

# PXR SERIES PHOTOELECTRIC SENSORS

- through beam .....16 - 32m
- diffuse proximity .....1 - 2m
- retro-reflective .....12m
- polarized retro-reflective .....6m
- background suppression.....0.05-0.3m / 0.25-0.7m

## INSTALLATION MANUAL

### INPROX SENSORS

**INPROX CORPORATION**  
 28 State Street Suite 1100  
 Boston, MA 02109 USA  
 1-877-INPROX-7 Toll Free  
 1-617-507-2663 Tel.  
 1-617-507-2665 Fax  
 www.inproxsensors.com



Warranty - INPROX SENSORS CORPORATION warrants for a period of one (1) year from the date of manufacturing that all products will be free from defects and commits oneself to repairing and replacing the goods that INPROX considers defective. Such warranty satisfaction is available only if any alleged defect has not been caused by misuse or improper installation.

Declaration of conformity - INPROX SENSORS CORPORATION. Declare under our sole responsibility that this products are in conformity with the following EEC directive: 89/336 and 73/23 and amendment.

**IMPORTANT:** The use of a safety electrical construction object of intervention and not explicitly authorized, exclude any responsibility of INPROX and will cause the investigation of the relevant conformity certificate and of the contractual warranty.

## GENERAL DESCRIPTION

The new series of photoelectric switches PXR represents an innovative generation of sensors with plastic rectangular housing and with electrical and optical features extremely advanced. The PXR series is the best solution for all applications requiring high performances, reduced overall dimensions and high relation quality/price; the two mounting options with superior bracket and with lateral bracket) allow maximum versatility for any applications. This series is provided with models of photoelectric sensors with relay output and which can be supplied in AC from 20 to 253 VAC and in DC from 20 to 60 VDC, moreover the models with static output which are supplied in DC from 10 to 30 Vdc.

### P BG 003 W C R 3 T K2

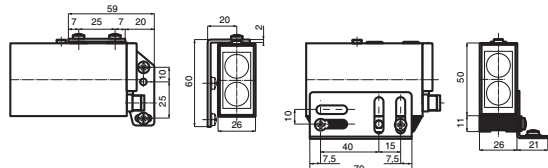
PXR Photoelectric Sensor Series	<b>P</b>
Background Suppression 300m/1000mm	<b>BG</b>
Polarized Retro-Reflective 6m	<b>PX</b>
Retro-Reflective 12m	<b>RX</b>
Diffuse 1m/2m	<b>DX</b>
Receiver 32m	<b>RE</b>
Transmitter	<b>TC</b>
	<b>K2</b> K2 M12 Connector
	<b>T</b> Axial/Straight
	<b>3</b> NO/NC
	<b>D</b> PNP/NPN Programmable Output
	<b>R</b> AC/DC Relay Output
	<b>C</b> Polycarbonate
	<b>W</b> Without Holes-Slide
	<b>F</b> With Holes-Slide

A denotes with timers ie, BA, PA, DA

300mm (BG/BA)	<b>003</b>
1000mm (BG/BA)	<b>01K</b>
6m (PX/PA)	<b>006</b>
12m (RX/RA)	<b>012</b>
1m (DX/DA)	<b>01K</b>
2m (DX/DA)	<b>02K</b>
32m (RE/RA)*	<b>032</b>

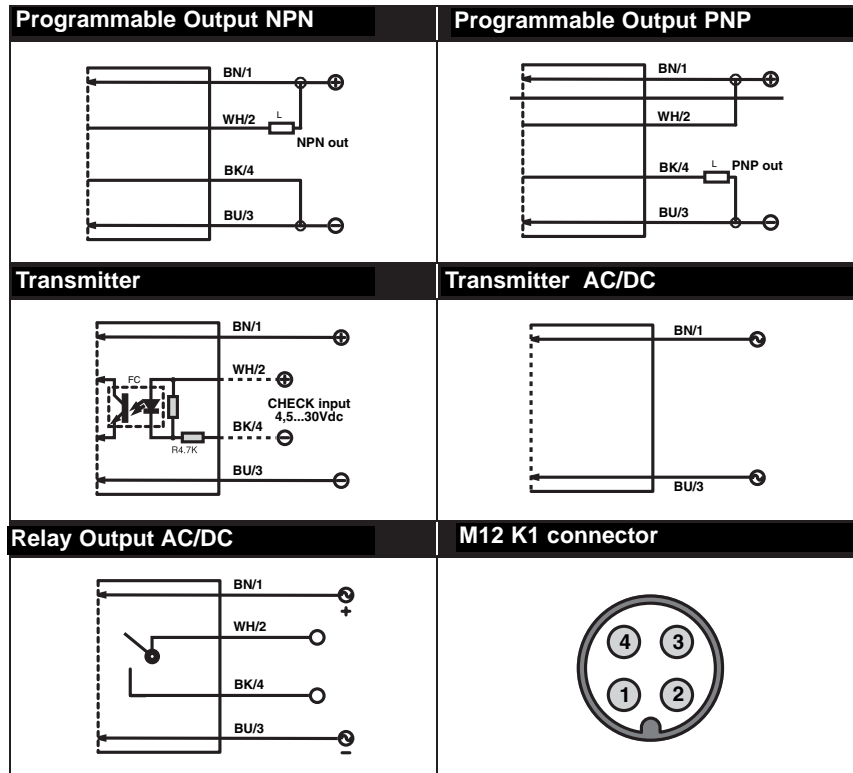
## INSTALLATION AND STARTING

A double installation is possible:  
 - with IN80 suitable bracket (option A models)  
 - with IN81 side bracket (option B models)

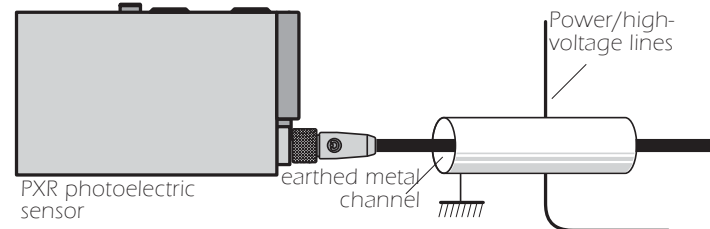


- The sensor head should not be exposed to organic solvents.
- Do not allow a strong light such as sun light to radiate directly on the sensor.

## WIRING DIAGRAMS



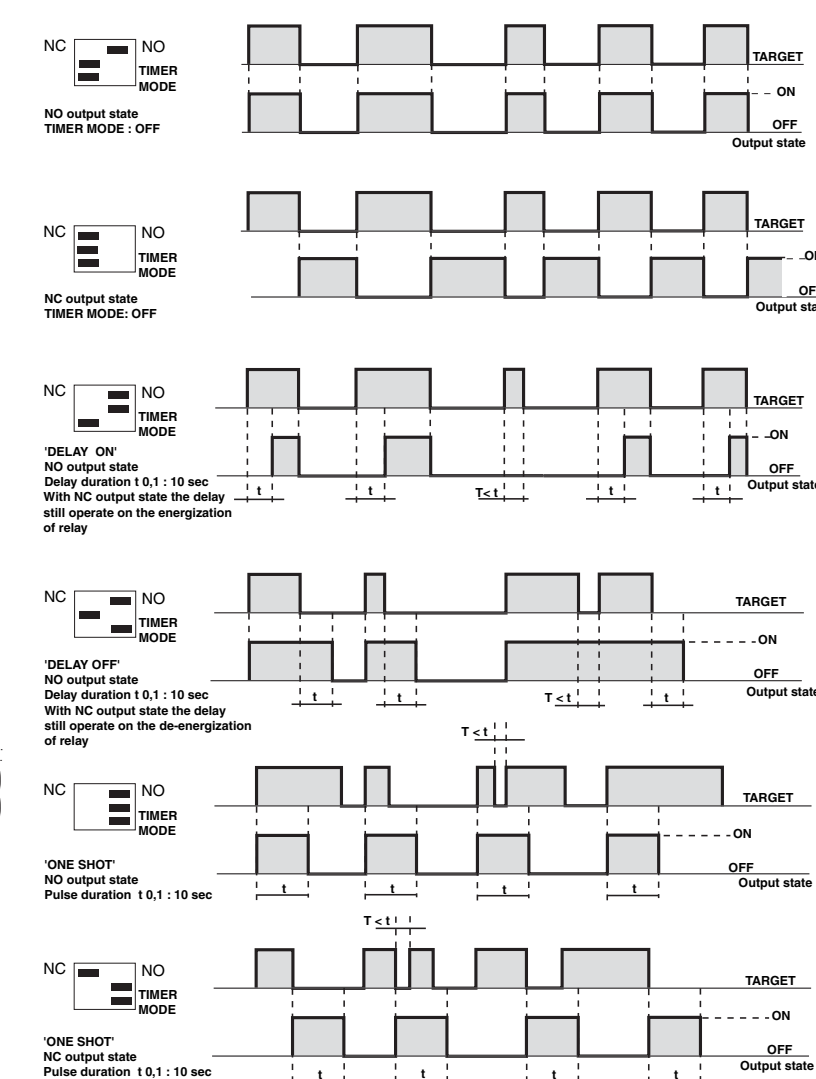
- Make sure that the supply voltage is correctly settled with maximum ripple specified in the catalog.
- For DC supply a class 2 source is required.
- In case of noise interference induced by the power lines higher than the admitted one, separate the wiring of the sensor (DC types) from the power and high voltage lines or place the sensor cable in an earthed metal channel. Otherwise the sensor may malfunction due to electric noise.



- The output state requires 100ms to become ready after the power has been applied (see "Time delay before availability").

## TIMING CHART

In the T models (with timer function) it's possible to obtain a delay of the turn-on instant (delay ON), turn-off instant (delay OFF) or to select ONE SHOT mode. The delay time can be adjusted from 0,1 to 10 seconds through the special adjustment.



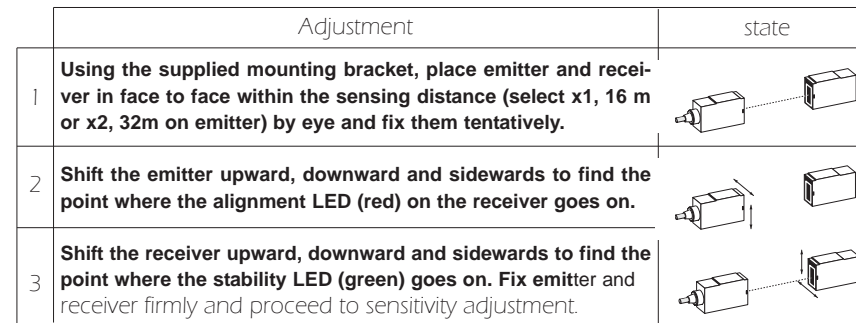
## SPECIFICATION

MODELS	PDX PBG/PBA	PRX PFX	PTC PRE/PRA	PDX PBG/PBA	PRX PFX	PTC PRE/PRA
	DC			AC-DC		
Differential travel	2...10%Sn		10%Sn	2...10%Sn		10%Sn
Repeat accuracy				5%		
Operating voltage	10-30Vdc			20-253Vac / 20-60Vdc		
Ripple	<10%					
No-load supply current		25mA	35mA	25mA	15mA	
Load current	40mA	25mA	30mA	25mA	3A-250Vad / 3A-30Vdc	(750VA / 90W)
Leakage current	<10µA					
Voltage drop	1,2V max.					
Output type	static (I)			relay		
Switching frequency	500Hz			250Hz	25Hz	
Supply electrical protections	polarity reversal, transient			transient (AC), over voltages (DC)		
Output electrical protections	short circuit (with hold)					
Temperature range	-25...+70°C (without freeze)					
Temperature drift	±10% Sr					
Interference to external light	>5000lux	>10000lux		>5000lux	>10000lux	
Protection degree	IEC IP 65					
LED indicators	red (output state), red (alignment), green (stability)					
Emitter LED indicators (distx2)	green (check), red (distx2)			green (supply), red (distx2)		
Housing material	polycarbonate (glass fiber reinforced)					

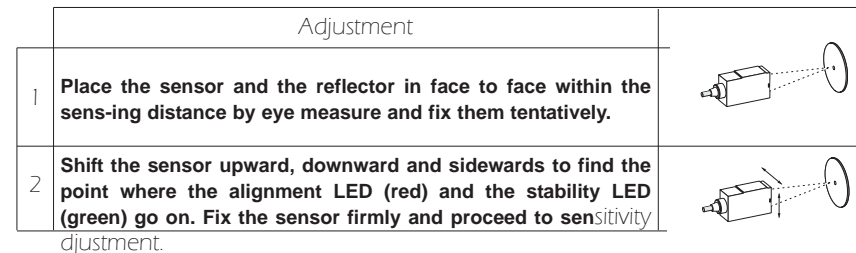
## ALIGNMENT

The following instructions are referred to NO modality. Please refer to the following operation mode table:

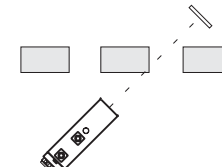
- Through beam models (sensing distance Sn = 16-32m)



- Retro-reflective (Sn=12m) and polarized models (Sn=6m)



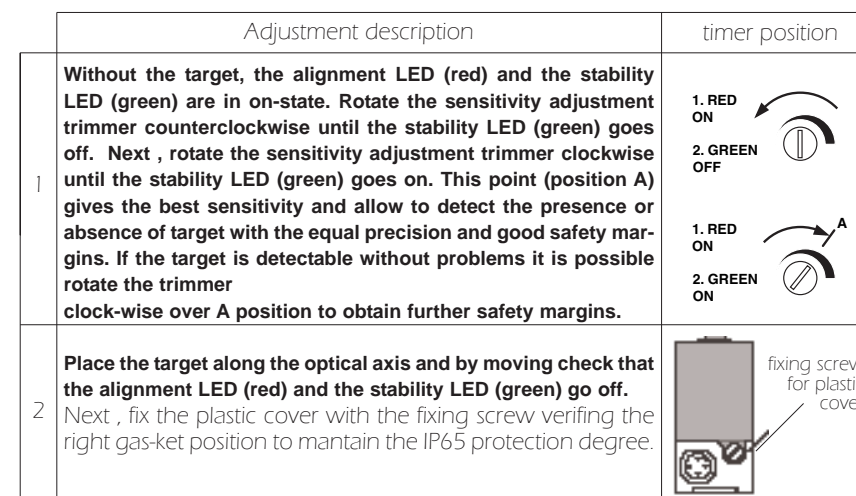
When the detected target is glossy or has a high reflection factor please use the polarized retroreflective models. In the case of using the retro-reflective models, tilt the sensor optical axis to avoid the high reflection factor.



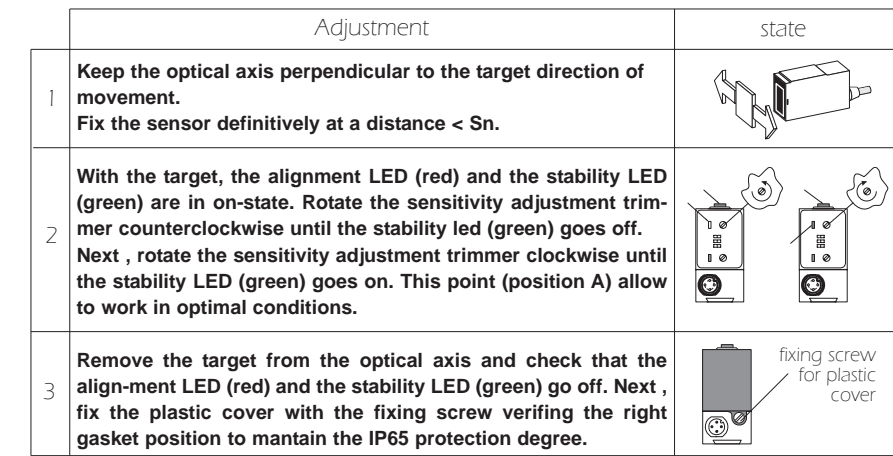
## REFLECTORS TABLE

Model	OX100D	OX104	OX106	OX110	OX111G	OX112G	OX113G	OX116
Distance in Retro%	50%	45%	55%	100%	50%	45%	95%	90%
Distance in Pol. %	45%	42%	53%	100%	39%	32%	95%	85%

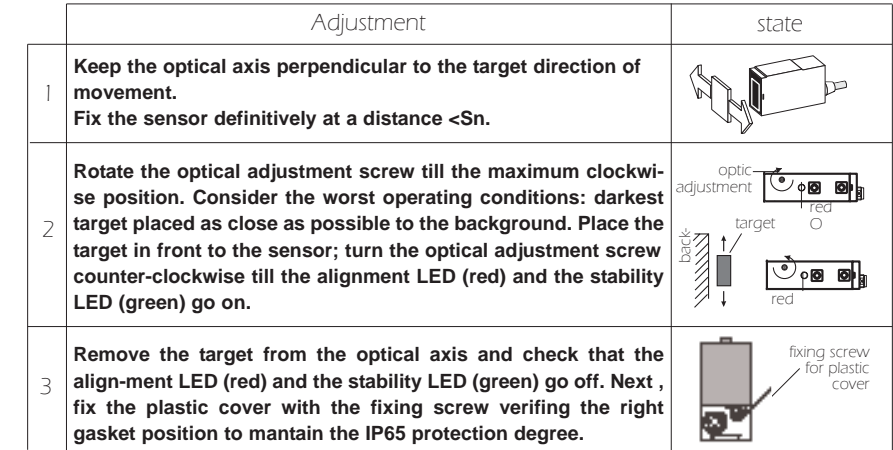
Sensitivity adjustment (through beam, retro-reflective, polarized models)



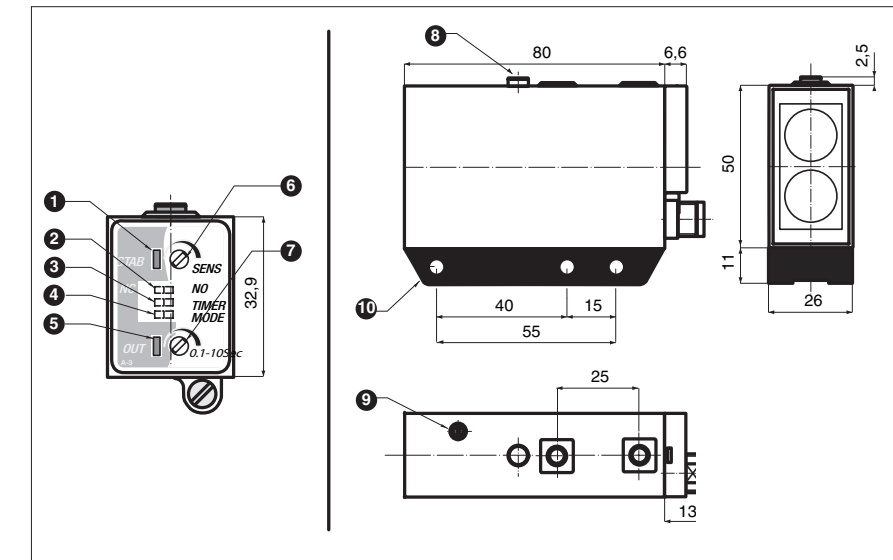
- Diffuse reflection models (Sn=1m), (Sn=2m)



- Background suppression models (Sn=0.05-0.3m) and (Sn=0.25-1m)



Timing functions are available for all models (see timing chart).



## PLUG CONNECTORS

Use preferably the following types of MD connectors:  
 INC12MZB\*\*\*A1 - M12 axial plug connectors, 4 poles, PVC, 2 and 5 metres - (\*\*\*)=020 for 2m and 050 for 5m  
 CD12MZB\*\*\*C5 - M12 right angle plug connectors, 4 poles, PVC, 2 and 5 metres.  
 CD12M/OB-\*\*\*A1 - M12 axial plug connectors with tang, 4 poles, CEI 2022 II, 2, 5, 7 and 10 metres - (\*\*\*)=020 for 2m, 050 for 5m, 070 for 7m and 100 for 10m  
 CD12MZB/\*\*\*C1 - M12 right angle plug connectors with tang, 4 poles, CEI 2022 II, 2, 5, 7 and 10 metres.

N.B. - It's very important to lock the connector nut to maintain IP65 protection degree of the sensor.

## ACCESSORIES

Use preferably IN82 screwdriver supplied with the sensors to adjust the trimmers or to remove protection screws.  
 IN80 bracket - Supplied for sensors without plastic slide (option A models).  
 IN81 bracket - Supplied for sensors with plastic slide (option B models).