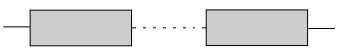
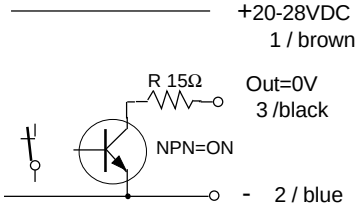
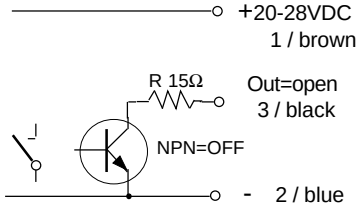
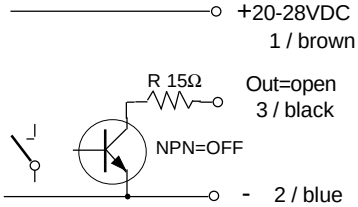
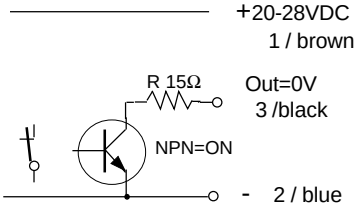
Tippkemper®

ISO 9001:2008 MATRIX elektronik ag

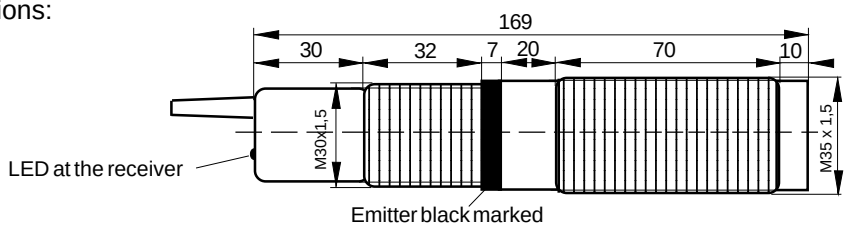
Light Barrier IRL-150NPNII-S/E / IRL-550NPNII-S/E
Housing M30

CE

- Good penetration capacity in polluted areas.
- Optimal alignment help by 3 color LED at the receiver
- Robust light barrier for industrial applications

Technical Data \ Type	IRL-150NPNII-E IRL-150-S	IRL-550NPNII-E IRL-550-S
Designation	S: emitter / E: receiver	
Range	150m	550m
Minimum detectable object size	22mm	35mm
Light source	Infrared 880nm	
Beam pattern, emitter:	appr. 12°	appr. 3.5°
Response time / switching frequency	5ms / 100Hz	6.7ms / 75Hz
Supply voltage	24 VDC (20 to 28VDC)	
Current consumption, emitter	40mA	55mA
Current consumption, receiver	25mA	
Maximum power dissipation, emitter	1.12W	1.54W
Maximum power dissipation, receiver	0.7W	
Output	NPN, 100mA, short circuit protected	
Housing	M30-M35, yellow brass, nickel plated	
Enclosure rating at EN 60529	IP 65	
Operating temperature T_A	$-20°C < T_A < +50°C$	
Connection cable, emitter	2+PE x 0.5mm², PVC, length: 3m	
Connection cable, receiver	3+PE x 0.5mm², PVC, length: 3m	
Accessories included	- 4 nuts M35 (or 2 clamps M30 optional)	
Options	- Emitter with disable input DI, type: IRL-150/550-S-**DI** - Special cable, PUR/TPE, shielded, oil resistant, for cable traying, Length=3m, on request - Cable length up to 100m, on request	
Alignment and Controlling by LED Display	LED red: Light beam interrupted / Not aligned LED yellow: Polluted lenses / Badly aligned LED green: Light beam free / Well aligned	
LED Indication Function	 Light beam interrupted Receiver- LED's shows red	 Light beam not interrupted Rec.-LED's shows yellow or green
Output function at normal connection of the supply voltage: Receiver: / Emitter: 1 / brown = + / 1 / brown = + 2 / blue / grey = - / 2 / blue / gray = - 3 / black = Output / (3 / black= DI) (Shield, only special cables, connect to PE)	 +20-28VDC 1 / brown R 15Ω Out=0V 3 /black NPN=ON - 2 / blue	 +20-28VDC 1 / brown R 15Ω Out=open 3 / black NPN=OFF - 2 / blue
Output function with reversal polarity of the supply voltage for the receiver: Receiver: / Emitter: 1 / brown = - / 1 / brown = + 2 / blue / grey = + / 2 / blue / gray = - 3 / black = Output / (3 / black= DI) (Shield, only special cables, connect to PE)	 +20-28VDC 1 / brown R 15Ω Out=open 3 / black NPN=OFF - 2 / blue	 +20-28VDC 1 / brown R 15Ω Out=0V 3 /black NPN=ON - 2 / blue

Dimensions:



Same dimensions for emitter end receiver

Connection layout:

without disable input:	with disable input DI:				Standard function:	X-Function, inverted output function:
+24VDC	+24V	1/brown		1/brown	+24VDC	0V
0V	0V	2/blue/grey	Emitter	2/blue/grey	0V	24V
--	DI input	3/black		3/black	Output	Output
PE	PE	yellow-green		yellow-green	PE	PE
Cable shield		white	Receiver	white	Cable shield	Cable shield
(Only special cables)				(Only special cables)		

Operating Manual / CE Declaration of Conformity:

General mounting prescriptions:
Do not exceed the maximum ratings. The electrical connections must be exactly as shown in the connection diagram. For types with shielded cables, the cable shield must be connected short. The cable shield should be connected to PE or 0V(-) of the supply voltage. Connection cables must not be installed parallel to high voltage cables.

Function at standard connection of the supply voltage:
If the light beam is not interrupted the NPN output is open. If the light beam is interrupted the output switches to 0V. The load must be connected to +24VDC.

Function at inverse connection of the supply voltage:
If the light beam is not interrupted the NPN output switches to 0V. If the light beam is interrupted the output is open. The load must be connected to +24VDC.

Arrangement of light barriers:
If several light barriers are installed close to another, each light barrier has an influence on each other. For an arrangement with multiple light barriers please choose the type IRL-150/550-S-DI.

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

Alignment of the Light Barrier
The receiver should be moved, until the LED shows "green". Search the middle of the green range.

Maintenance
No special maintenance is required. If the lenses becomes dirty, they should be cleaned with a non-aggressive cleaning liquid. Equipment must only be repaired by the manufacturer.

Safety Informations
The light barriers must not be used for Accident-Prevention! In worst case the output can change to any state!When installing and operating with the light barrier, it is necessary to take into consideration the relevant international and other national regulations.
Standards met:
- EN 61000-6-1/-2, EN 61000-6-3/4; EN 60529
- Machine directive: 2006/46/EC
- Low voltage directive: 73/23/EWG, 93/68/EWG
- EMC: 89/336/EWG, 93/68/EWG
- RoHS: 2002/95/EC

General Notes
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.

CE Declaration of Conformity
The conformity of the devices with the relevant EC standards and directives and the observation of the Quality Management System ISO 9001:2008, declares:

Hans Bracher, Matrix Elektronik AG

IRL150_550_NPN2_e6,2010-06-24/HB

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