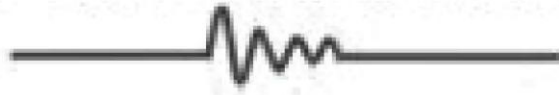


MANUAL

POWER DOCTOR II



**Diagnostic Tool for CVSS Line of
Power Protection Products**



**INNOVOLT, INC.
www.innovolt.com**

INTRODUCTION

Thank you for purchasing the Power Doctor II. The Power Doctor II is a unique diagnostic tool for use with all of INNOVOLT'S CVSS line of power protection products. This device allows you to download the number of power grid disturbances encountered by your INNOVOLT power protector such as:

- Voltage Sags that cause Current Surges
- Over Voltage events
- Brownouts
- Voltage Surges
- Power Outages.

After the data is transferred to the Power Doctor II via the Optical Interface, the data can then be downloaded to any standard PC via the USB interface for data organizing and printing.

To download software for Power Doctor II, please visit our website: www.innovolt.com

Getting Started

Unpacking, Battery Installation, and Charging

1) Unpack the PD II and all accessories. Install the battery being careful to align the battery contacts with the battery connector. Do this by inserting the contact end of the battery first, then tilting the body into the compartment. Install the battery holder on top of the battery in the compartment. This will ensure the battery will stay in place. Finally, install the battery cover.

2) Next, connect the PD II to the USB port of a PC via the enclosed USB cable. Install directly into the USB port and not to a hub as some hubs do not allow enough current flow for proper charging of the battery. Allow the battery to charge for at least 6 hours on the first charge.

Installing the PC Application Software

When you install the PC application, you will need an active internet connection. This is because the installer is actually going to a web site to download the latest version of the PC application. In fact, every time you launch the PC application, it will check to see if you have an open internet connection, check to see if there is an update, then automatically load the update.

Go to www.innovolt.com and click on the Products Spec & Manuals tab. Page down and click on the “Power Doctor 2” Icon. This will install the PC Application on your computer.

Embedded in the PC Application is any firmware updates for the Power Doctor (firmware the software that runs inside the PD itself). This means that each time you connect the PD II to your PC via the USB cable, it will check to see if there is a firmware update and load it automatically.

Also, when you connect the PD II via USB, it will automatically synchronize the PD II’s time and date to the PC’s time and date.

Performing and Optical Read

1) Install the Optical Probe by aligning the 3-pins on the PD II to the receptacle on the end of the probe. Screw on the threaded coupler.

2) Power ON the PD II by pressing the Power Button.

3) Remove the metal protective cap from the Optical Probe.

4) Align the Optical Probe LED Receiver with the MAINS LED on any Innovolt Power Protection Device.

5) Press the “ENTER” button while “<<” symbol is pointing to “Optical Read” You may have to adjust the angle of the LED Receiver on the end of the probe slightly for data to be read. The RX LED illuminates GREEN to show proper alignment. The display shows data transfer progress and when the transfer is complete. If the data read is identical to a previous read, the PD II prompts you to delete the duplicate record.

Note: Optical Read from the Plug In Protector PIP8 will take longer than from other Innovolt products.

Getting the Most out of your PD II

The PD II is a powerful tool that allows you to read power grid disturbance totals from any Innovolt Power Protection device and keep up with the history of the disturbances. As this tool was developed for technicians to keep up with power grid disturbance data from multiple devices installed in multiple locations, this tutorial is meant to give the user a head start on how to keep up with power grid disturbance data in an organized fashion.

It is important to get a baseline reading of disturbance totals from each installed Innovolt unit. It is possible that the first read will have 1 or 2 disturbances tallied. These are left over from testing during the manufacturing process. Each time you read the Innovolt device, it will give you the total number of disturbances encountered each of the categories: Voltage Sags/Current Surges, Over Voltages, Brownouts, Voltage Surges, and Power Outages. There is no way to reset the counts in the device. Therefore, if you want to know the increase since the last reading, you will have to subtract the last reading from the current reading.

When a Power Doctor II unit is connected via USB, the PC Application screen has many automatic indications showing that the Power Doctor II unit is connected, the Firmware is current, and the date/time has been set.

Keep a Data File for Each Installation Site

Once you have installed the PC Application software, perform a FILE > SAVE DATA FILE operation. When choosing a file name, you may want to choose the name of the installation site such as "Jones Residence" or "Smith Law Firm". This way, when you perform future reads from this site, you can load this file and append the readings to it.

Each Innovolt Power Protection Device has a unique Product ID stored internally. Whenever you perform an optical read for the device, the data is tagged with that Product ID. Within the PC Application software, you can give each Innovolt device a Location name associate with its Product ID. To do this, go into the DATABASE sub menu and select POWER PROTECTION DEVICES. Here, you can input a specific Location name for the device such as "Home Theater" or "Bedroom" or "Main Copy Room". When the data records are shown in the PC Application, this Location name is also shown to help you identify the device. In addition, you can input the Zip Code as well as 2 additional user defined fields.

Displaying and Printing the information on your PC

Before connecting your PD II to the PC via the USB cable, choose the appropriate data file you want the data to be appended to. When you connect the USB cable, your PD II will automatically be updated with the latest firmware and time of day. Note: The battery must be installed and your PD II must be powered ON for it to be recognized by the USB buss.

Perform ACTION>RETRIEVE POWER DOCTOR RECORDS to download the data to the PC. It will read the data from the PD and append it to the end of the currently opened data file. You can sort the data by any of the headings simply by clicking on that heading. For instance you can sort by Optical Read Date or by Protection Device Location or any other heading as you need. If you have data records that you do not need, you can highlight them and hit the DELETE key on your computer.

By clicking on DATABASE>SELECT VISIBLE COLUMNS you can choose what columns you want visible. This allows you to reduce the size of your report to make it less cluttered. You can print the report for you or your customer by clicking on FILE>PRINT or FILE>PRINT PREVIEW.

Power Doctor II Functional Overview

Power Doctor II	
General	Power up the PD II by pressing the power button. The firmware version is displayed as well as the current TIME and DATE
Optical Read	<p>Press the "ENTER" button while "<<" symbol is pointing to "Optical Read" to initiate a read from any Innovolt Power Protection device. After removing the cover from the Optical Probe, align the probe with the MAINS light on the Innovolt unit. You may have to adjust the angle of the probe slightly for data to be read. The RX LED on the PD II illuminates GREEN to show proper alignment. The display shows data transfer progress and when the transfer is complete. If the data read is identical to a previous read, the PD II prompts you to delete the duplicate record.</p> <p>Note: Optical Read from the Plug In Protector PIP8 will take longer than from other Innovolt products. Also, the optical data signal is visible light and is sensitive to ambient room light. If you are having trouble reading a device, try reducing the ambient light in the room.</p>
Turn Off	<p>To turn OFF the PD II, press the "ENTER" button while the double arrow symbol "<<" is pointing to "Turn Off". The double arrow symbol can be moved by pressing the up or down arrow button on the keypad.</p> <p>Note: Auto Shut-off time can be set by user by pressing "F1" button.</p>
"Data" Button	Press the "Data" button to view stored data records. Use < and > keys to browse through readings. Reading Number and Date of Optical Read is displayed as a reference. "Reading #1" is the most recent reading stored. Press the "Enter" button to look at the details for a particular reading. Use the < and > keys to browse through the all stored data for a reading such as disturbance totals.
"F1" Button	<p>Press the "F1" button to get to sub-menus for:</p> <ul style="list-style-type: none"> • Setting Backlight Off time • Setting Auto Shutoff time • Erasing all PD II records • Displaying your PD II Device ID • Setting the internal clock <p>Note: The internal clock is automatically synchronized with the PC system clock each time it is connected via USB. It is not necessary to manually set the internal clock.</p>

Power Doctor II PC Applications	
File Menu	<ul style="list-style-type: none"> • Access tools to ° Open New Files ° Open Existing Files ° Save Files ° Export Data ° Print Preview ° Print • Data is exported into a common format (CSV) which can be easily imported into common spreadsheet software programs
Database Menu	<ul style="list-style-type: none"> • Access tools where you can name your PPD's and Power Doctor. Instead of using the Device ID, you can name your Protection Devices and Power Doctors to more easily analyze data. • Within Power Protection Devices submenu, you can define your own "user fields" by adding more columns to the database. The PPD already has fields for zip code and location. You can add up to two more fields. • Add or delete the visible columns that are shown on the screen or printed. This is useful when you want to get rid of unused columns so your printout is less cluttered.
Connect Menu	<ul style="list-style-type: none"> • Gives troubleshooting instructions if Power Doctor II unit is not connected. Once a Power Doctor II unit is connected, this menu is no longer available. • Displays the Power Doctor II unit's Device ID.
Actions Menu	<ul style="list-style-type: none"> • Initiates a data download from the Power Doctor II to the PC database. • Displays information on the firmware version, and forces synchronization of system clock • Erases the PD II's disturbance event memory
About Menu	<ul style="list-style-type: none"> • Gives information on the version of both the PC application and the Power Doctor II firmware embedded within the PC application.