Dimensions

Transmitter

Receiver

Optical axis

Aperture receiver only

M8

Fixing screw M2 x 5

Model Number

M4.2/MV4.2-8000-RT-4922

Thru-beam sensor
with 4-pin, M8 x 1 connector

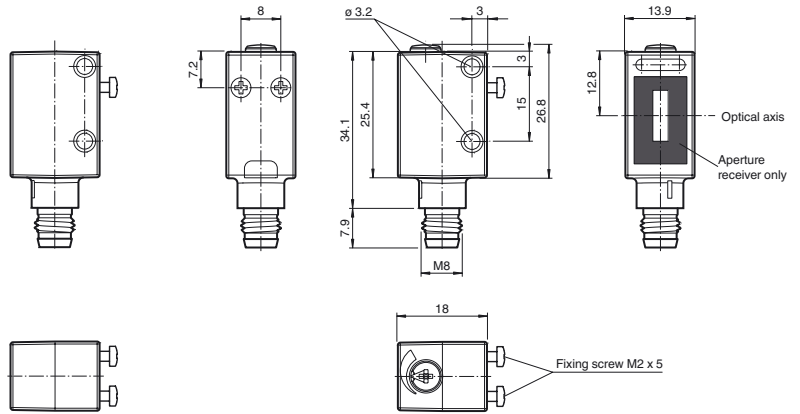### Features

- High-precision sensors for complex applications
- Miniature design with very robust and versatile mounting options
- Optical surface made of scratch-resistant glass for areas that are prone to high levels of dirt
- Maximum immunity thanks to unique encrypted emission frequency
- Very short response time
- Rear mounting option for easy mounting without mounting bracket
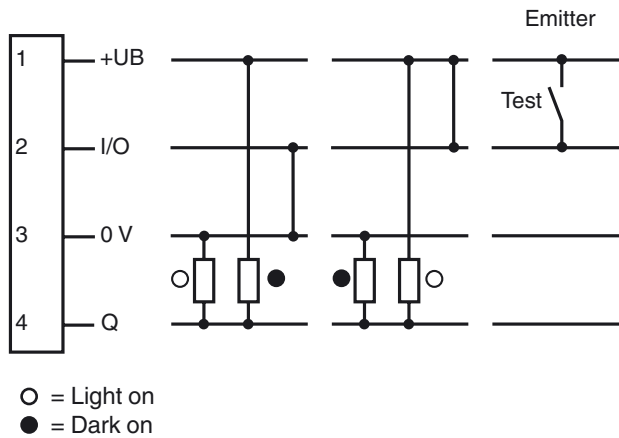- Aperture for reducing stray light

Electrical connection

Emitter

1	+UB
2	I/O
3	0 V
4	Q

Test

○ = Light on
● = Dark on

Pinout

Wire colors in accordance with EN 60947-5-2

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

2 4
1 3

Indicators/operating means
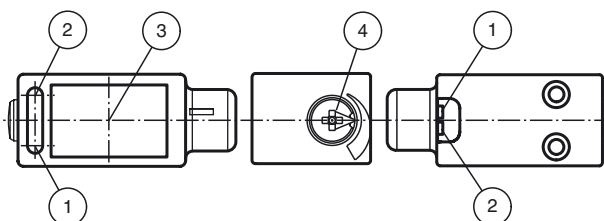
1	Operating display	green
2	Signal display (only Receiver)	yellow
3	Optical axis	
4	Sensitivity adjustment (only Receiver)	

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Technical data

System components

Emitter	M4.2-8000-RT-4922
Receiver	MV4.2-8000-RT-4922

General specifications

Effective detection range	0 ... 8000 mm
Threshold detection range	10000 mm
Light source	LED
Light type	modulated visible red light
Target size	min. 7 mm
Diameter of the light spot	300 mm at 8000 mm detection range
Angle of divergence	approx. 2 °
Ambient light limit	
Continuous light	40000 Lux
Modulated light	5000 Lux

Functional safety related parameters

$MTTF_d$	550 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	60 %

Indicators/operating means

Operation indicator	LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 4 Hz)
Function indicator	LED yellow, lights up with receiver lit flashes when falling short of the stability control
Control elements	sensitivity adjustment

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC
Ripple		< 10 %
No-load supply current	I_0	< 15 mA at 24 V DC

Input

Test input	emitter deactivation at $+U_B$

Output

Switching type		light/dark on electrically switchable
Signal output		Push-pull output, short-circuit protected, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Voltage drop	U_d	≤ 2.5 V DC
Switching frequency	f	2000 Hz
Response time		250 µs

Conformity

Product standard	EN 60947-5-2

Ambient conditions

Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Storage temperature	-20 ... 75 °C (-4 ... 167 °F)

Mechanical specifications

Housing width	13.9 mm
Housing height	31.4 mm
Housing depth	18 mm
Degree of protection	IP67 / IP69K
Connection	M8 x 1 connector, 4-pin
Material	
Housing	ABS
Optical face	glass pane
Mass	15 g (device)
Note	For indoor use only The sensor must be protected against UV radiation.

Compliance with standards and directives

Standard conformity	
Shock and impact resistance	IEC / EN 60068. half-sine, 40 g in each X, Y and Z directions
Vibration resistance	IEC / EN 60068-2-6. Sinus. 10 -2000 Hz, 10 g in each X, Y and Z directions

Approvals and certificates

CE conformity	yes
UL approval	cULus Listed
CCC approval	CCC approval / marking not required for products rated ≤36 V

Accessories

OMH-4.1
Mounting Clamp

OMH-ML6
Mounting bracket

OMH-ML6-U
Mounting bracket

OMH-ML6-Z
Mounting bracket

OMH-11-02 Aperture-V-H 0.5 mm
Slit diaphragm can be affixed for detecting very small parts

OMH-11-04 Aperture-V-H 1.0 mm
Slit diaphragm can be affixed for detecting very small parts

OMH-11-06 Aperture-V-H 1.5 mm
Slit diaphragm can be affixed for detecting very small parts

OMH-11-08 Aperture-V-H 2.0 mm
Slit diaphragm can be affixed for detecting very small parts

V31-GM-2M-PVC
Female cordset single-ended, M8, 4-pin, PVC cable

V31-WM-2M-PVC
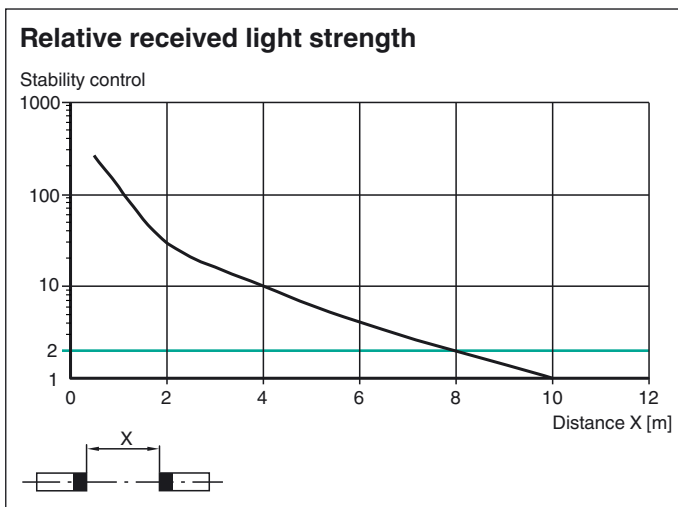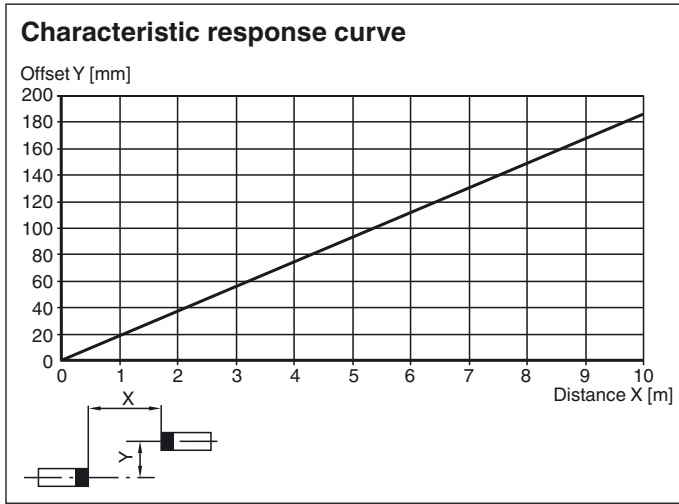Female cordset single-ended, M8, 4-pin, PVC cable

V31-GM-5M-PUR
Female cordset single-ended, M8, 4-pin, PUR cable

V31-WM-5M-PUR
Female cordset single-ended, M8, 4-pin, PUR cable

Other suitable accessories can be found at www.pepperl-fuchs.com

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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| Pepperl+Fuchs Group www.pepperl-fuchs.com | USA: +1 330 486 0001 fa-info@us.pepperl-fuchs.com | Germany: +49 621 776 1111 fa-info@de.pepperl-fuchs.com | Singapore: +65 6779 9091 fa-info@sg.pepperl-fuchs.com |

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Curves/Diagrams

Characteristic response curve

Offset Y [mm]

Distance X [m]

Relative received light strength

Stability control

Distance X [m]

Curves/Diagrams

To aid in the detection of small objects, various apertures OMH-11-... can be placed on the sensors. This results in different detection ranges:

Aperture	Aperture type	Min. object size	Detection range
No aperture		7.0 mm	
OMH-11-08	Vertical	2.0 mm	
OMH-11-08	Horizontal	2.0 mm	
OMH-11-06	Vertical	1.5 mm	
OMH-11-06	Horizontal	1.5 mm	
OMH-11-04	Vertical	1.0 mm	
OMH-11-04	Horizontal	1.0 mm	
OMH-11-02	Vertical	0.5 mm	
OMH-11-02	Horizontal	0.5 mm	

Detection range in X [m]

Effective detection range
Range limit

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Light spot diameter

Diameter Y [mm]

Distance X [m]

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