Online data sheet

SAS4-F028N3PS1T00

SLG

SWITCHING AUTOMATION LIGHT GRIDS

SICK
Sensor Intelligence.

Ordering information

Type	Part no.
SAS4-F028N3PS1T00	1208786

Other models and accessories ➜ www.sick.de/SLG

Detailed technical data

Features

Technology	Sender/receiver
Minimum detectable object (MDO)	Parallel beam, 45 mm
Beam separation	40 mm
Optical light exit	Flat
Number of beams	≥ 8
Detection height	280 mm
Configuration	Teach button with configuration software
Cross beam/parallel beam	Parallel beam active
Output 1	Output 1 active, if light beam interrupted
Automatic teach	Automatic teach inactive
Alignment aid	Without alignment aid
Muting function	Muting function deactivated

Performance

Maximum range	4 m [1)]
Minimum range	Parallel beam: ≥ 0 mm
Working range	3 m
Response time	Parallel beam ≥ 19 ms

[1)] No reserve for environmental issue and deterioration of the diode.

Interfaces

Switching output	1 x NPN
Inputs	Teach-in input
Connection type	Short cable with connector M8, 4-pin

Mechanics/electronics

Wave length	Infrared light, 950 nm
Supply voltage V_s	DC24 V, ± 20 % [1]
Power consumption sender	≥ 88 mA [2]
Power consumption receiver	≥ 70 mA [2] [2]
Ripple	< 5 V_{pp}
Output current $I_{max.}$	≤ 100 mA
Output load capacitive	100 nF
Output load inductive	1 H
Initialization time	1 s
Dimensions (W x H x D)	25 mm x 352.4 mm x 8 mm
Housing material	PMMA
Indication	LED
Synchronization	Optical
Enclosure rating	IP 65
Circuit protection	U_V connections, reverse polarity protected, Output Q short-circuit protected, Interference pulse suppression
Weight	≥ 40 g
Switching frequency	500 kHz
Aluminum stabilizer	Without stabilizer

[1] Limit values.
[2] Without load.

Ambient data

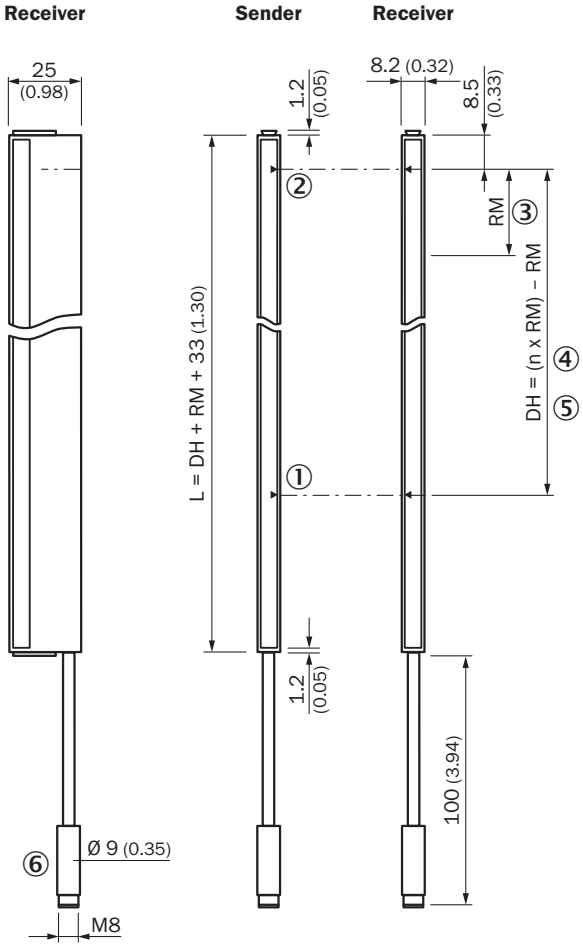
Protection class	III
EMC	EN 60947-5-2
Ambient temperature	Operation: –25 °C ... +55 °C Storage: –25 °C ... +70 °C
Ambient light immunity	Direct: 100,000 lx [1] Indirect: 150,000 lx
Vibration resistance	5 g, 10 Hz ... 55 Hz (IEC 68-2-6)
Shock load	10 g / DIN EN 60068-2-29 / 16 ms

[1] Sunlight.

Dimensional drawing (Dimensions in mm (inch))

Sxx-Fxxxxxxx1xxx

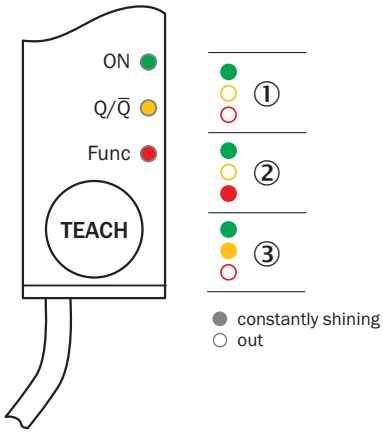
Flat, without stabilizer



① First beam
② Last beam
③ Beam separation (RM)
④ Number of beams (n)
⑤ Detection height (DH)
⑥ Connection

Adjustments

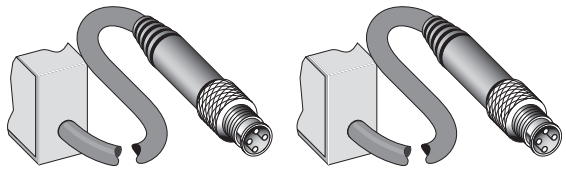
SAS, SGS, receiver, LED indication



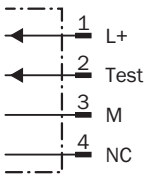
① Supply voltage
② Active if teach-in button is pressed
③ No object in the light path

Connection type and diagram

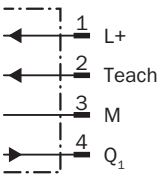
SAS



Sender



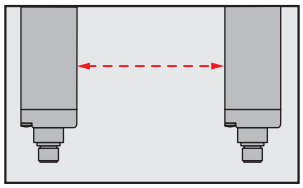
Receiver



Concept of operation

SAS, SGS, SPL

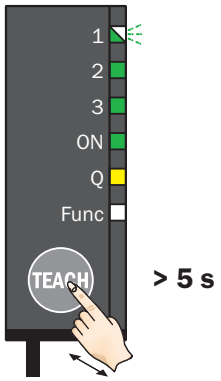
Optical synchronization



The light grid communicates via the light beams. A cable is not necessary for the optical synchronization.

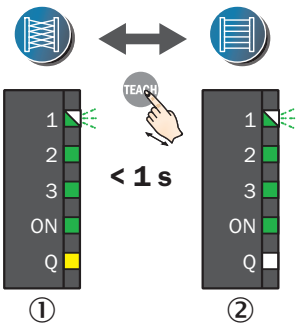
If the teach button is pressed longer than 5 s, you switch into the configuration mode. In the configuration mode the menu items are indicated by the green LEDs. If the teach button is then pressed for < 1 s, the respective function is activated or reset (yellow LED on or off). If the teach button is pressed for 1 s to 5 s long, you switch to the next menu item. To exit the configuration mode, press the teach button for > 5 s or wait for 30 s.

1. Light grid in RUN mode, green LED "ON" illuminates, yellow LED "Q" illuminates.



Press teach button > 5 s.
The light grid switches into the configuration mode – menu item "cross beam/parallel beam". The first green LED from top flashes.

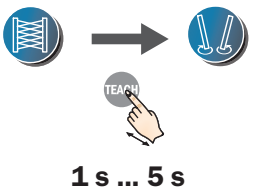
2. Cross or parallel beam set up. [1]



① = Yellow LED on,
☒ **"Crossed beam" active.**
② = Yellow LED off,
☒ **"Parallel beam" active.**

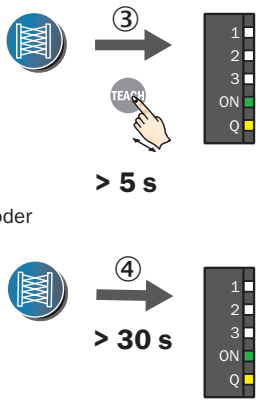
Press teach button < 1 s to switch between the settings.

3. Go to the next menu item.



Press teach button for 1 s to 5 s to switch to the next menu item (in this case "alignment aid").

4. Exit the configuration mode.



③ = Press teach button > 5 s,
☒ **save parameters.**
④ = Wait > 30 s,
☒ **parameters not saved.**

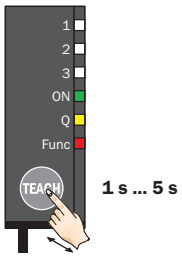
[1] Configure the light grid in a 3-way cross-beam or a parallel-oriented operating principle. The cross beam can be used to improve the resolution in the middle detection area. Objects up to a size of 25 mm can be detected. The response time increases.

The other menu items in sequence of the menu setting of the light grid

Alignment aid [2]	Invert switching output	Auto-teach [3]	Pushbutton lock	Standard values [4]	Invert second switching output	Muting [5]
active	Q_1	active	active	active	Q_2	active
inactive	$\overline{Q_1}$	inactive	inactive	inactive	$\overline{Q_2}$	inactive

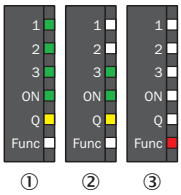
[2] The alignment aid is recommended for applications with high ranges. The signal strength of the receiver is permanently displayed by four green alignment LEDs. Depending on the strength, the number of illuminated LEDs differ. When reception is strong, all four LEDs illuminate. The alignment aid must be deactivated again after alignment.
[3] After commissioning (power on), the switching threshold is taught in automatically. No object should be between the sender and receiver during this process.
[4] With standard values "active" all parameters are reset to the delivery state.
[5] If a beam is interrupted permanently, it disappears after > 60 s, and the switching output Q_1 is enabled again. If a second switching output is present, it remains inactive.

1. Light grid in RUN mode, green LED "ON" illuminates, yellow LED "Q" illuminates.



Press the teach button for 1 s to 5 s. During the teach process the green LEDs illuminates sequentially. The red LED "Func" illuminates.

2. Alignment aid is automatically activated for 10 s.



① = Optimum light reception.
② = Light reception not optimized, ➜ **align sensors**.
③ = No light received, ➜ **check light path.**

The light grid switches after 10 s automatically back into the RUN mode.

3. Light grid in RUN mode, green LED "ON" illuminates, yellow LED "Q" illuminates.

The switching threshold is set.

Funktionsprinzip

Slim & Flat

① Slim model = light emission on narrow side
② Flat model = light emission on broad side

Recommended accessories

Other models and accessories ➜ www.sick.de/SLG

	Brief description	Type	Part no.
Mounting brackets and mounting plates			
	Mounting bracket for light grids up to a monitoring height of 600 mm, mounting on the face sides, 2x BEF-SLG1, 2x BEF-SLG2	BEF-SLG-SET1	2055427
Plug connectors and cables			
	Head A: female connector, M8, 4-pin, straight Head B: cable Cable: PVC, unshielded, 2 m	DOL-0804-G02M	6009870

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We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

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For us, that is “Sensor Intelligence.”

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