

## MICRO SWITCH™ Standard Subminiature Snap-Action Z Series



### Snap-Action Switches

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#### DESCRIPTION

The industry-defining name in snap-action switches, Honeywell MICRO SWITCH™ standard subminiatures are designed for repeatability and enhanced product life. The MICRO SWITCH™ Z Series combines small size and light weight with ample electrical capacity, low cost, and enhanced life.

The MICRO SWITCH™ Z Series consists of six product families with unique features that can drop right into an application.

These reliable and rugged switches offer a variety of actuators, terminations, circuitry configurations, electrical ratings, contact materials, operating characteristics, and sealing allows them to be utilized in numerous potential applications.

Carefully manufactured and thoroughly inspected, the MICRO SWITCH™ Z Series standard subminiatures are a great value for applications requiring sensing presence or absence of an object.

#### FEATURES

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- Small size and light weight switches lend themselves to numerous potential applications
- Choice of low energy or power-duty electrical ratings allow the switch to be specified in more types of applications
- Broad range of amp ratings (from 0.1 A to 10.1 A)
- Watertight IP67 sealing available on some listings allows the switch to be used where sealing and presence/absence detection is required
- UL/CSA, cUL, ENEC, and CE approvals

#### POTENTIAL APPLICATIONS

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- **Industrial:** Appliances, communication equipment, computers, electromechanical timers, mechanical cam assemblies (timers), office equipment, electric tools, HVAC wall controls, instrumentation, valves, vending machines
- **Transportation:** Automotive, truck, and boat wire harnesses; sub-assemblies for convertible roofs; lock modules for tail-gate/trunk; tank and hood latch detection
- **Medical:** Medical and hospital beds, foot pedal controls, and chair lifts
- Applications where a pre-wired sealed on/off switch is required

# MICRO SWITCH™ Standard Subminiature Snap-Action Z Series

## SPECIFICATIONS

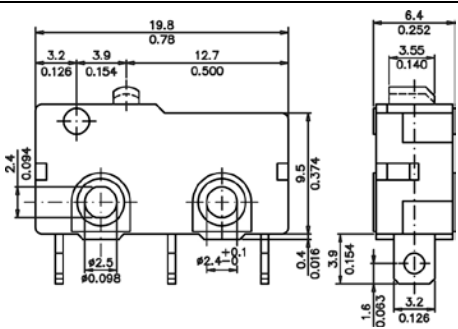
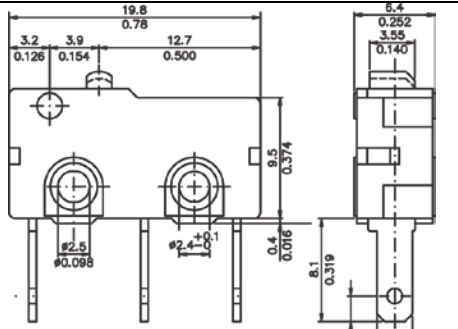
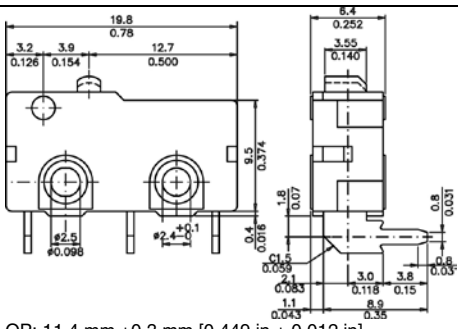
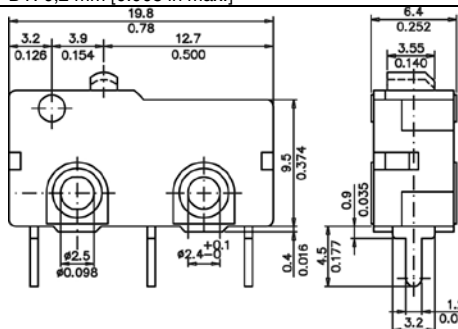
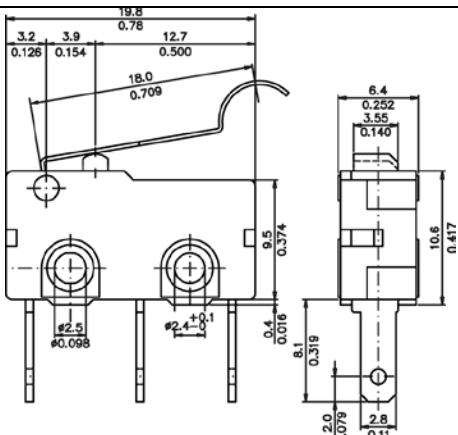
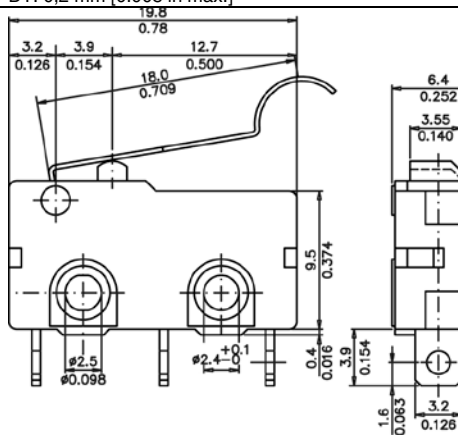
|                                |                                                                                                                                                   |                                                                                                      |                                                                                                             |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|                                |                                                                  |                     |                          |
| <b>SERIES</b>                  | <b>ZM (coil internal spring)</b>                                                                                                                  | <b>ZM1 (flat internal spring)</b>                                                                    | <b>ZV (coil spring)</b>                                                                                     |
| Differentiator                 | Integral lever, no ENEC, and an internal coil spring                                                                                              | Integral lever, ENEC, and a flat internal spring                                                     | Snap-on lever, ENEC, and coil spring                                                                        |
| Use                            | Use when ENEC is not required and the lever needs to be better secured to the switch                                                              | Used when added forces of a flat snap spring, ENEC, and a secured lever are required                 | Use when ENEC and a snap-on lever are required                                                              |
| Potential applications         | alarms, computers, food processors, gas detectors, humidifiers, joysticks, money sorters, water pumps                                             | air conditioners, consumer electronics, gas detectors, humidifiers, telephones, time recorders, toys | air conditioners, computers, consumer appliances, gas detectors, joysticks, money sorters, telephones, toys |
| Ampere rating                  | 0.1 A, 5 A, 10.1 A                                                                                                                                | 0.1 A, 3 A, 6 A, 10.1 A                                                                              | 0.1 A, 6 A, 10.1 A                                                                                          |
| Circuitry                      | SPDT, SPNO                                                                                                                                        | SPDT, SPNO, SPNC                                                                                     | SPDT, SPNO, SPNC                                                                                            |
| Operating force                | 0.18 oz to 8.78 oz                                                                                                                                | 12 gf to 355 gf                                                                                      | 0.78 oz to 11.01 oz                                                                                         |
| Termination                    | Quick connect, solder, pcb                                                                                                                        | Quick connect, solder, pcb                                                                           | quick connect, solder, pcb                                                                                  |
| Actuator                       | Pin plunger, straight, roller, sim. roller, L-shaped                                                                                              | Pin plunger, straight, roller, sim. roller, L-shaped                                                 | pin plunger, straight, roller, sim. roller                                                                  |
| Voltage                        | 125 Vac, 250 Vac, 30 Vdc                                                                                                                          | 125 Vac, 250 Vac                                                                                     | 125 Vac/125 Vdc<br>6(2) A 250 Vac                                                                           |
| Agency approvals               | UL, CE, CSA                                                                                                                                       | UL, cUL, ENEC                                                                                        | UL, CE, CSA, ENEC                                                                                           |
| Agency file info               | CE: 61058-1; UL: E12252; CSA: LR212438                                                                                                            | UL: E12252; c-UL: E12252                                                                             | CE: 61058-1; UL:12252; c-UL: E12252                                                                         |
| Operating temperature          | -40 °C to 120 °C<br>[-40 °F to 248 °F]                                                                                                            | -40 °C to 120 °C<br>[-40 °F to 248 °F]                                                               | -40 °C to 120 °C<br>[-40 °F to 248 °F]                                                                      |
| Contacts                       | Silver, gold-plated silver, gold-plated brass, silver-tin-indium oxide                                                                            | Silver, gold-plated silver, gold-plated brass, silver-tin-indium oxide                               | Silver, gold-plated silver, silver-tin-indium oxide                                                         |
| Housing                        | Polyamide (nylon)                                                                                                                                 | Polyamide (nylon)                                                                                    | Polyamide (nylon)                                                                                           |
| Sealing                        | None                                                                                                                                              |                                                                                                      |                                                                                                             |
| Storage humidity               | 85 % RH max. at 40 °C [104 °F]                                                                                                                    |                                                                                                      |                                                                                                             |
| Dielectric strength            | 1000 Vac (50 Hz to 60 Hz) between contacts, between terminals and ground, for one minute                                                          | 1000 Vac (50 Hz to 60 Hz)/min                                                                        | 1000 Vac (50 Hz to 60 Hz) between contacts, between terminals and ground, for one minute                    |
| Contact resistance             | 300 mOhm max.                                                                                                                                     | 300 mOhm max.                                                                                        | 300 mOhm max.                                                                                               |
| Insulation resistance          | 100 mOhm min. (at 500 Vdc/min)                                                                                                                    | 100 mOhm min. (at 250 Vdc/min)                                                                       | 100 mOhm min. (at 500 Vdc/min)                                                                              |
| Vibration                      | 10 Hz to 55 Hz, displacement 0.75 mm (p-p)                                                                                                        |                                                                                                      |                                                                                                             |
| Expected mechanical life       | 10 million min.                                                                                                                                   | 10 million min. @ <10 A;<br>1 million min. @ 10 A                                                    | 10 million min.                                                                                             |
| Electrical service life        | Min. 1,000,000 operations on resistive load current 0.1 A at 125 Vac; 0.1 A at 30 Vdc; Min. 6,000 operations on resistive load 5 A at 125/250 Vac | Min. 10,000 operations                                                                               | Min. 1,000,000 operations @ 0.1 A; Min 10,000 operations on resistive and motor load current 6(2) A 250 Vac |
| Electrical operating frequency | 0.1 A – 120 operations/min<br>other – 10 to 30 operations/min                                                                                     | 10 to 30 operations/min                                                                              | 0.1 A – 120 operations/min;<br>Other – 10 to 30 operations/min                                              |
| Mechanical operation frequency | 120 operations/min.                                                                                                                               |                                                                                                      |                                                                                                             |

# Snap-Action Switches

|                                |                                                                                                                        |                                                                                                                                      |                                                                                                                                      |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|                                |                                       |                                                     |                                                   |
| <b>SERIES</b>                  | <b>ZW (water-tight)</b>                                                                                                | <b>ZD (water-tight)</b>                                                                                                              | <b>ZX</b>                                                                                                                            |
| Differentiator                 | IP67 rating with lead wires; snap-on lever, coil spring, and ENEC                                                      | Smaller sized (like the ZX), sealed to IP67 (with leadwires only); plunger travel can be restricted, offers side-post quick mounting | Two-thirds the size of the ZM Series; unsealed, integral lever, and coil spring                                                      |
| Use                            | Use when a sealed position switch in a small and cost-effective package is required                                    | Use for automotive applications due to sealing and quick mounting option                                                             | Use when a much smaller unsealed position switch is required                                                                         |
| Potential applications         | air conditioners, computers, consumer appliances, gas detectors, joysticks, money sorters, telephones, toys            | automotive (operation systems and engine area interior), air conditioners, communication, electric toothbrushes, toys                | calculators, computer mouse, cordless phones, electric knife & stapler, tester machines, walkie-talkies                              |
| Ampere rating                  | 0.1 A, 5 A                                                                                                             | 0.1 A, 3 A                                                                                                                           | 0.1 A, 3 A                                                                                                                           |
| Circuitry                      | SPDT, SPNO, SPNC                                                                                                       | SPDT                                                                                                                                 | SPDT                                                                                                                                 |
| Operating force                | 1.94 oz to 7.16 oz                                                                                                     | 130 gf to 195 gf                                                                                                                     | 0.53 oz to 5.3 oz                                                                                                                    |
| Termination                    | quick connect, solder, cable bottom exit, cable side exit                                                              | Solder, pcb straight, pcb left angle, pcb right angle, pre-wired                                                                     | solder, pcb snap-in, pcb left angle, pcb right angle                                                                                 |
| Actuator                       | pin plunger, straight, roller, sim. roller                                                                             | Pin plunger, straight, sim. roller                                                                                                   | pin plunger, straight, roller, special                                                                                               |
| Voltage                        | 125 Vac, 250 Vac                                                                                                       | 125 Vac, 12 Vdc                                                                                                                      | 125 Vac, 48 Vdc                                                                                                                      |
| Agency approvals               | UL, cUL, CE, ENEC                                                                                                      | UL, cUL, CE, ENEC                                                                                                                    | UL, CE, CSA                                                                                                                          |
| Agency file info               | CE: 61058-1; UL: E12252; c-UL: E12252                                                                                  | UL: E12252; c-UL: E12252                                                                                                             | CE: 61058-1; UL:12252; CSA: LR212438                                                                                                 |
| Operating temperature          | -40 °C to 120 °C<br>[-40 °F to 248 °F] (w/o wires)<br>-40 °C to 105 °C<br>[-40 °F to 221 °F] (w/ wires)                | -40 °C to 120 °C<br>[-40 °F to 248 °F]                                                                                               | -40 °C to 120 °C<br>[-40 °F to 248 °F]                                                                                               |
| Contacts                       | silver, gold-plated silver                                                                                             | Silver, gold-plated silver                                                                                                           | silver, gold-plated silver                                                                                                           |
| Housing                        | PBT polyester thermoplastic                                                                                            | PBT polyester thermoplastic                                                                                                          | Polyamide (nylon)                                                                                                                    |
| Sealing                        | IP67 (with leadwires only)                                                                                             | IP67 (with leadwires only)                                                                                                           | None                                                                                                                                 |
| Storage humidity               | 85 % RH max. at 40 °C [104 °F]                                                                                         |                                                                                                                                      |                                                                                                                                      |
| Dielectric strength            | 1000 Vac (50 Hz to 60 Hz) between contacts and 1250 Vac (50 Hz to 60 Hz), between terminals and ground, for one minute | 150 Vac (50 Hz to 60 Hz)/minute between contacts, 500 Vac (50 Hz to 60 Hz)/minute between live parts and dead metal parts            | 1000 Vac (50 Hz to 60 Hz) between contacts, between terminals and ground, for one minute                                             |
| Contact resistance             | 30 mOhm max.                                                                                                           | 100 mOhm max.                                                                                                                        | 100 mOhm max.                                                                                                                        |
| Insulation resistance          | 100 mOhm min. (at 500 Vdc/min)                                                                                         | 100 mOhm min. (at 250 Vdc/min)                                                                                                       | 100 mOhm min. (at 500 Vdc/min)                                                                                                       |
| Vibration                      | 10 Hz to 55 Hz, displacement 0,75 mm (p-p)                                                                             |                                                                                                                                      |                                                                                                                                      |
| Expected mechanical life       | 2 million min.                                                                                                         | 500,000 min.                                                                                                                         | 1 million min.                                                                                                                       |
| Electrical service life        | Min. 10,000 operations                                                                                                 | Min. 500,000 operations on resistive load current 10 mA; Min. 6000 operations on resistive load current 3 A                          | Min. 1,000,000 operations on resistive load current 0.1 A at 48 Vdc; Min. 10,000 operations on resistive load current 3 A at 125 Vac |
| Electrical operating frequency | 10 to 30 operations/min                                                                                                | 10 mA – 120 operations/min<br>3 A – 10 to 30 operations/min                                                                          | 0.1 A – 120 operations/min<br>3 A – 10 to 30 operations/min                                                                          |
| Mechanical operation frequency | 120 operations/min.                                                                                                    |                                                                                                                                      |                                                                                                                                      |

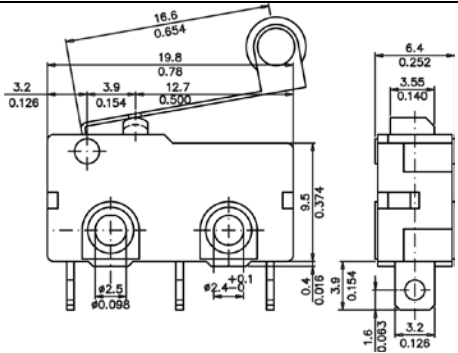
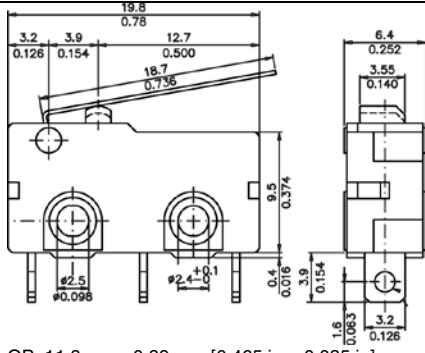
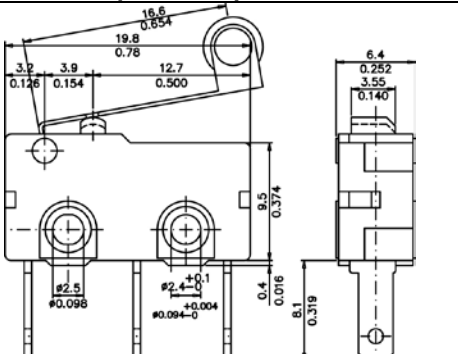
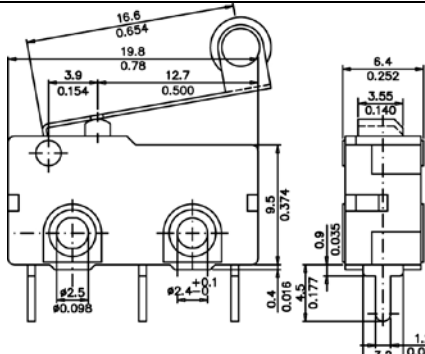
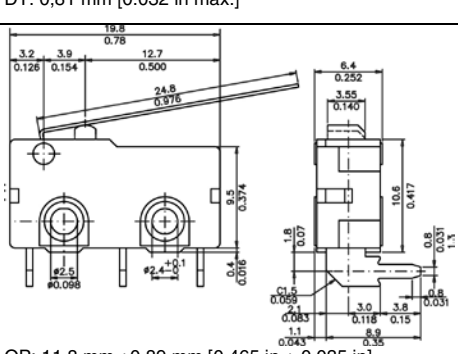
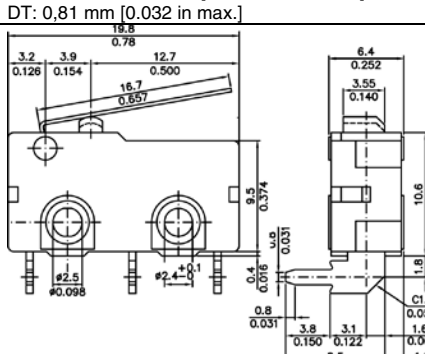
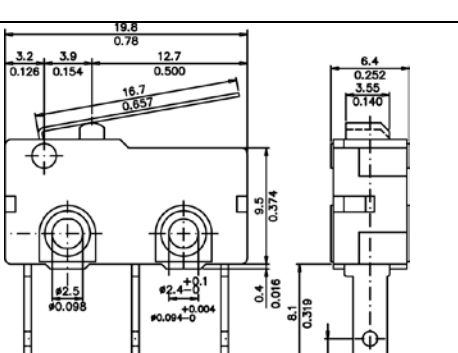
# MICRO SWITCH™ Standard Subminiature Snap-Action Z Series

## ZM AND ZM1 STANDARD LEVER OPTIONS & DIMENSIONS mm/in

| Lever/<br>Terminals                  | Dimensions                                                                                                                                                          | Lever/<br>Terminals           | Dimensions                                                                                                                                                           |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pin plunger/<br>solder               |  <p>OP: 11.4 mm ±0.3 mm [0.449 in ± 0.012 in]<br/>DT: 0.2 mm [0.008 in max.]</p>   | Pin plunger/<br>quick connect |  <p>OP: 11.4 mm ±0.3 mm [0.449 in ± 0.012 in]<br/>DT: 0.2 mm [0.008 in max.]</p>   |
| Pin plunger/<br>PCB right            |  <p>OP: 11.4 mm ±0.3 mm [0.449 in ± 0.012 in]<br/>DT: 0.2 mm [0.008 in max.]</p>  | Pin<br>plunger/PCB            |  <p>OP: 11.4 mm ±0.3 mm [0.449 in ± 0.012 in]<br/>DT: 0.2 mm [0.008 in max.]</p>  |
| Simulated<br>roller/quick<br>connect |  <p>OP: 15.1 mm ±1.5 mm [0.591 in ± 0.059 in]<br/>DT: 0.9 mm [0.035 in max.]</p> | Simulated<br>roller/solder    |  <p>OP: 15.1 mm ±1.5 mm [0.591 in ± 0.059 in]<br/>DT: 0.9 mm [0.035 in max.]</p> |

# Snap-Action Switches

Continued – ZM AND ZM1 STANDARD LEVER OPTIONS & DIMENSIONS mm/in

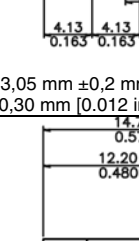
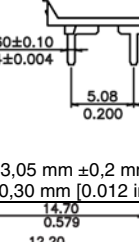
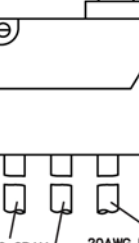
| Lever/<br>Terminals        | Dimensions                                                                                                                                                            | Lever/<br>Terminals  | Dimensions                                                                                                                                                             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Roller/solder              |  <p>OP: 17.5 mm ±0.8 mm [0.689 in ± 0.032 in]<br/>DT: 0.81 mm [0.032 in max.]</p>    | Straight/<br>solder  |  <p>OP: 11.8 mm ±0.89 mm [0.465 in ± 0.035 in]<br/>DT: 0.81 mm [0.032 in max.]</p>   |
| Roller/<br>quick connect   |  <p>OP: 17.5 mm ±0.8 mm [0.689 in ± 0.032 in]<br/>DT: 0.81 mm [0.032 in max.]</p>   | Roller/PCB           |  <p>OP: 17.5 mm ±0.8 mm [0.689 in ± 0.032 in]<br/>DT: 0.81 mm [0.032 in max.]</p>   |
| Straight/PCB<br>right      |  <p>OP: 11.8 mm ±0.89 mm [0.465 in ± 0.035 in]<br/>DT: 0.81 mm [0.032 in max.]</p> | Straight/PCB<br>left |  <p>OP: 11.8 mm ±0.89 mm [0.465 in ± 0.035 in]<br/>DT: 0.81 mm [0.032 in max.]</p> |
| Straight/<br>quick connect |  <p>OP: 11.8 mm ±0.89 mm [0.465 in ± 0.035 in]<br/>DT: 0.81 mm [0.032 in max.]</p> |                      |                                                                                                                                                                        |

# MICRO SWITCH™ Standard Subminiature Snap-Action Z Series

## ZV STANDARD LEVER OPTIONS & DIMENSIONS mm/in

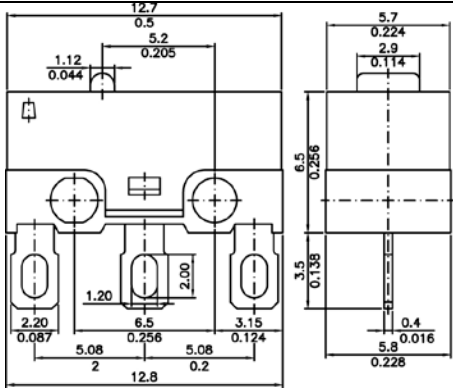
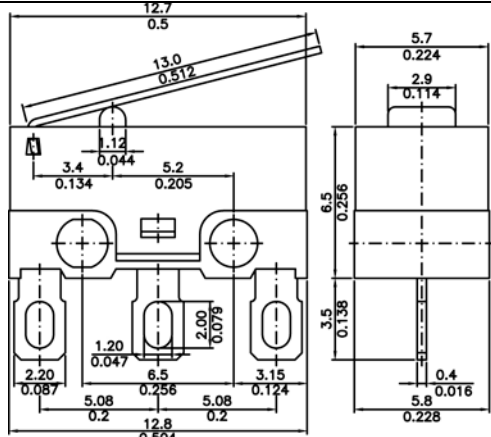
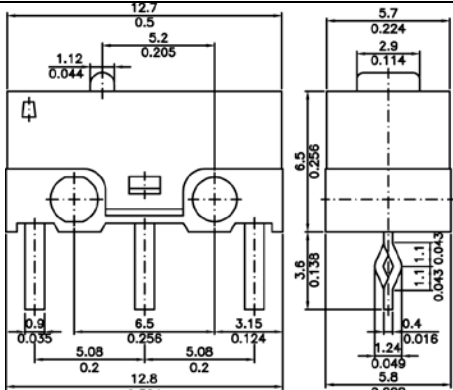
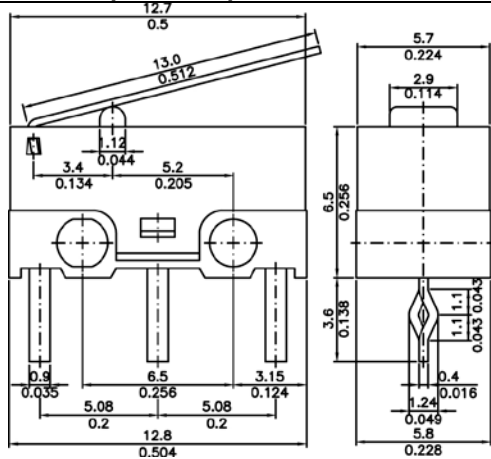
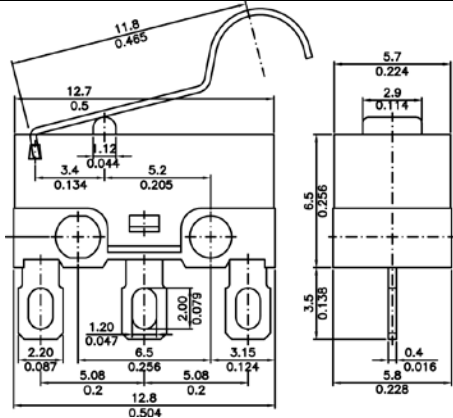
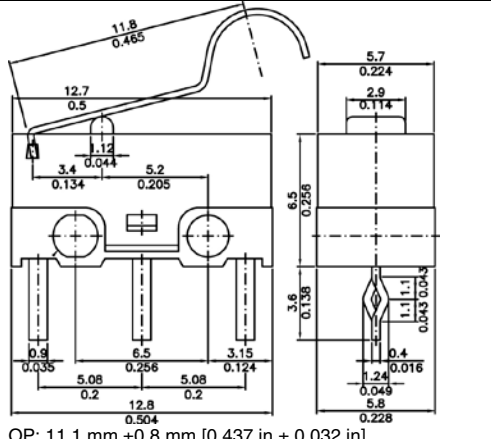
| Lever/<br>Terminals           | Dimensions                                                                       | Lever/<br>Terminals      | Dimensions                                                                       |
|-------------------------------|----------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------|
| Pin plunger/<br>quick connect | <p>OP: 11.4 mm ±0.3 mm [0.449 in ± 0.012 in]<br/>DT: 0.2 mm [0.008 in max.]</p>  | Pin plunger/<br>solder   | <p>OP: 11.4 mm ±0.3 mm [0.449 in ± 0.012 in]<br/>DT: 0.2 mm [0.008 in max.]</p>  |
| Straight/<br>solder           | <p>OP: 11.8 mm ±1.6 mm [0.465 in ± 0.063 in]<br/>DT: 0.81 mm [0.032 in max.]</p> | Roller/solder            | <p>OP: 17.5 mm ±1.1 mm [0.689 in ± 0.043 in]<br/>DT: 0.81 mm [0.032 in max.]</p> |
| Straight/<br>quick connect    | <p>OP: 11.8 mm ±1.2 mm [0.465 in ± 0.047 in]<br/>DT: 0.81 mm [0.032 in max.]</p> | Roller/<br>quick connect | <p>OP: 17.5 mm ±1.1 mm [0.689 in ± 0.043 in]<br/>DT: 0.81 mm [0.032 in max.]</p> |

## ZD STANDARD LEVER OPTIONS & DIMENSIONS mm/in

| Lever/<br>Terminals                         | Dimensions                                                                                                                                                                                           |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pin plunger/<br>solder<br>terminals         |  <p>OP: 3,05 mm <math>\pm</math> 0,2 mm [0.12 in <math>\pm</math> 0.008 in]<br/>DT: 0,30 mm [0.012 in max.]</p>   |
| Pin<br>plunger/PCB<br>straight<br>terminals |  <p>OP: 3,05 mm <math>\pm</math> 0,2 mm [0.12 in <math>\pm</math> 0.008 in]<br/>DT: 0,30 mm [0.012 in max.]</p>  |
| Pin<br>plunger/wire<br>leads                |  <p>OP: 3,05 mm <math>\pm</math> 0,2 mm [0.12 in <math>\pm</math> 0.008 in]<br/>DT: 0,30 mm [0.012 in max.]</p> |

# MICRO SWITCH™ Standard Subminiature Snap-Action Z Series

## ZX STANDARD LEVER OPTIONS & DIMENSIONS mm/in

| Lever/<br>Terminals        | Dimensions                                                                                                                                                                                         | Lever/<br>Terminals     | Dimensions                                                                                                                                                                                          |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pin plunger/<br>solder     |  <p>OP: 7,0 mm <math>\pm</math> 0,3 mm [0.276 in <math>\pm</math> 0.012 in]<br/>DT: 0,30 mm [0.012 in max.]</p>   | Straight/<br>Solder     |  <p>OP: 8,4 mm <math>\pm</math> 0,8 mm [0.331 in <math>\pm</math> 0.032 in]<br/>DT: 1,3 mm [0.051 in max.]</p>    |
| Pin<br>plunger/PCB         |  <p>OP: 7,0 mm <math>\pm</math> 0,3 mm [0.276 in <math>\pm</math> 0.012 in]<br/>DT: 0,30 mm [0.012 in max.]</p>  | Straight/PCB            |  <p>OP: 8,4 mm <math>\pm</math> 0,8 mm [0.331 in <math>\pm</math> 0.032 in]<br/>DT: 1,3 mm [0.051 in max.]</p>   |
| Simulated<br>roller/solder |  <p>OP: 11,1 mm <math>\pm</math> 0,8 mm [0.437 in <math>\pm</math> 0.032 in]<br/>DT: 1,3 mm [0.051 in max.]</p> | Simulated<br>roller/PCB |  <p>OP: 11,1 mm <math>\pm</math> 0,8 mm [0.437 in <math>\pm</math> 0.032 in]<br/>DT: 1,3 mm [0.051 in max.]</p> |

# Snap-Action Switches

## ZM SERIES NOMENCLATURE TREE

| ZM                          |    | 50                                      |                                 | E                                   |           | 10              |                             | A                                                      |                                             | 01                  |                     |                                                                                                                                                                                                                                        |
|-----------------------------|----|-----------------------------------------|---------------------------------|-------------------------------------|-----------|-----------------|-----------------------------|--------------------------------------------------------|---------------------------------------------|---------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (Notes 1, 4)<br>Switch type |    | Current rating                          |                                 | Operating force<br>(at pin plunger) |           | Terminal type   |                             | Actuator type <sup>(Note 5)</sup><br>(integral levers) |                                             | Circuitry           |                     | Special Designator                                                                                                                                                                                                                     |
| ZM Series<br>Subminiature   |    | 10                                      | 0.1 A: 125 Vac<br>(gold-plated) | B                                   | 60 g max. | 10              | Solder straight             | A                                                      | Pin plunger                                 | 01                  | SPDT<br>UL, CE, CSA | A special designator letter is used only when terminal type is "99" or actuator type is "S" to specify that the termination or the actuator of the switch is special. Review product specification to determine the exact differences. |
|                             | 50 | 5 A: 125/250 Vac                        | D                               | 104 g max.                          | 20        | PCB straight    | B                           | Short straight lever 16,7 [0.66]                       | 03                                          | SPNO<br>UL, CE, CSA |                     |                                                                                                                                                                                                                                        |
|                             | 90 | 10.1 A: 125/250 Vac <sup>(Note 2)</sup> | E                               | 146 g max.                          | 50        | PCB right angle | C                           | Standard straight lever 18,7 [0.74]                    | 04                                          | SPNC<br>UL, CE, CSA |                     |                                                                                                                                                                                                                                        |
|                             |    |                                         | G                               | 249 g max.                          | 60        | PCB left angle  | D                           | Long straight lever 24,8 [0.98]                        |                                             |                     |                     |                                                                                                                                                                                                                                        |
|                             |    |                                         |                                 |                                     |           | 70              | Quick connect 0.110 in      | K                                                      | Longer straight lever 35,2 [1.39]           |                     |                     |                                                                                                                                                                                                                                        |
|                             |    |                                         |                                 |                                     |           | 99              | Special <sup>(Note 3)</sup> | J                                                      | Longest straight lever 55,2 [2.17]          |                     |                     |                                                                                                                                                                                                                                        |
|                             |    |                                         |                                 |                                     |           |                 |                             | F                                                      | Roller lever 16,6 [0.65]                    |                     |                     |                                                                                                                                                                                                                                        |
|                             |    |                                         |                                 |                                     |           |                 |                             | H                                                      | Small simulated roller lever 17,9 [0.71]    |                     |                     |                                                                                                                                                                                                                                        |
|                             |    |                                         |                                 |                                     |           |                 |                             | E                                                      | Standard simulated roller lever 18,0 [0.71] |                     |                     |                                                                                                                                                                                                                                        |
|                             |    |                                         |                                 |                                     |           |                 |                             | M                                                      | Large simulated roller lever 21,1 [0.83]    |                     |                     |                                                                                                                                                                                                                                        |
|                             |    |                                         |                                 |                                     |           |                 |                             | L                                                      | L-shaped lever 31,5 [1.24]                  |                     |                     |                                                                                                                                                                                                                                        |
|                             |    |                                         |                                 |                                     |           |                 |                             | S                                                      | Special lever <sup>(Note 3)</sup>           |                     |                     |                                                                                                                                                                                                                                        |

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NOTES

(1) Nomenclature is for identification purposes only, not all combinations are possible. Variations not set up would require minimum volumes to establish.

(2) Switches with 10.1 A rating are only available with "G" operating force.

(3) Terminal type "99" or actuator type "S" designates a special and therefore requires a special designator letter at the end of the listing.

(4) Establishing new nomenclature may require notification to UL and European approvals agencies.

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### NOTES

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## ZM1 SERIES NOMENCLATURE TREE

| ZM1                                    | 50                                                                                                                                                                                                                                                 | C                                                  | 10                              | A                                                 | 01               |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------|---------------------------------------------------|------------------|--------------------|------------------|----|------------------------------------------------|-------------------------------------------------------|---|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------------|----|--------------|----|-----------------|----|----------------|----|---------------------------|----|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------|---|-------------------------------------|---|----------------------------------------|---|------------------------------------|---|------------------------------------|---|--------------|---|---------------------------------|---|---------------------------------------|---|------------------------------------|---|----------------|---|---------------------------------|---|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------------------|----|-----------------------|----|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch type<br><small>(Note 1)</small> | Current rating                                                                                                                                                                                                                                     | Operating force<br><small>(at pin plunger)</small> | Terminal type                   | Actuator type<br><small>(integral levers)</small> | Circuitry        | Special Designator |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| ZM1 Series<br>Subminiature             | <table><tr><td>10</td><td>0.1 A: 125 Vac<br/>(gold-plated)</td></tr><tr><td>50</td><td>3 A: 125/250 Vac</td></tr><tr><td>60</td><td>6 A: 125/250 Vac</td></tr><tr><td>90</td><td><small>(Note 2)</small><br/>10.1 A: 125/250 Vac</td></tr></table> | 10                                                 | 0.1 A: 125 Vac<br>(gold-plated) | 50                                                | 3 A: 125/250 Vac | 60                 | 6 A: 125/250 Vac | 90 | <small>(Note 2)</small><br>10.1 A: 125/250 Vac | <table><tr><td>C</td><td>150 g max.</td></tr></table> | C | 150 g max. | <table><tr><td>10</td><td>Solder straight</td></tr><tr><td>20</td><td>PCB straight</td></tr><tr><td>50</td><td>PCB right angle</td></tr><tr><td>60</td><td>PCB left angle</td></tr><tr><td>70</td><td>Quick connect<br/>0.110 in</td></tr><tr><td>99</td><td>Special <small>(Note 3)</small></td></tr></table> | 10 | Solder straight | 20 | PCB straight | 50 | PCB right angle | 60 | PCB left angle | 70 | Quick connect<br>0.110 in | 99 | Special <small>(Note 3)</small> | <table><tr><td>A</td><td>Pin plunger</td></tr><tr><td>B</td><td>Short straight<br/>lever 14,6 [0.57]</td></tr><tr><td>C</td><td>Standard straight<br/>lever 16,6 [0.65]</td></tr><tr><td>D</td><td>Long straight<br/>lever 22,7 [0.89]</td></tr><tr><td>E</td><td>Standard simulated<br/>roller lever</td></tr><tr><td>F</td><td>Roller lever</td></tr><tr><td>H</td><td>Small simulated<br/>roller lever</td></tr><tr><td>J</td><td>Longest straight<br/>lever 52,9 [2.08]</td></tr><tr><td>K</td><td>Long straight<br/>lever 33,1 [1.30]</td></tr><tr><td>L</td><td>L-shaped lever</td></tr><tr><td>M</td><td>Large simulated<br/>roller lever</td></tr><tr><td>S</td><td>Special lever <small>(Note 3)</small></td></tr></table> | A | Pin plunger | B | Short straight<br>lever 14,6 [0.57] | C | Standard straight<br>lever 16,6 [0.65] | D | Long straight<br>lever 22,7 [0.89] | E | Standard simulated<br>roller lever | F | Roller lever | H | Small simulated<br>roller lever | J | Longest straight<br>lever 52,9 [2.08] | K | Long straight<br>lever 33,1 [1.30] | L | L-shaped lever | M | Large simulated<br>roller lever | S | Special lever <small>(Note 3)</small> | <table><tr><td>01</td><td>SPDT<br/>UL, cUL, ENEC</td></tr><tr><td>03</td><td>SPNO<br/>UL, cUL, ENEC</td></tr><tr><td>04</td><td>SPNC<br/>UL, cUL, ENEC</td></tr></table> | 01 | SPDT<br>UL, cUL, ENEC | 03 | SPNO<br>UL, cUL, ENEC | 04 | SPNC<br>UL, cUL, ENEC | <p>A special designator letter is used only when terminal type is "99" or actuator type is "S" to specify that the termination or the actuator of the switch is special. Review product specification to determine the exact differences.</p> |
| 10                                     | 0.1 A: 125 Vac<br>(gold-plated)                                                                                                                                                                                                                    |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| 50                                     | 3 A: 125/250 Vac                                                                                                                                                                                                                                   |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| 60                                     | 6 A: 125/250 Vac                                                                                                                                                                                                                                   |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| 90                                     | <small>(Note 2)</small><br>10.1 A: 125/250 Vac                                                                                                                                                                                                     |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| C                                      | 150 g max.                                                                                                                                                                                                                                         |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| 10                                     | Solder straight                                                                                                                                                                                                                                    |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| 20                                     | PCB straight                                                                                                                                                                                                                                       |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| 50                                     | PCB right angle                                                                                                                                                                                                                                    |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| 60                                     | PCB left angle                                                                                                                                                                                                                                     |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| 70                                     | Quick connect<br>0.110 in                                                                                                                                                                                                                          |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| 99                                     | Special <small>(Note 3)</small>                                                                                                                                                                                                                    |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| A                                      | Pin plunger                                                                                                                                                                                                                                        |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| B                                      | Short straight<br>lever 14,6 [0.57]                                                                                                                                                                                                                |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| C                                      | Standard straight<br>lever 16,6 [0.65]                                                                                                                                                                                                             |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| D                                      | Long straight<br>lever 22,7 [0.89]                                                                                                                                                                                                                 |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| E                                      | Standard simulated<br>roller lever                                                                                                                                                                                                                 |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| F                                      | Roller lever                                                                                                                                                                                                                                       |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| H                                      | Small simulated<br>roller lever                                                                                                                                                                                                                    |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| J                                      | Longest straight<br>lever 52,9 [2.08]                                                                                                                                                                                                              |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| K                                      | Long straight<br>lever 33,1 [1.30]                                                                                                                                                                                                                 |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| L                                      | L-shaped lever                                                                                                                                                                                                                                     |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| M                                      | Large simulated<br>roller lever                                                                                                                                                                                                                    |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| S                                      | Special lever <small>(Note 3)</small>                                                                                                                                                                                                              |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| 01                                     | SPDT<br>UL, cUL, ENEC                                                                                                                                                                                                                              |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| 03                                     | SPNO<br>UL, cUL, ENEC                                                                                                                                                                                                                              |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |
| 04                                     | SPNC<br>UL, cUL, ENEC                                                                                                                                                                                                                              |                                                    |                                 |                                                   |                  |                    |                  |    |                                                |                                                       |   |            |                                                                                                                                                                                                                                                                                                                |    |                 |    |              |    |                 |    |                |    |                           |    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |             |   |                                     |   |                                        |   |                                    |   |                                    |   |              |   |                                 |   |                                       |   |                                    |   |                |   |                                 |   |                                       |                                                                                                                                                                          |    |                       |    |                       |    |                       |                                                                                                                                                                                                                                               |

NOTES

(1) Nomenclature is for identification purposes only, not all combinations are possible. Variations not set up would require minimum volumes to establish.

(2) Switches with 10.1 A rating are only available with "G" operating force.

(3) Terminal type "99" or actuator type "S" designates a special and therefore requires a special designator letter at the end of the listing.

### NOTES

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# MICRO SWITCH™ Standard Subminiature Snap-Action Z Series

## ZV SERIES NOMENCLATURE TREE

| ZV                                                           | 50                                                                                                                    | D                                                                                                                                                     | 10                                                                                                                                                                                              | A                                                                                                                                                                                                                                                                                                                                                                                                                                 | 01                                                                                                        |                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch type<br>(Notes 1, 4)<br><b>ZV Series Subminiature</b> | Current rating<br><b>10</b> 0.1 A: 125 Vac<br><b>50</b> 6 A: 125/250 Vac<br><b>90</b> 10.1 A: 125/250 Vac<br>(Note 2) | Operating force<br>(at pin plunger)<br><b>B</b> 60 g max.<br><b>D</b> 104 g max.<br><b>E</b> 146 g max.<br><b>G</b> 249 g max.<br><b>H</b> 312 g max. | Terminal type<br><b>10</b> Solder straight<br><b>20</b> PCB straight<br><b>50</b> PCB right angle<br><b>60</b> PCB left angle<br><b>70</b> Quick connect 0.110 in<br><b>99</b> Special (Note 3) | Actuator type<br>(levers mounted externally)<br><b>A</b> Pin plunger<br><b>B</b> Short straight lever 17.4 [0.69]<br><b>C</b> Standard straight lever 19.4 [0.76]<br><b>D</b> Long straight lever 25.5 [1.00]<br><b>E</b> Simulated roller lever 18.65 [0.73]<br><b>F</b> Roller lever 17.2 [0.68]<br><b>H</b> Small simulated roller lever 18.6 [0.73]<br><b>P</b> Plastic lever 25.7 [1.012]<br><b>S</b> Special lever (Note 3) | Circuitry<br><b>01</b> SPDT UL, cUL, ENEC<br><b>03</b> SPNO UL, cUL, ENEC<br><b>04</b> SPNC UL, cUL, ENEC | Special Designator<br>A special designator letter is used only when terminal type is "99" or actuator type is "S" to specify that the termination or the actuator of the switch is special. Review product specification to determine the exact differences. |

### NOTES

- (1) Nomenclature is for identification purposes only, not all combinations are possible. Variations not set up would require minimum volumes to establish.  
 (2) Switches with 10.1 A rating should only use "G" or "H" operating force.  
 (3) Terminal type "99" or actuator type "S" designate a special termination and therefore requires a special designator letter at the end of the listing.  
 (4) Establishing new nomenclature may require notification to UL and European approvals agencies.

## ZW SERIES NOMENCLATURE TREE

| ZW                                                                  | 50                                                                                                                                    | F                                                                                 | 15                                                                                                                                                                                                                                                                                                                                                                       | A                                                                                                                                                                                                                                                                                                                                                                                                                           | D                                                                                                        | 1                                                                                                                  |                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch type<br>(Notes 1, 3)<br><b>ZW Series Sealed Subminiature</b> | Current rating<br><b>10</b> 0.1 A: 125/250 Vac (gold-plated)<br><b>50</b> 5 A: 125/250 Vac (gold-plated)<br>6 A: 125/250 Vac (silver) | Operating force<br>(at pin plunger)<br><b>E</b> 150 g max.<br><b>F</b> 203 g max. | Terminal type<br><b>15</b> Solder (angled)<br><b>20</b> PCB straight<br><b>70</b> Quick connect 0.110 in x 0.20 in<br><b>90</b> Cable-bottom exit 500 mm (UL1007 dia 1.8 [0.07])<br><b>91</b> Cable-side exit (opposite plunger) 500 mm (UL1007 dia 1.8 [0.07])<br><b>92</b> Cable-side exit (plunger side) 500 mm (UL1007 dia 1.8 [0.07])<br><b>99</b> Special (Note 2) | Actuator type<br>(levers mounted externally)<br><b>A</b> Pin plunger<br><b>B</b> Short straight lever 17.4 [0.69]<br><b>C</b> Standard straight lever 19.4 [0.76]<br><b>D</b> Long straight lever 25.5 [1.00]<br><b>F</b> Roller lever 17.2 [0.68]<br><b>H</b> Small simulated roller lever 18.6 [0.73]<br><b>J</b> Longest straight lever 55.9 [2.2]<br><b>E</b> Simulated roller lever<br><b>S</b> Special lever (Note 2) | Construction<br><b>D</b> Dust tight - IP00, no wires<br><b>W</b> Water tight - IP67, 19.7 in wires, 20ga | Circuitry<br><b>1</b> SPDT UL, cUL, ENEC<br><b>3</b> SPNO only Wired versions<br><b>4</b> SPNC only Wired versions | Special Designator<br>A special designator letter is used only when terminal type is "99" or actuator type is "S" to specify that the termination or the actuator of the switch is special. Review product specification to determine the exact differences. |

### NOTES

- (1) Nomenclature is for identification purposes only, not all combinations are possible. Variations not set up would require minimum volumes to establish.  
 (2) Terminal type "99" or actuator type "S" designates a special and therefore requires a special designator letter at the end of the listing.  
 (3) Establishing new nomenclature may require notification to UL and European approvals agencies.

## ZD SERIES (NO WIRES) NOMENCLATURE TREE

| ZD                                                           | 20                                                                                                | S                                                          | 10                                                                                                                                                          | A                                                                                                                                              | 0                                        | 1                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch type<br>(Notes 1, 3)<br><b>ZD Series Subminiature</b> | Current rating<br><b>20</b> 10 mA: 12 Vdc (gold-plated)<br><b>30</b> 3 A: 12 Vdc/125 Vac (silver) | Operating force<br>(at pin plunger)<br><b>S</b> 130 g max. | Terminal type<br><b>10</b> Solder straight<br><b>20</b> PCB straight<br><b>50</b> PCB right angle<br><b>60</b> PCB left angle<br><b>99</b> Special (Note 2) | Actuator type<br><b>A</b> Pin plunger<br><b>C</b> Straight lever 15 mm<br><b>H</b> Simulated roller lever 18.6 mm<br><b>S</b> Special (Note 2) | Circuitry<br><b>0</b> SPDT UL, cUL, ENEC | Pillar and Travel<br><b>1</b> No pillar short travel<br><b>2</b> Left pillar short travel<br><b>3</b> Right pillar short travel<br><b>4</b> No pillar long travel<br><b>5</b> Left pillar long travel<br><b>6</b> Right pillar long travel | Special Designator<br>A special designator letter is used only when terminal type is "99" or actuator type is "S" to specify that the termination or the actuator of the switch is special. Review product specification to determine the exact differences. |

### NOTES

- (1) Nomenclature is for identification purposes only, not all combinations are possible. Variations not set up would require minimum volumes to establish.  
 (2) Terminal type "99" or actuator type "S" designates a special and therefore requires a special designator letter at the end of the listing.  
 (3) Ratings: Sealing rated IP00

# Snap-Action Switches

## ZD SERIES (WITH WIRES) NOMENCLATURE TREE

| ZD                                                                                                | 20                                                                                                      | S                                                          | A                                                                                                                                                    | 0                                                                                                               | 1                                                                                                                                                                                                                                                                                                             | E                                                                    | A                            | Blank or 001                      |
|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------------|-----------------------------------|
| Switch type<br>(Notes 1, 2)<br><b>ZD Series</b><br>Subminiature<br>IP67 Sealed with<br>Lead Wires | Current rating<br><b>20</b> 10 mA: 12 Vdc<br>(gold-plated)<br><b>30</b> 3 A: 12 Vdc/125 Vac<br>(silver) | Operating force<br>(if pin plunger)<br><b>S</b> 130 g max. | Actuator type<br><b>A</b> Pin plunger<br><b>C</b> Straight lever<br>15 mm<br><b>H</b> Simulated roller<br>lever 18,6 mm<br><b>S</b> Special (Note 2) | Circuitry<br><b>0</b> SPDT<br>UL, cUL, ENEC<br><b>3</b> SPNO<br>UL, cUL, ENEC<br><b>4</b> SPNC<br>UL, cUL, ENEC | Pillar and Travel<br><b>1</b> No pillar<br>short travel<br><b>2</b> Left pillar<br>short travel<br><b>3</b> Right pillar<br>short travel<br><b>4</b> No pillar<br>long travel<br><b>5</b> Left pillar<br>long travel<br><b>6</b> Right pillar<br>long travel<br><b>7</b> No pillar, with<br>mounting hole tab | AWG type<br><b>E</b> 20<br><b>F</b> 22<br><b>G</b> 24<br><b>H</b> 26 | UL number<br><b>A</b> UL1007 | Serial code<br>Special designator |

### NOTES

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## ZX SERIES NOMENCLATURE TREE

| ZX                                                              | 10                                                                                               | E                                                            | 10                                                                                                                                                                                   | A                                                                                                                                                                                                                                                                                                                                                                                                                    | 01                                     |                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch type<br>(Notes 1, 3)<br><b>ZX Series</b><br>Subminiature | Current rating<br><b>10</b> 0.1 A: 48 Vdc<br>(gold-plated)<br><b>40</b> 3 A: 125 Vac<br>(silver) | Operating force<br><b>C</b> 90 g max.<br><b>E</b> 150 g max. | Terminal type<br><b>10</b> Solder straight<br><b>20</b> PCB straight<br><b>30</b> PCB snap-in<br><b>50</b> PCB right angle<br><b>60</b> PCB left angle<br><b>99</b> Special (Note 2) | Actuator type<br>(integral levers)<br><b>A</b> Pin plunger<br><b>B</b> Short straight<br>lever 10,0 [0.39]<br><b>C</b> Standard straight<br>lever 13,0 [0.51]<br><b>E</b> Simulated roller<br>lever 11,8 [0.47]<br><b>G</b> Small simulated<br>roller lever 10,0 [0.39]<br><b>H</b> Small simulated<br>roller lever 15,0 [0.59]<br><b>J</b> Longest straight<br>lever 30,0 [1.18]<br><b>S</b> Special lever (Note 2) | Circuitry<br><b>01</b> SPDT<br>UL, CSA | Special Designator<br>A special designator letter<br>is used only when terminal<br>type is "99" or actuator type<br>is "S" to specify that the<br>termination or the actuator of<br>the switch is special. Review<br>product specification to<br>determine the exact<br>differences. |

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## 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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