



Part no.: 50129095
BCL 604i SF 102
Stationary bar code reader



Figure can vary

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- Dimensioned drawings
- Electrical connection
- Diagrams
- Operation and display
- Part number code
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Technical data

| Basic data | |
|--|--|
| Series | BCL 600i |
| Functions | |
| Functions | Alignment mode AutoConfig AutoControl AutoRefAct Code fragment technology LED indicator Reference code comparison |
| Characteristic parameters | |
| MTTF | 42.4 years |
| 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 | 800 scans/s |
| Bar codes per reading gate, max. number | 64 Piece(s) |
| Optical data | |
| Reading distance | 450 ... 1,450 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 | 0.3 ... 0.5 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 |
| PROFIBUS DP | |
| Function | Process |
| Classification | V1 |
| Transmission speed | 9,600 ... 12,000,000 Mbit/s |

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 | Female |
| 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) | 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 |

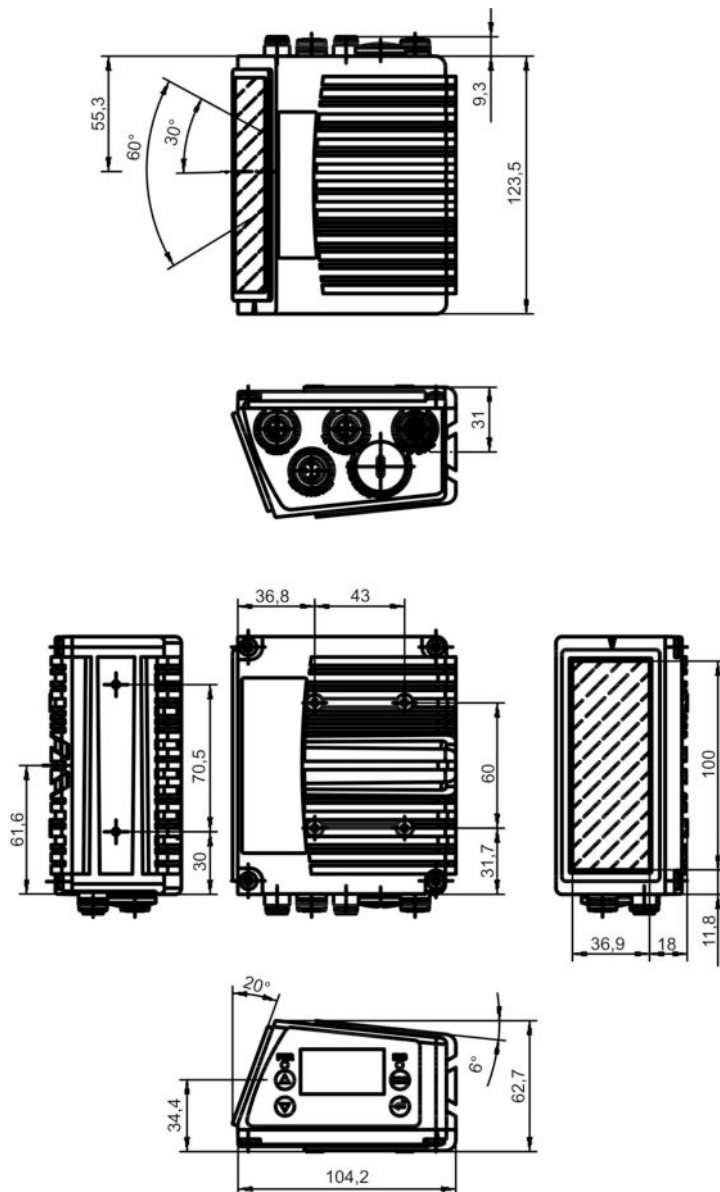
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| | |
|---|-------------------------|
| Test procedure for continuous shock in accordance with standard | IEC 60068-2-29, test Eb |
| Test procedure for vibration in accordance with standard | IEC 60068-2-6, test Fc |
| US patents | US 6,854,649 B |

| 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



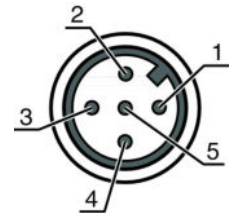
Electrical connection

| 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 |

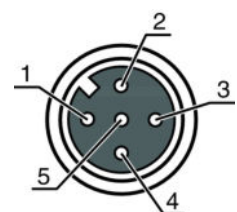
| Connection 2 | PWR |
|--------------------|---|
| Type of connection | Connector |
| Function | Signal IN Signal OUT Voltage supply |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | A-coded |

| 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 |

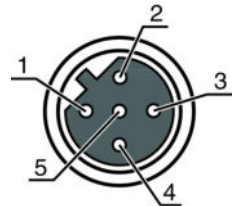
| Pin | Pin assignment |
|-----|----------------|
| 1 | VOUT |
| 2 | SWIO 1 |
| 3 | GND |
| 4 | SWIO 2 |
| 5 | FE |



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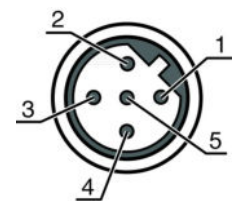
| Connection 4 | HOST / BUS IN |
|--------------------|---------------|
| Type of connection | Connector |
| Function | BUS IN |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | B-coded |

| Pin | Pin assignment |
|-----|----------------|
| 1 | Res. |
| 2 | A (N) |
| 3 | Res. |
| 4 | B (P) |
| 5 | FE |



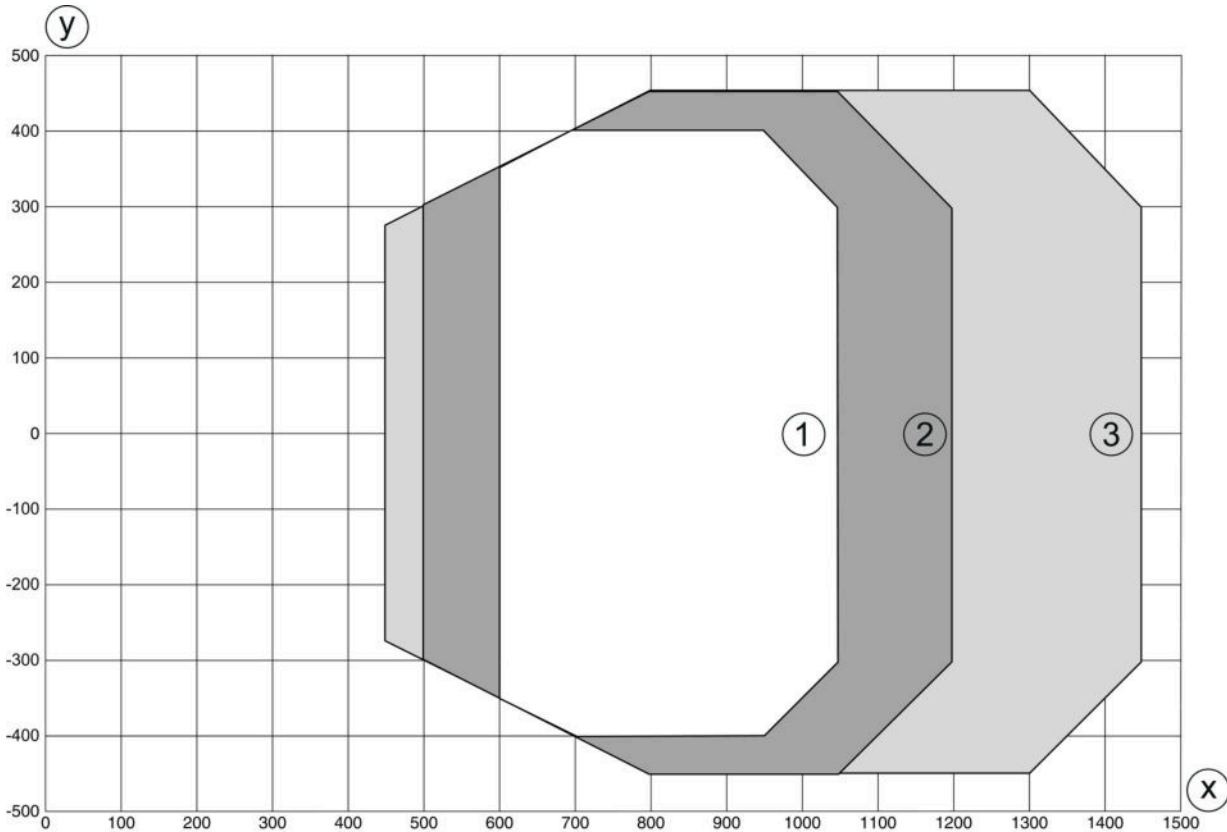
| Connection 5 | BUS OUT |
|--------------------|-----------|
| Type of connection | Connector |
| Function | BUS OUT |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | B-coded |

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



Diagrams

Reading field curve - Low Density



- y Reading field width [mm]
- x Reading field distance [mm]
- 1 Module = 0.3 mm: 600 mm - 1050 mm (450 mm depth of field)
- 2 Module = 0.35 mm: 500 mm - 1200 mm (700 mm depth of field)
- 3 Module = 0.5 mm: 450 mm - 1450 mm (1000 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 |

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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

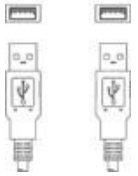
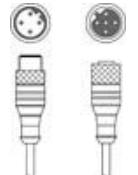
A list with all available device types can be found on the Leuze electronic website at www.leuze.com.

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 |

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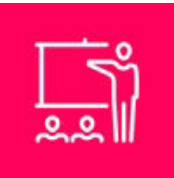

Connection technology - Terminating resistors

| | 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. |
|  | 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 electronic website in the Download tab of the article detailed page.