

# Photoelectrics Retro-reflective Type PA18ALR30T.., AC, Metal housing

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- Range: 3 m
- Modulated infrared light
- Supply voltage: 20 to 250 VAC
- Output: 500 mA SCR
- Make and break switching functions
- LED output indication
- High immunity to ambient light
- Heavy duty M18 metal housing, IP 67
- Cable and plug versions



## Product Description

The PA18ALR30.. is a family of general purpose retro-reflective sensors 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 PA18ALR30TOM6SA

|                      |       |
|----------------------|-------|
| 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 <sub>n</sub> ) | 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              | 3 m                                     | PA18ALR30TOSA                         | PA18ALR30TOM6SA                      | PA18ALR30TCSA                          | PA18ALR30TCM6SA                       |

Note: Plugs and reflector to be ordered separately

## Specifications

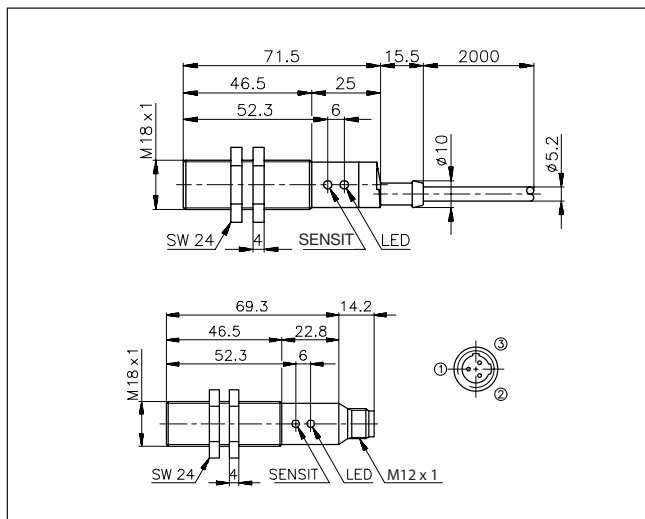
|   |  |  |   |
|---|--|--|---|
| <b>Rated operating dist. (S<sub>n</sub>)</b>  | Up to 3 m<br>Ref. reflector type ER4,<br>Ø 84 mm | <b>Optical angle</b>   | ±2.2°   |
| <b>Sensitivity</b>  | 270° single-turn pot. meter                      | <b>Light spot size</b>   | 150 mm at 2 m   |
| <b>Temperature drift</b>  | 0.4%/K   | <b>Ambient light</b>   | Max. 10,000 lux   |
| <b>Hysteresis (H)</b><br>(Differential travel)  | 3 to 20%   | <b>Operating frequency (f)</b>   | Max. 20 Hz, light/dark ratio 1:2  |
| <b>Rated operational volt. (U<sub>B</sub>)</b>  | 20 to 250 VAC,<br>45 to 65 Hz                    | <b>Response time</b><br>OFF-ON (t <sub>ON</sub> )<br>ON-OFF (t <sub>OFF</sub> )        | ≤ 20 ms<br>≤ 30 ms  |
| <b>Output current (AC 12, AC 140)</b><br>Continuous (I <sub>e</sub> )<br>Short-time (I) | ≤ 500 mA<br>≤ 3 A, max. 20 ms                    | <b>Power ON delay (t<sub>v</sub>)</b>  | Typ. 100 ms   |
| <b>Min. operational current (I<sub>m</sub>)</b>   | 10 mA  | <b>Indication function</b><br>Output ON  | Dark (NC) or light (NO) switching<br>LED, yellow  |
| <b>OFF-state current (I<sub>r</sub>)</b>  | < 5 mA, typ. 2.6 mA                              | <b>Environment</b><br>Overvoltage category<br>Pollution degree<br>Degree of protection | II (IEC 60664/60664A; 60947-1)<br>3 (IEC 60664/60664A; 60947-1)<br>IP 67 (IEC 60529; 60947-1) |
| <b>Voltage drop (U<sub>d</sub>)</b>   | ≤ 10 VAC, typ. 7 VAC                             | <b>Temperature</b><br>Operating<br>Storage   | -20° to +60°C (-4° to 140°F)<br>-30° to +70°C (-22° to 158°F)                                 |
| <b>Protection</b>   | Transients                                       | <b>Vibration</b>   | 10 to 150 Hz, 0.5 mm/-<br>7.5 g (IEC 60068-2-6)<br>2 x 1 m 100 x 0.5 m<br>(IEC 60068-2-32)    |
| <b>Transient voltage</b>  | 1 kV/0.5 J                                       | <b>Shock</b>   |   |
| <b>Light source</b>   | GaAlAs LED, 880 nm                               |  |   |
| <b>Light type</b>   | Infrared, modulated                              |  |   |



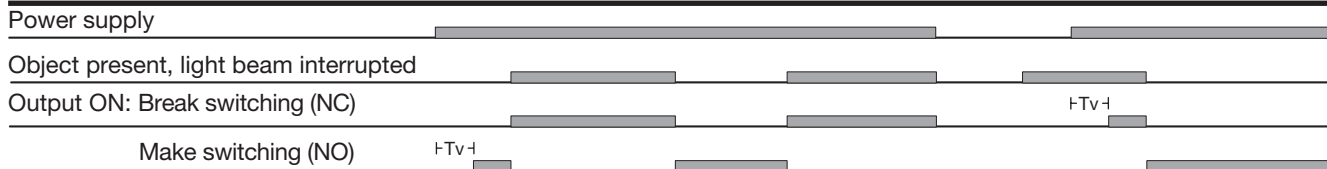
## Specifications (cont.)

|                           |   |
|---------------------------|---|
| <b>Dielectric voltage</b> | 1500 V (IEC 60364-4-41)                           |
| <b>Housing material</b>   |   |
| Body                      | Nickel-plated brass                               |
| Front                     | Luran®, black                                     |
| Cable end                 | Polyester, black                                  |
| Nuts                      | Nickel-plated brass                               |
| <b>Connection</b>         |   |
| Cable                     | Grey, 2 m, 2 x 0.5 mm <sup>2</sup> , oilproof PVC |
| Plug                      | M12 x 1   |
| Cables for plug (-3)      | CON.6A-... serie                                  |
| <b>Weight</b>             |   |
| Cable version             | 150 g   |
| Plug version              | 65 g  |
| <b>Approvals</b>          | UL, CSA   |
| <b>CE-marking</b>         | Yes   |

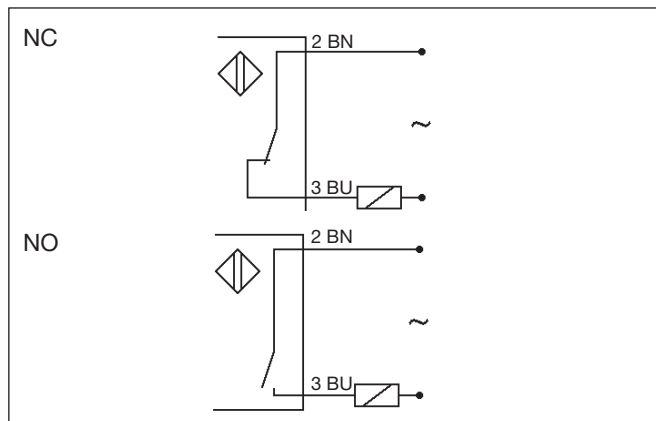
## Dimensions



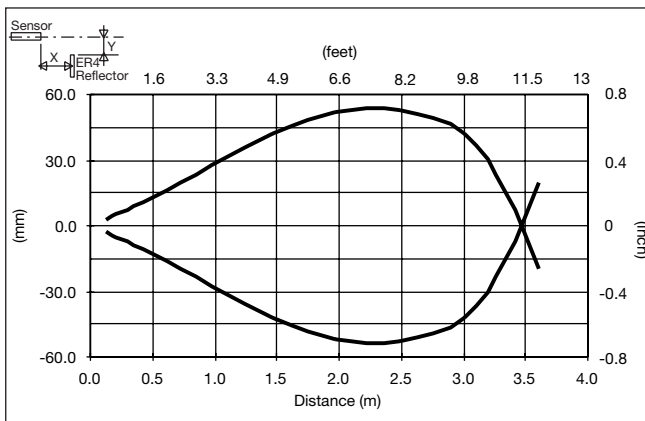
## Operation Diagram



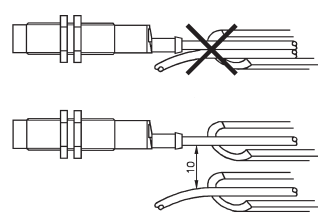
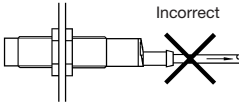
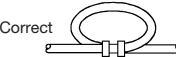
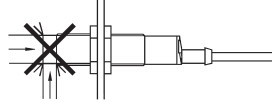
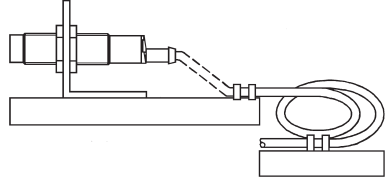
## Wiring Diagrams



## Detection Diagram



## Installation Hints

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

## Delivery Contents

- Photoelectric switch: PA18ALR..
- 2 nuts
- **Packaging:** plastic bag

## Accessories

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

For further information refer to "Accessories"