



Mess- und Prüftechnik, Die Experten,

11-1010

DATA PLATFORM GL7000 Modular Data Acquisition PLATFORM

General Purpose Data Acquisition System

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



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 128GB

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 bre 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 independtnly or in conjuctions with one another.



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

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

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

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

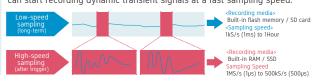


• Up to 10 input/output modules of the same kind can be attached to one main unit *2



Dual-Sampling Feature (Firmware version 2.0 or later)

Dual sampling speed can now be configured at the same time. while recording long intervals on the slow sampling speed, trigger set can start recording dynamic transient signals at a fast sampling speed.

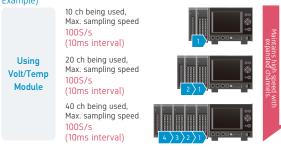


LAN straight cable (CAT5 or higher class, length up to 10m) allows an extended display option for:



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

Example)



*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.) If different types of modules are attached, the effective sampling speed of the system is to up to the fastest sampling speed among the installed modules. *2.

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 module. The same data is saved with the system sampling speed until new data is captured on the slower units.

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

♥ Y-T display



Four Different Display Methods

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

👽 Digital display



Supports multiple types of storage, 128GB 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.

Maximum sampling speed and the data capturing time *1

2 Built-in Flash memory

4GB 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). * The storage capacity might differ by its production date.

4 SSD module (128GB)

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.*



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

The number of modules are limited. * The storage capacity might differ by its production date

		Number of un	its, Max. sampling s	speed (interval)		Capturing time	when single module is attac	hed (when 10 modules are a	attached)	
Input Module	Strage Device	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)	1005/s (10ms)	15/s (1s)	
the second	Built-in RAM (2Msamples)	1MS/s (1µs)			2sec. (2sec.)	20sec. (20sec.)	33min. (33min.)	5hrs. (5hrs.)	23days (23days)	
High-speed Voltage	Built-in Flash memory (4GB)	1kS/s (1ms)			N/A	N/A	72hrs. (10hrs.)	32days (4days)	3269days (440days)	
Module	SD memory card (32GB)*2		165/5 (1115)		10/A	10/8	83hrs. (11hrs.)	34days (4days)	3495days (470days)	
Hodole	SSD (128GB)*2	1MS/s (1µs)	500KS/s (2µs)	200KS/s (5µs)	4min. (N/A)	44min. (6min.)	05115. (11115.)	SHudys (Hudys)	547500y5 (47000y5)	
	Built-in RAM (2Msamples)		1MS/s (1µs)		2sec. (2sec.)	20sec. (20sec.)	33min. (33min.)	5hrs. (5hrs.)	23days (23days)	
High Voltage	Built-in Flash memory (4GB)		1kS/s (1ms)		N/A	N/A	109hrs. (17hrs.)	45days (7days)	4577days (715days)	
Module	SD memory card (32GB)*2		165/3 (1113)		IN/A	10/8	117hrs. (18hrs.)	48days (7days)	4893days (764days)	
	SSD (128GB)*2	1MS/s (1µs)	500KS/s (2µs)	200KS/s (5µs)	4min. (N/A)	44min. (11min.)	(101113.)	iodays (radys)	10754435 (7014435)	
DCStrain*3	Built-in RAM (2Msamples)		100kS/s (10µs)			20sec. (20sec.)	33min. (33min.)	5hrs. (5hrs.)	23days (23days)	
&Charge	Built-in Flash memory (4GB)		1kS/s (1ms)		N/A		72hrs. (13hrs.)	32days (5days)	3269days (544days)	
Module	SD memory card (3GB)*2	- IKS/S (IIIIS)				N/A	83hrs. (13hrs.)	34days (5days)	3495days (582days)	
Hodole	SSD (128GB)*2		100kS/s (10µs)		44min. (6min.)		00110. (10110.)	5 ludy5 (5ddy5)	51754435 (5024435)	
	Built-in RAM (2M samples)						33min. (33min.)	5hrs. (5hrs.)	23days (23days)	
Voltage	Built-in Flashmemory (4GB)	1kS/s (1ms)			N/A	N/A	42hrs. (4hrs.)	17days (2days)	1760days (204days)	
Module	SD memory card (32GB)*2						45hrs. (5hrs.)	18days (2days)	1882days (218days)	
	SSD (128GB)*2						151115. (51115.)		1002udys (210udys)	
	Built-in RAM (2Msamples)							5hrs. (5hrs.)	23days (23days)	
Volt./Temp.	Built-in Flash memory (4GB)		1005/s (10ms)		N/A	N/A	N/A	17days (2days)	1760days (204days)	
Module	SD memory card (32GB)*2 SSD (128GB)*2		1005/s (10ms)			1077		18days (2days)	1882days (218days)	

Capturing time values are approximately. Data is 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.) The file size of the captured data is limited up to 4GB on firmware version 2.0 or later, 2GB on firmware version 1.6 or before. Reference recording time is for up to 8 modules. (max GL7-DCB and GL7-CHA modules is 8.)

Useful functions	SD memory card exchangeRing captureRelay capture	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 4GB continously without losing any recording. (Firmware version 2.0 or later : up to 4GB, Firmware version 1.6 or before : 2GB
for data saving and replay	Data searchMovement by cursor	In firmware version 2.0 or later, data capacity or capturing time can be set flexibly by users. 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.
	Statistical calculation with cursor	The statistical calculation (average, max, min, P-P, effective value) can be determined in between the recorded data specified by the

Supports measurement and simulation testing using the voltage output module (GL7-DC0)



3

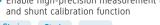
B)

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

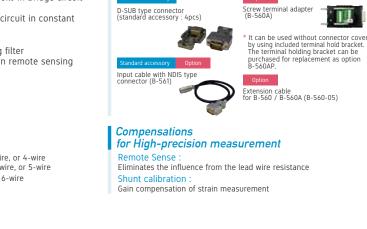




Supported sensor

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

Charge Module GL7-CHA



Output terminal and conversion cable

Output cable with BNC connector (B-562)

SMA (SubMiniature version A)

SMA

connector

connector

07

BNC

connector

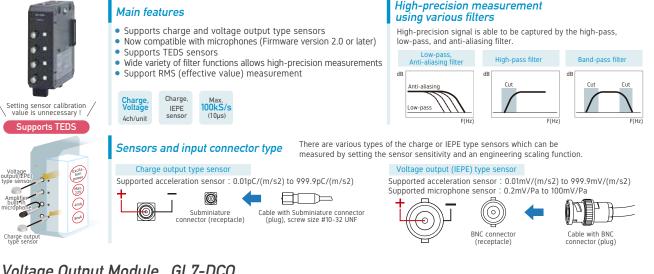
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0 0

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Connector for input



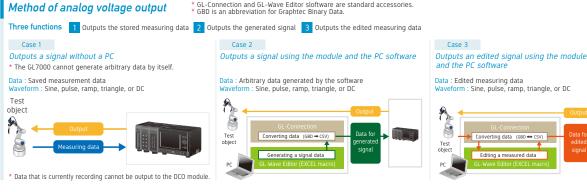
Voltage Output Module GL7-DC0



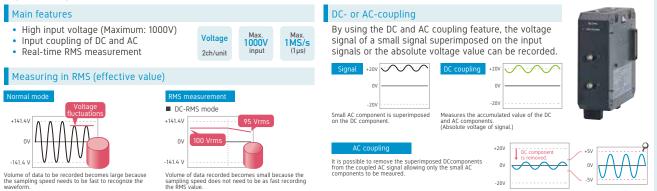
Main features

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

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



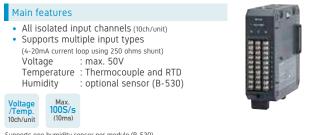
High Voltage Module GL7-HV



High Speed Voltage Module GL7-HSV



Voltage/Temperature Module GL7-M



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 1/0 (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

Input • Start/Stop control (1ch) • External trigger (1ch) External sampling (1ch) · Executing auto balance (1ch) Output. Trigger status (1ch)

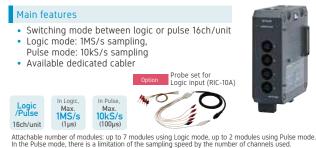
WEB and FTP server for remote control and data transfer / Direct USB connection to the main unit



Voltage Module GL7-V



Logic/Pulse Module GL7-L/P



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.

Backup Imag	je			Etherr	net		
						tic backup 9 server.	
							FTP server
	Æ			Memory		o-backup	., SD •
	1		1000		to SD m	emory card.	
Measured	signal				to SD m	iemory card.	SD memory card
		up destin		GL7000	pu -		SD memory card
Measured Destination of data		up destin SSD		GL7000 Backup in	Itervals	Off, 1, 2, 6,	SD memory card 12, 24 hour(s)
Destination	Back SD		ation	GL7000 Backup in Backup de	ntervals stination	Off, 1, 2, 6, SD memory	SD memory card 12, 24 hour(s) y card, SSD, FTP
Destination of data Built-in	Back SD card	SSD	ation FTP	GL7000 Backup ir Backup de	tervals stination ecify the sam nation.	Off, 1, 2, 6, SD memory e location as th	SD memory card 12, 24 hour(s)

NTP client function

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

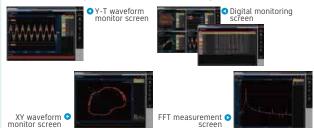
High performance and useful software GL-Connection It is able to display in the format that cannot be displayed in the GL7000

Recording safety measures include backing up the data on to the PC Application software allows a real time saving of the data while the data is being captured on to the memory of the GL7000. LAN / USB cable Built-in memory Storage on GL7000 Transferred data to the PC Captured data is transferred and saved to the PC after the completion of the measurement. During the measurement, free-running mode allows the display of the real time data but not the recording. (Real-lime recording is not available using the built-in RAM as the recording destination.) Built-in RAM Captured data is stored to the media and also transferred to the PC simultaneously. Max sampling speed: 1ms/unit when it is saved in the GBD format, 1ms/unit when it is in the CSV format. Built-in flash memory /SD memory card Captured data is transferred and saved to the PC after the completion of the measurement. During the measurement, free-running mode allows the display of the real time data but not the recording. (Real-lime recording is not available using the built-in RAM as the recording destination.)

Real time recording on the PC can be saved as a CSV file while the data is saved as a GBD file on the main GL7000. Maximum sampling speed for this feature is 1ms.

Display options

Allows YT waveform, XY waveform, digital monitoring and FFT measurement (same as the main GL7000 unit)



Useful functions for GL-Connection Software

Supports a user-friendly mouse movement that enables changes in the setting and the related display waveform

Display size of the waveform can be changed using a drag feature on the dotted line with the PC controlled mouse

The scale of the waveform can be changed using the mouse wheel operation.



Large-scale channel measurements

Up to 1120 channels can be recording using the PC platform 10 units of the GL7000 can be connected through 1 PC software using the LAN or the USB hub.

Up to 5 units of the GL7000 can be fully synchronized using the sync. cable

The start/stop trigger, and sampling can be synchronized in the GL7000 when they are connected by a sync cable. The master and slave units are automatically identified. Data is stored in each main unit individually.

Allows connections of Graphtec's midi LOGGER series Maximum channel is up to 2000 when 10 units of GL840 is connected midi LOGGER series

- GL2000, GL980, GL900-4 and GL900-8, GL840, GL820, GL240, GL220 - can all be viewed in real time.

Customized screens for Data Acquisition Professionals

Various control and setting screens for simplified operation



Setup screen

It is easily recognize the unit to be connected by graphical image on the display.





Setting menu screen

Setting menu on the GL Connection software is similar to the setup screen on the GL7000.

Data analysis with					
Oscope/Oscope2 (ONO SOKKI)					
※ GL7000 GBD data can be imported directly to Oscope.					

GL-Wave Editor (Excel macro)

Setting menu for the voltage output module

Setup for the output function using the GL7-DC0 module is set on the GL-Wave Editor (EXCEL macro) with customized data platform for specified measurement.

Multiple window option allows waveforms to be displayed in various forms * It is required version 2.20

Splits up to 4 windows and each window can display different format (Y-T, XY, FFT, and digits).





Oual windows • Quad windows displaying mixed format Ouad windows Cursor Sinchronization* : When displaying multiple windows, the cursor positions can be synced.

Module Settings List* : Settings of multiple modules can be displayed simultaneously, and setting conditions can now be saved as CSV data. Disable saving data to PC* : selection for enabling or disabling data recording on the PC and only to the main unit GL7000.

Remote Lock On/ Setting operation is available on GL7000 under control of GL-Connection.

Optional Features

Additional functions for data processing.

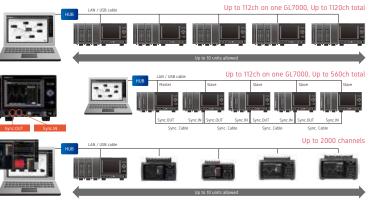
The maximum, minimum, peak, and average values are displayed while capturing data. The value between the cursors of the maximum, minimum, peak, average, and RMS will be displayed when replaying selected data span.

File operation

Data can be converted to CSV file format for a specified time period, or complete data, or multiple files. A file can also be created by compressing or consolidating multiple files. Search

The search point can be set by the level, alarm, or time (the beginning of the data, center, end, trigger point, the specified time, instruction time, the number specified). Send mail

Alarm warnings can be sent via Email.



SDK (Software Development Kit) is offered for free Software Development Kit (SDK) is available for real time data transfer and beyond for custom application developed for your need.

 USB driver
 Manual (Main unit controls, data communication, data file, etc.)
 Sample program (in Visual C++, Visual Basic, .NET framework) • Key commands have been set as modules for simpler implementation with LabVIEW. (Connection, Waveform Display, Digital Indicator, CSV conversion, file acquisition)

Input / Output Module Specifications

Model numb Number of ir	nput channels	GL7-V 10 channels	GL7-HSV 4 channels				
input metho	d	All channels isolated unbalanced input, Simultaneous sampling. Screw terminal (M3 scr	All channels isola ew) Simultaneous sar	ted unbalanced input, npling, BNC connector			
Built in RAM	eed (interval)	1 k Samples/s to 1 Sample/h (1 ms to 1 hr.) 1 M Samples/s to 1 Sample/h (1µs to 1 hr.) 2 million samples for each channel					
	nt accuracy (*1)	100, 200, 500 mV, 1, 2, 5, 10, 20, 50, 100 V, ±0.25% of Full Scale		• • • • • • • • • • • • • • • • • • •			
VD converte nput impeda	ance	Successive approximation type, 16 bits (effect 1 MΩ ±5%		U of the measuring full range)			
Maximum input voltage	Between (+)/(-) terminal Between channels ((-) terminals Between channel/GND	60 Vp-p	ange: IUU Vp-p				
voltage Max. voltage (withstand)		1000 Vp-p (1 minute)					
solation	Between input/GND ode rejection ratio		ance: Max. 300 0)				
Frequency re Filter		DC to 1 kHz (+1/-3 dB) Off, Line(1.5 Hz), 5, 50,	DC to 200 kHz (+ Off, Line(1.5 Hz), 5	I/-3 dB) 5, 50, 500, 5k,			
	ensions (W×D×H)	500 Hz (at -3 dB, 6dB/oct) Approx. 49 x 136 x 160 mm (Excluding proje	50k Hz (at -3 dB, actions)				
weight /oltage/Tem	nperature Input Modu	Approx. 840 g le Specifications	Approx. 740 g				
4odel numb Number of ir	er nput channels	GL7-M 10 channels					
nput methor Sampling spr	d eed (interval)	All channels isolated balanced input, Scans 100 Samples/s at 10ch to 1 Sample/h (10 m		g, Screw terminal (M3 screw)			
Built in RAM Measurement	Voltage	2 million samples for each channel 20, 50, 100, 200, 500 mV, 1, 2, 5, 10, 20, 50 V, and 1-5 V Full Scale					
ange	Temperature Humidity (*2)	Thermocouple: K, J, E, T, R, S, B, N, and W (RTD: Pt100, JPt100 (JIS), Pt1000 (IEC751) 0 to 100 % RH, using optional humidity sen					
Measurement	Voltage Temperature Thermocouple	±0.1% of Full Scale	Measurement act	uracy.			
iccoracy (5)	R/S	0 ≤ TS ≤ 100°C 100 < TS ≤ 300°C	± 5.2°C ± 3.0°C	conacy			
		R: 300 < TS ≤ 1600°C S: 300 < TS ≤ 1760°C	± (0.05% of readi ± (0.05% of readi	ng + 2.0°C) ng + 2.0°C)			
	В	400 ≤ TS ≤ 600°C 600 < TS ≤ 1820°C	± 3.5°C ± (0.05% of readi	ng + 2.0°C)			
	K	-200 ≤ TS ≤ -100°C -100 < TS ≤ 1370°C	± (0.05% of readi ± (0.05% of readi	ng + 2.0°C) ng + 1.0°C)			
	E	-200 ≤ TS ≤ -100°C -100 < TS ≤ 800°C	± (0.05% of readi ± (0.05% of readi	ng + 2.0°C) ng + 1.0°C)			
	T	-200 ≤ TS ≤ -100°C -100 < TS ≤ 400°C	± (0.1% of reading ± (0.1% of reading	g + 1.5°C)			
	J	-200 ≤ TS ≤ -100°C -100 < TS ≤ 100°C 100 < TS ≤ 1100°C	± 2.7°C ± 1.7°C				
	N	-200 ≤ TS < 0°C	± (0.05% of readi ± (0.1% of readin + (0.1% of readin	g + 2.0°C)			
	W	0 ≤ TS ≤ 1300°C 0 ≤ TS ≤ 2000°C Junction Compensation (R.J.C.) accuracy: ±0.5	± (0.1% of reading ± (0.1% of reading				
		Junction Compensation (R.J.C.) accuracy: ±0.5 of thermocouple used is 0.32 mm diameter i Measurement range		mm diameter in other types. Accuracy			
	Pt100 JPt100	-200 to 850°C (F.S. = 1050°C) -200 to 500°C (F.S. = 700°C)	1 mA 1 mA	±1.0°C ±0.8°C			
R.J. Compen	Pt1000	-200 to 500°C (F.S. = 700°C) -200 to 500°C (F.S. = 700°C) Select internal or external	0.2 mA	±0.8°C			
A/D converte nput impeda	er	Sigma-Delta type, 16 bits (effective resoluti 1 MΩ ±5%	on: 1/40000 of the me	easuring full range)			
4aximum nput	Between (+)/(-) terminal Between channels ((-) terminals	60 Vp-p 60 Vp-p					
/oltage	Between channel/GND	60 Vp-p					
Max. voltage	Between channels	350 Vp-p (1 minute)					
withstand)	Between channel/GND	350 Vp-p (1 minute) 350 Vp-p (1 minute)					
withstand) solation		350 Vp-p (1 minute) 350 Vp-p (1 minute) Min. 50 MΩ (at 500 V DC) Min. 90 dB (50/60 Hz, Signal source imped Off, 2, 5, 10, 20, 40					
withstand) solation Common-mo Filter	Between channel/GND Between input/GND ode rejection ratio	350 Vp-p (1 minute) 350 Vp-p (1 minute) 350 Vp-p (1 minute) Min. 50 MD (at 500 V DC) Min. 90 dB (50/60 Hz, Signal source imped 0ff, 2, 5, 10, 20, 40 (Moving average in selected number. When the data sampled in the sub-sample (5 sec	the sample is longer onds) will be used for				
withstand) solation Common-mo Filter 5 V output External dim	Between channel/GND Between input/GND ode rejection ratio	350 Vp-p (1 minute) 350 Vp-p (1 minute) Min. 50 M1 (at 500 V DC) Min. 90 dB (50/60 Hz, Signal source imped 0f Z, 5, 10, 20, 40 (Moving average in selected number. Wher the data sampled in the sub-sample (5 sec Driving the humidity (* 2) sensor B-530, 1C Approc. 49. Y 136. 160 mm (Excluding proj	i the sample is longer onds) will be used for hannel				
withstand) solation Common-mo Filter SV output External dim Veight High Voltage	Between channel/GND Between input/GND ode rejection ratio Moving average ensions (W×D×H)	350 Vp-p (1 minute) 1350 Vp-p (1 minute) Min. 50 M1 (at 500 V Dc) Min. 90 df (StoO H2, Signal source imped Off, 2, 5, 10, 20, 40 (Moving average in selected number, when the data sampled in the sub-sample (5 sec Driving the numidity (*2) sensor 8-530, 1 c Approx. 49, 7 138 x 160 mm (Excluding proj Approx. 770 g cations	i the sample is longer onds) will be used for hannel				
withstand) solation Common-mo Filter SV output External dim Weight High Voltage Wodel numb Number of ir	Between channet/GND Between input/GND de rejection ratio Moving average ensions (W×D×H) : Input Module Specifi er put channels	350 Vp-p (1 minute) 1350 Vp-p (1 minute) Min. 50 MD (at 500 V DC) Min. 90 dB (500 AD E. Signal source imped Off, 2,5, 10, 20, 40 (Moving average in selected number, when the data sampled in the sub-sample (5 sec Driving the humidity (*2) sensor 8-530, 1 c Approx. 49, 138, 160 mm (Excluding proj Approx. 770 g GL7-HV 2 channels	the sample is longer onds) will be used for hannel ections)	creating the average value.)			
withstand) solation Common-mo filter 5 V output External dim Weight High Voltage Model numb Number of in nput methor Sampling spi	Between channet/GND Between input/GND de rejection ratio Moving average ensions (W×D×H) : Input Module Specifi er put channels	350 Vp-p (1 minute) 350 Vp-p (1 minute) Min. 50 MD (at 500 V DC) Min. 50 MD (at 500 V DC) Min. 90 dB (500 APL 3 Signal source imped Off, 2, 5, 10, 20, 40 (Moving average in selected number. When the data sampled in the sub-sample (5 sec Driving the humdity (*2) sensor 8-530, 1c Approx. 49, 128 A 160 mm (Excluding proj Approx. 770 g exitors GL7-HV 2 channels J channels isolated unbalanced input, Sim 1M Samples/s to 15 sample/h (1 µs to 1 hr.)	the sample is longer onds) will be used for hannel ections)	creating the average value.)			
withstand) solation Common-mo iilter 5 V output External dim Weight High Voltage Model numb Number of ir nput methoo Sampling sp Built in RAM nput couplir	Between channet/GND Between input/GND de rejection ratio Moving average ensions (W×D×H) I nput Module Specifi er uput channels d eed (interval)	350 Vp-p (1 minute) 350 Vp-p (1 minute) Min. 50 M1 (at 500 V Dc) Min. 50 df (500 Hz, Signal source imped Off, 2, 5, 10, 20, 40 (Moving average in selected number, when the data sampled in the sub-sample (5 sec Driving the humdity (*2) sensor 8-530, 1c Approx. 49, 12 at 160 mm (Excluding proj Approx. 770 g etions Ge7HV 2 channels isolated unbalanced input, Sim 1 M Samples/s to 15 sample/h (1 µs to 1 hr.) 2 million samples for each channel A, Cp, CA, FMR, Dc. FMS	the sample is longer onds) will be used for hannel ections)	creating the average value.)			
withstand) solation <u>common-mo</u> ilter <u>sternal dim</u> <u>weight</u> ligh Voltage Model numb Number of ir nput methoo Sampling spi Built in RAM	Between channet/GND Between input/GND de rejection ratio Moving average ensions (W×D×H) I nput Module Specifi er uput channels d eed (interval)	350 Vp-p (1 minute) 350 Vp-p (1 minute) Min. 50 M1 (at 500 V Dc) Min. 50 M2 (60 At PL Signal source imped Off, 2, 5, 10, 20, 40 (Moving average in selected number, when the data sampled in the sub-sample (5 sec Driving the humidity (*2) sensor 8-530, 1c Approx. 49, 7 143 A 160 mm (Excluding proj Approx. 770 g exitors GL7-HV 2 channels J channels isolated unbalanced input, Sim 1M Samples/s to 15 ample/h (1 µs to 1 hr.) 2 million samples for each channel AC, DC, AC-RMS, DC-RMS 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 22, 510, 20, 50, 100, 200, 500, 1000 V Full 1, 22, 510, 20, 50, 100, 200, 500, 1000 V Full	the sample is longer onds) will be used for hannel ections) uultaneous sampling, iscale	creating the average value.)			
withstand) solation Common-mc ilter Versternal dim Weight High Voltage Model numb Vumber of ir nput Interhos appling spy Built in RAM nput couplir deasurement ange	Between nupurUGND Between nupurUGND de rejection ratio Moving average ensions (WxDxH) Input Module Specifi er put channels d ded (interval) mg and measurement DC, AC DC-RMS, AC-RMS DC, AC	350 Vp-p (1 minute) 350 Vp-p (1 minute) Min. 50 M1 (at 500 V DC) Min. 90 dB (500 HZ, Signal source imped Off, 2, 5, 10, 20, 40 (Moving average in selected number. When the data sampled in the sub-sample (5 sec Driving the humidity (*2) sensor 6-530, 1 C Approx. 770 cations GLZ-HV 2 channels All channels isolated unbalanced input, Sim 1 M Samples/r to 1 Sample/h (1 us to 1 hr.) T million samples for each channel AC, DC, AC-RMS, DC-RMS 25, 100, 205, 100, 200, 500, 1000 VF ull (5)	the sample is longer onds) will be used for hannel ections) uultaneous sampling, iscale	creating the average value.)			
withstand) solation Common-mc Filter 5 V output External dim weight High Voltage Model numb Womber of in Put methou Sampling sp Built in RAM nput couplin Weasurement 'ange	Between nupurUGND Between nupurUGND de rejection ratio Moving average ensions (WxDxH) Input Module Specifi er put channels d ded (interval) mg and measurement DC, AC DC-RMS, AC-RMS DC, AC	$\begin{array}{c} 350 \ Vp-p (1 minute) \\ 350 \ Vp-p (1 minute) \\ Min. 50 \ MD (at 500 V DC) \\ Min. 90 \ B(500 \ HZ, Signal source imped \\ Off, 2, 5. 10, 20, 40 \\ (Moving average in selected number. When the data sampled in the sub-sample (5 ace B-Sign, 1C $	the sample is longer onds) will be used for hannel ections) ultaneous sampling, icale icale icale icale 2 in 500 Vrm	creating the average value.)			
withstand) solation Common-mc ilter Versternal dim Weight High Voltage Model numb Vumber of ir nput Interhos appling spy Built in RAM nput couplir deasurement ange	Between nupurUGND Between nupurUGND de rejection ratio Moving average ensions (WxDxH) Input Module Specifi er put channels d ded (interval) mg and measurement DC, AC DC-RMS, AC-RMS DC, AC	$\begin{array}{c} 350 \ Vp-p (1 minute) \\ 350 \ Vp-p (1 minute) \\ Min. 50 \ MD (at 500 V DC) \\ Min. 90 \ B(500 \ HZ, Signal source imped \\ Off, 2, 5, 10, 20, 40 \\ (Moving average in selected number. When the data sampled in the sub-sample (5 ace Driving the humbit) (*2) sensor 6-530, 1C \\ Approx. 70 \ Colored (*1) \ App$	the sample is longer onds) will be used for hannel ections) ultaneous sampling, icale icale icale icale 2 in 500 Vrm	creating the average value.)			
withstand) solation Common-mc ilter Versternal dim Weight High Voltage Model numb Vumber of ir nput Interhos appling spy Built in RAM nput couplir deasurement ange	Between nuput/GND Between nuput/GND de rejection ratio Moving average ensions (WxD+H) Input Module Specifi er put channels d deed (interval) mg and measurement DC, AC DC-RMS, AC-RMS	$\begin{array}{c} 350 \ Vp-p (1 minute) \\ 350 \ Vp-p (1 minute) \\ Min. 50 \ MD (at 500 V DC) \\ Min. 90 \ B(500 \ HZ, Signal source imped \\ Off, 2, 5, 10, 20, 40 \\ (Moving average in selected number, When the data sampled in the sub-sample (5 ace B-Sign, 1C $	the sample is longer onds) will be used for hannel ections) ultaneous sampling, i icale i i i i	creating the average value.)			
withstand) solation Common-mc ilter Versternal dim Weight High Voltage Model numb Vumber of ir nput Interhos appling spy Built in RAM nput couplir deasurement ange	Between inchannel/GND Between input/GND de rejection ratio Moving average ensions (W+D+H) input Module Specifi er put channels d deed (interval) g and measurement DC-RMS, AC-RMS DC-RMS, AC-RMS AC-RMS	$\begin{array}{c} 350 \ Vp-p (1 minute) \\ 350 \ Vp-p (1 minute) \\ Min. 50 \ MD (at 500 V DC) \\ Min. 90 \ B(500 \ HZ, Signal source imped \\ Off, 2, 5, 10, 20, 40 \\ (Moving average in selected number, When the data sampled in the sub-sample (5 ace Driving the humbit) (*2) sensor 8-530, 1C \\ Approx. 70 \ All Channels isolated unbalanced input, Sim 1 M Samples/to 1 Samples/to 25, 510, 20, 50, 100, 200, 500, 1000 V Full Sale Same averagement = 0.5% of Full Scale (at 1 kHz + z > 10 kHz) Response time. 500m S(Cret Factor Sau) Fils (Sale (at 1 kHz + z > 20 kHz) Response time. 500m S(Cret Factor Sau) Successive Approximation type, 16 bits Sauce 1 Sauce 1 (b bits z + 20 kHz) Response time. 500m S(Cret Factor Sau) (rest Factor Sau) (rest) Response time. 500m S(Cret Factor Sau) (rest) Response t$	the sample is longer onds) will be used for hannel ections) ultaneous sampling, icale icale icale icale icale icale to 4)	s range)			
withstand) solation 	Between npurUGND Between npurUGND de rejection ratio Moving average ensions (W-D+H) anput Module Specifier ef pur Channels d d d DC-RMS DC-RMS DC-RMS DC-RMS AC-RMS	$\begin{array}{c} 350 \ Vp-p (1 minute) \\ 350 \ Vp-p (1 minute) \\ Min. 50 \ MD (at 500 V DC) \\ Min. 90 \ B(500 \ HZ, Signal source imped \\ Off, 2, 5, 10, 20, 40 \\ (Moving average in selected number, When the data sampled in the sub-sample (5 ace Briving the humbit) (*2) sensor B-530, 1C \\ Approx. 70 \ Box (110, 110, 110, 110, 110, 110, 110, 110$	the sample is longer onds) will be used for hannel ections) interference cale cale cale cale cale cale cale to 4) to 4) to 4)	creating the average value.) Isolated BNC connector s range) DC and AC coupling,			
withstand) solation 	Between (hannel/CMD) Between (hyt/CMD) de rejection ratio (Moving average ensions (W-D+H) anput Module Specif ef ef put channels d d DC-RMS DC-RMS DC-RMS DC-RMS AC-RMS ef ance Between (+)/() termina	$\begin{array}{c} 350 \ Vp-p (1 minute) \\ 350 \ Vp-p (1 minute) \\ Min. 50 \ MD (at 500 \ VD C) \\ Min. 90 \ dl (500 \ HZ, Signal source imped \\ Off, 2, 5, 10, 20, 40 \\ (Moving average in selected number, When the data sampled in the sub-sample (5 ace Signal S$	the sample is longer onds) will be used for hannel ections) interference cale cale cale cale cale cale cale to 4) to 4) to 4)	creating the average value.) Isolated BNC connector s range) DC and AC coupling,			
withstand) solation 	Between (-)/(-) termina Between (-)/(-)/(-) termina Between (-)/(-)/(-)/(-)/(-)/(-)/(-)/(-)/(-)/(-)/	$\begin{array}{c} 350 \ Vp-p (1 minute) \\ 350 \ Vp-p (1 minute) \\ Min. 50 \ MD (at 500 V DC) \\ Min. 90 \ B(500 \ HZ, Signal source imped \\ Off, 2, 5, 10, 20, 40 \\ (Moving average in selected number. When the data sampled in the sub-sample (5 ace Driving the humbit) (*2) sensor 6-530, 1C \\ Approx. 770 \\ California (*2) \ Approx.$	the sample is longer onds) will be used for hannel ections) interference cale cale cale cale cale cale cale to 4) to 4) to 4)	creating the average value.) Isolated BNC connector s range) DC and AC coupling,			
withstand) solation <u>common-mc</u> liter <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solat</u>	Between (hannel/cK) Between input/GKD de rejection ratio Moving average ensions (W-D+H) ainput Module Specifier ef put channels d d d d d d d d d d d d d d d d d d d	$\begin{array}{c} 350 \ Vp-p (1 minute) \\ 350 \ Vp-p (1 minute) \\ Min. 50 \ MD (at 500 V DC) \\ Min. 90 \ B(500 \ HZ, Signal source imped \\ Off, 2, 5. 10, 20, 40 \\ (Moving average in selected number, When the data sampled in the sub-sample (5 ace Point) and the humbility (22) sensor B-530, 1C \\ Approx. 70 \ government) (x, 22) sensor B-530, 1C \\ Approx. 70 \ government (x, 22) ace Point) (x, 23) \\ Approx. 70 \ government) (x, 23) \\ Approx. 70 \ government) (x, 23) \\ All Channels \\ All Channels isolated unbalanced input, Sim 1 M Samples/to 1 Sample/h (1 µs to 1 hr.) \\ Z million samples/to 1 Sample/h (1 µs to 1 hr.) \\ Z million samples/to 1 Sample/h (1 µs to 1 hr.) \\ Sim average massurement \\ 40, Sto 6 Full Scale (at 1 K42 + 5 × 10 K42) \\ Response time. 500 ms (Crest Factor sol) for W rars and \\ e15% of Full Scale (at 1 K42 + 5 × 10 K42) \\ Response time. 500 ms (Crest Factor S = 20 K42) \\ Response$	the sample is longer onds) will be used for hannel ections) ultaneous sampling. cale cale cale cale cale cale to 4) to 4) to 4)	creating the average value.) Isolated BNC connector s range) DC and AC coupling,			
withstand) solation <u>common-mc</u> liter <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u>	Between (hannel/SNL Between input/GND de rejection ratio Moving average ensions (W+D+H) ainput Module Specifier ef put channels d d d d DC-RMS DC-RMS DC-RMS DC-RMS DC-RMS C-R	$\label{eq:second} \begin{array}{l} 350 \ Vp-p (1 minute) \\ 350 \ Vp-p (1 minute) \\ Min. 50 \ MD (at 500 V DC) \\ Min. 90 \ B(500 \ HZ, Signal source imped \\ Off, 2, 5. 10, 20, 40 \\ (Moving average in selected number, When the data sampled in the sub-sample (5 ace Driving the humbit) (*2) sensor 8-530, 1C \\ Approx. 70 \ General Mathematical Source (1, 10, 10, 10, 10, 10, 10, 10, 10, 10, 1$	the sample is longer onds) will be used for hannel ections)	creating the average value.) Isolated BNC connector s range) DC and AC coupling,			
withstand) solation <u>Common-mc</u> lifter <u>S V output</u> <u>Sternal dim</u> Weight <u>Jigh Voltage</u> Model numb Womber of ir ampling spirat <u>Mamping Spirat</u> Model numb <u>Voltage</u> <u>A/D converte</u> <u>A/D converte</u> <u>A/D converte</u> <u>Maximum</u> <u>nput</u> <u>mput</u> <u>mput</u> <u>withstand</u>) <u>solation</u> <u>common-mc</u> <u>requency re</u>	Between (hannel/SNL Between input/GND de rejection ratio Moving average ensions (W-D+H) ainput Module Specifier ef put channels d d d d DC-RMS DC-RMS DC-RMS DC-RMS DC-RMS DC-RMS C-	350 Vp-p (1 minute) 350 Vp-p (1 minute) Min. 50 MD (at 500 V DC) Min. 90 dB (500 HZ, Signal source imped Off, 2, 5, 10, 20, 40 (Moving average in selected number. When the data sampled in the sub-sample (5 sec Driving the humbit) (*2) sensor 6-530, 1C Approx. 770 g Cations Approx. 770 g Cations All channels All channels isolated unbalanced input, Sim 1 M Samples/t to 1 Sample/h (1 us to 1 hr.) 2 million samples/t to 1 Sample/h (1 us to 1 hr.) 2 million samples/t to 1 Sample/h (1 us to 1 hr.) 2 million samples for each channel AC, DC, AC-RMS, DC-RMS 2 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 200, 500, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 200, 500, 100, 200, 500, 1000 V Full 1, 2, 5, 10, 200, 500, 100, 200, 500, 100, 200, 500, 1000 V Full 1, 2, 5, 100, 200, 500, 100, 200, 500, 100, 200, 500, 100, 200, 500, 100, 200, 500, 100, 200, 500, 100, 200, 500, 100, 200, 500, 100, 200, 100, 100, 100, 100, 100, 1	the sample is longer onds) will be used for nannel ections) cale cale cale cale to 4) to 4) to 4) DC-RMS, AC-RMS cou ance: Max. 300 D)	creating the average value.) Isolated BNC connector s range) DC and AC coupling,			
withstand) solation <u>common-mc</u> ilter <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solation</u> <u>solat</u>	Between (hannel/SNL Between input/GND de rejection ratio Moving average ensions (W+D+H) ainput Module Specifier ef put channels d d d d DC-RMS DC-RMS DC-RMS DC-RMS DC-RMS C-R	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	the sample is longer onds) will be used for hannel ections) icale cale cale cale cale to 4) to 4) to 4) to 4) to 4) info full range in the 1 DC-RMS, AC-RMS cou	creating the average value.) Isolated BNC connector s range) DC and AC coupling,			
withstand) solation <u>Common-mc</u> liter <u>S V output</u> <u>Sternal dim</u> Weight <u>High Voltage</u> Model numb Womber of ir ange <u>V assument</u> <u>AvD converte</u> <u>AvD converte</u> <u>AvD converte</u> <u>AvD converte</u> <u>AvD converte</u> <u>AvD converte</u> <u>AvD converte</u> <u>AvX convert</u>	Between nput/GND Between nput/GND de rejection ratio Moving average ensions (W-D-H) input Module Specifier ef put channels d d d d DC-RMS DC-RMS DC-RMS DC-RMS DC-RMS DC-RMS C-RMS C-RMS C-RMS C-RMS DC-RMS C-RMS DC-RMS C-RMS DC-RMS C-RMS DC-RMS C-RMS DC-RM	$\begin{array}{l} 350 \ Vp-p (1 minute) \\ 350 \ Vp-p (1 minute) \\ Min. 50 \ MD (at 500 \ VD C) \\ Min. 70 \ dB (500 \ HZ, Signal source imped \\ Off, 2, 5, 10, 20, 40 \\ (Moving average in selected number, When the data sampled in the sub-sample (5 ace N-S30, 1C Approx. 49 x 134 x 100 mm (Excluding proj. Approx. 770 g \\ Catholic State (1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1$	the sample is longer onds) will be used for hannel ections)	creating the average value.) isolated BNC connector S range) DC and AC coupling, Dling)			
withstand) solation <u>Common-mc</u> ilter <u>S V output</u> <u>Xternal dim</u> Weight <u>High Voltage</u> Model numb Womber of ir ange <u>Vasser</u> <u>AVD converte</u> <u>AVD converte</u> <u></u>	Between channel/SND Between input/GND de rejection ratio Moving average ensions (W-D+H) sinput Module Specifier ef put channels d d d DC-RMS DC-RMS DC-RMS DC-RMS DC-RMS DC-RMS DC-RMS C-RMS C-RMS C-RMS C-RMS C-RMS DC-RMS DC-RMS C-RMS C-RMS D	$\begin{array}{l} 350 Vp-p (1 minute) \\ 350 Vp-p (1 minute) \\ Min. 50 M1 (at 500 V DC) \\ Min. 90 dB (500 HZ, Signal source imped \\ Off, 2, 5, 10, 20, 40 \\ (Moving average in selected number. When the data sampled in the sub-sample (5 ace Driving the humbility (22) senses 0 = 8-30, 1C Approx. 49 x 136 x 100 mm (Excluding proj. Approx. 770 g Catlons 200 MI (at 200 MI (200 MI$	the sample is longer onds) will be used for hannel ections) ultaneous sampling. 	creating the average value.) isolated BNC connector S range) DC and AC coupling, Dling)			
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withstand) solation Common-mc ilter S V output Xiternal dim Weight High Voltage Model numb Womber of ir Sampling Spy A/D converter A/D conver A/D converter A/D converter	Between nutrur (SND) Between nutrur (SND) de rejection ratio moving average ensions (W+D+H) input Module Specifier er put channels d d d d d d d d d d d d d	350 Vp-p (1 minute) 350 Vp-p (1 minute) Min. 50 M0 (at 500 V DC) Min. 50 M0 (at 500 V DC) Approx. 770 g approx. 770 g appro	the sample is longer onds) will be used for hannel ections) ultaneous sampling. 	creating the average value.) solated BNC connector s range) DC and AC coupling, pling) DC and AC coupling, pling) med on. • Filter is set to 10 turned on. • Filter is set to 10 urmed on. • Filter is set to 10 bridge, 5-wire full bridge, 2.5V. front panel of the module.			
withstand) solation <u>ommon-mc</u> ilter <u>S V output</u> <u>S N ou</u>	Between channel/KNL Between input/GND de rejection ratio model rejection ratio provide the second second encode of the second second encode of the second second second de de (interval) terrest and the second second second de de (interval) terrest and the second second second de de (interval) terrest and terrest and second second de de (interval) terrest and terrest and terrest de de (interval) terrest and terrest de de (interval) terrest and terrest de terrest and terrest de rejection ratio seponse terrest and terrest and terrest is to the conditions: temperature is 23 ef erreminal is connected to the ranges vary by the de ranges va	350 Vp-p (1 minute) Min. 50 M0 (at 500 V DC) Min. 50 M0 (at 500 V DC) Approx. 770 g Approx. 770 g Approx. 770 g Approx. 770 g All Channels All Chanels All Chanels All Cha	the sample is longer onds) will be used for hannel ections) ultaneous sampling. 	creating the average value.) solated BNC connector s range) DC and AC coupling, pling) DC and AC coupling, pling) med on. • Filter is set to 10 turned on. • Filter is set to 10 urmed on. • Filter is set to 10 bridge, 5-wire full bridge, 2.5V. front panel of the module.			
withstand) solation <u>ommon-mc</u> ilter <u>S V output</u> <u>S S S V output</u> <u>S S S V output</u> <u>S S S S S S S S S S S S S S S S S S S </u>	Between channel/KNL Between input/GND de rejection ratio model rejection ratio participation of the second encode of the second encode of the second encode of the second de de (interval) the second of the second de de (interval) the second of the second de de (interval) the second of the second de de (interval) de de de (interval) de rejection ratio de ratio de ratio de ratio de ratio de ratio de ratio de ratio de ratio de ratio de rati	350 Vp-p (1 minute) Min. 50 MI (at 500 V DC) Min. 50 MI (at 500 V DC) Min. 50 MI (at 500 V DC) Min. 90 dI (500 HP, Signal source imped Off, 2, 510, 22, 40 (Moving average in selected number, When the data sampled in the sub-sample (5 sec Driving the humitity (*2) sensor 8-530, 1C Approx. 770 g Cations Approx. 770 g Cations All Channels All Channels All Channels isolated unbalanced input, Sim All Channels for each Channel AL Channels and Channel AL Channels for each Channel AL Channels and Channel AL Channel AL Channels and Channel AL Channels and Channel AL Channels and Channel AL Channels and Channel AL Channel AL Channels and Channel AL Channel AL Channels and Channel AL Channel AL Channels and AL Channel AL Channels and AL Channel AL Channels and Channel AL Channel AL Channels and Channels and Channel AL Channels and Channels and Channels and Channel AL Channels and Channels and Channels and Channel AL Channels and Channels and Channels and Chanel AL Channels and	the sample is longer onds) will be used for hannel ections) ultaneous sampling. cale cale cale cale (cale (cale) (cale (cale) (c	creating the average value.) solated BNC connector s range) DC and AC coupling, pling) DC and AC coupling, pling) med on. • Filter is set to 10 turned on. • Filter is set to 10 urmed on. • Filter is set to 10 bridge, 5-wire full bridge, 2.5V. front panel of the module.			

Model number Number of in	ut Module Specificatio er Iput channels	GL7-DCB 4 channels
Input method	dAll channels isolated eed (interval)	balanced input, Simultaneous sampling, D-SUB type connector (9 pins, receptacle) 100 k Samples/s to 1 Sample/h (10 μs to 1 hr.)
Built in RAM	eeu (intervat)	2 million samples for each channel
nput type Measurement	Strain (*5)	Strain, Voltage, Resistance value (including potentiometer) 500, 1000, 2000, 5000, 10000, 20000 με (με: 10-6 strain)0.2, 0.25, 0.4, 0.5, 1, 2, 2.5, 4, 5, 10 mV/V
ange	Voltage Resistance	1, 2, 5, 10, 20, 50, 100, 200, 500 mV, 1, 2, 5 V Full Scale 1, 2, 5, 10, 20, 50, 100, 200, 500 Ω, 1, 2, 5, 10, 20, 50 kΩ Full Scale
Measurement	Strain Voltage	±(0.2% of Full Scale + 10 με)
	Resistance	±(0.2% of Full Scale + 10 μV) ±0.5% of Full Scale (More than 1 hour elapsed after power-on)
A/D converte Gauge ratio	21	Successive Approximation type, 16 bits (effective resolution: 1/40000 of the measuring full range 2.0 constant
Supported sensor	Strain (*6)	Strain gauge Quarter bridge (single gauge) in 2-, 3- or 4-wire (supports remote sensing in 3- or 4-wire)
3011301		Half bridge (dual gauge) in 3-, 4-, 5-wire (supports remote sensing in 4- or 5-wire)
		Full bridge (quad gauge) in 4- or 6-wire (supports remote sensing in 6-wire) Transducer/sensor based on a strain gauge
	Resistance	Full bridge type in 4-wire, Full bridge type in 6-wire (supports remote sensing) Resistor, Potentiometer
Bridge resist		50 Ω to 10 kΩ * Available excitation power varies by selection of element. 120 or 350 Ω for the quarter- and half-bridge
Excitation	Voltage mode	1, 2, 2.5, 5, 10 V DC
oower	Current mode	* Excitation voltage 5 and 10 V is available when bridge resistance is the 350 Ω or higher. Constant current: 0.1 to 20 mA (supported voltage is up to 10 V.)
Zero Adjust or Strain gauge	Method Max. Range	Fully automatic (via push button or setting the condition menu) ±10,000με (με: 10-6 Strain)
Remote sens	ing	3- or 4-wire in quarter bridge, 4- or 5-wire in half bridge, 6-wire full bridge
<u>Shunt Calibra</u> Maximum	Between (+) / (-) terminal	Approx. 60 kΩ (120 Ω gauge), Approx. 175 kΩ (350 Ω gauge) 10 V, Common-mode voltage: 10 Vrms AC
nput /oltage	Between channels ((-) terminals) Between channel / GND	10 Vp-p 60 Vp-p
Max. voltage withstand)	Between channels Between channel / GND	1000 Vp-p (1 minute) 1000 Vp-p (1 minute)
solation	Between channel / GND	Min. 100 MΩ (at 500 V DC)
requency re	de rejection ratio	Min. 80 dB (50/60 Hz, Signal source impedance: Max. 300 Ω) DC to 20 kHz
ilter	Low pass Anti-aliasing	Off, Line (1.5 Hz), 3, 6, 10, 30, 50, 60, 100, 300, 500 Hz, 1k, 3k, 5k, 10k Hz (in -30dB/oct) Off, On
Support	Standard	IEEE 1451.4 Class2 (Temperate No.33)
	Support ensions (W x D x H)	Reading information from the sensor and setting it to module Approx. 49 x 136 x 160mm (Excluding Protection)
veight Charge Input	Module Specifications	Approx. 840 g
Model numb	er Iput channels	GL7-CHA 4 channels
nput method		All channels isolated unbalanced input, Simultaneous sampling,
	eed (interval)	BNC and Miniature connector (#10-32UNF) 100 k Samples/s to 1 sample/h (10 μs to 1 hr.)
Built in RAM nput type		2 million samples for each channel Sensor in charge output type, Sensor in IEPE type, Voltage, Microphone(*8)
nput couplin	ıg	Sensor: Charge-RMS, IEPE-RMS Voltage: DC, AC, DC-RMS, AC-RMS
Measurement	Acceleration sensor input	Voltagle, DC, AC, DC, KMS, AC-KMS 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000, 2000, 5000, 10000, 20000, 50000 m/s ² 200, 400, 500mPa, 1, 2, 4, 5, 10, 20, 40, 50, 100, 400, 500Pa
range	Microphone(*8) Voltage input	DC, AC coupling: 50, 100, 200, 500 mV, 1, 2, 5, 10 V
		RMS measurement: 20, 50, 100, 200, 500 mVrms, 1, 2, 5 Vrms (Crest Factor in RMS measurement: up to 4 in 20 mVrms to 2 Vrms range, up to 2 in 5 Vrms range)
Supported	Charge output type	0.01 pC/(m/s ²) to 999.9 pC/(m/s ²) Effective range of measurement range varies depending
sensor sensitivity	IEPE type	on sensor sensitivity. 0.01 mV/(m/s ²) to 999.9 mV/(m/s ²) Effective range of measurement range varies depending
	Microphone(*8)	on sensor sensitivity. 0.2mV/Pa to 100mV/Pa
Measurement	Charge output type	±0.9% of Full Scale ([sensor sensitivity] × [setting range] ≥ 20 pC)
accuracy (*4) A/D converte	51,	±0.25% of Full Scale ([sensor sensitivity] × [setting range] ≥ 200 mV) Successive approximation type, 16 bits (effective resolution: 1/40000 of the measuring full range
nput impeda Excitation po	ance wer	100 kΩ ±5% 4 or 8 mA (supported voltage: 22 V ±10%)
	out charge signal Between (+) / (-) terminal	Max. 50000 pC 25 Vp-p
nput	Between channels ((-) terminals)	25 Vp-p
voltage Max. voltage	Between channel / GND Between channels	25 Vp-p 300 Vp-p (1 minute)
withstand) solation	Between channel / GND Between input / GND	300 Vp-p (1 minute) Min. 50 MΩ (at 500 V DC)
	de rejection ratio	Min. 80 dB (50/60 Hz, Signal source impedance: Max. 300 Ω) 1.5 Hz to 45 kHz
response	Charge type IEPE type	1 Hz to 45 kHz
Filter	Hi pass Low pass	Off, 0.15, 1, 10 Hz (It depends on input conditions.) Off, Line (1.5 Hz), 3, 6, 10, 30, 50, 60, 100, 300, 500 Hz, 1k, 3k, 5k, 10k Hz (in -30dB/oct)
Support	Anti-aliasing Standard	Off, On IEEE 1451.4 Class1 (Temperate No.25 for sensor, Temperate No.27 for microphone)
TEDS	Support	Reading information from the sensor and setting it to module
Calculation fu	unction	Integration (convert measurement to velocity), Double Integration (convert measurement to displacement)
External dim Weight	ensions (W x D x H)	Approx. 49 x 136 x 160mm (Excluding projections) Approx. 850 g
Voltage Outp	ut Module Specificatio	วก ี่
	utput channels	GL7-DC0 8 channels
Dutput meth Sampling spe	od eed (interval)	All channels common ground, SMA (Sub-miniature version A) connector Up to 100 k Samples/s (10 µs)
Output Condition	Source of data	Measurement data, Edited measurement data, Generated arbitrary data(*9),
onation	Source of	Generated simple waveform (DC voltage and sine, triangle, ramp, pulse waveform) Module of Voltage (GL7-V), Voltage/Temperature (GL7-M), High speed voltage (GL7-HSV), Web Web (GL7 W), Control (GL7 HSV),
	measurement data Output condition	High voltage (GL7-HV), DC strain (GL7-DCB), and Charge (GL7-CHA) Signal can be measured by the input module even while the signal is output from the DC0 module
Dutput	Voltage	Measurement data except the temperature, humidity and logic/pulse are able to output. ± 1, 2, 5, 10 V Full Scale
ange	Current	Up to ± 10 mA in each channel (total output current of unit is up to 40 mA.)
	l accuracy (*10)	Max.1Ω ±0.25% of Full Scale
D/A converte Filter		Resolution 16 bits (effective resolution: 1/20000 of the output full range) OFF, Line(1.5 Hz), 5, 50, 500, 5k, 50k Hz
	ensions (W x D x H)	* This filter is the smoothing filter to remove the noise on output of the D/A converter. Approx. 49 x 136 x 160mm (Excluding projections)
veight		Approx. 770g
1odel numbe		itions GL7-L/P
	put channels	16 channels All channels common ground, Simultaneous sampling, Circular connector (4ch/connector)(*1
ampling	Logic mode	1 M Samples/s to 1 Sample/h (1 µs to 1 hr.)
Built-in RAM	Pulse mode	10 k Samples/s to 1 Sample/h (100 μs to 1 hr.) 2 million samples for each channels
4easuremen Pulse input n	t mode	Logic input mode or Pulse input mode (*12) Rotation count (RPM), Accumulating count, Instant count
Rotation	Function	Counting the number of pulses per sampling interval and then it is converted to RPM
	Span Function	50, 500, 5000, 50 k, 500 k, 5 M, 50 M, 500 M rpm Full Scale Accumulating the number of pulses from the start of measurement
nstant	Span Function	50, 500, 5000, 50 k, 500 k, 5 M, 50 M, 500 M counts Full Scale Counting the number of pulses per sampling interval (count is reset at each sampling)
ount	Span	50, 500, 5000, 50 k, 500 k, 5 M, 50 M, 500 M counts Full Scale
1aximum nu	mber of count Voltage range	15 M counts (24 bits counter is used) 0 to 24 V (common ground)
nput sianal		
nput signal	Signal type	Contact (Relay), Open collector, Voltage
nput signal	Signal type Threshold Hysteresis	Contact (Reary, Oper Concust, Volage Approx. 2.5 V Approx. 0.5 V (2.5 V to 3 V) Off or 0n (-3 dd at 50 Hz)

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tem Number of mo		Description Attached to up to 10 modules (*1), Max. 112 channels in 1 of GL7000 Charl (the Sphere Laborate Labo	Model name Supported O	5	GL-Connection Windows 10 / 8.1/	8/7 (32/64-bit ed	dition)	
ternal Input/ utput gnals (*2)	Input Output	Start/Stop, External trigger, External sampling, Auto balance (*3) Signal type: Contact (relay), Open collector, Voltage Trigger, Busy (*3), Alam (10 channels) (*4)	Functions Controlled un		Control GL7000, Real-time data capture, Replay data, Data format conversion Up to 10 units with GL7000, GL200, GL900, GL900, GL840, GL820, GL240, GL220 GL7000 only, max 1120 channels			
rigger,	Trigger action	Signal type: Open collector (pulled-up by resistor 10 kΩ) Start or Stop capturing data by the trigger	GL7000 Setti		Mixing with GL se Input settings. Me	ries: max. 2000 chi mory settings. Tric	oper and Alarm settings. Other settings	
larm unction	Trigger repeat	Enabled (ON): Automatically re-armed for the next data capture function Disabled (OFF): Data capture is completed in a single trigger	Captured dat		* Built-in RAM (Binary format), Built-in Flash memory (Binary, CSV format), SD memory card (Binary, CSV format), SSD (Binary, CSV format)			
T n A d	Trigger source	(Hold off repeat action in specified period: Previous start to next start, previous stop to next start) Start: Off, Measured signal, Alarm, External signal, Clock, Week or Time Stop: Off, Measured signal, Alarm, External signal, Clock, Week or Time			The sampling speed is limited by the number of channels used when data is saved in the CSV forma (1 ms per channel. When 10 channels are set, sampling is limited to 10 ms.) * When captured data is saved to the built-in RAM or SSD, data cannot be saved on the PC in real tim			
	Trigger determination conditions for measured signal	Combination: OR or AND condition at the level of signal or edge of signal Analog: Higher/Rising. Lower/Falling, Window-in, Window-out Logic (*5): Higher/Rising. Lower/Falling	Displayed inf Display mode		Analog waveform Y-T waveform wit	Logic waveform, F h digital values, XY	Pulse waveform, Digital values ' graph in real time/replay saved data (ver. 1.20 or lat	
	Alarm	Pulse (*5): Higher/Rising, Lower/Falling, Window-in, Window-out Combination: OR or AND condition at the level of signal or edge of signal			Measuring conditi Content: channel n	on setting list (*20 umber, line color, an	notation, input type, measuring range, filter, unit, span, s	
	determination condition (*6)	Analog: Higher/Rising, Lower/Falling, Window-in, Window-out Logic (*5): Higher/Rising, Lower/Falling	File operation	1	Function: Output in CSV format, Link to detailed setting 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.			
	Alarm output Pre-trigger (*7)	Pulse (*5): Higher/Rising, Lower/Falling, Window-in, Window-out 10 channels Number of data before trigger: Up to specified number of captured data	Warning Fund Statistical cal	ction culation	Creates a new file with compression or by consolidating multiple files. Send e-mail to the specified address when the alarms occur Capturing data: Maximum, Minimum, Peak or Average			
Calculation Between channels function Statistical Move function of the display range Search function		Addition, Subtraction, Multiplication and Division for two analog inputs (Sampling speed is limited up to 10 Samples/s (100 ms interval).	Search functi	on	Reglaying data: Hakimum, Minimum, Peak, Average or RMS in between cursors Search specified signal level point, alarm point, and time Synchronizing cursor position on multiple screens displaying different data file From the beginning: Synchronize from the current cursor position of each screen Position from present. Synchronize from the current cursor position of each screen I alows ta make sering operation size curcinal paint of software			
		Search for analog signal levels, logic signal pattern, pulse signal levels or alarm point in captured data	Release of rem	ronization (*20) ote lock of GL7000 (*20				
Annotation fur Message / Ma	rction rker functions	Comment can be set in each channel (up to 31 alphanumeric characters) Message: The registered messages or entered message is able to be recorded for any timing. Up to 8 messages can be pre-registered.	Operation loc FFT analysis function	Analyzing frequency range Number of points	0.08, 0.2, 0.4, 0.8, 500, 1000, 2000	1.6, 2, 3.2, 4, 8, 20, 4000, 10000	s unlocked with a password.) 40, 80, 200, 400, 800 Hz, 2, 4, 8, 20, 40, 80, 200, 400	
Resume		Marker: Marker is able to record for occurring alarm or power failure. Resume automatically in the same condition after power is recovered	(Firmware ve 1.20 or later)	r. Window function Averaging	Rectangular, Hanr Summation avera	ning, Hamming, Bla ge, Exponential ave	ickman, Flat-top, Exponential erage, Peak hold	
FT analysis	Analyzing frequency range Number of points	as when the power failure occurred during data capture (*9) 0.08, 0.2, 0.4, 0.8, 1.6, 2, 3.2, 4, 8, 20, 40, 80, 200, 400, 800 Hz, 2, 4, 8, 20, 40, 80, 200, 400 kHz 500, 1000, 2000, 4000, 10000		Channels Functions Display mode	4 channels Y-T, Linear, Powe Single display, Du	, PSD, Cross, Trans al display, Nyquist	sfer function, Coherence, COP	
Firmware ver. .20 or later)	Window function Averaging	Suo, Iool, Zuo, Hanning, Hamming, Blackman, Flat-top, Exponential Summation average, Exponential average, Peak hold		estination selection (*20) out data function	Selecting to recor Saved data file (G	d data to GL7000 c BD/CSV format) in	only or PC together with GL7000 the PC, Saved data file (GBD format) in the GL7000,	
	Channels Functions	4 channels Y-T, Linear, Power, PSD, Cross, Transfer function, Coherence, COP	(Version 1.40	or later)	Generated simple * This function is av	waveform (DC volt ailable when the ana	tage and sine, triangle, ramp, pulse waveform) alog voltage output module (GL7-DC0) is attached to the G	
nterface to PC Network funct		Single display, Dual display, Nyquist Ethernet (10 BASE-T7/100 BASE-TX), USB 2.0 (High speed) WEB server, FTP server, FTP Client, NTP client, DHCP Client	Display modu Model numbe	ule GL7-DISP (option) er	specification	ut from the GL7-DI	co module.	
JSB drive moo Storage	le Built-in	Emulate the USB memory device (*10) RAN (2 million samples, built-in amplifier module), Flash memory (4 GB, built-in the main module) (*11) SD card (Support SDHC, up to 32GB) slot, SSD (Approx. 128GB (*11))	Display devic Operation	e	5.7-inch TFT colo Touch panel and			
device Data saving	External (*12) Sampling speed	SD card (Support SDHC, up to 326B) slot, SSD (Approx. 1286B (*11)) The file for capturing data is limited up to 46B. (*13) IMS/G1(million samples per second) to 15/h (i sample per hour), and synchronized with external sampling signal	Displayed lan Screen saver Displayed inf		Turns off back-lig Waveform in Y-T v	vith digital values,	, 2, 5, 10, 30, 60 min. Waveform only, Digital value, Waveform in XY	
unction	(interval)	(Interval: 1, 2, 5, 10, 20, 50, 100, 200, 500 μs, 1, 2, 5, 10, 20, 50, 100, 200, 500 ms, 1, 2, 5, 10, 20, 30, 1, 2, 5, 10, 20, 30 min, 1 hur)	Connection c Standard acc	able essories	LAN cable (CAT5) Bracket for slante	lass, Straight conr d mount, Connecti	nection, Up to 10 m) (*22) on cable (40 cm), Ground cable, Screws	
		* The maximum sapling speed (minimum sampling interval) is different depending on the type of module. * Sampling can be set up to the fastest speed among multiple type connected modules. * The maximum sampling speed (minimum sampling interval) varies depending on the specified recording destination.	External dime Weight SSD module	ensions (W x D x H)	Approx. 187 x 34. Approx. 530 g	5 x 119 mm (Exclud	Ing projection)	
		Built-in RAM: up to 1 MS/s (1 µs interval) SSD module: up to 500 kS/s (2 µs interval) at 1 or 2 modules installed, up to 200 kS/s (5 µs interval)	Model number Storage devire	er ce	crification GL7-SSD Solid state disk (SSD)			
		at 3 or 4 modules installed, up to 1 kS/s (1 ms interval) at 5 or 10 modules installed Built-in Flash memory: up to 1 MS/s (1 µs interval)	Capacity (*23 Sampling	Attached to	Approx. 128GB (TI Max. 1 M Sample/	ne file size of the re	ecorded data is limited up to 4GB.)	
	Captured data (*12) Data in built-in RAM	External SD Flash memory: up to 1 KS/s (1 ms interval) Built-in RAM, Built-in Flash, SD memory card, SSD (Data is saved directly to it.) Specified number of data up 2 million samples in increments of 1	speed (*24)(*25)	1 or 2 modules Attached to 3 or 4 modules	Max. 500 k Sample/s (2 μs)			
	Auto save (*12)	Available for the built-in RAM Enabled (ON): Data in the RAM is saved automatically to the built-in Flash, SD memory card, SSD		Attached to 5 to 10 modules	Max. 200 k Sampl			
	Capturing mode (*12)	Disabled (OFF): Data in the RAM is not maintained after power is turned off Mode: Off, Normal, Ring, Relay Ring (*14): Saved most recent data (Number of capturing data: 1000 to 2000000 points,	External dim Weight Options and	ensions (W x D x H)	Approx. 49 x 136 x 180 mm (Excluding projection) Approx. 770 g			
		Destination of data: Built-in RAM, Built-in Flash, SD memory card, SSD) Relay (*13,*15): Saved data to multiple file without losing data until capturing data is stopped	Item Sync. Cable		Model number B-559 B-585	Remarks 1 m long, Synchr	onizing between GL7000	
	During data capture (*17) Backup (*12)	(Destination of data: Built-in Flash, SD memory card, SSD) Displaying information in two windows, Hot-swapping the SD memory card, Saving data in between cursors. Backup interval: Off, 1, 2, 6, 12, 24 hrs.	Carrying tool Storage case	Carrying tool Storage case		Can store GL700	0 with up to 3 modules attached. 0 with up to 3 modules. ing. The caster can work only on smooth surface.	
		Data destination: SD memory card, SSD, FTP server Data destination for backup cannot be specified to the same storage for destination of capturing data.		Safe probe - BNC	RIC-10A RIC-141A RIC-142	For Logic/Pulse m Insulated, 1.2 m	odule (GL7-L/P), 4 channels, Cable with Alligator clip and I long, 300 V DC, CAT II	
	Dual sampling function (*18)	It enables to record signal with two sampling speed. While the signal is recorded with low speed sampling for long term recording, the transient part is recorded with high speed sampling after the trigger occurs. [Carrent (Low-speed)	Input cable, E	Input cable, BNC - BNC Input cable, Banana - BNC Input cable, Banana - BNC		Insulated, 1.5 m l Insulated, 1.6 m l	long, 1000 V DC, CAT II long, 600 V DC, CAT II long, 1000 V DC, CAT II	
		Recording media : Built-in flash memory or SD card Sampling interval : 1, 2, 5, 10, 20, 50, 100, 125, 200, 250, 500ms, 1, 2, 5, 10, 20, 30s, 1, 2, 5, 10, 20, 30min, 1h	Clip, Alligator (mall size) (*26) Clip, Alligator (middle size) (*26) Clip, Cabber (*26) Clip, Grabber (*27) Input/Output cable for GL Humidity sensor (*27)		RIC-147 RIC-144A RIC-145	For RIC-143, Ape For RIC-143/RIC-	rture 11 mm, 300 V DC, CAT II, Max. 15 A 147, Aperture 20 mm, 1000 V DC, CAT II, Max. 32 A	
		Trigger timer feature: Starting time, Stopping time, Repeat recording Event (High-speed) Recording media : Built-in RAM or SSD (optional)			RIC-146 B-513 B-530	For RIC-143/RIC- 2 m long, Bare w 3 m cables for si	147, Aperture 5 mm, 1000 V DC, CAT III, Max. 1 A vire for signal connection - Connector for GL series	
Engineering so	cale function	Sampling interval : 1, 2, 5, 10, 20, 50, 100, 200, 500µs Measured value can be converted to the engineering unit	Shunt resista		B-550 B-551 B-560A	250 ohms (Conv For DC Strain mo	erts signal from "4-20mA" to "1-5V".) idule (GL7-DCB).	
		Analog voltage: Converts by four reference points (gain, offset) Temperature: Converts by two reference points (offset) Pulse count: Converts by two reference points (gain)	Terminal hold	ling bracket	B-560AP	* Terminal holdir	sensor - D-SUB (rectangular connector) for GL7-DCB mod ng bracket B-560AP included use for B-560/B-560A	
Synchronizatio Operating env	on between units ironment	Start and Trigger (*16) 0 to 40°C, 5 to 85% RH (non condensed)	Extension cal Input cable, N	ble	B-560-05 B-561	For B-560/B-560 For DC Strain mo	DA, 500 mm long Idule (GL7-DCB),	
Power source Power consum	nption	100 to 240 V AC, 50 to 60Hz 110VA	Output cable	, BNC - SMA	B-562	NDIS (round connect For Voltage Outp	tor) for sensor - D-SUB (rectangular connector) for GL7-DCB r but module (GL7-DC0), 2 m long,	
Standard acce External dimer	ssories nsions (W x D x H)	Quick guide, CD-ROM, AC power cable Main module: Approx. 193 x 141 x 160 mm (Excluding Projection), Alarm output terminal: Approx. 30 x 136 x 145 mm (Excluding projection)	(*23) Capacit		may be smaller tha	n above depending	utput - SMA (plug) for GL7-DC0 module g on time of production. The file for recording data is guarging 1.6 or before	
Veight *1) Excluding	a the function module	Main module : Approx. 2.2 kg, Alarm output terminal : Approx. 350 g	(*24) The san sam	mpling speed in the C aling speed in the GL	L7000 is limited to 7000 is faster than	the faster samplin the module, the sa	re version 1.6 or before. Ig speed of attached input module. When the selecte Impling is done in fastest sampling on the module.	
the mod	ule is used in the loo	e as the Display module or SSD module. In case of the DC Strain module (GL7-DCB): up to 8 modules. odule (GL7-L/P): input mode is selected in the logic or pulse for each module, up to 7 modules when gic mode, up to 2 modules when the module is used in the pulse mode. (3) is required for connecting the signal. The Auto balance signal input and the Busy signal	The sar (*25) When t the nur	me value is stored to he sampling speed ir nber of available cha	the memory device the GL7000 is selen nnels in the Logic/I	e in the selected sa ected to the 1 MS/s Pulse module will b	ampling speed until data is renewed by the next sam ((1 µs) or 500 kS/s (2 µs),	
output a	re available in the DI Jable on the DC strai	C Strain module (GL7-DCB). in module (GL7-DCB)	(*26) Red an	d black (per 1 unit). C able temperature rar	onnectable with RIC	-143, RIC-147.		
 the alari It is avai Method 	m signals are output lable on the Logic/P of detection	the double (dc/ local) the double of the main module as standard accessory. Julie (GL7-L/P) module.						
Volt./Ter The alar	mp. module: m is detected every	5 seconds when the sampling interval is longer than 5 seconds and reported. sampling interval when the sampling interval is shorter than 5 seconds and reported.						
Other m	ndules:	sampling interval when the sampling interval is shorter than 15 sections and reported. I ms when the sampling interval is shorter than 1ms. The alarm is detected in the sampling interval is set between 2 ms to 5 seconds and reported. The alarm is detected every 5 seconds						
when the 7) It is avai	e sampling interval i lable when the captu	is longer than 5 seconds and reported. ured data is saved to the built-in RAM.						
 The pre- *8) The result Available 	trigger function may It of real time calcul sampling speed is	y not available in combination with the trigger settings. lation is displayed in the digital display mode. the 10 samples/s (100 ms interval).						
When the When des	captured data destina stination is set to the b	the instantification of the intervention of the second sec						
captured. 10) The USB	This function is not av drive mode is starte	vailable when the FFT mode or the Voltage Output module (GL7-DCO) is used. ed by setting of the switch on the main module. It can be also started when the power is turned						
on while (11) Capacity (12) The SD r	pressing the START of memory device r nemory card is not i	//STOP key on the display module. may be smaller depending on time of production. included as a standard accessory. Compatible SD card type: SD, SDHC Speed class 4 or faster.						
The SSD	module (GL7-SSD) i	s an option. limited up to 4GB on firmware version 2.0 or later, 2GB on firmware version 1.6 or before. Jata is set to one third of available memory when the captured data destination is set to a device Available sampling speed is up to 10 samples/s (100ms interval).						
(15) When the	e captured data desi	tination is set to the built-in Flash or the SD memory card,						
sampling	a speed in limited up	to 100 samples/s (10 ms interval). In case of using the SSD module (6L7-SSD), to 50 thousand samples/s (2.0 µs interval) when 1 or 2 modules are attached, pured when this function is used. The synchronizing function is available only with GL-Connection. Valable when sampling speed is set up to 10 samples/s (100 ms interval).						
(18) Both slov	w and high speed sa	vailable when sampling speed is set up to 10 samples/s (100 ms interval). ´ ampling can only be recorded in GBD format. apturing destination is extended SSD unit, it takes a few seconds for event capturing.						
Followin	n actions are not av	ailable:						
• XY / FF • Configu 19) When da	unction • Synch uring with only Volta ita destination is spe	Relay recording • Back up feature • Dual screen feature (playback while recording) ronization operating with multiple GL7000 ger module (GL7-M) or Voltager/temperature module (GL7-M) ecified to the RAM or SSD on the GL7000, the captured data can not be saved on the PC in						
real-time 20) Supports	e. The data in the RA s only GI 7000 with f	W or SSD on the GL7000 can be saved to the PC after the data capturing is completed. armware version 2.0 or later & GL-Connection version 2.2 or later. cted by both the touch panel and the cursor keys.						
22) When the	e display module is i	The boot of the open panel and the costs keys. mounted at an angle using the bracket, the display module is connected to the main module and to the display module as a standard accessory.						
	/w.datate	- de						