## VARIO B — Switching light curtains

Part No. 501 07954

**5m**

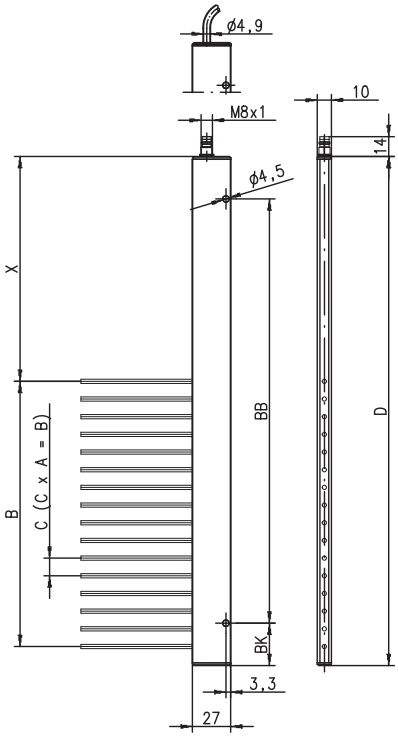
24 V DC

- 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

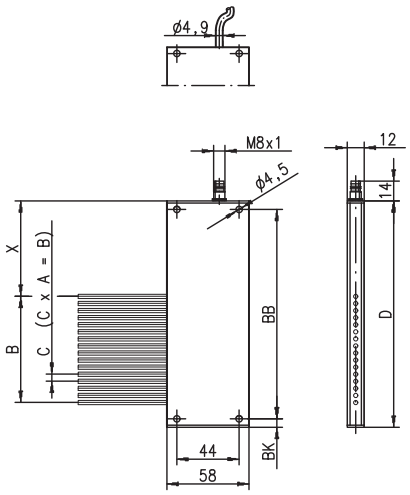
IP 54

## Dimensioned drawing

VARIO with beam spacing > 5mm



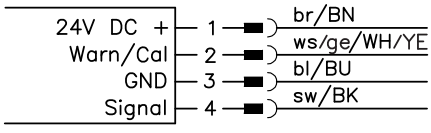

VARIO with beam spacing = 5mm



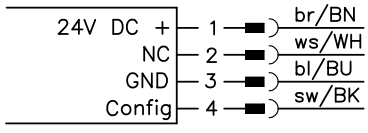

**A** Beam spacing
**B** Measurement field length
**C** Number of beams
**D** Profile length
**BB** Distance bore hole - bore hole
**BK** Distance bore hole - profile edge
**X** Distance first beam - profile edge
**see dimension table on page 3!**

## Electrical connection

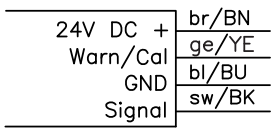
Receiver / M8



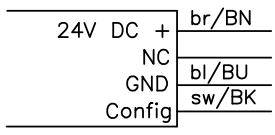

Transmitter / M8




Receiver / cable




Transmitter / cable




## 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

## Specifications

**Optical data**

| | |
|---|---|
| Operating range | 0.7 … 5m |
| 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: 1ms but min. 30ms<br>parallel and diagonal beam analysis: 2ms but min. 60ms |

**Electrical data**

| | |
|---|---|
| Operating voltage $U_B$[1)] | 24VDC (+20%; -15%) |
| Power consumption | approx. 8W (total) |
| Outputs[2)] | semiconductor outputs<br>/4: PNP<br>/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 27mm at other beam spacings |
| Connection | receiver: 4-pin, transmitter 3-pin<br>**,4000**: cable variants,<br>round lines with PVC sheathing Ø 4.9mm,<br>length 4m, with ferruled ends<br>**-S8**: M8 connector, 4-pin |
| Core cross section | 0.34mm$^2$ |

**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 ≥ 1m.<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**

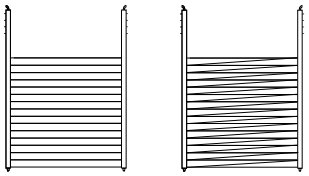
Automatic calibration

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

## Tables

| Measurement function | Light switching | Dark switching |
|---|---|---|
| Parallel beam method | **00** | **02** |
| Parallel+diagonal beam method | **01** | **03** |

00 / 02 01 / 03



## 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!

| | **Designation** |
|---|---|
| **Transmitter bar** | VBT … |
| **Receiver bar** | IVBR … |

## 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

## 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 – 0788 ,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 – 0788 – 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[1)] | 2175[1)] | 2375[1)] |
| | 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!