

Graphtec GL100-WL and GS Series Sensor Wireless Data Logger Accessories

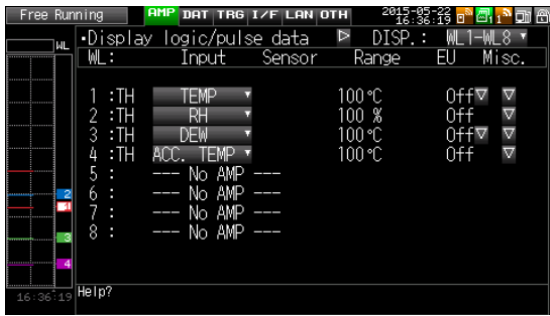


- ✓ Small size of 2.9 × 3.9 × 1.1 inches (74 x 100 x 29 mm), plus sensor
- ✓ Integral WiFi radio for wireless operation
- ✓ Stores data wirelessly to a WiFi-equipped GL240 or GL840
- ✓ GL240 supports one GL100-WL and connected accessories
- ✓ GL840 supports up to 5 GL100-WL and connected accessories
- ✓ Connect GS Series sensors directly to a GL840 without the GL100-WL
- ✓ Built-in LCD display
- ✓ Alarm output
- ✓ Embedded date and time clock
- ✓ Battery-powered by two AA alkaline cells
- ✓ Supports various optional measurement sensors:
 - ✓ 4-channel voltage/thermocouple/pulse
 - ✓ Ambient temperature and humidity
 - ✓ 4-channel thermistor/pulse
 - ✓ 3-axis accelerometer
 - ✓ AC current, power, and energy
 - ✓ CO2 (carbon dioxide)
 - ✓ Light and ultraviolet intensity

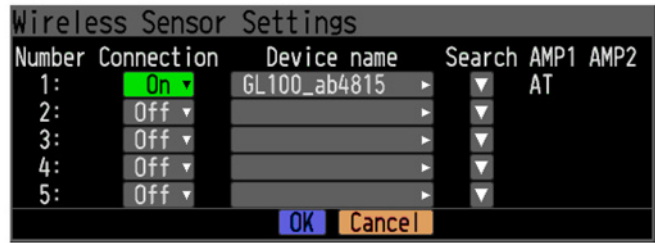
GL100-WL Product Description

Model GL100-WL is a small, lightweight data logger that can operate on two, standard AA alkaline batteries or via a USB cable connected to a power source. The instrument features an integral WiFi radio to allow wireless configuration and communication of measurements from various connected GS Series sensors (optional) to either a GL240 or GL840 data logger equipped with the B-568 wireless option. One GL100-WL may wirelessly connect to the GL240, and up to five simultaneously-connected GL100-WL instruments are supported by the GL840. Further, the GL840 supports the direct connection of GS Series measurement accessories without the need for the GL100-WL wireless data logger. Dedicated set up screens are supplied by the GL240 and GL840 data loggers that allow measurements from GS Series sensors to be folded into the data logger’s native readings.

GL240 Input Settings



GL840 Input Settings



GS Series Sensor Overview

Six GS Series sensors cover a wide range of measurement types. All may be connected to a GL100-WL main unit for wireless transmission to the either the GL240 or the GL840. The GL240 supports one GL100-WL while the GL840 supports up to five. GS Series sensors may also be connected directly to a GL840 using its built-in GS Series connector without the need for a GL100-WL.

3-axis Accelerometer (GS-3AT)



Voltage and Thermocouple (GS-4VT)



CO₂ (GS-CO2)



2-channel Ac Power (GS-DAP-AC)



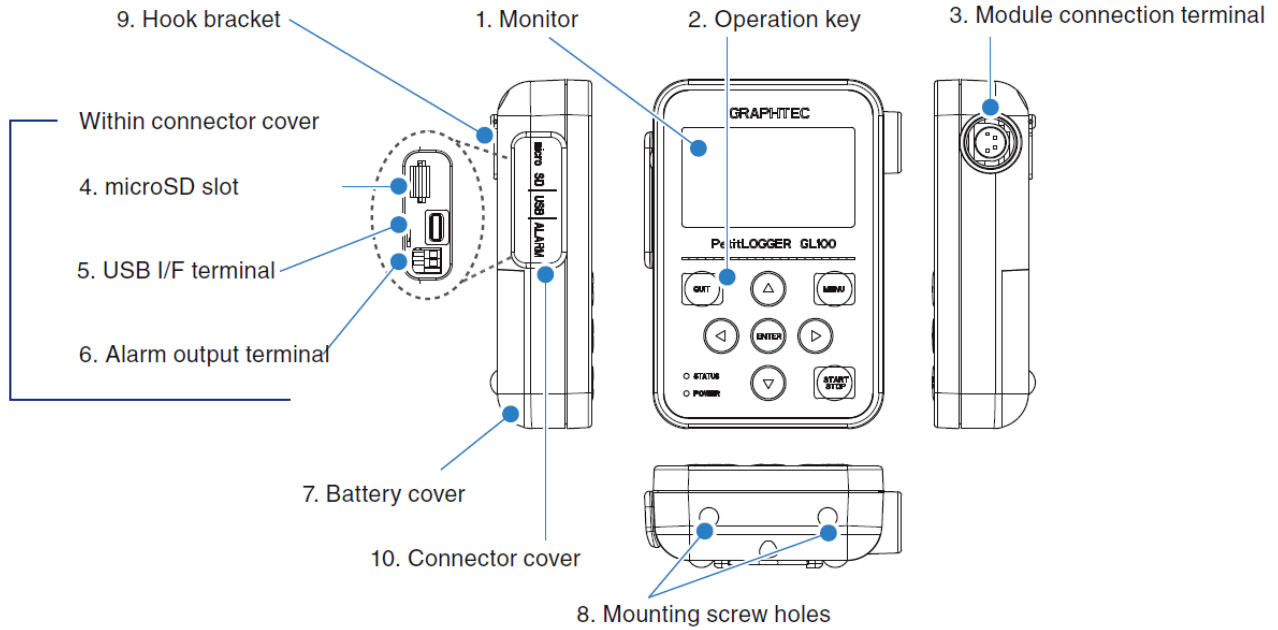
Illuminance / UV (GS-LXUV)



Temperature & RH (GS-TH)

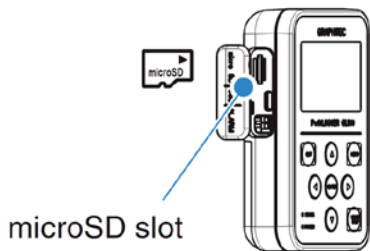


GL100-WL Close-up (Main Module)



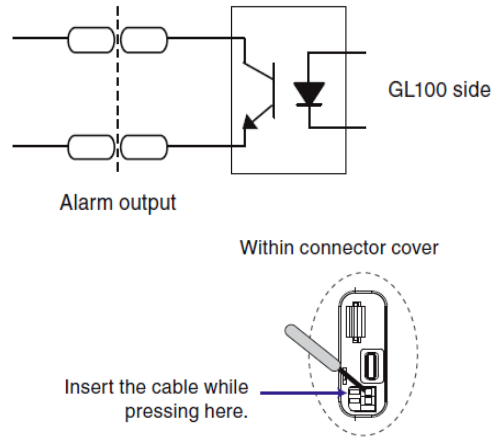
MicroSD Memory

A microSD memory (not supplied) can be used as the data storage target, greatly expanding GL100-WL storage capacity and lengthening record times as a result. Files sizes as large as 1.9 GB are supported on SD memories up to 64 GB.



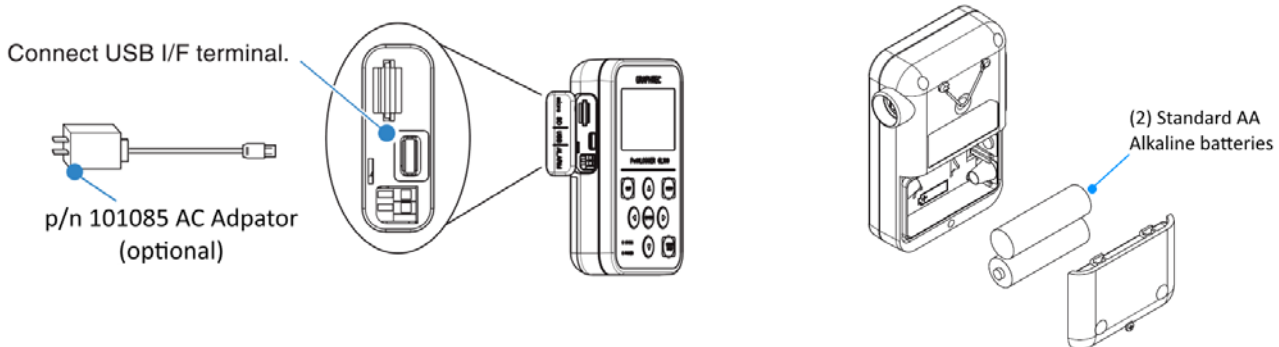
Alarm Output

An isolated alarm output is available on the GL100-WL main unit that can be used to indicate an alarm state to external devices, like a PLC or a light.



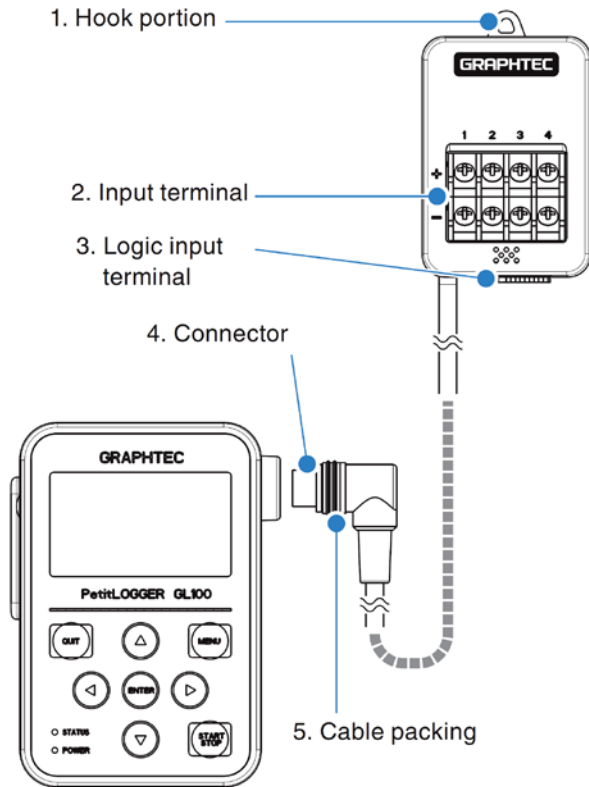
USB Interface, Power Supply, and Batteries

The GL100-WL's USB interface is located behind a drop-down panel. This connection to your PC allows you to retrieve data recorded to the GL100-WL's memory (internal or micro SD), and also allows you to power it from either the USB port of a PC or the from an optional power supply model 101085. Alternatively, you can operate the GL100-WL from two standard AA batteries



GL100-WL Measurement Modules

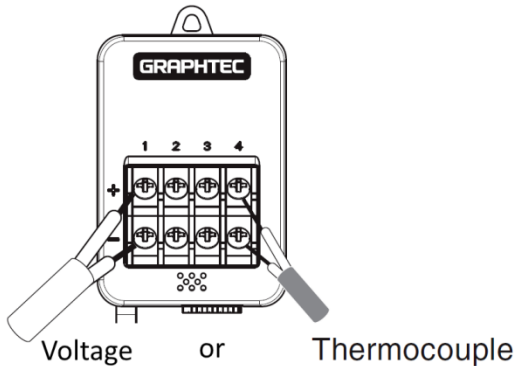
Four-channel Voltage/Thermocouple/Logic/Pulse Module (GS-4VT) Option



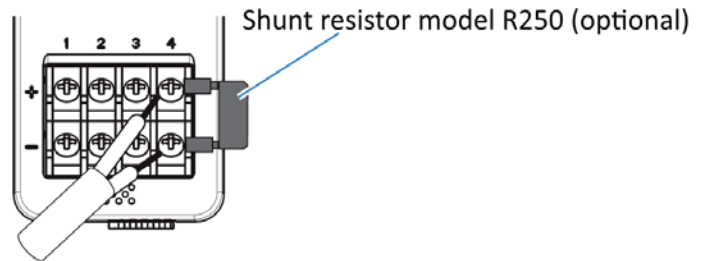
GS-4VT Measurement Overview

Analog input channels	4
Pulse/logic input channels	4
Voltage measurement range	20, 50, 100, 200, 500 mV 1, 2, 5, 10, 20, 50 V 1-5 V (for 4-20 mA using 250 Ω shunt)
Pulse Measurement range	Total counts: 65,535 Modes: Accumulate; Sampling interval reset Maximum frequency: 200 Hz
Logic/pulse input	Input voltage: 0 to +24 V Input type: Dry-contact, open collector
Supported thermocouple types	J/K (built-in CJC)
Temperature measurement range	K: -200 to 1370 °C T: -200 to 400 °C
Isolation	60 V p-p
Sampling intervals	0.5, 1, 2, 5, 10, 20, 30 sec 1, 2, 5, 10, 20, 30, 60 min

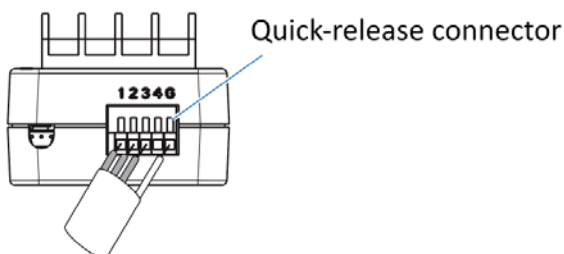
Voltage/Thermocouple Input



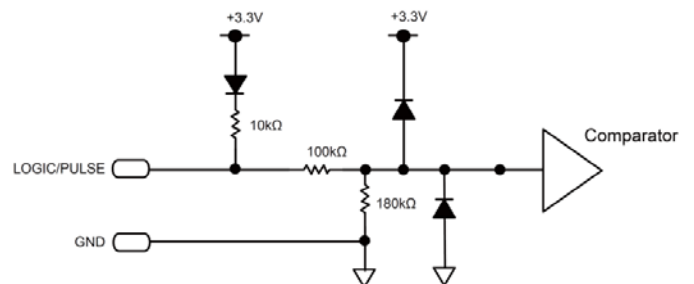
Process current Input



Logic/Pulse Input

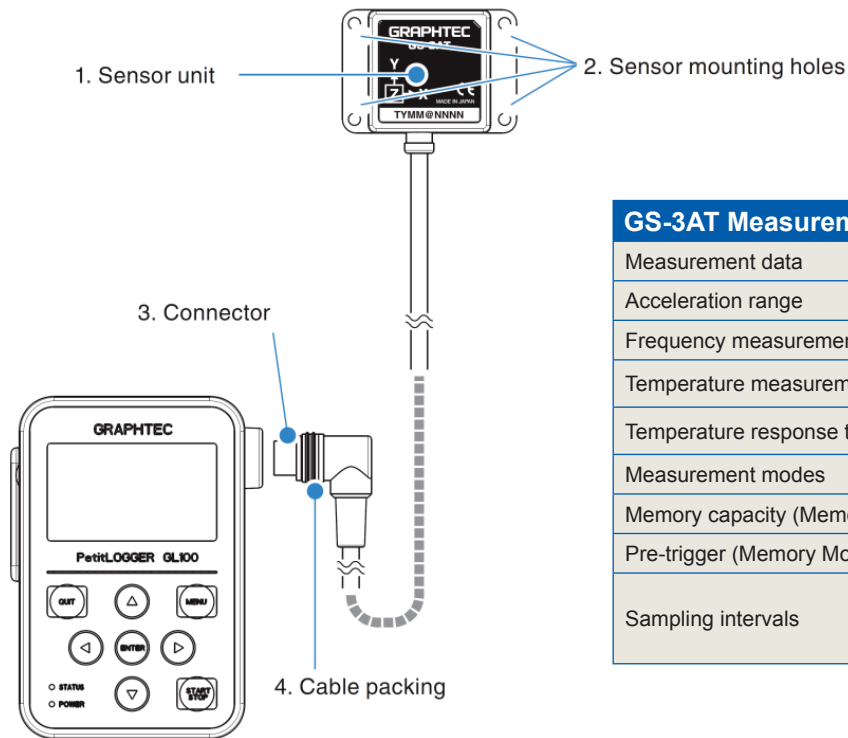


Logic/Pulse Input Circuit



GL100-WL Measurement Modules (cont.)

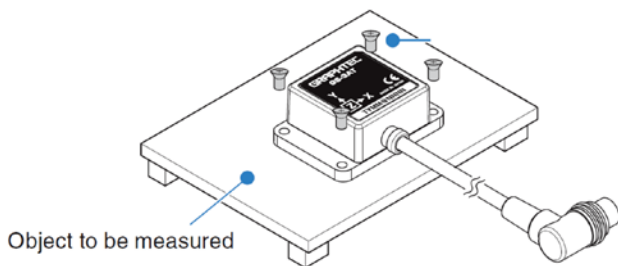
3-axis Accelerometer/Temperature Sensor (GS-3AT) Option



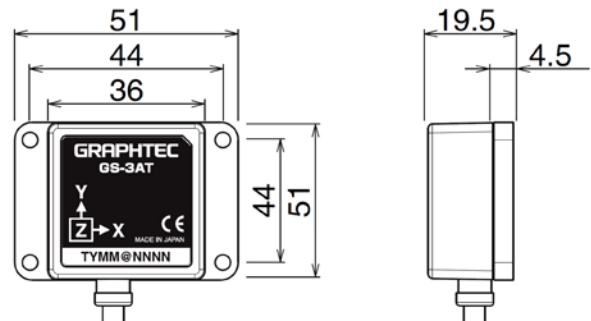
GS-3AT Measurement Overview

Measurement data	Acceleration (3 axis), Temperature
Acceleration range	± 2 G, ± 5 G, ± 10 G
Frequency measurement band	0 to 100 Hz
Temperature measurement range	-10 to 50 °C
Temperature response time	300 sec
Measurement modes	Memory / Direct
Memory capacity (Memory Mode)	16, 32, 64, 128 k samples
Pre-trigger (Memory Mode)	Off, 10, 25, 50, 100%
Sampling intervals	Memory Mode: 5, 10, 20, 50, 100 mS Direct Mode: 0.5, 1, 2, 5, 10, 20, 30 sec.; 1, 2, 5, 10, 20, 30 min.

Sensor Mounting

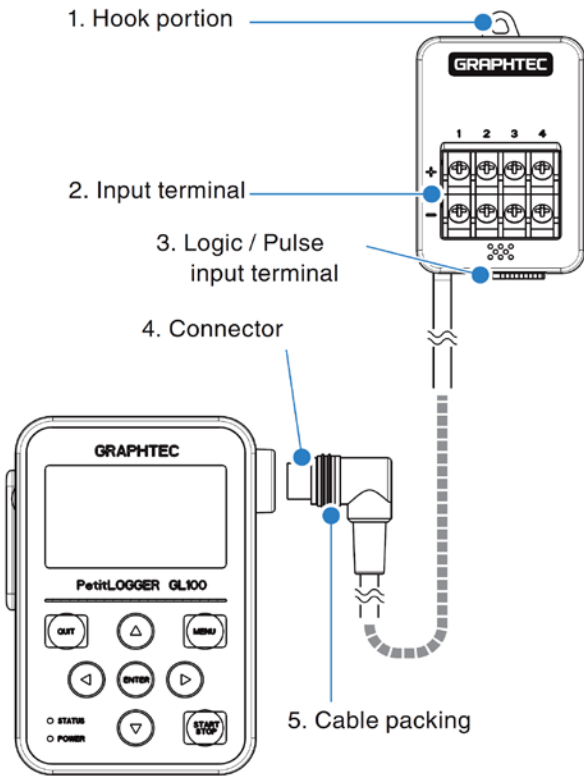


Sensor Dimensions (mm, approx)



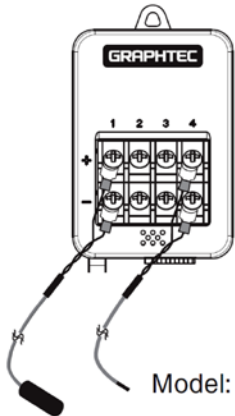
GL100-WL Measurement Modules (cont.)

4-channel Thermistor Input (GS-4TSR) Option



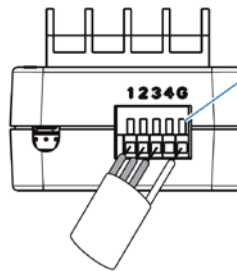
GS-4TSR Measurement Overview	
Measurement data	Temperature/Logic, Pulse
Measurement channels	Temperature: 4 Logic/Pulse: 4
Temperature range	GS-103AT-4P Option: -40 to 105 °C GS-103JT-4P Option: -40 to 120 °C
Pulse Measurement range	Total counts: 65,535 Modes: Accumulate; Sampling interval reset Maximum frequency: 200 Hz
Logic/pulse input	Input voltage: 0 to +24 V Input type: Dry-contact, open collector
Temperature measurement range	-10 to 50 °C
Triggers	Start trigger: Off, Level, Alarm, Date Stop trigger: Off, Level, Alarm
Alarm	Off, Level
Sampling intervals	0.5, 1, 2, 5, 10, 20, 30 sec 1, 2, 5, 10, 20, 30, 60 min

Thermistor Input



Model: GS-103AT-4P

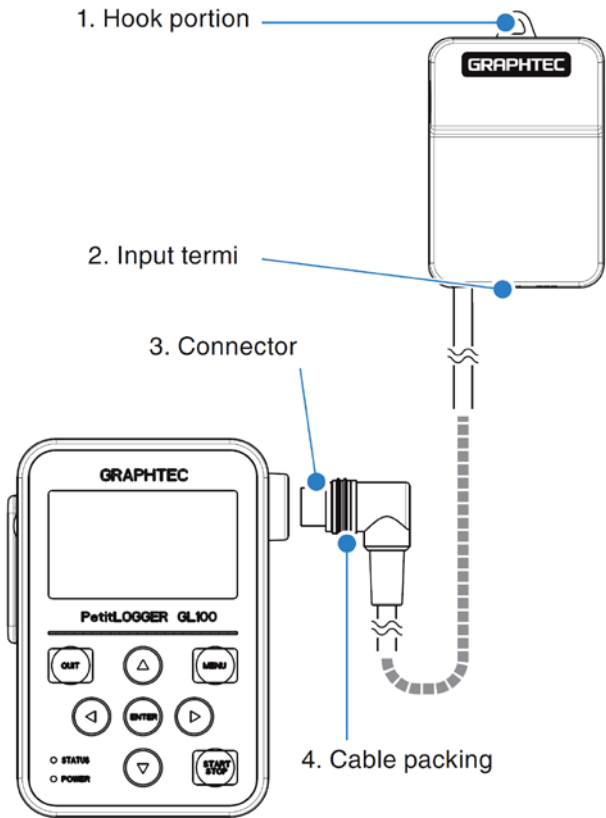
Logic/Pulse Input



When inserting the cable, insert it while pressing here.

GL100-WL Measurement Modules (cont.)

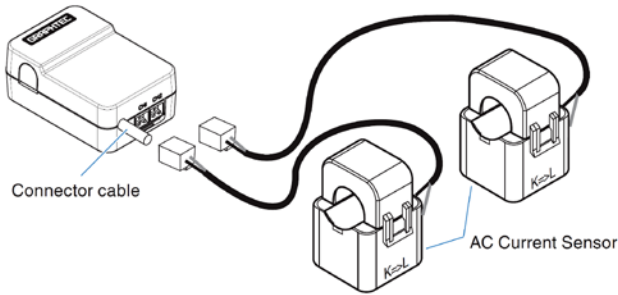
Adaptor for AC Current Sensors (GS-DPA-AC) Option



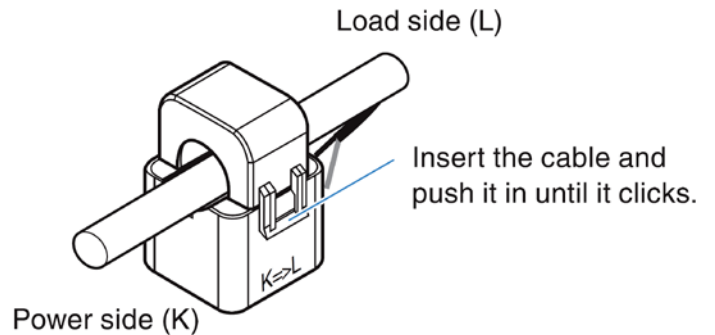
GS-DPA-AC Measurement Overview

Measurement data	Current, power, accumulated power (energy)
Compatible sensors	GS-AC50A: 50 A AC current sensor GS-AC100A: 100 A AC current sensor GS-AC200A: 200 A AC current sensor
Measurement channels	Up to two compatible sensors
Pulse Measurement range	Total counts: 65,535 Modes: Accumulate; Sampling interval reset Maximum frequency: 200 Hz
Frequency range	50/60 Hz
Applicable circuits	Single phase, 2-wire Single phase, 3-wire 3-phase, 3-wire
Alarm	Off, Level
Sampling intervals	0.5, 1, 2, 5, 10, 20, 30 sec 1, 2, 5, 10, 20, 30, 60 min

AC Current Sensor Connection



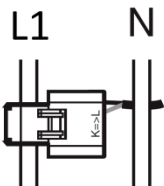
AC Current Sensor Close-up



Multi-phase Wiring Examples

< Single-phase 2-wire >

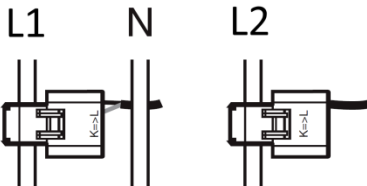
Load side (L)



Power side (K)

< Single-phase 3-wire >

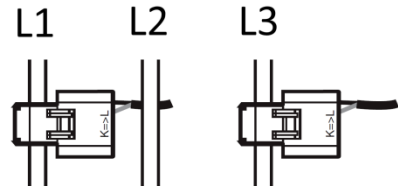
Load side (L)



Power side (K)

< 3-phase 3-wire >

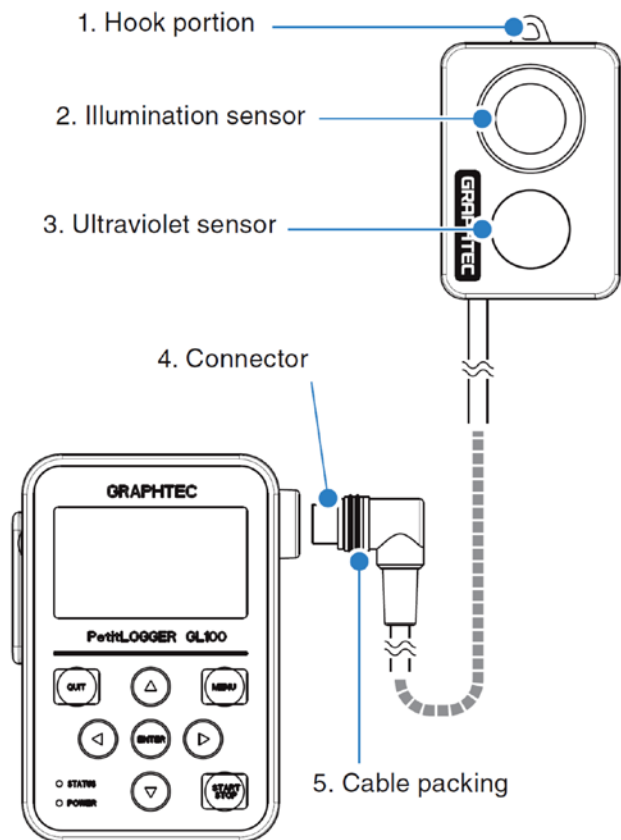
Load side (L)



Power side (K)

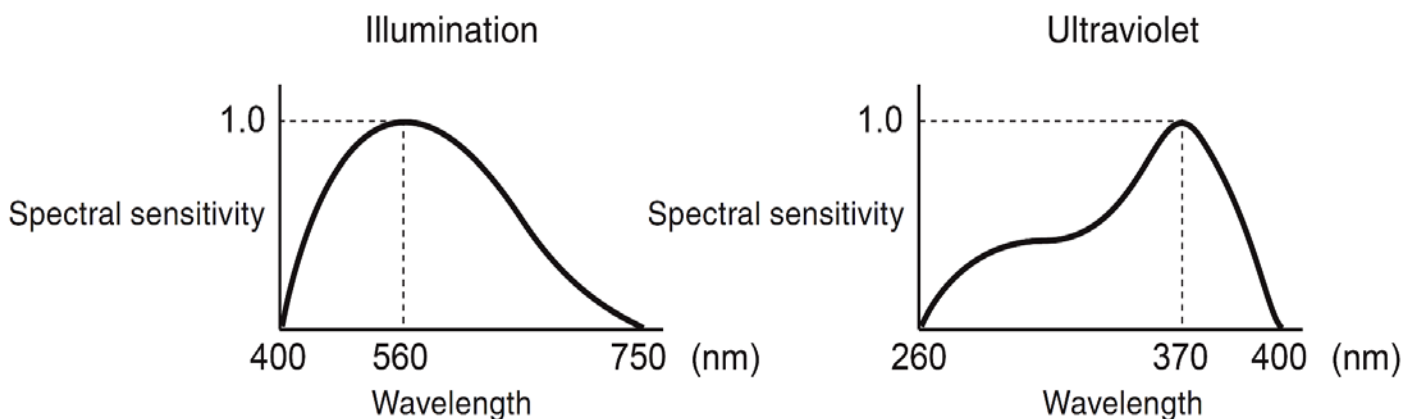
GL100-WL Measurement Modules (cont.)

Illumination / Ultraviolet Sensor (GS-LXUV) Option



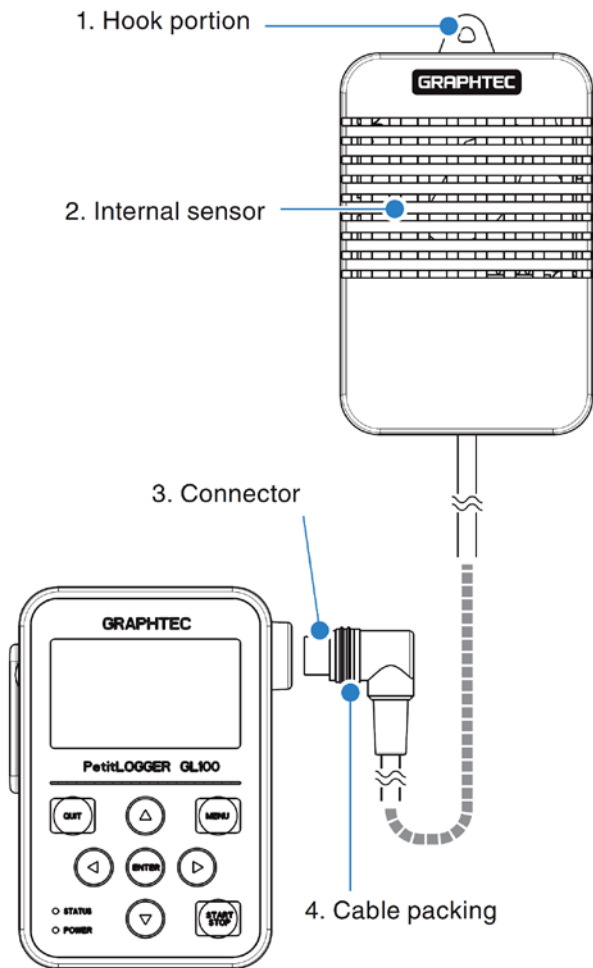
GS-LXUV Measurement Overview	
Measurement data	Illuminance, ultraviolet intensity
Measurement channel	Illuminance: 1 channel Ultraviolet: 1 channel
Measurement channels	Up to two compatible sensors
Measurement range	Illuminance: 0 to 200k lx Ultraviolet: 0 to 30 mW /cm ²
Spectral sensitivity	Illuminance: 400 to 750 nm (peak 560 nm) Ultraviolet: 260 to 400 nm (peak 370 nm)
Measurement resolution	Illuminance: 0.1 lx Ultraviolet: 0.001 mW /cm ²
Accumulated function	Accumulated illuminance: 0 to 999,999k lx Accumulated ultraviolet: 0 to 999,999 mW/cm ²
Alarm	Off, Level
Sampling intervals	0.5, 1, 2, 5, 10, 20, 30 sec 1, 2, 5, 10, 20, 30, 60 min

Spectral Sensitivity Characteristics



GL100-WL Measurement Modules (cont.)

CO2 Sensor (GS-CO2) Option

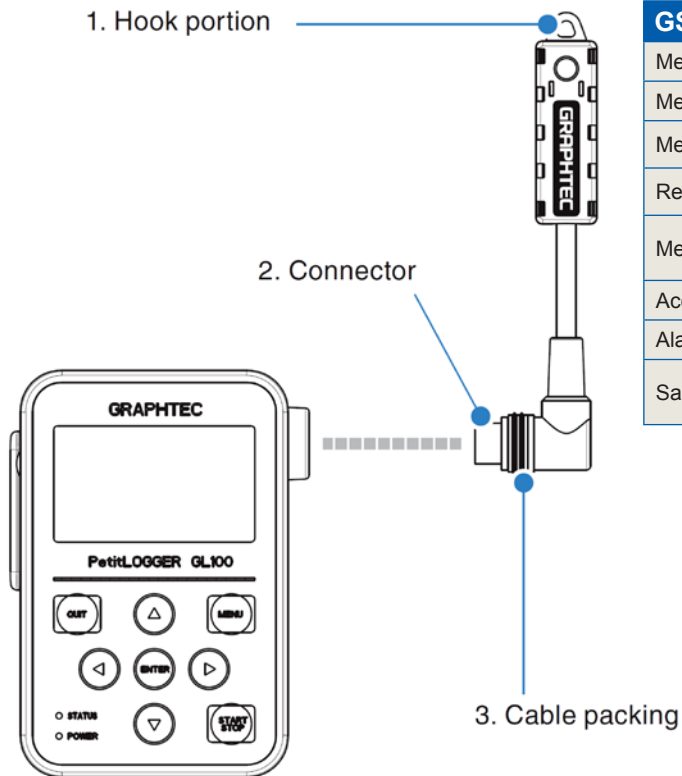


GS-CO2 Measurement Overview

Sensor method	NDIR system
Measurement data	CO ₂ density
Measurement channels	One
Measurement range	0 to 9,999 ppm
Response time	3 minutes or less
Alarm	Off, Level
Sampling intervals	0.5, 1, 2, 5, 10, 20, 30 sec 1, 2, 5, 10, 20, 30, 60 min

GL100-WL Measurement Modules (cont.)

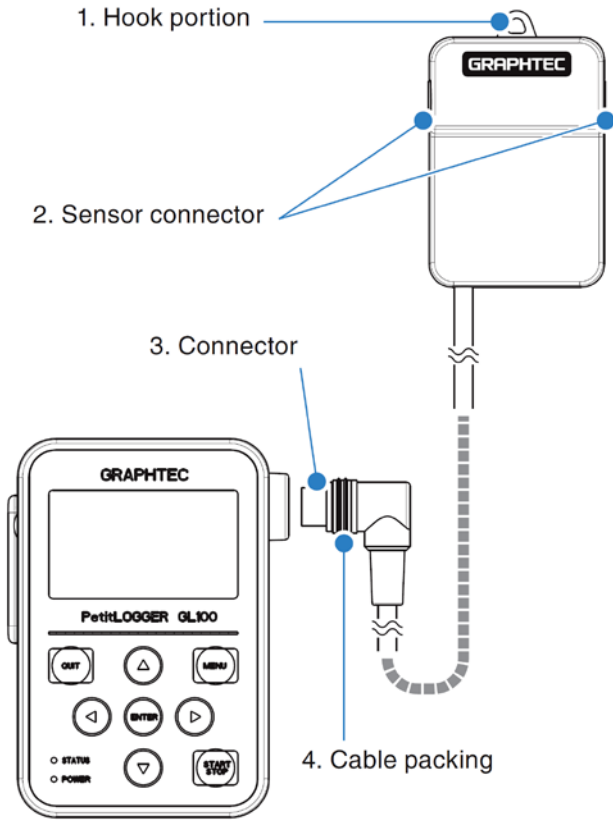
Temperature / Humidity Sensor (GS-TH) Option



GS-TH Measurement Overview	
Measurement data	Temperature, humidity, dew point
Measurement temperature range	-20 to 85 °C
Measurement humidity range	0.0 to 100% RH
Response time	Temp & RH: 100 sec
Measurement resolution	Illuminance: 0.1 lx Ultraviolet: 0.001 mW /cm ²
Accumulated function	Temperature (real time only)
Alarm	Off, Level
Sampling intervals	0.5, 1, 2, 5, 10, 20, 30 sec 1, 2, 5, 10, 20, 30, 60 min

GL100-WL Measurement Modules (cont.)

Branch Adaptor (GS-DPA) Option

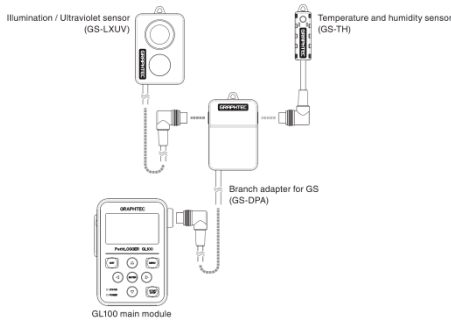


GS-DPA Measurement Overview

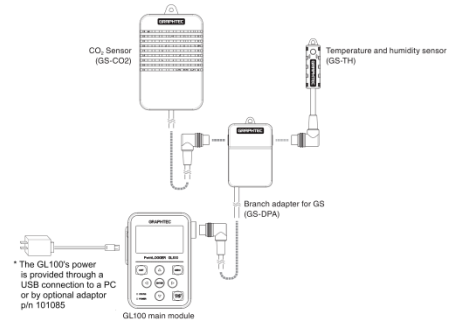
Function	Allows up to two modules to be simultaneously connected to the GL100-WL
Supported sensors	Temperature & humidity sensor (GS-TH) Illumination /UV sensor (GS-LXUV) CO2 sensor (GS-CO2)
Cable length	20 cm

Supported GS-DPA Configurations

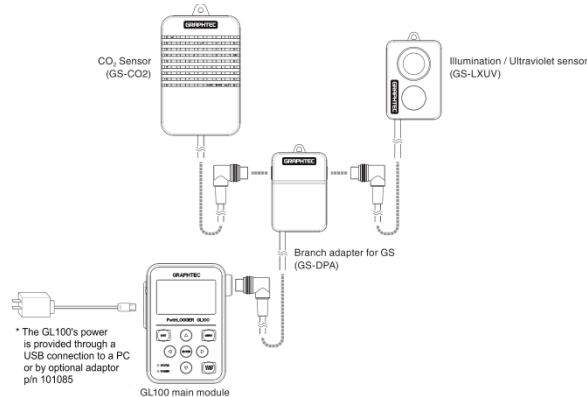
Combined Illumination/UV and Temp/RH Sensors



Combined CO2 and Temp/RH Sensors



Combined CO2 and Illumination/UV sensors



Powering the GL100-WL

Recommended Power Sources

Connected Sensors by Model	Connected Sensors by Description	Power Source	
		Battery	USB Cable
GS-TH	Temp & RH	B	A
GS-3AT	3-axis acceleration /Temp	B	A
GS-4VT	4-ch voltage / temp	C	A
GS-4TSR	4-ch thermistor temp	B	A
GS-LXUV	Illuminance / UV	B	A
GS-CO2	CO2	D	A
GS-DPA-AC	AC current / power	B	A
(GS-DPA) + (GS-TH) + (GS-CO2)	(Temp & RH) + (CO2)	D	A
(GS-DPA) + (GS-TH) + (GS-LXUV)	(Temp & RH) + (Illuminance / UV)	B	A
(GS-DPA) + (GS-CO2) + (GS-LXUV)	(CO2) + (Illuminance / UV)	D	A

Key	Description
A	Full operation
B	Works with batteries
C	Works with batteries with shorter operating time
D	Will not work with batteries

Current Drain of Various Configurations

Model	Power Source	Wireless	LCD Backlight	Screen-saver	SD Card	By Module (GS-) in mA						
						TH	3AT	4VT	4TSR	AC	LXUV	CO2
GL100-WL	Battery	Off	Max	Off	No	16	17	120	24	29	24	N/A
			Off	Off	No	6	8	110	15	20	15	
			-	On	No	5	7	109	14	19	14	
			-	On	Yes	6	8	110	15	20	15	
	USB	On	Max	Off	No	108	108	168	112	120	115	135
			Off	Off	No	102	102	162	108	116	110	130
			-	On	No	100	100	160	107	114	109	128
			-	On	Yes	102	102	162	109	116	111	130
Notes:	1. Above current consumption values are the average of the body plus sensor 2. Current consumption is not affected by sample rate 3. Current consumption increases up to 20 mA when accessing the SD card 4. The CO2 sensor's current consumption increases periodically in about 2-second intervals to about 500 mA											

Ordering Guide

Description	Order No.								
GL100-WL Small, battery-operated (2×AA), lightweight data logger with integral WiFi radio to allow wireless configuration and communication of measurements from various connected GS Series sensors (optional) to either a GL240 or GL840 data logger. Includes GL100-WL, a USB cable, and software.	GL100-WL								
GS-4VT Four-channel voltage and thermocouple temperature terminal.	GS-4VT								
GS-3AT Sensor for 3-axis acceleration and temperature measurements.	GS-3AT								
GS-4TSR Four-channel terminal for thermistor temperature measurements. Accessories <table border="1" style="width: 100%; margin-top: 5px;"> <thead> <tr> <th style="width: 70%;">Description</th> <th style="width: 30%;">Order No.</th> </tr> </thead> <tbody> <tr> <td> GS-103AT-4P 3m thermistor sensor measures -40 to 105°C. </td> <td style="text-align: center;">GS-103AT-4P</td> </tr> <tr> <td> GS-103JT-4P 3m ultra-thin thermistor sensor measures -40 to 120°C. </td> <td style="text-align: center;">GS-103JT-4P</td> </tr> </tbody> </table>	Description	Order No.	GS-103AT-4P 3m thermistor sensor measures -40 to 105°C.	GS-103AT-4P	GS-103JT-4P 3m ultra-thin thermistor sensor measures -40 to 120°C.	GS-103JT-4P	GS-4TSR		
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GS-103AT-4P 3m thermistor sensor measures -40 to 105°C.	GS-103AT-4P								
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GS-DPA-AC Two-channel adapter for AC power measurements. Accessories <table border="1" style="width: 100%; margin-top: 5px;"> <thead> <tr> <th style="width: 60%;">Description</th> <th style="width: 40%;">Order No.</th> </tr> </thead> <tbody> <tr> <td> GS-AC50A Dedicated 50A current transformer. </td> <td style="text-align: center;">GS-AC50A</td> </tr> <tr> <td> GS-AC100A Dedicated 100A current transformer. </td> <td style="text-align: center;">GS-AC100A</td> </tr> <tr> <td> GS-AC200A Dedicated 200A current transformer. </td> <td style="text-align: center;">GS-AC200A</td> </tr> </tbody> </table>	Description	Order No.	GS-AC50A Dedicated 50A current transformer.	GS-AC50A	GS-AC100A Dedicated 100A current transformer.	GS-AC100A	GS-AC200A Dedicated 200A current transformer.	GS-AC200A	GS-DPA-AC
Description	Order No.								
GS-AC50A Dedicated 50A current transformer.	GS-AC50A								
GS-AC100A Dedicated 100A current transformer.	GS-AC100A								
GS-AC200A Dedicated 200A current transformer.	GS-AC200A								
GS-CO2 Sensor for CO ₂ measurements.	GS-CO2								
GS-LXUV Sensor for 1 channel illuminance and 1 channel ultraviolet measurements.	GS-LXUV								
GS-TH Sensor for ambient temperature and humidity measurements.	GS-TH								
GS-DPA Adapter to accommodate up to two GS series sensors.	GS-DPA								
GS-EXC 1.5 meter extension cable for use between brand adapter and sensor.	GS-EXC								



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 241 Springside Drive
 Akron, Ohio 44333
 Phone: 330-668-1444
 Fax: 330-666-5434

Data Acquisition Product Links

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