



NEXT GEN *PCS*[™]

POWER CONDITIONING SYSTEM



User Manual

120 and 208-240 Volt Models

AMETEK[®]

ELECTRONIC SYSTEMS PROTECTION

ADVANCED SERIES MODE [®]	ECOMMANDCENTER [®]	FLATPAK [™]	NEXT GEN [®]	SURGE + PDU [™]
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CERVELLA [™]	EMPOWER [®]	IMPEDANCE TOLERANT [™]	POWERFRAME [®]	SURGEX [®]
COUVS [®]	ENERGY INTELLIGENCE [®]	INRUSH CURRENT ELIMINATION [®]	REMOTE PORTAL [®]	SURGEXICE [®]
DEFENDER SERIES [®]	ENVISION [®]	MULTIPAK [®]	SERIES MODE [®]	
DIGITAL QC [®]	ESP [®]	MULTI-STAGE [™]	SURGE + DIAGNOSTIC [™]	

This product may be covered by one or more claims of the following patents or published patent application:

U.S. Patent Nos.: RE39,466; 4,870,528; 4,870,534; 5,136,455; 6,040,969; 6,728,089; 6,744,613; 6,947,266; 7,068,487; 7,184,252; 7,511,934; 7,541,696; and 7,551,412; 8,482,885; 8,520,349; 8,547,672; and 8,614,866

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Canadian Patent Nos.: 1,332,439; 1,333,191; 2,461,332 and 2,511,695

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I. NEXT GEN PCS PRODUCT OVERVIEW

The ESP Next Gen PCS is a state-of-the-art, microprocessor-controlled, hybrid power filter engineered with real-time data acquisition and storage.

Models: This manual applies to the following Next Gen PCS models:

Model Number	Voltage (AC RMS)	Current (AC Amps)	LCD	Outlet
XG-PCS-15D	120	15	Yes	
XG-PCS-20D	120	20	Yes	
XG-PCS-20815D	208-240	15	Yes	
XG-PCS-20820D	208-240	20	Yes	
XG-PCS-23013	230	13	Yes	
XG-PCS-L630	208-240	30	Yes	
XG-PCS-630	208-240	30	Yes	
XG-PCS-IK	Data Interface Kit: Volts and Amps not applicable			

Key Features:

- Industrial Strength Normal and Common Mode EMI Noise Filter
- Industrial Strength 3-Stage Normal and Common Mode AC Surge Suppressor
- ETL Certified CAT5e Network Line Surge Suppressor
- Modem/Fax Line Surge Suppressor
- Modem/Fax DSL Filter
- Zero-Voltage Turn-On
- Zero- Current Turn-Off
- Inrush Current Elimination (ICE[®])
- Wiring Fault Detection
- Catastrophic Over/Under Voltage Shutdown (COUVS[®]) with selectable thresholds
- Under-Voltage Event Recorder (up to 999 events)
- Over-Voltage Event Recorder (up to 999 events)
- Power Outage Event Recorder (up to 999 events)
- Surge Event Recorder (up to 999 events)
 - Records surges in all three modes: Line-Neutral, Line-Ground, Neutral-Ground (120V)
 - Records surges in all three modes: Line1-Line 2, Line1-Ground, Line2-Ground (208-240V)
- Event Timestamp Recorder (up to 60 events)
 - Records time between events
- LCD Event Monitor cycles through:
 - Under-Voltage Events
 - Over-Voltage Events
 - Power Outage Events
 - Surge Events
 - Last Recorded Event Type
 - Output Status (On or Off)
 - Line Voltage measurement
 - Additional information in certain circumstances (detailed in Section: “Hardware/Next Gen PCS Filter/LCD Event Monitor”)
- Additional features available when connected to a PC (detailed in Section: “Using the Software”)

Technical Support:

- To download software and access further product information, visit www.espsurgex.com.
- **For Next Gen PCS technical support, please contact ESP at 1-800-645-9721.**

II. INSTALLATION INSTRUCTIONS

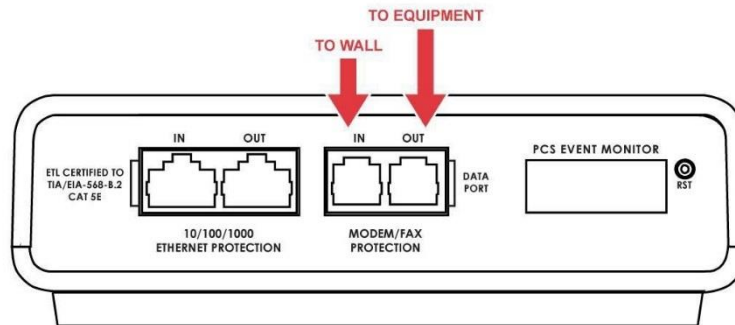
1. Next Gen PCS Installation:

- a. Turn off the machine you are connecting to the Next Gen PCS Filter, and unplug the machine's power cord from wall outlet.



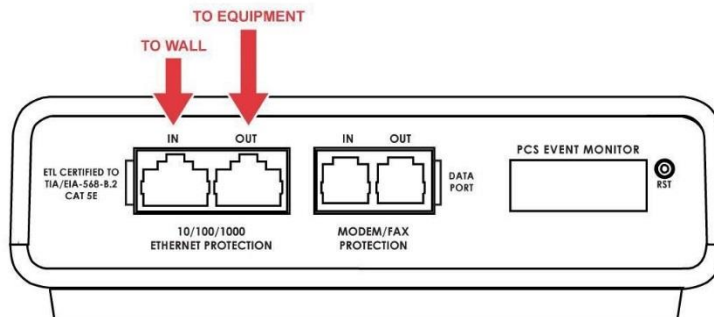
- b. Connect Modem/Fax line: Connect a phone cord from the wall jack to the "Modem/Fax" modular jack labeled "IN", and then connect a second phone cord from the "Modem/Fax" modular jack labeled "OUT" to the machine/equipment to be protected.

Please Note: *The Next Gen PCS Filter series only provides connectivity and protection for a single phone line – connecting the Filter to a phone jack with 2 lines using 4-conductor telephone cable may cause Filter malfunction, detailed in Section: "Troubleshooting/Next Gen PCS Filter".*



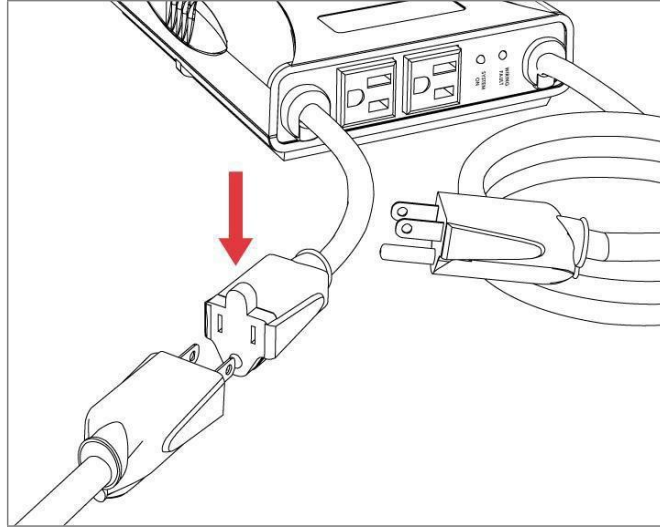
- c. Connect "10/100/1000 ETHERNET" network line: Connect a CAT5e network cable from the wall jack to the "10/100/1000 ETHERNET" modular jack labeled "IN", and connect a second CAT5e network cable from the "10/100/1000 ETHERNET" modular jack labeled "OUT" to the equipment to be protected.

One CAT5e network cable is included with the Next Gen PCS Filter.



d. Connect Equipment

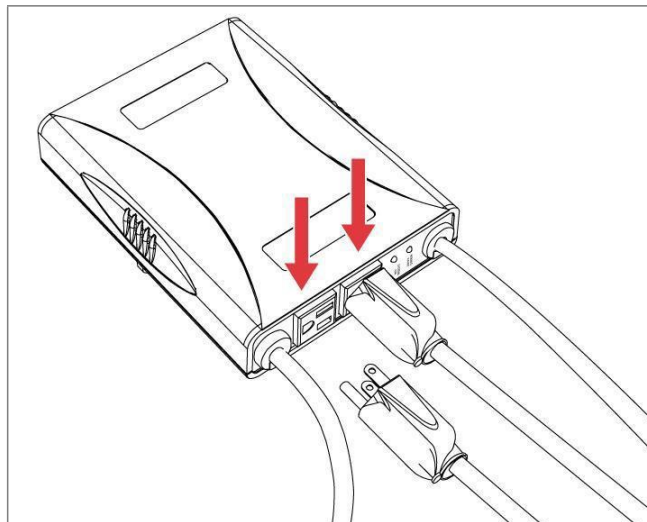
- i. Connect the AC power cord of the equipment to be protected into the short output power cord of the Next Gen PCS Filter.



- ii. For 120V products and XG-PCS-23013: Connect the AC power cords of additional peripherals into the 2 convenience receptacles next to the short output power cord.

Make sure that the total amperage of all equipment plugged into the Next Gen PCS Filter does not exceed the maximum branch circuit rating.

Please Note: Exceeding the branch circuit rating will cause the branch circuit breaker to trip.

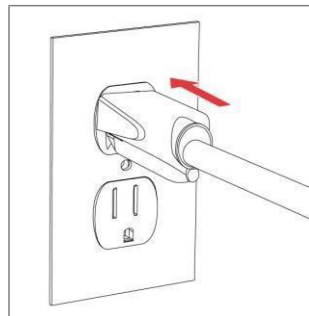


- e. Connect Next Gen PCS Filter to Outlet: Plug the Next Gen PCS Filter input power cord into a properly grounded and compatible branch circuit outlet.

Please Note: Do not plug the Filter into a re-locatable power tap.

- i. If the branch circuit outlet is correctly wired and the magnitude of the line voltage is acceptable (between 105 and 130 V_{RMS} for 120V products, or between 190 and 250 V_{RMS} for 208-240V products), power will be connected to the outlets of the Next Gen PCS Filter and the **Green** “System On” LED will illuminate. Your equipment is now protected and installed correctly. You may now turn all connected equipment back on.
- ii. If the branch circuit outlet is incorrectly wired, the **Red** “Wiring Fault” LED will illuminate and the LCD Event Monitor will display specific wiring fault information. If this occurs, contact a licensed electrician to correct the outlet wiring. Refer to Section: “Hardware/Next Gen PCS Filter” for LCD EVENT MONITOR display details.
- iii. If neither “System On”, nor the “Wiring Fault” LED illuminates, there is either no voltage at the receptacle or the magnitude of the line voltage is not acceptable (less than 105 V_{RMS} or above 130 V_{RMS} for 120V products, or less than 190 V_{RMS} or above 250 V_{RMS} for 208-240V products). If the magnitude of the line voltage is not acceptable, specific information will be displayed on the LCD EVENT MONITOR. If this occurs, contact a licensed electrician to trouble-shoot the abnormal voltage condition. Refer to Section: “Hardware/Next Gen PCS Filter” for LCD EVENT MONITOR display details.

1. *You may also need to verify that the Filter is operating properly. To test, plug Next Gen PCS Filter into a known properly functioning outlet. If the “System On” LED still does not illuminate in the functioning outlet, contact ESP at 1-800-645-9721.*



III. **HARDWARE**

1. Next Gen PCS Filter

a. LCD Event Monitor



The LCD EVENT MONITOR displays useful information related to data collection, device status, and troubleshooting.

i. Normal Operation

1. When the Next Gen PCS Filter is plugged into a branch circuit outlet with correct wiring and acceptable line voltage, the LCD Event Monitor will cycle through the following information:

- a. Number of recorded Under-Voltage events:



- b. Number of recorded Over-Voltage events:



- c. Number of recorded Power Outage events:



- d. Number of recorded Surge events:



- e. Last recorded Event type:



- f. Outlet Status (On or OFF):





- f. Line Voltage:






ii. Wiring Fault

When connected to an incorrectly wired branch circuit outlet, in addition to the illumination of the Red LED, the LCD Event Monitor will display the following information:

Wiring Fault Condition	Display	LCD EVENT MONITOR
Line (Hot) / Neutral Reversed (120V products only)	rP (Reverse Polarity)	
Missing Ground	gnd (no Ground)	

 iii. Abnormal Voltage

When the magnitude of the branch circuit outlet voltage is not acceptable*, the Next Gen PCS Filter will disconnect power to its outlets and display the following information on the LCD Event Monitor (*above the over-voltage shutdown threshold or below the under-voltage shutdown threshold; refer to Section: "Using the Software" for more information. 120V models with firmware version 2.00 and later will also indicate Neutral-Ground voltage in excess of 4V):

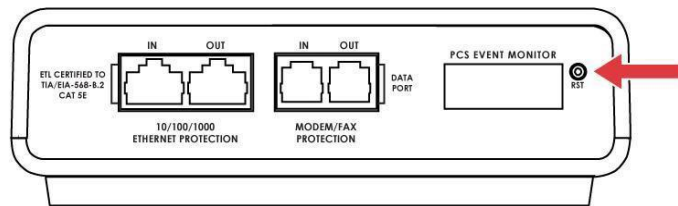
Voltage Condition	Display	LCD EVENT MONITOR
Over-Voltage	OFF + OVER	
Under-Voltage	OFF + UNDER	
Neutral-Ground Voltage \geq 4V	n-g	

b. Clearing Memory:

The Next Gen PCS Filter is able to timestamp the 60 most recent power quality events (information stored in microcontroller non-volatile memory). The microcontroller memory contents can be cleared at any time by following one of these two methods:

i. RST Button:

There is a recessed push button located on the far right of the front endplate (the end plate that contains the RJ45 and RJ11 and modular jacks).



Follow these steps to clear the device memory:

1. Unplug the input cord of the Next Gen PCS Filter from the branch circuit outlet.
2. Using a paperclip or small screwdriver, press and hold the **RST** button.
3. Plug the input cord of the Next Gen PCS Filter into a properly grounded and compatible branch circuit outlet, while continuing to hold the **RST** button.
4. Wait approximately 3-5 seconds; the LCD Event Monitor will now display “cLr”; release the **RST** button and the device microcontroller memory will now be cleared.



ii. Diagnostic Software:

The device microcontroller memory may alternately be cleared from within the Diagnostic Software. See Section: “Using the Software” for details.

2. Data Interface Cable

a. Overview

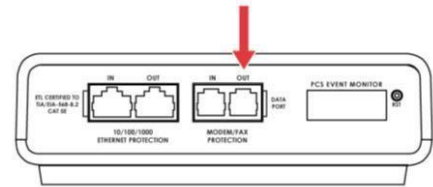
- i. The Next Gen PCS Data Interface Cable consists of a USB connection on one end, and a RJ-11 connection on the opposite end.
- ii. The USB connection plugs into an available USB port on your PC. The RJ-11 connection plugs into the RJ-11 “OUT” Jack (labeled “Data Port”) on the Next Gen PCS Filter, which is the jack closest to the LCD Event Monitor and RST button.



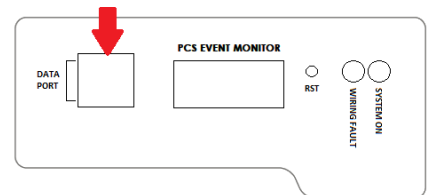
b. Instructions for Data Retrieval

- i. Disconnect any protected Modem/Fax lines connected to the “IN” and “Out” RJ-11 modular jacks on the Next Gen PCS Filter. Ethernet connections (RJ-45) may remain in place. *(Skip this step for (XG-PCS-L630 / XG-PCS-630)).*
- ii. Connect the Next Gen PCS Data Interface Cable into the USB port on your PC.

- iii. Connect the Next Gen PCS Data Interface Cable into the RJ-11 “OUT” Jack (labeled “Data Port”) on the Next Gen PCS Filter. It is the jack closest to the LCD Event Monitor and RST button.



For (XG-PCS-L630 / XG-PCS-630): Connect the Data Interface Cable into the RJ-11 jack labeled “Data Port” next to the LCD on the face of the unit.



- iv. Open Next Gen PCS Diagnostic Software.
- v. When you are finished, be sure to re-connect the Modem/Fax lines to the “IN” and “Out” RJ-11 modular jacks on the Next Gen PCS Filter.

IV. SOFTWARE INSTALLATION

1. Computer Requirements

- a. Minimum 133MHz Pentium processor (or equivalent), minimum 64MB of RAM, minimum 10MB free hard drive space, VGA or higher resolution monitor, keyboard, mouse, CD or DVD drive, minimum screen resolution of 1024x768, Microsoft Windows XP/Vista/7/8/10.

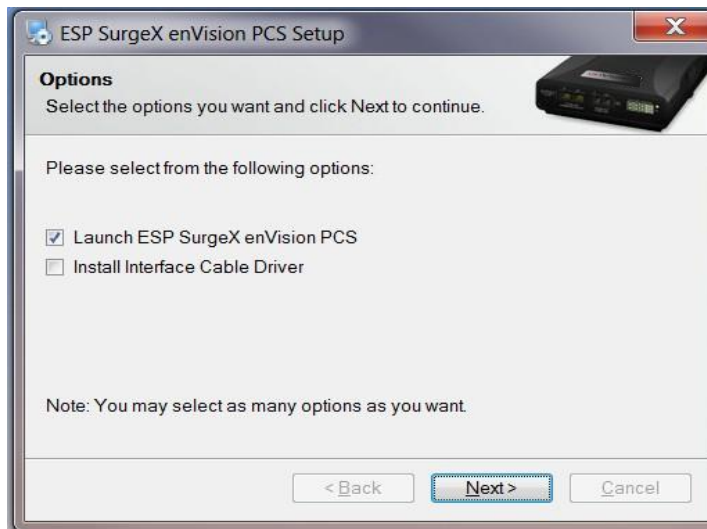
2. Hardware Requirements

- a. For use with enVision enabled products and Data Interface Cable (XG-PCS-1C-1)



3. Download and Install Software

- a. Download the Software Installer from www.espsurgex.com
- b. Unzip and run the installation utility.
- c. Follow the on-screen instructions to complete installation of the software.



4. Install Data Interface Cable

a. Automatic Installation (Requires Internet connection)

- i. Plug the USB side of the Data Interface Cable into an available USB port.
- ii. Windows will automatically detect and install appropriate device driver files for the Data Interface Cable.
 - If a “Found New Hardware” pop-up box appears, follow the on-screen instructions and allow Windows to search online for driver files.
 - The installation could take several minutes to search for and download appropriate driver files. Once the files are found, follow the on-screen instructions to install.
 - Note: The driver installation process will first install USB Serial Converter driver files, and then will install USB Serial Port drivers separately.

b. Manual Installation

In the event that the automatic driver installation process was not successful, or if no internet connection is available, the Data Interface Cable driver files may be installed manually.

- Select “Install Drivers” during the Software Installation process.
- Or run “Interface Setup” from: Start/All Programs/ESP SurgeX/Diagnostic Tool

c. Once the Data Interface Cable has been successfully installed, it will appear in Device Manager as “USB Serial Port (COMx)” under “Ports (COM & LPT)”.

V. USING THE SOFTWARE

1. Physical Connections

- a. Plug the USB side of the Data Interface Cable into an available USB port.
- b. Plug the RJ-11 side of the Data Interface Cable into the RJ-11 “OUT” jack labeled “Data Port” on the unit, which is the jack closest to the LCD.

2. Start the Software

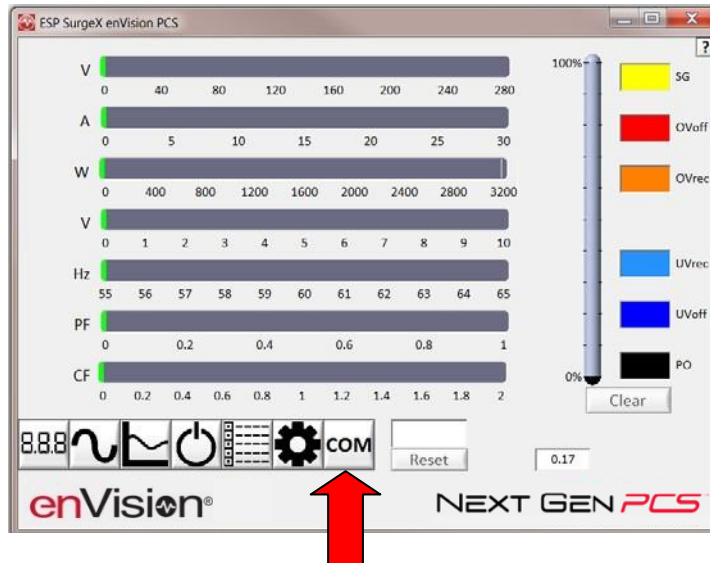
- a. Double-click the desktop shortcut labeled “ESP SurgeX Diagnostic Tool”, or use the “ESP SurgeX Diagnostic Tool” Start Menu shortcut located at:



Start/All Programs/ESP SurgeX/Diagnostic Tool

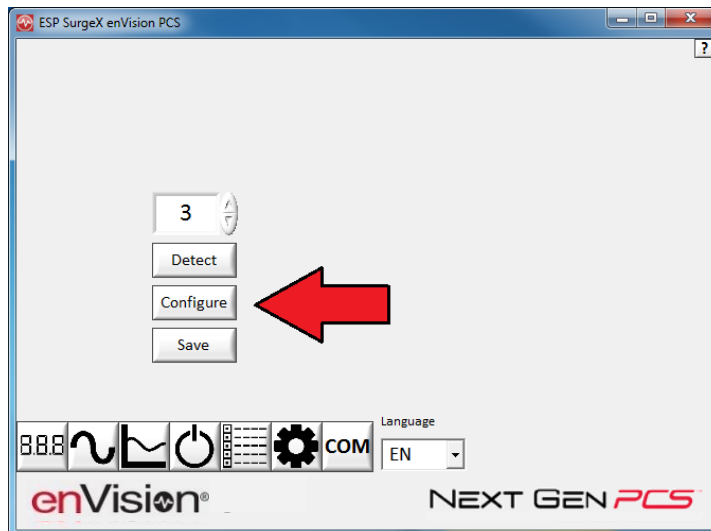
3. Configure the Data Interface Cable and COM Port

- a. Click the **COM Port Setup** button labeled **COM**.

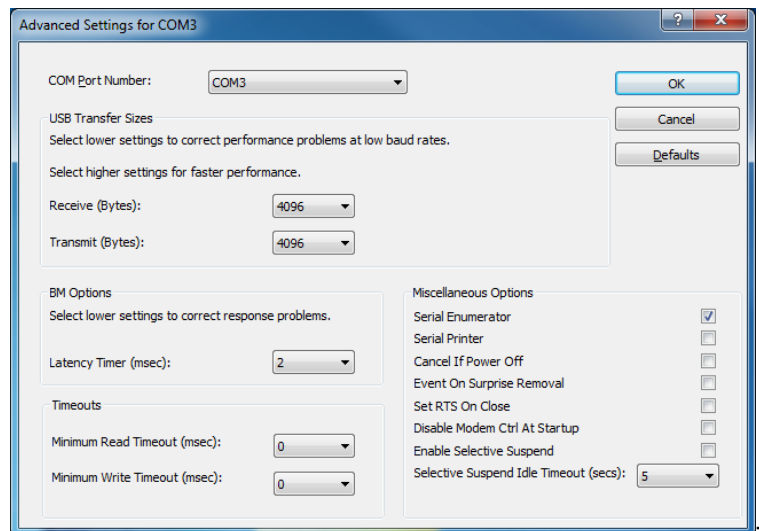


- b. Click Configure.

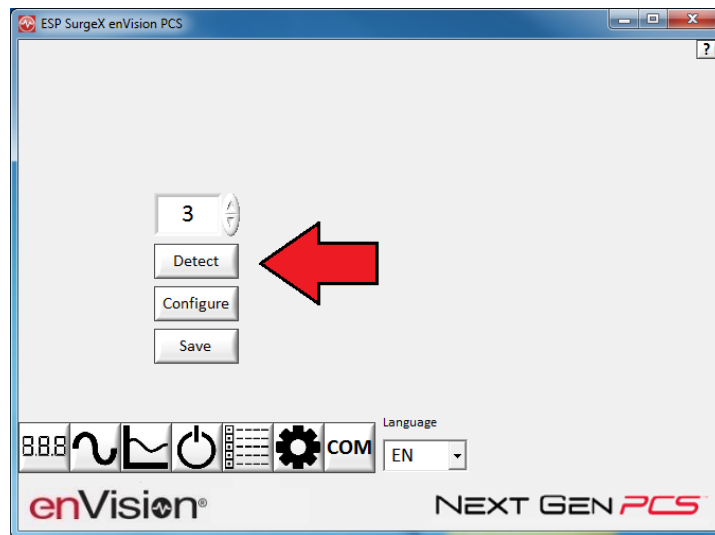
- i. The auto configuration process will automatically set the correct device parameters of the Data Interface Cable to operate properly with the software and Next Gen.
 - Note: This process only needs to be done once for each new Data Interface Cable installed on the PC.
 - Note: This process edits Windows registry values, and so may be blocked by MS Windows User Account Control (UAC) in Windows Vista/7/8/10. It may be necessary to exit the software and restart it with administrative rights by right-clicking the software shortcut and choosing "Run As Administrator". It may also be necessary to run the compatibility wizard by right-clicking the shortcut, selecting "Troubleshoot Compatibility", and following the prompts.



- ii. The COM port may also be manually configured using the Device Manager:
 1. Open Device Manager
 - a. Click on Start button
 - b. Type the following command in the Search box: devmgmt.msc
 - c. Press Enter
 2. In the Device Manager, expand “Ports (COM & LPT)”
 3. Right-click on the entry labeled “USB Serial Port (COMx)” and click “Properties”
 4. In the USB Serial Port Properties pop-up box, click the “Port Settings” tab, and then click the “Advanced” button.
 5. In “USB Transfer Sizes”, change both the “Receive” and “Transmit” values to 4096.
 6. In “BM Options”, change the “Latency Timer” value to 2.
 7. Leave all other settings at default.



- c. Click Detect.
 - i. The auto detect process will automatically detect the COM Port number assigned to the Data Interface Cable.
 - ii. If the auto detection process is successful, click Save. The software is now properly configured and ready for use.
 - iii. If the auto detection process is not successful, verify that the Data Interface Cable device drivers are properly installed, and that the physical connections between the enVision and the PC have been made correctly.



- d. The language may also be selected in this mode.

4. Software Modes

The Next Gen software is organized into several operational modes. The modes are activated by clicking the corresponding button at the bottom of the software interface.

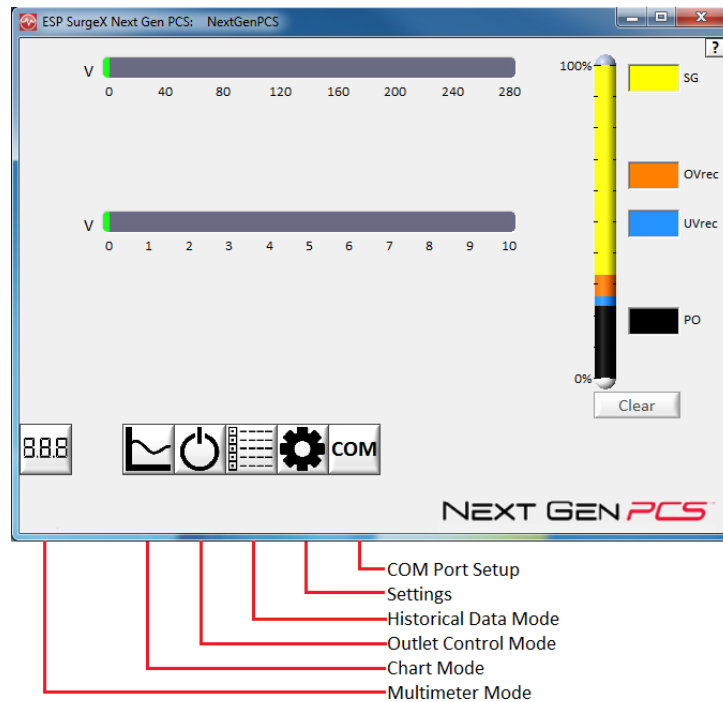
Note: Some features are only available when used with an enVision PCS product.

Press the Help Button (“?”) in the upper right for additional information on the features available in the current mode. Hovering the mouse cursor over items will also display additional information.

Scope Mode, Chart Mode, Historical Data Mode, and Settings Mode include a Save function. Press the Save button to save data to a CSV file. Time Stamped data may also be saved as a report in PDF format.

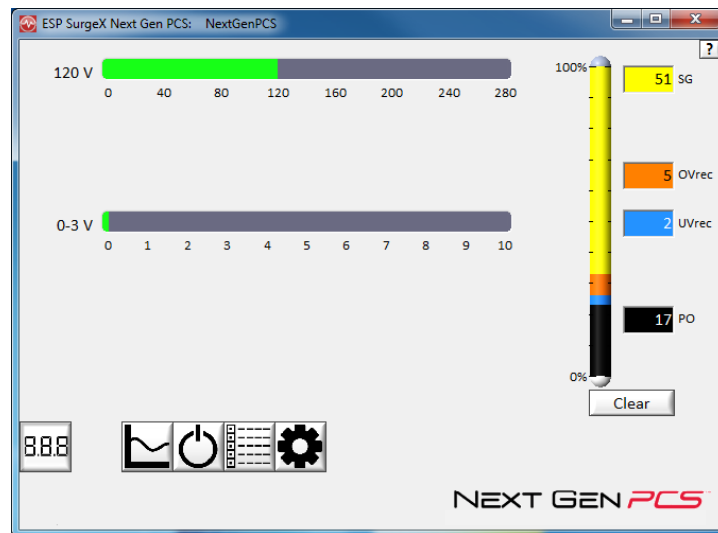
Chart Mode and Historical data may be analyzed by an automatic Expert Analysis tool. Press the Expert button to perform an expert analysis of recorded time-stamped event data or chart measurements and generate a PDF report of potential conclusions and recommendations.





a. Multimeter Mode

- i. The Multimeter Mode provides information traditionally acquired from a handheld digital multimeter, as well as an overview of the recorded power quality events. $\pm 2\%$ Typical Measurement Accuracy.



ii. Real-time display of electrical parameters

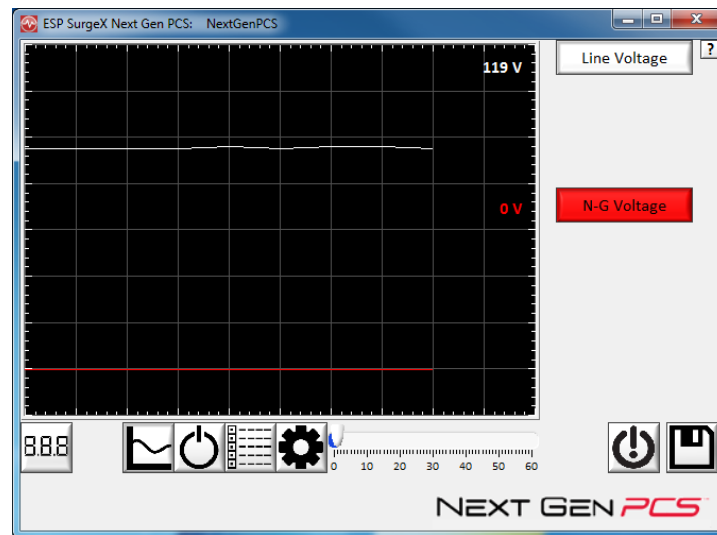
- Line Voltage: AC RMS Volts. Peak Measurement Type
- Neutral-Ground Voltage: AC RMS Volts Neutral-Ground. Peak Measurement Type. Available with 120V models with firmware version 2.00 and later. $\pm 1V$ accuracy from 3V-10V.

iii. Number of recorded power quality events

- Surge Events: SG
- Overvoltage Events: OVrec
- Undervoltage Events: UVrec
- Power Outage Events: PO

b. Chart Mode

- i. The Chart Mode enables a chart style data logging function of electrical parameters. Data point measurements are acquired once per second. The measured parameters may be enabled or disabled by pressing the corresponding button.

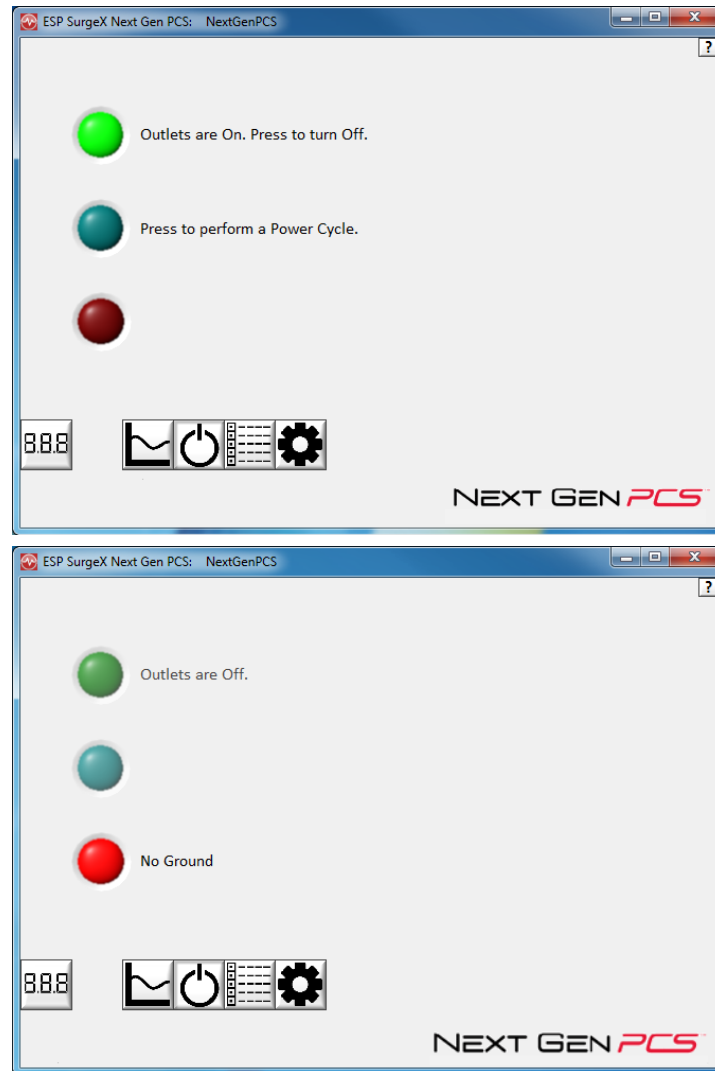


ii. Chart display of electrical parameters:

- Line Voltage: AC RMS Volts. Peak Measurement Type
- Neutral-Ground Voltage: AC RMS Volts Neutral-Ground. Peak Measurement Type. Available with 120V models with firmware version 2.00 and later. $\pm 1V$ accuracy from 3V-10V.

c. Outlet Control Mode

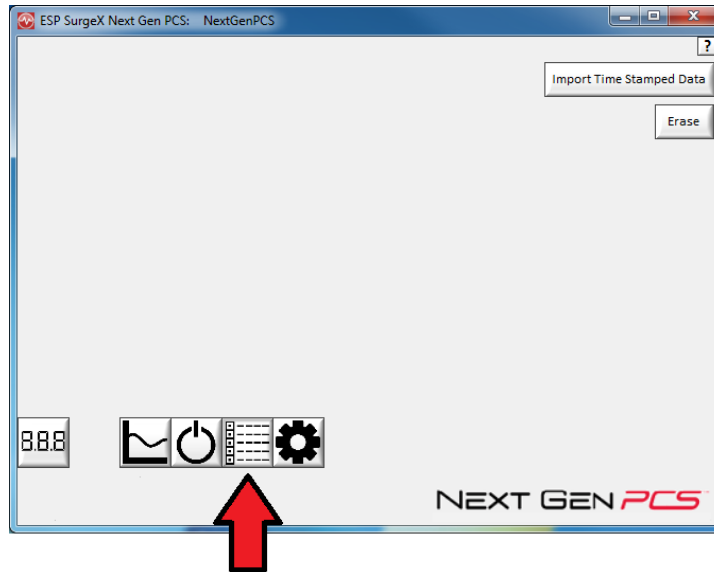
- i. The Outlet Control Mode enables control of the AC outlets and provides information about wiring faults and abnormal line voltage.



- ii. Use the green **On/Off** button to manually turn the AC outlets on and off.
 - Pressing the blue **Power Cycle** button will result in the execution of a power cycle. When commanded, the outlets will turn off, and then back on, after a 90 second delay. The **Power Cycle** indicator will be illuminated while a power cycle is active.

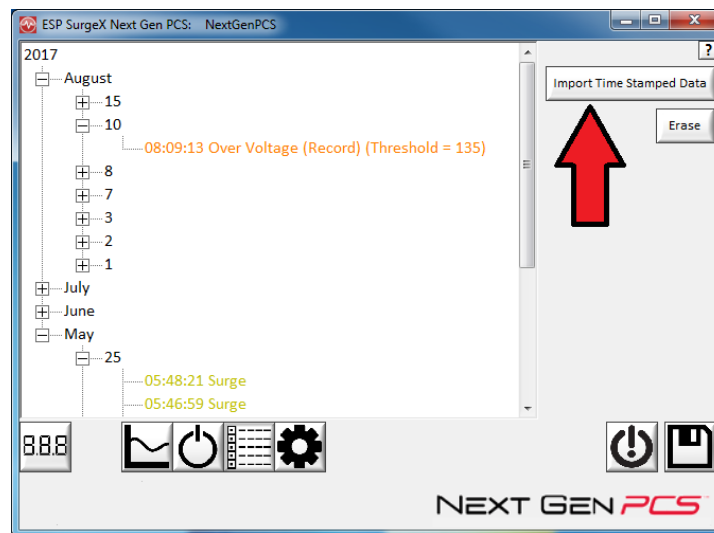
d. Historical Data Mode

The Historical Data Mode allows for the retrieval and display of the power quality event data stored in the Next Gen internal memory.



i. Time Stamped Power Quality Event Data

- Next Gen is able to store and timestamp the 60 most recent power quality events in its internal memory. Press the **Import Time Stamped Data** button to download the event data.



Four types of events are logged:

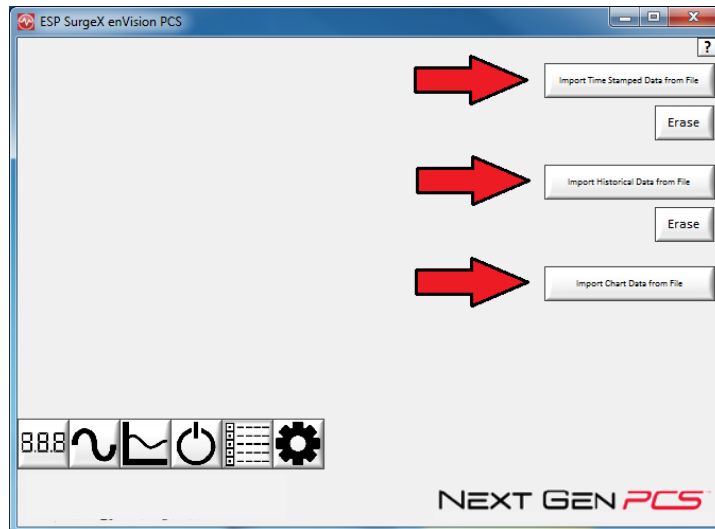
- Surge: Next Gen has been exposed to a transient voltage in one of the 3 possible modes (between Live and Neutral, between Live and Ground, between Neutral and Ground) with a peak amplitude of 500V* or higher and a frequency of 20 kHz or higher. **500V surge voltage amplitude applies to IEEE C62.41 Category B Impulse; surge voltage amplitudes necessary for detection of other surge types may vary.*
- Over Voltage: Line voltage exceeded the over voltage record threshold.
- Under Voltage: Line voltage dropped below the under voltage record threshold.
- Power Outage: Loss of AC power.

ii. Import Data

Previously saved data files may be imported by entering the Historical Data Mode while no product is connected. This may be achieved by removing the data interface cable or by selecting and saving an invalid COM Port number.

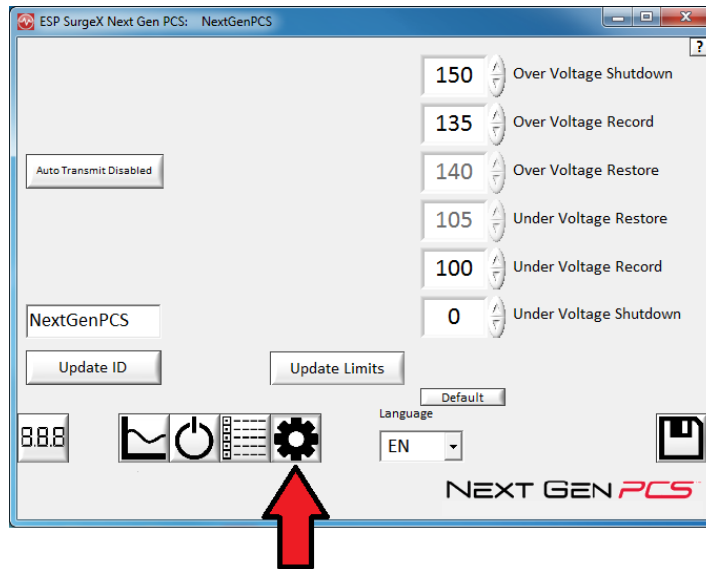
Press the button that corresponds to the type of data file to import and browse to the location of the file.

Note: “Import Historical Data from file” applies to enVision PCS, not Next Gen PCS.



e. Settings Mode

The Settings mode enables the specification of the user-configurable parameters of Next Gen. When this mode is entered, it displays the parameters currently in use. Firmware versions prior to 1.53 (120V models) and 1.02 (208-240V models) do not support the Auto Transmit feature.

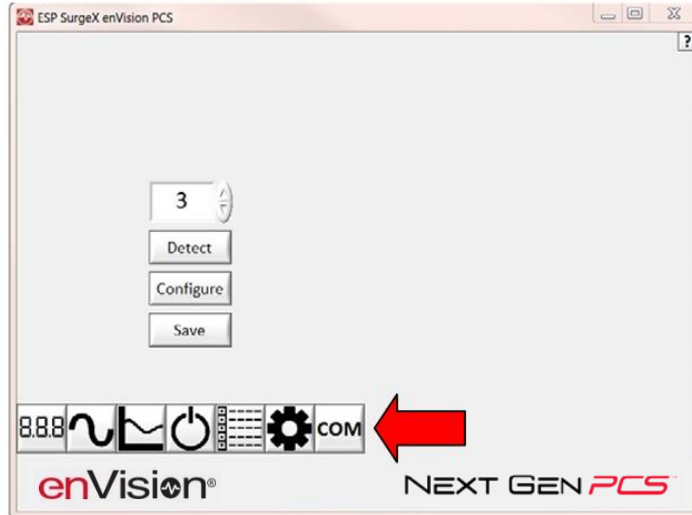


- i. Auto Transmit: Enables/Disables the automatic transmission of status information every 30 minutes. Primarily intended for use with Remote Portal RP-IP.
- ii. Update ID: Sets the product identifier specified in the text box. 10 character limit. This is a temporary setting intended to set an ID for saved reports.
- iii. Update Limits: Sets the voltage thresholds specified by the voltage threshold selection fields. Press **Default** to select factory default limits.
Note: Restore points may not be specified for Next Gen PCS.
- x. Language: Select the software’s display language.
- xi. Save: Save the current settings for reference.

Limit	When Activated	Action	Factory Default	
			120V	208/240V
Over Voltage Shutdown	$V > OV_{Shutdown}$	Outlets turned Off and event recorded	150	260
Over Voltage Record	$OV_{Shutdown} > V > OV_{Record}$	Outlets stay On and event recorded	135	260
Over Voltage Restore	$V < OV_{Restore}$ After $OV_{Shutdown}$	Outlets turned On	140	250
Under Voltage Restore	$V > UV_{Restore}$ After $UV_{Shutdown}$	Outlets turned On	105	190
Under Voltage Record	$UV_{Shutdown} < V < UV_{Record}$	Outlets stay On and event recorded	100	180
Under Voltage Shutdown	$V < UV_{Shutdown}$	Outlets turned Off and event recorded	0 (Disabled)	140

f. COM Port Setup Mode

- i. The COM Port Setup mode is used to configure new Data Interface Cables for use.



- ii. Detect: Automatically detect the COM Port when the Next Gen, Data Interface Cable, and PC are properly connected and powered up.
- iii. Configure: Automatically configure the advanced settings of the Data Interface Cable. May require running the software with elevated permissions (right-click program shortcut and choose “Run As Administrator”) on Windows Vista/7/8/10 with UAC (User Account Control) enabled.
- iv. Save: Saves the COM Port selection.

5. Command Line Operation

Usage: ESP_SurgeX_Diagnostic_Tool (/o output_file) [-a] [-t] [-c] [-m]

Example : ESP_SurgeX_Diagnostic_Tool /o C:\Users\Robert\Desktop\log.txt -a -m

Option	Meaning
-a	Append output file. If output file already exists, column headers will not be written.
-t	Write Timestamped data.
-c	Write Event Counts.
-m	Write Measurements.
If neither -t, -c, nor -m is specified, all will be written.	
If -a is not specified, output file will be overwritten.	

VI. TROUBLESHOOTING

The Next Gen PCS Filter and Data Interface Cable contain no user-serviceable parts. Do not attempt product disassembly, as this will void the product warranty.

1. Next Gen PCS Filter:

Symptom	Possible Cause	What To Do
Red LED On, Green LED Off, No power at output.	Incorrectly wired branch circuit outlet. If using a Next Gen PCS Filter (D models only), the LCD EVENT MONITOR will display the nature of the wiring fault.	Contact a licensed electrician to correct the branch circuit outlet wiring.
Red LED Off, Green LED Off, No power at output.	No voltage or unacceptable voltage at branch circuit outlet, or Next Gen PCS Filter output manually turned Off.	If using a Next Gen PCS Filter (D models only) and the LCD EVENT MONITOR is not on, there is no power at the wall receptacle. If the voltage is unacceptable, the LCD EVENT MONITOR will display the type of voltage condition. Use the Communications Software to measure the voltage at the wall receptacle. Contact a licensed electrician to troubleshoot the wall receptacle. Use the Communications Software to manually turn the outlets On. Alternately, press and release the RST button once to manually turn the outlets On.
Red LED Off, Green LED On, No power at output.	Defective product.	Contact ESP for product replacement at 800.645.9721.
Red LED Off, Green LED cycles On and Off, Power at output cycles On and Off, LCD EVENT MONITOR blank	The Next Gen PCS Filter's Modem/Fax RJ-11 modular jack is connected to a phone jack with 2 lines through a 4-conductor phone cord.	Replace the 4-conductor phone cord with a 2-conductor phone cord, then connect the wall jack to the IN port, and the equipment to the OUT port.
Red LED Off, Green LED Off, No Power at output, LCD EVENT MONITOR blank	The Next Gen PCS's Modem/Fax RJ-11 modular jack is connected to a phone jack with 2 lines through a 4-conductor phone cord.	Replace the 4-conductor phone cord with a 2-conductor phone cord, then connect the wall jack to the IN port, and the equipment to the OUT port.

2. Software:

Symptom/Error Message	Possible Cause	What To Do
Unable to automatically determine COM Port	Data interface cable not properly connected.	Check interface cable connections at PC and XG.
COM Port not successfully configured.	Windows User Account Control has prevented the software from automatically modifying the COM Port settings in the system registry.	Exit the software, right-click the desktop shortcut, and select “Run As Administrator” or select “Troubleshoot Compatibility” and follow the wizard.
Unable to locate or read dictionary file.	One or more language dictionary files cannot be found in the installation directory.	Uninstall the software, and then reinstall the latest version.
Problem communicating with XG.	Data interface cable not properly connected.	Check interface cable connections at PC and XG.
COM Port Settings are not correct, which may result in non-optimal operation.	The COM Port has not been properly configured.	Configure the COM Port following the steps listed in the Configure the Data Interface Cable and COM Port section of this manual.
Wrong or corrupt file.	A file import operation has been attempted with an invalid or corrupt data file.	Select a valid data file for import.

VII. SPECIFICATIONS

Parameter		Specification	
Load Rating	XG-PCS-15D	15 Amps at 120 Volts	
	XG-PCS-20D	20 Amps at 120 Volts	
	XG-PCS-20815D	15 Amps at 208-240 Volts	
	XG-PCS-20820D	20 Amps at 208-240 Volts	
	XG-PCS-23013	13 Amps at 230V	
	XG-PCS-L630	30 Amps at 208-240 Volts	
	XG-PCS-630	30 Amps at 208-240 Volts	
Voltage Protection Rating (VPR)	XG-PCS-15D	330V All Modes	
	XG-PCS-20D	330V All Modes	
	XG-PCS-20815D	800V Line-Line	
	XG-PCS-20820D	500V Line-Ground	
	XG-PCS-23013	N/A	
	XG-PCS-L630	800V Line-Line	
	XG-PCS-630	500V Line-Ground	
Attenuation	Normal Mode	XG-PCS-15D	> 30 dB 80kHz – 50MHz
		XG-PCS-20D	
		XG-PCS-20815D	
		XG-PCS-20820D	
		XG-PCS-23013	
		XG-PCS-L630	
	Common Mode	XG-PCS-15D	> 30 dB 70kHz – 50MHz
		XG-PCS-20D	
		XG-PCS-20815D	> 30 dB 200 kHz – 50MHz
		XG-PCS-20820D	
		XG-PCS-23013	
		XG-PCS-L630	
XG-PCS-630			
Power Requirement (no load)	XG-PCS-15D	4 Watts	
	XG-PCS-20D		
	XG-PCS-20815D		
	XG-PCS-20820D		
	XG-PCS-23013		
	XG-PCS-L630	6 Watts	
	XG-PCS-630	6 Watts	
Under-Voltage Shutdown	120V Models	Adjustable from 80V to 95 V, or Disabled. Restores at 105V.	
	208-240V Models	Adjustable from 140V to 170 V, or Disabled. Restores at 190V.	
Over-Voltage Shutdown	120V Models	Adjustable from 135V to 160V. Restores at 130V.	
	208-240V Models	Adjustable from 260V to 300V. Restores at 250V.	
Internal Memory Capacity		60 Events with timestamp; 999 counts of each event type	
Timestamp Accuracy		±2.5%	
Voltmeter Accuracy (Peak Reading Type)	120V Models	± 5% Typical product accuracy between 40V and 180V	
	208-240V Models	± 5% Typical product accuracy between 100V and 300V	
Response Time	Over-Voltage	100 msec	
	Under-Voltage	150 msec	
Under-Voltage Record Definition	120V Models	AC Voltage has dropped below 100V	
	208-240V Models	AC Voltage has dropped below 180V	
Over-Voltage Record Definition	120V Models	AC Voltage has risen above 135V	
	208-240V Models	AC Voltage has risen above 260V	
Power Outage Event Definition		AC Voltage has dropped below 20V	

Parameter		Specification
Surge Event Definition		Next Gen PCS has been exposed to a transient voltage in one of the 3 possible modes (between Live and Neutral, between Live and Ground, between Neutral and Ground) with a peak amplitude of 500V-700V* or higher and a frequency of 20 kHz or higher. *500V-700V surge voltage amplitude applies to IEEE C62.41 Category B Impulse; surge voltage amplitudes necessary for detection of other surge types may vary.
Modem/Fax Protection		Single telephone line surge suppression
Ethernet Protection		Cat5e network surge protection, ETL Certified to TIA/EIA-568-B.2
Computer Requirements		For use with Next Gen PCS Diagnostic Software. Minimum 133MHz Pentium processor (or equivalent), minimum 64MB of RAM, minimum 10MB free hard drive space, VGA or higher resolution monitor, keyboard, mouse, CD or DVD drive, minimum screen resolution of 1024x768, Microsoft Windows
Temperature Range		5C to 35C
Humidity Range		5% to 95% R.H. Non-condensing
Dimensions	XG-PCS-15D XG-PCS-20D XG-PCS-20815D XG-PCS-20820D XG-PCS-23013	6.125" W x 8.375" D x 2" H
	XG-PCS-L630 XG-PCS-630	7.75" W x 4.5" D x 11.25" H
Weight	XG-PCS-15D XG-PCS-20D XG-PCS-23013	2.4 lbs.
	XG-PCS-20815D XG-PCS-20820D	2.6 lbs.
	XG-PCS-L630 XG-PCS-630	10 lbs.
Agency Listings	XG-PCS-15D XG-PCS-20D	Conforms to UL1449 3rd Edition Conforms to UL1283 Certified to CSA Std C22.2 No. 8 ETL Certified to TIA/EIA-568-B.2 Cat 5e Industry Canada Certified
	XG-PCS-20815D XG-PCS-20820D XG-PCS-L630 XG-PCS-630	Conforms to UL1449 3rd Edition Certified to CSA Std C22.2 No. 8 ETL Certified to TIA/EIA-568-B.2 Cat 5e Industry Canada Certified
	XG-PCS-23013	In Process

** Specifications subject to change without notice

** All listed specifications obtained at an ambient temperature of 25°C