Isolated/Universal Input, Standalone Multi-Channel Datalogger

midi LOGGER
GL840-M / GL840-WV / GL240

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
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.

**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).
3. Terminal unit snaps onto the extension terminal base unit (B-566).
4. The combined extension terminal base set (B-566) and additional input terminals (B-564 or -565) are daisy chained together.

**Support digital sensors**

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

**Support digital sensors**

- Temp/Humidity
- Acceleration/Temp
- Carbon Dioxide
- Illuminance/UV
- Voltage/Temperature

**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**

- 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.

**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.

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

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

**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.

**Data format conversion**

Converts the GBD (Graphitec 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.

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

**GL240**

- Ethernet or USB
- PC (Software)

**GL240 series**

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

**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.
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.

4 channels* of Logic/Pulse inputs

<table>
<thead>
<tr>
<th>Input terminal</th>
<th>Logic/Pulse signal input port</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>Ranges from 20mV to 100V</td>
</tr>
<tr>
<td>Humidity</td>
<td>0 to 100%RH - using optional sensor (B-530)</td>
</tr>
</tbody>
</table>

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.

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.

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of channel</th>
<th>10ms</th>
<th>20ms</th>
<th>50ms</th>
<th>100ms</th>
<th>200ms</th>
<th>500ms</th>
<th>1s</th>
<th>2s</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL840</td>
<td>Measuring</td>
<td>Voltage</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>GL240</td>
<td>Measuring</td>
<td>Voltage</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* 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)

<table>
<thead>
<tr>
<th>Model</th>
<th>SDHC format</th>
<th>GBD format</th>
<th>CSV format</th>
<th>GBD format</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL840</td>
<td>3 days</td>
<td>31 days</td>
<td>3 days</td>
<td>3 days</td>
</tr>
<tr>
<td>GL240</td>
<td>2 days</td>
<td>20 days</td>
<td>2 days</td>
<td>2 days</td>
</tr>
</tbody>
</table>

* 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.

**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.

**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.
**Interface to PC**

- **Ethernet:** USB 2.0 (Hi-speed)
- **Search for analog signal levels, values of logic or pulse or alarm point in captured data**
- **Calculation**
  - **Settings control**
  - **Measured value can be converted to specified engineering unit**
  - **Scaling (Engineering unit) function**
- **Display (LCD)**
  - **Waveform in Y-T with digital values**
  - **Waveform only**
  - **Digital value**
  - **Digital values**
- **Illuminance and UV measurement**
  - **Cable 20 cm long, for GL840**
- **Temp & Humidity sensor**
  - **Cable 20 cm long, for GL840**
- **Acceleration and temp. measurement**
  - **Cable 20 cm long, for GL840**
- **Thermistor sensor (Normal type)**
  - **Cable 20 cm long, for GL840**
- **Thermistor input terminal**
  - **Cable 20 cm long, for GL840**
- **AC current sensor (100A)**
  - **Cable 20 cm long, for GL840**
- **DC current sensor (100A)**
  - **Cable 20 cm long, for GL840**
- **Thermistor input terminal**
  - **Cable 20 cm long, for GL840**
- **Temp & Humidity sensor**
  - **Cable 20 cm long, for GL840**
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- **Acceleration and temp. measurement**
  - **Cable 20 cm long, for GL840**

**Options and Accessories**

- **Connection cable for extension**
  - **B-551-10**
  - **B-564**
  - **B-565**
  - **GL240**
  - **GL840 series**
  - **GL840-WV**
  - **GL840-M**
  - **GL840 series**

**Software Specifications for PC**

- **Hardware**
  - **OS:** Windows 8.1, 8, 7, Vista (SP2/SP3 edition)
  - **Supported device:** GL840 (Ethernet), GL840-WV, GL840-M, GL840 (USB)
- **Functions**
  - Control the GL series, Real-time data capture, Relay data, and Data format conversion
- **Settings**
  - **Input conditions:** Analog input, Pulse Input
  - **Input signals:** Power supply (10.8V DC, 2.5A), Temperature (0 to 70 ºC, 100% RH), Power consumption: 0.7 W

**Input specifications**

- **Input terminal (Multi-input)**
  - **GL840 series:** Connectable to GL840 series devices
  - **GL840-WV:** 20-channel in GL840-WV, 10-channel in GL840-M
  - **GL840-M:** 10-channel in GL840-M
  - **GL840 series:** Connectable to GL840 series devices

- **Input terminal (WS style)**
  - **GL840 series:** Connectable to GL840 series devices
  - **GL840-WV:** 20-channel in GL840-WV, 10-channel in GL840-M
  - **GL840-M:** 10-channel in GL840-M

**Output specifications**

- **Output terminal (Multi-output)**
  - **GL840 series:** Connectable to GL840 series devices
  - **GL840-WV:** 20-channel in GL840-WV, 10-channel in GL840-M
  - **GL840-M:** 10-channel in GL840-M

**Connect to PC**

- **Ethernet:** USB 2.0 (Hi-speed)
- **Warning function**
  - **Warning message:** Starts alarm or stop capturing data by the trigger

**Digital relay (multi-channel)**

- **GL840 series:** Connectable to GL840 series devices
  - **GL840-WV:** 20-channel in GL840-WV, 10-channel in GL840-M
  - **GL840-M:** 10-channel in GL840-M

**Trigger, Alarm function**

- **Trigger action:** Start or stop capturing data by the trigger
  - **Alarm action:** Alarm input (A channel)

**Display**

- **Display (LCD):** Waveform in Y-T with digital values, Waveform only, Digital value, Digital values

**Power source**

- **DC power:** 8.5 to 24 V DC (DC drive cable (option B-514) is required)
  - **Max. voltage:** 60 Vp-p
  - **Measurement range:** -200 ≤ TS ≤ 1000 ºC

**Sample rate**

- **Sampling rate:** 1 sec, 2 sec, 4 sec, 8 sec, 16 sec, 32 sec, 64 sec, 128 sec, 256 sec, 512 sec

**Trigger or Sampling (1 channel)**

- **Logic/Pulse (4 channels)**
  - **Digital value**
  - **Digital values**
  - **Pulse (number of count): Rising (High), Falling (Low), Window-in, Window-out**
  - **Pulse count: Converts using two reference points (gain)**
  - **Temperature: Converts using two reference points (offset)**
  - **Relay:** Saves data to multiple files without losing data until data capturing is stopped.

**Output function**

- **Output function (PWM)**
  - **Duty cycle:** 0 to 100%
  - **Frequency:** 1 Hz to 1 kHz

**Input/output function**

- **Input/output function (PWM)**
  - **Duty cycle:** 0 to 100%
  - **Frequency:** 1 Hz to 1 kHz

**Characters**

- **Software specifications for PC**
  - **Files:** Windows 8.1, 8, 7, Vista (SP2/SP3 edition)
  - **Supported device:** GL840 (Ethernet), GL840-WV, GL840-M, GL840 (USB)
  - **Functions:** Control the GL series, Real-time data capture, Relay data, and Data format conversion
  - **Settings:** Input condition, Capturing condition, Trigger/Alarm condition, Report, etc.
  - **Capturing data:** Saved to GL unit
  - **Displayed information:** Waveform, Digital value, Report, X-Y graph specified period of data, pulse, data, and Statistical calculation average, standard deviation, min, max, etc.
  - **File operation:** Converting data from CSV to GL800 binary, merging multiple data files in the time axis or in an additional channel

**Temperature calculation**

- **Temperature calculation:** Maximum, Minimum, Average during data capturing

**Report function**

- **Create the daily or monthly report automatically**

### 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.**
- **In the case of using or modifying the equipment, please ensure a ground connection and use according to the specification.**
- **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 when necessary.**
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