MODEL 6000U
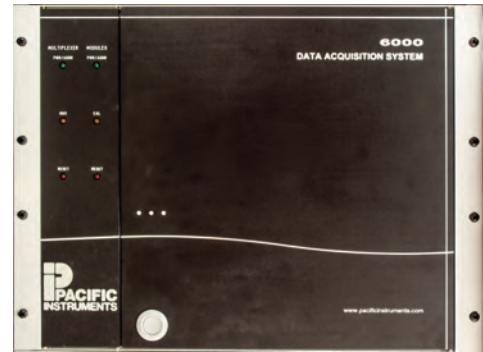## Enclosure, 16-slot, USB Data & Control Interface

The 6000U enclosure has 16 slots for Series 6000 input and output modules with a Universal Serial Bus (USB 2.0) computer interface for programming, control and data output. For larger systems, up to 32 enclosures may be combined using USB 2.0 hubs or a computer with multiple USB 2.0 ports. The enclosures are 8U 19-inch rack-mount. and have integral fans providing air circulation and an internal cable tray that routes the input and output cables from the front of the installed modules to exit the rear of the enclosure.

A sample clock bus is provided for multi-rack installations. Programming and data transfer is USB 2.0, which provides high data transfer rates with low, predictable latency. It interfaces to the USB 2.0 port provided on most PC computers, including laptops. Maximum length of the interface cable is 3 meters but it may be extended further using Ethernet with the Control & Data Processor (CDP) option.

Data Redundancy is optionally available. A 2.5" HD (Model 6095) mounts on the USB controller board in each 6000U enclosure and provides a redundant recording point for the DAS. In the unlikely event the Operators Workstation or DAS Software fails, data will continue to record in each enclosure and can be recovered from the system post test.

The Control & Data Processor (CDP) interfaces multiple 6000U enclosures to gigabit Ethernet providing remote and/or distributed operation. The CDP is typically installed with the Series 6000 DAS and provides an Ethernet interface to the Operators Workstation. The CDP includes a high-speed processor and software that performs low-level operations, freeing resources on the Operators Workstation computer for data display, storage, distribution and reduction.

The Operators Workstation (PCCOWU) is the primary control and data recording point for the Series 6000 DAS. The PCCOWU is typically

FEATURES

- Enclosure for 16 I/O modules
- USB 2.0 Interface provides 5+ MS/s aggregate data rate
- Calibration voltage distribution
- Alarm busses for control external equipment
- Optional remote operation using gigabit Ethernet
- Optional on-board data storage
- Built-in fans and cable tray

installed in the control room and runs PI660 Data Acquistion Software for system setup, calibration, dsiplay, recording, distribution and export. In installations where the DAS is not remote from the Operators Workstation, the PCCOWU will connect directly to Series 6000 Enclosures and does not require the CDP.

SPECIFICATIONS

DATA FORMAT

Data Word ....16 or 32-bits, 2's complement binary.
Scan Table ....Maximum format length is 65,536 samples.
Sample Rates ....Multiple sample rates consisting of the highest sample rate divided by binary numbers. Highest sample rate is programmable with 1 uS resolution.

DATA INTERFACE

Output Rate ....Processor dependent, typically over 5 million 16-bit samples/second (5 MS/s).
Latency.................Processor and scan table dependent, typically less than 5 milliseconds.
Clock Stability........100 ppm over temperature range.

OPERATION

Protocol ....Control and data interface is USB 2.0.
Software ....Window's driver (XP and 7, Both 32 and 64-bit) provides high-level operating command set. Fully compatible with all implementations of PI660 operating software.
Control Inputs ....TTL inputs for Start, Stop and Trigger assert flags in the header of output data that initiate software control operations.
Alarms ....Warning and alarm buses may be independent or shared between enclosures and may initiate an output from a digital I/O type module.

CONNECTIONS

Calibration ....15-Pin Type D mounted on rear panel. Mating connector supplied.
Control ....15-Pin Type D mounted on rear panel. Mating connector supplied.
Synchronization......Sampling clock synchronization for multiple rack systems. RJ45 connector on controller board. Category 5, 2-meter cable supplied.
USB ....Two-meter cable supplied.

MECHANICAL

Power ....115 or 230 VAC, ±10%, 47 to 63 Hz, 400 Watts.
Temperature ....0°C to +50°C operating.
Humidity ....95% without condensation.
Shock/Vibration ......Normal shipping and handling of laboratory instruments.
Size ....19 inches wide, 14 inches high, 23 inches deep (including connectors).
Weight ....Approximately 85 pounds with all channel modules.

CONTROL DATA PROCESSOR & OPERATOR WORKSTATION

Input ....USB 2.0 ports for up to eight 6000U enclosures. Additional 6000U enclosures accommodated by adding USB expansion cards.
Operating System ..Windows 7, 64-Bit (other Windows configurations available).
Processor ....Intel Core i5 or better. 4GB RAM.
Media ....160GB SSD or better and CD/DVD. Dual SSD Option. Larger disk drives available.
Ethernet ....Gigabit Ethernet.
Display ....24" Widescreen for PCCOWU. No Display for CDP. Larger, distributed or multi-monitor configurations available.
Power ....115 or 230 VAC, 47 to 63 Hz..
Temperature ....0°C to +50°C operating.
Size ....2U high, 19" Rack Mount. Other configurations available.

ORDERING INFORMATION

6000U ....Enclosure, 16-slot, USB Interface.
6095 ....Redundant Hard Drive.
CDP-1 ....Control & Data Processor.
CDP-1-DHD ....Control and Data Processor, Dual Hard Drives.
PCCOWU ....Operators Workstation.
PCCOWU-DHD ......Operators Workstation, Dual Hard Drive.

4080 Pike Lane ■ Concord, CA 94520 ■ Tel (925) 827-9010 ■ Fax (925) 827-9023 ■ PIsales@pacificinstruments.com