

NEO QUAD-AM

PASSIVE INFRARED DETECTOR With PET IMMUNITY & OPTIC ANTI-MASK

PRODUCT FEATURES

The NEO QUAD-AM is a combination of Passive Infra-Red (PIR) detectors, with PET immune function and optical anti-mask. The NEO QUAD-AM use Microcontroller for PIR signal analyzing, 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.
- Optic Anti-masking protection with special Relay trouble output.
- 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 PIR sensitivity adjustment.
- Bi directional temperature compensation.
- The NEO QUAD-AM provides pet immunity up to 25Kg. Pet active below 1m.
- 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

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.

Note: The NEO QUAD-AM performs better when provided with a constant and stable environment.

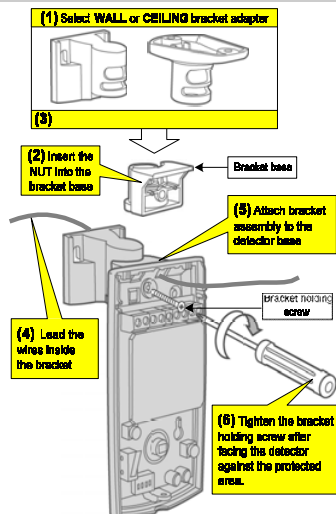
WIRE SIZE REQUIREMENTS

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

Note: Single cable with 2, 3, 4 or 6 pairs should be used, preferred twisted pairs.

FIG. 4 – BRACKET INSTALLATION OPTIONS



DETECTOR INSTALLATION

The NEO QUAD-AM can either be wall or corner mounted.

If ceiling or special wall mounting is required, use the optional mounting bracket. See Fig. 4.

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

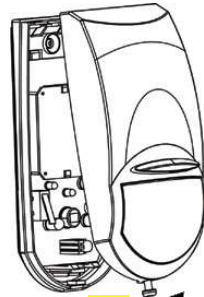


Fig.1 Holding screw

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.

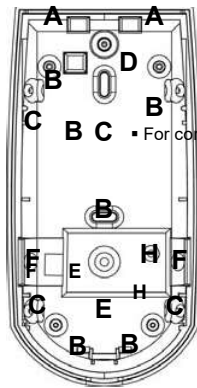
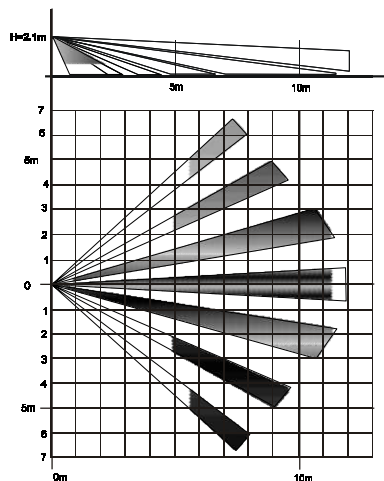


Fig. 2

- 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.
4. 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)
 5. Mount the detector base to the wall, corner or ceiling. (For bracket option see fig.4).
 6. Reinstall the PC board by fully tightening the holding screw. Connect wire to terminal block.
 7. Replace the cover by inserting it back in the appropriate closing pins and screw in the holding screw.
 8. 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).

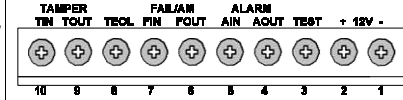
FIG. 5 - WIDE ANGLE LENS DETECTION PATTERN



CONNECTING THE DETECTOR

The NEO QUAD-AM might be installed with and without EOL options.

The block connector includes 10 terminals 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 switch "L" is in ON mode.

Apply 12VDC to this pin in order to enable the LED activation during walktest.

Terminals 4 & 5 - Marked "ALARM AIN & AOUT"

These are the COMMON and the NC (Normally Closed) outputs of ALARM relay.

Connect to the zone input of the alarm control unit.

Terminals 6 & 7 - Marked "FAIL/AM FIN & FOUT"

These are the COMMON and the NC (Normally Closed) outputs of ANTIMASK / TROUBLE relay.

Connect to the zone input of the alarm control unit.

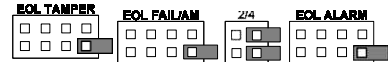
Terminal 8 - Marked "TAMPER EOL"

This pin connects the serial EOL resistor to the TAMPER terminals; it is use for connection of more than one detector in serial on the same zone. In this connection only one internal EOL resistor should be used.

Terminals 9 & 10 - 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



For EOL SETTING please refer to CROW ELECTRONIC ENGINEERING Ltd. - NEO QUAD AM on www.thecrowgroup.com

DETECTOR STARTUP and SELF TESTING

After applying 12Vdc to the (+) and (-) terminals, the NEO QUAD-AM starts a 60 second warm-up period. During this period the following self test take place:

- A. Warm up period (~30 Sec.) indicated by alternate flashing the Red, Yellow and Green LED's.
- B. Anti-mask self test (~20 Sec.) indicated by Yellow LED flashing.
- C. PIR self test (~20 Sec.) indicated by Yellow LED flashing.

Following this sequence the detector is ready.

Note: If the alternate flashing of the LED's does not

stop within 60 Sec. a failure has been detected by the self-test circuitry, or the unit may be masked, or power supply voltage is lower than nominal.

MASKING CONDITION

If an attempt is made to mask the lens with a sticker or to put a masking object close to the lens, a trouble alert will result approx. 180 seconds after masking:

The RED LED will turn ON and the Yellow LED will flash alternately. The ALARM relay will Close and the TROUBLE relay will Open..

RESET AFTER TROUBLE OR MASKING

In case of trouble alert, proceed as follows:

Search for masking material or objects on the lens or in front of the detector and remove them.

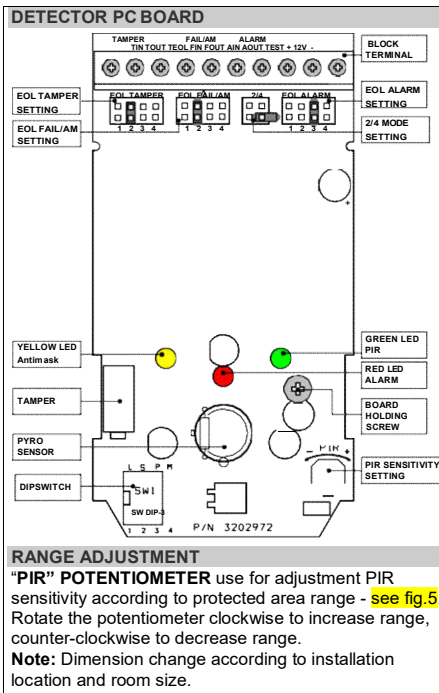
Reset the detector by walk testing: cross its field of view at the far end, causing it to alarm several times.

If everything is back to normal, the LED should stop flashing, and the ALARM and TROUBLE relays should reset.

Note: If walk testing does not cause the trouble alert to stop, recheck for masking.

If masking is removed, the TROUBLE alarm is may be due to low power supply voltage or defective PIR circuit.

If power supply is fine then replacing the detector unit will solve this problem.



SETTING UP THE DETECTOR

There are 3 miniature dip switches on the NEO QUAD-AM pc board that enables setting of following functions:

Switch 1 – Marked L - LED Enable
 Use 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 S - PIR SENSITIVITY Setting
 Use 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 P - PET IMMUNITY Setting
 Use 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: Marked (**)** positions are the factory default setting of the detector.

LED VISUAL INDICATIONS

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

Event Message	RED	GREEN	YELLOW
Initial warm-up (60Sec.)			
No Detection Standby			
MASK / Fail detection			
ALARM			

WALK TESTING
 Upon installation, the unit should be thoroughly tested to verify proper operation. The end user should be instructed on how to perform a walk test weekly.
A. Set DIP Switch-1 to ON position or make sure to trigger the TEST input from Control Panel.
B. Walk across the detector's field of view in different directions, at various distances from the detector, and verify proper alarming throughout the detector's coverage area, the red LED glows for 2Sec.
C. When done, remove the cover and set Switch-1 to OFF to prevent unauthorized tracing of the coverage pattern.
D. Remount the cover and fasten the holding screw.
Note: To assure proper operation, the range and coverage area should be checked at least twice a year.

CROW ELECTRONIC ENGINEERING LTD. ("Crow") - WARRANTY POLICY CERTIFICATE

This Warranty Certificate is given in favor of the purchaser (hereunder the "Purchaser") purchasing the products directly from Crow or from its authorized distributor. Crow warrants these products to be free from defects in materials and workmanship under normal use and service for a period of 24 months from the last day of the week and year whose numbers are printed on the printed circuit board inside these products (hereunder the "Warranty Period"). Subject to the provisions of this Warranty Certificate, during the Warranty Period, Crow undertakes, at its sole discretion and subject to Crow's procedures, as such procedures are from time to time, to repair or replace, free of charge for materials and/or labor, products proved to be defective in materials or workmanship under normal use and service. Repaired products shall be warranted for the remainder of the original Warranty Period.

All transportation costs and in-transit risk of loss or damage related, directly or indirectly, to products returned to Crow for repair or replacement shall be borne solely by the Purchaser. Crow's warranty under this Warranty Certificate does not cover products that is defective (or shall become defective) due to: (a) alteration of the products (or any part thereof) by anyone other than Crow; (b) accident, abuse, negligence, or improper maintenance; (c) failure caused by a product which Crow did not provide; (d) failure caused by software or hardware which Crow did not provide; (e) use or storage other than in accordance with Crow's specified operating and storage instructions.

There are no warranties, expressed or implied, of merchantability or fitness of the products for a particular purpose or otherwise, which extend beyond the description on the face hereof.

This limited Warranty Certificate is the Purchaser's sole and exclusive remedy against Crow and Crow's sole and exclusive liability toward the Purchaser in connection with the products, including without limitation - for defects or malfunctions of the products. This Warranty Certificate replaces all other warranties and liabilities, whether oral, written, (non-mandatory) statutory, contractual, in tort or otherwise.

In no case shall Crow be liable to anyone for any consequential or incidental damages (inclusive of loss of profit, and whether occasioned by negligence of the Crow or any third party on its behalf) for breach of this or any other warranty, expressed or implied, or upon any other basis of liability whatsoever. Crow does not represent that these products can not be compromised or circumvented; that these products will prevent any person injury or property loss or damage by burglary, robbery, fire or otherwise; or that these products will in all cases provide adequate warning or protection.

Purchaser understands that a properly installed and maintained product may in some cases reduce the risk of burglary, fire, robbery or other events occurring without providing an alarm, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss or damage as a result. Consequently, Crow shall have no liability for any personal injury; property damage or any other loss based on claim that these products failed to give any warning.

If Crow is held liable, whether directly or indirectly, for any loss or damage with regards to these products, regardless of cause or origin, Crow's maximum liability shall not in any case exceed the purchase price of these products, which shall be the complete and exclusive remedy against Crow.

TECHNICAL SPECIFICATION

Detection Method	Passive Infrared Detector Optical Anti-Masking by IR signal
Power Input	9.6 to 16Vdc
Current Draw	Active: 18mA (+/- 5%) Standby: 11mA (+/- 5%)
Temp Consumption	Yes
Alarm Period	2 ± 1 sec
Alarm Outputs	Form A N.C 28Vdc 0.1 A (with 10 Ohm series protection resistor)
AM / Trouble Output	Form A N.C 28Vdc 0.1 A (with 10 Ohm series protection resistor)
Tamper Switch	N.C 28Vdc 0.1 A (with 10 Ohm Resistors) open on cover removal
Warm up Period	60 sec.
Operation Temp	-10°C ~ +50 °C (14 °F~122 °F)
Dimensions	119mm x 60mm x 40mm (4.86" x 2.42" x 1.57")
Weight	102gr. (3.6oz.)

STANDARDS COMPLIANCE

European Council Directive 2004/108/EC
 EN50130-4+A1+A2
 EN301489-3
 EN300220-3
 EN61000-6-3
 EN55022
 EN50371
 SAFETY LVD 2006/95/EC , EN60950-1 (93/68/EEC)
 EN50131-1, EN50131-2-4
 Security Grade 3, Environmental Class II

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

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