

UEILogger™ 300/600

High performance data logger/recorders

- Flexible: Select the I/O boards installed to match your application
- Up to 150 analog inputs or 288 digital inputs per cube
- Easy-to-use, intuitive Windows setup/programming
- Stores data to standard SD Card (included)
- Sample up to 100 samples per second PER CHANNEL
- Compact

4" x 4.1" x 4" UEILogger 300

4" x 4.1" x 5.8" UEILogger 600

- Rugged (tested -40 to +85 °C, 5g vib., 50g shock)
- Start/Stop Logging via CAN-bus command
- Extremely cost effective
- AC, DC or Battery powered
- Program via Ethernet or load the logging/recording



UEILogger300 shown



UEILogger consists of the CPU, Ethernet interface, SD Card slot and either 3 (UEILogger 300) or 6 UEILogger 600) I/O slots. The slots are filled with the I/O boards required to match your application.

General Description:

The UEILogger is a powerful, flexible and easy-to-use data logger/ recorder suitable for use in a wide variety of industrial, aerospace, in-vehicle and laboratory applications. Based upon UEI's popular PowerDNA Ethernet DAQ Cubes, the UEILogger maintains all of the PowerDNA's flexibility and adds a powerful standalone data logging/recording capability.

The UEILogger is configured to meet the specific needs of your application. The Logger Cube contains the controller, network and SD card interface, power supply as well as either three or six I/O slots (UEILogger 300 or 600 respectively).

Configure your logger by simply selecting the I/O boards required to match your application. With over 20 different I/O boards available, there's sure to be a configuration to meet your needs. (The UEILogger family uses the same I/O boards as our PowerDNA cubes.)

Performance

The UEILogger supports sample rates up to 100 samples per second on each I/O channel or port. For example, a 6 slot Logger, full of 25 channel AI-225 boards has 150 input channels. The logger will log all 150 channels at up to 100 s/s, for an aggregate sample rate of 15,000 samples per second.

Data is logged onto standard SD Cards up to 4 Gigabyte (2 Gig SD Card included). Logged data may be retrieved via the unit's Ethernet port or the SD Card may be removed from the logger and read by any standard SD Card reader (available from any office supply or computer retailer). The 2 Gig SD Card included will hold over 500 million 16-bit A/D readings. Enough to sample 144 analog inputs at 10 Hz for over four days, or 75

channels at 1 Hz for over two months! If you need more data still, you may opt for a larger SD Card.

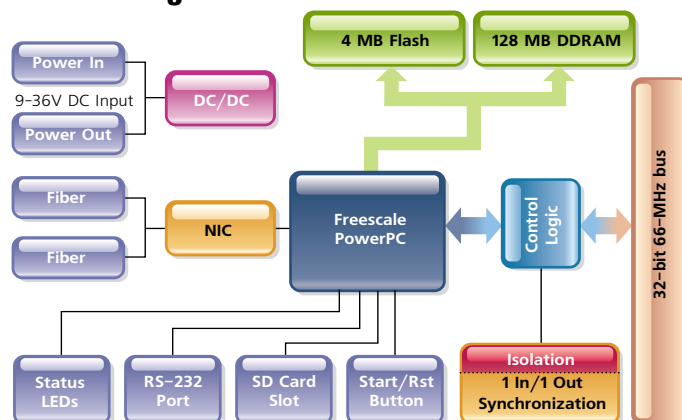
Simple and Flexible Setup

Developing the data logging application is simple with the intuitive, Windows-based application provided. There is absolutely no programming required. The software allows you to set input and output ranges, sample/update rates, signal conditioning, etc. all from simple pull down menus. Channels may be configured individually or to save time and effort channels with common configurations may set up as a group. You may also set Alarm/trigger conditions for input channels that may used to control outputs, sound an audible alarm and/or flash an LED. Please see the screen captures at the end of the data sheet for more info. You may also download a copy of the UEILogger application and try it out at www.ueidaq.com/UEIloggerdemo.

The data logging "program" may be loaded onto the UEILogger two ways. It may be downloaded via the unit's standard Ethernet port. The logging application configuration file may also be stored on the SD card. This allows Logger applications to be modified or initiated and data to be extracted simply by installing a new SD card.

The UEILogger software converts data on the SD Card (including all configuration information) into formats used by popular DAQ and analysis applications. The software also allows you to review the logged data graphically. The binary data storage format will also be published for users wishing to read the data directly from the SD card.

Block Diagram:



General Description (continued):

Logger Timing Control

Logging applications may be started and stopped in many ways. These include:

1. Initiated by host via Ethernet
2. On power up (start only!)
3. Start/Stop button
4. Real-time clock/calendar
5. Input from the Sync connector
6. An analog input crossing a trigger level (can be used to trigger from a digital signal)
7. An analog input inside or outside a user selected range

Mounting and Power requirements

The UEILogger cubes offer a wide variety of mounting options. A flange kit allows the cubes to be mounted to a wall or flat surface. Rack and DIN Rail kits allow mounting in 19" racks or on DIN rails respectively. For portable applications there is even an attache style carrying case that will safely hold a cube, its power supply, cables and screw terminal panels.

The UEILogger may be AC, DC or battery powered. The logger includes a 115/230 VAC universal power supply for AC powered applications. The logger may also be powered by any 9-36 VDC source or battery. Power consumption is dependent on the I/O boards installed though will not typically exceed 12-15 watts worst case. A standard automotive battery will supply a fully loaded logger for roughly two days.

UEILogger Layout:

A Network Connectors

Ethernet in from host PC or from another Cube; The Logger may be programmed via the ethernet port or the program/configuration may be stored on the SD Card. Data may be retrieved via ethernet or the SD Card may be read directly with a standard SD Card reader..

B USB Port

USB Ver 1.1 port is not currently active.

C SD Card Slot

Secure Digital (SD) Card slot for onboard data storage. The SD Card is used as the data storage media in the UEILogger series. It is also stores both data and linux embedded programs deployed on the cube using the soon to be released embedded toolkit. Supports FAT12, FAT16 and FAT32 filesystems.

D Serial Port

Using the supplied serial cable, you perform initial PowerDNA setup of the operating parameters from any serial terminal running at 57,600 baud/8 data bits/no parity/1 stop bit. From a terminal program you can, for instance, change the IP address from the default, if necessary. You also download updated firmware through the serial port. The serial port is usable for RS-232 communications.



F I/O Layer Status LEDs

These two green lights give a visual indication of the status of each I/O layer.

RDY - Ready • **STS** - Status

G Sync Connector

High-speed Cube-to-Cube synchronization connector.

H Start/Reset Button

Recessed to prevent accidental activation, this button may be used to initiate logging applications or to reset the CPU layer for activities such as downloading and installing new firmware for the Cube.

I Communication Status LEDs

These LEDs monitor communications through the serial and infrared ports.

ATT - Attention • **R/W** - Read/Write

COM - Communications underway

PG - Power Good / Ready

J Power Connectors

Power-In, 9-36V DC either from the universal AC power supply included with the Logger, a user-supplied source, or daisy-chained from another Logger.

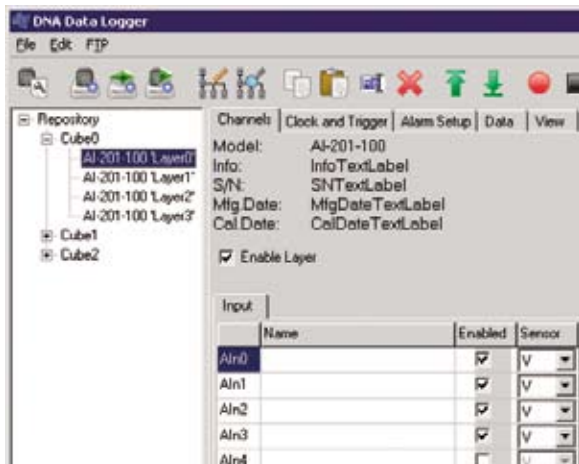
Power-Out (same voltage as applied to Power-In) to another Logger, if desired.

E I/O Board/Layer Slots

Loggers provide either 3 or 6 I/O slots. Boards installed in the I/O slots perform the various analog, digital and communications functions you need for your specific application. Your signals may be connected directly to the I/O boards via your custom cabling or take advantage of our wide variety of easy-to-use, external screw terminal panels. Boards ordered with your logger are factory installed. It is also a simple task to add boards or reconfigure a logger in the field

Software / Programming:

The data logger application is very intuitive. The initial screen allows you to select the particular Logger Cube (if more than one are on the network) as well as the I/O boards (also referred to as layers) you wish to include in your logging application. You configure your application by making selection in the Channels, Clock and Trigger, Alarms and Data Tabs. You may view logged data in the View tab.

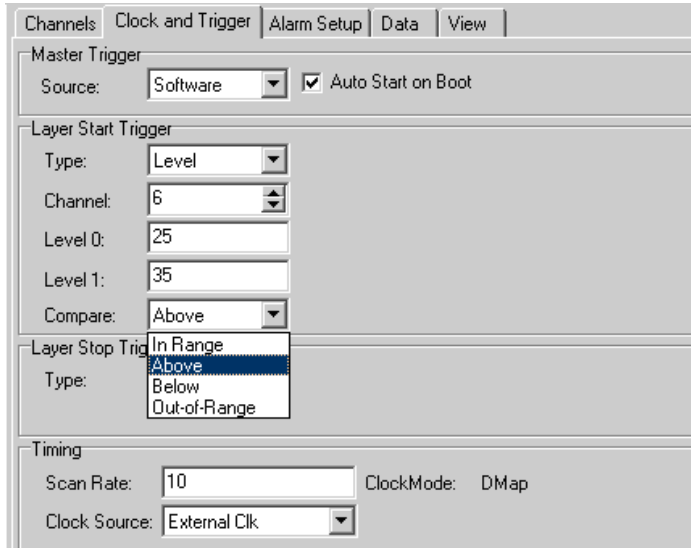


Name	Enabled	Sensor	Type	Units	Ranges
Aln0	<input checked="" type="checkbox"/>	TC	J	C	-200 .. 1190 C
Aln1	<input checked="" type="checkbox"/>	TC	J	C	-200 .. 1190 C
Aln2	<input checked="" type="checkbox"/>	V		V	-1.25 .. 1.25 V
Aln3	<input checked="" type="checkbox"/>	V		mV	-1250 .. 1250 mV
Aln4	<input checked="" type="checkbox"/>	TC	T	C	-1250000 .. 1250000
Aln5	<input checked="" type="checkbox"/>	TC	T	C	-260 .. 390 C
Aln6	<input checked="" type="checkbox"/>	TC	T	C	-260 .. 390 C
Aln7	<input checked="" type="checkbox"/>	TC	T	C	-260 .. 390 C
Aln8	<input checked="" type="checkbox"/>	TC	T	C	-260 .. 390 C

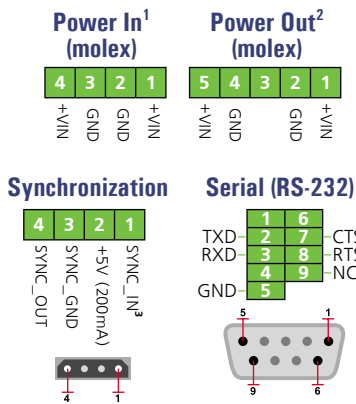
Enabling and setting up the scaling and signal conditioning options is a snap. Just select from the options available in the various drop-down boxes. The software only allows you to select options the board you are using supports.

Software (continued):

After selecting and configuring the channels to log, switch to the "Clock and Trigger" tab. Here you select your logging sample rate as well as how you would like to initiate the logging. The "Alarms" tab allows you to set various alarm conditions, the "Data" tab allows you to select how the data will be formatted and the "View" tab allows you to View logged data



Pinout Diagrams:



¹ Mating connector available from Digikey, Molex PN 39-01-4040

² Mating connector available from Digikey, Molex PN 39-01-4050

Technical Specifications:

Standard Interfaces	
To host computer	10/100Base-T, standard RJ-45 connector
Daisy chain output	10/100Base-T, standard RJ-45 connector
Config/general	RS-232, 9-pin "D"
I/O Slots Available	
UEILogger 600	6 slots
UEILogger 300	3 slots
Data Storage	
Storage media	Secure Digital (SD) Card
Storage capacity	4 Gigabyte (max), 2 Gbyte SD Card included
Data retrieval	Via logger ethernet port or SD Card may be read directly with a standard SD Card reader
I/O Performance	
Max sample rate	100 samples per second PER CHANNEL. Maximum aggregate rate 15 ks/s
I/O Boards	All PowerDNA analog/digital input boards
Processor	
CPU	Freescale MPC5200, 400 MHz, 32-bit
DDRAM	128 MB
On-board Flash	4 MB
Status LEDs	
On front panel	Attention, Read/Write, Power, Communications Active
Environmental	
Temp (operating)	Tested to -40 °C to 85 °C
Temp (storage)	-40 °C to 100 °C
Humidity	0 to 95%, non-condensing
Vibration	
(IEC 60068-2-64)	10-500 Hz, 5 g (rms), Broad-band random
(IEC 60068-2-6)	10-500 Hz, 5 g, Sinusoidal
Shock (IEC 60068-2-27)	50 g, 3 ms half sine, 18 shocks at 6 orientations; 30 g, 11 ms half sine, 18 shocks at 6 orientations
Altitude	70,000 feet, maximum
Power Requirements	
Input voltage	9-36 VDC. 120/240 VAC universal power supply included
Power consumption	3.5 Watt max, plus power required by I/O boards. Total power dissipation < 15 Watts
Physical Dimensions	
UEILogger 300	4.1" x 4.0" x 4.0"
UEILogger 600	4.1" x 4.0" x 5.8"

Ordering Guide:

Part Number	Description
Loggers (includes software, 2 Gbyte SD Card, universal AC power supply, serial and ethernet cables)	
UEILogger 300	3-Slot data logger/recorder
UEILogger 600	6-Slot data logger/recorder
Upgrades	
DNA-Embedded	Tool kit allows UEILogger to run standalone embedded Linux applications (Call for availability)
Accessories	
DNA-SD4GB	4 Gigabyte SD Card
DNA-SD2GB	2 Gigabyte SD Card
DNA-DR5	Rear-mount DIN rail clip for UEILogger 300
DNA-DR8	Rear-mount DIN rail clip for UEILogger 600
DNA-FLANGE	Bottom-mount flange assembly allows cube to be mounted to any flat surface
DNA-19RACKW	19" rackmount enclosure with DIN rail attached
DNA-CASE	Light-weight plastic carrying case for PowerDNA Cube
DNA-CBL-37S	3ft, 37-way round shielded cable