Photoelectrics
Retro-reflective, Polarized
Type PB3P



- **Range: 3 m**
- **Polarized modulated, visible red light**
- **For transparent glass detection**
- **Adjustable sensitivity**
- **Rated operational voltage: 10 to 30 VDC**
- **Output: 200 mA, NPN or PNP**
- **Make and break switching funct., with LED indication**
- **Protection: Reverse polarity, short circuit, overload**
- **Operating frequency: 1 kHz**
- **High immunity to ambient light**
- **18 x 75 x 36 mm ABS housing, IP 67**

Product Description

Polarized, retro-reflective photoelectric switch. Range 3 m. Reliable detection of shiny and transparent objects. Visible beam allows easy alignment. Precise detection through narrow beam. Rugged, glass-reinforced ABS housing, totally sealed. IP 67. 2 m PVC cable connection or standard M12 plug.

Ordering Key

PB3P NPA-1

Type
Function
Output type
Connection type

Type Selection

Housing W x H x D Rated operating dist. (S_n)	Ordering no. NPN/cable Make & break swit.	Ordering no. NPN/plug Make & break swit.	Ordering no. PNP/cable Make & break swit.	Ordering no. PNP/plug Make & break swit.
18 x 75 x 36 3 m	**PB 3P NPA**	**PB 3P NPA-1**	**PB 3P PPA**	**PB 3P PPA-1**

Note: Plugs and reflectors to be ordered separately.

Specifications

Rated operating dist. (S_n)	3 m, with reflector type ER 100, ref. target
Temperature drift	0.4%/K
Rated operational volt. (U_B)	10 to 40 VDC (ripple incl.)
Ripple (U_{rpp})	10%
Output current	
Continuous (I_e)	≤ 200 mA
Short-time (I)	200 mA, Max. load capacity 100 nF
No load supply current (I_O)	≤ 40 mA
OFF-state current (I_r)	Max. 100 μA
Voltage drop (U_d)	≤ 2.5 VDC
Protection	Reverse polarity, overload short-circuit, transients
Transient voltage	≤ 1 kV/0.5 J
Sensitivity	Adjustable, 20 turn pot
Light source	GaAlAs LED 660nm
Light type	Visible red polarized, modulated
Optical angle	± 1°
Light spot size	65 mm at 2 m
Ambient light	Max. 10,000 lux
Operating frequency (f)	1000 Hz, light/dark ratio 1:2
Response time	
OFF-ON (t_{ON})	≤ 660 μs
ON-OFF (t_{OFF})	≤ 330 μs
Power ON delay (t_v)	Typ. 100 ms
Indication	
Output ON	LED, yellow
Environment	
Overvoltage category	III (IEC 60664/60664A; 60947-1)
Pollution degree	3 (IEC 60664/60664A; 60947-1)
Degree of protection	IP 67 (IEC 60529; 60947-1)
Temperature	
Operating	-20° to +60°C (-4° to 140°F
Storage	-30° to +70°C (-22° to 158°F)
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)

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Specifications (cont.)

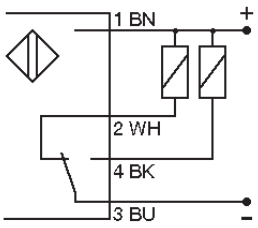
Shock	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)
Dielectric voltage	500 VAC (rms)
Housing material	
Body	ABS, glass-reinforced, grey
Front	ABS, glass-reinforced, black
Lenses	Acrylic
Mounting bracket ABP-1	Iron, black
Connection	
Cable	Black, 2 m, oilproof PVC, 4 x 0.35 mm^2, **Note:** Other lengths on request
Plug	CON.14NF..
Weight	197 g cable version 105 g plug version
CE-marking	Yes (only PB3PP..)

Truth Table

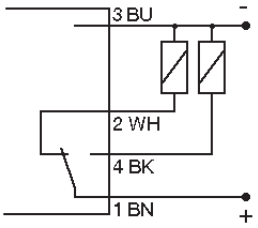
	Make switching		Break switching	
Object present	Yes	No	Yes	No
LED	OFF	ON	OFF	ON
Load	Non-active	Active	Active	Non-active
Output NPN	High	Low	Low	High
Output PNP	Low	High	High	Low

Wiring Diagrams

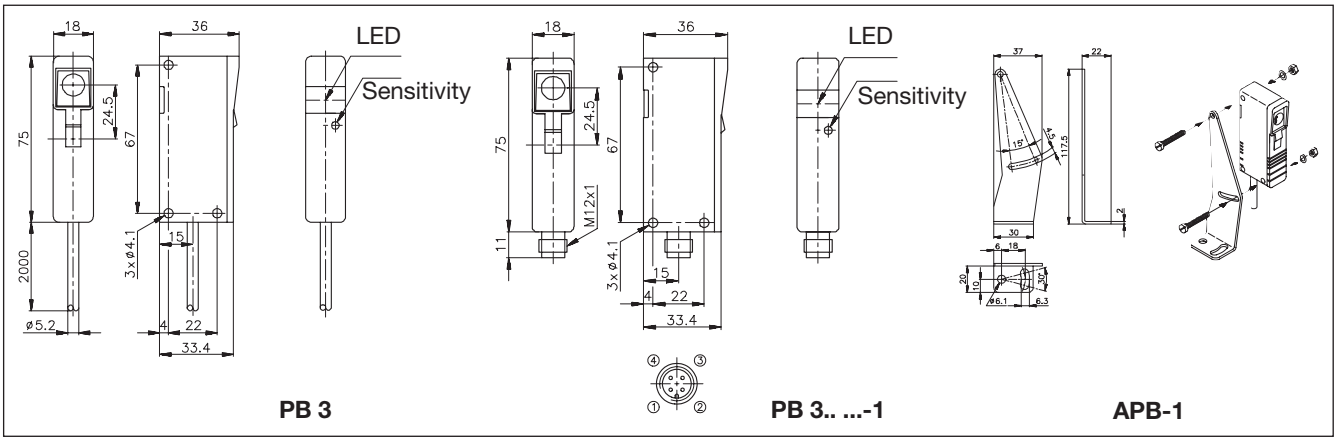
NPN



PNP

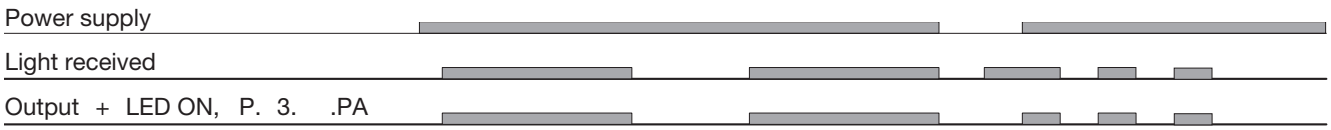


Dimensions

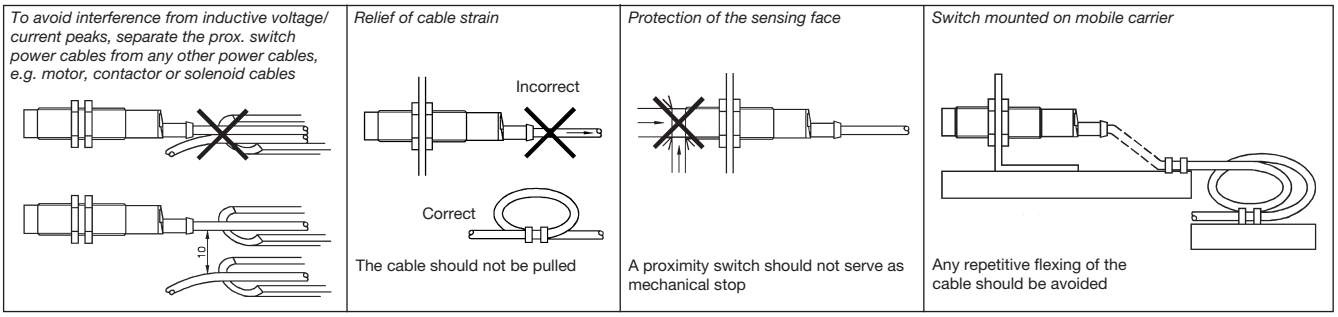


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Operation Diagram (Make switching (NO))



Installation Hints



Accessories

- Reflectors: ER series.
- Connector type CON.14NF.. serie.

Delivery Contents

- Photoelectric switch: PB3P..
- Adjustable mounting bracket APB-1
- Screwdriver for adjustments, 77-000
- Installation instruction
- Two M4 x 25 mm screws, washers and M 4 nuts
- **Packaging:** Carton box

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