



Photoelectric sensors  
V18V, Photoelectric retro-reflective sensor,  
Standard optics

VL18-4P2240V



**Model Name** > VL18-4P2240V  
**Part No.** > 6035497



*Illustration may differ*

#### At a glance

- IP 69K-rated cylindrical retro-reflective photoelectric sensor in M18 stainless steel housing with 5 m sensing distance
- Available for clear material detection up to 4.5 m
- Extended temperature range: +85° C (long-term), +100° C / 15 min. (short-term)
- Touch teach-in adjustment
- All sensor materials, including the housing, LED and lens are resistant to chemicals
- IP 69K and IP 68 according to DIN 40050
- Laser-etched part numbers
- Ecolab & JohnsonDiversey certified for chemical resistance
- Resistant to all common cleaning agents and certified by independent institutes

#### Your benefits

- Simple, time-saving design ensures easy mounting, alignment and replacement
- IP 69K-rated stainless steel housing has a long service life that withstands hygienic and wash down environments, reducing maintenance time and costs
- Unique touch-teach feature and lock/ unlock functionality allow users to control who can change the sensor setting, which reduces the chances of disturbing a proven process and saves commissioning and maintenance time
- Laser-etched part numbers ensure the part numbers will not be washed off, saving maintenance time
- Polarizing filter prevents false readings on reflective objects, reducing downtime



#### Features

|                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric retro-reflective sensor, Standard optics |
| Housing design (light emission): | Cylindrical, straight                                  |
| Housing length:                  | 83 mm                                                  |
| Thread diameter (housing):       | M18 x 1                                                |
| Optical axis:                    | axial                                                  |
| Sensing range max.:              | 0.035 m ... 4.5 m <sup>1)</sup>                        |
| Sensing range:                   | 0.035 m ... 4 m <sup>2)</sup>                          |
| Type of light:                   | Visible red light                                      |
| Light source:                    | LED <sup>3)</sup>                                      |
| Angle of dispersion:             | 3 °                                                    |
| Light spot size (distance):      | Ø 60 mm (1 m)                                          |

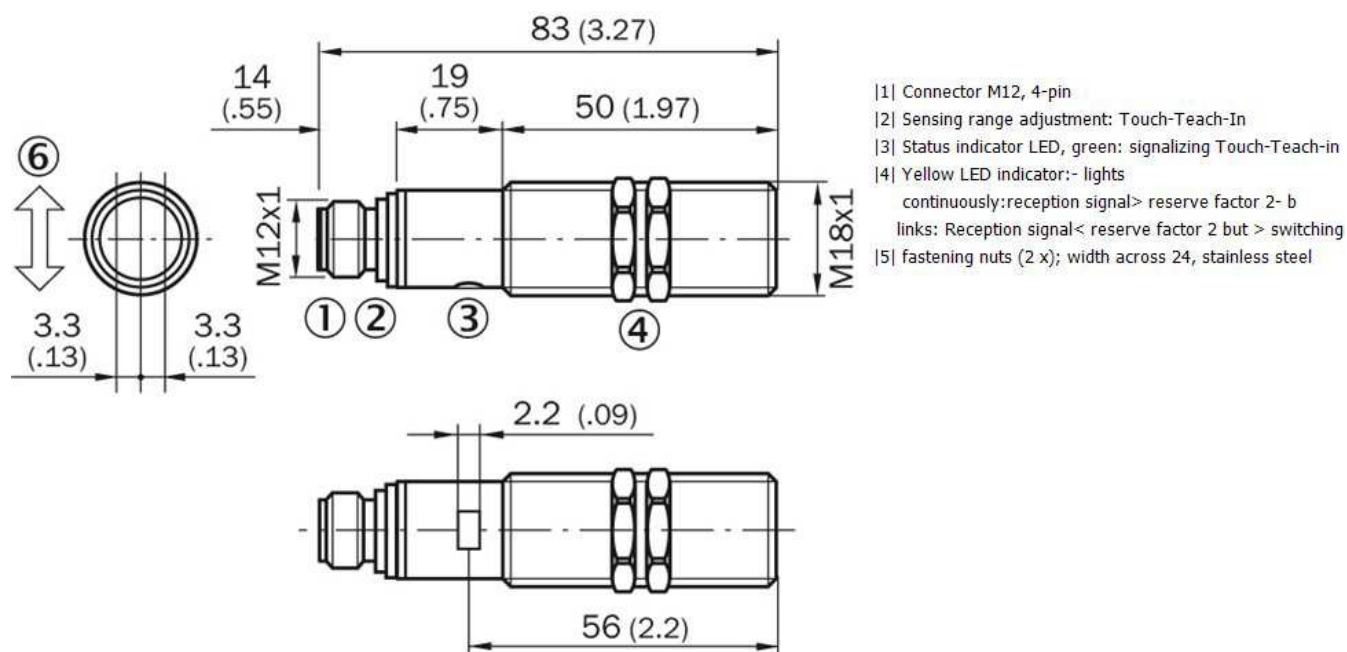
<sup>1) 2)</sup> PL80A <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

## Mechanics/electronics

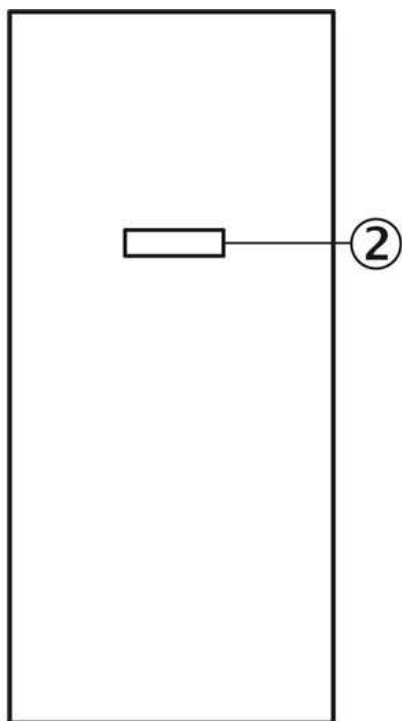
|                                          |                                                                     |
|------------------------------------------|---------------------------------------------------------------------|
| Supply voltage:                          | 10 V DC ... 30 V DC <sup>1)</sup>                                   |
| Residual ripple:                         | $\leq 10\%$ <sup>2)</sup>                                           |
| Power consumption:                       | $\leq 35\text{ mA}$ <sup>3)</sup>                                   |
| Output type:                             | PNP, open collector                                                 |
| Switching mode:                          | Light/dark switching                                                |
| Switching mode selector:                 | Selectable via L/D control wire                                     |
| Output current I <sub>max</sub> :        | $\leq 100\text{ mA}$                                                |
| Response time:                           | $\leq 1\text{ ms}$ <sup>4)</sup>                                    |
| Switching frequency:                     | 500 Hz <sup>5)</sup>                                                |
| Attenuation along light beam:            | $\geq 20\%$                                                         |
| Attenuation difference along light beam: | $\geq 15\%$                                                         |
| Attenuation difference of object:        | $\geq 7.5\%$                                                        |
| Electrical connection:                   | Connector M12, 4-pin <sup>6)</sup>                                  |
| Cable material:                          | PPS (Griamid)                                                       |
| Circuit protection:::                    | A, B, C, D <sup>7)</sup> <sup>8)</sup> <sup>9)</sup> <sup>10)</sup> |
| Protection class:                        | III                                                                 |
| Weight:                                  | 120 g                                                               |
| Polarisation filter:                     | -                                                                   |
| Special device:                          | -                                                                   |
| Housing material:                        | Stainless steel, Stainless steel V4A (1.4404, 316L)                 |
| Optics material:                         | Plan, PPS (Grilamid)                                                |
| Enclosure rating:                        | IP 67<br>IP 68 <sup>11)</sup><br>IP 69K                             |
| Special feature:                         | For transparent objects                                             |
| Ambient temperature operation:           | -25 °C ... +80 °C <sup>12)</sup>                                    |
| Ambient storage temperature:             | -40 °C ... +80 °C                                                   |
| UL File No.:                             | FDA, UL No. NRKH.E181493 & cUL No. NRKH7.E181493                    |
| Signal voltage PNP HIGH/LOW:             | Approx. VS - 2.0 V / 0 V                                            |

<sup>1)</sup> Limit values <sup>2)</sup> May not exceed or fall short of V<sub>S</sub> tolerances <sup>3)</sup> Without load, at VS 30 V DC <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> With light/dark ratio 1:1 <sup>6)</sup> With gold plated contact pins, PPS with FDA certificate <sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected <sup>8)</sup> B = interference suppression <sup>9)</sup> D = outputs overcurrent and short-circuit protected <sup>10)</sup> D = inputs and output reverse-polarity protected <sup>11)</sup> With correct mounted IP 69K connector <sup>12)</sup> +100 °C at max 15 minutes

## Dimensional drawing

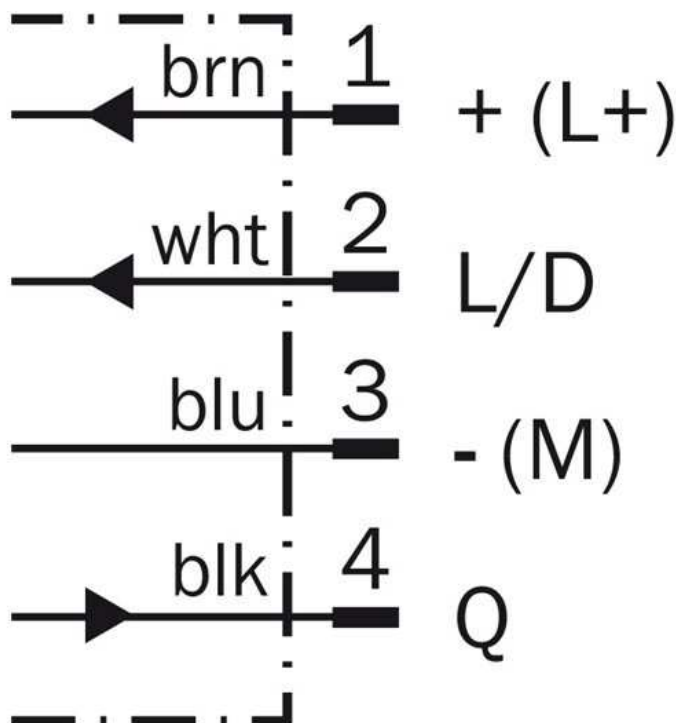


## Adjustments possible

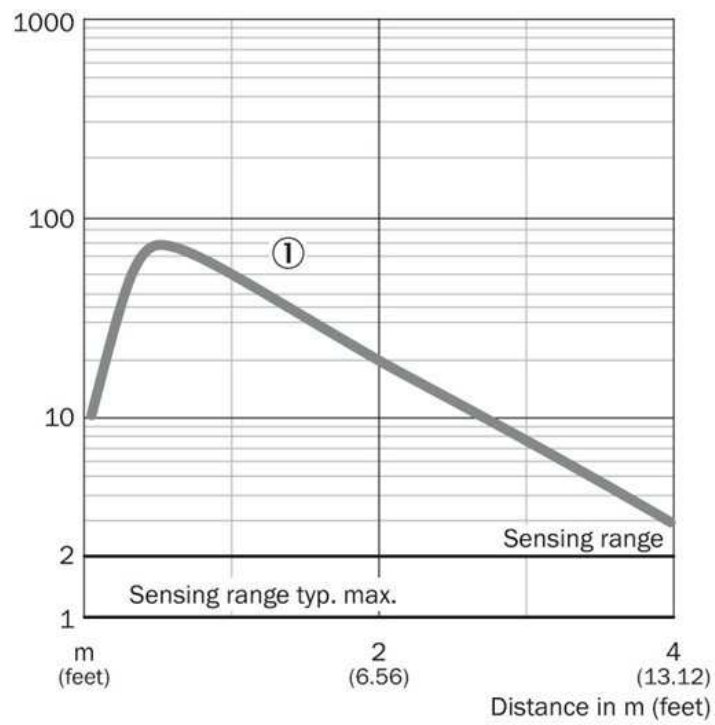


② Sensing range adjustment: Touch-Teach-In

Connection diagram



Characteristic curve

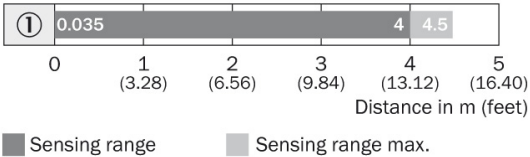


|1| PL80A

Connection type



Sensing range diagram



| 1 | PL80A

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