

Thru-beam sensor (pair) OBE500-R2F-SE2-0,2M-V31-L

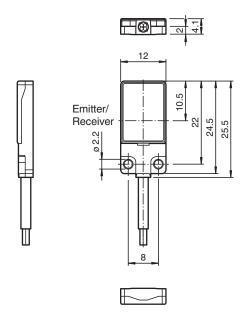


- Very flat design for direct mounting without mounting bracket
- DuraBeam Laser Sensors durable and employable like an LED
- TEACH-IN
- Detection of partially transparent objects by teach-in
- Detection of small parts or flat objects from 0.25 mm

Thru-beam sensor, flat design, space-saving M2 mounting, 500 mm detection range, red light, dark on, PNP output, with 0.2 m fixed cable and M8 plug, 4-pin



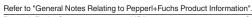
Dimensions



Technical Data

System components	
Emitter	OBE500-R2F-0,2M-V31-L
Receiver	OBE500-R2F-E2-0,2M-V31-L
General specifications	
Effective detection range	0 500 mm
Threshold detection range	700 mm
Light source	LASER LIGHT
Light type	modulated visible red light , 680 nm

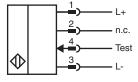
Operating voltage U _B 12 24 V No-load supply current I ₀ Emitter: ≤ 10 mA Receiver: ≤ 8 mA Protection class III Input Test input Test of switching function at 0 V Switching threshold Teach-In input Output Switching type NO contact / dark-on Signal output 1 PNP output, short-circuit protected, reverse polarity protected, open collector Switching voltage max. 30 v DC Switching current max. 50 mA , resistive load Voltage drop U _d ≤ 1.5 V DC Switching frequency f approx. 2 kHz Response time 250 μs Conformity Product standard EN 60947-5-2 Laser safety EN 60947-5-2 Laser safety EN 60925-1:2007 Approvals and certificates E87056 , cULus Recognized, Class 2 Power Source CCC approval E87056 , cULus Recognized, Class 2 Power Source CCC approval CC approval / marking not required for products rated ≤36 V FDA approval E86055-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for	Technical Data			
Laser class	Laser nominal ratings			
Laser class	-		LASER LIGHT DO NOT STARE INTO REAM	
Mave length				
Board divergence > 5 mrad Pulse length approx. 16.6 kHz Reposition rate approx. 16.6 kHz max, pulse energy 8 nJ Angle deviation approx. 0.5 ° Object size typ, starts from 0.5 mm; typ, from 0.25 mm (after teach-in) Diameter of the light spot approx. 4 mm at a distance of 500 mm Optical face frontal Ambient light limit EN 69947-5-2:25000 Lux Functional safety related parameters MTFF, MTFF, 806 a Mission Time (T ₀) 20 a Diagnostic Coverage (DC) 0 % Indicators/operating mems LED green, statically it Power on , short-clicult : LED green flashing (approx. 4 Hz) Function indicator Receiver. LED yellow, lights up when light beam is free, flashes when falling short of the operating votage Operating votage Up 12 24 V No-lead supply current Ig Emitter ≤ 10 mA Receiver : 8 mA Protection class Ill Injust Teach-in input Output Teach-in input Output Teach-in input Output Improve interpret				
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Storage temperature -20 70 °C (-4 158 °F) Mechanical specifications Housing width 12 mm Housing height 25.5 mm Housing depth 4.1 mm	Ambient conditions			
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Housing width 12 mm Housing height 25.5 mm Housing depth 4.1 mm	Storage temperature		-20 70 °C (-4 158 °F)	
Housing height 25.5 mm Housing depth 4.1 mm	Mechanical specifications			
Housing depth 4.1 mm	Housing width		12 mm	
	Housing height		25.5 mm	
Degree of protection IP67	Housing depth		4.1 mm	
	Degree of protection		IP67	

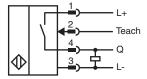


Technical Data

Connection	200 mm fixed cable with 4-pin, M8x1 connector
Material	
Housing	PC (Polycarbonate) and Stainless steel
Optical face	PMMA
Cable	PUR
Mass	approx. 10 g per sensor
Tightening torque, fastening screws	0.25 Nm
Cable length	200 mm

Connection



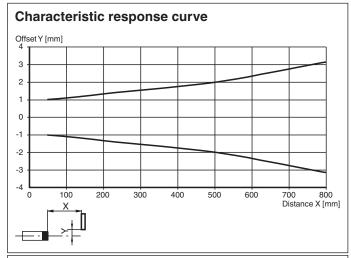


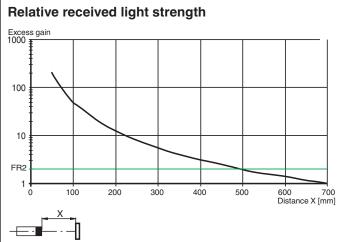
Connection Assignment

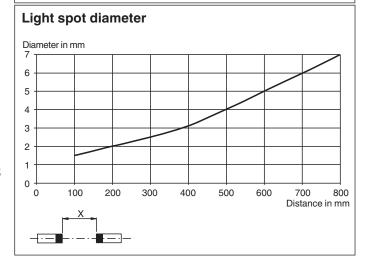


Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)









CLASS 1 LASER PRODUCT

IEC 60825-1: 2007 certified. Complies with 21 CFB 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

CLASS 1 LASER PRODUCT

IEC 60825-1: 2007 certified. Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

Safety Information

Laser Class 1 Information

The irradiation can lead to irritation especially in a dark environment. Do not point at people!

Maintenance and repairs should only be carried out by authorized service personnel!

Attach the device so that the warning is clearly visible and readable.

The warning accompanies the device and should be attached in immediate proximity to the device.

Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Accessories



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The thru-beam sensor enables the switching points to be taught in for optimum adaptation to specific applications. This eliminates the need for additional components such as apertures.

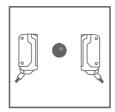
The sensitivity of the thru-beam sensor can be adjusted using three Teach-in methods:

Position Teach

When using this Teach-in method, the following settings are made on the thru-beam sensor:

- · The gain is set to an optimum value
- · The signal threshold is set to a minimum





Recommended application:

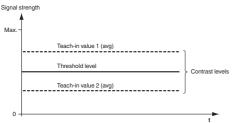
This method enables minuscule particles in the beam path to be detected, and provides exceptional positioning accuracy. Make sure that there are no objects in the beam path and that the sensor is connected to the power supply.

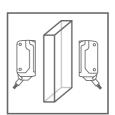
- Connect the white cable on the receiver (WH/IN) to the blue cable (BU/0 V) on the receiver.
 The green and yellow LED indicators flash simultaneously at 2.5 Hz
- 2. Disconnect the white cable on the receiver (WH/IN) from the blue cable (BU/0 V) on the receiver. The green and yellow LED indicators flash alternately at 2.5 Hz
- 3. The end of the Teach-in process is indicated when the green LED indicator lights up static and yellow LED blinks.

Two-Point Teach-In

When using this Teach-in method, the following settings are made on the thru-beam sensor:

- The gain is set to an optimum value
- The signal threshold is set in the center between the two taught signal values





- 1. Make sure that there are no objects in the beam path and that the sensor is connected to the power supply.
- 2. Connect the white cable on the receiver (WH/IN) to the blue cable (BU/0 V) on the receiver.

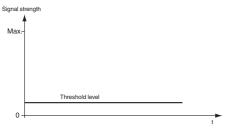
The green and yellow LED indicators flash simultaneously at 2.5 Hz

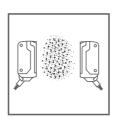
- 3. Position the object in the beam path.
- Disconnect the white cable on the receiver (WH/IN) from the blue cable (BU/0 V) on the receiver.
 The green and yellow LED indicators flash alternately at 2.5 Hz
- 5. The end of the Teach-in process is indicated when the green LED indicator lights up static.

Maximum Teach-In

When using this Teach-in method, the following settings are made on the thru-beam sensor:

- The gain is set to a maximum
- · The signal threshold is set to a minimum





Recommended application:

Enables an object to be detected with a high excess gain. This can be useful if there is severe environmental contamination or to achieve long operating times.

Make sure that there are no objects in the beam path and that the sensor is connected to the power supply.

- 6. Cover the receiver or transmitter.
- 7. Connect the white cable on the receiver (WH/IN) to the blue cable (BU/0 V) on the receiver.

Thru-beam sensor (pair)

The green and yellow LED indicators flash simultaneously at 2.5 Hz

- 8. Disconnect the white cable on the receiver (WH/IN) from the blue cable (BU/0 V) on the receiver. The green and yellow LED indicators flash alternately at 2.5 Hz
- 9. The end of the Teach-in process is indicated when the green LED indicator lights up static.