

PM MINI LINE SENSOR SERIES CATALOG



INDEX

PM MINI LINE COMPACT PHOTOELECTRIC SERIES

General description	2
Code structure	3
ACCESSORIES	4
MODELS SPECIFICATIONS	4
FEATURE DIAGRAMS	7
WIRING DIAGRAMS	7
DIMENSIONS	8





PM MINI LINE PHOTOELECTRIC SWITCH SERIES

List of the functions



The PM Mini Line Photoelectric switch series is characterized by large scanning ranges, simple handling and a wide variety of application.

Two supply voltage ranges with interfaces to permit further processing of sensor signals are available:

1. A Universal Voltage (12-240 V DC & 24-240 V AC), with potential-free relay switching output (SPDT).
2. A Low voltage (10- 30 V DC) with PNP or NPN switching output, with M12 plug, 4-pin (revolving by 90°) or connecting cable.

The Light ON/Dark ON control cable reduces the number of variants by half.

Approvals:



General description

The PM Micro Line series of photoelectric switches are characterized by large scanning ranges, simple handling and a wide variety of application. The principal areas of application for the PM are:

- Handling and warehousing systems
- Conveyor sensor systems
- General sensing

The scanning ranges:

- Through-beam photoelectric switch: 20 m
- Photoelectric reflex switch, with polarizing filter: 9 m
- Photoelectric proximity switch with background suppression and adjustable scanning distance to 310 and to 600mm

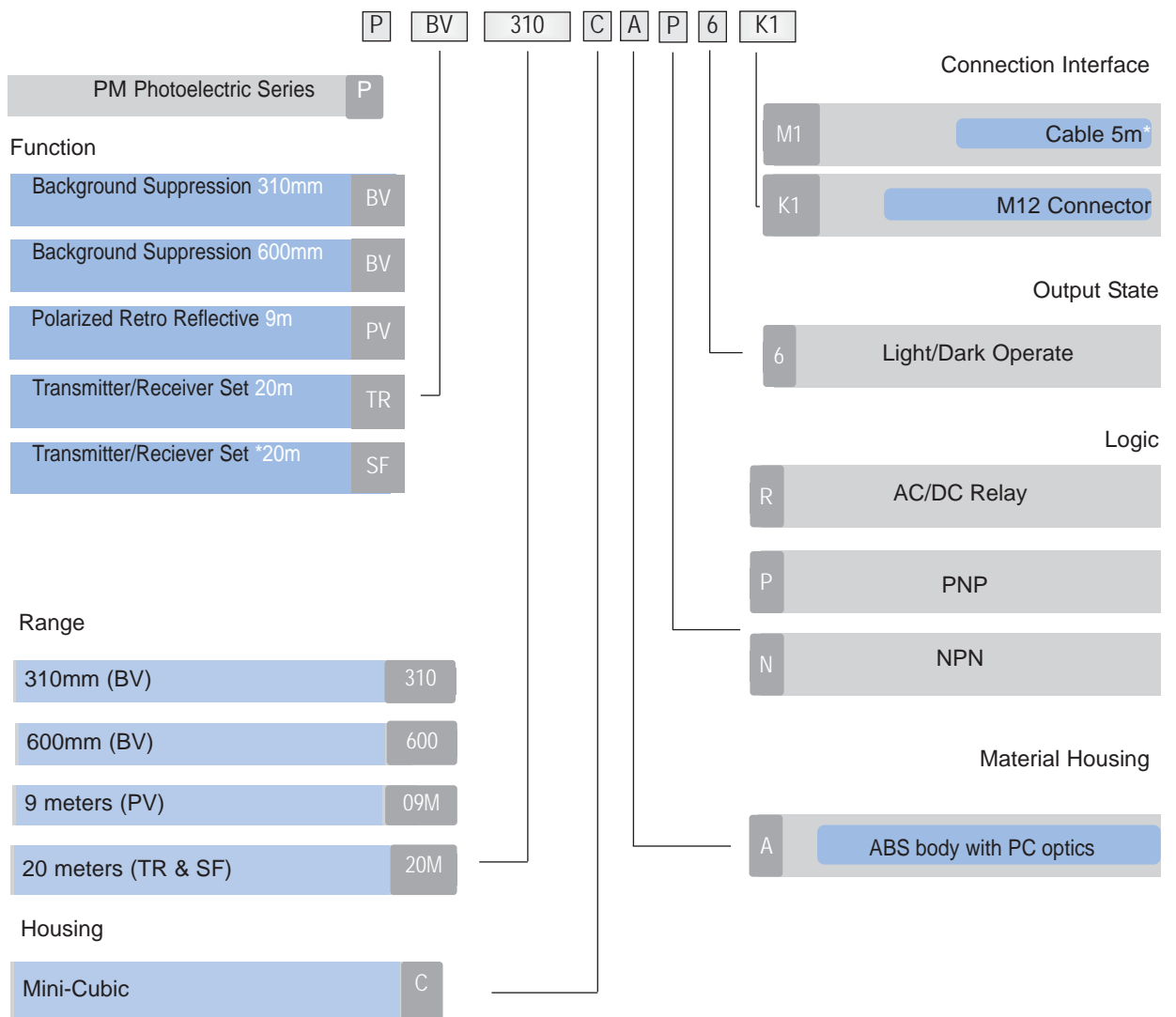
The mounting bracket INPM 00 and, for the PPV, the OX123 reflector are included. In addition, the visible red light of the sender LED also facilitates adjustment and handling.



Typical Application Notes

- Detection of an objects presence by different and irregular shapes
- Detection of objects of various colors and reflectivities
- Long range polarized retroreflective 9m
- Background suppression for use in high stainless steel environments
- Presence detection and height control of objects on conveyors

Parts Matrix

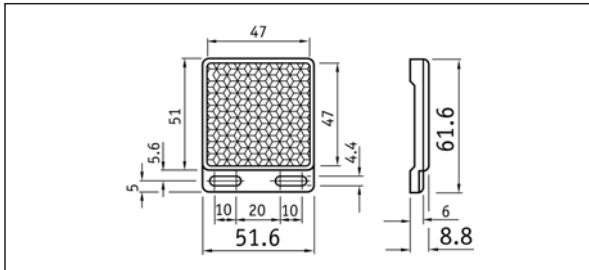


* without adjustability

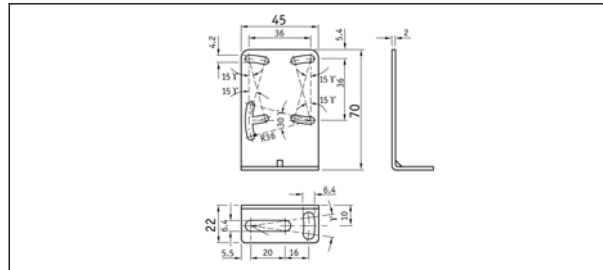
ACCESSORIES

Code	Description
OX123	Reflector 51,6x61,6 mm supplied with PPV models
INPM 00	Mounting bracket, supplied with all models

OX123



INPM 00



BACKGROUND SUPPRESSION MODELS

Model	PBV310(N-P)	PBV600(N-P)	PBV310(R)	PBV600(R)
Function	Background suppression			
Sensing distance mm (1)	90 ÷ 310	110 ÷ 600	90 ÷ 310	110 ÷ 600
Blind zone mm 5 ÷ 15	10 ÷ 35	5 ÷ 15	10 ÷ 35	
Scanning distance adjusting	Potentiometer 2 turns with position indicator			
Light source	Red visible LED light			
Spot diameter	approx. 35 mm @ 500 mm			
Light on-Dark on select.	control wire		light on	
Supply voltage	10 ÷ 30 VDC limit value		12 ÷ 240 VAC/VDC; 24 ÷ 240 VAC/VDC	
Ripple (Max)	5 Vpp		-	
No load supply current	35 mA		2 VA	
Load current max	100 mA		--	
Output voltage drop	1,8 V Max @ 100 mA		--	
Max output switching current	--		3A/240 V AC/DC (2) 3 A/30 V AC/DC (2)	
Output type	PNP or NPN		Relay SPDT electrically isolated	
open collector				
Switching frequency	250 Hz Max		33 Hz Max	
Response time	2 mS		15 mS	
Supply electrical protections	Overvoltage pulses and polarity reversal			
Output electrical protections	Short circuit, overcurrent, overvoltage		--	
Operation temperature range	- 25 °C...+ 55 °C			
Storage temperature	- 40 °C...+ 70 °C			
LUX	10 000 Lux minimum sunlight			
Ambient light immunity	3000 Lux min HF lamp			
Enclosure rating	IP 67			
LED indicators				
Housing material	Housing: ABS; optics: PC			
Cable PVC 2m	4 x 0,18 mmq, ø 3,8 mm		5 x 0,76 mmq, ø 6,3 mm	
Weight approx	80g cable; 40g plug		160 g	

(1) White target 90% 100x100 mm

(2) Ensure spark extinguishing for inductive or capacitive load



REFLEX POLARIZED MODELS

Model	PPV09MCA-P/N	PPV09MCAR
Function	Reflex polarized models	
Sensing distance (1)	9 m Max. typical	
Blind zone mm	0,01 m	
Sensitivity adjusting	Potentiometer 2 turns with position indicator	
Light source	Red polarized visible LED light	
Spot diameter	Approx. 400 mm @ 8 m	
Supply Voltage	10 ÷ 30 V dc	12 ÷ 240 Vac / Vdc;
Ripple max	5 Vpp	-
No load supply current	35 mA	2 VA
Load current max	100 mA	--
Output voltage drop	1,8 Vmax @ 100 mA	
Max output switching current	3 A/30 Vdc (2)/3A/240Vac (2)	
Output type	PNP NPN open collector	Relay SPDT electrically isolated
Switching frequency	1000 Hz max	33 Hz max
Response time	0,5 mS	15 mS
Time delay before availability		
	Supply electrical protections	Overvoltage pulses and polarity reversal
Output electrical protections	Short circuit, overcurrent, overvoltage	--
Operation temperature range	- 25 °C...+ 55 °C	
Storage temperature	- 40 °C...+ 70 °C	
Ambient light immunity	10 000 Lux minimum sunlight 3000 Lux min HF lamp	
Enclosure rating	IP 67	
LED indicators		
Housing material	Housing: ABS; optics: PC	
Cable PVC 2m	4 x 0,18 mmq, ø 3,8 mm	5 x 0,76 mmq, ø 6,3 mm
Weight approx	80g cable 40g plug	160 g

(1) With OX123 included reflector

(2) Ensure spark extinguishing for inductive or capacitive load





THROUGH - BEAM MODELS

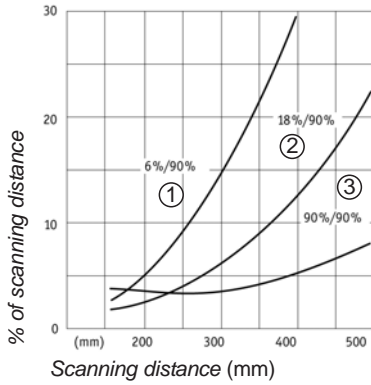
Modello/Model	PSF		PTR	
	PTX Transmitter	PRE Receiver	TF Transmitter	PRF Receiver
Function	20 m			
Sensing distance	Not available		Sensitivity adjusting potentiometer 2 turns with position indicator	
Light source	LED red light	--	LED red light	--
Spot diameter	1,5 m @ 20 m	--	1,5 m @ 20 m	--
Light on-Dark on select.	--	control wire	--	Light on
Supply voltage	10 ÷ 30 VDC limit value		12 ÷ 240 VDC; 24 ÷ 240 VAC	
Ripple Max	5 Vpp		--	
No load supply current	20 mA	35 mA	2 VA	2 VA
Load current max --	--	100 mA	--	--
--	--	1,8 V	--	--
Output voltage drop	--	max @ 100 mA	--	--
Max output switching current	--	--	--	3 A/240 V ac(2) 3 A/30 V dc (2)
Output type --	--	PNP / NPN open collector	--	Relay SPDT
Switching frequency	--	1000 Hz	--	33 Hz
Response time --	--	0,5 ms	--	15 ms
Time delay before availability				
Supply electrical protections	Overvoltage pulses and polarity reversal			
Output electrical protections	--	Short circuit, over current, over voltage	--	--
Operation temperature range	- 25 °C...+ 55 °C			
Storage temperature	- 40 °C...+ 70 °C			
Ambient light immunity	10 000 Lux minimum sunlight 3000 Lux min HF lamp			
Enclosure rating	IP 67			
LED indicators --	--			
Housing material	Housing: ABS; optics: PC			
Cable PVC 2m	3 x 0,18 mmq, ø 3,8 mm	4 x 0,18 mmq, ø 3,8 mm	2 x 0,76 mmq, ø 6,3 mm	5 x 0,76 mmq, ø 6,3 mm
Weight approx.	150g cable; 70g plug		290 g	

(2) Ensure spark extinguishing for inductive or capacitive load

FEATURE DIAGRAMS

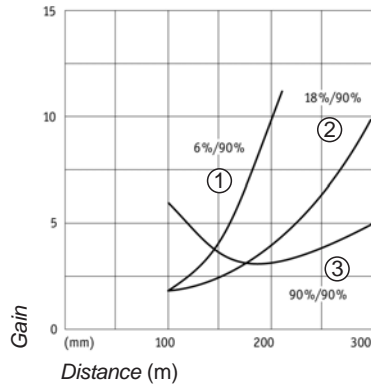
n Background suppression models

PBV600



n Background suppression models

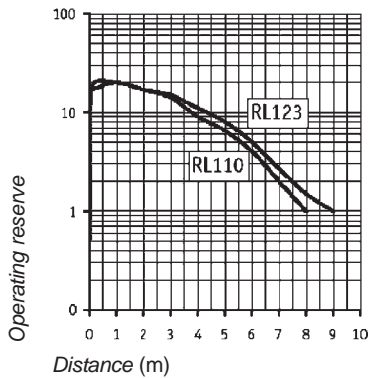
PBV310



- ① Scanning range on black, white background
- ② Scanning range on gray, white background
- ③ Scanning range on white, white background

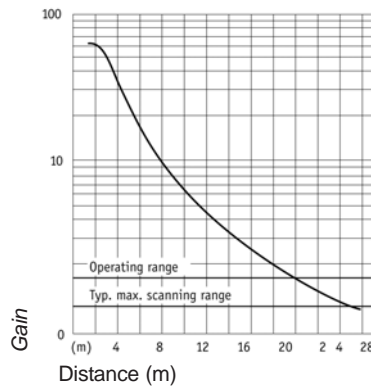
n Reflex polarized models

PPV



n Through – beam models

PSF/TR



WIRING DIAGRAMS

Transmitter

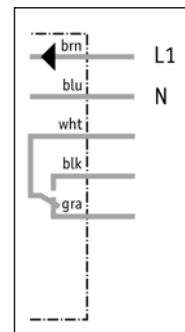
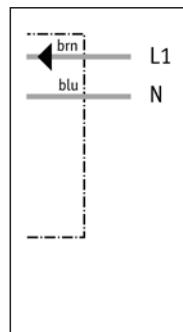
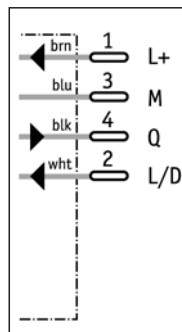
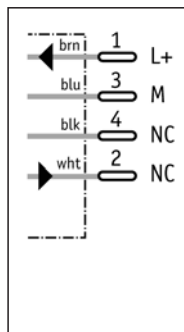
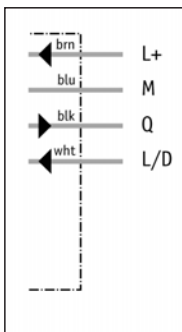
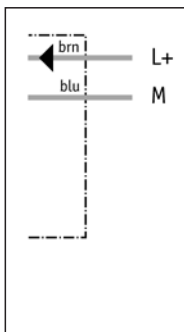
All the others

Transmitter

All the others

Transmitter

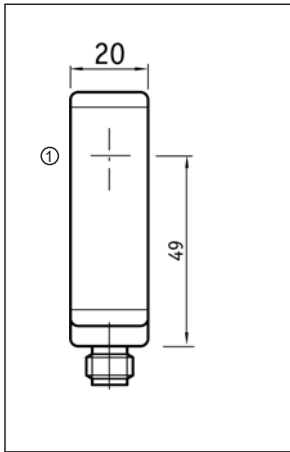
All the others





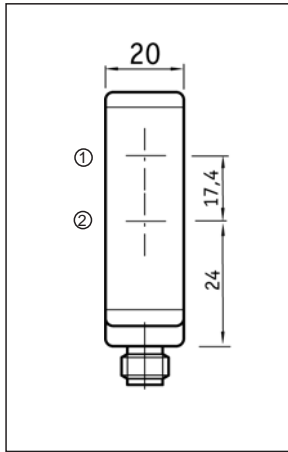
DIMENSIONS AND WIRING

PSF/TR(K1)

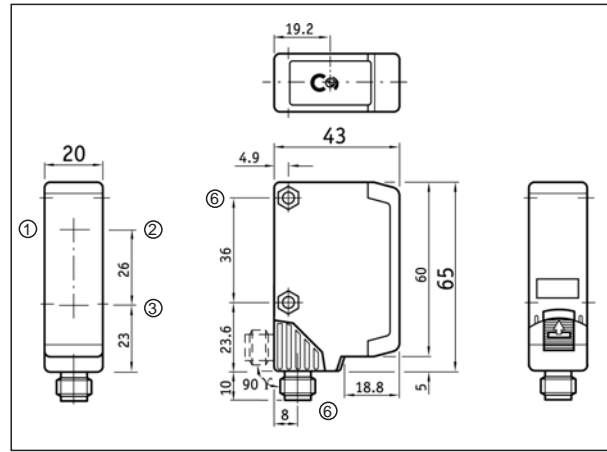


- ① Emitter center of optical axis
- ② Receiver center of optical axis

PPV(K1)

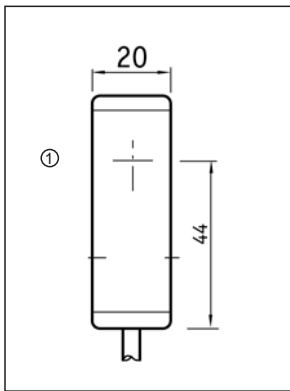


PBV310/600 (K1)

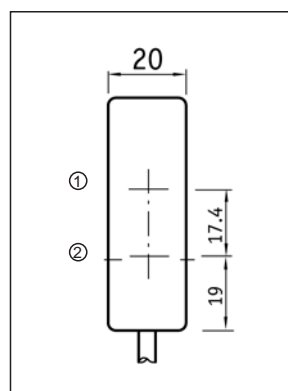


- ① Standard direction of the material
- ② Emitter center of optical axis
- ③ Receiver center of optical axis
- ④ Red LED indicator
- ⑤ Through bore hole | 4.2 mm, for M 4 hexagon nut
- ⑥ M12 plug

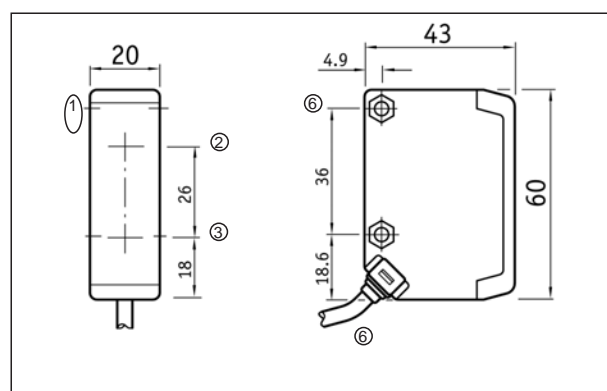
PSF/TR(M1)



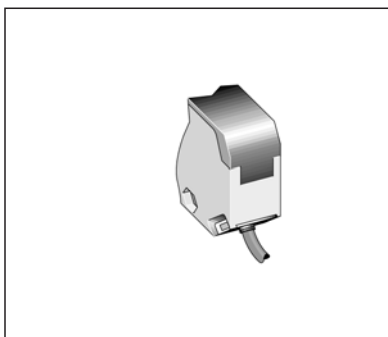
PPV(M1)



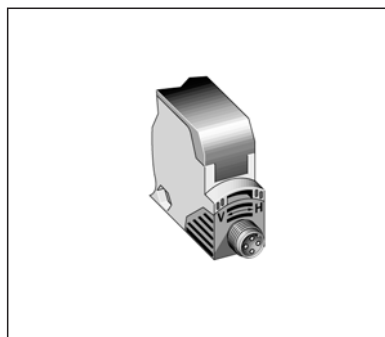
PBV(M1)



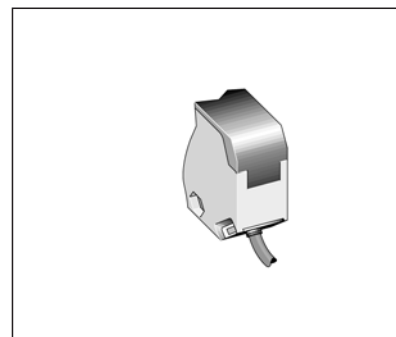
DC supplied models



DC supplied models



AC-DC supplied models



INPROX SENSORS
28 State Street Suite 1100
Boston, MA 02109
Toll Free 1-877-INPROX-7 1-877-467-7697
Fax 1-617-507-2665

sales@inproxsensors.com
www.inproxsensors.com