Technical data sheet Optical distance sensor

Part no.: 50113714 AMS 348i 120 H



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 changes

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We reserve the right to make technical changes



Technical data

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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

Heating

31 years

Special version

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

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

Performance data Supply voltage U_B

18 ... 30 V, DC

No information

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 2	BUS OUT		
Function	Data interface		
Type of connection	Connector		
Designation on device	BUS OUT		
Thread size	M12		
	Female		
No. of pins	4 -pin		
Encoding	D-coded		
Lisoung	2 0000		
Connection 3			
Function	PWR / SW IN / OUT		
	Voltage supply		
Type of connection	Connector		
Designation on device	PWR		
Thread size	M12		
Туре	Male		
No. of pins	5 -pin		
Encoding	A-coded		
Connection 4			
Function	Service interface		
Type of connection	Connector		
Designation on device Thread size	SERVICE		
	M12		
Type	Female		
No. of pins	5 -pin A-coded		
Encoding	A-coded		
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		
Type of fastening	Through-hole mounting		
Operation and display			
Type of display	LC Display		
······································	LED		
Number of LEDs	4 Piece(s)		
Operational controls	Membrane keyboard		
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Environmental data

Ambient temperature, operation	-30 50 °C
Ambient temperature, storage	-30 70 °C
Relative humidity (non-condensing)	90 %

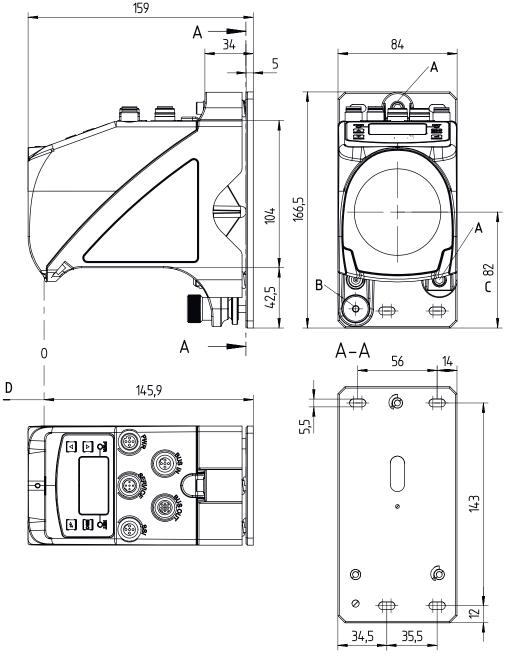
Certifications

Degree of protection	IP 65
Protection class	III
Approvals	c UL US

Classification	
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



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A M5 screw for alignment

C Optical axis

D Zero point of the distance to be measured

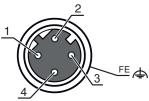
B Knurled nut with WAF4 hexagon socket and M 5 nut for securing

Electrical connection

Connection 1	BUSIN
Function	BUS IN
	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+			
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

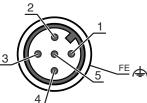
Encoding

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

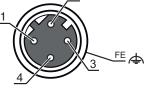
Connection 3	PWR	
Function	PWR / SW IN / OUT	
	Voltage supply	
Type of connection	Connector	
Thread size	M12	
Туре	Male	
Material	Metal	
No. of pins	5 -pin	

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

A-coded



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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.

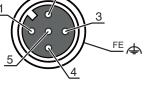
Operation and display

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

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 358i: EtherNet/IP 384i: Interbus



Part number code



YYY	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.
	Sum Strate to 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.
	String 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.
	String 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 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
	Ŵ	50135074	KS ET-M12-4A-P7- 050	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR

Reflective tapes for distance sensors

	Part no.	Designation	Article	Description
0	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	♣ A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.