

# Proximity Sensors

## SG Magnet Actuated Sensors

### Limit Switch Style



Non plug-in

Limit switch style magnet actuated proximity sensors for heavy duty industrial applications.

- Sensing is independent of magnet polarity
- Typical applications: security systems (gate interlocks), high speed rotational countings, identification.

#### Features:

- Housing; zinc die-cast
- Completely epoxy encapsulated
- Plug in models for fast replacement
- Very fast response time (reed output only)
- PLC compatible AC models
- High transient protection
- Overload and short protection (transistor models)
- No bouncing
- 0.5" NPT conduit entrance.
- UL recognized (except where indicated).

| Circuit Type                                                         | AC ratings (inductive or resistive) |              |                | VA (max.) | DC ratings (resistive only) |                | Leakage (mA) | Dim. Fig. No. | Wiring Fig. | Catalog Number |
|----------------------------------------------------------------------|-------------------------------------|--------------|----------------|-----------|-----------------------------|----------------|--------------|---------------|-------------|----------------|
|                                                                      | VA (max.)                           | Volts (nom.) | Current (max.) |           | Volts (max.)                | Current (max.) |              |               |             |                |
| AC triac output, non plug-in                                         |                                     |              |                |           |                             |                |              |               |             |                |
| N.O.                                                                 | 360                                 | 120          | 3.0A           | —         | —                           | —              | 1.7 (P)▲     | 1             | A           | SG08003        |
| N.C.                                                                 | 360                                 | 120          | 3.0A           | —         | —                           | —              | 1.7 (P)▲     | 1             | B           | SG18004        |
| Non plug-in with light indicator                                     |                                     |              |                |           |                             |                |              |               |             |                |
| N.O.                                                                 | 360                                 | 120          | 3.0A           | —         | —                           | —              | 1.7 (P)▲     | 1             | A           | SG0L8003       |
| N.C.                                                                 | 360                                 | 120          | 3.0A           | —         | —                           | —              | 1.7 (P)▲     | 1             | B           | SG1L8004       |
| DC, transistor output, non plug-in                                   |                                     |              |                |           |                             |                |              |               |             |                |
| N.O.                                                                 | -                                   | -            | -              | 7.5       | 30                          | 0.25 A         | 0            | 1             | D           | SG08079        |
| N.C.                                                                 | -                                   | -            | -              | 7.5       | 30                          | 0.25 A         | 0            | 1             | E           | SG18056        |
| Reed output, non plug-in (AC model has built-in surge RC protection) |                                     |              |                |           |                             |                |              |               |             |                |
| N.O.                                                                 | -                                   | -            | -              | 10        | 200                         | 0.5 A          | 0            | 1             | A           | SGA8005        |
| N.O.                                                                 | 15                                  | 120          | 1.0A           | 15        | 250                         | 1.0 A          | 6 (R)▲       | 1             | A           | SGA8040        |
| N.O./N.C.                                                            | -                                   | -            | -              | 3         | 200                         | 0.25 A         | 0            | 1             | C           | SGC8027        |
| N.O./N.C.                                                            | -                                   | -            | -              | 20        | 500                         | 1.5 A          | 0            | 3             | C           | SGC8025        |

▲ (P)=PLC compatible. (R) Bleeder resistor required for PLC compatibility.

#### Magnet actuators (See page 310) inches (mm)

|                         |            | To all others | 8079        | Sensing distance |             | 8025        | Catalog Number |
|-------------------------|------------|---------------|-------------|------------------|-------------|-------------|----------------|
|                         |            |               |             | 8040             | 8027        |             |                |
| Tubular                 |            | 1.3" (33)     | 1.2" (30.5) | 0.8" (20.3)      | 0.9" (23)   | 1" (25.4)   | 7046           |
| Flat bracket, center    | South pole | 0.7" (17.7)   | 0.5" (12.7) | 0.4" (10.1)      | 0.4" (10.1) | 0.4" (10.1) | 7093           |
| Flat bracket, side      | South pole | 0.5" (12.7)   | 0.4" (10.0) | 0.2" (5.1)       | 0.2" (5.1)  | 0.2" (5.1)  | 7063           |
| 90° bracket             | South pole | 0.5" (12.7)   | 0.4" (10.1) | 0.2" (5.1)       | 0.2" (5.1)  | 0.2" (5.1)  | 7062           |
| Block type              |            | 0.5" (12.7)   | 0.2" (5.1)  | 0.2" (5.1)       | 0.3" (7.6)  | 0.2" (5.1)  | 7099           |
| Flexible type - 1' long |            | 0.3" (7.6)    | 0.1" (2.5)  | —                | 0.2" (5.1)  | 0.1" (2.5)  | 7096           |

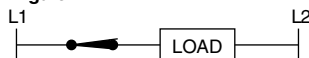
\* All sensors except the ones tabulated separately at right.

## Wiring

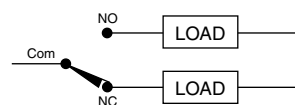
**Figure A**



### Figure B

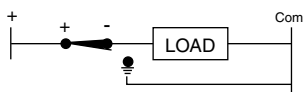


### Figure C



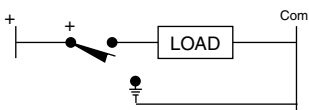
Terminal strip marked: NO-COM-NC

### Figure D



SG18056 is normally closed. Connect red terminal (+) to power source. Connect minus (-) terminal to load. Housing must be connected to minus.

### Figure E



## Specifications

### General characteristics

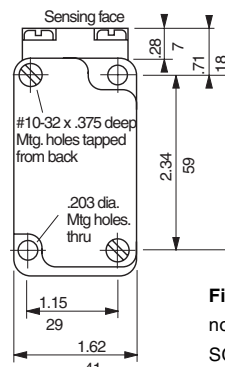
|                                       |                                                                                                        |                                                          |                |                |                           |                         |
|---------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------|----------------|---------------------------|-------------------------|
| Temperature range                     |                                                                                                        | -40° F to 140° F (-40° C to 60° C)                       |                |                |                           |                         |
|                                       |                                                                                                        | -40° F to 125° F (-40° C to 52° C) for transistor models |                |                |                           |                         |
| Enclosure ratings                     | NEMA Type                                                                                              | 1,4,13                                                   |                |                |                           |                         |
| Vibration resistance                  |                                                                                                        | 20G (10 to 2000Hz)                                       |                |                |                           |                         |
| Shock resistance                      |                                                                                                        | 50G for 11ms                                             |                |                |                           |                         |
| Differential                          |                                                                                                        | Max. 75%                                                 |                |                |                           |                         |
| Repeatability                         |                                                                                                        | 0.003"                                                   |                |                |                           |                         |
|                                       | <b>AC triac</b>                                                                                        | <b>Transistor</b>                                        | <b>Reed</b>    |                |                           |                         |
| Voltage drop (across switch)          | 2 V                                                                                                    | –                                                        | –              |                |                           |                         |
| Minimum load current (max.)           | 15 mA                                                                                                  | –                                                        | –              |                |                           |                         |
|                                       |                                                                                                        |                                                          | <b>SGA8005</b> | <b>SGA8040</b> | <b>SGS8027</b>            | <b>SGC8025</b>          |
| On delay (max.)                       | 1 ms                                                                                                   | 0.75 ms                                                  | 0.75           | 2 ms           | 1 ms N.O./<br>1.5 ms N.C. | 2 ms N.O./<br>4 ms N.C. |
| Off delay (max.)                      |                                                                                                        | 0.75 ms                                                  | 0.75           | 2 ms           | 11 ms N.O.<br>1.5 ms N.C. | 2 ms N.O./<br>4 ms N.C. |
| Cable - screw terminals               | #16 AWG                                                                                                |                                                          |                |                |                           |                         |
| Agency Listings<br>except where noted |  E 42259<br>CCN NKCR2 |                                                          |                |                |                           |                         |

### Options - triac models only

| Description                              | Fig.  | Suffix adder |
|------------------------------------------|-------|--------------|
| 3' 16-3 SJTO vinyl cable, epoxy sealed   | A,B   | 320          |
| 3' 16-3 SJTO vinyl cable, cord connector | A,B   | 321          |
| 3' 16-4 SJTO vinyl cable, epoxy sealed   | C,D,E | 420          |
| 3 pin mini style receptacle ①            |       | 347          |

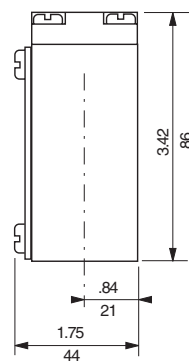
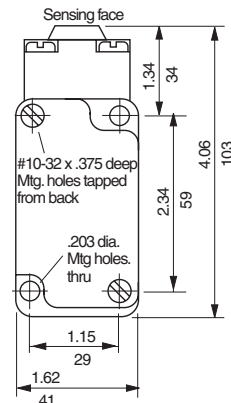
① See p. 518 for matching connector cables.

## Dimensions



**Figure 1**

non-plug-in  
SGA8005  
SGO8003  
SGC8027  
SGI8056  
SGO8056  
SGI8004  
SGO8040  
SGO8079

Dual Dimensions  $\frac{\text{inches}}{\text{mm}}$ 

### Figure 2

Style C  
SGC8025

