SMART
SENSOR
BUSINESS

△ Leuze electronic
the *sensor* people

Part no.: 50141799
DCR 248i FIX-U2-102-I3-G
Stationary 2D-code reader

CE   c(UL)us LISTED   *RS232*   *RS422*   Ethernet

PROFINET

Figure can vary

Contents

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

Basic data	
Series	DCR 200i
Chip	CMOS

Functions	
Software functions	Reading of 1D codes
	Reading of 2D codes

Read data	
Code types, readable	2/5 Interleaved
	Aztec
	Codabar
	Code 128
	Code 32
	Code 39
	Code 93
	Data Matrix Code
	EAN 128
	EAN 8/13
	GS1 Databar
	GS1 Databar Omnidirectional
	GS1 Databar QR code
	GS1 Databar Stacked
	PDF417
	Pharma Code
	QR code
	UPC

Optical data	
Reading distance	40 ... 75 mm
Light source	LED , Infrared
Transmitted-signal shape	Pulsed
Camera resolution, horizontal	1,280 px
Camera resolution, vertical	960 px
Modulus size	0.1 ... 0.25 mm
Electronic shutter speed	0.068 ... 5 ms
Camera type	Monochrome

Electrical data	
Protective circuit	Polarity reversal protection
	Short circuit protected
Performance data	
Supply voltage U_B	18 ... 30 V , DC
Average power consumption	8 W
Inputs	
Number of digital switching inputs	1 Piece(s)
Switching inputs	
Voltage type	DC

Outputs

Number of digital switching outputs	1 Piece(s)
Switching outputs	
Voltage type	DC
Switching current, max.	100 mA
Switching output 1	
Switching element	MOSFET semiconductor ,
Switching principle	+24 V switching
Inputs/outputs selectable	
Number of inputs/outputs selectable	2 Piece(s)
Voltage type, outputs	DC
Voltage type, inputs	DC

Interface

Type	RS 232 , RS 422 , Ethernet , PROFINET
RS 232	
Function	Process
Transmission speed	4,800 ... 115,200 Bd
Data format	Adjustable
Start bit	1
Data bit	8 data bits
Stop bit	1 stop bit
Parity	None
Transmission protocol	<STX><data><CR><LF>
Data encoding	ASCII Binary
RS 422	
Function	Process
Transmission speed	4,800 ... 115,200 Bd
Data format	Adjustable
Start bit	1
Data bit	7, 8 data bits
Stop bit	1, 2 stop bits
Parity	Adjustable
Transmission protocol	Adjustable
Data encoding	ASCII Binary
Ethernet	
Architecture	Client Server
Address assignment	DHCP Manual address assignment
Transmission speed	10 / 100 Mbit/s
Function	Process
Switch functionality	None
Transmission protocol	TCP/IP , UDP
Profinet	
Function	Process
Conformance class	B
Protocol	PROFINET RT
Transmission speed	100 Mbit/s

Service interface	
Type	Ethernet
Ethernet	
Function	Service

Connection	
Number of connections	2 Piece(s)
Connection 1	
Function	Data interface Signal IN Signal OUT Voltage supply
Type of connection	Connector
Thread size	M12
Type	Male
Material	Metal
No. of pins	12 -pin
Encoding	A-coded
Connection 2	
Function	Configuration interface Data interface
Type of connection	Connector
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	Glass
Net weight	120 g
Housing color	Silver
Type of fastening	Mounting thread Via optional mounting device

Operation and display	
Type of display	LED
Number of LEDs	10 Piece(s)
Type of configuration	Configuration codes Teach-in Via web browser
Operational controls	Button(s)
Function of the operational control	Adjustment mode Auto-setup Trigger

Environmental data	
Ambient temperature, operation	0 ... 45 °C
Ambient temperature, storage	-20 ... 70 °C

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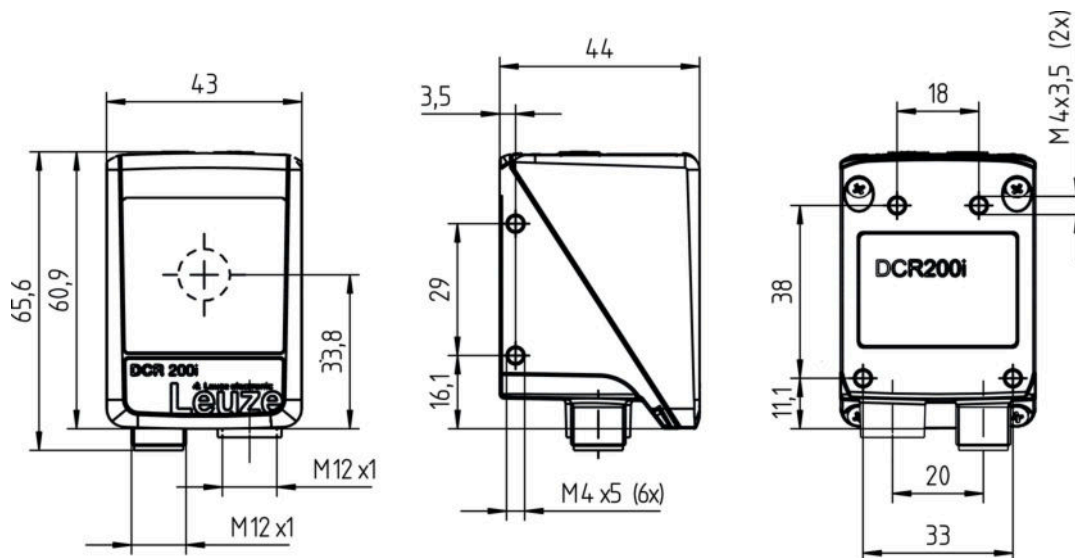| Relative humidity (non-condensing) | 90 % |

Certifications	
Degree of protection	IP 65
Protection class	III
Certifications	c UL US
Test procedure for EMC in accordance with standard	EN 61000-6-2 EN 61000-6-4
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	
Customs tariff number	84719000
eCl@ss 8.0	27280103
eCl@ss 9.0	27280103
ETIM 5.0	EC002999
ETIM 6.0	EC002999

Dimensioned drawings

All dimensions in millimeters

Electrical connection

Connection 1	**PWR / SWIO**
Function	Data interface Signal IN Signal OUT Voltage supply
Type of connection	Connector
Thread size	M12
Type	Male

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Connection 1	**PWR / SWIO**
Material	Metal
No. of pins	12 -pin
Encoding	A-coded

Pin	Pin assignment
1	V+
2	GNDIN
3	SWIN 1
4	SWOUT 2
5	FE
6	GND RS 232 / GND RS 422
7	Rx-
8	Tx-
9	RxD/Rx+
10	TxD/Tx+
11	SWIO 3
12	SWIO 4
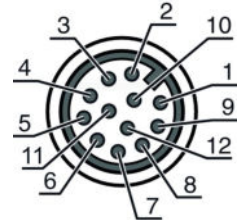
Connection 2	**HOST**
Function	Configuration interface Data interface
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded

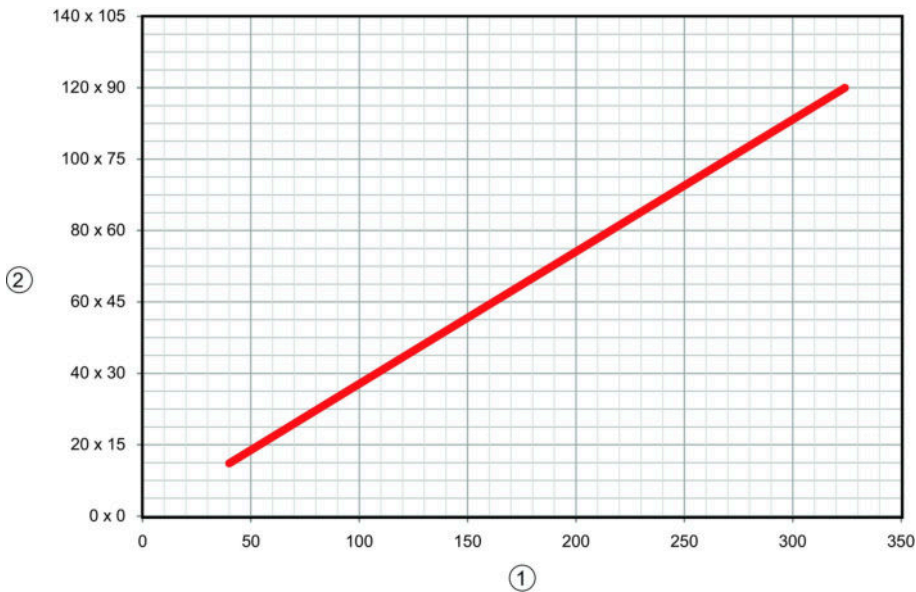| Pin	Pin assignment
1	TD+
2	RD+
3	TD-
4	RD-
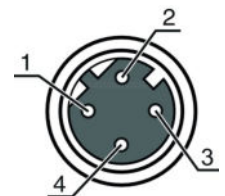
Diagrams

Reading distances
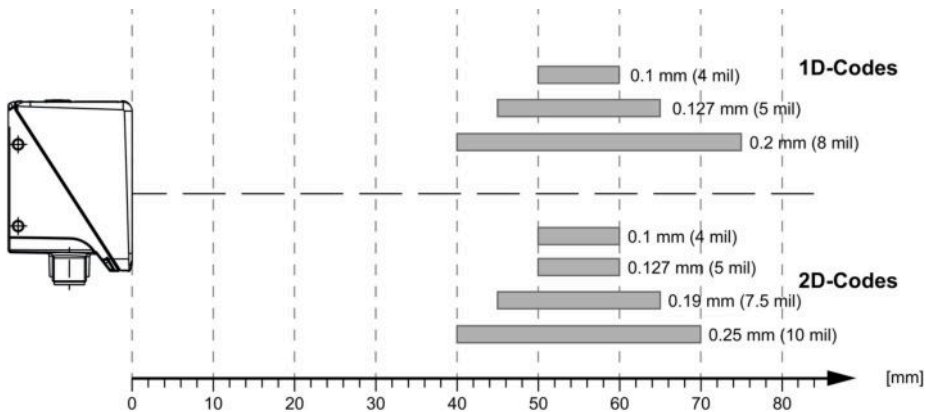
Relationship between camera distance and reading field size
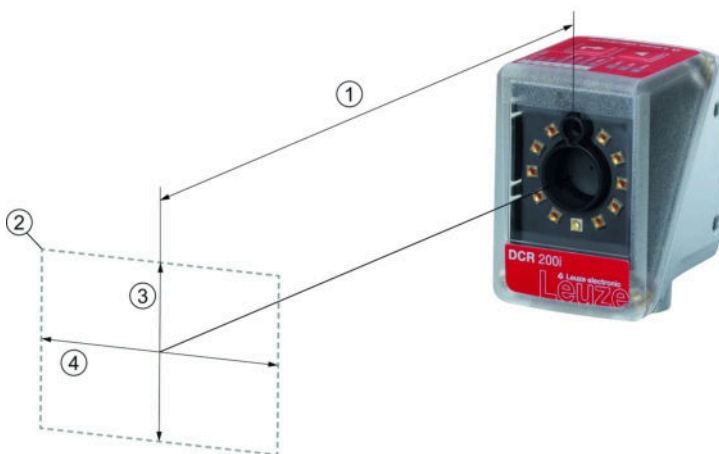
1   Camera distance
2   Reading field
3   Reading field height [mm]
4   Reading field width [mm]

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1   Camera distance [mm]
2   Reading field: 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
		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
4	TRIG	Green, flashing	Trigger and display of the read quality
5	AUTO	Green, flashing	Auto-setup and display of the read quality
6	ADJ	Green, flashing	Alignment mode and display of the read quality
7	TEACH	Green, flashing	Teach-in and display of the read quality

Part number code

Part designation: **DCR XXX YYY-Z-AAA-BC-D-EEEE**

DCR	**Operating principle:** DCR: Dual Code Reader

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XXXX	**Series/interface (integrated fieldbus technology):** 202i: Ethernet TCP/IP, UDP, RS 232/RS 422 248i: PROFINET-IO, Ethernet TCP/IP, UDP, RS 232/RS 422
YYY	**Equipment:** FIX: Fixed focal length
Z	**Optics:** U: Ultra high density (very close) N: High Density (close) M: Medium Density (medium distance) F: Low Density (remote) L: Ultra low density (very large distance)
AAA	**Beam exit:** 102: front
B	**Illumination:** R: Red light I: infrared light
C	**Resolution range:** 3: 1280 x 960 pixels
D	**Protective screen:** n/a: plastic G: Glass P: Polarization filter
EEEE	**Special equipment:** V: Stainless steel housing F001: NPN inputs/outputs H: with heating

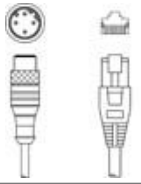| Note |
|------|
| A list with all available device types can be found on the Leuze website at www.leuze.com. |

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.

Accessories

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
	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

Connection technology - Interconnection cables

	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

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	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

General

	Part no.	Designation	Article	Description
	50144030	IL AL 034/031 IR 110 H	Illumination	

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.

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	Part no.	Designation	Article	Description
	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.

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

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