

The 6700U is a high performance data acquisition enclosure supporting high aggregated rate of up to 16M samples per second for high channel-count, high sample rate systems.

The 6700U enclosure has 16 slots for Series 6700 input and output modules with a Universal Serial Bus (USB 3.0) computer interface for programming, control and data output. For larger systems, up to 64 enclosures may be combined using USB 3.0 hubs or a computer with multiple USB 3.0 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. The 6700U is an enhanced version of the 6000U enclosure using improved power supplies. It is lighter, more rugged and offers ultimate reliability and performance.

A sample clock bus is provided for multi-rack installations. Control and data transfer interface is USB 3.0, which provides high data transfer rates with low, predictable latency, readily available 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 or a USB to Fiber/Ethernet extender.

Data Recording Redundancy is optionally available. A 2.5" HD (Model 6695) mounts on the USB controller board in each 6700U 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 6700U enclosures to gigabit Ethernet providing remote and/or distributed operation. The CDP is typically installed with the Series 6700 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.



FEATURES

- Enclosure for 16 I/O modules
- USB 3.0 Interface provides up to 16 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
- Higher performance, reliability, ruggedness and lower weight

The Operators Workstation (PCCOWU-DHD) is the primary control and data recording point for the Series 6700 DAS. The PCCOWU-DHD is typically installed in the control room and runs PI660 Data Acquisition Software for system setup, calibration, display, recording, distribution and export. In installations where the DAS is not remote from the Operators Workstation, the PCCOWU-DHD will connect directly to Series 6700 Enclosures and does not require the CDP.

SPECIFICATIONS

DATA FORMAT

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

DATA INTERFACE

Output RateProcessor dependent, typically over 16 million 24-bit samples/second (16 MS/s).
Latency.....Processor and scan table dependent, typically less than 5 milliseconds.
Clock Stability.....100 ppm over temperature range.

OPERATION

ProtocolControl and data interface is USB 3.0.
SoftwareWindows 10 64-bit driver provides a high-level operating command set. Fully compatible with all implementations of PI660 operating software.
Control InputsTTL inputs for Start, Stop and Trigger assert flags in the header of output data that initiate software control operations.
AlarmsWarning and alarm busses may be independent or shared between enclosures and may initiate an output from a digital I/O type module.

CONNECTIONS

Calibration15-Pin Type D mounted on rear panel. Mating connector supplied.
Control9-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.
USBTwo-meter cable supplied.

MECHANICAL

Power90 to 264 VAC, 47 to 63 Hz, 400 Watts.
Temperature0°C to +50°C operating.
Humidity95% without condensation.
Shock/VibrationNormal shipping and handling of laboratory instruments.
Size19 inches wide, 14 inches high, 23 inches deep (including connectors).
WeightApproximately 50 pounds with all channel modules.

CONTROL DATA PROCESSOR & OPERATOR WORKSTATION

InputUSB 3.0 ports for up to eight 6700U enclosures. Additional 6700U enclosures accommodated by adding USB expansion cards.
Operating System ..Windows 10, 64-Bit.
ProcessorIntel Core i7 or better. 32GB RAM.
Media512GB SSD or better and CD/DVD. Dual SSD Option. Larger disk drives available.
EthernetGigabit Ethernet.
DisplayDual 24" Widescreen for PCCOWU-DHD. No Display for CDP. Larger, distributed or multi-monitor configurations available.
Power115 or 230 VAC, 47 to 63 Hz..
Temperature0°C to +50°C operating.
Size2U high, 19" Rack Mount. Other configurations available.

ORDERING INFORMATION

6700UEnclosure, 16-slot, USB Interface.
6695Redundant Hard Drive.
CDP-1AControl & Data Processor.
CDP-1-DHDControl and Data Processor, Dual Hard Drives.
PCCOWU-DHDOperators Workstation, Dual Hard Drive.