



# SAS4-F012N3PS1T00

SLG

SWITCHING AUTOMATION LIGHT GRIDS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
SAS4-F012N3PS1T00	1208785

Other models and accessories → [www.sick.de/SLG](http://www.sick.de/SLG)



### Detailed technical data

#### Features

<b>Technology</b>	Sender/receiver
<b>Minimum detectable object (MDO)</b>	Parallel beam, 45 mm
<b>Beam separation</b>	40 mm
<b>Optical light exit</b>	Flat
<b>Number of beams</b>	≥ 4
<b>Detection height</b>	120 mm
<b>Configuration</b>	Teach button with configuration software
<b>Cross beam/parallel beam</b>	Parallel beam active
<b>Output 1</b>	Output 1 active, if light beam interrupted
<b>Automatic teach</b>	Automatic teach inactive
<b>Alignment aid</b>	Without alignment aid
<b>Muting function</b>	Muting function deactivated

#### Performance

<b>Maximum range</b>	4 m <sup>1)</sup>
<b>Minimum range</b>	Parallel beam: ≥ 0 mm
<b>Working range</b>	3 m
<b>Response time</b>	Parallel beam ≥ 19 ms

<sup>1)</sup> No reserve for environmental issue and deterioration of the diode.

#### Interfaces

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

## Mechanics/electronics

<b>Wave length</b>	Infrared light, 950 nm
<b>Supply voltage <math>V_s</math></b>	DC24 V, $\pm 20\%$ <sup>1)</sup>
<b>Power consumption sender</b>	$\geq 64$ mA <sup>2)</sup>
<b>Power consumption receiver</b>	$\geq 70$ mA <sup>2) 2)</sup>
<b>Ripple</b>	$< 5 V_{pp}$
<b>Output current <math>I_{max}</math></b>	$\leq 100$ mA
<b>Output load capacitive</b>	100 nF
<b>Output load inductive</b>	1 H
<b>Initialization time</b>	1 s
<b>Dimensions (W x H x D)</b>	25 mm x 192.4 mm x 8 mm
<b>Housing material</b>	PMMA
<b>Indication</b>	LED
<b>Synchronization</b>	Optical
<b>Enclosure rating</b>	IP 65
<b>Circuit protection</b>	$U_V$ connections, reverse polarity protected, Output Q short-circuit protected, Interference pulse suppression
<b>Weight</b>	$\geq 20$ g
<b>Switching frequency</b>	500 kHz
<b>Aluminum stabilizer</b>	Without stabilizer

<sup>1)</sup> Limit values.

<sup>2)</sup> Without load.

## Ambient data

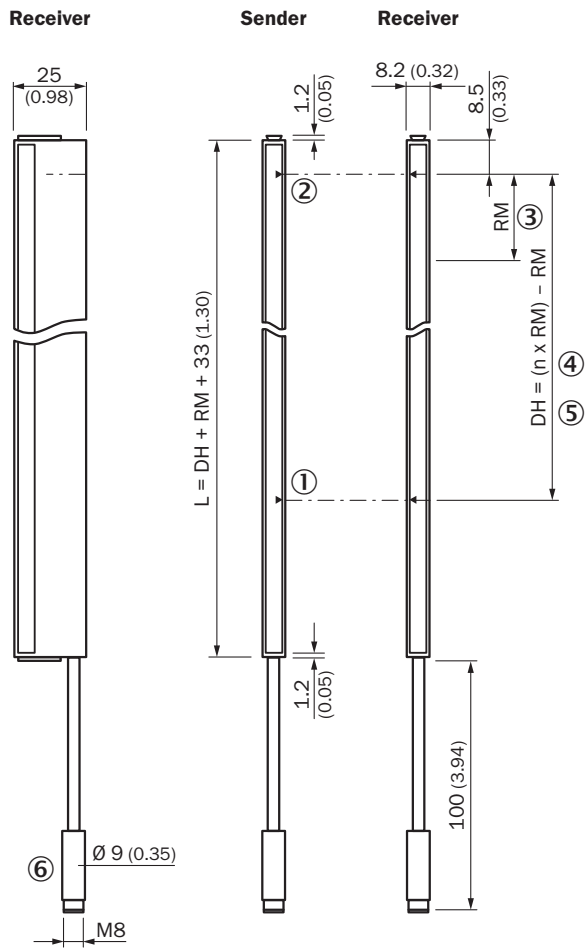
<b>Protection class</b>	III
<b>EMC</b>	EN 60947-5-2
<b>Ambient temperature</b>	Operation: $-25\text{ °C} \dots +55\text{ °C}$ Storage: $-25\text{ °C} \dots +70\text{ °C}$
<b>Ambient light immunity</b>	Direct: 100,000 lx <sup>1)</sup> Indirect: 150,000 lx
<b>Vibration resistance</b>	5 g, 10 Hz ... 55 Hz (IEC 68-2-6)
<b>Shock load</b>	10 g/ DIN EN 60068-2-29 / 16 ms

<sup>1)</sup> Sunlight.

Dimensional drawing (Dimensions in mm (inch))

Sxx-Fxxxxxx1xxx

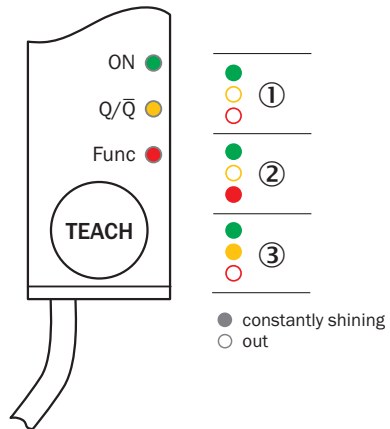
**Flat, without stabilizer**



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

## Adjustments

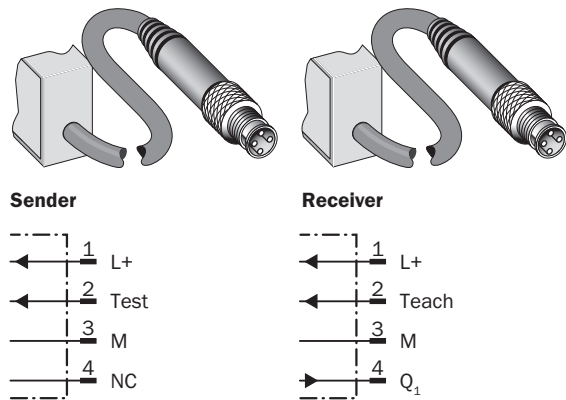
SAS, SGS, receiver, LED indication



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

## Connection type and diagram

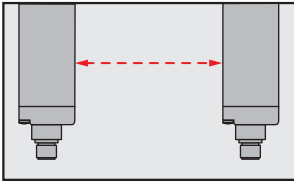
SAS



## Concept of operation

SAS, SGS, SPL

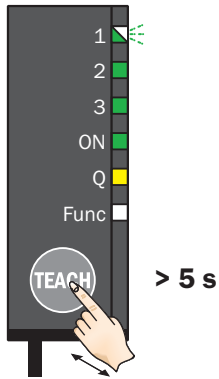
### Optical synchronization



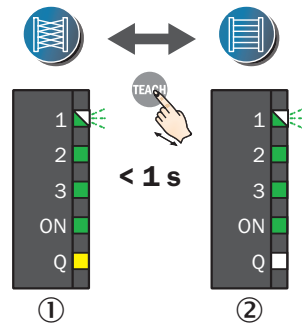
The light grid communicates via the light beams. A cable is not necessary for the optical synchronization.

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.

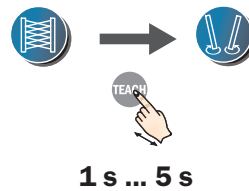
**1. Light grid in RUN mode, green LED "ON" illuminates, yellow LED "Q" illuminates.**



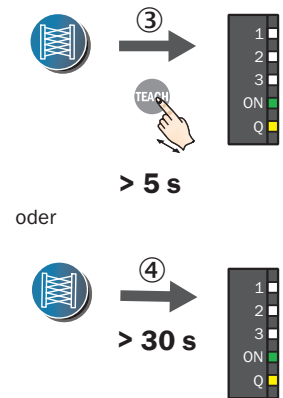
**2. Cross or parallel beam set up.<sup>1)</sup>**



**3. Go to the next menu item.**



**4. Exit the configuration mode.**



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.

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

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

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

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

<sup>1)</sup> 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 <sup>2)</sup>	Invert switching output	Auto-teach <sup>3)</sup>	Pushbutton lock	Standard values <sup>4)</sup>	Invert second switching output	Muting <sup>5)</sup>
active 	Q <sub>1</sub> 	active 	active 	active 	Q <sub>2</sub> 	active 
inactive 	Q̄ <sub>1</sub> 	inactive 	inactive 	inactive 	Q̄ <sub>2</sub> 	inactive 

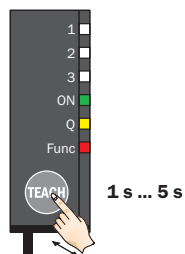
<sup>2)</sup> The alignment aid is recommended for applications with high ranges. The signal strength of the receiver is permanently displayed by four green alignment LEDs. Depending on the strength, the number of illuminated LEDs differ. When reception is strong, all four LEDs illuminate. The alignment aid must be deactivated again after alignment.

<sup>3)</sup> After commissioning (power on), the switching threshold is taught in automatically. No object should be between the sender and receiver during this process.

<sup>4)</sup> With standard values "active" all parameters are reset to the delivery state.

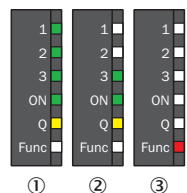
<sup>5)</sup> If a beam is interrupted permanently, it disappears after > 60 s, and the switching output Q<sub>1</sub> is enabled again. If a second switching output is present, it remains inactive.

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 illuminate 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](http://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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