



## MICRO SWITCH™ Premium Subminiature Basic Switches **SX Series**



# MICRO SWITCH™ SX Series

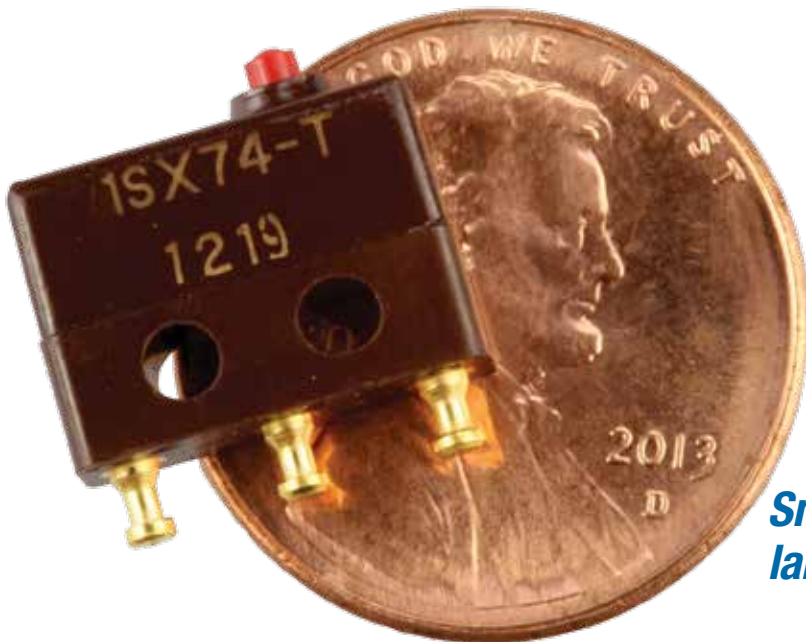
## Premium Subminiature Basic Switches

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™ SX Series delivers consistent performance within a range of conditions.

Offering enhanced repeatability, the MICRO SWITCH™ SX Series' lower operating force provides for application versatility. Like the MICRO SWITCH™ SM Series, the SX Series (which is a smaller package) offers gold contacts for low energy switching and bifurcated gold contacts for maximum reliability. Bifurcated contacts provide parallel redundancy within the SX switch.

### ***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 0,147 N [15 g] and differential travel as low as 0,025 mm [0.001 in] delivers consistent precise switch characteristics



***Small in size,  
large in capability!***

COST OPTIMIZATION • PERFORMANCE  
RELIABILITY • GLOBAL ACCEPTANCE

## Features and Benefits

### LONG LIFE

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

### APPLICATION FLEXIBILITY

MICRO SWITCH™ SX 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], SX Series switches allow for **years of reliable performance in harsh conditions**.

*Precision switch characteristics*

### COMPACT AND ROBUST

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

### EASILY CONTROLS LOW-VOLTAGE DC APPLICATIONS

Switches available with a choice of **silver, gold-plated, or bifurcated gold 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 0,147 N [15 g] max; sensitive differential travel as low as 0,025 mm [0.001 in] max.; power load switching capability to 7 A |
| Ampere rating           | 1 A to 7 A                                                                                                                                          |
| Circuitry               | SPDT, SPNO                                                                                                                                          |
| Operating force         | 0.71 oz to 6 oz                                                                                                                                     |
| Termination             | quick connect, solder, pcb                                                                                                                          |
| Actuator                | pin plunger, straight lever, roller lever, simulated roller lever, offset flag lever, crossed roller lever                                          |
| Voltage                 | 125 Vac, 250 Vac, 28 Vdc                                                                                                                            |
| Circuitry               | SPNO, SPDT, DPDT                                                                                                                                    |
| Agency approvals        | UL, CE, CSA, ENEC, MIL-PRF-8805, FAA-PMA                                                                                                            |
| Agency file information | 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 or thermoplastic polyester                                                                                                                 |
| Sealing                 | not weather sealed                                                                                                                                  |
| Mechanical life         | up to 10,000,000 operations for 11SX Series<br>up to 1,000,000 operations for 1SX Series                                                            |
| Size                    | 10,2 mm H x 5,08 mm W x 12,7 mm L [0.4 in H x 0.20 in W x 0.5 in L]                                                                                 |

## ELECTRICAL DATA AND UL CODES

**Table 2. UL Electrical Ratings**

| Code | Circuitry | Electrical data and UL codes                                                                                                                                                        |
|------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A    | SPDT      | 5 A res., 3 A ind., (sea level),<br>4 A res., 2 A ind., (50,000 feet), 28 Vdc<br>5 A res. or ind. 115 Vac, 60 Hz. UL/CSA rating: 5 A, 250 Vac                                       |
| B    | SPDT      | 7 A res., 4 A ind., (sea level),<br>7 A res., 2.5 A ind., (50,000 feet), 28 Vdc. UL/CSA rating: 7 A, 250 Vac                                                                        |
| C    | SPDT      | 3.5 A res., 2 A ind., (sea level),<br>3.5 A res., 1.5 A ind., (50,000 feet), 28 Vdc. UL rating: 7 A, 250 Vac                                                                        |
| D    | SPDT      | 1 A res., 0.5 amp ind., (sea level and 50,000 feet), 28 Vdc.<br>UL/CSA rating: 1 amp, 125 Vac                                                                                       |
| E    | SPDT      | 3 A res., 2 A ind., (sea level), 28 Vdc.<br>UL rating: 3 A, 250 Vac                                                                                                                 |
| F    | SPDT      | 7 A res., 4 A ind., 2.5 A lamp load, (sea level),<br>4 A res., 2.5 A ind., 2.5 A lamp load, (50,000 feet), 28 Vdc.<br>7 A res., 7 A ind., 2 A lamp load, 115 Vac, 60 Hz (sea level) |
| G    | SPDT      | 2 A res., lamp ind., (sea level) 28 Vdc                                                                                                                                             |
| H    | SPDT      | .010 A res. and ind., (sea level), 28 Vdc.<br>UL/CSA rating: 1 A, 125 Vac                                                                                                           |
| I    | SPDT      | 7 A res., 4 A ind., (sea level), 28 Vdc                                                                                                                                             |
| L    | SPDT      | 1 A res., 1/2 A ind., (sea level) 28 Vdc                                                                                                                                            |



## MICRO SWITCH™ SX 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>12SX2-T</b>                  | Bifurcated gold contacts                             | 0.01 A<br><b>H</b>           | 0.7 to 1,39 [2.5 to 5] | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,051 [0.002] | 8,13 [0.32]    |
|  | <b>3SX1-T</b>                   | Gold-plated contacts (1SX type)                      | 1 A<br><b>D</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,13 [0.005]  | 8,13 [0.32]    |
|  | <b>12SX1-T</b>                  | Enhanced reliability (gold bifurcated contacts)      | 1 A<br><b>D</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,076 [0.003] | 8,13 [0.32]    |
|  | <b>12SX3-T</b>                  | Lowest differential travel, bifurcated gold contacts | 1 A<br><b>H</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,025 [0.001] | 8,13 [0.32]    |
|  | <b>13SX21-T</b>                 | Gold-plated contacts (11SX type)                     | 1 A<br><b>D</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,051 [0.002] | 8,13 [0.32]    |
|  | <b>23SX39-T (MS24547-2)</b>     | MIL-PRF-8805, gold contacts, 82 °C [180 °F] max. use | 1 A<br><b>D</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,13 [0.005]  | 8,13 [0.32]    |
|  | <b>23SX39-T2 (MS24547-5)</b>    | MIL-PRF-8805, gold contacts, 82 °C [180 °F] max. use | 1 A<br><b>D</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,13 [0.005]  | 8,13 [0.32]    |
|  | <b>93SX39-T (M8805/109-03)</b>  | 0.156 in wide, gold contacts, 82 °C [180 °F]         | 1 A<br><b>D</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,13 [0.005]  | 8,13 [0.32]    |
|  | <b>411SX21-T (M8805/106-01)</b> | 204 °C [400 °F] for 100 hours                        | 2 A<br><b>G</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,13 [0.005]  | 8,13 [0.32]    |
|  | <b>413SX21-T (M8805/106-02)</b> | 204 °C [400 °F] for 100 hours                        | 1 A<br><b>L</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,051 [0.002] | 8,13 [0.32]    |
|  | <b>11SX1-T</b>                  | Lowest differential travel                           | 3 A<br><b>E</b>              | 0,97 [3.5]             | 0,21 [0.75]       | 0,51 [0.02]       | 0,1 [0.004]       | 0,025 [0.001] | 8,13 [0.32]    |
|  | <b>11SX21-T</b>                 | General purpose                                      | 5 A<br><b>A</b>              | 0.7 to 1,39 [2.5 to 5] | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,051 [0.002] | 8,13 [0.32]    |
|  | <b>11SX22-T</b>                 | General purpose                                      | 5 A<br><b>A</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,025 [0.001] | 8,13 [0.32]    |
|  | <b>17SX21-T</b>                 | Enhanced stability under varying humidity, 11SX type | 5 A<br><b>A</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,051 [0.002] | 8,13 [0.32]    |
|  | <b>1SX1-T</b>                   | Power-duty switching                                 | 7 A<br><b>B</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,13 [0.005]  | 8,13 [0.32]    |
|  | <b>1SX12-T</b>                  | Low differential travel                              | 7 A<br><b>C</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,051 [0.002] | 8,13 [0.32]    |
|  | <b>1SX48-T</b>                  | Added overtravel                                     | 7 A<br><b>B</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,25 [0.01]       | 0,13 [0.005]  | 8,13 [0.32]    |
|  | <b>2SX1-T</b>                   | Lower operating force                                | 7 A<br><b>B</b>              | 0,83 [3]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,13 [0.005]  | 8,13 [0.32]    |
|  | <b>4SX1-T</b>                   | 204 °C [400 °F] for 100 hours                        | 7 A<br><b>I</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,13 [0.005]  | 8,13 [0.32]    |
|  | <b>21SX1-T</b>                  | Enhanced stability under varying humidity, 1SX type  | 7 A<br><b>B</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,13 [0.005]  | 8,13 [0.32]    |
|  | <b>21SX39-T (MS24547-1)</b>     | MIL-PRF-8805 82 °C [180 °F]                          | 7 A<br><b>F</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,13 [0.005]  | 8,13 [0.32]    |
|  | <b>21SX39-T2 (MS24547-4)</b>    | MIL-PRF-8805 82 °C [180 °F]                          | 7 A<br><b>F</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,13 [0.005]  | 8,13 [0.32]    |
|  | <b>91SX39-T M8805-109-01</b>    | 0.156 in wide, 82 °C [180 °F]                        | 7 A<br><b>F</b>              | 1,39 [5]               | 0,28 [1]          | 0,51 [0.02]       | 0,1 [0.004]       | 0,13 [0.005]  | 8,13 [0.32]    |

\* ±0,38 mm [±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™ SX 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. mm [in]                                    |
|-------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------|------------------------------|-------------|-------------------|-------------------|-------------------|--------------|-------------------------------------------------|
|    | <b>311SX1-T</b> | 3,43 mm [0.135 in] straight lever                            | 5 A<br><b>A</b>              | 0,49 [1.76] | 0,09 [0.32]       | 1,65 [0.065]      | 0,36 [0.014]      | 0,51 [0.020] | 8,43 mm<br>±1,14 mm<br>[0.332 in<br>±0.045 in]  |
|                                                                                     | <b>313SX1-T</b> | 3,43 mm [0.135 in] straight lever with gold contacts         | 1 A<br><b>D</b>              | 0,49 [1.76] | 0,09 [0.32]       | 1,65 [0.065]      | 0,36 [0.014]      | 0,51 [0.020] | 8,43 mm<br>±1,14 mm<br>[0.332 in<br>±0.045 in]  |
|    | <b>311SX2-T</b> | 12,8 mm [0.505 in] straight lever                            | 5 A<br><b>A</b>              | 0,31 [1.1]  | 0,05 [0.18]       | 2,92 [0.115]      | 0,64 [0.025]      | 0,89 [0.035] | 8,26 mm<br>±1,91 mm<br>[0.325 in<br>±0.075 in]  |
|                                                                                     | <b>313SX2-T</b> | 12,8 mm [0.505 in] straight lever with gold contacts         | 1 A<br><b>D</b>              | 0,31 [1.1]  | 0,05 [0.18]       | 2,92 [0.115]      | 0,64 [0.025]      | 0,89 [0.035] | 8,26 mm<br>±1,91 mm<br>[0.325 in<br>±0.075 in]  |
|  | <b>311SX3-T</b> | 24,5 mm [0.965 in] straight lever                            | 5 A<br><b>A</b>              | 0,20 [0.71] | 0,03 [0.11]       | 4,70 [0.185]      | 0,61 [0.024]      | 1,52 [0.060] | 7,75 mm<br>±2,92 mm<br>[0.305 in<br>±0.115 in]  |
|                                                                                     | <b>313SX3-T</b> | 24,5 mm [0.965 in] straight lever with gold contacts         | 1 A<br><b>D</b>              | 0,20 [0.71] | 0,03 [0.11]       | 4,70 [0.185]      | 0,61 [0.024]      | 1,52 [0.060] | 7,75 mm<br>±2,92 mm<br>[0.305 in<br>±0.115 in]  |
|  | <b>311SX4-T</b> | 1,1 mm [0.042 in] simulated roller lever                     | 5 A<br><b>A</b>              | 0,58 [2.1]  | 0,11 [0.39]       | 1,27 [0.050]      | 0,25 [0.010]      | 0,38 [0.015] | 14,15 mm<br>±0,91 mm<br>[0.557 in<br>±0.036 in] |
|                                                                                     | <b>313SX4-T</b> | 1,1 mm [0.042 in] simulated roller lever with gold contacts  | 1 A<br><b>D</b>              | 0,58 [2.1]  | 0,11 [0.39]       | 1,27 [0.050]      | 0,25 [0.010]      | 0,38 [0.015] | 14,15 mm<br>±0,91 mm<br>[0.557 in<br>±0.036 in] |
|  | <b>311SX5-T</b> | 11,7 mm [0.459 in] simulated roller lever                    | 5 A<br><b>A</b>              | 0,31 [1.1]  | 0,05 [0.18]       | 2,67 [0.105]      | 0,56 [0.022]      | 0,89 [0.035] | 14,86 mm<br>±1,65 mm<br>[0.585 in<br>±0.065 in] |
|                                                                                     | <b>313SX5-T</b> | 11,7 mm [0.459 in] simulated roller lever with gold contacts | 1 A<br><b>D</b>              | 0,31 [1.1]  | 0,05 [0.18]       | 2,67 [0.105]      | 0,56 [0.022]      | 0,89 [0.035] | 14,86 mm<br>±1,65 mm<br>[0.585 in<br>±0.065 in] |

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

| Prefix       | Description                                                                |
|--------------|----------------------------------------------------------------------------|
| <b>1SX</b>   | Plastic pin plunger, fine silver contacts with 0.188 mounting hole centers |
| <b>2SX</b>   | 1SX with low force characteristics (3 oz. max. operating force)            |
| <b>3SX</b>   | 1SX with gold/gold alloy contacts                                          |
| <b>4SX</b>   | 1SX with high temperature construction [400 °F]                            |
| <b>6SX</b>   | 1SX with high temperature and gold/gold alloy contacts                     |
| <b>7SX</b>   | 2SX with gold/gold alloy contacts                                          |
| <b>11SX</b>  | Low force characteristics (OF and DT)                                      |
| <b>12SX</b>  | 11SX with bifurcated gold contacts                                         |
| <b>13SX</b>  | 11SX with gold/gold alloy contacts                                         |
| <b>14SX</b>  | 11SX with high temperature construction                                    |
| <b>21SX</b>  | 1SX with MIL-approvals                                                     |
| <b>22SX</b>  | 2SX with MIL-approvals                                                     |
| <b>23SX</b>  | 1SX with gold/gold alloy contacts and MIL-approvals                        |
| <b>311SX</b> | 11SX with integral lever actuator                                          |
| <b>312SX</b> | 12SX with integral lever actuator                                          |
| <b>313SX</b> | 13SX with integral lever actuator                                          |
| <b>323SX</b> | 311SX with gold/gold alloy contacts                                        |
| <b>91SX</b>  | Thin SX (0.156 in thick)                                                   |
| <b>93SX</b>  | Thin SX (0.156 in thick), gold/gold alloy contacts                         |
| <b>411SX</b> | 11SX with high temperature construction [400 °F]                           |

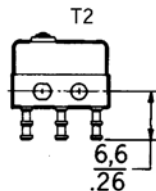
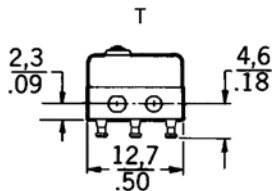


# MICRO SWITCH™ Premium Subminiature Basic Switches

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

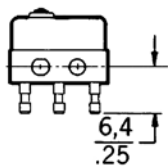
| Pin plunger, "T" terminals                                 | Pin plunger, "T1" terminals                                 | Integral lever,<br>3,43 mm [0.135 in] straight lever<br>12,8 mm [0.505 in] straight lever            |          |         |          |          |
|------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------|---------|----------|----------|
| <p>MOUNTING HOLES ACCEPT PINS OR SCREWS OF 2.3/.09 DIA</p> |                                                             | <table><tr><td>311SX1-T</td><td>3,6/.14</td></tr><tr><td>311SX2-T</td><td>13,0/.51</td></tr></table> | 311SX1-T | 3,6/.14 | 311SX2-T | 13,0/.51 |
| 311SX1-T                                                   | 3,6/.14                                                     |                                                                                                      |          |         |          |          |
| 311SX2-T                                                   | 13,0/.51                                                    |                                                                                                      |          |         |          |          |
| Integral lever,<br>24,5 mm [0.965 in] straight lever       | Integral lever,<br>1,1 mm [0.042 in] simulated roller lever | Integral lever,<br>11,7 mm [0.459 in] simulated roller lever                                         |          |         |          |          |
|                                                            |                                                             | <p>Interchangeable with 1SX-1T switch with JX-25 actuator.</p>                                       |          |         |          |          |

## MICRO SWITCH™ SX SERIES AVAILABLE TERMINALS

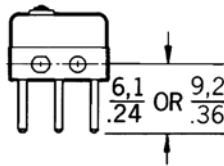


Mounting torque:  
0,226 Nm max.  
[2 in-lb max.]

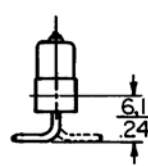
H58



STRAIGHT PIN



H391, H392  
90° FORMED PIN



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

## SX Series

## MICRO SWITCH™ JX SERIES AUXILIARY ACTUATORS FOR THE MICRO SWITCH™ SX SERIES SWITCHES (stainless steel actuators and hardware)

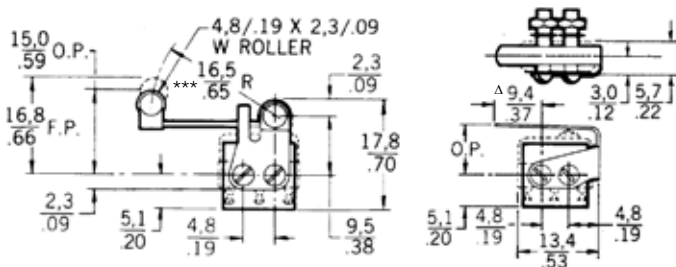
|                 |                                                                                     | Description                                     | Actuator length        | Operating Force max.        | Release Force min.  | Pretravel max.                   | Overtravel min.                  | Differential Travel max.         | Operating Point approx. | Free Position ref.    |
|-----------------|-------------------------------------------------------------------------------------|-------------------------------------------------|------------------------|-----------------------------|---------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|-----------------------|
| JX-20<br>JX-219 |    | Straight lever (JX-219 for higher temperatures) | 18,3 mm<br>[0.72 in]** | 0,28 N<br>[1 oz]<br>approx. | 0,04 N<br>[0.14 oz] | –                                | 0,76 mm<br>[0.030 in]<br>approx. | 0,76 mm<br>[0.030 in]<br>approx. | 10,8 mm<br>[0.425 in]   | 12,3 mm<br>[0.485 in] |
| JX-25<br>JX-220 |    | Roller lever (JX-220 for higher temperatures)   | 16,5 mm<br>[0.65 in]** | 0,42 N<br>[1.5 oz]          | 0,04 N<br>[0.14 oz] | –                                | 0,51 mm<br>[0.020 in]            | 0,76 mm<br>[0.030 in]            | 14,9 ,mm<br>[0.585 in]  | 168 mm<br>[0.660 in]  |
| JX-40<br>JX-95  |    | Straight leaf (JX-95 for higher temperatures)   | 9,4 mm<br>[0.37 in]^A  | 1,95 N<br>[7 oz]            | 0,56 N<br>[2 oz]    | 5,7 mm<br>[0.225 in ]<br>approx. | 0,38 mm<br>[0.015 in]            | 0,64mm<br>[0.025 in]             | 7,5 mm<br>[0.295 in]    | 12,3 mm<br>[0.485 in] |
| JX-41**         |   | Reverse leaf                                    | 9,4 mm<br>[0.37 in]^A  | 1,67 N<br>[6 oz]            | 0,28 N<br>[1 oz]    | 2,79 mm<br>[0.110 in]<br>approx. | 0,38 mm<br>[0.015 in]            | 0,64mm<br>[0.025 in]             | 7,5 mm<br>[0.295 in]    | 9,4 mm<br>[0.370 in]  |
| JX-45<br>JX-96  |  | Roller leaf (JX-96 for higher temperatures)     | 6,1 mm<br>[0.24 in]^A  | 1,95 N<br>[7 oz]            | 0,28 N<br>[1 oz]]   | 5,7 mm<br>[0.225 in ]<br>approx. | 0,38 mm<br>[0.015 in]            | 0,64mm<br>[0.025 in]             | 12,2 mm<br>[0.48 in]    | 16,5 mm<br>[0.650 in] |
| JX-51**         |  | Reverse roller leaf                             | 7,6 mm<br>[0.30 in]^A  | 1,67 N<br>[6 oz]            | 0,56 N<br>[2 oz]    | 2,79 mm<br>[0.110 in]<br>approx. | 0,38 mm<br>[0.015 in]            | 0,64mm<br>[0.025 in]             | 12,8 mm<br>[0.505 in]   | 14,7 mm<br>[0.58 in]  |
| JX-4            |  | Tandem leaf                                     | 7,9 mm<br>[0.31 in]^A  | 4,17 N<br>[15 oz]           | 0,83 N<br>[3 oz]    | 1,65 mm<br>[0.065 in]<br>approx. | 0,20 mm<br>[0.008 in]            | 0,76 mm<br>[0.030 in]            | 7,6 mm<br>[0.30 in]     | 9,40 mm<br>[0.37 in]  |

\*\* Switch is mounted with plunger end reversed from JX-40

NOTE: Above actuators should be used below 149 °C [300 °F], except listings JX-95, JX-96, JX-219, and JX-220 are for use with 4SX1-T to 204 °C [400 °F]

<sup>Δ</sup> Measurement for leaf-style levers is from center of mounting hole nearest tip of lever to the point indicated on the drawing

\*\*\* Measurement for hinge-style levers is from pivot point of the lever to the end of the lever or center of the lever's roller



# MICRO SWITCH™ Premium Subminiature Basic Switches

## 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.**

## WARRANTY/REMEDY

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Sensing and Control  
Honeywell  
1985 Douglas Drive North  
Golden Valley, MN 55422  
**honeywell.com**

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November 2013  
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