Important Note Regarding Rogowski Current Transducers and the ElitePro SP

Figure 1. Blue RoCoil current transducer

Battery-powered integrator

Figure 2. Red FLN-3000 CT and integrating amplifier
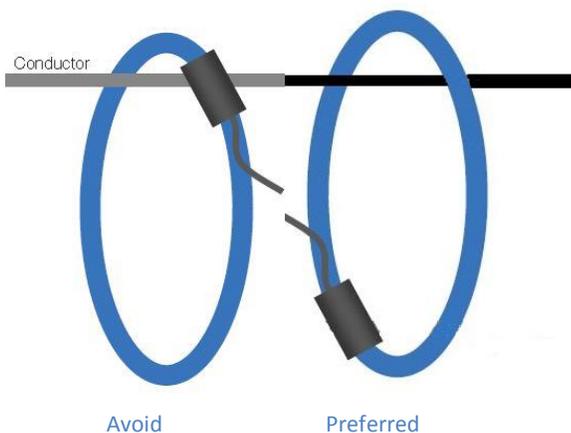

Avoid   Preferred

Figure 3. Correct conductor and CT positioning, as shown in the preferred image above, will contribute to the accuracy of CT readings.

Overview

The ELITEpro SP™ logging power meter made by Dent Instruments can be used with several current transducers (CTs), including two Dent Rogowski flexible coil CTs:

- The blue RoCoil™ (Figure 1)
- The red FLN-3000™ (Figure 2) -3000), which is equipped with an external battery-powered integrating amplifier that conditions the input signal to the logger

When using the ELITEpro with the Rogowski coils, incorrect set up of the ELITEpro can result in unusable data and perhaps a failed project. To help users avoid these problems, this *Application Note* covers setup of the ELITEpro when using Rogowski coils.

Notes:

- Rogowski coils typically replace clamp-on CTs in applications exceeding 1200A or in configurations that are too small to allow clamp-on CTs to close around the conductors. These can include configurations involving buss bars or multiple conductors dedicated to a single phase of power.

- The position of the conductor in relation to the CT junction—the point where the two ends of the coil attach—affects the overall accuracy of the CT readings. Correct positioning is therefore important, particularly in configurations with small conductors that fill very little of the area (or "window") inside the CT. Specifically, users should avoid resting the coil's junction on the conductor (Figure 3.) For more information, see Dent's application note, Optimizing Performance from Rogowski Coil Current Transformers, (http://www.dentinstruments.com/documents/Rogowski_appnote.pdf)
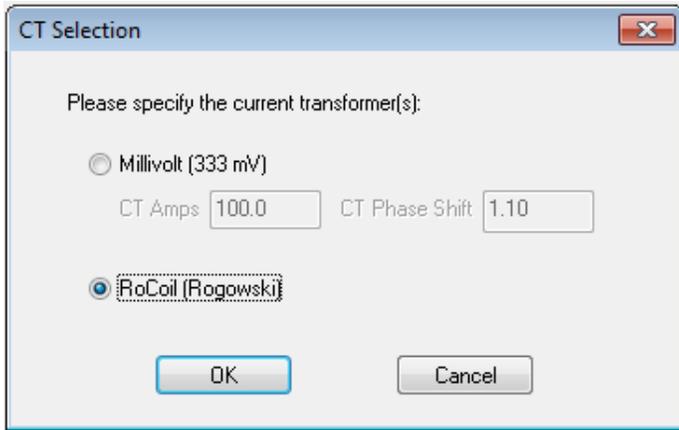
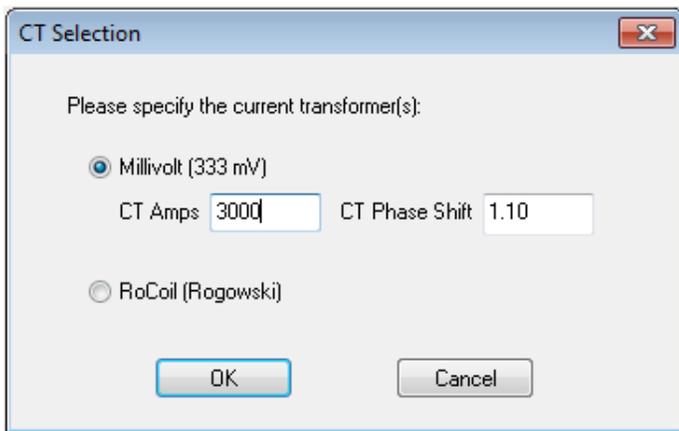Figure 4. Set up of the blue RoCoil CT using the CT Selection dialog box

Figure 5. Set up of the red FLN-3000 CT using the CT Selection dialog box

Figure 6. Set of the Rogowski CTs using the setup table

Instructions

Logger Setup

Below are instructions on configuring the ELITEpro using setup table in the ELOG 2012 software. Set up of this software is covered in detail in the *Quick Start Guide, ELITEpro SP™ and ELOG™ 12 Software Application Note* and more information is available in the *Quick Start Guide: ELITEpro SP™ and ELOG™ Software,* (http://www.dentinstruments.com/media/ESP_ELOG_12_ Quick_Start_Guide.pdf).

The instructions below show two set up options:
- Option 1, which enables set up by opening the CT Selection dialog box in the software
- Option 2, which enables set up by directly editing the setup table in the software

Option 1. Set up using the CT Selection dialog box

	Action
1.	From the logger setup table (**File > New > Setup Table File > ElitePro SP**), open the **CT Selection** dialog box by clicking one of the four **Quick Setups** buttons in the top right of the dialog box (see Figure 4).
2.	When using the blue RoCoil with the ElitePro, select the **RoCoil (Rogowski)** radio button and click **OK**.
3.	When using the red FLN-3000 or any other CT provided by the Tool Lending Library: ○ Select the **Millivolt (333mV)** radio button (see Figure 5) ○ In the **CT Amps** field, enter the value shown on the CT's signal amplifier* (either **300A** or **3000A**) ○ In the **CT Phase Shift** field, enter **1.1** for any CT provided by the Tool Lending Library

*When using clamp-on or split core CTs, in the **CT Amps** box, enter the value—ranging from 5 Amps to 1000 Amps—shown on the body of the CT for that channel.

Option 2. Set up using the setup table

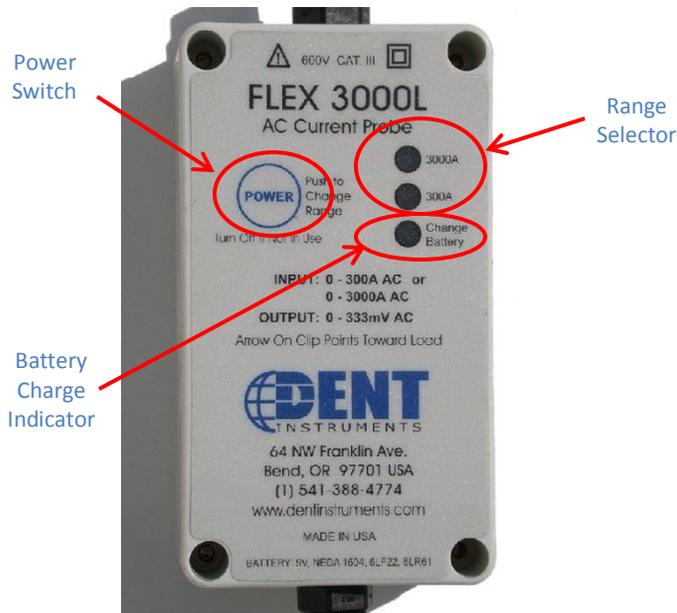|	Action
1.	To open the setup table (see Figure 6), click on the ELOG 12 **File** menu and **select New > Setup Table File > OK**.
2.	In the **Current Transformers – Type** box, select: ○ **RoCoil** if you are using the RoCoil CT ○ **Millivolt** if you are using the FLN-3000 or any other CT provided by the Tool Lending Library
3.	In the **Current Transformers – Amps** dialog box, select the proper amperage (if applicable) from the dropdown menu.
4.	Repeat these steps for each measurement channel activated.

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Power Switch

Range Selector

Battery Charge Indicator

Figure 7. Set up of the FLN-3000 signal amplifier

Figure 8. Check of logger configuration and installation using the Display real-time values menu

Figure 9. Values displayed in the Instantaneous Channel Values dialog box can be saved as a screen print for future reference.

Set-Up of the FLN-3000 Signal Amplifier

Follow these instructions to set up the FLN-3000 signal amplifier (see Figure 7):

Action

1. Press **Power** the appropriate number of times:
  o   One time: to turn the amplifier on
  o   Two times: to configure the CT for 300A full scale
  o   Three times: to configure the CT for 3000A full scale
  o   Four times: to turn the amplifier off

2. Once the amplifier is energized, check the **Change Battery** light. If lit, change the battery.

Checking Real-Time Values

To guarantee correct configuration and installation of the logger, always, check the logger's real-time values after installing the device. **Omitting this essential step can result in some or all of the data being unusable at the end of the monitoring period**.

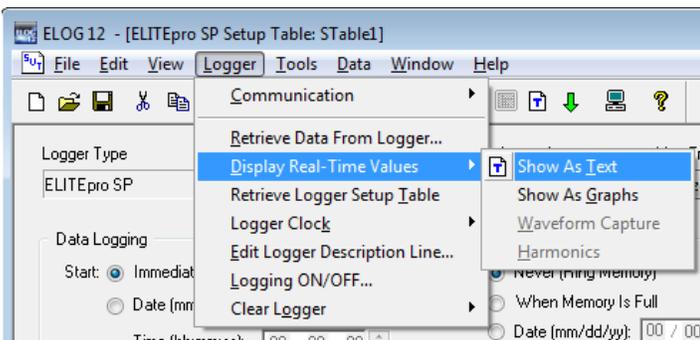| Action |
| --- |
| 1. On the **ELOG 12 Logger** menu, select **Display Real-Time Values** and then select **Show As Text** (Figure 8). |
| 2. Be sure the logger is recording and that each measured variable is displaying a reasonable value. |

Saving a Screen Print of Values

Saving a screen print of the values displayed in **Instantaneous Channel Values** dialog box (Figure 9) can be very helpful for future use and documentation. Tool Lending Library staff members usually request this information when asked for assistance.
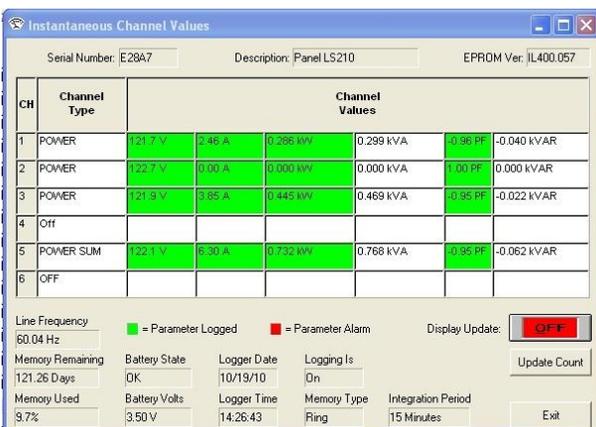
Contact Information

If you have any questions, please contact the Tool Lending Library at pectools@pge.com.

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