GENERAL INFORMATION
The 998EX detector is equipped with “downward-looking” optics to cover the normally “dead” zone directly beneath a detector (not present on the 996EX).

The detectors are shipped with the standard wide angle lens installed. An interchange lens is provided – the long range lens, is supplied with the 998EX detector, but is an optional lens for the 996EX. An optional swivel mounting bracket is available under part number 998SB.

SPECIFICATIONS
- **Detector Type**: Passive Infrared
- **Coverage**: Standard Wide Angle Lens
- **Dimensions**: 67mm x 111mm x 54mm
- **Humidity**: 20% to 90% condensing
- **Operating Temp.**: -10°C to +50°C
- **Current**: 18 mA (non-alarm), nominal
- **Input Impedance**: Approx. 1 megohm.
- **System Disarmed**: 0V applied.
- **System Armed**: +12VDC applied.
- **Input Voltage**: 10–16VDC (voltage reversal makes PIR inoperative).
- **Pulse Count**: Intermediate or Standard, selectable via DIP switch
- **Detection Rate**: 2.4m, nominal
- **Walk Rate**: 15-ohm protective resistor
- **MOUNTING SCREWS (USE 4)**
- **Protection Pattern, Standard Lens**
- **Protection Pattern, No. 595L Long Range Lens** (optional for 996EX)

INSTALLATION
Normal Surface Mounting
Mount the unit to a firm vertical surface. The wall wiring terminals are provided on the detector mounting bracket. The wall wiring connections are applicable after all connections are made and are insulated.

1. **CAUTION**: Be sure to center the lens.
2. **CAUTION**: Also break out the desired wire entry hole at this time (marked X1 or X2 in Fig. 2).
3. **CAUTION**: Feed wiring emerging from the wall through the wire access hole near the top of the detector base. Make sure wires have sufficient slack to allow the PC board to be moved up and down freely when the wires are connected to the terminals on the board.
4. **CAUTION**: Mount the base. Note the mounting orientation of this detector wire entry at the top, lens at the bottom!
5. **CAUTION**: Refer to the WIRING CONNECTIONS section before replacing the front cover.

Corner Mounting
- **Knockout holes “A” in the base are used for corner mounting on a wall (side DIP switch position for access to bottom holes, down for access to top holes) and mount in selected cover with 4 screws (see Fig. 3).

Note the mounting orientation of this detector – wire entry at the top, lens at the bottom! Make sure the board is positioned so that the arrow is in line with the appropriate setting on the graduated scale (see Fig. 5 and Table 1).

**WIRING CONNECTIONS**
Bring all wires in through the wire access slot at the top of the detector base (near the terminal block) and connect to the screw terminals (see Fig. 5 for wiring details). Seal any openings in the base with foam or RTV (not supplied) to prevent draft or insects from entering the unit. Apply power only after all connections have been made and are insulated.

**LED ENABLE/DISABLE OPTION**
To enable the LED, set the DIP switch #1 DOWN (see Fig. 5 for switch location). To disable the LED, set DIP switch #1 UP. Use a small pointed tool to move the switch handle up or down.

**PULSE COUNTER OPTION**
For Intermediate Pulse Count, set the Pulse Count DIP switch #2 UP (see Fig. 5 for switch location). For Standard Pulse Count, set DIP switch #2 DOWN. Use a small pointed tool to move the switch handle up or down.

**LED MEMORY OF ALARM OPTION (996EX ONLY)**
When used with a control that can provide a suitable switched voltage (12V), the detector can be programmed to provide intrusion memory, as follows:
1. **Set DIP switch #3 DOWN (memory enabled).**
2. **Set the DIP switch #5 0 on the 996EX, or 4 on the 998EX.**

**TAMPER SWITCH**
The detector is equipped with a cover tamper switch (terminals 6 and 7). These terminals should be connected to the normally closed tamper loop on control (see Fig. 5).

To clear memory at any time, momentarily arm the system, then disarm.
3. For the 998EX detector, check the downward-looking
2. Replace front cover and walk through protective
B. Protective loop is interrupted (open).
A. DC voltage supplied to detector is inadequate, intermittent or polarit reversed.
Remedy: Determine whether interruption is in protective loop or at detector's alarm relay contacts. Disconnect protective loop at detector relay contact terminals. Check continuity across terminals. If absent (and proper voltage is supplied to the detector), return unit for replacement. If present, check protective loop wiring.

LED INOPERATIVE
A. LED DIP switch #1 in UP position.
Remedy: Set DIP switch #1 in DOWN position.
B. LED malfunction. Check for broken/shorted leads.
Remedy: Return unit for replacement.

DETECTION AREA CHANGES
A. Repositioned furniture or equipment in the protected area.
Remedy: Caution customer about layout changes.
B. Mounting surface is unstable. A few degrees of vertical shift can change the angle substantially.
Remedy: Mount on secure surface.

PANEL INDICATES CONTINUOUS FAULT IN ZONE OF PROTECTION CONTAINING PIRs
Too many detectors being used in the zone. Each detector adds 15 ohms of series resistance and the zone's allowable loop resistance is being exceeded.
Remedy: Reduce the number of detectors used in the zone. The detection area is within the allowable loop resistance permitted by the control.

TO THE INSTALLER
Regular maintenance and inspection (at least annually) by the installer and frequent testing by the user are vital to continuous satisfactory operation of any alarm system.
The installer should assume the responsibility of developing and offering a regular maintenance program to the user, as well as acquainting the user with the proper operation and limitations of the alarm system and its component parts. Recommendations must be included for a specific program of frequent testing to insure the system's operation at all times.

THE LIMITATIONS OF YOUR PASSIVE INFRARED MOTION DETECTOR
While the Intrusion Detector is a highly reliable intrusion detection device, it does not offer guaranteed protection against burglary. Any Intrusion Detection device is subject to compromise or failure to warn for a variety of reasons:

- Passive Infrared Motion Detectors can only detect motion if there is appropriate DC power connected to it, or if the DC power source is not or is improperly repaired or serviced by anyone other than Ademco factory service. In case of defect, return the detector to or an authorized distributor for immediate replacement.

- THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE OR OTHER-WISE, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO CASE SHALL SELLER BE LIABLE TO ANYONE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, OR UPON ANY OTHER BASIS OF LIABILITY WHATSOEVER, EVEN IF THE LOSS OR DAMAGE IS CAUSED BY THE SELLER'S OWN NEGLIGENCE OR FAULT.

- Seller does not represent that its detector may not be compromised or circumvented; that the detector will prevent any personal injury or property loss by burglary, robbery, fire, or any other event; or that the detector will in all cases provide adequate warning or protection. Buyer understands that a properly installed and maintained alarm may only reduce the risk of a burglary, robbery, fire or other events occurring. The use of an alarm system, however, does not provide 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 the detector failed to give warning. However, if Seller is unable, whether directly or indirectly, for any loss or damage arising under this Limited Warranty or otherwise, regardless of cause or origin, Seller's maximum liability shall not in any case exceed the purchase price of the detector, which shall be the complete and exclusive remedy against Seller. This warranty replaces any previous warranties and is the only warranty made by Seller on this detector. No increase or alteration, whether written or verbal, of the obligations of this Limited Warranty is authorized.

<table>
<thead>
<tr>
<th>PROTECTION RANGE</th>
<th>90LR LONG RANGE LENS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mfg. Height</td>
<td>6m</td>
</tr>
<tr>
<td>2.5m</td>
<td>-10</td>
</tr>
<tr>
<td>2.4m</td>
<td>-9</td>
</tr>
<tr>
<td>2.1m</td>
<td>-6</td>
</tr>
<tr>
<td>1.8m</td>
<td>-3</td>
</tr>
</tbody>
</table>

*Vertical Pattern Setting*

*Important:* When using the Long Range lens, set the PIR for intermediate response (Pulse Count DIP switch in UP position).

TEST PROCEDURES
Important: Two-minute warm-up time is required after applying power. Testing should be conducted with the protected area cleared of all people. Disarm the protective system's control during the test procedure to prevent reporting of unwanted alarms.

1. Remove front cover and set DIP switch #2 (Pulse Count) to the setting which will be used for this detector in the installation. The LED lights when motion is detected (the LED serves as a Walk-Test indicator during this procedure).
2. Replace front cover and walk through protective zones, observing that the detector's LED lights when motion is detected (the LED serves as a Walk-Test indicator during this procedure).

For the 998EX detector, check the downward-looking zone by walking along the wall directly beneath the detector.
The absolute range of all PIR units is subject to variation because of different types of clothing, backgrounds and ambient temperature. For this reason, ensure that the most likely intruder routes are well within the PIR's protective zones and that walk-testing is carried out along these routes.

After the "Walk-Test" is complete, the LED may be dis-abled (DIP switch #1 UP).

MAINTAINING PROPER OPERATION
In order to maintain the detector in proper working condition, it is important that the user observe the following.
1. Power should be provided at all times. Loss of power to the unit will result in the alarm contacts reverting to an alarm state.
2. Units should never be re-aimed or relocated without the advice or assistance of the alarm service company.
3. The physical surroundings of the protected area should not be changed. If furniture or stock is moved, or air-conditioning or additional heating is installed, the system may have to be re-adjusted by the alarm service company.
4. Walk-tests should be conducted frequently (at least weekly) to confirm continued proper coverage by each detector.

TROUBLESHOOTING
**INTERMITTENT ALARM (LED OPERATIVE)**
A. Rapid temperature change. Check for electric or gas heaters, open flames, electric arcs, etc.
Remedy: Leave the unit and reposition detector.
B. Drafts causing drapes, light fixtures, display material to shift, or polarity reversed.
Remedy: Ensure that proper polarity and adequate voltage is supplied and that wiring is intact (no opens/shorts) and connections secure.
C. Protective loop is interrupted (open).
Remedy: Determine whether interruption is in protective loop or at detector's alarm relay contacts. Disconnect protective loop at detector relay contact terminals. Check continuity across terminals. If absent (and proper voltage is supplied to the detector), return unit for replacement. If present, check protective loop wiring.

**ADMC® SIX-YEAR LIMITED WARRANTY**
Alarm Device Manufacturing Company, a Division of Pittway Corporation, and its divisions, subsidiaries and affiliates ("Seller"). 165 Eileen Way, Syosset, New York 11791, warrants this detector to be in conformance with its own plans and specifications, and its workmanship and materials under normal use and service for 72 months from the date stamp control on the product. Seller's obligation shall be limited to replacing, at its option, free of charge for materials or labor, a detector which is proved not in conformance with Seller's specifications or proves defective in materials or workmanship under normal use and service as a result of defect, return the detector to or an authorized distributor for immediate replacement.

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THE COMPLETE AND EXCLUSIVE REMEDY AGAINST SELLER. This warranty replaces any previous warranties and is the only warranty made by Seller on this detector. No increase or alteration, whether written or verbal, of the obligations of this Limited Warranty is authorized.

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