

Photoelectrics Diffuse-reflective Type EO 1804



- 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

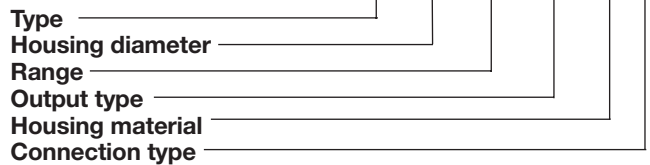


Product Description

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 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

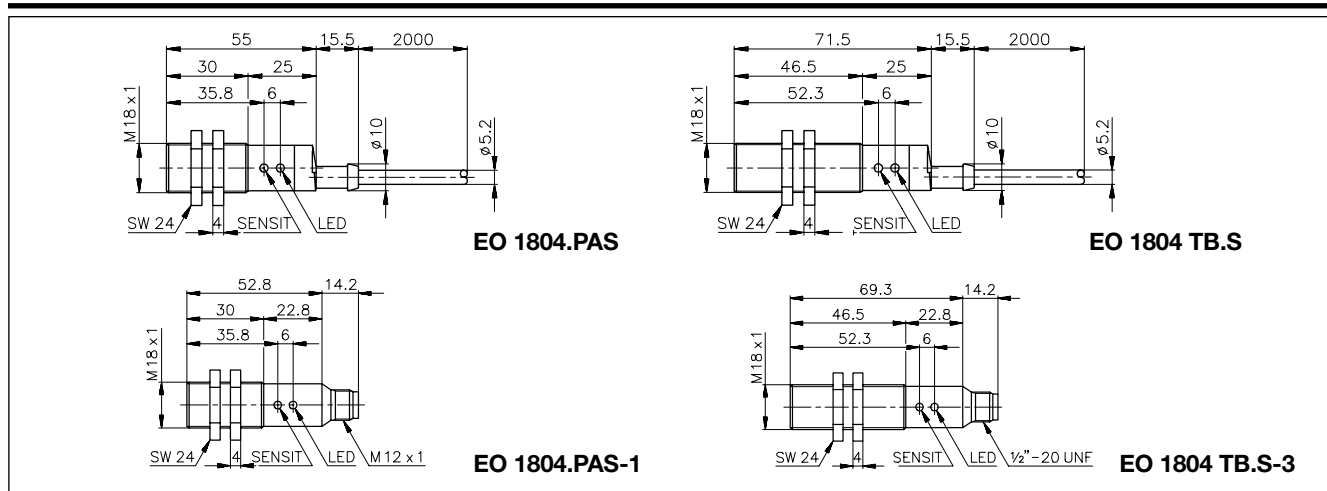
Specifications

| | 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 _{rip}) | ≤10% | |
| Output current Continuous (I _o) | ≤ 200 mA | ≤ 500 mA (AC 12) |
| Short-time (I) | 200 mA, max. load capacity 100 nF | ≤ 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 _o) | ≤ 100 μA | < 5 mA, typ. 2.6 mA (AC 12) |

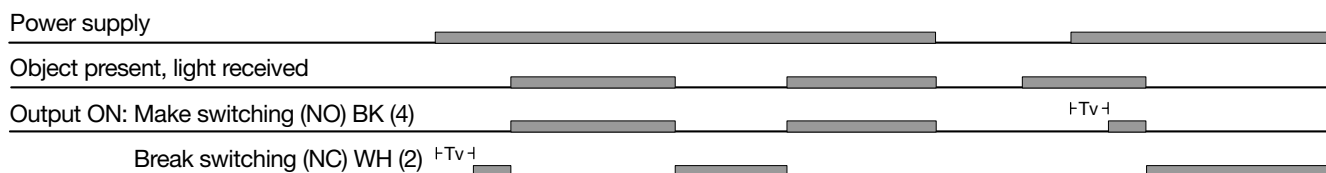
Specifications (cont.)

| | 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 | GaAIAs LED, 880 nm | GaAIAs 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 |
| Object present | 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

