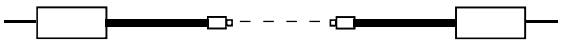
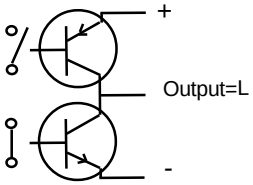
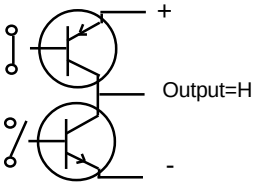
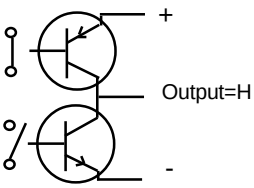
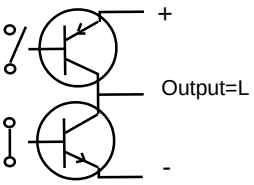
ISO 9001:2008

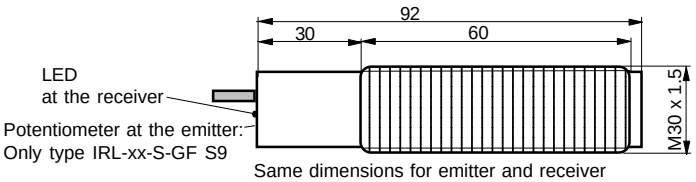
Light Barriers IRL-25. / IRL-50. / IRL-55. / IRL-56.-GF

with fibre optics connection (GF)

- specially for the connection of our multiple glass fiber optics
- applicable for the recognition of smallest objects also in high temperature areas
- for a longer range or a higher penetration capability objective lenses can be fitted on the fibre optics

Technical Data \ Type	IRL-25N-SE-GF IRL-25P-SE-GF	IRL-50N-SE-GF IRL-50P-SE-GF	IRL-55N-SE-GF IRL-55P-SE-GF	IRL-56N-SE-GF IRL-56P-SE-GF
Designation	S: Emitter / E: Receiver			
Base range	dependent of the connected fibre optics			
Optical power	low	average	strong	very strong
Light source	Infrared, 870nm			
Supply voltage range	24VDC (20 to 28VDC)			
Current consumption	Emitter: 40mA / Receiver: 25mA			
Maximum power dissipation	Emitter: 1,12W / Receiver: 0,7W			
Response time	5ms			
Output	Push-Pull, maximum 100mA, short circuit protected			
Temperature range T_{amb}	$-20°C < T_{amb} < +50°C$			
Housing	M30, yellow brass, nickel plated			
Enclosure rating	IP65, EN 60529			
Accessories included	2 nuts M30 (or 2 clamps optional)			
Connection, Cable	2/3(4)+PE x 0.5mm², TPU shielded, wires numbering marked, length: 3m			
Socket, types IRL-..-S/E S99	Socket M12, Lumberg RSF 5			
Application in high temperature areas	up to +400°C / IRL-... with special HT fibre optics (The Sensor must be mounted outside the high temperature area)			
Special Devices	- Switching frequency: Up to 1kHz on request - IRL-xxN/P-E-VA-GF: With pollution indication output VA and 3-color LED - IRL-xxN/P-S-DI-GF Emitter with disable input DI - IRL-25N/P-S/E-GF S9: With adjustable emitter power (Potentiometer at the emitter) - IRL-50-S/E-GF S11: With connector and high temperature optic B82/35H Wiring: 1=+24VDC / 3=0V / 4=Out / 2=NC - IRL-50-S/E-GF S99: With socket M12 - IRL-xxN/P-S/E-GF S99 Wiring: 1=+24V / 2=NC / 3=0V / 4=NC / 5=PE - IRL-56P-E-VA-GF S151: With: - Pollution indication output VA - 3-color LED - Cable numbering marked and shielded - IRL-56-S-DI-GF S151: Emitter with disable input DI - Cable numbering marked and shielded - IRL-50-S-GF S208: With socket M12 and LED (Red = in operation) Wiring: 1=+24V / 2=NC / 3=0V / 4=NC / 5=PE			
Fibre optics connection				
Function and LED indication	 Light beam free LED shows red (S151 = green)		 Light beam interrupted LED turned off (S151 = red)	
IRL-..**N**-E-GF Output N-mode				
IRL-..**P**-E-GF Output P-mode				

Dimensions:

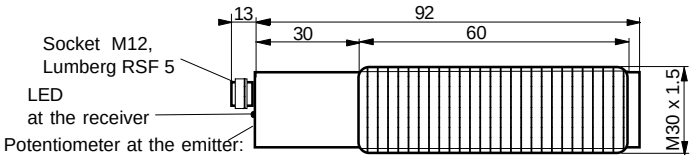


Same dimensions for emitter and receiver

Connection layout:

	IRL-xx-S(-DI)-GF Emitter		IRL-xxN/P-E(-VA)-GF Receiver	
+24VDC	1	brown	1	brown
0V	2	blue/grey	2	blue/grey
Output	--	--	3	black
VA output (optional)	--	--	4	--
DI input (optional)	3	black	--	--
PE	yel-grn	--	yel-grn	--
Cable shield	white	white	white	white

Dimensions IRL-xxN/P-S/E-GF S99:



Same dimensions for emitter and receiver

Connection layout:

	IRL-xx-S(-DI)-GF S99 Emitter	IRL-xxN/P-E(-VA)-GF S99 Receiver
+24VDC	1	1
0V	3	3
Output	--	4
VA output (optional)	--	2
DI input (optional)	4	--
PE	5	5
NC	2	--

Operating Manual / EC - Declaration of Conformity:

Connection prescriptions

The maximum ratings must be observed. The electrical connections must be exactly as shown in the connection diagram. The cable shield must be connected short . The cable shield should be connected to the protection earth large-surfaced. Connection cables must not be installed parallel to high voltage cables. For high temperature applications the special high temperature fibre optics must be used. The sensors must be mounted outside the high temperature area.

Optical power

The optical power of the light barriers, types IRL-..-SE-GF, is dependent of the used type (types 25 to 56) and the type, diameter and length of the fibre optic.

Function IRL-..**P**-S/E-GF

If the light beam between the fibre optics is not interrupted, the output switches to ON (+24V) and the receiver LED shows red. If the light beam is interrupted the output switches to OFF and the LED turns out.

Function IRL-..**N**-S/E-GF

If the light beam between the fibre optics is not interrupted, the output switches to OFF (0V) and the receiver LED shows red. If the light beam is interrupted the output switches to ON (+24V) and the LED turns out.

Output

The output is a push-pull type and the load can be connected to +24V or 0V.

Optional pollution indication output VA

Only when the receiver LED's shows green, the pollution indication output VA switches to +24VDC. (Light barrier well aligned, no pollution or no other impairments). If the receiver LED's shows yellow or red, the output VA is switched to 0V. This function gives the possibility to a fast reaction at polluted lenses.

LED indication. types VA and S151

LED red: Light beam interrupted / not aligned
LED yellow: Polluted lenses / bad aligned
LED green: Light beam free / well aligned

Arrangement of light barriers , types IRL-..-S-GF-DI:

If several light barriers or fibre optics are installed close to another, it is necessary to use light barriers with emitters with disable input. By using the disable input DI, each emitter can be controlled in a short reaction time. If only one emitter is activated in the same time, a mutual influence is precluded.

DI= 0V or not connected = emitter enabled

DI= High (24VDC) = emitter disabled

The Disable Input DI must be activated for >= 15ms. The DI input is PNP compatible.

Controlling by SPS or Matrix Multiplex unit:
Activate a emitter and after a delay of 15ms poll the associated receiver.

Maintenance

No special maintenance is required. If the fibre optics becomes dirty, they should be cleaned with a non-aggressive medium. Equipment must only be repaired by the manufacturer.

Safety Informations

The Light Barrier IRL must not be used for Accident-Prevention! When installing and operating with the light barrier, it is necessary to take into consideration the relevant international and other national regulations.

The sensors are conform to the following standards:
- Machine directive: 2006/42/EC
- EMC directive: 2004/108/EC
- RoHS directive: 2011/65/EU

General notes, disposal:

We reserve the right to modify our equipment. Our equipment is designed such way, that it has the least possible adverse effect on the environment. It neither emit or contain any damaging or siliconized substances and use a minimum of energy and resources. No longer usable or irreparable units must be disposed of in accordance with local waste disposal regulations.

EC-Declaration of Conformity

The conformity of the devices with the EC standards and directives and the observation of the Quality Safety System ISO 9001:2008, declares:

Hans Bracher, Matrix Elektronik AG

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