



ZL1-F2415

Z-Sensor

CYLINDRICAL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|-----------|----------|
| ZL1-F2415 | 1045498 |

Other models and accessories → www.sick.com/Z-Sensor

Detailed technical data

Features

| | |
|--|---------------------------------------|
| Functional principle | Photoelectric retro-reflective sensor |
| Functional principle detail | Dual lens |
| 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 ¹⁾ |
| Sensing range | 0.1 m ... 3 m ¹⁾ |
| Type of light | Visible red light |
| Light source | LED ²⁾ |
| Light spot size (distance) | Ø 125 mm (1 m) |
| Wave length | 660 nm |
| Adjustment | None |

¹⁾ Reflector PL80A.

²⁾ Average service life: 100,000 h at T_J = +25 °C.

Mechanics/electronics

| | |
|----------------------------|-----------------------------------|
| Supply voltage | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | < 5 V _{pp} ²⁾ |
| Current consumption | 20 mA ³⁾ |

¹⁾ Limit values.

²⁾ May not exceed or fall below U_v tolerances.

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.

| | |
|---|---|
| Switching output | PNP |
| Switching mode | Dark switching |
| Output current I_{\max} | ≤ 50 mA |
| Switching frequency | 400 Hz ⁴⁾ |
| Connection type | Cable, 3-wire, 2 m ⁵⁾ |
| Cable material | PVC |
| Conductor cross section | 0.23 mm ² |
| Circuit protection | A ⁶⁾ D ⁷⁾ |
| Protection class | III ⁸⁾ |
| Polarisation filter | ✓ |
| Housing material | Plastic, Glass fiber reinforced ABS plastic |
| Enclosure rating | IP67 |
| Items supplied | Mounting nut M18 |
| Ambient operating temperature | -25 °C ... +50 °C |
| Ambient temperature, storage | -40 °C ... +70 °C |
| UL File No. | NRKH.E189383 & NRKH7.E189383 |

¹⁾ Limit values.

²⁾ May not exceed or fall below U_V tolerances.

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.

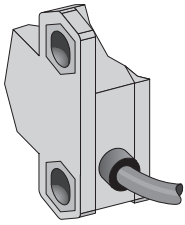
⁷⁾ D = outputs overcurrent and short-circuit protected.

⁸⁾ Reference voltage: 50 V DC.

Classifications

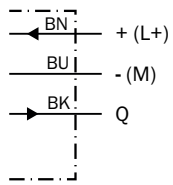
| | |
|-----------------------|----------|
| eCl@ss 5.0 | 27270902 |
| eCl@ss 5.1.4 | 27270902 |
| eCl@ss 6.0 | 27270902 |
| eCl@ss 6.2 | 27270902 |
| eCl@ss 7.0 | 27270902 |
| eCl@ss 8.0 | 27270902 |
| eCl@ss 8.1 | 27270902 |
| eCl@ss 9.0 | 27270902 |
| eCl@ss 10.0 | 27270902 |
| eCl@ss 11.0 | 27270902 |
| eCl@ss 12.0 | 27270902 |
| ETIM 5.0 | EC002717 |
| ETIM 6.0 | EC002717 |
| ETIM 7.0 | EC002717 |
| ETIM 8.0 | EC002717 |
| UNSPSC 16.0901 | 39121528 |

Connection type



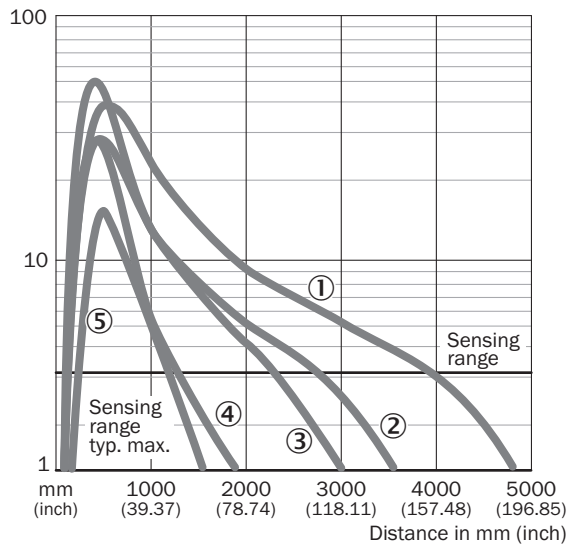
Connection diagram

Cd-043



Characteristic curve

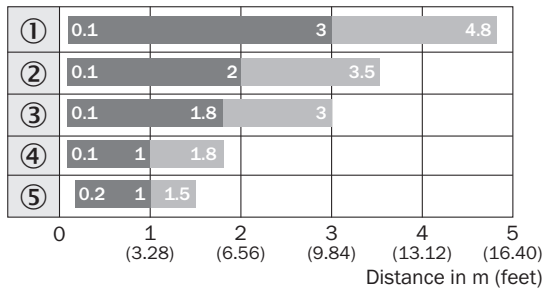
ZL1, ZL2, ZL3



- ① Reflector PL80A
- ② Reflector P250
- ③ Reflector PL40A
- ④ Reflector PL20A
- ⑤ Reflective tape REF-Plus

Sensing range diagram

ZL1, ZL2, ZL3

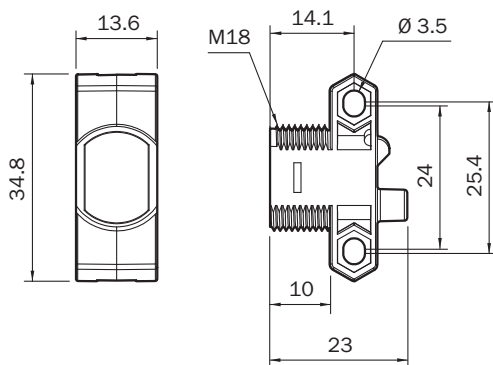


■ Sensing range ■ Sensing range max.

- ① Reflector PL80A
- ② Reflector P250
- ③ Reflector PL40A
- ④ Reflector PL20A
- ⑤ Reflective tape REF-Plus



Dimensional drawing (Dimensions in mm (inch))


ZT1, ZL1



Recommended accessories

Other models and accessories → www.sick.com/Z-Sensor

| | Brief description | Type | Part no. |
|---|--|-------------|----------|
| Mounting brackets and plates | | | |
|  | Universal mounting bracket for reflectors, steel, zinc coated | BEF-WN-REFX | 2064574 |
| Plug connectors and cables | | | |
|  | Head A: male connector, M8, 3-pin, straight Cable: unshielded | STE-0803-G | 6037322 |

| | Brief description | Type | Part no. |
|---|---|------|----------|
| Reflectors | | | |
|  | Rectangular, screw connection, 51 mm x 61 mm, PMMA/ABS, Screw-on, 2 hole mounting | P250 | 5304812 |

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com