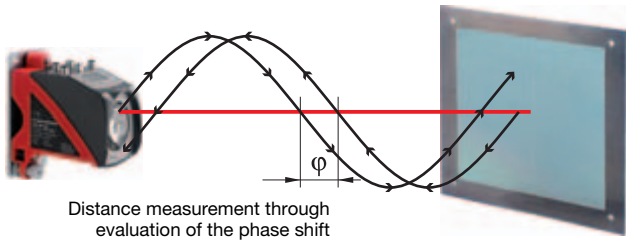
SELECTION GUIDE

Absolute laser distance measurement system

Measurement principle



Distance measurement through evaluation of the phase shift

The AMS 3xx*i* optical laser measurement system measures distances to stationary as well as moving system parts. The measurement principle is based on the measurement of the propagation time of the radiated light. The light emitted by the laser diode is reflected by a reflector onto the receiving element of the AMS 3xx*i*. The AMS 3xx*i* calculates the distance to the reflector based on the propagation time of the radiated light. The high absolute measurement accuracy of the laser measurement system as well as the short integration time are designed for position control applications.

Products / Measurement Ranges / Interfaces

Overview AMS 3xx*i* on **Page 312**

RS 232 + RS 422 or RS 485 or PROFIBUS + SSI or ETHERNET or CANopen or EtherCAT or PROFINET or DeviceNet or EtherNet/IP or INTERBUS

AMS 3xx*i* / 40 … from **page 314**

0,2 40 m

AMS 3xx*i* / 120 … from **page 314**

0,2 120 m

AMS 3xx*i* / 200 … from **page 314**

0,2 200 m

AMS 3xx*i* / 300 … from **page 314**

0,2 300 m

Features

- Absolute measurement system with very high accuracy, tested by the PTB (German Metrology Institute)
- AMS 3xx*i*: RS 232 / RS 422 or RS 485 or PROFIBUS / SSI or Ethernet TCP/IP or CANopen or EtherCAT or PROFINET or DeviceNet or EtherNet/IP or INTERBUS interface on board
- Additional speed output and speed monitoring
- Prefailure messages inform in good time and offer maximum device transparency
- Simple handling due to separate fastening and alignment elements
- Easy programming via GSD file or EDS files
- Standard M12 connections, simple and convenient
- Compact construction size and modern design
- Display informs about device status

DISTANCE MEASUREMENT / POSITIONING

Bar code positioning systems

Measurement principle

The bar code positioning system uses visible red laser light to determine its position relative to a bar code tape. This essentially takes place in 3 steps:

1. Reading a code on the bar code tape.
2. Determining the position of the read code in the scanning area of the scanning beam.
3. Calculating the position to within a millimeter using the code information and the code position relative to the device center.

The position value is output via the interface.

Products / Measurement Ranges / Interfaces

Measurement range for all BPS systems:

0 — 10000 m

BPS 8 — from **page 334**

RS 232 / RS 485 Interface

BPS 34 — from **page 338**

PROFIBUS Interface

BPS 37 — from **page 342**

Interface

Features

- M12 standard connection via ready-made connection cables
- RS 232/RS 485 or PROFIBUS DP or SSI interface
- Customer-specific configuration
- Integrated velocity measurement (BPS 3x)
- Measurement accuracy up to 10,000m at ± 1mm on taught-in positions
- Very easy mounting

SELECTION TABLE

Series	Dimensions in mm (WxHxD)	Housing material: Plastic	Housing material: Metal	Operating range in m: 0.2 – 200	Operating range in m: 200 – 10000
 AMS 3xx*i*	84 x 167 x 159		●	0.2 – 300	
 BPS 8	41 x 48 x 15 (58 x 48 x 18) [1]		●	0 – 10000	
 BPS 34	90 x 120 x 43 (90 x 120 x 53) [2]		●	0 – 10000	
 BPS 37	90 x 120 x 43 (90 x 120 x 53) [2]		●	0 – 10000	

1) Lateral beam exit
2) Devices with integrated heating

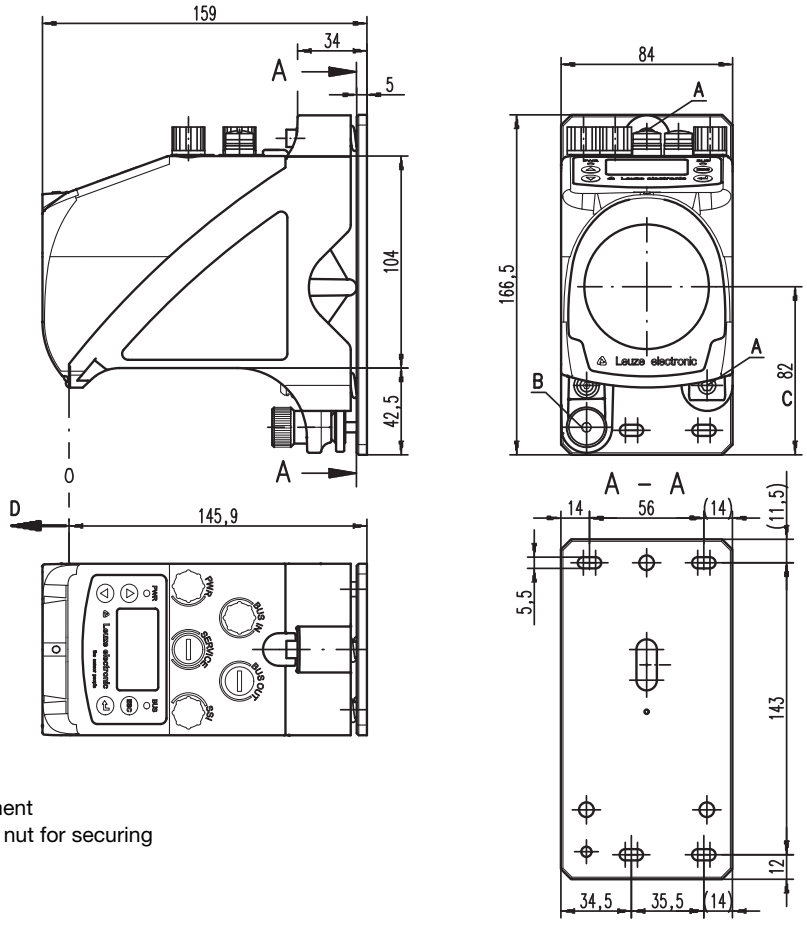
Detailed information on the dimensioned drawings or the specifications can be found in the respective data sheet or in the technical description.

DISTANCE MEASUREMENT / POSITIONING

Measurement principle			Requirement		Interfaces D = direct, G = via Gateway													Page
Laser on reflector	Bar code tape		Straight-lined	Curve-going	PROFIBUS DP	PROFINET	SSI	Interbus-S FOC	RS 232	RS 485	RS 422	Interbus-S	Ethernet	EtherNet/IP	DeviceNet	CANopen	EtherCAT	
●			●		D	D	D		D	D	D	D	D	D	D	D	D	312
	●		●	●	G	G			D	G			G	G	G	G	G	334
	●		●	●	D													338
	●		●	●			D											342

OVERVIEW

Dimensioned drawing



A M5 screw for alignment
B Knurled nut and M5 nut for securing
C Optical axis
D Measured distance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BCB 3x
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OPTICAL LASER DISTANCE MEAS. SYSTEM AMS 3xx*i*

Distance measurement system	Interface	Page
AMS 300*i* … (H)	RS 232 / RS 422	314
AMS 301*i* … (H)	RS 485	316
AMS 304*i* … (H)	PROFIBUS / SSI	318
AMS 308*i* … (H)	Ethernet TCP/IP	320
AMS 335*i* … (H)	CANopen	322
AMS 338*i* … (H)	EtherCAT	324
AMS 348*i* … (H)	PROFINET	326
AMS 355*i* … (H)	DeviceNet	328
AMS 358*i* … (H)	EtherNet/IP	330
AMS 384*i* … (H)	INTERBUS	332

Common technical data

Electrical data	Operating voltage U_B	18 … 30VDC
	Current consumption	w/o heating: ≤ 250mA with heating: ≤ 500mA (at 24VDC)
	Accuracy	± 2 … ± 5mm
	Consistency	0.3 … 1.5mm at 1 sigma
	Inputs/outputs	2, programmable
Operating and display elements	Keyboard	4 keypad buttons
	LEDs	2 (two-color)
	Display	128 x 64 pixels, monochrome
Mechanical data	Housing / Optics	diecast zinc/aluminum / glass
	Weight	approx. 2400g
Environmental data	Operating temperature	w/o heating: -5 … +50°C with heating: -30 … +50°C
	Storage temperature	-30 … +70°C
	Protection class	IP 65
	Air humidity	< 90% (non-cond.)
Laser	Class 2 acc. to EN 60825-1 and 21 CFR 1040.10 with Laser Notice No. 50	

Features

- **Available with all internationally relevant interfaces**
- **Absolute measurement system with very high accuracy, tested by the Physikalisch Technische Bundesanstalt (German Metrology Institute)**
- **Additional speed output and speed monitoring**
- **Prefailure messages inform in good time and offer maximum device transparency**
- **Simple handling due to separate fastening and alignment elements**
- **Easy programming via GSD or EDS files**
- **Standard M12 connections, simple and convenient**
- **Compact construction size and modern design**
- **Display provides information on the device status**

LASER DISTANCE MEAS. SYSTEM - RS 232 / RS 422

Part description Part no.	Description	Meas. range [m]	Accuracy / Consistency	Interface	
Optical Laser Distance Measurement System					
AMS 300i 40 50113661	Optical Laser Distance Measurement System w/o device heating	0.2 … 40	± 2mm / 0.3mm [1]	RS 232, RS 422	
AMS 300i 120 50113662	Optical Laser Distance Measurement System w/o device heating	0.2 … 120	± 2mm / 0.5mm [1]	RS 232, RS 422	
AMS 300i 200 50113663	Optical Laser Distance Measurement System w/o device heating	0.2 … 200	± 3mm / 0.7mm [1]	RS 232, RS 422	
AMS 300i 300 50113664	Optical Laser Distance Measurement System w/o device heating	0.2 … 300	± 5mm / 1.5mm [1]	RS 232, RS 422	
AMS 300i 40 H 50113665	Optical Laser Distance Measurement System with device heating	0.2 … 40	± 2mm / 0.3mm [1]	RS 232, RS 422	
AMS 300i 120 H 50113666	Optical Laser Distance Measurement System with device heating	0.2 … 120	± 2mm / 0.5mm [1]	RS 232, RS 422	
AMS 300i 200 H 50113667	Optical Laser Distance Measurement System with device heating	0.2 … 200	± 3mm / 0.7mm [1]	RS 232, RS 422	
AMS 300i 300 H 50113668	Optical Laser Distance Measurement System with device heating	0.2 … 300	± 5mm / 1.5mm [1]	RS 232, RS 422	

1) At 1 sigma

Accessories / connection cables

More accessories can be found from **page 430** onwards

Part no.	Designation	Features
see P. 452	Reflective tape …	Reflective tape, various sizes, self-adhesive or on aluminum plate
50104479	US AMS 01	Deflector unit for 90° deflection of the laser beam
50035630	US1 OMS	Deflection mirror for 90° deflection of the laser beam
50107255	MW OMS / AMS 01	Mounting bracket for converting from OMS to AMS
see P. 435	K - D M12…	Connection cables with M12 connector (A-coded) for PWR
see P. 430	KB SSI/IBS-…BA	Connection cables with M12 connector (B-coded) for BUS IN/OUT
see P. 443	KD 01-5-…BA	POWER-IO-DATA connector, M12, 5-pin, A-coded
see P. 443	KD 02-5-…	FIELDBUS connector, M12, 5-pin, B-coded

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AMS 300*i*

Distance meas. system

Features

The AMS 300*i* is equipped with an RS 422 or an RS 232 interface for transferring the measured distances, speeds as well as various status messages.

The AMS 300*i* can be operated with either the RS 422 or with the RS 232 interface. The respective interface is activated via the control panel / display. All AMS 300*i* device parameters are preset to default values. These can be changed quickly and easily via the control panel / display.

For outdoor or low-temperature applications, a model with integrated heating (AMS 300*i* … H) is available. If necessary, a heatable reflector can be used.

A reflector is necessary for operating the AMS 300*i* … laser distance measurement system. Please order the reflector together with the distance measurement system!

AMS 300*i*

40m
120m
200m
300m

RS 232

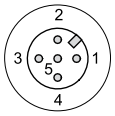
Baud rate RS 232:
max. 115.2 kBit/s
Protocol:
Leuze binary protocol

RS 422

Baud rate RS 422:
max. 500 kBit/s
Protocol:
Leuze binary protocol

Electrical connection

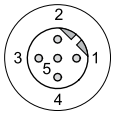
PWR - male, A-cod.



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

RS 422

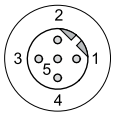
BUS IN - male, B-cod.



PIN	Signal
1	Rx+
2	Tx-
3	GND ISO
4	Tx+
5	Rx-

RS 232

BUS IN - male, B-cod.



PIN	Signal
1	NC
2	TxD
3	GND ISO
4	NC
5	RxD

LASER DISTANCE MEAS. SYSTEM - RS 485

Part description Part no.	Description	Meas. range [m]	Accuracy / Consistency	Interface	
Optical Laser Distance Measurement System					
AMS 301i 40 50113669	Optical Laser Distance Measurement System w/o device heating	0.2 … 40	± 2mm / 0.3mm [1]	RS 485	
AMS 301i 120 50113670	Optical Laser Distance Measurement System w/o device heating	0.2 … 120	± 2mm / 0.5mm [1]	RS 485	
AMS 301i 200 50113671	Optical Laser Distance Measurement System w/o device heating	0.2 … 200	± 3mm / 0.7mm [1]	RS 485	
AMS 301i 300 50113672	Optical Laser Distance Measurement System w/o device heating	0.2 … 300	± 5mm / 1.5mm [1]	RS 485	
AMS 301i 40 H 50113673	Optical Laser Distance Measurement System with device heating	0.2 … 40	± 2mm / 0.3mm [1]	RS 485	
AMS 301i 120 H 50113674	Optical Laser Distance Measurement System with device heating	0.2 … 120	± 2mm / 0.5mm [1]	RS 485	
AMS 301i 200 H 50113675	Optical Laser Distance Measurement System with device heating	0.2 … 200	± 3mm / 0.7mm [1]	RS 485	
AMS 301i 300 H 50113676	Optical Laser Distance Measurement System with device heating	0.2 … 300	± 5mm / 1.5mm [1]	RS 485	

1) At 1 sigma

Accessories / connection cables

More accessories can be found from **page 430** onwards

Part no.	Designation	Features
see P. 452	Reflective tape …	Reflective tape, various sizes, self-adhesive or on aluminum plate
50104479	US AMS 01	Deflector unit for 90° deflection of the laser beam
50035630	US1 OMS	Deflection mirror for 90° deflection of the laser beam
50107255	MW OMS / AMS 01	Mounting bracket for converting from OMS to AMS
see P. 435	K - D M12…	Connection cables with M12 connector (A-coded) for PWR
see P. 434/	KB PB - …	Connection cables with M12 connector (B-coded) for BUS IN/OUT
see P. 443	KD 01-5-…BA	POWER-IO-DATA connector, M12, 5-pin, A-coded
see P. 443	KD 02-5-…	FIELDBUS connector, M12, 5-pin, B-coded
50038539	TS 02-4-SA	M12 connector, integrated terminating resistor for BUS OUT

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AMS 301*i*

Distance meas. system

Features

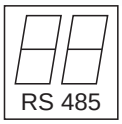
The AMS 301*i* is equipped with an RS 485 interface for transferring the measured distances, speeds as well as various status messages.

The data transmission rate can be set in a range from 9.6 kBit/s to 115.2 kBit/s. All AMS 301*i* device parameters are preset to default values. These can be changed quickly and easily via the control panel / display.

For outdoor or low-temperature applications, a model with integrated heating (AMS 301*i* … H) is available. If necessary, a heatable reflector can be used.

A reflector is necessary for operating the AMS 301*i* … laser distance measurement system. Please order the reflector together with the distance measurement system!

AMS 301*i*



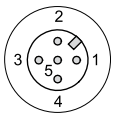
40m
120m
200m
300m

Baud rates RS 485:
9.6 kBit/s
19.2 kBit/s
38.4 kBit/s
57.6 kBit/s
93.75 kBit/s
115.2 kBit/s

Protocol:
Leuze binary protocol

Electrical connection

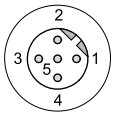
PWR - male, A-cod.



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

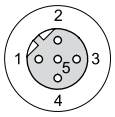
RS 485

BUS IN - male, B-cod.



PIN	Signal
1	NC
2	RS485(-)
3	NC
4	RS485(+)
5	FE

BUS OUT - female, B-cod.



PIN	Signal
1	VCC485
2	RS485(-)
3	GND485
4	RS485(+)
5	FE

LASER DISTANCE MEAS. SYSTEM - PROFIBUS / SSI

Part description Part no.	Description	Meas. range [m]	Accuracy / Consistency	Interface	
Optical Laser Distance Measurement System					
AMS 304i 40 50113677	Optical Laser Distance Measurement System w/o device heating	0.2 … 40	± 2mm / 0.3mm [1]	PROFIBUS / SSI	
AMS 304i 120 50113678	Optical Laser Distance Measurement System w/o device heating	0.2 … 120	± 2mm / 0.5mm [1]	PROFIBUS / SSI	
AMS 304i 200 50113679	Optical Laser Distance Measurement System w/o device heating	0.2 … 200	± 3mm / 0.7mm [1]	PROFIBUS / SSI	
AMS 304i 300 50113680	Optical Laser Distance Measurement System w/o device heating	0.2 … 300	± 5mm / 1.5mm [1]	PROFIBUS / SSI	
AMS 304i 40 H 50113681	Optical Laser Distance Measurement System with device heating	0.2 … 40	± 2mm / 0.3mm [1]	PROFIBUS / SSI	
AMS 304i 120 H 50113682	Optical Laser Distance Measurement System with device heating	0.2 … 120	± 2mm / 0.5mm [1]	PROFIBUS / SSI	
AMS 304i 200 H 50113683	Optical Laser Distance Measurement System with device heating	0.2 … 200	± 3mm / 0.7mm [1]	PROFIBUS / SSI	
AMS 304i 300 H 50113684	Optical Laser Distance Measurement System with device heating	0.2 … 300	± 5mm / 1.5mm [1]	PROFIBUS / SSI	

1) At 1 sigma

Accessories / connection cables

More accessories can be found from **page 430** onwards

Part no.	Designation	Features
see P. 452	Reflective tape …	Reflective tape, various sizes, self-adhesive or on aluminum plate
50104479	US AMS 01	Deflector unit for 90° deflection of the laser beam
50035630	US1 OMS	Deflection mirror for 90° deflection of the laser beam
50107255	MW OMS / AMS 01	Mounting bracket for converting from OMS to AMS
see P. 435	K - D M12…	Connection cables with M12 connector (A-coded) for PWR
see P. 434	KB PB - …	Connection cables with M12 connector (B-coded) for BUS IN/OUT
see P. 443	KD 01-5-…BA	POWER-IO-DATA connector, M12, 5-pin, A-coded
see P. 443	KD 02-5-…	FIELDBUS connector, M12, 5-pin, B-coded
50038539	TS 02-4-SA	M12 connector, integrated terminating resistor for BUS OUT

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AMS 304*i*

Distance meas. system

Features

The AMS 304*i* is equipped with a PROFIBUS and SSI interface. Both interfaces can be used simultaneously or individually.

Using the PROFIBUS and SSI simultaneously:
The PROFIBUS and SSI device parameters are configured with the GSD file.
Using the SSI interface without PROFIBUS:
Default settings for using only the SSI interface are stored in the AMS 304*i*. These can be changed at any time via the control panel / display.

For outdoor or low-temperature applications, a model with integrated heating (AMS 304*i* … H) is available. If necessary, a heatable reflector can be used.

A reflector is necessary for operating the AMS 304*i* … laser distance measurement system. Please order the reflector together with the distance measurement system!

AMS 304*i*

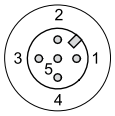
40m
120m
200m
300m

Baud rate PROFIBUS:
max. 12 MBit/s

SSI Clock:
50 … 800 kHz

Electrical connection

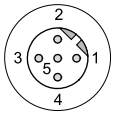
PWR - male, A-cod.



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

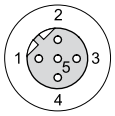
PROFIBUS

BUS IN - male, B-cod.



PIN	Signal
1	NC
2	A (N)
3	NC
4	B (P)
5	FE

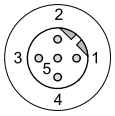
BUS OUT - female, B-cod.



PIN	Signal
1	VCC
2	A (N)
3	GND
4	B (P)
5	FE

SSI

SSI - male, B-cod.



PIN	Signal
1	DATA+
2	DATA-
3	CLK+
4	CLK-
5	FE

LASER DISTANCE MEAS. SYSTEM - ETHERNET TCP/IP

Part description Part no.	Description	Meas. range [m]	Accuracy / Consistency	Interface	
Optical Laser Distance Measurement System					
AMS 308i 40 50113685	Optical Laser Distance Measurement System w/o device heating	0.2 … 40	± 2mm / 0.3mm [1]	Ethernet TCP/IP	
AMS 308i 120 50113686	Optical Laser Distance Measurement System w/o device heating	0.2 … 120	± 2mm / 0.5mm [1]	Ethernet TCP/IP	
AMS 308i 200 50113687	Optical Laser Distance Measurement System w/o device heating	0.2 … 200	± 3mm / 0.7mm [1]	Ethernet TCP/IP	
AMS 308i 300 50113688	Optical Laser Distance Measurement System w/o device heating	0.2 … 300	± 5mm / 1.5mm [1]	Ethernet TCP/IP	
AMS 308i 40 H 50113689	Optical Laser Distance Measurement System with device heating	0.2 … 40	± 2mm / 0.3mm [1]	Ethernet TCP/IP	
AMS 308i 120 H 50113690	Optical Laser Distance Measurement System with device heating	0.2 … 120	± 2mm / 0.5mm [1]	Ethernet TCP/IP	
AMS 308i 200 H 50113691	Optical Laser Distance Measurement System with device heating	0.2 … 200	± 3mm / 0.7mm [1]	Ethernet TCP/IP	
AMS 308i 300 H 50113692	Optical Laser Distance Measurement System with device heating	0.2 … 300	± 5mm / 1.5mm [1]	Ethernet TCP/IP	

1) At 1 sigma

Accessories / connection cables

More accessories can be found from **page 430** onwards

Part no.	Designation	Features
see P. 452	Reflective tape …	Reflective tape, various sizes, self-adhesive or on aluminum plate
50104479	US AMS 01	Deflector unit for 90° deflection of the laser beam
50035630	US1 OMS	Deflection mirror for 90° deflection of the laser beam
50107255	MW OMS / AMS 01	Mounting bracket for converting from OMS to AMS
see P. 435	K - D M12…	Connection cables with M12 connector (A-coded) for PWR
see P. 431/	KB ET - …	Connection cables with M12 connector (D-coded) for BUS IN/OUT
see P. 443	KD 01-5-…BA	POWER-IO-DATA connector, M12, 5-pin, A-coded
see P. 443	S - M12A - ET	Ethernet connector, M12, 4-pin, D-coded

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AMS 308*i*

Distance meas. system

Features

The AMS 308*i* is equipped with an Ethernet TCP/IP interface for transferring the measured distances, speeds as well as various status messages.

The Ethernet TCP/IP interface can be operated at up to 100 MBit/s.

For outdoor or low-temperature applications, a model with integrated heating (AMS 308*i* … H) is available. If necessary, a heatable reflector can be used.

A reflector is necessary for operating the AMS 308*i* … laser distance measurement system. Please order the reflector together with the distance measurement system!

AMS 308*i*

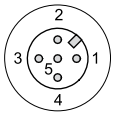
40m
120m
200m
300m

Ethernet

Baud rate Ethernet TCP/IP:
100 MBit/s max.

Electrical connection

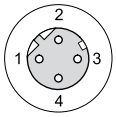
PWR - male, A-cod.



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

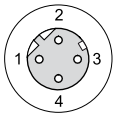
Ethernet TCP/IP

BUS IN - female, D-cod.



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

BUS OUT - female, D-cod.



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

LASER DISTANCE MEAS. SYSTEM - CANopen

Part description Part no.	Description	Meas. range [m]	Accuracy / Consistency	Interface	
Optical Laser Distance Measurement System					
AMS 335i 40 50113693	Optical Laser Distance Measurement System w/o device heating	0.2 … 40	± 2mm / 0.3mm [1]	CANopen	
AMS 335i 120 50113694	Optical Laser Distance Measurement System w/o device heating	0.2 … 120	± 2mm / 0.5mm [1]	CANopen	
AMS 335i 200 50113695	Optical Laser Distance Measurement System w/o device heating	0.2 … 200	± 3mm / 0.7mm [1]	CANopen	
AMS 335i 300 50113696	Optical Laser Distance Measurement System w/o device heating	0.2 … 300	± 5mm / 1.5mm [1]	CANopen	
AMS 335i 40 H 50113697	Optical Laser Distance Measurement System with device heating	0.2 … 40	± 2mm / 0.3mm [1]	CANopen	
AMS 335i 120 H 50113698	Optical Laser Distance Measurement System with device heating	0.2 … 120	± 2mm / 0.5mm [1]	CANopen	
AMS 335i 200 H 50113699	Optical Laser Distance Measurement System with device heating	0.2 … 200	± 3mm / 0.7mm [1]	CANopen	
AMS 335i 300 H 50113700	Optical Laser Distance Measurement System with device heating	0.2 … 300	± 5mm / 1.5mm [1]	CANopen	

1) At 1 sigma

Accessories / connection cables

More accessories can be found from **page 430** onwards

Part no.	Designation	Features
see P. 452	Reflective tape …	Reflective tape, various sizes, self-adhesive or on aluminum plate
50104479	US AMS 01	Deflector unit for 90° deflection of the laser beam
50035630	US1 OMS	Deflection mirror for 90° deflection of the laser beam
50107255	MW OMS / AMS 01	Mounting bracket for converting from OMS to AMS
see P. 435	K - D M12…	Connection cables with M12 connector (A-coded) for PWR
see P. 433	KB DN/CAN-…	Connection cables with M12 connector (A-coded) for BUS IN/OUT
see P. 443	KD 01-5-…	Connector for POWER, BUS IN, BUS OUT, M12, 5-pin, A-coded
50109832	TS 01-4-SA M12	120 ohm terminating resistor for CANopen BUS OUT

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AMS 335*i*

Distance meas. system

Features

The AMS 335*i* is equipped with a CANopen interface for transferring the measured distances, speeds as well as various status messages.

All device-specific settings can be changed using an EDS file (Electronic Data Sheet).

For outdoor or low-temperature applications, a model with integrated heating (AMS 335*i* … H) is available. If necessary, a heatable reflector can be used.

A reflector is necessary for operating the AMS 335*i* … laser distance measurement system. Please order the reflector together with the distance measurement system!

AMS 335*i*

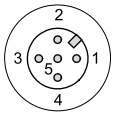
40m
120m
200m
300m

CANopen

Baud rates CANopen:
10 kBit/s
20 kBit/s
50 kBit/s
125 kBit/s
250 kBit/s
500 kBit/s
800 kBit/s
1000 kBit/s

Electrical connection

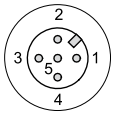
PWR - male, A-cod.



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

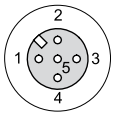
CANopen

BUS IN - male, A-cod.



PIN	Signal
1	Drain
2	V+
3	V-
4	CAN_H
5	CAN_L

BUS OUT - female, A-cod.



PIN	Signal
1	Drain
2	V+
3	V-
4	CAN_H
5	CAN_L

LASER DISTANCE MEAS. SYSTEM - EtherCAT

Part description Part no.	Description	Meas. range [m]	Accuracy / Consistency	Interface	
Optical Laser Distance Measurement System					
AMS 338i 40 50113701	Optical Laser Distance Measurement System w/o device heating	0.2 … 40	± 2mm / 0.3mm [1]	EtherCAT	
AMS 338i 120 50113702	Optical Laser Distance Measurement System w/o device heating	0.2 … 120	± 2mm / 0.5mm [1]	EtherCAT	
AMS 338i 200 50113703	Optical Laser Distance Measurement System w/o device heating	0.2 … 200	± 3mm / 0.7mm [1]	EtherCAT	
AMS 338i 300 50113704	Optical Laser Distance Measurement System w/o device heating	0.2 … 300	± 5mm / 1.5mm [1]	EtherCAT	
AMS 338i 40 H 50113705	Optical Laser Distance Measurement System with device heating	0.2 … 40	± 2mm / 0.3mm [1]	EtherCAT	
AMS 338i 120 H 50113706	Optical Laser Distance Measurement System with device heating	0.2 … 120	± 2mm / 0.5mm [1]	EtherCAT	
AMS 338i 200 H 50113707	Optical Laser Distance Measurement System with device heating	0.2 … 200	± 3mm / 0.7mm [1]	EtherCAT	
AMS 338i 300 H 50113708	Optical Laser Distance Measurement System with device heating	0.2 … 300	± 5mm / 1.5mm [1]	EtherCAT	

1) At 1 sigma

Accessories / connection cables

More accessories can be found from **page 430** onwards

Part no.	Designation	Features
see P. 452	Reflective tape …	Reflective tape, various sizes, self-adhesive or on aluminum plate
50104479	US AMS 01	Deflector unit for 90° deflection of the laser beam
50035630	US1 OMS	Deflection mirror for 90° deflection of the laser beam
50107255	MW OMS / AMS 01	Mounting bracket for converting from OMS to AMS
see P. 435	K - D M12…	Connection cables with M12 connector (A-coded) for PWR
see P. 431/432	KB ET - …	Connection cables with M12 connector (D-coded) for BUS IN/OUT
see P. 443	KD 01-5-…BA	POWER-IO-DATA connector, M12, 5-pin, A-coded
see P. 443	S - M12A - ET	Ethernet connector, M12, 4-pin, D-coded

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AMS 338*i*

Distance meas. system

Features

The AMS 338*i* is equipped with an EtherCAT interface for transferring the measured distances, speeds as well as various status messages.

An XML description/file is available for all AMS 338*i* settings. The XML file defines all device-specific parameters.

For outdoor or low-temperature applications, a model with integrated heating (AMS 338*i* … H) is available. If necessary, a heatable reflector can be used.

A reflector is necessary for operating the AMS 338*i* … laser distance measurement system. Please order the reflector together with the distance measurement system!

AMS 338*i*

40m

120m

200m

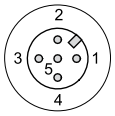
300m

EtherCAT

Baud rate EtherCAT:
100 MBit/s max.

Electrical connection

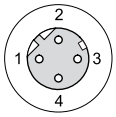
PWR - male, A-cod.



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

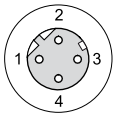
EtherCAT

BUS IN - female, D-cod.



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

BUS OUT - female, D-cod.



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

LASER DISTANCE MEAS. SYSTEM - PROFINET

Part description Part no.	Description	Meas. range [m]	Accuracy / Consistency	Interface	
Optical Laser Distance Measurement System					
AMS 348i 40 50113709	Optical Laser Distance Measurement System w/o device heating	0.2 … 40	± 2mm / 0.3mm [1]	PROFINET	
AMS 348i 120 50113710	Optical Laser Distance Measurement System w/o device heating	0.2 … 120	± 2mm / 0.5mm [1]	PROFINET	
AMS 348i 200 50113711	Optical Laser Distance Measurement System w/o device heating	0.2 … 200	± 3mm / 0.7mm [1]	PROFINET	
AMS 348i 300 50113712	Optical Laser Distance Measurement System w/o device heating	0.2 … 300	± 5mm / 1.5mm [1]	PROFINET	
AMS 348i 40 H 50113713	Optical Laser Distance Measurement System with device heating	0.2 … 40	± 2mm / 0.3mm [1]	PROFINET	
AMS 348i 120 H 50113714	Optical Laser Distance Measurement System with device heating	0.2 … 120	± 2mm / 0.5mm [1]	PROFINET	
AMS 348i 200 H 50113715	Optical Laser Distance Measurement System with device heating	0.2 … 200	± 3mm / 0.7mm [1]	PROFINET	
AMS 348i 300 H 50113716	Optical Laser Distance Measurement System with device heating	0.2 … 300	± 5mm / 1.5mm [1]	PROFINET	

1) At 1 sigma

Accessories / connection cables

More accessories can be found from **page 430** onwards

Part no.	Designation	Features
see P. 452	Reflective tape …	Reflective tape, various sizes, self-adhesive or on aluminum plate
50104479	US AMS 01	Deflector unit for 90° deflection of the laser beam
50035630	US1 OMS	Deflection mirror for 90° deflection of the laser beam
50107255	MW OMS / AMS 01	Mounting bracket for converting from OMS to AMS
see P. 435	K - D M12…	Connection cables with M12 connector (A-coded) for PWR
see P. 431/432	KB ET - …	Connection cables with M12 connector (D-coded) for BUS IN/OUT
see P. 443	KD 01-5-…BA	POWER-IO-DATA connector, M12, 5-pin, A-coded
see P. 443	S - M12A - ET	Ethernet connector, M12, 4-pin, D-coded

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AMS 348*i*

Distance meas. system

Features

The AMS 348*i* is equipped with a PROFINET interface for transferring the measured distances, speeds as well as various status messages.

The PROFINET transfers data according to standard RT (real time).
All device-specific settings are made using a GSD file.

For outdoor or low-temperature applications, a model with integrated heating (AMS 348*i* … H) is available. If necessary, a heatable reflector can be used.

A reflector is necessary for operating the AMS 348*i* … laser distance measurement system. Please order the reflector together with the distance measurement system!

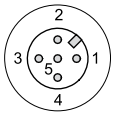
AMS 348*i*

40m
120m
200m
300m

Baud rate PROFINET:
100 MBit/s max.

Electrical connection

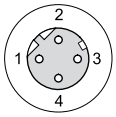
PWR - male, A-cod.



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

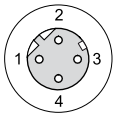
PROFINET

BUS IN - female, D-cod.



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

BUS OUT - female, D-cod.



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

LASER DISTANCE MEAS. SYSTEM - DeviceNet

Part description Part no.	Description	Meas. range [m]	Accuracy / Consistency	Interface	
Optical Laser Distance Measurement System					
AMS 355i 40 50113717	Optical Laser Distance Measurement System w/o device heating	0.2 … 40	± 2mm / 0.3mm [1]	DeviceNet	
AMS 355i 120 50113718	Optical Laser Distance Measurement System w/o device heating	0.2 … 120	± 2mm / 0.5mm [1]	DeviceNet	
AMS 355i 200 50113719	Optical Laser Distance Measurement System w/o device heating	0.2 … 200	± 3mm / 0.7mm [1]	DeviceNet	
AMS 355i 300 50113720	Optical Laser Distance Measurement System w/o device heating	0.2 … 300	± 5mm / 1.5mm [1]	DeviceNet	
AMS 355i 40 H 50113721	Optical Laser Distance Measurement System with device heating	0.2 … 40	± 2mm / 0.3mm [1]	DeviceNet	
AMS 355i 120 H 50113722	Optical Laser Distance Measurement System with device heating	0.2 … 120	± 2mm / 0.5mm [1]	DeviceNet	
AMS 355i 200 H 50113723	Optical Laser Distance Measurement System with device heating	0.2 … 200	± 3mm / 0.7mm [1]	DeviceNet	
AMS 355i 300 H 50113724	Optical Laser Distance Measurement System with device heating	0.2 … 300	± 5mm / 1.5mm [1]	DeviceNet	

1) At 1 sigma

Accessories / connection cables

More accessories can be found from **page 430** onwards

Part no.	Designation	Features
see P. 452	Reflective tape …	Reflective tape, various sizes, self-adhesive or on aluminum plate
50104479	US AMS 01	Deflector unit for 90° deflection of the laser beam
50035630	US1 OMS	Deflection mirror for 90° deflection of the laser beam
50107255	MW OMS / AMS 01	Mounting bracket for converting from OMS to AMS
see P. 435	K - D M12…	Connection cables with M12 connector (A-coded) for PWR
see P. 433	KB DN/CAN-…	Connection cables with M12 connector (A-coded) for BUS IN/OUT
see P. 443	KD 01-5-…	Connector for POWER, BUS IN, BUS OUT, M12, 5-pin, A-coded
50040099	TS 01-4-SA M12	120 ohm terminating resistor for DeviceNet BUS OUT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AMS 355*i*

Distance meas. system

Features

The AMS 355*i* is equipped with a DeviceNet interface for transferring the measured distances, speeds as well as various status messages.

All device-specific settings can be changed using an EDS file (Electronic Data Sheet).

For outdoor or low-temperature applications, a model with integrated heating (AMS 355*i* … H) is available. If necessary, a heatable reflector can be used.

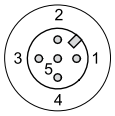
A reflector is necessary for operating the AMS 355*i* … laser distance measurement system. Please order the reflector together with the distance measurement system!

AMS 355*i*

	40m
	120m
	200m
	300m
DeviceNet CONFORMANCE TESTED	Baud rates DeviceNet: 125 kBit/s 250 kBit/s 500 kBit/s

Electrical connection

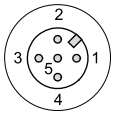
PWR - male, A-cod.



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

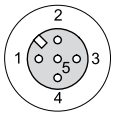
DeviceNet

BUS IN - male, A-cod.



PIN	Signal
1	Drain
2	V+
3	V-
4	CAN_H
5	CAN_L

BUS OUT - female, A-cod.



PIN	Signal
1	Drain
2	V+
3	V-
4	CAN_H
5	CAN_L

LASER DISTANCE MEAS. SYSTEM - EtherNet/IP

Part description Part no.	Description	Meas. range [m]	Accuracy / Consistency	Interface	
Optical Laser Distance Measurement System					
AMS 358i 40 50113725	Optical Laser Distance Measurement System w/o device heating	0.2 … 40	± 2mm / 0.3mm [1]	EtherNet/IP	
AMS 358i 120 50113726	Optical Laser Distance Measurement System w/o device heating	0.2 … 120	± 2mm / 0.5mm [1]	EtherNet/IP	
AMS 358i 200 50113727	Optical Laser Distance Measurement System w/o device heating	0.2 … 200	± 3mm / 0.7mm [1]	EtherNet/IP	
AMS 358i 300 50113728	Optical Laser Distance Measurement System w/o device heating	0.2 … 300	± 5mm / 1.5mm [1]	EtherNet/IP	
AMS 358i 40 H 50113729	Optical Laser Distance Measurement System with device heating	0.2 … 40	± 2mm / 0.3mm [1]	EtherNet/IP	
AMS 358i 120 H 50113730	Optical Laser Distance Measurement System with device heating	0.2 … 120	± 2mm / 0.5mm [1]	EtherNet/IP	
AMS 358i 200 H 50113731	Optical Laser Distance Measurement System with device heating	0.2 … 200	± 3mm / 0.7mm [1]	EtherNet/IP	
AMS 358i 300 H 50113732	Optical Laser Distance Measurement System with device heating	0.2 … 300	± 5mm / 1.5mm [1]	EtherNet/IP	

1) At 1 sigma

Accessories / connection cables

More accessories can be found from **page 430** onwards

Part no.	Designation	Features
see P. 452	Reflective tape …	Reflective tape, various sizes, self-adhesive or on aluminum plate
50104479	US AMS 01	Deflector unit for 90° deflection of the laser beam
50035630	US1 OMS	Deflection mirror for 90° deflection of the laser beam
50107255	MW OMS / AMS 01	Mounting bracket for converting from OMS to AMS
see P. 435	K - D M12…	Connection cables with M12 connector (A-coded) for PWR
see P. 431/	KB ET - …	Connection cables with M12 connector (D-coded) for BUS IN/OUT
see P. 443	KD 01-5-…BA	POWER-IO-DATA connector, M12, 5-pin, A-coded
see P. 443	S - M12A - ET	Ethernet connector, M12, 4-pin, D-coded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AMS 358*i*

Distance meas. system

Features

The AMS 358*i* is equipped with an EtherNet/IP interface for transferring the measured distances, speeds as well as various status messages.

All device-specific settings can be changed using an EDS file (Electronic Data Sheet).

For outdoor or low-temperature applications, a model with integrated heating (AMS 358*i* … H) is available. If necessary, a heatable reflector can be used.

A reflector is necessary for operating the AMS 358*i* … laser distance measurement system. Please order the reflector together with the distance measurement system!

AMS 358*i*

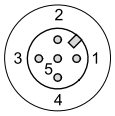
40m
120m
200m
300m

EtherNet/IP conformance tested

Baud rate EtherNet/IP:
100 MBit/s max.

Electrical connection

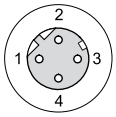
PWR - male, A-cod.



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

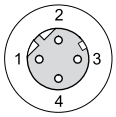
EtherNet/IP

BUS IN - female, D-cod.



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

BUS OUT - female, D-cod.



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

LASER DISTANCE MEASUREMENT SYSTEM - INTERBUS

Part description Part no.	Description	Meas. range [m]	Accuracy / Consistency	Interface	
Optical Laser Distance Measurement System					
AMS 384i 40 50113733	Optical Laser Distance Measurement System w/o device heating	0.2 … 40	± 2mm / 0.3mm [1]	INTERBUS	
AMS 384i 120 50113734	Optical Laser Distance Measurement System w/o device heating	0.2 … 120	± 2mm / 0.5mm [1]	INTERBUS	
AMS 384i 200 50113735	Optical Laser Distance Measurement System w/o device heating	0.2 … 200	± 3mm / 0.7mm [1]	INTERBUS	
AMS 384i 300 50113736	Optical Laser Distance Measurement System w/o device heating	0.2 … 300	± 5mm / 1.5mm [1]	INTERBUS	
AMS 384i 40 H 50113737	Optical Laser Distance Measurement System with device heating	0.2 … 40	± 2mm / 0.3mm [1]	INTERBUS	
AMS 384i 120 H 50113738	Optical Laser Distance Measurement System with device heating	0.2 … 120	± 2mm / 0.5mm [1]	INTERBUS	
AMS 384i 200 H 50113739	Optical Laser Distance Measurement System with device heating	0.2 … 200	± 3mm / 0.7mm [1]	INTERBUS	
AMS 384i 300 H 50113740	Optical Laser Distance Measurement System with device heating	0.2 … 300	± 5mm / 1.5mm [1]	INTERBUS	

1) At 1 sigma

Accessories / connection cables

More accessories can be found from **page 430** onwards

Part no.	Designation	Features
see P. 452	Reflective tape …	Reflective tape, various sizes, self-adhesive or on aluminum plate
50104479	US AMS 01	Deflector unit for 90° deflection of the laser beam
50035630	US1 OMS	Deflection mirror for 90° deflection of the laser beam
50107255	MW OMS / AMS 01	Mounting bracket for converting from OMS to AMS
see P. 435	K - D M12…	Connection cables with M12 connector (A-coded) for PWR
see P. 430	KB SSI/IBS-…	Connection cables with M12 connector (B-coded) for BUS IN
see P. 431	KB IBS-…SA	Connection cables with M12 connector (B-coded) for BUS OUT
see P. 443	KD 01-5-…BA	POWER-IO-DATA connector, M12, 5-pin, A-coded
see P. 443	KD 02-5-…	FIELDBUS connector, M12, 5-pin, B-coded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AMS 384*i*

Distance meas. system

Features

The AMS 384*i* is equipped with an INTERBUS interface for transferring the measured distances, speeds as well as various status messages.

All AMS 384*i* device parameters are preset to default values. These can be changed quickly and easily via the control panel / display.

For outdoor or low-temperature applications, a model with integrated heating (AMS 384*i* … H) is available. If necessary, a heatable reflector can be used.

A reflector is necessary for operating the AMS 384*i* … laser distance measurement system. Please order the reflector together with the distance measurement system!

AMS 384*i*

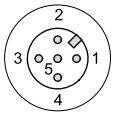
40m
120m
200m
300m

INTERBUS

Baud rate:
500 kBit/s or 2 Mbit/s

Electrical connection

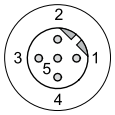
PWR - male, A-cod.



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

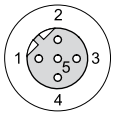
INTERBUS

BUS IN - male, B-cod.



PIN	Signal
1	DO
2	/DO
3	DI
4	/DI
5	COM

BUS OUT - female, B-cod.



PIN	Signal
1	DO
2	/DO
3	DI
4	/DI
5	COM