Thank you for purchasing APC’s Modular Data Line Surge Protection System. Please fill out the supplied Warranty Registration Card or an on-line Product Warranty Registration form at www.apc.com.

APC’s Modular Data Line Surge Protection System consists of the PRM4 Chassis, mounting hardware, ground wire, and associated data line modules (PNETR5 for Network Protection, PTEL2R for Analog Telephone Protection, P232R for RS232 Protection, PDIGTR for Digital Telephone Protection, and PVR for Digital Cable Protection). The chassis was designed for desktop use, but can also be mounting in a home wiring enclosure, or in an equipment bay or rack.

This manual provides basic information necessary to install the PRM4 chassis and associated modules.

Note: Procedures provided in this document are not intended to supersede local standards or codes. Reference the Telecommunications Industries Association and Electronic Industries Alliance publication “Commercial Building Telecommunications Cabling Standard, General Requirements” (document number TIA/EIA-568-B.1-2002) to ensure proper installation of system wiring.

Safety
Please read and save these instructions and observe the following safety precautions.

• Do not install the system in an environment where the operating temperature exceeds 0° to 40°C (32° to 104°F).
• Do not install the system where the relative humidity exceeds 95%, non-condensing.
• Do not store the system in an environment that exceeds 0° to 45°C (32° to 113°F).

Chassis Installation
APC recommends the ProtectNET PRM4 Data Line Surge Protection chassis can be installed using the optional mounting brackets (Detail A, Figure 1) available from APC (order PRMLB). In applications where more than one PRM4 chassis is being used, the chassis can be stacked (Figure 1) or mounted side-by-side (Figure 2) using the joining plate and supplied machine screws.

Module Installation
The PRM4 chassis is designed to accommodate up to four data line or cable modules. To install a module, remove the two machine screws that secure the insert plate to the "U" bracket bezel holder. Remove one of the blank panels by pulling it straight out of the chassis. Align module with the groove in the chassis and slide the module fully into the chassis. After installing all required modules, replace the "U" bracket bezel holder and insert plate. The "U" bracket bezel holder is provided to prevent modules from being accidently removed from the chassis.

Telephone or Coaxial Cable Installation
To install a data line cable, connect the input RJ-45 connector to the signal source and then to the upper connector on the module. Connect a data line cable from the lower connector on the module to the equipment to be protected. Note: To accommodate four modules, the four center blank panels must be removed.

For coaxial cables, connect one end of the cable to the signal source. Connect the other end of the cable to the upper input connector of the module marked “IN”. Connect the output cable "F" connector from the lower module connector marked “OUT” to the device to be protected (CATV, DSS, Cable Modem, or Antenna System).

Grounding
The chassis must be grounded (Figure 3) to a proper protective earth ground. In a typical home/office environment, this can be accomplished by grounding the chassis to theTransient Voltage Surge Suppression (TVSS) ground of an Uninterruptable Power Supply (UPS), or to your computer chassis. If the chassis is mounted in a structured wiring cabinet, ground the chassis to earth ground via the cabinet's earth ground connection. A ground wire, machine screw, and threaded mounting hole are provided for use when grounding the chassis.

Other Considerations
• Do not install this device in an environment where the operating temperature exceeds 0° to 40°C (32° to 104°F).
• Do not install this device where the relative humidity exceeds 95%, non-condensing.
• Do not store this device in an environment that exceeds 0° to 45°C (32° to 113°F).
All other trademarks are the property of their respective owners.

Installed cable Category level or type. The ISO/IEC 8802-3 standard specifies a maximum UTP cable transmission rate, there is a small insertion loss introduced by the PNETR5. Use Table 1 to approximate the insertion loss based on cable length effectively introduced by the PNETR5 by company is required to provide you with advance notice so you can make the modifications necessary to maintain uninterrupted service. This product is not serviceable by the user.

In applications where the network data transmission rate is high, insertion loss introduced by in-line asynchronous multiplexers, asynchronous printer spoolers, etc.) comprised of unshielded, twisted-pair wiring with RJ-45 connectors. It protects up to four ports per unit.

The PVR module protects the cable input to video/cable/modem equipment against surges and spikes caused by lightning and electrostatic discharge (ESD). It is compatible with cable television (CATV), digital satellite system (DSS), television, video cassette recorder (VCR), cable modem and TV antenna equipment. It is also compatible with many DSS units having operating voltages below 26 volts DC. The PVR is recognized by Underwriter’s Laboratories (UL) as a secondary protector.

Model PVR (Digital Cable Protection)

The PVR module protects the cable input to video/cable/modem equipment against surges and spikes caused by lightning and electrostatic discharge (ESD). It is compatible with cable television (CATV), digital satellite system (DSS), television, video cassette recorder (VCR), cable modem and TV antenna equipment. It is also compatible with many DSS units having operating voltages below 26 volts DC. The PVR is recognized by Underwriter’s Laboratories (UL) as a secondary protector.

Model PTE2R (Analog Telephone Protection)

The PTE2R module protects analog telephones, ADSL, ISDN2, voice mail and automated answering systems, fax machines and modems from damage caused by lightning-generated electrical transients. Each PTE2R protects up to 2 lines.


Model PDIGTR (Digital Telephone Protection)

The PDIGTR module is only for use in T1, CSU, DSU, ISDN, DDS and Digital Leased Line telecommunication equipment, T1N-1 or SELV circuits only.

In applications where the network data transmission rate is high, insertion loss introduced by in-line devices is a significant consideration where cable lengths are particularly long. At the 100 Mbps data transmission rate, there is a small insertion loss introduced by the PNETR5. Use Table 1 to approximate the insertion loss based on cable length effectively introduced by the PNETR5 by installed cable Category level or type. The ISO/IEC 8802-3 standard specifies a maximum UTP cable length of 100 meters per segment at 10/100 Mbps. For Thinet, the maximum cable length is 185 meters (607 feet).

Table 1

<table>
<thead>
<tr>
<th>EIA/TIA 568 Category or Cable Type</th>
<th>Frequency (MHz)</th>
<th>Attenuation (db/100m)</th>
<th>Equivalent Cable Length (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>10</td>
<td>9.8</td>
<td>1.0 (3.3 ft)</td>
</tr>
<tr>
<td>4</td>
<td>16</td>
<td>13.1</td>
<td>1.7 (5.6 ft)</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>7.2</td>
<td>1.4 (4.5 ft)</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>8.9</td>
<td>1.5 (4.9 ft)</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>6.6</td>
<td>1.7 (5.6 ft)</td>
</tr>
<tr>
<td>7</td>
<td>16</td>
<td>8.2</td>
<td>1.7 (5.6 ft)</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>24</td>
<td>12.9 (41 ft)</td>
</tr>
</tbody>
</table>

For information please call APC Customer Service Center at: American Power Conversion Inc. 401-789-5735 or 1-800-800-4APC (4272). West Kingston, RI 02892 USA esupport@apc.com

Customer Service / Technical Support

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For information please call APC Customer Service Center at: American Power Conversion 401-789-5735 or 1-800-800-4APC (4272) 132 Fairgrounds Road http://www.apc.com/support or

West Kingston, RI 01892 USAsupport@apc.com

Federal Communications Commission (FCC) Notice

This equipment contains an FCC compliant RJ-45 modular jack. It is designed to be connected to the telephone network or premises wiring using compatible modular plugs and cables which comply with the requirements of FCC Part 68 rules. The Ringer Equivalence Number (REN) is used to determine the number of devices which may be connected to the telephone line. An excessive REN may cause the equipment to not ring in response to an incoming call. In most areas, the sum of RENs of all equipment on a line should not exceed five (5).

In the unlikely event that this equipment causes harm to the telephone network, the telephone company can temporarily disconnect your service. The telephone company will try to warn you in advance of such any disconnection, but if advance notice isn’t practical, it may disconnect the service first and notify you as soon as possible afterwards. In the event such a disconnection is deemed necessary, you will be advised of your right to file a complaint with the FCC.

From time to time, the telephone company may make changes in its facilities, equipment, or operations which could affect the operation of connected equipment. If this occurs, the telephone company is required to provide you with advance notice so you can make the modifications necessary to maintain uninterrupted service. This product is not serviceable by the user.