



**MICRO SWITCH™**  
**Premium Subminiature Basic Switches**  
**SM Series**



# MICRO SWITCH™ SM Series

## Premium Subminiature Basic Switches

The industry-defining name in snap-action switches, Honeywell MICRO SWITCH™ premium subminiature switches are designed for repeatability and enhanced product life. The MICRO SWITCH™ SM Series delivers consistent performance within a range of conditions.

The MICRO SWITCH™ SM Series' small size and light weight are combined with ample electrical capacity, precision operation, and extended life. Featuring high precision and repeatability, the SM Series offers gold contacts for low-energy switching and gold bifurcated contacts for maximum reliability. Bifurcated contacts provide parallel redundancy within the SM switch.

The SM switch is available for power-duty switching up to 11 A (Vac) or 1/4 HP (Vac).

### ***What makes our switches better?***

- Industry-leading life cycle rating reduces the need to replace switches over life in an OEM platform – reducing total system cost
- Very wide temperature range allows for years of reliable performance in the harshest of conditions
- MIL-PRF-8805 qualified listings
- Operating forces as low as 0,06 N [6 g] and differential travel as low as 0,025 mm [0.001 in] delivers consistent, precise switch characteristics



***Designed for  
precision applications.***

COST OPTIMIZATION • PERFORMANCE  
RELIABILITY • GLOBAL ACCEPTANCE

## Features and Benefits

### LONG LIFE

With a mechanical life of up to **10,000,000 operations**, SM Series switches boast an industry-leading life cycle.

### APPLICATION FLEXIBILITY

MICRO SWITCH™ SM Series delivers a selection of actuation, electrical termination, and operating characteristics along with **high-temperature construction options**.

*Life of up to 10,000,000 cycles*

### INDUSTRY-LEADING TEMPERATURE RANGE

With a wide temperature range of -54 °C to 204 °C [-65 °F to 400°F], SM Series switches allow for **years of reliable performance in harsh conditions**.

*Precise switch characteristics*

### COMPACT AND ROBUST

Built from **military-grade components**, MICRO SWITCH™ SM switches deliver MIL-PRF-8805 qualified listings in a lightweight, small package. MICRO SWITCH™ SM switches are available with FAA-PMA approvals for commercial aircraft applications.

### EASILY CONTROLS LOW-VOLTAGE DC APPLICATIONS

Switches available with a choice of **silver or gold-plated, or gold bifurcated contacts** to handle a variety of electrical load requirements.

### GLOBAL APPROVALS

UL/CSA, cUL, ENEC, and CE approvals allows the customer to **utilize switches in products sold across the globe** - in some of the most regulated regions.

# Potential Applications



## AEROSPACE

- In precision switch assemblies for commercial aircraft to monitor doors for “closed” and “locked” position
- Monitor whether landing gear is “up” or “down and locked”
- In precision switch assemblies for commercial cockpit applications for pushbuttons, toggle, or joystick assemblies
- MIL-PRF-8805 listings suitable for precision switch assemblies in military applications
- FAA-PMA approvals for commercial aircraft



## INDUSTRIAL

- In precision switch assemblies for pressure switches and temperature switches
- In power generation, fuel level switch for gas and oil



# MICRO SWITCH™ Premium Subminiature Basic Switches

**Table 1. Specifications**

| Characteristic          | Parameter                                                                                                                                                 |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Differentiator          | low operating force to 2 oz. max; power load switching capability to 11 A;<br>motor load handling capacity to 1/4 HP (Vac)                                |
| Ampere rating           | 0.1 A to 11 A                                                                                                                                             |
| Circuitry               | SPDT                                                                                                                                                      |
| Operating force         | 0.04 oz to 2 oz                                                                                                                                           |
| Termination             | quick connect, solder, pcb                                                                                                                                |
| Actuator                | pin plunger, straight lever, roller lever, simulated roller lever, paddle lever                                                                           |
| Voltage                 | 115 Vac, 125 Vac, 250 Vac, 30 Vdc                                                                                                                         |
| Agency approvals        | UL, CE, CSA, ENEC, MIL-PRF-8805, FAA-PMA                                                                                                                  |
| Agency file information | CE: 61058-1; UL: E12252; CSA: LR41372                                                                                                                     |
| Operating temperature   | -54 °C to 121 °C [-65 °F to 250 °F]; select catalog listings 204 °C [400 °F]                                                                              |
| Contacts                | silver, gold plated, bifurcated gold                                                                                                                      |
| Housing                 | phenolic                                                                                                                                                  |
| Sealing                 | sealed plunger on 411SM Series, other SM Series not weather sealed                                                                                        |
| Mechanical life         | up to 10,000,000 operations for 11SM listings<br>up to 80,000 operations for 1SM/14SM listings<br>up to 1,000,000 operations for gold bifurcated contacts |
| Size                    | 12,7 mm H x 6,35 mm W x 20,3 mm L [0.5 in H x 0.25 in W x 0.8 in L]                                                                                       |

## Electrical data and UL codes

**Table 2. UL Electrical Ratings**

| Code | Circuitry | Electrical data and UL codes                                                                                                                                                         |
|------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| J    | SPDT      | 5 A res., 3 A ind., (sea level),<br>5 A res., 2.5 A ind., (50,000 feet), 28 Vdc. UL rating: 5 A, 250 Vac                                                                             |
| K    | SPDT      | UL rating: 5 A, 125 or 250 Vac                                                                                                                                                       |
| M    | SPDT      | UL rating: 11 A and 1/4 hp, 125 or 250 Vac                                                                                                                                           |
| N    | SPDT      | 1 A res., 0.5 A ind., 30 Vdc. UL rating: 1 A, 125 Vac                                                                                                                                |
| P    | SPDT      | 1 A res., 30 Vdc. UL rating: .1 A, 125 Vac                                                                                                                                           |
| R    | SPDT      | 5 A res., 3 A ind., 2.4 A lamp load (sea level),<br>5 A res., 2.5 A ind., 2.4 A lamp load, (50,000 feet), 28 Vdc.<br>5 A res., 5 A ind., 1.5 A lamp load, 115 Vac. 60 Hz (sea level) |
| S    | SPDT      | UL rating: 4 A, 250 Vac                                                                                                                                                              |

O.F. • Operating force  
R.F. • Release force  
P.T. • Pretravel  
O.T. • Overtravel  
D.T. • Differential travel  
O.P. • Operating position

## MICRO SWITCH™ SM SERIES ORDER GUIDE • PIN PLUNGER

|                                                                                     | Catalog Listing               | Recommended For                                  | Electrical Data and UL Codes | O.F. N [oz]                | R.F. min. N [ oz] | P.T. max. mm [in] | O.T. min. mm [in] | D.T. mm [in]     | O.P. * mm [in]  |
|-------------------------------------------------------------------------------------|-------------------------------|--------------------------------------------------|------------------------------|----------------------------|-------------------|-------------------|-------------------|------------------|-----------------|
|    | <b>11SM1077-T</b>             | Gold-plated contacts                             | 0.1 A<br><b>P</b>            | 0,83 to 1,39<br>[3 to 5]   | 0,28 [1]          | 0,51<br>[0.020]   | 0,13<br>[0.005]   | 0,1 [0.004]      | 8,38<br>[0.330] |
|                                                                                     | <b>12SM604-T</b>              | Bifurcated gold contacts, reduced rating         | 0.1 A<br><b>P</b>            | 0,83 to 1,39<br>[3 to 5]   | 0,28 [1]          | 0,51<br>[0.020]   | 0,076<br>[0.003]  | 0,1 [0.004]      | 8,38<br>[0.330] |
|                                                                                     | <b>11SM23-T</b>               | Gold-plated contacts                             | 1 A<br><b>N</b>              | 0,83 to 1,39<br>[3 to 5]   | 0,28 [1]          | 0,51<br>[0.020]   | 0,13<br>[0.005]   | 0,1 [0.004]      | 8,38<br>[0.330] |
|                                                                                     | <b>12SM4-T</b>                | Enhanced reliability (bifurcated gold contacts)  | 1 A<br><b>N</b>              | 0,83 to 1,39<br>[3 to 5]   | 0,28 [1]          | 0,51<br>[0.020]   | 0,076<br>[0.003]  | 0,1 [0.004]      | 8,38<br>[0.330] |
|                                                                                     | <b>11SM701-T</b>              | Lower force                                      | 4 A<br><b>S</b>              | 0,56 [2]                   | 0,14 [0.5]        | 0,51<br>[0.020]   | 0,13<br>[0.005]   | 0,051<br>[0.002] | 8,38<br>[0.330] |
|                                                                                     | <b>11SM1-T</b>                | General purpose                                  | 5 A<br><b>J</b>              | 0,83 to 1,39<br>[3 to 5]   | 0,28 [1]          | 0,51<br>[0.020]   | 0,13<br>[0.005]   | 0,1 [0.004]      | 8,38<br>[0.330] |
|                                                                                     | <b>11SM3-T</b>                | Operating temps to 121 °C [250 °F]               | 5 A<br><b>J</b>              | 0,83 to 1,39<br>[3 to 5]   | 0,28 [1]          | 0,51<br>[0.020]   | 0,13<br>[0.005]   | 0,1 [0.004]      | 8,38<br>[0.330] |
|                                                                                     | <b>11SM244-T</b>              | Operating temps to 204 °C [400 °F] for 100 hours | 5 A                          | 0,83 to 1,39<br>[3 to 5]   | 0,28 [1]          | 0,51<br>[0.020]   | 0,13<br>[0.005]   | 0,1 [0.004]      | 8,38<br>[0.330] |
|                                                                                     | <b>11SM401-T</b>              | Less differential travel                         | 5 A<br><b>K</b>              | 0,97 [3.5]<br>max.         | 0,28 [1]          | 0,51<br>[0.020]   | 0,13<br>[0.005]   | 0,025<br>[0.001] | 8,38<br>[0.330] |
|                                                                                     | <b>21SM284-T2 (MS25085-2)</b> | MIL-PRF-8805 applications                        | 5 A<br><b>R</b>              | 0,83 to 1,39<br>[3 to 5]   | 0,28 [1]          | 0,76<br>[0.030]   | 0,13<br>[0.005]   | 0,1 [0.004]      | 8,38<br>[0.330] |
|                                                                                     | <b>21SM284 (MS25085-1)</b>    | MIL-PRF-8805 applications, solder terminals      | 5 A<br><b>R</b>              | 0,83 to 1,39<br>[3 to 5]   | 0,28 [1]          | 0,76<br>[0.030]   | 0,13<br>[0.005]   | 0,1 [0.004]      | 8,38<br>[0.330] |
|                                                                                     | <b>22SM1-T</b>                | Enhanced stability under varying humidity        | 5 A<br><b>J</b>              | 0,83 to 1,39<br>[3 to 5]   | 0,28 [1]          | 0,51<br>[0.020]   | 0,13<br>[0.005]   | 0,1 [0.004]      | 8,38<br>[0.330] |
|  | <b>41SM1-T</b>                | Up to 11 A, 1/4 HP (ac)                          | 11 A<br><b>M</b>             | 0,83 to 1,39<br>[3 to 5]   | 0,28 [1]          | 0,76<br>[0.030]   | 0,13<br>[0.005]   | 0,1 [0.004]      | 8,38<br>[0.330] |
|                                                                                     | <b>411SM1</b>                 | Sealed plunger construction                      | 5 A<br><b>K</b>              | 0,83 to 2,09<br>[3 to 7.5] | 0,28 [1]          | 0,51<br>[0.020]   | 0,13<br>[0.005]   | 0,1 [0.004]      | 8,38<br>[0.330] |
|                                                                                     | <b>411SM23</b>                | Sealed plunger construction, gold contacts       | 1 A<br><b>N</b>              | 0,83 to 2,09<br>[3 to 7.5] | 0,28 [1]          | 0,51<br>[0.020]   | 0,13<br>[0.005]   | 0,1 [0.004]      | 8,38<br>[0.330] |

\* except where stated  $\pm 0,38$  mm [ $\pm 0.015$  in]

# MICRO SWITCH™ Premium Subminiature Basic Switches

O.F. • Operating force  
R.F. • Release force  
P.T. • Pretravel  
O.T. • Overtravel  
D.T. • Differential travel  
O.P. • Operating position

## MICRO SWITCH™ SM SERIES ORDER GUIDE • INTEGRAL LEVER

|                                                                                    | Catalog Listing    | Recommended For                                          | Electrical Data and UL Codes | O.F. N [oz] | R.F. min. N [ oz] | P.T. max. mm [in] | O.T. min. mm [in] | D.T. mm [in] | O.P.                                 |
|------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------|------------------------------|-------------|-------------------|-------------------|-------------------|--------------|--------------------------------------|
|    | <b>311SM1-T</b>    | 7,24 mm [0.285 in] straight lever                        | 5 A<br><b>J</b>              | 0,39 [1.4]  | 0,07 [0.25]       | 2,16 [0.085]      | 0,51 [0.020]      | 0,48 [0.019] | 8,64 mm ±1,5 mm [0.34 in ±0.060 in]  |
|                                                                                    | <b>311SM23-T</b>   | 7,24 mm [0.285 in] straight lever, gold contacts         | 1 A<br><b>N</b>              | 0,39 [1.4]  | 0,07 [0.25]       | 2,16 [0.085]      | 0,51 [0.020]      | 0,48 [0.019] | 8,64 mm ±1,5 mm [0.34 in ±0.060 in]  |
|                                                                                    | <b>311SM701-T</b>  | 7,24 mm [0.285 in] straight lever, lower force           | 4 A<br><b>S</b>              | 0,16 [0.57] | 0,03 [0.11]       | 2,16 [0.085]      | 0,51 [0.020]      | 0,36 [0.014] | 8,64 mm ±1,5 mm [0.34 in ±0.060 in]  |
|    | <b>311SM2-T</b>    | 14,35 mm [0.565 in] straight lever                       | 5 A<br><b>J</b>              | 0,31 [1.1]  | 0,05 [0.18]       | 3,05 [0.12]       | 0,66 [0.026]      | 0,69 [0.027] | 8,51 mm ±2 mm [0.335 in ±0.08 in]    |
|                                                                                    | <b>311SM43-T</b>   | 14,35 mm [0.565 in] straight lever, gold contacts        | 1 A<br><b>N</b>              | 0,31 [1.1]  | 0,05 [0.18]       | 3,05 [0.12]       | 0,66 [0.026]      | 0,69 [0.027] | 8,51 mm ±2 mm [0.335 in ±0.08 in]    |
|                                                                                    | <b>311SM702-T</b>  | 14,35 mm [0.565 in] straight lever, lower force          | 4 A<br><b>S</b>              | 0,11 [0.4]  | 0,02 [0.07]       | 3,05 [0.12]       | 0,66 [0.026]      | 0,38 [0.015] | 8,51 mm ±2 mm [0.335 in ±0.08 in]    |
|    | <b>311SM3-T</b>    | 44,8 mm [1.765 in] straight lever                        | 5 A<br><b>J</b>              | 0,15 [0.53] | 0,02 [0.07]       | 7,87 [0.31]       | 1,45 [0.057]      | 2,8 [0.11]   | 7,11 mm ±4,3 mm [0.28 in ±0.17 in]   |
|                                                                                    | <b>311SM17-H58</b> | 44,8 mm [1.765 in] straight lever, gold contacts         | 1 A<br><b>N</b>              | 0,15 [0.53] | 0,02 [0.07]       | 7,87 [0.31]       | 1,45 [0.057]      | 2,8 [0.11]   | 7,11 mm ±4,3 mm [0.28 in ±0.17 in]   |
|                                                                                    | <b>311SM703-T</b>  | 44,8 mm [1.765 in] straight lever, lower force           | 4 A<br><b>S</b>              | 0,06 [0.2]  | 0,01 [0.04]       | 7,87 [0.31]       | 1,45 [0.057]      | 1,78 [0.07]  | 7,11 mm ±4,3 mm [0.28 in ±0.17 in]   |
|  | <b>311SM4-T</b>    | 6,38 mm [0.251 in] simulated roller lever                | 5 A<br><b>J</b>              | 0,39 [1.4]  | 0,07 [0.25]       | 2,16 [0.085]      | 0,46 [0.018]      | 0,48 [0.019] | 11,7 mm ±1,5 mm [0.46 in ±0.06 in]   |
|                                                                                    | <b>311SM25-T</b>   | 6,38 mm [0.251 in] simulated roller lever, gold contacts | 1 A<br><b>N</b>              | 0,39 [1.4]  | 0,07 [0.25]       | 2,16 [0.085]      | 0,46 [0.018]      | 0,48 [0.019] | 11,7 mm ±1,5 mm [0.46 in ±0.06 in]   |
|                                                                                    | <b>311SM704-T</b>  | 6,38 mm [0.251 in] simulated roller lever, lower force   | 4 A<br><b>S</b>              | 0,16 [0.57] | 0,03 [0.11]       | 2,16 [0.085]      | 0,46 [0.018]      | 0,33 [0.013] | 11,7 mm ±1,5 mm [0.46 in ±0.06 in]   |
|  | <b>311SM5-T</b>    | 13,6 mm [0.535 in] simulated roller lever                | 5 A<br><b>J</b>              | 0,31 [1.1]  | 0,05 [0.18]       | 3,05 [0.12]       | 0,66 [0.026]      | 0,69 [0.027] | 11,56 mm ±2 mm [0.455 in ±0.08 in]   |
|                                                                                    | <b>311SM705-T</b>  | 13,6 mm [0.535 in] simulated roller lever, lower force   | 4 A<br><b>S</b>              | 0,11 [0.4]  | 0,02 [0.07]       | 3,05 [0.12]       | 0,66 [0.026]      | 0,38 [0.015] | 11,56 mm ±2 mm [0.455 in ±0.08 in]   |
|  | <b>311SM6-T</b>    | 6,38 mm [0.251 in] roller lever                          | 5 A<br><b>J</b>              | 0,39 [1.4]  | 0,07 [0.25]       | 2,16 [0.085]      | 0,46 [0.018]      | 0,48 [0.019] | 14,2 mm ±1,5 mm [0.56 in ±0.06 in]   |
|                                                                                    | <b>311SM68-T</b>   | 6,38 mm [0.251 in] roller lever, gold contacts           | 1 A<br><b>N</b>              | 0,39 [1.4]  | 0,07 [0.25]       | 2,16 [0.085]      | 0,46 [0.018]      | 0,48 [0.019] | 14,2 mm ±1,5 mm [0.56 in ±0.06 in]   |
|                                                                                    | <b>311SM706-T</b>  | 6,38 mm [0.251 in] roller lever, lower force             | 4 A<br><b>S</b>              | 0,16 [0.57] | 0,03 [0.11]       | 2,16 [0.085]      | 0,46 [0.018]      | 0,33 [0.013] | 14,2 mm ±1,5 mm [0.56 in ±0.06 in]   |
|  | <b>311SM7-T</b>    | 13,6 mm [0.535 in] roller lever                          | 5 A<br><b>J</b>              | 0,31 [1.1]  | 0,05 [0.18]       | 3,05 [0.12]       | 0,66 [0.026]      | 0,69 [0.027] | 14,1 mm ±2 mm [0.555 in ±0.08 in]    |
|  | <b>111SM1-T</b>    | Leaf actuator                                            | 5 A<br><b>J</b>              | 1,95 [7]    | 0,56 [2]          | 5,54 [0.218]      | 0,76 [0.03]       | 0,76 [0.03]  | 8,89 mm ±0,76 mm [0.35 in ±0.03 in]  |
|                                                                                    | <b>111SM17-T</b>   | Leaf actuator gold contacts                              | 1 A<br><b>N</b>              | 1,95 [7]    | 0,56 [2]          | 5,54 [0.218]      | 0,76 [0.03]       | 0,76 [0.03]  | 8,89 mm ±0,76 mm [0.35 in ±0.03 in]  |
|  | <b>111SM2-T</b>    | Flexible leaf with roller                                | 5 A<br><b>J</b>              | 1,95 [7]    | 0,56 [2]          | 5,56 [0.219]      | 0,76 [0.03]       | 0,64 [0.025] | 14,3 mm ±0,76 mm [0.562 in ±0.03 in] |
|                                                                                    | <b>111SM23-T</b>   | Flexible leaf with roller, gold contacts                 | 1 A<br><b>N</b>              | 1,95 [7]    | 0,56 [2]          | 5,56 [0.219]      | 0,76 [0.03]       | 0,64 [0.025] | 14,3 mm ±0,76 mm [0.562 in ±0.03 in] |

# SM Series

## NUMERIC DESIGNATIONS FOR MICRO SWITCH™ SM SERIES/ORDER GUIDE

| Prefix       | Description                                                     |
|--------------|-----------------------------------------------------------------|
| <b>1SM</b>   | Standard pin plunger construction, up to 80,000 operations      |
| <b>11SM</b>  | Long-life pin plunger construction, up to 10,000,000 operations |
| <b>12SM</b>  | Gold bifurcated contacts                                        |
| <b>21SM</b>  | Same as 1SM (formerly had DAP material)                         |
| <b>22SM</b>  | Same as 11SM (formerly had DAP material)                        |
| <b>23SM</b>  | Same as 12SM (formerly had DAP material)                        |
| <b>41SM</b>  | 11 A construction (11SM construction)                           |
| <b>101SM</b> | 1SM with an integral leaf actuator                              |
| <b>111SM</b> | 11SM with an integral spring leaf                               |
| <b>112SM</b> | 12SM with an integral spring leaf                               |
| <b>122SM</b> | 22SM with an integral spring leaf                               |
| <b>151SM</b> | 51SM with an integral spring leaf                               |
| <b>301SM</b> | 1SM with an integral rigid lever                                |
| <b>302SM</b> | 1SM with an integral roller lever                               |
| <b>311SM</b> | Integral rigid lever                                            |
| <b>321SM</b> | 21SM with an integral rigid lever                               |
| <b>322SM</b> | 22SM with an integral rigid lever                               |
| <b>401SM</b> | Dust/splash resistant 1SM                                       |
| <b>411SM</b> | Dust/splash resistant 11SM                                      |
| <b>412SM</b> | Dust/splash resistant 12SM                                      |

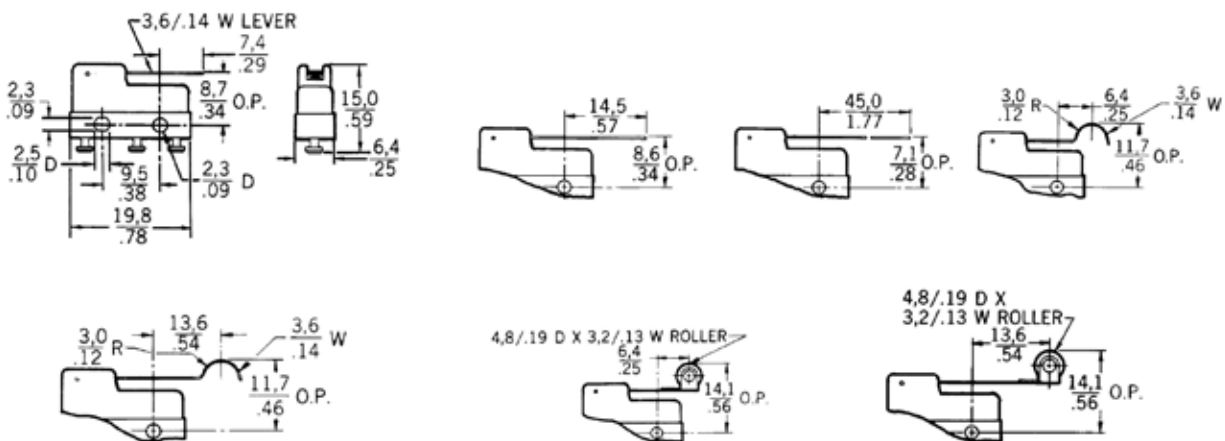
| Suffix      | Description                    |
|-------------|--------------------------------|
| <b>23</b>   | Gold contacts                  |
| <b>400</b>  | Low differential travel series |
| <b>500</b>  | Reverse terminal designation   |
| <b>700</b>  | Low force series               |
| <b>1000</b> | Gold alloy                     |

# MICRO SWITCH™ Premium Subminiature Basic Switches

## SM SERIES • STANDARD ACTUATOR OPTIONS, SCREW TERMINALS, & DIMENSIONS (mm/in)

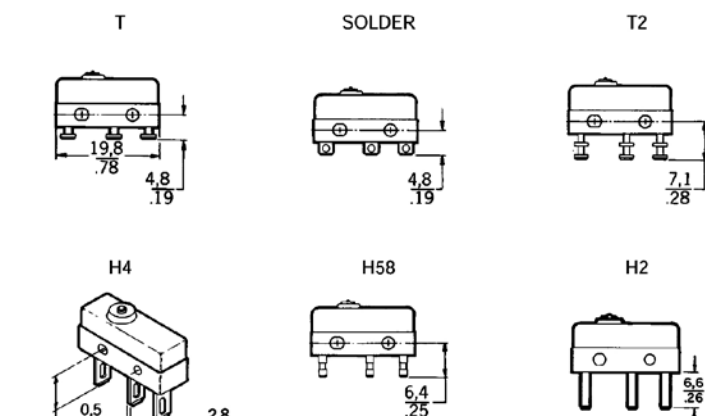
| Pin plunger, T terminals | Pin plunger, Solder terminals |
|--------------------------|-------------------------------|
|                          |                               |
| Integral leaf lever      | Integral roller lever         |
|                          |                               |

### Integral levers



NOTE: The two mounting holes accept pins or screws of 2,21 mm (0.087 in) maximum diameter

## MICRO SWITCH™ SM SERIES AVAILABLE TERMINALS



Mounting torque:  
0,26 Nm [2.3 in-lb] max.

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

## SM Series

## MICRO SWITCH™ JS SERIES AUXILIARY ACTUATORS FOR THE MICRO SWITCH™ SM SERIES SWITCHES (stainless steel actuator and hardware)

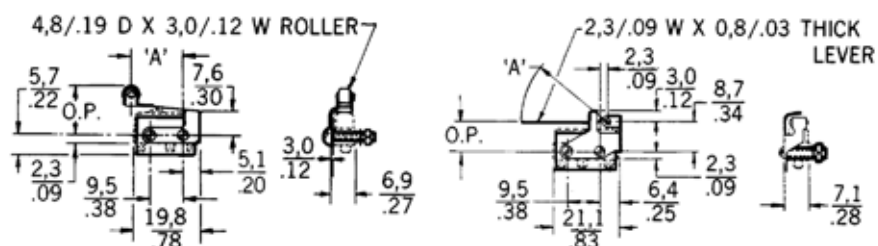
|           |                                                                                     | Description                        | Actuator Length       | Operting Force max. | Release Force min.  | Pretravel max.                   | Overtravel min.       | Differential Travel max. | Operating Point                                | Free Position max.    |
|-----------|-------------------------------------------------------------------------------------|------------------------------------|-----------------------|---------------------|---------------------|----------------------------------|-----------------------|--------------------------|------------------------------------------------|-----------------------|
| JS-2      |    | Straight leaf                      | 16,8 mm<br>[0.66 in]  | 2,78 N<br>[10 oz]   | 0,56 N<br>[2 oz]    | 1,98 mm<br>[0.078 in]            | 0,38 mm<br>[0.015 in] | 0,38 mm<br>[0.015 in]    | 8,89 mm<br>±0,38 mm<br>[0.350 in<br>±0.015 in] | 11,3 mm<br>[0.445 in] |
| JS-5      |    | Roller leaf<br>(bronze roller)     | 15 mm<br>[0.59 in]    | 2,78 N<br>[10 oz]   | 0,83 N<br>[3 oz]    | 1,98 mm<br>[0.078 in]            | 0,38 mm<br>[0.015 in] | 0,38 mm<br>[0.015 in]    | 14,2 mm<br>±0,38 mm<br>[0.580 in<br>±0.015 in] | 16,9 mm<br>[0.665 in] |
| JS-7      |    | Formed leaf<br>(simulated roller)  | 14,7 mm<br>[0.58 in]  | 2,78 N<br>[10 oz]   | 0,56 N<br>[2 oz]    | 2,39 mm<br>[0.094 in]            | 0,79 mm<br>[0.031 in] | 0,38 mm<br>[0.015 in]    | 9,65 mm<br>±0,38 mm<br>[0.380 in<br>±0.015 in] | 12,7 mm<br>[0.475 in] |
| JS-220    |    | Straight lever                     | 26,2 mm<br>[1.03 in]* | 0,28 N<br>[1 oz]    | 0,04 N<br>[0.14 oz] | 3,18 mm<br>[0.125 in]<br>approx. | 0,76 mm<br>[0.030 in] | 0,76 mm<br>[0.030 in]    | 10,3 mm<br>[0.406 in]<br>approx.               | –                     |
| JS-246    |   | Roller lever<br>(steel roller)     | 25,4 mm<br>[1.00 in]* | 0,28 N<br>[1 oz]    | 0,04 N<br>[0.14 oz] | 3,18 mm<br>[0.125 in]<br>approx. | 0,76 mm<br>[0.030 in] | 0,76 mm<br>[0.030 in]    | 14,3 mm<br>[0.562 in]<br>approx.               | –                     |
| JS-221    |  | Formed lever<br>(simulated roller) | 25,4 mm<br>[1.00 in]* | 0,28 N<br>[1 oz]    | 0,04 N<br>[0.14 oz] | 3,18 mm<br>[0.125 in]<br>approx. | 0,76 mm<br>[0.030 in] | 0,76 mm<br>[0.030 in]    | 11,6 mm<br>[0.455 in]<br>approx.               | –                     |
| JS-33** Δ |  | Tandem leaf                        | 5,3 mm<br>[0.21 in]   | 5,00 N<br>[18 oz]   | 2,78 N<br>[10 oz]   | 2,36 mm<br>[0.093 in]            | 0,15 mm<br>[0.006 in] | 0,38 mm<br>[0.015 in]    | 8,89 mm<br>±0,38 mm<br>[0.350 in<br>±0.015 in] | 10,5 mm<br>[0.415 in] |
| JS-31** Δ |  | Tandem leaf<br>(bronze roller)     | 4,3 mm<br>[0.17 in]   | 11,1 N<br>[40 oz]   | 4,45 N<br>[16 oz]   | 2,36 mm<br>[0.093 in]            | 0,13 mm<br>[0.005 in] | 0,38 mm<br>[0.015 in]    | 14,5 mm<br>±0,38 mm<br>[0.570 in<br>±0.015 in] | 16,1 mm<br>[0.635 in] |

\*\* Travel characteristics on tandem actuators vary with actual basic switch characteristics

NOTE: Above actuators should be used  
below 300 °F

\* "A" measurement is from pivot point of lever to the point indicated on drawing

Δ Plated steel machine screws



# MICRO SWITCH™ Premium Subminiature Basic Switches

**This Honeywell datasheet supports the following MICRO SWITCH™ SM Series Basic Switch Listings**

|               |             |               |               |               |               |
|---------------|-------------|---------------|---------------|---------------|---------------|
| 111SM1        | 11SM23-T2   | 11SM861-T     | 21SM284-T2    | 311SM3        | 341SM169-H252 |
| 111SM1053-H58 | 11SM244     | 11SM862-H2    | 21SM289-T     | 311SM3-H2     | 341SM2-T      |
| 111SM113-H58  | 11SM2440    | 11SM8849-H58  | 21SM35        | 311SM3-H58    | 411SM1        |
| 111SM115-H2   | 11SM2442-T  | 11SM8850-H58  | 21SM365       | 311SM3-T      | 411SM1-H58    |
| 111SM115-H58  | 11SM244-H4  | 11SM8853-T    | 21SM366       | 311SM4        | 411SM1-T      |
| 111SM117-H2   | 11SM244-T   | 11SM98        | 21SM367       | 311SM43-H58   | 411SM701-H4   |
| 111SM117-H58  | 11SM2454    | 11SM98-T      | 21SM368       | 311SM43-T     | 412SM4        |
| 111SM119-H2   | 11SM250-T   | 122SM160-T2   | 21SM369       | 311SM4-H2     | 412SM4-T      |
| 111SM124-H2   | 11SM3       | 122SM44-T2    | 22SM157-T     | 311SM4-H58    | 41SM1         |
| 111SM125-H2   | 11SM303-T2  | 12SM4         | 22SM157-T2    | 311SM4-T      | 41SM1-H2      |
| 111SM126-T    | 11SM320-T   | 12SM4-T       | 22SM1-T       | 311SM5-T      | 41SM1-H251    |
| 111SM127-T    | 11SM38      | 12SM4-T2      | 22SM22-H58    | 311SM6        | 41SM1-H4      |
| 111SM17-T     | 11SM3-H58   | 12SM604-T     | 22SM22-T      | 311SM604-H4   | 41SM1-H58     |
| 111SM1-H2     | 11SM3-S     | 12SM825       | 22SM25-T      | 311SM605-H4   | 41SM1-S       |
| 111SM1-H58    | 11SM3-T     | 12SM83        | 22SM396-T     | 311SM68-H4    | 41SM1-T       |
| 111SM1-T      | 11SM3-T2    | 12SM83-H2     | 22SM401       | 311SM68-T     | 41SM1-T2      |
| 111SM1-T2     | 11SM401     | 141SM102      | 22SM401-T     | 311SM6-H4     | 41SM2         |
| 111SM2        | 11SM401-H2  | 141SM102-T    | 22SM426-T     | 311SM6-H58    | 41SM25-H2     |
| 111SM23-H4    | 11SM401-H58 | 141SM102-T2   | 22SM426-T2    | 311SM6-T      | 41SM27-T      |
| 111SM23-T     | 11SM401-T   | 141SM123-T2   | 22SM801-H58   | 311SM6-T2     | 41SM28        |
| 111SM241      | 11SM403     | 141SM281-H403 | 22SM81-T      | 311SM701      | 41SM28-H2     |
| 111SM2410     | 11SM403-T   | 141SM28-H2    | 22SM82-T      | 311SM7017-T   | 41SM28-T2     |
| 111SM244      | 11SM405     | 141SM28-H58   | 23SM13        | 311SM7018-H58 | 41SM2-T       |
| 111SM247      | 11SM423     | 141SM2-T      | 311SM1        | 311SM7018-T   | 41SM301       |
| 111SM248      | 11SM423-H2  | 141SM2-T2     | 311SM1005-H58 | 311SM701-H58  | 41SM301-T2    |
| 111SM2-H2     | 11SM423-H4  | 141SM32-H2    | 311SM1005-T   | 311SM701-T    | 41SM30-H403   |
| 111SM2-T      | 11SM430-T   | 1SM1          | 311SM1017-T   | 311SM702      | 41SM30-H58    |
| 111SM2-T2     | 11SM4601-H4 | 1SM195-T      | 311SM1018-T   | 311SM7021.    | 51SM1-H4      |
| 111SM305-T2   | 11SM54-T    | 1SM1-T        | 311SM1029     | 311SM702-T    | 51SM1-T       |
| 111SM47-T2    | 11SM601-H4  | 1SM2          | 311SM1068-H4  | 311SM703-T    | 8SM42-T       |
| 111SM518-T2   | 11SM608-H4  | 1SM23         | 311SM1138-T   | 311SM704-H2   |               |
| 111SM601-H4   | 11SM701     | 1SM23-T2      | 311SM1721-H4  | 311SM704-T    |               |
| 111SM602-H4   | 11SM701-H2  | 1SM263        | 311SM1781-H4  | 311SM705-H58  |               |
| 111SM7-T      | 11SM701-H58 | 1SM282        | 311SM17-H58   | 311SM705-T    |               |
| 111SM858-H403 | 11SM701-T   | 1SM3          | 311SM18       | 311SM706-H58  |               |
| 11SM1         | 11SM703     | 1SM314-H2     | 311SM1-H2     | 311SM706-T    |               |
| 11SM1077-H4   | 11SM703-H2  | 1SM33-H2      | 311SM1-H4     | 311SM717-T    |               |
| 11SM1077-H58  | 11SM703-T   | 1SM35         | 311SM1-H58    | 311SM718-H58  |               |
| 11SM1077-T    | 11SM705-H58 | 1SM36-H2      | 311SM1-T      | 311SM719-T    |               |
| 11SM144       | 11SM711     | 1SM379-H2     | 311SM2        | 311SM71-T     |               |
| 11SM144-H2    | 11SM712-H58 | 1SM3-T        | 311SM23-H2    | 311SM730-T2   |               |
| 11SM1777-H58  | 11SM723-T   | 1SM430        | 311SM23-H4    | 311SM7602-H4  |               |
| 11SM1777-T    | 11SM727     | 1SM46-T       | 311SM23-T     | 311SM768-H58  |               |
| 11SM1-H2      | 11SM7601-H4 | 1SM61         | 311SM25-H4    | 311SM768-T2   |               |
| 11SM1-H58     | 11SM76-T    | 1SM817-T      | 311SM25-T     | 311SM778-T    |               |
| 11SM1-T       | 11SM77-H58  | 1SM836        | 311SM2721-T2  | 311SM781-H58  |               |
| 11SM1-T2      | 11SM77-T    | 21SM144       | 311SM2-H2     | 311SM7-H58    |               |
| 11SM22-H258   | 11SM82-T2   | 21SM144-T     | 311SM2-H251   | 311SM7-T      |               |
| 11SM23-H2     | 11SM837-T   | 21SM157-T     | 311SM2-H4     | 311SM800-T    |               |
| 11SM23-H4     | 11SM8423-H2 | 21SM1-T       | 311SM2-H58    | 311SM8092-T   |               |
| 11SM23-T      | 11SM861-H58 | 21SM284       | 311SM2-T      | 311SM95       |               |

## ADDITIONAL INFORMATION

The following associated literature is available on Honeywell's web site at [sensing.honeywell.com](http://sensing.honeywell.com):

- Product installation instructions
- Product range guide
- Aerospace range guide
- Applying basic switches
- Low energy switching guide
- Product application-specific information
  - Application Note: Central Vacuum System
  - Application Note: Electronic Taping Machine
  - Application Note: Sensors and Switches in Sanitary Valves
  - Application Note: Sensors and Switches in Oil Rig Applications
  - Application Note: Sensors and Switches for Potential Medical Applications

### **WARNING**

#### **PERSONAL INJURY**

**DO NOT USE** these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

### **WARNING**

#### **MISUSE OF DOCUMENTATION**

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

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