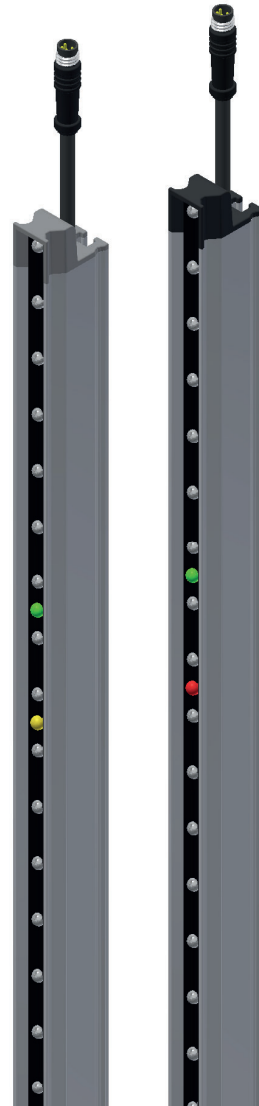


Non-contact protective
device with high
beam distribution



Safety light curtain LIGI-10

Sold only to industrial specialist companies



Light barrier systems

Move doors safely

Subject to change

LIGI-10 Technical information

- High resolution, obstacle detection as of \varnothing 28 mm
- Closely-meshed protective field for manual protection
- Beam geometry up into the boundary area
- Universal OSE or semiconductor relay output variants
- Automatic light control
- Highly resistant to extraneous light
- Extensive range of variants
- Robust aluminium housing, fully encapsulated
- IP 67, resistance to environmental influences
- Universal mounting options

The new LIGI, with its high resolution and robust execution, has been specifically designed for industrial doors and gates where safe detection in the hand protection range is required.

The LIGI can be used as a safety guard for the entire winding reel, as pull-in protection or as clamping protection for door/gate panels. This means that the mechanical protective housing can be fully dispensed with, which in turn means that the production costs can be reduced and service quality can be significantly improved.

For machine protection doors, the LIGI can be used as a non-contact protective device for closing edge monitoring and reach-in protection.

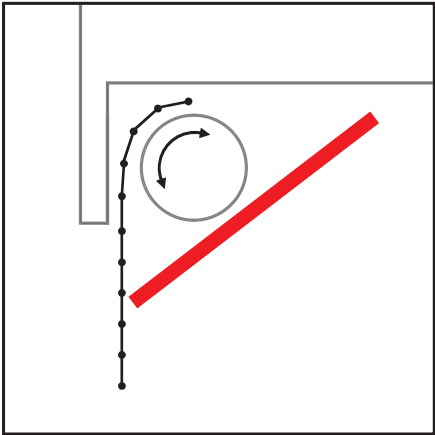
The LIGI can also be used for applications where secure detection of small obstacles in the door range is required, e.g. drawbar detection for trucks or fork arms of forklift trucks.

The highly compact and fully encapsulated LIGI offers perfect protection against moisture and vibrations in everyday door use. The housing is equipped with a guide groove for M4 hex screws as well as with the option to add freely selectable cross holes. Its compatibility with all the standard door controllers means that it can be used universally in almost all door systems.

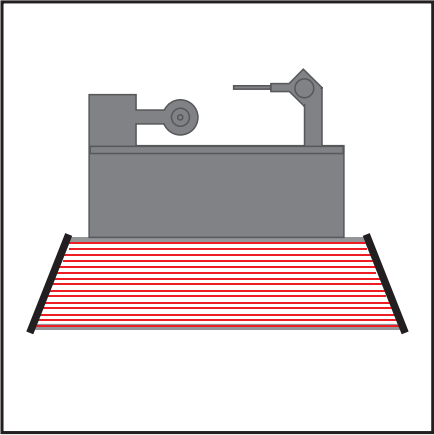
Technical data

Door widths	1.6 - 10 m
Operating voltage	10 - 30 V DC
Current consumption	Transmitter: approx. 30 mA (24 V DC), depending on number of channels Receiver: approx. 20 mA (24 V DC), depending on number of channels
Power consumption	approx. 1.2 W
Type of light	infrared modulated
Detection capability	Obstacle detection as of \varnothing 28 mm
OSE output	approx. 950 Hz, alternating signal, short-circuit-proof, protected against reverse polarity
SSR semiconductor relay	100 mA, short circuit-proof, potential-free
Response time	< 100 ms
Reactivation time	< 800 ms
Ambient light safety	\geq 100 klux
Housing material	Aluminium profile fully encapsulated in 2 K epoxy resin
Connection	M8-6-pole plug
Protection class	IP67 as per EN60529
Operating temperature	-20 to +60°C
Storage temperature	-30 to +70°C

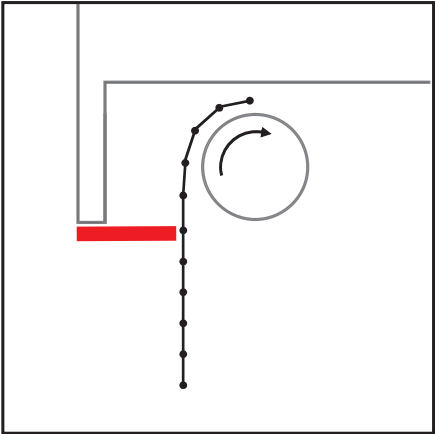
Winding reel pull-in protection



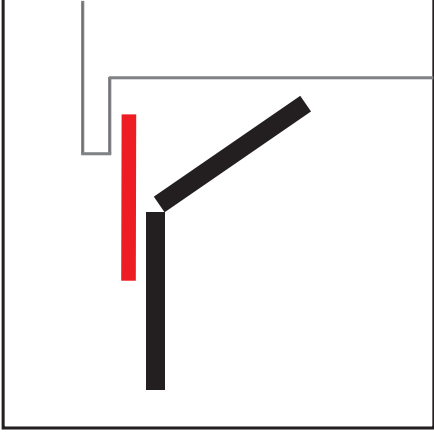
Surface monitoring



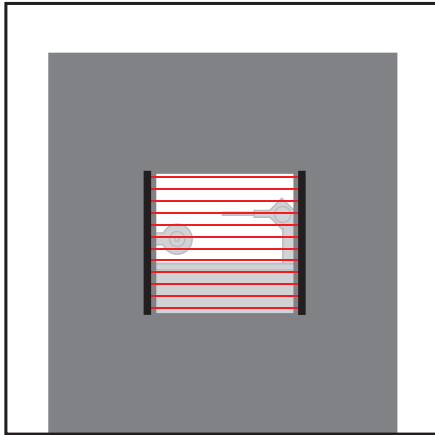
Pull-in protection



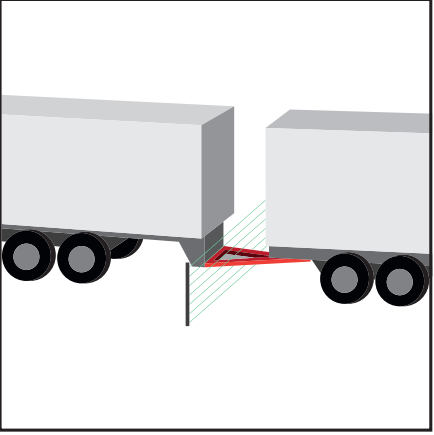
Clamping protection



Machine protection doors



Drawbar detection



Basic functions

The LIGI is a very powerful safety light curtain equipped with state-of-the-art microprocessor technology. It comes with a very broad capacity range in regard to parameterisation for optimal adjustment to the door types and installation type. It performs a permanent self-test of the internal electronic system and software.

Diagnosis indicators

Setting parameters and service diagnosis are represented by a flashing code of the indicator LEDs. The LIGI monitors all important internal parameters of the electronic system and the software. In case of an error, a flash code is issued.

- LED illuminated
- ☆ LED flashing
- ⊗ LED off

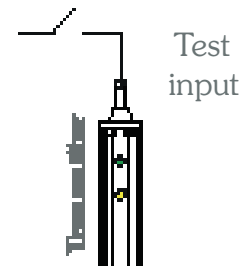
Indicator transmitter	Indicator receiver	Description	Error	Solution
⊗ ⊗	⊗ ⊗		no power supply	Check power supply
☆ ☆ ☆ ☆ ⊗ ⊗ ⊗ ⊗	⊗ ⊗	Yellow LED flashes 3x, long pause	Receiver poles reversed	Check operating voltage for receiver
	⊗ ⊗ ⊗ ⊗ ☆ ☆ ⊗ ⊗	Red LED flashes 2x, long pause	Short-circuit at output	Check output line, overload, incorrectly connected, line faulty, output in light curtain faulty
⊗ ⊗ ⊗ ⊗ ☆ ☆ ☆ ☆	⊗ ⊗ ⊗ ⊗ ☆ ☆ ☆ ⊗	LEDs flash 3x, long pause	Fault in sync line	Check sync line, should only be connected between transmitter and receiver
☆ ⊗ ☆ ⊗ ☆ ⊗ ☆ ⊗	☆ ⊗ ☆ ⊗ ☆ ⊗ ☆ ⊗	All LEDs flashing	Internal device error	Light curtain needs to be replaced

Test inputs / adjustment mode

Function assignment for test input

The test input on the LIGI transmitter is used with time control for two functions.

1. Test of the light curtain using the control
2. Adjustment mode through activation of the test input for at least 15s



Switch variants for test input

	T00	T05
Test input switching	OSE output	SSR output
10 - 30 V DC	Adjustment > 15s	Test Adjustment > 15s
open	Operation	Operation
GND	Operation	Test Adjustment > 15s
Internal test input		

Alignment mode

If the test input is activated for longer than 15s, the LIGI internally measures a receiver signal. The light signal quality is indicated through a flashing code of the indicator LEDs on the receiver. This serves to indicate the signal strength to solve problems with the adjustment, pollution or installation. Furthermore, it is also a helpful function to detect errors if service is needed and during the annual inspection.

activated test input	Transmitter	Receiver	
0 - 15s			LEDs flash in alternation
> 15s		Output of measured value	
			green LED flashes Insufficient light reserve
			green LED on red LED flashes

* The faster the flashing frequency of the red LEDs, the greater the light reserve.

Troubleshooting if the light reserve is insufficient:

clean the LIGI, check adjustment, possibly check installation behind the panel if the LIGI or the panel has shifted.

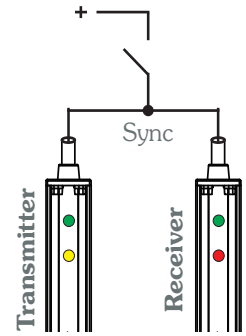
Programmable light control

With light control (default)

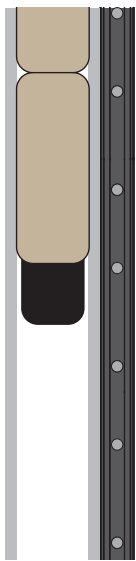
The LIGI is delivered by default with an automated luminance control. The control continuously adapts the luminance to the operating conditions.

Programming luminance directly

For the installation of the LIGI in systems with very high reflective values, e.g. circle-matted structures, stainless steel and reflecting surfaces, the light control functions may be disrupted.



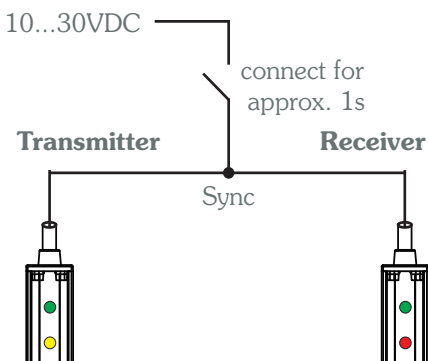
In these cases, the ideal luminance can be taught-in directly by LIGI on the system. This serves to disable the automated luminance control.



Procedure:

1. Door must be open
2. LIGI must be connected and ready for operation
3. LIGI must have uninterrupted free view during the reading of approx. 10s
4. Sync line for approx. 1s connected with the positive pole, reading and setting starts

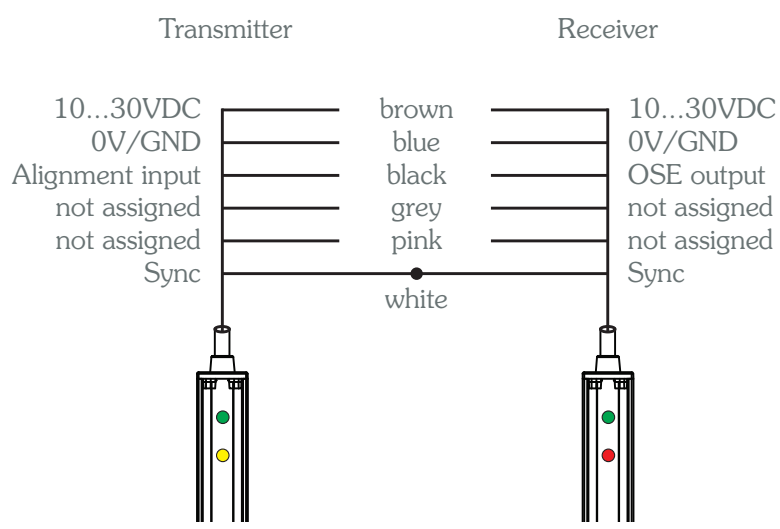
Start (when protected area is vacant)



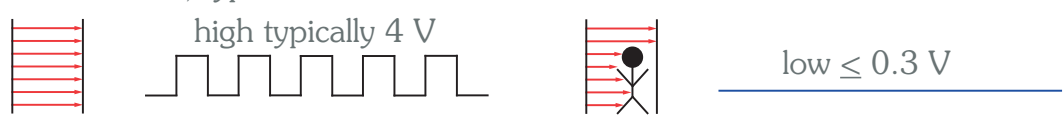
Indicator LEDs on receiver	
Indicator before start protected area vacant	
Programming phase, approx. 10s green on / red flashes	
Programming phase completed Operational	

OSE output

The safety-oriented OSE output is supported by most door controls.

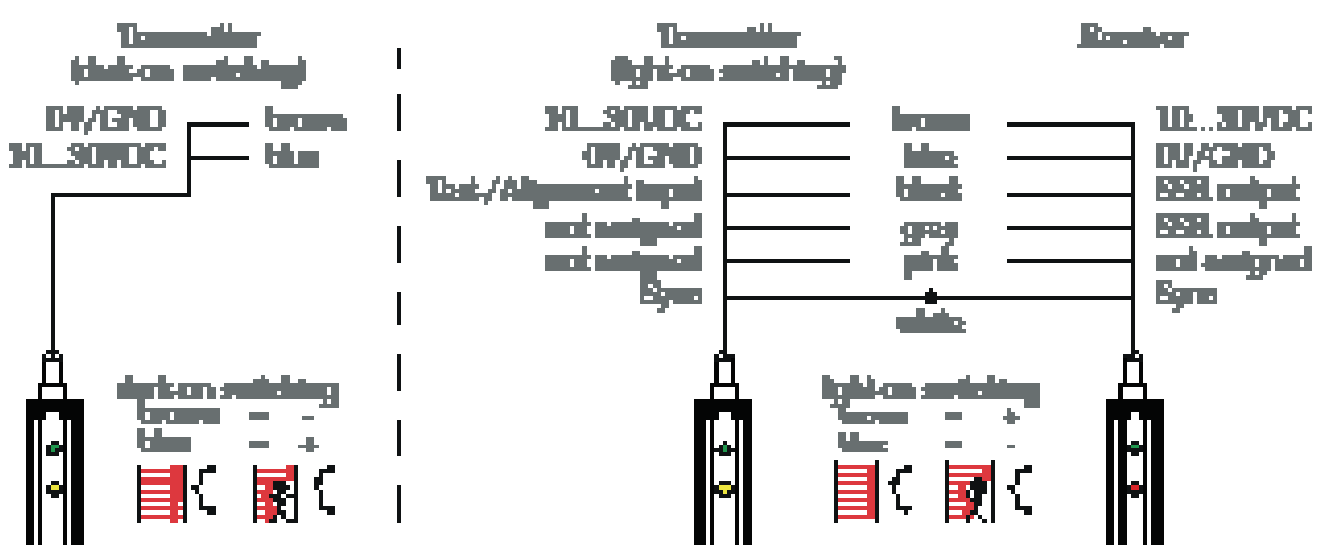


I = max. 20 mA, typ. 950 Hz



SSR semiconductor relay output

The SSR output is a semiconductor relay with potential-free contact.



Order code LIGI - safety light curtain

LIGI-10-S-P01-T00-A-70-1568-C03-F01-S000

Description ←

Housing design ←

10 = standard profile 29x16

Finish ←

S = silver

Output versions ←

OSE = rectangular signal

R03 = SSR - light-on/dark-on switching

Testing ←

T00 = pull-down resistor, only activates the alignment mode

T05 = open is normal operation, test=low or high

Beam geometry ←

A = continuous high detection capability

Active light beams ←

Active detection zone ←

C = Cable length/connector ←

03 = pig-tail connector with M8 plug, 6-pin

F = Function ←

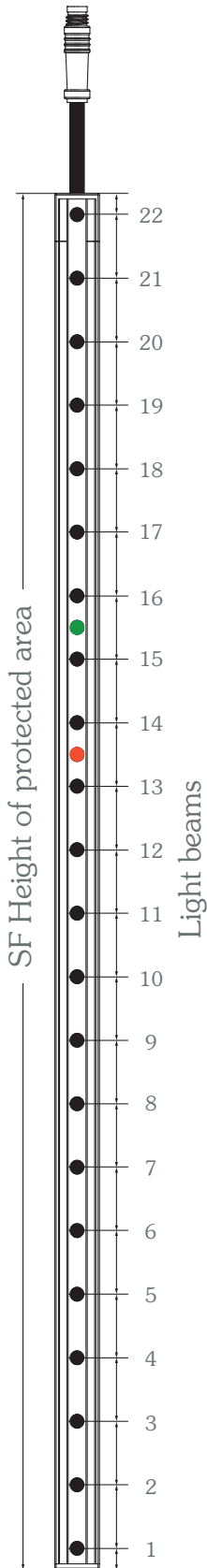
01 = without Blanking

S = Special version ←

000 = standard version

XXX = custom design without functional difference, for example: color, logo, etc.

All LIGI 10s come with a 6-pin plug system. The delivery includes one connecting cable of 5 m and 15 m each.



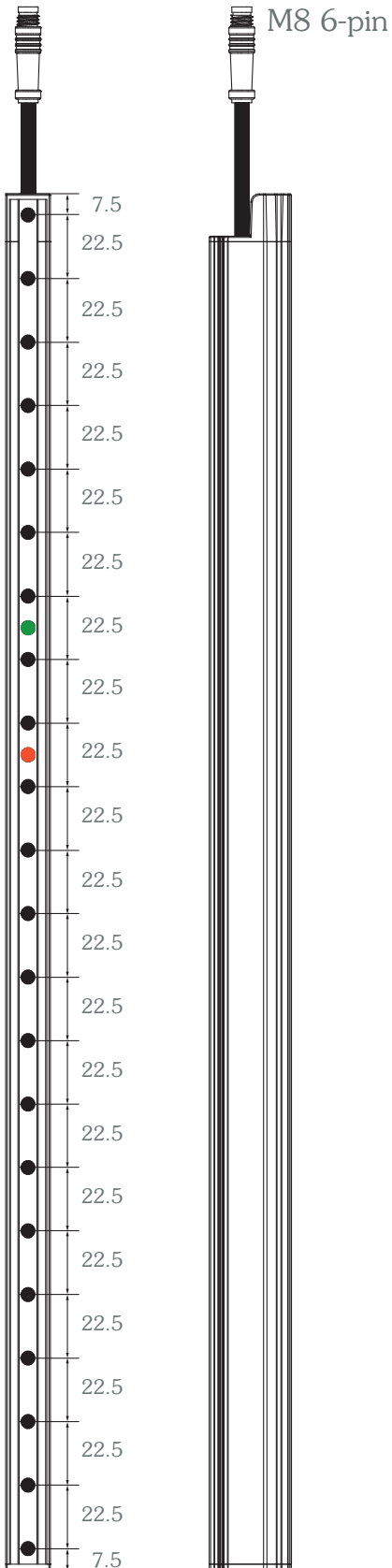
Description	Number of beams	SF	SSR semiconductor relay Item no.:	OSE output Item no.:
LIGI-10 - 14	14	308	322100	321526
LIGI-10 - 16	16	353	322102	321532
LIGI-10 - 18	18	398	322104	321535
LIGI-10 - 20	20	443	322106	321538
LIGI-10 - 22	22	488	322108	321541
LIGI-10 - 24	24	533	322110	321545
LIGI-10 - 26	26	578	322112	321548
LIGI-10 - 28	28	623	322114	321551
LIGI-10 - 30	30	668	322116	321554
LIGI-10 - 32	32	713	322118	321557
LIGI-10 - 34	34	758	322120	321560
LIGI-10 - 36	36	803	322122	321566
LIGI-10 - 38	38	848	322124	321569
LIGI-10 - 40	40	893	322126	321572
LIGI-10 - 42	42	938	322128	321575
LIGI-10 - 44	44	983	322130	321578
LIGI-10 - 46	46	1028	322132	321581
LIGI-10 - 48	48	1073	322134	321584
LIGI-10 - 50	50	1118	322136	321587
LIGI-10 - 52	52	1163	322138	321590
LIGI-10 - 54	54	1208	322140	321593
LIGI-10 - 56	56	1253	322142	321596
LIGI-10 - 58	58	1298	322144	321600
LIGI-10 - 60	60	1343	322146	321603
LIGI-10 - 62	62	1388	322148	321606
LIGI-10 - 64	64	1433	322150	321609
LIGI-10 - 66	66	1478	322152	321612
LIGI-10 - 68	68	1523	322154	321615
LIGI-10 - 70	70	1568	322156	321618

SF = height of protected area

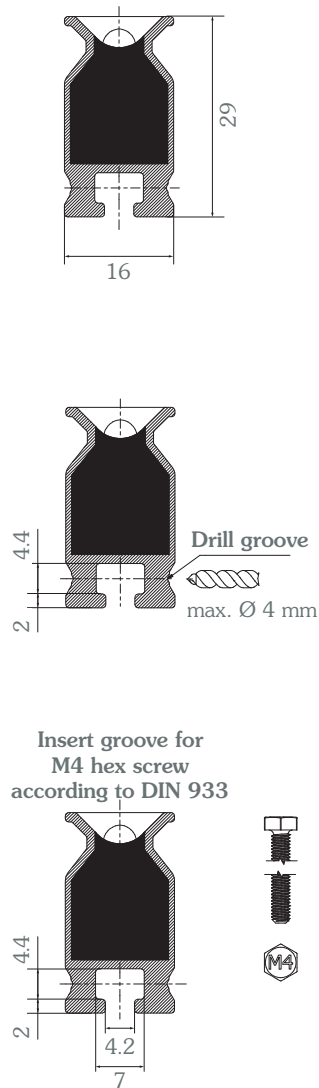
Example: LIGI-10-A-22

Dimensions

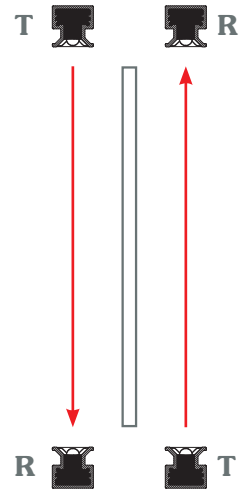
Attachment positions, see type table



Example: LIGI-10-A-22

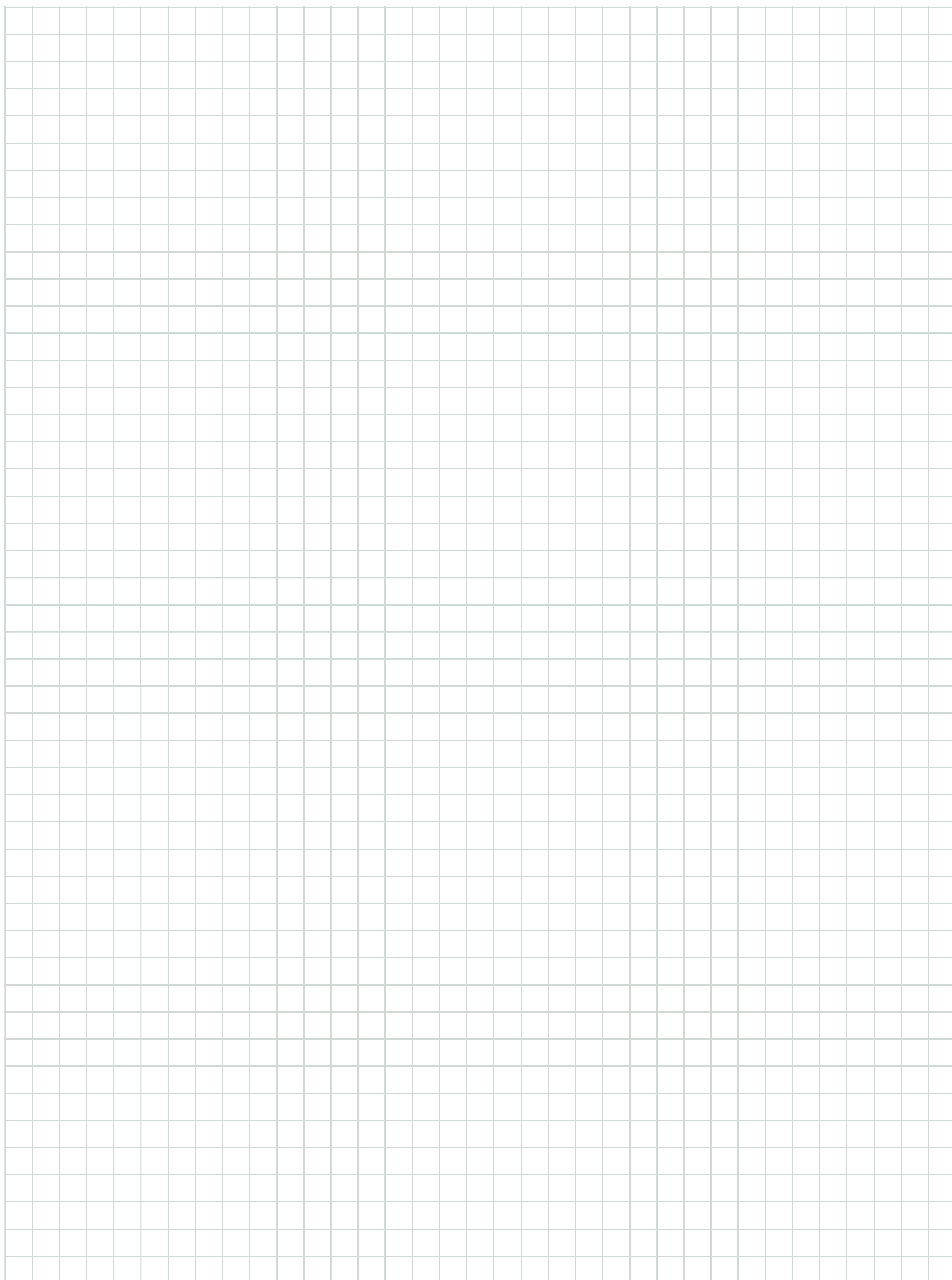


Two-way installation



To minimise the mutual impact of two LIGs, they must be installed alternately.

Notes





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