

Technical data sheet

Line profile sensor

Part no.: 50136678

LES 36HI/VC6.10



For illustration purposes only

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- Dimensioned drawings
- Electrical connection
- Diagrams
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CDRH Ethernet

Technical data

Basic data

| | |
|-------------|---|
| Series | 36 |
| Contains | LxSsoft configuration software |
| Application | 3D object detection Object measurement |

Special version

| | |
|-----------------|-----------------------|
| Special version | Synchronization input |
|-----------------|-----------------------|

Optical data

| | |
|--------------|------------|
| Light source | Laser, Red |
| Laser class | 2M |

Measurement data

| | |
|---|---|
| X-axis measurement range | 50 ... 140 mm |
| Measurement range z-axis | 200 ... 600 mm |
| Resolution of x-axis | 0.2 ... 0.6 mm |
| Resolution of z-axis | 0.1 ... 0.9 mm |
| Repeatability of Z-axis, relative to measurement distance | ≤ 0.25 % |
| Repeatability of Z-axis, relative to measurement distance, note | Reflectivity 90 %, identical object, identical environment conditions, measurement object ≤ 50x50 mm ² |
| Measurement time | 10ms |
| Linearity of Z-axis, relative to measurement distance | ± 0,5% % |
| Minimum object size, x-axis | 0.6 ... 2 mm |
| Minimum object size, z-axis | 0.4 ... 3 mm |
| Black/white behavior | 0.5 %, 6 ... 90% diffuse reflectance |

Electrical data

| | |
|-------------------------------------|-----------------------|
| Performance data | |
| Supply voltage U _B | 18 ... 30 V, DC |
| Inputs | |
| Number of activation inputs | 1 Piece(s) |
| Number of digital switching inputs | 5 Piece(s) |
| Outputs | |
| Number of digital switching outputs | 6 Piece(s) |
| Analog outputs | |
| Type | Analog output |
| Analog output 1 | |
| Type | Current |
| Analog output 2 | |
| Type | Voltage |
| Switching outputs | |
| Switching output 1 | |
| Switching element | Transistor, Push-pull |
| Switching output 2 | |
| Switching element | Transistor, Push-pull |
| Switching output 3 | |
| Switching element | Transistor, Push-pull |

Switching output 4

| | |
|-------------------|-----------------------|
| Switching element | Transistor, Push-pull |
|-------------------|-----------------------|

Switching output 5

| | |
|-------------------|-----------------------|
| Switching element | Transistor, Push-pull |
|-------------------|-----------------------|

Switching output 6

| | |
|-------------------|---------------------|
| Switching element | Push-pullTransistor |
|-------------------|---------------------|

Time behavior

| | |
|---------------|-------|
| Response time | 10 ms |
|---------------|-------|

Interface

| | |
|------|----------|
| Type | Ethernet |
|------|----------|

Connection

| | |
|-----------------------|------------|
| Number of connections | 3 Piece(s) |
|-----------------------|------------|

Connection 1

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

Connection 2

| | |
|--------------------|-------------------------|
| Function | Configuration interface |
| | Data interface |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | D-coded |

Connection 3

| | |
|--------------------|------------|
| Function | Signal IN |
| | Signal OUT |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 8 -pin |
| Encoding | A-coded |

Connection 4

| | |
|--------------------|------------|
| Function | Signal OUT |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | A-coded |

Technical data

Mechanical data

| | |
|-----------------------|------------------------|
| Dimension (W x H x L) | 56 mm x 160 mm x 74 mm |
| Housing material | Metal |
| | Plastic |
| Metal housing | Aluminum |
| Lens cover material | Plastic |
| Net weight | 620 g |

Environmental data

| | |
|--------------------------------|---------------|
| Ambient temperature, operation | -30 ... 50 °C |
| Ambient temperature, storage | -30 ... 70 °C |

Certifications

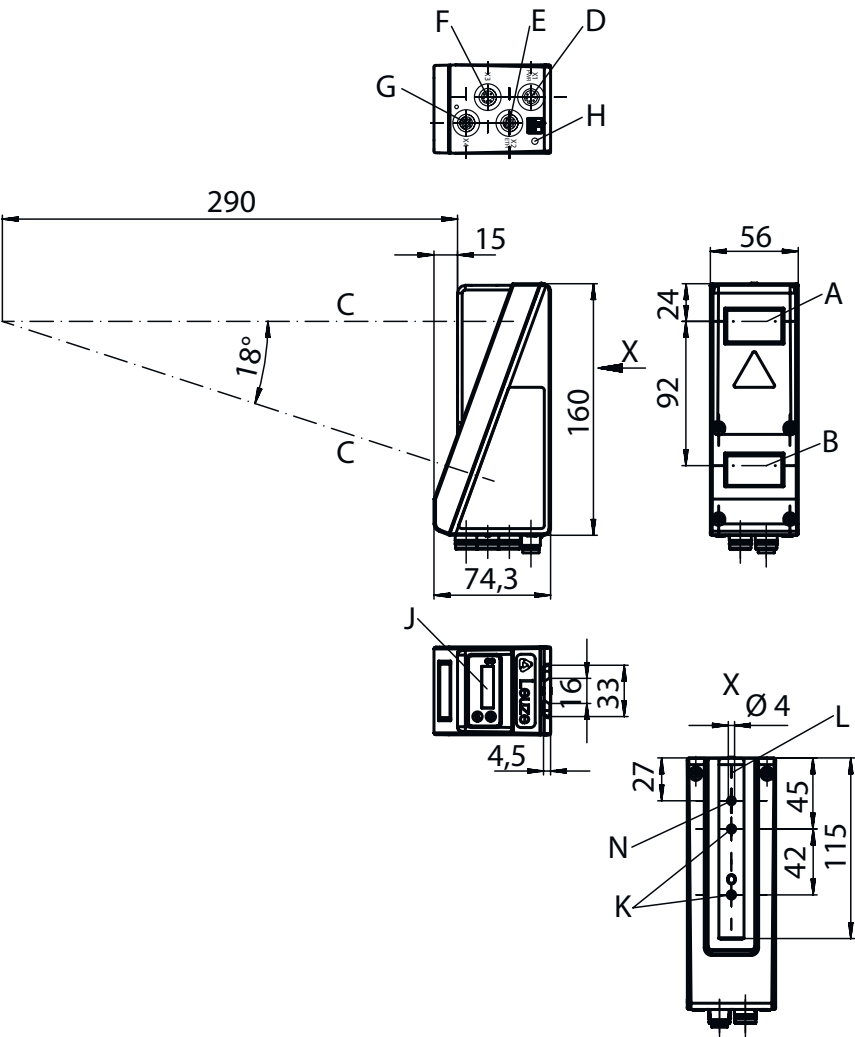
| | |
|----------------------|------------------|
| Degree of protection | IP 67 |
| Protection class | III, VDE |
| Approvals | c UL US |
| Standards applied | IEC/EN 60947-5-2 |
| US patents | US 8,928,894 B |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 90318020 |
| ECLASS 5.1.4 | 27280190 |
| ECLASS 8.0 | 27280190 |
| ECLASS 9.0 | 27280190 |
| ECLASS 10.0 | 27280190 |
| ECLASS 11.0 | 27280190 |
| ECLASS 12.0 | 27280190 |
| ECLASS 13.0 | 27280190 |
| ECLASS 14.0 | 27280190 |
| ECLASS 15.0 | 27280190 |
| 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



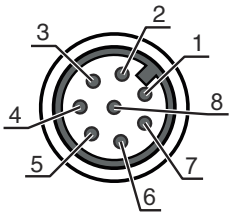
- A Transmitter
- B Receiver
- C Optical axis
- D, E, F, G X1-X4 connections
- H FE screw
- J OLED display and membrane keyboard
- K M4 thread (4.5 mm deep)
- L Support for mounting system

Electrical connection

| Connection 1 | | PWR |
|--------------------|--|----------------|
| Function | | Signal IN |
| | | Signal OUT |
| | | Voltage supply |
| Type of connection | | Connector |
| Thread size | | M12 |
| Type | | Male |
| Material | | Metal |
| No. of pins | | 8 -pin |
| Encoding | | A-coded |

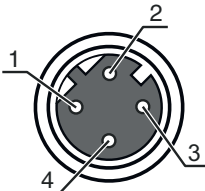
Electrical connection

| Pin | Pin assignment |
|-----|-------------------------------|
| 1 | V+ |
| 2 | IN ACTIVATE |
| 3 | GND |
| 4 | OUT 1 / Operational readiness |
| 5 | Trigger IN |
| 6 | OUT 2 |
| 7 | n.c. |
| 8 | n.c. |



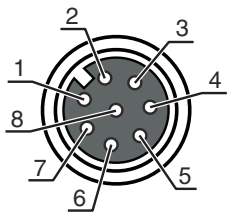
| Connection 2 | ETH |
|--------------------|---|
| Function | Configuration interface Data interface |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | D-coded |

| Pin | Pin assignment |
|-----|----------------|
| 1 | Tx+ |
| 2 | Rx+ |
| 3 | Tx- |
| 4 | Rx- |



| Connection 3 | |
|--------------------|-------------------------|
| Function | Signal IN Signal OUT |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 8 -pin |
| Encoding | A-coded |

| Pin | Pin assignment |
|-----|----------------|
| 1 | OUT 4 |
| 2 | OUT 3 |
| 3 | GND |
| 4 | OUT 2 |
| 5 | OUT 1 |
| 6 | IN1 |
| 7 | IN2 |
| 8 | IN3 |

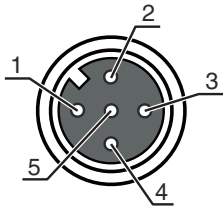


Electrical connection

Connection 4

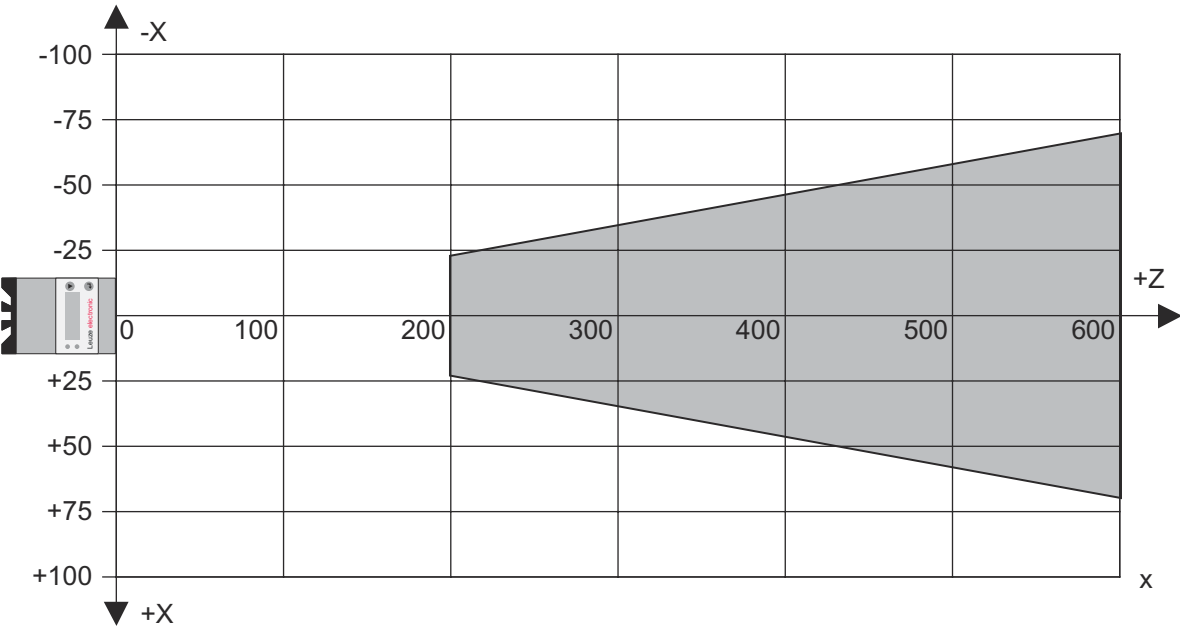
| | |
|--------------------|------------|
| Function | Signal OUT |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | A-coded |

| Pin | Pin assignment |
|-----|----------------|
| 1 | n.c. |
| 2 | OUT mA |
| 3 | GND |
| 4 | OUT V |
| 5 | FE |



Diagrams

Measurement range



X Line length in mm
Z Object distance

Operation and display

| LED | Display | Meaning |
|-----|--------------------------|------------------------------------|
| 1 | Green, continuous light | Operational readiness |
| | Off | No supply voltage |
| 2 | Yellow, continuous light | Ethernet connection is established |
| | Yellow, flashing | Data transmission active |
| | Off | No data transmission |

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.

NOTE



- ⚠ For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).



ATTENTION! LASER RADIATION – CLASS 2M LASER PRODUCT




Do not stare into beam or expose users of telescopic optics!

The device satisfies the requirements of IEC 60825-1:2014 / EN 60825-1:2014+A11:2021 safety regulations for a product of **laser class 2M** and complies with U.S. 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 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! The use of optical instruments or devices (e.g., magnifying glasses, binoculars) in combination with the device increases the danger of eye damage.
- ⚠ 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.
There are no user-serviceable parts inside the device.
Repairs must only be performed by Leuze electronic GmbH + Co. KG.
- ⚠ The device emits a divergent, pulsed laser beam. For laser power, pulse duration and wavelength, see technical data.


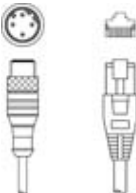
Accessories

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 |

Accessories


Connection technology - Interconnection cables

| | Part no. | Designation | Article | Description |
|--|----------|-----------------------------|-----------------------|---|
|  | 50125541 | K-DS M12A-8P-0,75m-LxS36-CP | Configuration cable | Parameter memory: Yes Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 8 -pin Shielded: Yes Cable length: 750 mm Sheathing material: PUR |
|  | 50135081 | KSS ET-M12-4A-RJ45-A-P7-050 | Interconnection cable | Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |

Mounting technology - Rod mounts

| | Part no. | Designation | Article | Description |
|--|----------|-------------|-----------------|---|
|  | 50121435 | BT 56 - 1 | Mounting device | Functions: Static applications Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, For 14 mm rod, For 16 mm rod Mounting bracket, at device: Clampable Material: Metal Tightening torque of the clamping jaws: 8 N·m |

Services

| | Part no. | Designation | Article | Description |
|--|----------|-------------|------------------|--|
|  | S981001 | CS10-S-110 | Start-up support | Details: Performed at location of customer's choosing, duration: max. 10 hours. Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses. |
|  | S981005 | CS10-T-110 | Product training | Details: Location and content to be agreed upon, duration: max. 10 hours. Conditions: Price not including travel costs and, if applicable, accommodation expenses. |

Note



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