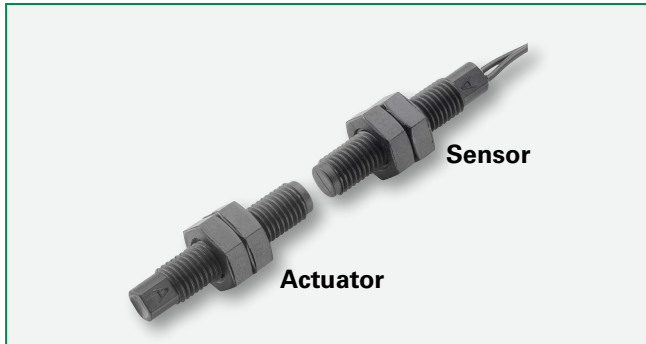


# 59070 M8 Plastic Threaded Barrel Sensor + 57070 Actuator



## Description

The 59070 is a small plastic barrel sensor with a M8 x 1.25 thread, 38.1mm (1.500") long with a choice of normally open, normally open high voltage, normally closed or change over contacts. It is capable of switching up to 265Vac/300Vdc at 10VA. It functions best with the 57070 actuator.

**Note: The 57070 Actuator is sold separately.**

## Features

- Two-part magnetically operated proximity sensor
- Threaded barrel with retaining nuts
- Available as M8 (57070/59070) or 5/16 (57065/59065) size options
- Customer defined sensitivity option
- Choice of cable length and connector

## Agency Approvals

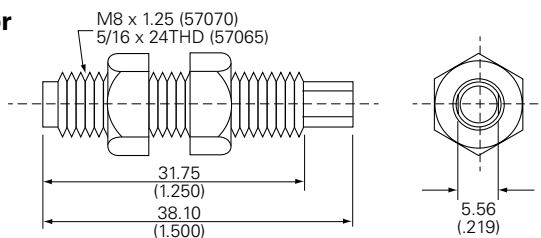
| Agency | Agency File Number |
|--------|--------------------|
|        | E61760             |

Note: Contact Littelfuse for specific agency approval ratings.

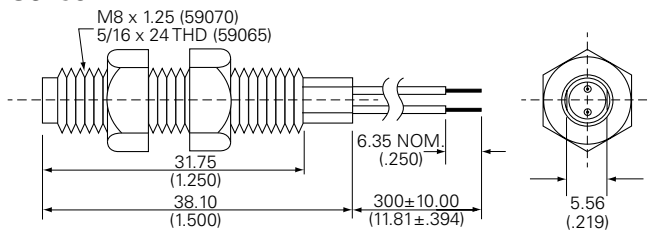
## Dimensions

Dimensions in mm (inch)

### Actuator



### Sensor



Different cable options available.

## Benefits

- Simple installation and adjustment using supplied retaining nuts
- Operates through non-ferrous materials such as wood, plastic or aluminium
- Excellent for switching micro-controller logic level loads.
- No standby power requirement

## Applications

- Position and Limit Sensing
- Security System Switch
- Industrial Process Control
- Linear Actuators

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## Electrical Ratings

| Contact Type                |                             |                      | Normally Open           | Normally Open High Voltage | Change Over            | Normally Closed        |
|-----------------------------|-----------------------------|----------------------|-------------------------|----------------------------|------------------------|------------------------|
| Switch Type                 |                             |                      | 1                       | 2                          | 3                      | 4                      |
| Contact Rating <sup>1</sup> |                             | VA/Watt - max.       | 10                      | 10                         | 5                      | 5                      |
| Voltage <sup>4</sup>        | Switching <sup>2</sup>      | Vdc - max.           | 200                     | 300                        | 175                    | 175                    |
|                             |                             | Vac - max.           | 140                     | 265                        | 120                    | 120                    |
|                             | Breakdown <sup>3</sup>      | Vdc - min.           | 250                     | 400                        | 200                    | 200                    |
| Current <sup>4</sup>        | Switching <sup>2</sup>      | Adc - max.           | 0.5                     | 0.4                        | 0.25                   | 0.25                   |
|                             |                             | Aac - max.           | 0.35                    | 0.30                       | 0.18                   | 0.18                   |
|                             | Carry                       | Adc - max.           | 1.2                     | 1.4                        | 1.5                    | 1.5                    |
| Resistance <sup>5</sup>     | Contact, Initial Insulation | Ω - max.<br>Ω - min. | 0.2<br>10 <sup>10</sup> | 0.2<br>10 <sup>10</sup>    | 0.2<br>10 <sup>9</sup> | 0.2<br>10 <sup>9</sup> |
| Capacitance                 | Contact                     | pF - typ.            | 0.3                     | 0.2                        | 0.3                    | 0.3                    |
| Temperature                 | Operating                   | °C                   | -40 to +105             | -20 to +105                | -40 to +105            | -40 to +105            |

### Product Characteristics

|                           |             |           |     |     |     |     |
|---------------------------|-------------|-----------|-----|-----|-----|-----|
| Operate Time <sup>6</sup> |             | ms - max. | 1.0 | 1.0 | 3.0 | 3.0 |
| Release Time <sup>6</sup> |             | ms - max. | 1.0 | 1.0 | 3.0 | 3.0 |
| Shock <sup>7</sup>        | 11ms ½ sine | G - max.  | 100 | 100 | 50  | 50  |
| Vibration <sup>7</sup>    | 50-2000 Hz  | G - max.  | 30  | 30  | 30  | 30  |

#### Notes:

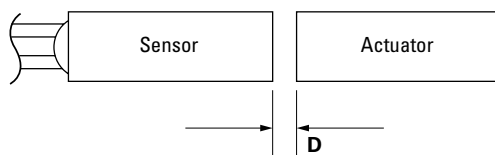
- Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
- When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application Notes AN108A and AN107 for details.
- Breakdown Voltage - per MIL-STD-202, Method 301.
- Electrical Load Life Expectancy - Contact Littelfuse with voltage, current values along with type of load.
- This resistance value is for 11.81mm wire length. Resistance changes when wire lengthens.
- 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.
- For custom modifications to the wire length or size, or adding a special connector, please contact Littelfuse.

## Sensitivity Options (Using 57070 Actuator)

| Select Option |                 | S                |                                       | T                |                                       | U                |                                       | V                |                                       |
|---------------|-----------------|------------------|---------------------------------------|------------------|---------------------------------------|------------------|---------------------------------------|------------------|---------------------------------------|
| 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 | Pull-In AT Range | Activate Distance-D mm (inch) Average |
| 1             | Normally Open   | 12-18            | 8.4 (.330)                            | 17-23            | 6.6 (.260)                            | 22-28            | 5.1 (.200)                            | 27-33            | 4.0 (.157)                            |
| 2             | High Voltage    | --               | --                                    | 17-23            | 6.6 (.260)                            | 22-28            | 5.1 (.200)                            | 27-33            | 4.0 (.157)                            |
| 3             | Change Over     | 15-20            | 6.5 (.255)                            | 20-25            | 4.9 (.193)                            | 25-30            | 3.7 (.146)                            | --               | --                                    |
| 4             | Normally Closed | 15-20            | 6.5 (.255)                            | 20-25            | 4.9 (.193)                            | 25-30            | 3.7 (.146)                            | --               | --                                    |

#### Note:

- Pull-In AT Range: These AT values are the bare reed switch AT before modification.
- The activation distance is average value on the final sensor assembly.



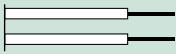
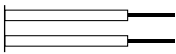
| Schematics                                                                           | Switch Type |
|--------------------------------------------------------------------------------------|-------------|
|  | 1 and 2     |
|  | 3           |
|  | 4           |

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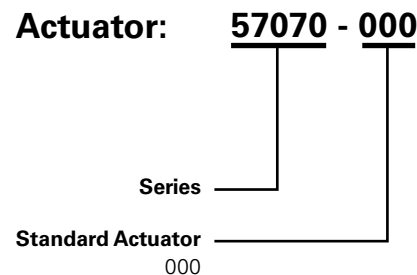
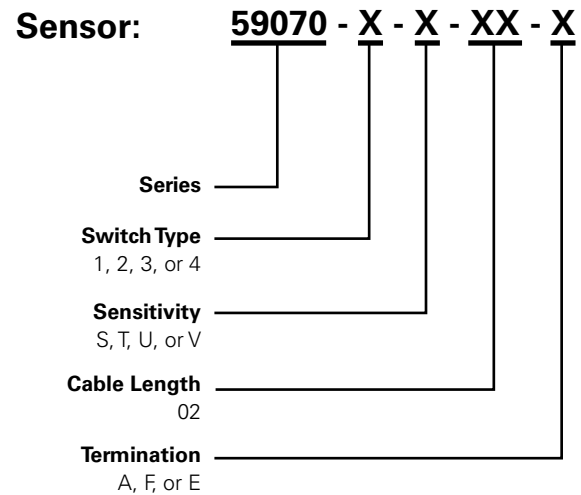
## Cable Length Specification

| Cable Type: 24 AWG 7/32 PVC 105°C UL1430/UL1569 |                           |
|-------------------------------------------------|---------------------------|
| Select Option                                   | Cable Length<br>mm (inch) |
| 02                                              | 300 (11.81)               |

## Termination Specification

| Termination Options |                                                |                                                                                    |
|---------------------|------------------------------------------------|------------------------------------------------------------------------------------|
| Select Option       | Description<br>(Two-wire versions illustrated) |                                                                                    |
| A                   | Tinned leads (6.4±0.76)mm                      |   |
| F                   | Untinned leads (6.4±0.76)mm                    |   |
| E                   | JST type XHP 2.5mm pitch                       |  |

## Part Numbering System



Note: The 57070 Actuator is sold separately.

## Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code | Taping Width |
|------------------|-------------------------|----------|---------------------------|--------------|
| Bulk             | Bulk                    | 500      | N/A                       | N/A          |

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