



Photoelectric sensors  
Z1, Photoelectric retro-reflective sensor

ZL1-F2431



**Model Name** > ZL1-F2431  
**Part No.** > 1045506



Illustration may differ

**At a glance**

- Photoelectric sensor with 4.8 m sensing distance; non-adjustable
- Compact, transparent housing with 360° status indication
- M18 front mount and 24-25.4 mm slotted side through holes compatible with competitor devices
- Connection system: straight cable output

**Your benefits**

- Low-cost retro-reflective sensor for standard applications
- Clear housing provides 360° status indication, which simplifies troubleshooting
- Simple and unique mounting options lower installation costs
- Small size fits applications with limited space
- Compatibility with competitor products for easy integration into existing systems



**Features**

Sensor/detection principle:	Photoelectric retro-reflective sensor
Dimensions (W x H x D):	13.6 mm x 34.8 mm x 23 mm
Housing design (light emission):	Hybrid
Thread diameter (housing):	M18 x 1
Sensing range max.:	0.1 m ... 4.8 m <sup>1)</sup>
Sensing range:	0.1 m ... 3 m <sup>2)</sup>
Type of light:	Visible red light
Light source:	LED <sup>3)</sup>
Light spot (distance):	125 mm (1 m)
Wave length:	660 nm

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

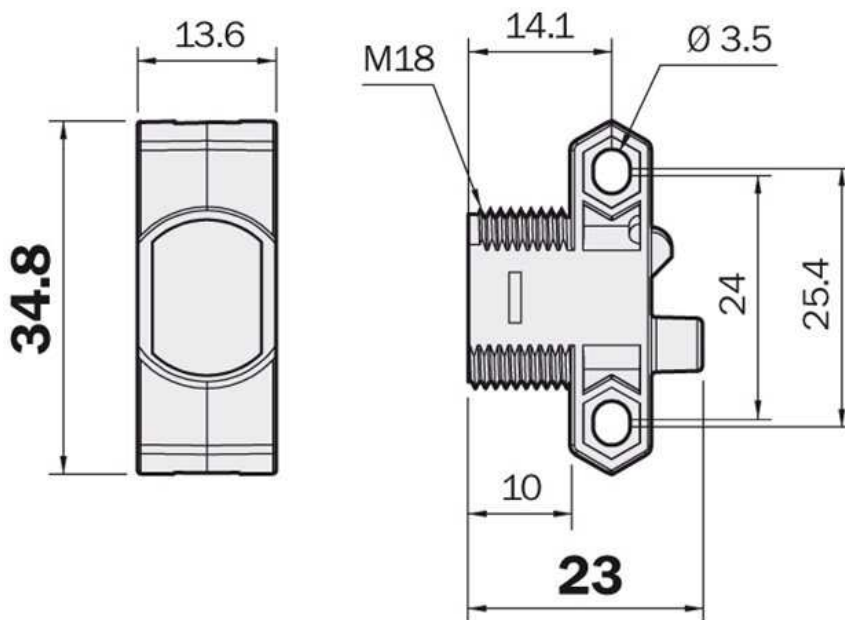
**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	< 5 Vpp <sup>2)</sup>
Power consumption:	< 20 mA <sup>3)</sup>
Output type:	PNP, Dark-switching
Output current I <sub>max</sub> ·:	50 mA <sup>4)</sup>
Switching frequency:	400 Hz <sup>4)</sup>
Connection type:	Cable with plug, M8, 4-pin, 150 mm <sup>5)</sup>
Circuit protection::	A, D <sup>6) 7)</sup>

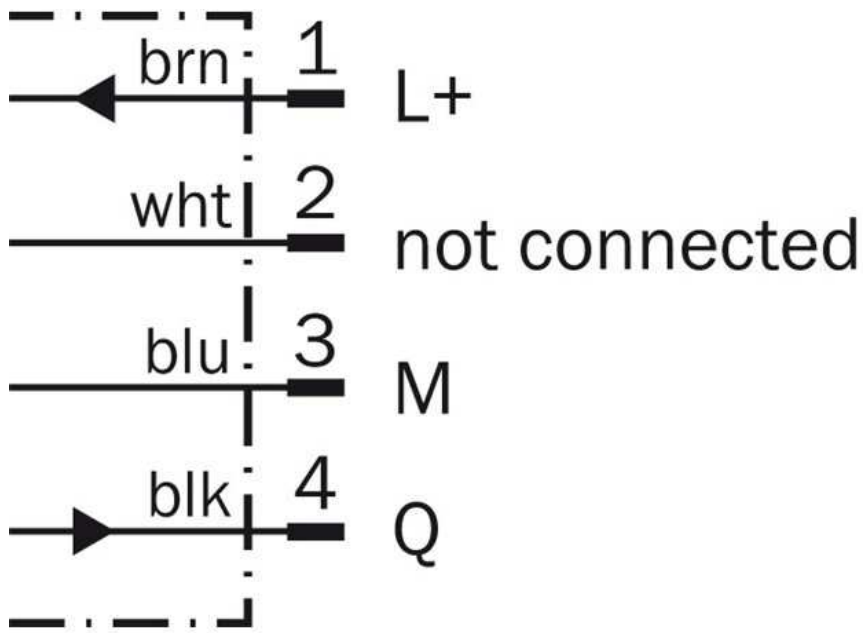
Protection class:	III <sup>8)</sup>
Polarisation filter:	✓
Housing material:	Glass fiber reinforced ABS plastic
Enclosure rating:	IP 67
Items supplied:	Mounting nut M18
Ambient operating temperature:	-25 °C ... 50 °C
Ambient storage temperature:	-40 °C ... 70 °C

1) Limit values 2) May not exceed or fall short of  $V_S$  3) Without load 4) With light/dark ratio 1:1 5) Do not bend below 0 °C 6) A =  $V_S$  connections reverse-polarity protected 7) D = outputs overcurrent and short-circuit protected 8) Reference voltage 50 V DC

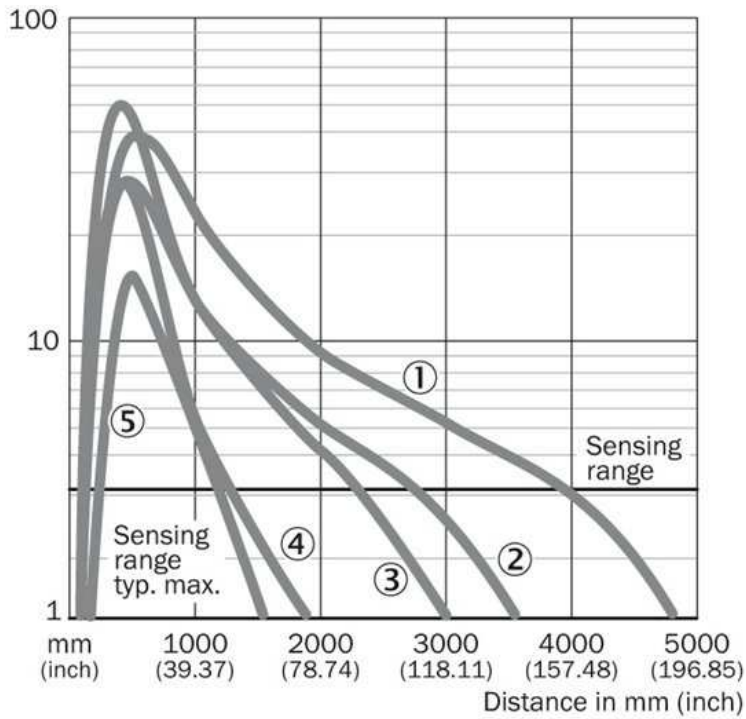
### Dimensional drawing



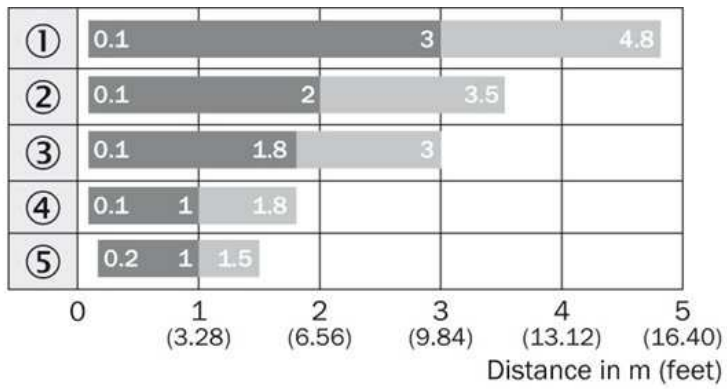
Connection diagram: receiver



Characteristic curve



## Sensing range diagram

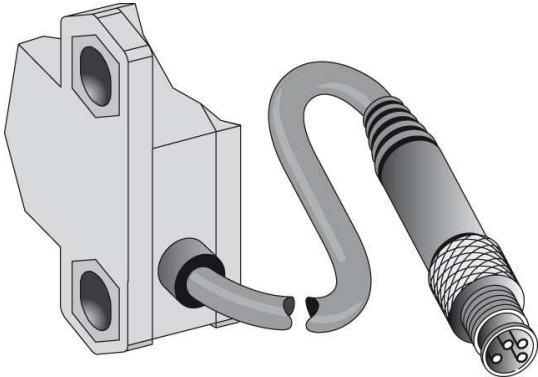


■ Sensing range            ■ Sensing range typ. max.

## Reflector type

- ① PL80A
- ② P250
- ③ PL40A
- ④ PL20A
- ⑤ REF-PLUS

## Connection type



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