# **Technical data sheet Optical distance sensor**

Part no.: 50113736 AMS 384i 300





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We reserve the right to make technical changes eng • 2023-07-06

# **Technical data**

### Basic data

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

### **Characteristic parameters**

MTTF

#### 11

### **Optical data**

Laser, Red
655 nm
2, IEC/EN 60825-1:2014
Modulated
225 mm [300,000 mm]
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

No information

18 ... 30 V, DC

Interbus-S

2 Mbit/s

4 Piece(s)

#### **Electrical data**

Protective circuit	
Performance data	
Supply voltage U <sub>B</sub>	

### Interface

Туре	
Interbus-S	

Transmission speed

### Connection

Number of connections

Connection 1	
Function	BUS IN
	Data interface
Type of connection	Connector
Designation on device	BUS IN
Thread size	M12
Туре	Male
Material	Metal
No. of pins	5 -pin
Encoding	B-coded

FunctionBUS OUT Data interfaceType of connectionConnectorDesignation on deviceBUS OUTThread sizeM12TypeFemaleNo. of pins5 - pinEncodingB-codedConnection 3FunctionFunctionConnectorDesignation on devicePWR / SW IN / OUTVoltage supplyVoltage supplyType of connectionConnectorDesignation on devicePWRThread sizeM12TypeMaleNo. of pins5 -pinEncodingA-codedConnection 4FunctionFunctionService interfaceType of connectionConnectorDesignation on deviceSERV/CEThread sizeM12Type of connectionConnectorDesignation on deviceSERV/CEThread sizeM12Type of connectionConnectorDesignation on deviceSERV/CEThread sizeM12TypeFemaleNo. of pins5 -pinEncodingCubicDimension (W x H x L)84 mm x 168.5 mm x 159 mmHousing materialMetalMetalMetalMetalMetalMetal housingDiecast zinc/aluminumLens cover materialGlassNet weight2.450 gHousing colorGrayRedType of displayLEDLCD DisplayLEDLEDNumber of LEDs2 Piece(s)	Connection 2	
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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         Type of display       LC Display         Number of LEDs       2 Piece(s)         Operational controls       Membrane keyboard         Environmental data       -5 50 °C         Ambient temperature, storage       -30 70 °C         Relative humidity (non-condensing)       90 %	Housing material	Metal
Net weight     2,450 g       Housing color     Gray Red       Type of fastening     Through-hole mounting       Operation and display     LC Display LED       Number of LEDs     2 Piece(s)       Operational controls     Membrane keyboard       Environmental data     -5 50 °C       Ambient temperature, operation     -5 70 °C       Relative humidity (non-condensing)     90 %	Metal housing	Diecast zinc/aluminum
Housing color       Gray Red         Type of fastening       Through-hole mounting         Operation and display       LC Display LED         Number of LEDs       2 Piece(s)         Operational controls       Membrane keyboard         Environmental data       -5 50 °C         Ambient temperature, storage       -30 70 °C         Relative humidity (non-condensing)       90 %	Lens cover material	Glass
Red       Type of fastening     Through-hole mounting       Operation and display     LC Display       Type of display     LC Display       Number of LEDs     2 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 %	Net weight	2,450 g
Type of fastening       Through-hole mounting         Operation and display       LC Display         Type of display       LC Display         Number of LEDs       2 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 %	Housing color	Gray
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Type of display     LC Display LED       Number of LEDs     2 Piece(s)       Operational controls     Membrane keyboard       Environmental data     -550 °C       Ambient temperature, operation     -5070 °C       Relative humidity (non-condensing)     90 %	Type of fastening	Through-hole mounting
Type of display     LC Display LED       Number of LEDs     2 Piece(s)       Operational controls     Membrane keyboard       Environmental data     -550 °C       Ambient temperature, operation     -5070 °C       Relative humidity (non-condensing)     90 %		
LED       Number of LEDs     2 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 %	Operation and display	
Number of LEDs2 Piece(s)Operational controlsMembrane keyboardEnvironmental data-5 50 °CAmbient temperature, operation-5 50 °CAmbient temperature, storage-30 70 °CRelative humidity (non-condensing)90 %Certifications	Type of display	LC Display
Operational controls     Membrane keyboard       Environmental data       Ambient temperature, operation     -5 50 °C       Ambient temperature, storage     -30 70 °C       Relative humidity (non-condensing)     90 %       Certifications		LED
Environmental data Ambient temperature, operation -5 50 °C Ambient temperature, storage -30 70 °C Relative humidity (non-condensing) 90 % Certifications	Number of LEDs	2 Piece(s)
Ambient temperature, operation       -5 50 °C         Ambient temperature, storage       -30 70 °C         Relative humidity (non-condensing)       90 %         Certifications	Operational controls	Membrane keyboard
Ambient temperature, operation       -5 50 °C         Ambient temperature, storage       -30 70 °C         Relative humidity (non-condensing)       90 %         Certifications	Environmental data	
Ambient temperature, storage     -30 70 °C       Relative humidity (non-condensing)     90 %       Certifications		
Relative humidity (non-condensing) 90 % Certifications	1 7 1	
Certifications		
	Relative humidity (non-condensing)	90 %
	<b> </b>	00 /0
Degree of protection IP 65		
	Certifications	
Protection class III	Certifications Degree of protection	IP 65
	Certifications Degree of protection	IP 65

c UL US

Certifications

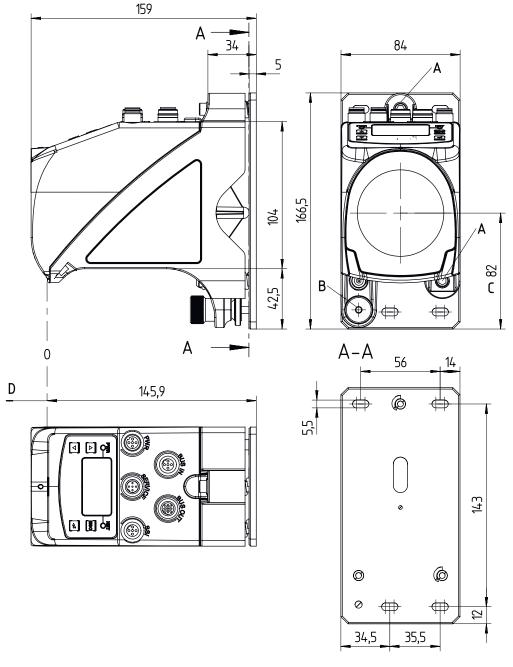
# **Technical data**

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
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825
ETIM 8.0	EC001825

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# **Dimensioned drawings**

All dimensions in millimeters



#### А M5 screw for alignment

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

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

### 4/9

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# **Electrical connection**

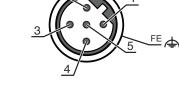
Function	BUS IN
	Data interface
Type of connection	Connector
Thread size	M12
Туре	Male
Material	Metal
No. of pins	5 -pin
Encoding	B-coded

**BUS IN** 

### Pin Pin assignment

1 DO	
2 /DO	3
3 DI	<u> </u>
4 /DI	
5 Data GND	

**BUS OUT** 



### Connection 2

**Connection 1** 

Function	BUS OUT
	Data interface
Type of connection	Connector
Thread size	M12
Туре	Female
Material	Metal
No. of pins	5 -pin
Encoding	B-coded

# Pin Pin assignment

1	DO
2	/DO
3	DI
4	/DI
5	Data GND

### **Connection 3**

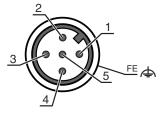
Pin

### PWR

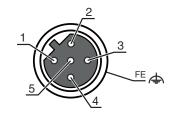
Function	PWR / SW IN / OUT
	Voltage supply
Type of connection	Connector
Thread size	M12
Туре	Male
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

### Pin assignment

1	VIN
2	I/O 1
3	GND
4	I/O 2
5	FE



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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				
5	n.c.				

# **Operation and display**

LED	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
2 BUS	Green, quickly flashing	BUS initialization
	Green, continuous light	

### Part number code

Part designation: AMS 3XXi YYY Z AAA

3XXiSeries/interfa 300i: RS 422/ 301i: RS 485 304i: PROFIB 308i: TCP/IP 335i: CANope 338i: EtherCA 348i: PROFIN 355i: DeviceN 358i: EtherNe 384i: InterbusYYYOperating rat 40: max. ope 200: max. ope 300: max. opeZSpecial equip H: With heatinAAAInterface	
300i: RS 422/           301i: RS 485           304i: PROFIB           308: TCP/IP           308: TCP/IP           338: EtherCA           338: EtherCA           348i: PROFIN           355: DeviceN           358: EtherNe           384: Interbus           YYY           Operating rat           40: max. ope           200: max. ope           300: max. ope           300: max. ope           300: max. ope           300: max. ope           20           AAA	rinciple ie measurement system
40: max. oper         120: max. oper         120: max. oper         200: max. oper         300: max. oper         40: max. oper         300: max. oper         300: max. oper         40: max. oper	BUS DP / SSI en AT NET RT Net et/IP
H: With heatin	Inge rating range in m erating range in m erating range in m erating range in m
SSI: with SSI	interface

	Note
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♣ A list with all available device types can be found on the Leuze website at www.leuze.com.

6/9



### Notes

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### **Observe intended use!**

- b This product is not a safety sensor and is not intended as personnel protection.
- b The product may only be put into operation by competent persons.
- b 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.
- b 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! Use of controls or adjustments or performance of procedures other than specified herein may result in hazardous light exposure.
- b Observe the applicable statutory and local laser protection regulations.
- rightarrow 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

#### 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

- b 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

# Leuze

# Connection technology - Connection cables

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

# Reflective tapes for distance sensors

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

# Deflecting mirror

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

### Services

	Part no.	Designation	Article	Description
y; U	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. Restrictions: No mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment.

## Accessories

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 Part no.	Designation	Article	Description
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. Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure.

	Note
i	<sup>t</sup> A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.

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