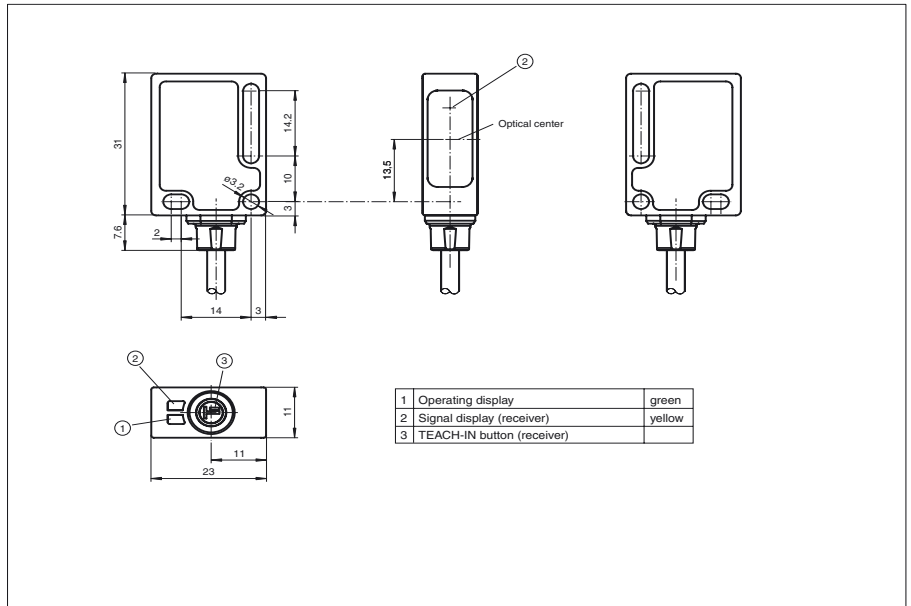




Dimensions



Model Number

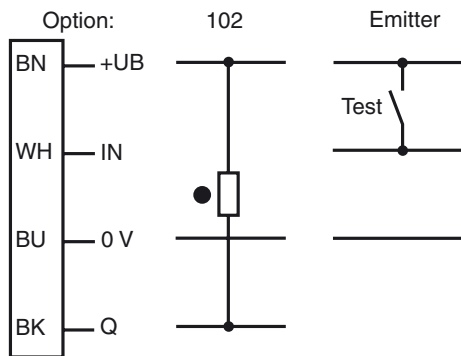
M7/MV7/59/76a/102/115

Thru-beam sensor
with 2 m fixed cable

Features

- Miniature design
- Automatic adjustment of sensitivity via Teach-In
- Reliable, even under the toughest cleaning conditions - certified as per ECOLAB
- Clearly visible function indicators
- Flashing power on LED in case of short-circuit
- Not sensitive to ambient light
- IP69K Steam jet proof

Electrical connection



○ = Light on
● = Dark on

Release date: 2008-03-12 08:06 Date of issue: 2009-09-28 127427_ENG.xml

Suitable reflectors and cable sockets can be found in the Internet

Subject to modifications without notice

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Technical data

General specifications

Effective detection range	0 ... 3.5 m
Threshold detection range	4.5 m
Light source	LED, red
Approvals	CE, cULus
Obstacle size	min. 7 mm
Light type	red, modulated light
Diameter of the light spot	approx. 180 mm at a distance of 3.5 m
Angle of divergence	approx. 3 °
Ambient light limit	40000 Lux

Functional safety related parameters

MTTF _d	1130 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	60 %

Indicators/operating means

Operating display	Receiver: LED green, flashes in case of short-circuit Emitter: LED green
Function display	Receiver: LED yellow, lights up when light beam is unblocked, flashes when falling short of the stability control
Operating elements	Receiver: Teach-In key

Electrical specifications

Operating voltage	U _B	10 ... 30 V DC , class 2
Protection class		II , rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
Ripple		max. 10 %
No-load supply current	I ₀	Emitter: ≤ 17 mA Receiver: ≤ 15 mA

Input

Test input	emitter deactivation at +U _B
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Output

Switching type	dark ON	
Signal output	1 NPN output, short-circuit proof, protected from reverse polarity, open collector	
Switching voltage	max. 30 V DC	
Switching current	max. 100 mA	
Voltage drop	U _d	≤ 1.5 V DC
Switching frequency	f	1000 Hz
Response time		0.5 ms

Standard conformity

Standards	EN 60947-5-2
Standards 2	EN 50178, UL 508

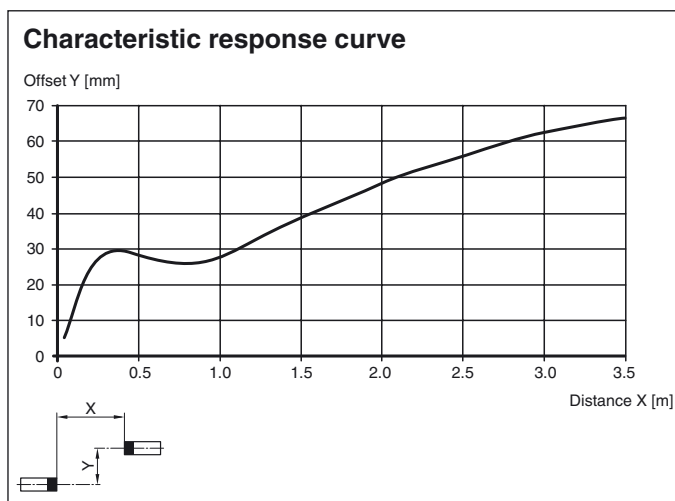
Ambient conditions

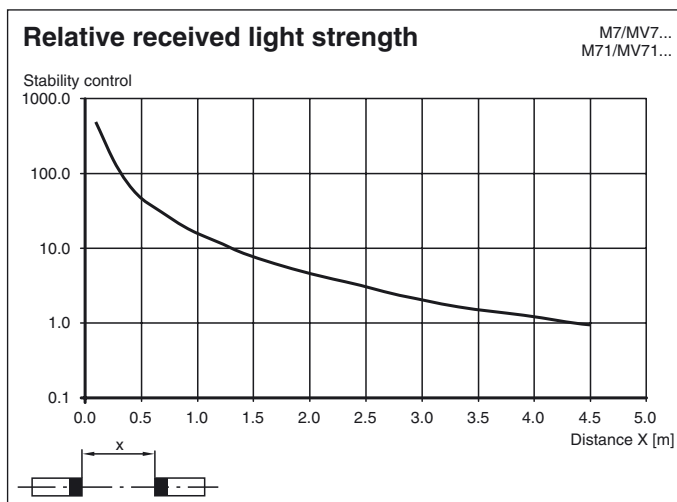
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
Storage temperature	-40 ... 75 °C (233 ... 348 K)

Mechanical specifications

Protection degree	IP67 / IP69K
Connection	fixed cable 2 m
Material	
Housing	PC (Makrolon, glass-fiber-reinforced)
Optical face	PMMA
Mass	approx. 100 g (emitter and receiver)

Curves / Diagrams





Teach-In

Connect the sensors to operating voltage, the LEDs green lights up constantly.

The receiver operates at max. sensitivity (delivery status) or with the last teached values.

- Emitter and receiver mount to opposite each other and align roughly.
- Adjust the emitter to the receiver.
- Press the Teach-In button on the receiver - as an acknowledge the green LED will switch off shortly for one time.
- Press the Teach-In button on the receiver until both LEDs green and yellow are blinking in parallel (2 Hz). Release the Teach-In button now.
- While the green and yellow LEDs are blinking alternating (2 Hz) on the receiver the unit is in the internal set up procedure.
- **Teach-In successful:** Both LEDs green and yellow on the receiver are on. The unit is ready to use and in switching mode now.
- **Teach-In not successful:** Both LEDs on the receiver are flashing alternating (4 Hz) for approx. 5 seconds. Afterwards the sensor returns to max. sensitivity setting. Please retry the Teach-In procedure beginning by step 1.