

Opens the door to smart sensing



Product description

SGS can be mounted inside doors, gates, and entry/exit points. As a result, they are the largest light grids of the SLG product family group, are taught by remote wire, and have the longest sender to receiver span. SGS light grids can be commissioned quickly thanks to their simple "Click & Go" assembly feature and setup. In addition, features

such as auto-muting, auto-teach, and an alignment aid provide more uptime. A specially developed multi-connector also makes it easy to connect a series of multiple SGS light grids to a larger unit. Available with optional aluminum stabilizer for stand-alone mounting – it's that simple!

At a glance

- Variable detection lengths from 600 mm up to 1,400 mm (in 160 mm increments)
- Simple teach-in setup via cable
- Optional parameter setting with teach-in button, no PC required
- Maximum range 10 m
- Response time 18 ms
- 25 mm or 45 mm MDO possible
- Highly immune to sunlight at 150,000 lux
- Small blind zone < 11 mm

Your benefits

- Small, slim and sleek design enables easy integration into applications
- Slim and flat models offer flexible mounting options and optimize shelf/bin space while reducing damage
- Customized preset configurations or set parameters via one-touch teach-in with no PC
- Optical synchronization eliminates the need to lay cables, saving time
- Optional: Capacitive teach-in button and LEDs make commissioning easier for complex solutions
- Auto-teach and auto-muting enable Plug & Play. And, an alignment aid and "Click & Go" provide faster installation.



Additional information

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→ www.mysick.com/en/SGS

Detailed technical data

Features

Technology	Sender/receiver
Task	Switching light grid
Minimum detectable object (MDO)	Parallel beam: ≥ 45 mm ... 85 mm Cross beam: ≥ 25 mm
Number of beams	8 ... 36
Configuration	Teach button with configuration software ¹⁾
Software features	Parallel beam Cross beam Output 1 high active/low active (normally open/closed), if light beam interrupted Automatic teach active/inactive With/without alignment aid Output 2 active/inactive (normally open/closed), if light beam interrupted With/without muting function at output 2 With/without muting function

¹⁾ For all T-types (cf. type code).

Performance

Maximum range ¹⁾	4 m 10 m
Minimum range ²⁾	Parallel beam: ≥ 0 m Cross beam: $\geq 0,3$ m
Response time	Parallel beam: 19 ms Cross beam: 57 ms

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

²⁾ $\pm 10^\circ$.

Interfaces

Inputs	Teach input
Connection type	Short cable with connector M8, 4-pin Short cable with connector, M12, 4-pin Cable open end

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Mechanics/electronics

Wave length	IR, 950 nm
Supply voltage V_s	DC 24 V \pm 20 %
Power consumption sender ¹⁾	88 mA ... 148 mA
Power consumption receiver ¹⁾	70 mA
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 672.4 mm x 8 mm ... 25 mm x 1,472.4 mm x 8 mm (SGS4) 25 mm x 932.4 mm x 8 mm ... 25 mm x 1,432.4 mm x 8 mm (SGS8)
Housing material	PMMA
Indication	LED
Synchronization	Optical
Enclosure rating	IP 65
Circuit protection	V_s connections reverse-polarity protected Output Q short-circuit protected Interference suppression
Weight	80 g ... 360 g
Switching frequency ²⁾	500 kHz 250 kHz

¹⁾ Without load.²⁾ Depending on type.

Ambient data

Protection class	III
EMC	EN 60947-5-2
Ambient temperature	Operation: -25 °C ... +55 °C Storage: -25 °C ... +70 °C
Ambient light safety ¹⁾	Direct: 100,000 lx 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.

Specific data

Beam separation	Optical light exit	Aluminum stabilizer	Model name	Ordering information
40 mm	Flat	-	SGS4-Fxxxxxx1xxx	D-33
		With stabilizer	SGS4-Fxxxxxx2xxx	D-33
	Slim	-	SGS4-Sxxxxxx1xxx	D-34
		With stabilizer	SGS4-Sxxxxxx2xxx	D-34
80 mm	Flat	With stabilizer	SGS8-Fxxxxxx2xxx	D-35
	Slim	-	SGS8-Sxxxxxx1xxx	D-35
		With stabilizer	SGS8-Sxxxxxx2xxx	D-35

Ordering information

The part numbers below show a selection of common configurations and represent only a portion of the product portfolio. The type code on page D-36 indicates all possible configurations that can be ordered.

Please note: Sender and receiver are only offered as a pair.

SGS4-Fxxxxxx1xxx

- **Beam separation:** 40 mm
- **Optical light exit:** Flat
- **Aluminum stabilizer:** –

Working range	Detection height	Switching output	Model name	Part no.
3 m	760 mm	1 x NPN	SGS4-F076N3PS1T00	1208788
			SGS4-F076N3CS1T00	1208793
		2 x PNP	SGS4-F076F3PS1W14	1209181
	920 mm	1 x NPN	SGS4-F092N3CS1T00	1208794
		1 x PNP	SGS4-F108P3PS1W00	1045008
		1 x PNP	SGS4-F140P3PS1W00	1045012
7 m	600 mm	1 x PNP	SGS4-F060P7PS1W00	1209723
	760 mm	1 x PNP	SGS4-F076P7PS1W00	1209287
		1 x NPN	SGS4-F092N7PS1W00	1209012
	920 mm	1 x PNP	SGS4-F092P7PS1T00	1208151
			SGS4-F092P7PS1W00	1047211
	1,080 mm	1 x PNP	SGS4-F108P7PS1W00	1045010
			SGS4-F108P7PS1W02	1047500
	1,400 mm	1 x PNP	SGS4-F140P7PS1W00	1045014

SGS4-Fxxxxxx2xxx

- **Beam separation:** 40 mm
- **Optical light exit:** Flat
- **Aluminum stabilizer:** With stabilizer

Working range	Detection height	Switching output	Model name	Part no.
3 m	1,080 mm	1 x PNP	SGS4-F108P3PS2T01	1207780
	1,240 mm	1 x PNP	SGS4-F124P3PS2T00	1048038
	1,400 mm	1 x PNP	SGS4-F140P3PS2T00	1208809

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SGS4-Sxxxxxx1xxx

- **Beam separation:** 40 mm
- **Optical light exit:** Slim
- **Aluminum stabilizer:** –

Working range	Detection height	Switching output	Model name	Part no.
3 m	760 mm	1 x PNP	SGS4-S076P3PS1W00	1046966
			SGS4-S076P3PS1T00	1047092
	920 mm	1 x PNP	SGS4-S092P3PS1T00	1208201
			SGS4-S108P3PS1W82	1045017
	1,080 mm	1 x PNP	SGS4-S108P3PS1W02	1209567
			SGS4-S108P3PS1W00	1045007
			SGS4-S108P3PS1T00	1209472
			SGS4-S108N3PS1T00	1208155
	1,240 mm	1 x NPN	SGS4-S124N3PS1T0D	1209172
	1,400 mm	1 x PNP	SGS4-S140P3PS1T00	1047015
SGS4-S140P3PS1W00			1045011	
7 m	600 mm	1 x PNP	SGS4-S060P7PS1W00	1209722
	760 mm	1 x PNP	SGS4-S076P7PS1W00	1209288
	920 mm	1 x PNP	SGS4-S092P7PS1T00	1208200
			SGS4-S092P7PS1W00	1208596
	1,080 mm	1 x PNP	SGS4-S108P7PS1T00	1209457
			SGS4-S108P7PS1W00	1045009
	1,400 mm	2 x PNP	SGS4-S140F7PS1T00	1047077
		1 x PNP	SGS4-S140P7PS1W00	1045013

SGS4-Sxxxxxx2xxx

- **Beam separation:** 40 mm
- **Optical light exit:** Slim
- **Aluminum stabilizer:** With stabilizer

Working range	Detection height	Switching output	Model name	Part no.
3 m	920 mm	1 x PNP	SGS4-S092P3PS2T00	1208108
	1,080 mm	1 x PNP	SGS4-S108P3PS2T07	1207519
	1,240 mm	1 x PNP	SGS4-S124P3PS2W00	1047815
			SGS4-S124P3PS2W04	1047903
	1,400 mm	1 x PNP	SGS4-S140P3PS2T00	1208109
7 m	1,080 mm	2 x PNP	SGS4-S108F7TS2W17	1209503
	1,400 mm	1 x PNP	SGS4-S140P7PS2T00	1208241

SGS8-Fxxxxxx2xxx

- **Beam separation:** 80 mm
- **Optical light exit:** Flat
- **Aluminum stabilizer:** With stabilizer

Working range	Detection height	Switching output	Model name	Part no.
3 m	880 mm	1 x PNP	SGS8-F088P3PS2W0E	1208797
	1,040 mm	1 x PNP	SGS8-F104P3PS2W0C	1208451
			SGS8-F104P3PS2W0E	1208610
	1,200 mm	1 x PNP	SGS8-F120P3PS2W0C	1208517
			SGS8-F120P3PS2W0E	1208611
1,360 mm	1 x PNP	SGS8-F136P3PS2W0C	1208516	

SGS8-Sxxxxxx1xxx

- **Beam separation:** 80 mm
- **Optical light exit:** Slim
- **Aluminum stabilizer:** -

Working range	Detection height	Switching output	Model name	Part no.
3 m	560 mm	2 x PNP	SGS8-S056F3PS1T00	1209297
		1 x PNP	SGS8-S056P3PS1W00	1208141
	720 mm	1 x PNP	SGS8-S072P3PS1W00	1209568
	880 mm	1 x PNP	SGS8-S088P3PS1W00	1209597
	1,200 mm	1 x PNP	SGS8-S120P3PS1T00	1209294
7 m	1,040 mm	2 x PNP	SGS8-S104F7PC1WA4	1045016
			SGS8-S104F7PS1T00	1047499
			SGS8-S104F7PS1WA4	1045015

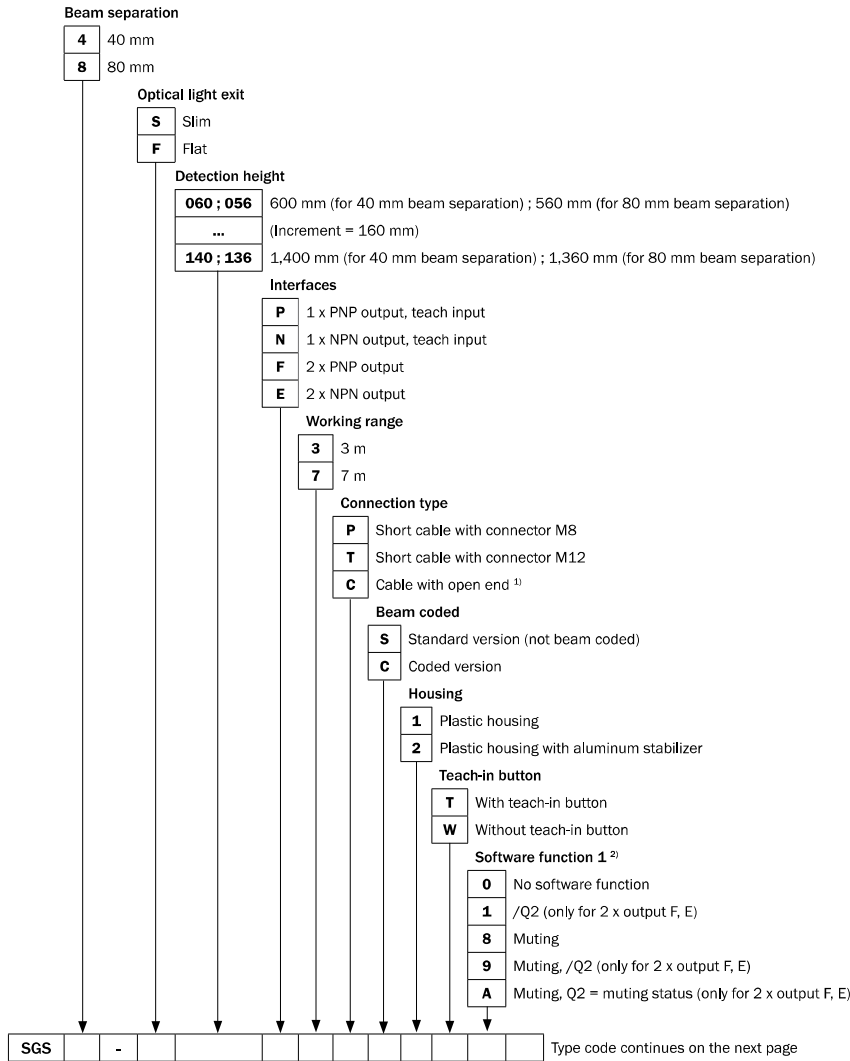
SGS8-Sxxxxxx2xxx

- **Beam separation:** 80 mm
- **Optical light exit:** Slim
- **Aluminum stabilizer:** With stabilizer

Working range	Detection height	Switching output	Model name	Part no.
3 m	720 mm	1 x PNP	SGS8-S072P3PS2W0C	1208519
	880 mm	1 x PNP	SGS8-S088P3PS2T00	1207983
			SGS8-S088P3PS2W00	1047998
	1,200 mm	1 x PNP	SGS8-S120P3PS2W0C	1208452
	1,360 mm	1 x PNP	SGS8-S136P3PS2T00	1209554
SGS8-S136P3PS2W00			1047161	

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Type code



¹⁾ On request.

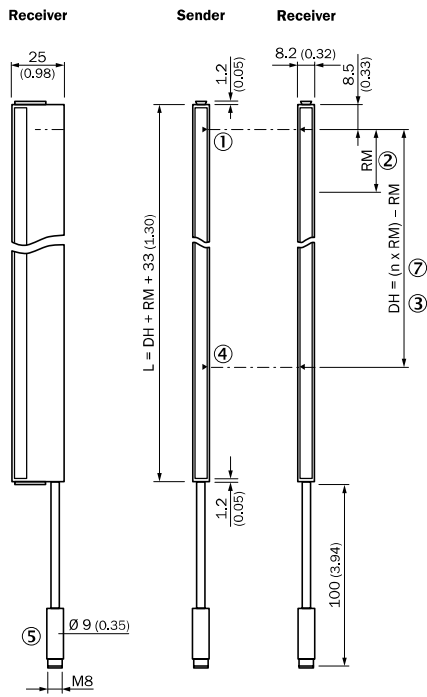
²⁾ Alignment aid = LEDs signalize the correct alignment
 Automatic teach = Automatic teach at plug-in
 Q1 = switching status ON if light path interrupted
 /Q1; /Q2 = switching status OFF if light path interrupted.

Dimensional drawings

SGS4-Fxxxxxx1xxx

SGS8-Fxxxxxx1xxx

Flat, without stabilizer

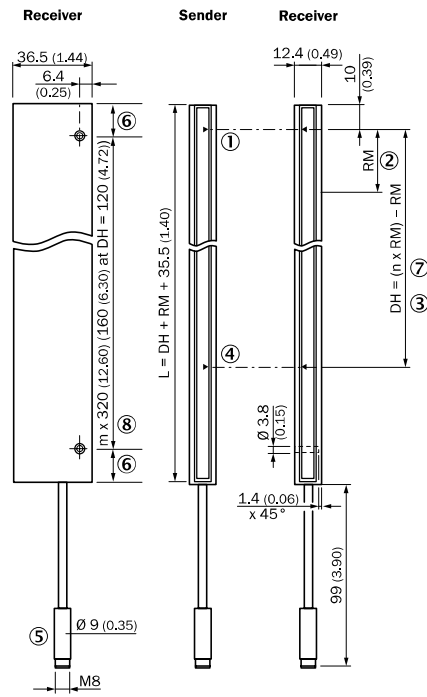


All dimensions in mm (inch)

SGS4-Fxxxxxx2xxx

SGS8-Fxxxxxx2xxx

Flat, with stabilizer

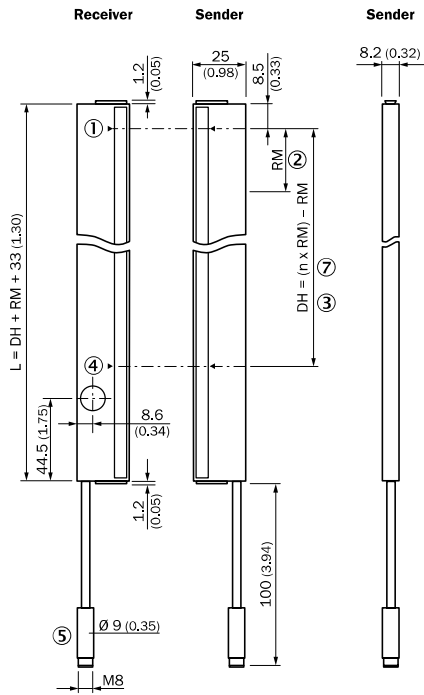


All dimensions in mm (inch)

- ① Last beam
- ② Beam separation RM
- ③ DH - Detection height $(n \times RM) - RM$
- ④ First beam
- ⑤ Connection
- ⑥ Same distance
- ⑦ n = beam
- ⑧ m = mounting hole

SGS4-Sxxxxxx1xxx
SGS8-Sxxxxxx1xxx

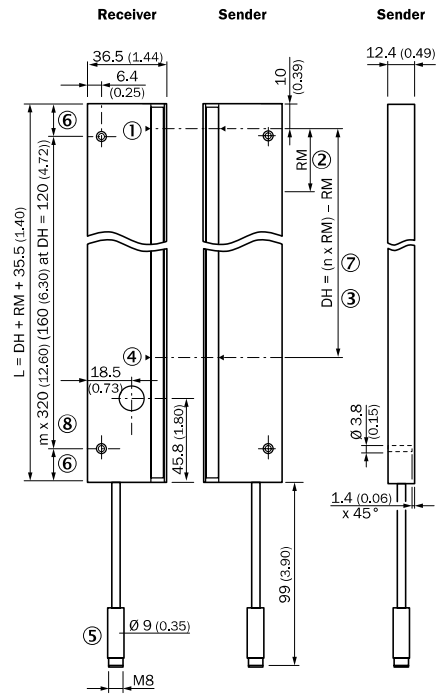
Slim, without stabilizer



All dimensions in mm (inch)

SGS4-Sxxxxxx2xxx
SGS8-Sxxxxxx2xxx

Slim, with stabilizer



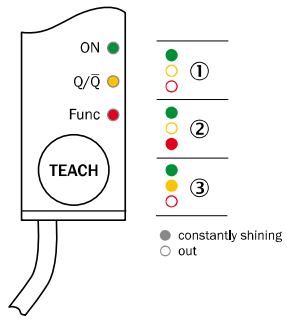
All dimensions in mm (inch)

- ① Last beam
- ② Beam separation RM
- ③ DH - Detection height (n x RM) - RM
- ④ First beam
- ⑤ Connection
- ⑥ Same distance
- ⑦ n = beam
- ⑧ m = mounting hole



Adjustments

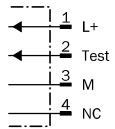
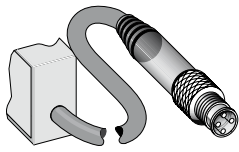
Receiver, LED indication



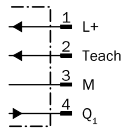
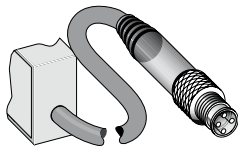
- ① Supply voltage
- ② Active, if teach-in button is pressed
- ③ No object in the light path

Connection type and diagram

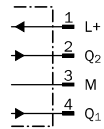
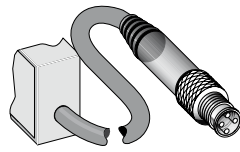
Sender Connector M8, 4-pin



Receiver teach PNP/NPN Connector M8, 4-pin



Receiver 2 x PNP/2 x NPN Connector M8, 4-pin





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Recommended accessories



Complete accessories for SGS include: 2 female connector cables and 1 bracket.

Please take note of the number of pins on the connector when choosing connection cables.

Terminal and alignment brackets

	Brief description	Model name	Part no.
	Mounting bracket for mounting on the top sides. The mounting kit consists of 2 x BEF-SLG1 and 2 x BEF-SLG2.	BEF-SLG-SET1	2055427
	Bracket for SLG, stainless steel, 4 pcs	VZA-SLG	2048519

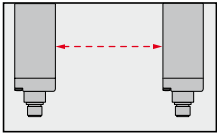
Plug connectors and cables

	Brief description	Model name	Part no.
 Illustration may differ	Female connector, M8, 4-pin, straight, 2 m, PVC	DOL-0804-G02M	6009870
	Female connector, M8, 4-pin, straight, 5 m, PVC	DOL-0804-G05M	6009872
	Female connector, M8, 4-pin, straight, 10 m, PVC	DOL-0804-G10M	6010754
 Illustration may differ	Female connector, M12, 4-pin, straight, 2 m, PVC	DOL-1204-G02M	6009382
	Female connector, M12, 4-pin, straight, 5 m, PVC	DOL-1204-G05M	6009866
	Female connector, M12, 4-pin, straight, 10 m, PVC	DOL-1204-G10M	6010543

For additional accessories including dimensional drawings, please see page E-14.

Special functions

Optical synchronisation

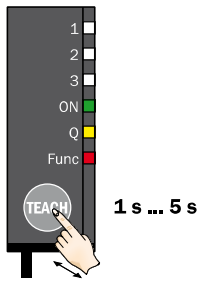


The light grid communicates via the light beams. A cable is not necessary for the optical synchronisation.

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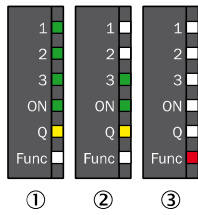
Setting the switching threshold via teaching process

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.



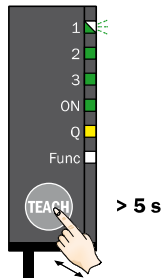
The switching threshold is set.

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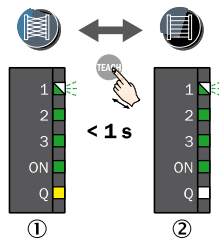
Configuration mode using the example of "cross beam/parallel beam"

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.

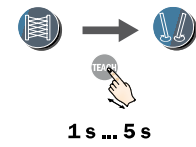
1. Light grid in RUN mode, green LED "ON" illuminates, yellow LED "Q" illuminates.



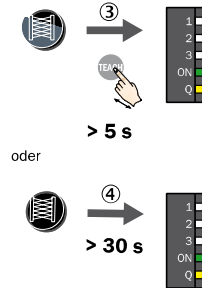
2. Cross or parallel beam set up.²⁾



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.

²⁾ 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	Q̄ ₁	inactive	inactive	inactive	Q̄ 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 Q₁ is enabled again. If a second switching output is present, it remains inactive.