

Light Barriers IRL/ILN/ILD-201-S/E

ILD-201-S/E



II 2 G EEx d IIC T6
II 1/2 D IP67 T90°C

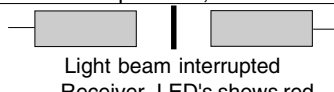
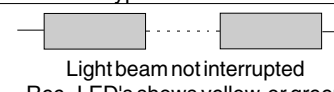
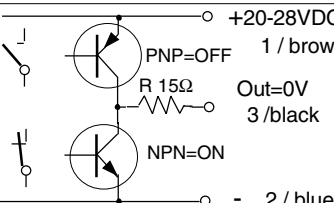
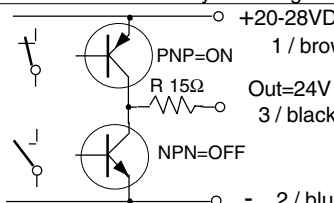

Housing M30

- Good penetration capacity in polluted areas.
- Optimal alignment by visualization by LED into receiver optic
- red illuminated emitter lens
- short response time
- robust light barrier for industrial applications

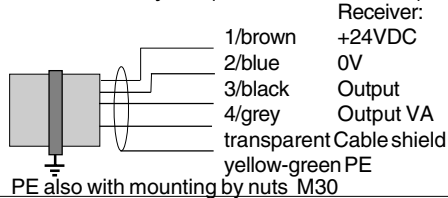
ILN-201-S/E-GD



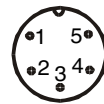
II 3 G EEx nA II T6
II 3 D IP67 T90°C

Type	IRL-201-S/E (-S39)	ILN-201-S/E-GD (-S39)	ILD-201-S/E
Technical Data			
Type of Ex protection, Gas at 09/9EC	none	II 3 G EEx nA II T6	II 2 G EEx d IIC T6
Type of Ex protection, Dust at 09/9EC	none	II 3 D IP67 T90°C	II 1/2 D IP67 T90°C
Applicable in Ex Zones	--	2, 22	1, 2, 20/21, 22
Designation	I...-201-S: emitter / I...-201-E: receiver		
Range	120m		
minimum detectable object size	22mm (avoid mirror effects)		
Light source	Infrared 880nm		
Beam pattern (on a distance of 10m)	Emitter: appr. 8° / Receiver: appr. 12°		
Response time / switching frequency	14ms / 75Hz		
Supply voltage	24 VDC (20 to 28VDC)		
Current consumption, emitter	45mA		
Current consumption, receiver	40mA		
maximum power dissipation	Emitter: 1.26W / Receiver: 0.7W		
Output	Push-Pull, 100mA, short circuit protected		
Output, pollution indication "VA"	Push-Pull, 100mA, short circuit protected		
Housing	M30, yellow brass, nickel plated		
Protection rating at EN 60529	IP 65	IP 67	IP67
Operating temperature TA	-20°C < TA < +50°C		
Connection cable	2/4+PE x 0.5mm ² + Shield / L=10m		
Connection, IRL/ILN-201-S/E(-GD)-S39	Connector, Binder series 423 (09-0115-00-05), 5 terminals		
Accessories, included, all types	- 4 nuts M30 (or 2 clamps M30 optional)		
Accessories, included, only type ILN-201S39	- 2x Warning plate "Do not separate when supply voltage connected", self-sealing, for gluing on the cable connectors. - 2x Warning plate "Do not separate when supply voltage connected", self-sealing, for gluing on the threaded joint of the cable connectors. - 2x Protection cap for the sensor connectors.		
Accessories optional	- Cable connector for ILN... S39, Binder 423, 5 terminals		
Options	- Emitter with disable input DI: Type: I...-201-S-DI - Special lense glueing (high solvent resistant): Type: I...-201-S/E S94 - Cable length up to 100m - with fitted optic M42, Type: I...-201-S/E / M42		
LED Indication Function			
Output and connection diagram:			
Pollution indication output VA	VA-Out = 0V		VA=24V only if LED=GREEN
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 visible red light illuminated emitter lens		
ATEX related designations	CE 0158 Manufacturer with address Device type  LD: II 2 G, II 1/2 D IP67 T90°C / ILN: II 3G, II 3D IP67 T90°C Certification number: ILD: DMT 99 ATEX E 056/N1 TA: -20° < TA < 50° Electrical data according to the chart Date of construction: Numeral 4 and 5 of the serial number		

Connection layout (Devices with cable):



Connection devices with connector (only types IRL/ILN S39):



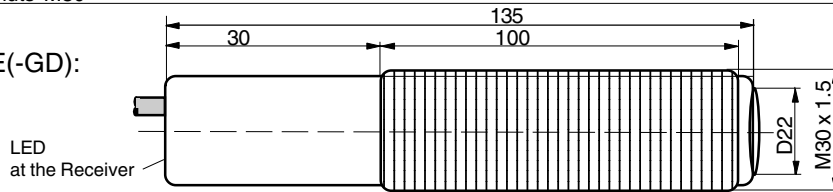
Binder Serie 423

Receiver:	Emitter:
1 +24VDC	+24V
2 0V	0V
3 Output	DI (Disable)
4 OutputVA, pollution indication	NC
5 PE	PE

Dimensions

IRL/ILN/ILD-201-S/E(-GD):

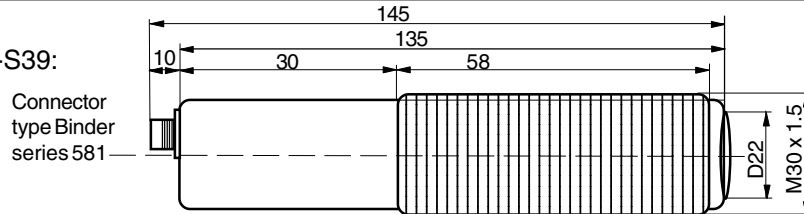
Same dimensions for Emitter and Receiver



Dimensions

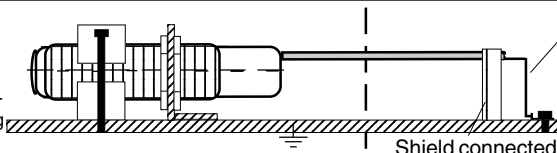
IRL/ILN-201-S/E(-GD)-S39:

Same dimensions for Emitter and Receiver



Equipotential Bonding at Ex Devices:

For Sensors without PE-Wire, the equipotential bonding is to realize by the housing with the nuts M30.



The end of the cable must be connected outside the hazardous locations.
 Reliable, noncorrosive holding of the protection earth connection.
 Shield connected to PE in a wide area

Operating Manual / EC - Declaration of Conformity:

Ex Protection:

It is necessary to take into consideration the valid international and national rules and regulations (EN 60079-14). The local equipotential bonding have to be done. The protective earth (PE) is solid connected with the housing. The cable have to be installed and protected against damages. To connect cables inside hazardous locations only use certificated Ex e housings. All cable terminals must be connected outside hazardous locations. Protect the cable against damages. Additional optical lenses are not allowed in hazardous locations. Type: ILD-... is applicable in Ex Zones 1 and 20/21. For the zones 20/21 only the front part (optical lens) can be mounted inside the zone 20. The rear part with the cable must be in the zone 21.

Type: ILN-...-GD is only applicable in Ex zones 2 and 22. Special prescriptions for the type ILN-201-S/E-GD S39: Do not open or close the connector when the supply voltage is connected to the cable. When installing the sensor, the additional adhesive warning labels must be fixed to the connector housings at the connection cables end there screwing. Only connectors, Binder series 423, are allowed. It is necessary to take into consideration the mounting prescription of the connector manufacturer. In dusty locations, the protection caps for the connector at the sensors must be fitted, when the cables are not connected.

General mounting prescriptions:

Do not exceed the maximum ratings. 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 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 output switches to ON (+24V). If the light beam is interrupted the output switches to 0V. The load can be connected between the output and +24VDC or 0V.

Function at inverse connection of the supply voltage:

If the light beam is not interrupted the output switches to ON (0V). If the light beam is interrupted the output switches to +24VDC. The load can be connected between the output and +24VDC or 0V.

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.

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/ILN/ILD-201-S-DI.

Arrangement of light barriers, type I.-201-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 >= 10ms.

The DI input is PNP compatible.

Alignment of the Light Barrier

The three color indication in the receiver optic allows an optimal alignment.

1. The emitter must be aligned this way, that the emitter lens is fully illuminated (By watching from the receiver at the emitter).
2. The receiver should be moved, until the LED (from the receiver) 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 barrier I.-201-S/E 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. ATEX 118a, ElexV, TRbF, TRD, UVV, EX-RL (BGR 104), BetrSichV (ATEX 137).

Standards met:

- EN 50014, Type ILD: EN 50018, Type ILN: EN 50021
- EN 50281-1-1; EN 61000-6-1/-2, EN 61000-6-3/4; EN 60529
- Ex Protection: 94/9/EG (ATEX 100a)
- Machine directive: 98/37/EG
- Low voltage directive: 73/23/EWG, 93/68/EWG
- EMC: 89/336/EWG, 93/68/EWG / - RoHS: 2002/95/EG

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.

Declaration of Conformity / Approvals:

DMT 99 ATEX E 056/N1

The conformity of the devices with the EC standards and directives and the EC-type examination certificate and the observation of the Quality Safety System ISO 9001:2000 with the ATEX module "Production", declares:

Hans Bracher, Matrix Elektronik AG