GL900 main unit specifications

Item		Description
No. of analog input ch.		8 ch
External input/output		Trigger input (1 channel), Logic input (4 channels) or Pulse input (4 channels), Alarm output (4 channels)
Sampling interval		10µs to 1 min
TIME/DIV		10 ms/DIV to 24 hour/DIV
Timer functions		Date and time, daily cycle, hourly cycle
Trigger functions	Type	Start: Data capture starts when a trigger is activated; Stop: Data capture stops when a trigger is activated
	Condition	Start: Off, Input signal level (analog, logic/pulse), External*1
		Stop: Off, Input signal level (analog, logic/pulse), External *1, Scheduled time
	Combination	Input signal level: Level OR, Level AND, Edge OR, Edge AND
	Mode	H (Rising), L (Falling), Window In*2, Window Out*2
Alarm setting functions		Rising, Falling, Window In*2, Window Out*2
Alarm output *1		Number of channels: 4, Open collector output (5V, 10 kΩ pull-up resistance)
Pulse input*1, *3	RPM mode	5 to 20 M RPM/F.S. (in steps of 1, 2, or 5)
	Count mode	5 to 20 M C/F.S. (in steps of 1, 2, or 5)
	Inst. Mode	5 to 20 M C/F.S. (in steps of 1, 2, or 5)
Calculation functions		Statistical calculations *4: Average, Peak, Maximum, Minimum, RMS (2 calculations can be set simultaneously)
Other functions		Search function, annotation input function
PC inteface		Ethernet (10BASE-T/100BASE-TX), USB (High Speed supported) provided as standard
Ethernet functions		Web server function, FTP server function, NTP client function
USB function		USB drive mode (File transfer and deletion from internal GL900 memory)
Memory device	Internal	One million data points / Internal flash memory:Approx. 256 MB
	External	USB memory slot (High speed supported) *5
Display screens		Waveforms + digital values, enlarged waveforms, digital values + calculation results, X-Y
Display unit		5.7-inch TFT color LCD
Operating environment		0 to 40°C, 5 to 85% R.H. (15 to 35°C when using batteries)
Withstand voltage		Between each input channel and GND: 1000 V p-p for one minute, between input terminals: 1000 Vp-p for one minute
Power supply	AC adapter	100 to 240 VAC, 50 to 60 Hz
	DC input	8.5 to 24 VDC
	Battery pack *6	Option
Power consumption		30 VA (when operating with AC power)
External dimensions		232 x 150 x 80 mm (W x H x D), approx.
Weight (approx.)		1.1 kg (excluding AC adapter and battery)
Vibration-tested conditions		Equivalent to automobile parts Type 1 Category A classification

Terminal block specifications

Item					
Input terminal type	Voltage			BNC connector	
	Temperature			M3 screw type terminal board *7	
Input method				All channels isolated Imbalanced input Simultaneous sampling of all channels	
Measurement ranges	Voltage			20, 50, 100, 200, 500 mV; 1, 2, 5, 10, 20, 50, 100, 200, 500 V F.S., 1-5 V F.S.	
	Temperature			Thermocouples : K, J, E, T, R, S, B, N, W (WRe5-26)	
	Humidity			0 to 100% (voltage 0 V to 1 V scaling conversion) with B-530 (option)	
Input filter				Off, Line, 5 Hz, 50 Hz, 500 Hz	
Measurement accuracy *8 (23°C±5°C) When 30 minutes or more have elapsed after power was switched on Filter : Line GND : connected	Voltage			±0.25% of F.S.	
	Thermocouple	Type	R/S	0°C ≤ TS ≤100°C	±7.0°C
				100°C < TS ≤300°C	±5.0°C
				R:300°C < TS ≤1600°C	±(0.05% of rdg +3.0°C)
				S:300°C < TS ≤1760°C	±(0.05% of rdg +3.0°C)
			B	400°C ≤ TS ≤600°C	±5.5°C
				600°C < TS ≤1820°C	±(0.05% of rdg +3.0°C)
			K	-200°C ≤ TS ≤ -100°C	±(0.05% of rdg +3.0°C)
				-100°C < TS ≤ 1370°C	±(0.05% of rdg +2.0°C)
			E	-200°C ≤ TS ≤ -100°C	±(0.05% of rdg +3.0°C)
				-100°C < TS ≤ 800°C	±(0.05% of rdg +2.0°C)
			T	-200°C ≤ TS ≤-100°C	±(0.1% of rdg +2.5°C)
				-100°C < TS ≤400°C	±(0.1% of rdg +1.5°C)
			J	-200°C ≤ TS ≤-100°C	±3.7°C
				-100°C < TS ≤ 100°C	±2.7°C
				100°C < TS ≤ 1100°C	±(0.05% of rdg +2.0°C)
			N	0°C ≤ TS ≤ 1300°C	±(0.1% of rdg +2.0°C)
			W	0°C ≤ TS ≤ 2315°C	±(0.1% of rdg +2.5°C)
					Reference contact compensation accuracy : ±1.0°C
A/D converter				16 bits (out of which 14 bits are internally acknowledged)	
Maximum permissible input voltage				Between input channel + and - terminals	20 mv to 1 V : ±30VDC
					2 V to 500 V : ±500VDC
				Between input channel terminals	60 Vp-p
				Between input channel terminal and GND terminal	60 Vp-p
Withstand voltage				Between input channel terminal and GND terminal	1 minute at 1000 Vp-p
				Between input channel terminals	1 minute at 1000 Vp-p

*1 Logic alarm cable (B-513) is required.
*2 Cannot be set for logic input
*3 Maximum input frequency: 50 kHz, maximum number of counts: 15 M C
*4 In real time or when Between Cursors has been specified (during Replay)
*5 1 file = 2 Gbytes (depends on the USB memory stick used) *6 Please install two battery packs.
*7 Connections are made to both the BNC terminal and M3 screw terminal for the same channel.
*8 Thermocouple diameters T:0.32φ, others:0.65φ
*9 Operating temperature range: -25 to +80°C

Control software specifications

Item	Description	
Supported OS	Windows 2000, Windows XP, Windows Vista (32-bit and 64-bit versions)	
Functions	GL900 control, real-time data capture, data conversion	
Setting range	Amp settings, data capture settings, trigger settings, alarm settings, other	
Captured data	Real-time data	Binary: Sampling speed: 10 µs to 60 s CSV: Sampling speed: 10 ms to 60 s
	Data conversion	Binary, CSV
Display information	Analog waveforms, logic waveforms, pulse waveforms, digital values	
File conversion	Data between cursors, All data	
2-screen function (Zoom)	Display of current and past data	
Display of statistics and history	Display of maximum, minimum, and average values	

Options and accessories

Product name	Model name	Specification
Battery pack*6	B-517	One pack
Logic alarm cable	B-513	2 m
DC drive cable	B-514	2 m
Humidity sensor*9	B-530	3 m
Safe probe	RIC-141	1:1, 42 pF
BNC-BNC cable	RIC-112	1.5 m
BNC banana plug cable	RIC-113	1.5 m
BNC alligator clip cable	RIC-114	1.5 m
Rod-shaped K-type thermocouple	RIC-410	1.1 m
K-type thermocouple for static surfaces	RIC-420	1.1 m
L-shaped K-type thermocouple for static surfaces	RIC-430	1.1 m

Battery pack *6 (B-517)

Logic alarm cable (B-513)

DC drive cable (B-514)

Humidity sensor *9 (B-530)

Safe probe (RIC-141)

Rod-shaped K-type thermocouple (RIC-410)

K-type thermocouple for static surfaces (RIC-420)

L-shaped K-type thermocouple for static surfaces (RIC-430)

Digital clamp meter (incorporating output function) specifications

Item		CM-211	CM-114	CM-113 (Leak clamp)
Current	DC	0 to 400A /0 to 2000A	0 to 400A /0 to 1000A	
	AC	0 to 400A /0 to 2000A	0 to 400A /0 to 1000A	0 to 300mA /0 to 60A
Voltage	DC	○	○	×
	AC	○	○	×
Other		Frequency Duty ratio Pulse width	Frequency Duty ratio Pulse width	

CM-211

CM-114

CM-113

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Specifications are subject to change without notice.

RoHS Compliant model

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ER040810 Vol.2

GRAPHTEC

High-speed isolated 8-channel multifunction logger

midi LOGGER GL900

8 isolated channels & high speed simultaneous sampling

Voltage

Temperature

Humidity

Pulse

Logic

Multifunction input on eight isolated channels

High-speed simultaneous sampling on eight channels, 16-bit resolution

Equipped with a large-format 5.7-inch color LCD for easy-to-read waveform display

Data can also be saved to PC-friendly USB memory sticks

In compliance with various test requirements, this data logger is capable of performing high-speed simultaneous voltage and temperature measurements

High-speed isolated 8-channel multifunction logger

midi LOGGER GL900

Easy-to-use upright high-speed isolated 8-channel multifunction logger

An easy-to-use upright device enabling isolated 8-channel multifunction input, the GL900 is capable of performing high-speed simultaneous measurements of voltage, temperature, and various other phenomena.

- **Voltage** +/-20 mV to +/-500 V
- **Temperature** Thermocouples: K, J, E, T, R, S, B, N, W
- **Humidity** 0 to 100% (the B-530 option is required)
- **Pulse** 4 channels Count, Inst., Rpm
- **Logic** 4 channels ‡ Select either Pulse or Logic

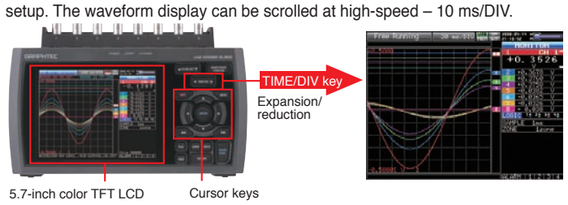
‡ Connections are made to both the BNC terminal and M3 screw terminal for the same channel.

High-voltage measurement capability

The wide 500 V range enables 100 to 240 VAC power supply voltage waveform measurements. Using logic input and a clamp meter simultaneously allows measurement of a device's power supply voltage and current concurrently with sequential control of various points.

Built-in, large-format 5.7-inch color LCD for easy-to-read waveforms

The bright, easy-to-read large-format 5.7-inch color TFT LCD provides vivid, easy-to-read waveform displays. Cursor keys enable fast, easy control and setup. The waveform display can be scrolled at high-speed – 10 ms/DIV.

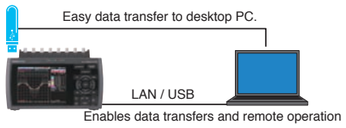


Free Running display for waveform-checking without the need for data capture

The Free Running display lets users check input signal waveforms even before measurements begin. Since waveforms are displayed on each setup screen, users can make settings while viewing the waveforms.

Data can be captured to PC-friendly USB memory sticks

Long-term data can be captured directly to built-in 256-MB flash memory or to an external USB memory stick at sampling intervals of from 1 ms to 1 min. For high-speed sampling at intervals faster than 1 ms, up to one million data points can be captured to internal RAM.



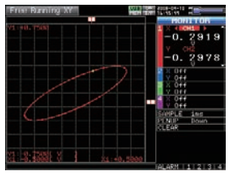
Example of 8-channel analog measurement

Capture destination	10µs	100µs	500µs	1ms	10ms	100ms	1s
Internal RAM (up to one million points)	10 sec.	Approx. 1 min and 40 sec.	Approx. 8 min and 20 sec.	Approx. 16 min and 40 sec.	Approx. 2 hrs. and 40 sec.	Approx. 1 day and 3 hrs.	11 days and 13 hrs.
Internal flash memory (256 MB)	x	x	x	Approx. 1 hour	Approx. 11 hrs.	Approx. 4 days	Approx. 46 days
External USB memory stick (512 MB)	x	x	x	Approx. 2 hrs.	Approx. 22 hrs.	Approx. 9 days	Approx. 93 days

The USB memory stick must be a standard model (without fingerprint recognition or other proprietary features).

Can be used as an X-Y recorder

The GL900 reproduces analog X-Y recorder movements and provides the illusion of pen up/pen down movements. It can be operated like an analog X-Y recorder and can also be used as a 4-pen X-Y recorder. The digital data format facilitates post-measurement confirmation of data values and report creation.



High-precision temperature measurement even during high-speed sampling

Lets users perform high-precision temperature measurements even during high-speed sampling – ideal for performing combined voltage and temperature measurements.

Easy PC measurement via USB; remote monitoring via Ethernet web server and FTP functions

The USB and Ethernet connections enable transfer of captured data to your PC and setup and control of the GL900 from a PC, even without the PC software provided standard with the GL900.

Web server/FTP server functions

Waveform display and GL900 setup operations can be performed via a web browser (e.g., Internet Explorer). In addition, data files captured to the GL900's internal memory or to a USB memory stick can be transferred or deleted from the PC.

USB drive mode

When your GL900 is connected to your PC via the USB interface, the GL900 can be operated in USB mode to enable fast, easy data transfers from internal memory to the PC.

NTP client function

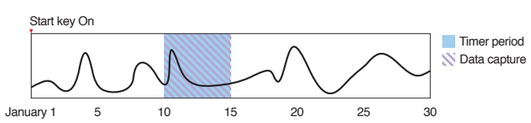
Simply connect the GL900 to an NTP server via an Ethernet connection to synchronize GL900 time with NTP server time at periodic intervals.

Comprehensive built-in trigger and timer functions

Using a combination of trigger and timer functions eliminates superfluous data and enables capture of only the required data.

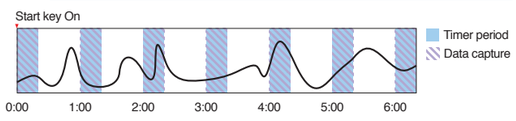
Setting example 1 — To perform measurement over a four-day period starting January 10

Timer setting	Date and time	Start setting	January 10 00 hours 00 minutes
		Stop setting	January 14 23 hours 59 minutes
Trigger setting		Start trigger	Off
		Stop trigger	Off



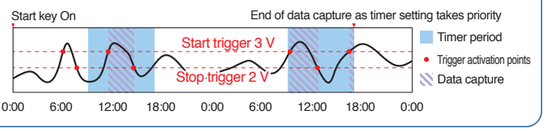
Setting example 3 — To perform measurements every 20 minutes

Timer setting	Hourly cycle	Start setting	00 minutes 00 seconds
		Stop setting	20 minutes 00 seconds
Trigger setting		Start trigger	Off
		Stop trigger	Off



Setting example 2 — To perform measurements of abnormal signals during device operations

Timer setting	Daily cycle	Start setting	09 hours 00 minutes
		Stop setting	17 hours 00 minutes
Trigger setting		Start trigger	Level CH 1 (3 V Rising)
		Stop trigger	Level CH 1 (2 V Falling)
		Repeat	On



Setting example 4 — To perform measurements for a period of one hour, every four hours, daily

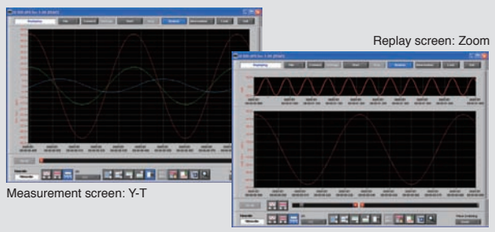
With the timer set to daily cycle status, data is captured repeatedly for one hour every four hours.

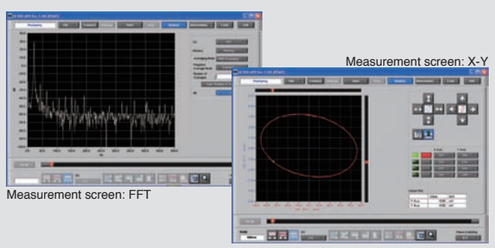
Trigger setting	Start trigger	Off
	Stop trigger	Scheduled time (one hour)
	Repeat	On (Repeat interval: 4 hours)

Timer settings	Timer mode	Off, Date and time, Daily cycle, Hourly cycle
Trigger settings	Start source setting	Off, Level value, External input
	Stop source setting	Off, Level value, External input, Scheduled time
	Pre-trigger	0-100%
	Repeat capture	On, Off and Repeat interval

Dedicated software for real-time data capture

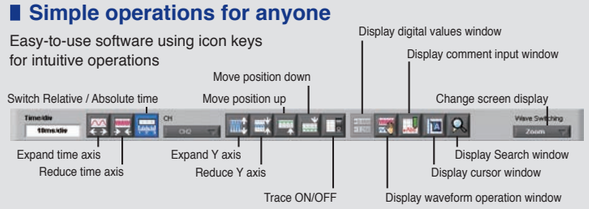
Three measurement screens are provided to allow selection of the screen that best suits measurement needs.
The Replay screen provides a Zoom screen feature to enable enlarged display of specific sections of long-term measurement data.



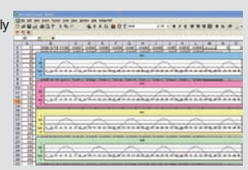


Simple operations for anyone

Easy-to-use software using icon keys for intuitive operations



Convenient functions

Various convenient data-processing functions are built in.

- **Direct to Excel function** This function enables measurement data to be written directly to an Excel file.
- **Search function** This function enables searching for specific values in the captured data.
- **CSV batch conversion function** This function enables batch conversion of multiple captured files to CSV file format.
- **Thumbnail function** This function enables display of captured data files as thumbnails.