ASCO Power Technologies™

CONTROL
Data Sheet

SIGMA Instrumentation System (SIS)

The SIGMA Instrumentation System (SIS) is used, in conjunction with the SIGMA PC program, to display and capture the three phase instrumentation directly at the Supply on Test. When a SIGMA controlled load bank and SIS are used together on the SIGMA 'network' the SIGMA PC System will also enable load control at the load bank.

SIGMA Control

SIGMA controlled load banks are commonly used for the testing of low voltage (LV) generating sets up to 690V. When testing medium and high voltage (MV/HV) generating sets, low voltage load banks can be used in conjunction with suitably rated power transformers to load the generating set. The SIS provides a means of directly measuring the actual MV or HV electrical parameters, including power, voltage, current and frequency.

Previous versions of the SIGMA PC System required calibrating the CT and VT Ratios of the SIS with the SIGMA Setup Program. This new method improves the integration of the SIS into the SIGMA PC System by withdrawing the dependency on the Setup Program.

If you have an SIS connected then use the SIGMA Instrumentation System dialogue to configure your voltage and current transformer ratios and connection. The SIGMA PC will then apply the correct scaling to the raw instrumentation data. When the SIGMA PC System performs a search for supply it will automatically select the SIS as the data source for all instrumentation.

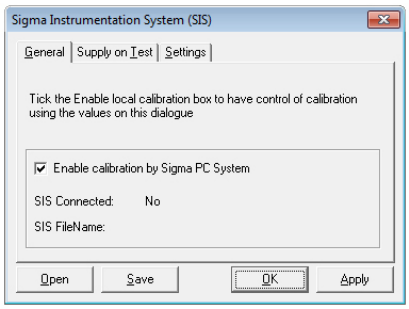
Ensure the Supply on Test properties match the generator on test size and voltage (available using the Edit button on the Supply and Load bank Information dialogue after a Search for Supply).

If a SIS is connected, then a SIS button on the Supply on Test Properties will be available and take you straight to the SIS dialogue. Otherwise the SIS dialogue can be found by clicking SIGMA Instrumentation System on the Instrumentation menu.

SIGMA Instrumentation System

General

The ‘General’ tab of the dialogue box allows you to tick whether you wish to ‘enable calibration by SIGMA PC System’. By having this box ticked you are now able to edit the ‘Supply on Test’ and ‘Settings’ tabs. When not ticked you will not be able to edit the ‘Supply on Test’ and ‘Settings’ tab.



Supply on Test

This tab shows the settings on your Voltage and Current Transformer and the SIS options you have selected. Normally it is only these parameters which will need changing.

Voltage

Enter the Primary and Secondary voltages as declared on your Voltage Transformer ratings into the text boxes.

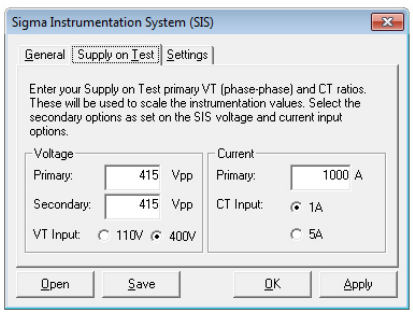
The selected VT Input (110V or 400V) should match the Secondary VT on your transformer, and the equivalent VT Input selection on the SIS box. For example, if you have a 415V secondary then turn the switch on the box to 400V, and select the 400V option on this dialogue.

Current

Enter the Primary CT current for your transformer.

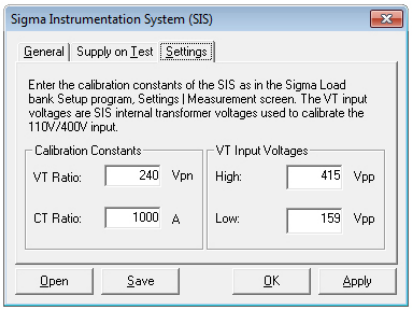
Select the CT input options to match the secondary CT of the Transformer (1A or 5A) and plug the secondary CT connector into the matching socket on the SIS.

Click the Apply button, and the values of the instrumentation will be scaled accordingly.



Settings

The values in the Settings tab are advanced variables and will only require changing if the SIS needs some calibration other than the system defaults.



The Values shown above are the default values as normally set up as factory defaults in the SIS.

Calibration Constants

The Calibration Constants can be viewed by connecting to the SIS with the SIGMA Setup Program and looking at the Measurement Screen. The CT and VT ratio’s here should match those in the Setup Program.

VT Input Voltages

The VT Input Voltages are the nominal voltages related to the 400V and 110V VT inputs on the SIS box, these are system dependant and are used to calibrate the internal transformers.

SIGMA Diagnostics

If the SIS has already been configured and calibrated using the SIGMA Diagnostics, then set the following values in the SIS dialogue to use unscaled instrumentation. On the Supply on Test tab set Primary and Secondary Voltage - 415V, select 400VT Input, and Primary Current - 1000A. On the Settings tab set the VTRatio - 240V; CT Ratio - 1000A, VT High - 415V and VT Low - 159V.

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