

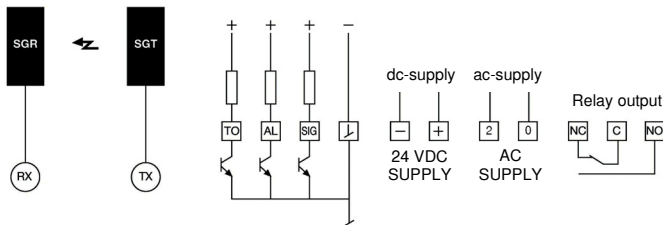
| Product Data | |
|---------------------------|--|
| Electrical Data | |
| Supply voltage | ac 24 V ac, 115 V ac or 230 V ac dc 24 V dc |
| Voltage tolerance | ac -12 % / + 6 % dc +/- 15 % |
| Current consumption | Max. 15 VA |
| Output | Relay 1 open / 1 close, 250 V ac / 3 A, 120 V ac / 5 A Transistor NPN Max. 24 V dc / 100 mA |
| Environmental Data | |
| Temperature, operation | -10 to + 40 °C |
| Sealing class | IP 20 |
| Approvals | CE e-RA US |

| Available Models | | | |
|------------------|----------------|----------|---------------|
| Model | Supply Voltage | Output | |
| SGC 11 A | 300 | 230 V ac | Relay and NPN |
| | 301 | 115 V ac | |
| | 302 | 24 V ac | |
| | 500 | 230 V ac | Relay |
| | 501 | 115 V ac | |
| | 502 | 24 V ac | |

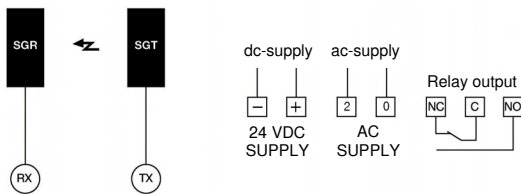
Note: 1. Detectors to be ordered separately.
2. All controllers can be used with a 24 V dc supply voltage.

Connection

Wiring Diagrams



Relay and NPN output



Relay output

Installations & Adjustments

| Installation | |
|--------------|--|
| 1 | Connect the SGR detector to the RX connector input and the SGT detector to the TX connector input. |
| 2 | Connect either AC power supply to the terminals marked 0 and 2, or connect 24 V dc power supply to the terminals marked + and -. DO NOT turn power on. Warning: DO NOT connect AC and DC power supply at the same time |
| 3 | Connect terminal ⏚ to earth or machine frame. |
| 4 | Connect to relay on terminal NO, COM, NC or to transistor output on terminal SIG (signal), ⏚ (ground) according to your application. For "safety" relay operation use NO and COM outputs. |
| 5 | Connect to the Alarm and Time-out outputs on terminals AL, TO and ⏚ according to your application. |
| 6 | Turn the gain potentiometer to max sensitivity (fully clockwise). |
| 7 | Make sure Operation Mode (SW2 DIP-switch n° 2 : OFF) has been selected. Make sure Long Range has been selected (SW2 DIP-switch n°1 : ON). |
| 8 | Turn power on after double checking your wiring, and checking for correct power supply voltage. |

| | |
|----|---|
| 9 | If the controller indicates a broken beam despite a clear optical path between the detectors, switch to Diagnostic Mode. Wait approx. 15 sec. The RXERR and TXERR LED's will indicate the faulty detector. Change or clean the faulty detector and switch to Operation Mode. |
| 10 | For operation at ranges below approx. 3 m it is recommended to adjust the sensitivity, following the calibration procedure below. Turn the potentiometer to minimum (fully anticlockwise), and then turn slowly clockwise until the detector see each other. If the adjustment appears too delicate, then switch to Short Range and re-adjust. |
| 11 | In applications with operation at short range it is recommended to use Automatic Sensitivity Control Mode, to ensure that the light beams easily can be broken. If there is a need for constant excess emitted power at short range, use Fixed Sensitivity Mode. |
| 12 | Select Relay Mode and time-out according to your application. |

Output Logic

| Detection | Output mode | Relay | Transistor Output | Output indicator (yellow led) |
|-----------|----------------|-------|-------------------|-------------------------------|
| Present | Dark operated | | Closed | On |
| | Light operated | | Open | Off |
| Absent | Dark operated | | Open | Off |
| | Light operated | | Closed | On |

Long/Short Range Selection

| | | |
|-------------|---|--|
| Long range | Enables the system to operate at 100% (maximum range). Range up to 5 m. | |
| Short range | Enables the system to operate at 60% of maximum range. Range up to 3 m. | |

Diagnostic/Operation Mode

| | | SW2 |
|-----------------|---|-----|
| Diagnostic mode | This switch is only for service. When activated, the controller initiates a self test. If there is any error in transmitter or in the receiver, the TXERR LED or RXERR LED are activated. For instance, contamination on detectors, bad connections,... | |
| Operation mode | Operating mode. | |

Automatic Sensing/Fixed Sensing

| | | SW2 |
|---------------------------|---|-----|
| Automatic Sensing Control | Automatic Sensitivity Control Mode is recommended in applications with operation at short range, to ensure that the light beams easily can be broken. | |
| Fixed Sensing | Allows to adjust manually the sensitivity of the system via the potentiometer. | |

Buzzer On/Off

| | | SW2 |
|------------|---|-----|
| Buzzer On | Activates the buzzer in parallel with the output. | |
| Buzzed Off | Deactivates the buzzer. | |

Time-out function

| | | SW1 |
|---|--|-----|
| After one or more beams (selectable from 0 to 32) have been broken for more than a preset period of time (selectable from approx. 15 seconds to 10 minutes) the Controller will ignore the broken beams, and thus allow the system to operate with the remaining light beams. | | |
| The maximum number of channels time-out can be selected from 0 to 32 by using the DIP-switches n° 1,2 and 3, on the SW1 switch. Please, refer to Fig. 1 | | |
| The time-out delay time can be selected from approx. 15 seconds to 10 minutes by using the DIP-switches n° 5,6 and 7, on the SW1 switch. Please, refer to Fig. 1 | | |



Warning
This product is not a safety system and must not be used as such. It is not designed for personnel safety applications, and must not be used as a stand alone personnel safety system.

| Output Mode Selection | | SW1 |
|-----------------------|--|-----|
| Light Operated | Enables the output to be inactive (yellow LED is off) when there is an object present in the detection area. | |
| Dark Operated | Enables the output to be active (yellow LED is on) when there is an object present in the detection area. | |

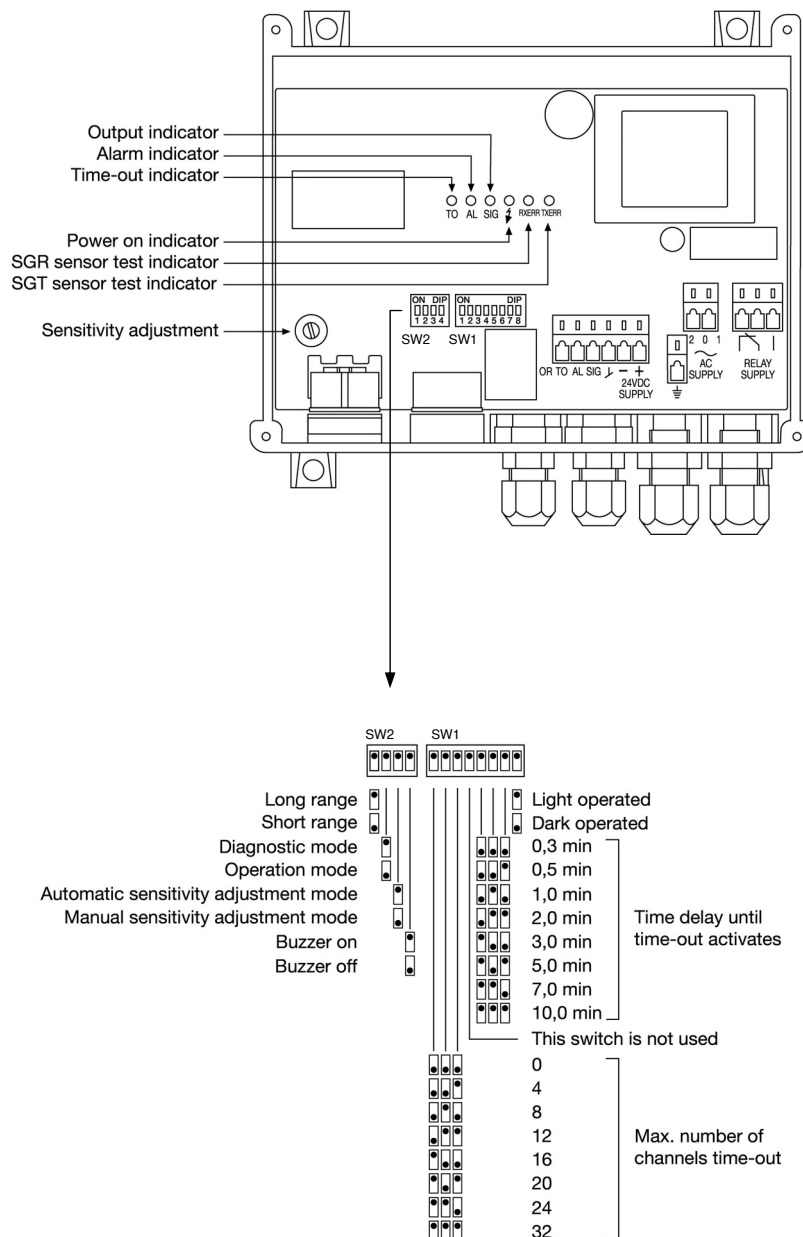
| Indicators | | | | | |
|---|----|-----|---|-------|-------|
| On the SGC 11 there are the following led indicators: | | | | | |
| | | | | | |
| TO | AL | SIG | ⚡ | RXERR | TXERR |

| | |
|-------|--|
| TO | Time-out indicator (red led): Activated when one or more channels are timed out. |
| AL | Alarm indicator (red led): Activated when the number of channels timed out is greater than – or equal to – 75 % of the maximum number of channels chosen on the DIP-switch. |
| SIG | Output (signal) indicator (yellow led): Activated when the relay is operated. The relay may be either light-operated or dark-operated, controlled by the DIP-switch setting. |
| | Power on indicator (green led) |
| RXERR | Receiver Error indicator (red led): activated when an electrical error is detected in the SGR, or when the detector is not present. ** |
| TXERR | Transmitter Error indicator (red led): activated when an electrical error is detected in the SGT, or when the detector is not present. ** |

** Note: If the number of channels on the receiver and transmitter detectors are different, both TXERR and RXERR are activated.

Description & DIP-switch Settings

Fig. 1



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