

GL800 Main Unit Specifications

Item	Description	
Number of analog input terminal units	1unit (20 ch) or Extension unit (max. 200 ch) Maximum 10 units or 200 ch when using with a PC	
Sampling interval *1	100 ms (10 ch) to 1 h	
Trigger function	Type	Start (Data capture starts when a trigger is generated) Stop (Data capture stops when a trigger is generated)
	Condition	Start Off, Level, Alarm, Scheduled time, External Stop Off, Level, Alarm, Scheduled time, Elapsed time, External
		(Data capture starts/stops when a trigger is generated)
Alarm function	Type	Analog, Logic, Pulse (AND and OR operation available)
	Condition	Analog H, L, Window In, Window Out Logic H, L at each channel Pulse H, L, Window In, Window Out
Pulse / Logic input *2 *5		
Pulse input range	Count mode	Selectable between Pulse and Logic, Number of channels : 4 50 C, 500 C, 5 kc, 50 kc, 500 kc, 5 MC, 50 MC, 500 MC/F.S. (max. 50 k/sampling interval)
	Inst. Mode	50 C, 500 C, 5 kc, 50 kc, 500 kc, 5 MC, 50 MC, 500 MC/F.S. (max. 50 k/sampling interval)
	RPM mode	50 rpm, 500 rpm, 5 krpm, 50 krpm, 500 krpm, 5 Mrpm, 50 Mrpm, 500 Mrpm/F.S. (max. 50 k/sec)
Alarm output *5	No. of channels	4
	Output format	Open collector output (5V pull-up resistance 10 k ohm), 5 to 24V (100 mA or less)
	Output conditions	Level judgement, Window judgement, Logic pattern judgement, Pulse judgement
External trigger input *2 *5	1 ch	
Interface to PC	Ethernet (10BASE-T / 100BASE-TX), USB (Compatible with high speed)	
Data storage function	Measured data	Internal flash memory or USB memory directly
	Other	Setting conditions and Screen hard copy can be saved into the internal memory or the USB memory
Internal storage device	Internal flash memory : 12 Mbyte	
USB memory slot (Full speed)	Provided as standard	
Calculation function	Statistics calculation	Average, Peak, maximum, Minimum, RMS
	Number of calculations	2 calculations can be set simultaneously
Searching function	Searching the necessary point from captured data. Type : Level, Alarm, Logic, Pulse	
Display	Size	5.7 inch TFT color LCD
	Displayed items	Waveforms + Digital values, Waveforms only, Digital values only
Operating environment	Temperature : 0 to 45 °C (15 to 40 °C when operating by battery), Humidity : 5 to 85 % R.H.	
Power supply	AC adapter	100 to 240V AC, 50/60 Hz
	DC input	8 to 24 V DC *3
Power consumption	Battery pack	Max. 2 batteries installable, 9 hours operation (when using under Graphtec specified condition) *3
	AC power	28 VA or lower (when operating with AC power)
External dimensions (W x D x H) (approx.)	232 mm x 152 mm x 50 mm	
Weight (approx.)	990 g including a 20 channel input terminal unit *4	
Vibration resistance	Compatible with JIS Vibration testing methods for automobile Type 1 Class A-equivalent	
Certifications	CE, RoHS, China RoHS	

GL800 Input Terminal Unit Specifications

Item		Description			
Number of input channels		20 (maximum 200 channels by the expansion terminal unit)			
Type of input terminal		M3 screw type terminal			
Method		Scan All channels isolated, Non balanced input			
Measurement range	Voltage	20, 50, 100, 200, 500 mV, 1, 2, 5, 10, 20, 50V, 1-5 V F.S.			
	Temperature	Thermocouple : K, J, E, T, R, S, B, N, W (WR65-26) RTD : Pt100, JPt100, Pt1000 (IEC751)			
	Humidity	0 to 100 % RH (Voltage 0 to 1 V conversion, when using optional B-530 humidity sensor is used)			
Input filter		Off, 2, 5, 10, 20, 40 (Moving average)			
Measurement accuracy	Voltage	± 0.1 % of F.S.			
	Temperature	Measurement rangeAccuracy			
(23°C ± 5°C) · When 30minutes or more have elapsed after power was switched on · Sampling 1s/20ch · Filter ON(10) · GND connected	Thermo-couple	R/S	0 ≤ TS ≤ 100 °C	± 5.2 °C	
			100 < TS ≤ 300 °C	± 3.0 °C	
		B	R : 300 < TS ≤ 1600 °C	± (0.05 % of rdg + 2.0 °C)	
			S : 300 < TS ≤ 1760 °C	± (0.05 % of rdg + 2.0 °C)	
		K	400 ≤ TS ≤ 600 °C	± 3.5 °C	
			600 < TS ≤ 1820 °C	± (0.05 % of rdg + 2.0 °C)	
		E	-200 ≤ TS ≤ -100 °C	± (0.05 % of rdg + 2.0 °C)	
			-100 < TS ≤ 800 °C	± (0.05 % of rdg + 1.0 °C)	
		T	-200 ≤ TS ≤ -100 °C	± (0.1 % of rdg + 1.5 °C)	
			-100 < TS ≤ 400 °C	± (0.1 % of rdg + 0.5 °C)	
	J	-200 ≤ TS ≤ -100 °C	± 2.7 °C		
		-100 ≤ TS ≤ 100 °C	± 1.7 °C		
		100 < TS ≤ 1100 °C	± (0.05 % of rdg + 1.0 °C)		
		100 < TS ≤ 1300 °C	± (0.1 % of rdg + 1.0 °C)		
	N	0 ≤ TS ≤ 1300 °C	± (0.1 % of rdg + 1.0 °C)		
	W	0 ≤ TS ≤ 2315 °C	± (0.1 % of rdg + 1.5 °C)		
	* If the reference junction compensation is internal, add ± 0.5 °C to each of the above values				
	RTD	Pt100	-200 to 850 °C (FS = 1050 °C)	± 1.0 °C	
		JPt100	-200 to 500 °C (FS = 700 °C)	± 0.8 °C	
		Pt1000	-200 to 500 °C (FS = 700 °C)	± 0.8 °C	
A/D converter		16 bit (out of which 14 are internally acknowledged)			
Maximum input voltage		60 Vp-p (Between ±) 60 Vp-p (Between input terminals) 60 Vp-p (Between input terminal and chassis)			
Withstand voltage		350 Vp-p (between input terminal and GND) 1 minute			

*1 The available number of channels varies according to the sampling interval.
*2 Max. input voltage : 24 V, Input threshold voltage : approx. 2.5 V, Hysteresis approx. 0.5 V (+2.5 to 3 V)
*3 Option
*4 Excluding the battery and AC adapter
*5 Logic/Alarm cable (B-513) is required

GL200

max. 100ms Sampling

Temperature Humidity, Voltage Pulse, Logic

Maximum 10 ch

USB USB memory



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GL500A Main Unit Specifications

Basic Specifications		GL500A
Number of analog input terminal units	Current	2
	Event	1 ms - 1 h
Sampling interval*1	Current	2µs (per channel) - 1 s
	Event	2µs (per channel) - 1 s
Trigger	Current	Type: Start (Data capture starts when a trigger is generated) Stop (Data capture stops when a trigger is generated) Condition: Start: Level, Scheduled Time, External, Off Stop: Level, Scheduled Time, External, Elapsed Time, Event Full (two channels can be specified), Off
		Event
	Event	Type: Start (Data capture starts when a trigger is generated) Stop (Data capture stops when a trigger is generated) Condition: Start: Level, External, Off Stop:Level, External, Off
Alarm	Type	Analog, Logic, Pulse (AND and OR operations available)
	Condition	Analog: H, L, Window In, Window Out Logic: 4-ch pattern Pulse: H, L, Window In, Window Out
Pulse/Logic input		
Pulse input range	Count mode	Either Pulse or Logic can be selected. Number of channels: 4 5 c, 50 c, 500 c, 5 kc, 50 kc/f.s. (max. 50 k/sampling interval)
	Inst. mode	5 c, 50 c, 500 c, 5 kc, 50 kc/f.s. (max. 50 k/sampling interval)
	RPM mode	5 rpm, 50 rpm, 500 rpm, 5 krpm, 50 krpm/f.s. (max. 50k/sec)
Alarm output	Number of channels	4 ch
	Output format	Open collector output (100 kΩ pull-up resistance)
	Output conditions	Level judgment, Window judgment, Logic Pattern judgment, Pulse judgment
External trigger input*2	1 ch	
Interface to PC	Ethernet (10BASE-T/100BASE-TX), USB2.0	
Internal memory	Current:	4 MByte (2M words)
	Event:	32 MByte (16M words)
PCMCIA slot		
Display	Size	Type 2 compatible
	Displayed items	4.7-inch STN color LCD
Functions	Waveforms + digital values, waveforms only, digital values only	
	Expanded/compressed waveform displays, scaling, statistical calculations, four arithmetic operations, search	
Operating environment	Temperature: 0 - 40°C, Humidity 30 - 80% RH	
Withstand voltage	1 minute at 500 Vp-p (between each input channel and main unit chassis)	
Power supply	AC adapter	100 to 240 VAC, 50/60Hz
	DC power	8.5 to 24 VDC) *3, battery pack *3
Power consumption	26 VA or lower (AC power)	
External dimensions (W x D x H, approx.)	212 x 162 x 45 mm	
Weight (approx.)	800g *4	

*1 Sampling speed depends on available number of channels
*2 Maximum input voltage: + 24 V, input threshold voltage: approx. +2.5V, hysteresis: approx. 1V (+2 to +3V)
*3 Optional
*4 GL500AVF: excluding the battery and AC adapter"

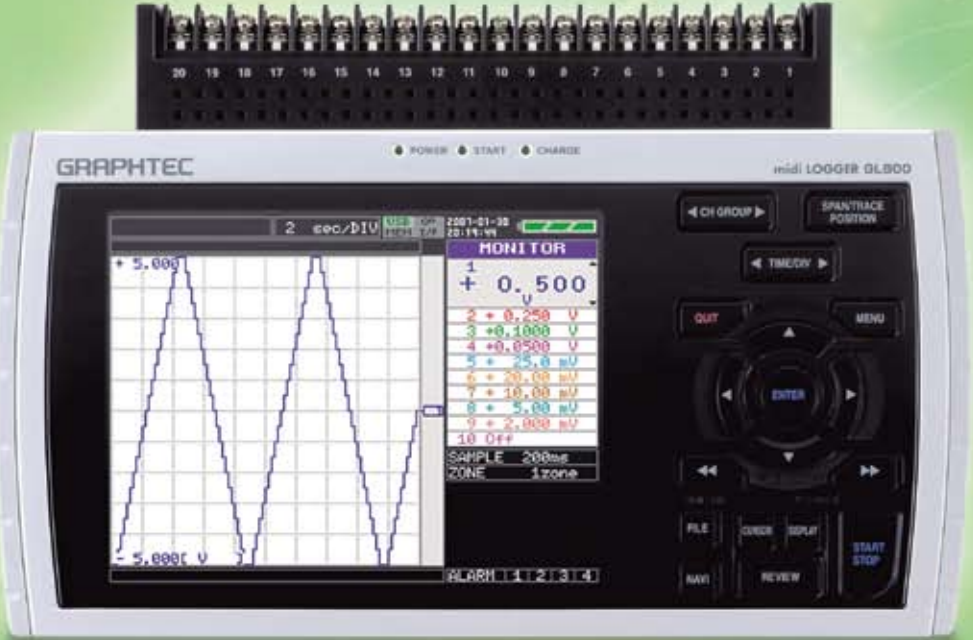
GL500A Terminal Unit Specifications

Item		4VF	4MF	8MS	
Number of input channels		4	4	8	
Type of input terminal		BNC	Screw type terminal	Screw type terminal	
Method		Scan All channels isolated Non-balanced input	Scan All channels isolated Non-balanced input	Scan Channels not isolated Balanced input	
Measurement ranges	Voltage	±100,500 mV ±1.5,10.50,100 V	±100,500 mV ±1.5,10.50,100 V	±100,500 mV ±1.5,10 V	
	Temperature	K, J, E, T, R, S, B, N, W		K, J, E, T, R, S, B, N, W	
Type of input filter		Line (1.5 Hz), 5 Hz, 50 Hz, 500 Hz			
Frequency response		DC - 20 kHz (+1/-3 dB Typ)		DC-20 kHz (+1/-4.5 dB Typ)	
Measurement precision* (23°C ±5°C) 30 min after power-on Line filter: ON Data stored in current memory	Voltage				
	Temperature	Thermo-couple	Measurement range	Accuracy	
		K, J, E	-200s TS<0 °C K: 0s TS ≤1370 °C J: 0s TS ≤1100 °C E: 0s TS ≤800 °C	± (1 % of rdg +3.5 °C) ± (0.2 % of rdg +3.5 °C) ± (0.2 % of rdg +3.5 °C) ± (0.2 % of rdg +3.5 °C)	
			T	-200s TS<0 °C 0s TS ≤400 °C	± (0.8 % of rdg +3.0 °C) ± (0.2 % of rdg +3.0 °C)
			R/S	0s TS<200 °C 200s TS<800 °C R: 800s TS ≤1600 °C S: 800s TS ≤1760 °C	± 9.5 °C ± 6.5 °C ± (0.2 % of rdg +4.5 °C) ± (0.2 % of rdg +4.5 °C)
		B		600s TS ≤700 °C 700<s TS ≤1820 °C	± 9.5 °C ± (0.2 % of rdg +5.5 °C)
				N	0s TS ≤1300 °C
		W	0s TS ≤2315 °C	± (0.2 % of rdg +4.0 °C)	
		Including the reference junction compensation			
		A/D converter		14 bit (Out of which 12 are internally acknowledged)	
Maximum input voltage	Between +/-	100 mV - 10 V range: 30 V 50 V - 100 V range: 100 V		100 mV -10 V range: 10 V	
	Between input terminal/chassis	AC33 V r.m.s (60 VDC)		Non-isolated	
Withstand voltage		Between input terminal and GND 1 minute at 500 VAC		Non-isolated	

GRAPHTEC

Powerful Things Come In Small Packages

midi LOGGER



Multi-channel measurement anytime, anywhere

midi LOGGER GL800

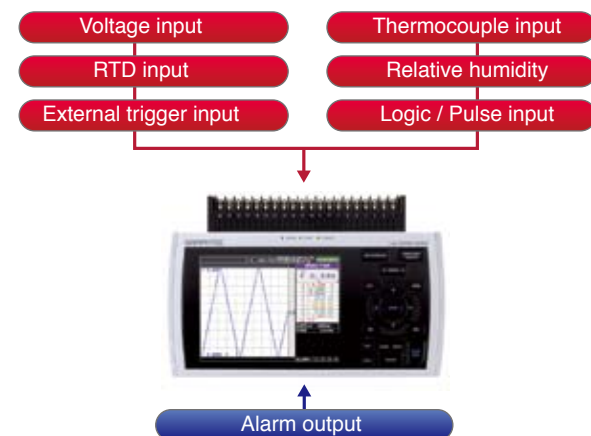


Simultaneous Data Collection at Both Low and High Speeds

midi LOGGER dual GL500A

Expandable from the standard 20-channel configuration to a maximum of 200 channels All channels feature insulated and multi-function inputs

The GL800 is a compact data logger, with an A5 footprint, providing excellent portability. All channels are isolated channel-to-channel and channel-to-ground. It has the ability to perform simultaneous measurement of voltage, temperature and humidity. It also supports such inputs as pulse (e.g. power, rpm and flow) and logic, in addition to voltage and temperature.



Terminal units are standardized to 20 channels per unit (expandable to a maximum of 200 channels), with insulated and multi-function inputs on all channels. In addition, further expansion to up to 500 channels is possible by connecting multiple LOGGER units to a computer via USB/LAN connections.

Channel expansion guide

	20 ch	40 ch	100 ch	200 ch
GL800	One	One	One	One
Expansion terminal base kit (B-537)	—	One	One	One
20-channel expansion terminal set (B-538)	—	One	Four	Nine

Example of channel expansion to 60 channels.

- 1 Remove standard 20ch. terminal unit.
- 2 Install the optional Expansion terminal base kit.
- 3 Mount the standard 20ch. terminal unit to the expansion terminal base kit.
- 4 Mount 2 sets of the 20ch. expansion terminal set to the expansion terminal base kit.

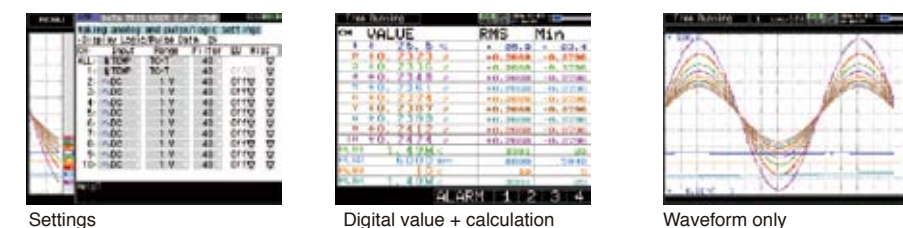
Record directly to USB memory

The new LOGGER is compatible with high-capacity USB memory devices and also features 12 MB of internal flash memory.

Sample analog 10 channel measurement	100 ms	200 ms	500 ms	1 s	10 s
Recording interval (sampling speed)					
12 MB internal flash memory	Approx. 13 hours	Approx. One day + 3 hours	Approx. Two days + 21 hours	Approx. Five days	Approx. 58 days
256 MB USB memory	Approx. 12 days	25 days	Approx. 62 days	Approx. 125 days	Approx. 1,256 days

Large TFT display

The 5.7-inch TFT display is bright and easy to read, with a choice of three screens to suit the measurement application. The settings screen shows the input signal waveform in order to illustrate the impact of each modification in real time.



The LOGGER operates on both AC and DC, as well as on battery power supplied via twin on-board batteries designed to allow nine hours of continuous operation.*2

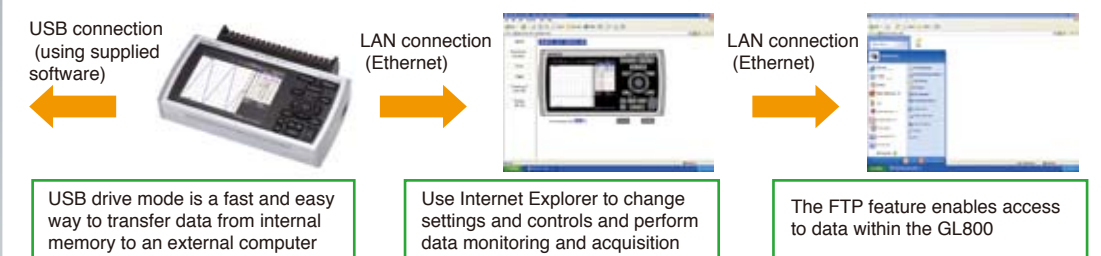
The LOGGER has been designed to provide maximum protection for important measurement data, by switching automatically to battery back-up in the event of an interruption to the AC power supply, and stopping measurement and closing all files when the battery power is low.

*2 Actual time may vary depending on settings and operating conditions.



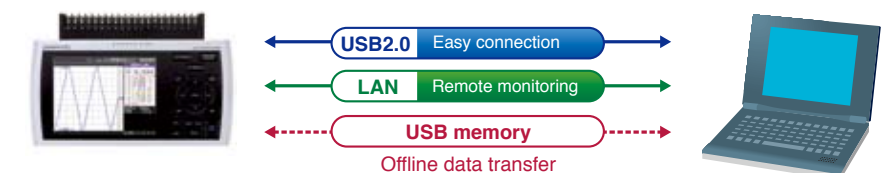
Transfer data easily via USB or Ethernet; use Ethernet web server and FTP features for remote monitoring

LOGGER is equipped with a user-friendly USB interface for simple connection to an external computer and Ethernet for remote monitoring.



Fast and easy connection to external computer

USB 2.0 makes it easy to connect to a computer for real-time transfer of sampling data at up to 100 ms, while LAN connectivity supports remote monitoring applications and USB memory supports offline data transfer.



Safe and simple

Key lock and password authentication

The key lock feature has been supplemented with password authentication to prevent operational errors, particularly in applications where the system may be unattended for extended periods.



Hold down the left and right arrow keys and the ENTER key together to bring up the password screen, which can be used to set the four-digit password.



Suitable for automobile parts vibration testing

LOGGER has been designed for use in vibration tests, realizing an anti-vibration level satisfying ISO 2041 and IEC Pub 68-2-6, the standards for on-board instrumentation and car navigation devices.

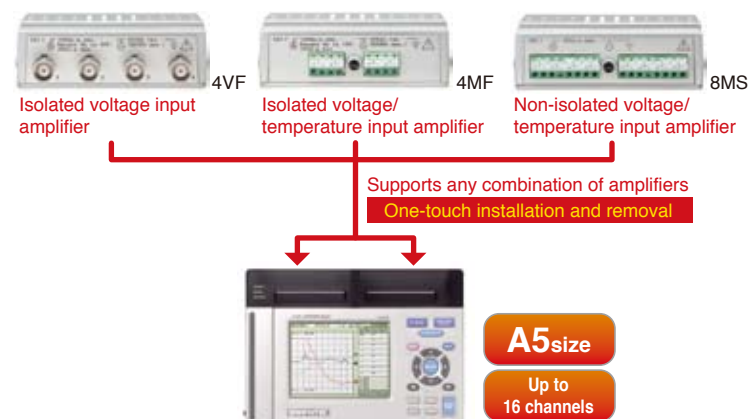
Various enhanced features realize multi-channel measurement anytime, anywhere

NEW
GL800



A5 size with multifunction input capability, supporting both isolated and non-isolated inputs

The GL500A is a compact recorder, with an A5 footprint, providing excellent portability. Three types of amplifiers: isolated voltage, isolated voltage/temperature and non-isolated voltage/temperature are supported and any combination of these can be selected to fit user's application. Input terminal units can be easily installed and removed by one-touch operation, and can be combined to increase the number of channels up to 16. GL500A can handle both logic and pulse signals. Alarm output terminals are also provided.



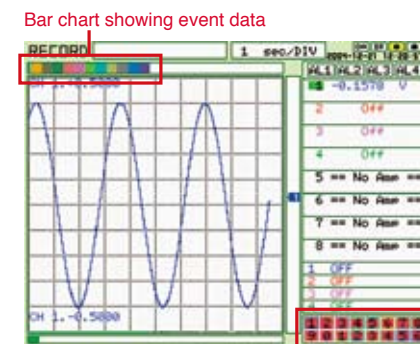
4 pulse/logic inputs are standard

Four pulse inputs are interchangeable with logic inputs and support Count, Inst. and RPM modes (requires optional B-513 input cable).

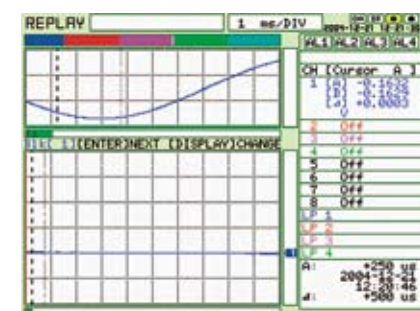


Event data can be displayed with current data

When an event occurs during measurement, it is displayed along the time axis of current data as a bar chart. Each captured event is represented in its corresponding memory block of a different color.



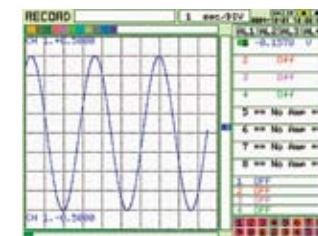
After measurement, event data can be viewed alongside with current data. Current data is displayed in the upper, and event data in the lower section.



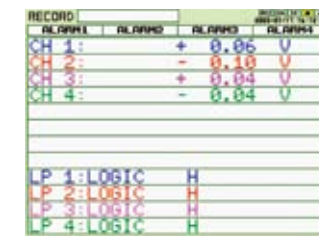
*** Event data:**
data captured using high-speed sampling mode when an abnormal event, e.g. voltage transient, occurs.
Current data:
data captured using normal, low-speed sampling mode

Pursuing the ultimate ease-of-use

Control panel has a very user-friendly layout utilizing navigation keys resembling a mobile phone. Even first-time users can easily perform setups and display measurement data using intuitive step-by-step menu. Captured events can be viewed after the measurement. Captured data can be monitored in both waveform and digital forms during measurement.



Digital + Analog screen
Both analog waveforms and digital values are visible.



Digital screen
Measurement values can be viewed in digital format.

Easy navigation using arrow keys

Excellent operability similar to that of a mobile phone
Easy, user-friendly operation at fingertips

As easy as cell phone

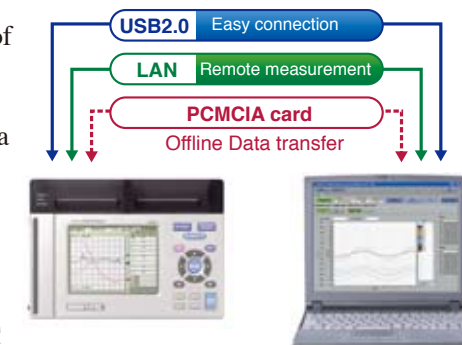
Worry-free battery charging during operation

Battery charging is available even during measurement.* Backup battery will protect your data from possible data loss due to power outage.

* Only possible when using the AC adapter or in 24V DC operation. Battery charging may not be available depending on the operating conditions of the main unit.

Easy connection to PC

The GL500A support USB2.0, allowing for easy connection to PC. Data will be transferred at a high speed of 1ms. The GL500A also support remote measurement sessions via LAN, and data transfer using a PCMCIA card. The configuration of the GL500A can be easily done from a PC, and data is clearly displayed on the monitor. Current data is displayed in real time on PC monitor at maximum sampling rate of 1 ms. A portion of current data can be expanded for examination by specifying the start and end points with a cursor. Moreover the 500A can act as USB Memory Storage device, and transfer recorded data to a PC using Windows Explorer.



High and Low Speed Dual Sampling midi LOGGER dual GL500A

The GL500A provides the ability to precisely measure abnormal events that occur during low-speed sampling (max. 1ms) triggering high-speed sampling mode (max. 2μs). It incorporates 4MB of memory for data from low-speed sampling, and 32MB of built-in memory for data from high-speed sampling. In addition, it has a PCMCIA-card slot, enabling storage of large amounts of data to various PCMCIA media.

Catch a high-speed phenomenon with 500KS/s		Low-speed data sampling	Stored in 4MB memory or PCMCIA media.	■ Capture time: low-speed sampling with 8ch (approx. values)					
				4MB memory	1ms	100ms	10s		
Catch an abnormal phenomenon with a high-speed sampling during a low-speed sampling measurement		High-speed data sampling	Stored in 32MB memory	256MB PCMCIA card	3 minutes	5 hours	23 days		
				4 hours	17 days	1725 days			
Measure the voltage with 1ms sampling for a long time				■ Capture time: high-speed sampling (approx. values)					
					2μs	5μs	10μs	1ms	
				1 channel used.	6.4 sec	16 sec	32 sec	1 min.	53 min.
				2 channels used.		13 sec	26 sec	53 sec	44 min.
				4 channels used.			20 sec	40 sec	33 min.
				8 channels used.				26 sec	22 min.

Simultaneous low and high speed sampling sessions Capability of accurately capturing burst events that occur during measurement



4-channel isolated voltage terminal unit
4VF



4-channel isolated voltage/temperature terminal unit
4MF



8-channel voltage/temperature terminal unit
8MS

Standalone models

GL500AVF

4-channel isolated voltage measurement

GL500AMF

4-channel isolated voltage/temperature measurement

GL500AMS

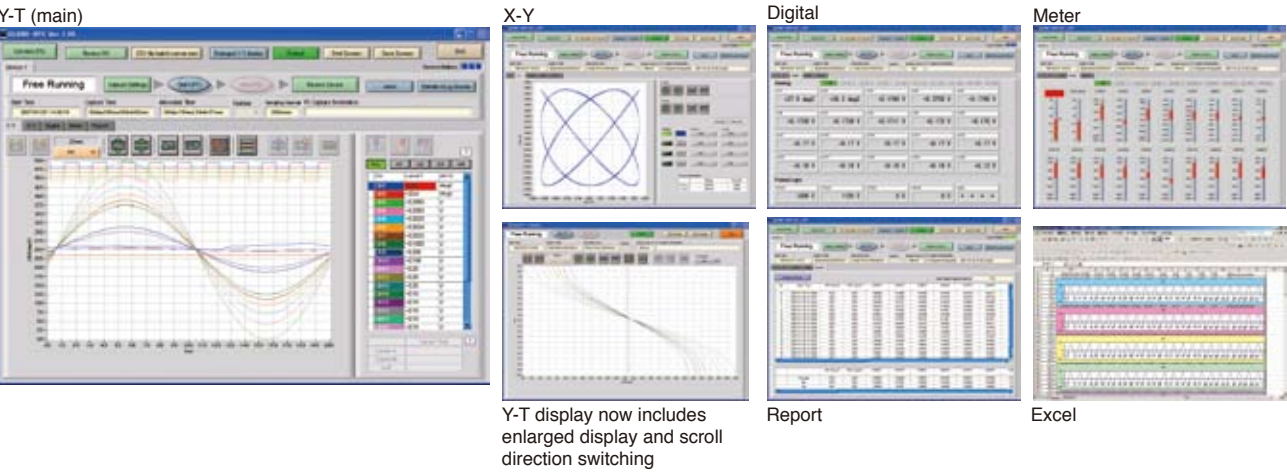
8-channel voltage/temperature measurement



GL800 Application Software

Choice of screens

A wide variety of screen configurations are provided: Y-T, X-Y, digital, metering and report display.



User-friendly interface

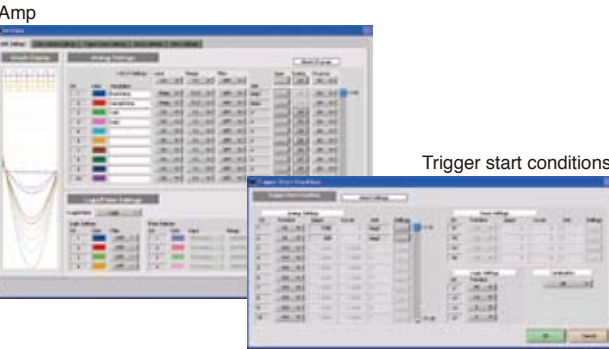
The interface employs intuitive icons to suit all ability levels



- ① Shrinks the time axis
- ② Expands the time axis
- ③ Expands the Y axis of the selected channel
- ④ Shrinks the Y axis of the selected channel
- ⑤ Moves up the position of the selected channel
- ⑥ Moves down the position of the selected channel
- ⑦ Displays plot marks at the sample points of a waveform
- ⑧ Opens a sub-screen to:
 - Switch the scroll direction
 - Set the scale axis
 - Reset the Y axis operation, and
 - Perform calculations
- ⑨ Displays Cursor A in the waveform display
- ⑩ Displays Cursor B in the waveform display
- ⑪ Input comments. Up to 20 comments can be entered
- ⑫ Displays the level value for Cursor A in the digital value area
- ⑬ Displays the level value for Cursor B in the digital value area
- ⑭ Displays the level value for Cursor A-B in the digital value area

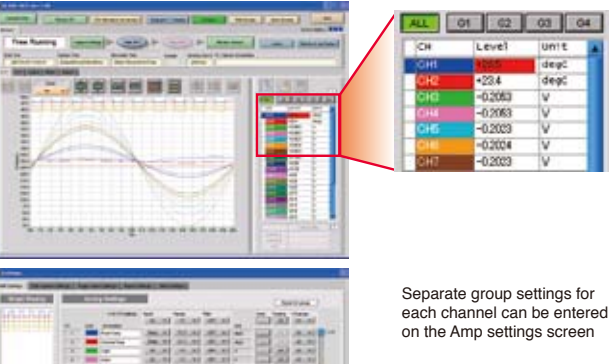
Simple settings procedures

There are now only five settings screens. The input waveform is displayed on all screens to illustrate the impact of each modification in real time.



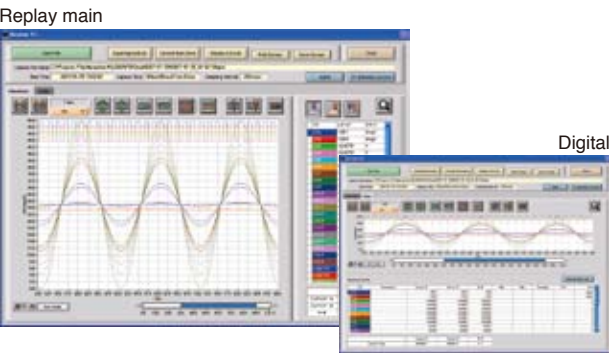
Multi-channel measurement

Up to ten LOGGER units can be connected to an external computer, supporting up to 500 channels. Measurement channels can be classified into four different display groups in any desired configuration.



Three replay screens

Choose from three replay screens: Y-T, X-Y, and digital.



User-friendly features

LOGGER is equipped with helpful features such as logic alarm status display during measurement and password protection to prevent unauthorized access. In addition, features such as the batch CSV conversion screen and search functions appear automatically after replaying stored data.



GL500A Application Software

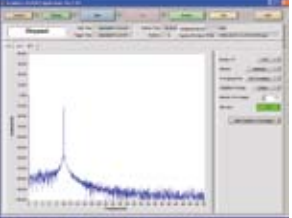
Connection settings

Allows you to configure USB/TCP-IP connections



Measurement modes

Available measurement modes are: Y-T, X-Y, and FFT.



Screens for settings

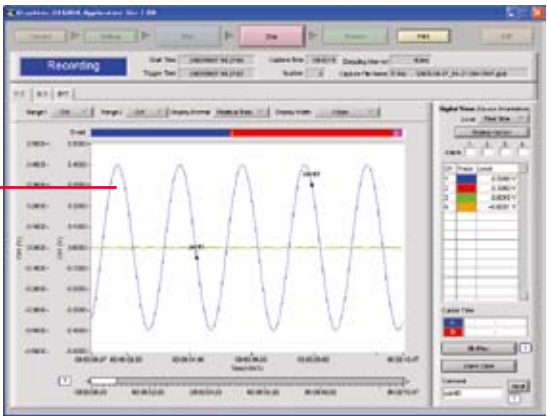
Separate screens are available for each of the settings.



Amplifier setting screen

Main screen

This area displays current data.



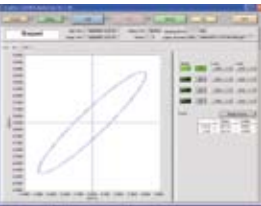
Direct Excel transfer

Direct Excel transfer can be enabled as a report function



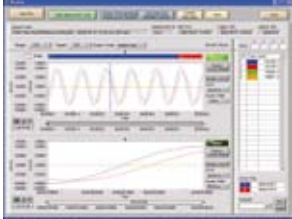
Transfer the measurement data directly to Excel. Not only transferring data to Excel, but also preparing the convenient reference template. Therefore, you can measure it soon.

X-Y view mode



Review screen

This screen allows for loading captured data. After data has been loaded, it can be saved to a CSV file, or printed.



Various Accessories

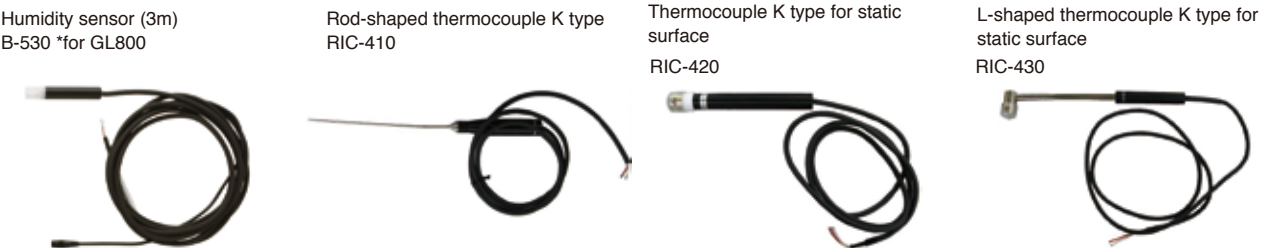
Probe and cables



Common options



Sensors



System Requirements

- OS : Windows 2000, XP
- HDD (GL800) : 20MB additional space required for installing the application software
- CPU : Pentium 4, 1.7GHz or higher
- HDD (GL500A) : 100 MB (1 GB recommended) additional space required for installing the application software
- Memory : 256MB or more
- Other : TCP-IP port, USB port, CD-ROM drive (for installing from CD)
- USB 2.0 required for high-speed applications