



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, straight
Housing length:	83 mm
Thread diameter (housing):	M18 x 1
Optical axis:	Axial
Sensing range max.:	0.035 m ... 4.5 m ¹⁾
Sensing range:	0.035 m ... 4 m ²⁾
Type of light:	Visible red light
Light source:	LED ³⁾
Light spot (distance):	60 mm (1 m)
Wave length:	660 nm
Angle of dispersion:	3 °

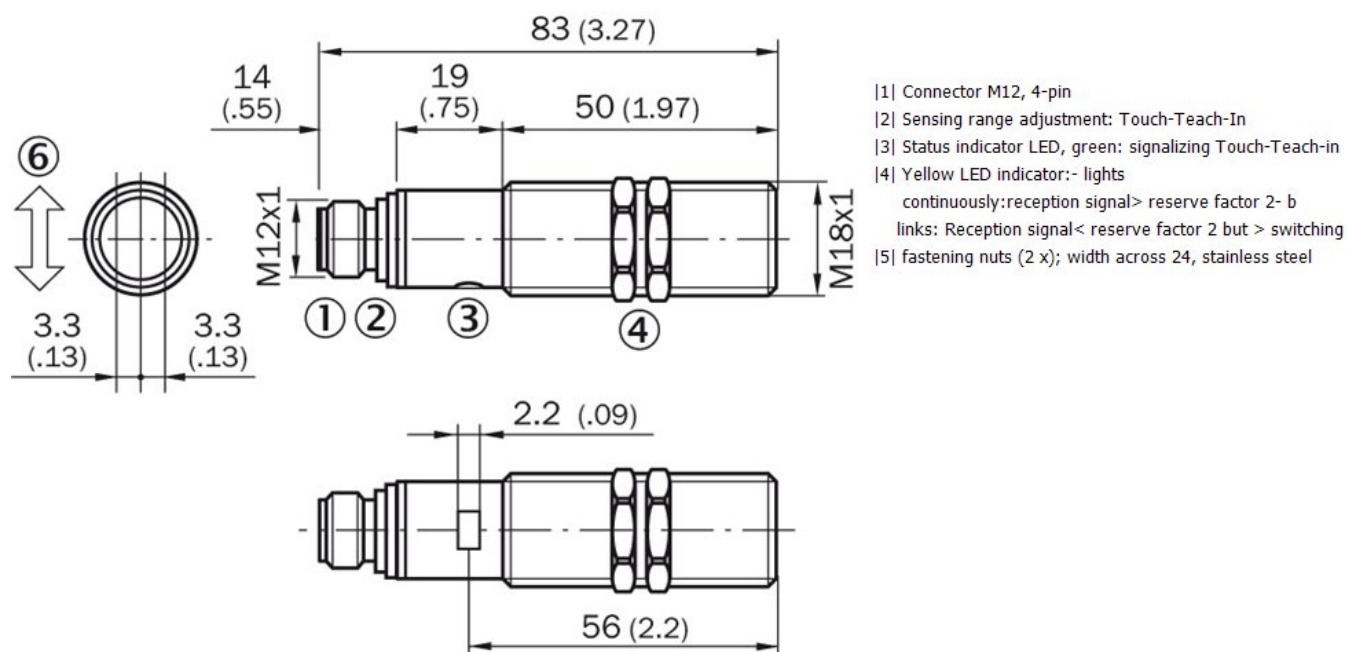
1) 2) PL80A 3) Average service life of 100,000 h at $T_A = +25\text{ °C}$

Mechanics/electronics

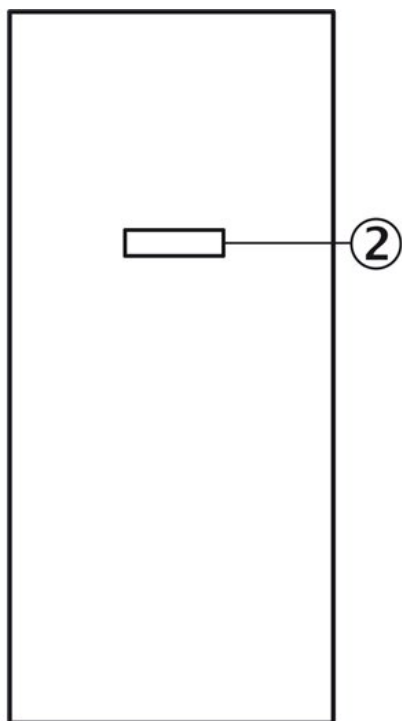
Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	$\leq 10\%$ ²⁾
Power consumption:	$\leq 35\text{ mA}$ ³⁾
Output type:	PNP, Light/dark-switching, Selectable via L/D control wire, open collector
Signal voltage PNP HIGH/LOW:	Approx. $V_S - 2.0\text{ V} / 0\text{ V}$
Output current I_{max} :	$\leq 100\text{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

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

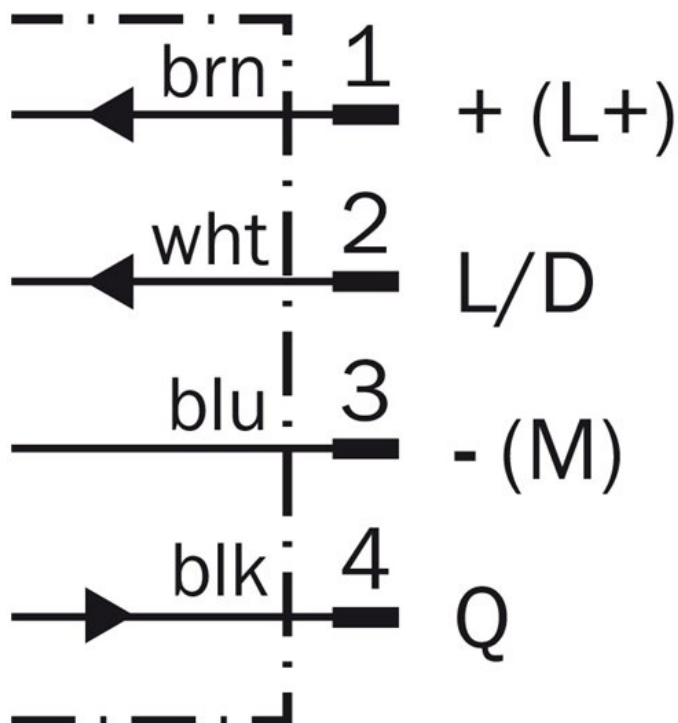
Dimensional drawing



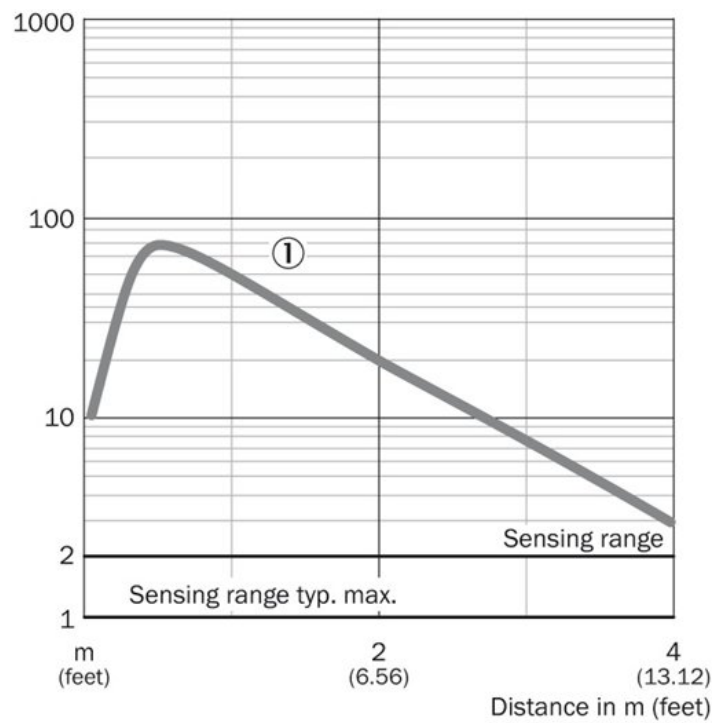
Adjustments possible



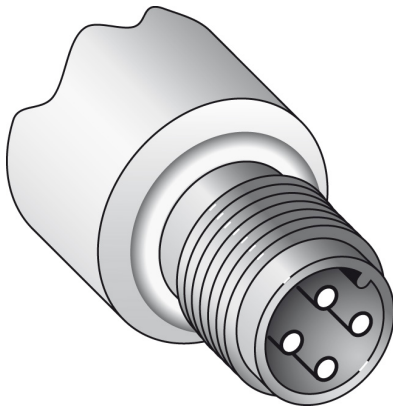
Connection diagram



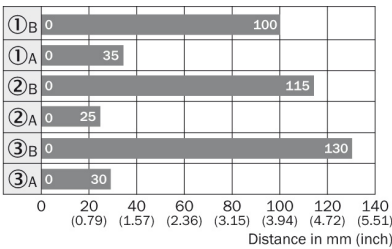
Characteristic curve



Connection type



Sensing range diagram



- Sensing range
- ① Sensing range on black, 6 % remission
 - ② Sensing range on gray, 18 % remission
 - ③ Sensing range on white, 90 % remission
 - A Sensing range adjuster on MIN
 - B Sensing range adjuster on MAX

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