# **Technical data sheet Optical distance sensor**

Part no.: 50113712 AMS 348i 300



Leuze

1/9

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# **Technical data**

### Basic data

| Series      | AMS 300i  |
|-------------|---|
| Application | Collision protection of cranes / gantry<br>cranes           |
|             | Positioning of electroplating plants                        |
|             | Positioning of skillet systems and side-<br>tracking skates |
|             | Positioning of stacker cranes                               |
|             |   |

### **Characteristic parameters**

MTTF

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### **Optical data**

| Light source                         | Laser, Red             |
|--------------------------------------|------------------------|
| Wavelength                           | 655 nm                 |
| Laser class                          | 2, IEC/EN 60825-1:2014 |
| Transmitted-signal shape             | Modulated              |
| Light spot size [at sensor distance] | 225 mm [300,000 mm]    |
| Type of light spot geometry          | Round                  |

31 years

### Measurement data

| Measurement value calculation time | 8 ms           |
|------------------------------------|----------------|
| Measurement range                  | 200 300,000 mm |
| Resolution                         | 0.001 10 mm    |
| Accuracy                           | 5 mm           |
| Reproducibility (3 sigma)          | 3 mm           |
| Measurement value output           | 1.7 ms         |
| Temperature drift                  | 0.01 0.1 mm/K  |
| Max. traverse rate                 | 10 m/s         |

#### **Electrical data**

| Protective circuit            | No information |  |
|-------------------------------|----------------|--|
| Performance data              |                |  |
| Supply voltage U <sub>B</sub> | 18 30 V, DC    |  |
| Interface                     |                |  |
| Туре                          | PROFINET       |  |
| PROFINET                      |                |  |
| Conformance class             | В              |  |
| Protocol                      | PROFINET RT    |  |
| Switch functionality          | Integrated     |  |
| Transmission speed            | 100 Mbit/s     |  |
| Connection                    |                |  |
| Number of connections         | 4 Piece(s)     |  |

| Connection 1          |                |
|-----------------------|----------------|
| Function              | BUS IN         |
|                       | Data interface |
| Type of connection    | Connector      |
| Designation on device | BUS IN         |
| Thread size           | M12            |
| Туре                  | Female         |
| Material              | Metal          |
| No. of pins           | 4 -pin         |
| Encoding              | D-coded        |

| Connection 2Function 2BUS OUTData interfaceType of connection 2Designation on device 8Designation on device 7Designation on device 8No. of pins 4 -pin 1Encoding 0D-coded 1Connection 3Function 3Function 1Pure of connection 0Designation on device 9PWR /SW IN / OUT 1Voltage supplyType of connection 1Connector 1Designation on device 9PWR 1Thread size 11No. of pins 5 -pin 1Encoding 1A-coded 1Connection 4Function 5Function 5Service interface 11Type of connection 1Designation on device SERVICE 11Tread size 11No. of pins 5 -pin 1Encoding 1A-coded 1Male 1Designation on device 15 -pin 1Encoding 1A-coded 1Mechanical data 1Design 1Dusing material 1Metal 1Metal 1Metal 1Metal 1Metal 1Metal 2Mover material 1Metal 2Metal 2   | Connection 2  |   |
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| Connection 4           Function         Service interface           Type of connection         Connector           Designation on device         SERVICE           Thread size         M12           Type         Female           No. of pins         5 -pin           Encoding         A-coded           Mechanical data         Metal           Design         Cubic           Dimension (W x H x L)         84 mm x 166.5 mm x 159 mm           Housing material         Metal           Metal housing         Diecast zinc/aluminum           Lens cover material         Glass           Net weight         2,450 g           Housing color         Gray           Red         Type of display           LED         LED           Number of LEDs         4 Piece(s)           Operational controls         Membrane keyboard           Environmental data         Funce(s)           Operational controls         90 %           Certifications         90 %   | •   |   |
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| Mechanical data         Design       Cubic         Dimension (W x H x L)       84 mm x 166.5 mm x 159 mm         Housing material       Metal         Metal housing       Diecast zinc/aluminum         Lens cover material       Glass         Net weight       2,450 g         Housing color       Gray         Red       Red         Type of fastening       Through-hole mounting         Operation and display       LC Display         LED       LED         Number of LEDs       4 Piece(s)         Operational controls       Membrane keyboard         Environmental data       -30 70 °C         Ambient temperature, operation       -5 50 °C         Ambient temperature, operation       90 %         Certifications       90 %  |   |   |
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| Dimension (W x H x L)84 mm x 166.5 mm x 159 mmHousing materialMetalMetal housingDiecast zinc/aluminumLens cover materialGlassNet weight2,450 gHousing colorGrayRedRedType of fasteningThrough-hole mountingOperation and displayLC DisplayLEDLEDNumber of LEDs4 Piece(s)Operational controlsMembrane keyboardEnvironmental data-5 50 °CAmbient temperature, storage-30 70 °CRelative humidity (non-condensing)90 %Degree of protectionIP 65Protection classIII  | Mechanical data   |   |
| Housing materialMetalMetal housingDiecast zinc/aluminumLens cover materialGlassNet weight2,450 gHousing colorGrayRedRedType of fasteningThrough-hole mountingOperation and displayLC Display<br>LEDNumber of LEDs4 Piece(s)Operational controlsMembrane keyboardEnvironmental data-5 50 °CAmbient temperature, storage-30 70 °CRelative humidity (non-condensing)90 %Degree of protectionIP 65Protection classIII   | Design  | Cubic   |
| Metal housingDiecast zinc/aluminumLens cover materialGlassNet weight2,450 gHousing colorGray<br>RedType of fasteningThrough-hole mountingOperation and displayType of displayLC Display<br>LEDNumber of LEDs4 Piece(s)Operational controlsMembrane keyboardEnvironmental data-5 50 °CAmbient temperature, storage-30 70 °CRelative humidity (non-condensing)90 %Degree of protectionIP 65Protection classIII  | Dimension (W x H x L)   | 84 mm x 166.5 mm x 159 mm   |
| Metal housingDiecast zinc/aluminumLens cover materialGlassNet weight2,450 gHousing colorGray<br>RedType of fasteningThrough-hole mountingOperation and displayLC Display<br>LEDNumber of LEDs4 Piece(s)Operational controlsMembrane keyboardEnvironmental data-5 50 °CAmbient temperature, storage-30 70 °CAmbient temperature, storage-30 70 °CRelative humidity (non-condensing)90 %Degree of protectionIP 65Protection classIII  |   | Metal   |
| Lens cover materialGlassNet weight2,450 gHousing colorGrayRedRedType of fasteningThrough-hole mountingOperation and displayLC DisplayType of displayLC DisplayNumber of LEDs4 Piece(s)Operational controlsMembrane keyboardEnvironmental data-5 50 °CAmbient temperature, storage-30 70 °CRelative humidity (non-condensing)90 %Degree of protectionIP 65Protection classIII  |   |   |
| Housing colorGray<br>RedType of fasteningThrough-hole mountingOperation and displayLC Display<br>LEDType of displayLC Display<br>LEDNumber of LEDs4 Piece(s)Operational controlsMembrane keyboardEnvironmental data-5 50 °CAmbient temperature, storage-30 70 °CRelative humidity (non-condensing)90 %CertificationsIP 65Portection classIII  | Metal housing   | Diecast zinc/aluminum   |
| Housing colorGray<br>RedType of fasteningThrough-hole mountingOperation and displayLC Display<br>LEDType of displayLC Display<br>LEDNumber of LEDs4 Piece(s)Operational controlsMembrane keyboardEnvironmental data-5 50 °CAmbient temperature, storage-30 70 °CRelative humidity (non-condensing)90 %CertificationsIP 65Portection classIII  | -   |   |
| RedType of fasteningThrough-hole mountingOperation and displayLC Display<br>LEDType of displayLC Display<br>LEDNumber of LEDs4 Piece(s)Operational controlsMembrane keyboardEnvironmental data-5 50 °CAmbient temperature, operation-5 50 °CAmbient temperature, storage-30 70 °CRelative humidity (non-condensing)90 %Degree of protectionIP 65Protection classIII   | Lens cover material   | Glass   |
| Operation and display         Type of display         LC Display         LED         Number of LEDs       4 Piece(s)         Operational controls       Membrane keyboard         Environmental data         Ambient temperature, operation       -5 50 °C         Ambient temperature, storage       -30 70 °C         Relative humidity (non-condensing)       90 %         Certifications       III  | Lens cover material<br>Net weight   | Glass<br>2,450 g  |
| Operation and display         Type of display         LC Display         LED         Number of LEDs       4 Piece(s)         Operational controls       Membrane keyboard         Environmental data         Ambient temperature, operation       -5 50 °C         Ambient temperature, storage       -30 70 °C         Relative humidity (non-condensing)       90 %         Certifications       III  | Lens cover material<br>Net weight   | Glass<br>2,450 g<br>Gray  |
| Type of display       LC Display         LED         Number of LEDs       4 Piece(s)         Operational controls       Membrane keyboard         Environmental data         Ambient temperature, operation       -5 50 °C         Ambient temperature, storage       -30 70 °C         Relative humidity (non-condensing)       90 %         Certifications       III  | Lens cover material<br>Net weight<br>Housing color  | Glass<br>2,450 g<br>Gray<br>Red   |
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| Number of LEDs     4 Piece(s)       Operational controls     Membrane keyboard       Environmental data     -5 50 °C       Ambient temperature, operation     -5 50 °C       Ambient temperature, storage     -30 70 °C       Relative humidity (non-condensing)     90 %       Certifications     III  | Lens cover material<br>Net weight<br>Housing color<br>Type of fastening   | Glass<br>2,450 g<br>Gray<br>Red   |
| Operational controls     Membrane keyboard       Environmental data     -5 50 °C       Ambient temperature, operation     -5 70 °C       Ambient temperature, storage     -30 70 °C       Relative humidity (non-condensing)     90 %       Certifications     Degree of protection       Protection class     III  | Lens cover material<br>Net weight<br>Housing color<br>Type of fastening<br>Operation and display  | Glass<br>2,450 g<br>Gray<br>Red<br>Through-hole mounting  |
| Environmental data         Ambient temperature, operation       -5 50 °C         Ambient temperature, storage       -30 70 °C         Relative humidity (non-condensing)       90 %         Certifications       Degree of protection         Protection class       III  | Lens cover material<br>Net weight<br>Housing color<br>Type of fastening<br>Operation and display  | Glass<br>2,450 g<br>Gray<br>Red<br>Through-hole mounting<br>LC Display  |
| Ambient temperature, operation       -5 50 °C         Ambient temperature, storage       -30 70 °C         Relative humidity (non-condensing)       90 %         Certifications       Degree of protection         Protection class       III   | Lens cover material<br>Net weight<br>Housing color<br>Type of fastening<br>Operation and display<br>Type of display   | Glass<br>2,450 g<br>Gray<br>Red<br>Through-hole mounting<br>LC Display<br>LED   |
| Ambient temperature, storage       -30 70 °C         Relative humidity (non-condensing)       90 %         Certifications       90 %         Degree of protection       IP 65         Protection class       III  | Lens cover material<br>Net weight<br>Housing color<br>Type of fastening<br>Operation and display<br>Type of display<br>Number of LEDs   | Glass<br>2,450 g<br>Gray<br>Red<br>Through-hole mounting<br>LC Display<br>LED<br>4 Piece(s)   |
| Ambient temperature, storage       -30 70 °C         Relative humidity (non-condensing)       90 %         Certifications       90 %         Degree of protection       IP 65         Protection class       III  | Lens cover material<br>Net weight<br>Housing color<br>Type of fastening<br>Operation and display<br>Type of display<br>Number of LEDs<br>Operational controls   | Glass<br>2,450 g<br>Gray<br>Red<br>Through-hole mounting<br>LC Display<br>LED<br>4 Piece(s)   |
| Relative humidity (non-condensing)     90 %       Certifications     IP 65       Protection class     III   | Lens cover material<br>Net weight<br>Housing color<br>Type of fastening<br>Operation and display<br>Type of display<br>Number of LEDs<br>Operational controls<br>Environmental data   | Glass<br>2,450 g<br>Gray<br>Red<br>Through-hole mounting<br>LC Display<br>LED<br>4 Piece(s)<br>Membrane keyboard                                  |
| Certifications       Degree of protection     IP 65       Protection class     III  | Lens cover material<br>Net weight<br>Housing color<br>Type of fastening<br>Operation and display<br>Type of display<br>Number of LEDs<br>Operational controls<br>Environmental data<br>Ambient temperature, operation   | Glass<br>2,450 g<br>Gray<br>Red<br>Through-hole mounting<br>LC Display<br>LED<br>4 Piece(s)<br>Membrane keyboard                                  |
| Degree of protection     IP 65       Protection class     III   | Lens cover material<br>Net weight<br>Housing color<br>Type of fastening<br>Operation and display<br>Type of display<br>Number of LEDs<br>Operational controls<br>Environmental data<br>Ambient temperature, operation<br>Ambient temperature, storage   | Glass<br>2,450 g<br>Gray<br>Red<br>Through-hole mounting<br>LC Display<br>LED<br>4 Piece(s)<br>Membrane keyboard<br>-5 50 °C<br>-30 70 °C         |
| Protection class III  | Lens cover material<br>Net weight<br>Housing color<br>Type of fastening<br>Operation and display<br>Type of display<br>Number of LEDs<br>Operational controls<br>Environmental data<br>Ambient temperature, operation<br>Ambient temperature, storage   | Glass<br>2,450 g<br>Gray<br>Red<br>Through-hole mounting<br>LC Display<br>LED<br>4 Piece(s)<br>Membrane keyboard<br>-5 50 °C<br>-30 70 °C         |
|   | Lens cover material<br>Net weight<br>Housing color<br>Type of fastening<br>Operation and display<br>Type of display<br>Number of LEDs<br>Operational controls<br>Environmental data<br>Ambient temperature, operation<br>Ambient temperature, storage<br>Relative humidity (non-condensing)   | Glass<br>2,450 g<br>Gray<br>Red<br>Through-hole mounting<br>LC Display<br>LED<br>4 Piece(s)<br>Membrane keyboard<br>-5 50 °C<br>-30 70 °C         |
| Certifications c UL US  | Lens cover material<br>Net weight<br>Housing color<br>Type of fastening<br>Operation and display<br>Type of display<br>Number of LEDs<br>Operational controls<br>Environmental data<br>Ambient temperature, operation<br>Ambient temperature, storage<br>Relative humidity (non-condensing)<br>Certifications                         | Glass<br>2,450 g<br>Gray<br>Red<br>Through-hole mounting<br>LC Display<br>LED<br>4 Piece(s)<br>Membrane keyboard<br>-5 50 °C<br>-30 70 °C<br>90 % |
|   | Lens cover material<br>Net weight<br>Housing color<br>Type of fastening<br>Operation and display<br>Type of display<br>Number of LEDs<br>Operational controls<br>Environmental data<br>Ambient temperature, operation<br>Ambient temperature, storage<br>Relative humidity (non-condensing)<br>Certifications<br>Degree of protection | Glass<br>2,450 g<br>Gray<br>Red<br>Through-hole mounting<br>LC Display<br>LED<br>4 Piece(s)<br>Membrane keyboard<br>-5 50 °C<br>-30 70 °C<br>90 % |

Leuze

# **Technical data**

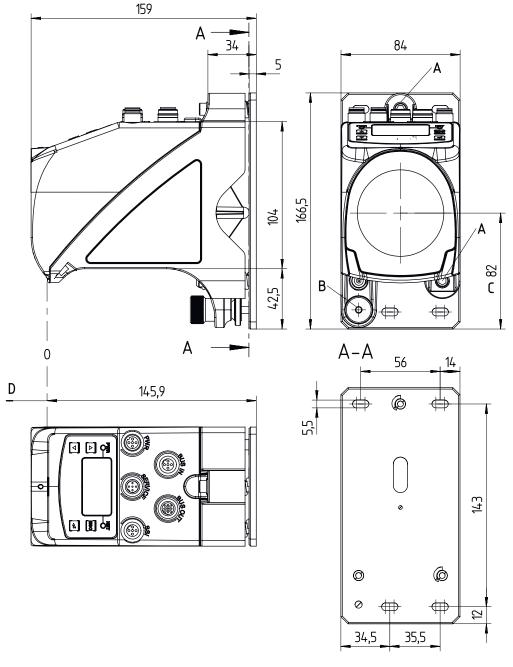
| Customs tariff number | 90318020 |
|-----------------------|----------|
| ECLASS 5.1.4          | 27270801 |
| ECLASS 8.0            | 27270801 |
| ECLASS 9.0            | 27270801 |
| ECLASS 10.0           | 27270801 |
| ECLASS 11.0           | 27270801 |
| ECLASS 12.0           | 27270916 |
| ECLASS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

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# Leuze

## **Dimensioned drawings**

All dimensions in millimeters



### A M5 screw for alignment

- C Optical axis
- D Zero point of the distance to be measured

B Knurled nut with WAF4 hexagon socket and M 5 nut for securing

# Leuze

### **Electrical connection**

**Connection 1** 

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

**BUS IN** 

### Pin Pin assignment

| 1 | TD+ |  |  |
|---|-----|--|--|
| 2 | RD+ |  |  |
| 3 | TD- |  |  |
| 4 | RD- |  |  |

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

### Pin Pin assignment

| 1 | TD+ | 1 |
|---|-----|---|
| 2 | RD+ |   |
| 3 | TD- |   |
| 4 | RD- |   |

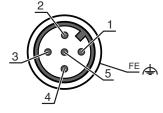
**PWR** 

#### **Connection 3**

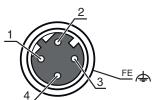
| Function           | PWR / SW IN / OUT |
|--------------------|-------------------|
|                    | Voltage supply    |
| Type of connection | Connector         |
| Thread size        | M12               |
| Туре               | Male              |
| Material           | Metal             |
| No. of pins        | 5 -pin            |
| Encoding           | A-coded           |

# Pin Pin assignment 1 VIN 2 I/O 1 3 GND 4 I/O 2

5 FE



# Leuze



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## **Electrical connection**

### **Connection 4**

SERVICE

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

| Pin | Pin assignment |
|-----|----------------|
| 1   | n.c.           |
| 2   | RS 232-TX      |
| 3   | GND            |
| 4   | RS 232-RX      |

4 RS 5 n.c.

# **Operation and display**

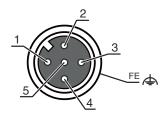
| LE | D       | Display                  | Meaning  |
|----|---------|--------------------------|--|
| 1  | PWR     | Off                      | No supply voltage  |
|    |         | Green, flashing          | Voltage connected / no measurement value output / initialization running |
|    |         | Green, continuous light  | Device OK, measurement value output                                      |
|    |         | Red, flashing            | Device OK, warning set   |
|    |         | Red, continuous light    | No measurement value output  |
|    |         | Orange, flashing         | PROFINET wave function activated   |
|    |         | Orange, continuous light | Configuration via display  |
| 2  | BUS     | Off                      | No supply voltage  |
|    |         | Green, flashing          | Device ok, initialization phase  |
|    |         | Green, continuous light  | Device OK  |
|    |         | Red, flashing            | Communication error  |
|    |         | Red, continuous light    | Bus error  |
|    |         | Orange, flashing         | PROFINET wave function activated   |
| 3  | BUS IN  | Green, continuous light  | Link OK  |
|    |         | Orange, flashing         | Data exchange active   |
| 4  | BUS OUT | Green, continuous light  | Link OK  |
|    |         | Orange, flashing         | Data exchange active   |

### Part number code

Part designation: AMS 3XXi YYY Z AAA

| SXXiSeries/interface (integrated fieldbus technology)300i: RS 422/RS 232301i: RS 485304i: PROFIBUS DP / SSI308i: TCP/IP335i: CANopen338i: EtherCAT348i: PROFINET RT355i: DeviceNet358i: EtherNet/IP384i: Interbus | AMS  | Operating principle<br>AMS: absolute measurement system  |
|---|------|--|
|   | ЗХХІ | 300i: RS 422/RS 232<br>301i: RS 485<br>304i: PROFIBUS DP / SSI<br>308i: TCP/IP<br>335i: CANopen<br>338i: EtherCAT<br>348i: PROFINET RT<br>355i: DeviceNet<br>355i: DeviceNet |





### Part number code



| үүү | <b>Operating range</b><br>40: max. operating range in m<br>120: max. operating range in m<br>200: max. operating range in m<br>300: max. operating range in m |  |  |
|-----|---|--|--|
| z   | Special equipment<br>H: With heating  |  |  |
| AAA | Interface<br>SSI: with SSI interface  |  |  |
|     | Note  |  |  |
|     | the A list with all available device types can be found on the Leuze website at www.leuze.com.  |  |  |

### Notes

| Observe intended use!   |
|---|
| <ul> <li>This product is not a safety sensor and is not intended as personnel protection.</li> <li>The product may only be put into operation by competent persons.</li> <li>Only use the product in accordance with its intended use.</li> </ul> |

| ATTENTION! LASER RADIATION - CLASS 2 LASER PRODUCT   |
|--|
| Do not stare into beam!<br>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. |
| Solution 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.  |
| t bo not point the laser beam of the device at persons!  |
| 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!  |
| SCAUTION! Use of controls or adjustments or performance of procedures other than specified herein may result in hazardous light exposure.  |
| by Observe the applicable statutory and local laser protection regulations.  |
| ✤ The device must not be tampered with and must not be changed in any way.<br>There are no user-serviceable parts inside the device.<br>Repairs must only be performed by Leuze electronic GmbH + Co. KG.  |

#### 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.

# **Further information**



- · For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).
- Use as safety-related component within the safety function is possible, if the component combination is designed correspondingly by the machine manufacturer.

### Accessories

### Connection technology - Connection cables

|   | Part no. | Designation             | Article          | Description   |
|---|----------|-------------------------|------------------|---|
|   | 50104171 | KB SSI/IBS-5000-BA      | Connection cable | Suitable for interface: SSI, Interbus-S<br>Connection 1: Connector, M12, Axial, Female, B-coded, 5 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 5.000 mm<br>Sheathing material: PUR |
|   | 50132079 | KD U-M12-5A-V1-<br>050  | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5.000 mm<br>Sheathing material: PVC   |
| Ŵ | 50135074 | KS ET-M12-4A-P7-<br>050 | Connection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 5.000 mm<br>Sheathing material: PUR          |

### Reflective tapes for distance sensors

|   | Part no. | Designation                | Article         | Description  |
|---|----------|----------------------------|-----------------|--|
| 0 | 50115022 | Reflexfolie<br>914x914mm-H | Reflector       | Special version: Heating<br>Supply voltage: 230 V, AC<br>Design: Rectangular<br>Reflective surface: 914 mm x 914 mm<br>Base material: Aluminum composite<br>Fastening: Mounting plate, Through-hole mounting |
|   | 50108988 | Reflexfolie<br>914x914mm-S | Reflective tape | Design: Rectangular<br>Reflective surface: 914 mm x 914 mm<br>Chemical designation of the material: PMMA<br>Fastening: Adhesive  |

### **Deflecting mirrors**

| <br>Part no. | Designation | Article           | Description                              |
|--------------|-------------|-------------------|--|
| 50104479     | US AMS 01   | Deflecting mirror | Type of fastening: Through-hole mounting |

### Accessories

# Leuze

### Services

| <br>Part no. | Designation | Article          | Description  |
|--------------|-------------|------------------|--|
| S981001      | CS10-S-110  | Start-up support | Details: Performed at location of customer's choosing, duration: max. 10<br>hours.<br>Conditions: Devices and connection cables are already mounted, price not<br>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.<br>Conditions: Price not including travel costs and, if applicable, accommodation<br>expenses.   |

|   | Note  |
|---|---|
| 6 | ♣ A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page. |