

# DART SENSORS

# MW250

## Passive Infrared Detector

### SPECIFICATIONS & INSTRUCTIONS

## APPLICATION

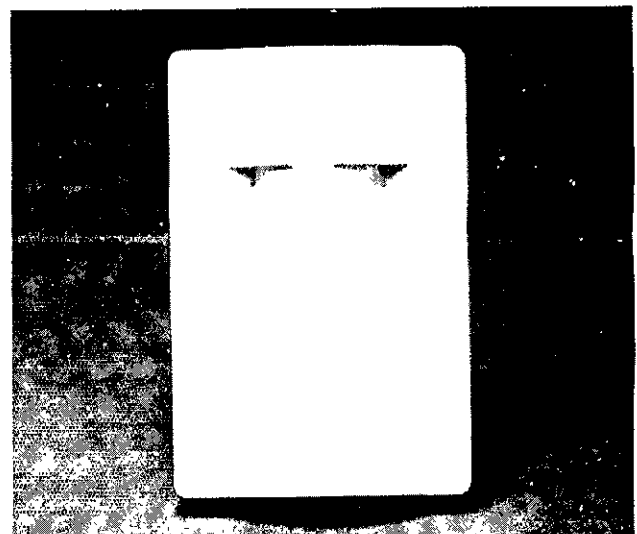
The MW250 is a Passive Infrared Detector with a built in Supervised RF transmitter and features balanced detection, one or two pulse count logic, a walk test mode, low battery supervision and battery saver lockout. It is designed for use with compatible wireless security systems.

## FEATURES

- Dual antennae for more reliable transmission.
- 80° Area of Detection.
- 1 or 2 Pulse Count.
- Pet Alley.
- Lens Masking.
- Tamper Protected.
- Walk Test LED, extinguished during normal operation.
- Wall or Corner Mounting.
- Fully Supervised.
- Battery Saver.
- Pre-programmed Wireless Address (no dip switches).

## SPECIFICATIONS

- Color: Off white.
- Dimensions: 4.73" x 3.15" x 1.6".
- Operating Voltage: 2.8 to 4.0 VDC.
- Current Consumption (at 3.6 VDC):  
Stand-by: 35  $\mu$ A typical, 60  $\mu$ A maximum  
Alarm: 22 mA typical, 25 mA maximum
- Battery:  $2/3$  A size 3.6 VDC lithium.
- Low Battery Detection at 2.9 to 3.1 VDC.
- Detectable Walking Speed: 0.5 to 4.5 ft/sec.
- Pulse Count operation:  
Alarm = 2 pulse activations (events) within 80 to 180 seconds, or (optional) 1 pulse activation.
- RF emission: Complies with F.C.C. Rules Part 15, F.C.C. ID. No. HHV26PECA249508N; Complies with DOC Rules TRC-51, Issue 2 and GL 17 Rev. 3, Certification No. 216 K936.
- RF carrier used: 318.6 MHz.
- RF oscillation: Crystal controlled.
- Operating temperature: 32°F to 120°F (0°C to 49°C).
- Storage temperature: -4°F to +140°F (-20°C to +60°C).



## SETUP

1. Insert a flat blade screwdriver into the slot on the bottom of the device. Depress with mild pressure and lift the cover forward.
2. Plug the battery leads into the battery connection and place the battery into the battery chamber. This unit does not come with a battery included, it must be ordered separately. The battery for this device is a  $\frac{2}{3}$  A size lithium battery (Part No. MW402). It has an average life expectancy of about 1 year. The battery rating is 3.6 VDC at 1.5 Ah. Battery life will vary as different usage causes higher or lower consumption.
3. Copy down the six-digit Wireless Address for the device; it is located on the PC board near the battery. This number should be recorded for the device on the Program Sheet.
4. Carefully replace the device's cover by aligning the hinge at the top of the unit and snapping the other side on.

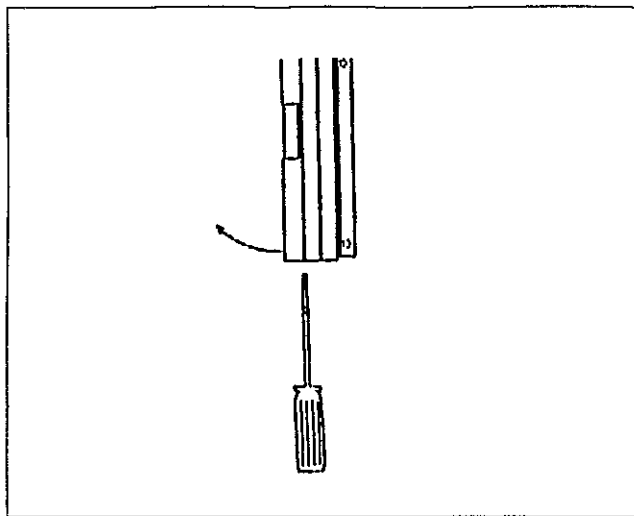


Figure 1 Opening the Unit

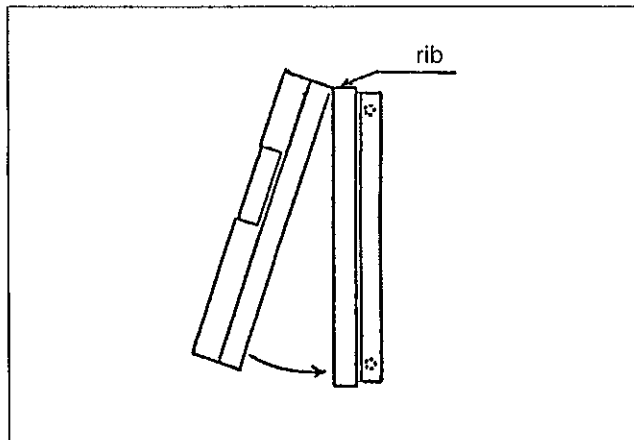


Figure 2 Closing the Sensor Cover

## ENVIRONMENTAL CONSIDERATIONS

The Following Should be Avoided:

1. Sunlight, headlights shining directly on the unit.
2. Heat sources and mobiles in the field of view.
3. Strong air drafts blowing on the detector.
4. Animals in the field of view.
5. Insects in the housing or on the face of the unit.
6. Objects or circumstances which may cause rapid temperature changes in the field of view.
7. Very strong sources of RF energy and induction of electrical noise.

## INSTALLATION CONSIDERATIONS

A PIR is most sensitive to motion at right angles to the optical field. Plan the installation so that would-be intruders cross as much of the 80° field of view as the installation will allow. Mounting height should be between 6-10'.

The control/receiver should be mounted in an area centrally located to all transmitters and free of metallic structures and obstacles. While phase diverse transmitters are vastly superior to other transmitter types, the position of each of the transmitters should be considered and tested before permanent mounting is completed. Avoid placing transmitters near large surfaces or appliances. Avoid other sources of RF or EMI energy.

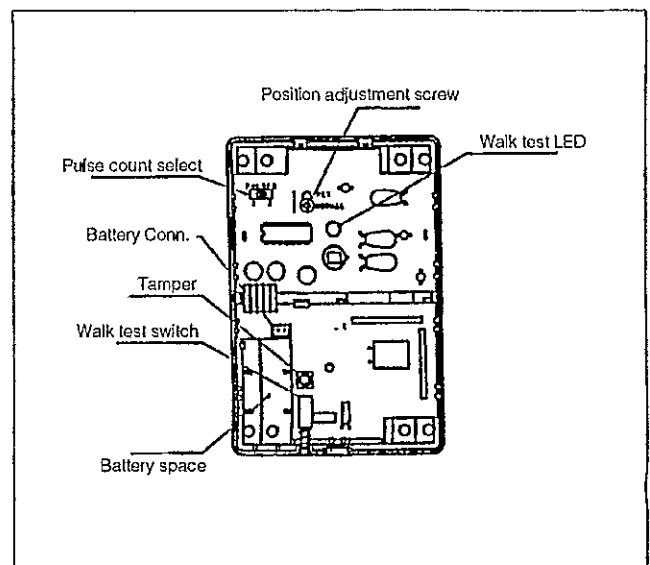


Figure 3 Sensor layout

## PROTECTION PATTERN SELECTION

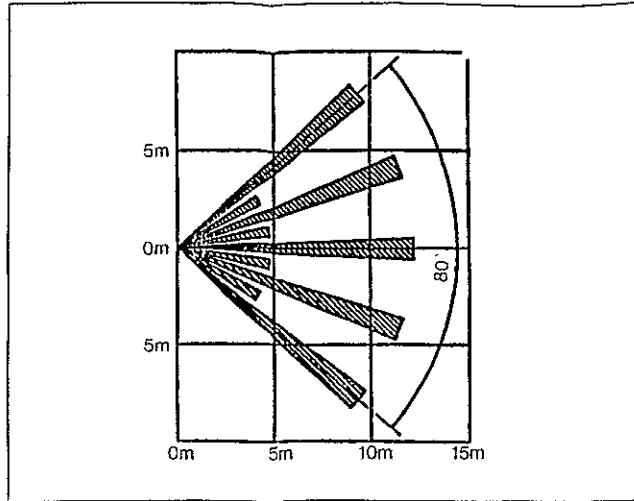


Figure 4 PIR Detection Pattern

Here are three drawings showing patterns of detection available to the installer. Pattern A or B will be selected by setting the angle fixing screw to the normal or pet position.

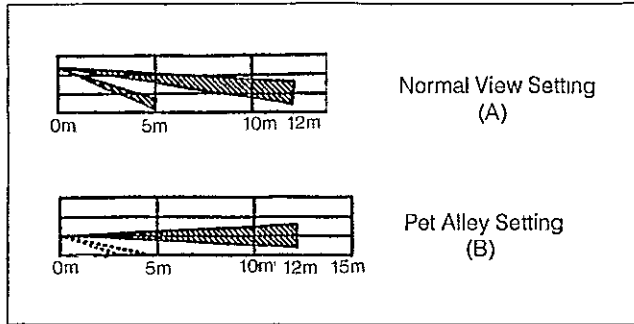


Figure 5 Viewing angle adjustment

Please note the lower mounting height in the Pet Alley application. This pattern may be desirable in other instances where a more lateral trajectory is desired. Block off individual sections of the lens in pet alley applications.

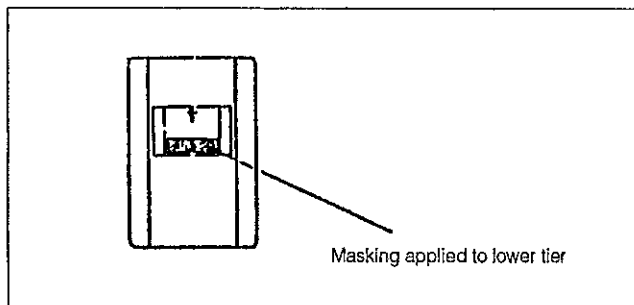


Figure 6 Lens masking

## WALK TESTING

Temporarily mount the device in the desired location using double sided tape. After power has been applied for **at least 2 minutes**, the unit will be ready for walk testing. Using a thin edged tool, press the walk test button at the base of the unit. The button should be held for more than 1 second. During the next 3 minutes the unit will be in the walk test mode. The sensor's activation will be retriggerable during that time and the LED will illuminate for approx. 3 seconds to signify each activation. Walk through each of the protective zones making sure that only desired areas of detection cause the LED to activate. Allow the LED to extinguish before moving to the next zone. Adjust the position of the sensor or the masking tape until the desired pattern is reached.

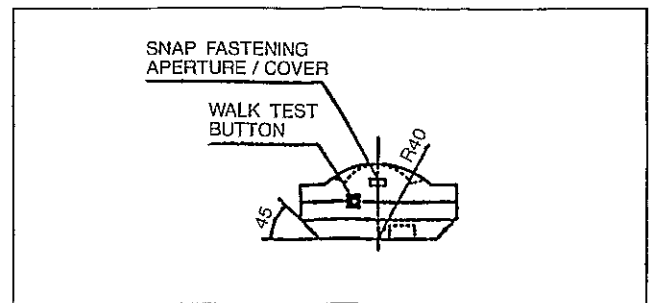


Figure 7 Bottom view of sensor

## MOUNTING

Once optimum performance is achieved the sensor should be securely mounted to the intended surface. See the sensor layout to identify the available holes for screws and anchors. Select outer holes for corner mounting and inner holes for wall surface mounting.

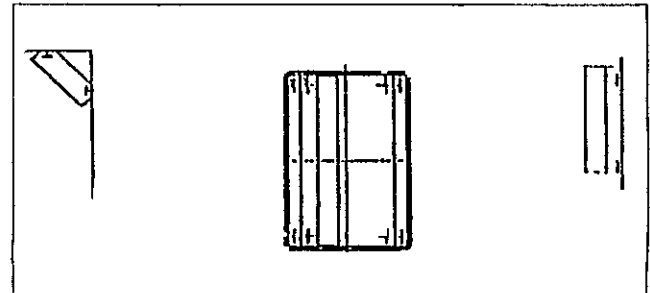


Figure 8 Mounting hole selection

## PROGRAMMING AND TESTING

Enter the PROGRAMMING Mode on the LCD Control Station. Select the appropriate WIRELESS POINT definition and program as directed in the panel's Programming Manual. To program the device's Wireless Address, enter the six-digit number which is printed on the device's PC board near the battery. Once all desired programming has been completed, exit the PROGRAMMING Mode on the LCD Control Station. Then select the POINT TEST option from the TESTS Menu. While in POINT TEST, activate the sensor to determine if the device is transmitting. All LCD Control Stations in the area will annunciate an identification of the device being activated. While in POINT TEST, the panel will not initiate any alarm outputs or communication devices. (Always be sure that the point is Disarmed or the panel is in POINT TEST when testing transmitters).

## NORMAL OPERATION

During normal operation, the sensor's lockout will remain active 80 to 180 seconds after each activation. The sensor will ignore subsequent activations until the lockout time has expired. The LED will not illuminate for detection.

## PULSE COUNT

If the pulse count switch is set for a single pulse then upon detecting a single event the transmitter will activate and the control will alarm if armed. If the pulse count is set for 2 events then upon the first event a timer is initiated. If a second event is detected within 80 to 180 seconds of the first, the transmitter will activate and the control will alarm. Upon the activation of the transmitter in either setting the sensor will ignore additional events for a period of 80 to 180 seconds.