

High-speed isolated 4 or 8 channel multifunction logger

midi **LOGGER GL900** series

4 or 8 isolated channels & high speed simultaneous sampling



Voltage

Multifunction input on 4 or 8 isolated channels

Temperature

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

Humidity

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

Pulse

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

Logic

www.graphteccorp.com

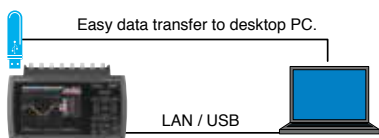
In compliance with various test of performing high-speed simult



High-speed isolated 4 or 8 channel multifunction logger midi **LOGGER** **GL900 series**

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.



Enables data transfers and remote operation

Example of 8-channel analog measurement

The time is effective when the captured data is saved in the GBD format.

Capture destination	10 μ s	100 μ s	500 μ s	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.
Build-in 256 MB Flash Memory	x	x	x	Approx. 1 hour	Approx. 11 hrs.	Approx. 4 days	Approx. 46 days
4 GB USB memory stick	x	x	x	Approx. 9 hrs.	Approx. 3 day and 21 hrs.	Approx. 38 days	Approx. 388 days

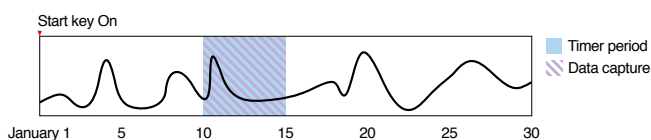
Standard USB memory devices without high-end functions such as fingerprint recognition are required. The file size of the captured data is limited up to 2GB when data is saved into the USB memory stick.

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.

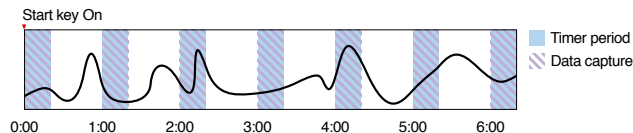
Setting example 1 To perform measurement over a four-day period starting January 10

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



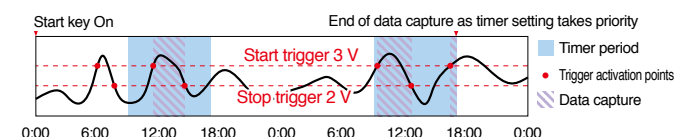
Setting example 3 To perform measurements every 20 minutes

Timer setting	Hourly cycle	Start setting	00 minutes 00 seconds
Stop setting		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		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.

Timer setting		Start trigger	Off
Stop setting		Stop trigger	Scheduled time (one hour)
Repeat		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

Easy-to-use upright high-speed isolated 4 or 8 channel multifunction logger

An easy-to-use upright device enabling isolated 4 or 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: K, J, E, T, R, S, B, N, W (WRe5-26)

Humidity 0 to 100% (the B-530 option is required)

4 channels
Pulse Accumulating, instant or RPM Count

4 channels
Logic ‡ Select either Pulse input or Logic input, and use the optional input/output cable for GL (B-513 option)

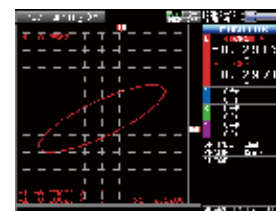
BNC terminal for voltage measurement



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

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.



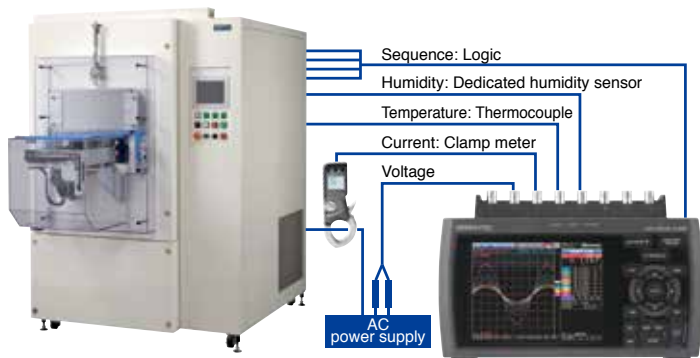
High-precision temperature measurement even during high-speed sampling

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

requirements, this data logger is capable aneous voltage and temperature measurements

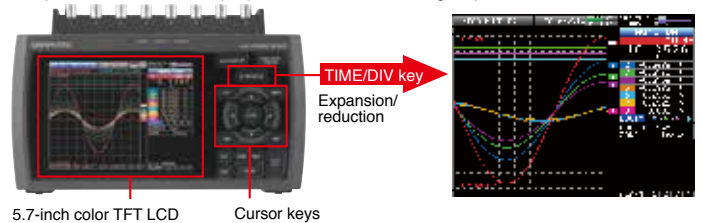
High-voltage measurement capability

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.



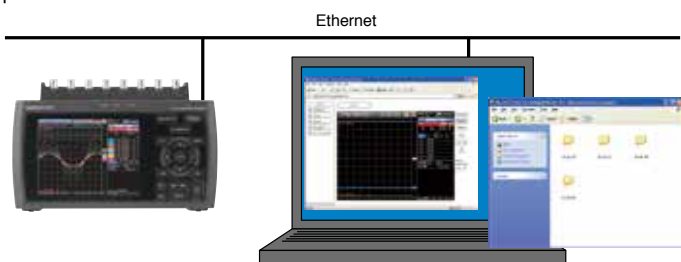
Free Running display for waveform-checking without the need for data capture

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.



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.

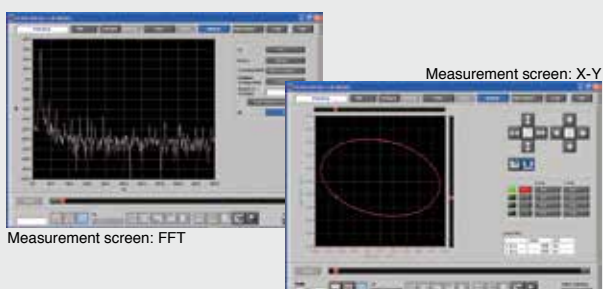
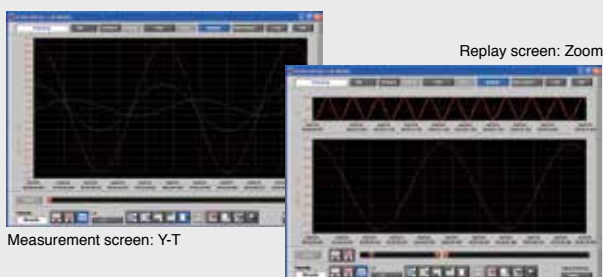
NTP client function

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

Dedicated software for real-time data capture

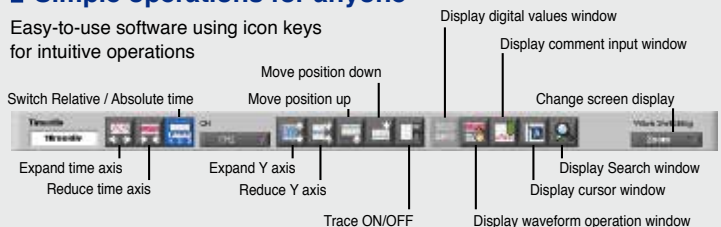
Three measurement screens are provided to allow selection of the screen that best suits measurement needs.

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

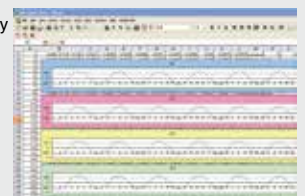
This function enables searching for specific values in the captured data.

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.



GL900 main unit specifications

model	GL900-8	GL900-4
No. of analog input ch.	8 ch	4 ch
External input/output*1	Trigger input (1 channel), Logic input (4 channels) or Pulse input (4 channels), Alarm output (4 channels) Or trigger output 1ch + Alarm output 3ch (Ver 3.0 or later)	
Sampling interval	10µs to 1 min, External*1	
TIME/DIV	10 ms/DIV to 24 hour/DIV	
Timer functions	Date and time, daily cycle, hourly cycle, off	
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, Scheduled time 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)	
Trigger output (3.0 or later)	Output from 1 to 3 ms pulse when trigger output detects trigger. (Under low active and trigger output mode)	
Pulse input*1, *3	RPM mode	50 to 20 M RPM/F.S. (in steps of 1, 2, or 5)
	Count mode	50 to 20 M C/F.S. (in steps of 1, 2, or 5)
	Inst. Mode	50 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 interface	Ethernet (10BASE-T/100BASE-TX), USB (High Speed supported)	
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)	
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	42 VA (when operating and charging battery 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) 1.0 kg (excluding AC adapter and battery)	
Vibration-tested conditions	Equivalent to automobile parts Type 1 Category A classification in JIS	

Analog Input specifications

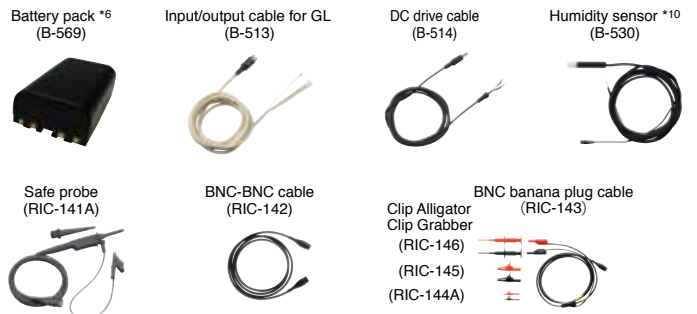
Item	Description			
Input terminal type	Voltage	BNC connector		
	Temperature	M3 screw type terminal board *7		
Input method	All channels isolated unbalanced input Simultaneous sampling of all channels			
Measurement ranges	Voltage	20, 50, 100, 200, 500 mV; 1, 2, 5, 10, 20, 50, 100, 200, 500 V F.S., 1-5 V F.S.		
	Temperature	Thermocouples : K, J, E, T, R, S, B, N, W (WRε5-26)		
	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	Thermocouple	Type	Measurement range	Measurement accuracy
		R/S	TS: Measured temperature 0°C ≤ TS ≤ 100°C 100°C < TS ≤ 300°C R: 300°C < TS ≤ 1600°C S: 300°C < TS ≤ 1760°C	±7.0°C ±5.0°C ±(0.05% of rdg +3.0°C) ±(0.05% of rdg +3.0°C)
	B	400°C ≤ TS ≤ 600°C 600°C < TS ≤ 1820°C	±5.5°C ±(0.05% of rdg +3.0°C)	
	K	-200°C ≤ TS ≤ -100°C -100°C < TS ≤ 1370°C	±(0.05% of rdg +3.0°C) ±(0.05% of rdg +2.0°C)	
	E	-200°C ≤ TS ≤ -100°C -100°C < TS ≤ 800°C	±(0.05% of rdg +3.0°C) ±(0.05% of rdg +2.0°C)	
	T	-200°C ≤ TS ≤ -100°C -100°C < TS ≤ 400°C	±(0.1% of rdg +2.5°C) ±(0.1% of rdg +1.5°C)	
	J	-200°C ≤ TS ≤ -100°C -100°C < TS ≤ 100°C 100°C < TS ≤ 1100°C	±3.7°C ±2.7°C ±(0.05% of rdg +2.0°C)	
	N	-200°C ≤ TS < 0°C 0°C ≤ TS ≤ 1300°C	±(0.1% of rdg +3.0°C) ±(0.1% of rdg +2.0°C)	
	W	0°C ≤ TS ≤ 2000°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 Effective)			
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		

Control software specifications

Item	Description	
Supported OS	Windows 10 / 8.1 / 8 / 7 / Vista (32bit, 64bit)	
Functions	GL900 control, real-time data capture, data conversion	
Setting range	Amp settings, data capture settings, trigger settings, alarm settings,*9 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 to CSV
Display information	Analog waveforms, logic waveforms, pulse waveforms, digital values	
File conversion	Data between cursors, All data, Function of thinning out	
2-screen function (Zoom)	Display of current and past data	
Display of statistics and history	Display maximum, minimum, average peak to peak and RMS	

Options and accessories

Product name	Model name	Specification
Battery pack*6	B-569	One pack
Input/output cable for GL	B-513	2 m
DC drive cable	B-514	2 m
Humidity sensor*10	B-530	3 m
Safe probe	RIC-141A	1.2 m
BNC-BNC cable	RIC-142	1.5 m
BNC banana plug cable	RIC-143	1.5 m
Clip Alligator (small size) for RIC-143	RIC-144A	
Clip Alligator (middle size) for RIC-143	RIC-145	
Clip Grabber for RIC-143	RIC-146	



- *1 Input/output cable for GL(B-513) is required.
Input signal of External sampling, Logic, Pulse; Max. voltage: 24V,
Threshold: approx. 2.5V, Hysteresis: approx. 0.5V
- *2 Cannot be set for logic input.
- *3 Maximum input frequency : 50 kHz, maximum number of counts: 15 MC.
- *4 In real time or when Between Cursors has been specified.(during Replay)
- *5 The file size of the captured data is limited up to 2GB.
- *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 : 0.32mm, others:0.65mm.
- *9 The trigger output mode (Trigger output 1ch + alarm 3ch) that is implemented by the firmware ver. 3.0 or before is not supported.
- *10 Operating temperature range : -25 to +80°C.

- Due to the possibility of equipment or PC failure, the data files on the instrument will not be guaranteed to be held on the memory. Please make a backup of data whenever possible to avoid data loss.
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- Specifications are subject to change without notice. For more information about product, please check the web site or contact your local representative.



For using equipment in correctly and safely

- Before using it, please read the user manual and then please use it properly in accordance with the description.
- To avoid malfunction or an electric shock by current leakage or voltage, please ensure a ground connection and use according to the specification.

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