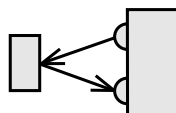# Retro-reflective Photoelectric Sensor

CE

OCT1500-F44- ☐ *1 **-** ☐ *2

1500 mm

Features

- Energetic switch for standard applications

- 1500 mm adjustable sensing range

- Automatic adjustment of the switch points (sensitivity) through "TEACH IN"

- Visible red light

- 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°
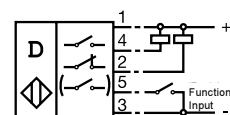
- Protection class min. IP 67
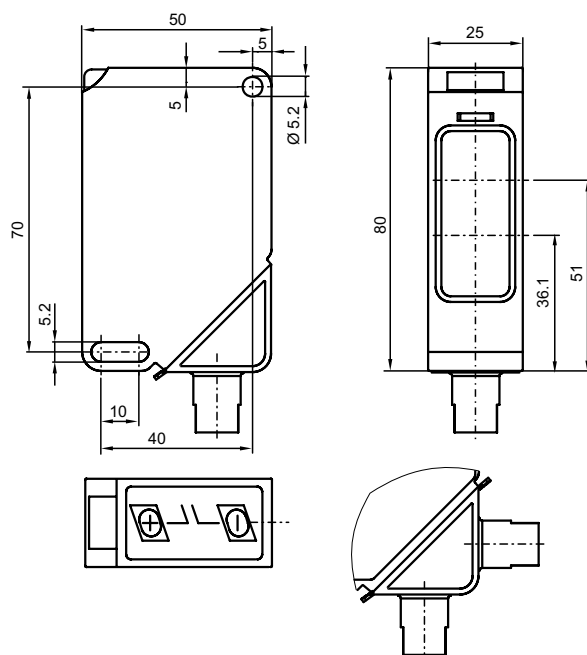
Cable sockets, mounting aids etc. see catalogue "Sensors 2"

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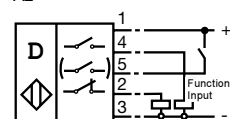
Electrical Connection

A0

A2

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

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*1 - electrical connection
*2 - mechanical connection

Technical Data

Model number	**OCT1500-F44-A2-V15**
	OCT1500-F44-A0-V15
Sensing range	0 mm ... 1500 mm
Reference card size	Standard white card 100 mm x 100 mm
Adjustment range	150 mm ... 1500 mm
Adjustment of the sensing range	- stepwiese „+" or „-" buttons
	- automatic through „Teach In"
Max.switch frequency	1 kHz (Pulse : Pause 1:1)
Min. response time	500 µs
Readiness delay	< 50 ms, with standardised switch-on
Distance hysterese	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	- Switching status indicator
LED red	- Failure warning indicator, flashing at 2 Hz
	- Return signal on detection of key pressure, 65 ms
	- Error indication in teaching mode 1.5 s
LED green	- 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	≤ 2.5V
Contacting load	200 mA, circuit / overload proof

Mechanical Data

Protection class to IEN 60 529	IP 67
EMC	Grade 3, CE-konform, EN 60947-5-2 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 lense	Scratch resistant plastic lens, PMMA
Weight	50 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 responce 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

- **Switchingfrequency:**
  - 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.)
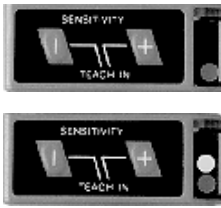 - always (keypad is locked permanently)
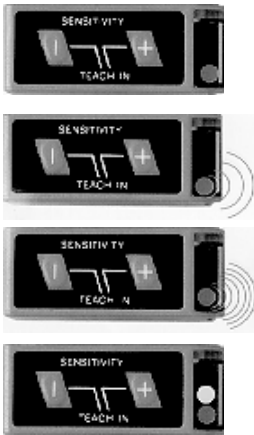
- **Parameterization disable:**
  - off
  - on

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To Set-up the sensor on a target object

Description
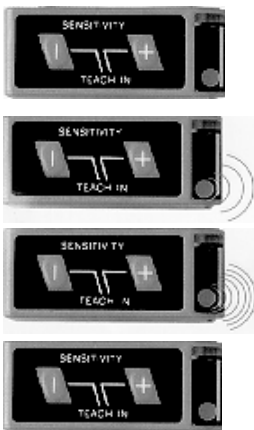
Setting options:
- **Manual** (use membrane keypad)
- **TEACH IN** static operation
- **TEACH IN** dynamic operation

Manual setting

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.

Static TEACH IN

TEACH IN of objects at a fixed point (static 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) Place the object to be detected at the required position in the detection range. The green LED flashes briefly at a higher frquency (4 Hz). As soon as the LED flashes again at the output frequency, the teaching process is concluded.

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 teh yellow LED indicates detection of the target. If the object is removed, the yellow LED is extinguished.

Dynamic TEACH IN

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.