PACIFIC POWER SOURCE
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APPLICATION NOTE

AFX Series - LabView LAN TCP Interface Sample VIs

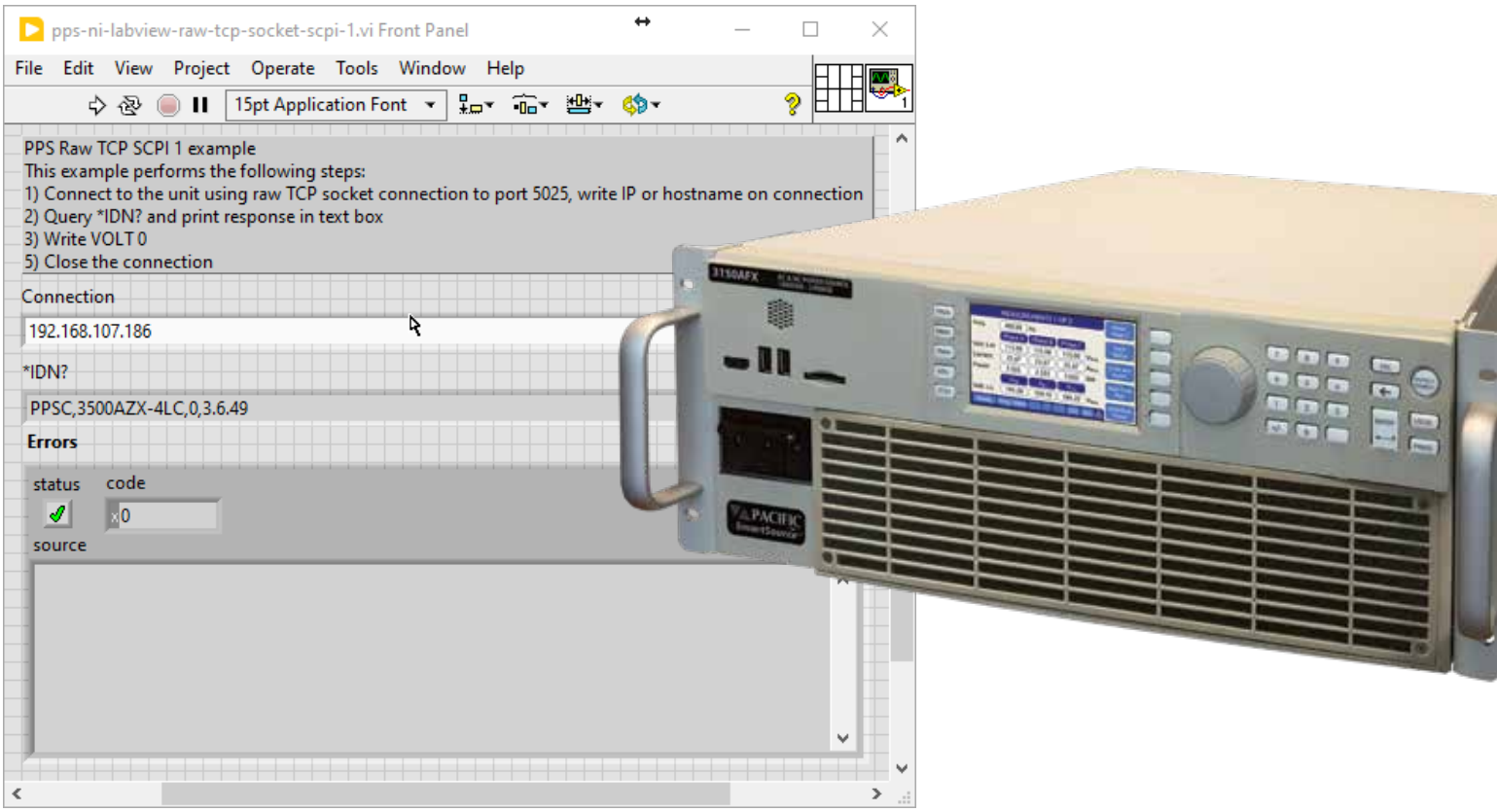

Figure 1: Sample Measurement VI Front Panel Interface

Abstract

This application note provides a simple example of communicating with the AFX Series programmable AC & DC Power source product over LAN using TCP/IP protocol.

Note that the same VIs may be used for ADF, AZX, LMX and LSX Series power sources as well as needed.

Example VIs (Virtual Instruments) are provided - available for download from pacificpower.com - for the following three connection methods:

- The TCP socket interface on port 5025 **(pps-ni-labview-peak-current-measurement-1.vi)**
- The raw TCP socket interface on port 5025 through NI VISA **(pps-ni-labview-peak-current-measurement-2.vi)**
- The LXI interface through NI VISA **(pps-ni-labview-peak-current-measurement-3.vi)**

These VI's perform the following tasks:

1. Establish a LAN connection to the power source using a raw TCP Socket connection to port number 5025.
2. Query a peak current measurement reading.
3. Query recorded peak hold current measurement reading.
4. Reset the recorder peak hold measurement reading.
5. Close the LAN connection.

These examples do not use the AFX Series LabVIEW instrument driver but instead use standard LabVIEW components. This example can be used to create other VIs to query and write any SCPI commands.

Telnet

The Telnet protocol - port 23 - requires a welcome message when connecting. Even though it can be used, it is not convenient for this purpose. Also, the Telnet protocol is no longer supported by NI LabView. As such, use of the Telnet interface is not recommended.

List of VI's

The following three sets of VI's are included in the downloadable zip archive file, each using an alternative connection method:

LAN Connection VIs:

- pps-ni-labview-raw-tcp-socket-scpi-1.vi
- pps-ni-labview-peak-current-measurement-1.vi

Establishes a raw TCP socket connection

- pps-ni-labview-visa-raw-tcp-socket-scpi-1.vi
- pps-ni-labview-peak-current-measurement-2.vi

Establishes a VISA connection using raw TCP socket connection

- pps-ni-labview-visa-lxi-scpi-1.vi
- pps-ni-labview-peak-current-measurement-3.vi

Establishes a VISA connection using LXI protocols

Note the use of NI-VISA (Virtual Instrument Software Architecture) provides the added benefit of being able to use the NI-MAX and NI IO Trace bus monitor utility to analyze interface activity.

User Interface Front Panel VIs

Each set of VIs includes a front panel vi, " pps-ni-labview-peak-current-measurement-x" that allows entry of the AC power source IP address and displays the measured peak current and peak hold current value read back when the VI is executed.

The VI block diagram for the Raw Socket front panel VI is shown in Figure 2 below.

Note that familiarity with NI LabView is required to use these VI examples as a starting point.

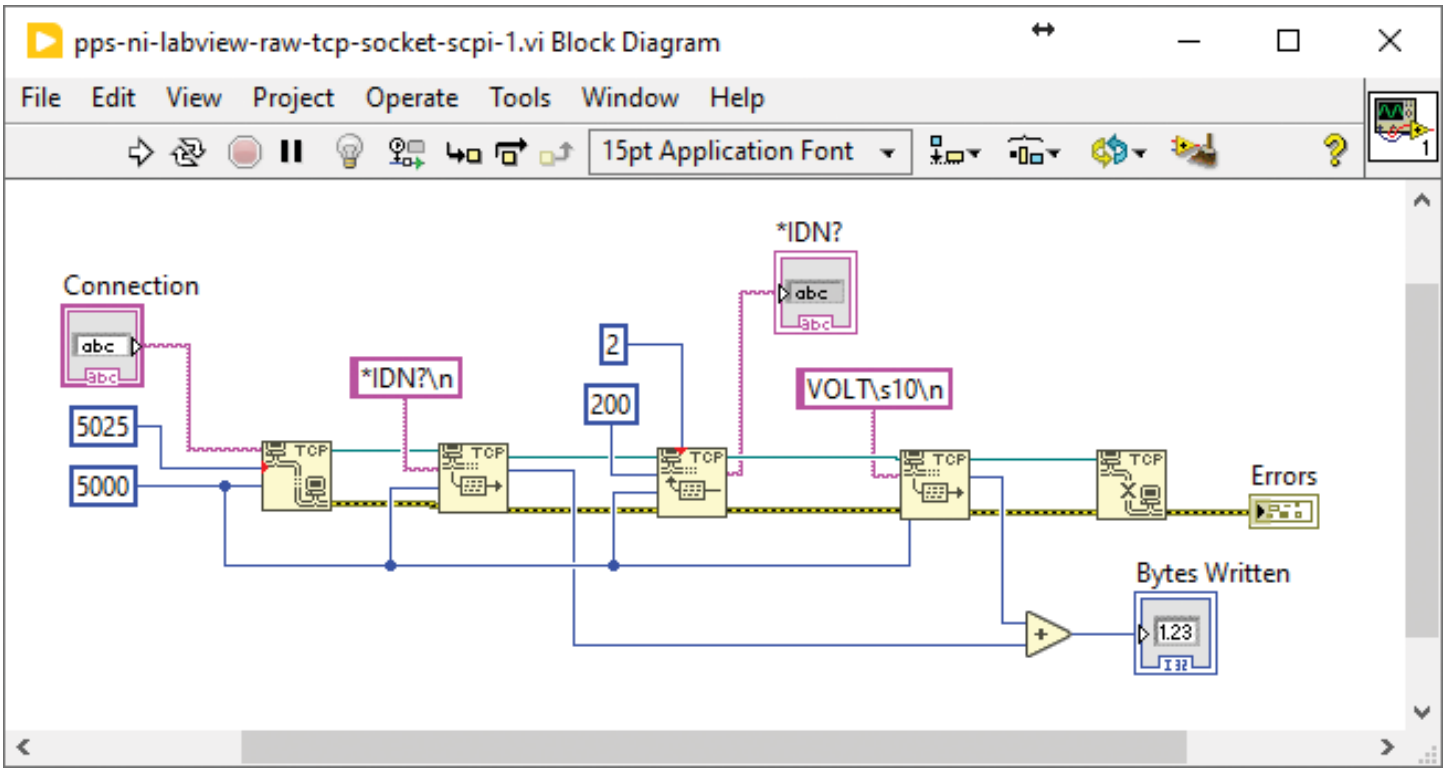

Figure 2: Block diagram for the Raw Socket front panel VI

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AFX Series - LabView LAN TCP Sample VIs

Summary

The AFX Series supports several alternative connection methods for LAN interfacing.

To download these sample VIs use the URL below to access the technical resources page:
https://tr.pacificpower.com/

Note that registration is required to gain access.

The sample VIs can be downloaded from the " Power Source Control Software and Instrument Drivers" section by clicking on the " PPS-NI-LabView-LAN_TCP_examples" link.

Customer Support

For application support, contact Pacific Power Source's Customers Service - Toll Free US: +1 (800) 854-2433 or your local authorized Pacific Power Source distributor or send an email to support@pacificpower.com

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