

GRAPHTEC

Modula Type Data Acquisition Platform

DATA PLATFORM GL7000

Next Generation Data Acquisition Unit with Touch Panel Control
On-Demand Signal Acquisition
Embedded Monitoring and Datalogging Solution



GL7000 specifications	
Item	Description
Number of module	Attached to up to 10 modules *1
Number of input channels	Max. 112 channels in 1 of GL7000
External Input/Output signals *2	Input Start/Stop, External trigger, External sampling, Auto balance Signal type: Contact (relay), Open collector, Voltage
	Output Trigger, Busy, Alarm (10 channels) *3 Signal type: Open collector (pulled-up by resistor 10 kΩ)
Trigger, Alarm function	Trigger action Start or stop capturing data by the trigger
	Trigger repeat Enabled (ON): Automatically re-armed for the next data capture function Disabled (OFF): Data capture is completed in a single trigger
	Trigger source Start: Off, Measured signal, Alarm, External signal, Clock, Week or Time Stop: Off, Measured signal, Alarm, External signal, Clock, Week or Time
	Trigger determination conditions for measured signal Combination: OR or AND condition at the level of signal or edge of signal Logic *4: Higher/Rising, Lower/Falling, Window-in, Window-out Pulse *4: Higher/Rising, Lower/Falling, Window-in, Window-out
Alarm determination condition *5	Combination: OR or AND condition at the level of signal or edge of signal Logic *4: Higher/Rising, Lower/Falling, Window-in, Window-out Pulse *4: Higher/Rising, Lower/Falling, Window-in, Window-out
	Alarm output 10 channels
Calculation function	Pre-trigger *6 Number of data before trigger: Up to specified number of captured data
	Between channels Addition, Subtraction, Multiplication and Division for two analog inputs (Sampling speed is limited up to 10 Samples/s (100ms interval). Available arithmetic element and the output destination is the analog input channel 1 to 100.)
Statistical	Select two calculations from Average, Peak, Max., Min. in real time and replay *7
	Move function of the display range Beginning, center or end of the data, Trigger point, Specific time (absolute, relative), Call cursor
Search function	Search for analog signal levels, logic signal pattern, pulse signal levels or alarm point in captured data
Annotation function	Comment can be set in each channel (up to 31 alphanumeric characters)
Message / Marker Functions	Message: The registered messages or entered message is able to be recorded for any timing. Up to 8 messages can be pre-registered. Marker: Marker is able to record for occurring alarm or power failure.
Resume	Resume automatically in the same condition after power is recovered as when the power failure occurred during data capture *8
Interface to PC	Ethernet (10 BASE-T/100 BASE-TX), USB 2.0 (High speed)
Network function	WEB server, FTP server, FTP client, NTP client, DHCP client
USB drive mode	Emulate the USB memory device *9
Storage device	Built-in RAM (2 million samples for each channels, built-in amplifier module), Flash memory (2 GB, built-in the main module)
	External *10 SD card (Support SDHC, up to 32 GB) slot, SSD (Approx. 64 GB) The file for capturing data is limited up to 2 GB.
Data saving function	Captured data *10 Built-in RAM, Built-in Flash, SD memory card, SSD (Data is saved directly to it.)
	Data in built-in RAM Specified number of data up to 2 million samples in increments of 1
	Auto save *10 Available for the built-in RAM Enabled (ON): Data in the RAM is saved automatically to the built-in Flash, SD memory card, SSD Disabled (OFF): Data in the RAM is not maintained after power is turned off
	Capturing mode *10 Mode: Off, Normal, Ring, Really Ring *11: Saved most recent data (Number of capturing data: 1000 to 2000000 points, Destination of data: Built-in RAM, Built-in Flash, SD memory card, SSD) Really *12: Saved data to multiple file without losing data until capturing data is stopped (Destination of data: Built-in Flash, SD memory card, SSD)
During data capture *13	Displaying information in two windows, Hot-swapping the SD memory card, Saving data in between cursors.
Backup *10	Backup interval: Off, 1, 2, 6, 12, 24 hrs. Data destination: SD memory card, SSD, FTP server
Engineering Scale function	Measured value can be converted to the engineering unit Analog voltage: Converts by four reference points (gain, offset) Temperature: Converts by two reference points (offset) Pulse count: Converts by two reference points (gain)
Synchronization between units	Start and Trigger *14
Accuracy of clock (at 23°C)	± 0.002 % (Monthly deviation approx. 50 sec.)
Operating environment	0 to 45 °C, 5 to 85 % RH (non condensed)
Power source	100 to 240 V AC, 50 to 60Hz
Power consumption	85 VA
Standard accessories	Quick guide, CD-ROM, AC power cable
External dimensions (W x D x H)	Main module: Approx. 193 x 141 x 160 mm (Excluding Projection), Alarm output terminal: Approx. 30 x 136 x 145 mm (Excluding projection)
Weight	Main module: Approx. 2.2 kg, Alarm output terminal: Approx. 350 g
Software specifications	
Model name	GL-Connection
Supported OS	Windows 10 / 8.1 / 8 / 7 / Vista
Functions	Control GL7000, Real-time data capture, Replay data, Data format conversion
Controlled unit	Up to 10 units (Max. 1120 channels), (Max. 2000 channels when the GL series are included.)
GL7000 Settings control	Input settings, Memory settings, Trigger and Alarm settings, Other settings
Captured data *15	Built-in RAM (Binary format), Built-in Flash memory (Binary, CSV format), SD memory card (Binary, CSV format), SSD (Binary, CSV format)
	The sampling speed is limited by the number of channels used when data is saved in the CSV format. (1 ms per channel. When 10 channels are set, sampling is limited to 10 ms.)
Displayed information	Analog waveforms, Logic waveforms, Pulse waveforms, Digital values
Display mode	Y-T waveform with digital values, X-Y graph in real time, FFT analysis, Cursor information, Capture condition, Alarm information
File operation	Converts binary data to the CSV data (specific period, all data in one file, multiple files), Creates a new file with compression or by consolidating multiple files.
Warning Function	Send e-mail to the specified address when the alarms occur
Statistical calculation	Capturing data: Maximum, Minimum, Peak or Average Replaying data: Maximum, Minimum, Peak, Average or RMS in between cursors
Search function	Level Specific level in any channels
	Alarm Occurred alarm in any channel
Time	Beginning, center, end of the data, Trigger point, Specific time (absolute, relative), Specific number
	Operation lock

Display module specification		
Model number	GL7-DISP	
Display device	5.7-inch TFT color LCD monitor (VGA: 640 x 480 dots)	
Operation section	Touch panel and Cursor keys *16	
Touch panel	Capacitive type touch panel, Operated by finger or the proprietary pen	
Displayed language	English, French, German, Chinese, Korean, Japanese	
Screen saver	Turns off backlight by 10, 30 sec., 1, 2, 5, 10, 30, 60 min.	
Displayed information	Waveform in Y-T with digital values, Waveform only, Digital value, Waveform in X-Y, FFT	
Connection cable	LAN cable (CAT5 class, Straight connection, Up to 10m) *17	
Standard accessories	Bracket for slanted mount, Connection cable (40cm), Ground cable, Screws	
External dimensions (W x D x H)	Approx. 187 x 34.5 x 119 mm (Excluding projection)	
Weight	Approx. 530 g	
SSD module specifications		
Model number	GL7-SSD	
Storage device	Solid state disk (SSD), Form factor: 2.5-inch HDD	
Capacity	Approx. 64 GB (The file size of the captured data is limited up to 2 GB.)	
Sampling speed *18	Attached to 1 or 2 modules	Max. 1 M Samples/s (1μs)
	Attached to 3 or 4 modules	Max. 500 k Samples/s (2μs)
	Attached to 5 to 10 modules	Max. 200 k Samples/s (5μs)
External dimensions (W x D x H)	Approx. 49.2 x 136 x 160 mm (Excluding projection)	
Weight	Approx. 770 g	
Options and accessories		
Item	Model number	Remarks
Input/Output cable	B-513	2 m long, Bare wire for signal connection - Connector for GL7000
Humidity sensor	B-530	3 m cables for signal and power
Sync. Cable	B-559	1 m long, Synchronizing between GL7000
Input connector, screw terminal	B-560	For DC Strain module (GL7-DCB), Screw terminal for sensor - D-SUB (rectangular connector) for GL7-DCB module
Input cable, NDIS - D-SUB	B-561	For DC Strain module (GL7-DCB), NDIS (round connector) for sensor - D-SUB (rectangular connector) for GL7-DCB module
Output cable, BNC - SMA	B-562	For Voltage Output module (GL7-DCO), 2 m long, BNC (pulg) for output - SMA (plug) for GL7-DCO module
Probe set for Logic input	RIC-10	For Logic/Pulse module (GL7-LIP), 4 channels, Cable with Alligator clip and IC clip
Input cable, BNC - BNC	RIC-112	1.5 m long, Max. 60 V DC
Input cable, Banana - BNC	RIC-113	1.5 m long, Max. 60 V DC
Input cable, Alligator clip - BNC	RIC-114	1.5 m long, Max. 60 V DC
Input cable, Safe probe - BNC	RIC-141A	Insulated, 1.2 m long, 300 V DC, CAT II
Input cable, BNC - BNC	RIC-142	Insulated, 1.5 m long, 1000 V DC, CAT II
Input cable, Banana - BNC	RIC-143	Insulated, 1.6 m long, 600 V DC, CAT II
Clip, Alligator (small size)	RIC-144A	For RIC-143, Aperture 11 mm, 300 V DC, CAT II, Max. 15 A
Clip, Alligator (middle size)	RIC-145	For RIC-143, Aperture 20 mm, 1000 V DC, CAT II, Max. 32 A
Clip, Grabber	RIC-146	For RIC-143, Aperture 5 mm, 1000 V DC, CAT III, Max. 1 A

- Excluding the function module as the Display module or SSD module. In case of the DC Strain module (GL7-DCB): up to 8 modules. In case of the Logic/Pulse module (GL7-LIP): input mode is selected in the logic or pulse for each module, up to 7 modules when the module is used in the logic mode, up to 2 modules when the module is used in the pulse mode.
 - The Input/Output cable (B-513) is required for connecting the signal. The Auto balance signal input and the Busy signal output are available in the DC Strain module (GL7-DCB).
 - The alarm signals are output on the terminal block attached to the main module as standard accessory.
 - It is available on the Logic/Pulse (GL7-LIP) module.
 - Method of detection
Volt./Temp. module:
The alarm is detected every 5 seconds when the sampling interval is longer than 5 seconds and reported. The alarm is detected in the sampling interval when the sampling interval is shorter than 5 seconds and reported.
Other modules:
The alarm is detected every 1 ms when the sampling interval is shorter than 1ms. The alarm is detected in the sampling interval when the sampling interval is set between 2 ms to 5 seconds and reported. The alarm is detected every 5 seconds when the sampling interval is longer than 5 seconds and reported.
 - It is available when the captured data is saved to the built-in RAM. The pre-trigger function may not available in combination with the trigger settings.
 - The result of real time calculation is displayed in the digital display mode. Available sampling speed is the 10 samples/s (100 ms interval).
 - When the captured data destination is set to the built-in-RAM, the captured data is not maintained after a power failure is occurred. When destination is set to the built-in Flash or the SD memory card, it may have a problem by a power failure if it is being accessed to write data. If the memory device is not damaged, the closed data file is maintained. The file is closed every minute while data is being captured.
This function is not available when the FFT mode or the Voltage Output module (GL7-DCO) is used.
 - The USB drive mode is started by setting of the switch on the main module. It can also be started when the power is turned on while pressing the START/STOP key on the display module.
 - The SD memory card is not included as a standard accessory.
Compatible SD card type: SD, SDHC Speed class 4 or faster. The SSD module (GL7-SSD) is an option.
 - The capacity for saving the data is set to one third of available memory when the captured data destination is set to a device other than the built-in-RAM. Available sampling speed is up to 10 samples/s (100ms interval).
 - The file size of captured data is limited up to 2 GB. When the captured data destination is set to the built-in Flash or the SD memory card, sampling speed is limited up to 100 samples/s (10 ms interval). In case of using the SSD module (GL7-SSD), sampling speed is limited up to 50 thousand samples/s (20 μs interval) when 1 or 2 modules are attached. (It is required firmware version 1.45 or later.)
 - This function is able to be available when sampling speed is set up to 10 samples/s (100 ms interval).
 - The Sync cable (B-559) is required when this function is used. The GL-Connection software is required when the synchronizing function is used.
 - The captured data that is saved to the built-in-RAM or SSD cannot be saved to the PC in real time. The data in the built-in-RAM or SSD needs to be transferred to the PC after data capture is completed.
 - Most operations can be selected by both the touch panel and keys.
 - When the display module is mounted at an angle using the bracket, the display module is connected to the main module by a LAN cable that is attached to the display module as a standard accessory.
 - The sampling speed in the GL7000 is limited to the fastest sampling speed of attached amplifier module.
When the selected sampling speed in the GL7000 is faster than the module, the sampling is done in fastest sampling on the module. The same value is stored to the memory device in the selected sampling speed until data is renewed by the next sampling.
- We cannot guarantee any problems of data generated by the malfunction of equipment or PC. Please make a backup of data to avoid it.
 - 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: The before using it, please read the user manual and then please use it properly in accordance with the description.
To avoid an occurrence of malfunction or an electric shock by leakage, please ensure ground connection and use it in specified power source.

GRAPHTEC
Graphtec Corporation

503-10 Shinano-cho, Totsuka-ku, Yokohama 244-8503, Japan
Tel : +81-45-825-6250 Fax : +81-45-825-6396
Email : webinfo@graphtec.co.jp

Website <http://www.graphteccorp.com>



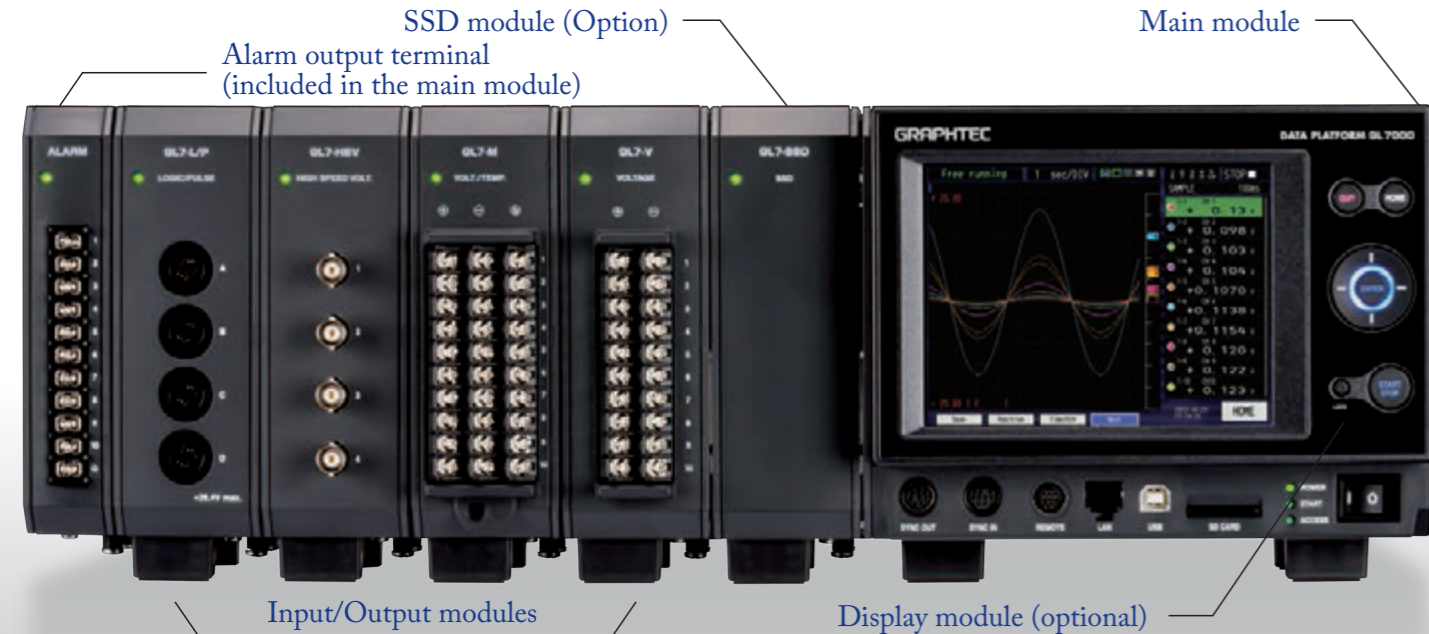
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Attach up to 10 input/output modules in a mixed condition environment
Corresponds to various measurement types (physical, mechanical, and electrical)
Supports a variety of storage media including a SSD module with a capacity of 64GB

New Generation Data Acquisition Platform - GL7000 - Display module allows a stand-alone operation or an embedded systems environment with touch-panel control

Input/output module has capacity to attach up to 10 units with mixed signals (temp, high voltage, high speed, strain, vibration, etc.)

Allows up to 112 channels in one main unit by attaching up to 10 units of the input/output modules.*¹
Detachable display module enables the GL7000 to be used in a stand-alone platform or to be embedded into the acquisition system.
Control and monitoring via the PC or display module may be done independently or in conjunction with one another.



MODULE OPTIONS (8 TOTAL) - Compatible with various electrical, mechanical, and physical measurement needs.

Voltage Module GL7-V	Volt./Temp. Module GL7-M	High-speed Voltage Module GL7-HSV	High Voltage Module GL7-HV
DC Strain Module GL7-DCB	Charge Module GL7-CHA	Voltage Output Module GL7-DCO	Logic/Pulse Module GL7-L/P

Maintains the maximum sampling speed even when the number of input/output modules are increased *¹

Example:

Using Volt/Temp Module

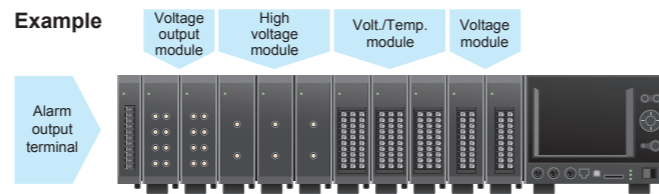
- 10 ch being used, Max. sampling speed 100S/s (10ms interval)
- 20 ch being used, Max. sampling speed 100S/s (10ms interval)
- 40 ch being used, Max. sampling speed 100S/s (10ms interval)

Maintains high speed with expanded channels.

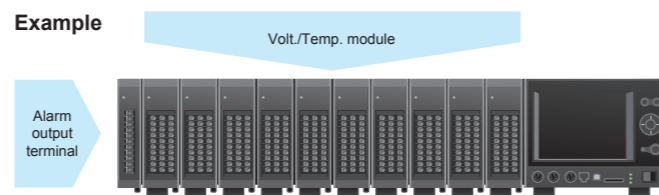
*¹ Maximum sampling speed will depend on the data destination. (RAM and optional SSD module is the fastest, Flash memory, SD Card will be slower.)
*² If different types of modules are attached, the effective sampling speed of the system is up to the fastest sampling speed among the installed modules. When the maximum sampling speed of the module is slower than the maximum sampling speed of the fastest amplifier, signal will be sampled with maximum sampling speed of the slower units. The same data is saved with the system sampling speed until new data is captured on the slower units.
* The number of modules that can be attached is limited by the type of module. Up to 10 modules (maximum 112ch with 7 GL7-L/P module, max 100ch with GL7-V or GL7-M module).
For Logic/Pulse module (GL7-L/P): Maximum 7 units allowed using logic option (112ch). Maximum 2 units allowed using pulse option (32ch). (The mode for logic or pulse can be set for each unit.)
For Strain module (GL7-DCB): Maximum 8 units allowed with additional two other amplifier units. (Number of channels is limited to 112ch.)
* For the logic/pulse module, the number of channels can be limited by the selected sampling speed when the module is attached together with other amplifier modules.
1μs sampling interval: up to 8 channels
2μs sampling interval: up to 16 channels (If two modules are attached, channel #1 to #8 in each unit can be used.)
When pulse mode is used, the maximum sampling speed is the 100μs. The data will be updated every 100μs.

Up to 10 input/output modules can be attached to one main unit *²

Each of the 10 units can include a different input/output module *²



Up to 10 input/output modules of the same kind can be attached to one main unit *²



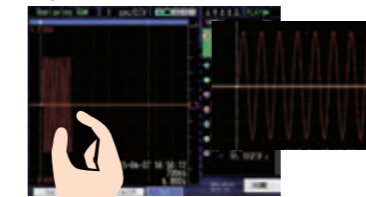
The display unit incorporates a touch panel system to provide convenient on-site operation

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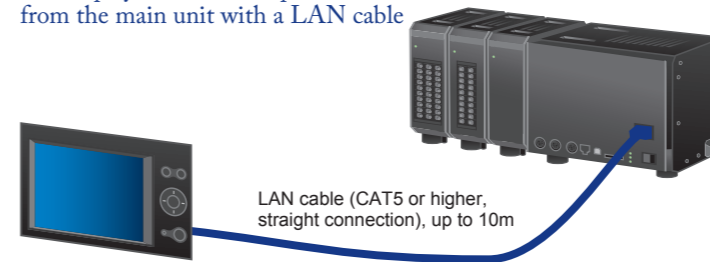
Touch the icon, move to the next setting menu screen.



The display waveform is able to expand or shrink.

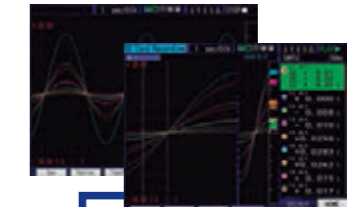


The display unit can be separated from the main unit with a LAN cable



Four Different Display Methods

Y-T display



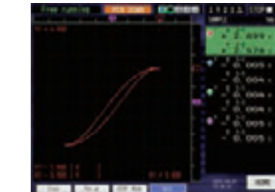
Stored recording can be displayed in double-screen mode even while the current recording is on-going.
* Available when the destination of data file is the Built-in flash memory / SD memory card / SSD unit (optional).
* Sampling interval should be the 100ms or longer.

Digital display



Both digital and statistical values can be displayed at the same time.
* Select two functions from the Ave. / Max. / Min. / Peak value and Off.
* Sampling interval should be 100ms or longer.

X-Y display



FFT display



Supports multiple types of storage, 64GB SSD is available as an option

1 Built-in RAM

RAM is built into each of the amplifier modules to allow savings of up to 2 million samples. Increasing the number of channels does not decrease the data capture duration.

3 SD memory card

SD card slot (supports SDHC, up to 32GB) is standard on the main module. Captured data can be saved directly on the SD card when sampling speed is slower than 1ms (sampling speed: 1 k Samples/s). Supports hot-swap where SD memory card can be replaced during recording without any data loss.* The captured data can be transferred easily to the PC during offline condition.
* The hot-swap is possible when the sampling is slower than 100ms.

2 Built-in Flash memory

2GB of Flash memory is built into the main module. Captured data can be saved directly to the flash memory when sampling speed is less than 1ms (1k Samples/s). Non-volatile memory (saved data is retained even if the power is turned off).

4 SSD module (64GB) Option

Allows multiple recording of large amount of data to be saved when optional SSD module is used. It has a high vibration resistance and the captured data can be saved directly to the SSD when sampling is not faster than 1μs.*
* The number of modules are limited.



SSD module needs to be set next to the main module.

Advantage of SSD • Retain the data even when power is off • High vibration resistance • High-speed access

Maximum sampling speed and the data capturing time *¹

Input Module	Storage Device	Number of units, Max. sampling speed (interval)		Capturing time when single module is attached (when 10 modules are attached)					
		Attached to 1 or 2 modules	Attached to 3 or 4 modules	Attached to 5 to 10 modules	1MS/s (1μs)	100kS/s (10μs)	1kS/s (1ms)	100S/s (10ms)	1S/s (1s)
High-speed Voltage Module	Built-in RAM (2 M samples)	1MS/s (1μs)	1MS/s (1μs)	1MS/s (1μs)	2sec. (2sec.)	20sec. (20sec.)	Approx. 33min. (33min.)	Approx. 5hrs. (5hrs.)	Approx. 23days (23days)
	Built-in Flash memory (2GB)				N/A	N/A	Approx. 39hrs. (6hrs.)	Approx. 16days (2days)	Approx. 1659days (223days)
	SD memory card (32GB) * ²						Approx. 42hrs. (6hrs.)	Approx. 17days (2days)	Approx. 1775days (238days)
High Voltage Module	Built-in RAM (2 M samples)	1MS/s (1μs)	500KS/s (2μs)	200KS/s (5μs)	Approx. 134sec. (N/A)	Approx. 22min. (3min.)	Approx. 33min. (33min.)	Approx. 5hrs. (5hrs.)	Approx. 23days (23days)
	Built-in Flash memory (2GB)				2sec. (2sec.)	20sec. (20sec.)	Approx. 55hrs. (8hrs.)	Approx. 23days (3days)	Approx. 2323days (363days)
	SD memory card (32GB) * ²						Approx. 59hrs. (9hrs.)	Approx. 24days (3days)	Approx. 2485days (388days)
DC Strain * ³ & Charge Module	Built-in RAM (2 M samples)	1MS/s (1μs)	500KS/s (2μs)	200KS/s (5μs)	Approx. 134sec. (N/A)	Approx. 22min. (5min.)	Approx. 33min. (33min.)	Approx. 5hrs. (5hrs.)	Approx. 23days (23days)
	Built-in Flash memory (2GB)				N/A	N/A	Approx. 39hrs. (6hrs.)	Approx. 16days (2days)	Approx. 1659days (276days)
	SD memory card (32GB) * ²						Approx. 42hrs. (7hrs.)	Approx. 17days (2days)	Approx. 1775days (295days) (In Charge module: 238days)
Voltage Module	Built-in RAM (2 M samples)	1MS/s (1μs)	500KS/s (2μs)	200KS/s (5μs)	Approx. 134sec. (N/A)	Approx. 22min. (3min.)	Approx. 33min. (33min.)	Approx. 5hrs. (5hrs.)	Approx. 23days (23days)
	Built-in Flash memory (2GB)				N/A	N/A	Approx. 21hrs. (2hrs.)	Approx. 8days (24hrs.)	Approx. 893days (103days)
	SD memory card (32GB) * ²						Approx. 22hrs. (2hrs.)	Approx. 9days (26hrs.)	Approx. 956days (110days)
Volt./Temp. Module	Built-in RAM (2 M samples)	100S/s (10ms)	100S/s (10ms)	100S/s (10ms)	N/A	N/A	N/A	Approx. 5hrs. (5hrs.)	Approx. 23days (23days)
	Built-in Flash memory (2GB)				N/A	N/A	Approx. 8days (24hrs.)	Approx. 893days (103days)	
	SD memory card (32GB) * ²						Approx. 9days (26hrs.)	Approx. 956days (110days)	

*¹ Captured time values are saved as GBD format files. When data is saved in CSV format, maximum sampling speed will be 10ms regardless of the captured destination and module type. Value of the capturing time is also different from above. (Data cannot be saved to built-in RAM using the CSV format.) *² The file size of the captured data is limited to 2GB. *³ Reference recording time is for up to 8 modules. (max GL7-DCB and GL7-CHA modules is 8.)

Useful functions for data saving and replay

- SD memory card exchange
 - Ring capture
 - Relay capture
 - Data search
 - Movement by cursor
 - Statistical calculation with cursor
- The SD card can be replaced during recording when the sampling interval is 100ms or slower. When data capturing stops, the most recent data is stored in the memory. Creates data file up to 2GB continuously without losing any recording. (It is required firmware version 1.45 or later.) Specific value (measured value, alarm point) of a particular channel in the recorded data can be searched and found automatically. The cursor can be moved automatically to a specified time in the recorded data. The statistical calculation (average, max, min, P-P, effective value) can be determined in between the recorded data specified by the cursor.

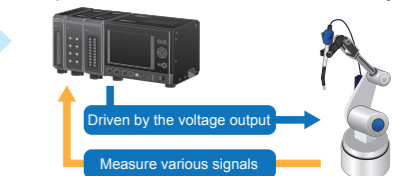
Supports measurement and simulation testing using the voltage output module (GL7-DCO)

Allows a simulation testing by outputting the measured data from signals recorded from various input modules and outputs the data through the voltage output module (GL7-DCO).

1 Captures the abnormal signal



2 Outputs the saved data for driving equipment, and the signal of various points are measured simultaneously



* Signals that are being captured may not be output at the same time. The output current is max 10mA for each channel. Total output current of the unit is 40mA. If the target object needs to be driven by external power, than a power amplifier may be needed.

DC Strain Module GL7-DCB



Main features

- Easily measure strain gauges using built-in bridge circuit for both 120 and 350 ohm gauges
- Supports excitation power for bridge circuit in constant voltage or current
- Supports TEDS sensors
- Supports a low-pass and anti-aliasing filter
- Enable high-precision measurement in remote sensing and shunt calibration function

Supported sensor

- Strain gauge : 1 gauge in 2-wire, 3-wire, or 4-wire
 : 2 gauges in 3-wire, 4-wire, or 5-wire
 : 4 gauges in 4-wire, or 6-wire
- Strain type sensor : 4-wire or 6-wire

Connector for input

Standard accessory

D-SUB type connector
 (standard accessory: 4pcs)



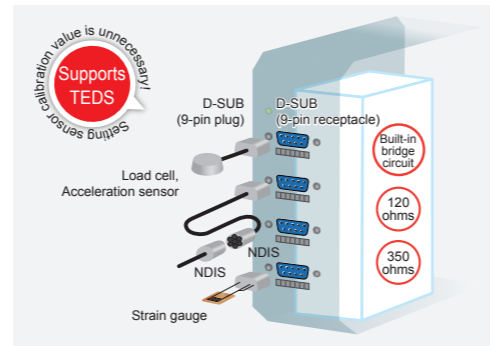
Option

Screw terminal adapter (B-560)



Option

Input cable with NDIS type connector (B-561)



- **Compensations for High-precision measurement**
- Remote Sense: Eliminates the influence from the lead wire resistance
- Shunt calibration: Gain compensation of strain measurement

Strain Voltage Res. 4ch/unit
 Strain gauge, TEDS sensor
 Max. 100kS/s (10μs)

* Attachable number of unit: up to 8 units

Charge Module GL7-CHA

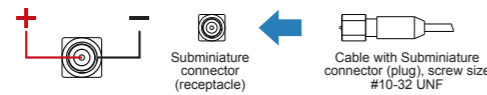


Main features

- Supports charge and voltage output type sensors
- Supports TEDS sensors
- Wide variety of filter functions allows high-precision measurements
- Support RMS (effective value) measurement

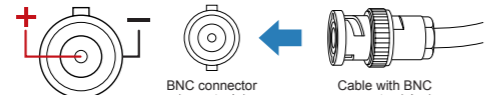
Sensors and input connector type

Charge output type sensor



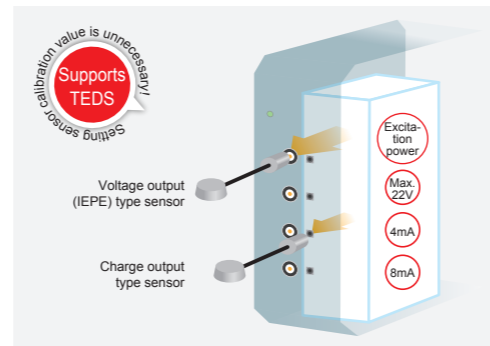
Supported acceleration sensor: 0.01pC/(m/s²) to 999.9pC/(m/s²)

Voltage output (IEPE) type sensor

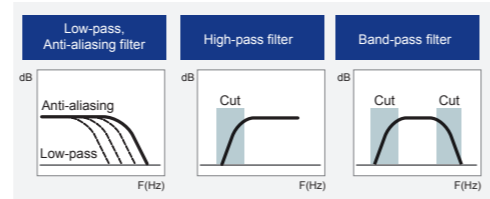


Supported acceleration sensor: 0.01mV/(m/s²) to 999.9mV/(m/s²)

* There are various types of the charge or IEPE type sensors which can be measured by setting the sensor sensitivity and an engineering scaling function.



- **High-precision measurement using various filters**
- High-precision signal is able to be captured by the high-pass, low-pass, and anti-aliasing filter.



Charge Voltage 4ch/unit
 Charge, IEPE sensor
 Max. 100kS/s (10μs)

Voltage Output Module GL7-DCO

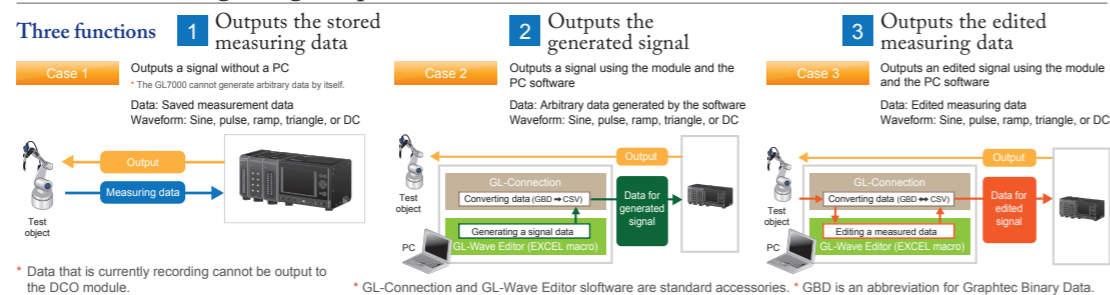


Main features

- Recorded measurement data can be output as an analog voltage, and reproduce the measured anomalies and recorded data (Temperature, humidity, logic/pulse data is excluded.)
- The reference signal for the test created by the GL-Wave Editor (EXCEL macro) can be output into an analog voltage (Signal: Sine wave, pulse wave (any duty ratio), ramp, triangle wave, simple arbitrary waveform, DC.)
- Output voltage: Max. 10V (Output current: Max ±10mA/ch or ±40mA/unit.)

Method of analog voltage output

Three functions



Output voltage 8ch/unit
 Max. 100kS/s (10μs)
 Captured data, Arbitrary waveform

* Data that is currently recording cannot be output to the DCO module.

* GL-Connection and GL-Wave Editor software are standard accessories. * GBD is an abbreviation for Graphtec Binary Data.

High Voltage Module GL7-HV

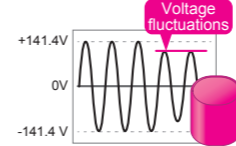


Main features

- High input voltage (Maximum: 1000V)
- Input coupling of DC and AC
- Real-time RMS measurement

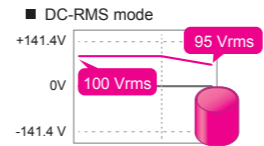
Measuring in RMS (effective value)

Normal mode



Volume of data to be recorded becomes large because the sampling speed needs to be fast to recognize the waveform.

RMS measurement



Volume of data recorded becomes small because the sampling speed does not need to be as fast recording the RMS value.

Voltage 2ch/unit
 Max. 1000V input
 Max. 1MS/s (1μs)

High Speed Voltage Module GL7-HSV



Main features

- All isolated input channels (4ch/unit)
- 1MS/s high speed simultaneous sampling
- Maximum input voltage 100V
- Supports low-pass filter

High speed voltage 4ch/unit
 Max. 1MS/s (1μs)
 Simultaneous sampling Isolated

Voltage/Temperature Module GL7-M



Main features

- All isolated input channels (10ch/unit)
- Supports multiple input types (4-20mA current loop using 250 ohms shunt)
 Voltage: max. 50V
 Temperature: Thermocouple and RTD
 Humidity: optional sensor (B-530)

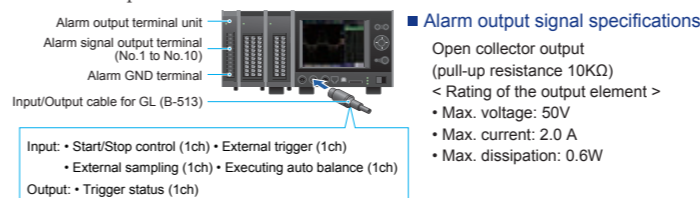
Voltage /Temp. 10ch/unit
 Max. 100S/s (10ms)

* Supports one humidity sensor per module (B-530). Additional humidity sensors require an external power supply for the sensors..

Reliable measurement with useful functions

External I / O (Input/Output) and Alarm output

Output module is used for triggering, external sampling, start/stop, and auto-balance for input and output using the Input/Output cable for GL (B-513 optional). The signals related to the status of alarms are output from the terminal on the alarm output module.



Alarm output signal specifications

- Open collector output (pull-up resistance 10KΩ)
- < Rating of the output element >
- Max. voltage: 50V
- Max. current: 2.0 A
- Max. dissipation: 0.6W

WEB and FTP server for remote control and data transfer / Direct USB connection to the main unit

WEB server: Web browser function allows remote control and remote monitoring of waveform analysis.

FTP server: Data can be transferred between the server and GL7000.

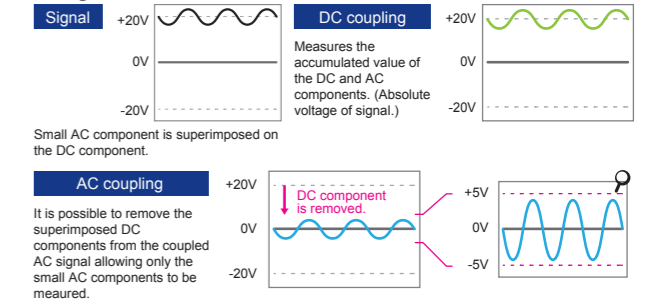
USB drive mode: The USB drive mode function enables data to be transferred to the PC from the main module built-in flash memory, SD card memory, or the SSD by drag & drop feature. You can then easily delete the files from the file explorer.

* While using the FTP server or the USB drive mode, data files that are being recorded cannot be transferred to the PC.



DC- or AC-coupling

By using the DC and AC coupling feature, the voltage signal of a small signal superimposed on the input signals or the absolute voltage value can be recorded.



Small AC component is superimposed on the DC component.

It is possible to remove the superimposed DC components from the coupled AC signal allowing only the small AC components to be measured.

Voltage Module GL7-V



Main features

- All isolated input channels (10ch/unit)
- 1kS/s Simultaneous sampling
- Maximum input voltage 100V
- Supports low-pass filter

Voltage 10ch/unit
 Max. 1kS/s (1ms)
 Simultaneous sampling Isolated

Logic/Pulse Module GL7-L/P



Main features

- Switching mode between logic or pulse
- 16ch/unit
- Logic mode: 1MS/s sampling, Pulse mode: 10kS/s sampling
- Available dedicated cable

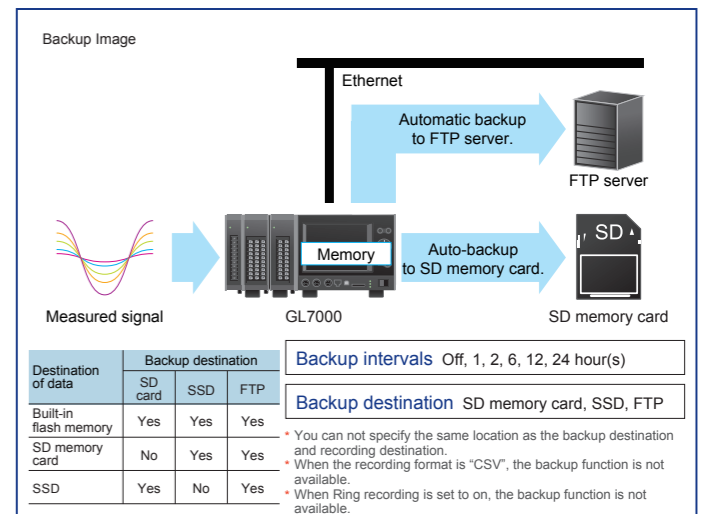
Option: Probe set for Logic input (RIC-10)

Logic /Pulse 16ch/unit
 In Logic, Max. 1MS/s (1μs)
 In Pulse, Max. 10kS/s (100μs)

* Attachable number of modules: up to 7 modules using Logic mode, up to 2 modules using Pulse mode. In the Pulse mode, there is a limitation of the sampling speed by the number of channels used.

Backup settings

The GL7000 has a function that periodically backs up recording data (refer to the chart below). Here, the user can set the conditions for data backup.



Destination of data	Backup destination		
	SD card	SSD	FTP
Built-in flash memory	Yes	Yes	Yes
SD memory card	No	Yes	Yes
SSD	Yes	No	Yes

Backup intervals: Off, 1, 2, 6, 12, 24 hour(s)

Backup destination: SD memory card, SSD, FTP

* You can not specify the same location as the backup destination and recording destination.
 * When the recording format is "CSV", the backup function is not available.
 * When Ring recording is set to on, the backup function is not available.

NTP client function

The clock on the GL7000 is periodically synchronized with the NTP server.

DHCP client function

The IP address of the GL7000 is automatically obtained from the DHCP server.

