



L21E-21MA1A

L21

SINGLE-BEAM PHOTOELECTRIC SAFETY SWITCHES

SICK
Sensor Intelligence.



Ordering information

| Type | Part no. |
|-------------|----------|
| L21E-21MA1A | 6034875 |

Other models and accessories → www.sick.com/L21



Detailed technical data

Features

| | |
|------------------------|--------------|
| Scanning range | 0 m ... 10 m |
| Number of beams | 1 |
| Optical axis | Axial |

Safety-related parameters

| | |
|---|---|
| Type | Type 2 (IEC 61496) ¹⁾ |
| Safety integrity level | SIL1 (IEC 61508) ¹⁾ SILCL1 (EN 62061) ¹⁾ |
| Category | Category 2 (EN ISO 13849) ¹⁾ |
| Test rate (external test) | 100 /s (EN ISO 13849) ²⁾ |
| Maximum demand rate | ≤ 60 min ⁻¹ (EN ISO 13849) ³⁾ |
| Performance level | PL c (EN ISO 13849) ¹⁾ |
| PFH_D (mean probability of a dangerous failure per hour) | 1.0 x 10 ⁻⁶ (EN ISO 13849) ¹⁾ |
| T_M (mission time) | 20 years (EN ISO 13849) |

¹⁾ Only in combination with an appropriate test device, e.g., Flexi Classic or Flexi Soft.

²⁾ The test rate shall not be exceeded.

³⁾ Between two requirements on a safety-related response of the device, at least 100 internal or external tests must be carried out.

Interfaces

| | |
|-------------------------------------|---|
| Connection type | Male connector M12, 4-pin, straight |
| Fieldbus, industrial network | Integration via Flexi Soft safety controller |
| | CANopen, DeviceNet™, EtherCAT®, EtherNet/IP™, Modbus TCP, PROFIBUS DP, PROFINET ¹⁾ |

¹⁾ For additional information on Flexi Soft -> www.sick.com/Flexi_Soft.

Electrical data

| | |
|-------------------------|----------------|
| Protection class | III (EN 50178) |
|-------------------------|----------------|

¹⁾ Short-circuit protected.

| | |
|--|-----------------------------------|
| Supply voltage V_s | 24 V DC (19.2 V DC ... 28.8 V DC) |
| Power consumption | ≤ 30 mA |
| Switching outputs | PNP, Q ¹⁾ |
| Switching current | ≤ 70 mA |

¹⁾ Short-circuit protected.

Mechanical data

| | |
|---------------------------------------|---------------------|
| Design | Cylindrical |
| Dimensions (diameter x length) | M18 x 97.7 mm |
| Housing material | Nickel-plated brass |
| Lens material | Glass |
| Weight | 67 g |

Ambient data

| | |
|--------------------------------------|--------------------------------------|
| Enclosure rating | IP67 (EN 60529) |
| Ambient operating temperature | -40 °C ... +55 °C |
| Storage temperature | -40 °C ... +75 °C |
| Air humidity | 15 % ... 95 %, Non-condensing |
| Vibration resistance | 5 g, 10 Hz ... 55 Hz (IEC 60068-2-6) |
| Shock resistance | 10 g, 16 ms (IEC 60068-2-29) |

Other information

| | |
|---------------------------------------|-----------------------------|
| Aperture angle/receiving angle | $\pm 5^\circ / \pm 5^\circ$ |
|---------------------------------------|-----------------------------|

Classifications

| | |
|-----------------------|----------|
| ECl@ss 5.0 | 27272701 |
| ECl@ss 5.1.4 | 27272701 |
| ECl@ss 6.0 | 27272701 |
| ECl@ss 6.2 | 27272701 |
| ECl@ss 7.0 | 27272701 |
| ECl@ss 8.0 | 27272701 |
| ECl@ss 8.1 | 27272701 |
| ECl@ss 9.0 | 27272701 |
| ETIM 5.0 | EC001831 |
| ETIM 6.0 | EC001831 |
| UNSPSC 16.0901 | 46171620 |

Possible faults

Malfunctions in the UE10-30S will be detected. The shutdown function is retained.

Comments






¹⁾ Output circuits: These contacts are to be connected to the controller such that, with the output circuit open, the dangerous state is disabled. For categories 4 and 3, the integration must be dual-channel (x/y paths). Single-channel integration in the control (z path) is only possible with a single-channel control and by taking the risk analysis into account.

²⁾ PELV as required in EN 60204-1 / 6.4

Take note of the operating instructions for the integrated devices. The safety-related parameters (safety integrity level and response time) are dependent on the types used.

Recommended accessories

Other models and accessories → www.sick.com/L21

| | Brief description | Type | Part no. |
|---|--|---------------|----------|
| Plug connectors and cables | | | |
|  | Head A: female connector, M12, 4-pin, straight Head B: cable Cable: PVC, unshielded, 5 m | DOL-1204-G05M | 6009866 |
|  | Head A: female connector, M12, 4-pin, angled Head B: cable Cable: PVC, unshielded, 5 m | DOL-1204-W05M | 6009867 |
|  | Head A: female connector, M12, 4-pin, straight Head B: - Cable: unshielded | DOS-1204-G | 6007302 |
|  | Head A: female connector, M12, 4-pin, angled Head B: - Cable: unshielded | DOS-1204-W | 6007303 |
| Alignment aids | | | |
|  | Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam! | AR60 | 1015741 |

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:

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