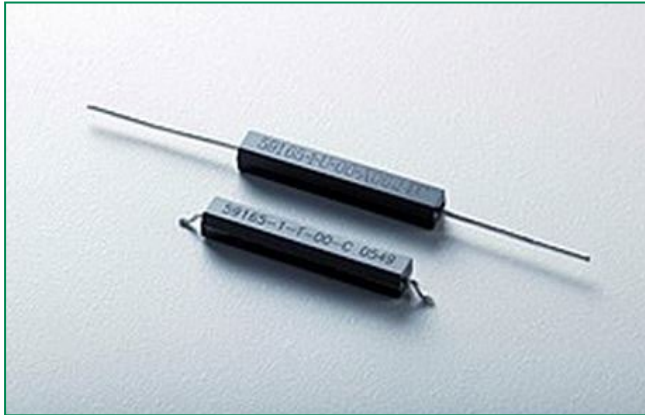


# 59165 Miniature Overmolded Reed Switch + 57045 Actuator



## Description

The 59165 is a miniature overmolded reed switch 16.00mm x 2.40mm x 2.40mm (0.630" x 0.095" x 0.095") with either straight or Gull Wing leads. It has normally open contact, capable of switching up to 200Vdc at 10W.

**Note: The 57045 Actuator is sold separately.**

## Features

- Two-part magnetically operated proximity switch
- Gull Wing, leaded and staple form options
- Tape and reel option
- RoHS Compliant
- Solder reflow capable
- Thermoset overmolded material
- ATEX certified for use in European explosive atmospheres: Ex nC IIC Gc
- Certified for use in North American Hazardous Locations: Class I, Division 2 and Zone 2

## Agency Approvals

| Agency | Agency File Number                            |
|--------|-----------------------------------------------|
|        | E61760<br>e471070                             |
|        | DEMKO 14 ATEX 1393U<br>Ex II 3 G Ex nC IIC Gc |

Note: Contact Littelfuse for specific agency approval ratings.

## Benefits

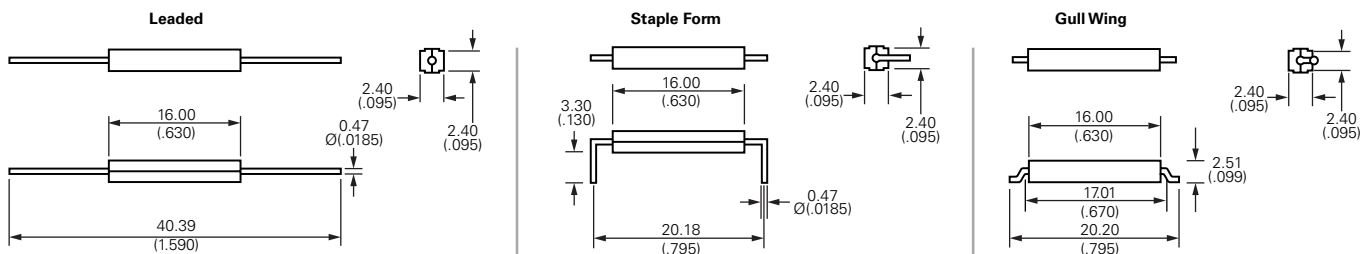
- Suitable for pick and place
- No standby power requirement
- Operates through non-ferrous materials such as wood, plastic or aluminium
- Hermetically sealed, magnetically operated contacts continue to operate long after optical and other technologies fail due to contamination

## Applications

- Position and Limit Sensing
- Security System Switch
- Door Switch

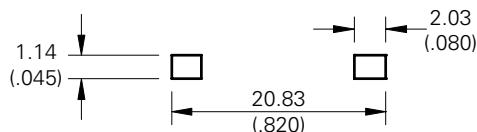
## Dimensions

Dimensions in mm (inch)



## Soldering Footprint

Dimensions in mm (inch)



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### Electrical Ratings

| Contact Type                |                             |                      | Normally Open           |
|-----------------------------|-----------------------------|----------------------|-------------------------|
| Switch Type                 |                             |                      | 1                       |
| Contact Rating <sup>1</sup> |                             | VA/Watt - max.       | 10                      |
| Voltage <sup>3</sup>        | Switching <sup>2</sup>      | Vdc - max.           | 200                     |
|                             | Breakdown <sup>4</sup>      | Vac - max.           | 140                     |
|                             |                             | Vdc - min.           | 250                     |
| Current <sup>3</sup>        | Switching <sup>2</sup>      | Adc - max.           | 0.5                     |
|                             | Carry                       | Aac - max.           | 0.35                    |
|                             |                             | Adc - max.           | 0.8                     |
| Resistance                  | Contact, Initial Insulation | Ω - max.<br>Ω - min. | 0.2<br>10 <sup>10</sup> |
| Capacitance                 | Contact                     | pF - typ.            | 0.3                     |
| Temperature                 | Operating                   | °C                   | -40 to +105             |

### Product Characteristics

|                           |             |           |     |
|---------------------------|-------------|-----------|-----|
| Operate Time <sup>5</sup> |             | ms - max. | 1.0 |
| Release Time <sup>5</sup> |             | ms - max. | 1.0 |
| Shock <sup>6</sup>        | 11ms ½ sine | G - max.  | 100 |
| Vibration <sup>6</sup>    | 50-2000 Hz  | G - max.  | 30  |

Notes:

- Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
- When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application Notes AN108A and AN107 for details.
- Electrical Load Life Expectancy - Contact Littelfuse with voltage, current values along with type of load.
- Breakdown Voltage - per MIL-STD-202, Method 301.
- Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
- Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.

### Sensitivity Options (Using 57045 Actuator)

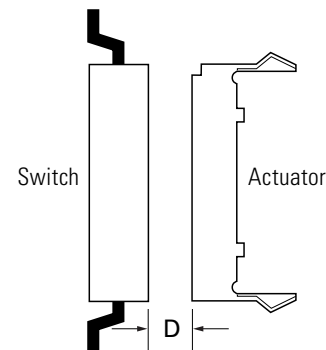
| Select Option |               | S                |                                        | T                |                                        | U                |                                        |
|---------------|---------------|------------------|----------------------------------------|------------------|----------------------------------------|------------------|----------------------------------------|
| Switch Type   |               | Pull-In AT Range | Activate Distance, D mm (inch) Average | Pull-In AT Range | Activate Distance, D mm (inch) Average | Pull-In AT Range | Activate Distance, D mm (inch) Average |
| 1             | Normally Open | 10-15            | 7.4 (.292)                             | 15-20            | 6.1 (.240)                             | 20-25            | 5.1 (.201)                             |

Note:

- Pull-In AT Range: These AT values are the before molding and modification AT of the 59165.
- The activation distance is average value post modification for the Gull wing option C or D.

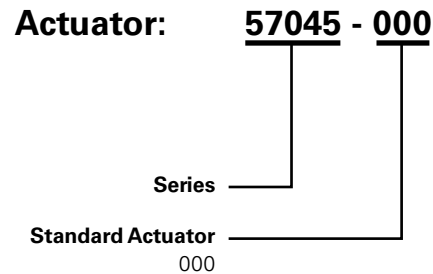
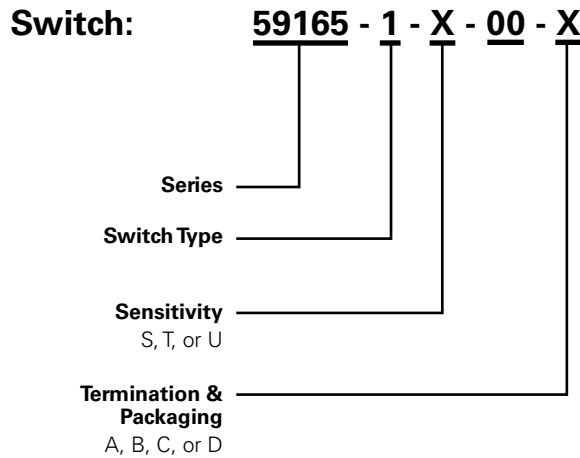
### Termination Specification

| Termination Options |                         |
|---------------------|-------------------------|
| Select Option       | Description             |
| A                   | Leaded                  |
| B                   | Staple form             |
| C                   | Gull Wing bulk packed   |
| D                   | Gull Wing tape and reel |



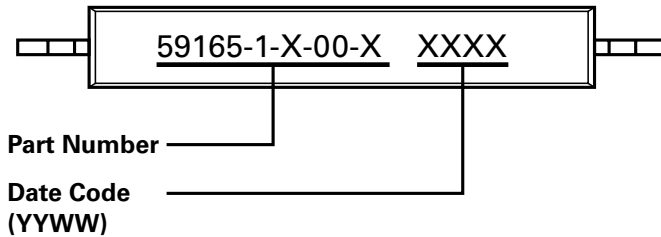
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### Part Numbering System



Note: The 57045 Actuator is sold separately.

### Product Marking



### Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity and Packaging Code | Taping Width  |
|------------------|-------------------------|----------|-----------------------------|---------------|
| Bulk             | Bulk                    | 800/box  | 59165-1-X-00-A              | N/A           |
| Bulk             | Bulk                    | 1500/box | 59165-1-X-00-C              | N/A           |
| Tape and Reel    | EIA-RS-481-1            | 1500     | R                           | 32.00/(1.260) |

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