

Technical data sheet

Stationary bar code reader

Part no.: 50129093

BCL 604i SM 102



Figure can vary

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- Technical data
- Dimensioned drawings
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- Diagrams
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Technical data

Basic data

Series	BCL 600i
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Functions

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

Characteristic parameters

MTTF	42.4 years
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Read data

Code types, readable	2/5 Interleaved
	Codabar
	Code 128
	Code 39
	Code 93
	EAN 128
	EAN 8/13
	EAN Addendum
	GS1 Databar Expanded
	GS1 Databar Limited
	GS1 Databar Omnidirectional
	UPC
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
Usable opening angle (reading field opening)	60 °
Bar code contrast (PCS)	60 %
Modulus size	0.25 ... 0.35 mm
Reading method	Line scanner
Beam deflection	Via rotating polygon wheel
Light beam exit	Front

Electrical data

Protective circuit	Polarity reversal protection
Performance data	
Supply voltage U_B	10 ... 30 V, DC
Power consumption, max.	14 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

Interface

Type	PROFIBUS DP
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PROFIBUS DP

Function	Process
Classification	V1
Transmission speed	9,600 ... 12,000,000 Mbit/s

Service interface

Type	USB
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USB

Function	Configuration via software
	Service

Connection

Number of connections	5 Piece(s)
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Connection 1

Function	Service interface
Type of connection	USB
Designation on device	SERVICE
Connector type	USB 2.0 Standard-A

Connection 2

Function	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Connector
Designation on device	PWR
Thread size	M12
Type	Male
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

Connection 3

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

Technical data

Connection 4

Function	BUS IN
Type of connection	Connector
Designation on device	HOST / BUS IN
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin
Encoding	B-coded

Connection 5

Function	BUS OUT
Type of connection	Connector
Designation on device	BUS OUT
Thread size	M12
Type	Male
No. of pins	5 -pin

Mechanical data

Design	Cubic
Dimension (W x H x L)	123.5 mm x 63 mm x 104.2 mm
Housing material	Metal, Diecast aluminum
Lens cover material	Glass
Net weight	1,400 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)
	Via service interface

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

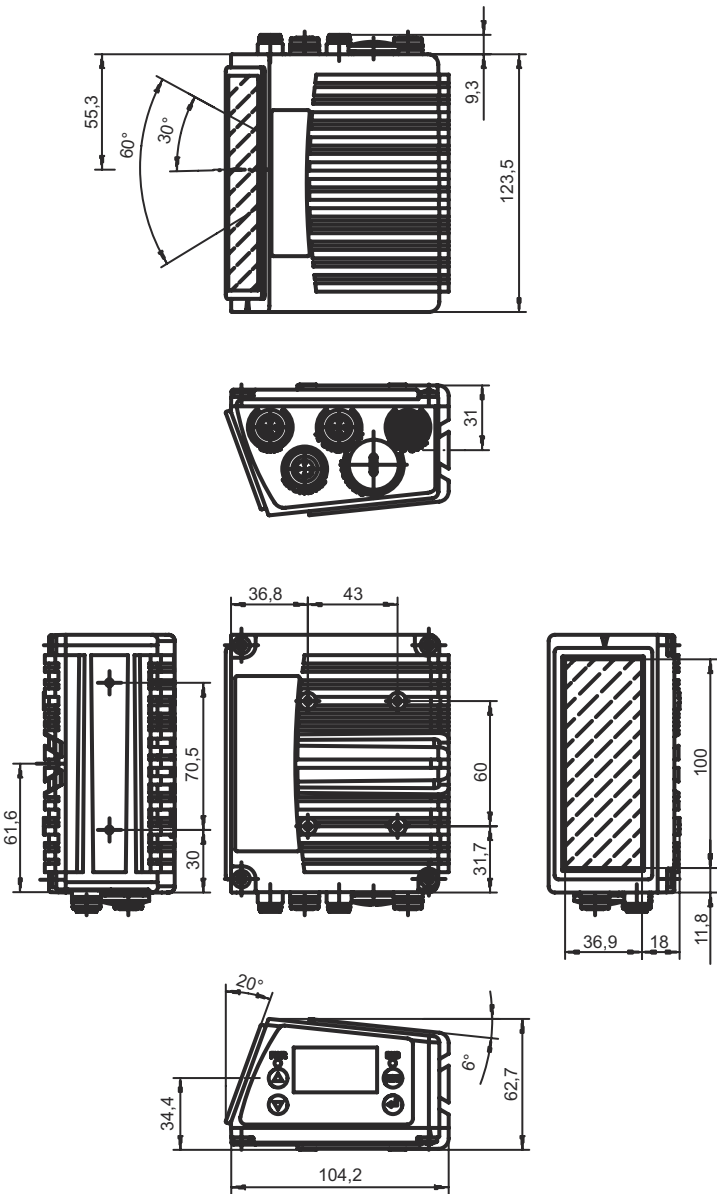
Degree of protection	IP 65
Protection class	III
Certifications	c UL US
Test procedure for EMC in accordance with standard	EN 55022
	EN 61000-4-2, -3, -4, -6
	EN 61000-6-2
Test procedure for shock in accordance with standard	IEC 60068-2-27, test Ea
Test procedure for continuous shock in accordance with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

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

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

Electrical connection

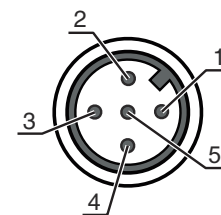
Connection 2

PWR

Function	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Connector
Thread size	M12
Type	Male
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

Pin Pin assignment

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



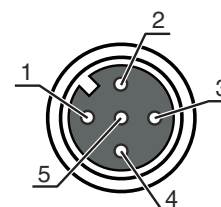
Connection 3

SW IN/OUT

Function	Signal IN
	Signal OUT
Type of connection	Connector
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



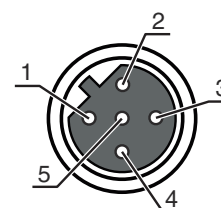
Connection 4

HOST / BUS IN

Function	BUS IN
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin
Encoding	B-coded

Pin Pin assignment

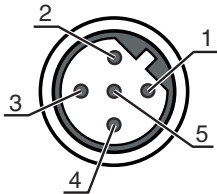
1	Res.
2	A (N)
3	Res.
4	B (P)
5	FE



Electrical connection

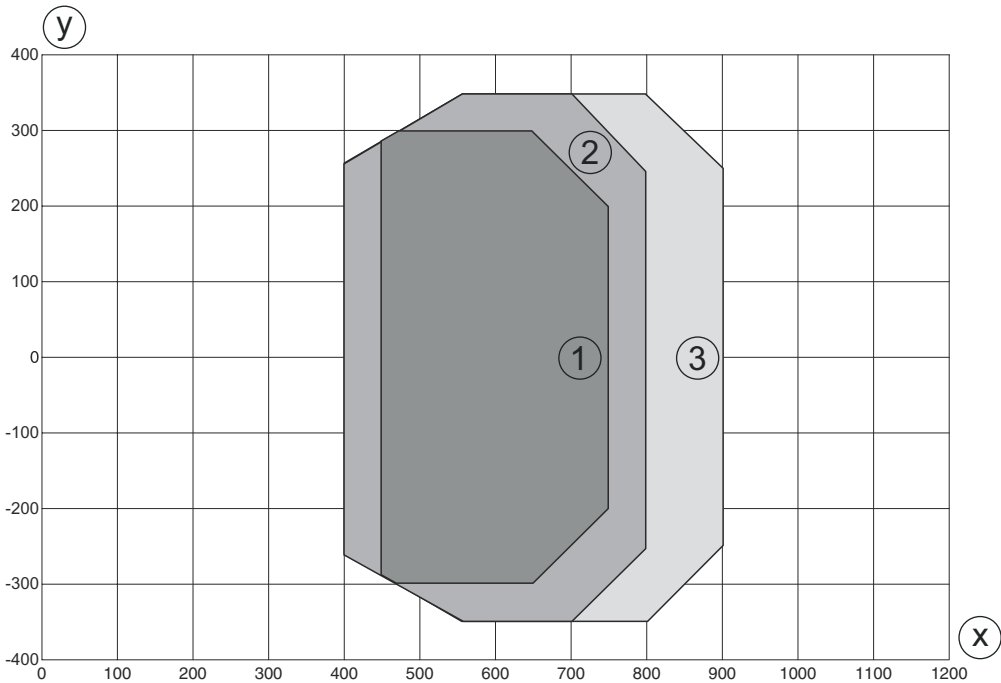
Connection 5		BUS OUT
Function		BUS OUT
Type of connection		Connector
Thread size		M12
Type		Male
Material		Metal
No. of pins		5 -pin
Encoding		B-coded

Pin	Pin assignment
1	VP
2	A (N)
3	GND 485
4	B (P)
5	FE



Diagrams

Reading field curve - Medium Density



- y Reading field width [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

LED	Display	Meaning
1 PWR	Off	No supply voltage
	Green, flashing	Initialization

Operation and display

LED	Display	Meaning
1 PWR	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 website at www.leuze.com.

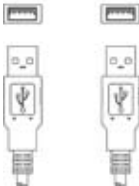
Accessories

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

Accessories

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

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.

Accessories

	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.
	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.

Note



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