

Agency Approvals

| Agency | Agency File Number |
| :---: | :---: |
| c ${ }^{-1}$ us | E61760 and E471070 |
| Ex | DEMKO 14 ATEX 1393U (Ex) II 3 G ExnC IIC Gc |

Note: Contact Littelfuse for specific agency approval ratings.

## Dimensions

Dimensions in mm (inch)


## Description

The 59166 is a miniature overmolded reed switch $16.00 \mathrm{~mm} \times 2.40 \mathrm{~mm} \times 2.40 \mathrm{~mm}$ $\left(0.630^{\prime \prime} \times 0.094^{\prime \prime} \times 0.094^{\prime \prime}\right)$ with Gull Wing leads. It has normally open contact, capable of switching up to 200 Vdc at 10 W .

Note: The 57045 Actuator is sold separately.

## Features

- Two-part magnetically operated proximity switch
- Gull Wing Leads
- Tape and reel option
- Solder reflow capable
- Thermoset overmolded material
- RoHS Compliant


## Benefits

- Suitable for pick and place
- No standby power requirement
- Operates through non-ferrous materials such as wood, plastic or aluminium
- ATEX certified for use in European explosive atmospheres: $\left\langle\overline{\sum_{x} \|} \| \mathrm{G}\right.$ ExnC IIC Gc
- Certified for use in North American Hazardous Locations: Class I, Division 2 and Zone 2


## Applications

- Position and Limit Sensing
- Door Switch
- Hermetically sealed, magnetically operated contacts continue to operate long after optical and other technologies fail due to contamination
- 


## Soldering Footprint

Dimensions in mm (inch)


- Security System Switch

59166 Miniature Overmolded Reed Switch +57045 Actuator

Electrical Ratings

| Contact Type |  |  | Normally Open |
| :---: | :---: | :---: | :---: |
| Switch Type |  |  | 1 |
| Contact Rating ${ }^{1}$ |  | VA/Watt - max. | 10 |
| Voltage ${ }^{3}$ | Switching ${ }^{2}$ <br> Breakdown ${ }^{4}$ | Vdc - max. <br> Vac - max <br> Vdc - min. | $\begin{aligned} & 200 \\ & 140 \\ & 250 \end{aligned}$ |
| Current ${ }^{3}$ | Switching ${ }^{2}$ <br> Carry | Adc - max. <br> Aac - max. <br> Adc - max. | $\begin{gathered} 0.5 \\ 0.35 \\ 0.8 \end{gathered}$ |
| Resistance | Contact, Initial Insulation | $\begin{aligned} & \Omega-\max . \\ & \Omega-\text { min. } \end{aligned}$ | $\begin{aligned} & 0.2 \\ & 10^{10} \end{aligned}$ |
| Capacitance | Contact | pF - typ. | 0.3 |
| Temperature | Operating | ${ }^{\circ} \mathrm{C}$ | -40 to +105 |

## Product Characteristics

| Operate Time ${ }^{5}$ |  | ms - max. | 1.0 |
| :--- | :---: | :---: | :---: |
| Release Time ${ }^{5}$ |  | ms - max. | 1.0 |
| Shock ${ }^{6}$ | $11 \mathrm{~ms}^{1 / 2} \sin$ | $\mathrm{G}-\max$. | 100 |
| Vibration $^{6}$ | $50-2000 \mathrm{~Hz}$ | $\mathrm{G}-\max$. | 30 |

Notes:

1. Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
2. 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.
3. Electrical Load Life Expectancy - Contact Littelfuse with voltage, current values along with type of load.
4. Breakdown Voltage - per MIL-STD-202, Method 301.
5. Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
6. Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.

## Sensitivity Options (Using 57045 Actuator)

| Select Option |  | S |  | T |  | U |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | itch 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:

1. Pull-In AT Range: These AT values are the before molding and modification AT of the 59166 .
2. The activation distance is average value post modification for the Gull wing option C or D .

## Termination Specification

| Termination Options |  |
| :---: | :---: |
| Select Option | Description |
| C | Gull Wing bulk packed |
| $D$ | Gull Wing tape and reel |



## 59166 Miniature Overmolded Reed Switch +57045 Actuator

## Part Numbering System



Product Marking


