GRAPHTEC

Isolated/Universal Input, Standalone Multi-Channel Datalogger

midi LOGGER
GL840-M / GL840-WV / GL240

Setting New Heights
in Data Recording

■ Flexible input system for wide array of applications

■ Extended memory capacity using SD memory card

■ Maximum sampling interval of up to 10ms

NEW Multi-Input Model
midi LOGGER GL840-M

NEW High Voltage Withstand Model
midi LOGGER GL840-WV

NEW 10-Channel Portable Model
midi LOGGER GL240

www.graphteccorp.com

midi LOGGER
GL840 series & GL240

GL840 series   **GL240**

Setting New Industry Standards for It's Class

Accommodates a wide variety of measurements

■ Multifunction analog input ports

Contains a highly isolated input mechanism which ensures that signals are not corrupted by noise from other channels. The GL840/240's inputs are suitable for combined measurements from voltage, temperature, humidity, logic, and pulse signals.

■ 4 channels of Logic/Pulse inputs

Supports 4-channel logic or pulse signal inputs. Pulse mode allows cumulative, instant, or rotational values for industrial measurement capability with speed and flow.

Voltage	Ranges from 20mV to 100V	**Pulse**	4 channels* Accumulating, Instant or RPM
Temp.	Thermocouple type: R, S, B, K, E, T, J, N, W RTD types (for GL840 only): Pt100, JPt100, Pt1000	**Logic**	4 channels*
Humidity	0 to 100%RH - using optional sensor (B-530)		* Requires optional input/output cable (B-513). Select either Pulse or Logic input.

Large easy-to-read 7-inch wide color LCD(4.3-inch in the GL240)

Carries a clear 7-inch wide TFT color LCD screen (WVGA: 800 x 480 dots) for the GL840, and 4.3-inch wide LCD screen (WQVGA: 480 x 272 dots) for the GL240. Monitoring data are displayed in waveform or digital form option. Parameter settings can be displayed on the screen.
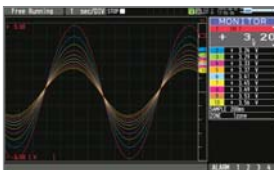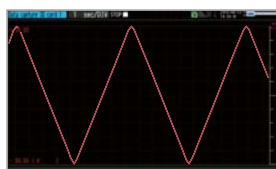
Waveform display (Analog + Digital)   Digital display

Dual display (Current + Past)   Waveform display (Analog only)

Useful functions

■ Alarm output function

Based on set conditions for each channels, alarm signals can be placed using the four channel alarm output ports.*
* Input/output cable (B-513 option) is required to connect the alarm output ports to external buzzer/light mechanism.

■ USB drive mode

USB drive mode function enables data to be transferred to the PC from GL840/GL240 by drag & drop feature.

■ Navigation function

Simple to use navigation screen allows setting operation for measurement and wireless LAN adapter.

Maximum sampling interval of up to 10ms

Provides faster sampling rates for voltage measurements. You are able to achieve up to 10ms sampling speed when limiting the number of channels in use.

Model	Sampling interval	10ms	20ms	50ms	100ms	200ms	500ms	1s	2s
	Number of channel	1	2	5	10	20	50	100	200
GL840	Voltage	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Measuring	Temperature	N/A	N/A	N/A	Yes	Yes	Yes	Yes	Yes
GL240	Voltage	Yes	Yes	Yes	Yes	Yes(10ch)	Yes(10ch)	Yes(10ch)	Yes(10ch)
Measuring	Temperature	N/A	N/A	N/A	Yes	Yes(10ch)	Yes(10ch)	Yes(10ch)	Yes(10ch)

* This chart is applicable when the captured data is saved in the GBD binary file format.
Limited sampling speed is available when digital sensors and GL100-WL are used as a remote monitoring device.

Supports large-size SD memory card for reliable long term measurement

New GL series carries two SD memory card slots for storage device. The SDHC type SD memory card is supported up to 32GB. 4GB SD memory card comes as a standard accessory installed in the first slot.

Capturing time* (When all 20 or 10 analog channels are being used with Logic/Pulse inputs turned off.)

Model	Sampling	10ms	50ms	100ms	200ms	500ms	1s	10s
GL840 (20ch)	GBD format	31 days	77 days	95 days	108 days	270 days	over 365	over 365
	CSV format	3 days	11 days	16 days	21 days	54 days	109 days	over 365
GL240 (10ch)	GBD format	41 days	88 days	103 days	207 days	over 365	over 365	over 365
	CSV format	3 days	11 days	16 days	36 days	91 days	182 days	365 days

* Figures are approximate. File size of captured data is 2GB in GBD or CSV file format on this chart. Sampling interval is limited by the number of channels in use. (10ms: 1ch, 50ms: 5ch, 100ms: 10ch) Limited sampling speed is available when digital sensors and GL100-WL are used as a remote monitoring device.

■ Ring capture function

The most recent data is saved when the memory is configured in ring memory mode. (Number of capturing data is 1000 to 2000000 points)

■ Relay capture function

Data is continuously saved to multiple files up to 2GB without losing any data until capturing is stopped when the memory is configured in the relay mode.

■ Hot-swapping the SD memory card

SD card can be replaced during data capturing when the sampling interval is 100ms or slower.

■ 3 Types of Power Source

Choose from AC power supply, DC supply* or the rechargeable battery pack.*
* DC power drive cable (B-514) and battery pack (B-569) are optional accessories.

■ Networking features

Web & FTP server function
GL840/GL240 can be controlled externally via a network on the WEB browser, which also supports monitoring and transfer of signals and captured data.

FTP client function
Captured data is periodically transferred to the FTP server for backup.

NTP client function
The clock on the GL840/Gl240 is periodically synchronized with the NTP server.
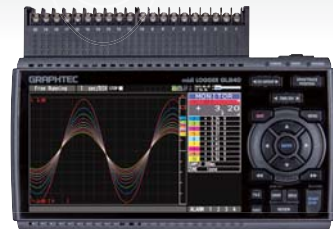* The GL840/GL240 needs to be connected to a LAN environment using the available Ethernet/WLAN ports.

GL840 expands to two models for application specific use

Multi-Input Model
midi LOGGER GL840-M

Suitable for temperature measurement with multiple channels.

High Voltage Withstand Model
midi LOGGER GL840-WV

Suitable for stacked high voltage battery application, or high-precision temperature measurement.

| Withstand voltage & Accuracy		Multi-input type (B-564)	Withstand-voltage type (B-565)
Voltage	Input voltage range	20 mV to 100 V	20 mV to 100 V
	Max. voltage (Input - GND)	60 Vp-p	300 Vp-p
Temp.	Thermocouple	R, S, B, K, E, T, J, N, W (WRe5-26)	
	RTD (Resistance Temp. Detector)	Pt100 (IEC751), JPt100 (JIS), Pt1000 (IEC751)	
Accuracy	Voltage	± 0.1% of F.S.	±(0.05% of FS + 10µV)
	Temperature*	± 1.55 °C	± 1.1 °C

* Accuracy rating for K-type thermocouple at 100°C includes reference junction compensation. Accuracy varies by the temperature levels and thermocouple types.

Expandable up to 200 channels

Standard configuration has 20 analog input channels. It is expandable to 200 channels by adding the optional 20 channel extension terminal base unit (B-566) and input terminal units (B-564 or B-565).
The following shows how a standard configuration is expanded to a 40 channel configuration.

1. Terminal unit is removed from the main body of the GL840.

2. Extension terminal base unit (B-566) connects to the GL840 using the external cable (B-567).

Connection cable (B-567-05 or B-567-20)
Extension terminal base (B-566)

3. Terminal unit snaps onto the extension terminal base unit (B-566).

Input terminal unit (B-564/565)

4. The combined extension terminal base set (B-566) and additional input terminals (B-564 or -565) are daisy chained together.

Extension terminal base (B-566) & input terminal unit (B-564/565)
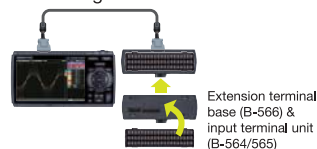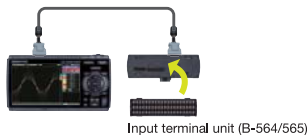
Configuration for additional channels

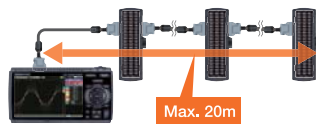| Number of channels	20 channels	40 channels	100 channels	200 channels
GL840 unit (GL840-M or GL840-WV)	1 set	1 set	1 set	1 set
Connection cable (B-567-05 or -20)	N/A	1 pc	1 pc	1 pc
Terminal base (B-566)	N/A	2 sets	5 sets	10 sets
Input terminal (B-564 or B-565)	N/A	1 set	4 sets	9 sets

* Input terminal blocks for the B-564 and B-565 can be mixed together for combined configurations. However, the maximum voltage and accuracy rating for the setup will be limited to the rating of the B-564.

■ Offers longer cable for the input terminals

Input terminal blocks can be connected directly (in daisy chain), or using the B-565 cable(s). This allows the input terminals to be placed in separate locations according to the need of the application.
The input terminal and the GL840 main body can be extended by using an extended connection cable.
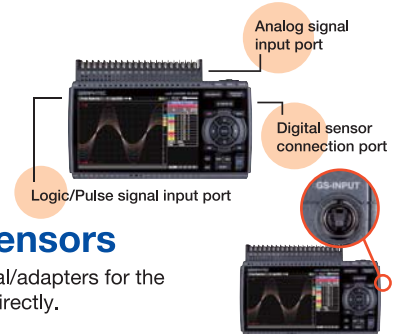* If the signal is affected by noise, it may be required to use a slower sampling.

Max. 20m

Three types of input systems enable measurement of various signals

Along with the basic analog signal, Logic/Pulse, and digital sensors can be all connected to monitor a variety of measurements.

Analog signal input port
Digital sensor connection port
Logic/Pulse signal input port

Support digital sensors

Digital sensors and input terminal/adapters for the GL100 connects to the GL840 directly.

GS-INPUT

Temp/Humidity GS-TH
Acceleration/Temp GS-3AT
Carbon Dioxide GS-CO2
Illuminance/UV GS-LXUV
Voltage/Temp GS-4VT

Thermistor adapter GS-4TSR
Thermistor
AC current sensor adapter GS-DPA-AC*
AC current sensor
Extension cable**

* Supports up to two AC current sensors.
** Allows only one extension cable per port.

■ Dual port adapter connects up to two sensors for simultaneous interface

- Temp/Humidity & Illuminance/UV
- Temp/Humidity & Carbon Dioxide
- Illuminance/UV & Carbon Dioxide

Dual port adapter GS-DPA

High performance software with useful functions for the PC (GL100_240_840-APS)

GL840 series
GL240
Ethernet or USB
PC (Software)

■ Supports GL840, GL240, GL100

Up to 10 units of GL840, GL240 and GL100 can be connected to 1 PC simultaneously. Up to 1000 channels are supported.

■ Controls settings for GL840, GL240, GL100

■ Various measurement screen

Displays data in Y-T waveform, digital monitoring, statistical calculation result.
The direct-Excel function enables captured data to be written directly to an Excel file.

■ File operation

Data captured in multiple files can be merged into a single file. Using the *combine* function, data can be imported as a new channel overlaying on top of each other. The *bind* function connects the data in a time axis. When using the relay capture mode, the bind feature will append multiple files together into one large, continuous file.

■ Useful functions

Scheduling function

Create a schedule for your monitoring to start and stop at selected time, and set an automatic measurement schedule.

Group function

Multiple units can be managed, such as controlling start or stop simultaneously. Data captured by each unit is saved in a single file.

Schedule table is able to create easily using mouse.

Saves to a single file
Multiple units

■ Data format conversion

Converts the GBD (Graphtec Binary Data) format to CSV format. The file size is reduced using the compression function saving a value at particular time point of a specified interval. Or, it will save the average, maximum, or minimum values from the specified time interval as the highlighted values.
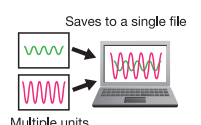
Main unit series specifications

Item		Description	
Model number		GL840-M/GL840-WV	GL240
Number of analog input channels		20 channels in standard configuration, Expandable up to 200 channels	10 channels
Number of analog input terminals		Up to 10 terminals (standard config: 1)	N/A
Type of analog input terminal		Multi-input type, Withstand-voltage type	N/A
Port for digital sensor		1 port for the sensor/terminal of the GL100	N/A
External input/ output [1]	Input [2]	Trigger or Sampling (1 channel), Logic/Pulse (4 channels)	
	Ouput [3]	Alarm (4 channels)	
Sampling interval		10 ms to 1 hour (10ms to 50ms: voltage only) [4], External signal	
Time scale of waveform display		1 sec. to 24 hour /division	
Trigger, Alarm function	Trigger action	Start or stop capturing data by the trigger	
	Repeat action	Off, On (auto rearmed)	
	Trigger source	Start: Off, Measured signal, Alarm, External, Clock, Week or Time Stop: Off, Measured signal, Alarm, External, Clock, Week or Time	
	Condition Setting	Combination: OR or AND Analog signal: Rising (High), Falling (Low), Window-in, Window-out Logic signal: Pattern (combination of each input signal in high or low) Pulse (number of count): Rising (High), Falling (Low), Window-in, Window-out	
	Alarm output	Outputs a signal when alarm condition occurs in the input signal [5]	
Pulse input function	Rotation count (RPM) mode	Counts the number of pulses per sampling interval and converts to rpm (rotations per minute), Number of pulses for one rotation can be set to 50, 500, 5000, 50k, 500k, 5M, 50M, 500M rpm/F.S. (rpm./Full Scale)	
	Accumulating count mode	Accumulates the number of pulses from the start of measurement 50, 500, 5000, 50k, 500k, 5M, 50M, 500M C/F.S. (Counts/Full Scale)	
	Instant count mode	Counts the number of pulses per sampling interval 50, 500, 5000, 50k, 500k, 5M, 50M, 500M C/F.S. (Counts/Full Scale)	
Calculation function	Between channels	Addition, Subtraction, Multiplication, and Division for analog input	
	Statistical	Select two calculations from Average, Peak, Maximum, Minimum, RMS	
Search function		Search for analog signal levels, values of logic or pulse or alarm point in captured data	
Interface to PC		Ethernet, USB 2.0 (Hi-speed)	USB 2.0 (Hi-speed)
Storage device	Media	SD memory card (Support SDHC, up to 32 GB), supports 2 slots [6]	
	Saved contents	Captured data, Setting conditions, Screen copy	
Capturing mode		Mode: Normal, Ring, Relay Ring: Saves most recent data (Number of capturing data: 1000 to 2000000 points) [7] Relay: Saves data to multiple files without losing data until dada capturing is stopped.	
Replay data (in GBD or CSV format)		Replays captured data that was saved in the GL840	Replays captured data that was saved in the GL240
Scaling (Engineering unit) function		Measured value can be converted to specified engineering unit • Analog voltage: Converts using four reference points (gain, offset) • Temperature: Converts using two reference points (offset) • Pulse count: Converts using two reference points (gain)	
Action during data capture		• Displaying past data (using dual display mode (Current + Past data)) • Hot-swapping the SD memory card • Saving data in between cursors	
Display (LCD)	Size	7-inch color TFT (WVGA: 800 x 480 dots)	4.3-inch color TFT (WQVGA: 480 x 272 dots)
	Language	English, French, German, Chinese, Korean, Russian, Spanish, Japanese	
	Information [8]	Waveform in Y-T with digital values, Waveform only, Digital value, Digital values and statistics values	
Operating environment		0 to 45 °C, 5 to 85 % RH (non condensed) (When operating with batterypack 0 to 40 °C, charging battery 15 to 35 °C)	
Power source	AC adapter	100 to 240 V AC, 50/60 Hz (1 pc of adapter is attached as standard accessory)	
	DC power	8.5 to 24 V DC (DC drive cable (option B-514) is required)	
	Battery pack	Mountable battery pack (battery pack (option B-517): 7.2V DC, 2900mAh)	
Power consumption [9]		Max. 38 VA	Max. 36 VA
External dimensions (W x D x H in mm, Excluding projections)		GL840-M: Approx. 240 x 158 x 52.5 GL840-WV: Approx. 240 x 166 x 52.5	Approx. 188 x 117 x 42
Weight [10]		GL840-M: Approx. 1010 g GL840-WV: Approx. 1035 g	Approx. 500 g

Software specifications for PC

Item		Description
Model name		GL100_240_840-APS
Supported OS		Windows 8.1, 8, 7, Vista (32/64-bit edition)
Supported device		GL840 (USB, Ethernet), GL240 (USB), GL100 (USB)
Functions		Control the GL series, Real-time data capture, Replay data, and Data format conversion
Supported units & channels		Up to 1000 channels total, Up to 4 groups (number of units is limited by model)
Settings control		Input condition, Capturing condition, Trigger/Alarm condition, Report, etc.
Capturing data	Saved to PC	Saves captured data in real time (in GBD binary or CSV format)
	Saved to GL unit	Saves to the SD memory card (in GBD binary or CSV format)
Displayed information		Y-T waveform, Digital values, Report, X-Y graph (specified period of data, data reply only), Two display for the current and past, and Statistical calculation
File operation		Converting data format to CSV from GBD binary, merge multiple data files in the time axis or as an additional channel
Warning function		Send e-mail to the specified address when the alarms occur
Statistical calculation		Maximum, Minimum, and Average during data capturing
Report function		Creates the daily or monthly report automatically

[1]. Input/Output cable for GL (option B-513) is required to connect the signal.
[2]. Input signal; • Voltage range: up to 24V (common ground) • Signal type: Voltage, Open collector, Contact (relay)
      • Threshold: approx + 2.5 V (Hysteresis: approx 0.5V (2.5V to 3V))
[3]. Output signal: Open collector (pull-up to 5V by 10kΩ resistor)
      <Maximum rating of the output transistor>
      Voltage: 30V, Current: 0.5A, Collector dissipation: 0.2W
[4]. Minimum interval varies by number of channels used.
[5]. Output port can be specified in each input channel.
[6]. 4GB SD memory card is installed to slot 1 as standard accessory.
[7]. Size of the capture data will be limited to 1/3 available memory.
[8]. Display mode is switched every time the dedicated key is pressed. In magnified digital value mode, the displayed channel number can be specified. In the waveform display mode, the changing of the time scale will be effective from the point of the next displayed data.
[9]. Rating under maximum power consumption using the AC adapter, with LCD display on, and battery pack(s) being charged.
[10]. Excludes AC adapter and battery pack.
[11]. The terminal "b" for using the RTD is connected each other across all channels.
[12]. If the specifications of the temperature sensor is lesser or greater than the selected measurement range, GL840 can measure up to the specifications of the sensor.
[13]. Subject to the following conditions:
      • Room temperature is 23 °C ± 5 °C.
      • When 30 minutes or more have elapsed after power was turned on.
      • Filter is set to 10.
      • Sampling rate is set to 1 sec, using 20-channel in GL840-M, 10-channel in GL840-WV and 10-channel in GL240.
      • GND terminal is connected to ground.
[14]. Wire size of thermocouple used is 0.32mm diameter in the T type and 0.65mm diameter in other types.
[15]. The "TS" is the "Temperature Sensed".
[16]. Supports 3-wire type sensor.

Analog input specifications

Item		Description	
Model number		GL840 series	GL240
Input method		All channels isolated balanced input [11], Scans channels for sampling, Screw terminal (M3)	
Measurement range	Voltage	20, 50, 100, 200, 500 mV, 1, 2, 5, 10, 20, 50, 100 V, and 1-5V F.S. (Full Scale)	
	Thermocouple	Type: K, J, E, T, R, S, B, N, W (WRe5-26), Range: 100, 500, 2000 °C [12]	Type: K, J, E, T, R, S, B, N, W (WRe5-26)
	RTD (Resistance Temperature Detector)	Type: Pt100, JPt100 (JIS), and Pt1000 (IEC751) Range: 100, 500, 2000 °C [12]	N/A
	Humidity	0 to 100 % RH - using the humidity sensor (option B-530)	
Filter		Off, 2, 5, 10, 20, 40 (moving average in selected number)	

Measurement accuracy [13]

	Model number		GL840-M, Input terminal B-564	GL840-WV, Input terminal B-565	GL240
	Voltage		± 0.1% of F.S. (Full Scale)	± (0.05% of F.S. + 10μV)	± 0.1% of F.S. (Full Scale)

Temperature (Thermocouple) [14]

Type	Measurement range [15]	Measurement accuracy	Measurement accuracy	Measurement accuracy
R/S	0 ≤ TS ≤ 100 °C	± 5.2 °C	± 4.5 °C	± 5.2 °C
	100 < TS ≤ 300 °C	± 3.0 °C	± 3.0 °C	± 3.0 °C
	R: 300 < TS ≤ 1600 °C	± (0.05% of rdg. + 2.0 °C)	± 2.2 °C	± (0.05% of rdg. + 2.0 °C)
	S: 300 < TS ≤ 1760 °C	± (0.05% of rdg. + 2.0 °C)	± 2.2 °C	± (0.05% of rdg. + 2.0 °C)
B	400 ≤ TS ≤ 600 °C	± 3.5 °C	± 3.5 °C	± 3.5 °C
	600 < TS ≤ 1820 °C	± (0.05% of rdg. + 2.0 °C)	± 2.5 °C	± (0.05% of rdg. + 2.0 °C)
K	-200 ≤ TS ≤ -100 °C	± (0.05% of rdg. + 2.0 °C)	± 1.5 °C	± (0.05% of rdg. + 2.0 °C)
	-100 < TS ≤ 1370 °C	± (0.05% of rdg. + 1.0 °C)	± 0.8 °C	± (0.05% of rdg. + 1.0 °C)
E	-200 ≤ TS ≤ -100 °C	± (0.05% of rdg. + 2.0 °C)	± 1.0 °C	± (0.05% of rdg. + 2.0 °C)
	-100 < TS ≤ 800 °C	± (0.05% of rdg. + 1.0 °C)	± 0.8 °C	± (0.05% of rdg. + 1.0 °C)
T	-200 ≤ TS ≤ -100 °C	± (0.1% of rdg. + 1.5 °C)	± 1.5 °C	± (0.1% of rdg. + 1.5 °C)
	-100 < TS ≤ 400 °C	± (0.1% of rdg. + 0.5 °C)	± 0.6 °C	± (0.1% of rdg. + 0.5 °C)
J	-200 ≤ TS ≤ -100 °C	± 2.7 °C	± 1.0 °C	± 2.7 °C
	-100 < TS ≤ 100 °C	± 1.7 °C	± 0.8 °C	± 1.7 °C
	100 < TS ≤ 1100 °C	± (0.05% of rdg. + 1.0 °C)	± 0.6 °C	± (0.05% of rdg. + 1.0 °C)
N	-200 ≤ TS < 0 °C	± (0.1% of rdg. + 2.0 °C)	± 2.2 °C	± (0.1% of rdg. + 2.0 °C)
	0 ≤ TS ≤ 1300 °C	± (0.1% of rdg. + 1.0 °C)	± 0.8 °C	± (0.1% of rdg. + 1.0 °C)
W	0 ≤ TS ≤ 2000 °C	± (0.1% of rdg. + 1.5 °C)	± 1.8 °C	± (0.1% of rdg. + 1.5 °C)
R.J.C.		± 0.5 °C	± 0.3 °C	± 0.5 °C

Temperature (RTD) [16]

Type	Measurement range [15]	Measurement accuracy	Measurement accuracy	Measurement accuracy
Pt100	-200 ≤ TS ≤ 100 °C	± 1.0 °C	± 0.6 °C	N/A
	100 < TS ≤ 500 °C		± 0.8 °C	
	500 < TS ≤ 850 °C		± 1.0 °C	
JPt100	-200 ≤ TS ≤ 100 °C	± 0.8 °C	± 0.6 °C	
	100 < TS ≤ 500 °C		± 0.8 °C	
Pt1000	-200 ≤ TS ≤ 100 °C	± 0.8 °C	± 0.6 °C	
	100 < TS ≤ 500 °C		± 0.8 °C	

Item		Description		
A/D converter		Sigma-Delta type, 16 bits (effective resolution: 1/40000 of the measuring full range)		
Maximum input voltage	Between (+) / (-)	20 mV to 2 V range: 60 Vp-p, 5 V to 100 V range: 110 Vp-p		20 mV to 1 V range: 60 Vp-p, 2 V to 100 V range: 110 Vp-p
	Channels ((-) / (-))	60 Vp-p	600 Vp-p	60 Vp-p
	Channel / GND	60 Vp-p	300 Vp-p	60 Vp-p
Max. voltage (withstand)	Between channels	350 Vp-p (1 minute)	600 Vp-p (1 minute)	350 Vp-p (1 minute)
	Channel / GND	350 Vp-p (1 minute)	2300 Vrms AC (1 minute)	350 Vp-p (1 minute)

Options and Accessories

Item	Model number	Description
Input terminal (Multi-input)	B-564	20ch input terminal, multi-input type, for GL840
Input terminal (Withstand voltage)	B-565	20ch input terminal, withstand-high-voltage type, for GL840
Base unit for input terminal	B-566	Base unit for input terminal (B-564 or 565), for GL840
Connection cable for extension terminal	B-567-05	Cable to connect GL840 and B-566, 50 cm long
	B-567-20	Cable to connect GL840 and B-566, 2 m long
Battery pack	B-569	Rechargeable Lithium-ion battery (7.2 V, 2900mAh)
Bracket for DIN rail (GL840 main body)	B-570	Bracket for DIN rail (GL840 main body), for GL840, Build-to-order
Bracket for DIN rail (extension terminal)	B-540	Bracket for DIN rail (B-566 terminal base), for GL840, Build-to-order
Input/Output cable for GL series	B-513	2 m long (no clip on end of cable)
DC drive cable	B-514	2 m long (no clip on end of cable)
Humidity sensor	B-530	With 3 m long signal cable (with power plug)
Shunt resistor	B-551-10	250 ohms (it converts the signal to the "1-5V" from the "4-20mA")
AC power adapter	ACADP-20	Input: 100 to 240 V AC, Output: 24 V DC
Temp & Humidity sensor	GS-TH	Temperature and humidity measurement, for GL840
Illuminance & UV sensor	GS-LXUV	Illuminance and UV measurement, cable 20cm long, for GL840
Carbon Dioxide (CO2) sensor	GS-CO2	CO2 measurement, cable 20cm long, for GL840
Acceleration & Temp sensor	GS-3AT	Acceleration and temp. measurement, cable 20cm long, for GL840
Thermistor input terminal	GS-4TSR	Temp measurement (using a Thermistor), cable 20cm long, for GL840
Thermistor sensor (Normal type)	GS-103AT-4P	Temperature sensor (-40 to 105 °C), 3m long, 4pcs/set, for GS-4TSR
Thermistor sensor (Ultrathin type)	GS-103JT-4P	Temperature sensor (-40 to 120 °C), 3m long, 4pcs/set, for GS-4TSR
AC current sensor adapter	GS-DPA-AC	Current measurement (using a CT), cable 20cm long, for GL840
AC current sensor (50A)	GS-AC50A	Current sensor (CT) 50A, cable 20cm long, for GS-DPA-AC
AC current sensor (100A)	GS-AC100A	Current sensor (CT) 100A, cable 20cm long, for GS-DPA-AC
AC current sensor (200A)	GS-AC200A	Current sensor (CT) 200A, cable 20cm long, for GS-DPA-AC
Voltage & Temp input terminal	GS-4VT	Voltage or Temp (using a thermocouple), cable 20cm long, for GL840
Module extension cable	GS-EXC	Extension cable for the sensor/terminal, 1.5m long, for GL840
Dual port adapter	GS-DPA	Connect up to 2 sensor modules, for GL840

• 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.