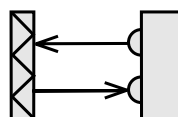


Retro-reflective Photoelectric Sensor



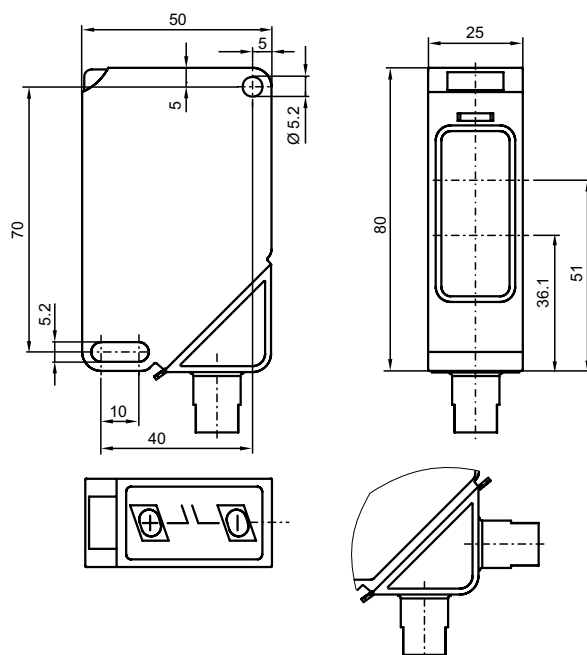
OCS12M-F44- □ *1 - □ *2



12 m

Features

- 12 m sensing range
- True reflection characteristics using polarising filter
- Visible red light
- Automatic adjustment of the sensitivity through "TEACH IN", resulting in the detection of semi-transparent objects
- Failure warning indication and output (static, dynamic)
- Control / test input
- Programming via optical interface (e.g. freely selectable time steps)
- Connector (M12x1) - adjustable through 90°
- Protection class min. IP 67

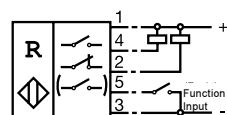


Mounting aids, retro-reflectors and cable sockets etc. - see catalogue "Sensors 2"

e. g. cable sockets: V15-G-2M-PVC (straight)
V15-W-2M-PUR (angled)

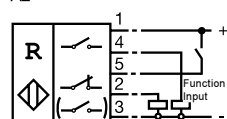
Electrical Connection

A0



- 1 - Supply +
- 2 - Inverted output or failure warning output (programmable)
- 3 - Supply -
- 4 - Switch output
- 5 - Multifunction input

A2



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*1 - electrical connection

*2 - mechanical connection

Technical Data

Model number	OCS12M-F44-A0-V15 OCS12M-F44-A2-V15
Sensing range	0 .. 12000 mm at Retro-reflector ORR100 0 .. 9000 mm at Retro-reflector ORR50
Adjustment of the sensing range	- stepwise „+“ or „-“ buttons - automatic through "Teach in"
Max.switch frequency	1 kHz (Puls : Pause 1:1)
min. response time	500 µs
Readiness delay	< 50 ms, with standardised switch-on
Distance hysteresis	Programmable
Light source	Visible red light 660 nm
Operating temperature	-25 °C ... +70 °C
Temperature drift	+/-0.05 % / K
Storage temperature	-40 °C ... +70 °C
Ambient light limit	Sunlight ≤ 10 000 Lux Halogen light ≤ 7 500 Lux
Indicators	LED yellow LED red LED green
	- Switching status indicator - Failure warning indicator, flashing at 2 Hz - Return signal on detection of key pressure, 65 ms - Error indication in teaching mode 1.5 s - Power-On indicator - Display flashes in teaching mode 2 Hz or 4 Hz
Electrical Data	
Rated operational voltage	10...30 V DC, +/- 10% ripple Overvoltage protection, reverse polarity protection
Current requirement	approx. 25 mA
Function input	
Internal resistance	> 20 kOhm
switching threshold for	
PNP-variation	deactivated < 3 V or undamped, activated > 7 V
NPN-variation	deactivated > 7 V or undamped, activated < 3 V
Reaction time	< 3 ms
Switch outputs	NPN or PNP, antivalent or switch output and failure warning output (programmable)
Voltage drop	≤ 2.5 V
Contacting load	200 mA, circuit / overload proof
Mechanical Data	
Protection class to IEN 60 529	IP 67
EMC	Grade 3, CE-konform, EN 60 947-5-2 Annex X
Housing	ABS, B x H x T: 25 mm x 80 mm x 50 mm
Connector	PA
Connection type	V15-connector 5-pin, adjustable through 90°
Optical system	PMMA double lens
Material front optical panel	Scratch resistant plastic lens, PMMA
Weight	60 g
Conforms to	EN 60 947-5-2

Notes

Others:

- Fully automatic teach-in, static and dynamic, up to maximum switching frequency.
- Teach-in of operating distance or optimum threshold setting.
- Self test.
- Reset function for factory setting.
- Repeat function (key pressure sensitivity setting)

Remark:

Once the parameterization disable has been activated, it can only be removed by resetting to the factory setting.

Parameter setting:

Parameterization via optical interface (PC or hand-Held).

- **Parameters:**
- NC or NO response
Light ON or Dark ON
- statical or dynamical function
reverse
- antivalent outputs or switch
output and stability control output

Multifunction input:

- Test input
(switch-off the emitter)
- Logic-Function:
AND-, OR- or XOR-
Logic-Operation
- Light/Dark-changeover input
- Function reserve test input
(normal operation with half
transmission power)
- Teach-In (level controlled)
- Output-hold

all input functions can be inverted
logically

Switching frequency:

- 20 Hz, 50 Hz, 100 Hz, 250 Hz,
500 Hz, 1 kHz for application-
optimized interference
suppression

Pulse frequency:

- 3 different frequencies as
protection against mutal
influence.

Keypad interlock:

- ON delay 0.1 s to
25.5 s in 0.1 s -steps
- OFF delay 0.1 s to
25.5 s in 0.1 s -steps
- limit timer 1 ms to
255 ms in 1 ms -steps
- one shot 1 ms to
255 ms in 1 ms -steps

The functions may be combined

Hysteresis:

- small
- standard
- large

Keypad interlock:

- off (keypad always on)
- automatic (Press both keys for
at least (ca. 5s) to activate
keypad. It will be locked
automatically after 4 min.)
- always (keypad is locked
permanently)

Parameterization disable:

- off
- on

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Manual setting



Object



Retro-reflector

Dynamic TEACH IN



Object



Retro-reflector

Setting options:

- **Manual** (use membrane keypad)
- **TEACH IN** dynamic operation

Manual setting

- 1) If necessary, simultaneously depress the "+" and "-" keys for 5 s (until the green LED flashes briefly). the sensor is now "unlocked".
- 2) Place the object with is to be detected at the required position within the detection range. The sensitivity of the sensor can now be set by means of the "+" and "-" keys (the red LED flashes on every key press and the yellow LED indicates the switching status). The keys are provided with a repeat-function (key actuation is automatically repeated if the key is pushed for a longer time). The sensitivity setting is retained even when the operating voltage is switched off.

Note: If the red LED does not flash when a key is pressed, the end stop of the key potentiometer has been reached.

TEACH IN of moved objects (dynamic operation)

- 1) If necessary, simultaneously depress the "+" and "-" keys for 5 s (until the green LED flashes briefly). the sensor is now "unlocked".
- 2) Depress the "+" and "-" keys simultaneously (for approx. 1 s), until the red LED is extinguished. The sensor is now in "Learning mode". This is indicated by the green LED flashing (at 2 Hz).
- 3) Traverse the detection range with the objects that are to be detected (one object may be enough) at a desired distance perpendicular to the sensing axis. The green LED flashes briefly at a higher frequency (4 Hz). The TEACH IN is finished if the LED is blinking constantly with the output frequency also when the object is moved several times.

Note: It's possible that the very briefly change of the flash frequency is hardly recognizable.

- 4) In order to terminate the TEACH IN process, either one of the "+" or "-" keys must be pressed. The green LED becomes lit continuously and the yellow LED indicates the switching status.