

IDENTIX IDR-11xxP / IDN-11xxP-GD / IDD-11xxP-GD



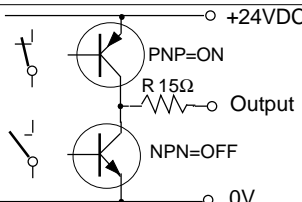
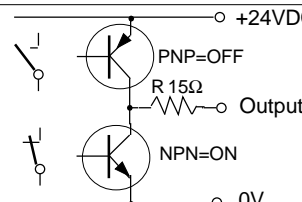
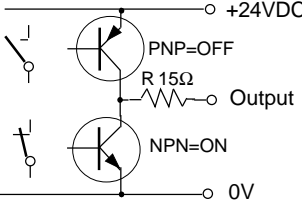
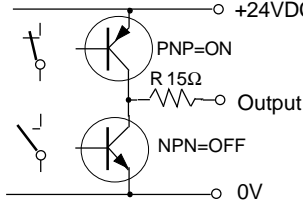
Photo-Sensors with TEACH-IN function and adjustable sensitivity

IDD-11..P-GD
Housing M30
IDN-11..P-GD

 II 2G Ex d IIC T6 Gb
 II 2D Ex tb IIIB T90°C Db IP67

- Adjustment by "Teach-In" function
- Well applicable with different fibre optics
- Infrared, red or yellow light sources
- Fine adjustable sensitivity
- Types IDD...-GD: Applicable in Ex zones 1, 2, 21, 22
- Types IDN...-GD: Applicable in Ex zones 2, 22


 II 3G Ex nA IIB T4 Gc
 II 3D Ex tc IIIA T135°C Dc IP67

| Technical data | Types IDR | IDR-1130P | IDR-1131P | IDR-1150P | IDR-1190P |
|---|---|---|---|--|---------------|
| | Types IDN | IDN-1130P-GD | IDN-1131P-GD | IDN-1150P-GD | IDN-1190P-GD |
| | Types IDD | IDD-1130P-GD | IDD-1131P-GD | IDD-1150P-GD | IDD-1190P-GD |
| Light source | | 870nm, infrared | 870nm, infrared | 630nm, red | 590nm, yellow |
| IDD-11xxP-GD: Type of Ex protection Gas, at 94/9/EC | II 2G Ex d IIC T6 Gb | | | | |
| IDD-11xxP-GD: Type of Ex protection Dust, at 94/9/EC | II 2D Ex tb IIIB T90°C Db IP67 | | | | |
| IDD-11xxP-GD: Applicable in Ex zones | Zones 1, 2, 21, 22 | | | | |
| IDN-11xxP-GD: Type of Ex protection Gas, at 94/9/EC | II 3G Ex nA IIB T4 Gc | | | | |
| IDN-11xxP-GD: Type of Ex protection Dust, at 94/9/EC | II 3D Ex tc IIIA T135°C Dc IP67 | | | | |
| IDN-11xxP-GD: Applicable in Ex zones | Zones 2, 22 | | | | |
| Working space, at white paper 30cmx20cm | appr.10 - 400mm | appr.400 - 1000mm | | appr.10 - 400mm | |
| Response time | 7.5ms | | | | |
| Time for TEACH-IN | 180ms | | | | |
| Supply voltage | 24VDC +10% | | | | |
| Current consumption | 60mA | | | | |
| Max. power dissipation | 1.7W | | | | |
| Output | PNP, max. 100mA, short circuit protected | | | | |
| Input TEACH-IN | PNP compatible | | | | |
| Potentiometer for fine adjustment | Yes | | | | |
| Housing | M30, brass, nickel plated | | | | |
| Enclosure rating, at EN 60529 | IDN and IDD: IP 67 / IDR: IP 65 | | | | |
| Vibration and shock resistance | Vibration: 30g over 20Hz to 2kHz. Shock: 100g for 3ms | | | | |
| Working temperature range Tamb | -10°C < Tamb < +50°C | | | | |
| Storage temperature range | -20°C ... +70°C | | | | |
| Connection cable, length: IDR=3m, IDN/IDD=10m | 4+PE x 0,5mm ² , TPU, shielded, leads numbering marked, halogen free | | | | |
| Socket, only IDR/IDN-11xxP(-GD)-S99 | M12, Lumberg, RSFM-5 | | | | |
| Accessories included, all types | 2x Nuts M30 (or 1x clamp on request) | | | | |
| Accessories, only IDN/IDD-11xxP-GD | 1x Spare safety screw with packing ring for potentiometer sealing | | | | |
| Accessories, only IDN-11xxP-GD-S99 | - Safety lock device, mount at the cable connection, for locking the connection. - 1x Warning plate "WARNING - Explosion Hazard - Do Not Disconnect While Circuit is Live Unless Area Is Known To Be Non-Hazardous", self-sealing, for gluing on the cable connector - 1x Dust-protection cap for the sensor socket | | | | |
| Accessories, not included, IDR/IDN-11xxP(-GD)-S99 | - Cord set M12, types RKTS 5-298/xx or RKWTH 5-298/xx, Lumberg | | | | |
| Options: IDR/IDN/IDD-1151P(-GD) | - Same specifications as IDx-1150P(-GD), reduced optical power, output during TEACH-IN not activated. Range: 1.5cm to 10cm, on white paper. | | | | |
| ID.-1132P/1152P/1191P(-GD) | - Same specifications as base devices, reduced optical power. | | | | |
| ID.-1133P(-OP) | - reduced optical power IDx-1131P(-GD), increased optical power, 0.5m-3m on white paper, special for light barrier applications with wide area fibre optics QW. | | | | |
| IDR/IDN-11xxP(-GD)-S99 | - Socket M12: Lumberg RSFM 5, 5 pins. | | | | |
| IDR-1150P-S104 | - Response time: 1.25ms, reduced optical power, special for light barrier applications with fibre optics. Cable: 10cm, with socket M12, Binder 713/4-pins. | | | | |
| IDR-1150P-S123 | - Response time: 0.8ms, reduced optical power, special for light barrier applications with fibre optics. Cable: 10cm, with socket M12, Binder 713/4-pins. | | | | |
| ID.-1150P(-GD)-S182 | - Same specifications as IDx-1150P, increased optical power, special for light barrier function, for glass detection. Response time: 200ms. With special optical tubes at the fibre optic probes M18 at the emitter and receiver probe. (Special Tubes M18/90/8). | | | | |
| Fibre optics connection |  | |  | | |
| Function: | LED | TEACH-IN | | At measurement | |
| At Teach-In the sensor measure the quantity of diffuse reflected light and save this reference value. During normal running the actual measured value will be compared with the saved reference value. If more or less quantity of light received, the output will be switched OFF. The tolerance of allowable difference can be adjusted by the potentiometer. | LED shows RED | At activated TEACH-IN: No valid reference data measured. Output = OFF IDR/IDN/IDD-1151P: Output not served | | Actual measured value is greater or less than the reference value, including the tolerance, determinately by the potentiometer. Output = OFF | |
| | LED shows GREEN | At activated TEACH-IN: Valid reference data measured and saved. Output = ON IDR/IDN/IDD-1151P: Output not served | | Actual measured value equal to the reference value, within the determinately tolerance. Output = ON. | |
| Function of the output at measurement and LED display: | LED = GREEN | | LED = RED | | |
| Output function at standard wiring of the supply voltage: Cable: S104 / S123: Socket S99: |  | |  | | |
| Output function at reversed wiring of the supply voltage: Cable: S104 / S123: Socket S99: |  | |  | | |

Dimensions and wiring
IDD-11xxP-GD
IDN-11xxP-GD:

Wiring
IDN/IDD-11xxP-GD:
1 +24VDC
2 0V
3 Output
4 Input Teach-In
white Cable shield
yellow-green PE

Dimensions and wiring
IDN-11xxP-GD-S99:

Wiring
IDR/IDN-11xxP(-GD)-S99:
1/brown +24VDC
2/white Input Teach-In
3/blue 0V
4/black Output
5/grey PE

Dimensions and wiring
IDR-11xxP-S99 (socket)
IDR-11xxP (cable):

Wiring
IDR-11xxP:
1 +24VDC
2 0V
3 Output
4 Input Teach-In
white Cable shield
yellow-green PE

Equipotential bonding prescription for Ex devices:

The end of the cable must be connected outside the hazardous location. Check the reliable, noncorrosive holding of the protection earth connection.
The cable shield is to connect to PE in a wide area.

Connection "Teach-In"
TEACH-IN, min. hold time: >= 180ms

ATEX related designations:
CE 0158 Manufacturer with address
Type IDD-...-GD: II 2G Ex d IIC T6 Gb, II 2D Ex tb IIIB T90°C Db IP67
Type IDN-...-GD: II 3G Ex nA IIB T4 Gc, II 3D Ex tc IIIA T135°C Dc IP67
Tamb: -10°C < Tamb < +50°C
(X designation of the certification number: Fibre optics must only be applied with sensors with certificated limited optical power)

Electrical data according to the chart
EC Type Certification. Number: BVS 10 ATEX E 130 X DEKRA
Declaration by manufacturer at 94/9/EC
Date of production: Numeral 5 to 8 of the serial number (Year/Week)

Operating Manual and EC - Declaration of Conformity:

LED red: Actual measure value is out of the permitted range. (The permissible tolerance range can be adjusted by the potentiometer) .
Output = OFF.

If the sensor not recognize the difference between the reference value to the actual measure value turn the potentiometer to the left side or optimize the measure set-up.

Adjustment of sensitivity
Position and measure the reference and actual object. Narrow the measuring range by tuning the potentiometer to the left until the optimal measurement accuracy has been achieved.

Output Function
By reversal connection of the supply voltage, the output function can be inverted. The LED doesn't change the function.

Fibre optics
For efficiently detection solutions look for our multiple program of fibre optics, also for high temperature areas. For Ex zones only approved fibre optics are allowed.

Maintenance
Protect the sensor and the optional fibre optics against pollution. The adjustment of the Teach-In must be repeated at regular intervals, depending on use, after several days or at the latest approximative six months. If the fibre optics or the sensor lenses are contaminated, clean with alcohol. Do not use aggressive solvents. Optical fibres can be destroyed by strong solvents. Equipment must only be repaired or serviced by the manufacturer.

General safety instructions
Devices IDN-11xxP-GD-S99: "WARNING - EXPLOSION HAZARD - WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES. DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS". The mounting of the sensor in dusty locations without fixed cordset or protection cap results in a high ignition risk. The sensors must not be used for Accident-Prevention! In worst case the output can change to any state! When installing and operating with the sensor, it is necessary to take into consideration the relevant international and other national regulations:
EN 60079-14, ATEX 118a, single directive 1999/92/EC.
The sensor and the fibre optic are conform to the following standards:
EN 60079-0:2012 + a11:2013, EN 60079-1:2007, EN 60079-15:2010, EN 60079-31:2010, EN 60825-1:2006, EN 60825-2:2004, EN 60529:2014, EN 61000-4-2 to EN 61000-4-6, EN 61000-6-1/-2, EN 61000-6-4. ATEX directive: 94/9/EC (ATEX 100a), Machine directive: 2006/42/EC, EMC directive: 2014/30/EU, RoHS: 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
Model IDD: EC-Certification No. BVS 10 ATEX E 130 X. DEKRA.
Model IDN: ATEX declaration by manufacturer at 94/9/EC
ATEX certification of quality type production of Ex devices at the directive 94/9/EC Certification No: BVS 12 ATEX ZQS / E118. 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 9001:2008 with the ATEX module "Production", declares:
Hans Bracher, Matrix Elektronik AG

Installation prescriptions for hazardous locations
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 maximum input voltage Um=30VDC must not be exceeded. The cable have to be installed and protected against damages. The cable with termination fittings, or in cable tray systems and installed in a manner to avoid tensile stress at the termination fittings. To connect cables inside hazardous locations only use certificated Ex housings. All cable terminals must be connected outside hazardous locations. Other than original manufacturer, additional optical lenses are not allowed in hazardous locations. In Ex zones 21 and 22, do not operate the sensors without fixed dustproof sealing crew. After adjust the potentiometer, the dustproof sealing crew with undamaged packing ring, must be screwed down. Damaged or lost screws or packing rings must be replaced.
Type IDD-11xxP-GD: Applicable in Ex zones 1, 2, 21, 22.
Type IDN-11xxP-GD: Only applicable in Ex zones 2, 22.
Type IDN-11xxP-GD-S99: Only applicable in Ex zones 2, 22. Do not separate the connector when the supply voltage is connected to the cable. When installing the sensor, the safety lock device must be fitted at the cable connector. The additional adhesive warning label must be fixed to the connector housing at the connection cable. Lumberg cordsets RKTS 5-298/xx (Straight type) RKWTH 5-298/xx (Right angle type), are allowed ONLY. It is necessary to take into consideration the mounting prescription of the connector manufacturer. In dusty locations, the protection cap for the sensor socket must be fitted, when no connection cable is 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 the protection earth, large-surfaced. Connection cables must not be installed parallel to high voltage cables. The cable shield is to connect at PE.

TEACH-IN
Because the IDENTIX sensor compares a memorized reference value with a actual measure value, first a reference value must be memorized. The reference value will be picked-up by the TEACH-IN function and memorized in an EEPROM. (Data holding >= 5 years). TEACH-IN is activated by a +24VDC pulse. With the potentiometer, the tolerance range for the permitted deviation can be adjusted. (Left turn = small tolerance; right turn = great tolerance). The potentiometer has no influence to the range of the sensor.

Running TEACH-IN:
Turn the potentiometer to the right side (great tolerance). Place the measuring object in front to the sensor and activate TEACH-IN.
LED shows green: Valid measure value picked-up and memorized. The output will be switched to +24VDC during TEACH-IN.
LED shows red: No valid reference value picked-up. The output will be switched to 0V during TEACH-IN.
Optimize the measure set-up.

At the types IDR/IDN/IDD-1151P(-GD) the output will not be influenced by the TEACH-IN function.

Optimizing of the measure set-up:
Change the distance from the sensor to the measure object or select an other fibre optic and repeat TEACH-IN.

At measurement:
LED green: Actual measure value equal to the reference value with adjusted tolerance
Output = ON.

IDN-11xxP-GD_e27/2016-03-07/HB

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