

Technical data sheet

Optical distance sensor

Part no.: 50040720
ODSL 30/24-30M-S12



For illustration purposes only

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CDRH

Technical data

Basic data

| | |
|-------------------------|--|
| Series | 30 |
| Contains | Mounting brackets |
| Application | Collision protection of cranes / gantry cranes |
| | Fill-level monitoring |
| | Final position monitoring |
| Type of scanning system | Against object |

Optical data

| | |
|--------------------------------------|------------------------|
| Beam path | Collimated |
| Light source | Laser, Red |
| Wavelength | 655 nm |
| Laser class | 2, IEC/EN 60825-1:2014 |
| Transmitted-signal shape | Pulsed |
| Light spot size [at sensor distance] | 6 mm [10,000 mm] |
| Type of light spot geometry | Round |

Measurement data

| | |
|---|---|
| Measurement range, additional text | The sensor has 3 switching outputs, no measurement data output |
| Measurement range (6 ... 90 % diffuse reflection) | 200 ... 30,000 mm |
| Measurement range (90 % diffuse reflection) | 200 ... 30,000 mm |
| Resolution | 1.0 mm |
| Accuracy | 2 mm, (+/-) at 90% diffuse reflection / 5 mm (+/-) at 6% diffuse reflection |
| Reproducibility (3 sigma) | 2 mm |
| Temperature drift | 0 ... 0.5 mm/K |
| Referencing | Yes |
| Standard measurement object | 100 x 100 mm ² |
| Optical distance measurement principle | Phase measurement |

Electrical data

| | |
|--------------------|------------------------------|
| Protective circuit | Polarity reversal protection |
| | Short circuit protected |

Performance data

| | |
|-------------------------------|---------------------------------|
| Supply voltage U _B | 10 ... 30 V, DC |
| Residual ripple | 0 ... 15 %, From U _B |

Inputs

| | |
|------------------------------------|------------|
| Number of digital switching inputs | 2 Piece(s) |
|------------------------------------|------------|

Switching inputs

Digital switching input 1

| | |
|------------|---------------------|
| Assignment | Connection 1, pin 2 |
| Function | Programmable |

Digital switching input 2

| | |
|------------|---------------------|
| Assignment | Connection 1, pin 5 |
| Function | Programmable |

Outputs

| | |
|-------------------------------------|------------|
| Number of digital switching outputs | 3 Piece(s) |
|-------------------------------------|------------|

Switching outputs

| | |
|-------------------|------------------------|
| Voltage type | DC |
| Switching voltage | high: $\geq(U_B - 2V)$ |

Switching output 1

| | |
|-------------------|-----------------------|
| Assignment | Connection 1, pin 4 |
| Switching element | Transistor, Push-pull |

Switching output 2

| | |
|-------------------|-----------------------|
| Assignment | Connection 1, pin 6 |
| Switching element | Transistor, Push-pull |

Switching output 3

| | |
|-------------------|-----------------------|
| Assignment | Connection 1, pin 7 |
| Switching element | Transistor, Push-pull |

Time behavior

| | |
|-----------------|---------------|
| Response time | 30 ... 100 ms |
| Readiness delay | 1,000 ms |

Connection

| | |
|-----------------------|------------|
| Number of connections | 1 Piece(s) |
|-----------------------|------------|

Connection 1

| | |
|--------------------|----------------|
| Function | Signal IN |
| | Signal OUT |
| | Voltage supply |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | Plastic |
| No. of pins | 8 -pin |
| Encoding | A-coded |

Mechanical data

| | |
|-----------------------|---------------------------|
| Design | Cubic |
| Dimension (W x H x L) | 79 mm x 69 mm x 150 mm |
| Housing material | Metal |
| Metal housing | Diecast aluminum |
| Lens cover material | Glass |
| Net weight | 650 g |
| Housing color | Gray |
| | Silver |
| Type of fastening | Mounting thread |
| | Supplied mounting bracket |

Operation and display

| | |
|----------------------|-------------------|
| Type of display | LC Display |
| | LED |
| Operational controls | LC Display |
| | Membrane keyboard |

Environmental data

| | |
|--------------------------------|---------------|
| Ambient temperature, operation | 0 ... 45 °C |
| Ambient temperature, storage | -40 ... 70 °C |

Certifications

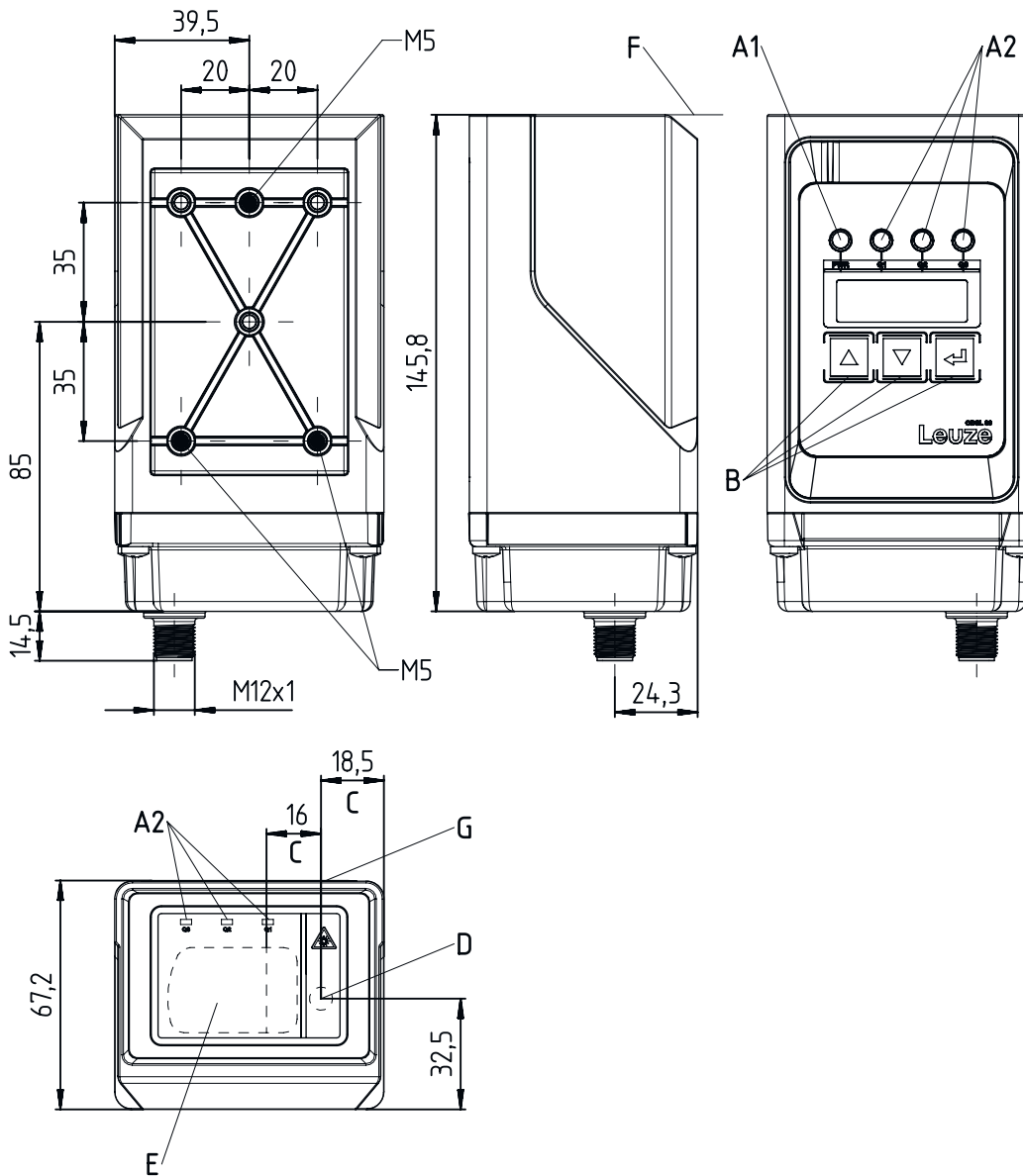
| | |
|----------------------|---------------|
| Degree of protection | IP 67 |
| Protection class | II |
| Approvals | c UL US |
| Standards applied | IEC 60947-5-2 |

Technical data

| | |
|-----------------------|----------|
| Customs tariff number | 90318020 |
| ECLASS 5.1.4 | 27270801 |
| ECLASS 8.0 | 27270801 |
| ECLASS 9.0 | 27270801 |
| ECLASS 10.0 | 27270801 |
| ECLASS 11.0 | 27270801 |
| ECLASS 12.0 | 27270916 |
| ECLASS 13.0 | 27270916 |
| ECLASS 14.0 | 27270916 |
| ECLASS 15.0 | 27270916 |
| ETIM 5.0 | EC001825 |
| ETIM 6.0 | EC001825 |
| ETIM 7.0 | EC001825 |
| ETIM 8.0 | EC001825 |
| ETIM 9.0 | EC001825 |
| ETIM 10.0 | EC001825 |

Dimensioned drawings

All dimensions in millimeters



- A1 Green indicator diode
- A2 Yellow indicator diode
- B Control buttons
- C Optical axis
- D Transmitter

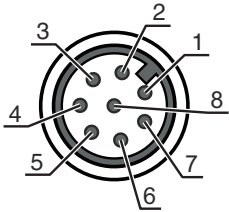
- E Receiver
- F Reference edge for the measurement (distance zero point)
- G Sight for coarse alignment

Electrical connection

Connection 1

| | |
|--------------------|----------------|
| Function | Signal IN |
| | Signal OUT |
| | Voltage supply |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | Plastic |
| No. of pins | 8 -pin |
| Encoding | A-coded |

| Pin | Pin assignment |
|-----|------------------|
| 1 | +10...30 V DC |
| 2 | active/reference |
| 3 | GND |
| 4 | Q1 |
| 5 | teach Q1/Q2 |
| 6 | Q2 |
| 7 | Q3 |
| 8 | teach Q3 |



Notes

Observe intended use!


- ⚡ This product is not a safety sensor and is not intended as personnel protection.
- ⚡ The product may only be put into operation by competent persons.
- ⚡ Only use the product in accordance with its intended use.

ATTENTION! LASER RADIATION – CLASS 2 LASER PRODUCT

Do not stare into beam!
The device satisfies the requirements of IEC/EN 60825-1:2014 safety regulations for a product of **laser class 2** as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to Laser Notice No. 56 from May 08, 2019.

- ⚡ Never look directly into the laser beam or in the direction of reflected laser beams! If you look into the beam path over a longer time period, there is a risk of injury to the retina.
- ⚡ Do not point the laser beam of the device at persons!
- ⚡ Interrupt the laser beam using a non-transparent, non-reflective object if the laser beam is accidentally directed towards a person.
- ⚡ When mounting and aligning the device, avoid reflections of the laser beam off reflective surfaces!
- ⚡ CAUTION! The use of operating and adjusting devices other than those specified here or the carrying out of differing procedures may lead to dangerous exposure to radiation!
- ⚡ Observe the applicable statutory and local laser protection regulations.
- ⚡ The device must not be tampered with and must not be changed in any way.
There are no user-serviceable parts inside the device.
Repairs must only be performed by Leuze electronic GmbH + Co. KG.

Notes




NOTE


Affix laser information and warning signs!
Laser information and warning signs are affixed to the device. In addition, self-adhesive laser information and warning signs (stick-on labels) are supplied in several languages.

- ☞ "Affix the laser information sheet to the device in the language appropriate for the place of use. When using the device in the US, use the stick-on label with the "Complies with 21 CFR 1040.10" note.
- ☞ Affix the laser information and warning signs near the device if no signs are attached to the device (e.g. because the device is too small) or if the attached laser information and warning signs are concealed due to the installation position.
- ☞ Affix the laser information and warning signs so that they are legible without exposing the reader to the laser radiation of the device or other optical radiation.

Accessories

Connection technology - Connection cables

| | Part no. | Designation | Article | Description |
|--|----------|--------------------|------------------|--|
|  | 50135128 | KD S-M12-8A-P1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR |



Note

☞ A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.