

Photoelectrics

Diffuse-reflective

Type EO 1804

CARLO GAVAZZI



- Range: 10 to 400 mm
- Adjustable sensitivity
- Modulated, infrared light
- Rated operational voltage: 10 to 40 VDC or 20 to 250 VAC
- Output: DC 200 mA NPN or PNP, AC 500 mA SCR
- Make and break switching function, LED indication
- Operating frequency 120 Hz (DC), 20 Hz (AC)
- High immunity to ambient light
- Heavy duty M 18 metal housing, IP 67
- Cable and plug versions
- Fibre optics optional



Product Description

Diffuse-reflective photoelectric switch with extended range up to 400 mm. Easily adjustable sensitivity with 270° potentiometer. LED output indication. Short M 18

metal housing for heavy duty applications. IP 67. Easy mounting. DC and AC types, fully protected. Cable and plug versions. Option: fibre optics.

Ordering Key

EO 18 04 NPA S-1

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

Type Selection, DC Types

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	400 mm	EO 1804 NPAS	EO 1804 NPAS-1	EO 1804 PPAS	EO 1804 PPAS-1

Type Selection, AC Types

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
M 18	400 mm	EO 1804 TBOS	EO 1804 TBOS-3	EO 1804 TBCS	EO 1804 TBCS-3

Note: Plugs to be ordered separately

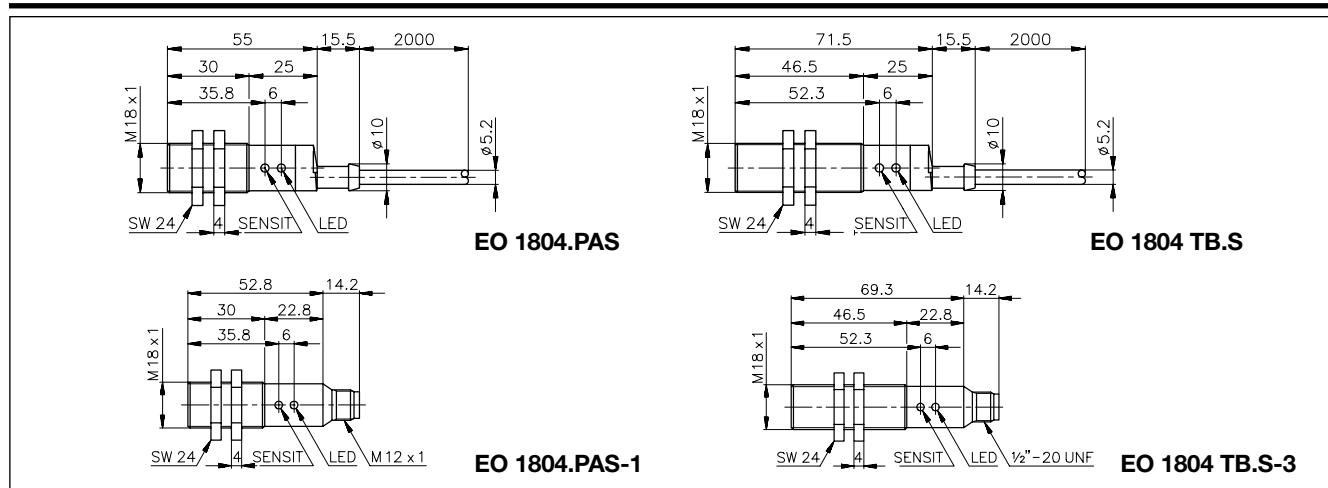
Specifications

	Transistor NPN/PNP	SCR output AC types
Rated operating dist. (S_n)	10 to 400 mm, Reference target: Kodak test card R27, white, 90% reflectivity 200 x 200 mm	10 to 400 mm. Reference target: Kodak test card R27, white, 90% reflectivity 100 x 100 mm
Temperature drift	0.4%/K	0.4%/K
Hysteresis (H) (Differential travel)	3 to 20%	3 to 20%,
Rated operational volt. (U_B)	10 to 40 VDC (ripple included)	20 to 250 VAC, 45 to 65 Hz, (AC 12, AC 140)
Ripple (U_{pp})	≤10%	
Output current Continuous (I _e) Short-time (I)	≤ 200 mA 200 mA, max. load capacity 100 nF	≤ 500 mA (AC 12) ≤ 3A, max. 20 ms (AC140)
No load supply current (I_o)	≤ 20 mA,	
Min. load current (I_m)	0.5 mA	10 mA (AC 12)
OFF-state current (I_f)	≤ 100 μA	< 5 mA, typ. 2.6 mA (AC 12)

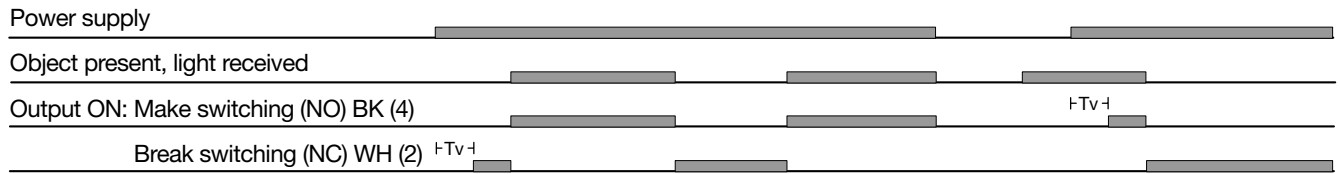
Specifications (cont.)

	Transistor NPN/PNP	SCR output AC types
Voltage drop (U_d)	≤ 2.5 V	≤ 10 V, typ. 7 VAC
Protection	Reverse polarity, short circuit, transients	Transients
Transient voltage	Max. 1 kV/0.5 J	Max 1 kV/0,5 J
Sensitivity	Adjustable, 270° turn potentiometer,	Adjustable, 270° turn potentiometer,
Light source	GaAlAs LED, 880 nm	GaAlAs LED, 880 nm
Light type	Infrared, modulated synchronized	Infrared, modulated synchronized
Sensing angle	$\pm 25^\circ$ at 1/2 range	$\pm 25^\circ$ at 1/2 range
Ambient light	Max. 10,000 lux	Max 10'000 lux
Operating frequency (f)	120 Hz, light/dark ratio 1:2	20 Hz, light/dark ratio 1:2
Response time		
OFF-ON (t_{ON})	≤ 3.2 ms	≤ 20 ms
ON-OFF (t_{OFF})	≤ 5 ms	≤ 30 ms
Power ON delay (t_v)	Typ. 100 ms	Typ. 100 ms
Indication		
Output ON	LED, yellow	LED, yellow
Environment		
Overvoltage category	III (IEC 664/664A; 947-1)	III (IEC 664/664A; 947-1)
Pollution degree	3 (IEC 664/664A; 947-1)	3 (IEC 664/664A; 947-1)
Degree of protection	IP 67 (IEC 529; 947-1)	IP 67 (IEC 529; 947-1)
Temperature		
Operating	-20° to +60°C (-4° to 140°F)	-20° to +60°C (-4° to 140°F)
Storage	-30° to +70°C (-22° to 158°F)	-30° to +70°C (-22° to 158°F)
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 68-2-6)	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)	2 x 1 m 100 x 0.5 m (IEC 68-2-32)
Dielectric voltage	500 VAC (rms)	1500 VAC (rms)
Housing material		
Body	Nickel-plated brass	Nickel-plated brass
Front	Luran, black	Luran, black
Cable end	Polyester, black	Polyester, black
Nuts	Nickel-plated brass	Nickel-plated brass
Connection		
Cable	Grey, 2 m, oilproof PVC, 4 x 0.35 mm ² , Note: Other cable lengths on request	Grey, 2 m, oilproof PVC, 2 x 0.5 mm ² , Note: Other cable lengths on request
Plug	M 12, CONH1A-.. serie	1/2", CONH3A-.. serie
Weight		
Cable version	140 g	150 g
Plug version	55 g	65 g

Dimensions



Operation Diagram



Truth Table

	Make switching		Break switching	
	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
AC types				
LED	OFF	ON	ON	OFF
Load	Non-active	Active	Active	Non-active

Accessories

- Fibre optics
- Plugs CONH1A-.. or CONH3A-.. series.
- Screw driver for adjustments: 77-000

Delivery Contents

- Photoelectric switch: EO 1804....
- 2 nuts
- **Packaging:** plastic bag

Wiring Diagrams

