



*Defender 2000*  
**Field Installation Guide**

IMPORTANT NOTICE

Before installing the equipment, it is important that you completely review this Field Installation Guide and any other manuals provided by suppliers of related equipment (such as telephone sets or concentrators). Proper review of this information and careful advance planning will reduce the possibility of errors in the installation process.

The Field Installation Guide is an abbreviated version of the *Defender 2000 Installation and Service Manual*. You should read the Installation and Service Manual in order to gain a complete understanding of the installation process.

Failure to properly install and test the *Defender 2000* may result in loss of revenue from fraudulent calls. Potential losses from an improperly programmed or installed controller can be virtually unlimited.

**DOC-022-01**

## **1. WARRANTY INFORMATION**

**1.01** The *Defender 2000* product is covered by a limited warranty which is printed at the back of this document. Please read the warranty before installing or operating any equipment.

## **2. EQUIPMENT SERIAL NUMBERS**

**2.01** Each of the three circuit boards which, when combined, form the *Defender 2000* has a unique serial number. These serial numbers are important in establishing warranty coverage. Enclosed with the packing documents for each shipment is a Shipping Verification List which contains serial numbers and shipping dates. Retain this document for your records.

## **3. SITE SELECTION**

**3.01** Select the location for installing the *Defender 2000* by determining 115 VAC availability, grounding arrangements, routing of station wiring, and routing of wiring to the telephone company interface. Check to insure that all required equipment and tools are available before you start. The tools you will need vary depending upon the needs of each particular installation, but a list of suggestions is contained in the Installation and Service Manual.

## **4. EQUIPMENT DESCRIPTION**

**4.01** The *Defender 2000* is a line controller which consists of three separate circuit boards: the Station Line Interface Board (or Line Board), the CO Interface Board, and the Processor Board. These three boards are connected together by standoff and screw attachments. The large board on the bottom is the Line Board. The CO Board is attached to the Line Board and can be identified by the RJ-11C jacks which are mounted to receive the wiring harness plugs. The Processor Board is also attached to the Line Board and can be identified by the round battery. The *Defender 2000* Processor Board has 2 RS-422 output ports. Installation does not require access to the three boards. Refer to the diagram on pages 5 & 6.

**4.02** Each telephone station line is terminated at a quad RJ11 block located on the bottom short end of the enclosure. There can be two, three, or four lines depending upon the model ordered.

**4.03** The telephone company central office lines will also terminate at the quad RJ-11C jack located on the bottom short end of the enclosure.

**4.04** The *Defender 2000* is powered by a wall-mounted power supply. Power is provided to the *Defender 2000* via a six foot cord which connects

to the bottom short end of the enclosure. It is labeled POWER and is next to the quad RJ11 block.

**4.05** There is a 3 volt lithium battery on the Processor Board that provides power to maintain the controller's memory during power failures. It is a Panasonic BR2330 (or equivalent) and can be purchased from a variety of sources, including some local electronic supply houses or Omniphone. Installation of the battery requires opening the enclosure. It is recommended that the battery be changed once a year.

## **5. INSTALLATION PROCESS**

**5.01** Do not plug the power supply into a wall outlet or other power source at this time.

**5.02** Hold the controller against a wall or other flat surface to determine the best mounting position. Carefully consider such factors as routing of wiring, availability of AC power, protection from the elements, and security from possible tampering by unauthorized personnel. For the purpose of description in this manual, vertical installation with the power and quad RJ11 block connector at the bottom is assumed. Proper operation is assured regardless of mounting position.

**5.03** Locate the four mounting holes. Mark the mounting surface at each hole using a pencil or pen. Remove the controller from the wall.

**5.04** Make the necessary preparations to the installation surface such as mounting wall bolts or drilling starter holes for wood screws. Attach the controller to the wall. Due to widely varying requirements, mounting materials, such as wall bolts or wood screws, are not provided with the *Defender 2000*. Use caution when installing the equipment.

**5.05** There are four RJ11 jacks in a quad block located on one end of the enclosure. Each line of the *Defender 2000* is accessed via one of the RJ11 jacks in the quad block. The outer two wires in each RJ11 plug provide station (telephone set) connection, while the inner two wires provide CO dial tone connection. The diagram on pages 5 and 6 shows the connection of station and CO wiring to the *Defender 2000*.

**5.06** Use standard RJ-11C connectors to plug the lines into the CO terminal block.

**5.07 Verify that the power supply is not connected to a power source.**

**5.08 A ground lug is provided on the exterior of the *Defender 2000* enclosure. Use the lug and a wire of the same type as used in step 5 to provide a safety ground to the enclosure. An earth ground is critical to the proper operation of the Defender 2000. • Do not skip this step even if your wall outlet is grounded.**

**5.09 *The Defender 2000* provides two RS-422 connections which can be used to daisy-chain the controllers together or can be used in conjunction with an external monitoring device. Refer to the *Defender 2000 Installation and Service Manual* for details regarding the use of this feature.**

**5.10 Secure all wiring in a neat fashion consistent with good workmanship. This will help avoid confusion during future service calls. Recheck all connections and review the installation to insure that you have completed all steps as outlined above.**

**5.11 Install the power supply plug into the *Defender 2000*. Connect the power supply to a 115 VAC power source such as a wall outlet.**

**5.12 If possible, secure the power supply to the wall by removing the outlet plate screw and passing it through the screw hole located at the top of the power supply.**

**5.13 Test the *Defender 2000* according to the instructions in the *Defender 2000* Installation and Service Manual.**

- Failure to properly test your installation may result in loss of revenue from fraudulent calls. Potential losses from an improperly programmed or installed controller can be virtually unlimited.

## **6. ASSISTANCE FROM OMNIPHONE**

**6.01 If, after referring to this document and the *Defender 2000 Installation and Service Manual*, you still have unanswered questions call Omniphone for technical assistance.**

**Before you call, have a brief description prepared to help us identify the installation and testing steps you have taken. Also, be sure to have the serial number from the Line Board available. The serial number is located on the shipping verification list. This will enable the technician to verify the model of controller as well as the warranty expiration.**

**Warranty Notice**  
**Omniphone**  
***Defender 2000* Products**

Omniphone, Inc. makes no warranties, either express or implied, regarding the accompanying *Defender 2000* as to its fitness for any particular purpose. Omniphone, Inc. specifically disclaims any warranty of merchantability, either stated or implied.

If during the first eighteen (18) months from the date of purchase the *Defender 2000* fails because of a defect in components or workmanship, it may be returned to Omniphone for repair or replacement at our option. We will pay for the return freight to you using the least expensive means available to us.

Neither Omniphone nor its employees, agents, or assigns are liable or responsible to the purchaser or user in any way whatsoever for loss or damage caused, or alleged to be caused, directly or indirectly by the *Defender 2000*, its related software or documentation, including but not limited to interruption of service, loss of business, revenue, or anticipated profits.

This manual describes the proper installation of the *Defender 2000*. Omniphone disclaims any responsibility for the operation of the *Defender 2000* (other than repair or replacement as described above) even if it was installed according to the instructions in this manual. The *Defender 2000* is under the control of a software program which operates according to many options and features which are user programmed and configured. Certain options or combinations of options may result in the equipment being operated in a manner inconsistent with the desired or "normal" operation. The owner of the equipment and not Omniphone, Inc., or any of its subsidiaries, affiliates, or agents, assumes sole responsibility for any liabilities, losses, or damages which may occur as a result of such operation, any other statements, either written or oral, to the contrary notwithstanding.

**FCC Part 68 Information**

This equipment complies with part 68 of the FCC rules. On the bottom of this equipment is a label that contains, among other information, the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. You must, upon request, provide this information to your telephone company.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of all the REN's of all devices connected to one line should not exceed five(5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your calling area.

If your telephone equipment causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance, but if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with your telephone equipment, please contact Omniphone, Inc., P. O. Box 8739, Mobile, Alabama 36689, (25) 639-9639, for information on obtaining service or repairs. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.

**This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subjects to state tariffs.**

**To comply with state tariffs, the telephone company must be given notification prior to connection. In some states, prior approval of connection must be obtained from the public utility commission, public service commission, or corporation commission.**

### **Installation**

**The device is equipped with a USOC RJ-11C connector.**

### **FCC Part 15 Information**

**This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of the equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.**

# DEFENDER 2000 DIAGRAM

