

**Product Data**

Electrical Data	
	SGT (Transmitter) / SGR (Receiver)
Supply voltage	12 – 36 Vdc
Max. Voltage ripple	15% (within supply range)
Reverse polarity protected	Yes
Max. current consumption	70 mA (RMS)
Max. output load	50 mA / 200 mA
Short circuit protected	Yes
Inductive load protection	Yes

Environmental Data	
Light immunity @ 5° incidence	> 100.000 lux
Temperature, operation	-20 to + 65 °C
Sealing class	IP67
Approvals	UK CA CE

Available Models					
	Model	Output	Blanking Function	Output Mode	Sensing Range
Transmitter	SGT 14-xxx-0xx-A1-x-0x-xx	-	-	-	C profile: 1 – 10m
Receiver	SGR 14-xxx-0xx-A1-x-08-xx	Solid State Relay	On / Off	N.O.	D profile: 1 – 7.5 m
	SGR 14-xxx-0xx-A1-x-09-xx			N.C.	

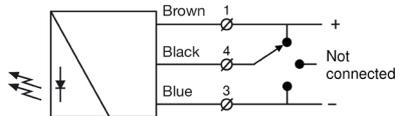
**Connection**

**Wiring Diagrams**

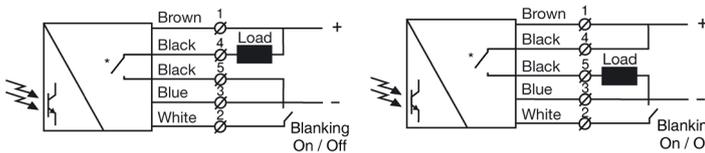


5 pole M12 male connector

Transmitter Model	Black wire connected to (-)	Black wire not connected	Black wire connected to (+)
SGT 14-xxx-0xx-A1-x-00-xx	TX is not transmitting	TX is transmitting	TX is transmitting
SGT 14-xxx-0xx-A1-x-01-xx	TX is not transmitting	TX is transmitting	TX is not transmitting
SGT 14-xxx-0xx-A1-x-02-xx	TX is transmitting	TX is not transmitting	TX is transmitting

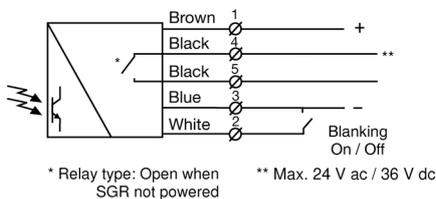


Transmitter SGT 14



Receiver SGR 14 with solid state relay used as NPN output

Receiver SGR 14 with solid state relay used as PNP output



\* Relay type: Open when SGR not powered \*\* Max. 24 V ac / 36 V dc

Receiver SGR 14 with solid state relay output.

**Installation & Adjustments**

**Installation and Adjustment**

No initial set up or adjustments are required, due the automatic signal-tracking (AST) feature, which automatically adjust each individual channel on the system.

Note that the SG14 system must not be placed on moving doors.

1	Mount the transmitter (SGT) and receiver (SGR) facing each other and correctly aligned. Telco recommends that the rails are placed at least 5mm from edges for mechanical protection.
2	Wire the sensor according to the wiring diagram. Make sure the load does not exceed 200 mA.
3	Check for correct wiring. Select blanking function if required.
4	Turn power on.
5	The status indicator (red LED) on the SGR will flash quickly when the AST is active.

6	When the power on indicators (green LEDs) are on, the system is operating. If the Status indicator (red LED) is constant on the SGR cannot see the SGT.
7	Notice that the rails must not be moved after the power to the SGR is turned on.

**Output Logic**

Detection	Output mode	Output status	Output indicator (yellow led)
Present	Dark operated (N.O.)	Closed	On
	Light operated (N.C.)	Open	Off
Absent	Dark operated (N.O.)	Open	Off
	Light operated (N.C.)	Closed	On

**Indicator LEDs**

Indicators	
Red LED:	Status indicator
Yellow LED:	Output indicator
Green LED:	Power on indicator

**Troubleshooting**

Troubleshooting	Probable Reason	Corrective Action
1. Symptom: Status indicator (Red LED) on SGR is constant on.	TX is not emitting SGT is disabled The lowest beam is blocked	Check supply and cable to the SGT Enable the SGT Remove obstruction
2. Symptom: Output indicator (Yellow LED) is flashing	Severe electrical interference Severe ambient light Cross talk from another light curtain	Remove SGR and SGT supply cable from high voltage cables Change position of SGT and SGR Change position of SGT and SGR

**SGR Output Response Time**

Output Response Time	N° of channels					
	16	24	32	40	48	56
Response time (max) For obstruction by objects larger than 100 mm.	24 ms	24 ms	30 ms	37 ms	43 ms	49 ms

**SGT Test Input**

**SGT Test Input**  
The transmitter can be externally disabled and enabled via the control wire (black wire) for test purposes. To activate the test input, please refer to "Transmitter Model" table. Make sure no object is present in the detection area when transmitter is disabled for test. When the transmitter is disabled, the receiver will change its output.

The test input on SGT14 has to be activated a certain minimum time  $T_i$  in order to ensure that the output of SG14 will switch.  
On activation of the SGT14 test input, the output of the receiver will switch within a certain maximum time  $T_{ON}$ .  
When the test input of SGT14 is deactivated the output will be switched back within a certain maximum time  $T_{OFF}$ .  
The time  $T_i$  is longer than  $T_{ON}$  in order to ensure a complete test cycle of minimum duration.

**Note:** Refer to "SGT test input response time table" & graph.

**SGR Dynamic Blanking Function**

**Dynamic Blanking Function**

All channels can be blanked without switching the output by moving a non transparent object between the SGR and SGT from top of the rails and down to the lowest channel in one movement.

All channels will stay blanked as long as the lowest channel at the bottom of the rails is obstructed. Make sure that the lowest channel is well obstructed when all the channels are blanked.

Minimum speed of the blanking object	0.05 m/s
Maximum speed of the blanking object	1.6 m/s

There is no restriction on maximum speed when removing the object.

**Note:** Refer to "SGR blanking function response time" & graph.

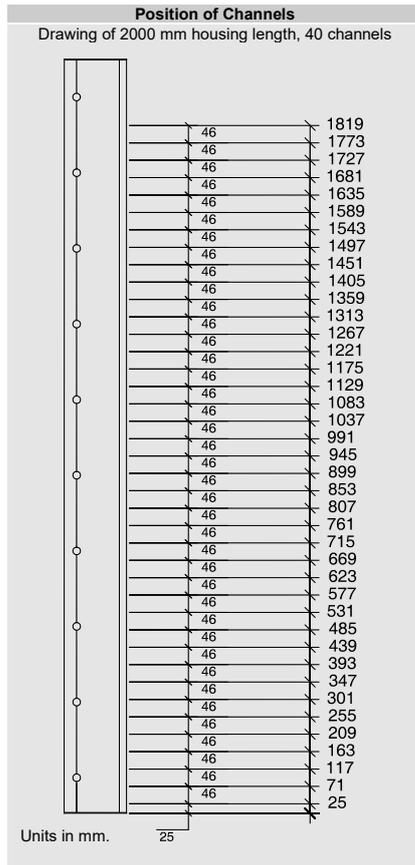
Channel spacing	46 mm
Minimum size of blanking object	55 mm



**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.



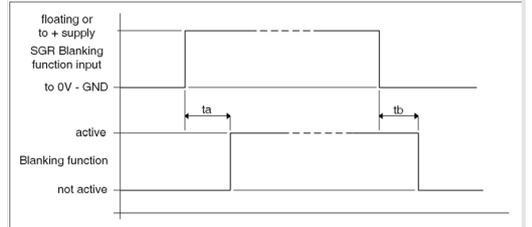
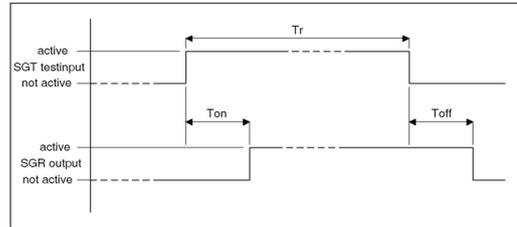


**SGT test input response time**

Number of channels	Ton (max.)	Toff	Tr (min.)
56	12 ms	48 ms	40 ms
48	12 ms	42 ms	35 ms
40	12 ms	36 ms	30 ms
32	12 ms	29 ms	25 ms
24	12 ms	23 ms	20 ms
16	19 ms	15 ms	27 ms

**SGR blanking function response time**

Number of channels	ta	tb
56	96 ms	5 ms
48	84 ms	5 ms
40	71 ms	5 ms
32	58 ms	5 ms
24	45 ms	5 ms
16	45 ms	12 ms



**Housing Length & Number of Channels**

Housing Length	Active Height	Channels	Beam Spacing
2800 mm	2555 mm	56	46 mm
2400 mm	2187 mm	48	
2000 mm	1819 mm	40	
1600 mm	1451 mm	32	
1250 mm	1083 mm	24	
850 mm	715 mm	16	



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