



# L40S-21MA1A

L4000 Systems

**SAFETY SINGLE-BEAM SENSORS**

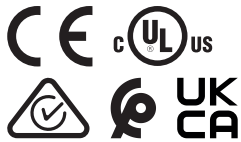
**SICK**  
Sensor Intelligence.



### Ordering information

| Type        | part no. |
|-------------|----------|
| L40S-21MA1A | 6027339  |

Other models and accessories → [www.sick.com/L4000\\_Systems](http://www.sick.com/L4000_Systems)



### Detailed technical data

#### Features

|                             |                                            |
|-----------------------------|--------------------------------------------|
| <b>Light source</b>         | LED                                        |
| <b>Type of light</b>        | Visible red light                          |
| <b>Scanning range</b>       | 16 m                                       |
| <b>Number of beams</b>      | 1                                          |
| <b>Detection capability</b> | 30 mm                                      |
| <b>Optical axis</b>         | Axial                                      |
| <b>Response time</b>        | 0.4 ms                                     |
| <b>Response time</b>        | 0.4 ms + Test device response time (UE401) |

#### Safety-related parameters

|                                                                           |                                                    |
|---------------------------------------------------------------------------|----------------------------------------------------|
| <b>Type</b>                                                               | Type 4 (IEC 61496-1) <sup>1)</sup>                 |
| <b>Safety integrity level</b>                                             | SIL 3 (IEC 61508) <sup>1)</sup>                    |
| <b>Category</b>                                                           | Category 4 (EN ISO 13849) <sup>1)</sup>            |
| <b>Performance level</b>                                                  | PL e (EN ISO 13849) <sup>1)</sup>                  |
| <b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b> | $2.9 \times 10^{-10}$ (EN ISO 13849) <sup>1)</sup> |
| <b>T<sub>M</sub> (mission time)</b>                                       | 20 years (EN ISO 13849) <sup>1)</sup>              |

<sup>1)</sup> Only in conjunction with UE401.

#### Interfaces

|                         |                                     |
|-------------------------|-------------------------------------|
| <b>Connection type</b>  | Male connector M12, 4-pin, straight |
| <b>Display elements</b> | LED                                 |

#### Electronics

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| <b>Protection class</b>             | III (IEC 61140)                   |
| <b>Supply voltage V<sub>S</sub></b> | 24 V DC (19.2 V DC ... 28.8 V DC) |

|                          |         |
|--------------------------|---------|
| <b>Power consumption</b> | ≤ 60 mA |
|--------------------------|---------|

## Mechanics

|                                       |                     |
|---------------------------------------|---------------------|
| <b>Design</b>                         | Cylindrical         |
| <b>Dimensions (diameter x length)</b> | M18 x 97.7 mm       |
| <b>Housing material</b>               | Nickel-plated brass |
| <b>Front screen material</b>          | Glass               |
| <b>Weight</b>                         | 67 g                |

## Ambient data

|                                      |                                      |
|--------------------------------------|--------------------------------------|
| <b>Enclosure rating</b>              | IP67 (EN 60529)                      |
| <b>Ambient operating temperature</b> | -20 °C ... +55 °C                    |
| <b>Storage temperature</b>           | -25 °C ... +75 °C                    |
| <b>Air humidity</b>                  | 15 % ... 95 %, Non-condensing        |
| <b>Vibration resistance</b>          | 5 g, 10 Hz ... 55 Hz (IEC 60068-2-6) |
| <b>Shock resistance</b>              | 10 g, 16 ms (IEC 60068-2-27)         |

## Other information

|                                       |                   |
|---------------------------------------|-------------------|
| <b>Light source</b>                   | LED               |
| <b>Type of light</b>                  | Visible red light |
| <b>Wave length</b>                    | 660 nm            |
| <b>Aperture angle/receiving angle</b> | ± 2.5° / ± 2.5°   |

## Certificates

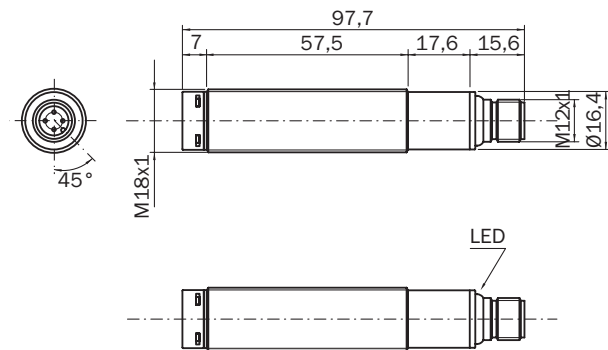
|                                           |   |
|-------------------------------------------|---|
| <b>EU declaration of conformity</b>       | ✓ |
| <b>UK declaration of conformity</b>       | ✓ |
| <b>ACMA declaration of conformity</b>     | ✓ |
| <b>Moroccan declaration of conformity</b> | ✓ |
| <b>China RoHS</b>                         | ✓ |
| <b>cULus certificate</b>                  | ✓ |
| <b>EC-Type-Examination approval</b>       | ✓ |

## Classifications

|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27272701 |
| <b>ECLASS 5.1.4</b> | 27272701 |
| <b>ECLASS 6.0</b>   | 27272701 |
| <b>ECLASS 6.2</b>   | 27272701 |
| <b>ECLASS 7.0</b>   | 27272701 |
| <b>ECLASS 8.0</b>   | 27272701 |
| <b>ECLASS 8.1</b>   | 27272701 |
| <b>ECLASS 9.0</b>   | 27272701 |
| <b>ECLASS 10.0</b>  | 27272701 |
| <b>ECLASS 11.0</b>  | 27272701 |
| <b>ECLASS 12.0</b>  | 27272701 |
| <b>ETIM 5.0</b>     | EC001831 |

|                       |          |
|-----------------------|----------|
| <b>ETIM 6.0</b>       | EC001831 |
| <b>ETIM 7.0</b>       | EC001831 |
| <b>ETIM 8.0</b>       | EC001831 |
| <b>UNSPSC 16.0901</b> | 46171620 |

### Dimensional drawing M18, axial, straight



Dimensions in mm (inch)

### Recommended accessories

Other models and accessories → [www.sick.com/L4000\\_Systems](http://www.sick.com/L4000_Systems)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                         | Type                      | part no. |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------|
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                           |                           |          |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket for M18 sensors</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Without mounting hardware</li> <li><b>Suitable for:</b> GR18, V180-2, V18, W15, Z1, Z2</li> </ul> | BEF-WN-M18                | 5308446  |
| Commissioning aids and test equipment                                               |                                                                                                                                                                                                                                                                                                           |                           |          |
|  | <ul style="list-style-type: none"> <li><b>Product:</b> Alignment aids</li> <li><b>Description:</b> Adapter AR60 for M18 sensors (L41 and L21)</li> </ul>                                                                                                                                                  | AR60 adapter, M18 sensors | 5313533  |

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                       | Type               | part no. |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| reflectors and optics                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |          |
|    |                                                                                                                                                                                                                                                                                                                                                                                                                         | PNS75-008          | 1026647  |
|    |                                                                                                                                                                                                                                                                                                                                                                                                                         | PSK1               | 1005229  |
|    |                                                                                                                                                                                                                                                                                                                                                                                                                         | PSK45              | 5306053  |
| system plugs and extension modules                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |          |
|   | <ul style="list-style-type: none"> <li><b>Applications:</b> Evaluation unit</li> <li><b>Description:</b> UE401 evaluation unit</li> <li><b>Compatible sensor types:</b> L4000 Systems single-beam photoelectric safety switches</li> <li><b>Mounting:</b> Snap-on mounting on 35 mm mounting rail according to EN 60715</li> </ul>                                                                                      | UE401-A0010        | 6027343  |
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |          |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>   | YG2A14-050VB3XLEAX | 2095897  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul> | YF2A14-050VB3XLEAX | 2096235  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm²</li> </ul>                                                                                                                                   | DOS-1204-G         | 6007302  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm²</li> </ul>                                                                                                                                     | DOS-1204-W         | 6007303  |

## 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](http://www.sick.com)