

NEO DT

PASSIVE INFRARED & MICROWAVE DETECTOR With End Of Line Resistors

PRODUCT FEATURES

The NEO DT is a combination of PIR & MW detectors, with PET immune function, providing protection from intruders by PYRO sensor element and MW (based on Doppler concept). Using micro controller for PIR & MW signal analyzing, with special ASIC technology for PIR pulse analyzing and unique optic for anti-mask protection.

- Quad (Four element) PYRO sensor.
- Hard spherical lens for outstanding detection performance and elimination of false alarms.
- Microwave detection based on Doppler concept.
- Unique Microwave Motion Sensor Module.
- ASIC VLSI based electronics with movement speed spectrum analysis.
- PIR self-test by applying a short heat pulse.
- Height installation calibrations free.
- User-friendly installation with or w/o swivel bracket.
- 2-way Microwave sensitivity adjustment.
- 2-way PIR sensitivity adjustment.
- Bi directional temperature compensation.
- PET immunity up to 25Kg.
- White light and environmental immunity.

SELECT MOUNTING LOCATION

Choose a location most likely to intercept an intruder. (Our recommendation is a corner installation). See detection pattern **fig.5 or 6**. The quad-element high quality sensor detects motion crossing the beam; it is slightly less sensitive detecting motion toward the detector.

AVOID THE FOLLOWING LOCATIONS

- Locations where there are large objects in a range of 1m (3ft) from the detector.
- Locations where there are air drafts or substantial airflows.
- Facing direct sunlight.
- Facing areas that may change temperature rapidly or large metal objects.
- Do not install outdoors
- Keep wiring away from electrical power cables.

▪ Do not install behind partitions.
The NEO DT performs better when provided with a constant and stable environment.

WIRE SIZE REQUIREMENTS

Use #22 AWG (0.5 mm) or wires with a larger diameter. Use the following table to determine required wire gauge (diameter) and length of wire between the detector and the control panel.

Wire Length	m	200	300	400	800
Wire Diameter	mm	.5	.75	1.0	1.5
Wire Length	ft.	656	984	1312	2624
Wire Gauge	AWG	22	20	18	16

DETECTOR INSTALLATION

The NEO DT can either be wall or corner mounted. If ceiling or special wall mounting is required, use the optional mounting bracket. Refer to bracket description. (See fig. 4).

1. To remove the front cover, unscrew the holding screw and gently raise the front cover.

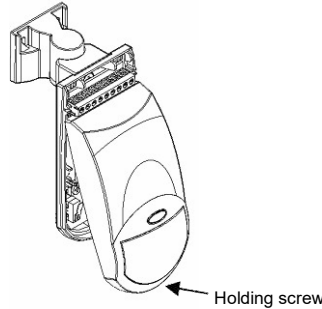


Fig.1

2. To remove the PC board, carefully unscrew the holding screw located on the PC board.
3. Break out the desired holes for proper installation.

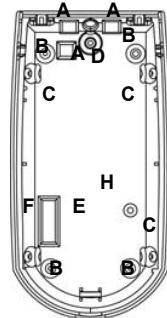


Fig. 2

- For wire access use holes A.
- For flat wall mounting use holes B.
- For corner mounting - use 4 holes C.
- For 45° mounting - use 2 holes C (left or right).
- For bracket mounting use hole D for holding screw.
- For Detector breakage / removal monitoring by back tamper use hole E in flat mounting or F in corner mounting.
- H hole is for the PC board holding screw.

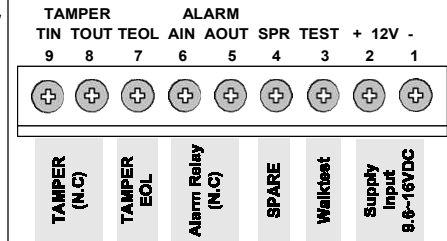
The circular and rectangular indentations at the base are the knock-out holes for wire entry. For option with bracket - lead wire through the bracket (see fig. 4).

4. Mount the detector base to the wall, corner or ceiling. (For bracket option see fig.4).
5. Reinstall the PC board by fully tightening the holding screw. Connect wire to terminal block.
6. Replace the cover by inserting it back in the appropriate closing pins and screw in the holding screw.
7. Detector breakage/removal monitoring (Back Tamper). If the detector is forcibly removed from the mounting surface, a TAMPER alarm is triggered. For this, the detector base must be secured with an additional screw. (This option is not valid in case of bracket installation).

CONNECTING THE DETECTOR

The NEO DT might be installed with and without EOL options.

The terminal block connector is build as follow:



Terminals 1&2 - Marked "+ 12V -": Supply Voltage
Connect to the positive (Voltage supply) and negative (Ground) of the alarm control unit.



Note: The supply connection to the Detectors must only be to a Limited Power Source (LPS) for the input supply in accordance with the Standard EN 60950-1 Latest Revision.

Terminals 3 - Marked "TEST"
This pin is used to enable the LED for walktest when the LED Jumper is in AUTO mode. Apply 12VDC to this pin in order to enable the LED activation during walktest.

Terminal 4 - Marked "SPARE"
This pin is spare pin use to connect external EOL resistor.

Terminals 5 & 6 - Marked "ALARM IN & OUT"
These are the COMMON and the NC (Normally Closed) outputs of ALARM relay. Connect to the zone input of the alarm control unit.

Terminal 7 - Marked "TAMPER EOL"

This pin is spare pin use to connect more then one detector on the same zone with the internal EOL resistor.

Terminals 8 & 9 - Marked "TAMPER IN & OUT"
Connect these terminals to a 24-hour normally closed protective zone in the control unit. If the front cover of the detector is opened, an immediate alarm signal will be sent to the control unit.

Fig. 3 - End Of Line Resistor Options

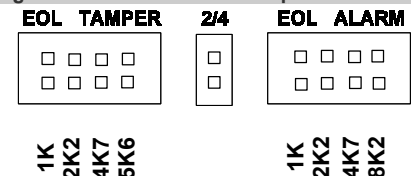


Fig. 4 - Bracket installation options

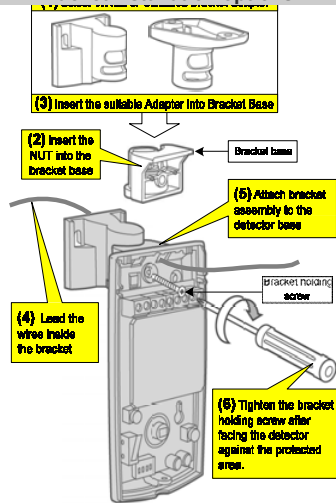


Fig. 5 - Wide Angle Lens Detection Pattern

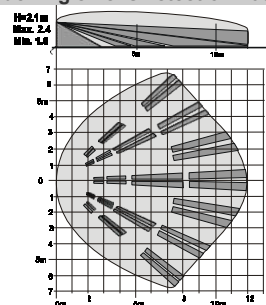


Fig. 6 - Long Range Lens Detection Pattern

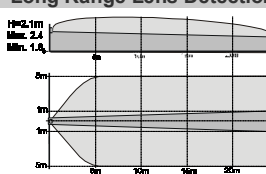
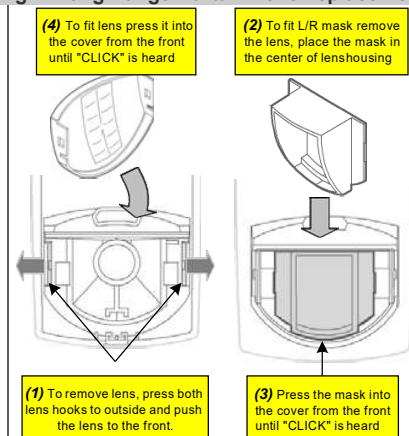
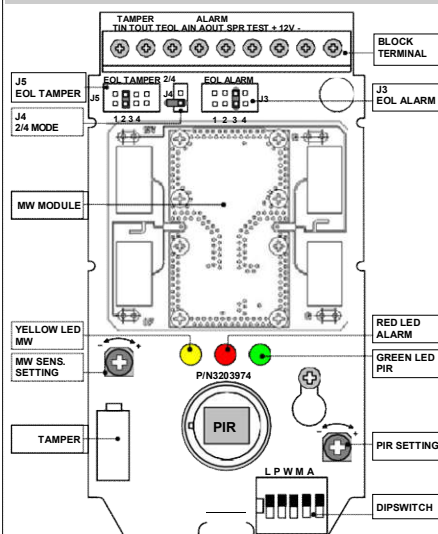


Fig. 7 Long Range Curtain Lens Replacement



Note: When using the Long Range detection option - Set Switch 2 to ON.

SETTING UP THE DETECTOR



The dip switch selector mounted on the unit's pc board controls the functions setting of the detector:

Switch 1 – Marked L - LED Enable

Used for setting LED Enable / Disable

**** ON Position (Up)** – all LED's enabled.

OFF Position (Down) – all LED's disabled.

Note: the state of the switch "LED" does not affect the operation of the ALARM and TROUBLE relays

Switch 2 – Marked P - PIR SENSITIVITY Setting

Used for setting the PULSE count function in order to provide PIR sensitivity control according to the environment.

**** ON Position (Up)** - High sensitivity for stable environments. One motion event trips the PIR.

OFF Position (Down) - Low sensitivity for harsh environments. Two motion events trip the PIR.

Switch 3 – Marked W - PET IMMUNITY Setting

Used for setting the PET Immune function 12Kg or 25Kg, depending on the pet Weight.

**** ON Position (Up)** - Immunity to an animal up to 12kg

OFF Position (Down) - Immunity to an animal up to 25kg

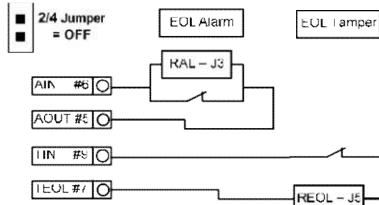
Note: The detector should be reset after any change by removing and applying the 12V power supply.

EOL Connection Options

The End-Of-Line connection options are described in the following drawings.

Set **J4 JUMPER "2/4"** according to connection option Set **J5 "REOL"** and **J3 "RAL"** Jumpers according to EOL resistors value (see fig. 3)

Option A - 4 Wire Connection with EOL



TECHNICAL SPECIFICATION

Detection Method	PIR & Microwave pulse Doppler
Detection Range	2 - 15m @ H=1.8 - 2.4m
MW Freq. - X Band	10.525GHz / 10.687GHz / 9.9GHz
Power Input	9.6 to 16Vdc
Current Draw	Active: 35mA (+/- 5%) Standby: 22mA (+/- 5%)
Temp Consumption	Yes
Alarm Period	2 ± 1 sec Form C - NC&NO
Alarm Outputs	28Vdc 0.1 A with 10 Ohm series protection resistors
AM / Trouble Output	Form A N.C 28Vdc 0.1 A with 10 Ohm series protection resistors open when cover is removed N.C 28Vdc 0.1 A with 10 Ohm
Tamper Switch	series protection resistors open when cover is removed
Warm up Period	1min
Operation Temp	-10°C ~ +50°C (14 °F~122 °F)
Dimensions	116 mm x 60mm x 37mm
Weight	105gr.

Switch 4 – Marked M - MW SENSITIVITY Setting

Used for setting the MW functions in order to provide MW sensitivity control according to the environment.

**** ON Position (Up)** - Low sensitivity, for harsh environments.

OFF Position (Down) - High sensitivity, for normal operation - immediate detection.

Switch 5 – Marked A – AND/OR Mode

Used for setting the ALARM indication mode

**** ON Position (Up)** – AND mode, Alarm will activate upon PIR **AND** MW detection.

OFF Position (Down) – OR mode, Alarm will activate upon PIR **OR** MW detection.

**** Note: Marked (**) positions are the factory default setting of the detector.**

RANGE ADJUSTMENT

"MW" POTENTIOMETER - adjustments according to protected area range - see fig.5&6.

The potentiometer at mid-scale is equivalent to a distance of 15m, at min-scale - 7m. Rotate the potentiometer clockwise to increase range, counter-clockwise to decrease range.

Dimension change according to installation location and room size.

"PIR" POTENTIOMETER - adjustment according to protected area range - see fig.5&6.

Use the Potentiometer marked "PIR" to adjust the detection sensitivity between 30% and 100%, according to walk test in the protected area.

Rotate the potentiometer clockwise to increase range, counter-clockwise to decrease range.

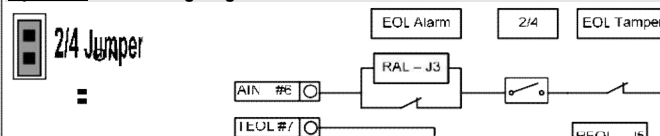
After adjusting the sensitivity perform a walk test to verify optimum correct sensitivity in the protected area.

LED VISUAL INDICATIONS

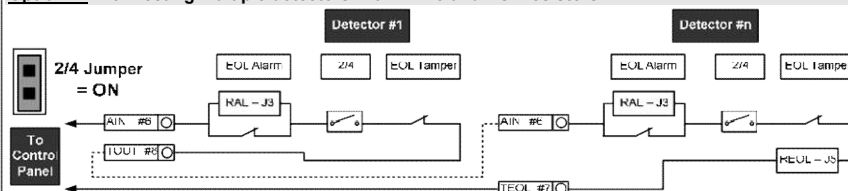
There are three LEDs on the unit's PC board to signal various detector events

Event Message	RED	GREEN	YELLOW
Initial warm-up (60Sec.)			
No Detection Standby			
PIR walk-test detection			
MW walk-test detection			
ALARM			

Option B - Connecting single detector with 2 wire and EOL resistors



Option C - Connecting multiple detectors with 2 wire and EOL resistors



STANDARDS COMPLIANCE

European Council Directive 2004/108/EC
EN50130-4+A1+A2
EN301489-3
EN301489-1
EN61000-6-3
EN50130-5
EN50131-1
EN50131-2-4
EN50131-6
SAFETY LVD 2006/95/EC
EN60950-1 (93/68/EEC)
Security Grade 2, Environmental Class II

For more detailed instruction please refer the manuals which you could download from the internet at:

www.thecrowgroup.com



P/N 7101740 Rev C YS

Testing the Detector -WALK TEST

Upon installation, the unit should be thoroughly tested to verify proper operation.

Apply 12 Vdc power to the detector, wait 2 minutes to finish the detector warm up time. Conduct testing within the protected area cleared of all people.

Walk test

1. Remove front cover.
2. Make sure that **PIR and MW** switches are in positions high sensitivity.
3. Make sure that **LED** switch is **ON**.
4. Replace the front cover.
5. Start walking slowly across the detection zone.
6. Observe that the detector's LED lights whenever motion is detected.
7. Allow 5 sec. between each test.
8. After the walk test is completed, the **LED, PIR and MW** switches may be changed.

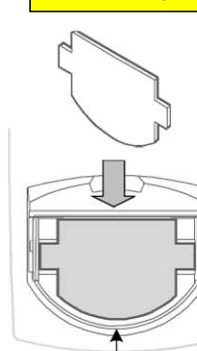
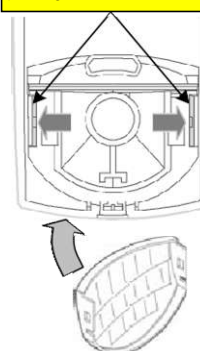
NOTE: Walk tests should be conducted, at least once a year, to confirm proper operation and coverage of the detector

Visible Light Filter Option

Use the optional white light filter in order to improve the detector stability to high intensity visible light.

(1) Remove lens, by pressing both lens hooks to outside and pushing the lens to the front.

(2) Bend the FILTER and place in the center of lens housing



(4) To fit lens press it into the cover from the front until "CLICK" is heard

(3) Insert the FILTER into the two slots at lens housing corners

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These instructions supersede all previous issues in circulation prior to March 2012.