



**VARIO B**

**Switching light curtains**

Part No. 501 07954



5m



- Throughbeam principle with high performance reserve and integrated evaluation
- Automatic beam calibration after installation
- Configurable function scope (switching threshold, warning function, beam suppression, detection range)
- Additional diagonal beam evaluation for increasing the detection reliability and resolution
- Beam spacings 5 / 12.5 / 25 / 50 / 100mm
- Broad range of models; cable and M8 models, PNP and NPN models



We reserve the right to make changes • DB\_varioB\_gb.fm

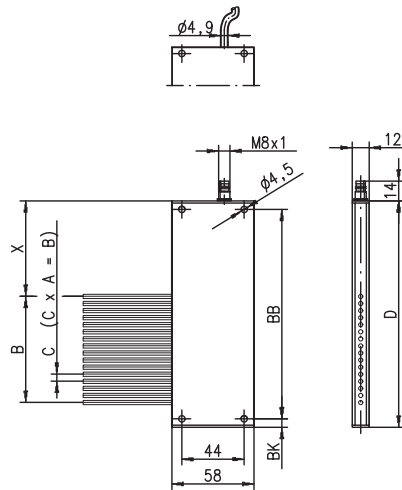
**Accessories:**

(available separately)

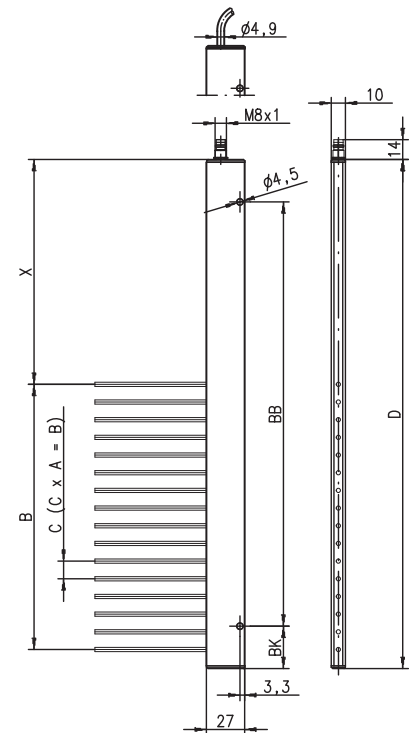
- PC - interface module VB-Int-232  
Part No. 501 07711
- Cable with M8 connector
- PC - configuration software VARIOsoft, download from:  
<http://www.leuze.de/downloads/los/08/variosoft.zip>

**Dimensioned drawing**

VARIO with beam spacing = 5 mm



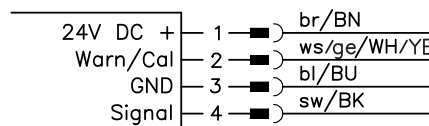
VARIO with beam spacing > 5 mm



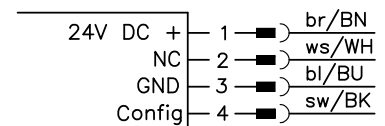
- A** Beam spacing
  - B** Measurement field length
  - C** Number of beams
  - D** Profile length
  - BB** Distance bore hole - bore hole
  - BK** Distance bore hole - profile edge
  - X** Distance first beam - profile edge
- see dimension table on page 3!**

**Electrical connection**

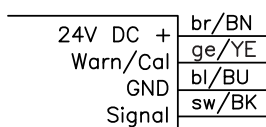
Receiver / M8



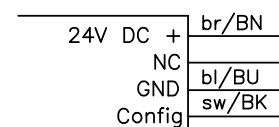
Transmitter / M8



Receiver / cable



Transmitter / cable





## Specifications

### Optical data

|                               |   |
|-------------------------------|---|
| Operating range               | 0.7 ... 5 m   |
| Maximum number of beams       | 96  |
| Light source                  | LED (modulated light)                               |
| Wavelength                    | 880nm   |
| Permissible angular deviation | ±10° (between the transmitter bar and receiver bar) |

### Time behaviour

|            |  |
|------------|--|
| Cycle time | parallel beam analysis: 1 ms but min. 30ms<br>parallel and diagonal beam analysis: 2ms but min. 60ms |
|------------|--|

### Electrical data

|                                       |                       |
|---------------------------------------|-----------------------|
| Operating voltage $U_B$ <sup>1)</sup> | 24VDC (+20%; -15%)    |
| Power consumption                     | approx. 8W (total)    |
| Outputs <sup>2)</sup>                 | semiconductor outputs |
|                                       | /4: PNP               |
|                                       | /2: NPN               |
| Output current                        | max. 200 mA           |

### Indicators

|              |   |
|--------------|---|
| Control LEDs | 2 x status LEDs in receiver bar,<br>1 x status LED in transmitter bar |
|--------------|---|

### Mechanical data

|                       |  |
|-----------------------|--|
| Light curtain housing | aluminium, natural anodising, front cover made of plastic, dark red.<br>(Do not use any cleaning agents containing solvents!)  |
| Profile cross section | 12 x 58mm at 5mm beam spacing<br>10 x 27 mm at other beam spacings   |
| Connection            | receiver: 4-pin, transmitter 3-pin<br><b>,4000:</b> cable variants,<br>round lines with PVC sheathing Ø 4.9mm,<br>length 4m, with ferruled ends<br><b>-S8:</b> M8 connector, 4-pin |
| Core cross section    | 0.34mm <sup>2</sup>  |

### Environmental data

|  |  |
|--|--|
| Ambient temperature (operation)        | -10°C ... +45°C  |
| Humidity                               | up to 90 % relative, non-condensing  |
| Interference rejection – ambient light | operation with no interference with the effect caused by a halogen light source, 500W, outside the ±15° angular range of the beam axis at a distance of ≥ 1 m.<br>operation with no interference with sunshine up to 200,000LUX outside the ±25° angular range of the beam axis. |
| Protection class                       | IP 54  |
| Standards applied                      | EN 61000-6-3/4 and EN 60947-5-2,<br>EN 61000-6-1/2 and EN 60947-5-2,<br>EN 61000-4-2   |

### Options

- Automatic calibration
- 1) 2=polarity reversal protection, use a grounded voltage supply!  
2) 2=polarity reversal protection, 3=short-circuit protection for all transistor outputs

## Order guide

The products of the **VARIO B** series are characterised by a broad range of models.

Please order the desired light curtain using the **type code on page 4!**

**Beam spacing A** and **measurement field length B** of a transmitter/receiver pair must be the same!

### Transmitter bar

### Receiver bar

### Designation

VBT ...

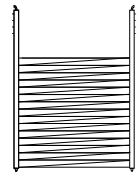
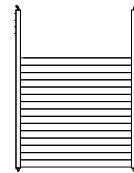
IVBR ...

## Tables

| Measurement function          | Light switching      | Dark switching |
|-------------------------------|----------------------|----------------|
|                               | Parallel beam method | <b>00</b>      |
| Parallel+diagonal beam method | <b>01</b>            | <b>03</b>      |

00 / 02

01 / 03



## Remarks

- A VB-INT-232 interface module (Part No. 501 07711) is necessary for configuring the VARIO B light curtains using a PC and the VARIOsoft configuration software.
- Download the VARIOsoft configuration software:  
<http://www.leuze.de/downloads/los/08/variosoft.zip>



## VARIO B

## Switching light curtains

## Dimension table

| Part master | Beam spacing A | Measurement field length B | Number of beams C | Profile length D | BK  | Number of bore holes | BB  | Profile thickness | Profile depth | Distance X |
|-------------|----------------|----------------------------|-------------------|------------------|-----|----------------------|-----|-------------------|---------------|------------|
| VB-5-35     | 5              | 35                         | 8                 | 120              | 6   | 4                    | 108 | 12                | 58            | 67.5       |
| VB-5-75     | 5              | 75                         | 16                | 160              | 6   | 4                    | 148 | 12                | 58            | 67.5       |
| VB-5-115    | 5              | 115                        | 24                | 200              | 6   | 4                    | 188 | 12                | 58            | 67.5       |
| VB-5-155    | 5              | 155                        | 32                | 240              | 6   | 4                    | 228 | 12                | 58            | 67.5       |
| VB-5-195    | 5              | 195                        | 40                | 280              | 6   | 4                    | 268 | 12                | 58            | 67.5       |
| VB-5-235    | 5              | 235                        | 48                | 320              | 6   | 4                    | 308 | 12                | 58            | 67.5       |
| VB-5-275    | 5              | 275                        | 56                | 360              | 6   | 4                    | 348 | 12                | 58            | 67.5       |
| VB-5-315    | 5              | 315                        | 64                | 400              | 6   | 4                    | 388 | 12                | 58            | 67.5       |
| VB-12.5-88  | 12.5           | 88                         | 8                 | 260              | 30  | 2                    | 200 | 10                | 27            | 158.5      |
| VB-12.5-188 | 12.5           | 188                        | 16                | 360              | 30  | 2                    | 300 | 10                | 27            | 158.5      |
| VB-12.5-288 | 12.5           | 288                        | 24                | 460              | 80  | 2                    | 300 | 10                | 27            | 158.5      |
| VB-12.5-388 | 12.5           | 388                        | 32                | 560              | 80  | 2                    | 400 | 10                | 27            | 158.5      |
| VB-12.5-488 | 12.5           | 488                        | 40                | 660              | 80  | 2                    | 500 | 10                | 27            | 158.5      |
| VB-12.5-588 | 12.5           | 588                        | 48                | 760              | 30  | 2                    | 700 | 10                | 27            | 158.5      |
| VB-12.5-688 | 12.5           | 688                        | 56                | 860              | 80  | 2                    | 700 | 10                | 27            | 158.5      |
| VB-12.5-788 | 12.5           | 788                        | 64                | 960              | 80  | 2                    | 800 | 10                | 27            | 158.5      |
| VB-25-175   | 25             | 175                        | 8                 | 360              | 30  | 2                    | 300 | 10                | 27            | 165        |
| VB-25-375   | 25             | 375                        | 16                | 560              | 80  | 2                    | 400 | 10                | 27            | 165        |
| VB-25-575   | 25             | 575                        | 24                | 760              | 30  | 2                    | 700 | 10                | 27            | 165        |
| VB-25-775   | 25             | 775                        | 32                | 960              | 80  | 3                    | 400 | 10                | 27            | 165        |
| VB-25-975   | 25             | 975                        | 40                | 1160             | 80  | 3                    | 500 | 10                | 27            | 165        |
| VB-25-1175  | 25             | 1175                       | 48                | 1360             | 80  | 3                    | 600 | 10                | 27            | 165        |
| VB-25-1375  | 25             | 1375                       | 56                | 1560             | 30  | 4                    | 500 | 10                | 27            | 165        |
| VB-25-1575  | 25             | 1575                       | 64                | 1760             | 130 | 4                    | 500 | 10                | 27            | 165        |
| VB-25-1775  | 25             | 1775                       | 72                | 1960             | 80  | 4                    | 600 | 10                | 27            | 165        |
| VB-25-2175  | 25             | 2175                       | 88                | 2360             | 140 | 5                    | 520 | 10                | 27            | 165        |
| VB-25-2375  | 25             | 2375                       | 96                | 2560             | 80  | 5                    | 600 | 10                | 27            | 165        |
| VB-50-350   | 50             | 350                        | 8                 | 560              | 80  | 2                    | 400 | 10                | 27            | 190        |
| VB-50-750   | 50             | 750                        | 16                | 960              | 80  | 3                    | 400 | 10                | 27            | 190        |
| VB-50-1150  | 50             | 1150                       | 24                | 1360             | 80  | 3                    | 600 | 10                | 27            | 190        |
| VB-50-1550  | 50             | 1550                       | 32                | 1760             | 130 | 4                    | 500 | 10                | 27            | 190        |
| VB-50-1950  | 50             | 1950                       | 40                | 2160             | 80  | 5                    | 500 | 10                | 27            | 190        |
| VB-50-2350  | 50             | 2350                       | 48                | 2560             | 80  | 5                    | 600 | 10                | 27            | 190        |
| VB-50-2750  | 50             | 2750                       | 56                | 2960             | 80  | 5                    | 700 | 10                | 27            | 190        |
| VB-50-3150  | 50             | 3150                       | 64                | 3360             | 80  | 5                    | 800 | 10                | 27            | 190        |
| VB-100-700  | 100            | 700                        | 8                 | 970              | 85  | 3                    | 400 | 10                | 27            | 250        |
| VB-100-1100 | 100            | 1100                       | 12                | 1370             | 85  | 3                    | 600 | 10                | 27            | 250        |
| VB-100-1500 | 100            | 1500                       | 16                | 1770             | 135 | 4                    | 500 | 10                | 27            | 250        |
| VB-100-1900 | 100            | 1900                       | 20                | 2170             | 85  | 5                    | 500 | 10                | 27            | 250        |
| VB-100-2300 | 100            | 2300                       | 24                | 2570             | 85  | 5                    | 600 | 10                | 27            | 250        |
| VB-100-2700 | 100            | 2700                       | 28                | 2970             | 85  | 5                    | 700 | 10                | 27            | 250        |
| VB-100-3100 | 100            | 3100                       | 32                | 3370             | 85  | 5                    | 800 | 10                | 27            | 250        |

A = beam spacing  
 B = measurement field length  
 C = number of beams  
 D = profile length

BK = distance bore hole to profile edge (connector/cable end)  
 BB = distance bore hole to bore hole  
 X = distance profile edge to first beam (connector/cable end)

Tolerance of the beam positions: ± 2mm

**All dimensions in mm !**



### Type code

#### Type code VARIO B - transmitter

**VBT** - 12.5 - 788 .4000

Type:

VBT VARIO B transmitter

Beam spacing A in mm:

- 5
- 12.5
- 25
- 50
- 100

Measurement field length B in mm:

see following table "Measurement field length"

Electrical connection:

- S8 M8 connector
- ,4000 cable, length in mm

#### Type code VARIO B - receiver

**IVBR / 4** - 12.5 - 788 - 00 .4000

Type:

IVBR VARIO B receiver with warning output

Output circuit:

- 2 NPN
- 4 PNP

Beam spacing in mm:

- 5
- 12.5
- 25
- 50
- 100

Measurement field length in mm:

see following table "Measurement field length"

Measurement function:

- 00 light switching, parallel beam analysis (HP)
- 01 light switching, parallel and diagonal beam analysis (HD)
- 02 dark switching, parallel beam analysis (DP)
- 03 dark switching, parallel and diagonal beam analysis (DD)

Electrical connection:

- S8 M8 connector
- ,4000 cable, length in mm

#### Measurement field length

|                     |      | Measurement field length B [mm] |      |      |      |      |      |      |      |                    |                    |                    |
|---------------------|------|---------------------------------|------|------|------|------|------|------|------|--------------------|--------------------|--------------------|
| Beam spacing A [mm] | 5    | 35                              | 75   | 115  | 155  | 195  | 235  | 275  | 315  |                    |                    |                    |
|                     | 12.5 | 88                              | 188  | 288  | 388  | 488  | 588  | 688  | 788  |                    |                    |                    |
|                     | 25   | 175                             | 375  | 575  | 775  | 975  | 1175 | 1375 | 1575 | 1775 <sup>1)</sup> | 2175 <sup>1)</sup> | 2375 <sup>1)</sup> |
|                     | 50   | 350                             | 750  | 1150 | 1550 | 1950 | 2350 | 2750 | 3150 |                    |                    |                    |
|                     | 100  | 700                             | 1100 | 1500 | 1900 | 2300 | 2700 | 3100 |      |                    |                    |                    |

1) only with PNP switching output, available as cable version and with measurement function 00!