SMART
SENSOR
BUSINESS

Leuze electronic

the sensor people

Figure can vary

Part no.: 50132846
BCL 600i OM 100 H
Stationary bar code reader

Contents

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We reserve the right to make technical changes • eng 2019-05-13

Technical data

Basic data	
Series	BCL 600i

Functions	
Functions	Alignment mode AutoConfig AutoControl AutoReflAct Code fragment technology Heating LED indicator Reference code comparison

Read data	
Code types, readable	2/5 Interleaved Codabar Code 128 Code 39 Code 93 EAN 128 EAN/UPC GS1 Databar Omnidirectional
Scanning rate, typical	1,000 scans/s
Bar codes per reading gate, max. number	64 Piece(s)

Optical data	
Reading distance	400 ... 900 mm
Light source	Laser , Blue
Laser light wavelength	405 nm
Laser class	2 , IEC/EN 60825-1:2007
Transmitted-signal shape	Continuous
Bar code contrast (PCS)	60 %
Modulus size	0.25 ... 0.35 mm
Reading method	Oscillating-mirror scanner
Beam deflection	Via rotating polygon wheel + stepping motor with mirror
Light beam exit	Zero position at side at angle less than 90°
Oscillating mirror frequency	10 Hz
Max. swivel angle	20 °

Electrical data	
Protective circuit	Polarity reversal protection
Performance data	
Supply voltage U_B	10 ... 30 V , DC
Power consumption, max.	10 W
Inputs/outputs selectable	
Output current, max.	60 mA
Number of inputs/outputs selectable	4 Piece(s)
Voltage type, outputs	DC
Switching voltage, outputs	Typ. U_B / 0 V
Voltage type, inputs	DC
Switching voltage, inputs	Typ. U_B / 0 V
Input current, max.	8 mA

Part no.: 50132846 – BCL 600i OM 100 H – Stationary bar code reader

Interface	
Type	RS 232 , RS 422 , RS 485
RS 232	
Function	Process
Transmission speed	4,800 ... 115,400 Bd
Data format	Adjustable
Start bit	1
Data bit	7,8
Stop bit	1.2
Parity	None
Transmission protocol	Adjustable
Data encoding	ASCII
RS 422	
Function	Process
Transmission speed	4,800 ... 115,400 Bd
Data format	Adjustable
Start bit	1
Data bit	7, 8 data bits
Stop bit	1, 2 stop bits
Transmission protocol	Adjustable
Data encoding	ASCII
RS 485	
Function	Process
Transmission speed	57,600 Bd
Data format	Fixed
Start bit	1
Data bit	9 data bits
Stop bit	1 stop bit
Parity	None
Transmission protocol	Fixed
Data encoding	ASCII

Service interface	
Type	USB
USB	
Function	Configuration via software Service

Connection	
Number of connections	5 Piece(s)
Connection 1	
Type of connection	USB
Designation on device	SERVICE
Function	Service interface
Connector type	USB 2.0 Standard-A

Connection 2	
Type of connection	Connector
Designation on device	PWR
Function	Signal IN Signal OUT Voltage supply
Thread size	M12
Type	Male
Material	Metal
No. of pins	5 -pin
Encoding	A-coded
Connection 3	
Type of connection	Connector
Designation on device	SW IN/OUT
Function	Signal IN Signal OUT
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded
Connection 4	
Type of connection	Connector
Designation on device	HOST / BUS IN
Function	BUS IN
Thread size	M12
Type	Male
Material	Metal
No. of pins	5 -pin
Encoding	B-coded
Connection 5	
Type of connection	Connector
Designation on device	BUS OUT
Function	BUS OUT
Thread size	M12
Type	Male
No. of pins	5 -pin

Mechanical data	
Design	Cubic
Dimension (W x H x L)	173 mm x 84 mm x 147 mm
Housing material	Metal , Diecast aluminum
Lens cover material	Glass
Net weight	1,500 g
Housing color	Red, RAL 3000 Silver
Type of fastening	Dovetail grooves Mounting thread Via optional mounting device

Operation and display

Type of display	LED Monochromatic graphical display, 128x64 pixel, with background lighting
Number of LEDs	2 Piece(s)
Type of configuration	Via web browser
Operational controls	Button(s)

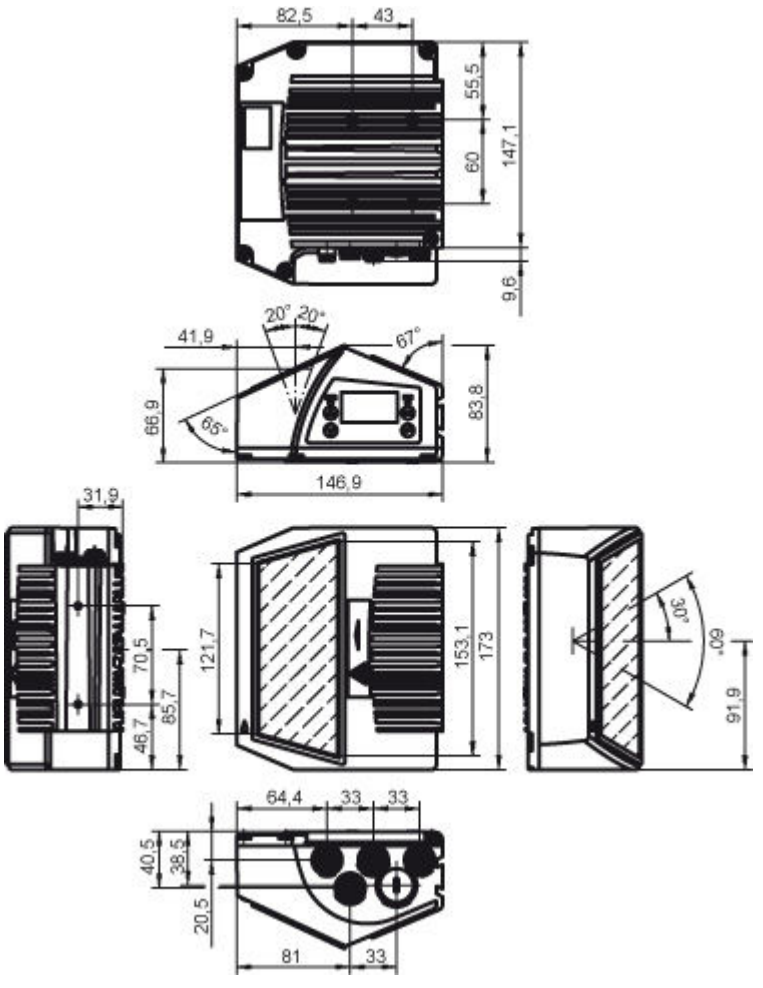
Environmental data	
Ambient temperature, operation	0 ... 40 °C
Ambient temperature, storage	-20 ... +70 °C
Relative humidity (non-condensing)	90 %
Extraneous light tolerance on the bar code, max.	2,000 lx

Certifications	
Degree of protection	IP 65
Protection class	III
Certifications	c UL US
Test procedure for EMC in accordance with standard	EN 55022 EN 61000-4-2, -3, -4, -6
Test procedure for shock in accordance with standard	IEC 60068-2-27, test Ea
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
US patents	US 6,854,649 B

Classification	
Customs tariff number	84719000
eCl@ss 8.0	27280102
eCl@ss 9.0	27280102
ETIM 5.0	EC002550
ETIM 6.0	EC002550

Dimensioned drawings

All dimensions in millimeters



Electrical connection

Connection 1	SERVICE
Type of connection	USB
Function	Service interface
Connector type	USB 2.0 Standard-A

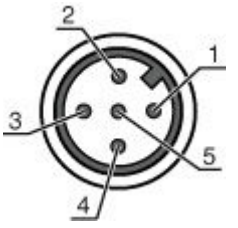
Pin	Pin assignment
1	+5 V DC
2	DATA-
3	DATA+
4	GND

Connection 2	PWR
Type of connection	Connector
Function	Signal IN Signal OUT Voltage supply
Thread size	M12
Type	Male
Material	Metal

Part no.: 50132846 – BCL 600i OM 100 H – Stationary bar code reader

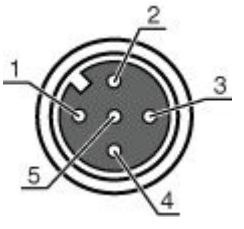
Connection 2	PWR
No. of pins	5 -pin
Encoding	A-coded

Pin	Pin assignment
1	VIN
2	SWIO 3
3	GND
4	SWIO 4
5	FE



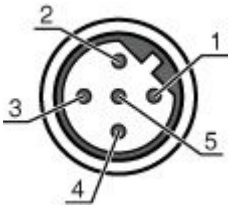
Connection 3	SW IN/OUT
Type of connection	Connector
Function	Signal IN Signal OUT
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

Pin	Pin assignment
1	VOUT
2	SWIO 1
3	GND
4	SWIO 2
5	FE



Connection 4	HOST / BUS IN
Type of connection	Connector
Function	BUS IN
Thread size	M12
Type	Male
Material	Metal
No. of pins	5 -pin
Encoding	B-coded

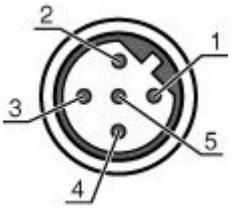
Pin	Pin assignment
1	CTS / RX+
2	TxD/Tx-
3	GND_H
4	RTS/TX+
5	RxD/RX-



Connection 5	BUS OUT
Type of connection	Connector

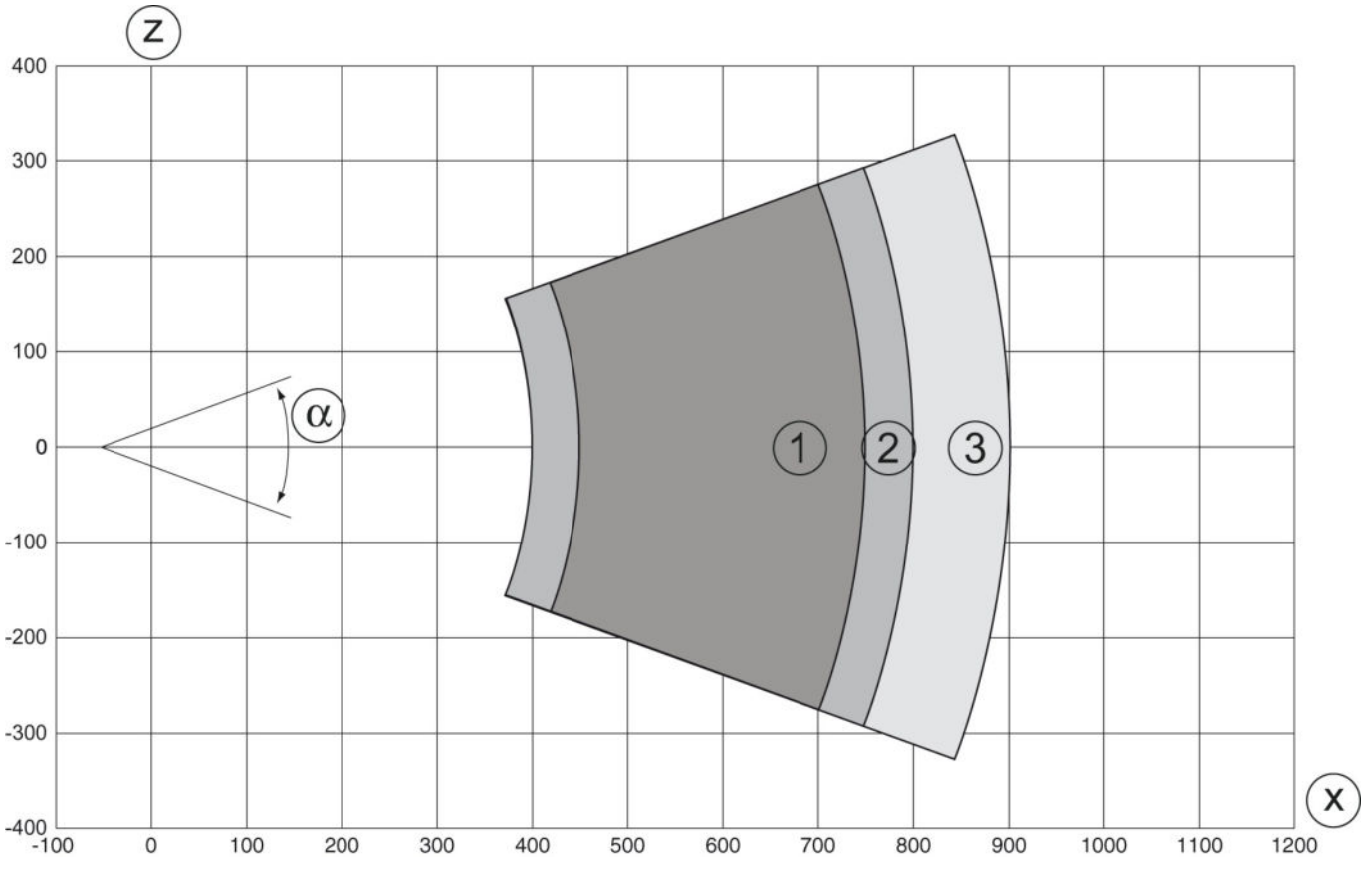
Connection 5	BUS OUT
Function	BUS OUT
Thread size	M12
Type	Male
Material	Metal
No. of pins	5 -pin
Encoding	B-coded

Pin	Pin assignment
1	n.c.
2	RS 485 B
3	GND 485
4	RS 485 A
5	FE



Diagrams

Reading field curve - Medium Density



z Reading field height [mm]
x Reading field distance [mm]
1 Module = 0.25 mm: 450 mm - 750 mm (300 mm depth of field)
2 Module = 0.3 mm: 400 mm - 800 mm (400 mm depth of field)
3 Module = 0.35 mm: 400 mm - 900 mm (500 mm depth of field)

Operation and display

LEDs

LED		Display	Meaning
1	PWR	Off	No supply voltage
		Green, flashing	Initialization
		Green, continuous light	Device OK
		Orange, flashing	Service operation
		Orange, continuous light	Reset
		Red, flashing	Device OK, warning set
		Red, continuous light	Device error
2	NET	Off	No supply voltage
		Green, flashing	BUS initialization
		Green, continuous light	Bus operation ok
		Orange, flashing	Service mode
		Orange, continuous light	Reset
		Red, flashing	Communication error
		Red, continuous light	Network error

Part number code

Part designation: **BCL XXXX YYZ AAA B**

BCL	**Operating principle:** BCL: bar code reader
XXXX	**Series/interface (integrated fieldbus technology):** 600i: RS 232/RS 422/ RS 485 (multiNet master) 601i: RS 485 (multiNet slave) 604i: PROFIBUS DP 608i: Ethernet 648i: PROFINET
YY	**Scanning principle:** S: line scanner (single line) O: oscillating-mirror scanner (oscillating mirror)
Z	**Optics:** N: High Density (close) M: Medium Density (medium distance) F: Low Density (remote) L: Long Range (very large distances)
AAA	**Beam exit:** 100: lateral 102: front
BB	**Special equipment:** H: with heating

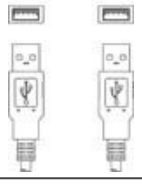
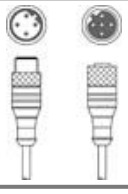
Note
A list with all available device types can be found on the Leuze electronic website at www.leuze.com.

Accessories

Connection technology - Connection cables

	Part no.	Designation	Article	Description
	50132079	KD U-M12-5A-V1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC

Connection technology - Interconnection cables

	Part no.	Designation	Article	Description
	50107726	KB USB A - USB A	Interconnection cable	Suitable for interface: USB Connection 1: USB Connection 2: USB Shielded: Yes Cable length: 1,800 mm Sheathing material: PVC
	50135254	KDS PB-M12-4A-M12-4A-P3-050	Interconnection cable	Suitable for interface: PROFIBUS DP Connection 1: Connector, M12, Axial, Female, B-coded, 2 -pin Connection 2: Connector, M12, Axial, Male, B-coded, 4 -pin Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

Connection technology - Terminating resistors

	Part no.	Designation	Article	Description
	50038539	TS 02-4-SA	Terminator plug	Suitable for: MultiNet Plus, PROFIBUS DP Connection 1: Connector, M12, Axial, Male, B-coded, 4 -pin Function: Bus termination

Mounting technology - Other

	Part no.	Designation	Article	Description
	50111224	BT 59	Mounting bracket	Fastening, at system: Groove mounting Mounting bracket, at device: Clampable Material: Metal

Part no.: 50132846 – BCL 600i OM 100 H – Stationary bar code reader

Services

	Part no.	Designation	Article	Description
	S981020	CS30-E-212	Hourly rate for "Configuration"	Details: Compilation of the application data, selection and suggestion of suitable sensor system, drawing prepared as assembly sketch. Conditions: Completed questionnaire or project specifications with a description of the application have been provided. Restrictions: Travel and accommodation charged separately and according to expenditure.
	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.
	S981021	CS30-V-212	Hourly rate for "Bar code qualification"	Details: REA evaluation with creation of a test report, evaluation of the code quality. Conditions: Original bar codes to be provided by the client.