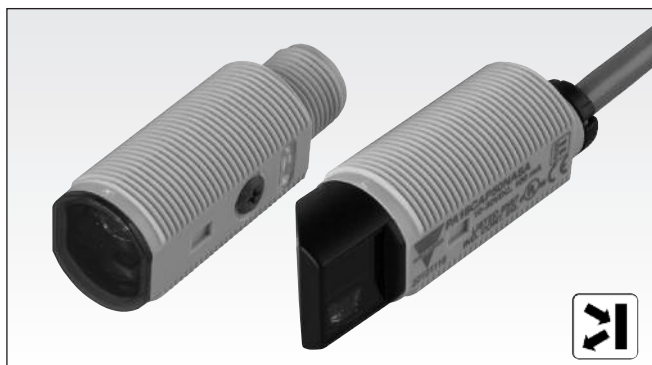


Photoelectrics Diffuse-reflective Type PA18C.D..., DC

CARLO GAVAZZI



- Miniature sensor range
- Range: 1 m (Axial), 0.8 m (Radial)
- Sensitivity adjustment by potentiometer
- Modulated, red light 625 nm
- Supply voltage: 10 to 30 VDC
- Output: 100 mA, NPN or PNP, N.O & N.C.
- Degree of protection IP67, IP69K
- LED indication for output, stability and power ON
- Protection: reverse polarity, short circuit and transients
- Cable and plug versions
- Excellent EMC performance



Product Description

The PA18CAD10... is part of a family of inexpensive general purpose diffuse reflective sensors in industrial standard 18 mm cylindrical ABS housing. The sensors are useful in applications where high-accuracy detection as well as small size is required.

Compact housing and high power LED for excellent performance-size ratio. The potentiometer used for adjustment of the sensitivity makes the sensors highly flexible. The output type is NPN or PNP and the output switching function is NO and NC.

Ordering Key

PA18CAD10PAM1SA

Type	_____
Housing style	_____
Housing size	_____
Housing material	_____
Housing type axial	_____
Detection principle	_____
Sensing distance	_____
Output type	_____
Output configuration	_____
Connection type	_____
Sensitive adjustment	_____

Type Selection

Housing style	Range S_n	Connection	Ordering no. NPN Make & break switching	Ordering no. PNP Make & break switching
M18 Axial type	1 m	Cable	PA 18 CAD 10 NASA	PA 18 CAD 10 PASA
M18 Axial type	1 m	Plug	PA 18 CAD 10 NAM1SA	PA 18 CAD 10 PAM1SA
M18 Radial type	0.8 m	Cable	PA 18 CRD 08 NASA	PA 18 CRD 08 PASA
M18 Radial type	0.8 m	Plug	PA 18 CRD 08 NAM1SA	PA 18 CRD 08 PAM1SA

Specifications according to EN60947-5-2

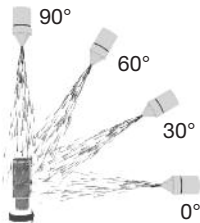
Rated operating distance (S_n) Axial type (A) Radial type (R)	Up to 1 m, Up to 0.8 m reference target Kodak test card R27, white, 90% reflective, 200 x 200 mm	OFF-state current (I_r)	$\leq 100 \mu A$
Blind zone	20 mm	Voltage drop (U_d)	$\leq 2.0 VDC @ 100 mA$
Sensitivity control Adjustable distance Axial types Radial types	Adjustable by potentiometer 270° 50-1000 mm 50-800 mm	Protection	Short-circuit, reverse polarity and transients
Temperature drift	$\leq 0.2\%/^{\circ}C$	Light source	InGaAlP, LED, 625 nm
Hysteresis (H) (differential travel)	$\leq 20\%$	Light type	Red, modulated
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)	Sensing angle	$\pm 2^{\circ}$
Ripple (U_{rpp})	$\leq 10\%$	Ambient light	30.000 lux Incandescent lamp
Output current Continuous (I_a) Short-time (I)	$\leq 100 mA$ $\leq 100 mA$ (max. load capacity 100 nF)	Light spot Diameter	$\varnothing 52 mm @ 0.5 m$
No load supply current (I_o)	$\leq 20 mA @ 24 VDC$	Operating frequency	500 Hz
Minimum operational current (I_m)	0.5 mA	Response time OFF-ON (t_{ON}) ON-OFF (t_{OFF})	$\leq 1.0 ms$ $\leq 1.0 ms$
		Power ON delay (t_v)	$\leq 300 ms$
		Output function Type Switching function	NPN or PNP NO and NC
		Indication Output ON Signal stability and power ON	LED, yellow LED, green



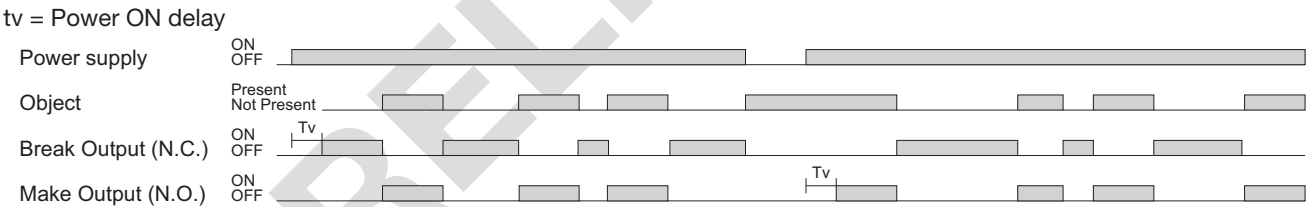
Specifications (cont.)

Environment		Housing material	
Installation category	III (IEC 60664/60664A; 60947-1)	Body	ABS, grey
Pollution degree	3 (IEC 60664/60664A; 60947-1)	Front material	PMMA, red
Degree of protection	IP 67, IP 69K*	Connection	
Ambient temperature		Cable	PVC, grey, 2 m 4 x 0.25 mm ² , Ø = 4.5 mm
Operating	-25° to +60°C (-13° to +140°F)	Plug	M12, 4-pin (CON. 54-series)
Storage	-40° to +70°C (-40° to +158°F)	Weight	
Vibration		With cable: 40 g	
Shock		With plug: 10 g	
Rated insulation voltage		CE-marking	
500 VAC (rms)		Yes	
IEC protection class III		Approvals	
		cULus (UL508) supply class 2	

* The IP69K test according to DIN 40050-9 for high-pressure, high-temperature wash-down applications. The sensor must not only be dust tight (IP6X), but also able to withstand high-pressure and steam cleaning. The sensor is exposed to high pressure water from a spray nozzle that is fed with 80°C water at 8'000-10'000 KPa (80-100bar) and a flow rate of 14-6L/min. The nozzle is held 100 -150 mm from the sensor at angles of 0°, 30°, 60° and 90° for 30s each. The test device sits on a turntable that rotates with a speed of 5 times per minute. The sensor must not suffer any damaging effects from the high pressure water in appearance and function.



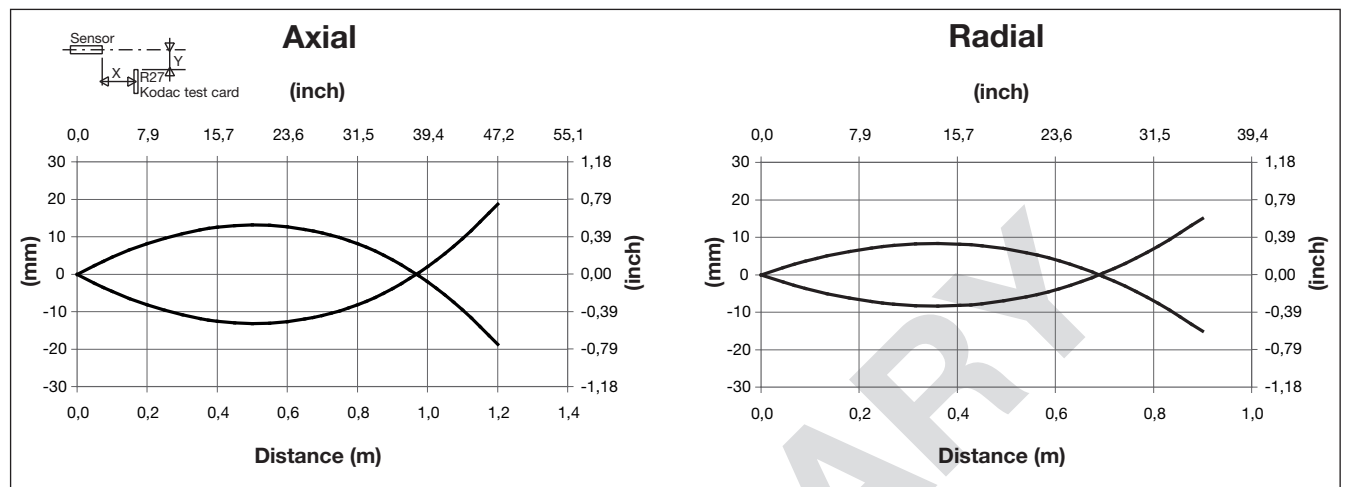
Operation Diagram



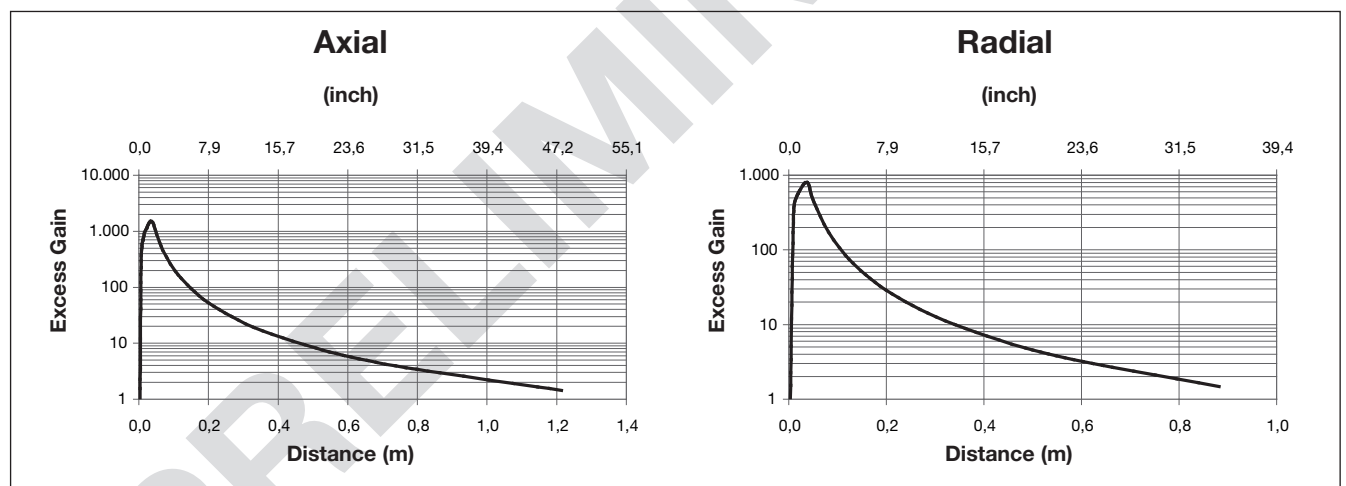
Wiring Diagrams



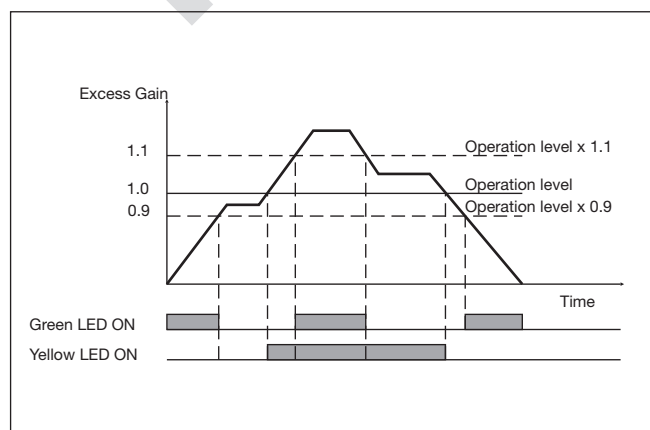
Detection Diagram



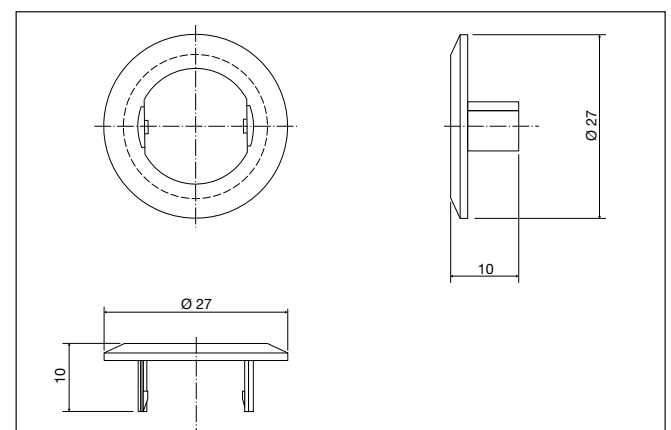
Excess Gain



Signal Stability Indication

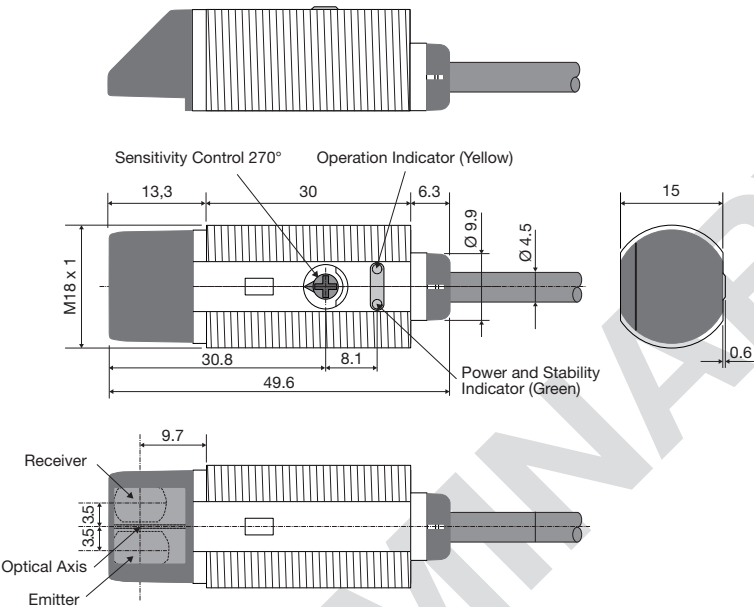


APA 18-MB1

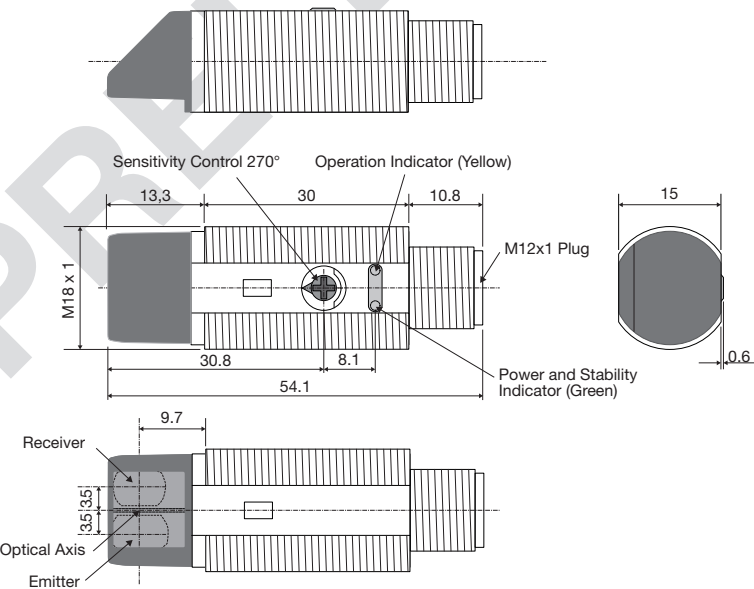


Dimensions Radial version

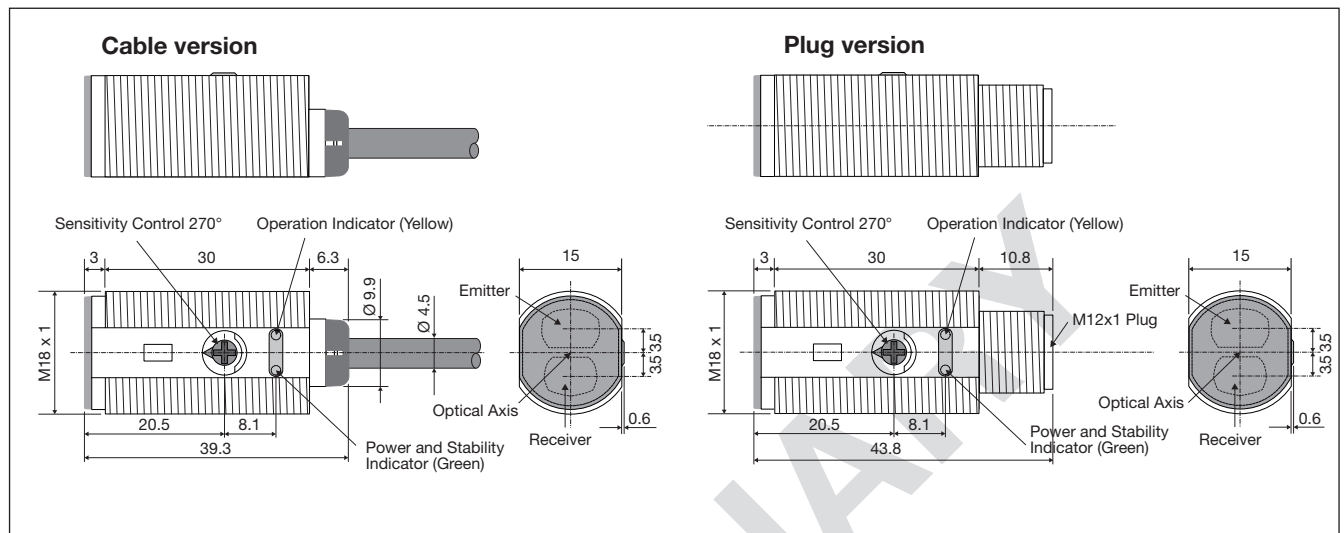
Cable version



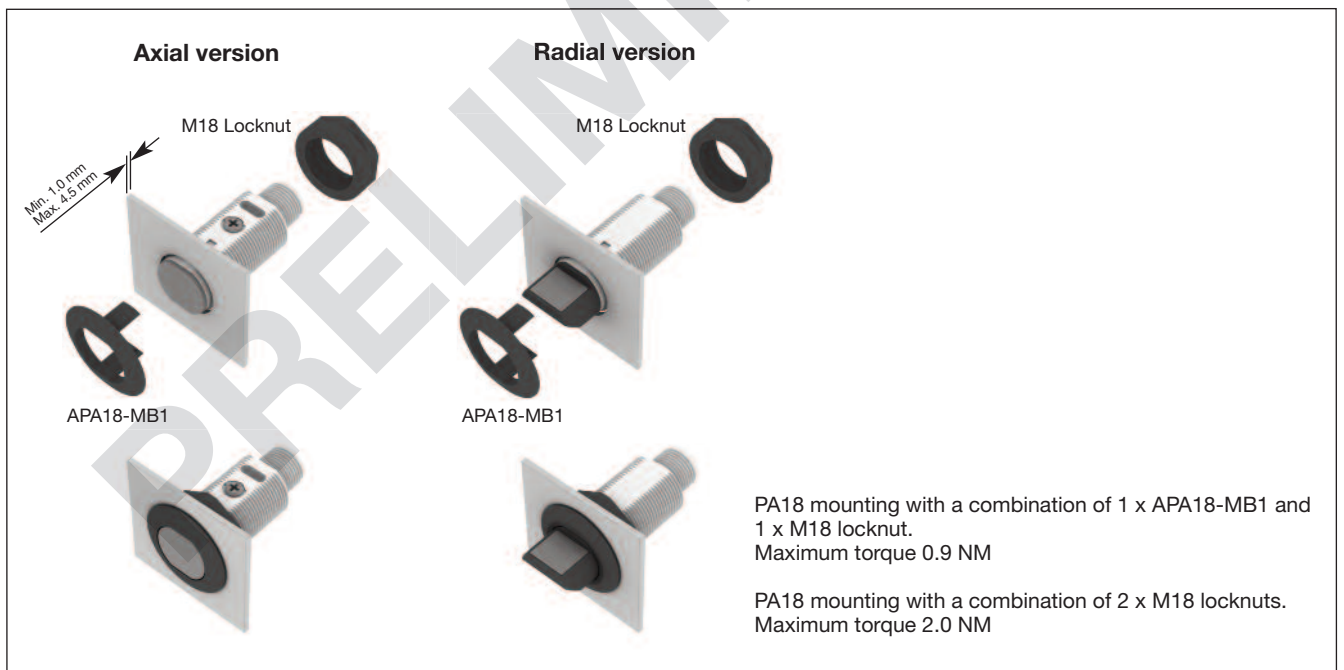
Plug version



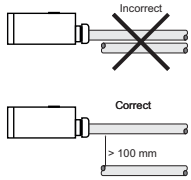
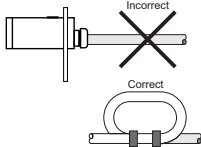
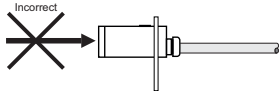
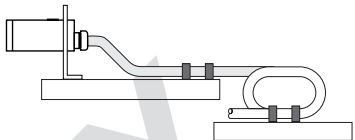
Dimensions Axial version



Mounting Systems



Installation Hints

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

- Photoelectric switch: PA 18 C.D...
- Installation instruction on plastic bag
- Screwdriver
- Mounting bracket APA18-MB1
- 2 M18 locknuts
- **Packaging:** Plastic bag

Accessories

- Connector type CONG1A.. / CONM14NF.. series