



D & D

DOUBLE & DUAL OUTDOOR
ADVANCED ASIC
PASSIVE INFRARED
INTRUSION DETECTOR

INSTALLATION INSTRUCTIONS



GENERAL DESCRIPTION

Av-Gad presents D & D, the new PIR detector, intended for operation in difficult conditions.

D & D achieves unprecedented signal differentiation, while its powerful "ASIC" (Application Specific Integrated Chip) microcontroller analyses the signal sensed by TWIN DUAL ELEMENT PIR detectors to minimize the rejection of false alarms and to determine intrusions.

- The ASIC guarantees constant filtering at all gain levels, without degradation of the signal to noise ratio, using embedded analog multiplier and signal processing.
- The ASIC provide multiplier self test mode on every operation to ensure complete functionality of the detector.
- The ASIC ensures maximum protection against RFI and EMI disturbances.

- The D & D includes an enhanced bi-directional temperature compensation that provides constant detection of human body at ambient temperature range from -20°C to +50°C (-4°F to +122°F). While most PIRs fail to detect an intruder when background temperature nears body temperature, the D & D proves to be fully effective in differentiating between them.
- The ASIC based D & D allows identical detection from left to right and right to left when crossing zones.
- The D & D provides an ultimate monitoring of the protected site, together with automatic updating and self-reconfiguring according to the environmental changes.

MOUNTING LOCATION

A PIR detector is more sensitive to motion across its field of view than to motion back/forward from it. Mounting height and location should not cause the D & D to exceed its estimated detection range. It should utilize existing elements to attain a stable background, by facing walls and solid fences.

While the D & D is capable of detecting intrusions under difficult conditions, it is recommended to install a covering roof against weather elements (rain, snow) and protection against direct sunlight.

Avoid the following location:

- Facing direct sunlight
- Facing reflective surfaces such as swimming pool, shiny painted surfaces, puddles, etc.
- Mounting surfaces that absorb heat (black walls), metal gates or fences, hot water pipes, etc.
- Areas that is susceptible to a rapid change of temperature - radiators, etc.
- Sources of air currents - air conditioning openings, ventilation ducts, etc.
- Above a window or a door.
- Areas with moving objects (swaying trees, bushes, etc.).

IMPORTANT:

Where a small animal is present, the D & D MUST be mounted 2.1m (7ft) or higher (max. 3.0m /10 ft) above floor level.

MOUNTING THE DETECTOR

A variety of mounting positions are possible with the standard housing of the D & D.

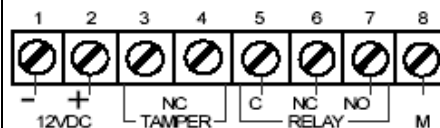
To open the front cover of the housing:

1. Pry off the front cover and unscrew the four screws of the integral gray cover and remove the cover.
2. Remove the PC board housing (and the board) by pushing the right wall of the housing outward and gently lifting out the PC board housing.
3. Prepare mounting holes in accordance with the desired mounting position.
Cover all openings for screws with RTV/SILICON or similar sealant.
4. A special opening for cable entry is provided in the D&D. Make sure to use only this opening, for wires.

5. Please make sure the lens is right side up. The lens has an arrow on it and the housing has a slit.
6. To re-fit the housing (and PCB), insert its left into the groove on the left wall of the housing, pull or push out the right wall and gently snap the board into position. The vertical calibration scale on the right side of the board should be directly under the marker in the middle of the right wall. Calibrate the PCB with its housing according to the mounting height and the tables p.p.14, 15.
7. In areas affected by heavy rains the cable entry hole should be open - for cable only (sealant free).
In areas affected by heavy dust the cable entry hole should be sealed with RTV/SILICON or similar sealant.

TERMINAL BLOCK WIRING

Run the cable through the cable entry hole and connect the wires in accordance with the following instructions:



- Terminal 1 - Marked "-" - Connect to a negative Voltage output of ground of the control panel.
- Terminal 2 - Marked "+" - Connect to a positive Voltage output of an 8.7 - 16Vdc source (usually from the alarm control unit).
- Terminal 3 & 4 - Marked "TAMPER".
If a Tamper switch is required 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.

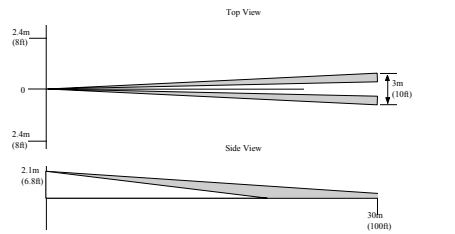
- Terminal 5 - marked "C". This is the central output relay contact used with Terminal 6 or 7.
- Terminal 6 - Marked "NC". This is the normally closed alarm output relay contact of the detector. With Terminal "5", these two terminals should be connected to a normally closed zone in the control panel.
- Terminal 7 - Marked "NO". (Optional only, is manufactured according special application.) This is the normally open alarm output relay contact of the detector. With Terminal "5", these allow the D&D to be connected to a control panel that requires a balanced end of line resistor configuration. If such a control panel is not used, the "NO" terminals have many other uses: it may be used to trigger a timer to operate security lighting, etc.
- Terminal 8 - Marked "M" (memory) - see explanation under "MEMORY LATCH SETTING AND FUNCTION".

MEMORY LATCH SETTING AND FUNCTION

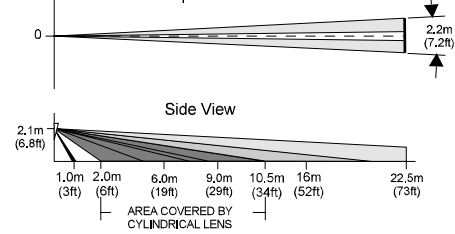
The Memory function enables tracing a specific alerting detector out of others connected to the same zone. Connect to the Arm/Disarm key-switch in the control panel (+12Vdc switched).

- The Memory input keeps the LED active after an alarm event.
- When Memory input is set to +12Vdc (Arm), Memory mode is activated.
- In case of an alarm the LED will light constantly after Memory is set to low (Disarm), allowing identification of the alerting detector among the other detectors in the zone.
- To reset the Memory function the Memory input must go High and then Low (with the key-switch).

LONG RANGE (02DD) LENS



VERTICAL CURTAIN (03DD) LENS



TECHNICAL SPECIFICATIONS

Power Input	8.7 - 16 Vdc
Current Consumption Standby	13 mA @ 12 Vdc
Active	8.5 mA @ 12 Vdc
Sensitivity	Δ1.1°C @ 0.9 m/sec (Δ2°F @ 3 ft/sec)
Alarm Output	N.C. 100 mA @ 24 Vdc (10 Ω in line resistor Form "A")
Tamper switch	N.C. 100 mA @ 24 Vdc (10 Ω in line resistor Form "A")
Operating ambient temperature range	-20°C to +50°C (-4°F to +122°F)
Operating humidity range	Up to 95% (non-condensing)
Storage temperature range	-40°C to +80°C (-40°F to +176°F)
Pyro sensor electrics	2 matching dual element with double optic system
RFI protection	≥30 V/m @ 10-1000 MHz
EMI immunity	50,000 V electrical interference due to power surges or lightning
Self test	12 sec indicated 8 LED flashes
Dimensions	135mm (5.3")x 85mm (3.4")x 43.4mm (1.7")
Weight	150 gr (4.2 oz)

Av-Gad reserves the rights to change specifications without prior notice

DIP SWITCH SETTING

DIP-SWITCH 1 - NORMAL / HIGH RISK

- Dipswitch 1 provides control for normal or high risk operating environments.
- ON (up) - This setting is for a harsh environment with air drafts.
- OFF (down) - This setting is for operation within a stable environment.

DIP-SWITCH 2 - LED ENABLE / DISABLE

- ON (up) - the LED is disabled.
- OFF (down) - the LED is enabled.

The LED ENABLE / DISABLE switch has no effect on the RELAY output.

D&D VERTICAL CALIBRATION CHARTS

EXTRA WIDE ANGLE (01DD) LENS

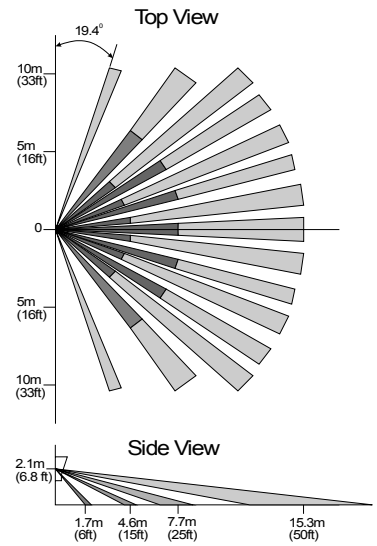
Vert Scale Mt. Height	+5	+4	+3	+2	+1	0	-1	-2	-3	-4	-5
1.0 m (3.3 ft)	3 (9.9)	3.5 (11.6)	4.0 (13.2)	5.0 (16.5)	6.0 (19.8)	8.0 (26.4)	9.5 (31.4)	11.0 (36.3)	12.5 (41.3)	14.5 (47.9)	16.5 (54.5)
1.2 m (4 ft)	3.5 (11.6)	4.0 (13.2)	5.0 (16.5)	6.0 (19.8)	8.0 (26.4)	9.5 (31.4)	11.0 (36.3)	12.5 (41.3)	14.5 (47.9)	16.5 (54.5)	18.0 (59.4)
1.5 m (5 ft)	4.0 (13.2)	5.0 (16.5)	6.0 (19.8)	8.0 (26.4)	9.5 (31.4)	11.0 (36.3)	12.5 (41.3)	14.5 (47.9)	16.5 (54.5)	18.0 (59.4)	Over Range
1.8 m (6 ft)	5.0 (16.5)	6.0 (19.8)	8.0 (26.4)	9.5 (31.4)	11.0 (36.3)	12.5 (41.3)	14.5 (47.9)	16.5 (54.5)	18.0 (59.4)	Over Range	Over Range
2.1 m (7 ft)	6.0 (19.8)	8.0 (26.4)	9.5 (31.4)	11.0 (36.3)	12.5 (41.3)	14.5 (47.9)	16.5 (54.5)	18.0 (59.4)	Over Range	Over Range	Over Range
2.4 m (8 ft)	8.0 (26.4)	9.5 (31.4)	11.0 (36.3)	12.5 (41.3)	14.5 (47.9)	16.5 (54.5)	18.0 (59.4)	Over Range	Over Range	Over Range	Over Range
2.7 m (9 ft)	9.5 (31.4)	11.0 (36.3)	12.5 (41.3)	14.5 (47.9)	16.5 (54.5)	18.0 (59.4)	Over Range	Over Range	Over Range	Over Range	Over Range
3.0 m (10 ft)	11.0 (36.3)	12.5 (41.3)	14.5 (47.9)	16.5 (54.5)	18.0 (59.4)	Over Range	Over Range	Over Range	Over Range	Over Range	Over Range

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VERTICAL CALIBRATION LENS PATTERN EXTRA WIDE ANGLE (01DD) LENS



LONG RANGE (02DD) LENS

Vert Scale Mt. Height	+5	+4	+3	+2	+1	0	-1	-2	-3	-4	-5
1.0 m (3.3 ft)	5.0 (16.5)	6.0 (19.8)	7.0 (23.1)	8.0 (26.4)	10.0 (33)	12.0 (39.6)	14.0 (46.2)	16.0 (52.8)	18.0 (59.4)	20.0 (66)	22.0 (72.6)
1.2 m (4 ft)	6.0 (19.8)	8.0 (26.4)	10.0 (33)	12.0 (39.6)	14.0 (46.2)	16.0 (52.8)	18.0 (59.4)	20.0 (66)	22.0 (72.6)	25.0 (82.5)	29.0 (95.7)
1.5 m (5 ft)	7.0 (23.1)	8.0 (26.4)	10.0 (33)	12.0 (39.6)	14.0 (46.2)	16.0 (52.8)	18.0 (59.4)	20.0 (66)	22.0 (72.6)	25.0 (82.5)	30.5 (100.7)
1.8 m (6 ft)	8.0 (26.4)	10.0 (33)	12.0 (39.6)	14.0 (46.2)	16.0 (52.8)	18.0 (59.4)	20.0 (66)	22.0 (72.6)	25.0 (82.5)	30.5 (100.7)	Over Range
2.1 m (7 ft)	10.0 (33)	12.0 (39.6)	14.0 (46.2)	16.0 (52.8)	18.0 (59.4)	20.0 (66)	22.0 (72.6)	25.0 (82.5)	30.5 (100.7)	Over Range	Over Range
2.4 m (8 ft)	12.0 (39.6)	14.0 (46.2)	16.0 (52.8)	18.0 (59.4)	20.0 (66)	22.0 (72.6)	25.0 (82.5)	30.5 (100.7)	Over Range	Over Range	Over Range
2.7 m (9 ft)	14.0 (46.2)	16.0 (52.8)	18.0 (59.4)	20.0 (66)	22.0 (72.6)	25.0 (82.5)	30.5 (100.7)	Over Range	Over Range	Over Range	Over Range
3.0 m (10 ft)	16.0 (52.8)	18.0 (59.4)	20.0 (66)	22.0 (72.6)	25.0 (82.5)	30.5 (100.7)	Over Range	Over Range	Over Range	Over Range	Over Range

VERTICAL CURTAIN (03DD) LENS

Vert Scale Mt. Height	+5	+4	+3	+2	+1	0	-1	-2	-3	-4
1.0 m (3.3 ft)	3.0 (9.9)	4.0 (13.2)	5.0 (16.5)	6.0 (19.8)	8.0 (26.4)	10.0 (33)	13.0 (42.9)	16.5 (54.5)	19.5 (64.4)	22.5 (74.3)
1.2 m (4 ft)	4.0 (13.2)	5.0 (16.5)	6.0 (19.8)	8.0 (26.4)	10.0 (33)	13.0 (42.9)	16.5 (54.5)	19.5 (64.4)	22.5 (74.3)	Over Range
1.5 m (5 ft)	5.0 (16.5)	6.0 (19.8)	8.0 (26.4)	10.0 (33)	13.0 (42.9)	16.5 (54.5)	19.5 (64.4)	22.5 (74.3)	Over Range	Over Range
1.8 m (6 ft)	6.0 (19.8)	8.0 (26.4)	10.0 (33)	13.0 (42.9)	16.5 (54.5)	19.5 (64.4)	22.5 (74.3)	Over Range	Over Range	Over Range
2.1 m (7 ft)	8.0 (26.4)	10.0 (33)	13.0 (42.9)	16.5 (54.5)	19.5 (64.4)	22.5 (74.3)	Over Range	Over Range	Over Range	Over Range
2.4 m (8 ft)	10.0 (33)	13.0 (42.9)	16.5 (54.5)	19.5 (64.4)	22.5 (74.3)	Over Range	Over Range	Over Range	Over Range	Over Range
2.7 m (9 ft)	13.0 (42.9)	16.5 (54.5)	19.5 (64.4)	22.5 (74.3)	Over Range	Over Range	Over Range	Over Range	Over Range	Over Range
3.0 m (10 ft)	16.5 (54.5)	19.5 (64.4)	22.5 (74.3)	Over Range	Over Range	Over Range	Over Range	Over Range	Over Range	Over Range

Buyer understands that a properly installed and maintained alarm may only reduce the risk of burglary, robbery or fire without warning, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss as a result.

CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE OR OTHER LOSS BASED ON A CLAIM THAT THE PRODUCT FAILS TO GIVE WARNING. HOWEVER, IF SELLER IS HELD LIABLE, WHETHER DIRECTLY OR INDIRECTLY, FOR ANY LOSS OR DAMAGE ARISING UNDER THIS LIMITED WARRANTY OR OTHERWISE, REGARDLESS OF CAUSE OF ORIGIN, SELLER'S MAXIMUM LIABILITY SHALL NOT IN ANY CASE EXCEED THE PURCHASE PRICE OF THE PRODUCT, WHICH SHALL BE THE COMPLETE AND EXCLUSIVE REMEDY AGAINST SELLER.

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WARNING: Test this product at least once a week

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