

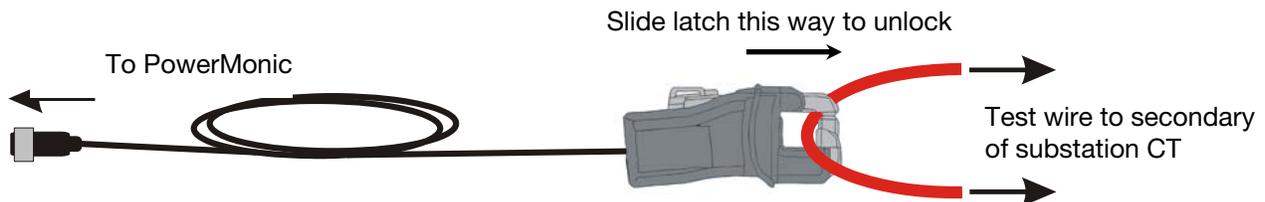
## PowerMonic CT Cat No: C10 for Substation Measurements

### Guide to substation current transformer measurements using the C10 Current Probe with the PowerMonic Power Quality Analyzer.

**Background:** The PowerMonic can be used to take power quality measurements in a substation. Most substation current transformers (CTs) have a 0-1 Amp or 0-5 Amp secondary. This application note explains how the C10 Current Probe is used to measure the CT secondary current.

**Technique:** The secondary of the substation CT will have two terminals available for current measurement.

1. Connect an insulated test wire between the two terminals of the CT as shown below. The CT will usually be fitted with its own shorting link to ensure the secondary is never opened.
2. After connecting the insulated test wire, remove the CT shorting link to allow current to flow in the test wire.
3. Connect the C10 to the PowerMonic current channel and place the open C10 over the test wire.
4. Ensure the C10 jaws are closed, then slide the safety latch to the locked position.



**Measurements:** When the C10 is connected to the PowerMonic, the current will be displayed and logged using a full scale of 10 Amps.

Currents over 12 Amps will be clipped inside the PowerMonic. If you want to measure fault currents greater than 10 Amps, a current probe with a higher rated current should be used.

To convert the current measured by the PowerMonic to the equivalent value on the high voltage side of the substation current transformer, you will need to use PowerView to change the current scaling, as detailed below.

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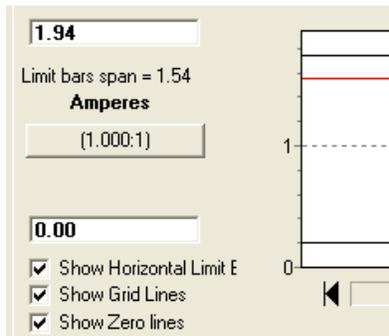
#### CHK GridSense PTY Ltd.

Suite 102, 25 Angas Street  
Meadowbank, NSW 2114, Australia

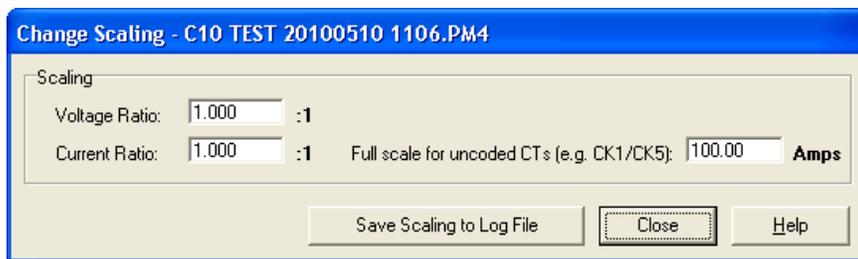
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**Current Scaling:** After downloading the log file, display the logged data in PowerView. The full scale current will be 10 Amps. This full scale current can be adjusted in PowerView to show the equivalent current on the high voltage side of the substation CT.

To re-scale the current graphs, click on the button under the “Amperes” text to the left of the main current graph.

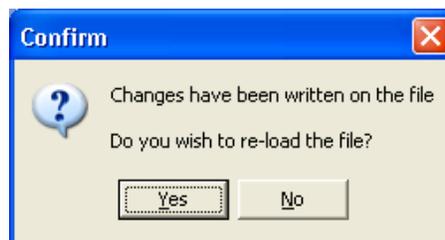


The following dialog box will be displayed:



Edit the Current Ratio value. The current ratio will be the substation CT full scale value divided by 10, because the C10 has a full scale of 10 Amps. For example if the substation CT has a full scale of 3000 Amps, enter 300 for the current ratio. This scaling factor will be applied to all current channels. The new scaling factor must be saved to the .PM4 data file. These changes are reversible, so it is OK to update the file.

Click the Save Scaling to Log File button. The following screen will be displayed:



Click Yes. The file will be reloaded with the new scaling shown. If you need to change or undo the scaling, repeat the procedure using the new scaling factor.