# **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
- Wireless LAN capability for remote monitoring and remote datalogging system
- Extended memory capacity using SD memory card
- Maximum sampling interval of up to 10ms











www.graphtecamerica.com

# midi LOGGER GL840<sub>series</sub> & GL240





GL840 series

GL240

# Setting New Industry Standards for It's Class

# Accommodates a wide variety of measurements

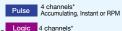
### ■ Multifunction analog input ports

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

# ■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



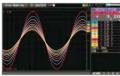


Humidity 0 to 100%RH - using optional sensor (B-530)

\* 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 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)

# **Useful functions**

# ■ Displays the data by a bar chart

The integrated data that is measured by the digital sensors can be displayed by a bar chart in the GL840 series. Multiple bar chart types are available. Data can also be displayed as a line chart when the GS-TH (Temp/Humidity), GS-DPA-AC with GS-ACxxx (AC current/power) or GS-LXUV (Illuminance/UV) digital sensor is used. The digital sensor can be connected to the GL840 or the GL100-WL. The GL100-WL is used combining with the GL840/GL240. \* Firmware ver.1.10 or later.

### ■ Alarm output function

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

Input/output cable (B-513 option) is required to connect the alarm output ports to external buzzer/light mechanism

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

# 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.

Model	Samplir	ng interval	10ms	20ms	50ms	100ms	200ms	500ms	1s	2s	
Model	Number	of channel	1	2	5	10	20	50	100	200	
CL 040	.840 Measuring		Voltage	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GL040		Temperature	N/A	N/A	N/A	Yes	Yes	Yes	Yes	Yes	
CL 040	Measuring	Voltage	Yes	Yes	Yes	Yes	Yes(10ch)	Yes(10ch)	Yes(10ch)	Yes(10ch)	
GL240		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 GL 100-WL are used as a remote

# **Built-in 4GB Flash memory** with SD card support

The new GL series enables reliable long term measurement with its built-in 4GB flash memory and SD card slot for external storage devices. The SD card slot supports an SDHC memory card of up to 32GB.

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

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

<sup>\*</sup> 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

# 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

\* When the wireless sensor (GL100-WL) is connected, the sample interval among 10, 20, and 50ms cannot be replaced during recording.

# ■ Navigation function

Simple to use navigation screen allows setting operation for measurement and wireless LAN adapter in GL840.

### ■ 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.

#### Multi-input type Withstand-voltage Withstand voltage & Accuracy (B-564) type (B-565) 20 mV to 100 V 20 mV to 100 V Input voltage range Voltage Max. voltage (Input - GND) 60 Vp-p 300 Vp-p R, S, B, K, E, T, J, N, W (WRe5-26) Thermocouple Pt100 (IEC751), Pt1000 (IEC751), JPt100 (JIS) RTD (Resistance Temp Dete $\pm (0.05\% \text{ of FS} + 10\mu\text{V})$ Voltage ± 0.1% of F.S. Accuracy ± 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 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

body of the GL840.



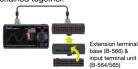
3. Terminal unit snaps onto the extension 4. The combined extension terminal terminal base unit (B-566).



#### 1. Terminal unit is removed from the main 2. Extension terminal base unit (B-566) connects to the GL840 using the external cable (B-567).



base set (B-566) and additional input terminals (B-564 or -565) are daisy chained together.



### 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

<sup>\*</sup> Input terminal blocks for the B-564 and B-565 can be mixed together for combined configurations. However, the mum 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.



# 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



# Support digital sensors

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



GS-4VT



Thermistor

adapter

GS-4TSR

**AC** current sensor adapter GS-DPA-AC



GS-I XUV



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

# High performance software with useful functions for the PC (GL100\_240\_840-APS)

# GL840 series GL240

WLAN. Ethernet or USB

(Software)

# ■ Supports GL840, GL240, GL100

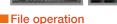
Up to 10 units of GL840, GL240 and GL100 can be connected to 1 PC simultaneously. Up to 1000 channels are supported.

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.





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

MARAN

# 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.

# **Wireless Measurement Using WLAN (option)**

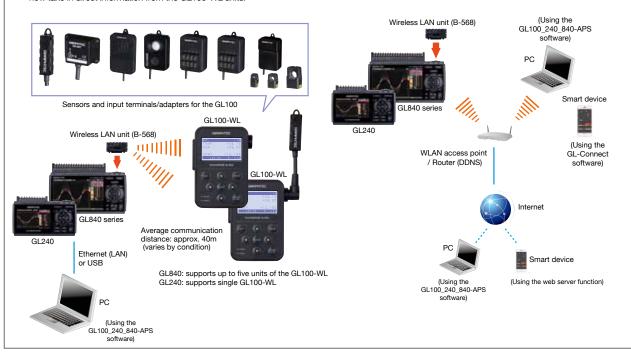
Wireless LAN option enables the wireless communication with other devices. Connects to the GL100-WL wireless unit remotely when set as an access point. When set as a station, PC and smart devices will be able to access the WLAN unit directly.

## ■ Combining GL100-WL and GL240/GL840

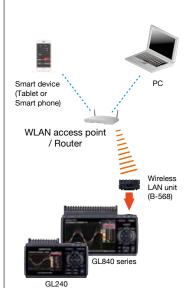
GL100-WL can now be connected to the GL840 or GL240 as a remote sensor using the WLAN feature. You can expand your measurement variety by adding the sensors available on the GL100-WL unit. The measured value will then appear in a single file along with the measurement values from the GL840/GL240 main inputs. GL840/GL240 will now take in direct information from the GL100-WL units.

# Communication with PC or Smart device GL840 and GL240 units can be connected to a LAN

GL840 and GL240 units can be connected to a LAN (Local Area Network) via a WLAN access point. Measured data can be monitored and controlled via a PC or a smart device using the application software. Configuration of GL840/GL240 can be set via the network. Available functions vary by the network configuration.



# High quality performance and measurement software with useful functions for PC & smart devices



# For PC (GL100 240 840-APS)

Software for the PC is included as a standard accessory.

- Monitor and save captured data remotely
- Control the GL840/GL240
- Additional functions
  - Scheduling function Group function Data format conversion File operation And more!

# For Smart device (GL-Connect)

Apps for the smart devices are available on the Android OS and iOS platforms. Download them free from the individual stores.

# ■ Monitoring captured data

Real time captured data can be displayed as digital values in real time on the smart device apps. The saved data on the GL840/GL240 main body can also be displayed in waveform display format.

\*Captured data will not be saved on the smart device.



\* Please type "graphtec" to search for the app.

### Set and control simple functions

Dedicated control features allow remote start and stop, setting the sampling interval, and setting the alarm conditions.

# ■ Control the settings remotely

Web server function of the GL840/GL240 allows remote control and monitoring using this application.



	n unit specificat					
Item		Description	T			
Model number		GL840-M	GL840-WV			
	alog input channels	20 channels in standard configuration, Expandable up to 200 channels				
	alog input terminals	Up to 10 terminals (20 channels / terminals				
	input terminal	Multi-input type, Withstand-voltage type				
Port for digital		1 port for the sensor/input terminal/adap				
External input/		Trigger or Sampling (1 channel), Logic/Pr	ulse (4 channels)			
output (*1)	Output (*3)	Alarm (4 channels)				
Sampling inter		10 ms to 1 hour (10ms to 50ms: voltage of	nly) (^4), External signal			
	waveform display	1 sec. to 24 hour /division				
Trigger,	Trigger action	Start or stop capturing data by the trigge	er			
Alarm function	Repeat action	Off, On (auto rearmed) Start: Off, Measured signal, Alarm, Exter	and Olevela Wards on Three			
	Trigger source					
	O distant O - stales -	Stop: Off, Measured signal, Alarm, Exter	nai, Clock, week or Time			
	Condition Setting	Combination: AND / OR	A Mile de la Mile de la contra del contra de la contra del contra de la contra del l			
		Analog signal: Rising (High), Falling (Low	**			
		Logic signal: Pattern (combination of each Pulse (number of count): Rising (High), F				
	Alama andra d	, , ,				
Pulse input	Alarm output Rotation count	Outputs a signal when alarm condition or Counts the number of pulses per sampli				
function	(RPM) mode					
TUTICLIOT	(NPIVI) IIIOGE	(rotations per minute), Number of pulses				
	A a a como datin a	50, 500, 5000, 50k, 500k, 5M, 50M, 500l Accumulates the number of pulses from				
	Accumulating count mode	50, 500, 5000, 50k, 500k, 5M, 50M, 500l				
	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	Between channels	Addition, Subtraction, Multiplication, and Division for analog input				
function	Statistical					
Search function		Select two calculations from Average, Peak, Maximum, Minimum, RMS  Search for analog signal levels, values of logic or pulse or alarm point				
Search luncuo	11	in captured data	logic or pulse or alarm point			
Interface to PC		Ethernet (10 BASE-T/100 BASE-TX), USB (Hi-speed), WLAN (using B-568 option)				
Storage	Internal	Built-in 4GB Flash Memory (*6)				
device	External	One SD card slot (Supports SDHC mem	ony card up to 32GB) (*7)			
401.00	Saved contents	Captured data, Setting conditions, Scree				
Capturing mod		Mode: Normal, Ring, Relay	псору			
Capturing mod	36		apturing data: 1000 to 2000000 points) (*8)			
			losing data until dada capturing is stopped			
Replay data		Replays captured data that was saved in the GL840 (in GBD or CSV format)				
	eering unit) function	Measured value can be converted to spe				
ooumig (Engine	soming army randulon					
		Analog voltage: Converts using four reference points (gain, offset)     Temperature: Converts using two reference points (offset)				
		Pulse count: Converts using two reference points (onset)     Pulse count: Converts using two reference points (gain)				
Action during	data capture	Displaying past data (using dual display				
		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, Korei				
	Information (*9)	Waveform in Y-T with digital values, Wavefor				
		statistics values, Bar chart	,, , , , , , , , , , , , , , , , , , , ,			
Operating envi	ironment	0 to 45 °C, 5 to 85 % RH (non condensed)				
		(When operating with battery pack 0 to 4				
Power source	AC adapter	100 to 240 V AC, 50/60 Hz (1 pc of adap				
	DC power	8.5 to 24 V DC (DC drive cable (option B				
	Battery pack	Mountable two battery packs (battery pa				
Power consun		Max. 38 VA				
	nsions (W x D x H	Approx. 240 x 158 x 52.5	Approx. 240 x 166 x 52.5			
	ing projections)		I			
Weight (*11)	· · · · · · · · · · · · · · · · · · ·	Approx. 1010 g Approx. 1035 g				
Software sr	pecifications for	PC				

Item		Description			
Model name		GL100_240_840-APS			
Supported OS		Windows 10, 8.1, 8, 7, Vista (32/64-bit edition)			
Supported dev	vice .	GL840 (USB, Ethernet, WLAN), GL240 (USB, WLAN), GL100 (USB, WLAN)			
Functions		Control the GL series, Real-time data capture, Replay data, and Data format conversion			
Supported uni	ts & channels	Up to 1000 channels total, Up to 4 groups (number of units is limited by model)			
Settings contri	ol	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 info	rmation	Y-T waveform, Digital values, Report, X-Y graph (specified period of data, data			
		reply only), Two displays for the current and past data, Statistical calculation, and			
		Integrated value in a bar chart			
File operation		Converting data format to CSV from GBD binary, merge multiple data files			
		in the time axis or as an additional channel			
Warning functi	ion	Send e-mail to the specified address when the alarms occur			
Statistical calc	ulation	Maximum, Minimum, and Avarage during data capturing			
Report functio	n	Creates the daily or monthly report automatically			

Software specifications for	r Smart device
Item	Description
Model name	GL-Connect
Supported OS	Android 4.1 to 4.4, iOS 7/8
Supported device	GL840 (WLAN), GL240 (WLAN), GL100 (WLAN)
Functions	Control the GL series, Display measured data in waveform or digital value
Supported units	Up to 10 units
Settings control	Start/Stop, Sampling interval
Capturing data	Saves captured data in the GL main body (data cannot be saved in the smart device)
Displayed information	Data captured in real time by digital value, Replay the data stored in the GL body by the waveform

Wireless LAN unit (option)	specifications
Item	Description
Model number	B-568
Supported device	GL840, GL240
Communication method	Wireless communication (using radio waves in the 2.4GHz band)
Supported WLAN system	IEEE802.11b/g/n
	WPS: Push button or PIN method
	Security protocols: WEP64, WEP128, WPA-PSK/WPA2-PSK, AKIP/AES
	Communication distance: Approx. 40m (depending on the conditions of radio
	communication)
Installed location	Attaches to the SD card slot on the GL840/GL240 (*7)
Function	Access Point mode: Communicate with the GL100-WL as a remote sensor
	(captured data in the GL100-WL is transferred to GL840/GL240)
	Station mode: Communicate with PC or Smart device (control GL840/GL240 and
	transfer the data from GL840/GL240)
Connected number of GL100-WL	GL840: Up to 5 units of the GL100-WL
	GL240: 1 unit of the GL100-WL

GL840	) Anal	og input specifi	cations				
Item			Description				
Model	number		GL840-M. Input terminal B-564	GL840-WV, Input terminal B-565			
Input m	nethod		All channels isolated balanced input (*12), Scans channels for sampling				
Type of input terminal		erminal	Screw terminal (M3 screw)				
Measurement Voltage		Voltage	20, 50, 100, 200, 500 mV, 1, 2, 5, 10, 20,	50, 100 V, and 1-5V F.S. (Full Scale)			
range		Thermocouple	Type: K, J, E, T, R, S, B, N, W (WRe5-26)				
-			Range: 100, 500, 2000 °C (*13)				
		RTD (Resistance	Type: Pt100 (IEC751), Pt1000 (IEC751),	JPt100 (JIS)			
		Temperature Detector)	Range: 100, 500, 2000 °C (*13)	, ,			
		Humidity	0 to 100 % RH - using the humidity sens	sor (option B-530)			
Filter		,	Off, 2, 5, 10, 20, 40 (moving average in s	elected number)			
Measur	rement a	accuracy (*14)	, , , , , , , , , , , , , , , , , , , ,				
Vo	oltage	, , ,	± 0.1% of F.S. (Full Scale)	± (0.05% of F.S. + 10μV)			
Te	mperati	ure (Thermocouple)	(*15)	,			
			Measurement accuracy	Measurement accuracy			
	71	(TS: Temp Sense)	,	,			
	R	0 ≤ TS ≤ 100 °C	+ 5.2 °C	± 4.5 °C			
		100 < TS ≤ 300 °C		± 3.0 °C			
			± (0.05% of rdg. + 2.0 °C)	± 2.2 °C			
	S	0 ≤ TS ≤ 100 °C		± 4.5 °C			
		100 < TS ≤ 300 °C		± 3.0 °C			
			± (0.05% of rdg. + 2.0 °C)	± 2.2 °C			
	В	400 ≤ TS ≤ 600 °C		± 3.5 °C			
	_		± (0.05% of rdg. + 2.0 °C)	± 2.5 °C			
	K		± (0.05% of rdg. + 2.0 °C)	± 1.5 °C			
			± (0.05% of rdg. + 1.0 °C)	± 0.8 °C			
	E		± (0.05% of rdg. + 2.0 °C)	± 1.0 °C			
	_		± (0.05% of rdg. + 1.0 °C)	± 0.8 °C			
	Т		± (0.1% of rdg. + 1.5 °C)	± 1.5 °C			
			± (0.1% of rdg. + 0.5 °C)	± 0.6 °C			
	J	-200 ≤ TS ≤ -100 °C		± 1.0 °C			
	۰	-100 < TS ≤ 100 °C		± 0.8 °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			
			± (0.1% of rdg. + 1.0 °C)	± 1.0 °C			
	w		± (0.1% of rdg. + 1.5 °C)	± 1.8 °C			
	R.J.C.	031032000 0	± 0.5 °C	± 0.3 °C			
Ta		ure (RTD) (*16)	10.00	1 0.0 0			
1,0			Measurement accuracy	Measurement accuracy			
	турс	(TS: Temp Sense)	Weastrement accuracy	ividadirent accuracy			
	Pt100	-200 ≤ TS ≤ 100 °C	+10°C	± 0.6 °C			
	F1100	100 < TS ≤ 500 °C	1.0 0	± 0.8 °C			
		500 < TS ≤ 850 °C		± 1.0 °C			
	PHION	-200 ≤ TS ≤ 100 °C	+08°C	± 0.6 °C			
	1 11000	100 < TS ≤ 500 °C	1 0.0 0	± 0.8 °C			
	ID+100	-200 ≤ TS ≤ 100 °C	+0.8%C	± 0.6 °C			
	JF1100	100 < TS ≤ 500 °C	± 0.8 G	± 0.8 °C			
A/D cor	nyortor	100 < 13 ≤ 300 €	Ciama Dalta tuna 16 bita (affactiva vacal)	ution: 1/40000 of the measuring full range)			
Maximu		Between	20 mV to 2 V range: 60 Vp-p,	ation: 1/40000 of the measuring full range)			
input vo		(+) / (-) terminal	5 V to 100 V range: 110 Vp-p				
iriput vo	unage	(+) / (-) terminal Channels ((-) / (-))		600 Vp-p			
		Channels ((-) / (-)) Channel / GND	60 Vp-p				
May	oltogo		60 Vp-p	300 Vp-p			
Max. vo		Channel / GND	350 Vp-p (1 minute)	600 Vp-p 2300 Vrms AC (1 minute)			
<del></del>			350 Vp-p (1 minute)	` '			

- Max. voltage | Between channels | \$50 Vp-p (1 minute) | \$600 Vp-p (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) |

  3. Signal type: Voltage, Open collector, Contact (relay) |

  3. Output signal: Open collector, Contact (relay) |

  4. 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) |

  4. 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 refer to the website 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. Size of the capture data will be limited to 1/3 of available memory.

  9. 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.

  10. Rating under maximum power consumption using the AC adapter, with LCD display on, and battery pack.

  11. Excludes AC adapter and battery pack.

  12. The terminal "b" for using the RTD is connected each other across all channels.

  13. 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.

  14. Subject to the following conditions:

  8. Room temperature is 23 "C±5" C.

  9. When 30 minutes or more have elapsed after power has turned on.

  19. Filter is set to 10.

  19. Sampling rate is set to 1 sec., using 20-channel in GL840-M and 10-channel in GL840-WV.

  10. Options and Accessories

Item   Model number   Description   Input terminal (Multi-inputs)   B-564   20ch input terminal, multi-input type   Input terminal (Withstand voltage)   B-565   20ch input terminal, withstand-high-voltage type   Base unit for input terminal   B-566   Base unit for input terminal (B-564 or 566)   Connection cable   B-567-05   Cable to connect GL840 and B-566, 50 m long   Greatersion terminal   B-567-20   Cable to connect GL840 and B-566, 2 m long   Wireless LAN unit   B-568   WLAN adapter, IEEE802.11b/g/n   Battery pack   B-569   Rechargeable Lithium-ion battery (7.2 V, 2900mAh)   Bracket for DIN rali (GL840 main body), Build-to-order   Bracket for DIN rali (GL840 main
Input terminal (Withstand voltage) B-565 20ch input terminal, withstand-high-voltage type Base unit for input terminal (B-564 or 566) Connection cable B-567-05 Cable to connect GL840 and B-566, 50 cm long for extension terminal B-567-20 Cable to connect GL840 and B-566, 2 m long Wireless LAN unit B-568 WLAN adapter, IEEE802.11b/g/n Battery pack B-569 Rechargeable Lithium-ion battery (7.2 V, 290mAh) Bracket for DIN rail (GL840 main body) B-570 Bracket for DIN rail (GL840 main body), Build-to-order Bracket for DIN rail (extension terminal) B-540 Bracket for DIN rail (input terminal), Build-to-order
Base unit for input terminal B-566 Base unit for input terminal (B-564 or 566)  Connection cable B-567-05 Cable to connect GL840 and B-566, 50 cm long for extension terminal B-567-20 Cable to connect GL840 and B-566, 2 m long  Wireless LAN unit B-568 WLAN adapter, IEEE802.11b/g/n  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), Build-to-order  Bracket for DIN rail (extension terminal) B-540 Bracket for DIN rail (input terminal), Build-to-order
Connection cable   B-567-05   Cable to connect GL840 and B-566, 50 cm long
for extension terminal B-567-20 Cable to connect GL840 and B-566, 2 m long Wireless LAN unit B-568 WLAN adapter, IEEE802.11b/g/n 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), Build-to-order Bracket for DIN rail (extension terminal) B-540 Bracket for DIN rail (input terminal), Build-to-order
Wireless LAN unit B-568 WLAN adapter, IEEE802.11b/g/n Battery pack B-569 Rechargeable Lithium-ion battery (7.2 V, 290mAh) Bracket for DIN rale (GL840 main body) B-570 Bracket for DIN rali (GL840 main body), Build-to-order Bracket for DIN rali (extension terminal) B-540 Bracket for DIN rali (input terminal), Build-to-order
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), Build-to-order Bracket for DIN rail (extension terminal) B-540 Bracket for DIN rail (input terminal), Build-to-order
Bracket for DIN rail (GL840 main body) B-570 Bracket for DIN rail (GL840 main body), Build-to-order Bracket for DIN rail (extension terminal) B-540 Bracket for DIN rail (input terminal), Build-to-order
Bracket for DIN rail (extension terminal) B-540 Bracket for DIN rail (Input terminal), 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 "4-20m/
AC power adapter ACADP-20 Input: 100 to 240 V AC, Output: 24 V DC
Temp & Humidity sensor GS-TH Temperature and humidity measurement
Illuminance & UV sensor GS-LXUV Illuminance and UV intensity measurement, cable 20cm lo
Carbon Dioxide (CO2) sensor GS-CO2 CO2 measurement, cable 20cm long
Acceleration & Temp sensor GS-3AT Acceleration and temperature measurement, cable 20cm I
Thermistor input terminal GS-4TSR Temp measurement (using a Thermistor), cable 20cm lon
Thermistor sensor (Normal type) GS-103AT-4P Temperature sensor (-40 to 105 °C), 3m long, 4pcs/set
Thermistor sensor (Ultrathin type) GS-103JT-4P Temperature sensor (-40 to 120 °C), 3m long, 4pcs/set
AC current sensor adapter GS-DPA-AC Current measurement (using a CT), cable 20cm long
AC current sensor (50A) GS-AC50A Current sensor (CT) 50A, cable 20cm long
AC current sensor (100A) GS-AC100A Current sensor (CT) 100A, cable 20cm long
AC current sensor (200A) GS-AC200A Current sensor (CT) 200A, cable 20cm long
Voltage & Temp input terminal GS-4VT Voltage or Temperature (using a thermocouple), cable 20cm lon
Module extension cable GS-EXC Extension cable for the sensor/terminal/adapter module, 1.5m l
Dual port adapter GS-DPA Connect up to 2 sensor modules

	n unit specificat					
Item	des lands - t	Description				
	alog input channels	10 channels	Makanah Laria/Duka (Ashanada)			
External input/	,		1 channel), Logic/Pulse (4 channels)			
output (*1)	Output (*3)	Alarm (4 channels)				
Sampling inter			ns to 50ms: voltage only) (*4), External signal			
	waveform display	1sec. to 24 hour /div				
Trigger,	Trigger action		ng data by the trigger			
Alarm function	Repeat action	Off, On (auto rearme				
	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 cou	unt): Rising (High), Falling (Low), Window-in, Window-out			
	Alarm output	Outputs a signal whe	en alarm condition occurs in the input signal (*5)			
Pulse input	Rotation count	Counts the number of	of pulses per sampling interval and converts to rpm			
function	(RPM)		), Number of pulses for one rotation may be set to			
		50, 500, 5000, 50k, 5	500k, 5M, 50M, 500M rpm/F.S. (rpm./Full Scale)			
	Accumulating	Accumulates the nur	nber of pulses from the start of measurement			
	count		500k, 5M, 50M, 500M C/F.S. (Counts/Full Scale)			
	Instant count		of pulses per sampling interval			
	motant oount		500k, 5M, 50M, 500M C/F.S. (Counts/Full Scale)			
Calculation	Between channels		n, Multiplication, and Division for analog input			
unction	Statistical		ns from Average, Peak, Maximum, Minimum, RMS			
Search function	n		anal levels, values of logic or pulse or alarm point			
		in captured data				
nterface to PC			AN (using B-568 option)			
Storage	Internal	Built-in 4GB Flash M				
device	External	One SD card slot (Su	pports SDHC memory card, up to 32 GB) (*7)			
	Saved contents	Captured data, Settin	ng conditions, Screen copy			
Capturing mod		Mode: Normal, Ring,				
. •			ent data (Number of captured data: 1000 to 2000000 points) (			
			multiple files without losing data until data capturing is stoppe			
Replay Data						
	eering unit) function	Replays captured data that was saved in the GL240 (in BGD or CSV format)				
Journal (Engine	borning arms, raniosion	Measured value can be converted to the specified engineering unit				
		<ul> <li>Analog voltage: Converts using four reference points (gain, offset)</li> <li>Temperature: Converts using two reference points (offset)</li> </ul>				
		Pulse count: Converts using two reference points (gain)     Displaying parst data (using dual display mode (Current + Past data))				
Action during	data capture					
		Hot-swapping the SD memory card				
		Saving data in between cursors				
Display (LCD)	Size	4.3-inch TFT color LO	CD (WQVGA: 480 x 272 dots)			
	Language	English, French, German, Chinese, Korean, Russian, Spanish, Japa				
	Information (*9)	Waveform in Y-T with digital values, Waveform only, Digital value, Digital values				
		and statistics values, Bar chart				
Operating env	ironment	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 source	AC adapter		60 Hz (1 pc of adapter is attached as standard accessory)			
	DC power		Irive cable (option B-514) is required)			
	Battery pack		ack (battery pack (option B-569): 7.2V DC, 2900mAh)			
Power consun		Max. 36 VA	ack (batter) pack (option 5 ccc). They be; Eccommun			
		Approx.188 x 117 x 42 mm (Excluding projections)				
	nsions (W x D x H)		42 Milli (Excluding projections)			
Weight (*11)		500 g				
Software s	pecifications for	PC				
Item		Description				
Model name		GL100_240_840-APS	3			
Supported OS			7, Vista (32/64-bit edition)			
Supported dev						
Functions		GL840 (USB, Ethernet, WLAN), GL240 (USB, WLAN), GL100 (USB, WLAN)  Control the GL series, Real-time data capture, Replay data, and Data format conversion				
	te & channole					
Supported uni			total, Up to 4 groups (number of units is limited by model)			
Settings contri			tuering condition, Trigger/Alarm condition, Report, etc.			
Capturing 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 info	rmation	Y-T waveform, Digital values, Report, X-Y graph (specified period of data, data replay only),				
		Two display for the current and past, Statistical caliculation, and Integrated value in a bar chart				
File operation		Converting data format to CSV from GBD binary, merge multiple data files				
		in the time axis or as an additional channel				
Warning functi	on		pecified address when the alarms occur			
Statistical calc						
Report functio		Maximum, Minimum, and Avarage during data capturing  Creates the daily or monthly report automatically				
			norms, report automatically			
Software sp	pecifications for	Smart device				
tem		Description				
Model name		GL-Connect				
Supported OS		Android 4.1 to 4.4, iOS 7/8				
Supported dev		Android 4.1 to 4.4, iOS 7/8  GL840 (WLAN), GL240 (WLAN), GL100 (WLAN)				
Functions			s, Display measured data in waveform or digital value			
	to		s, sopra, measured data in waveloriii or digital value			
Supported uni		Up to 10 units	- Indiana and			
Settings contri		Start/Stop, Sampling				
Capturing data			in the GL main body (data cannot be saved in the smart device			
Displayed info	rmation	Data captured in real time	e by digital value, Replay the data stored in the GL body by the wavefore			
Displayed IIIIO						
Options an	d Accessories					
Options and		Model number	Description			
Options and Item Wireless LAN		B-568	WLAN adapter, IEEE802.11b/g/n			
Options and Item Wireless LAN of Battery pack	unit	B-568 B-569				
Options and Item Wireless LAN Battery pack		B-568	WLAN adapter, IEEE802.11b/g/n			
Options and Item Wireless LAN Battery pack	unit	B-568 B-569	WLAN adapter, IEEE802.11b/g/n Rechargeable Lithium-ion battery (7.2 V, 2900mAh)			

GL240 Anal	og input specif	catio	าร				
Item	og inpat opcom	Descri					
Input method		All channels isolated balanced input(*12), Scans channels for sampling					
Type of input terminal			terminal (M3 screw				
Measurement				1, 2, 5, 10, 20, 50, 100 V, and 1-5V F.S. (Full Scale)			
range	Thermocouple	Type: K, J, E, T, R, S, B, N, and W (WRe5-26)					
9-	Humidity			humidity sensor (option B-530)			
Filter				ng average in selected number)			
Measurement	Voltage		6 of F.S. (Full Scale)	ig avorage in ecocoted maniper,			
accuracy (*13)				Measurement accuracy			
,	(Thermocouple) (*14)	,,,	(TS: Temp Sense)	,			
	(,	R	0 ≤ TS ≤ 100 °C	+ 5.2 °C			
			100 < TS ≤ 300 °C				
				± (0.05% of rdg. + 2.0 °C)			
		S	0 ≤ TS ≤ 100 °C				
			100 < TS ≤ 300 °C	1 1			
				± (0.05% of rdg. + 2.0 °C)			
		В	400 ≤ TS ≤ 600 °C				
				± (0.05% of rdg. + 2.0 °C)			
		K		± (0.05% of rdg. + 2.0 °C)			
		K		± (0.05% of rdg. + 2.0 °C)			
		F					
		E		± (0.05% of rdg. + 2.0 °C)			
		Т		± (0.05% of rdg. + 1.0 °C)			
		1'		± (0.1% of rdg. + 1.5 °C)			
				± (0.1% of rdg. + 0.5 °C)			
		J	-200 ≤ TS ≤ -100 °C				
			-100 < TS ≤ 100 °C	-			
				± (0.05% of rdg. + 1.0 °C)			
			-200 ≤ TS < 0 °C	± (0.1% of rdg. + 2.0 °C)			
				± (0.1% of rdg. + 1.0 °C)			
			0 ≤ TS ≤ 2000 °C	± (0.1% of rdg. + 1.5 °C)			
			R.J.C. ± 0.5 °C				
A/D converter		Sigma-Delta type, 16 bits (effective resolution: 1/40000 of the measuring full range					
Maximum	Between		to 1 V range: 60 Vp				
input voltage	(+) / (-) terminal		100 V range: 110 V	р-р			
	Channels ((-) / (-))	60 Vp					
	Channel / GND	60 Vp-p					
Max. voltage	Between channels						
(withstand)	Channel / GND	350 Vp-p (1 minute)					
Wiveless	Nmit (amtion)		fications				
	N unit (option)						
Item		Description					
Model number		B-568					
Supported GL			), GL240	color and la constant to the O 4OH beauth			
Communicatio				using radio waves in the 2.4GHz band)			
Supported WL	AN system		02.11b/g/n				
			Push button or PIN				
				4, WEP128, WPA-PSK/WPA2-PSK, AKIP/AES			
				Approx. 40m (depending on the conditions of radio			
		communication)					

Connected number of GL100-WL GL840: Up to 5 units of the GL100-WL

communication)

Installed location

Attaches to the SD card slot on the GL840/GL240 (\*7

transfer the data from GL840/GL240)

GL240: 1 unit of the GL100-WL

Access Point mode: Communicate with the GL100-WL as a remote sensor (captured data in the GL100-WL is transferred to GL840/GL240) Station mode: Communicate with PC or Smart device (control GL840/GL240 and

- \*10. Rating under maximum power consumption using the AC adapter, Will LOD display on, allo battley pack.
  \*11. Excludes AC adapter and battery pack.
  \*12. The terminal "b" for using the RTD is connected each other across all channels.
  \*13. Subject to the following conditions:

  Room temperature is 23 "0 ± 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 10-channel.
  GND terminal is connected to ground.

  \*14. Wire size of thermocouple used is 0.32mm diameter in the T or K type and 0.65mm diameter in other types.

- 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.
   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.

Input: 100 to 240 V AC, Output: 24 V DC

With 3 m long signal cable (with power plug)
250 ohms (it converts the signal to the "1-5V" from the "4-20mA")

AC power adapter

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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ACADP-20

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