

MLV11 Series - Introduction

Parameter settings

Through-beam type (M11/MV11...),
reflex type (MLV11-54...),
diffuse type (MLV11-8), light guide
connection type (MLV11-LL)

Parameter:

- Outputs:

Parameterisation via optical interface (PC or handheld).

Default settings underlined

- N.O. and pre-fault
- N.C. and pre-fault
- Antivalent

- Pre-fault signal:

- dynamic
- static
- OFF

- Switch freq. → Switch delay:

- 1 kHz ⇒ 0.5 ms
- 500 Hz → 1 ms
- 250 Hz → 2 ms
- 100 Hz → 5 ms
- 50 Hz → 10 ms
- 20 Hz → 25 ms

for application-optimised interference suppression

- Hysteresis:

- small
- standard
- large

- Time function 1:

- none
- ON delay (0.1 s to 25.5 s in 0.1 s steps)

- Time function 2:

- none
- OFF delay (0.1 s to 25.5 s in 0.1 s steps)
- Pulse extension (1 ms to 255 ms in 1 ms steps)
- One shot output function (1 ms to 255 ms in 1 ms steps)

- Pulse frequency:

- Pulse frequency 1
- Pulse frequency 2
- Pulse frequency 3

- Keypad settings:

- OFF
- automatic
- always

- Input functions:

- none
- Test (emitter deactivation)
- AND-Logic-Operation
- OR-Logic-Operation
- XOR-Logic-Operation
- NC/NO switching
- Function reserve test (normal operation with half transmission power) only for MLV11... sensors.
- TEACH-IN (level controlled) only for MLV11... sensors
- LATCH only for MLV11... sensors.
- D-Flipflop only for MLV11... sensors

- Input inverted:

- all control input functions can be inverted

- Parameterisation disable:

- OFF
- ON

MLV11 Series - Introduction

- Operating mode:
(Only for sensors with light guide connection MLV11-LL...)

Some of these settings are not available on through-beam sensors and are only possible on the receiver:

Description

Setting the sensitivity

Through-beam sensor M11/MV11...

Manual Adjustment



Receiver



Emitter



Automatic Adjustment



Receiver



Emitter



- Direct detection
- Through-beam mode

Hysteresis
Pulse frequency
Emitter disconnection
The emitter is equipped with a test input (switches emitter off).

- **Manually** (using the membrane keys)
- **Automatically (TEACH-IN)**

Note:

The sensitivity adjustment (teach in or manually) is maintained even after the operating voltage is turned off.

Sensitivity / adjustment using the membrane keys

On delivery, the sensitivity of the photoelectric sensor is set to maximum over the whole operating distance of 0 m ... 15 m. It is possible via the membrane key to achieve the detection of material with partial optical absorption (detection of partly transparent or small objects) or to reduce the effective operating distance (improvement of the interference light suppression).

A useful adjustment can be achieved in the 2 m ... 15 m range. In this range, the automatic adjustment (TEACH-IN) ensures a function with optimum signal reserve.

Manual adjustment

- 1) Align the emitter and receiver correctly. The light path must be unobstructed.
- 2) If necessary, simultaneously push the "+" and "-" buttons for 5 seconds until the green LED flashes **once**. The sensor is now unlocked.
The light path must be unobstructed!
- 3) Using the "+" and "-" buttons, the sensitivity of the sensor can be adjusted (the red LED flashes with each keystroke, the yellow LED indicates the switching status).

The push buttons feature a repeat function: simply hold down the key for repeated actuation. The sensitivity adjustment is maintained even after the operating voltage is turned off.

Note:

If the red LED does not flash when the key is pushed, then the sensor is either at the end of the adjustable range or the keypad is locked.

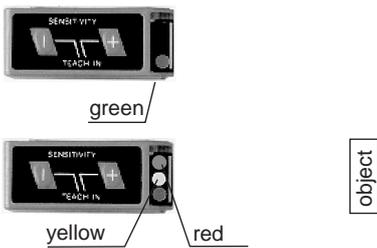
Automatic Adjustment (Dynamic Mode for Moving Targets)

- 1) Align the emitter and receiver correctly. The light path must be unobstructed.
- 2) If necessary, simultaneously push the "+" and "-" buttons for 5 seconds until the green LED flashes **once**. Release the keys briefly. The sensor is now unlocked.
The light path must be unobstructed!
- 3) Simultaneously push the "+" and "-" buttons (approx. 2 s) until the green LED flashes, then release both keys. The sensor is now in the TEACH-IN mode as indicated by the green LED flashing at 2 Hz.
- 4) The teaching process has finished when the green LED remains on.

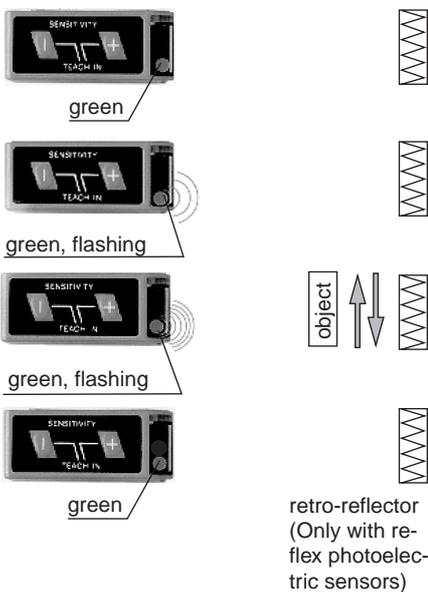
MLV11 Series - Introduction

All types apart from M11/MV11...
(through-beam type)

Manual Adjustment

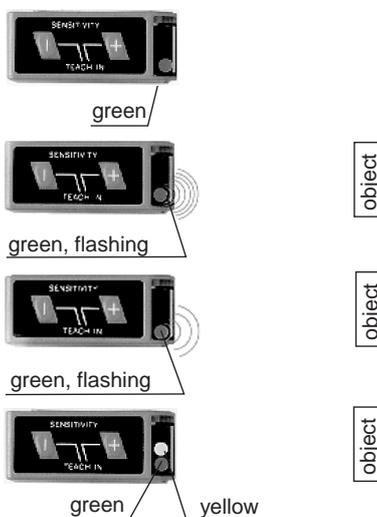


Dynamic TEACH-IN



Direct detection sensors MLV11-8,
and types for light guide MLV11-LL...
in direct detection mode

Static TEACH-IN



Manual adjustment

- 1) If necessary, simultaneously push the "+" and "-" buttons for 5 seconds until the green LED flashes once. The sensor is now unlocked.
- 2) Place the object to be detected at the desired distance within the sensing range. Using the "+" and "-" buttons, the sensitivity of the sensor can be adjusted (the red LED flashes with each keystroke, the yellow LED indicates the switching status).
The push buttons feature a repeat function: simply hold down the key for repeated actuation.

Note:

If the red LED does not flash when the key is pushed, then either the sensor is at the end of the adjustable range or the keypad is still locked.

TEACH-IN of moving objects (dynamic TEACH-IN)

- 1) If necessary, simultaneously push the "+" and "-" buttons for 5 seconds until the green LED flashes once. The sensor is now unlocked.
- 2) Simultaneously push the "+" and "-" buttons (approx. 1 s) until the red LED goes out. The sensor is now in the TEACH-IN mode as indicated by the green LED flashing at 2 Hz.

Note:

If the red LED does not flash when the key is pushed, then the keypad is still locked.

- 3) Move the objects to be detected (one object is sufficient) across the sensing range at the desired distance. The green LED flashes briefly at a higher frequency (4 Hz).

When the LED flashes again at the initial frequency, with an object within the detection range, the teaching process has finished.

Note:

The very brief change in flashing frequency is undetectable under certain circumstances.

- 4) Press either "+" or "-" key to end the TEACH-IN. The sensor then resumes normal operation.

TEACH-IN of stationary objects (static TEACH-IN)

- 1) If necessary, simultaneously push the "+" and "-" buttons for 5 seconds until the green LED flashes once. The sensor is now unlocked.
- 2) Place the object to be detected at the desired distance within the sensing range.

Simultaneously push the "+" and "-" buttons (approx. 1 s) until the red LED goes out. The sensor is now in the teach mode as indicated by the flashing green LED.

Note:

If the red LED does not flash when the key is pushed, then the keypad is still locked.

- 3) The green LED flashes briefly at a higher frequency (4 Hz). When the LED flashes again at the initial frequency of 2 Hz, the teaching process has finished.
- 4) To end the TEACH-IN process, use either the "+" or the "-" key. The sensor then resumes normal operation.