

Photoelectrics Through-beam Type ET 1820 DC, Nickel-plated Brass Housing

CARLO GAVAZZI



- Range: 20 m
- Adjustable sensitivity
- Modulated infrared light
- Make and break switching functions, NPN, PNP (200 mA)
- LED-indication for power supply ON (emitter) and target detected (receiver)
- Supply voltage: 10 to 40 VDC
- Heavy duty M18 metal housing, IP 67
- Cable and plug versions



Product Description

The ET1820 is a family of general purpose through-beam sensors in an industrial standard M18 nickel-plated brass housing for heavy duty applications. They are useful for simple applications where a basic sensor provide adequate

sensing performance. The sensors are easy to adjust with a 270° single turn potentiometer. The output is a 4-wire complementary (NO and NC) circuit with NPN (current sinking) or PNP (current sourcing) open collector transistor output.

Ordering Key

ET 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. Receiver/NPN Make & break switching	Ordering no. Receiver/PPN Make & break switching	Ordering no. Emitter
M18	20 m	Cable	ET 1820 NPAS	ET 1820 PPAS	ET 1820
M18	20 m	Plug	ET 1820 NPAS-1	ET 1820 PPAS-1	ET 1820-1

Note: Please order emitter and receiver separately.

Specifications Emitter

Rated operational volt. (U_B)	10 to 40 VDC (ripple included)
Ripple (U_{rp})	≤ 10%
Supply current (I_o)	≤ 20 mA
Protection	Reverse polarity, short-circuits, transients
Light source	GaAlAs LED, 880 nm
Light type	Infrared, modulated
Optical angle	± 2°
Indication Supply ON	LED, green

Specifications Receiver

Rated operating dist. (S_n)	Up to 20 m
Sensitivity	270° single turn pot. meter
Temperature drift	0.6%/°C
Hysteresis (H) (Differential travel)	3 to 20%
Rated operational volt. (U_B)	10 to 40 VDC (ripple included)
Ripple (U_{rp})	Max. 10%
No-load supply current (I_o)	Max. 12 mA (typ. 8 mA)
Min. operational current (I_e)	0.5 mA
OFF-state current (I_r)	Max. 100 μA (typ. 0)
Output current Continuous (I_e) Short-time (I)	Max. 200 mA 200 mA Max. load capacity 100 nF
Voltage drop (U_d)	Max. 2.5 VDC
Protection	Reverse polarity, short-circuit, transients
Optical angle	± 2°
Ambient light	Max. 5,000 lux
Operating frequency (f)	Typ. 170 Hz
Response time OFF-ON (t_{ON}) ON-OFF (t_{OFF})	Typ. 1.6 ms Typ. 4.2 ms



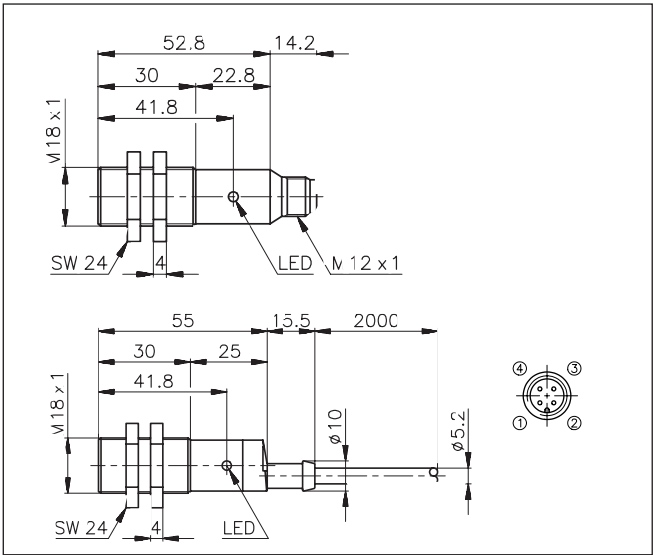
General Specifications

Power ON delay (t _v)	70 ms	Housing material	
Indication	Light and dark (Complementary switch)	Body	Nickel plated brass
Output ON	LED, yellow	Front	PC, black
Environment		Cable end	Polyester, black
Overvoltage category	III (IEC 60664/664A; 60947-1)	Nuts	Nickel plated brass
Pollution degree	3 (IEC 60664/664A; 60947-1)	Connection	
Degree of protection	IP 67 (IEC 60529; 60947-1)	Cable	Grey, 2 m oilproof, PVC, Receiver 4 x 0.34 mm ² , Ø 5.2 mm
Temperature		Ermitter	2 x 0.5 mm ² , Ø 5.2 mm
Operating	-20° to +60°C (-4° to +140°F)	Plug	M12 x 1
Storage	-30° to +70°C (-22° to +158°F)	Cables for plug (M1)	CON.14NF.. series
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)	Weight	
Shock	2 x 1 m & 100 x0.5 m (IEC 60068-2-32)	Cable version	137 g
Dielectric voltage	500 VAC (IEC 60364-4-41)	Plug version	54 g
		Approvals	UL, CSA
		CE-marking	Yes

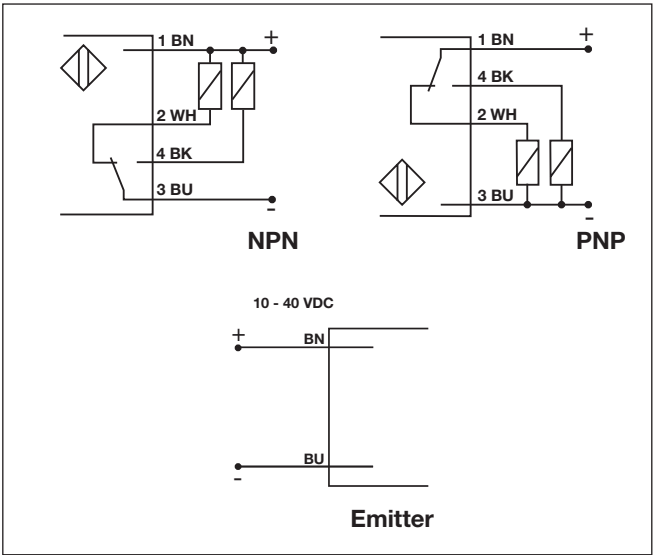
Operation Diagram



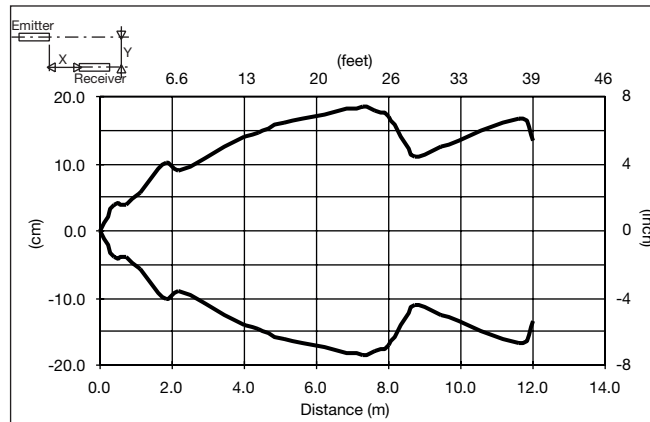
Dimensions



Wiring Diagrams



Detection Diagram



Delivery Contents

- Photoelectric switch: ET 1820 ..
- 2 nuts
- **Packaging:** Plastic bag

Accessories

- MB18A
- Connector type CON.14NF.. series
- APA18-RAR
- APA18-AR

Installation Hints

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	Relief of cable strain Incorrect Correct The cable should not be pulled	Protection of the sensing face A proximity switch should not serve as mechanical stop	Switch mounted on mobile carrier Any repetitive flexing of the cable should be avoided
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