

SGP30 - USER MANUAL

Space Guard Proximity Series

Photoelectric light curtain



Product Data

Electrical Data

Supply voltage	12 – 30 V dc
Max. voltage ripple	15 % (within supply range)
Max. current consumption	120 mA (RMS)
Max. output load	200 mA
Output Reverse polarity protected	Yes
Output short circuit protected	Yes
Output inductive load protection	Yes

Environmental Data

Light immunity @5° incidence	> 100.000 lux
Temperature, operation	-30 to +60 °C
Sealing class	IP 67

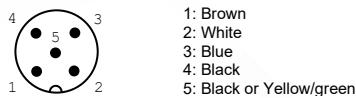
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Available Models

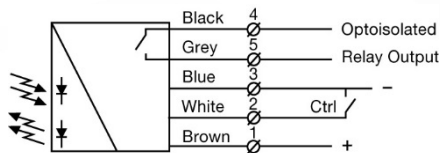
Model	Beam spacing	Sensing Range
SGP 30-xxx-0xx-A1-l-xx-xx	46 mm	1,3 m

Connection

Wiring Diagrams



SGP30 5 pin M12 male connector



Wiring diagram

Installation & Adjustments

Adjustment

- Mount the SGP30 unit.
- Wire the sensor according to the wiring diagram. Make sure the output load does not exceed 200 mA.
- Check for correct wiring before turning power on.
- When the power on indicator (green LED) is on the system is operating.
- Use the control wire to blank any IR channels which unintended has proximity effect on the output or decrease the sensing range.
- Adjust the sensing range with potentiometer mounted in the top plastic plug of the rail.
- If necessary use the control wire again to blank any IR channels which unintended has proximity effect on the output.
- After power on make sure that the output indicator (yellow LED) change state when an object is placed in front of the rails and within the sensing range.
- The light curtain is only intended for static applications.

Output Logic

Detection	Object	Output status	Output indicator (yellow led)
	Present	Closed (NO) Open (NC)	On (NO) Off (NC)
	Absent	Open (NO) Closed (NC)	Off (NO) On (NC)

Adjusting sensing range

With the potentiometer mounted in the top plastic plug of the rail the sensing range can be adjusted from 0m to 1,3m. The sensing range is at its maximum when the potentiometer is fully clock wise. Notice that when increasing the sensing range it can be necessary to blank IR beams because nearby objects unintentionally can be detected.

Blanking function mode, Ctrl input

This function is used to blank out beams that otherwise constantly would detect close lying surfaces or objects, for instance construction elements as metallic frames, support pillars or beams. When an IR beam is blanked it cannot change the state of the output.

The blanking mode is activated by powering up the SGP30 with pin 2 (white Ctrl wire) connected to ground (-). Notice that the output and output indicator (yellow LED) is locked when the light curtain is in blanking mode. In this mode every IR beam that detects something, even temporarily, will be blanked and stored in non-volatile memory. The red LED is lit as long as pin 2 (white Ctrl wire) is connected to ground (-) and the non-volatile memory is not updated.

When the blanking procedure is finish pin 2 must be removed from ground (-) **before** power to the SGP30 is removed, otherwise no IR beams will be blanked. During normal operation pin 2 must be left floating. The blanking is now permanent, also after power down, until new blanking has been made.

The red LED will flash with 2 Hz constantly under normal operation if any IR beams are blanked.

If blanking shall be deactivated there are two options:

- Repeat blanking process, but without nearby objects or surfaces that can cause blanking.
- Repeat blanking process, with the potentiometer turned to 0.

Indicators

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

Troubleshooting

Probable Reason	Corrective Action
1. Symptom: Status indicator (Red LED) is constant on.	
A blanking sequence is ongoing.	Remove pin 2 (white Ctrl wire) from ground (-) and leave it floating. Be aware that beams can be blanked.
Internal failure.	Return SGP30 unit to factory.
2. Symptom: Status indicator (Red LED) is flashing at a rate of 2 Hz.	
One or more beams are blanked.	Deactivate blanking as described above.
3. Symptom: Output indicator (Yellow LED) on is flashing.	
Severe electrical interference.	Separate supply cable from high voltage cables.
Severe ambient light.	Shield, reposition or twist SGP30.
Cross talk from another light curtain or photo sensor.	Shield or reposition SGP30 or other photo sensor.
Cross talk from a nearby HF strip light.	Shield, reposition or twist SGP30.
4. Symptom: With NO output red LED, yellow LED is constant on and output is closed.	
One or more IR beams have proximity effect.	If necessary perform a blanking process or remove object(s) or lower amplification by turning potentiometer anti clock wise.
5. Symptom: With NC output red LED and yellow LED is constant off and output is open.	
One or more IR beams have proximity effect.	If necessary perform a blanking process or remove object(s) or lower amplification by turning potentiometer anti clock wise.
6. Symptom: Red LED is off and output is stocked.	
SGP30 is out of sensing range.	Adjust the sensing range with potentiometer.

Disposal

Disposal should be done using the most up-to-date recycling technology according to local rules and laws.



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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