

## Technical data sheet

### Bar code positioning system

Part no.: 50107325  
BPS 8 SM 102-05



For illustration purposes only

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CDRH



UK  
CA

Technical data

Basic data

|               |  |
|---------------|--|
| Series        | BPS 8                                    |
| Data telegram | Binary protocol 1                        |
| Order guide   | Bar code tape must be ordered separately |

Characteristic parameters

|      |            |
|------|------------|
| MTTF | 67.5 years |
|------|------------|

Optical data

|                          |                        |
|--------------------------|------------------------|
| Depth of field           | 80 ... 140 mm          |
| Light source             | Laser, Red             |
| Wavelength               | 655 nm                 |
| Laser class              | 2, IEC/EN 60825-1:2014 |
| Transmitted-signal shape | Continuous             |
| Light beam exit          | Front                  |

Measurement data

|                          |                     |
|--------------------------|---------------------|
| Measurement range        | 0 ... 10,000,000 mm |
| Resolution               | 0.001 ... 100 mm    |
| Measurement value output | 3.3 ms              |
| Max. traverse rate       | 4 m/s               |

Electrical data

|                    |                         |
|--------------------|-------------------------|
| Protective circuit | Short circuit protected |
|--------------------|-------------------------|

Performance data

|                               |                    |
|-------------------------------|--------------------|
| Supply voltage U <sub>B</sub> | 4.75 ... 5.5 V, DC |
| Current consumption, max.     | 250 mA             |

Inputs/outputs selectable

|                                     |            |
|-------------------------------------|------------|
| Output current, max.                | 100 mA     |
| Number of inputs/outputs selectable | 1 Piece(s) |

Interface

|                       |                      |
|-----------------------|----------------------|
| Type                  | RS 232               |
| RS 232                |                      |
| Function              | Process              |
| Transmission speed    | 1,200 ... 187,500 Bd |
| Data format           | Adjustable           |
| Start bit             | 1                    |
| Data bit              | 8                    |
| Stop bit              | 1                    |
| Parity                | Adjustable           |
| Transmission protocol | Adjustable           |
| Data encoding         | Binary               |

Service interface

|          |         |
|----------|---------|
| Type     | RS 232  |
| RS 232   |         |
| Function | Service |

Connection

|                       |            |
|-----------------------|------------|
| Number of connections | 1 Piece(s) |
|-----------------------|------------|

Connection 1

|                    |                      |
|--------------------|----------------------|
| Function           | Connection to device |
| Type of connection | Connector            |
| Thread size        | M12                  |
| Type               | Male                 |
| Material           | Metal                |
| No. of pins        | 5 -pin               |
| Encoding           | A-coded              |

Mechanical data

|                       |                              |
|-----------------------|------------------------------|
| Design                | Cubic                        |
| Dimension (W x H x L) | 15 mm x 48 mm x 40.3 mm      |
| Housing material      | Metal                        |
| Metal housing         | Diecast zinc                 |
| Lens cover material   | Glass                        |
| Net weight            | 70 g                         |
| Housing color         | Red                          |
|                       | Silver                       |
| Type of fastening     | Dovetail grooves             |
|                       | Mounting thread              |
|                       | Through-hole mounting        |
|                       | Via optional mounting device |

Operation and display

|                 |            |
|-----------------|------------|
| Type of display | LED        |
| Number of LEDs  | 2 Piece(s) |

Environmental data

|                                    |               |
|------------------------------------|---------------|
| Ambient temperature, operation     | 0 ... 40 °C   |
| Ambient temperature, storage       | -20 ... 60 °C |
| Relative humidity (non-condensing) | 0 ... 90 %    |

Certifications

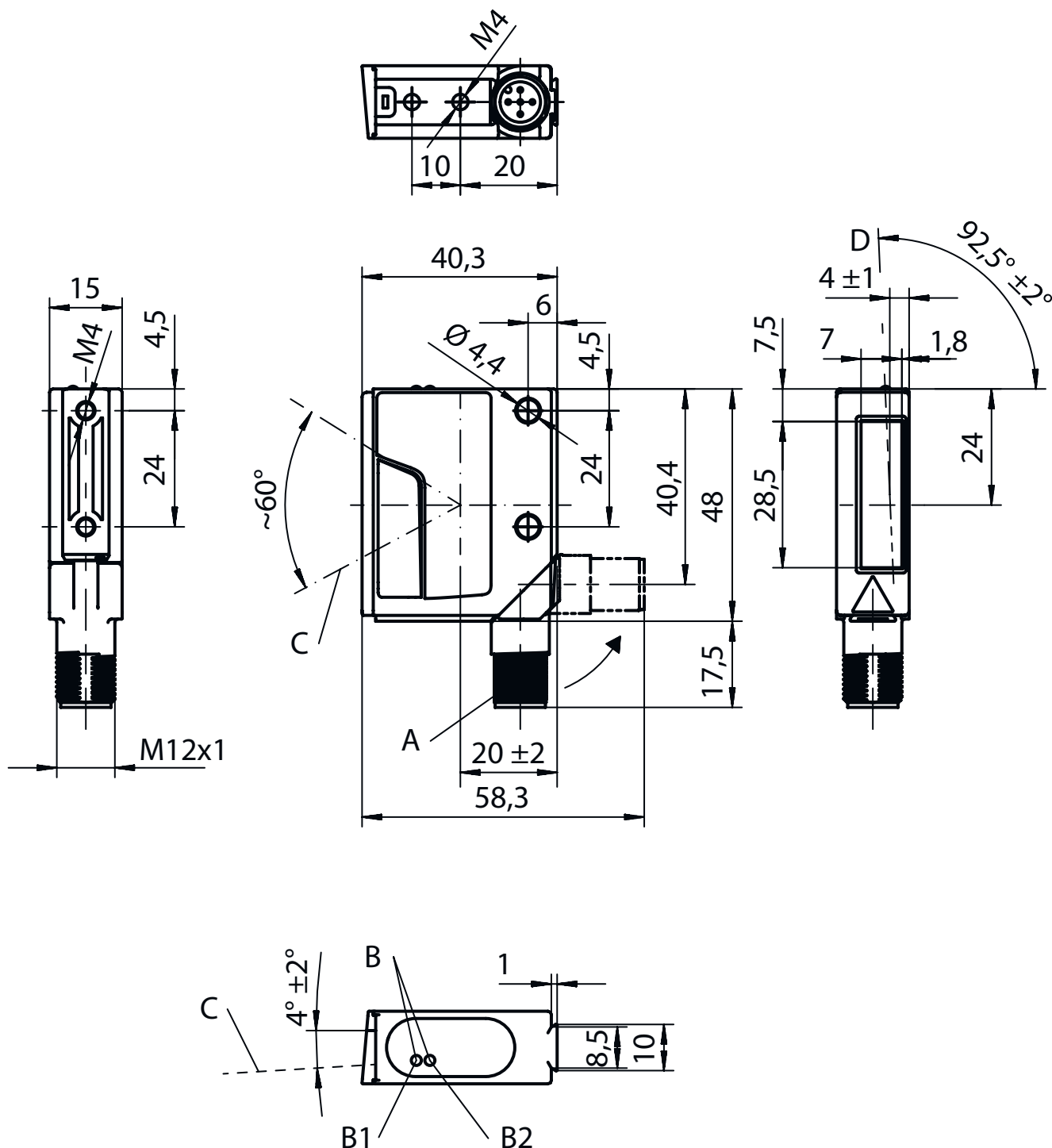
|   |  |
|---|--|
| Degree of protection  | IP 67, EN 60529 with various connectors or screwed-on caps |
| Protection class  | III  |
| Certifications  | c UL US  |
| Test procedure for EMC in accordance with standard              | EN 55022   |
|   | EN 55024   |
|   | EN 61000-4-2, -3, -4, -6                                   |
|   | EN 61000-6-2, -3   |
| Test procedure for shock in accordance with standard            | EN 60068-2-27  |
|   | 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                                     |

Technical data

|                       |          |
|-----------------------|----------|
| Customs tariff number | 84719000 |
| ECLASS 5.1.4          | 27280190 |
| ECLASS 8.0            | 27280190 |
| ECLASS 9.0            | 27280190 |
| ECLASS 10.0           | 27280190 |
| ECLASS 11.0           | 27280190 |
| ECLASS 12.0           | 27280106 |
| ECLASS 13.0           | 27280106 |
| ECLASS 14.0           | 27280106 |
| ETIM 5.0              | EC001825 |
| ETIM 6.0              | EC001825 |
| ETIM 7.0              | EC001825 |
| ETIM 8.0              | EC001825 |
| ETIM 9.0              | EC001825 |

## Dimensioned drawings

All dimensions in millimeters



A Turning connector, turnable by 90°

B Indicator diodes (B1: status LED, B2: decode LED)

C Scanning beam, divergence max. 5 mm at 150 mm reading distance

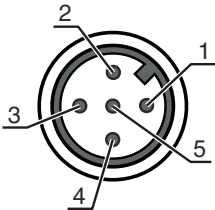
D Optical axis

Electrical connection

Connection 1

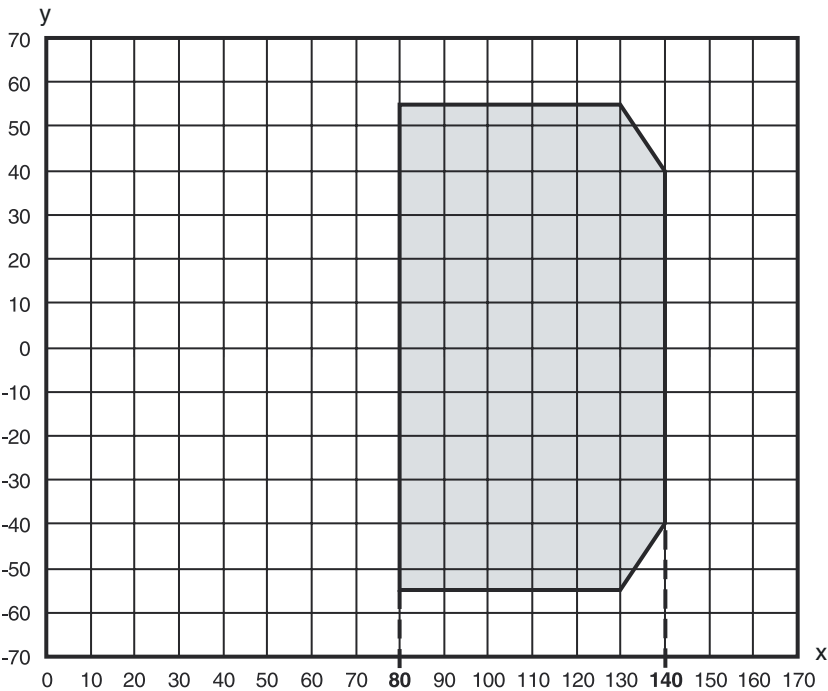
|                    |                      |
|--------------------|----------------------|
| Function           | Connection to device |
| Type of connection | Connector            |
| Thread size        | M12                  |
| Type               | Male                 |
| Material           | Metal                |
| No. of pins        | 5 -pin               |
| Encoding           | A-coded              |

| Pin | Pin assignment |
|-----|----------------|
| 1   | V+             |
| 2   | RS 232 TxD     |
| 3   | GND            |
| 4   | RS 232 RxD     |
| 5   | SW IN/OUT      |



Diagrams

Reading field curve



x    Reading distance [mm]  
y    Reading field width [mm]  
  
Gray Working range

Operation and display

| LED | Display                 | Meaning                                    |
|-----|-------------------------|--|
| 1   | Off                     | No supply voltage                          |
|     | Green, flashing         | Device ok, initialization phase            |
|     | Green, continuous light | Operational readiness                      |
|     | Red, flashing           | Device OK, warning set                     |
|     | Red, continuous light   | Device error                               |
|     | Orange, flashing        | Service operation active                   |
| 2   | Off                     | Positioning deactivated                    |
|     | Green, continuous light | Positioning running (position value valid) |

| LED | Display                  | Meaning                                      |
|-----|--------------------------|--|
| 2   | Red, continuous light    | Positioning running (position value invalid) |
|     | Orange, continuous light | Positioning running (marker label detected)  |

Part number code

Part designation: BPS 8 XX YYY - ZZ

|     |   |
|-----|---|
| XX  | <b>Scanning principle / optics</b><br>S: line scanner (single line)<br>M: Medium Density (medium distance)  |
| YYY | <b>Beam exit</b><br>100: lateral<br>102: front  |
| ZZ  | <b>Presetting</b><br>01 / 05: Binary protocol 1<br>02: Binary protocol 2<br>03: Binary protocol 3<br>04: Binary protocol 4<br>10: Binary protocol 6 |


Note



A list with all available device types can be found on the Leuze website at [www.leuze.com](http://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.

⚠ ATTENTION! LASER RADIATION – CLASS 2 LASER PRODUCT



**Do not stare into beam!**  
The device satisfies the requirements of IEC/EN 60825-1:2014 safety regulations for a product of **laser class 2** as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to Laser Notice No. 56 from May 08, 2019.

- ⚡ Never look directly into the laser beam or in the direction of reflected laser beams! If you look into the beam path over a longer time period, there is a risk of injury to the retina.
- ⚡ Do not point the laser beam of the device at persons!
- ⚡ Interrupt the laser beam using a non-transparent, non-reflective object if the laser beam is accidentally directed towards a person.
- ⚡ When mounting and aligning the device, avoid reflections of the laser beam off reflective surfaces!
- ⚡ CAUTION! Use of controls or adjustments or performance of procedures other than specified herein may result in hazardous light exposure.
- ⚡ Observe the applicable statutory and local laser protection regulations.
- ⚡ The device must not be tampered with and must not be changed in any way.  
There are no user-serviceable parts inside the device.  
Repairs must only be performed by Leuze electronic GmbH + Co. KG.

## Notes

## NOTE



**Affix laser information and warning signs!**

Laser information and warning signs are affixed to the device. In addition, self-adhesive laser information and warning signs (stick-on labels) are supplied in several languages.


- ✎ Affix the laser information sheet to the device in the language appropriate for the place of use. When using the device in the US, use the stick-on label with the "Complies with 21 CFR 1040.10" note.
- ✎ Affix the laser information and warning signs near the device if no signs are attached to the device (e.g. because the device is too small) or if the attached laser information and warning signs are concealed due to the installation position.
- ✎ Affix the laser information and warning signs so that they are legible without exposing the reader to the laser radiation of the device or other optical radiation.

## Accessories


## Connection technology - Connection unit

|  | Part no. | Designation              | Article                 | Description   |
|--|----------|--------------------------|-------------------------|---|
|    | 50112891 | MA 248i Profinet Gateway | Modular connection unit | Supply voltage: 18 ... 30 V<br>Current consumption, max.: 300 mA<br>Interface: PROFINET, RS 232<br>Connections: 6 Piece(s)<br>Degree of protection: IP 65 |
|  | 50104790 | MA 8-01                  | Modular connection unit | Supply voltage: 10 ... 30 V<br>Current consumption, max.: 50 mA<br>Interface: RS 485<br>Connections: 3 Piece(s)<br>Degree of protection: IP 67            |

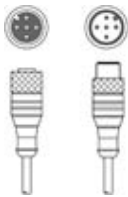
## Connection technology - Connection cables

|   | Part no. | Designation   | Article          | Description  |
|---|----------|---------------|------------------|--|
|  | 50040757 | KB 008-3000 A | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 3.000 mm<br>Sheathing material: PUR |


## Connection technology - Interconnection cables

|  | Part no. | Designation         | Article               | Description  |
|--|----------|---------------------|-----------------------|--|
|  | 50113467 | KB JST-M12A-5P-3000 | Interconnection cable | Suitable for interface: RS 232<br>Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connection 2: JST ZHR, 12 -pin<br>Shielded: Yes<br>Cable length: 3,000 mm<br>Sheathing material: PUR |


## Accessories

|  | Part no. | Designation                | Article               | Description  |
|--|----------|----------------------------|-----------------------|--|
|  | 50133890 | KDS S-M12-5A-M12-5A-P1-020 | Interconnection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin<br>Shielded: Yes<br>Cable length: 2,000 mm<br>Sheathing material: PUR |



## Mounting technology - Mounting brackets

|   | Part no. | Designation | Article         | Description   |
|---|----------|-------------|-----------------|---|
|  | 50104791 | BT 8-01     | Mounting device | Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Material: Metal |

## Mounting technology - Rod mounts

|   | Part no. | Designation  | Article         | Description  |
|---|----------|--------------|-----------------|--|
|  | 50127177 | BTU 008M-D10 | Mounting system | Design of mounting device: Mounting system<br>Fastening, at system: Sheet-metal mounting, For 10 mm rod<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Turning, 360°, Adjustable, Clampable<br>Material: Metal |

## Bar code tape

|  | Part no. | Designation      | Article       | Description  |
|--|----------|------------------|---------------|--|
|  | 50144173 | BCB G30 H25 L010 | Bar code tape | Dimensions: 25 mm x 10,000 mm<br>Grid dimension: 30 mm |
|  | 50104792 | BCB G30 H47 L010 | Bar code tape | Dimensions: 47 mm x 10,000 mm<br>Grid dimension: 30 mm |

## Note



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