Technical data sheet Optical distance sensor

Part no.: 50113734 AMS 384i 120



Leuze

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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		
Order guide	Reflective tape must be ordered sepa- rately		

Characteristic parameters

MTTF

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]	100 mm [120,000 mm]		
Type of light spot geometry	Round		

31 years

Measurement data

Measurement value calculation time	8 ms			
Measurement range	200 120,000 mm			
Resolution	0.001 10 mm			
Accuracy	2 mm			
Reproducibility (3 sigma)	1.5 mm			
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 _B	18 30 V, DC
Interface	
Туре	Interbus-S
Interbus-S	
Transmission speed	2 Mbit/s
Connection	
Number of connections	4 Piece(s)
Number of connections Connection 1	4 Piece(s)
	4 Piece(s) BUS IN
Connection 1	
Connection 1	BUS IN
Connection 1 Function	BUS IN Data interface
Connection 1 Function Type of connection	BUS IN Data interface Connector
Connection 1 Function Type of connection Designation on device	BUS IN Data interface Connector BUS IN
Connection 1 Function Type of connection Designation on device Thread size	BUS IN Data interface Connector BUS IN M12
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Degree of protection IP 65 Protection class III	Mechanical data Design Dimension (W x H x L) Housing material Metal housing Lens cover material Net weight Housing color Type of fastening Operation and display Type of display Number of LEDs Operational controls Environmental data Ambient temperature, operation	84 mm x 166.5 mm x 159 mm Metal Diecast zinc/aluminum Glass 2,450 g Gray Red Through-hole mounting LC Display LED 2 Piece(s) Membrane keyboard -5 50 °C		
Degree of protection IP 65 Protection class III	Mechanical data Design Dimension (W x H x L) Housing material Metal housing Lens cover material Net weight Housing color Type of fastening Operation and display Type of display Number of LEDs Operational controls Environmental data Ambient temperature, operation Ambient temperature, storage	84 mm x 166.5 mm x 159 mm Metal Diecast zinc/aluminum Glass 2,450 g Gray Red Through-hole mounting LC Display LED 2 Piece(s) Membrane keyboard -5 50 °C -30 70 °C		
Protection class III	Mechanical data Design Dimension (W x H x L) Housing material Metal housing Lens cover material Net weight Housing color Type of fastening Operation and display Type of display Number of LEDs Operational controls Environmental data Ambient temperature, operation Ambient temperature, storage Relative humidity (non-condensing)	84 mm x 166.5 mm x 159 mm Metal Diecast zinc/aluminum Glass 2,450 g Gray Red Through-hole mounting LC Display LED 2 Piece(s) Membrane keyboard -5 50 °C -30 70 °C		
	Mechanical data Design Dimension (W x H x L) Housing material Metal housing Lens cover material Net weight Housing color Type of fastening Operation and display Type of display Number of LEDs Operational controls Environmental data Ambient temperature, operation Ambient temperature, storage Relative humidity (non-condensing)	84 mm x 166.5 mm x 159 mm Metal Diecast zinc/aluminum Glass 2,450 g Gray Red Through-hole mounting LC Display LED 2 Piece(s) Membrane keyboard -5 50 °C -30 70 °C		
Approvals c UL US	Mechanical data Design Dimension (W x H x L) Housing material Metal housing Lens cover material Net weight Housing color Type of fastening Operation and display Type of display Number of LEDs Operational controls Environmental data Ambient temperature, operation Ambient temperature, storage Relative humidity (non-condensing) Certifications	84 mm x 166.5 mm x 159 mm Metal Diecast zinc/aluminum Glass 2,450 g Gray Red Through-hole mounting LC Display LED 2 Piece(s) Membrane keyboard -5 50 °C -30 70 °C 90 %		
	Mechanical dataDesignDimension (W x H x L)Housing materialMetal housingLens cover materialNet weightHousing colorType of fasteningOperation and displayType of displayNumber of LEDsOperational controlsEnvironmental dataAmbient temperature, operationAmbient temperature, storageRelative humidity (non-condensing)CertificationsDegree of protection	84 mm x 166.5 mm x 159 mm Metal Diecast zinc/aluminum Glass 2,450 g Gray Red Through-hole mounting LC Display LED 2 Piece(s) Membrane keyboard -5 50 °C -30 70 °C 90 %		

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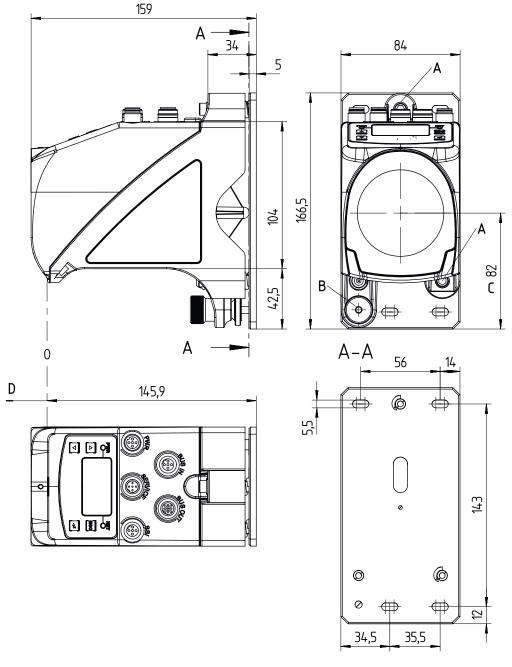
Technical data

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

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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

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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

Connection 2

Connection 1

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

BUS OUT



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

Data GND

/DI

Connection 3

4

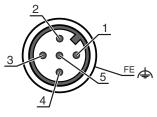
5

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 Pin assignment

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



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FE 👍

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

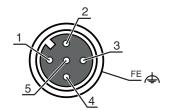
LE	ED	Display	Meaning
1	PWR	Off	No supply voltage
		Green, flashing	Voltage connected / no measurement value output / initialization running
		Green, continuous light	Device OK, measurement value output
		Red, flashing	Device OK, warning set
		Red, continuous light	No measurement value output
		Orange, continuous light	No data transmission
2	2 BUS	Green, flashing	BUS initialization
		Green, continuous light	Bus operation ok

Part number code

Part designation: AMS 3XXi YYY Z AAA

AMS	Operating principle AMS: absolute measurement system
3XXi	Series/interface (integrated fieldbus technology) 300i: RS 422/RS 232 301i: RS 485 304i: PROFIBUS DP / SSI 308i: TCP/IP 335i: CANopen 338i: EtherCAT 348i: PROFINET RT 355i: DeviceNet 355i: DeviceNet 358i: EtherNet/IP 384i: Interbus





Part number code



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

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. 	

	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.
77F	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 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.
	by When mounting and aligning the device, avoid reflections of the laser beam off reflective surfaces!
	Section CAUTION! The use of operating and adjusting devices other than those specified here or the carrying out of differing procedures may lead to dare exposure to radiation!
	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. There are no user-serviceable parts inside the device. Repairs must only be performed by Leuze electronic GmbH + Co. KG.

	NOTE
0	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.
	S "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.
	Shifts 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.
	Structure 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
W	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
	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
50115021	Reflexfolie 500x500mm-H	Reflector	Special version: Heating Supply voltage: 230 V, AC Design: Rectangular Reflective surface: 500 mm x 500 mm Base material: Aluminum Fastening: Mounting plate, Through-hole mounting
50104362	Reflexfolie 500x500mm-S	Reflective tape	Design: Rectangular Reflective surface: 500 mm x 500 mm Chemical designation of the material: PMMA Fastening: Adhesive

Deflecting mirrors

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

Accessories

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