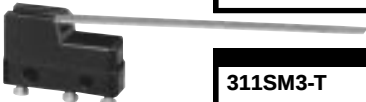
Dim. Dwg. Fig. 4

Catalog Listing	Description	Electrical Data And UL Code Page 20	O.F. max. newtons ounces	R.F. max. newtons ounces	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	O.P. mm inches
311SM1-T	.285 inch (7,24mm) straight lever	5 Amps J	0,39 1.4	0,07 .25	2,16 .085	0,51 .020	0,48 .019	8,64±1,5 .340±.060
311SM23-T	As above with gold contacts	1 Amp N	0,39 1.4	0,07 .25	2,16 .085	0,51 .020	0,48 .019	8,64±1,5 .340±.060
311SM701-T	.285 inch (7,24mm) straight lever. Lower force	4 Amps S	0,16 .57	0,03 .11	2,16 .085	0,51 .020	0,36 .014	8,64±1,5 .340±.060



Dim. Dwg. Fig. 5

311SM2-T	.565 inch (14,35mm) straight lever	5 Amps J	0,31 1.1	0,05 .18	3,05 .120	0,66 .026	0,69 .027	8,51±2 .335±.080
311SM43-T	As above with gold contacts	1 Amp N	0,31 1.1	0,05 .18	3,05 .120	0,66 .026	0,69 .027	8,51±2 .335±.080
311SM702-T	.565 inch (14,35mm) straight lever. Lower force	4 Amps S	0,11 .4	0,02 .07	3,05 .120	0,66 .026	0,38 .015	8,51±2 .335±.080



Dim. Dwg. Fig. 6

311SM3-T	1.765 inch (44,8mm) straight lever	5 Amps J	0,15 .53	0,02 .07	7,87 .310	1,45 .057	2,8 .110	7,11±4,3 .280±.170
311SM17-H58	As above with gold contacts	1 Amp N	0,15 .53	0,02 .07	7,87 .310	1,45 .057	2,8 .110	7,11±4,3 .280±.170
311SM703-T	1.765 inch (44,8mm) straight lever. Lower force	4 Amps S	0,06 .2	0,01 .04	7,87 .310	1,45 .057	1,78 .070	7,11±4,3 .280±.170



Dim. Dwg. Fig. 7

311SM4-T	.251 inch (6,38mm) simulated roller lever	5 Amps J	0,39 1.4	0,07 .25	2,16 .085	0,46 .018	0,48 .019	11,7±1,5 .460±.060
311SM25-T	As above with gold contacts	1 Amp N	0,39 1.4	0,07 .25	2,16 .085	0,46 .018	0,48 .019	11,7±1,5 .460±.060
311SM704-T	.251 inch (6,38mm) simulated roller lever. Lower force	4 Amps S	0,16 .57	0,03 .11	2,16 .085	0,46 .018	0,33 .013	11,7±1,5 .460±.060



Dim. Dwg. Fig. 8

311SM5-T	.535 inch (13,6mm) simulated roller lever	5 Amps J	0,31 1.1	0,05 .18	3,05 .120	0,66 .026	0,69 .027	11,56±2 .455±.080
311SM705-T	.535 inch (13,6mm) simulated roller lever. Lower force	4 Amps S	0,11 .4	0,02 .07	3,05 .120	0,66 .026	0,38 .015	11,56±2 .455±.080



Dim. Dwg. Fig. 9

311SM6-T	.251 inch (6,38mm) roller lever	5 Amps J	0,39 1.4	0,07 .25	2,16 .085	0,46 .018	0,48 .019	14,2±1,5 .560±.060
311SM68-T	As above with gold contacts	1 Amp N	0,39 1.4	0,07 .25	2,16 .085	0,46 .018	0,48 .019	14,2±1,5 .560±.060
311SM706-T	.251 inch (6,38mm) roller lever. Lower force	4 Amps S	0,16 .57	0,03 .11	2,16 .085	0,46 .018	0,33 .013	14,2±1,5 .560±.060



Dim. Dwg. Fig. 10

311SM7-T	.535 inch (13,6mm) roller lever	5 Amps J	0,31 1.1	0,05 .18	3,05 .120	0,66 .026	0,69 .027	14,1±2 .555±.080
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Basic Switches

Subminiature

SM Series

INTEGRAL LEAF



Dim. Dwg. Fig. 11

ORDER GUIDE

Catalog Listing	Recommended For	Electrical Data And UL Code Page 20	O.F. max. newtons ounces	R.F. min. newtons ounces	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	O.P. mm inches
111SM1-T	Force and stability of flexible leaf actuator	5 Amps J	1,95 7	0,56 2	5,54 .218	0,76 .030	0,76 .030	8,89±0,76 .350±.030
111SM17-T	As above with gold contacts	1 Amp N	1,95 7	0,56 2	5,54 .218	0,76 .030	0,76 .030	8,89±0,76 .350±.030



Dim. Dwg. Fig. 12

111SM2-T	Flexible leaf with roller	5 Amps J	1,95 7	0,56 2	5,56 .219	0,76 .030	0,64 .025	14,3±0,76 .562±.030
111SM23-T	As above with gold contacts	1 Amp N	1,95 7	0,56 2	5,56 .219	0,76 .030	0,64 .025	14,3±0,76 .562±.030

Miniature/
Subminiature

Basic Switches

Subminiature

SM Series

AUXILIARY ACTUATORS

Switches are not included with the actuators.



Dim. Dwg. Fig. 14



Dim. Dwg. Fig. 14



Dim. Dwg. Fig. 14



Dim. Dwg. Fig. 16



Dim. Dwg. Fig. 16



Dim. Dwg. Fig. 16



Characteristics: O.F. — Operating Force; R.F. — Release Force; P.T. — Pretravel; O.T. — Overtravel; D.T. — Differential Travel; O.P. — Operating Position; F.P. — Free Position
 * All characteristics are taken with actuator assembled to Catalog Listing 11SM3-T as shown.

ORDER GUIDE

Catalog Listing	Description	Actuator Length "A" mm inches	O.F. max. newtons ounces	R.F. min. newtons ounces	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	O.P. mm inches	F.P. max. mm inches
JS-2	Straight leaf	16,8 .66	2,78 10	0,56 2	1,98 .078	0,38 .015	0,38 .015	8,89±0,38 .350±.015	11,3 .445

JS-5	Roller leaf (Bronze roller)	15 .59	2,78 10	0,83 3	1,98 .078	0,38 .015	0,38 .015	14,2±0,38 .580±.015	16,9 .665
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JS-7	Formed leaf (Simulated roller)	14,7 .58	2,78 10	0,56 2	2,39 .094	0,79 .031	0,38 .015	9,65±0,38 .380±.015	12,1 .475
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JS-220	Straight lever	26,2† 1.03	0,28 1	0,04 .14	3,18 .125 approx.	0,76 .030	0,76 .030	10,3 .406 approx.	—
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JS-246	Roller lever (Steel roller)	25,4† 1.00	0,28 1	0,04 .14	3,18 .125 approx.	0,76 .030	0,76 .030	14,3 .562 approx.	—
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JS-221	Formed lever (Simulated roller)	25,4† 1.00	0,28 1	0,04 .14	3,18 .125 approx.	0,76 .030	0,76 .030	11,6 .455 approx.	—
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JS-33**	Tandem leaf	5,3 .21	5,00 18	2,78 10	2,36 .093	0,15 .006	0,38 .015	8,89±0,38 .350±.015	10,5 .415
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JS-31**	Tandem roller leaf (Bronze roller)	4,3 .17	11,1 40	4,45 16	2,36 .093	0,13 .005	0,38 .015	14,5±0,38 .570±.015	16,1 .635
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**Travel characteristics on tandem actuators vary with actual basic switch characteristics.
 NOTE: Above actuators should be used below +300°F.
 See page 79 for other actuators that may be used with SM Switches at higher temperatures.
 †"A" measurement is from the pivot point of lever to the point indicated on drawing.

SM Series

PIN PLUNGER

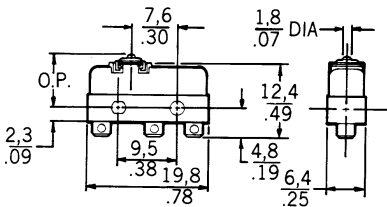


Fig. 1

Fig. 2

Fig. 4

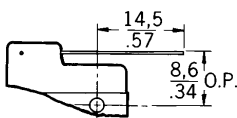


Fig. 5

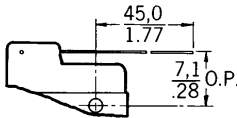


Fig. 6

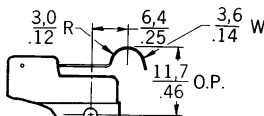


Fig. 7

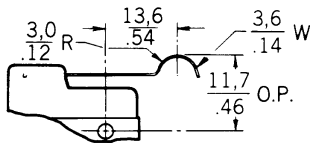


Fig. 8

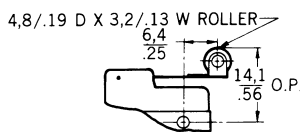


Fig. 9

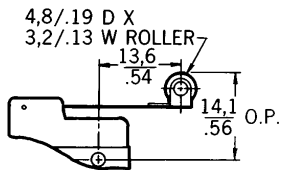


Fig. 10

Technical drawing of a corrosion resistant steel leaf. The drawing shows two views: a front view on the left and a side view on the right. Dimensions are given in inches (top) and millimeters (bottom).

Front View Dimensions:

- Top width: 7.6 in, 30 mm
- Left side height: 2.3 in, 59 mm
- Right side height: 8.9 in, 35 mm
- Bottom width: 19.8 in, 78 mm
- Bottom left height: 9.5 in, 38 mm
- Bottom right height: 4.8 in, 19 mm

Side View Dimensions:

- Top width: 4.1 in, 16 mm
- Bottom width: 6.4 in, 25 mm

Labels:

- CORROSION RESISTANT STEEL LEAF
- O.P.

Fig. 11

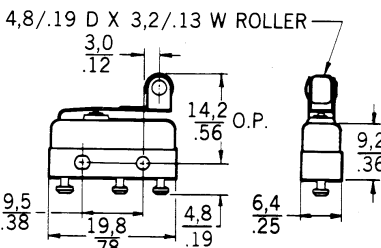


Fig. 12

Mounting holes accept pins or screws of
.087 inch (2,21 mm) max. diameter

Key: $\frac{0,0 = \text{mm}}{0.00 = \text{inches}}$

4.8/.19 D X 3.0/.12 W ROLLER

Technical drawing of a roller assembly. The drawing includes a side view and a detail view of the roller. Dimensions are provided in inches (top) and millimeters (bottom).

Side View Dimensions:

- Overall width: 5.7" (145 mm)
- Distance from left edge to center of roller: 0.22" (5.6 mm)
- Distance from center of roller to right edge: 7.6" (193 mm)
- Distance from left edge to center of roller (alternative): 2.3" (58 mm)
- Distance from center of roller to right edge (alternative): 9.5" (241 mm)
- Overall width (alternative): 19.8" (500 mm)
- Distance from center of roller to right edge (alternative): 5.1" (129 mm)
- Distance from center of roller to right edge (alternative): 7.8" (198 mm)

Detail View Dimensions:

- Distance from center of roller to right edge: 3.0" (76 mm)
- Distance from center of roller to right edge (alternative): 6.9" (175 mm)

Fig. 14

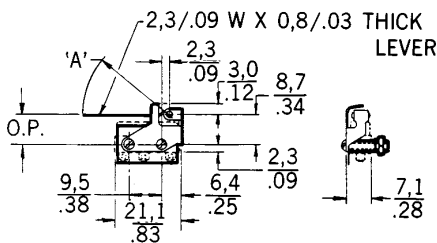


Fig. 16

Switches are not included with the actuators.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Honeywell:](#)

[11SM22-H258](#) [22SM1-T](#) [311SM2-H4](#) [411SM1-H58](#)