

PR32 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
- Measuring size and position of objects: absolute and relative



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. After the calibration the orange LED lights up.

- **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!**

Attention!!!

After a new installation the red LED lights up. This means, the old calibration data have to be overwritten by a new CAL-order.

It is recommended to calibrate once a day.

Factory-delivered programming

1. Variation [W] = calibration after power on

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).

2. Variation [F] = fixed memory

A calibration follows only after an order by the orange CAL-input wire. These calibration data are stored and used again after power on.

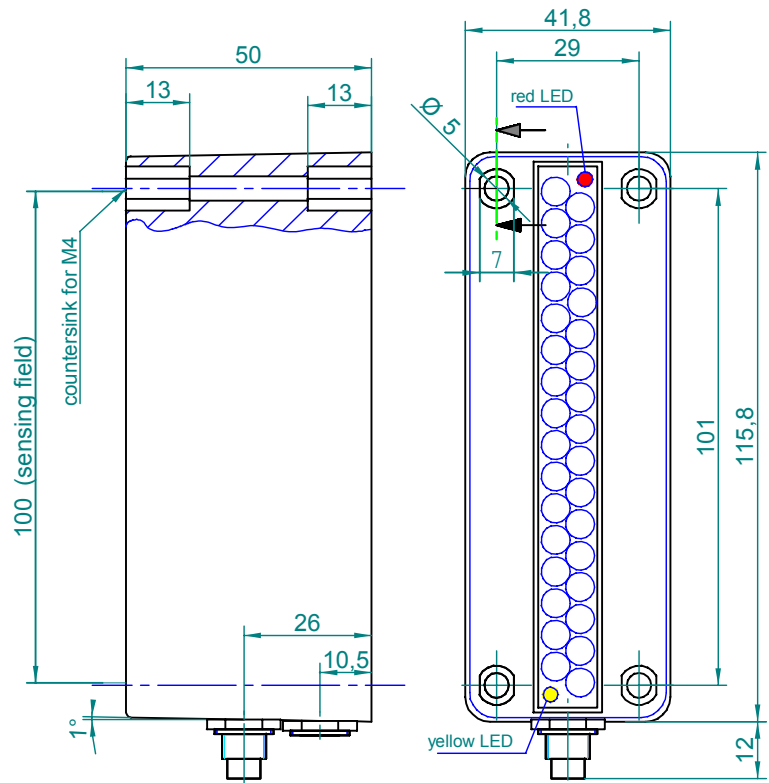
3. Sensitivity [level 1, 2, 3 or 4]

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

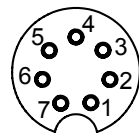
4. Beams evaluation [P] or [K]

The beams can be factory-delivered in a parallel mode [P] or crossed mode [K].

Housing dimensions (mm)



Connecting chart



- 1 = RD +UB (24-28 VDC)
- 2 = BK GND (0 V)
- 3 = BL Analog output (4-20 mA)
- 4 = YE PNP-output (100 mA), red LED
- 5 = OR CAL-input (4 kΩ)
- 6 = GN PNP-ready out (100 mA), orange LED
- 7 = BN program in/+UB (24-28 VDC)

Notes

The brown connection wire is only used for programming and has to be connected to +24VDC operating voltage.

The ANALOG-output (blue wire): is an current output. Therefore this output has to be connected to GND. The allowed range of the load-resistor is: 0...400 Ohm.

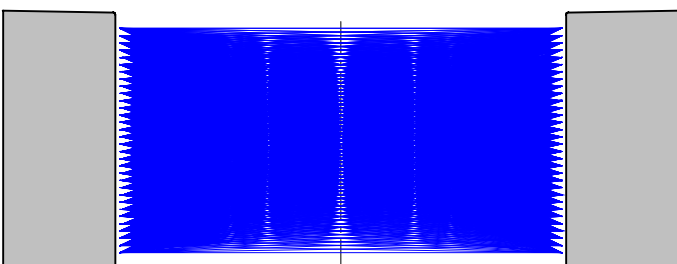
By mounting two or more light curtains there must be taken care, that the RECEIVER receives only the light beams of the belonging EMITTER.

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

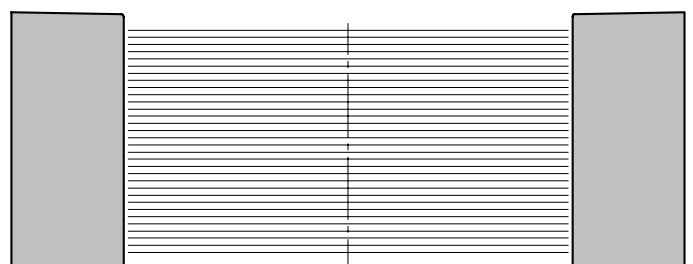
The light curtain has to be mounted and programmed by an authorised person.

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

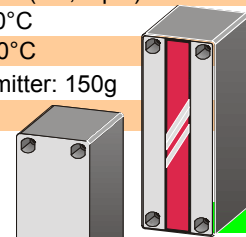
Crossed beams evaluation (1024 beams)



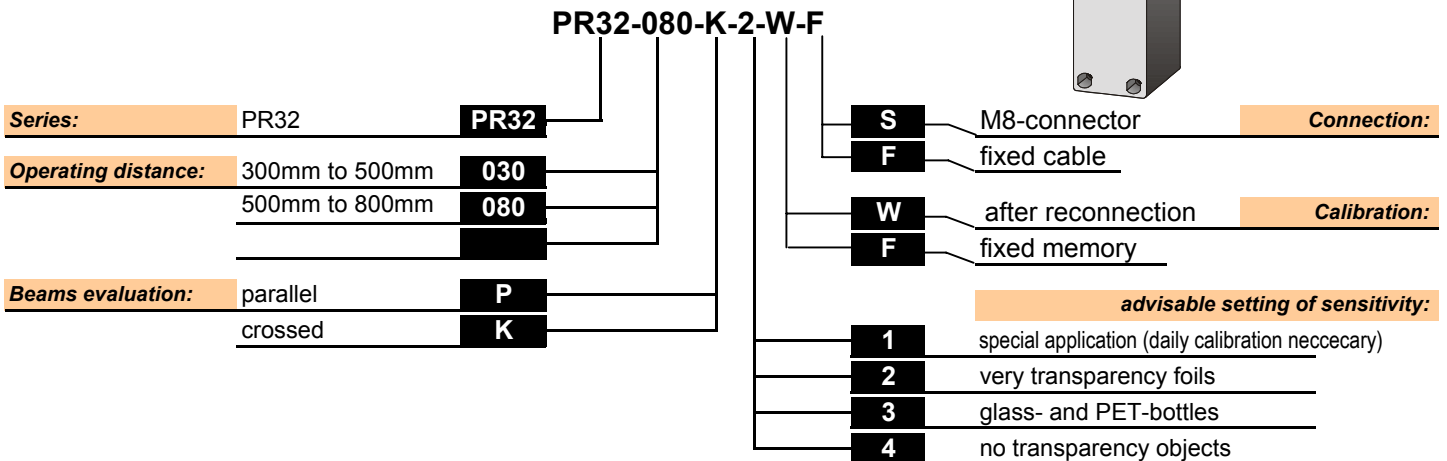
Parallel beams evaluation (32 beams)



Technical data	PR32-030-...	PR32-080-...	PR32-150-...
Number of beams		32	
Light type		infrared, pulsed	
Sensing field		100 mm	
Beam spacing		3 mm	
Operating distance	300 - 500	500 - 800	800 - 1500
Resolution (parallel mode)	Ø1,5 mm	Ø2 mm	Ø3 mm
Resolution (crossed mode)	Ø0,5 mm	Ø1 mm	Ø1,5 mm
Power supply		24 - 28 VDC	
Current consumption		about 100 mA without load	
PNP output		PNP-transistor, open collector, 100 mA, short circuit protected	
Analog output (for measurement)		4...20 mA (0,25mA/1,6mm ±0,5mm)	
allowed range of the analog output resistor		0...bis 400 Ohm	
Response time (parallel mode)	4 ms	4 ms	10 ms
Response time (crossed mode)	32 ms	32 ms	80 ms
On / off cycles (parallel mode)	80/s	80/s	33/s
On / off cycles (crossed mode)	10/s	10/s	5/s
Sensitivity		level: 1, 2, 3, 4	4
Mode of operation		dark mode	
Indicators		yellow LED and red LED	
Calibration variation F (fixed memory)		min 10 ms GND activ (teach-in)	
Calibration variation W (after reconnection)		period ca. 5 s	
Housing material		grey ABS-plastic or 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: 180g	emitter: 150g



Ordering example



Accessoires

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 of the connectors: IP 65

Connect up cable:

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

