

DDT-2

Wired Dual Technology Detector



Installation and use manual

2021.09-M:1.1-H:SE-03v4-13-F:1.0

DESCRIPTION

Thank you for choosing our dual technology detector for your security system. DDT-2 is a compact dual-technology movement detector equipped with passive infrared (**PIR**) and microwave (**MW**) detection elements. When both technologies detect movement or at masking attempts (**AM**), the alarm starts. This detector assure to your security system an high-level protection reliability against intruders and nuisance.

FEATURES

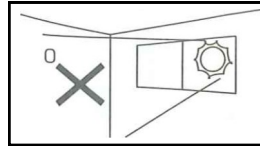
- Detector range: about 12 m
- Microprocessor-based signal analysis
- Anti-masking (**AM**)
- LEDs dedicated to different detections: microwave, infrared, alarm
- Memory and display of anti-masking event
- Memory and display of alarm event
- Anti-tampering protection (Tamper)
- Input for microwave enabling
- 100 Hz neon lights filter
- Low absorption, max 7 mA
- Microwave sensitivity fine adjustment
- Immune to intense electro-magnetic fields

TECHNICAL *

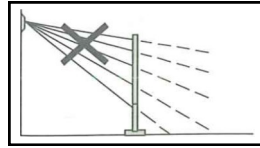
Power supply	9 ÷ 15 V _{DC} (nominal: 12 V _{DC})
Absorption	Max: 7 mA @ 12 V (LED off)
Microwave	Pulsed microwave, patch-array type Working frequency: 24,125 GHz Excluded by AB input
Infrared	Double element passive infrared
Alarm/Anti-mask timing	2 seconds
Outputs:	OptoMOS (solid state relay) N.C. ** max 50 V _{DC} / 100 mA contact impedance: 7 ÷ 16 Ω ** Outputs open in case of power loss
Detection range	Min: 2 m - Max: 12 m, 104° @ 25 °C
Installation height	2.3 m (typical)
Speed detection range	0.3 ÷ 3.0 m/s
RFI immunity	Mean: 10 V/m
Temperature	-20 °C ÷ 50 °C
Humidity	95 % (relative) max
Dimension	112 x 66 x 46 mm
Weight	About 90 g

* Specifications can vary without notice

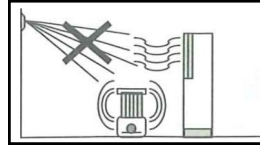
INSTALLATION TIPS



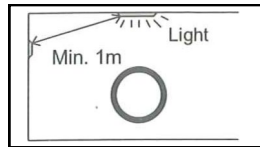
Do not install the detector exposed to direct or reflected sunlight, or towards windows facing streets (to avoid car flash lightings).



Verify that there are not obstacles (trees, shields, furniture, etc.) within the detection area, which can cause masking / false detections.

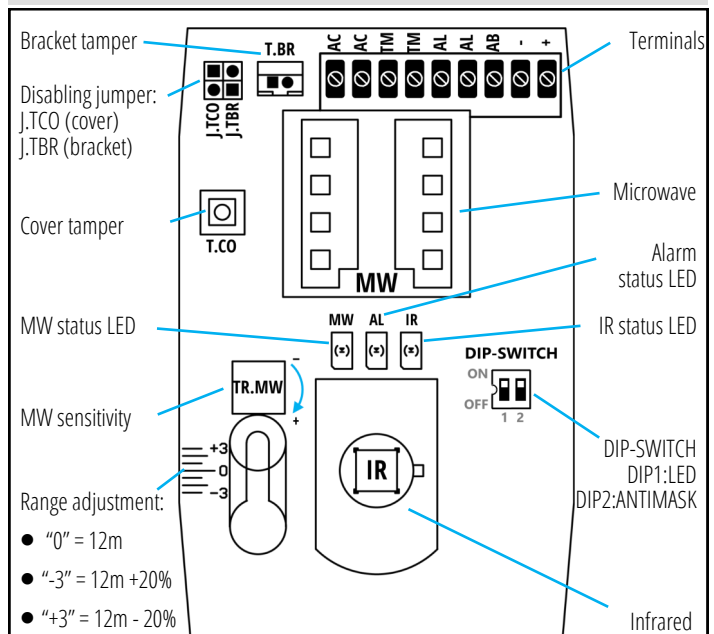


Avoid to install the sensor faced towards heating systems and/or conditioning systems causing fast temperature variations.



Place the sensor at least at 1 meter far from the nearest fluorescent light source to avoid interference with the microwave element.

DESCRIPTION



Terminals

- AC/AC Anti-masking output N.C.
- TM/TM Anti-opening tamper output + bracket anti-removal (in series) N.C.
- AL/AL Alarm output N.C.
- AB Microwave enabling input.
Apply a positive 9 ÷ 15 V_{DC} voltage to switch off the microwave but maintain the infrared active (the alarm AL/AL output signals the detection of infrared element)
- Power supply negative reference
- + Power supply positive reference (nominal: 12 V_{DC})

DIP-SWITCH

DIP	ON	OFF
DIP1 (LED)	LED enabled	LED disabled
DIP2 (ANTI-MASKING)	ANTI-MASK enabled	ANTI-MASK disabled

JUMPERS

JUMPERS	ON	OFF
J.TCO (Cover tamper)	Tamper disabled	Tamper enabled
J.TBR (Bracket tamper)	Tamper disabled	Tamper enabled

MICROWAVE SENSITIVITY

TRIMMER TR.MW	MIN (trimmer counter-clockwise)	MAX (trimmer clockwise)
Range	2 m	12 m

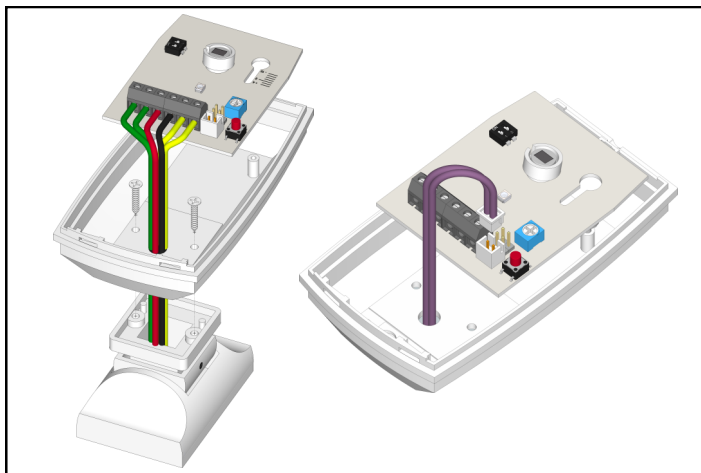
LED *

LED MW	GREEN	Microwave MW detection
LED IR	RED	Infrared IR detection
LED AL	BLUE	Alarm: MW+IR detection, anti-masking

* When **AB** input is at $9 \div 15 V_{DC}$ the LEDs show alarm memory (see "Alarm Memory" paragraph)

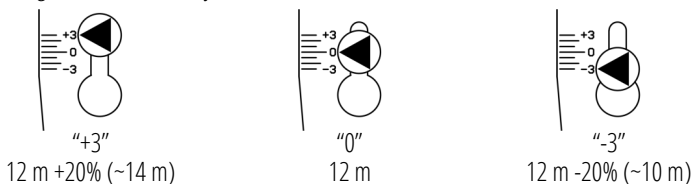
INSTALLATION AND CONNECTION

1. Mount the base of the bracket in wanted position. Pass the cables into the opposite holes of the bracket.
2. Open the cover of the sensor and gently remove the PCB from the frame. Pass the cables inside the frame and mount it on the bracket (as shown in next figure).
3. Connect the cables to the proper terminals. Place the PCB back on the frame. Close the cover and make some detection tests.



RANGE ADJUSTMENT (POSITIONS +3 / 0 / -3)

Depending on the position the electronic board is fixed to the frame, the max range of the sensor vary of about $\pm 20\%$ (@ 25 °C):



DETECTION TEST

It is necessary to make a crossing test (walk test) of the detection area of the sensor to verify a correct covering. The test also shows if both technologies (PIR and MW) work on the same area.

1. Power up the sensor and wait about 45 seconds until it is ready.
2. Set **DIP1 = ON** (LED enabled).
3. Walk normally crossing the detection area.
The red IR LED lights on at PIR detection, the green MW LED lights on at MW detection, the blue AL LED lights on when both technologies detect movement.
4. If the microwave sensitivity is too high (the green LED lights on at minimum movement), adjust it turning the trimmer **TR.MW** counter-clockwise (to decrease the sensitivity).

MICROWAVE DISABLING

The **AB** input - when at $9 \div 15 V_{DC}$ - switches off the microwave. This function allows to avoid microwave irradiation reducing the electromagnetic pollution.

NOTE: when the MW element is disabled, the infrared continues to detect, changing the **AL/AL** output status. If is necessary to completely bypass the sensor, the **AL/AL** terminals must be connected to a control panel zone properly programmed.

ALARM MEMORY

When the **AB** terminal is at $9 \div 15 V_{DC}$ (microwave disabled) it is possible to visualize the **EVENTS LOG**.

The alarm memory shows the last alarm type (detection or anti-mask) occurred from last time the **AB** terminal switched from rest to positive voltage.

At first IR detection (after the **AB** terminal switched to positive and then alarm) the LEDs light on for one minute according to next table:

GREEN LED	RED LED	ALARM EVENT
ON	ON	Alarm
ON	BLINKING	Alarm + Anti-masking
OFF	BLINKING	Anti-masking

The memory log does not store events occurred in the 30 seconds before the switching of **AB** to positive (entry time). The same, no memory log of events occurred in the 30 seconds after the switching of **AB** to rest (exit time). The alarm memory is displayed even if LEDs are disabled (**DIP1 = OFF**).

DETECTION AREA

Dimension: 104° - radius 12 m (at 25 °C)

