V3·0499·GB

Telco Spaceguard Catalogue

Contents

Spaceguard Detectors
Light Curtain System

Key Features

- Range 5 m
- Up to 64 parallel lightbeams
- Covers up to 180 cm
- Wide viewing angle
- Slim line & Leading edge housings
- IP 55 proof
- Extremely easy mounting
- User-friendly connection

The Telco SpaceGuard Detectors form a protective screen by generating a curtain of infra-red light beams. Any obstruction of the curtain may be detected by a connected SpaceGuard controller resulting in a change of its output status.

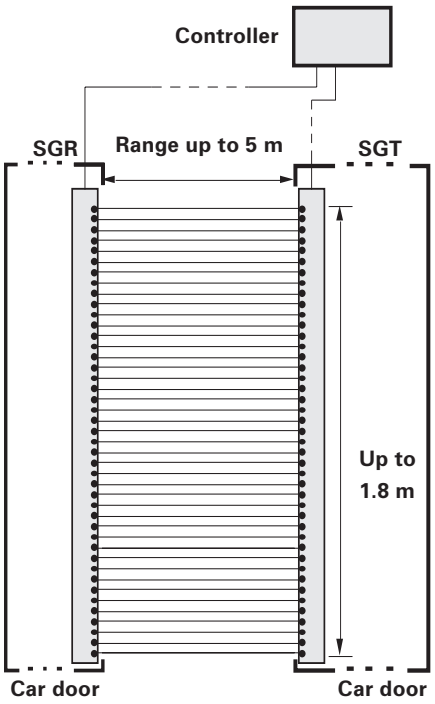
Because of a small separation of the light beams, even very small objects, (e.g. in a door opening) may be detected. This ensures protection of objects not detected by conventional sensors.

To provide the optimum solution for any application the SpaceGuard Detectors are available in various lengths of both slim line and leading edge types. The protective screen may assume an active height of 0.4 to 1.8 m.

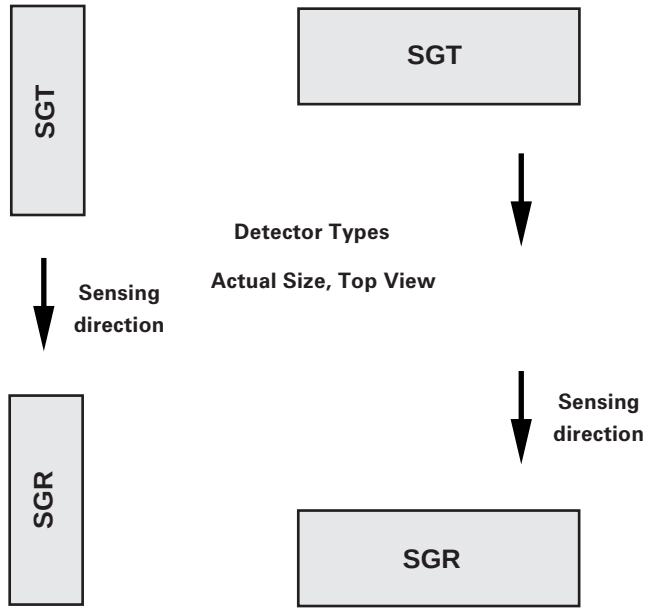
The detector alignment is not critical due to a wide viewing angle.

The detectors are very durable and IP 55 proof, despite their small dimensions.

The SpaceGuard Detectors are designed to be used with Telco SpaceGuard Controllers, see separate specification sheet for details.



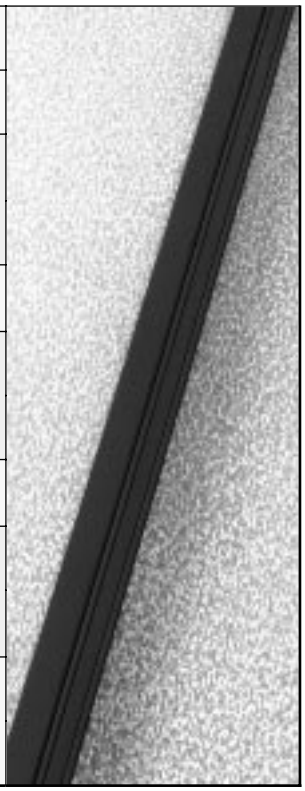
Beam pattern of typical elevator door installation



Complete Set

A complete set is formed by a SpaceGuard transmitter and receiver detector used in conjunction with a SpaceGuard controller. Please notice that the transmitter and the receiver always must have the same number of light beams

SpaceGuard Detectors

SLIM LINE TYPES*	No. of Beams	Beam spacing [mm]	Active height [mm]	Overall length [mm]	Cable length** [m]	Outline see Fig.	No. of mounting holes	PHOTO
SGT/SGR 057-016-A1-A-0.5 SGT/SGR 057-016-A1-A-4	16	28	425	570	0.5 4	1 and 2	rear 3 side 3	
SGT/SGR 080-024-A1-A-0.5 SGT/SGR 080-024-A1-A-4	24	28	650	795	0.5 4	1 and 2	rear 4 side 4	
SGT/SGR 102-032-A1-A-0.5 SGT/SGR 102-032-A1-A-4	32	28	875	1020	0.5 4	1 and 2	rear 5 side 5	
SGT/SGR 102-016-B1-A-0.5 SGT/SGR 102-016-B1-A-4	16	56	845		0.5 4			
SGT/SGR 125-040-A1-A-0.5 SGT/SGR 125-040-A1-A-4	40	28	1100	1245	0.5 4	1 and 2	rear 6 side 6	
SGT/SGR 147-048-A1-A-0.5 SGT/SGR 147-048-A1-A-4	48	28	1320	1470	0.5 4	1 and 2	rear 7 side 7	
SGT/SGR 147-024-B1-A-0.5 SGT/SGR 147-024-B1-A-4	24	56	1295		0.5 4			
SGT/SGR 170-056-A1-A-0.5 SGT/SGR 170-056-A1-A-4	56	28	1545	1695	0.5 4	1 and 2	rear 8 side 8	
SGT/SGR 200-064-A1-A-0.5 SGT/SGR 200-064-A1-A-4	64	28	1770	1995	0.5 4	1 and 2	rear 9 side 9	
SGT/SGR 200-032-B1-A-0.5 SGT/SGR 200-032-B1-A-4	32	56	1740		0.5 4			
SGT/SGR 210-064-A1-A-0.5 SGT/SGR 210-064-A1-A-4	64	28	1770	2105	0.5 4	3 and 4	rear 4 side 4	
SGT/SGR 210-032-B1-A-0.5 SGT/SGR 210-032-B1-A-4	32	56	1740		0.5 4			

LEADING EDGE TYPES*	No. of Beams	Beam spacing [mm]	Active height [mm]	Overall length [mm]	Cable length** [m]	Outline see Fig.	No. of mounting holes	PHOTO
SGT/SGR 057-016-A1-B-0.5 SGT/SGR 057-016-A1-B-4	16	28	425	570	0.5 4	5 and 6	3	
SGT/SGR 080-024-A1-B-0.5 SGT/SGR 080-024-A1-B-4	24	28	650	795	0.5 4	5 and 6	4	
SGT/SGR 102-032-A1-B-0.5 SGT/SGR 102-032-A1-B-4	32	28	875	1020	0.5 4	5 and 6	5	
SGT/SGR 102-016-B1-B-0.5 SGT/SGR 102-016-B1-B-4	16	56	845		0.5 4			
SGT/SGR 125-040-A1-B-0.5 SGT/SGR 125-040-A1-B-4	40	28	1100	1245	0.5 4	5 and 6	6	
SGT/SGR 147-048-A1-B-0.5 SGT/SGR 147-048-A1-B-4	48	28	1320	1470	0.5 4	5 and 6	7	
SGT/SGR 147-024-B1-B-0.5 SGT/SGR 147-024-B1-B-4	24	56	1295		0.5 4			
SGT/SGR 170-056-A1-B-0.5 SGT/SGR 170-056-A1-B-4	56	28	1545	1695	0.5 4	5 and 6	8	
SGT/SGR 200-064-A1-B-0.5 SGT/SGR 200-064-A1-B-4	64	28	1770	1995	0.5 4	5 and 6	9	
SGT/SGR 200-032-B1-B-0.5 SGT/SGR 200-032-B1-B-4	32	56	1740		0.5 4			
SGT/SGR 210-064-A1-B-0.5 SGT/SGR 210-064-A1-B-4	64	28	1770	2105	0.5 4	5 and 6	9	
SGT/SGR 210-032-B1-B-0.5 SGT/SGR 210-032-B1-B-4	32	56	1740		0.5 4			

* SpaceGuard Transmitter denotes SGT. SpaceGuard Receiver denotes SGR.

** Please note: Add "F" to the cable length for flexible cable for moving installations

Extension Cables

DETECTOR	TYPE	INSTALLATION	LENGTH [m]
Transmitter	CAG S 4	Fixed cable	4
Receiver	CAH S 4	Fixed cable	4
Transmitter	CBG S 4	Flexible (moveable) cable	4
Receiver	CBH S 4	Flexible (moveable) cable	4
PLEASE NOTE: The total cable length of the receiver detector must not exceed 5 m and on the transmitter detector not 9 m			

Technical Data

ITEM	TRANSMITTER SGT	RECEIVER SGR
Transmitter diode	Ga Al As (880 nm)	-
Phototransistor	-	Silicon
Opening angle (50 % Intensity)	± 20 °	± 15 °
Estimated Life Time	50.000 h at 25 °C	
Housing material, front	Red transparent plastic	
Housing material, cover	Black anodized aluminium	
Connection	5 pin DIN plug, Male 240 °	5 pin DIN plug, Male 180 °
Cable	5 x 0.14 sqr. mm + shield. PVC sleeve Ø 4.5 mm / Ø 5.2 mm for flexible types	
Min. cable bending radius	45 mm / 55 mm for flexible types	

Environmental Test Conditions

ITEM	SPECIFICATION SGT/SGR	REFERENCE
Sealing	IP 55	IEC 529
Vibration	10 - 55 Hz, 1.5 mm (peak/peak)	IEC 68-2-6
Shock	30 g (294 m/s/s)	IEC 68-2-27
Immunity to Extraneous Light, Sun Light	10.000 lux	Extraneous Light specified at 20 deg. incidence relative to the optical axis of the receiver.
Fluorescent Light	2.000 lux	
Incandescent Light	8.000 lux	
Ambient Temperature (operation)	–20 ºC to +55 ºC	IEC 68-2-14
Ambient Temperature (storage)	–40 ºC to +80 ºC	IEC 68-2-14
Approvals	CE	EN50081-1, EN50082-1

Find the Controller for your Application

DETECTOR	RECOMMENDED CONTROLLER	SENSING RANGE	OUTPUT	SUPPLY VOLTAGE *
SGT SGR	SGC 11 A 300	5 m	Relay NPN output for: Signal Time-out Alarm	230 V AC
	SGC 11 A 301			115 V AC
	SGC 11 A 302			24 V AC
	SGC 11 A 306			245 V AC
	SGC 11 A 500		Relay	230 V AC
	SGC 11 A 501			115 V AC
	SGC 11 A 502			24 V AC
	SGC 11 A 506			245 V AC

* PLEASE NOTE: All controller types can also be used on 24 V DC supply.

Dimensions and mounting drawing

Slim Line Housings

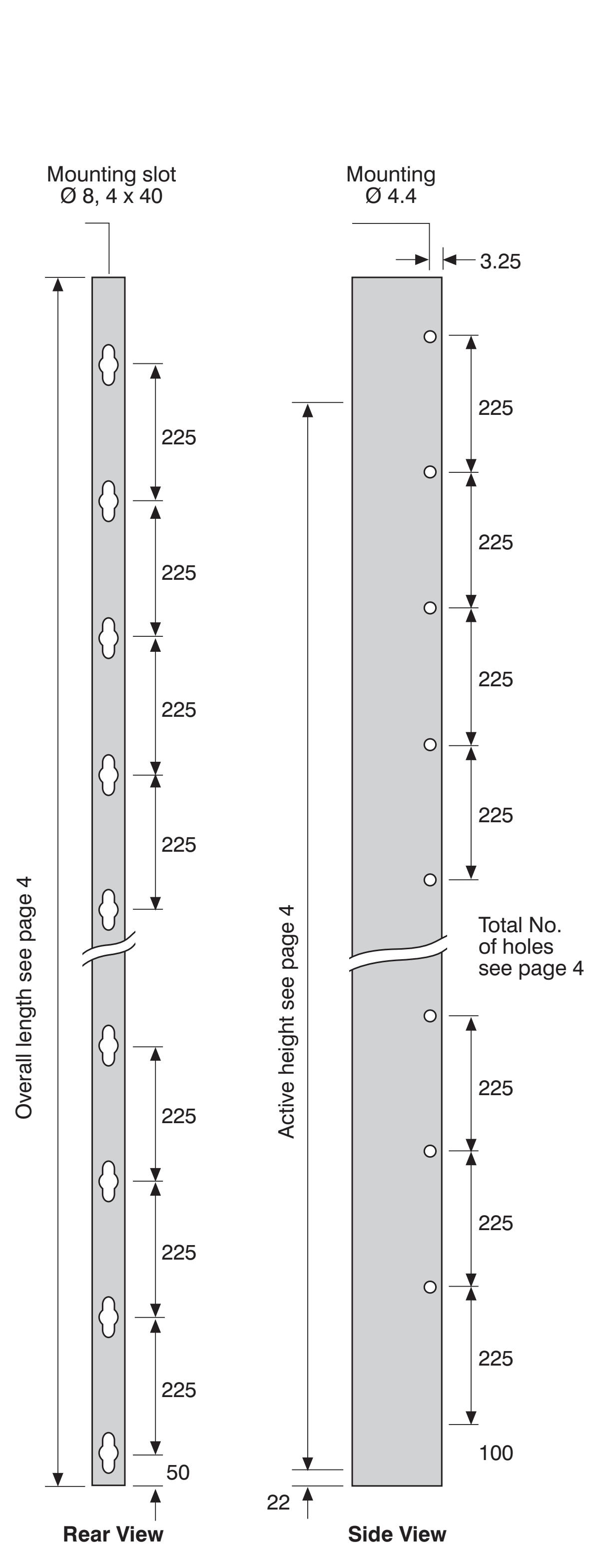


Fig. 1

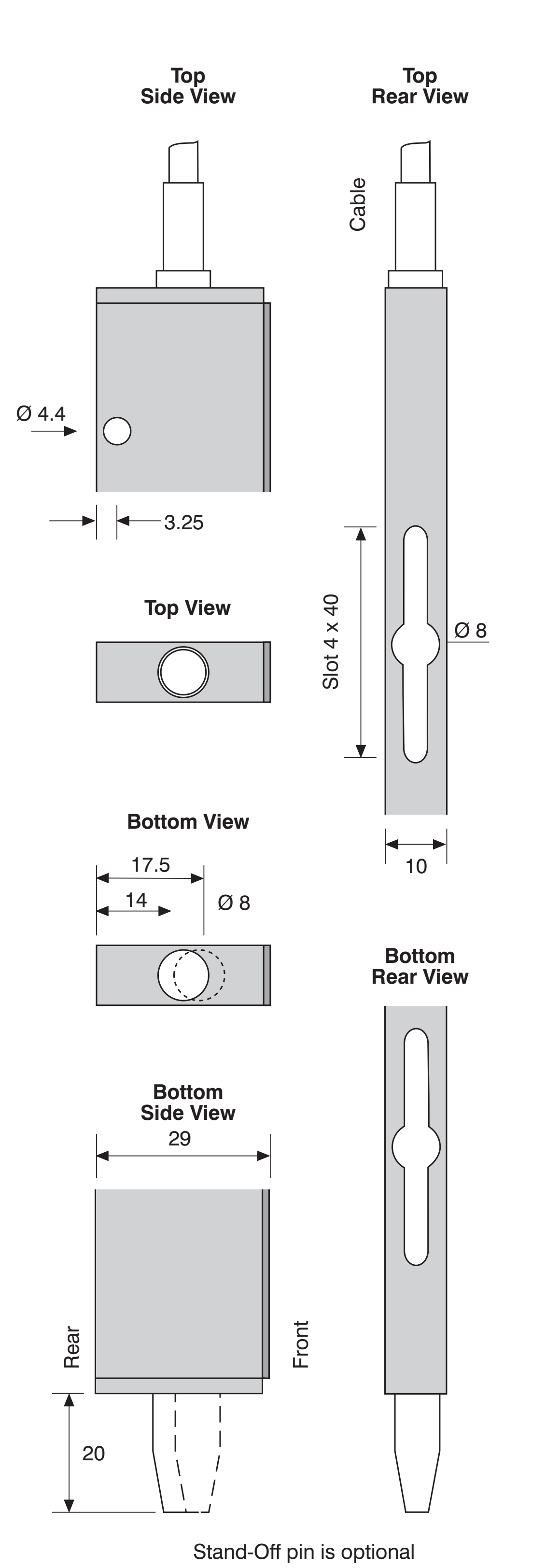


Fig. 2

Dimensions in mm

Dimensions and mounting drawing

Slim Line Housings

2105 mm Types

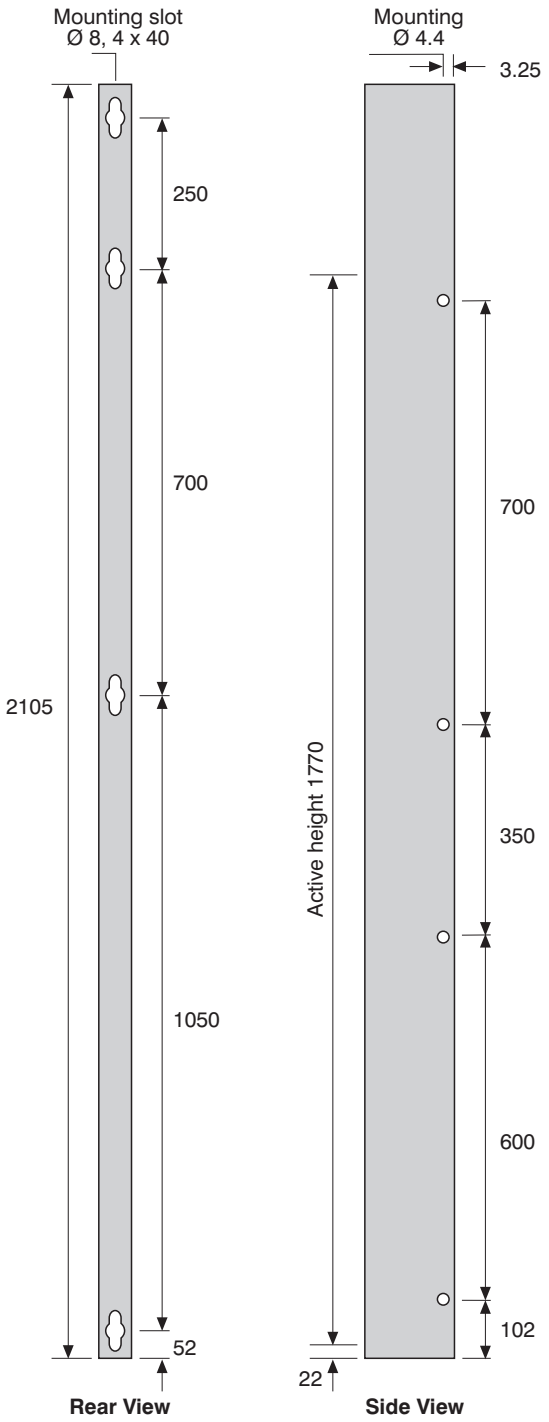
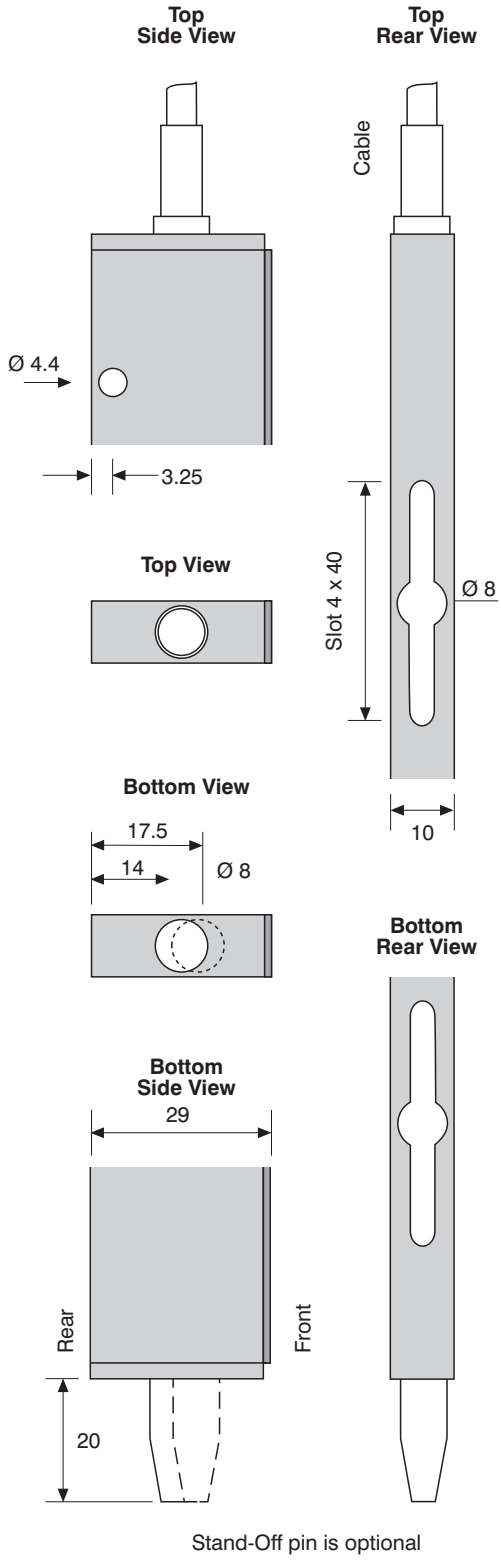


Fig. 3

Details



Stand-Off pin is optional

Fig. 4

Dimensions in mm

Dimensions and mounting drawing

Leading Edge Housings

225 mm Module Types

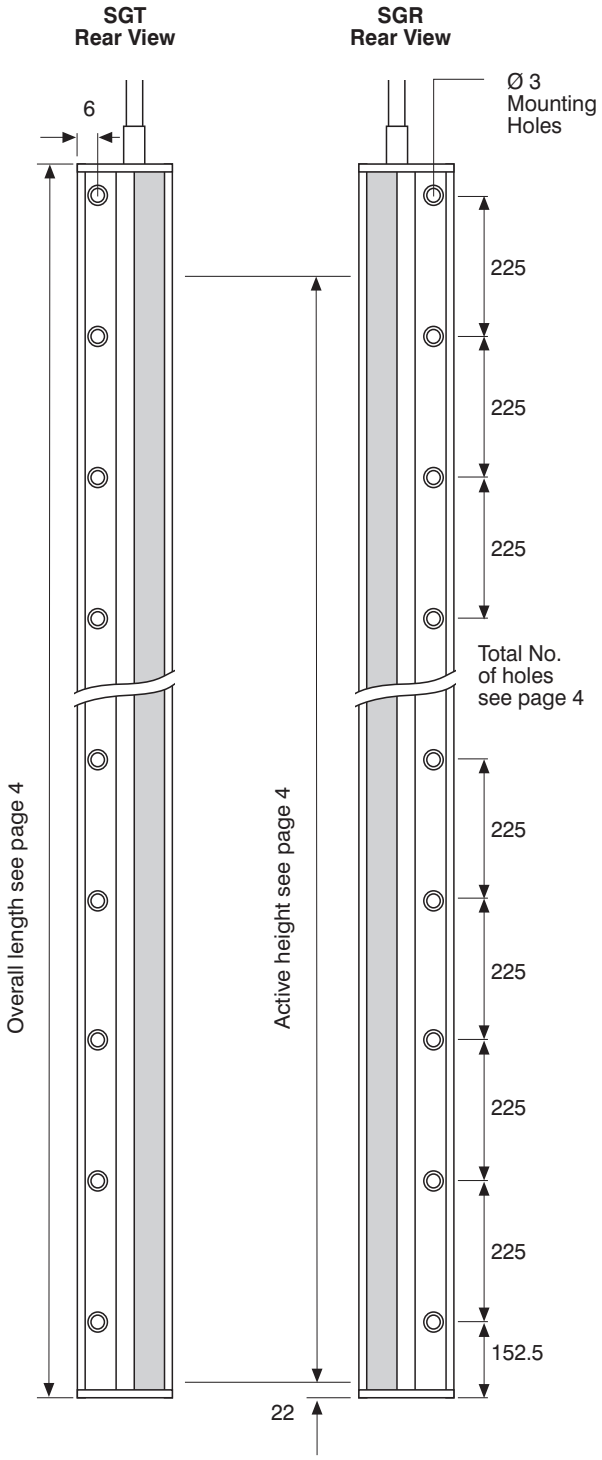


Fig. 5

Details

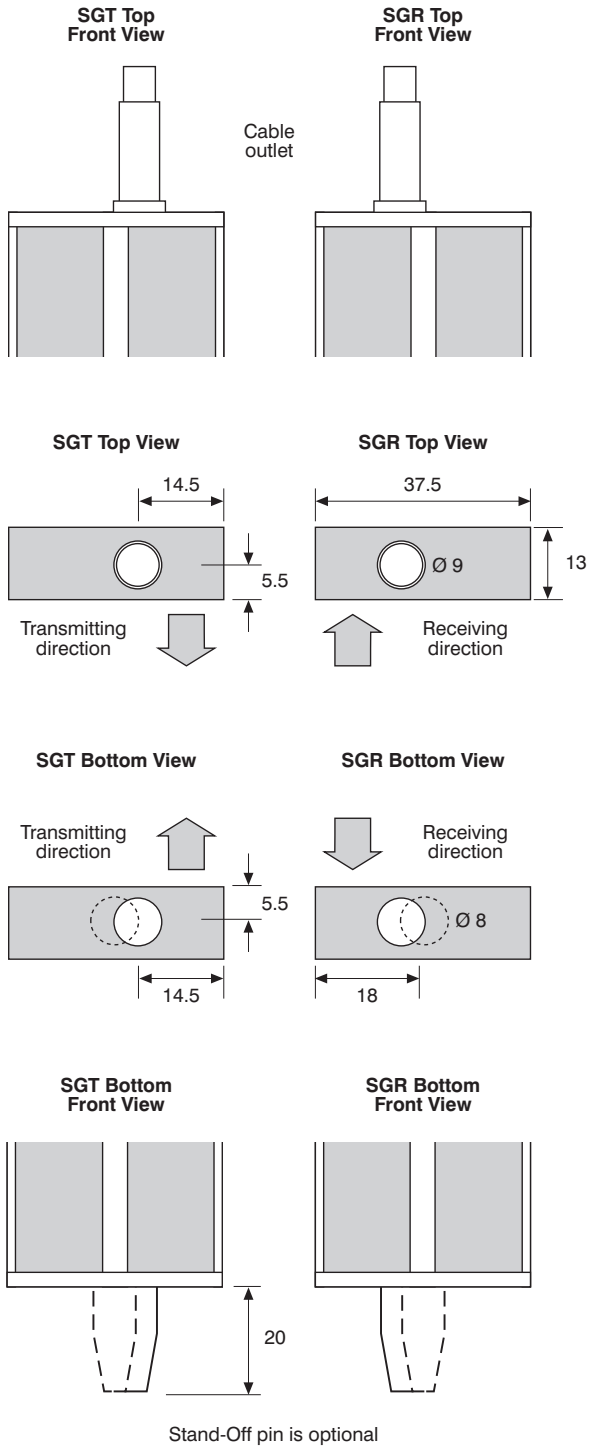


Fig. 6

Dimensions in mm

User Instructions

1. If the detectors are mounted on car doors, or other moving installations, it is recommended to use detectors with 0.5 m flexible cable in conjunction with 4 m flexible extension cables.
2. Make sure that the surface of the mounting place is straight, in order not to stress the SpaceGuard Detector.
3. Make sure that the detector is not exposed to excessive water. The detector is protected against dust and water jetting (IP55 proof).
4. Make sure that the receiver detector (SGR) is not exposed to direct sunlight, or other strong light sources. If appropriate, interchange the position of the receiver and the transmitter.
5. Mount the detector, using the fixing holes on the rear or the side of the detector housing.
6. Control the alignment, according to the Alignment Characteristics in Fig. 7 and Fig. 8.
7. Connect the detectors to the controller, ensuring that the cables are not exposed to mechanical stress, e.g. sharp bends or twisting. If the cables are flexible types, they should only be secured by loose fastenings, in order to preserve the best flexibility possible.

Characteristics

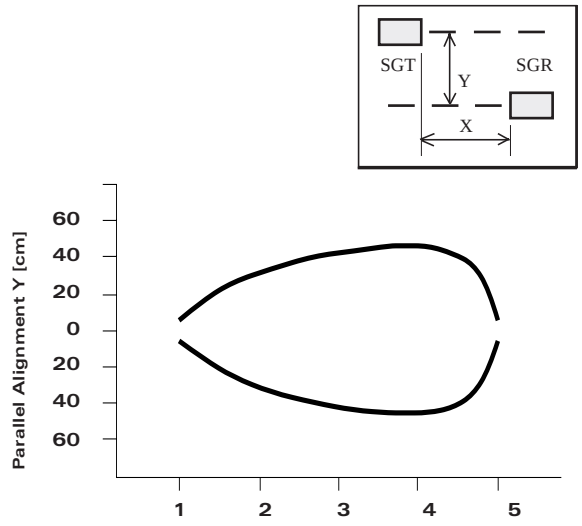


Fig. 7

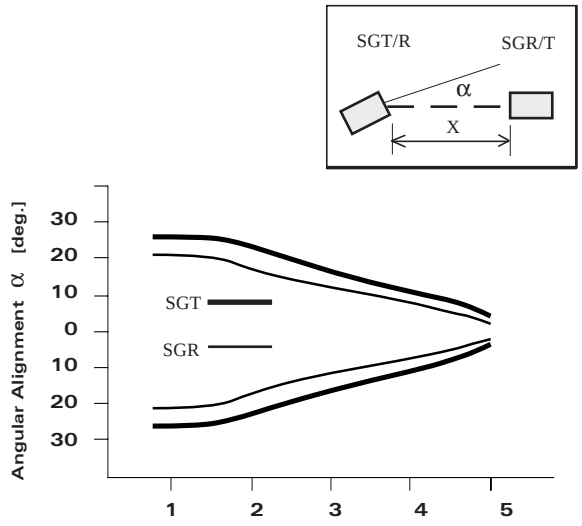


Fig. 8

WARNING

THE TELCO SPACEGUARD SYSTEM 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.

Spaceguard Controllers
Light Curtain System

Key Features

Range 5 m

Up to 128 parallel light beams

Fast response

Time-out

LED indication of:

- Power
- Relay output
- Alarm
- Time-out
- Detector failure

The Telco SpaceGuard Controllers are based on the newest microprocessor technology. The Controller incorporates several features especially intended for the door and elevator industry.
Used in conjunction with Telco SpaceGuard Detectors the Controller generates a curtain of infra-red light beams. Any interruption of the light beams activates a relay, which can control an automatic door.
The Controller can operate several versions of the SpaceGuard Detectors, with a number of light beams ranging from 16 to 128.
The Controller has a time-out feature, which may be selected when convenient. The time-out operates as follows:

> After one or more beams (selectable from 4 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 Time-out LED is on to indicate if one or more channels are timed out, and the Alarm LED is on if more than 75 % of the selected channels are timed out. The time-out system will also allow operation with up to 32 defect channels, which can reduce emergency call-outs.
The transmitter and receiver detectors are constantly monitored by the Controller, and if an electrical failure is detected, the output relay will revert to safe position. The failure will be indicated by the Failure LEDs and the Alarm LED.
To ease installation the SpaceGuard Controller features a buzzer, which can be switched on to indicate a broken infra-red light beam and an alarm.

Available Types

MODEL	TYPE	FEATURES	* POWER SUPPLY	OUTLINE
Controller	SGC 11 A 300	Relay and NPN output Alarm indication and NPN output Time-out indication and NPN output Controls 16 to 128 light beams	230 V AC	See Fig. 1
	SGC 11 A 301		115 V AC	
	SGC 11 A 302		24 V AC	
	SGC 11 A 306		240 V AC	
	SGC 11 A 500	Relay output Alarm indication Time-out indication Controls 16 to 128 light beams	230 V AC	
	SGC 11 A 501		115 V AC	
	SGC 11 A 502		24 V AC	
	SGC 11 A 506		240 V AC	

*** PLEASE NOTE: All controller types can also be used on 24 V DC supply.**

Dimensions

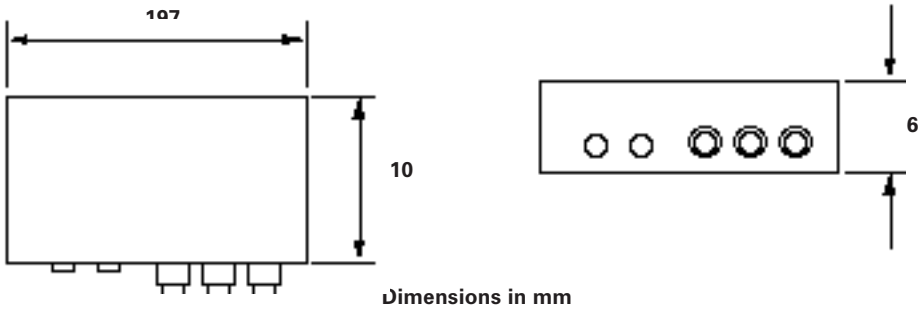


Fig.1 Dimensions in mm

Technical Data

ITEM	SPECIFICATION
AC Supply voltage range	24 V AC, 115 V AC, 230 V AC, 240 V AC
AC Voltage tolerance	+6 %, –12%
DC Supply voltage range	24 V DC ± 15 %
Power consumption	Max 15 VA
Output relay	1 Open / 1 Close 250 V AC / 3 A 120 V AC / 5 A
Output NPN open collector	Max 15 V DC / 100 mA (Max 24 V DC when a 24 V DC power supply is used)
Inductive load protection	Yes
Short circuit protection	No
Channel reaction time	Max 2 ms. Typical 1 ms
Relay reaction time (scan time)	NC x 2 ms + 10 ms (see note *)
Time-out	Selectable 4 to 32 channels
Connection, transmitter	5 pin DIN plug, Female 240 °
Connection, receiver	5 pin DIN plug, Female 180 °
Housing material	Polystyrene

* NC = Number of Channels. Eg. Scan time for 64 channels: 64 x 2 ms + 10 ms = 138 ms

Environmental Test Conditions

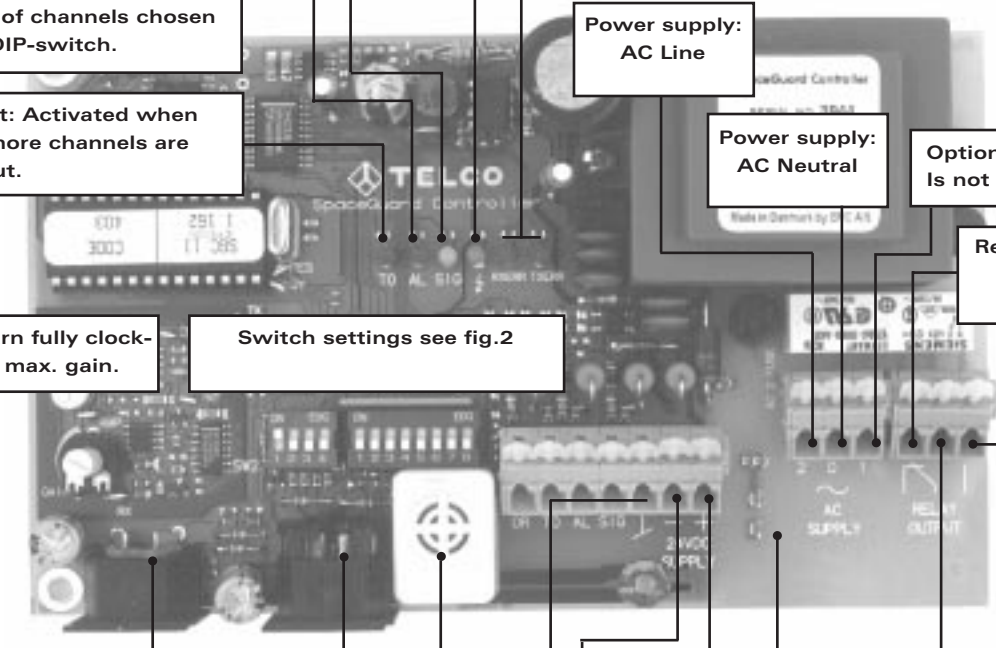
ITEM	SPECIFICATION	REFERENCE
Ambient Temperature (operation)	–10°C to +40 °C	IEC 68-2-14
Ambient Temperature (storage)	– 40 °C to +80 °C	IEC 68-2-14
Relative humidity	85 %	
Sealing	IP 20	IEC 529
Vibration	10 - 55 Hz, 1.5 mm (peak/peak)	IEC 68-2-6
Shock	30 g (294 m/s/s)	IEC 68-2-27
Free fall	100 mm, concrete	!EC 68-2-32
Approvals	CE UL cUL	EN50081-1, EN50082-1 UL 508 C22.2 No. 14-M91

Find the Detector for your Application

MODEL	MAIN TYPE	HOUSING TYPE	SENSING RANGE	NO. OF CHANNELS	ACTIVE HEIGHT
SGT SGR	A1	A-slim line and B-leading edge	5 m	16 to 64	425 mm to 1770 mm
	B1			16 to 32	845 mm to 1740 mm

See the Telco SpaceGuard Detectors Catalogue

Features



Signal: Activated when the relay is operated. The relay may be either light-operated or dark-operated, controlled by the DIP-switch settings.

RXERR: Receiver Error is activated when an electrical error is detected in the SGR, or when the detector is not present. **

TXERR: Transmitter Error is activated when an electrical error is detected in the SGT, or when the detector is not present. **

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

Alarm: 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.

Power on indicator.

Power supply: AC Line

Power supply: AC Neutral

Optional terminal: Is not to be used.

Time-out: Activated when one or more channels are timed out.

Relay output Normally Closed

Gain: Turn fully clock-wise for max. gain.

Switch settings see fig.2

Receiver terminal

Transmitter terminal

Buzzer

Connect to ground or machine frame.

Relay output Normally Open

Relay output Common

Use these two outputs for safe operation. The output will be open if power or wiring fails.

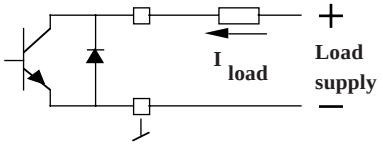
Power supply: 0 V DC

Power supply: + 24 V DC

WARNING:

DO NOT connect AC and DC power supply at the same time.

Signal, Alarm and Time-out output



The type SGC 11 A 30x features an NPN open collector output for:

- Time-out, activated when the Time-out LED is on.
- Alarm, activated when the Alarm LED is on.
- Signal, activated when the output relay is operated.

Description of switch functions

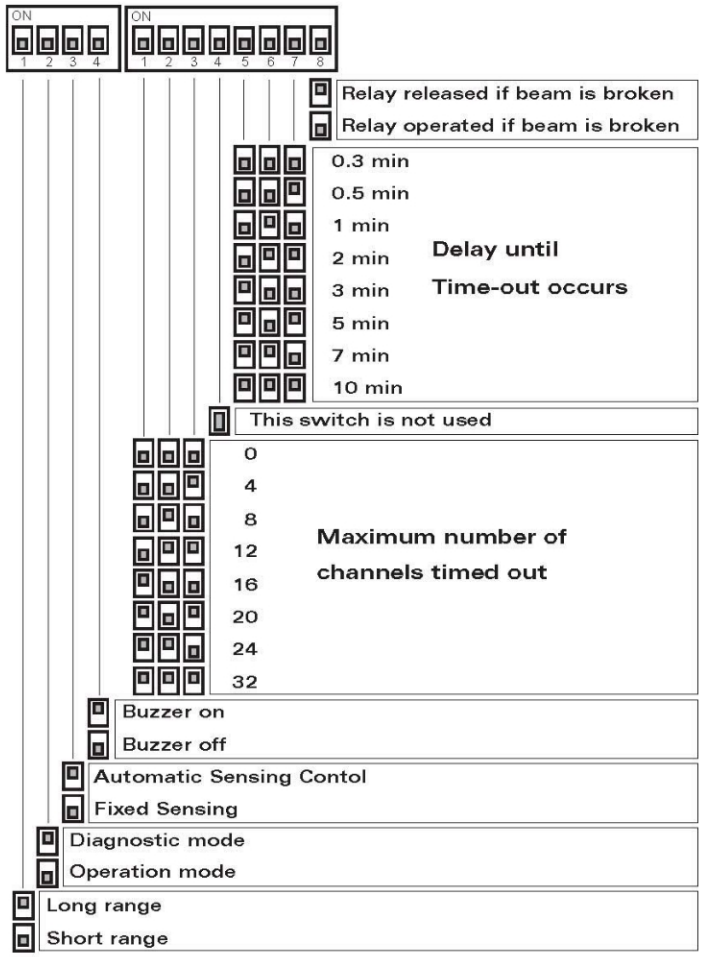


Fig. 2

Wiring and user instructions

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 1, 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 terminals NO, COM, NC or the transistor output on terminals SIG, ⏚ 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, ⏚ according to your application (only on types SGC11A300 -301 -302 -306)
6. Turn the gain potmeter to max gain (fully clockwise).
7. Make sure Operation Mode has been selected. Make sure Long Range has been selected.
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 LEDs will indicate the failing detector. Change or clean the failing detector and switch to Operation Mode.
10. For operation at ranges below approx. 3 m it is recommended to adjust the gain, following the calibration procedure below.

    Turn the gainpot to minimum (fully anticlockwise), and then turn it slowly clockwise until the detectors 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 ranges, use Fixed Sensitivity Mode.
12. Select Relay Mode and time-out according to your application.

Notes

Notes

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