Photoelectrics
Retro-reflective, Polarized
Type PA18ALP20T.., AC, PBTP housing

CARLO GAVAZZI



- **Range: 2.0 m**
- **Modulated red light, polarized**
- **Supply voltage: 20 to 250 VAC**
- **Output: 500 mA SCR**
- **Make and break switching functions**
- **LED-output indication**
- **Improved immunity to reflecting surfaces**
- **Heavy duty M18 metal housing, IP67**
- **Cable and plug versions**

Product Description

The PA18ALP20T.. is a family of general purpose polarized retro-reflective sensor in a long M18 nickel-plated brass 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 2-wire NO or NC thyristor (SCR) output.

Ordering Key PA18ALP20TOM6SA

- **Type**
- **Housing style**
- **Housing size**
- **Housing material**
- **Housing length**
- **Detection principle**
- **Sensing distance**
- **Output type**
- **Output configuration**
- **Connection type**
- **Adjustable**

Type Selection

Housing diameter	Rated operating dist. (S_n)	Ordering no. SCR/cable Make switching	Ordering no. SCR/plug Make switching	Ordering no. SCR/cable Break switching	Ordering no. SCR/plug Break switching
M18	2 m	**PA18ALP20TOSA**	**PA18ALP20TOM6SA**	**PA18ALP20TCSA**	**PA18ALP20TCM6SA**

Note: Plugs and reflector to be ordered separately

Specifications

Rated operating dist. (S_n)	Up to 2.0 m. Ref. reflector type ER4 Ø 84 mm
Sensitivity	270° single-turn pot. meter
Blind zone	0.15 m
Temperature drift	0.4%/°C
Hysteresis (H) (Differential travel)	 3 to 20 %
Rated operational volt. (U_B)	20 to 250 VAC, 45 to 65 Hz
Output current (AC 12, AC 140) Continuous (I_e) Short-time (I)	 ≤ 500 mA ≤ 3 A, max. 20 ms
Min. operational current (I_m)	10 mA
OFF-state current (I_r)	≤ 5 mA, typ. 2.6 mA
Voltage drop (U_d)	Typ. ≤ 7 VAC Max. ≤ 10 VAC
Protection	Transients
Transient voltage	1 kV / 0.5 J
Light source	GaAlAs LED, 660 nm
Light type	Red polarized, modulated
Optical angle	± 2°

Light spot size	150 mm at 2 m
Ambient light	Max 5'000 lux
Operating frequency (f)	Max. 25 Hz light-dark ratio 1.2
Response time OFF-ON (t_{ON}) ON-OFF (t_{OFF})	 ≤ 20 ms ≤ 30 ms
Power ON delay (t_v)	Typ. 70 ms
Indication function Output ON	Dark (NC) or light (NO) switching LED, yellow
Environment Overvoltage category Pollution degree Degree of protection	 II (IEC 60664/60664A; 60947-1) 3 (IEC 60664/60664A; 60947-1) IP 67 (IEC 60529; 60947-1)
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 60068-2-6)
Shock	2 x 1 m 100 x 0.5 m (IEC 60068-2-32)
Dielectric voltage	1500 V (IEC 60364-4-41)

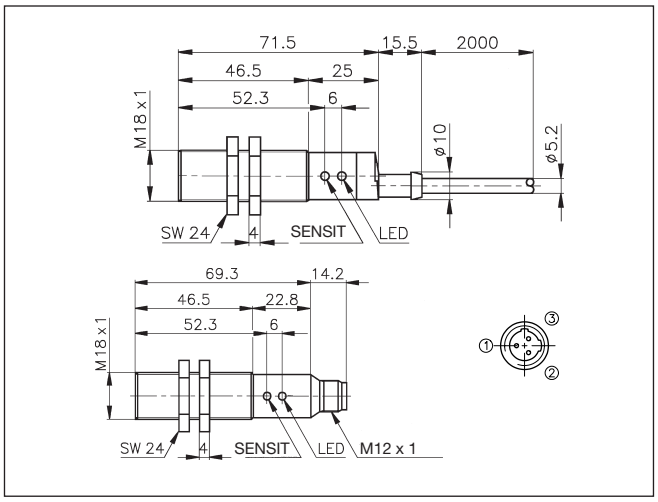
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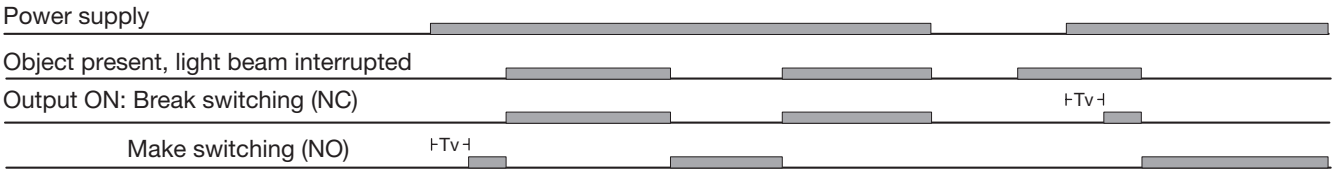
Specifications (cont.)

Housing material	
Body	Nickel-plated brass
Front	PMMA, red
Cable (Cable end)	PVC, black
Nuts	Nickel-plated brass
Connection	
Cable	Grey, 2 m, 2 x 0.5 mm², oilproof PVC
Plug	M12 x 1
Cables for plug (M6)	CON.6A-.. series
Weight	
Cable version	230 g
Plug version	145 g
Approvals	UL, CSA
CE-marking	Yes

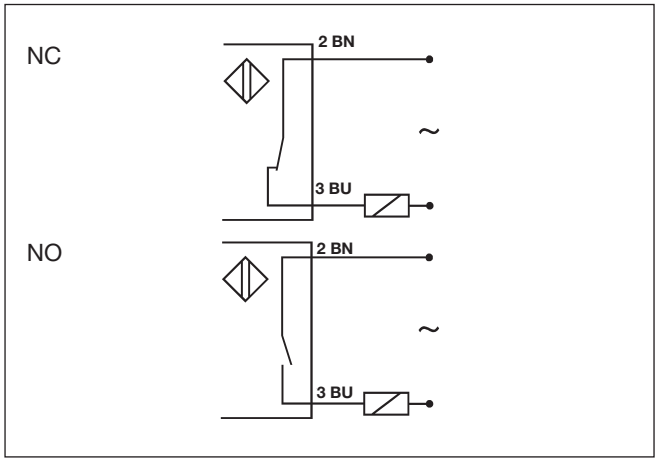
Dimensions



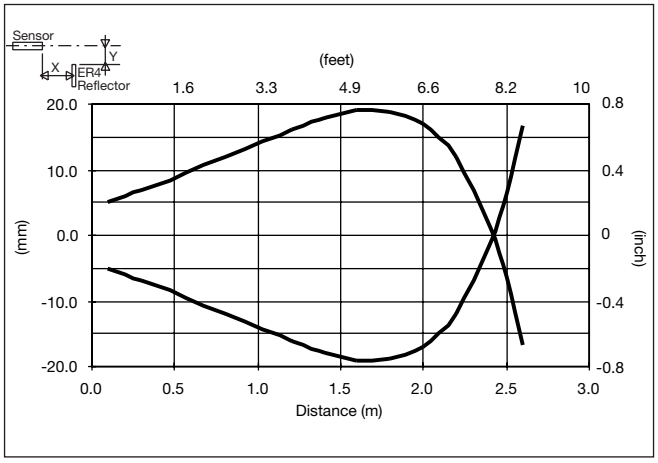
Operation Diagram



Wiring Diagrams

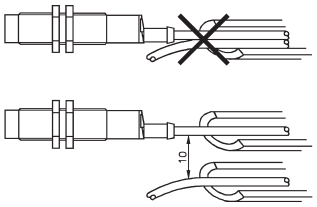
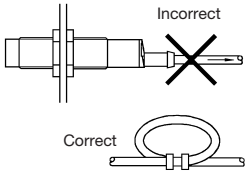
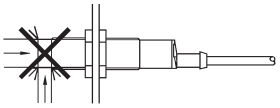
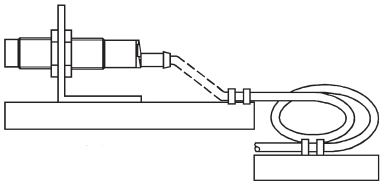


Detection Diagram



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

Delivery Contents

- Photoelectric switch: PA18ALP20..
- 2 nuts
- **Packaging:** Plastic bag

Accessories

- Reflectors: ER series
- Connector type CON.6A-.. serie
- MB18A
- APA18-RAR

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