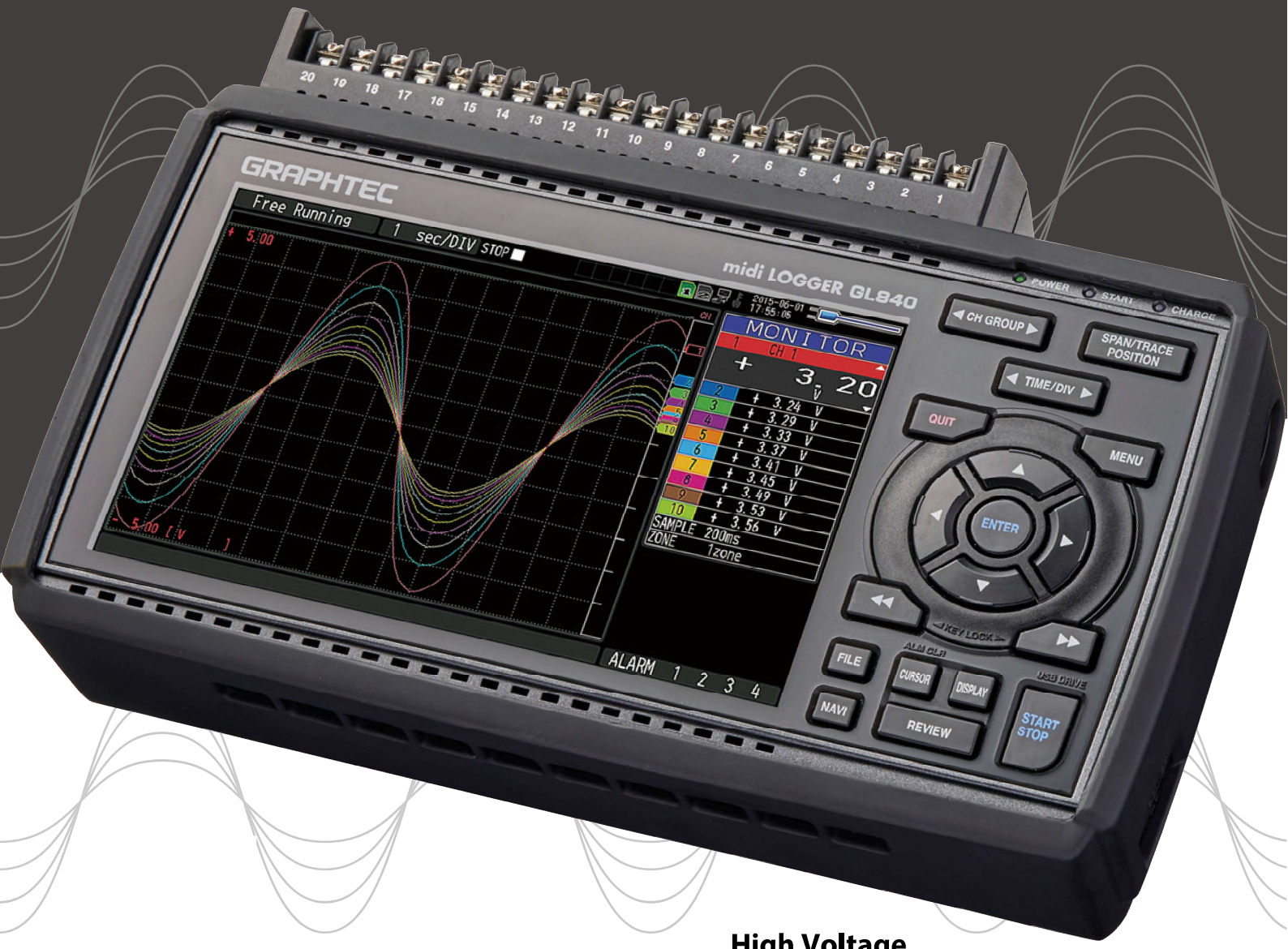
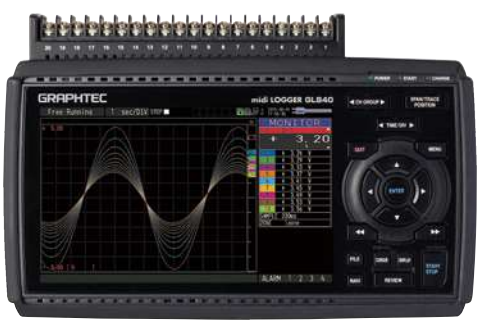
GRAPHTEC

Isolated/Universal Input, Standalone Multi-Channel Datalogger

midi LOGGER
GL840-M / GL840-WV



Multi-Input Model midi LOGGER GL840-M



High Voltage Withstand Model midi LOGGER GL840-WV

www.graphteccorp.com

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

Withstand voltage & Accuracy		Multi-input type (B-564)	Withstand-voltage type (B-564)
Voltage	Input voltage range	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), Pt1000 (IEC751), JPt100 (JIS)	
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 temperature levels and

Setting New Industry Standards for It's Class

Accommodates a wide variety of measurements

Multifunction analog input ports

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

Built-in 8GB Flash memory with SD card support

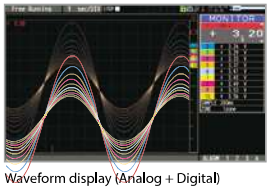
The SD card slot supports an SDHC memory card of up to 32GB.

Maximum sampling interval of up to 10ms

Provides faster sampling rates for voltage measurements.Up to 10ms sampling speed is achievable when limiting the number of channels in use.

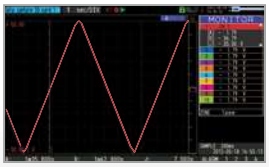
Carries a clear 7-inch wide TFT color LCD screen (WVGA: 800 x 480 dots) for GL840

Monitoring data can be displayed in waveform or digital form. Parameter settings can be displayed on the screen.



Waveform display (Analog + Digital)

Digital display

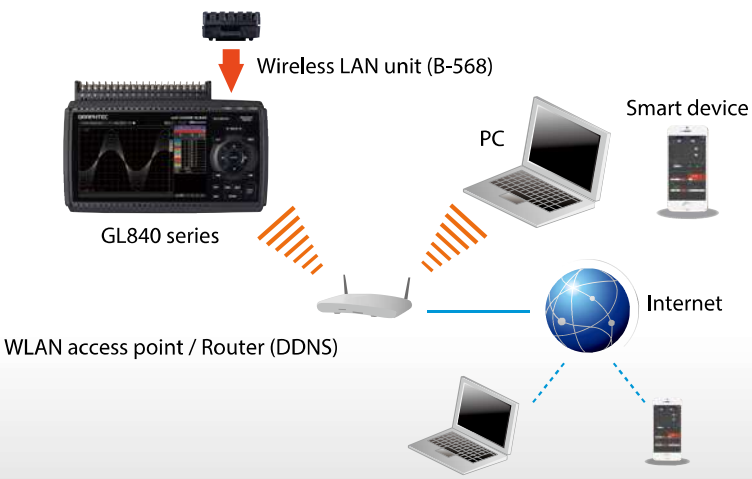


Dual display (Current + Past)

Bar chart (Integrated data in a stacked bar chart)

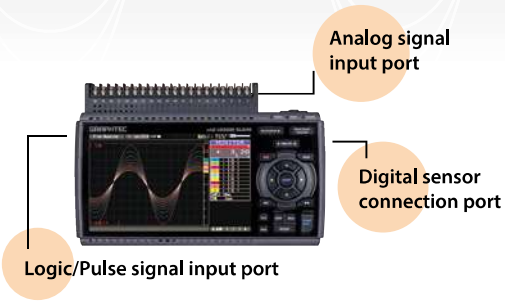
Wireless Measurement Using WLAN (option)

Wireless LAN option enables the wireless communication with other devices. Connects to the GL100-WL wireless unit remotely when set as an access point. When set as a station, PC and smart devices will be able to access the WLAN unit directly.



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.



Useful functions

Alarm output function

Alarm signals can be placed using four channel alarm output ports based on set conditions for each channel.

USB drive mode

Enables data to be transferred to the PC from GL840 by drag & drop.

Ring capture function

The most recent data is saved when the memory is configured in ring memory mode. (Number of capturing data is 1,000 to 2,000,000 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.

Expandable up to 200 channels

Input terminal blocks can be connected directly (in daisy chain), or by using B-565 cable(s).
This allows the input terminals to be placed in separate locations according to the need of the application.
The image shows how a standard configuration is expanded to 40 channels configuration.

Terminal unit is removed from the main body of the GL840.
The combined extension terminal base set (B-566) and additional input terminals (B-564 or -565) are daisy chained together.

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

GL840 series

WLAN, 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, bar chart*. * Software ver.1.10 or later.
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

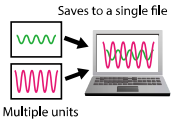
Scheduling function

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.

Easily creatable schedule table using only a mouse.



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.

GL840 Main unit specifications

Item		Description	
Model number		GL840-M	GL840-WV
Number of analog input channels		20 channels in standard configuration, Expandable up to 200 channels	
Number of analog input terminals		Up to 10 terminals (20 channels / terminal), standard config:1	
Type of analog input terminal		Multi-input type, Withstand-voltage type	
Port for digital sensor		1 port for the sensor/input terminal/adapter of the GL100	
External input/ output (*1)	Input (*2)	Trigger or Sampling (1 channel), Logic/Pulse (4 channels)	
	Output (*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: AND / OR 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)	
	Maximum number of pulse inputs	Maximum input frequency : 50kHz Maximum number of count : 50kC/sampling (16-bit counter)	
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 (10 BASE-T/100 BASE-TX), USB (Hi-speed), WLAN (using B-568 option)	
Storage device	Internal	Built-in 8GB Flash Memory (*6)	
	External	One SD card slot (Supports SDHC memory card, up to 32GB) (*7)	
	Saved contents	Captured data, Setting conditions, Screen copy	
Data save function	Capture destination	Internal memoryor SD memory card	
	Captured data	Settings, Screen data, Measurement data, Integrated bar graph data(page)	
Data backup function(*8)	Backup Interval	Off, 1, 2, 6, 12, 24 hours	
	Backup Destination		
	File Type	GBD/CSV	
Checksum function The checksum is available only for GBD format.		OFF: The checksum is not applied to the data file. ON: The checksum is applied to the data file. The checksum verification can be done either on main unit or GL-Connection (*9)	
Capturing mode		Mode: Normal, Ring, Relay Ring: Saves most recent data (Number of capturing data: 1000 to 2000000 points) (*10) Relay: Saves data to multiple files without losing data until dada capturing is stopped	
Replay data		Replays captured data that was saved in the GL840 (in GBD or CSV format)	
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 TFT color LCD (WVGA: 800 x 480 dots)	
	Language	English, French, German, Chinese, Korean, Russian, Spanish, Japanese	
	Information (*11)	Waveform in Y-T with digital values, Waveform only, Digital value, Digital values and statistics values, Bar chart	
Operating environment		0 to 45 °C, 5 to 85 % RH (non condensed) (When operating with battery pack 0 to 40 °C, charging battery 15 to 35 °C)	
Power sourc	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 two battery packs (battery pack (option B-569): 7.2V DC, 2900mAh)	
Power consumption (*12)		Max. 38 VA	
External dimensions (W x D x H, Excluding projections)		Approx. 246 x 161 x 58.2 mm (with the cover)	Approx. 246 x 170.4 x 58.2 mm (with the cover)
Weight (*13)		Approx. 1218 g (the cover is attached)	Approx. 1244 g (the cover is attached)

GL840 Analog input specifications

Item			Description	
Model number			GL840-M, Input terminal B-564	GL840-WV, Input terminal B-565
Input method			All channels isolated balanced input (*14), Scans channels for sampling	
Type of input terminal			Screw terminal (M3 screw)	
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 (*15)	
	RTD (Resistance Temperature Detector)		Type: Pt100 (IEC751), Pt1000 (IEC751), JPt100 (JIS) Range: 100, 500, 2000 °C (*15)	
	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 (*16)				
Voltage			± 0.1% of F.S. (Full Scale)	± (0.05% of F.S. + 10µV)
Temperature (Thermocouple) (*17)				
	Type	Measurement range (TS: Temp Sense)	Measurement accuracy	Measurement accuracy
	R	0 ≤ TS ≤ 100 °C	± 5.2 °C	± 4.5 °C
		100 < TS ≤ 300 °C	± 3.0 °C	± 3.0 °C
		300 < TS ≤ 1600 °C	± (0.05% of rdg. + 2.0 °C)	± 2.2 °C
	S	0 ≤ TS ≤ 100 °C	± 5.2 °C	± 4.5 °C
		100 < TS ≤ 300 °C	± 3.0 °C	± 3.0 °C
		300 < TS ≤ 1760 °C	± (0.05% of rdg. + 2.0 °C)	± 2.2 °C
	B	400 ≤ TS ≤ 600 °C	± 3.5 °C	± 3.5 °C
		600 < TS ≤ 1820 °C	± (0.05% of rdg. + 2.0 °C)	± 2.5 °C
	K	-200 ≤ TS ≤ -100 °C	± (0.05% of rdg. + 2.0 °C)	± 1.5 °C
		-100 < TS ≤ 1370 °C	± (0.05% of rdg. + 1.0 °C)	± 0.8 °C
	E	-200 ≤ TS ≤ -100 °C	± (0.05% of rdg. + 2.0 °C)	± 1.0 °C
		-100 < TS ≤ 800 °C	± (0.05% of rdg. + 1.0 °C)	± 0.8 °C
	T	-200 ≤ TS ≤ -100 °C	± (0.1% of rdg. + 1.5 °C)	± 1.5 °C
		-100 < TS ≤ 400 °C	± (0.1% of rdg. + 0.5 °C)	± 0.6 °C
	J	-200 ≤ TS ≤ -100 °C	± 2.7 °C	± 1.0 °C
		-100 < TS ≤ 100 °C	± 1.7 °C	± 0.8 °C
		100 < TS ≤ 1100 °C	± (0.05% of rdg. + 1.0 °C)	± 0.6 °C
	N	-200 ≤ TS < 0 °C	± (0.1% of rdg. + 2.0 °C)	± 2.2 °C
		0 ≤ TS ≤ 1300 °C	± (0.1% of rdg. + 1.0 °C)	± 1.0 °C
	W	0 ≤ TS ≤ 2000 °C	± (0.1% of rdg. + 1.5 °C)	± 1.8 °C
	R.J.C.		± 0.5 °C	± 0.3 °C
Temperature (RTD) (*18)				
	Type	Measurement range (TS: Temp Sense)	Measurement accuracy	Measurement accuracy
	Pt100	-200 ≤ TS ≤ 100 °C	± 1.0 °C	± 0.6 °C
		100 < TS ≤ 500 °C		± 0.8 °C
		500 < TS ≤ 850 °C		± 1.0 °C
	Pt1000	-200 ≤ TS ≤ 100 °C	± 0.8 °C	± 0.6 °C
		100 < TS ≤ 500 °C		± 0.8 °C
	JPt100	-200 ≤ TS ≤ 100 °C	± 0.8 °C	± 0.6 °C
		100 < TS ≤ 500 °C		± 0.8 °C
A/D converter			Sigma-Delta type, 16 bits (effective resolution: 1/40000 of the measuring full range)	
Maximum input voltage	Between (+) / (-) terminal		20 mV to 2 V range: 60 Vp-p, 5 V to 100 V range: 110 Vp-p	
	Channels ((-) / (-))		60 Vp-p	600 Vp-p
	Channel / GND		60 Vp-p	300 Vp-p
Max. voltage (withstand)	Between channels		350 Vp-p (1 minute)	600 Vp-p
	Channel / GND		350 Vp-p (1 minute)	2300 Vrms AC (1 minute)

*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: Max. 30V, • Current: Max. 0.5A, • Collector dissipation: Max. 0.2W
*4. Minimum interval varies by number of channels used.
*5. Output port can be specified in each input channel.
*6. The built-in Flash memory is available for units with serial numbers C604xxxxx or later.
Please contact your local representative for more information.
*7. SD memory card cannot be used on the second slot while the wireless LAN unit (option B-568) is used.
*8. When the backup file is in CSV format, the firmware must be Ver. 1.43 or later.
If ring capture or external sampling is On, the backup function is not available.
It may take some time to save the data if many channels are used, the sampling speed is fast, the backup duration is long, or backup data is large.
*9. Waveform viewer software for GL series. The software is free of charge and available to downloaad on Graphtec website.
*10. Size of the capture data will be limited to 1/3 of available memory.
*11. 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.
*12. Rating under maximum power consumption using the AC adapter, with LCD display on, and battery pack(s) being charged.
*13. Excludes AC adapter and battery pack.
*14. The terminal "b" for using the RTD is connected each other across all channels.
*15. 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.
*16. Subject to the following conditions:
• Room temperature is 23 °C ± 5 °C.
• When 30 minutes or more have elapsed after power has turned on.
• Filter is set to 10.
• Sampling rate is set to 1 sec, using 20-channel in GL840-M and 10-channel in GL840-WV.
• GND terminal is connected to ground.
*17. Wire size of thermocouple used is 0.32mm diameter in the T or K type and 0.65mm diameter in other types.
*18. Supports 3-wire type sensor.

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 toavoid data loss.
Brand names and product names listed in this brochure are the trademarks or registered trademarks of their respective owners.
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.

GRAPHTEC
Graphtec Corporation
503-10 Shinano-cho, Totsuka-ku, Yokohama 244-8503, Japan
Tel : +81-45-825-6250 Fax : +81-45-825-6396
Website http://www.graphteccorp.com

CE