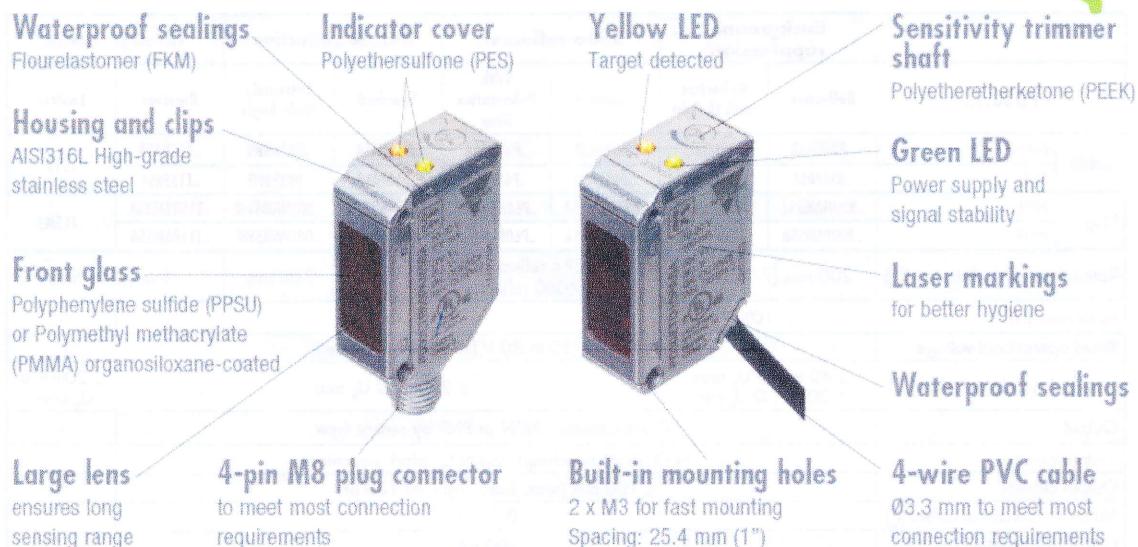


# PD30 Series

## Miniature photoelectric sensors

### PD30 Stainless Steel - features and functions



### PD30 Stainless Steel - benefits



#### Highest degree of protection

The IP69K rating is for applications where high pressure and high temperature wash-down is used to sanitize equipment.

The PD30 Stainless steel housing withstands high-pressure cleaning processes with chemicals, and the sensor's object detection is continuous and reliable even in the harshest conditions. Certified by Ecolab.

| Tolerates         | Description of application  | Concentration | Load duration     | Result |
|-------------------|---|---------------|-------------------|--------|
| Topax 56          | Acidic foam cleaner for the food industry                           | 5%            | 240 hours at 50°C | Passed |
| P3 Hypochloran    | Chlorine-containing disinfectant for the food industry              | 1%            | 240 hours at 24°C | Passed |
| TOPAZ CL1         | Alkaline and chlorine-containing foam cleaner for the food industry | 5%            | 240 hours at 50°C | Passed |
| TOPAZ AC1         | Acidic foam cleaner for the food industry                           | 4%            | 240 hours at 50°C | Passed |
| TOPAZ MD3         | Alkaline foam cleaner for the food industry                         | 5%            | 240 hours at 50°C | Passed |
| P3-topactive OKTO | Acidic foam disinfectant for the food industry                      | 1%            | 240 hours at 24°C | Passed |



## PD30 Stainless Steel - specifications

|   |  | Background suppression                    |  | Retro-reflective   |   | Diffuse-reflective |                            | Through-beam |         |  |  |  |  |  |  |  |  |  |  |  |  |
|---|--|---|--|--------------------|---|--------------------|----------------------------|--------------|---------|--|--|--|--|--|--|--|--|--|--|--|--|
| PD30ET..                                    |  | Reflective                                | Reflective with IR light   | Standard           | With Polarization filter                | Standard           | Extremely Wide Angle       | Receiver     | Emitter |  |  |  |  |  |  |  |  |  |  |  |  |
| Cable                                       | NPN  | ..B20NASA                                 | ..B20NAIS  | ..R60NASA          | ..P60NASA                               | ..D10NASA          | ..D02NAWE                  | ..T15NASA    | ..T15   |  |  |  |  |  |  |  |  |  |  |  |  |
|   | PNP  | ..B20PASA                                 | ..B20PAIS  | ..R60PASA          | ..P60PASA                               | ..D10PASA          | ..D02PAWE                  | ..T15PASA    |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Plug  | NPN  | ..B20NAMSSA                               | ..B20NAMSIS  | ..R60NAMSSA        | ..P60NAMSSA                             | ..D10NAMSSA        | ..D02NAMSSWE               | ..T15NAMSSA  | ..T15MS |  |  |  |  |  |  |  |  |  |  |  |  |
|   | PNP  | ..B20PAMSSA                               | ..B20PAMSIS  | ..R60PAMSSA        | ..P60PAMSSA                             | ..D10PAMSSA        | ..D02PAMSSWE               | ..T15PAMSSA  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Rated operating distance ( $S_o$ )          | 200 mm (7.9 inches)  | 6 m ER4 reflector<br>4 m ER4060 reflector |  | 1 m                | 200 mm                                  | 15 m (49.2 feet)   |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Hysteresis ( $H$ )                          | $\leq 10\%$  |   | 5% to 20%  |                    | -                                       |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Rated operational voltage                   | 10 to 30 V DC (Ripple included)  |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| No load supply current ( $I_o$ )            | $\leq 40 \text{ mA} @ U_B \text{ max.}$<br>$\leq 20 \text{ mA} @ U_B \text{ min.}$   |   | $\leq 25 \text{ mA} @ U_B \text{ max.}$  |                    | $\leq 20 \text{ mA} @ U_B \text{ max.}$ |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Output                                      | Open collector, NPN or PNP by sensor type  |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Output function                             | N.O. (light switching) and N.C. (dark switching)   |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Output current                              | $\leq 100 \text{ mA}$ (max. load capacity 100 nF)  |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum operational current ( $I_{op}$ )    | $\leq 0.5 \text{ mA}$  |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Off-State current ( $I_{os}$ )              | $\leq 100 \mu\text{A}$   |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Voltage drop ( $U_d$ )                      | $\leq 2 \text{ VDC} @ (I_o) \text{ max.}$  |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Sensor protection                           | Short circuit (A), reverse polarity (B) and transients (C)   |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Response time                               | $\leq 1.0 \text{ ms}$  |   | $\leq 0.5 \text{ ms}$  |                    | $\leq 1.0 \text{ ms}$                   |                    | -                          |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Power on delay ( $t_p$ )                    | $\leq 200 \text{ ms}$  |   | $\leq 30 \text{ ms}$   |                    | $\leq 200 \text{ ms}$                   |                    | $\leq 30 \text{ ms}$       |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Led indications                             | Target detected (Yellow LED), Signal stability and Power ON (Green LED)  |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Sensitivity control                         | Potentiometer, 210° electric, integrated in the receiver for through-beam type   |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Degree of protection                        | IP68 @ 2 m and 20 h (IEC 60539; EN60947-1), IP69K (DIN40050-9)   |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Ambient temperature                         | Operating: -25 to +60°C (-13 to +140°F)<br>Storage: -40 to +70°C (-40 to +158°F)   |   | Operating cable version: -25 to +60°C (-13 to +140°F)<br>Operating plug version: -40 to +60°C (-40 to +140°F)<br>Storage: -40 to +70°C (-40 to +158°F) |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Ambient humidity                            | Operating: 35 to 95 % RH, Storage: 35 to 95 % RH   |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Ambient light                               | $\leq 45\,000 \text{ Lux}$   |   | $\leq 65\,000 \text{ Lux}$   |                    | $\leq 10\,000 \text{ Lux}$              |                    | $\leq 65\,000 \text{ Lux}$ |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| CE marking                                  | According to EN 60947-5-2  |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Approvals                                   | cULus (UL508, CSA C22.2), ECOLAB   |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Installation category                       | III (IEC60664; EN60947-1)  |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Pollution degree                            | 3(EN60947-1)   |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Vibration                                   | 10 to 150 Hz (1.0 mm/15 g; (EN 60068-2-6) in X,Y and Z direction   |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Shock                                       | 30 g /11 ms. 6 positive and 6 negative in X,Y and Z direction  |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Light source                                | 617 nm   | 850 nm                                    | 625 nm   | 617 nm             | -                                       | 850 nm             |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Light type                                  | Red modulated  | Infrared modulated                        | Red modulated  | Infrared modulated | -                                       | Infrared modulated |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Material                                    | Body: Stainless steel, AISI316L;<br>Front glass: Polyphenylene sulfide (PPSU) or Polymethyl methacrylate (PMMA) organosiloxane-coated;<br>Trimmer shaft: Polyetheretherketone (PEEK) |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Cable                                       | PVC, black, 2 m, $4 \times 0.14 \text{ mm}^2$ , $\varnothing=3.3 \text{ mm}$   |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Connector                                   | 4-pin M8, male   |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Dimensions                                  | 11 x 31.5 x 21 mm  |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Weight incl. packaging                      | Cable version $\leq 100 \text{ g}$ , Plug version $\leq 65 \text{ g}$  |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Accessories<br>(to be purchased separately) | Mounting bracket: APD30-MB1 or APD30-MB2<br>Connectors: CO..54NF... series   |   |  |                    |   |                    |                            |              |         |  |  |  |  |  |  |  |  |  |  |  |  |