

True RMS Current Data Logger Model CL601



0-600 Arms measurement range

True RMS measurements

Built-in data logger

Built-in data memory

Built-in date & time clock

Alarm function

Battery-powered (2 AA cells)

EN 61010-1; 600V CAT III, 300V CAT IV



Features

600A AC Measurement Range

Adapts to a wide range of AC current measurement requirements with 0.1 A resolution.

Integrated Current Probe

Data logger and current probe are merged in a sleek, convenient design that eliminates multiple instruments and sensors.

True RMS Measurements

Current measurement accuracy is preserved by the CL601's true rms measurement approach.

Automatic Harmonic Calculation

Real time harmonic calculations are available while the CL601 is tethered to a PC.

Automatic Line Syncing

Measurement repeatability is ensured by the CL601's line sync circuitry that ensures 64 samples per 50/60 Hz line cycle.

240,000 Sample Non-volatile Memory

Allows long measurement cycles, and ensures data will not be lost, even in the event of battery failure.

Built-in Real Time Clock

Allows recorded data to be correlated with an actual date and time of acquisition.

LED Status Array

The instrument's front panel contains multi-colored LEDs to clearly indicate instrument status.

Programmable Stop/Start Record Times

Program the instrument to both start and stop recording at specific dates and times.

Selectable Storage Modes

Choose from simple record until full, FIFO where the oldest data is overwritten in a circular fashion, or the Extended Record Mode (XRM) where the logger automatically deletes every other sample and doubles its sample interval upon filling the data memory.

Programmable Sample Intervals

Program the sample interval of the CL601 to sample AC current as frequently as eight times per second, to as long as once every 24 hours across 21 preselected intervals.

Configurable Alarms

Alarm conditions can be flagged as a function of definable upper and lower limits: Above limit, below limit, inside upper/lower limit window, outside upper/lower limit window.

Long Battery Life

The instrument is powered from two AA alkaline cells (included), which can power the instrument for 100 hours to 45 days depending upon sample interval.

Includes Data Logger Configuration Software

Simple Logger II configuration software is included to allow instrument configuration and data retrieval via the USB port. Real time waveform and harmonic displays are also available.

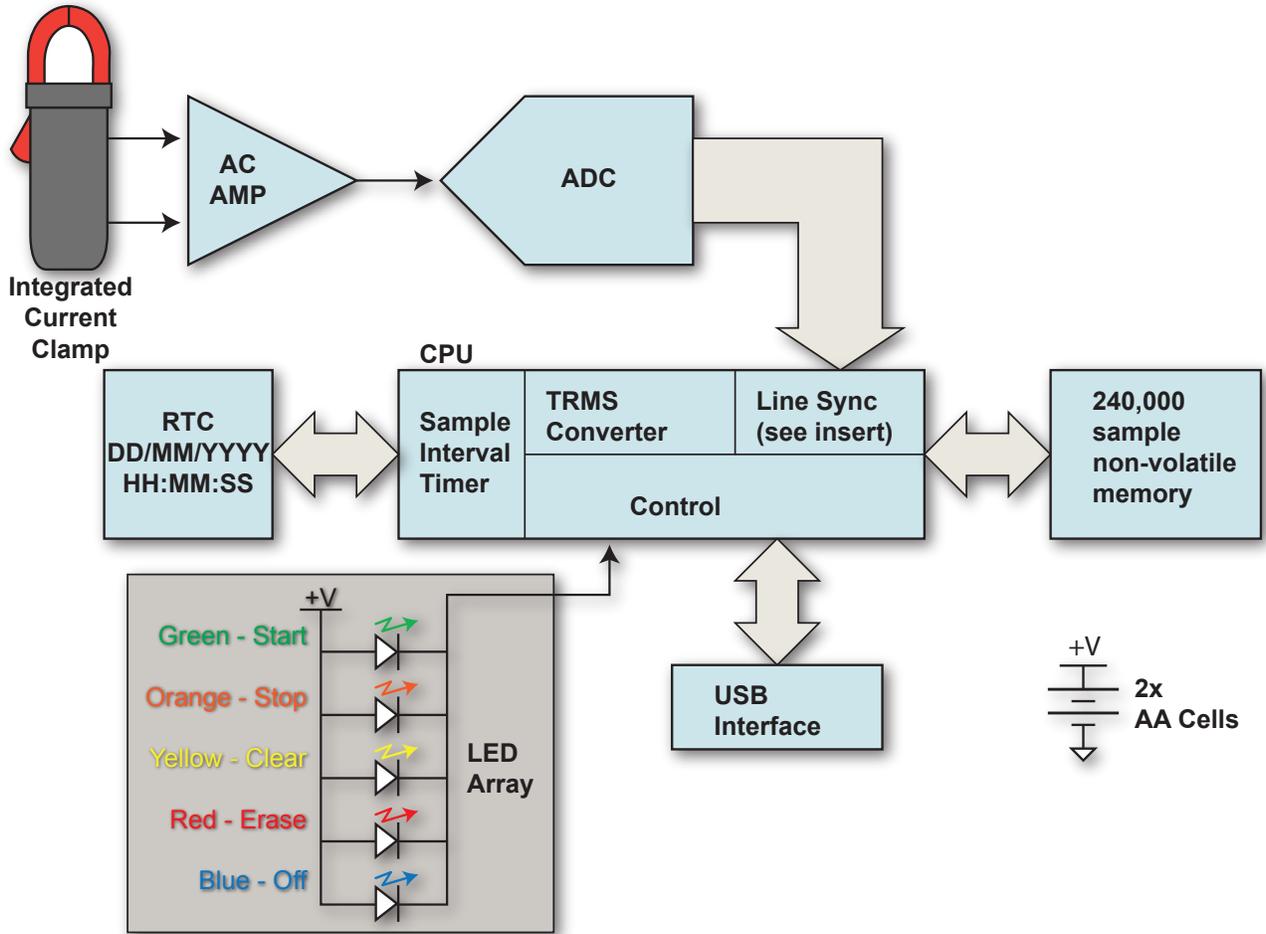
Includes DataView Software

Allows recorded data to be reviewed, analyzed, printed, and exported to Microsoft Excel.

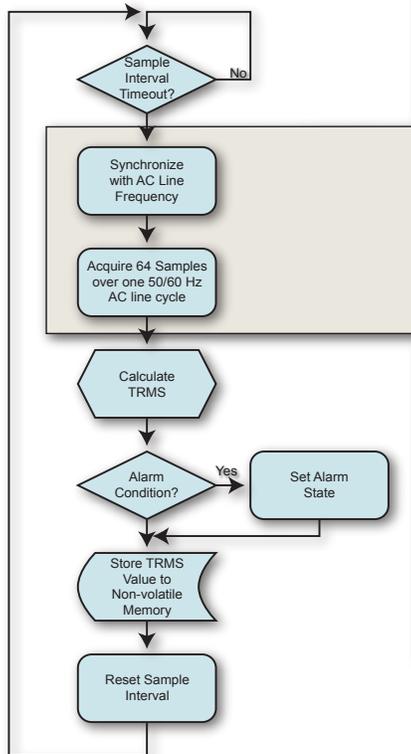
Model CL601 is a member of the Simple logger II series of instruments and is designed for TRMS current measurements. It features an integrated current probe that supports a current measurement range of up to 600A with 0.1A resolution. The instrument features a built in 240,000-sample memory, integrated LED indicators to display status, and a built-in USB interface for uploading configurations and downloading recorded data. The CL601 is powered from two standard AA cells providing complete portability, and a "use anywhere" design.

The CL601's data logging function supports sample intervals ranging from once every 125 milliseconds (eight times per second) to as long as once every day. Each CL601 measurement is synchronized with the AC line such that 64 samples over one AC line cycle are taken. Frequency tracking is performed over the range of ± 2 Hz around the nominal line frequency (50 or 60Hz). An integrated real time clock provides time and date stamping of logged current data.

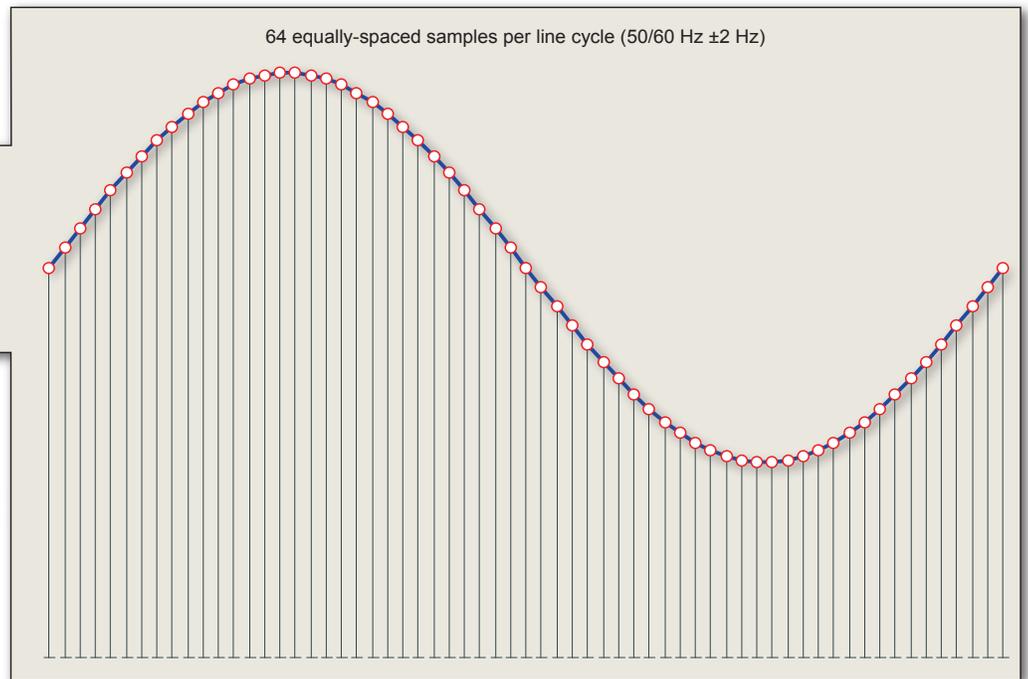
Model CL 601 Data Logger Block Diagram



Typical Measurement Flow



Line Synchronization



CL601 Current Data Logger Close-up (Front)

Integrated current clamp

GREEN "START" LED		
CONTROL	Starts a Recording	
STATUS	OFF	Logger is turned OFF or in Low Power Standby state*
	Single-blink	Logger is in Standby Mode (and not recording)
	Double-blink	Logger is in Record Mode
ORANGE "STOP" LED		
CONTROL	Stops a Recording	
STATUS	OFF	Logger is not in an Overload condition
	Single-blink	One or more inputs are in an Overload condition
YELLOW "CLEAR" LED		
CONTROL	Clears the Alarm State	
STATUS	OFF	No alarm has been seen on any input
	Single-blink	At least one channel has seen an alarm at least once
	Double-blink	At least one channel is currently in an alarm condition
	Fast-blink	Armed to clear alarm indication
RED "ERASE" LED		
CONTROL	Erases the Memory	
STATUS	OFF	No data in memory
	Single-blink	Memory is partially filled
	Double-blink	Memory is full
	Fast-blink	Armed to erase memory
BLUE "TURN OFF" LED		
CONTROL	Turns the Instrument Off	
STATUS	OFF	Battery voltage is above 2.2 volts
	Single-blink	Battery voltage is below 2.2 volts
	Double-blink	Indicates a recording is scheduled

*To determine whether the unit is OFF or in SLEEP mode, press the PRESS button for 0.5 second. If all LEDs light, the logger is not OFF.



CL601 Current Data Logger Close-up (Back and Bottom)

Bottom Edge



USB Connector

Rear Edge



Battery Compartment

Included Accessories



USB cable
Batteries (2 ea. AA)
Software (CD)

Instrument Configuration Software

Sample Interval

Record start and stop dates and times

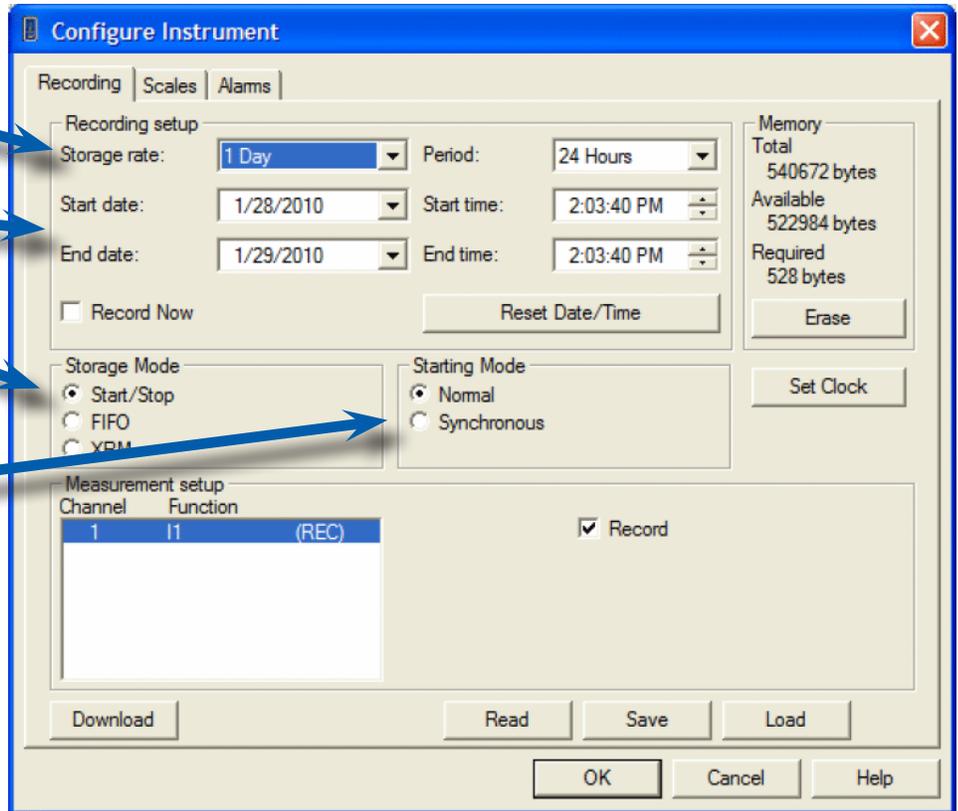
Storage Modes:

- Stop on Full
- Circular
- Extended Record Mode (XRM)

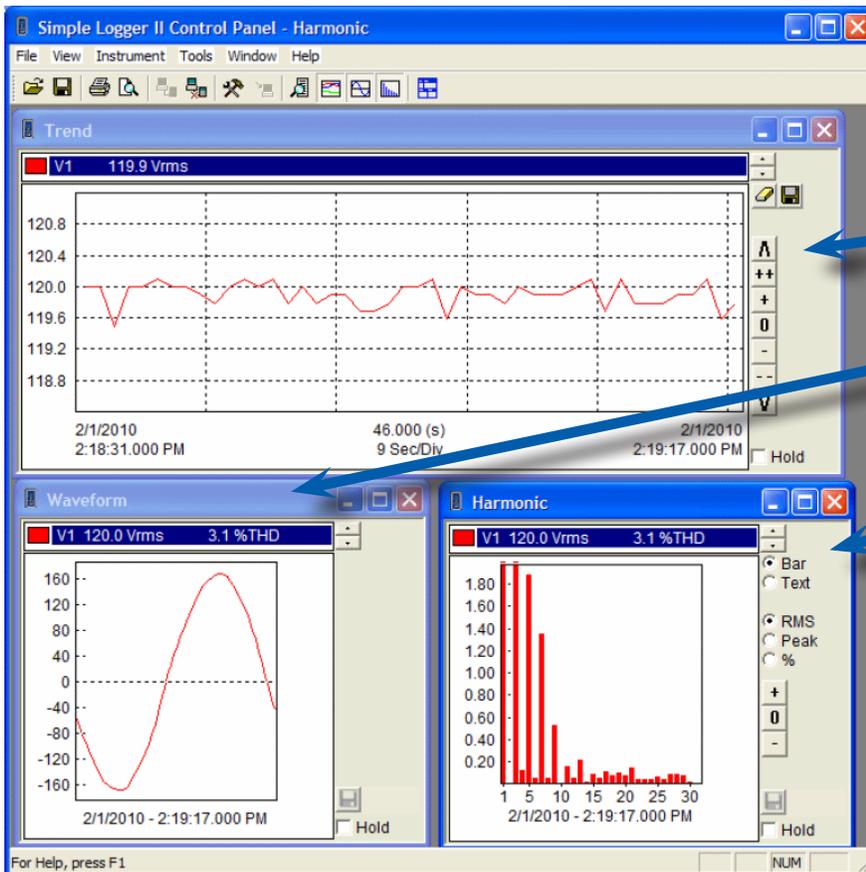
Starting Modes:

Normal causes the recording to start at the specified starting time without regard for storage rate.

Synchronous causes the recording to start synchronized to the storage rate.



Real Time Display Window



The **Trend** Display window shows measurement (sample points) over a time period.

The **Waveform** Display window displays line cycle snapshots. This window displays the actual waveform relative to time.

The **Harmonic** window shows the harmonic content of an associated line cycle using a bar graph or textual table.

DataView Review, Analysis, Report, Export Application

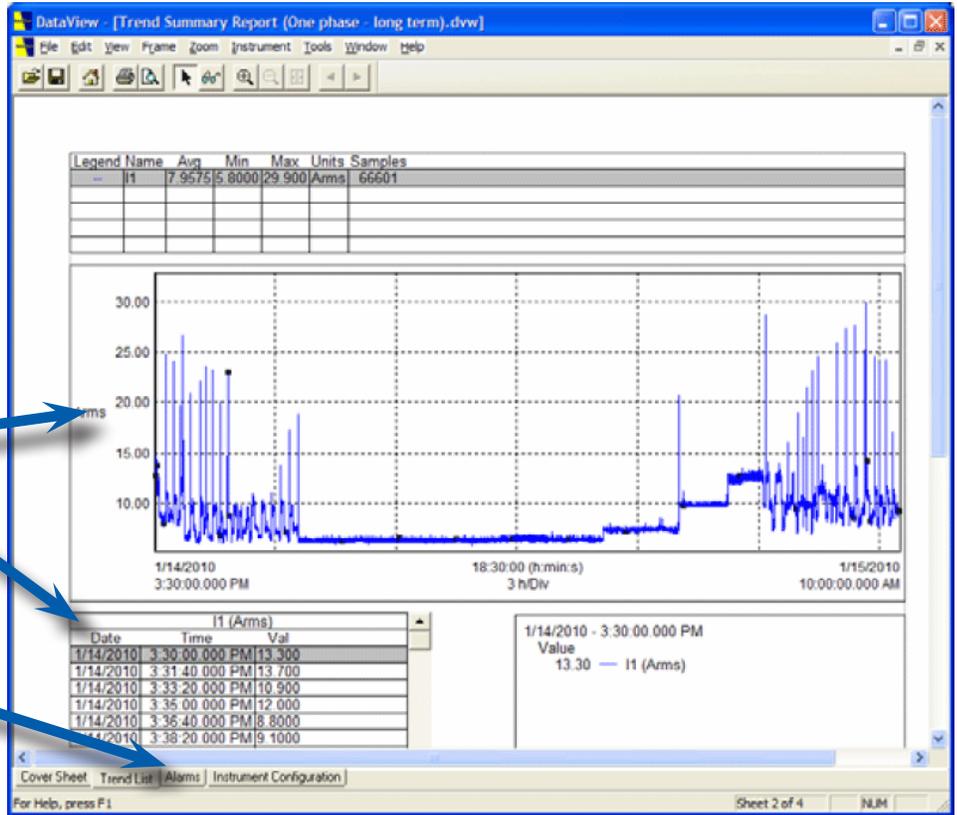
Cursor-based readings along with zoom in and out features.

Built-in Report Generator.

Graphical plot of logged data versus date and time.

Text output of logged data versus date and time.

List of alarm conditions, the date and time of occurrence, and duration.



	A	B	C	D	E	F	G	H	
	Date of Measurement	Time of Measurement	I1	Measurement Units	Channel Name	Channel Units	Start Date	Start Time	Durat
1	1/14/2010	3:30:00 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
2	1/14/2010	3:30:01 PM	13.4	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
3	1/14/2010	3:30:02 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
4	1/14/2010	3:30:03 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
5	1/14/2010	3:30:04 PM	12.8	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
6	1/14/2010	3:30:05 PM	12.8	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
7	1/14/2010	3:30:06 PM	13.2	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
8	1/14/2010	3:30:07 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
9	1/14/2010	3:30:08 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
10	1/14/2010	3:30:09 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
11	1/14/2010	3:30:10 PM	13.2	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
12	1/14/2010	3:30:11 PM	13	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
13	1/14/2010	3:30:12 PM	12.7	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
14	1/14/2010	3:30:13 PM	12.7	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
15	1/14/2010	3:30:14 PM	13.2	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
16	1/14/2010	3:30:15 PM	13.2	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
17	1/14/2010	3:30:16 PM	13.2	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
18	1/14/2010	3:30:17 PM	13.2	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
19	1/14/2010	3:30:18 PM	13.2	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
20	1/14/2010	3:30:19 PM	13.1	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
21	1/14/2010	3:30:20 PM	12.8	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
22	1/14/2010	3:30:21 PM	12.9	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
23	1/14/2010	3:30:22 PM	13.1	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
24	1/14/2010	3:30:23 PM	13.4	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
25	1/14/2010	3:30:24 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
26	1/14/2010	3:30:25 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
27	1/14/2010	3:30:26 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
28	1/14/2010	3:30:27 PM	13.2	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
29	1/14/2010	3:30:28 PM	13	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
30	1/14/2010	3:30:29 PM	13.1	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
31	1/14/2010	3:30:30 PM	12.7	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
32	1/14/2010	3:30:31 PM	12.9	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
33	1/14/2010	3:30:32 PM	13.2	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
34	1/14/2010	3:30:33 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
35	1/14/2010	3:30:34 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
36	1/14/2010	3:30:35 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
37	1/14/2010	3:30:36 PM	13.1	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
38	1/14/2010	3:30:37 PM	12.9	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
39	1/14/2010	3:30:38 PM	12.7	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
40	1/14/2010	3:30:39 PM	12.8	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
41	1/14/2010	3:30:40 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
42	1/14/2010	3:30:41 PM	13.3	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
43	1/14/2010	3:30:42 PM	13.4	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
44	1/14/2010	3:30:43 PM	13.4	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
45	1/14/2010	3:30:44 PM	13.1	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30
46	1/14/2010	3:30:45 PM	12.8	Arms	I1	Arms	1/14/2010	3:30:00 PM	18:30

Easily export measured values into Microsoft Excel

Specifications

ELECTRICAL		MECHANICAL	
Number of Channels:	One	Dimensions:	9.25 × 4.0 × 1.63" (235 × 102 × 41mm)
Input:	Split CT – AC Current	Weight (with battery):	17.1 oz (485g)
Input Level:	0 to 600A AC	Case:	Polycarbonate UL94-V0
Accuracy (50/60Hz):	0 to 5A: Unspecified 5 to 50A: ±(1% of Reading +1A) 50 to 400A: ±(1% of Reading +0.5A) 400 to 600A for duration <10min: ±(3% of Reading +1A)	Jaw Opening:	1 cable - Ø 1.42" (36mm) 2 cables - Ø 1.00" (25mm) each 2 bus bars - 50 × 5mm
Resolution:	0.1A	Vibration:	IEC 68-2-6 (1.5mm 10 to 55Hz)
Maximum Input Current***:	600A < 1 min	Shock:	IEC 68-2-27 (30G)
Sample Rate:	64 samples/cycle	Drop:	IEC 68-2-32 (1m)
Storage Rate:	Programmable from 125ms to 1 day	ENVIRONMENTAL	
Storage Modes:	Start/Stop, FIFO and Extended Recording Mode* (XRM™)	Operating Temperature:	14° to 122°F (-10° to 50°C)
Recording Length:	15 minutes to 8 weeks, programmable using DataView®	Storage Temperature:	-4° to 140°F (-20° to 60°C)
Memory:	240,000 measurement (512kB). Recorded data is stored in non-volatile memory and will be retained even if battery is low or removed.	Relative Humidity:	up to 85% at 95°F (35°C), Non-condensing
Communication:	USB 2.0 optically isolated	Altitude:	2000m
Power Source**:	2×1.5V AA (LR6) alkaline batteries	SAFETY & ELECTRO-MAGNETIC COMPATIBILITY	
Battery Life:	100 hours to >45 days (dependent on sample rate/recording length)	Safety Rating:	EN 61010-2-032; 300V CAT IV, 600V CAT III; Pollution Degree 2
		Protection Degree:	IP40
		Electro-Magnetic Compatibility:	EN 61326-1; 07/1997 (+A1 10/1998, +A2 09/2001, +A3 05/2004)
		CE Approved:	Yes

*This unique recording mode provides the opportunity to continuously record over long periods of time by reducing the storage resolution of the stored data and maintaining matching resolution for the newest data. Each time the memory fills up using XRM™, every other of the oldest stored samples is discarded making room for newer samples. This process continues until the recording is manually stopped.

**A memory backup capacitor provides backup power while the batteries are being changed. This backup capacitor will maintain the instrument for up to 10 seconds without batteries installed. After 10 seconds the date and time will need to be reset (data and configuration will be maintained). If the unit is connected to DataView® via a PC, the battery life is 100 hours regardless of the storage rate.

*** Input level beyond this range may damage the instrument.

Ordering Guide

Description	Order Number
CL601 AC current data logger including batteries, USB cable, DataView analysis software, data logger configuration software.	CL601
NIST Certificate Must be ordered at the same time as the CL601 data logger.	CL601-N



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