

Panasonic[®]

USER'S MANUAL

Compact Laser Displacement Sensor
HL-G1 Series (Console-dedicated Version)

Introduction

Thank you for downloading the "Screen Data for GT-series Programmable Display for the HL-G1-series Compact Laser Displacement Sensor." Read this manual carefully and be sure you understand the information provided before attempting to install and operate the product so that the product will fully demonstrate its superior performance. Refer to the website of Panasonic Electric Works SUNX Co., Ltd. (<http://panasonic-electric-works.net/sunx>) for the latest information on the product as well as the latest version of the manual.

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■ Conventions

The following conventions are used to indicate and classify precautions in this manual. Always heed the information provided with them.





 WARNING	Indicates information that, if not heeded, is likely to result in loss of life or serious injury.
 CAUTION	Indicates information that, if not heeded, could result in relatively serious or minor injury, damage to the product, or faulty operation.
 CHECK	Explains matters that should be observed or mistakes that the user is apt to make.
 REFERENCE	Explains items that should be kept in mind, relevant information in detail, and references.

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1. Introduction of HL-G1 Dedicated Console

1-1 Applicable Programmable Display Models

Panasonic Electric Works SUNX's GT-series Programmable Display (any of the following models sold separately) can be used as a dedicated console by connecting the Programmable Display to the high-functional model (HL-G1□□-S-J) of the HL-G1 Compact Laser Displacement Sensor and writing dedicated screen data to the Programmable Display.

The dedicated console makes it possible to make sensor head settings and monitor measurement values remotely.

GT-series Programmable Display models applicable

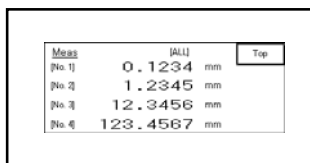
Applicable series names	GT02 or GT12 Series
Power supply voltage	24 VDC
Communications port	RS-422 (RS-485)
SD card memory slot	None (or not used)

Products applicable

No. of connection units	Product name	Screen	Backlight	Body color	Product no.
Single connection	GT02G	3.8-inch STN	Green/Orange/Red	Pure black	AIG02GQ14D
	GT02M	240 x 96 dots	White /Pink/ Red	Silver	AIG02MQ15D
Multi connection (1 to 4 units)	GT12G	4.6-inch STN 320 x 120 dots	Green/Orange/Red	Pure black	AIG12GQ14D
				Hairline silver	AIG12GQ15D
	GT12M		White /Pink/ Red	Pure black	AIG12MQ14D
			Hairline silver	AIG12MQ15D	



GT02 Series measurement value display



GT12 Series measurement value display (with four HL-G1 units connected)

- The GT02□ Series controls a single sensor head over RS-422.
- The GT12□ Series controls a maximum of four sensor heads over RS-485.

For information on the installation and connection of the GT Series, download the GT-series User's Manual. Read the manual carefully and be sure you understand the information provided before attempting to install and operate the GT Series.

1-2 Steps to Introduce Dedicated Console

This section provides brief information on the introduction of the GT Series as a dedicated console.

For the procedure in detail, refer to "3. Acquiring and Writing Screen Data".

- Preparation

- PC connected to the Internet
 - * For the operating environment of the PC, refer to "GT-series User's Manual" (p. 1-9).
- USB cable (for A-to-mini B-connector connection)
- Power supply for Programmable Display (24 VDC)

- Writing HL-G1-dedicated screen data to the GT-series

Acquiring and writing screen data

- [1] Downloading dedicated software
- [2] Writing screen data to the GT Series

- Using GT Series as HL-G1-dedicated console.

Connecting the console to the sensor head and making initial settings

- [1] Installation
- [2] Connecting the dedicated console to the HL-G1
- [3] Making HL-G1 settings
- [4] Changing and saving the display language of the console

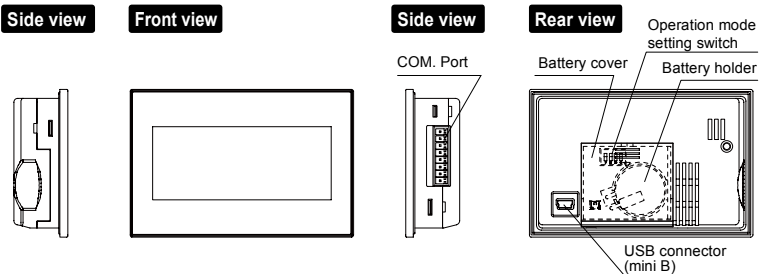
Console operation

- [1] Basic operation
- [2] Console-dedicated function
- [3] Setting of each function and measurement value display (list of screen transition)

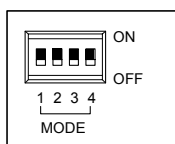
For each function of the sensor head, refer to the "HL-G1-series User's Manual".

2. Nomenclature

■ GT02 Series

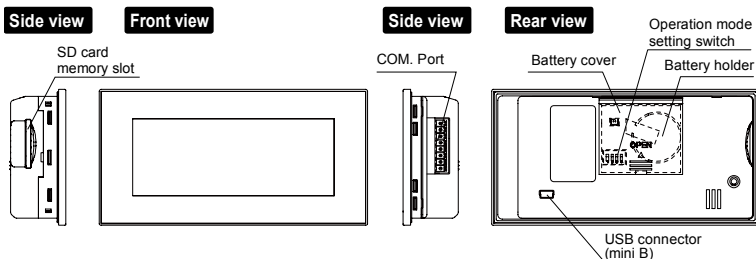


● Operation mode setting switch

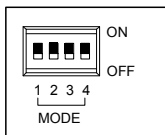


SW No.	Function	OFF	ON
1	Reserved (not used)	<u>Always turned OFF</u>	
2	Not allowed to go to system menu	Movement possible	Movement prohibited
3	Reserved (not used)	<u>Always turned OFF</u>	
4		<u>Always turned OFF</u>	

■ GT12 Series



● Operation mode setting switch



SW No.	Function	OFF	ON
1	Reserved (not used)	<u>Always turned OFF</u>	
2	Not allowed to go to system menu	Movement possible	Movement prohibited
3	Reserved (not used)	<u>Always turned OFF</u>	
4		<u>Always turned OFF</u>	

❗ CHECK

The SD memory card slot or internal battery is not used in the case of using either one of the above as a dedicated console for the HL-G1 Series.

3. Acquiring and Writing Screen Data

3-1 Use Condition

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3-2 Downloading Dedicated Software

Download the applicable data file of dedicated software according to the communications method (RS-422 or RS-485) and the GT-series model to be used. The following data files are available.

Applicable model	Applicable product number	Dedicated software	Remarks
GT02G	AIG02GQ14D	Screen Data for Programmable Display GT02	RS-422 dedicated
GT02M	AIG02MQ15D		
GT12G	AIG12GQ14D	Screen Data for Programmable Display GT12	RS-485 dedicated
	AIG12GQ15D		
GT12M	AIG12MQ14D		
	AIG12MQ15D		

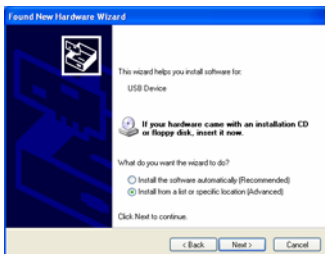
- 1 Go to the download page from the top page of Panasonic Electric Works SUNX's website.
<http://panasonic-electric-works.net/sunx>
- 2 Download the applicable data file from the page for "HL-G1-series Compact Laser Displacement Sensor".
- 3 The downloading file is compressed (in zip). Uncompress the file in an appropriate folder.

3-3 Installing USB Driver

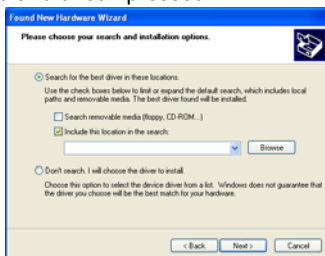
- 1 Connect a DC power supply to the GT, and connect the PC and GT over USB cable.
- 2 The PC will automatically recognize the USB driver, and a new hardware detection wizard will be displayed.



- 3 Select "Install from a list or specific location" and click "Next".



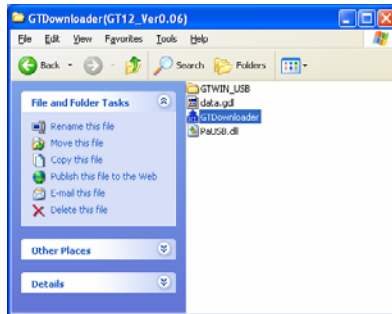
- 4 Click "Browse" and specify the destination of the USB driver downloaded and uncompressed.



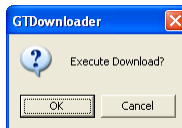
- 5 The installation of the driver starts.
- 6 Terminate the installation with the "Close" button.

3-4 Writing Screen Data

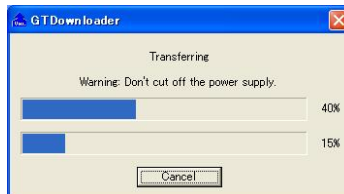
- 1 Click the "GTDownloader.exe" in the folder where the file has been expanded.



- 2 The message "Execute Download?" will be displayed in the prompt screen for the screen data. Click the "OK" button.



- 3 A progress screen will be displayed. Wait until the transfer of the data is completed.



- 4 Click the "OK" button on completion of data transfer.



- 5 End.

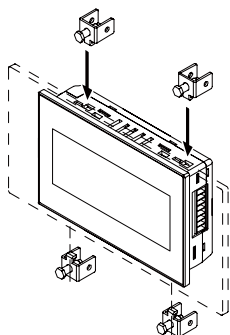
4. Sensor Connections and Initial Settings

4-1 Mounting Console

For the installation of the GT Series in detail, refer to "Chapter 3 Installation and Wiring" of the "GT-series User's Manual".

Use the four mounting brackets and four mounting screws provided and mount the console to the mounting plate.

■ GT02 Series

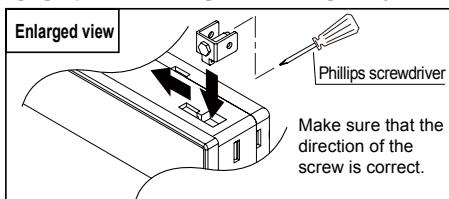


- (1) Insert the unit into the mounting plate.
- (2) Attach the mounting brackets to the grooves of the unit, and slide and fix the brackets. Tighten the screws and fix the unit to the mounting plate securely.

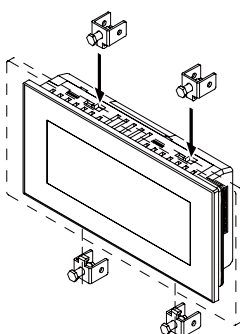
Note 1) Use a No. 1 Phillips screwdriver.

Note 2) Screw tightening torque of 0.2 to 0.3 N·m

Note 3) Do not tighten the screws in excess, or otherwise the front panel may deform and the touch switch cannot work properly. Be sure to keep the above torque range.



■ GT12 Series

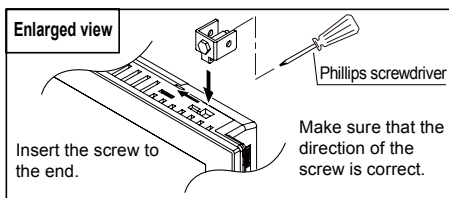


- (1) Insert the unit into the mounting plate.
- (2) Attach the mounting brackets to the grooves of the unit. Tighten the screws and fix the unit to the mounting plate securely.

Note 1) Use a No. 1 Phillips screwdriver.

Note 2) Screw tightening torque of 0.2 to 0.3 N·m

Note 3) Do not tighten the screws in excess, or otherwise the front panel may deform and the touch switch cannot work properly. Be sure to keep the above torque range.



4-2 Connecting Dedicated Console to HL-G1

For general handling information on the GT Series, refer to the GT-series User's Manual.

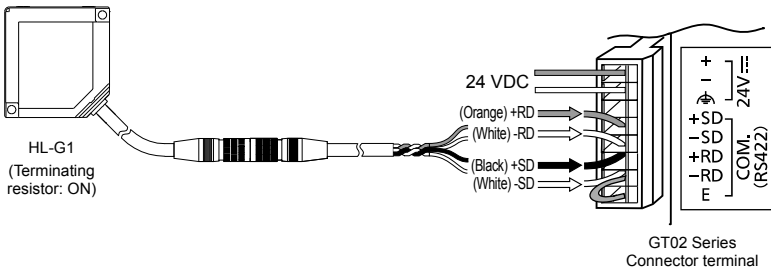
- Connecting GT02 Series to HL-G1 (Single HL-G1 Unit over RS-422)

- Make one-to-one wiring for each signal name between the HL-G1 and console connected through a cable.

Communications line connections

HL-G1		Signal direction		Console
Wiring color	Signal name	HL-G1	Console	Signal name
Twisted-pair wire	Orange	+RD	Input ← Output	+SD
	White	-RD	Input ← Output	-SD
Twisted-pair wire	Black	+SD	Output → Input	+RD
	White	-SD	Output → Input	-RD

- To terminate the console, connect the ground terminal "E" to the signal "-RD".
- Set the "Terminating resistor selection" to the HL-G1 as well.
- Connect the shield of the cable to the 0 V (-) terminal of the power supply for the console.
- No sensor number settings are required for the sensor head.



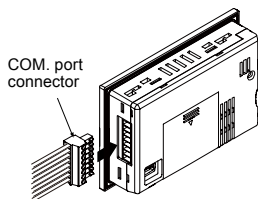
• Connecting GT12 Series to HL-G1 (More than a single HL-G1 unit over RS-485)

- Up to four HL-G1 units can be connected.
- The console will be the terminator. Connect the ground terminal "E" to the signal "-RD".
- Set the "Terminating resistor selection" for the terminating HL-G1 unit only, while turn OFF the terminating resistor for each intermediate HL-G1 unit connected through a bus line.
- The shield of each HL-G1 extension cable is connected to the signal ground (SG) of the sensor head. Connect the shield to the 0 V (-) terminal of the power supply for the console.

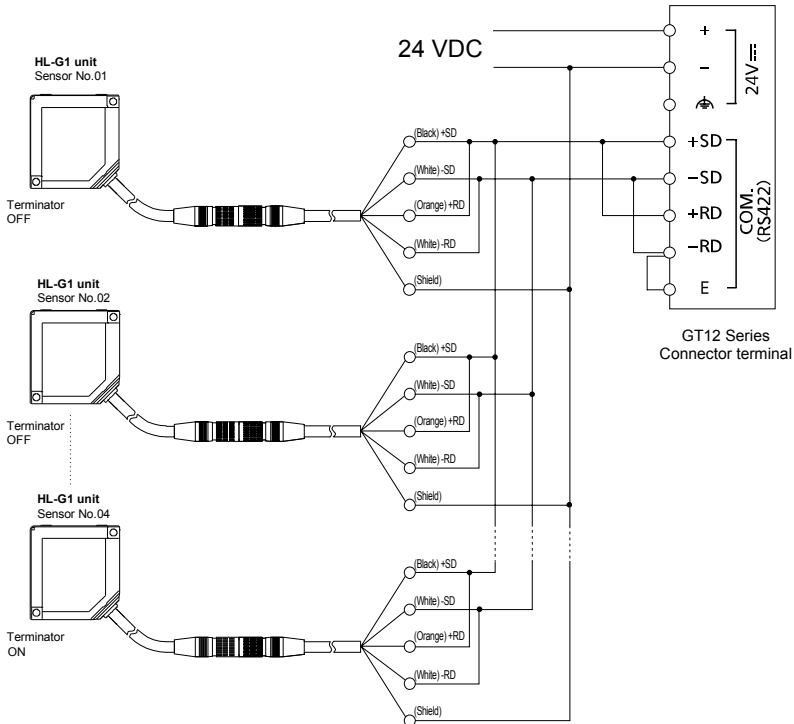
Wire the SD and RD signal lines according to the diagram as shown below.

(+SD and -SD are connected with a twisted pair cable and so are +RD and -RD.)

- Short-circuit the +SD + RD terminals and -SD and -RD terminals.
- Connect the +SD and +RD terminals on the HL-G1 side and the +SD and +RD terminals on the console side.
- Connect the -SD and -RD terminals on the HL-G1 side and the -SD and -RD terminals on the console side.



Dedicated console



4-3 HL-G1 Settings

Before using the compact console (GT-series unit) for communication with the HL-G1, select and set communications conditions on the HL-G1 side according to the communications specifications.

- HL-G1 Settings for communications conditions

COM Settings Prog

Item	RS-422 (single-unit connections only)	RS-485 (for multi-unit connections)
Terminating resistor selection	R3 (see note 1)	R3 (see note 1)
Sensor No.	Optional	Specify 01 through 04 in sequence (see note 2)
Baud rate	38400bps (initial value)	38400bps (initial value)
Connection mode	RS-422 handshake [422-1] (default)	Multiple RS-485 [485-M]

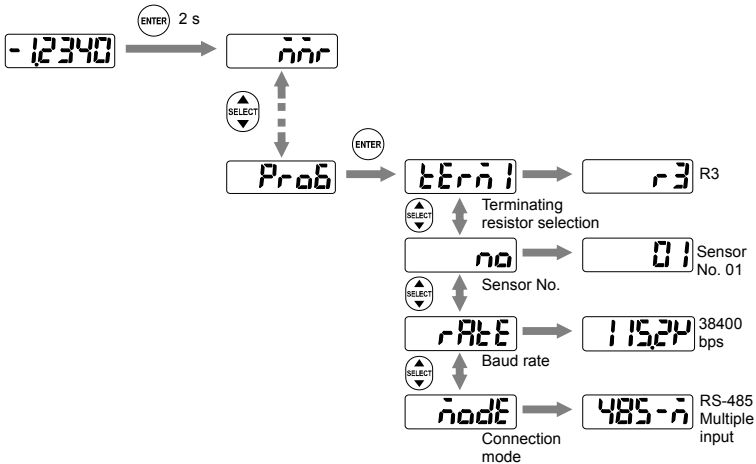
Note 1: Terminating resistor selection from R1 or R2 may improve communication condition depending on the characteristics and length of the cable in use or the number of sensors connected.

Do not set the termination resistor for any sensor other than that located as terminator.

Note 2: Set the sensor numbers beginning with 01 in sequence if the sensors are connected over RS-485. If the sensor numbers are not consecutive, they will not be recognized and the sensors will not operate correctly.

HL-G1 setting procedure

Example) In this example, sensor head number 01 is set as terminator and used over RS-485.



4-4 Changing and Saving Display Language of Console

The console screen will display in English when the console is started with the sensor head connected after screen data is written.

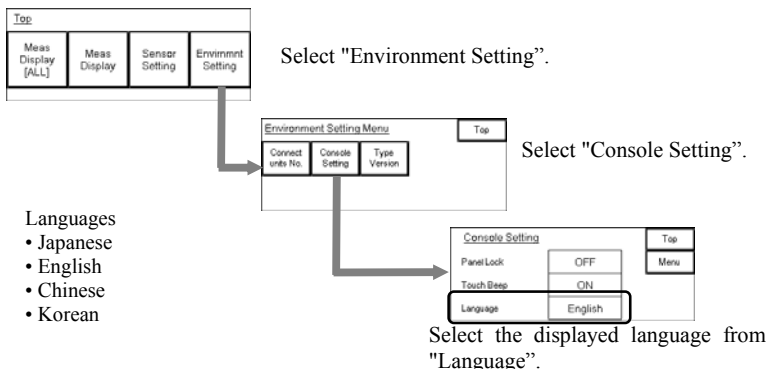
Environment settings for the console are required to change the displayed language on the screen.

The settings are saved in the sensor. Execute the Save command after making the settings. The settings will be lost with the sensor head turned OFF if the settings are not saved.

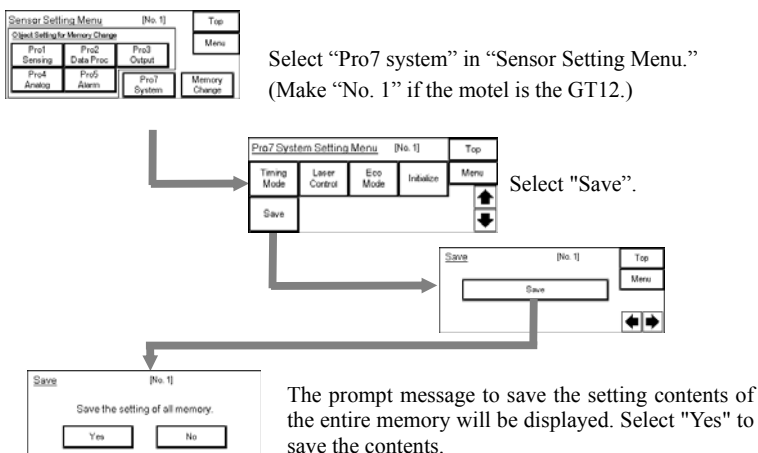
! CHECK

When the sensor head is initialized, the displayed language will return to English. In that case, set the language again and save it.

● Switching language



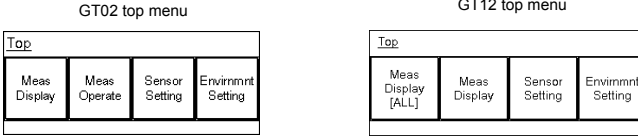
● Saving language settings



5. Screen Configuration and Basic Operation

5-1 Top Menu Screen and Basic Buttons

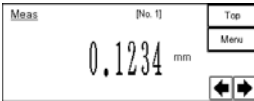
• Top menu



★The top menu screen shows the above items.
The user can move to other screens through here.

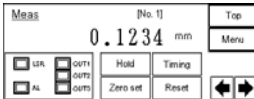
- Meas Display** Used to display the measurement value of the sensor connected.
- Meas Operate** Used to operate the measurement control of the sensor connected. (GT02 only)
- Sensor Setting** Used to make various sensor settings.
- Envirnmnt Setting** Used to make console environment settings.
- Meas Display [ALL]** Used to display the measurement values of all the sensors connected. (GT12 only)

• Basic button operation



- Top** Returns to the top screen.
- Menu** Returns to each menu screen according to each setting.

• Operation during measurement value display



- Hold** The measurement value display is kept on hold (not refreshed).
- Timing** Used to implement the same action as timing input.
- Zero set** Used to switch the zero set and zero set OFF.
- Reset** Used to reset the measurement value kept on hold.

5-2 Basic Console Operation

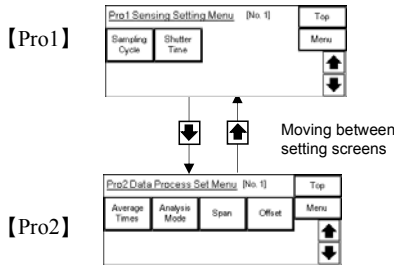
■ Moving between Setting Screens

The operation screen is of hierarchic structure.

Touch the Up and Down Keys (↓ ↑) to go to the target screen and make necessary settings.

↓ …… The value of each item in the sensor setting menus (Pro1 through Pro7) will increase by 1.

↑ …… The value of each item in the sensor setting menus (Pro 1 through Pro7) will decrease by 1.

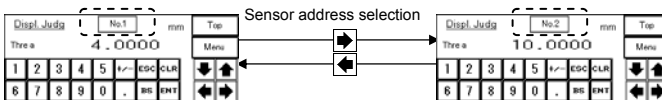


■ Changing Sensor Head Number (GT12 Only)

To move between sensor head numbers, touch the Left and Right Keys (← →).

→ …… Press this key to go to the sensor head number that is 1 larger.

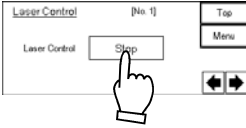
← …… Press this key to go to the sensor head number that is 1 smaller.



■ Selection

This section provides information on how to select the target item from multiple choices.

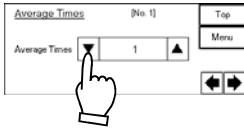
[Selection from a few choices]



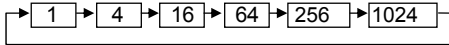
The selectable item changes as shown each time the key is touched.



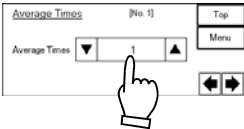
[Selection from many choices]



The selectable item changes as shown each time the Up Key (▲) is touched.



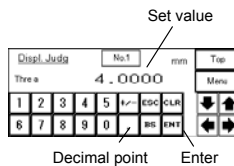
Press the Down Key (▼) to change the direction of selection.



The value will return to the default value by touching the part (where the set value is displayed) between the Up and Down Keys.

■ Numeric Input

This section provides information on how to input numeric values, such as limit values and offset values. The keyboard will be displayed for items for which numeric input is possible.

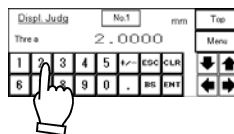


1 Touch the frame above the set value.

The system is ready to accept numeric input, and the cursor starts flashing.

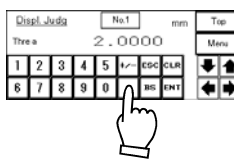


2 Enter the integer part from the keyboard.



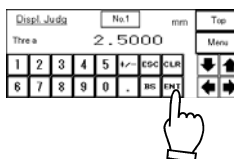
3 Touch the decimal (.) on the keyboard.

Input after the decimal point is acceptable. Input the value.



4 Touch the Enter Key (ENT) after the value is input.

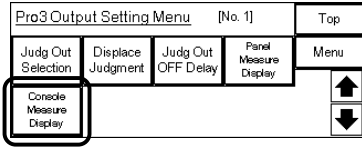
The setting will be entered.



- * To cancel the numeric input, touch the Esc Key (ESC).
- * To clear the input, touch the CLR Key (CLR). Then the user can input the desired value again.
- * To clear the input, touch the BS Key (BS). Then the user can input the desired value again.

5-3 Console-dedicated Functions

■ Output setting menu



(GT-12 setting screen)

● Display console measurement value

Use this function to fix the console measurement value after the decimal point to 0.

Set this item to disable the change in the display of the minute measurement value of the console.

Set value: FULL, Set 1, Set 2, and Set 3



[FULL] The full value down to the fourth decimal place is displayed.

[Set 1] The fourth decimal point is fixed to 0.

[Set 2] The third and fourth decimal points are fixed to 0.

[Set 3] The second, third, and fourth decimal points are fixed to 0.



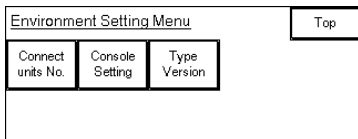
Select "FULL."



Select "Set 2."

- These settings are memory-dependent. Make settings for each memory number if memory change is used.

■ Environment setting menu



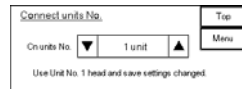
(GT-12 setting screen)

● Number of units connected (GT12 only)

Use this function to specify the number of sensor heads to be connected to the console and operated.

It is necessary that the sensor head numbers are set correctly.

Set value: 1, 2, 3, 4



- Panel lock

Use this function to prevent set value changes with console key manipulation. It is possible to move between screens.

Set value: ON, OFF

Console Setting		Top
Panel Lock	OFF	Menu
Touch Beep	ON	
Language	English	

- Touch beep

Use this function to enable or disable the touch beep.

Set value: ON, OFF

- Language

Use this function to select the display language.

Set value: Japanese, English, Korean, Chinese

- Backlight color selection (GT02 only)

Use this function to select the switching method of backlight colors according to the state of judgment 2 of the sensor head.

Set value: White /Green (fixed), OUT2ON red, OUT2OFF red.

Console Setting (2/2)		Top
Backlight Color Disp	White/Green(fix)	Menu
		↑

[White/Green (fix)] The backlight color is set according to the default of the display unit.

[OUT2ON red] The backlight color is changed to red by a measurement value that turns OUT2 ON.

[OUT2OFF red] The backlight color is changed to red by a measurement value that turns OUT2 FF.

- The ON/OFF operating conditions of OUT2 are set with "Judgment output selection" and "Displacement judgment".

- Type and Version display

Use this function to display the model number of each sensor head connected and the software version for the sensor head.

Type/Version		Top
No.1 HL-G103-S-J	Ver. 1.00	Menu
No.2 HL-G105-S-J	Ver. 1.00	
No.3 HL-G108-S-J	Ver. 1.00	
No.4 unknown		
Console GT12	Ver. 1.00	

❗ CHECK

Each set value need to be saved in the sensor head.

Be sure to execute "Pro7: System setting" → "Save" after making settings.

(Set and save "Sensor No. 01" (No. 1) in the case of connecting the GT12 to a number of sensor heads over RS-485.

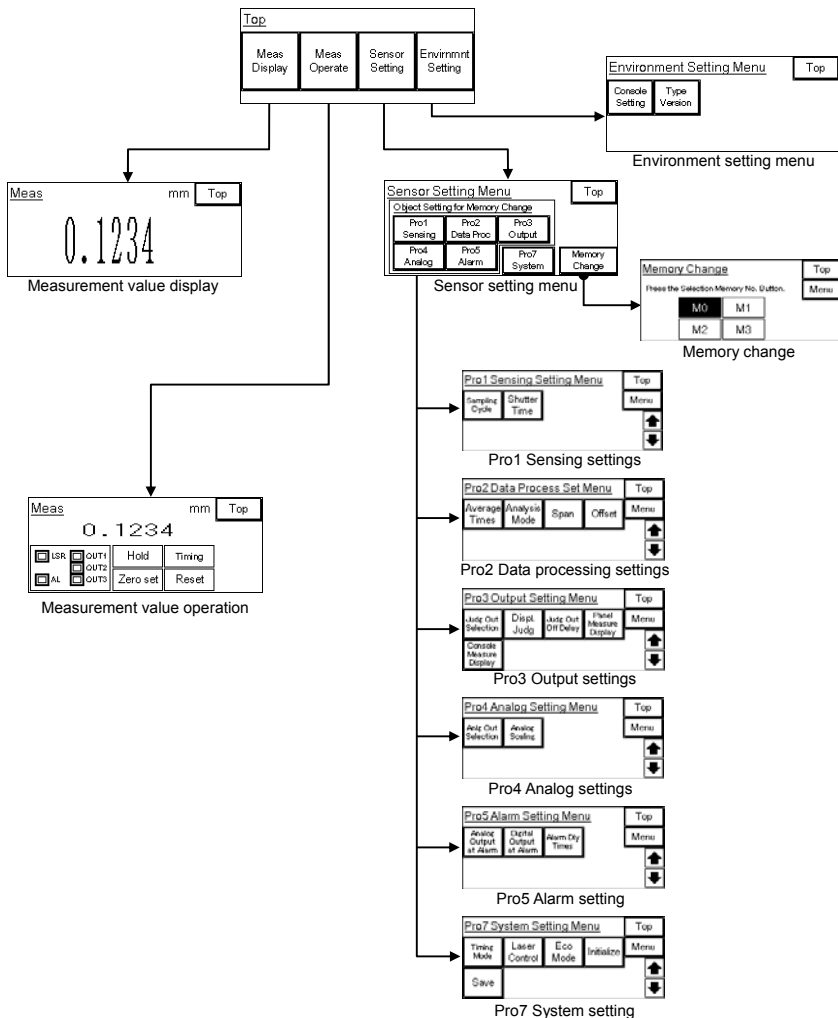
Keep in mind that settings will be lost with the sensor head turned OFF unless the settings are saved.

6. Screen Transition Charts

This section provides screen transition charts of the console dedicated to HL-G1. For details of each function, refer to the HL-G1 User's Manual provided with the sensor head.

6-1 GT02 Screen Transition

- Transition from top screen to each menu screen



● Setting item screen for each setting menu (for GT02 use)

Pro1 Sensing Setting Menu		Top
Sampling Cycle	Shutter Time	Menu
		↑
		↓

Pro1: Sensing setting menu

Sampling Cycle		Top
Sampling Cycle	▼ 200us ▲	Menu
Sampling cycle		
Shutter Time		Top
Shutter Time	▼ Auto ▲	Menu
Recd LI Monitor 1 2 3 4		
Shutter time		

Pro2 Data Process Set Menu					Top
Average Times	Analysis Mode	Span	Offset	Menu	
					↑
					↓

Pro2: Data processing menu

Average Times		Top					
Average Times	▼ 1 ▲	Menu					
Average times							
Analysis Mode		Top					
Analysis Mode	▼ Normal ▲	Menu					
Analysis mode							
Span		No. 1					
1 . 0000		Menu					
1	2	3	4	5	%	⏏	⏏
6	7	8	9	0	.	%	↵
Span							
Offset		No. 1					
0 . 0000		Menu					
1	2	3	4	5	%	⏏	⏏
6	7	8	9	0	.	%	↵
Offset							

Pro3 Output Setting Menu					Top
Judg Out Selection	Displ. Judg	Judg Out Off Delay	Panel Measure Display	Menu	
					↑
					↓

Pro3: Output setting menu

Judg Out Selection		Top					
Judg Out Selection	▼ Logic ▲	Menu					
Judgment output selection							
Displ. Judg		No. 1					
Thre a		4 . 0000					
		Menu					
1	2	3	4	5	%	⏏	⏏
6	7	8	9	0	.	%	↵
Displacement judgment (Threshold a)							
Displ. Judg		No. 1					
Thre b		-4 . 0000					
		Menu					
1	2	3	4	5	%	⏏	⏏
6	7	8	9	0	.	%	↵
Displacement judgment (Threshold b)							
Displ. Judg		No. 1					
Hysteresis		0 . 0000					
		Menu					
1	2	3	4	5	%	⏏	⏏
6	7	8	9	0	.	%	↵
Hysteresis							
Judg Out OFF Delay		Top					
Judg Out OFF Delay	▼ OFF ▲	Menu					
Judgment output OFF delay							
Panel Measure Display		Top					
Panel Meas Display	FULL	Menu					
Panel measurement value display							
Console Measure Display		Top					
Console Meas Display	▼ FULL ▲	Menu					
Console measurement value display							

Pro4 Analog Setting Menu		Top
Analog Selection	Analog Scaling	Menu
		↑
		↓

Pro4: Analog setting menu

Pro5 Alarm Setting Menu			Top
Analog Output at Alarm	Digital Output at Alarm	Alarm Delay Times	Menu
			↑
			↓

Pro5: Alarm setting menu

Pro7 System Setting Menu				Top
Timing Mode	Laser Control	Eco Mode	Initialize	Menu
Save				↑
				↓

Pro7: System setting menu

Analog Output Selection		Top
Analog Output Selection	Current Output	Menu
Analog output selection		
Analog Scaling		Top
Meas.A	(mm)	Current A (mA)
-4,0000	=	4,000
Meas.B	(mm)	Current B (mA)
4,0000	=	20,000
Analog scaling (current)		
Analog Scaling		Top
Meas.A	(mV)	Volta (V)
-4,0000	=	0,000
Meas.B	(mV)	Volt B (V)
4,0000	=	10,000
Analog scaling (voltage)		

Analog Output at Alarm		Top					
Analog Output at Alarm	Hold Pre Val	Menu					
Fixed Value at Current Output=21.6[mA] Fixed Value at Voltage Output=11.0[V]							
Digital Output at Alarm		Top					
Digital Output at Alarm	Hold Pre Val	Menu					
Fixed Value=+999.9999[mm]							
Alarm Delay Times No. 1		Top					
⊗ OFF, 65535=+64 Previous Normal Value							
1	2	3	4	5	%	⊗	⊗
6	7	8	9	0	.	⊗	⊗
Alarm delay times							

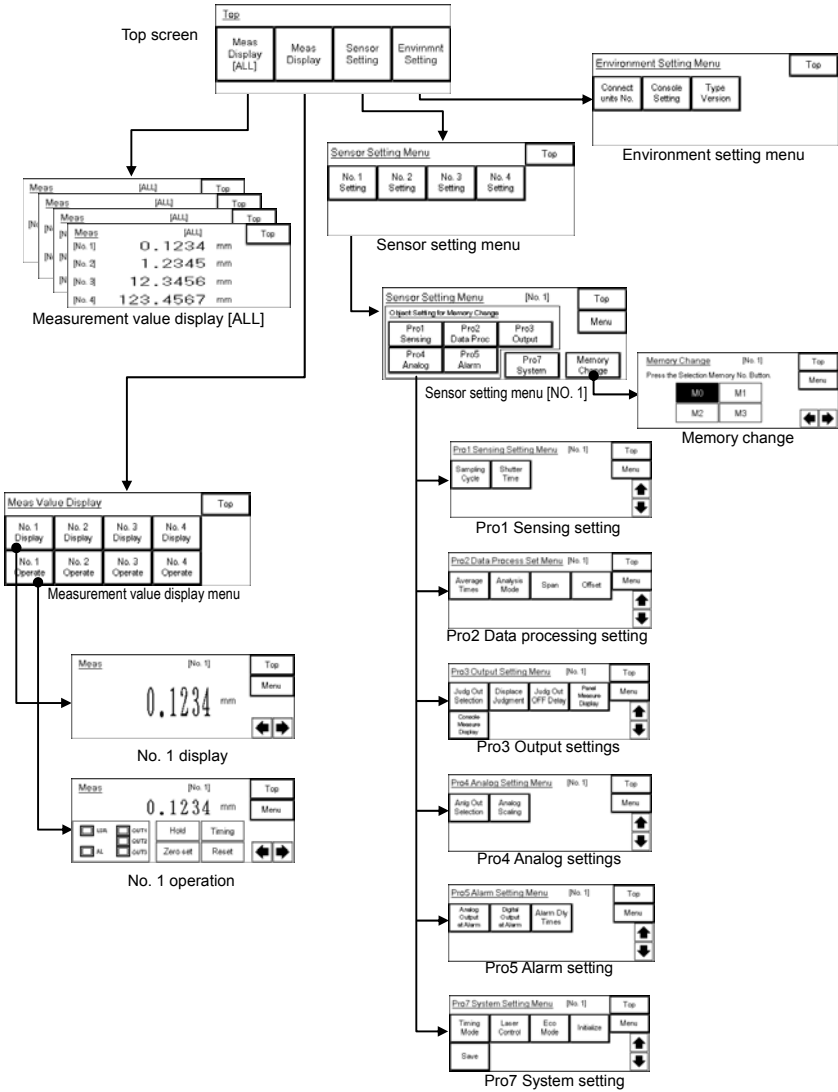
Timing Mode		Top
Timing Mode	Hold	Menu
Timing mode		
Laser Control		Top
Laser Control	Stop	Menu
Laser control		
Eco Mode		Top
Eco Mode	Eco-OFF	Menu
Eco mode		
Initialize		Top
Initialize		Menu
Initialization		
Save		Top
Save		Menu
Save		

Environment Setting Menu		Top
Console Setting	Type Version	
Environment setting menu		

Console Setting (1/2)		Top
Panel Lock	OFF	Menu
Touch Beep	ON	↓
Language	Japanese	
Console settings (1/2)		
Console Setting (2/2)		Top
Backlight Color Disp	White/Green(fb)	Menu
Console settings (2/2)		
Type/Version		Top
Sensor	HL-G103-S-J	Menu
	Ver. 1.00	
Console GT02	Ver. 1.00	
Type No. and Version		

6-2 GT12 Screen Transition

- Transition from top screen to each menu screen



● Setting item screen for each setting menu (for GT12 use)

Pro1 Sensing Setting Menu (No. 1)		Top
Sampling Cycle	Shutter Time	Menu
		↑
		↓

Pro1: Sensing setting menu

Pro2 Data Process Set Menu (No. 1)		Top
Average Times	Analysis Mode	Span
Offset	Menu	
↑		
↓		

Pro2: Data processing menu

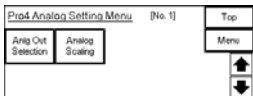
Pro3 Output Setting Menu (No. 1)		Top
Judg Out Selection	Displace Judgment	Judg Out OFF Delay
Panel Measure Display		Menu
		↑
		↓

Pro3: Output setting menu

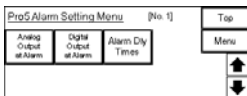
Sampling Cycle (No. 1)		Top
Sampling Cycle	200us	Menu
← →		
Sampling cycle		
Shutter Time (No. 1)		Top
Shutter Time	Auto	Menu
Rec'd LI Monitor	1 2 3 4	← →
Shutter time		

Average Times (No. 1)		Top
Average Times	1	Menu
← →		
Average times		
Analysis Mode (No. 1)		Top
Analysis Mode	Normal	Menu
← →		
Analysis mode		
Span (No. 1)		Top
Span	1 . 0000	Menu
1 2 3 4 5	ESC CLR	↑
6 7 8 9 0 .	ENT EXIT	↓
← →		
Span		
Offset (No. 1)		Top
Offset	0 . 0000	Menu
1 2 3 4 5	ESC CLR	↑
6 7 8 9 0 .	ENT EXIT	↓
← →		
Offset		

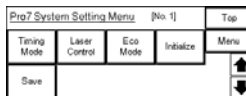
Judg Out Selection (No. 1)		Top
Judg Out Selection	Logic	Menu
← →		
Judgment output selection		
Displ_Judg (No. 1) mm		Top
Three a	4 . 0000	Menu
1 2 3 4 5	ESC CLR	↑
6 7 8 9 0 .	ENT EXIT	↓
← →		
Displacement judgment (Threshold a)		
↓ ↑		
Displ_Judg (No. 1) mm		Top
Three b	-4 . 0000	Menu
1 2 3 4 5	ESC CLR	↑
6 7 8 9 0 .	ENT EXIT	↓
← →		
Displacement judgment (Threshold b)		
↓ ↑		
Displ_Judg (No. 1) mm		Top
Hysteresis	0 . 0000	Menu
1 2 3 4 5	ESC CLR	↑
6 7 8 9 0 .	ENT EXIT	↓
← →		
Hysteresis		
Judg Out OFF Delay (No. 1)		Top
Judg Out OFF Delay	OFF	Menu
← →		
Judgment output OFF delay		
Panel Measure Display (No. 1)		Top
Panel Measure Display	FULL	Menu
← →		
Panel measurement value display		
Console Measure Display (No. 1)		Top
Console Measure Display	FULL	Menu
← →		
Console measurement value display		



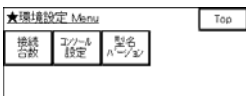
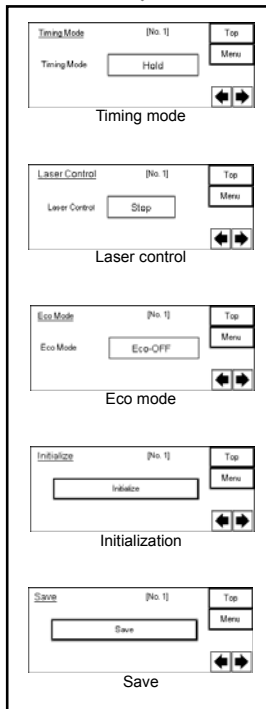
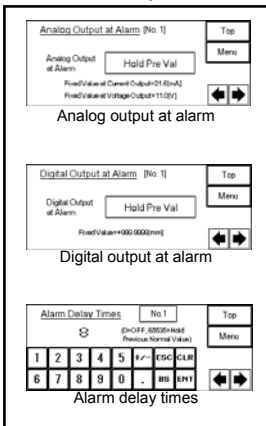
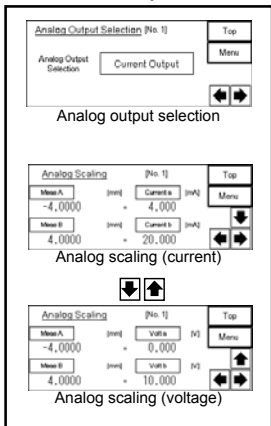
Pro4: Analog setting menu



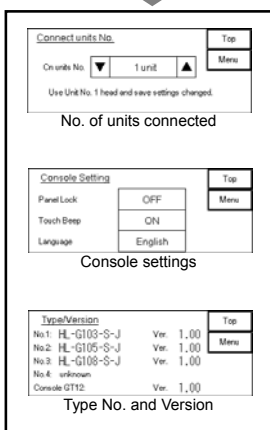
Pro5: Alarm setting menu



Pro7: System setting menu



Environment setting menu



MEMO



Revision history

Released date	Revision No.
October 2010	First release

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PRINTED IN JAPAN

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