

Photoelectrics

Retro-reflective, Polarized

Type EP 1820, DC, PBTP-housing

CARLO GAVAZZI



- Range: 2.0 m
- Modulated red light, polarized
- Supply voltage: 10 to 40 VDC
- Output: 200 mA NPN or PNP
- Make and break switching functions, LED, indication
- Protection: Reverse polarity, short-circuit, transients
- Improved immunity to reflecting surfaces
- Heavy duty M18 metal housing, IP67
- Cable and plug versions



Product Description

The EP1830 is a family of general purpose polarized retro-reflective sensors in a short M18 metal housing for heavy duty applications. They are useful for simple applications, where a basic sensor

provides adequate sensing performance. The sensors are easy to adjust with a 270° single turn potentiometer. The output is a 4-wire complementary NO or NC thyristor (SCR) output.

Ordering Key

EP 18 20 NPA S-1

Type _____
 Housing diameter _____
 Range _____
 Output type _____
 Housing material _____
 Connection type _____

Type Selection

Housing diameter	Rated operating dist. (S _n)	Connection	Ordering no. NPN Make & break switching	Ordering no. PNP Make & break switching
M18	2.0 m	Cable	EP 1820 NPAS	EP 1820 PPAS
M18	2.0 m	Plug	EP 1820 NPAS-1	EP 1820 PPAS-1

Specifications

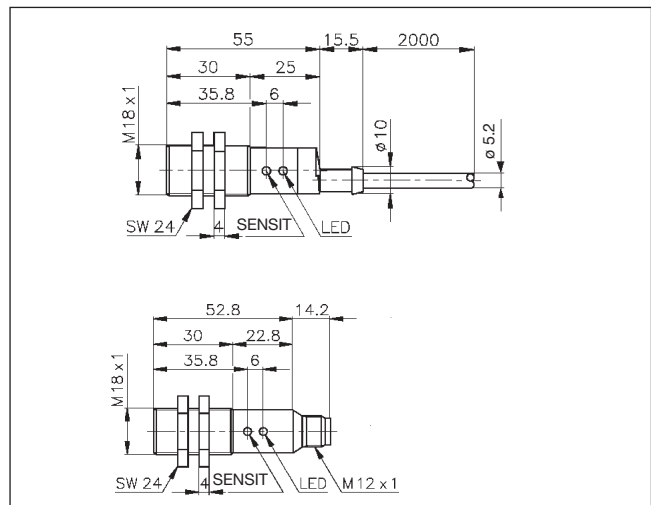
Rated operating dist. (S_n)	Up to 2.0 m Ref. reflector type ER4, Ø 84 mm	Light source	GaAlAs LED, 660 nm
Sensitivity	270° single turn pot.meter	Light type	Red polarized, modulated ± 2°
Temperature drift	0.4%/°C	Optical angle	150 mm at 2 m
Hysteresis (H) (Differential travel)	3 to 20 %	Light spot size	Max 5'000 lux
Rated operational volt. (U_B)	10 to 40 VDC (ripple included)	Ambient light	
Ripple (U_{rip})	Max. 10%	Operating frequency (f)	Max. 100 Hz, light-dark ratio 1.2
Output current Continuous (I _a) Short-time (I)	≤ 200 mA 200 mA max. load capacity 100nF	Response time OFF-ON (t _{ON}) ON-OFF (t _{OFF})	≤ 3.2 ms ≤ 5 ms
No load supply current (I_O)	Max. 20 mA	Indication Function	Dark and light (complementary) switch. LED, yellow
Min. operational current (I_m)	0,5 mA	Output ON	
OFF-state current (I_i)	Max. 100 µA	Environment Overvoltage category Pollution degree Degree of protection	III (IEC 60664/60664A; 60947-1) 3 (IEC 60664/60664A; 60947-1) IP 67 (IEC 60529; 60947-1)
Voltage drop (U_d)	Max. 2.5 VDC @ 200 mA	Temperature Operating Storage	-20° to +60°C (-4° to 140°F) -30° to + 70°C (-22° to 158°F)
Protection	Reverse polarity, short-circuit, transients	Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)
Transient voltage	1 kV / 0.5 J	Shock	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)
Power ON delay (t_v)	Typ. 70 ms		



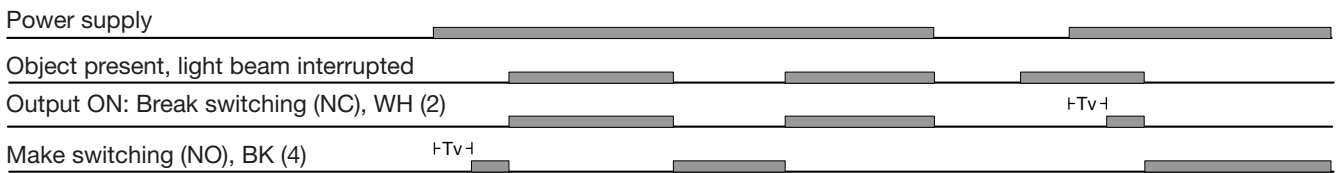
Specifications (cont.)

Dielectric voltage	500 V (IEC 60364-4-41)
Housing material	Nickel plated brass PMMA, red Polyester, black Nickel plated brass
Connection	Grey, 2 m, 4 x 0.35 mm ² , oilproof PVC M12 x 1 CON.1A... series
Weight	175 g 90 g
CE-marking	Yes

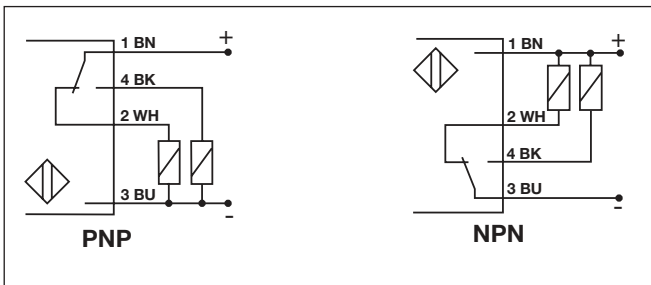
Dimensions



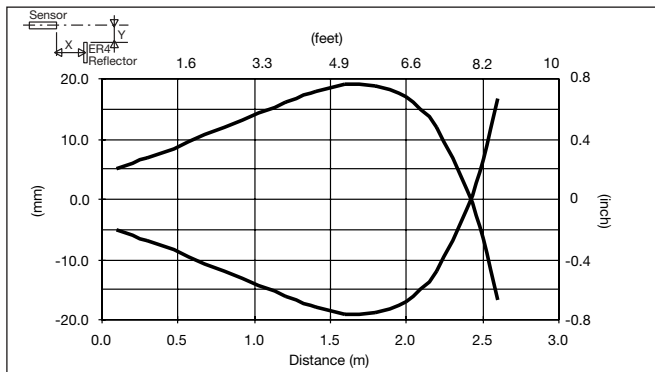
Operation Diagram



Wiring Diagrams



Detection Diagram



Installation Hints

<p>To avoid interference from inductive voltage/current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables</p>	<p>Relief of cable strain</p> <p>The cable should not be pulled</p>	<p>Protection of the sensing face</p> <p>A proximity switch should not serve as mechanical stop</p>	<p>Switch mounted on mobile carrier</p> <p>Any repetitive flexing of the cable should be avoided</p>
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Delivery Contents

- Photoelectric switch ER1820.
- 2 nuts
- **Packaging:** Plastic bag

Accessories

- Reflectors: ER series
- Connector type CON.1A../CON.14NF.. series
- MB18A
- APA18-RAR

For further information refer to "Accessories".

Specifications are subject to change without notice (08.02.06)