AVQ_AM

Passive Infrared Detector with Pet Immunity & Optical Anti-Mask

PRODUCT FEATURES

The AVQ_AM is a combination of Passive Infra-Red (PIR) detectors, with PET immune function and optical anti-mask. The AVQ_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.
- Optiç Anti-masking protection at 0.6 meter 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 AVQ_AM provides pet immunity up to 25Kg. Pet active bellow 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 AVQ_AM performs better at 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.

DETECTOR INSTALLATION

The AVQ_AM is 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.

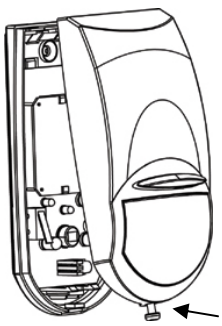
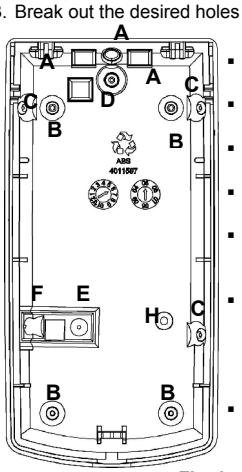


Fig.1

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.



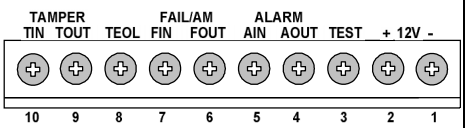
- For wire access use holes A.
- For flat wall mounting use holes B.
- For corner mounting - use 4 holes C.
- For 45° mounting - use 2 holes C (left or right).
- For bracket mounting use hole D for holding screw.
- For Detector breakage / removal monitoring by back tamper use hole E in flat mounting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

Fig. 2

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).

CONNECTING THE DETECTOR

The AVQ_AM might be installed with and without EOL options.
The wires terminal 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 walk test when the LED switch "L" is in AUTO mode.
Apply 12VDC to this pin in order to enable the LED activation during walk test.

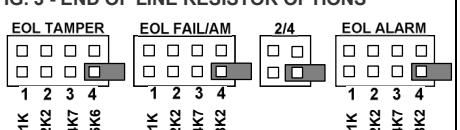
Terminals 4 & 5 - Marked "ALARM AIN & AOUT "
Alarm relay COMMON and the NC (Normally Closed) outputs.
Connect to the zone input of the alarm control unit.

Terminals 6 & 7 - Marked "FAIL/AM FIN & FOUT "
Trouble/Anti mask relay COMMON and the NC (Normally Closed) outputs.
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 then 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 panel. If the front cover of the detector is opened, an immediate alarm signal will be sent to the control panel.

FIG. 3 - END OF LINE RESISTOR OPTIONS



EOL Connection Options
The End-Of-Line features and options are explained on the attached notice.

DETECTOR STARTUP and SELF TESTING

After applying 12Vdc to the **(+)** and **(–)** terminals, the AVQ_AM starts a 30 second warm-up period, 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.

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. 60 seconds after masking:
The RED LED will turn ON and the Yellow LED will flash alternately.
The ALARM relay will activate 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 defective PIR circuitry. Replacing the detector unit to solve this problem.

FIG. 4 – BRACKET INSTALLATION (OPTIONAL)

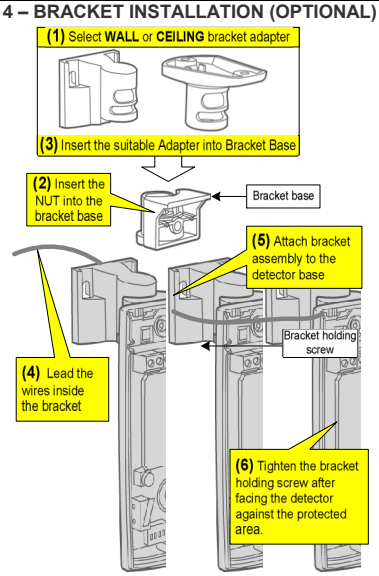
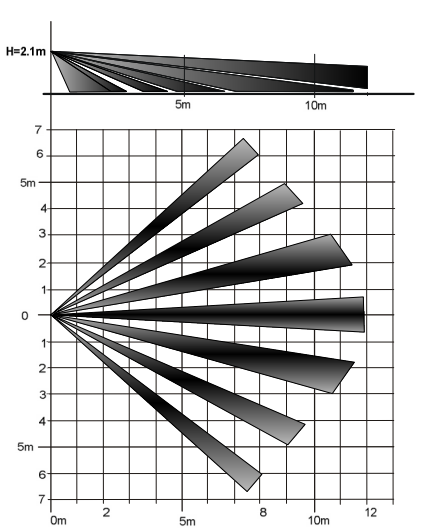
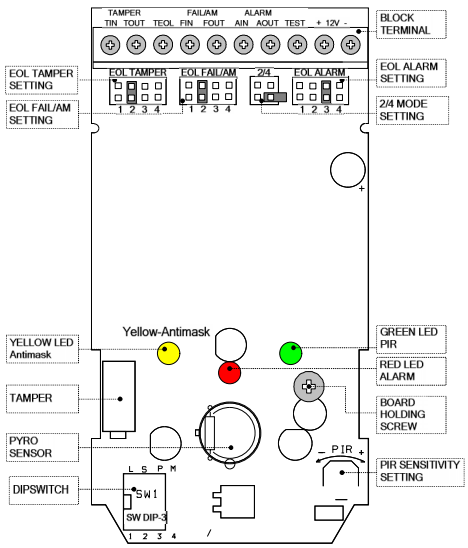


FIG. 5 - WIDE ANGLE LENS DETECTION PATTERN



DETECTOR PC BOARD



RANGE ADJUSTMENT

PIR potentiometer is used for adjustment PIR sensitivity according to protected area range - see fig.5.
Rotate the potentiometer clockwise to increase range, counter-clockwise to decrease range.
Note: Dimension change according to installation location and room size.

SETTING UP THE DETECTOR

There are 3 miniature DIP switches on the AVQ_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	2Sec		

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.

TECHNICAL SPECIFICATION

Detection Method	Passive Infrared Detector Optical Anti-Masking by IR signal
Power Input	9.6 to 16Vdc
Current Draw	**Active:** 35mA (+/- 5%) **Standby:** 22mA (+/- 5%)
Temp Consumption	Yes
Alarm Period	2 ± 1 sec
Alarm Outputs	Form C - NC&NO 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	30 sec.
Operation Temp	-10ºC ~ +50 ºC (14 ºF~122 ºF)
Dimensions	123.5mm x 61.5mm x 40mm (4.86" x 2.42" x 1.57")
Weight	102 gr. (3.6 oz.)

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

WARNING: Test this product at least once a week

Certified by: ANPI INCERT NUMBER XXXXXX

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