Quick Start Guide

# ELITEpro™ XC

*and*

# ELOG™ Software

**IMPORTANT: Do not connect the ELITEpro XC to your computer until you have installed ELOG software.**

## NEED TECHNICAL SUPPORT?

CALL: 541.388.4774 or 800.388.0770
E-MAIL: support@dentinstruments.com

Revision: November 15, 2024

## ELITEPRO XC SAFETY SUMMARY AND SPECIFICATIONS

| | | |
|---|---|---|
| This general safety information is to be used by both the Logger operator and servicing personnel. DENT Instruments, Inc. assumes no liability for user's failure to comply with these safety guidelines. | CE<br>c UL us<br>4RH8<br>E186827 | Conforms to UL Std 61010-1<br>Certified to CSA Std C22.2 No. 61010-1 |
| The ELITEpro XC™ is an Over-Voltage Category III device. Use approved rubber gloves with mechanical protection and goggles when operating the device. | | |
| **CAUTION: This LOGGER may contain life threatening voltages. QUALIFIED PERSONNEL MUST disconnect all high voltage wiring before using or servicing the LOGGER.** | | |

**Warning:** Use of this device in a manner for which it is not intended may impair its means of protection.

**SYMBOLS ON EQUIPMENT**

Denotes caution. See manual for a description of the meanings.

When connecting the ELITEpro XC to an AC load, follow these steps in sequence to prevent a shock hazard.

1. If possible, de-energize the circuit to be monitored.
2. Connect the CTs to the phases being monitored.
3. Connect the voltage leads to the different phases. Use proper safety equipment (gloves, mask, and protective clothing) as required for the voltages monitored.

Risk of electric shock. Life threatening voltages may be present. Qualified personnel only.

**DO NOT EXCEED 600V Phase to Phase.** This logger is equipped to monitor loads up to 600V. Exceeding this voltage will cause damage to the logger and danger to the user. Always use a Potential Transformer (PT) for loads in excess of 600V. The ELITEpro XC is a 600 Volt Over Voltage Category III device.



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Dispose of properly.

IN: 6-10 VDC, 500 mA
OUT: 6 VDC, 200 mA maximum

USB port

## SENSOR LIMITATIONS

USE ONLY SHUNTED CURRENT TRANSFORMERS (CTs).

Do not use other CTs. Only use shunted CTs with a 333mV maximum output only. Serious shock hazard and logger damage can occur if unshunted CTs are used. The UL listing covers the use of the following DENT Instruments CTs that are UL Recognized and have been evaluated to IEC 61010-1:

CT-RGT12-XXXX (solid core), CT-SRS-XXX (split core), CT-HSC-020-X (20A Mini), CT-HSC-050-X (50A Mini), CT-HMC-0100-X (100A Midi), CT-HMC-0200-X (200A Midi), CT-RXX-1310-U (RōCoil), CTRXX-A4-U (RōCoil), CT-CON-1000-X, CT-CON-0150EZ-X and the CT-SRL-XXX or CT's that are UL listed to UL2808.

The use of any other CT will invalidate the UL Listing of the ELITEpro XC.

**Pulse: Use only "dry contact" non-energized pulse inputs (ELITE*pro* SP only).** Use of energized pulse initiators can cause damage to the logger and a potential shock hazard to the user. Wiring must meet 600V AC CAT III rating.

The meter is designed to measure AC voltages for installations up to 600 VAC. The meter is also capable of measuring DC voltages up to 600 VDC with the following caveats:

1. The internal fuse installed in meters with serial numbers before XC1703xxx are not a suitable disconnect for voltages above 80 VDC. Customers using the meter for high voltage DC systems must install a UL listed inline 600 volt DC fuse with a rating of 1 amp or less. These fuses are commonly available in the solar power market.
2. UL testing of the ELITEpro XC was conducted on AC systems only. DC results are comparable but not tested.

Equipment protected throughout by double insulation (IEC 536 Class II). CAT III 80-600 VAC 125mA 50/60 Hz

## MAINTENANCE

There is no required maintenance with the ELITEpro XC. Abide by the following items:

**Cleaning:** No cleaning agents, including water, shall be used on the ELITEpro XC.

**Battery Life:** The lithium battery is only used to maintain the date and clock settings during power failure and has a life expectancy of greater than 10 years. Contact DENT Instruments for service. No accessories are approved for use with the ELITEpro XC other than those specified in the DENT Instruments product literature and price sheets.

If the logger appears damaged or defective, first disconnect all power and sensors. Call or email technical support for assistance.

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Bend, Oregon USA
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DENTinstruments.com
Email: support@DENTinstruments.com

## ELITEPRO XC RÉSUMÉ DE SÉCURITÉ ET SPÉCIFICATIONS

| | | |
|---|---|---|
| Cette information de sécurité est destinée à être utilisée à la fois par l'opérateur de l'enregistreur et le personnel de service. DENT Instruments, Inc n'assume aucune responsabilité pour l'utilisateur qui ne respecte pas les directives en matière de sécurité. | CE<br>c UL us<br>4RH8<br>E186827 | Conforme à UL Std 61010-1<br>Certifié CSA Std C22.2 No. 61010-1 |
| Le ELITEpro XC est un appareil de surtension de catégorie III. Utiliser des gants en caoutchouc approuvé avec protection mécanique et des lunettes lors de l'utilisation de l'appareil. | | |
| ATTENTION: Ce LOGGER peut contenir de hautes tensions qui peuvent être dangereuses. UN PERSONNEL QUALIFIÉ DOIT débrancher tous les câbles à haute tension avant d'utiliser ou de réparer du LOGGER. | | |

**Attention**: L'utilisation de cet appareil d'une manière pour laquelle il n'est pas destiné peut annuler ses moyens de protection.

### SYMBOLES DES EQUIPEMENTS

Signifie prudence. Voir le manuel pour une description de la signification.

En faisant la connexion du ELITEpro XC à une prise de courant alternatif, suivez ces étapes en ordre pour empêcher un risque de choc.

1. Décharger le circuit à contrôler.
2. Connectez le TC aux phases à surveiller.
3. Connectez les fils de tension à des phases différentes. Utiliser des équipements de sécurité (gants et des vêtements de protection) qui sont nécessaires pour les tensions surveillées.

Indique haute tension. Risque de choc électrique. Hautes tensions peuvent être présentes qui mettent la vie en danger. Personnel qualifié uniquement.

**NE PAS DEPASSER 600V Phase à Phase**. Ce compteur peut contrôler les charges jusqu'à 600V. Le dépassement de cette tension peut causer des dommages à l'appareil et du danger pour l'utilisateur. Utiliser toujours le potentiel transformateur (PT) pour des charges de plus de 600V. Le ELITEpro XC est un appareil à 600 V de surtension de catégorie III.

Se débarrasser de correctement.

IN: 6-10 VDC, 500 mA
OUT: 6 VDC, 200 mA maximum

USB port

**LIMITATIONS DE DÉTECTEUR**

UTILISEZ SEULEMENT TRANSFORMATEURS DE COURANT (TC) SHUNTÉE.

N’utilisez pas d'autres TC. Utilisez seulement des TC shuntée avec une puissance maximale 333mV. Un sérieux risque de décharge électrique et des dommages à l'enregistreur peut se produire si des TC pas shuntée sont utilisés. Utiliser seulement les CTs des DENT Instruments suivants qui sont énumérés jusqu'au 600V/CATIII.

CT-RGT12-XXXX (solid core), CT-SRS-XXX (split core), CT-HSC-020-X (20A Mini), CT-HSC-050-X (50A Mini), CT-HMC-0100-X (100A Midi), CT-HMC-0200-X (200A Midi), CT-RXX-1310-U (RōCoil), CTRXX-A4-U (RōCoil), CT-CON-1000-X, CT-CON-0150EZ-X et le CT-SRL-XXX.

**Impulsion**: n'utilisez que "contact sec" impulsion intrants non charger **(ELITEpro SP uniquement).** Utilisation de impulsion initiateurs charger peut causer des dommages à l'enregistreur et une décharge électrique potentielle pour l'utilisateur. Il faut que l'installation électrique satisfasse l'évaluation de 600V AC CATIII.

Le ELITEpro XC est conçu pour mesurer tensions c. a. pour les installations jusqu'à 600 V c. a. Le ELITEpro XC est également capable de mesurer les tensions c. c. jusqu'à 600 V c. c. avec les avertissements suivants.

1) Le fusible interne installé dans le ELITEpro XC n'est pas un dispositif de désaccouplage adéquat pour des tensions supérieures à 80 V c. c. Les clients utilisant le ELITEpro XC pour haute tension DC systèmes doivent installer un UL inline 600 volts DC fusible avec une valeur nominale de 1 amp ou moins. Ces fusibles sont couramment disponibles dans le marché des piles solaires. Serial #’s < XC1703xxx.

2) UL et tests du ELITEpro XC a été menée sur systèmes CA uniquement. DC résultats sont comparables, mais pas testé.

L'équipement protégé en double isolation (IEC 536 Classe II). CAT III 80-600 VAC 125mA 50/60 Hz

## Entretien

Il n'y a aucun entretien requis avec le ELITEpro XC. Respectez les points suivants:

**Nettoyage**: Aucun agents de nettoyage, y compris l'eau, doit être utilisé sur le ELITEpro XC.

**Espérance de Vie de la Batterie:** La pile au lithium est utilisée uniquement pour maintenir les paramètres de date et d'heure en cas de coupure de le courant et a une espérance de vie de plus de 10 ans. Contactez DENT Instruments pour le service.

Pas d'accessoires approuvés pour une utilisation avec le ELITEpro XC sauf ceux spécifiés par DENT Instruments dans ses documentations sur les produits et également sur les prix.

Si le compteur semble endommagé ou défectueux, tout d'abord déconnecter le pouvoir de l'appareil. Alors s'il vous plaît appelez 541.388.4774 ou contacter par courriel l'assistance technique pour obtenir de l'aide.

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## ELITEPRO XC™ TECHNICAL SPECIFICATIONS

| Specification | Description |
|---|---|
| Service Types | Single Phase-Two Wire, Single Phase-Three Wire, Three Phase-Four Wire (WYE), Three Phase-Three Wire (DELTA), DC Systems (solar, battery) |
| Voltage Channels | 3 channels, CAT III, 0-600 VAC (line-to-line) or 600 VDC |
| Current Channels | 4 channels, .67 VAC max, +/- 1 VDC max; ideal for 333 mV full scale CTs |
| Maximum Current Channel Input Voltage | External transducer dependent; 200% of current transducer rating (mV CTs); Measure up to 6000A with RōCoil CTs |
| Measurement Type | True RMS using high-speed digital signal processing (DSP) |
| Line Frequency | DC/50/60Hz |
| Waveform Sampling | 12 kHz<br>200 samples/cycle at 60Hz<br>240 samples/cycle at 50Hz |
| Channel Sampling Rate<br>(internal sampling) | 8Hz or every 125 mSec |
| Data Interval | The default integration period is fifteen minutes. The choices are 1, 3, 10, 15, 30 seconds; 1, 2, 5, 10, 15, 20 and 30 minutes; 1 and 12 hours; 1 day. This tells the logger at what time intervals data is to be stored in the memory. For example, if the integration period is set for 30 minutes and average watts is being monitored, then every 30 minutes the logger records the average power use (watts) for that channel over the preceding 30 minute interval, based on approximately 14,400 measurements of the monitored power draw. If Maximum (and/or Minimum) values are being recorded the highest (and/or lowest) of those 14,400 readings are also saved. |
| Energy Measurements | Volts, Amps, Amp-Hrs (Ah), kW, kWh, kVAR, kVARh, kVA, kVAh, Displacement Power Factor (dPF). All parameters for each phase and for system total. |
| Analog Measurements | 0–10 Volts, 0 or 4–20 ma current loop non-isolated, external power for current loop. User scaling for sensor reporting in physical units. |
| Accuracy | Better than 1% (<0.2% typical) for V, A, kW, kVAR, kVA, PF |
| Resolution | 0.01 Amp, 0.1 Volt, 0.1 Watt, 0.1 VAR, 0.1 VA, 0.01 PF, 0.01 ANA |

| Specification | Description |
|---|---|
| LED Indicators | Tri-colors (red, green, and blue): 1 LED to indicate communication, 4 LEDs for correct phasing (green when voltage and current on the same phase; red when incorrectly wired, blue for wireless, and Ethernet). |
| **Communication** | |
| USB (Standard) | USB standard (Type B). 1.8 M (6 FT) A-to-B USB Cable (included) |
| ETHERNET (Standard) | Standard RJ-45 Connector supports 10/100 MB Ethernet over Cat 5 or better. Configure for DHCP or Static IP address. |
| Wi-Fi ADAPTER (Optional) | Internal Wi-Fi adapter with two separate configurations:<br>Internal antenna: typical conditions <75ft up to 300ft<br>External 5 dbi antenna: typical conditions <150ft up to 300ft |
| **Power** | |
| Line Power Supply | From L1 Phase to L2 Phase. 80-600V (AC or DC) CAT III DC/50/60Hz, 125 mA, 5 W, or 10 VA max.<br>Non-user replaceable .5 Amp internal fuse protection. |
| Power In (optional) | 6-10 VDC maximum, 500 mA minimum |
| **Mechanical** | |
| Operating Temperature | -7 to + 60°C (20 to 140°F) |
| Humidity | 5% to 95% non-condensing |
| Enclosure | ABS plastic, 94-V0 flammability rating |
| Weight | 340 g (12 ounces, excluding sensors and leads) |
| Dimensions | 69 x 58 x 203 mm (2.7” x 2.2” x 8.0”) |
| **Minimum System Requirements** | |
| Operating System | Windows® 10, Windows® 8, or Windows® 7 (32 or 64 bit) |
| Processor | Pentium Class 1 GHz or more recommended |
| Hard Drive | 50 MB minimum available |
| Communications Port | One USB port required for logger connection and ELOG software installation |

QUICK START GUIDE

The Quick Start Guide quickly gets you set up and operating with the new ELITEpro XC and ELOG software and is recommended for those that have experience with DENT Instruments or are familiar with power measuring products and procedures.

To set up the ELITEpro XC for any monitoring session the following items must be completed:

1) **Current Transformers (CTs**) must be connected to one or more of the channel inputs (unless doing voltage-only measurements).
2) **Line voltage connections** must be made for *any* voltage or power measurements both for measurement purposes and to power the ELITEpro XC.
3) **A Setup Table** that tells the meter *how* and *what* to measure must be created in the ELOG software and loaded into the ELITEpro XC.

To complete this Quick Start, you do not need to have the ELITEpro XC connected to an actual load. You can do a mock setup at your desk to review how the software and logger work together. The meter wiring connections are not needed to configure or gain familiarity with the meter while at a desk (only the meter, USB cable, and PC are required for basic configuration).

The information contained in the following section is provided as an example on how to set up a single phase, 2-wire power measurement session using the ELITEpro XC and ELOG software. Use this as a guide for your own monitoring project.

## Install the ELOG Software and the USB Driver

1) Insert the **ELOG USB memory stick** into the USB port.
   Browse to the memory stick and locate the ELOGInstaller.exe program. Start the installer by double-clicking ELOGInstaller.exe.
   - Perform the setup steps onscreen.

If your computer has multiple USB ports, Step 2 may be required for each USB port the ELITEpro XC is plugged into.

2) Install the ELITEpro XC driver on your computer.
   a) Connect the USB cable to a USB port on your computer, inserting the other end in the USB port on the ELITEpro XC. If a USB cable is to be used inside an electrical panel it must be rated to the appropriate voltage or wrapped in an appropriately rated insulating sleeve. The DENT-supplied cable does not meet this requirement without an insulating sleeve.
   b) Perform the setup steps onscreen. You must allow ELOG to install the driver for the ELITEpro XC to work correctly.
   c) If the driver installation fails, see the ***Troubleshooting Driver Installation*** section of the ELITEpro XC/ELOG Operator's Guide.
3) Set the computer aside and proceed with the next section.


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## Set Up the ELITE*pro* XC for Single Phase, 2-Wire

1) Connect the Current Transformers (CTs) to the wires of the load you are measuring. Orient the CT so that the arrow on the CT case points towards the load.

**NOTE:** Use only inherently safe 333mV output CTs supplied by DENT. Never use current output CTs. The UL listing covers the use of the following DENT Instruments CTs that are UL Recognized and have been evaluated to IEC 61010-1:

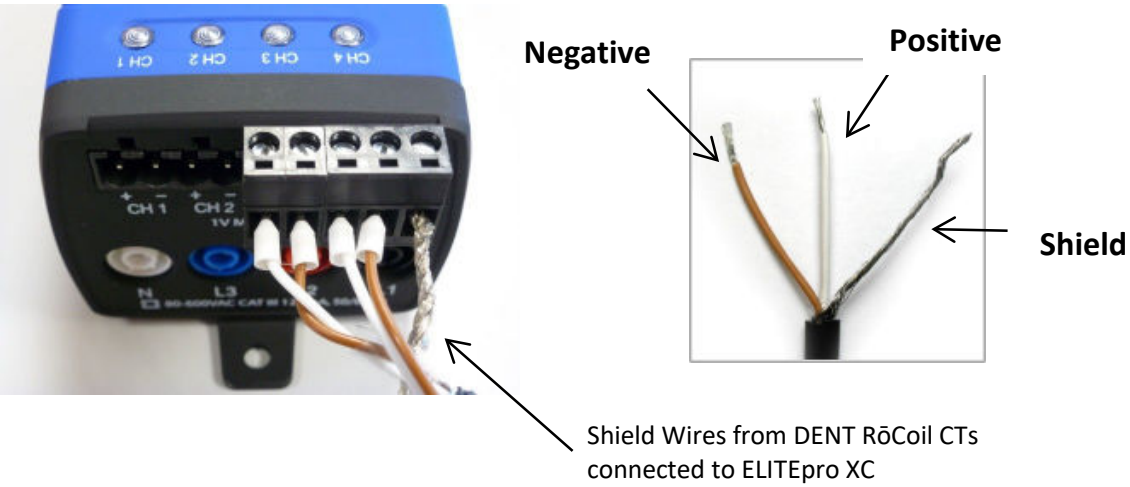
CT-RGT12-XXXX-Y, CT-HSC-020-X (20A Mini), CT-HSC-050-X (50A Mini), CT-HMC-0100-X (100A Midi), CT-HMC-0200-X (200A Midi), CT-Rxx-1310-U (RōCoil), CTRxx-A4-U (RōCoil), CT-CON-1000-X, and the CT-CON-0150EZ-X or CTs that are UL listed to UL2808. The use of any other CT will invalidate the UL Listing of the ELITEpro XC.

2) Connect the Current Transformer to the ELITEpro XC.

Connect the CTs to the black (Phoenix-style) connectors on the ELITEpro XC's end panel. Start with the left-most pair of connections which is Channel One.

- The high (+) wire of the CT (the white, banded, or numbered wire depending on CT type) should go to the left (+) screw terminal of each channel input.
- The low (-) CT wire (the black or unbanded wire) should go into the right (-) screw terminal of the channel input.
- If you are using RōCoil CTs, be sure to connect the bare wire to the "S" (shield) screw terminal. This reduces interference and improves the accuracy of the CT.

The ELITEpro XC is rated for 600V Over-Voltage Category III. CAT III is for measurements performed in the building. Examples are measurements on distribution boards, circuit breakers, wiring including cables, buss bars, junction boxes, switches, and socket outlets in a fixed installation, and equipment for industrial use. Other equipment could include stationary motors with permanent connection to the fixed installation.




3) Make your voltage connections (L1, L2, and N): Connect each lead one-at-a-time to the panel and then to the meter. Repeat until all required voltage leads are connected. In this scenario, L3 is not used and may be set aside.



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**Sometimes when connecting the L1 and L2 leads a small spark may be noted. This is normal and will not damage the meter.**

## Communicate with the ELITE*pro XC*

1) Connect the PC to the ELITEpro XC using a USB cable.

The ELITEpro XC automatically launches ELOG and connects to the PC. If it does not, go to step 2 to launch ELOG and then choose the correct USB port from the Ports drop-down menu located in ELOG PC Setup window under the Tools tab. For more information regarding Friendly Ports, see the Communications section of the full ELITEpro XC/ELOG Operator's Guide.

2) Double-click on the ELOG shortcut on the Windows® desktop. (ELOG is compatible with Windows® 10, Windows® 8, and Windows® 7 (32 or 64 bit), but not older versions of Windows, including Windows® XP.)

## Create a Setup Table for a Single Phase, 2-Wire Load

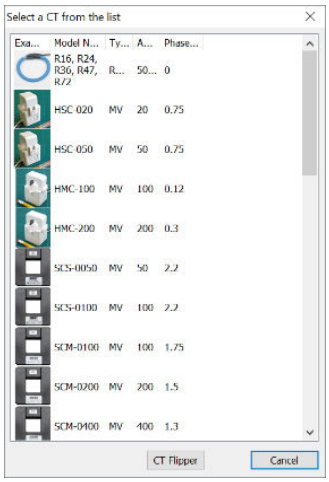
In this step you will create a Setup Table that will tell the ELITEpro XC what to measure, how often, etc.

1) Select File > New > Setup Table File and click **OK**.

When your computer is connected to an ELITEpro XC, the ELOG software assumes the new setup file is for the connected device. Selecting **New** displays a Setup Table with the default parameters. If no ELITEpro XC or other logger is connected to the computer, the **Select A Setup Table Type** dialog box displays, with **ELITEpro XC** as the default. Click **OK**.

2) In the Quick Setups location of the dialog box, click the **Single Phase 2 Wire** speed button . The CT Selection dialog box displays for you to enter CT values and type, either through the **View All** drop down menu or manually inputting the CT info. Click **OK**.
3) Enter the following information:
   - Set **Data Interval** to **1 Minute** (or other as desired).
   - Set the **Line Frequency** to 50Hz or 60Hz.
   - (Optional) enter "Quick Start Setup" in the **Setup Table Name**.

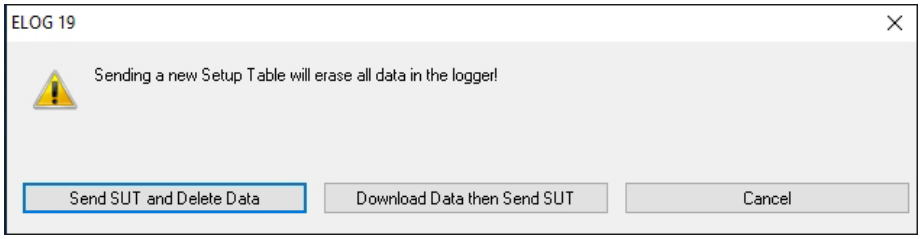
- If you did not choose/change values in the CT Selection window, either through the **Type** drop down menu or manually enter the current transformer (CT) value corresponding to the selected CT if different from the default value of 100A. The CT value is the nominal maximum input (primary) rating of the CT in Amps and is printed on the CT.




- Input the phase shift (if known and if different from the default value of 1.1°) for the selected CT. Or select a CT from the **CT List** dialog (accessed automatically from the "Type" dropdown).
- (Optional) Click in the box under **Name** and type "110V Load" to describe the load.
- Click the down arrow to the right of the **Volts** field and click **Average** (or other parameters to be recorded as desired). Repeat the selection for **Amps**, **kW** (kilowatts), **kVA** (kilovolt-amps), **PF** (power factor), and **kVAR** (kilovolt-amps reactive). You can choose any combination of values to record: Average, Minimum, Maximum, and Integrated average (e.g., kWh).

4) Select **File > Save As…** to save the Setup Table to the computer's hard drive. Name the table "Sample" and then click **Save**.

5) After connecting to the logger, click on one of the **SEND SETUP TABLE to Logger** command buttons on the Setup Table screen. Separate buttons are available at the top and lower left of the Setup Table screen. Sending a new Setup Table to the logger deletes any data still stored in the logger. ELOG displays the following dialog box to ensure desired data is not lost:



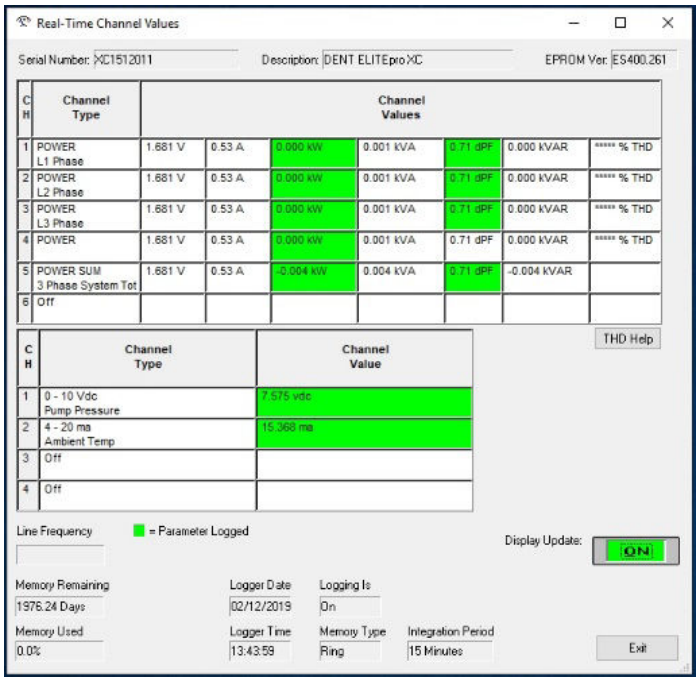

6) Click **Send SUT and Delete Data**. This loads the new Setup Table into the meter and clears the data in the logger. The ***Logging is now ON*** dialog box briefly displays.
-or-
Click **Download Data then Send SUT**. The ***Select A Directory and A Name…*** dialog box displays. Enter the name and location for the data file. After the data is downloaded to the PC and saved, ELOG automatically sends the new Setup Table to the meter and starts logging.
-or-
Click **Cancel**.

ELOG automatically initiates logging when a Setup Table is downloaded to the Logger unless the Data Logging delayed start time is being used.

## View Real Time Values and Retrieve Logger Data

1) Select **Logger > Display Real-Time Values > Show As Text** to view the real-time values measured by the logger.

> Until the logger is connected to a real load, the Real Time Values you see in ELOG will represent "noise" and will not be meaningful. However, you may still want to familiarize yourself with the type of information available before heading into the field.




Once connected to an actual load, allow the logger to collect several minutes of data. Then review the collected data to ensure the readings make sense for your setup. Collected data can be saved as an .elog file on the hard drive.

2) Select Logger > Retrieve Data From Logger…

   a) Enter a data file name and folder to save the data or use the defaults.

   b) Click **Save**. The data is retrieved from the logger and when finished, the downloaded data displays automatically.



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3) Select **Data >Data File Statistics > Data File Summary** to view a text summary of the data. Select **Data > Create New Graph…** command to make graphs of the data.

The ELITEpro XC is not powered by an internal battery. Instead, the ELITEpro XC can be powered one of three ways:

1. **Line Power:** Powering the logger happens automatically when the L1 and L2 voltage connections are made. Normally the logger is powered in the field during the course of a measurement project.
2. **USB Connection:** The logger is also powered off the USB connection while it's connected to a computer. This is ideal for when you're configuring the logger in the office for a new project.
3. **Wall Power:** Power can also be supplied using an optional wall transformer. This may be necessary when taking current-only measurements.

For more information on powering the ELITEpro XC, please consult the ELITEpro XC manual which can also be found under the "Help" menu in ELOG or on the DENT Instruments website.



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# DENT INSTRUMENTS WARRANTY STATEMENT

Rev 4/9/2015

DENT Instruments, Inc. promises buyer that any product sold by DENT Instruments, Inc. shall be free from material defects in design, materials, or manufacturing for the period shown on the current datasheet for that product beginning from the manufacture date; provided, however, that the warranty shall not extend to ordinary wear and tear, or to normally replaceable components (e.g., batteries and humidity sensor elements). During the warranty period, DENT Instruments, Inc. may repair or replace (at its sole discretion) any product suffering from a warranty defect and returned freight prepaid by buyer, with no charge to buyer for any warranty repair or replacement. The warranty shall remain in full force and effect for said period, provided that the product: (1) was installed, operated, and maintained properly; (2) has not been abused or misused; (3) has not been repaired, altered, or modified outside of DENT Instruments' authorized facilities; (4) has not been sold subject to other warranty terms specified at the time of sale. This warranty provides specific legal rights that may be varied by local laws.

## ELITEpro Series and Accessories

Seller warrants to Buyer that ELITEpro Series products and accessories or services are free from substantial defect in material and workmanship under normal use given prior installation and maintenance for the period of 1 year (12 months) after delivery

## LIMITATION OF WARRANTY

CORRECTION OF DEFECTS BY REPAIR, REPLACEMENT, SERVICE OR CREDIT WILL BE AT SELLER'S OPTION AND CONSTITUTE FULFILLMENT OF ALL OBLIGATIONS TO BUYER FOR BREACH OF WARRANTY.

Seller assumes no warranty liability with respect to defects in the product caused by: (a) modification, repair, installation, operation or maintenance of the product by anyone other than Seller or its agent, except as described in Seller's documentation; or (b) the negligent or other improper use of the product.

Other manufacturers' equipment purchased by Seller and resold to Buyer will be limited to that manufacturers' warranty. Seller assumes no warranty liability for other manufacturers' equipment furnished by Buyer.

No agent, distributor, or representative is authorized to make any warranties on behalf of Seller or to assume for Seller any other liability in connection with any Seller product or service.

## DISCLAIMER OF WARRANTY

Buyer understands and agrees as follows:

THE ABOVE WARRANTY REPLACES ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, & ALL OTHER OBLIGATIONS OR LIABILITIES OF SELLER, INCLUDING ANY WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. ALL OTHER WARRANTIES ARE DISCLAIMED AND EXCLUDED BY SELLER.THE FOREGOING WILL BE THE SOLE AND EXCLUSIVE REMEDY WHETHER IN CONTRACT,

TORT, OR OTHERWISE, & SELLER WILL NOT BE LIABLE FOR INJURIES OR DAMAGES CAUSED BY THE GROSS NEGLIGENCE OF SELLER. THIS LIMITATION APPLIES TO ALL SERVICES AND PRODUCTS DURING AND AFTER THE WARRANTY PERIOD.

## LIMITATION OF REMEDIES

IN NO EVENT WILL SELLER BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR COMMERCIAL LOSSES EVEN IF SELLER HAS BEEN ADVISED OF THE POSSIBILITY THEREOF.

## GENERAL PROVISIONS

A. Seller reserves the right to subcontract any obligation hereunder.

B. No waiver will be valid unless in writing and no waiver granted will release Buyer from subsequent strict compliance herewith.

C. Seller is not liable for failure or delay in fulfilling its obligations under these Terms and Conditions due to causes beyond its reasonable control.

D. The laws of the State of Oregon, U.S.A. will apply to all transactions hereunder. Any action hereunder will be brought in Deschutes County, in the State of Oregon, U.S.A. Any claim, except for nonpayment, will be brought within one year of product shipment or completion of services and Buyer will be liable for any collection costs or attorney fees.

E. Claims for non-conforming orders must be submitted within 30 days from shipment date.

F. These Terms & Conditions together with Seller's Order Acknowledgment constitute the entire agreement between the parties with respect to the subject matter hereof & supersede any prior of contemporaneous agreement or representation written or oral. Any amendment hereto must be written and signed by Seller.

## Service and Support for DENT Instruments Products

Before calling, remember that many questions are answered in the Operator's Guide for your product. Furthermore, there is extensive product information on the website. In the event that you have a problem with your DENT product that you cannot resolve, please note the following information. Before contacting DENT Tech Support, note the Model Name and Serial Number for your product. You should also be prepared to list the hardware and software details of your PC and related equipment.



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