SMART
SENSOR
BUSINESS

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the sensor people

Figure can vary

Part no.: 50135334
IPS 208i FIX-M3-102-I3-H
Smart camera

CE   c UL us LISTED   Ethernet

Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Diagrams
- Operation and display
- Notes
- Accessories

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1 / 14

Part no.: 50135334 – IPS 208i FIX-M3-102-I3-H – Smart camera

Technical data

Basic data	
Series	IPS 200i
Chip	CMOS

Special design	
Special design	Heating

Functions	
Software functions	Compartment fine positioning

Optical data	
Working range	100 ... 600 mm
Light source	LED, Infrared
Transmitted-signal shape	Pulsed
Camera resolution, horizontal	1,280 px
Camera resolution, vertical	960 px
Marker size	5 ... 20 mm
Electronic shutter speed	0.068 ... 5 ms
Camera type	Monochrome

Measurement data	
Reproducibility (1 sigma)	0.1 mm, depending on the application

Electrical data		
Protective circuit		Short circuit protected Polarity reversal protection
Performance data		
Supply voltage U_B		18 ... 30 V, DC
Average power consumption		12 W
Inputs		
Number of digital switching inputs		3 Piece(s)
Switching inputs		
Type		Digital switching input
Voltage type		DC

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Outputs	
Number of digital switching outputs	5 Piece(s)

Switching outputs	
Type	Digital switching output
Voltage type	DC
Switching current, max.	100 mA

Switching output 1	
Switching principle	+24 V switching

Switching output 2	
Switching principle	+24 V switching

Switching output 3	
Switching principle	+24 V switching

Switching output 4	
Switching principle	+24 V switching

Switching output 5	
Switching principle	+24 V switching

Interface	
Type	Ethernet

Ethernet	
Architecture	Server Client
Address assignment	DHCP Manual address assignment
Transmission speed	10 Mbit/s 100 Mbit/s
Function	Process
Switch functionality	None
Transmission protocol	TCP/IP , UDP

Service interface	
Type	Ethernet

Ethernet	
Function	Service

Connection	
Number of connections	2 Piece(s)

Connection 1	
Type of connection	Connector
Function	Signal IN Voltage supply Signal OUT
Thread size	M12
Type	Male
Material	Metal
No. of pins	12 -pin
Encoding	A-coded

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3 / 14

Connection 2

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

Mechanical data

Design	Cubic
Dimension (W x H x L)	43 mm x 61 mm x 44 mm
Housing material	Metal Plastic, Diecast aluminum, PC
Lens cover material	Plastic
Net weight	120 g
Housing color	Silver
Type of fastening	Via optional mounting device Mounting thread

Operation and display

Type of display	LED
Number of LEDs	9 Piece(s)
Type of configuration	Configuration codes Via web browser Teach-in
Operational controls	Button(s)
Function of the operational control	Auto-setup Adjustment mode

Environmental data

Ambient temperature, operation	-30 ... 50 °C
Ambient temperature, storage	-20 ... 70 °C
Relative humidity (non-condensing)	90 %

Certifications

|	
Degree of protection	IP 65
Protection class	III
Certifications	c UL US
Test procedure for EMC in accordance with standard	EN 61000-6-4 EN 61000-6-2
Test procedure for continuous shock in accordance with standard	IEC 60068-2-29, test Eb
Test procedure for vibration in accordance with standard	IEC 60068-2-6, test Fc

Classification

eCl@ss 8.0	27310201
eCl@ss 9.0	27310201
ETIM 5.0	EC002550
ETIM 6.0	EC002550

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4 / 14

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Dimensioned drawings

All dimensions in millimeters
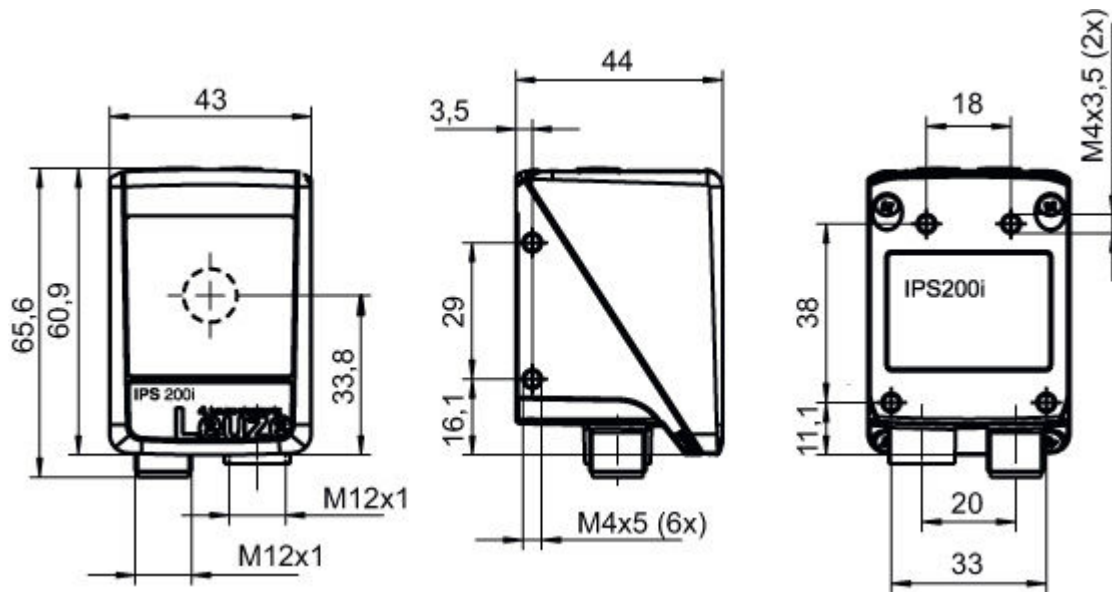
Electrical connection

Connection 1	PWR / SWI / SWO
Type of connection	Connector
Function	Signal IN Voltage supply Signal OUT
Thread size	M12
Type	Male
Material	Metal
No. of pins	12 -pin
Encoding	A-coded

Pin	Pin assignment
1	VIN
2	GND
3	SWIN 1
4	SWOUT 2
5	FE
6	n.c.
7	SWOUT 5
8	SWOUT 6
9	SWOUT 7
10	SWOUT 8
11	SWIO 3
12	SWIO 4
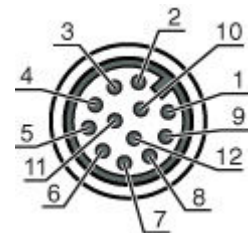
Connection 2	HOST
Type of connection	Connector

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5 / 14

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Connection 2	HOST
Function	Data interface Configuration interface
Thread size	M12
Type	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded

Pin	Pin assignment
1	TD+
2	RD+
3	TD-
4	RD-
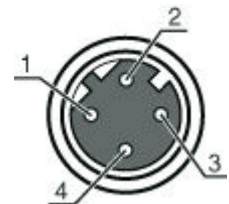
Diagrams

Typical working distances for markers with different marker diameters
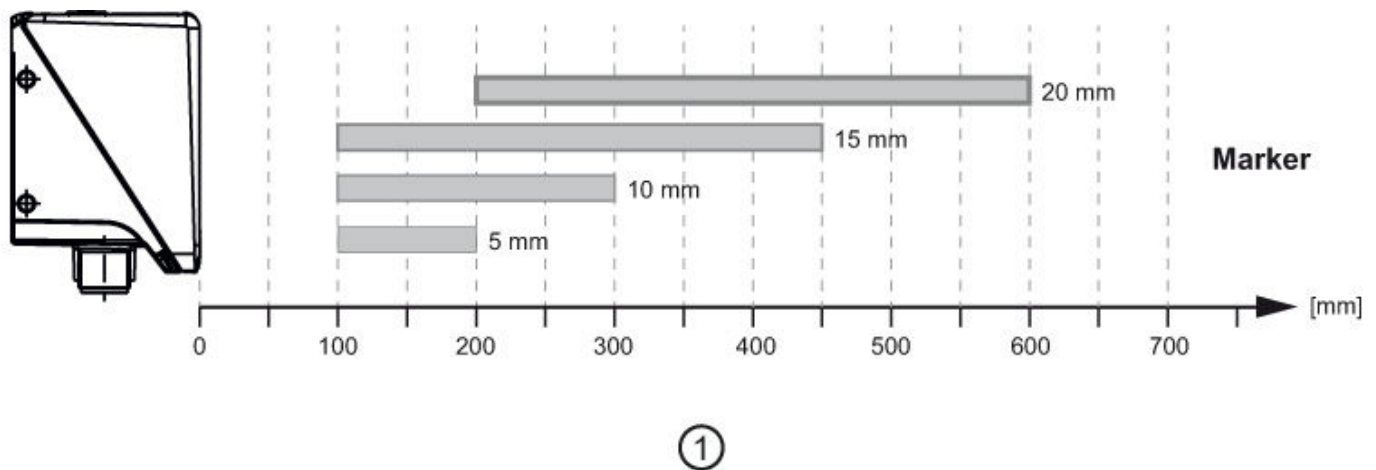
1   Distance [mm]

Mode of operation of the positioning sensor
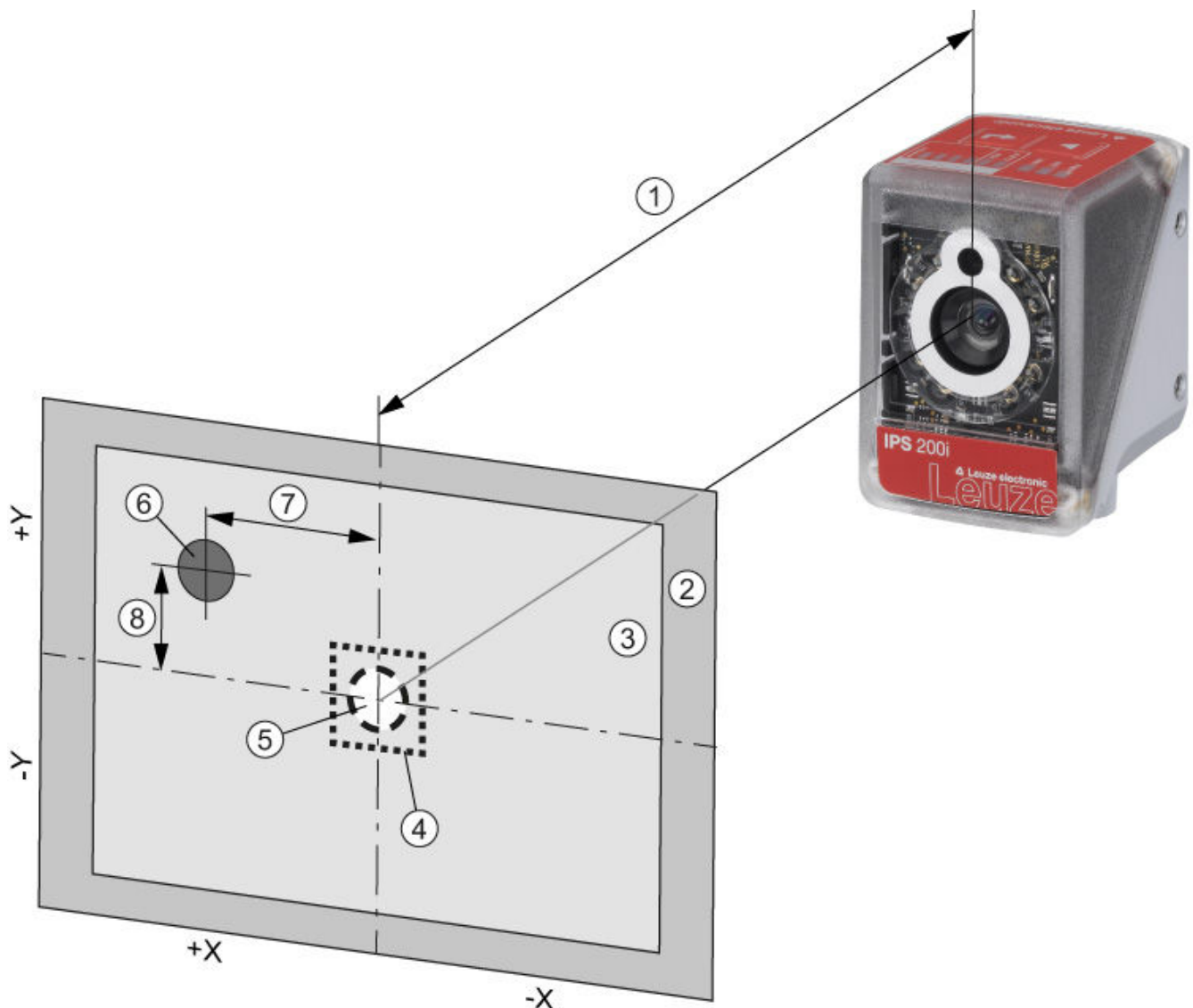
1   Working distance
2   Field of view (FOV)
3   Region of interest (ROI)
4   Tolerance range
5   Nominal position (marker)
6   Actual position (marker)
7   X deviation
8   Y deviation

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Relationship between working distance and field of view size

1   Distance [mm]
2   Field of view: width x height [mm]
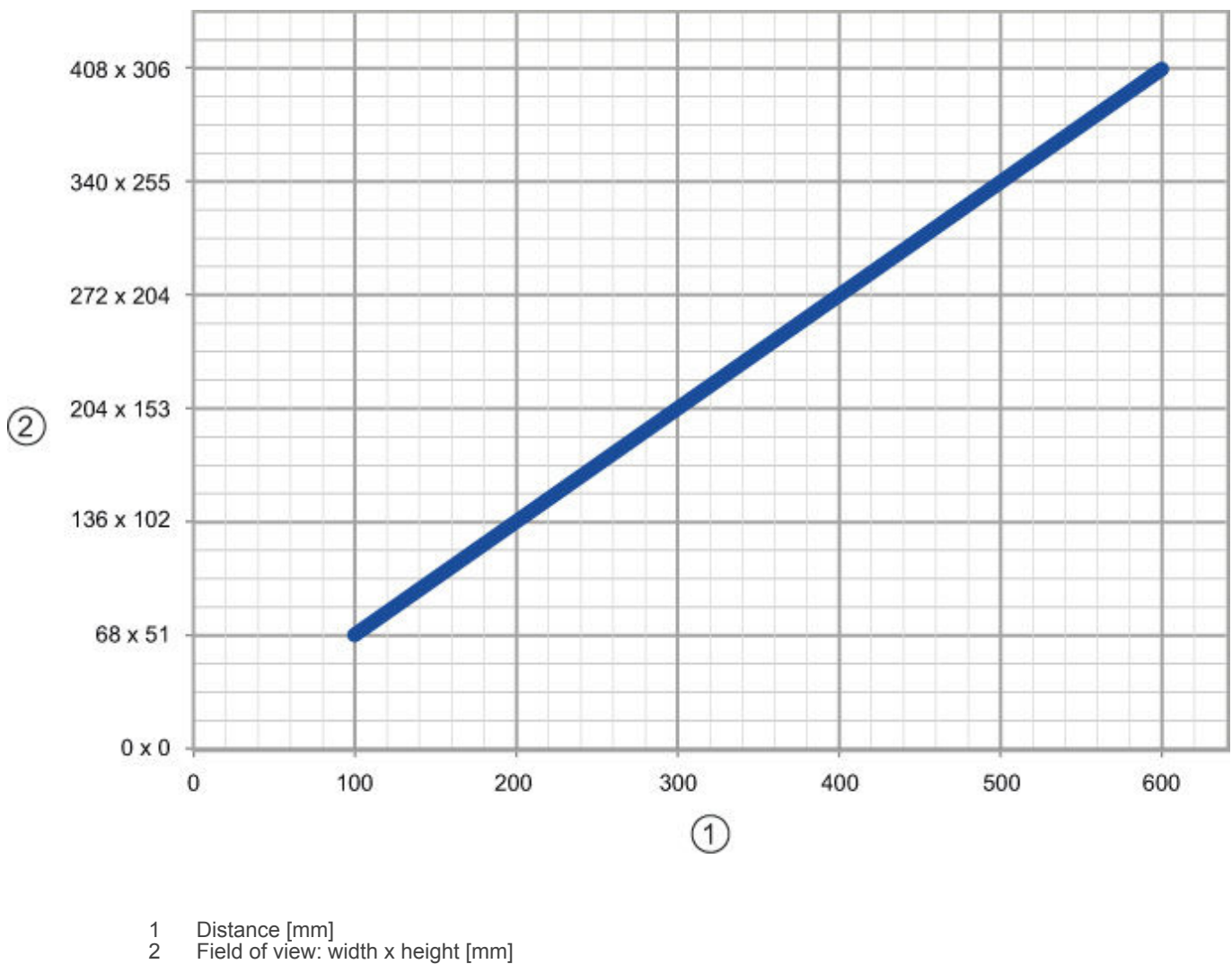
Operation and display

LEDs

LED		Display	Meaning
1	PWR	Off	No supply voltage
		Green, flashing	Initialization
		Green, continuous light	Operational readiness
		Orange, continuous light	Service operation
		Orange, flashing	Wave function
		Red, flashing	Device OK, warning set
		Red, continuous light	Device error
2	NET	Off	No supply voltage
		Green, flashing	Initialization
		Green, continuous light	Operational readiness
		Red, flashing	Communication error
		Red, continuous light	Network error
3	LINK	Green, continuous light	Ethernet connection is established
		Yellow, flashing	Data exchange active

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8 / 14

LED		Display	Meaning
4	AUTO	Green, flashing	Auto setup and teach-in of position
5	ADJ	Green, flashing	Alignment mode and teach-in of position
6	---	Green, flashing	Flashing frequency signals the marker distance to the nominal position
		Green, continuous light	Marker is in nominal position
7	---	Green, flashing	Flashing frequency signals the marker distance to the nominal position
		Green, continuous light	Marker is in nominal position
8	---	Green, flashing	Flashing frequency signals the marker distance to the nominal position
		Green, continuous light	Marker is in nominal position
9	---	Green, flashing	Flashing frequency signals the marker distance to the nominal position
		Green, continuous light	Marker is in nominal position

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.

- Warmup time: minimum 30 min at +24 VDC and an ambient temperature of -30 °C
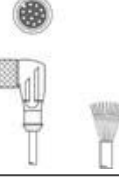
Accessories

Connection technology - Connection unit

	Part no.	Designation	Article	Description
	50130109	MA 150	Modular connection unit	Supply voltage: 18 ... 30 V Current consumption, max.: 150 mA Connections: 5 Piece(s) Degree of protection: IP 67
	50135196	MD 708-21-42/ D4-12	Ethernet switch	Supply voltage: 18 ... 30 V Interface: Ethernet Connections: 5 Piece(s) Connections for voltage supply: 1 Piece(s) Interface connections: 4 Piece(s) Degree of protection: IP 67
	50135197	MD 708-21-82/ D4-12	Ethernet switch	Supply voltage: 18 ... 30 V Interface: Ethernet Connections: 9 Piece(s) Connections for voltage supply: 1 Piece(s) Interface connections: 8 Piece(s) Degree of protection: IP 67

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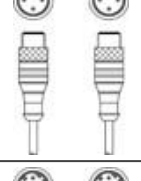We reserve the right to make technical changes • eng 2019-01-05
9 / 14
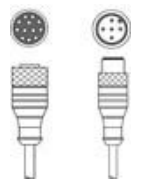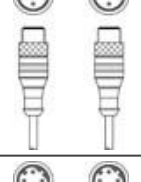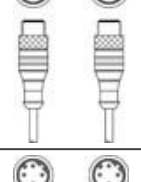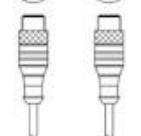
Connection technology - Connection cables

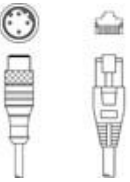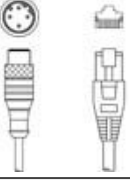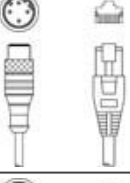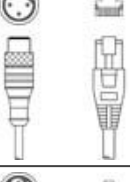|	Part no.	Designation	Article	Description
	50130281	KD S-M12-CA-P1-020	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Open end Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR
	50130282	KD S-M12-CA-P1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR
	50130283	KD S-M12-CA-P1-100	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Open end Shielded: Yes Cable length: 10,000 mm Sheathing material: PUR
	50134943	KD S-M12-CW-P1-050	Connection cable	Connection 1: Connector, M12, Angled, Female, A-coded, 12 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR
	50135073	KS ET-M12-4A-P7-020	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR
	50135074	KS ET-M12-4A-P7-050	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR
	50135075	KS ET-M12-4A-P7-100	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 10,000 mm Sheathing material: PUR
	50135076	KS ET-M12-4A-P7-150	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 15,000 mm Sheathing material: PUR
	50135077	KS ET-M12-4A-P7-300	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 30,000 mm Sheathing material: PUR
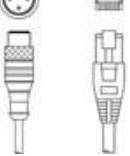
	Part no.	Designation	Article	Description
	50134942	KS ET-M12-4W-P7-050	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Angled, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

Connection technology - Interconnection cables

	Part no.	Designation	Article	Description
	50137694	KDS S-M12-CA-M12-5A-P1-004-23X	Interconnection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin Shielded: Yes Cable, crossed: Connection 1, pin 2 <-> connection 2, pin 3 Cable length: 400 mm Sheathing material: PUR
	50130284	KDS S-M12-CA-M12-CA-P1-020	Interconnection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 12 -pin Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR
	50130285	KDS S-M12-CA-M12-CA-P1-050	Interconnection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 12 -pin Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR
	50130286	KDS S-M12-CA-M12-CA-P1-100	Interconnection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 12 -pin Shielded: Yes Cable length: 10,000 mm Sheathing material: PUR
	50137077	KSS ET-M12-4A-M12-4A-P7-020	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin Shielded: Yes Cable length: 1,000 mm Sheathing material: PUR
	50137078	KSS ET-M12-4A-M12-4A-P7-050	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin Shielded: Yes Cable length: 1,000 mm Sheathing material: PUR
	50137079	KSS ET-M12-4A-M12-4A-P7-100	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin Shielded: Yes Cable length: 10,000 mm Sheathing material: PUR
	50137080	KSS ET-M12-4A-M12-4A-P7-150	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin Shielded: Yes Cable length: 15,000 mm Sheathing material: PUR

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11 / 14

		Part no.	Designation	Article	Description
		50135080	KSS ET-M12-4A-RJ45-A-P7-020	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR
		50135081	KSS ET-M12-4A-RJ45-A-P7-050	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR
		50135082	KSS ET-M12-4A-RJ45-A-P7-100	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 10,000 mm Sheathing material: PUR
		50135083	KSS ET-M12-4A-RJ45-A-P7-150	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 15,000 mm Sheathing material: PUR
		50135084	KSS ET-M12-4A-RJ45-A-P7-300	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 30,000 mm Sheathing material: PUR

Connection technology - Connectors

	Part no.	Designation	Article	Description
	50132254	D M12A-12P	Connector	Connection: Connector with solder connection, M12, Axial, Female, A-coded, 12 -pin
	50112155	S-M12A-ET	Connector	Suitable for interface: Ethernet Connection: Connector, M12, Axial, Male, D-coded, 4 -pin

Connection technology - Adapters

	Part no.	Designation	Article	Description
	50132255	D M12A-12P-PWR	Adapter	Number of connections: 2 Piece(s) Connection 1: Connector, M12, Axial, Female, A-coded, 12 -pin Connection 2: Jack socket

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12 / 14

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Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	50132151	BT 320M	Mounting bracket	Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Metal

Mounting technology - Rod mounts

	Part no.	Designation	Article	Description
	50132150	BTU 320M-D12	Mounting system	Contains: 4x M4 x 6 screws Design of mounting device: Mounting system Fastening, at system: For 12 mm rod Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal

Standard reflectors

	Part no.	Designation	Article	Description
	50132911	REF 7-A-15-30 SET	Reflective tape	Contains: 500x Design: Round Reflection surface diameter: 15 mm Fastening: Self-adhesive

Micro-triad-type reflectors

	Part no.	Designation	Article	Description
	50130343	MTKZ 13-30 SET	Reflector	Contains: 100x Design: Round Reflection surface diameter: 15 mm Material: Plastic Base material: Plastic Chemical designation of the material: PA Fastening: Clip Suitable for bore hole diameter: 12.5 ... 13.5 mm Suitable for material thickness: 0.8 ... 5 mm Processing temperature: 5 ... 45 °C
	50129092	MTKZ 15-30 SET	Reflector	Contains: 100x Design: Round Reflection surface diameter: 15 mm Material: Plastic Base material: Plastic Chemical designation of the material: PA Fastening: Clip Suitable for bore hole diameter: 14.5 ... 15.5 mm Suitable for material thickness: 0.8 ... 5 mm Processing temperature: 5 ... 45 °C
	50140183	MTKZ 7-30 SET	Reflector	Contains: 100x Design: Round Reflection surface diameter: 15 mm Material: Plastic Base material: Plastic Chemical designation of the material: PA Fastening: Clip Suitable for bore hole diameter: 6 ... 7 mm Suitable for material thickness: 0.8 ... 5 mm Processing temperature: 5 ... 45 °C

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13 / 14

General

	Part no.	Designation	Article	Description
	50137680	Cover IPS 200i	Cover hood	Housing material: Plastic Optics cover: Plastic
	50137681	Cover IPS 200i-G	Cover hood	Housing material: Plastic Optics cover: Glass

Services

	Part no.	Designation	Article	Description
	S981014	CS30-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.
	S981019	CS30-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.

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14 / 14