

**Built-in TFT LCD color display**

**Stand-alone or PC-connected operation**

**High-speed sampling**

**Analog channel isolation**

**20mV to 500V full-scale measurements**

**Four alarm outputs**

**Optional battery pack**

**USB and Ethernet Interfaces**

With its color monitor and internal memory the GL900 is a self-contained, compact, lightweight, multi-channel data logger with 8 analog measurement channels, each with input-to-output and channel-to-channel isolation. Measurements per channel of 20mV to 500V FS across 14 programmable ranges allow the GL900 to adapt to a wide range of signal types, including thermocouple-based temperatures (K,J,E,T,R,S,B,N,W) and process current (4-20 mA). Up to four pulse channels can count and measure speed using an optional cable, and Humidity measurements are also possible with an optional sensor. The GL900 may be configured to trigger up to four different alarm outputs as a function of measured values.

The GL900 allows data to be recorded to internal high-speed volatile RAM memory (64 MB) at rates as fast as 100,000 Hz. The unit also provides built-in non-volatile memory (256 MB) and accepts external USB flash drives (2 GB maximum file size) for lower speed sampling as fast as 1,000 Hz. The minimum sample rate for all memory configurations is one sample per minute. The GL900 features built-in USB and Ethernet ports to facilitate data transfer to a connected PC either in real time or from its memory for analysis and archiving. Measurement protocols may also be uploaded from the PC to the instrument.

An optional battery pack allows power-independent operation and failsafe measurement continuity during a power failure.



## Features

### 8 Channels Measure Voltage, Current, and Temperature

Measure from 20mV to 500V full scale, as well as process current (4-20mA) and temperature measurements using type J,K,E,T,R,S,B,N, or W thermocouples.

### Electrical Isolation Per Channel

The GL900's eight analog input channels offer electrical isolation to allow accurate measurements in industrial applications where ground potential differences are often encountered.

### High-speed Sampling

Depending upon the destination memory (internal RAM, flash, or external USB flash drive) sample rates as fast as 100,000 Hz are supported.

### Four Unique 'Pulse' Inputs for Discrete Measurements

The GL900 provides discrete input channels that can be used for counting and rotational speed or flow measurement applications. Or program the discrete inputs as simple logic level input channels.

### Four Alarm Outputs

Program the GL900 to trigger its open-collector outputs as a function of analog input signal level judgment, pulse judgment, or logic pattern.

### Real Time Calculations

The GL900 may be programmed to calculate average value, peak value, minimum value, and rms. You can also generate calculated channels as a function of arithmetic operations in real time.

### Bright TFT LCD Color Display

The focal point of the GL900 is its built-in color display that allows real time trending, data review, and complete instrument configuration.

### Engineering Units Scaling

Each GL900 channel allows up to four break points to be programmed for accurate scaling into meaningful units like psi, grams, newtons, gallons per minute, liters, etc.

### Flexible Triggering Options

The GL900 allows data capture to be started or stopped based upon a manual keystroke or automatically based upon signal level, an external event, date/time, alarm, duration, or Boolean channel combinations. Analog signal triggers can be programmed based upon level and window tests: above threshold, below threshold, inside window, or outside window.

### Flexible Power Requirements

Power the GL900 from its provided international AC adaptor, from an optional built-in battery pack, or from any 9 to 24 VDC source using an optional cable.

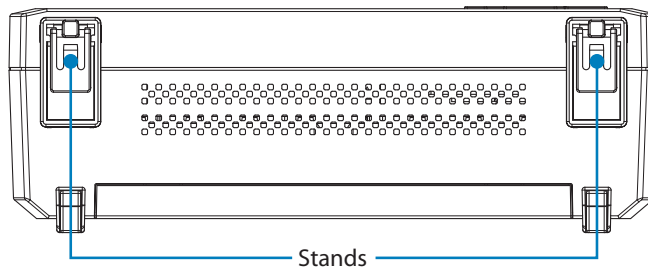
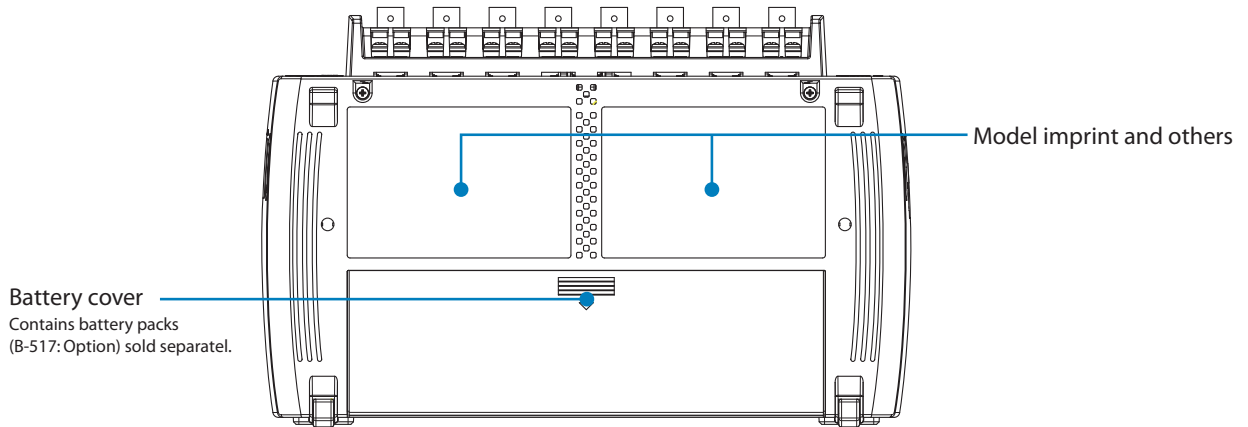
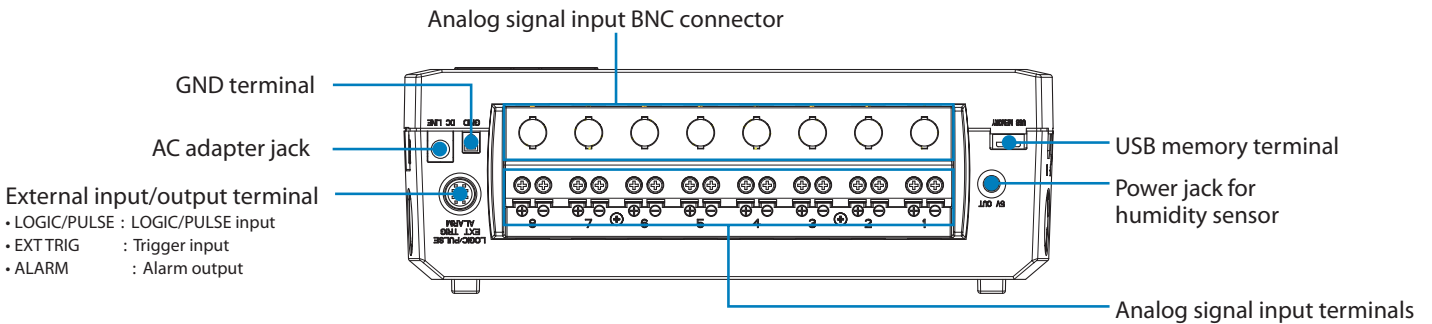
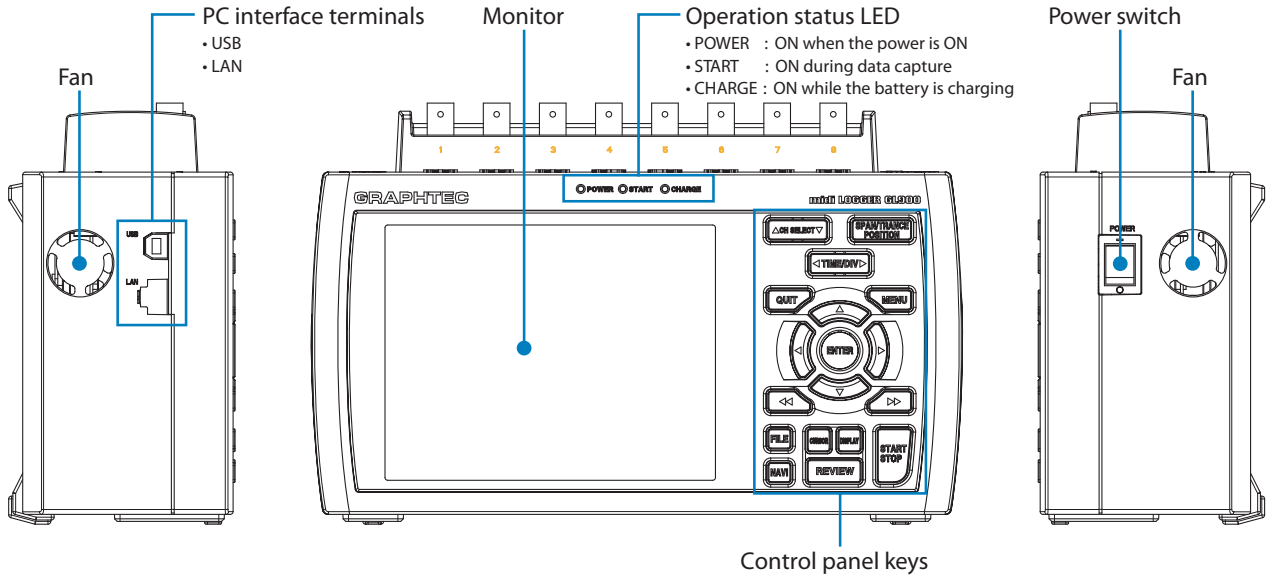
### Connect via USB or Ethernet

Allows data transfer to the PC either in real time or from the GL900's memory. Also allows complete configuration of the GL900.

### PC Software Bundle Included

The GL900 includes a Windows application for direct capture, measurement, and monitoring of GL900 data as well as analysis (FFT, X-Y plots, etc). The application can export data to an Excel file for further analysis and report creation. The software includes built-in help for quick reference.

# GL900 Display, I/O, and Control Overview

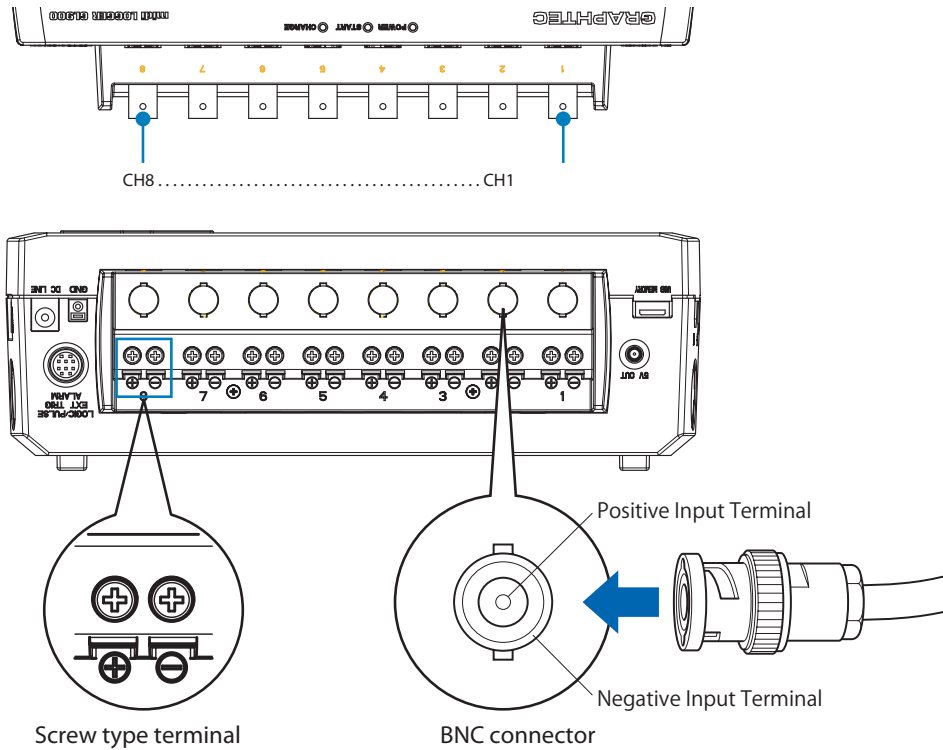


Before using the stands, read the precautions provided in Section 1.3 "Operating Environment".

# GL900 Isolated Analog Input Connections

The GL900 connects to almost any analog signal type that you want to measure -- from millivolts to hundreds of volts; from process current to humidity and temperature. Each channel is accessible through either a screw terminal pair or a BNC connector. Thermocouple connections are made directly to the terminal strips, which also easily accommodate an external shunt resistor for process current measurements.

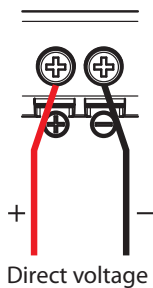
## Terminal configuration and signal types



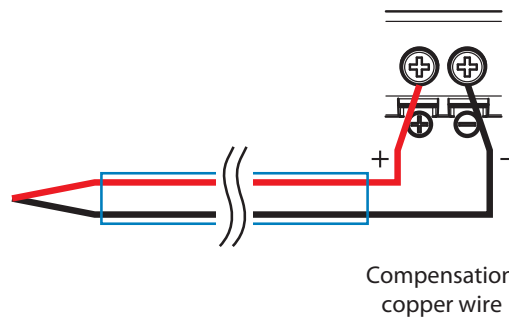
The screw type terminal and the BNC connector are internally connected. Data entered to either of them can be measured.

## Connection diagram and measurement types

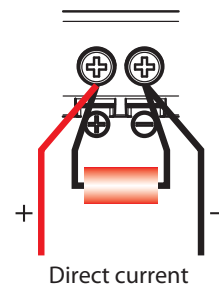
### Direct voltage input



### Thermocouple input



### Direct current input



Shunt resistor  
Example: If 4-20 mA is used, connect a 250  $\Omega$  ( $\pm 0.1\%$ ) resistor and measure it in the 1-5 V range.

## Measurement types and ranges

Item	Description
Input Configuration	Isolated Input
Analog Voltage	Analog voltage 20, 50, 100, 200, 500 mV/F.S.; 1, 2, 5, 10, 20, 50, 100, 200, 500V/F.S.; 1-5V
Thermocouple	K, J, E, T, R, S, B, N, W (WRe 5-26)
A/D resolution	16-bit
Filter	Off, Line, 5, 50, 500Hz

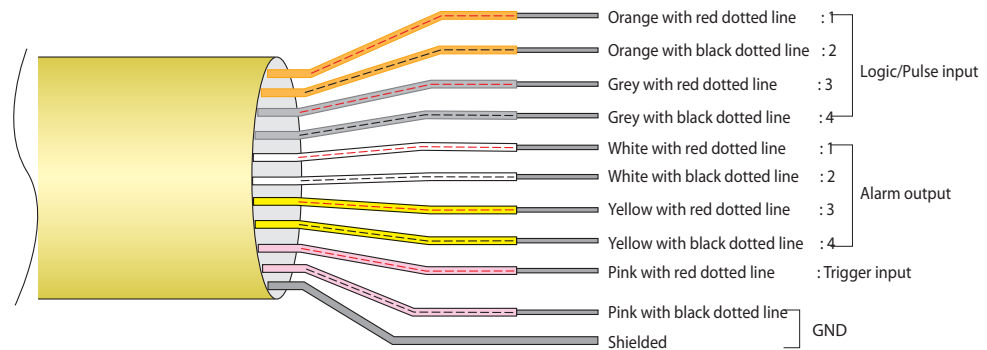
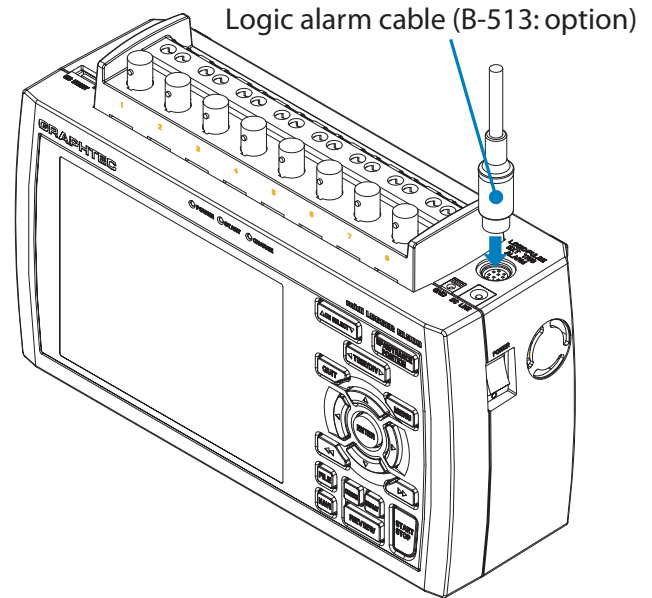
# GL900 Logic, Pulse, Alarm, and External Trigger Connections

The optional Logic Alarm Cable model B-513 provides access to the GL900's discrete and pulse inputs, and alarm outputs. The cable is two meters in length, and is purchased separately. The GL900 supports frequency measurements, pulse counting, discrete inputs, and alarm outputs.

## Wiring

Cable tips are bare tips. Perform wiring for the necessary functions

Signal Name	Channel Number	Wire Color
Logic/Pulse Output*	1	Orange with red dotted line
	2	Orange with black dotted line
	3	Grey with red dotted line
	4	Grey with black dotted line
Alarm Output	1	White with red dotted line
	2	White with black dotted line
	3	Yellow with red dotted line
	4	Yellow with black dotted line
Trigger Input		Pink with red dotted line
GND		Pink with black dotted line
		Shielded



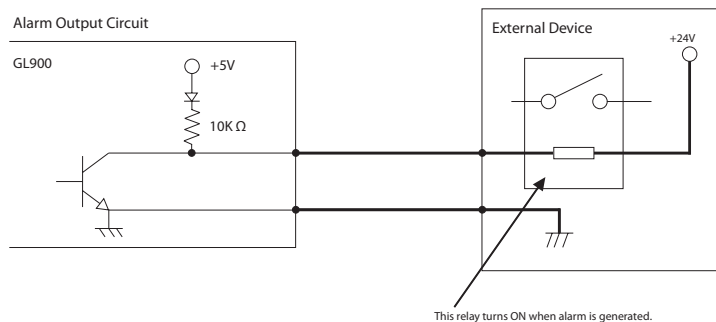
## Trigger Input Specifications

Item	Description
Number of input channels	1
Input voltage range	0 to +24V max. (single-ended ground input)
Threshold level	Approx. +2.5V
Hysteresis	Approx. 0.5 V (+2.5 to +3 V)

## Logic/Pulse Specifications\*

Item	Description
Number of input channels	4
Input voltage range	0 to +24V max. (single-ended ground input)
Threshold level	Approx. +2.5V
Hysteresis	Approx. 0.5 V (+2.5 to +3 V)

## Typical Alarm Output Implementation



## Alarm Output Specifications

Item	Description
Number of output channels	4
Output format	Open collector output +5 V, 10 KΩ pull-up resistance Contact capacity 5 V to 24 V, 100 mA or below

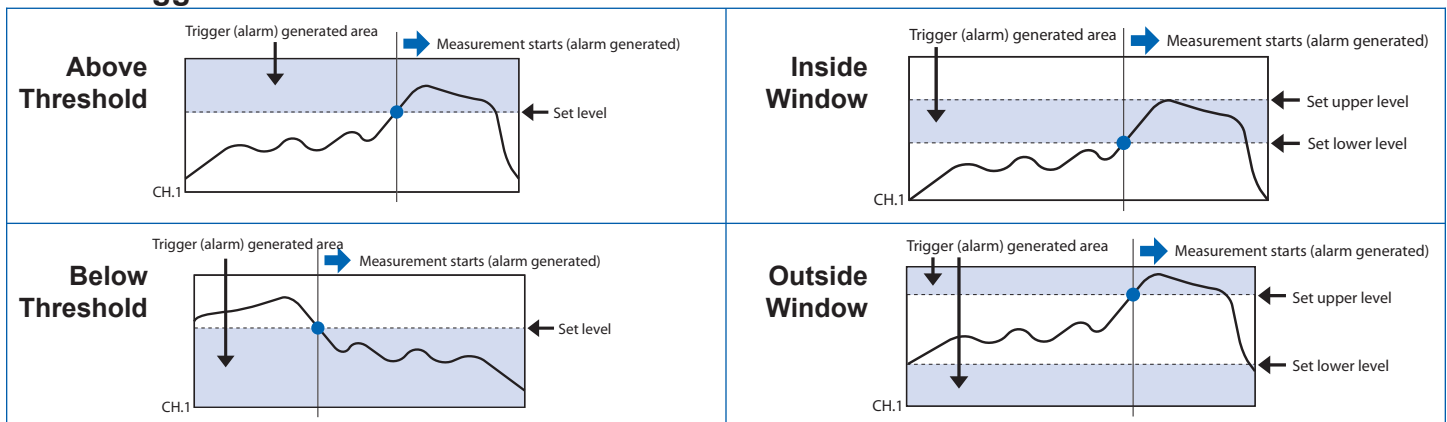
\*Switch between logic and pulse

## Flexible Triggering Options Add Versatility

The GL900 adapts to just about any trigger condition you might encounter. Using its combination of trigger and timer functions eliminates superfluous data and enables capture of only the required data. Data recording can be stopped or started manually or as a function of analog signal level, an external event, or specific date and time. Beyond initiating a data capture cycle, the GL900 can be programmed to set digital outputs to flag up to four external alarm conditions. And after a trigger condition is executed you can program the GL900 to automatically rearm itself to wait for another trigger event, or stop entirely. Completing the trigger picture, the GL900 also supports pre-triggering so you can see events leading up to a trigger event – perfect for cause-and-effect troubleshooting.

Setting		Selections Available	
<b>Timer Mode</b>		Off, Date and Time, Every Day Cycle, Every Hour Cycle	
[Date and Time]	Start side source setting	Date	January 1, 2005 to December 31, 2035
		Time	00:00 to 23:59 (Hour:Minute)
	Stop side source setting	Date	January 1, 2005 to December 31, 2035
		Time	00:00 to 23:59 (Hour:Minute)
[Every Day Cycle]	Start side source setting	Time	00:00 to 23:59 (Hour:Minute)
	Stop side source setting	Time	00:00 to 23:59 (Hour:Minute)
[Every Day Cycle]	Start side source setting	Time	00:00 to 59:59 (Minute:Second)
	Stop side source setting	Time	00:00 to 59:59 (Minute:Second)
<b>Start side source setting</b>		Off, Level, External Input	
[Level]	Combination	Level OR, Level AND, Edge OR, Edge AND	
	Mode	Analog : Off, ↑ H, ↓ L, Win In, Win Logic : Off, ↑ H, ↓ L Pulse : Off, ↑ H, ↓ L	
	Level	Numeric value setting	
<b>Stop side source setting</b>		Off, Level, External Input, Time	
[Level]	Combination	Level OR, Level AND, Edge OR, Edge AND	
	Mode	Analog : Off, ↑ H, ↓ L, Win In, Win Logic : Off, ↑ H, ↓ L Pulse : Off, ↑ H, ↓ L	
	Level	Numeric value setting	
[Time]		0000:00:01 to 9999:59:59 (Hour:Minute:Second)	
<b>Pre-trigger</b>		0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100%	
<b>Repeated capturing</b>		Off, On	
<b>Repeat interval</b>		0000:00 to 9999:59 (Hour:Minute)	
<b>Timer trigger information</b>		▼ Display Information	
<b>Alarm Level Settings</b>	Alarm Hold	On, Off	
	Mode	Analog : Off, ↑ H, ↓ L, Win In, Win Out Logic : Off, ↑ H, ↓ L Pulse : Off, ↑ H, ↓ L, Win In, Win Out	
	Level	Numeric value setting	
	Output	1, 2, 3, 4	

### GL900 Trigger Modes



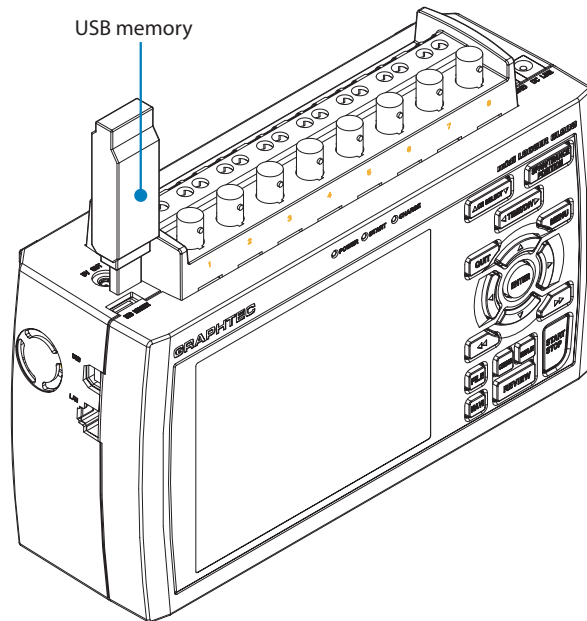
## Three Memory Destinations for Speed and Flexibility

The GL900 supports three different memory types. Each is used depending upon the amount of recorded data that is needed and the speed that data must be acquired. Built-in 64MB of RAM is the fastest and supports all the GL900's sample intervals, from 10  $\mu$ s to 60 seconds. The GL900 also provides 256MB of internal, non-volatile flash memory. Data stored here is retained even if power is removed from the GL900. And if you need an even larger non-volatile memory, the GL900 supports an external USB flash drive connected to its USB port. Memories of any size are supported to a maximum file size of 2GB. Both internal and external non-volatile memory support a minimum sample interval of 1 ms.

### GL900 supported memory devices and sample speeds

Item	Description
Memory capacity	Internal RAM : Approx. 64 MB SDRAM Internal flash memory : Approx. 256 MB Flash Memory USB memory : Max. 2 GB (Depends on the type of USB memory in use)
Memory contents	Setup conditions, Measured data, Screen copy
Save destination specification	Internal RAM, internal flash memory, or USB memory <i>* Neither the internal flash memory or USB memory can be selected if a unit in <math>\mu</math>s is selected.</i>
Sampling speeds	10, 20, 50, 100, 200, 500 $\mu$ s* 1, 2, 5, 10, 20, 50, 100, 200, 500 ms 1, 2, 5, 10, 20, 30, 60 s <i>* A unit in <math>\mu</math>s cannot be selected if the save destination is the internal flash memory or USB memory</i>
Setting of memory used for data capture	Set the number of data capture points. Setting range : 1000 to 1000000 points Setting unit : In steps of one point
Pre-trigger	0 to 100% (Set in steps of 10%)
Auto save function	ON or OFF setting ON : Automatically saves the data in the internal RAM to the internal flash memory or USB memory. OFF : Only temporarily retains data in the internal RAM (The data is lost at poweroff). <i>* This function is available only if data is captured to the internal RAM.</i>

### Support for external USB flash drives



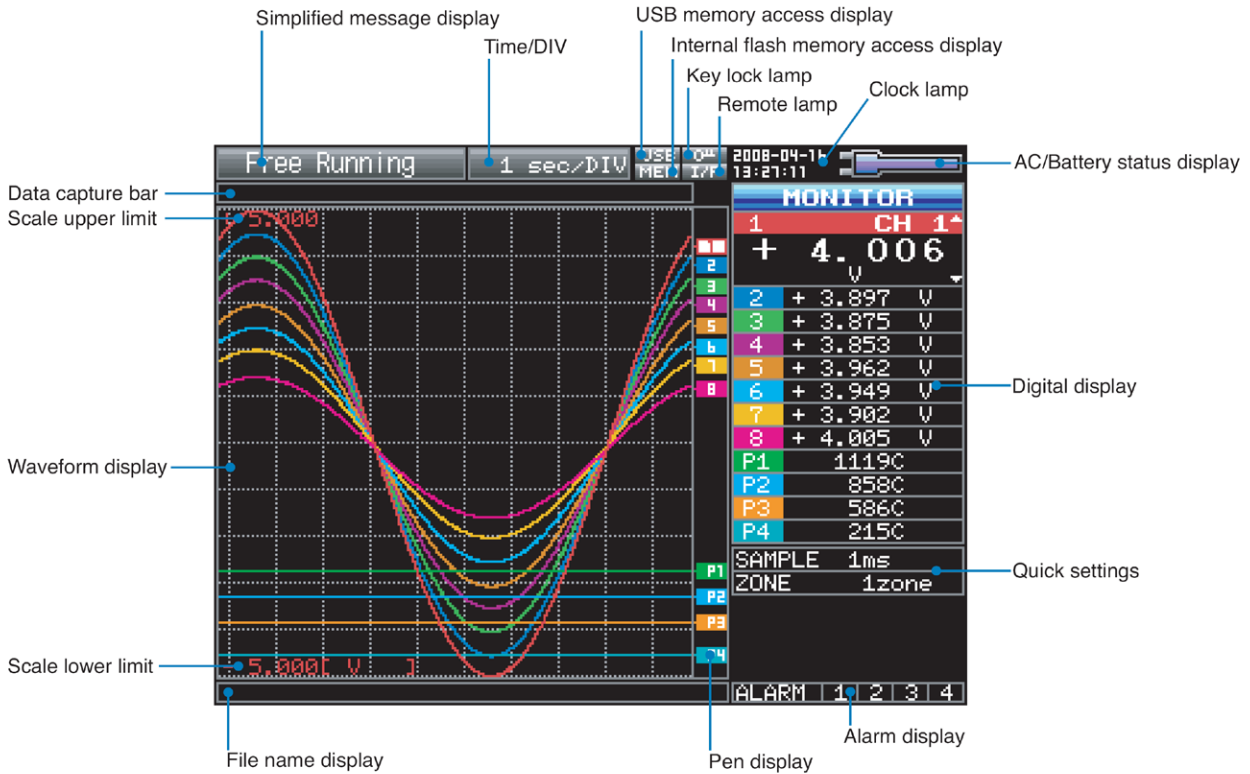
### GL900 memory destination and typical record times (8 channels)

Capture destination	10 $\mu$ s	100 $\mu$ s	500 $\mu$ s	1ms	10ms	100ms	1s
Internal RAM (up to one million points)	10 seconds	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.	Approx. 11 days and 13 hrs.
Internal flash memory (256 MB)	X	X	X	Approx. 11 hrs.	Approx. 4 days	Approx. 49 days	Approx. 493 days
External USB memory stick (512 MB)	X	X	X	Approx. 22 hrs.	Approx. 8 days	Approx. 98 days	Approx. 986 days

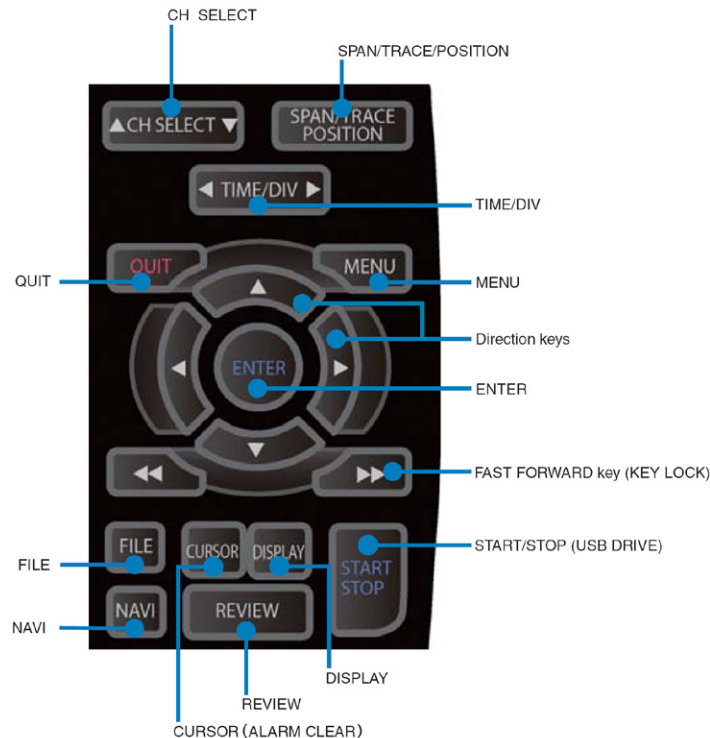
# GL900 Display and Keyboard Overview

The GL900's keyboard and display are key components you'll use for any data recording or data review session. The display is a full color TFT LCD (thin-film transistor liquid crystal display), the same technology used in modern flat-panel televisions. It measures 5.7 inches diagonally with 320 x 240 pixels of bright, clear, high contrast resolution. The display is a focal point for real time graphic waveform display during acquisition, and graphic review of post-acquired data. The GL900's keyboard allows full access to the instrument's menu system as viewed through its display. Navigation is straightforward and intuitive using the keyboard's navigation and ENTER keys that form the center of the array. Other keys support special operations that are clearly annotated. The keyboard features a lock function to prevent unauthorized access.

## Full color LCD display



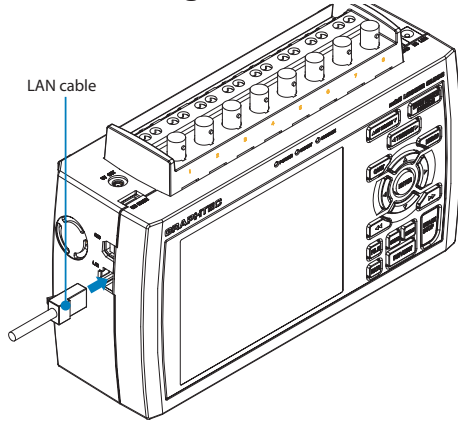
## GL900 keyboard



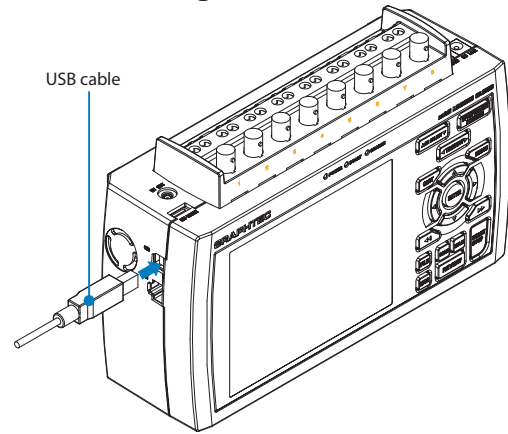
# Remote Control and Access to Data using USB and Ethernet Interfaces

The GL900 connects to either a USB or Ethernet port and PC-based software provided with the GL900 allows you to acquire data directly to a PC, or to remotely configure the instrument for any task. You can upload measurement protocols to the GL900, monitor acquired data in real time, or download and analyze previously acquired data. Data analysis includes cursor-based amplitude and time measurements, frequency analysis using an FFT, X-Y plotting, and functions to search recorded data for specific values. Also included is an Excel export function, and the ability to batch-convert recorded files into an Excel-compatible format.

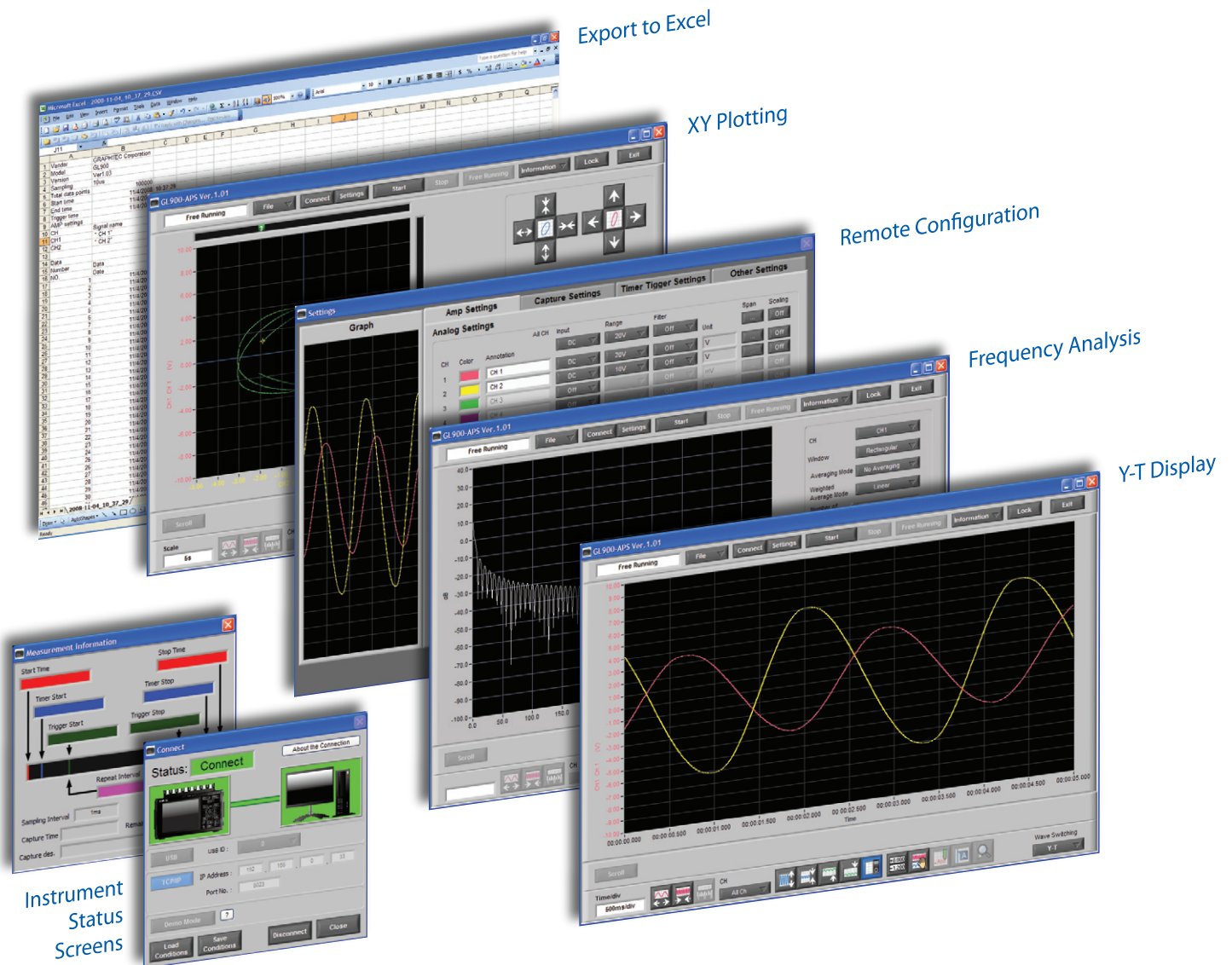
## PC connection using Ethernet



## PC connection using USB



## PC Software Overview



Export to Excel

XY Plotting

Remote Configuration

Frequency Analysis

Y-T Display

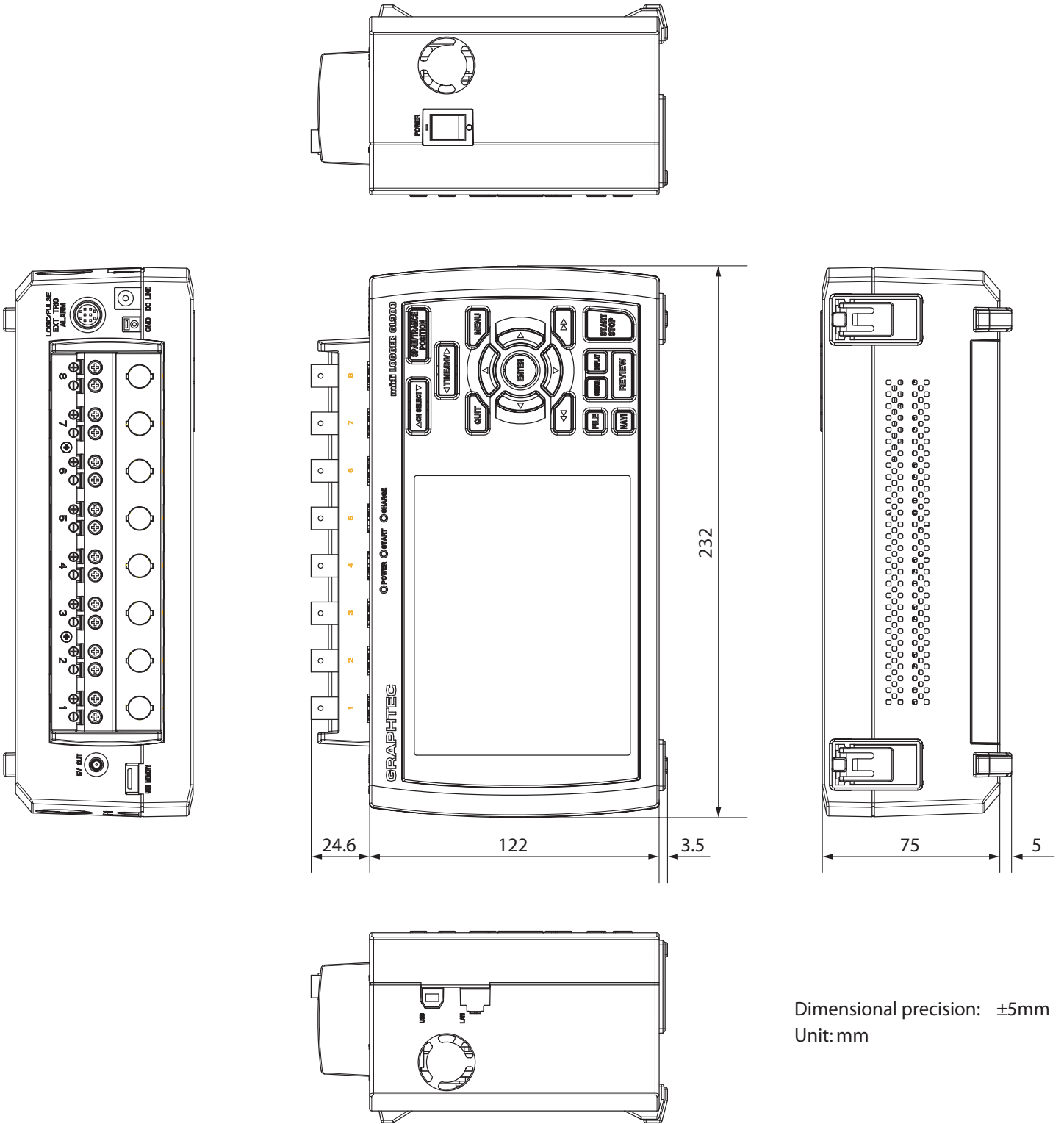
Measurement Information

Connect

Instrument Status Screens



# GL900 External Dimensions (millimeters)



Dimensional precision: ±5mm  
Unit: mm

## GL900 Accessories and Options Specifications

### Included Control Software

Item	Description
Compatible OS	Windows 2000, Windows XP
Functions	Main unit control, real time data capture, data conversion
Allowed connection	up to 1
Settings	AMP, data, trigger/alarm, others
Captured data	Realtime data (Binary: 1ms to 60s; CSV: 10ms to 60s); Data conversion (Binary, CSV)
Display	Analog waveforms, logic waveforms, pulse waveforms, digital values
Display modes	Y-T View, X-Y View, Digital View
File conversion	Between cursors. All data.
Dual-screen function	Displays the current data alongside past data (Possible at sampling speeds of 1 ms to 60 s)
Statistic/History	Displays max, min, and average values

### Included Accessories

Item	Description
Quick Start Guide	GL900-UM-8xx
CD-ROM	User's manual, application software
AC adapter	100 to 240 VAC, 50/60 Hz, power supply cord for each area

### Optional Battery Pack model B-517

Item	Description
Capacity	7.2V/2200mAh
Battery type	Lithium secondary battery
Running time	Up to two packs can be mounted (2 required for running on batteries; 1 sufficient for battery charging) <When LCD is ON> Battery pack x 2 (brightness MAX) : approx. 2 hours <When LCD is OFF> Battery pack x 2 : approx. 2.5 hours <i>Note: These values are for when capturing a 1-second sample to the internal memory, using new battery packs in +25°C environment. Note: The running time depends on the operating environment.</i>
Charging method	Mount in the main unit
Time required for charging	1 battery pack: approx. 4 hours; 2 battery packs: approx. 8 hours
Switchover in the case of power failure	Because the battery is used together with the AC adapter, the power supply will be switched automatically to the battery in the event of power failure. The AC adapter is the primary power source
Operating environment	15 to 35°C
Other functions	When battery is running low, file is closed automatically (when captured to USB or internal memory). Remaining amount indicator.

### Optional Humidity Sensor model B-530

Item	Description
Allowable temperature range	-25 to 80°C
Allowable Humidity Range	0 to 100%
Relative humidity measurement accuracy	±3% RH (5 to 98% RH at 25°C)
Response time	15 s (90% response when membrane filter installed)
Sensor output	0 to 1 VDC
Sensor power source	5 to 16 VDC
Power consumption	approx. 4mA
External dimensions	14mm × 80 mm (excluding cable)
Cable length	3m

### Other Optional Accessories

Item	Option	Description
DC power cable	B-514	Bare tips (2 m)
Logic alarm cable	B-513	2m, bare tips
BNC to 4mm banana jack adapter	ADAP-5	Safety insulated male BNC to dual 4mm banana jacks
Cable and adapter kit	CABL-900	Cable and adaptor kit consisting of one ADAP-5; one pair of safety-shrouded 39-in (99-cm) test leads (one red, one black); one pair of safety right angle plunger hook clips (one red, one black).
Carrying Case	B-544	Hardened plastic carrying case designed specifically for the GL900.

# GL900 Specifications

## Standard Specifications

- Number of analog channels:** Fixed to 8 channels
- External input/output:** Trigger input, Logic input 4 channels or Pulse input 4 channels, Alarm output
- PC interface:** Ethernet (10Base-T/100Base-TX), USB (high speed supported) provided as standard features.
- Internal memory devices:** Internal RAM : Approx. 64 MB  
Internal flash memory : Approx. 256 MB  
USB memory slot (High Speed supported) provided as standard features
- Data backup functions:** Setup conditions: EEPROM; Clock: lithium secondary battery
- Clock accuracy (23°C environment):** ±0.002% (accurate within about 50 seconds per month)
- Operating Environment:** 0 to 45°C, 5 to 85% RH (15 to 35°C when using batteries)
- Withstand voltage:** Between each input channel and GND terminal: 1 minute at 1000Vp-p  
Between each input terminal: 1 minute at 1000Vp-p
- Power supply:** AC adapter: 100 to 240 VAC, 50/60 Hz  
DC input: 8.5 to 24 VDC  
Battery pack (option): 7.4 VDC (2200 mAh), 2 packs mountable
- Power Consumption:** AC current consumption (when AC adapter is used)

Condition	Normal Consumption	Consumption during battery recharge
LCD on	30 VA	42 VA
Screensaver on	25 Va	37 VA

### DC current consumption

DC Voltage	Condition	Normal Consumption	Consumption during battery recharge
+24V	LCD on	0.62 VA	0.7 VA
+24V	Screensaver on	0.48 VA	0.6 VA
+12V	LCD on	1.16 VA	Can't Recharge
+12V	Screensaver on	0.92 VA	Can't Recharge
+8.5V	LCD on	1.82 VA	Can't Recharge
+8.5V	Screensaver on	1.36 VA	Can't Recharge

Note: normal status is when LCD brightness is set to MAX

- External Dimensions:** 232 × 150 × 80 mm
- Weight:** 1.1 kg (excluding AC adapter and battery)
- Vibration-tested conditions:** Equivalent to automobile parts Type 1 Category A classification

## Function Specifications

- Display Screen:** Waveform screen + Digital screen; Expanded Waveform screen; Digital screen; X-Y display  
*Even during data capture, you can open menus (to check whether setting is possible). Screens can be key-toggled.*
- EU Scaling function:** 4 points can be set for each channel.
- Review function:** Data replay during data capture
- Calculation:** Types: Average, Max, Min Peak, RMS  
2 operations can be set simultaneously  
Method: Data between cursors specified (during data replay)
- Search functions:** Function: Search the captured data for the required number of points  
Search type: Search of channels by levels;  
Search by logic pulses + combinations;  
Search by alarm generation
- Annotation input function:** Function: A comment can be input for each channel.  
Inputtable characters: Alpha numerics and kana  
Number of characters: 11 (8 displayed)

## Analog Input Specifications

- Number of inputs:** Fixed to 8 channels
- Input terminal type:** Voltage: BNC connector  
Temperature: M3 screw-type terminal board
- Input method:** All channels isolated, Imbalanced input, Simultaneous sampling of all channels
- Max. sampling speed:** 10µs
- 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 (WRRe5-26)  
Resistance temperature detector: Pt100, JPt100, Pt1000 (IEC751)
- Humidity:** 0 to 100% (voltage 0 V to 1 V scaling conversion)  
\*with B-530 (option)

### Measurement accuracy\*

- Voltage:** ±0.25% of Full Scale
- Temperature (Thermocouple):**

TC	Measurement Temperature Range (°C)	Measurement Accuracy (°C)
R/S	0 ≤ Ts ≤ 100	±7.0
	100 < Ts ≤ 300	±5.0
	R: 300 < Ts ≤ 1600 S: 300 < Ts ≤ 1760	±(0.05% of rdg +3.0) ±(0.05% of rdg +3.0)
B	400 ≤ Ts ≤ 600	±5.5
	600 < Ts ≤ 1820	±(0.05% of rdg +3.0)
K	-200 ≤ Ts ≤ -100	±(0.05% of rdg +3.0)
	-100 < Ts ≤ 1370	±(0.05% of rdg +2.0)
E	-200 ≤ Ts ≤ -100	±(0.05% of rdg +3.0)
	-100 < Ts ≤ 800	±(0.05% of rdg +2.0)
T	-200 ≤ Ts ≤ -100	±(0.1% of rdg +2.5)
	-100 < Ts ≤ 400	±(0.1% of rdg +1.5)
J	-200 ≤ Ts ≤ -100	±3.7
	-100 < Ts ≤ 100	±2.7
	100 < Ts ≤ 1100	±(0.05% of rdg +2.0)
N	0 ≤ Ts ≤ 1300	±(0.1% of rdg +2.0)
W	0 ≤ Ts ≤ 2315	±(0.1% of rdg +2.5)

Reference contact compensation accuracy: ±1.0°C  
Thermocouple diameters T: 0.32φ, others: 0.65φ

\* 23°C ±3°C when 30 minutes have elapsed after the power was switched on (filter On (10), 1 s/20 ch sampling, GND connected).

- Reference contact compensation accuracy:** Internal/External switching
- A/D converter:** 16 bits (out of which 14 bits are internally acknowledged)
- Temperature coefficient:** Gain: 0.01% of F.S./°C  
Zero: 0.02% of F.S./°C
- Input resistance:** 1 MΩ ±5%
- Allowable signal source resistance:** Within 1kΩ
- Maximum permissible input voltage:** Between input channel + and - terminals:  
20 mv to 1 V → 30 Vp-p  
2 V to 500 V → 500 Vp-p  
Between input channel terminals: 60 Vp-p  
Between input channel terminal and GND terminal: 60 Vp-p
- Insulation resistance:** Between Input terminal/GND: At least 50 MΩ (at 500 VDC)
- Common mode rejection ratio:** At least 90 dB (50/60 Hz; signal source 300 Ω or less)
- Noise:** 20 mV range: At least -40 dB  
Other range: At least -50 dB
- Frequency response:** DC to 20 KHz (+1/-4 dB)
- Filter:** OFF, Line, 5Hz, 50Hz, 500Hz  
(Attenuation) -3 dB / 6 dB oct

## GL900 Specifications (continued)

### Internal Memory Devices

<b>Memory capacity:</b>	Internal RAM : Approx. 64 MB SDRAM Internal flash memory : Approx. 256 MB Flash Memory USB memory : Max. 2 GB (Depends on the type of USB memory in use)
<b>Memory contents:</b>	Setup conditions, measured data, screen copy
<b>Save destination specification:</b>	Internal RAM, internal flash memory, or USB memory neither the internal flash memory nor USB memory can be selected if a unit in $\mu\text{s}$ is selected
<b>Sampling speeds:</b>	10, 20, 50, 100, 200, 500 $\mu\text{s}^*$ 1, 2, 5, 10, 20, 50, 100, 200, 500 ms 1, 2, 5, 10, 20, 30, 60 s <i>*A unit in <math>\mu\text{s}</math> cannot be selected if the save destination is the internal flash memory or USB memory</i>
<b>Setting of memory used for data capture:</b>	Set the number of data capture points. Setting range : 1000 to 1000000 points Setting unit : In steps of one point
<b>Pre-trigger:</b>	0 to 100% (Set in steps of 10%)
<b>Auto save function (ON/OFF):</b> (only available if data is captured to the internal RAM)	ON : Automatically saves the data in the internal RAM to the internal flash memory or USB memory. OFF : Only temporarily retains data in the internal RAM (The data is lost at poweroff).

### Trigger Function Specifications

<b>Timer mode:</b>	Off, Date and Time, Every Day Cycle, Every Hour Cycle
<b>Repeat trigger:</b>	Off, On
<b>Trigger types:</b>	Start: Data capture starts when a trigger is generated. Stop: Data capture stops when a trigger is generated.
<b>Trigger conditions:</b>	Start: Off, Level, External Stop: Off, Level, External, Time <i>a level can be set for each channel</i>
<b>Alarm judgment modes:</b>	Analog : H ( $\uparrow$ ), L ( $\downarrow$ ), Window In, Window Out (tolerance $\pm 1\%$ ) Logic : H ( $\uparrow$ ), L ( $\downarrow$ ) Pulse : H ( $\uparrow$ ), L ( $\downarrow$ ), Window In, Window Out
<b>Channel combination:</b>	Level OR, Level AND, Edge OR, Edge AND

### Integral TFT LCD Display

<b>Display:</b>	5.7-inch TFT color LCD (QVGA: 320 x 240 dots)
<b>Displayed languages:</b>	Japanese, English, Others
<b>Backlight life:</b>	50,000 hrs (when brightness is down to 50%), depends on operation environment
<b>Backlight:</b>	Screensaver function (10, 30 sec., 1, 2, 5, 10, 30, 60 min.)

### External I/O Specifications

<b>Input/Output types:</b>	Trigger input (1 ch); Logic input (4 ch) or Pulse input (4 ch); Alarm output (4 ch) <i>Note: Switch between Logic and Pulse</i>
<b>Input specifications:</b>	Maximum input voltage: 0 to +24 V (single-ended ground input) Input threshold voltage: Approx. +2.5V Hysteresis: Approx. 0.5 V (+2.5 to +3 V)
<b>Alarm output specifications:</b>	Output format: Open collector output (5 V, 10 K $\Omega$ pull-up resistance), Contact capacity 5 V to 24 V, 100 mA or below Output conditions: Level judgment, window judgment, logic pattern judgment, pulse judgment <i>Alarm output is judged every 5 ms.</i>
<b>Pulse input</b>	
<b>Revolutions mode (engines, etc):</b>	Function: Counts the number of pulses per second; enables them to be converted to rpms. Spans: 5, 10, 20, 50, 100, 200, 500, 1 k, 2 k, 5 k, 10 k, 20 k, 50 k, 100 k, 200 k, 500 k, 1 M, 2 M, 5 M, 10 M, 20 M RPM/F.S.
<b>Counts mode (electric meters, etc.):</b>	Function: Displays a count of the number of pulses for each sampling interval from the start of measurement. Spans: 5, 10, 20, 50, 100, 200, 500, 1 k, 2 k, 5 k, 10 k, 20 k, 50 k, 100 k, 200 k, 500 k, 1 M, 2 M, 5 M, 10 M, 20 M C/F.S.
<b>Inst. mode:</b>	Function: Counts the number of pulses for each sampling interval. Resets the count value after each sampling interval. Spans: 5, 10, 20, 50, 100, 200, 500, 1 k, 2 k, 5 k, 10 k, 20 k, 50 k, 100 k, 200 k, 500 k, 1 M, 2 M, 5 M, 10 M, 20 M C/F.S.
<b>Maximum number of pulse inputs:</b>	Max input frequency : 50 kHz Max number of counts : 15 MC (24-bit counter)
<b>PC Interface</b>	
<b>Interface types:</b>	Ethernet (10Base-T/100Base-TX) USB (HighSpeed)
<b>Application functions:</b>	Data transfer to PC (real time, memory) PC control of the GL900
<b>Ethernet functions: (10BASE-T, 100BASE-TX)</b>	Web server function: Displays GL900s screen image on web browser, operation of GL800 FTP server function : Transfers and deletes files from internal memory and USB memory SNTP function: Corrects the time of the internal clock.
<b>USB functions:</b>	USB drive mode : Transfers and deletes files from internal memory.
<b>Real time data transfer speed:</b>	1 ms to 60 s

## Ordering Guide

Description	Order No.
<b>GL900</b> Compact, lightweight, multi-channel data logger that provides 8 fixed analog measurement channels. Includes calibration certificate traceable to NIST, PC-based software, and AC adaptor.	GL900
<b>BNC to banana jack Adapter</b> Safety insulated male BNC to dual 4mm banana jacks.	ADAP-5
<b>Cable and adaptor kit</b> Cable and adaptor kit consisting of one ADAP-5; one pair of safety-shrouded 39-in (99-cm) test leads (one red, one black); one pair of safety right angle plunger hook clips (one red, one black).	CABL-900
<b>Humidity Sensor</b> 3-meter with dedicated power connector.	B-530
<b>Battery Pack</b> 7.2V/2200mAh Battery pack (2 required for battery operation).	B-517
<b>DC power cable</b> 2-meter DC power cable, bare tips.	B-514
<b>Logic Alarm Cable</b> 2-meter, bare tips.	B-513
<b>Carrying Case</b> Durable carrying case designed specifically for GL900 data loggers.	B-544



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### Data Acquisition Product Links

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