

Photoelectrics Special Function Type EF 1801, Fiber Optic Sensor



- Range: Fiber dependent, typ. 100 mm
- Adjustable sensitivity
- Modulated, red light
- Rated operational voltage: 10 to 40 VDC
- Output: DC 200 mA NPN or PNP
- Make and break switching function, LED indication
- Heavy duty M 18 metal housing, IP 67
- Cable and plug versions
- For 2.2 mm fiber cable with 1 mm core
- MB 18A for DIN-rail mounting (see Accessories)

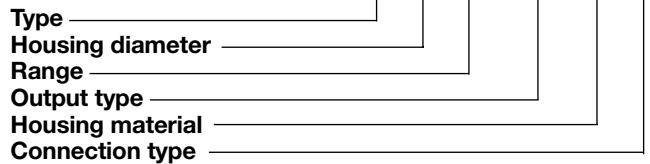


Product Description

Used in through-beam, retro-reflective or diffuse-reflective applications depending upon how the additional fibers are mounted. Easily adjustable sensitivity with 270° potentiometer. LED indication for out-

put ON. Short M 18 metal housing for heavy duty applications. The fiber allows positioning and mounting in tight spaces with the photoelectric sensor itself mounted in a more convenient location.

Ordering Key EF 18 01 PPA S - 1



Type Selection

Housing diameter	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.
M 18	Fiber depend.	EF 1801 NPAS	EF 1801 NPAS-1	EF 1801 PPAS	EF 1801 PPAS-1

Specifications

Rated operating dist. (S _n)	Fiber dependent
Temperature drift	0.4%/K
Hysteresis (H) (Differential travel)	3 to 20%
Rated operational volt. (U _B)	10 to 40 VDC (ripple included)
Ripple (U _{rip})	≤10%
Output current Continuous (I _c) Short-time (I)	≤ 200 mA 200 mA, max. load capacity 100 nF
No load supply current (I ₀)	≤ 20 mA,
Min. load current (I _m)	0.5 mA
OFF-state current (I _l)	≤ 100 μA
Voltage drop (U _d)	≤ 2.5 V
Protection	Reverse polarity, short circuit, transients
Transient voltage	Max. 1 kV/0.5 J
Sensitivity	Adjustable, 270° turn potentiometer,
Light source	660 nm
Light type	Red, modulated synchronized

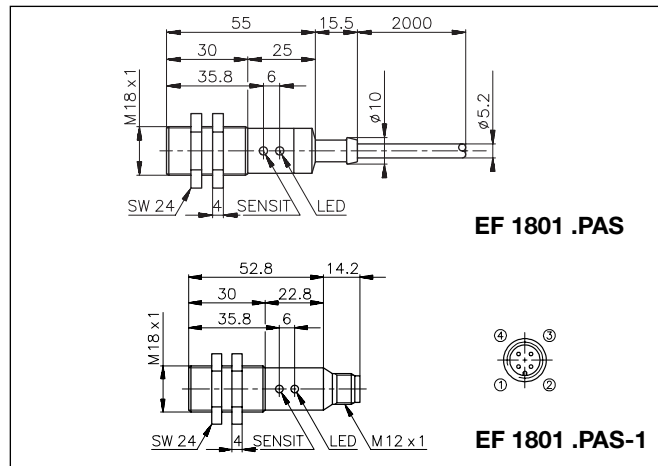
Operating frequency (f)	120 Hz, light/dark ratio 1:2
Response time OFF-ON (t _{ON}) ON-OFF (t _{OFF})	≤ 3.2 ms ≤ 5 ms
Power ON delay (t _v)	Typ. 100 ms
Indication Output ON	LED, yellow
Environment Overvoltage category Pollution degree Degree of protection	III (IEC 664/664A; 947-1) 3 (IEC 664/664A; 947-1) IP 67 (IEC 529; 947-1)
Temperature Operating Storage	-20° to +60°C (-4° to 140°F) -30° to + 70°C (-22° to 158°F)
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 68-2-6)
Shock	2 x 1 m & 100 x 0.5 m (IEC 68-2-32)
Dielectric voltage	500 VAC (rms)
Housing material Body Front Cable end Nuts	Nickel-plated brass TPE/POM, black Polyester, black Nickel-plated brass



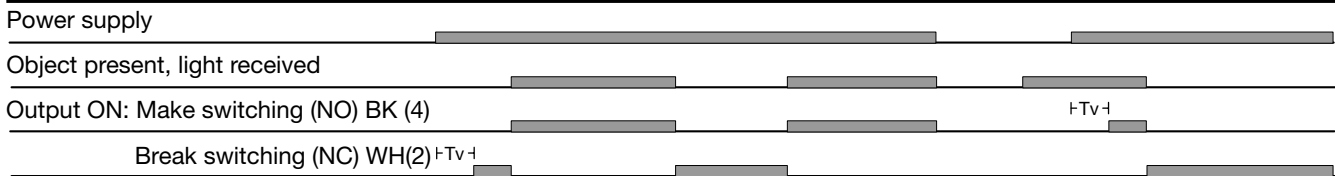
Specifications (cont.)

Connection	
Cable	Grey, 2 m, oilproof PVC, 4 x 0.35 mm ² Note: Other cable lengths on request
Plug (-1) Cables for plug (-1)	M 12 CONH1A-.. serie
Weight	
Cable version	115 g
Plug version	40 g

Dimensions



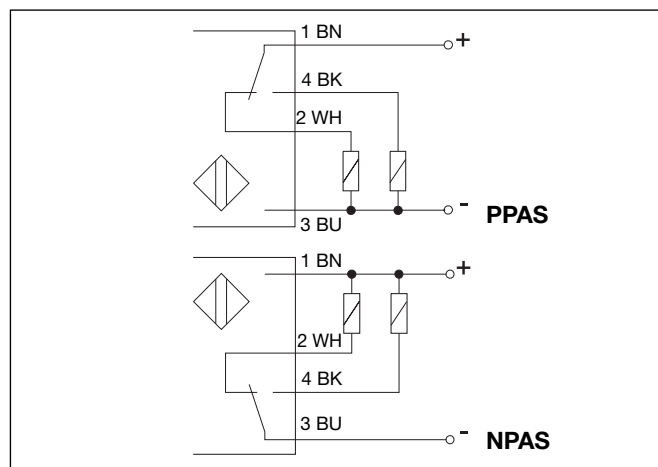
Operation Diagram



Truth Table

	Make switching		Break switching	
	No	Yes	No	Yes
Object present	No	Yes	No	Yes
DC types				
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



Accessories

- Fiber optics - call for further information
- Plugs CONH1A-.. serie, please refer to "Accessories"

Delivery Contents

- Photoelectric switch: EF 1801....
- 2 nuts
- M 18 mounting bracket MB 18A for direct surface or DIN-rail mounting
- Screw driver
- Fiber cutter
- **Packaging:** cardboard box

Installation Instructions

When you insert the fibers:

- Push the spring-loaded clamp (1) with the enclosed screw driver towards the fiber entries (2). The fiber entries are now open for putting in the fibers.
- Put in the fibers. Be sure that the fibers pass the constriction near the bot-

tom of the hole. The constriction seals the junction (between fiber and photo element) against dust.

The sensing distance will be reduced if there is an air gap between the fiber and the photo element.

- Release the clamp to fix the fibers.

