

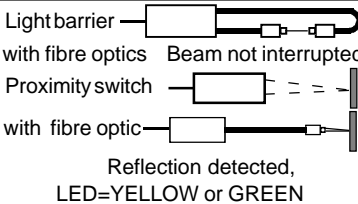
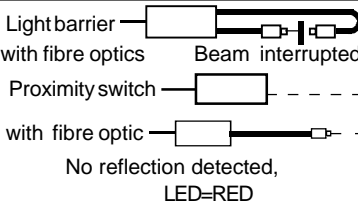
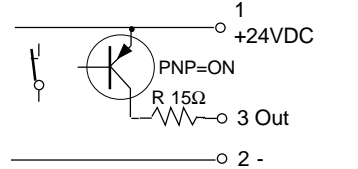
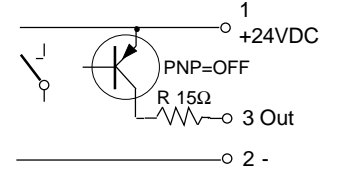
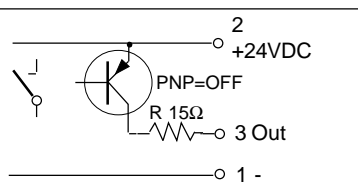
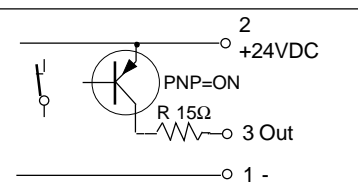
Photoelectric Proximity Switch IRD - .. - XC-316ss

Housing M30, stainless steel 316

IRD-..-XC-316ss

- Applicable with different fibre optics
- Applicable in Ex Zones 1, 2, 20/21, 22
- Robust sensor for industrial applications
- Housing in stainless steel 316 (1.4436)

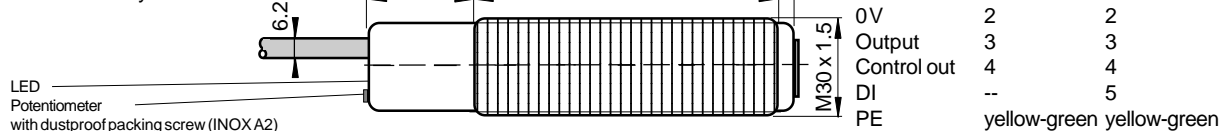

 II 2G Ex d IIC T6
 II 1/2D Ex tD A20/21 IP67 T90°C

Technical Data	Type	IRD-5/10/15/20/30-XC-316ss	
Type of Ex protection Gas, at 94/9/EG		II 2G Ex d IIC T6	
Type of Ex protection Dust, at 94/9/EG		II 1/2D Ex tD A20/A21 IP67 T90°C	
Applicable in Ex zones		1, 2, 20/21, 22	
Range (adjustable) (on white paper. A4. 80g)		IRD-5-XC-316ss = 0.5m IRD-10-XC-316ss = 1.0m IRD-15-XC-316ss = 1.5m IRD-20-XC-316ss = 2.0m IRD-30-XC-316ss = 3.0m	
Response time		5ms	
Power up delay time		150ms	
Light source		Infrared, 880nm	
Optical beam angle (Distance 2m)		appr. 12°	
Maximum radiant intensity		5mW/mm²	
Maximum optical output power		32mW	
Supply voltage		20VDC - 28VDC	
Maximum current consumption		60mA	
Maximum power dissipation		1.4W	
Output		PNP, short circuit protected, maximum 100mA	
Control output (Pollution indication)		PNP, short circuit protected, maximum 100mA	
Output impedance		maximum 15Ω	
Emitter disable input, only types ...-DI		PNP compatible, Ri=10kΩ	
Housing		M30 x 135mm	
Housing, material		Stainless steel 1.4436 (X3CrNiMo17-13-3)	
Enclosure rating, at EN 60529		IP67	
Operating temperature range TA		-20°C < TA < +50°C	
Vibration and shock resistance		Vibration: 30g over 20Hz to 2kHz. Shock: 100g for 3ms	
Connection cable, diameter: 6.2mm		5 (4+PE) x 0.5mm², shielded, TPE, oil resistant, for cable traying, Length=3m	
Connection cable, IRD-..-XC-316SS-DI, dia: 6.7mm		6 (5+PE) x 0.5mm², shielded, TPE, oil resistant, for cable traying, Length=3m	
Accessories		- 1x Spare safety screw with packing ring for potentiometer sealing. Spare part No: M030 0195 (M4x5 BN 660, material: INOX A2) - 1 clamp (polypropylene, on request or 2 nuts M30 (brass, nickel plated), on request	
Options		- Cable length: Up to 100m, on request - IRD-..-XC-316SS-DI: With emitter disable input - IRD-10-XC-316SS-2kHz: Switching frequency 2kHz - IRD-5-XC-316SS-5kHz: Switching frequency 5kHz	
Function and LED display			
Function at standard supply voltage wiring:			
Function at reversed supply voltage wiring:			

IRD-30-XC-316SS_e5/2010-06-30/HB

Dimensions

Connection layout:

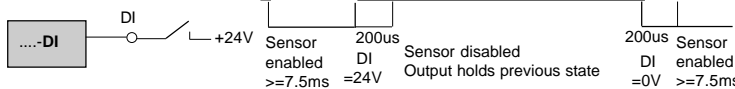


....-DI (with optional Disable Input)

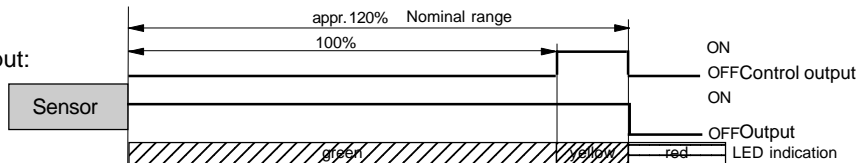
Uin: 18V-28VDC, DI=+24V=Disable

Response time: <=200us

Hold time: >=7.5ms, DI = 0V=Enable



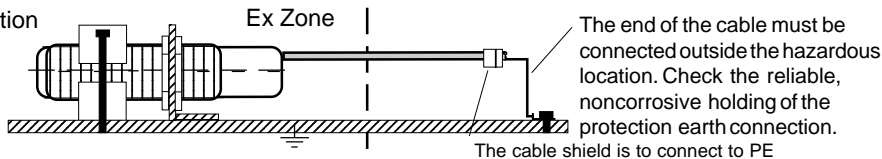
LED indication and function control output:



ATEX RELATED MARKINGS ON THE SENSORS:

CE0158
 Device type: IRD...XC-316ss: II 2G Ex d IIC T6, II 1/2D Ex tD A20/A21 IP67 T90°C
 TA: -20°C < TA < +50°C
 Manufacturer with address: Production date: Numbers 4 to 7 of the serial number
 Certification number: DMT 99 ATEX E 056. DEKRA
 Electrical data according to the chart

Equipotential Bonding prescription for Ex Devices:



Operating Manual, EC-Declaration of Conformity:

Mounting prescriptions

Ex Protection:

The types IRD...XC-316ss are only applicable in Ex zones 1, 2 and 20/21, 22. 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. It is necessary to take into consideration the valid international and national rules and regulations (EN 60079-14). The maximum input voltage Um=30VDC must not be exceeded. 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. 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. Additional optical lenses are not allowed in hazardous locations. In Ex zones 20/21 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.

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. Do not exceed the maximum ratings.

Function

The sensor works basically as proximity switch on diffuse optical reflections. If the sensor detects reflected light, the output switches to +24VDC or 0V dependent of the polarity of the supply voltage. If the sensor works under safe conditions the LED shows green. If the sensor detects only poor reflected light, the LED shows yellow and the Control Output switches to +24VDC. If no reflected light will be recognized, the LED shows red, the outputs switches to 0V and the control-output is switching OFF. The load on the outputs must be connected to 0V.

Sensors with disable input, types IRD...XC-316ss-DI:

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

DI= 0V or not connected = emitter enabled
 DI= High (24VDC) = emitter disabled
 For a correct function the sensor must be enabled for at minimum

>= 7.5ms (DI=0V). If the DI input will be disabled, the outputs holds the previous output status from the last enabled time. The DI input is PNP compatible.

Maintenance

For a high reliability hold the lens and the mirror free from sediment. No special maintenance is required. If the lens or the mirror becomes dirty, they should be cleaned with a non-aggressive cleaning liquid. Equipment must only be repaired by the manufacturer.

Safety Informations

In Ex zones 20/21 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. The sensor IRD...XC-316ss 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, ElexV, TRbF, TRD, UVV, EX-RL(BGR104), BetrSichV(ATEX137), directive 1999/92/EC
 Standards met:
 EN 60079-0:2004, EN 60079-1:2004, EN 60079-15:2005, EN 60241-0:2004, EN 61241-1:2004; EN 60825-1:2006, EN 60825-2:2004; EN 60529:2000; EN 60950-1:2006; EN 61000-4-2 to EN 61000-4-6, EN 61000-6-1/-2, EN 61000-6-4
 - Ex protection: 94/9/EC (ATEX 100a)
 - Machine directive: 2006/46/EC
 - EMC: 89/336/EWG
 - RoHS directive: 2002/95/EC

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.

CE Declaration of Conformity

EC-Certification of conformity: DMT 99 ATEX E 056, DEKRA ATEX certification of quality type production of Ex devices at the directive 94/9/EC Certification No: BVS 03 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

IRD-30-XC-316SS_e5/2010-06-30/HB

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