

## PR4 Precision one-way light curtain

### Applications

- Detection of any shaped objects
- Hole detection
- Detection of objects in any positions
- Used in packing machines
- Detection of transparent objects
- Developed for a rough industrial use



### Features

- The special automatic calibration guarantees a safe operation.
- High immunity to all types of ambient light.

### Functional overview

The product is an one-way light-curtain. This means the emitter and the receiver is mounted in separate housings. The receiver housing contains two indication LEDs. An orange LED to indicate the state "ready" and a red one to indicate the state of control. During an interruption of the light curtain the red LED lights up.

### Calibration

After the operating voltage is switched on, the calibration starts automatically

A calibration is always performed automatically after the operating voltage is switched on.

It is also possible to calibrate during operation by activating the CAL-input (orange wire).

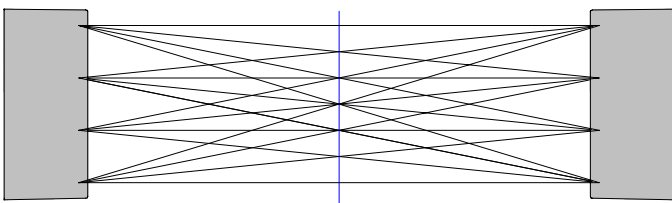
- **DURING THE CALIBRATIONPROCESS; IT IS NOT ALLOWED THAT AN OBJECT IS IN THE WORKING AREA OF THE LIGHT CURTAIN!**

*Otherwise wrong conditions would be stored in the calibration data.*

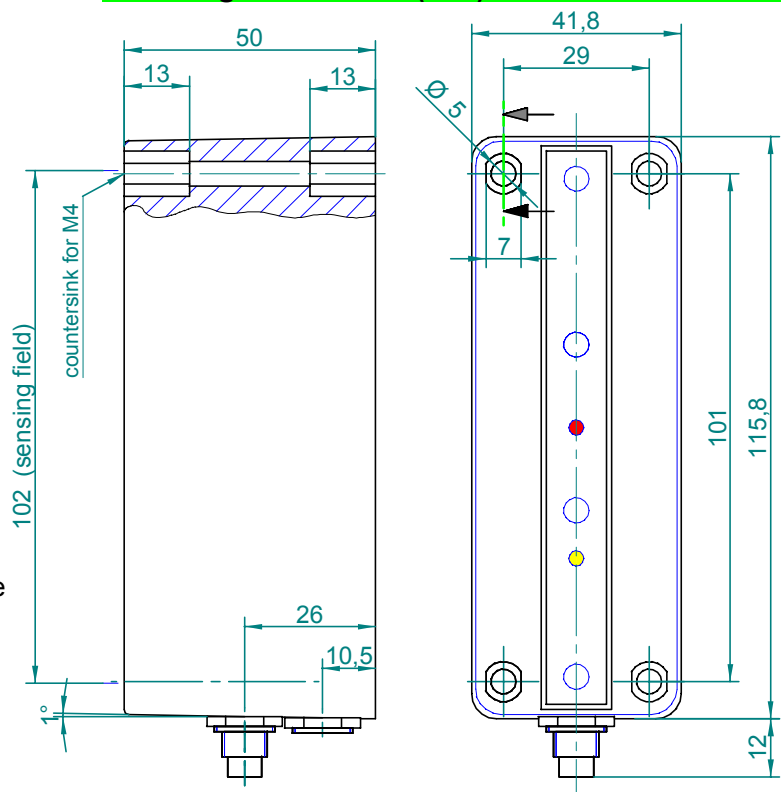
- **THE POSITION OF TRANSMITTER AND RECEIVER HAS NOT TO BE CHANGED AFTER THE CALIBRATION!**

After the calibration the orange LED lights up.

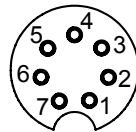
### Crossed beams evaluation (16 beams)



### Housing dimensions (mm)



### Connecting chart



- 1 = RD +UB (24-28 VDC)
  - 2 = BK GND (0 V)
  - 3 = BL not connected
  - 4 = YE PNP-output (100 mA), red LED\*
  - 5 = OR CAL-input (4 kΩ)
  - 6 = GN PNP-ready out (100 mA), orange LED
  - 7 = not connected
- \*alternativ NPN-OUTPUT (200 Ohm)

### Factory-delivered programming

**Sensitivity: level 1, 2, 3 or 4**

Look: „advisable setting of sensitivity“ on the back of this sheet.

### Notes

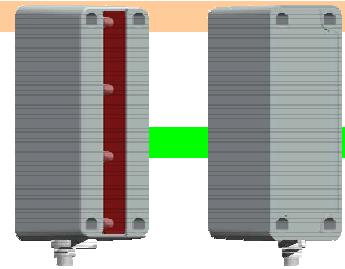
**By mounting two or more light curtains there must be taken care, that the RECEIVER receives only the light beams of the belonging EMITTER.**

Because of the high precision and resolution of the light curtain, avoid reflected (mirrored) beams.

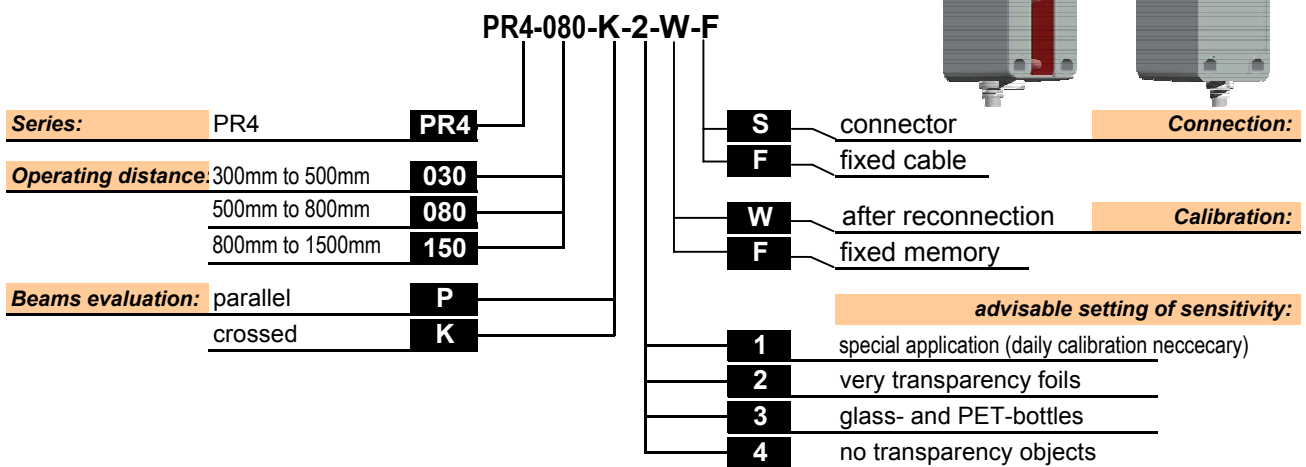
The light curtain has to be mounted and programmed by an authorised person.

To guarantee the proper function of the light curtain, all technical data has to be respected. The usage outside the listed technical data may destroy the equipment.

| Technical data                 | PR4-030-...   | PR4-080-... | PR4-150-... |
|--------------------------------|---|-------------|-------------|
| Number of beams                | 4   |             |             |
| Light type                     | infrared, pulsed  |             |             |
| Sensing field                  | 102 mm  |             |             |
| Beam spacing                   | 33 mm   |             |             |
| Operating distance             | 300 - 500   | 500 - 800   | 800 - 1500  |
| Resolution (crossed mode)      | Ø15mm   | Ø16mm       | Ø17mm       |
| Power supply                   | 24 - 28 VDC   |             |             |
| Current consumption            | about 100 mA without load                                       |             |             |
| PNP output                     | PNP-transistor, open collector, 100 mA, short circuit protected |             |             |
| Response time (crossed mode)   | 2 ms  | 2 ms        | 5 ms        |
| On / off cycles (crossed mode) | 100/s   | 100/s       | 5/s         |
| Mode of operation              | dark mode   |             |             |
| Indicators                     | orange LED and red LED  |             |             |
| Calibration                    | period ca. 10 s   |             |             |
| Sensitivity                    | level: 1, 2, 3, 4   |             |             |
| Housing material               | black glas fibre strengthen plastic                             |             |             |
| Housing dimensions (mm)        | 50 x 41.7 x 115.7   |             |             |
| Optic material                 | PMMA, red colour  |             |             |
| Mechanical protection          | IP 65 (EN60529)   |             |             |
| Connection                     | fixed cable or connector (M8, 7 pin)                            |             |             |
| Operating temperature          | -10°C to +50°C  |             |             |
| Storage temperature            | -20°C to +70°C  |             |             |
| Weight                         | receiver: 120g / emitter: 110g                                  |             |             |



## Ordering example



## Accessoirs

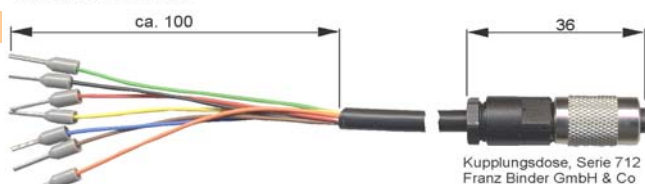
### Connection cable ( between receiver and emitter device ) :

Available lengths: 2,5m and 4m  
Connections: Female connector, M8x1, 7-pole  
Male connector, M8x1, 7-pole  
Mechanical protection: IP 65



### Connect up cable (for receiver) :

Available lengths: 5m and 10m  
Connection: Female connector, M8x1, 7-pole  
Mechanical protection: IP 65



### Used cable

Technical data: 7-wires, AWG 26, outside diameter ca. 4,8mm, cable sheath made of special-PVC, colour matt black

Approbation: UL-Style-No. 2464 und UL-Style-No. 1061  
VDE 0881 und VDE 0472 § 803 b