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

CARLO GAVAZZI



- **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. ($S_n$) | 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 | 3 m | **PA18ALR30TOSA** | **PA18ALR30TOM6SA** | **PA18ALR30TCSA** | **PA18ALR30TCM6SA** |

**Note:** Plugs and reflector to be ordered separately

## Specifications

| | |
|---|---|
| **Rated operating dist.** ($S_n$) | Up to 3 m<br>Ref. reflector type ER4,<br>∅ 84 mm |
| **Sensitivity** | 270° single-turn pot. meter |
| **Temperature drift** | 0.4%/K |
| **Hysteresis** (H)<br>(Differential travel) | 3 to 20% |
| **Rated operational volt.** ($U_B$) | 20 to 250 VAC,<br>45 to 65 Hz |
| **Output current** (AC 12, AC 140)<br>Continuous ($I_e$)<br>Short-time (I) | <br>≤ 500 mA<br>≤ 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** ($U_d$) | ≤ 10 VAC, typ. 7 VAC |
| **Protection** | Transients |
| **Transient voltage** | 1 kV/0.5 J |
| **Light source** | GaAlAs LED, 880 nm |
| **Light type** | Infrared, modulated |

| | |
|---|---|
| **Optical angle** | ±2.2° |
| **Light spot size** | 150 mm at 2 m |
| **Ambient light** | Max. 10,000 lux |
| **Operating frequency** (f) | Max. 20 Hz, light/dark ratio 1:2 |
| **Response time**<br>OFF-ON ($t_{ON}$)<br>ON-OFF ($t_{OFF}$) | <br>≤ 20 ms<br>≤ 30 ms |
| **Power ON delay** ($t_v$) | Typ. 100 ms |
| **Indication function**<br>Output ON | Dark (NC) or light (NO) switching<br>LED, yellow |
| **Environment**<br>Overvoltage category<br>Pollution degree<br>Degree of protection | <br>II (IEC 60664/60664A; 60947-1)<br>3 (IEC 60664/60664A; 60947-1)<br>IP 67 (IEC 60529; 60947-1) |
| **Temperature**<br>Operating<br>Storage | <br>-20° to +60°C (-4° to 140°F)<br>-30° to + 70°C (-22° to 158°F) |
| **Vibration** | 10 to 150 Hz, 0.5 mm/-<br>7.5 g (IEC 60068-2-6) |



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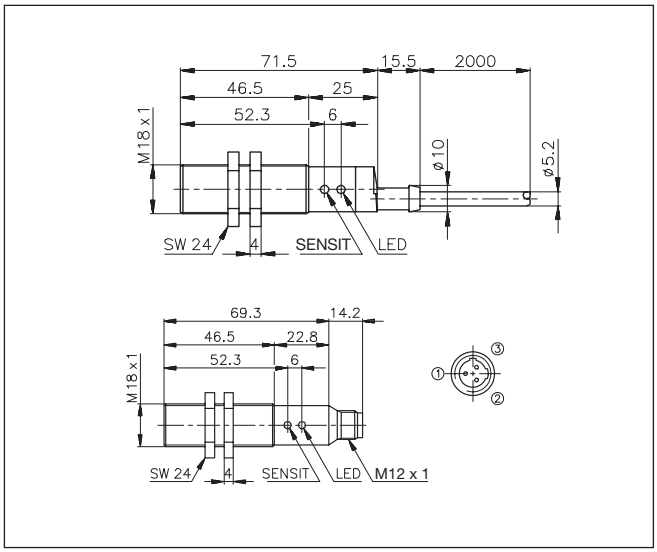
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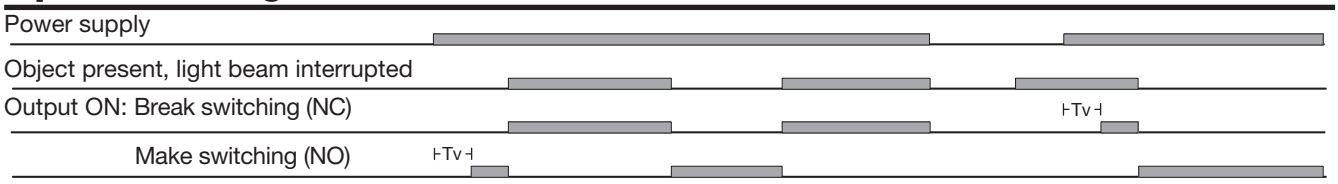
## Specifications (cont.)

| | |
|---|---|
| **Shock** | 2 x 1 m 100 x 0.5 m (IEC 60068-2-32) |
| **Dielectric voltage** | 1500 V (IEC 60364-4-41) |
| **Housing material** | |
| Body | Nickel-plated brass |
| Front | Luran®, black |
| Cable end | Polyester, black |
| Nuts | Nickel-plated brass |
| **Connection** | |
| Cable | Grey, 2 m, 2 x 0.5 mm², oilproof PVC |
| Plug | M12 x 1 |
| Cables for plug (-3) | CON.6A-.. serie |
| **Weight** | |
| Cable version | 150 g |
| Plug version | 65 g |
| **Approvals** | UL, CSA |
| **CE-marking** | Yes |

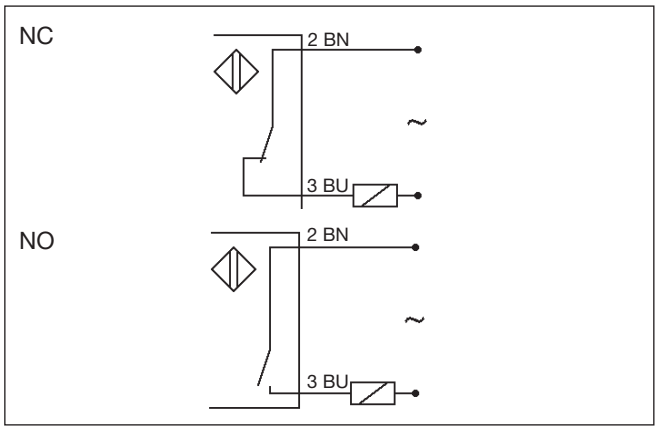
## Dimensions



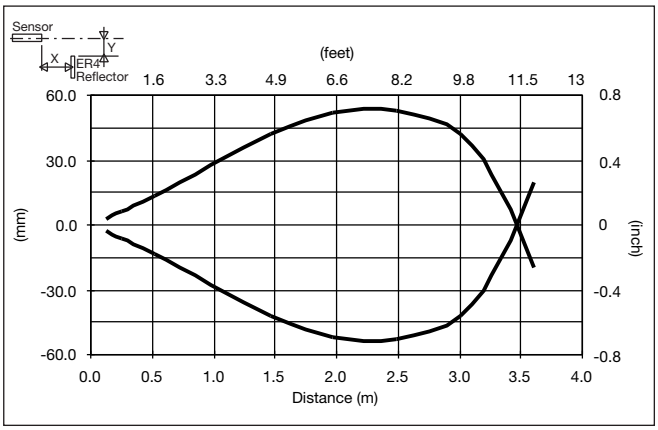

## Operation Diagram




## Wiring Diagrams




## Detection Diagram

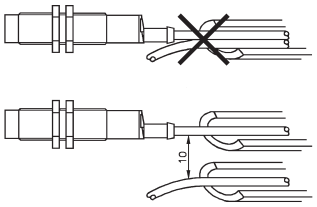
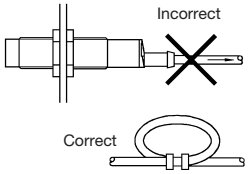
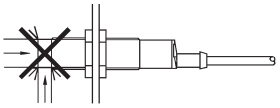
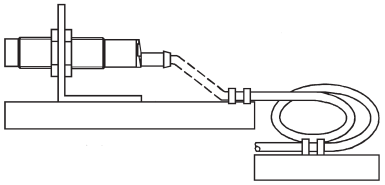





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## Installation Hints

| *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: PA18ALR..
- 2 nuts
- **Packaging:** plastic bag

## Accessories

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



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