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 ºC
Sealing class	IP 20
Approvals	UK CA CE c UL us

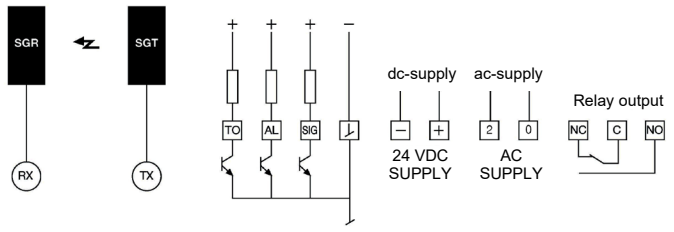
Available Models

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	

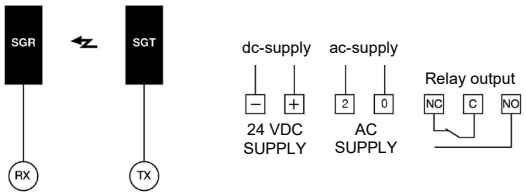
Note: 1. Detectors to be ordered separately.
2. All controllers can be used with a 24 V dc supply voltage.

Connection

Wiring Diagrams



Relay and NPN output



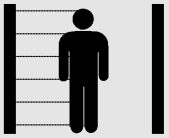
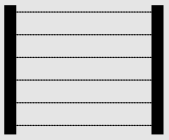
Relay output

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 nº 2 : OFF) has been selected. Make sure Long Range has been selected (SW2 DIP-switch nº1 : 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

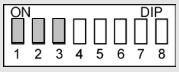
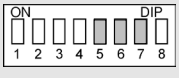
Automatic Sensing Control	Automatic Sensitivity Control Mode is recommended in applications with operation at short range, to ensure that the light beams easily can be broken.	
Fixed Sensing	Allows to adjust manually the sensitivity of the system via the potentiometer.	

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 nº 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 nº 5,6 and 7, on the SW1 switch. Please, refer to Fig. 1	

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Made in Denmark

Warning
This device is not to be used for Personnel Protection in Machine Guarding Safety applications. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel machine guarding stand-alone safety applications.

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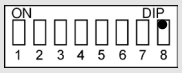
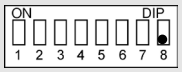
Output Mode Selection		**SW1**
Light Operated	Enables the output to be inactive (yellow LED is off) when there is an object present in the detection area.	
Dark Operated	Enables the output to be active (yellow LED is on) when there is an object present in the detection area.	

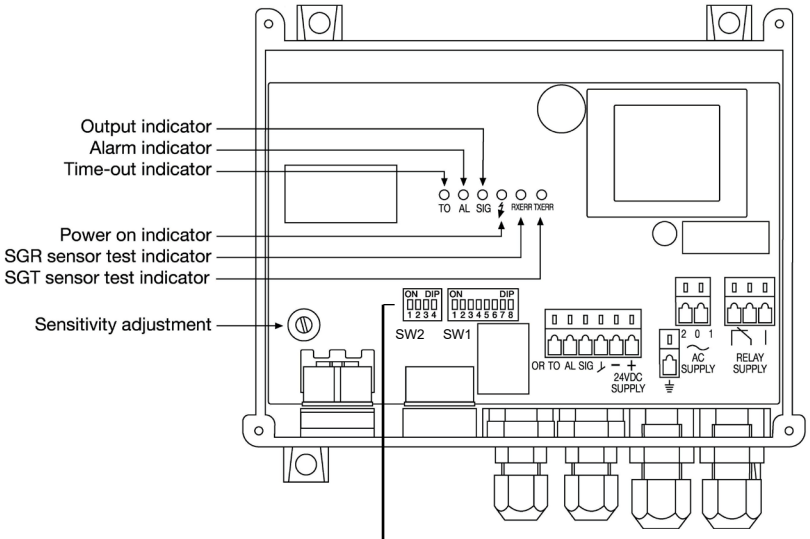
Indicators

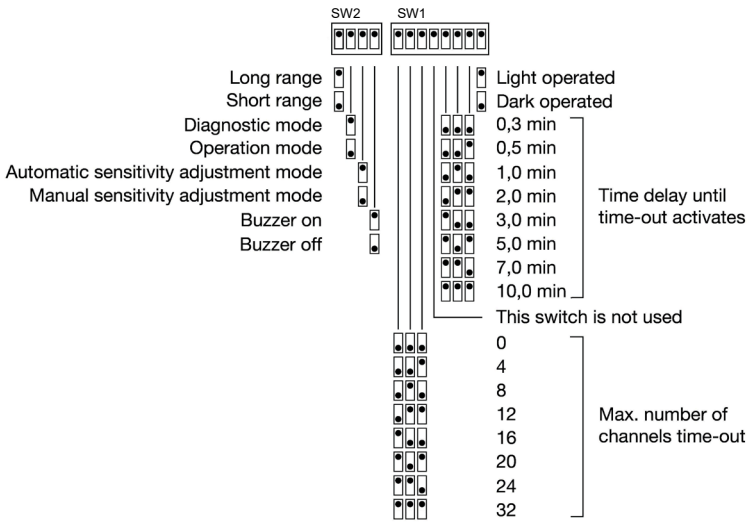
On the SGC 11 there are the following led indicators:

TO	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.
ϟ	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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