M18 SENSOR SUITE SERIES CATALOG

INPROX SENSORS

Photoelectric Suite Series M18

InterXPlus

Laser
Infrared
Visible Red

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Complete Suite of M18 sensors:
LED Infrared
LASER
Visible Red
10-30 Vd.c. power supply
90 (radial) & Straight (axial) optics with flat surface
Retro-Reflective units for special transparency detection
IP67
Metal (NBT) or Plastic (PBT) housings
Total protection against any type of electrical damage
CE UL cUL Listed and Approved

3 **3 YEAR WARRANTY**

Technical and functional description

M18
Short Body & Standard Lengths
Radial & Axial Optics
Radial & Axial Cable
Radial & Axial M12 Connectors

Diffuse Proximity with visible red emission-range up to 5-10 cm

Diffuse Proximity with infrared emission up to 20-40-100 cm (axial) / 20-40-80 cm (radial)

Diffuse Proximity with a range up to 10 cm - focused laser emission

Retro-reflective with an infrared emission - range up to 4 m

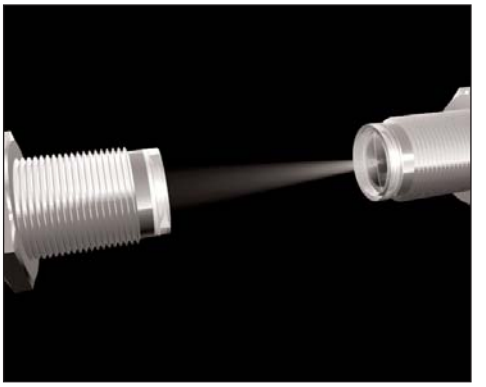
Polarized retro-reflective with red emission - range up to 3 m (2 m radial)

Retro-reflective with red emission for transparent objects - detection up to 1 m

Polarized retro-reflective with laser emission - range up to more than 20 m

Transmitter/Receiver with infrared emission up to 20 m (15 m radial optic)

TRANSMITTER - RECEIVER



Through beam sensor systems; consisting of a transmitter and a receiver offer a high performance set for long range, harsh duty industrial environments.

With a tight beam configuration and suitable high gain in an M18 housing.

through beam

high powered

Transmitter/Receiver with red laser emission up to 50 m
IP67 protection
Metal or plastic housing
Axial and radial reading (90°)
All models can be supplied with sensitivity adjustment
Total protection against any type of electric damage

PNP Models - where the load is connected between the output and the power negative pole.

NPN Models - where the load is connected between the output and the power positive pole.

The sensors are equipped with a 4 wires electrical interface with complementary output, Q/Qnot in accordance with EN60947-5-2 norms, (Pin 4 or black wire = NO: LON for diffuse/DON for reflex and Transmitter-Receiver; Pin 2 or white wire = NC: DON for diffuse/LON for reflex and Transmitter-Receiver).

Laser emission models

All laser models are equipped with a visible red light laser diode and are classified as: CLASS 1 LASER DEVICES. According to the CEIEN60825-1 norms, the class 1 laser devices are safe in operating conditions that can be reasonably foreseen.
The Laser sensors emit visible laser light impulses with a maximum peak power of 0,4 milliwatt. the laser output maximum power level is checked through a circuit that is always working, also in presence of any eventual single failure.
The laser devices, also if class 1, always emit a beam of intense and very concentrate light: the intentional and prolonged observation of this light can cause problems. As a result, it is advisable, where possible, to install the laser sensors so as the beam cannot exceed the operating area. Moreover, if possible, we suggest avoiding that the laser beam direction permanently meets the operator's eyes.

CLASS 1 LASER PRODUCT
Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice N° 50, dated July 26, 2001

CODE DESCRIPTION, MODELS AVAILABLE AND TECHNICAL SPECIFICATIONS

Transmitter - Receiver

Parts Coding System - Transmitter - Receiver

P RE 020 9 P N 7 T M2

M18 Photoelectric Suite Series	P
Transmitter Infrared	TX
Transmitter Infrared with Check	TC
Transmitter Laser with Check	LT
Receiver Infrared	RE
Receiver Infrared Fixed Range	RF
Receiver Laser	LR
Maximum Range in Meters - Fixed Range in Meters -	000
M18 - 18mm Barrell Diameter	9
PBT Plastic Housing	P
NBT Metal Housing	B

M2	Axial cable output
K2	Axial M12 4 pin connector output
T	Axial straight optics
R	Radial 90 degree optics
8	LO/DO -
7	Q/Qnot logic
6	-LO/DO
5	Dark Operated
4	Light Operated
N	NPN output logic
C	Check- Transmitter
P	PNP output logic

Special Options Available for Connectors

Available models

Infrared LED emission axial (straight) optics:

PTX0209PTM	PRE0209PP8TK2	PRE0209PN8TK2	PRF0209PP8TK2	PRE0209PP7TM1	PRE0209BP7TM1
PTX0209PTK2	PRE0209BP8TK2	PRE0209BN8TK2	PRF0209BP8TK2	PRE0209PP7TK2	PRE0209BP7TK2
PTX0209BTM1		PRE0209PN4TK2		PRE0209PN7TM1	PRE0209BN7TM1
PTX0209BTK2		PRE0209BN4TK2		PRE0209PN7TK2	PRE0209BN7TK2
PTC0209PTM1				PRF0209PP7TM1	PRF0209BP7TM1
PTC0209PTK2				PRF0209PP7TK2	PRF0209BP7TK2
PTC0209BTM1				PRF0209PP7TM1	PRF0209BN7TM1
PTC0209BTK2				PRF0209PN7TK2	PRF0209BN7TK2

Infrared LED emission radial (90) optics:

PTX0209PRM1	PRE0209PP8RK2	PRE0209PN8RK2	PRF0209PP8RK2	PRE0209PP7RM1	PRE0209BP7RM1
PTX0209PRK2	PRE0209BP8RK2	PRE0209BN8RK2	PRF0209BP8RK2	PRE0209PP7RK2	PRE0209BP7RK2
PTX0209BRM1		PRE0209PN4RK2		PRE0209PN7RM1	PRE0209BN7RM1
PTX0209BRK2		PRE0209BN4RK2		PRE0209PN7RK2	PRE0209BN7RK2
PTC0209PRM1				PRF0209PP7RM1	PRF0209BP7RM1
PTC0209PRK2				PRF0209PP7RK2	PRF0209BP7RK2
PTC0209BRM1				PRF0209PP7RM1	PRF0209BN7RM1
PTC0209BRK2				PRF0209PN7RK2	PRF0209BN7RK2

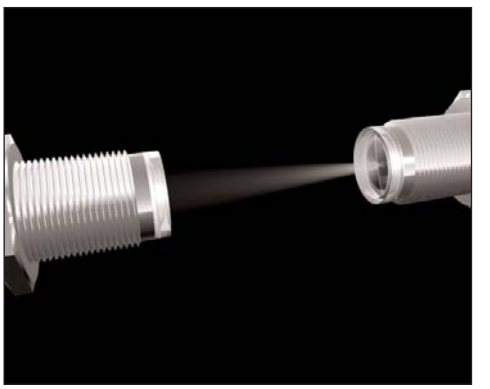
Red visible laser emission axial (straight) optics:

PLT0509PC8TM1	PLT0509PP7TM1	PLT0509BP7TM1
PLT0509PC8TK2	PLT0509PP7TK2	PLT0509BP7TK2
PLT0509BC8TM1	PLT0509PN7TM1	PLT0509BN7TM1
PLT0509BC8TK2	PLT0509PN7TK2	PLT0509BN7TK2

Red visible Laser emission radial (90) optics:

PLT0509PC8RM1	PLT0509PP7RM1	PLT0509BP7RM1
PLT0509PC8RK2	PLT0509PP7RK2	PLT0509BP7RK2
PLT0509BC8RM1	PLT0509PN7RM1	PLT0509BN7RM1
PLT0509BC8RK2	PLT0509PN7RK2	PLT0509BN7RK2

- Class A and B standard codes
- Class C special codes



NOTE: The Class C models and the special models could be subject to delayed delivery or limits in the quantities to be ordered.

Led emission models specifications

	Transmitter		Receiver	
Models	TC	TX	RF	RE
Nominal sensing distance	20 m axial model/15 m radial model			
Emission	Infrared 880 nm			
Differential travel	10%			
Repeat accuracy	5%			
Operating voltage	10-30 Vd.c.			
Ripple	10%			
No load supply current	25 mA		25 mA	
Load current			100 mA	
Leakage current			10 µA a Vmax	
Output voltage drop			2 Vmax. I_L =100mA	
Output type			NPN or PNP Q/Qnot output (Lon/Don selectable special model)	
Switching frequency			250 Hz	
Time delay before availability			200 ms	
Supply electrical protections	Impulsive overvoltage polarity reversal			
Protection electrical output			Short circuit (autoreset) - Overvoltage	
Sensitivity adjustment	No		No	Yes Trimmer
Operative Temperature range	-25°… +70° (without freeze)			
Storage temperature	-55°... +80°			
Temperature drift	10% sr			
Check input	BK/2 connected to 0 switches off the emission	-		
EMC	According to EN50082-2; 1995/EN60947-5-2; 1999 According to EN50081-1; 1993			
Interference external light	5000 lux (incandescence lamp) 10000 lux (sunlight)			
Protection degree	IP 67 (EN60529)			
LED indicators	Green (Power ON)		Yellow (light state) or (output status in the special Lon/Don versions)	
Housing material	PBT (Plastic)/ Nicked plated brass (Metallic)			
Optic material	PC (cable exit)			
Tightening torque	PC			
Weight (approx)	40 Nm			
	0.20kg (Plastic)/0.24kg (Metallic)			

Laser models specifications

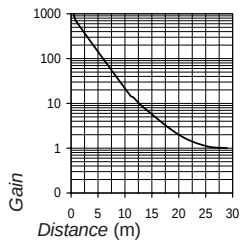
Models	Transmitter Laser	Receiver Laser
Nominal sensing distance	50 m	
Emission	Red laser diode 650 nm	
Transmitter	Class 1 laser (IEC 60825-1)	
Minimun detectable object	10 mm	
Spot dimension	40 mm at 60 m	
Differential travel	10%	
Repeat accuracy	5%	
Operating voltage	10-30 Vc.c./Vd.c.	
Ripple	10%	
No load supply current	25 mA	25 mA
Load current		100 mA
Leakage current		10 µA a Vmax
Output voltage drop		2 Vmax. I_L =100mA
Output Logic		Lon/Don NPN or PNP NO/NC complementary or Lon/Don special version wire selecta
Switching frequency		1KHz
Time delay before availability		200 ms
Supply electrical protections	Polarity reversal, transient	
Protection electrical output	Short circuit (autoreset) Overvoltage	
Sensitivity adjustment		Trimmer
Temperature range	-15°… +55° (without freeze)	
Temperature drift	10% Sr	
Storage temperature	-55°… +80°	
Check input	BK/2 connected to 0 switches off the emission	
Interference external light	3000 lux (incandescent lamp) 10000 lux (sunlight)	
Protection degree	IP 67 (EN60529)	
EMC	according to EN50082-2; 1995/EN60947-5-2 ; 1999 According to EN50081-1; 1993	
LED indicators	Green: power supply Yellow: laser on	Green: power supply Lon/Don)/Yellow (light status) or (output status in the special Lon/Don version)
Housing material	PBT (Plastic)/Nicked plated brass (Metallic)/PC (cable exit)	
Optic material	PC/Glass	
Tightening torque	40 Nm	
Weight (approx)	0.20kg Plastic/0.24kg Metallic	

Feature diagrams of the transmitter and receiver models

PTX** PTC** PRE** PRF**

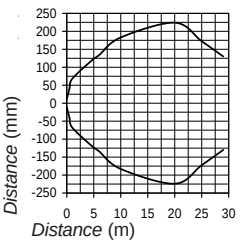
axial

Excess Gain



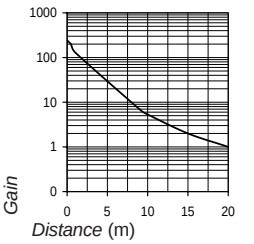
axial

Parallel displacement



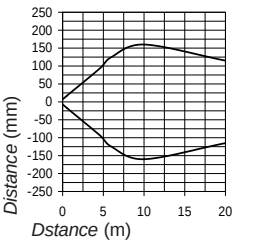
radial

Excess Gain



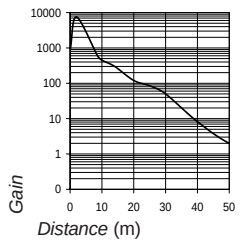
radial

Parallel displacement

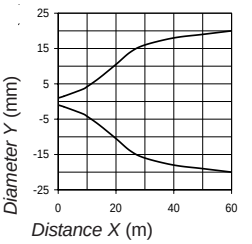


PLR** PLT**

Excess Gain



Spot dimension



CODE DESCRIPTION, MODELS AVAILABLE AND TECHNICAL SPECIFICATIONS

Diffuse Proximity

Parts Coding System - Diffuse Proximity

P DF 100 9 P N 7 T M1

M18 Photoelectric Suite Series	P
Diffuse Proximity Visible Red - Fixed	DH
Diffuse Proximity Visible Red	DV
Diffuse Proximity Infrared	DX
Diffuse Proximity Infrared - Fixed	DF
Diffuse Proximity Laser	TL
Maximum Range in Millimeters Fixed Range in Millimeters	000
M18 - 18mm Barrell Diameter	9
PBT Plastic Housing	P
NBT Metal Housing	B
Special Options Available for Connectors	

M1	Axial cable output
K2	Axial M12 4 pin connector
T	Axial straight optics
R	Radial 90 degree optics
4	Light Operated
8	LO/DO -
7	Q/Qnot logic
6	-LO/DO
5	Dark Operated
N	NPN output logic
P	PNP output logic

Models available

PDH050	PDV050	PDV100	PDH100	PDX200	PDF200
PDH0509PN6TK2	PDV0509PN6TK2	PDV1009PN6TK2	PDH1009PN6TK2	PDX2009PN6TK2	PDF2009PN6TK2
PDH0509BN6TK2	PDV0509BN6TK2	PDV1009BN6TK2	PDH1009BN6TK2	PDX2009BN6TK2	PDF2009BN6TK2
PDH0509PN6RK2	PDV0509PN6RK2	PDV1009PN6RK2	PDH1009PN6RK2	PDX2009PN6RK2	PDF2009PN6RK2
PDH0509BN6RK2	PDV0509BN6RK2	PDV1009BN6RK2	PDH1009BN6RK2	PDX2009BN6RK2	PDF2009BN6RK2
PDH0509PP6TK2	PDV0509PP6TK2	PDV1009PP6TK2	PDH1009PP6TK2	PDX2009PP6TK2	PDF2009PP6TK2
PDH0509BP6TK2	PDV0509BP6TK2	PDV1009BP6TK2	PDH1009BP6TK2	PDX2009BP6TK2	PDF2009BP6TK2
PDH0509PP6RK2	PDV0509PP6RK2	PDV1009PP6RK2	PDH1009PP6RK2	PDX2009PP6RK2	PDF2009PP6RK2
PDH0509BP6RK2	PDV0509BP6RK2	PDV1009BP6RK2	PDH1009BP6RK2	PDX2009BP6RK2	PDF2009BP6RK2
PDH0509PN7TM1	PDV0509PN7TM1	PDV1009PN7TM1	PDH1009PN7TM1	PDX2009PN7TM1	PDF2009PN7TM1
PDH0509PN7TK2	PDV0509PN7TK2	PDV1009PN7TK2	PDH1009PN7TK2	PDX2009PN7TK2	PDF2009PN7TK2
PDH0509BN7TM1	PDV0509BN7TM1	PDV1009BN7TM1	PDH1009BN7TM1	PDX2009BN7TM1	PDF2009BN7TM1
PDH0509BN7TK2	PDV0509BN7TK2	PDV1009BN7TK2	PDH1009BN7TK2	PDX2009BN7TK2	PDF2009BN7TK2
PDH0509PN7RM1	PDV0509PN7RM1	PDV1009PN7RM1	PDH1009PN7RM1	PDX2009PN7RM1	PDF2009PN7RM1
PDH0509PN7RK2	PDV0509PN7RK2	PDV1009PN7RK2	PDH1009PN7RK2	PDX2009PN7RK2	PDF2009PN7RK2
PDH0509BN7RM1	PDV0509BN7RM1	PDV1009BN7RM1	PDH1009BN7RM1	PDX2009BN7RM1	PDF2009BN7RM1
PDH0509BN7RK2	PDV0509BN7RK2	PDV1009BN7RK2	PDH1009BN7RK2	PDX2009BN7RK2	PDF2009BN7RK2
PDH0509PP7TM1	PDV0509PP7TM1	PDV1009PP7TM1	PDH1009PP7TM1	PDX2009PP7TM1	PDF2009PP7TM1
PDH0509PP7TK2	PDV0509PP7TK2	PDV1009PP7TK2	PDH1009PP7TK2	PDX2009PP7TK2	PDF2009PP7TK2
PDH0509BP7TM1	PDV0509BP7TM1	PDV1009BP7TM1	PDH1009BP7TM1	PDX2009BP7TM1	PDF2009BP7TM1
PDH0509BP7TK2	PDV0509BP7TK2	PDV1009BP7TK2	PDH1009BP7TK2	PDX2009BP7TK2	PDF2009BP7TK2
PDH0509PP7RM1	PDV0509PP7RM1	PDV1009PP7RM1	PDH1009PP7RM1	PDX2009PP7RM1	PDF2009PP7RM1
PDH0509PP7RK2	PDV0509PP7RK2	PDV1009PP7RK2	PDH1009PP7RK2	PDX2009PP7RK2	PDF2009PP7RK2
PDH0509BP7RM1	PDV0509BP7RM1	PDV1009BP7RM1	PDH1009BP7RM1	PDX2009BP7RM1	PDF2009BP7RM1
PDH0509BP7RK2	PDV0509BP7RK2	PDV1009BP7RK2	PDH1009BP7RK2	PDX2009BP7RK2	PDF2009BP7RK2
		PDV1009PN5TK2	PDH1009PN5TK2		PDF2009PN5TK2
		PDV1009BN5TK2	PDH1009BN5TK2		PDF2009BN4TK2
		PDV1009PN5RK2	PDH1009PN5RK2		PDF2009PN4RK2
		PDV1009BN5RK2	PDH1009BN5RK2		PDF2009BN4RK2

PDF400	PDX400	PDX01K	PDF01K	PTL LASER
PDF4009PN6TK2	PDX4009PN6TK2	PDX01K9PN8TK2	PDF01K9PN7TM1	PTL3009BN8TK2
PDF4009BN6TK2	PDX4009BN6TK2	PDX01K9BN6TK2	PDF01K9PN7TK2	PTL2009BN8RK2
PDF4009PN6RK2	PDX4009PN6RK2	PDX8009PN6TK2	PDF01K9BN7TM1	PTL3009BP8TK2
PDF4009BN6RK2	PDX4009BN6RK2	PDX8009BN6TK2	PDF01K9BN7TK2	PTL2009BP8RK2
PDF4009PP6TK2	PDX4009PP6TK2	PDX01K9PP6TK2	PDF8009PN7RM1	PTL3009PN7TM1
PDF4009BP6TK2	PDX4009BP6TK2	PDX01K9BP6TK2	PDF8009PN7RK2	PTL3009PN7TK2
PDF4009PP6RK2	PDX4009PP6RK2	PDX8009PP6TK2	PDF8009BN7RM1	PTL3009BN7TM1
PDF4009BP6RK2	PDX4009BP6RK2	PDX8009BP6TK2	PDF8009BN7RK2	PTL3009BN7TK2
PDF4009PN7TM1	PDX4009PN7TM1	PDX01K9PN7TM1	PDF01K9PP7TM1	PTL2009PN7RM1
PDF4009PN7TK2	PDX4009PN7TK2	PDX01K9PN7TK2	PDF01K9PP7TK2	PTL2009PN7RK2
PDF4009BN7TM1	PDX4009BN7TM1	PDX01K9BN7TM1	PDF01K9BP7TM1	PTL2009BN7RM1
PDF4009BN7TK2	PDX4009BN7TK2	PDX01K9BN7TK2	PDF01K9BP7TK2	PTL2009BN7RK2
PDF4009PN7RM1	PDX4009PN7RM1	PDX8009PN7RM1	PDF8009PP7RM1	PTL3009PP7TM1
PDF4009PN7RK2	PDX4009PN7RK2	PDX8009BN7RK2	PDF8009PP7RK2	PTL3009PP7TK2
PDF4009BN7RM1	PDX4009BN7RM1	PDX8009BN7RM1	PDF8009BP7RM1	PTL3009BP7TM1
PDF4009BN7RK2	PDX4009BN7RK2	PDX8009BN7RK2	PDF8009BP7RK2	PTL3009BP7TK2
PDF4009PP7TM1	PDX4009PP7TM1	PDX01K9PP7TM1		PTL2009PP7RM1
PDF4009PP7TK2	PDX4009PP7TK2	PDX01K9PP7TK2		PTL2009PP7RK2
PDF4009BP7TM1	PDX4009BP7TM1	PDX01K9BP7TM1		PTL2009BP7RM1
PDF4009BP7TK2	PDX4009BP7TK2	PDX01K9BP7TK2		PTL2009BP7RK2
PDF4009PP7RM1	PDX4009PP7RM1	PDX8009PP7RM1		
PDF4009PP7RK2	PDX4009PP7RK2	PDX8009BP7RK2		
PDF4009BP7RM1	PDX4009BP7RM1	PDX8009BP7RM1		
PDF4009BP7RK2	PDX4009BP7RK2	PDX8009BP7RK2		
PDF4009PN5TK2	PDX4009PN5TK2			
PDF4009BN4TK2	PDX4009BN4TK2			
PDF4009PN4RK2	PDX4009PN4RK2			
PDF4009BN4RK2	PDX4009BN4RK2			

- Class A and B standard codes
- Class C special codes

NOTE: The Class C and special products could be subject to delays delivery terms or limits for the quantities to be ordered.

Led emission models specifications

	Red LED emission				Infrared Led emission					
Models										
* fixed	050*	050	100*	100	200*	200	400*	400	01K*	01K
Nominal sensing distance	50 mm (1)	50mm (1)	100mm (1)	100mm (1)	200 mm (2)	200 mm (2)	400 mm (2)	400 mm (2)	1000* mm (3)	1000* mm (3)
Emission	Red (660 nm)				Infrared (880 nm)					
Diffential travel	10%									
Repeat accuracy	5%									
Operating voltage	10-30 Vd.c.									
Ripple	10%									
No load supply current	30 mA									
Load current	100 mA									
Leakage current	10 µA									
Output voltage drop	2 Vmax. I_L =100mA									
Output type	NPN or PNP Q/Qnot output or (Lon/Don special model)									
Switching frequency	250 Hz									
Time delay before availability	200 ms									
Supply electrical protections	Polarity reversal, impulsive overvoltage									
Protection electrical output	Short circuit (autoreset)Overvoltage									
Sensitivity adjustment	No	Yes	No	Yes	Yes	No	No	Yes	Yes	No
Operative temperature range	-25°… +70° (without freeze)									
Temperature drift	10% Sr									
Storage temperature	-55°… +80°									
Interference external light	5000 lux (incandescence lamp) - 10000 lux (sun light)									
Protection degree	IP 67 (EN60529)									
EMC	According to EN50082-2; 1995; EN60947-5-2; 1999									
LED indicators	According to EN50081-1; 1993									
	Yellow (Light status) or (output status in the Lon/Don special versions)									
Housing material	PBT (Plastic)/Nicked plated brass (Metallic)/PC (cable exit)									
Optic material	PC									
Tightening torque	40 Nm									
Peso (appros.)/Weight (approx)	0.10kg (Plastic); 0.12kg (Metal)									

(1) White target kodak 90% refletcion 100 x 100 mm
(2) White target kodak 90% refletcion 200 x 200 mm
(3) White target kodak 90% refletcion 400 x 400 mm
* 800 mm radial optic version

Laser emission models specifications

Models	PTL
Nominal sensing distance	300 mm axial optic (focused 100 mm) (1) 200 mm radial optic (focused 100 mm) (1)
Emission	Red laser diode 650 nm Laser Class 1 laser (IEC60825-1)
Minimun detectable object	0.1 mm
Diffential travel	10%
Repeat accuracy	5%
Operating voltage	10-30 Vd.c.
Ripple	10%
Load current	No load supply current 30 mA 100 mA
Leakage current	10 µA a Vmax
Output voltage drop	2 Vmax. I_L =100mA
Output type	NPN or PNP; Q/Qnot output or Lon/Don selectable (special model)
Switching frequency	800Hz
Time delay before availability	200 ms
Supply electrical protections	Polarity reversal, transient
Protection electrical output	Short circuit (autoreset) Overvoltage Yes
Sensibility adjustment	Teach-in function
Operative temperature range	-15°… +55° (without freeze)
Temperature drift	10% Sr
Storage temperature	-55°… +80°
Interference external light	3000 lux (incandescent lamp) 10000 lux (sunlight)
Protection degree	IP 67 (EN60529)
EMC	According to EN50082-2; 1995; EN60947-5-2; 1999 According to EN50081-1; 1993
LED indicators	Green power supply; Yellow (ON-Light state EX.G 2) Yellow (Flashing-Light state EX.G 2) Yellow (OFF-Dark state)
Housing material	PBT (Plastic)Nickel plated brass (Metallic) PC (cable exit)
Optic material	PC/Glass
Tightening torque	40 Nm
Weight (approx)	0.20kg

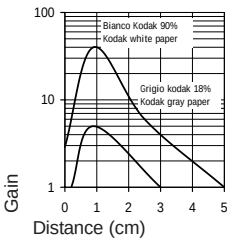
(1)White target kodak 90% refletcion 100 x 100 m

Features diagrams of diffuse proximity models

Modelli Models: PDH050**-** PDV050**-**

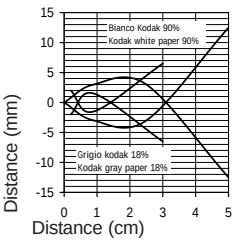
axial

Excess Gain



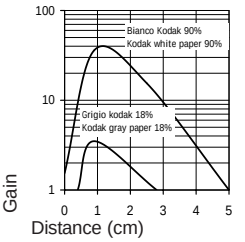
axial

Parallel displacement



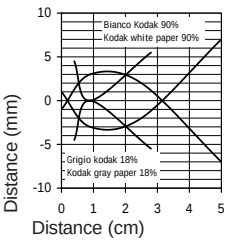
radial

Excess Gain



radial

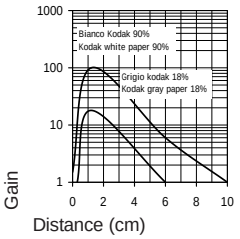
Parallel displacement



Modelli Models: PDH100**-** PDV100**-**

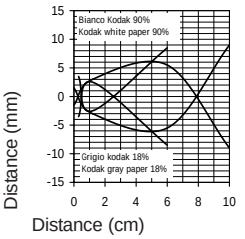
axial

Excess Gain



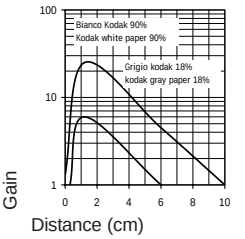
axial

Parallel displacement



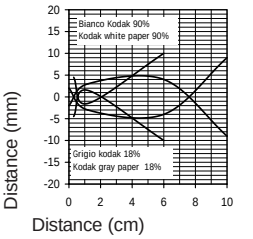
radial

Excess Gain



radial

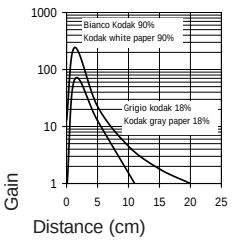
Parallel displacement



Modelli Models: PDX200**-** PDF200**-**

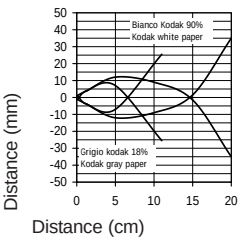
axial

Excess Gain



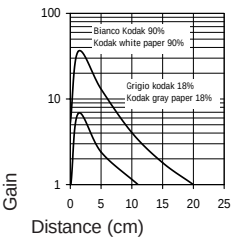
axial

Parallel displacement



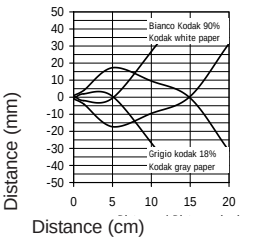
radial

Excess Gain



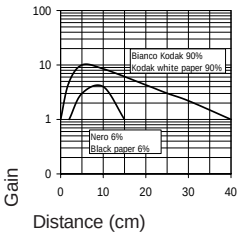
radial

Parallel displacement

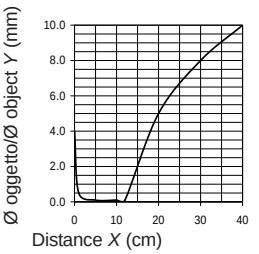


Modelli Models: PTL**-**

Excess Gain



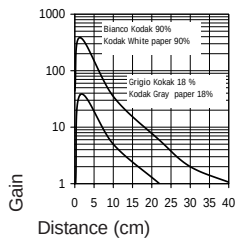
Minimum detectable object



Modelli Models: PDF400**-** PDX400**-**

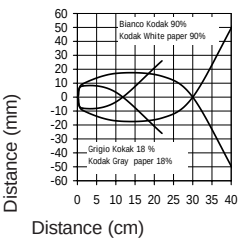
axial

Excess Gain



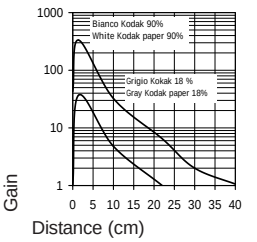
axial

Parallel displacement



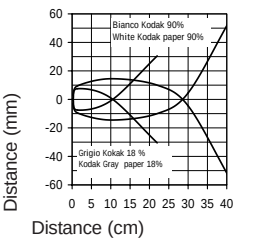
radial

Excess Gain



radial

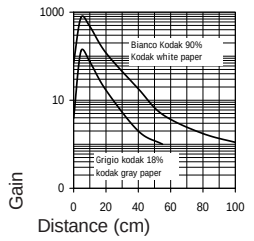
Parallel displacement



Modelli Models: PDX01K**-** PDF01K**-**

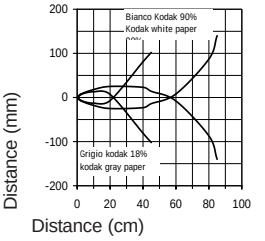
axial

Excess Gain



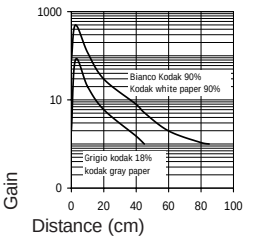
axial

Parallel displacement



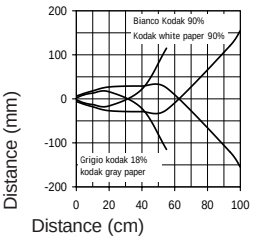
radial

Excess Gain



radial

Parallel displacement



CODE DESCRIPTION, MODELS AVAILABLE AND TECHNICAL SPECIFICATIONS

Retro Reflective

Parts Coding System - Retro Reflective

P RI 020 9 P N 7 T M1

M18 Photoelectric Suite Series	P
Retro Reflective - Fixed	RF
Retro Refelctive	RX
Polarized Retro Reflective - Fixed	PI
Polarized Retro Reflective - Fixed (For use with transparent objects)	RI
Laser Polarized Retro Relective	PL
Maximum Range in Meters Fixed Range in Meters	000
M18 - 18mm Barrell Diameter	9
PBT Plastic Housing	P
NBT Metal Housing	B
Special Options Available for Connectors	

M1	Axial cable output
K2	Axial M12 4 pin connector
T	Axial straight optics
R	Radial 90 degree optics
4	Light Operated
8	LO/DO -
7	Q/Qnot logic
6	-LO/DO
5	Dark Operated
N	NPN output logic
P	PNP output logic

Available models

PRF004
PRF0049PN8TK2
PRF0049BN8TK2
PRF0049PN8RK2
PRF0049BN8RK2
PRF0049PP8TK2
PRF0049BP8TK2
PRF0049PP8RK2
PRF0049BP8RK2
PRF0049PN7TM1
PRF0049PN7TK2
PRF0049BN7TM1
PRF0049BN7TK2
PRF0049PN7RM1
PRF0049PN7RK2
PRF0049BN7RM1
PRF0049BN7RK2
PRF0049PP7TM1
PRF0049PP7TK2
PRF0049BP7TM1
PRF0049BP7TK2
PRF0049PP7RM1
PRF0049PP7RK2
PRF0049BP7RM1
PRF0049BP7RK2
PRF0049PP4TK2
PRF0049BP4TK2
PRF0049PP4RK2
PRF0049BP4RK2

PRF004
PRF0049PN8TK2
PRF0049BN8TK2
PRF0049PN8RK2
PRF0049BN8RK2
PRF0049PP8TK2
PRF0049BP8TK2
PRF0049PP8RK2
PRF0049BP8RK2
PRF0049PN7TM1
PRF0049PN7TK2
PRF0049BN7TM1
PRF0049BN7TK2
PRF0049PN7RM1
PRF0049PN7RK2
PRF0049BN7RM1
PRF0049BN7RK2
PRF0049PP7TM1
PRF0049PP7TK2
PRF0049BP7TM1
PRF0049BP7TK2
PRF0049PP7RM1
PRF0049PP7RK2
PRF0049BP7RM1
PRF0049BP7RK2
PRF0049PP4TK2
PRF0049BP4TK2
PRF0049PP4RK2
PRF0049BP4RK2

PRX004
PRX0049PN7TM1
PRX0049PN7TK2
PRX0049BN7TM1
PRX0049BN7TK2
PRX0049PN7RM1
PRX0049PN7RK2
PRX0049BN7RM1
PRX0049BN7RK2
PRX0049PP7TM1
PRX0049PP7TK2
PRX0049BP7TM1
PRX0049BP7TK2
PRX0049PP7RM1
PRX0049PP7RK2
PRX0049BP7RM1
PRX0049BP7RK2

PPI003
PPI0039PN8TK2
PPI0039PN7TK2
PPI0039BN7TM1
PPI0039BN7TK2
PPI0039PN7RM1
PPI0039PN7RK2
PPI0039BN7RM1
PPI0039BN7RK2
PPI0039PP7TM1
PPI0039PP7TK2
PPI0039BP7TM1
PPI0039BP7TK2

PPI0039PN7TM1
PPI0039PN7TK2
PPI0039BN7TM1
PPI0039BN7TK2
PPI0039PN7RM1
PPI0039PN7RK2
PPI0039BN7RM1
PPI0039BN7RK2
PPI0039PP7TM1
PPI0039PP7TK2
PPI0039BP7TM1
PPI0039BP7TK2

PPL020
PPL0209BN8TK2
PPL0209BN8RK2
PPL0209BP8TK2
PPL0209BP8RK2
PPL0209PN7TM1
PPL0209PN7TK2
PPL0209BN7TM1
PPL0209BN7TK2
PPL0209PN7RM1
PPL0209PN7RK2
PPL0209BN7RM1
PPL0209BN7RK2
PPL0209PP7TM1
PPL0209PP7TK2
PPL0209BP7TM1
PPL0209BP7TK2
PPL0209PP7RM1
PPL0209PP7RK2
PPL0209BP7RM1
PPL0209BP7RK2

- Standard classe A & B
- Class C special codes

NOTE: The C and K outputs are special outputs.
NOTE: The Class C and special products could be subject to delays in delivery terms or limits for the quantities to be ordered.

Led emission models specifications

	Infrared emission		Polarized red emission		Transparent objects red emission
Models	PRF**-** (1)	PRX**-** (1)	PPI**-** (1)	PRI**-** (1)	PRI*/**-** (2)
Nominal sensing distance	4 m		3 m axial 2m radial		1 m
Emission	Infrared (880 nm)		Red (660 nm)		
Diffential travel	10%				
Repeat accuracy	5%				
Operating voltage	10-30 Vc.c./Vd.c.				
Ripple	10%				
No load supply current	30 mA				
Load current	100 mA				
Leakage current	10 µA				
Output voltage drop	2 Vmax. I_L =100mA				
Output type	NPN or PNP, output Q/Qnot or LON/DON selectable (special model)				
Switching frequency	250 Hz				
Time delay before availability	200 ms				
Supply electrical protections	Polarity reversal, transient				
Protection electrical output	Short circuit (autoreset) Overvoltage				
Sensitivity adjusent	No	Yes Trimmer	No	Yes Trimmer	Yes Trimmer
Operative temperature range	-25°… +70° (without freeze)				
Temperature drift	10% Sr				
Storage temperature	-55°… +80°				
EMC	According to EN50082-2; 1995; EN60647-5-2; 1999 According to EN50081-1; 1993				
Interference external light	5000 lux (incandescence lamp) 10000 lux (sunlight)				
Protection degree	IP 67 (EN60529)				
LED indicators	Yellow (Light state) or (status of the Lon/Don output in special versions)				
Housing material	PBT (Plastic)/Nickel plated brass (Metallic)/ PC (cable exit)				
Optic material	PC		PMMA		PC
Tightening torque	40 Nm				
Weight (approx)	0.10kg (Plastic); 0.12kg (Metal)				

(1) With OX 110 reflector
(2) With OX 113G or OX 116 reflector

Laser emission models specifications

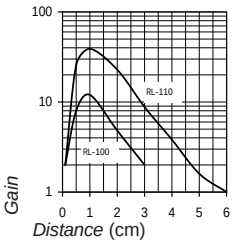
Models	Laser
Nominal sensing distance	20 m with OX110; 30 m with OX201; 5 m with OX100D
Emission	Red laser diode 650 nm
Transmitter	Laser Class 1 Laser (IEC 825-1)
Minimun detectable object	0.7mm-1m 24mm-25 m
Spot dimension	25 mm at 25 m
Differential travel	10%
Repeat accuracy	5%
Operating voltage	10-30 Vd.c.
Ripple	10%
No load supply current	20 mA
Load current	100 mA
Leakage current	10 µA a Vmax
Output voltage drop	2 Vmax. I_L =100mA
Output type	NPN or PNP Q/Qnot output or Lon/Don selectable (special model)
Switching frequency	800Hz
Time delay before availability	200 ms
Supply electrical protections	Polarity reversal, transient
Supply electrical output	Short circuit (autoreset) Overvoltage
Sensibility adjustment	Yes Teach-in function
Operative temperature range	-15°… +55° (without freeze)
Temperature drift	10% Sr
Storage temperature	-55°… +80°
Interference external light	3000 lux (incandescent lamp) 10000 lux (sunlight)
Protection degree	IP 67 (EN60529)
EMC	According to EN50082-2; 1995; EN60947-5-2; 1999 According to EN50081-1; 1993
LED indicators	Green power supply Yellow (ON-Light state EX.G. 2) Yellow (Flashing-Light state EX.G 2) Yellow (OFF-Dark state)
Housing material	PBT (Plastic)/Nickel plated brass (Metallic) - PC (cable exit)
Optic material	PC/Glass
Tightening torque	40 Nm
Weight (approx)	0.20kg

Features diagrams of reflex models

Models: PRF004**-** PRX004**-**

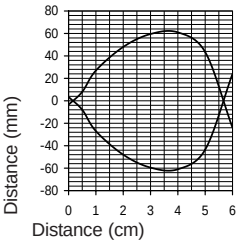
axial

Excess Gain



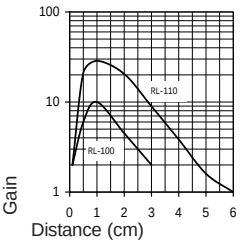
axial

Parallel displacement



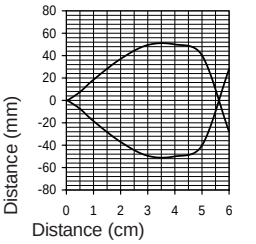
radial

Excess Gain



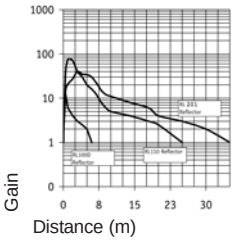
radial

Parallel displacement

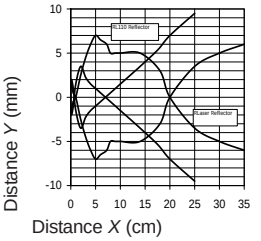


Models: PPL020**-**

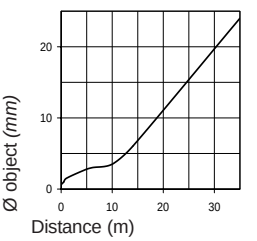
Excess Gain



Parallel displacement



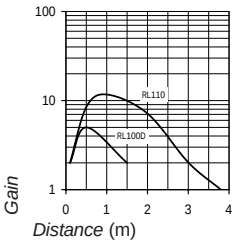
Minimum detectable object



Models: PPI003**-** PRI003**-**

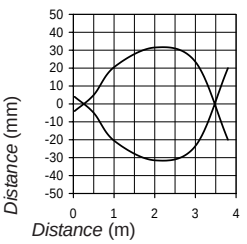
axial

Excess Gain



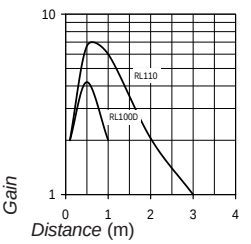
axial

Parallel displacement



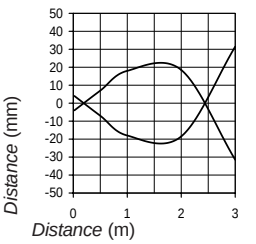
radial

Excess Gain



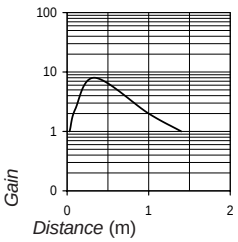
radial

Parallel displacement

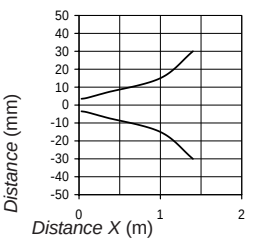


Models: PRI001**-** Transparency Sensor

Excess Gain

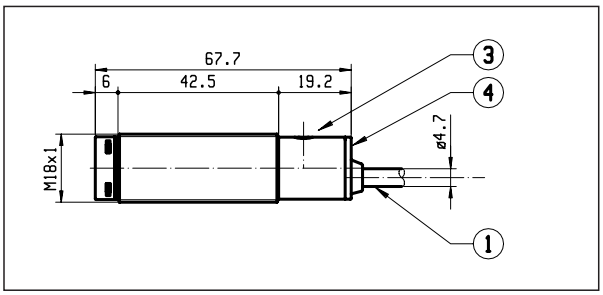


Parallel displacement

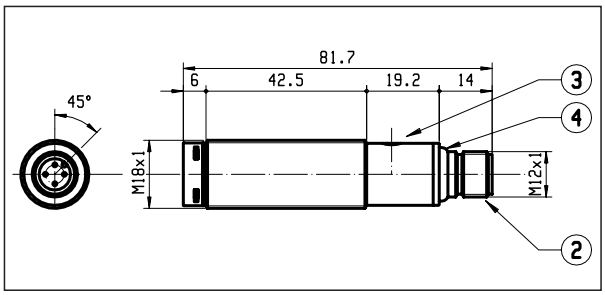


LED MODELS DIMENSIONS

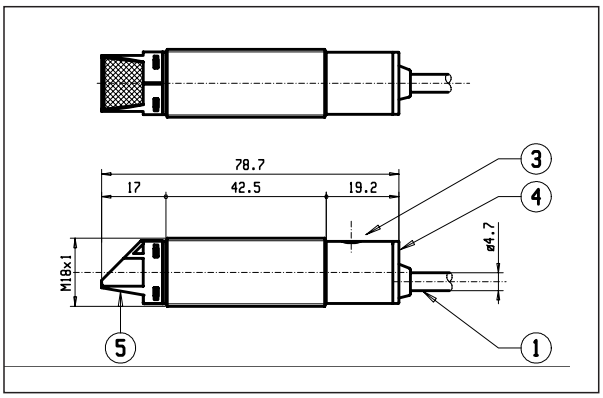
Axial optic axial cable version



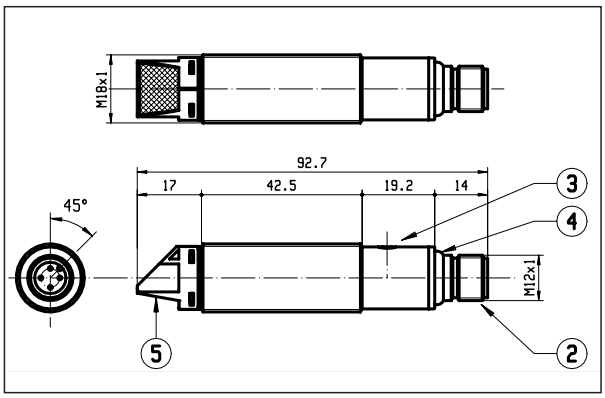
Axial optic axial connector version



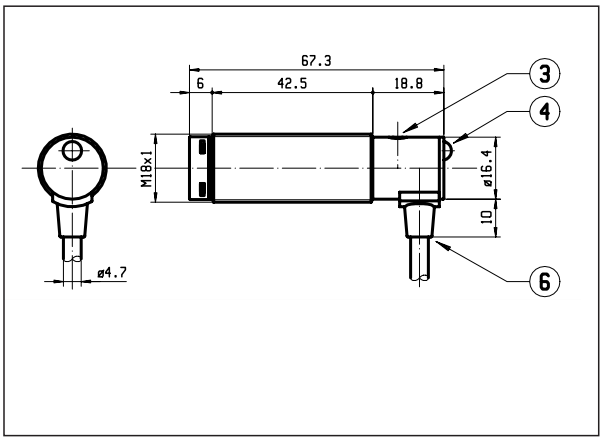
Radial optic axial cable version



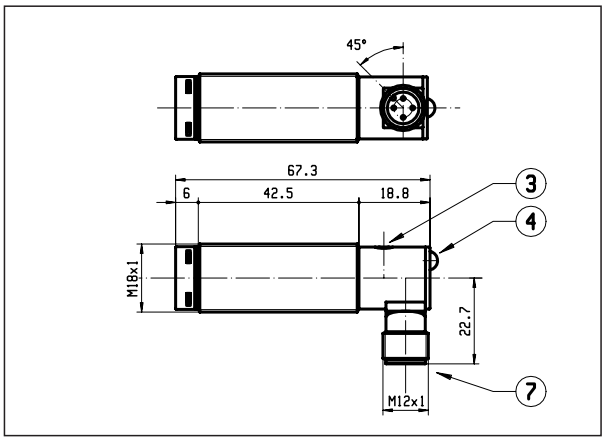
Radial optic axial connector version



Special radial cable version



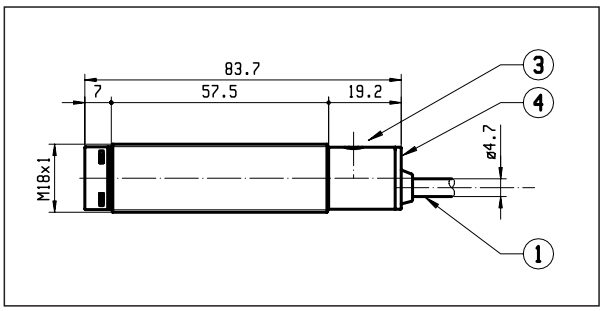
Special radial connector version



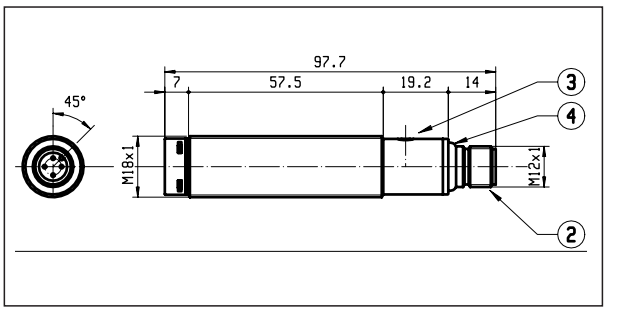
¿ Axial cable exit
¡ Axial M12 plastic connector
¬Trimmer for sensitivity adjustement
- Led indicator
ƒ Radial optic axis
² Radial cable exit
³ M12 radial connector

LASER DIODE MODELS DIMENSION

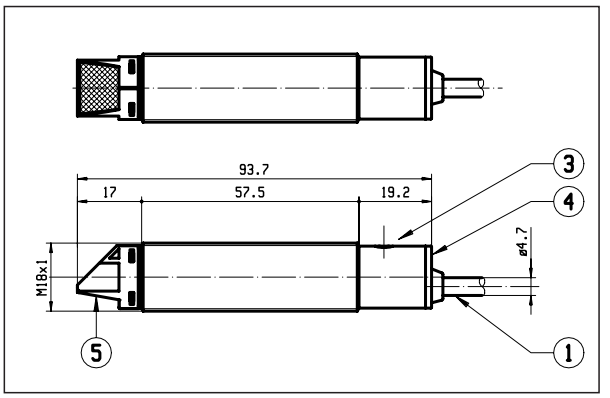
Axial optic axial cable version



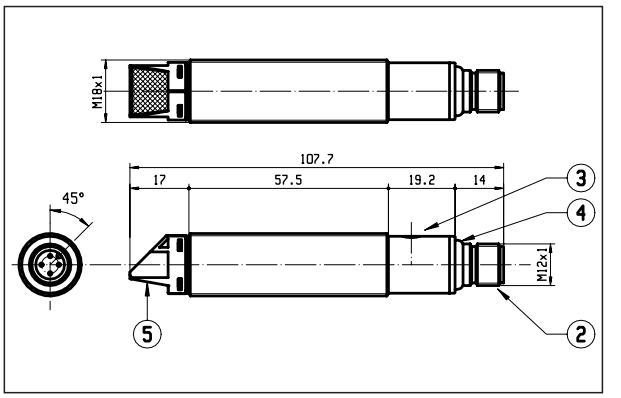
Axial optic axial M12 connector version

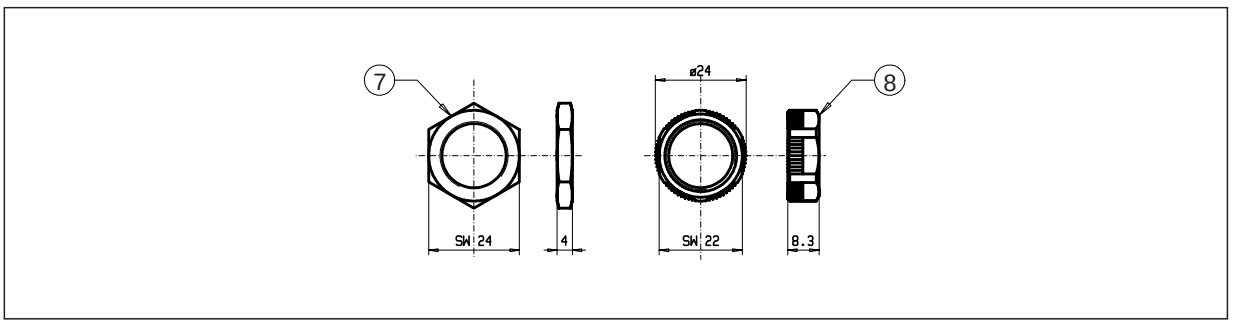


Radial optic axial cable version



Radial optic axial M12 connector



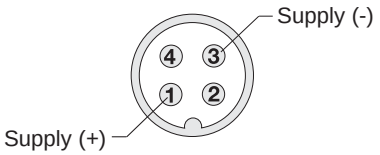


1Axial cable exit
¡ Axial M12 plastic connector
¬ Trimmer for sensitivity adjustement
- Led indicator
ƒRadial optic axis
² Metal tightening nut
³ Plastic tightening nut

ELECTRICAL DIAGRAMS OF THE CONNECTIONS

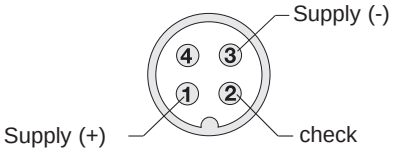
Connector output

M12



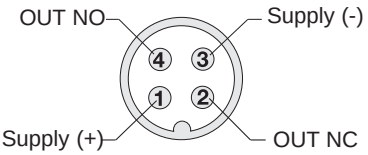
Transmitters without check

M12



Transmitters with check

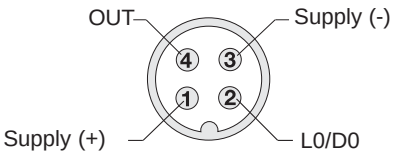
M12



4 wire Q/Qnot

Diffuse Proximity
Polarized Retro Reflective
Receiver

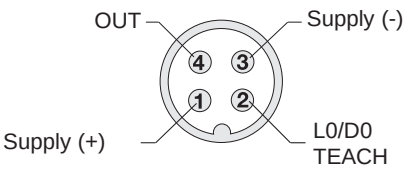
M12



4 wire LO/DO

Diffuse Proximity
Polarized retro Reflective
Receiver

M12



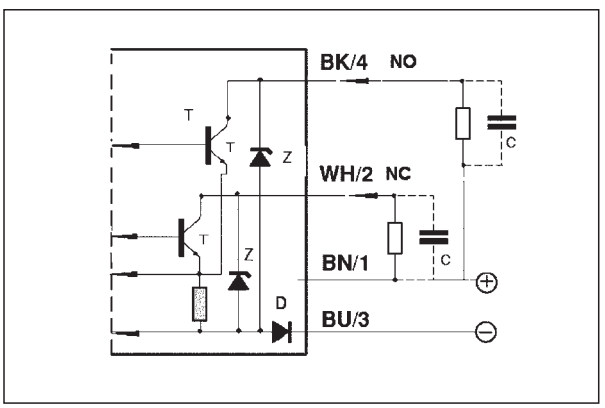
Laser

Diffuse Proximity
Polarized Retro Reflective

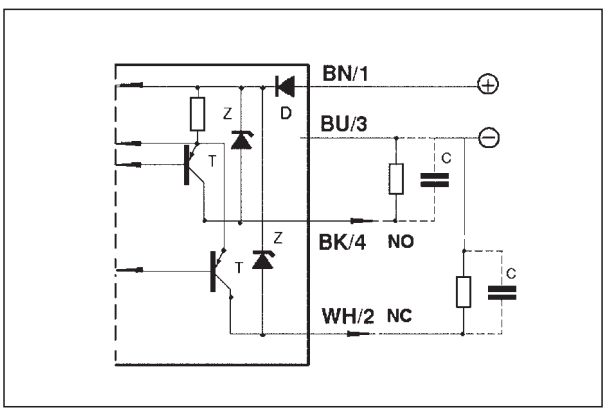
WIRING DIAGRAMS

Complementary Q/Qnot output

NPN

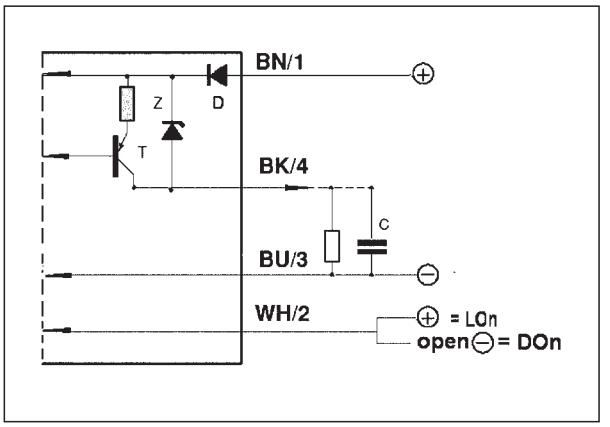


PNP

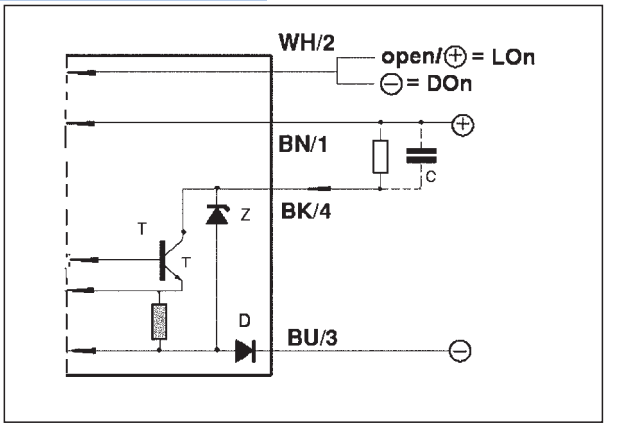


Lon/Don selectable output for LED models and laser receiver

PNP

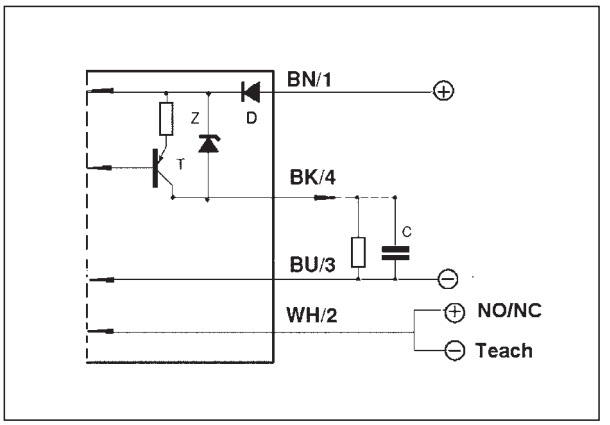


NPN

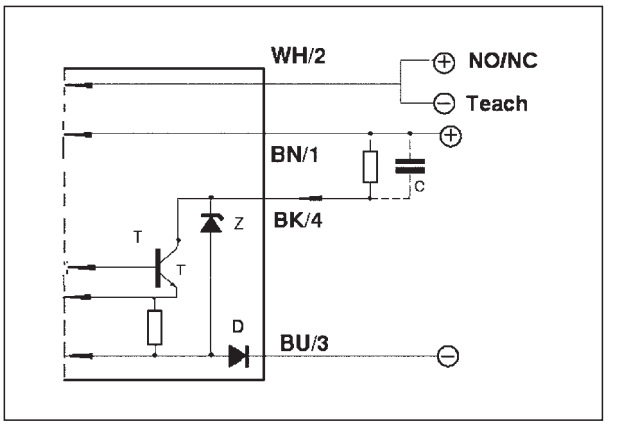


Lon/Don selectable output for Laser diode models

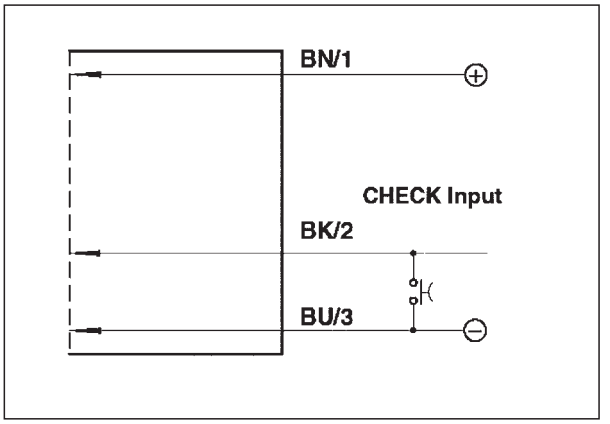
PNP



NPN



Transmitter with check

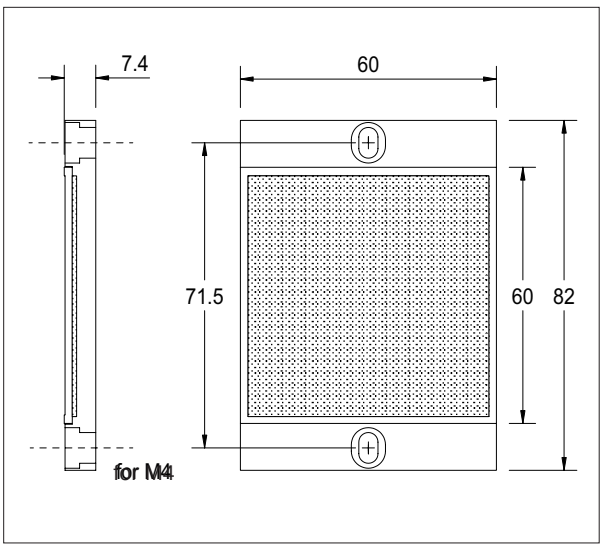


REFLECTORS FOR LASER VERSION

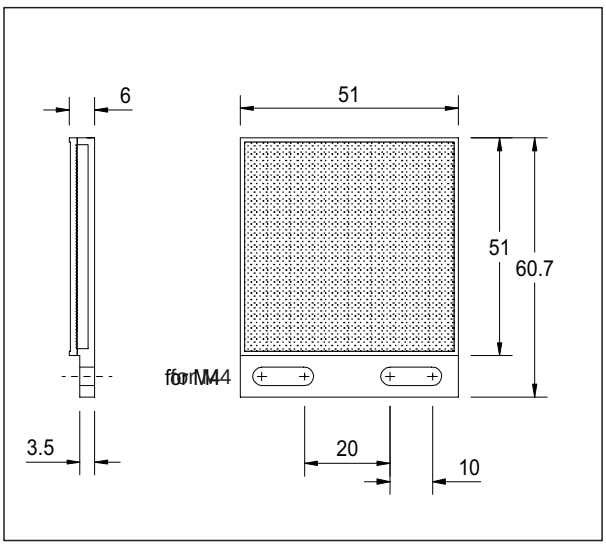
Reflectors with special micro-cube structure, particularly suitable for use with PPL**-** series laser sensors; infact, they ensure better signal stability also in presence of vibrations, and higher optic performances with respect to traditional retro-reflective.

Code	Maximum operating distance
OX 201	30 m
OX 202	30 m
OX 203	7 m
OX 204	7 m

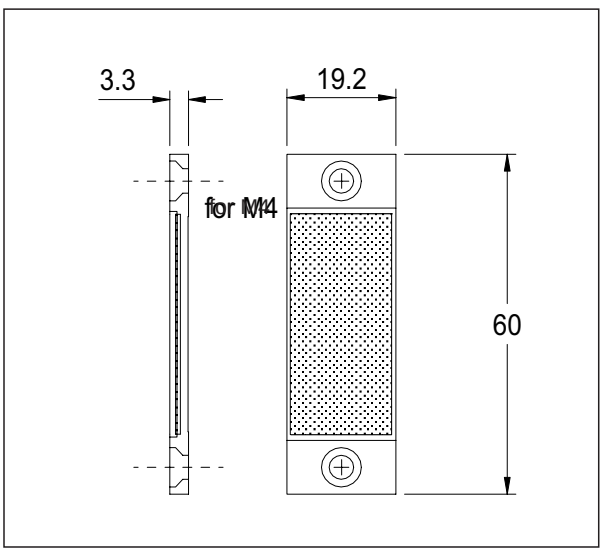
OX 201



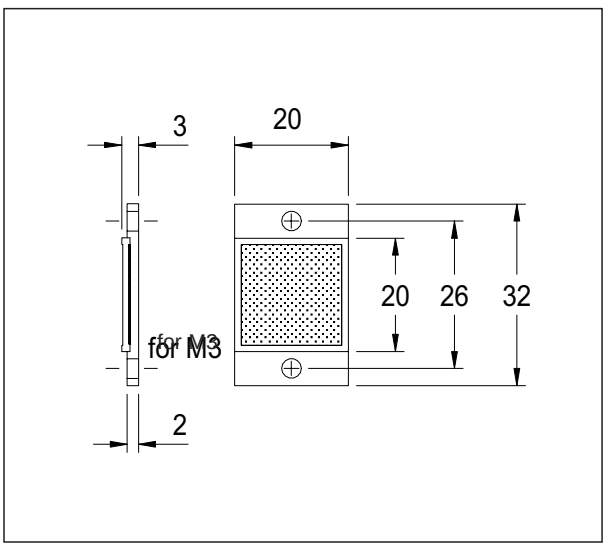
OX 202



OX 203



OX 204



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