

# Photoelectrics

## Diffuse-reflective

### Type PA18CLD0.T, AC, PBTP-housing



- Range: 400 mm adjustable  
100, 200 or 400 mm fixed
- Modulated, infrared light
- Supply voltage: 20 to 250 VAC
- Output: 500 mA SCR
- Make or break switching function, LED indication
- High immunity to ambient light
- Cable and plug versions



## Product Description

The PA18CLD.. is a family of inexpensive general purpose Diffuse-reflective sensors in industrial standard 18 mm cylindrical PBTP housing. They are useful for simple applications where a basic sensor provides adequate sensing performance. The sensors are simple to use and no adjustment are necessary (except 400 mm diffuse adjustable type). The output is a 2-wire NO or NC thyristor (SCR) output.

## Ordering Key

**PA18CLD04TCM6SA**

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 |
|------------------|-----------------------------------------|---------------------------------------|--------------------------------------|----------------------------------------|---------------------------------------|
| M 18             | 100 mm fixed                            | PA18CLD01TO                           | PA18CLD01TOM6                        | PA18CLD01TC                            | PA18CLD01TCM6                         |
| M 18             | 200 mm fixed                            | PA18CLD02TO                           | PA18CLD02TOM6                        | PA18CLD02TC                            | PA18CLD02TCM6                         |
| M 18             | 400 mm fixed                            | PA18CLD04TO                           | PA18CLD04TOM6                        | PA18CLD04TC                            | PA18CLD04TCM6                         |
| M 18             | 400 mm adjust.                          | PA18CLD04TOSA                         | PA18CLD04TOM6SA                      | PA18CLD04TCSA                          | PA18CLD04TCM6SA                       |

**Note:** Plugs to be ordered separately

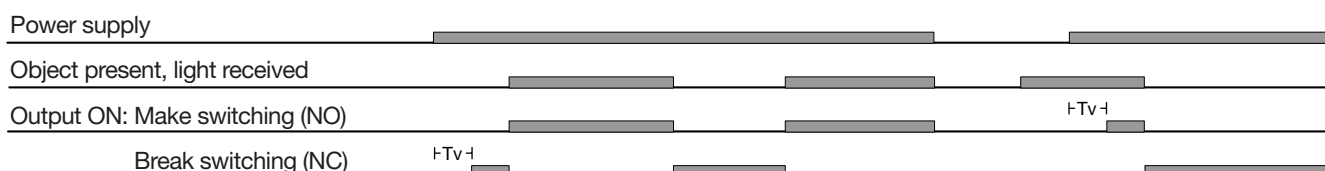
## Specifications

|                                                                                       |                                                                                                                                            |                                                                                 |                                                  |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------|
| <b>Rated operating dist. (S<sub>n</sub>)</b><br>Adjustable<br>Fixed                   | Up to 400 mm<br>100, 200 or 400 mm<br>Reference target:<br>Kodak test card R27, white,<br>90% reflectivity<br>100 x 100 mm<br>200 x 200 mm | <b>Min. operational current (I<sub>m</sub>)</b>                                 | 10 mA                                            |
| Size: S <sub>n</sub> < 400 mm<br>S <sub>n</sub> ≥ 400 mm                              |                                                                                                                                            | <b>OFF-state current (I<sub>i</sub>)</b>                                        | Max < 5 mA, typ. 2.6 mA                          |
| <b>Sensitivity</b><br>Adjustable type only                                            | 270° turn potentiometer,                                                                                                                   | <b>Voltage drop (U<sub>d</sub>)</b>                                             | Max ≤ 10 V, typ. 7 VAC                           |
| <b>Temperature drift</b>                                                              | 0.4%/K                                                                                                                                     | <b>Protection</b>                                                               | Transients                                       |
| <b>Hysteresis (H)</b><br>(Differential travel)                                        | 3 to 20%,                                                                                                                                  | <b>Transient voltage</b>                                                        | Max 1 kV/0,5 J                                   |
| <b>Rated operational volt. (U<sub>B</sub>)</b>                                        | 20 to 250 VAC,<br>45 to 65 Hz                                                                                                              | <b>Light source</b>                                                             | GaAlAs LED, 880 nm                               |
| <b>Output current (AC12, AC140)</b><br>Continuous (I <sub>a</sub> )<br>Short-time (I) | ≤ 500 mA<br>≤ 3 A, max. 20 ms                                                                                                              | <b>Light type</b>                                                               | Infrared, modulated synchronized                 |
|                                                                                       |                                                                                                                                            | <b>Sensing angle</b>                                                            | ± 25° at 1/2 range                               |
|                                                                                       |                                                                                                                                            | <b>Ambient light</b>                                                            | Max 10'000 lux                                   |
|                                                                                       |                                                                                                                                            | <b>Operating frequency (f)</b>                                                  | 20 Hz, light/dark ratio 1:2                      |
|                                                                                       |                                                                                                                                            | <b>Response time</b><br>OFF-ON (t <sub>ON</sub> )<br>ON-OFF (t <sub>OFF</sub> ) | ≤ 20 ms<br>≤ 30 ms                               |
|                                                                                       |                                                                                                                                            | <b>Power ON delay (t<sub>v</sub>)</b>                                           | Typ. 100 ms                                      |
|                                                                                       |                                                                                                                                            | <b>Indication function</b><br>Output ON                                         | Dark (NC) or light (NO) switching<br>LED, yellow |

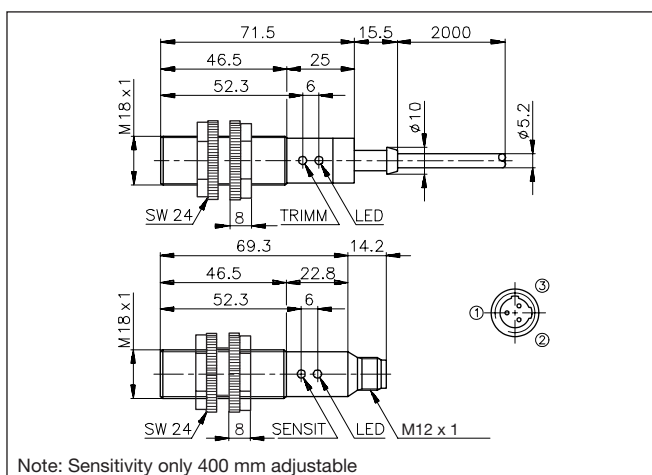
## Specifications (cont.)

|                           |                                             |                         |                                       |
|---------------------------|---------------------------------------------|-------------------------|---------------------------------------|
| <b>Environment</b>        |                                             | <b>Housing material</b> |                                       |
| Overvoltage category      | III (IEC 60664/60664A; 60947-1)             | Body                    | PBTP, grey thermoplastic polyester    |
| Pollution degree          | 3 (IEC 60664/60664A; 60947-1)               | Front                   | Luran®, black                         |
| Degree of protection      | IP 67 (IEC 60529; 60947-1)                  | Cable end               | Polyester, black                      |
| <b>Temperature</b>        |                                             | Nuts                    | Reinforced nylon                      |
| Operating                 | -20° to +60°C (-4° to 140°F)                | <b>Connection</b>       |                                       |
| Storage                   | -30° to + 70°C (-22° to 158°F)              | Cable                   | Grey, 2 m, 2 x 0.5 mm², oilproof PVC, |
| <b>Vibration</b>          | 10 to 150 Hz, 0.5 mm/-7.5 g (IEC 60068-2-6) | Plug                    | M12 x 1                               |
| <b>Shock</b>              | 2 x 1 m 100 x 0.5 m (IEC 60068-2-32)        | Cables for plug (M6)    | CON.6A-... series                     |
| <b>Dielectric voltage</b> | 1600 VAC (IEC 60364-4-41)                   | <b>Weight</b>           |                                       |
|                           |                                             | Cable version           | 105 g                                 |
|                           |                                             | Plug version            | 22 g                                  |
|                           |                                             | <b>Approvals</b>        | UL, CSA                               |
|                           |                                             | <b>CE-marking</b>       | Yes                                   |

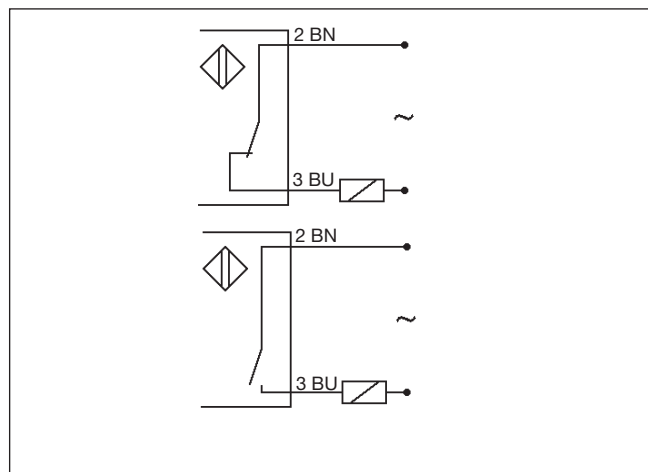
## Operation Diagram



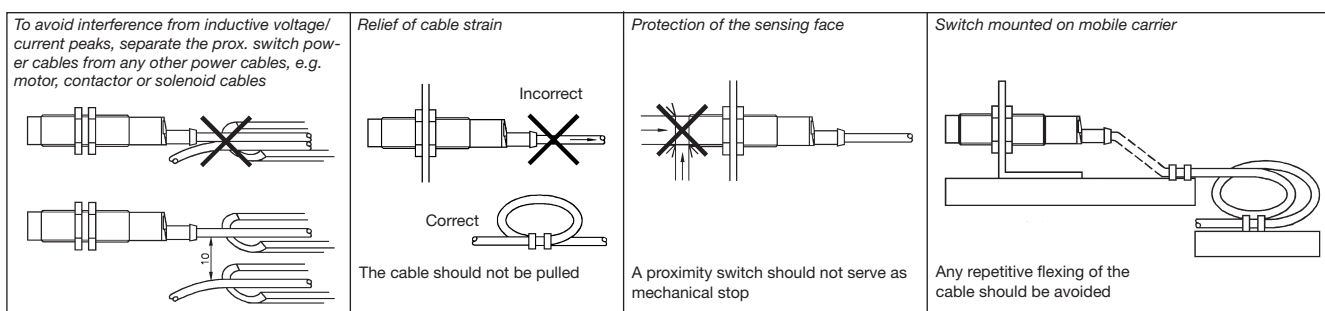
## Dimensions



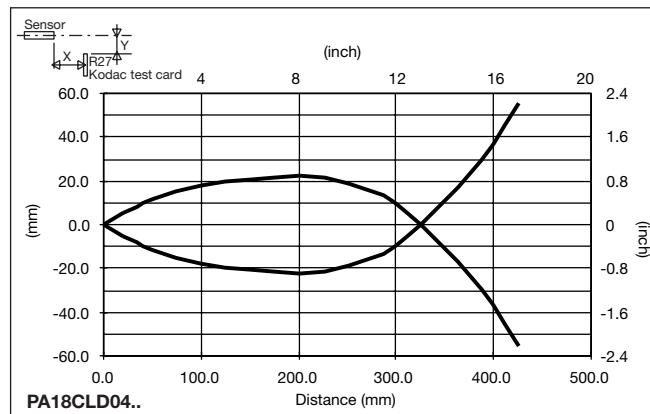
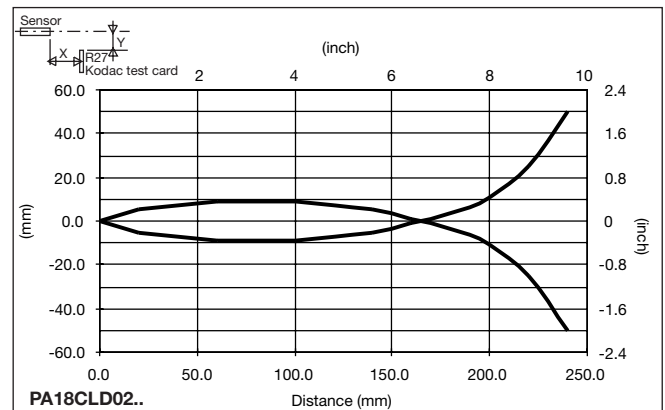
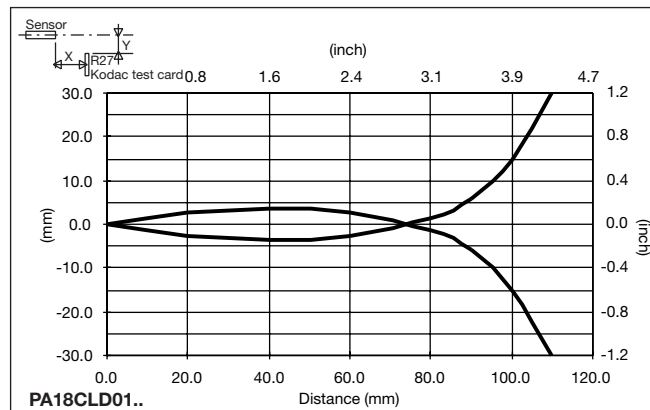
## Wiring Diagrams



## Installation Hints



## Detection Diagrams



## Delivery Contents

- Photoelectric switch: PA18CLD04T
- 2 nuts
- **Packaging:** plastic bag

## Accessories

- Fibre optics
- Connector type CON.6A-.. series.
- Screw driver for adjustments: 77-000
- MB18A
- APA18-RAR

For further informations refer to "Accessories"