

***Thermal Printer  
DP-581H  
Product Introduction***

28 May 2019  
Graphtec Corporation

Graphtec has been developing and launching various recorders since the launch of the first X-Y recorder in the world.

By launching GL series, Graphtec shifted from paper output to digital data and we have been one of leading manufacturer of compact data logger.

However, there is still certain demand for paper recording and many customers are still using Graphtec paper recorder. Also we received request to output recording data to the paper.

To meet customer's demand, we have launched mobile printer to output waveform in real-time.

Available model	GL240/840/980/2000
Recording width	210mm
Max. chart speed	25mm/s
Printing resolution	Head resolution 8 dots/mm Feeding resolution 8 dots/mm
Recording paper	210mm width, 30m long
Power source	AC adaptor Li-ion battery
Dimension	312x66x109 (mm)



### Application examples ①

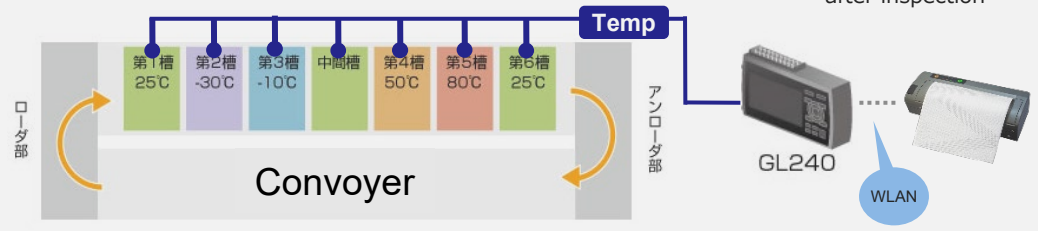
#### 1: On-site inspection of the product

<Detail>

When custom-made product is delivered, on-site performance test result is provided in paper as a proof of the inspection.

Market: Service & Maintenance

Ex) On-site inspection of climate chamber to prove that temperature of each chamber is within specification



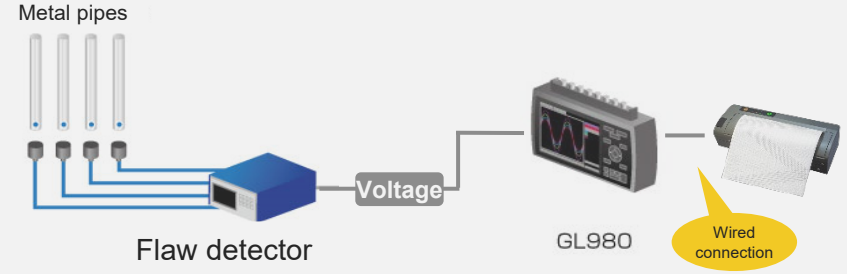
#### 2: Flaw detection test

<Detail>

Result of flaw detection test for steel pipes is stored in paper format.

Market: Production, Production control

Ex) Steel maker tends to have regulation to store test data in paper format.

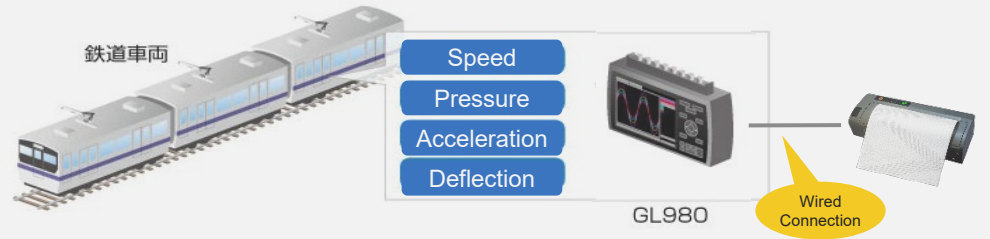


#### 3: Performance test for trains

<Detail>

The data is outputted while running the test.

Market: R&D



■ DP-581H can be proposed to customers who bought old paper recorder of Graphtec!

## Application examples ②

### 1: X-Y recorder

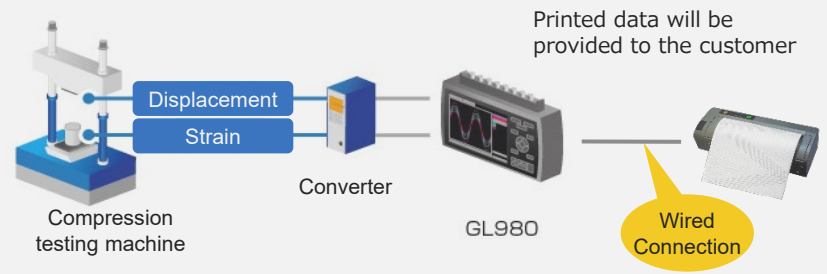
Ex) Analog output from compression testing machine (displacement, strain) is recorded in X-Y format

<Detail>

Output of X-Y data from GL series is printed.

※Copy of screen of GL will be printed

Market: R&D

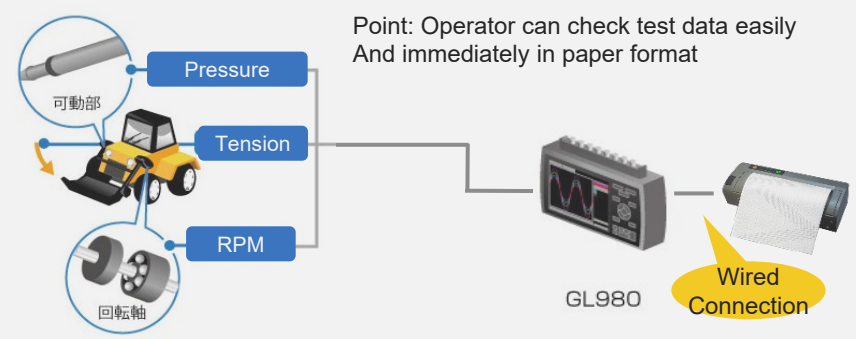


### 2: Measurement in hydraulic equipment

<Detail>

Test data is checked and printed to verify the performance of the equipment

Market: QA/QC

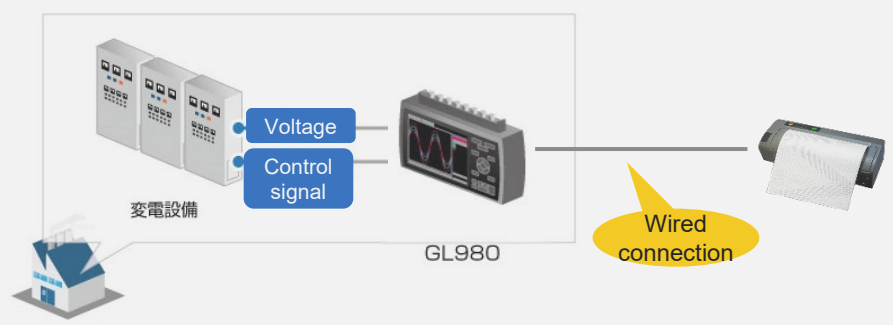


### 3: Inspection at infrastructure such as substation equipment

<Detail>

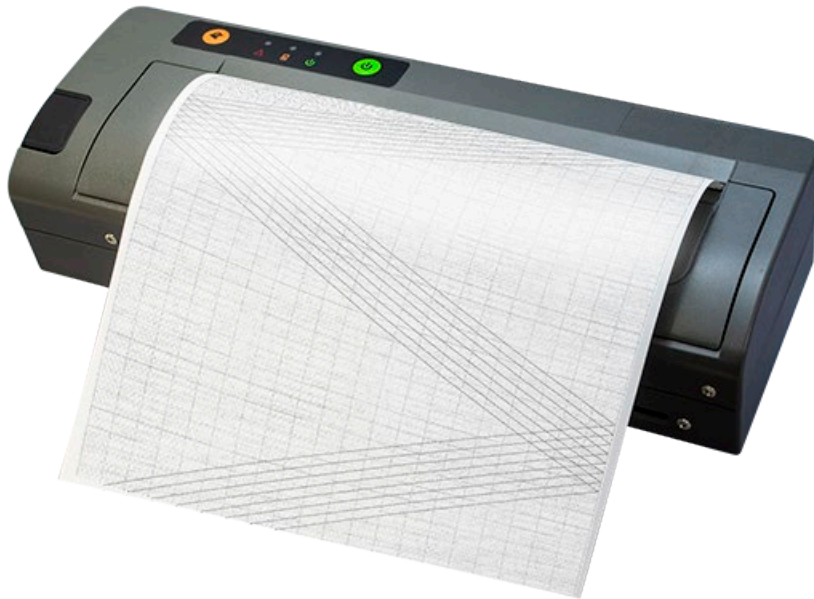
Voltage, current and control signals are measured and outputted in paper format

Market: Service & maintenance



■ User can prevent from falsification and test data can be provided immediately in paper

## 1、Characteristics



**Direct output of waveform**  
Other useful printing feature available

**WLAN connection**  
※Available for GL240・GL840 in summer 2019

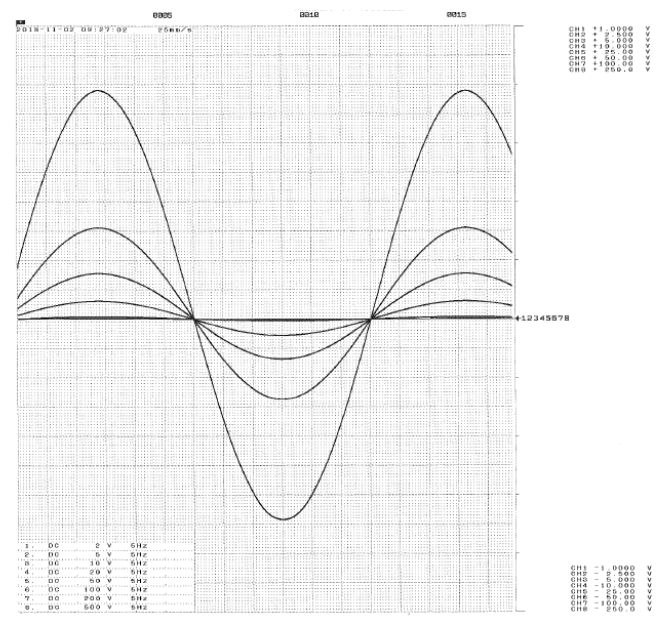
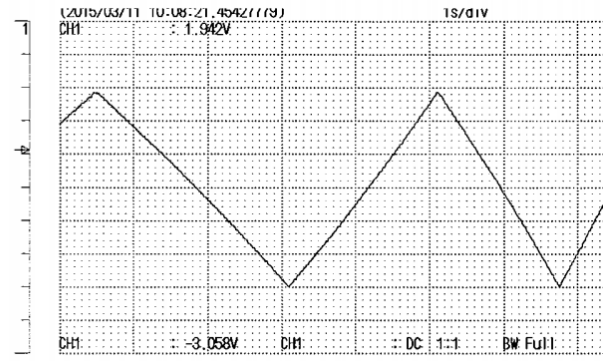
**Printing width**  
**Max. 210mm**

**Battery operation**

# 1. Product features

## ① Direct print out feature

- Y-T in real time  
Between Start & Stop, Trigger synchronous, asynchronous mode
- Y-T in replay  
All data or between cursors
- Logging data in real time (GL240/840)  
Between Start & Stop, Trigger synchronous, asynchronous mode
- Logging data in replay  
Printing area can be chosen from replay menu (max. 1000 samples)
- X-Y printing  
Hard copy of replay display
- Bar graph (GL240/840)  
Hard copy of replay display  
When accumulated bar graph is displayed in GL240/840



# 1. Product features

DP-581H has WLAN and USB interface with GL series

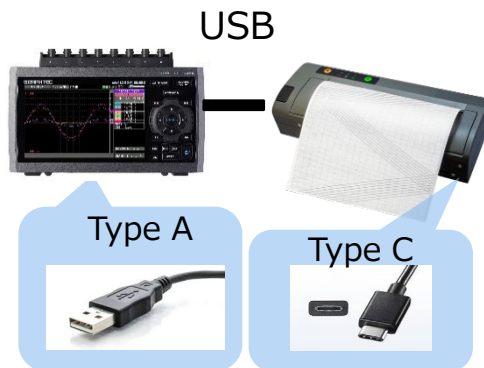
	WLAN*1	USB2.0	LAN*2
GL240	○		
GL840 series	○		○
GL980		○	○
GL2000		○	○

- ※1: GL100-WL and DP-581H cannot be connected at the same time in AP mode
  - WLAN specification: (IEEE802.11b/g/n), WLAN (Access point mode)
  - Wireless connection with GL240/840 will be available from summer 2019
- ※2: WLAN router is necessary for wired LAN connection

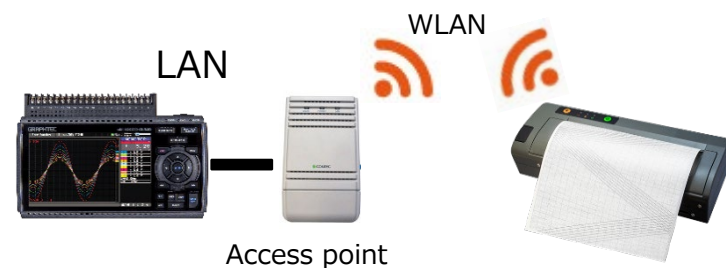
WLAN connection



Wired connection (USB)













Wired LAN connection



# 1. Product features

Print width: Maximum 210mm

DP581-H is categorized as large format printer in mobile printer market

	10mm/s	25mm/s	50mm/s	100mm/s
<b>100mm</b>	 Hioki MR8880  A&D RM1100  Yokogawa DL850	 Sefram DAS30/50		
<b>200mm</b>			 Hioki MR8847A  Hioki MR8827	 A&D RA2300MK II  A&D RA2800A
<b>256mm</b>		<p style="color: red;">Real time output</p>		 Sefram 8460



## 1. Product features

### **Battery operation allows portable use**

Rechargeable battery allows users to print the data anywhere  
(6-cells, Li-ion battery, 11.1V, 6000mAh, 66.6Wh)

Driving time: Approx. 150 meters print per charging (5mm/s continuous recording with low printing rate)



## Price and launch schedule

### 【Main unit】

Product name: Thermal Printer

Model code: DP-581H

MSRP:

### 【Options】

- Recording paper
  - Model code: PR-210x30 (210mm x30m, 6 rolls/box)
  - MSRP:
  
- Battery pack for replacement
  - Model code: BAT-581H
  - MSRP:

### 【Launch schedule】

- Available for shipment from Japan from 21 June 2019
  - GL2000 & GL980 will be firstly available
  - GL240 & GL840 will be available upon firmware update in summer 2019

## Specifications

Y-T format	Feed speed	25, 20, 10, 5, 2, 1mm/s 100, 50, 30, 25, 20, 10, 5, 2, 1mm/min 100, 50, 30, 25, 20, 10, 5, 2, 1mm/h 20mm, 10mm/Day External sampling *Feed speed is not automatically synchronized with TIME/DIV setting of the display *Auto feed speed adjust to TIME/DIV setting is available *Max. feed speed is subject to sampling speed of GL *Max. feed speed is 5mm/s when printer is driven by battery
	Annotation	Title field: Date, time, feed speed, system annotations Channel field: CH annotation, AMP settings, data value *Other texts can be added by using flying annotation
	Channel mark	Channel number
	Distance mark	Accumulated distance from the start point every 50mm
	Timing marker	Off, 1, 10sec, 1, 10min, 1, 10hrs Distance mark and Timing marker cannot be printed at the same time
	Alarm printing	A mark will be printed at the point wherer the alarm occurred
	Envelope mode	Envelope of waveform is printed
	Trigger mark	A mark will be printed at the point wherer the trigger occurred
	Scale printing	Scaled value will be printed
Logging printing	Digital value of each channel will be printed (available for GL240 & GL840)	
X-Y printing	Screen copy of the main unit will be printed	
Screen copy	By dither method	
List printout	Setting condition of GL will be printed	

## Specifications

Description	Thermal printer	
Supported models (Interface)	GL2000, GL980 (USB or wired LAN) GL840 (Wired LAN or WLAN) GL240 (WLAN) *Access point (router) will be required for wired LAN connection Wired LAN connection with GL240 & GL840 will be available after July 2019 *WLAN connection with printer and access point mode for GL100-WL cannot be used at the same time	
Standard accessories	Product	Qty
	USB cable (Type-C)	1 pc
	Recording paper	1 roll
	Quick manual	1 pc
	CD-ROM	1 pc
	AC adapter	1 pc
	AC power cable	1 pc
	Battery pack	1 pc
	A4 paper for spacer	1 pc

### Operating environment

Operating temperature	5 to 35°C
Operating humidity	30 to 80%RH (no condensation)

### Power source

AC power	100 to 240V
Battery pack	Rechargeable lithium-ion battery (6-cells, 11.1V, 6000mAh, 66.6Wh) Rechargeable in printer unit Low power warning by LED lamp on the printer Operating length: Approx. 150m with full charge, low printing rate.

### Supported area and standards

Available region	Japan, US, EU and China
Supported standard	CE marking, RoHS

## Specifications

### Weight and dimension

Dimension	Approx. 312 (W) x 109 (D) x 66 (H) mm (excl. protrusions)
Weight and dimension	Approx. 2.1kg (Incl. battery pack, excl. AC adapter)

### Printing unit

Print resolution	8 dots/mm in width and feed direction
Paper feed accuracy	$\pm 2\%$ , $\pm 0.5\text{mm}$
Print width	210mm
Recoring paper length	30m
Print head lifetime	Approx. 30km (in print density 12.5%)
Keys and display	
Operation keys	Power key and feeding key
Display	Status LED (Power, Battery and Alart)
	Status is indicated by turning on, blinking and turning off

### PC Interface

Interface	USB2.0 (Type-C)
	LAN (IEEE 802.11b/g/n)
Network function	Web server function for printer settings
	DHCP client function

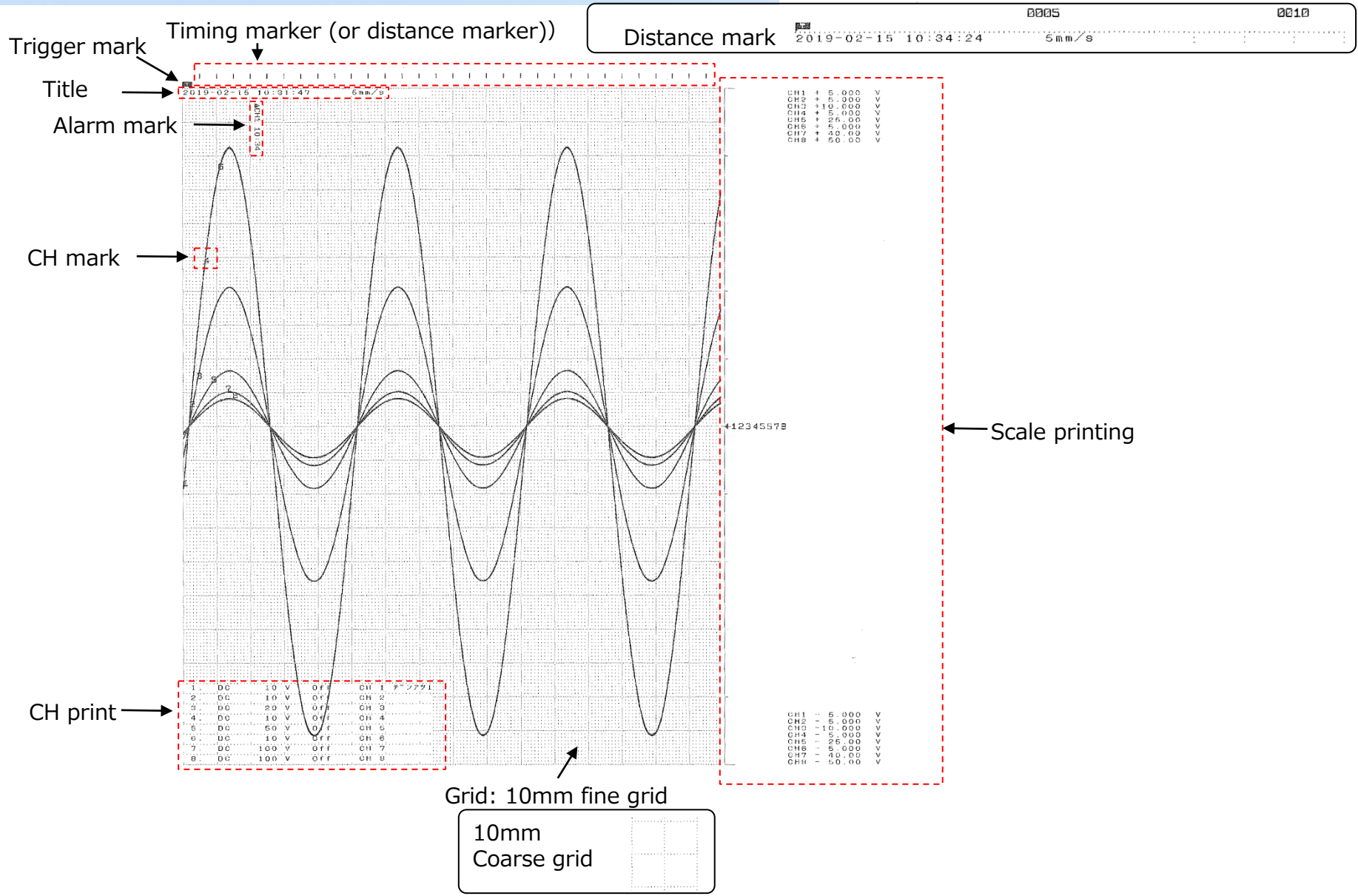
Specifications

Y-T format	Feed speed	<ul style="list-style-type: none"> <li>• 25, 20, 10, 5, 2, 1mm/s</li> <li>• 100, 50, 30, 25, 20, 10, 5, 2, 1mm/min</li> <li>• 100, 50, 30, 25, 20, 10, 5, 2, 1mm/h</li> <li>• 20mm, 10mm/Day</li> <li>• External sampling</li> </ul> <p>*Feed speed is not automatically synchronized with TIME/DIV setting of the display                  *Auto feed speed adjust to TIME/DIV setting is available                  *Max. feed speed is subject to sampling speed of GL                  *Max. feed speed is 10mm/s when GL240/840 is connected by AC power drive                  *Max. feed speed is 5mm/s when printer is driven by battery</p>
	Record format	200 x1 fixed
	Zone setting	Subject to zone setting of GL *One division on GL corresponds to two divisions on printed display
	Grid	10mm fine/coarse grid or 5mm fine/coarse grid
	Span/Position	Subject to the settings of GL
	Annotation	Title field: Date, time, feed speed, system annotations
		Channel field: CH annotation, AMP settings, data value
		*Other texts can be added by using flying annotation
	Channel mark	Channel number
	Distance mark	Accumulated distance from the start point every 50mm
	Timing marker	Off, 1, 10sec, 1, 10min, 1, 10hrs
		Distance mark and Timing marker cannot be printed at the same time
Alarm printing	A mark will be printed at the point wherer the alarm occurred	
Envelope mode	Envelope of waveform is printed	
Trigger mark	A mark will be printed at the point wherer the trigger occurred	
Scale printing	Scaled value will be printed	
	Selected 10ch will be displayed when GL840 is connected	
Logging printing	Digital value of each channel will be printed (available for GL240 & GL840) Selected 10ch will be printed	

## Specifications

X-Y printing	Screen copy of the main unit will be printed	
Screen copy	By dither method	
List printout	Setting condition of GL will be printed	
Print format	Y-T in real time	Between start and stop or Trigger synchronization/asynchronization
	Y-T in replay	All data or between cursors
	Logging in real time	Between start and stop or Trigger synchronization/asynchronization
	Logging in replay	All data or between cursors (max. 1000 samples)
	X-Y print	Screenshot
Bar graph	Screenshot (Available with GL240/840 when bar graph is displayed)	
External signal synchronous feed function	Paper feed speed and external signal input will be synchronized	

# Printing example (Y-T format)





## Printing examples (Logging printing)

2019-02-15	CH1 [ CH 1 # ] ( V )	CH2 [ CH 2 ] ( V )	CH3 [ CH 3 ] ( V )	CH4 [ CH 4 ] ( V )	CH5 [ CH 5 ] ( V )	CH6 [ CH 6 ] ( V )	CH7 [ CH 7 ] ( V )	CH8 [ CH 8 ] ( V )
10:34:24.803000	- 4.549	- 4.547	- 2.423	- 4.544	- 8.08	- 4.548	- 4.57	- 4.55
10:34:24.804000	- 4.550	- 4.546	- 2.427	- 4.552	- 8.08	- 4.544	- 4.55	- 4.55
10:34:24.805000	- 4.545	- 4.542	- 2.426	- 4.545	- 8.07	- 4.546	- 4.56	- 4.54
10:34:24.806000	- 4.544	- 4.545	- 2.423	- 4.553	- 8.06	- 4.541	- 4.56	- 4.53
10:34:24.807000	- 4.547	- 4.548	- 2.426	- 4.549	- 8.07	- 4.541	- 4.56	- 4.55
10:34:24.808000	- 4.545	- 4.548	- 2.424	- 4.549	- 8.08	- 4.544	- 4.54	- 4.55
10:34:24.809000	- 4.543	- 4.548	- 2.426	- 4.544	- 8.09	- 4.541	- 4.55	- 4.56
10:34:24.810000	- 4.544	- 4.547	- 2.427	- 4.549	- 8.09	- 4.547	- 4.56	- 4.55
10:34:24.811000	- 4.546	- 4.546	- 2.428	- 4.552	- 8.08	- 4.543	- 4.56	- 4.55
10:34:24.812000	- 4.544	- 4.545	- 2.424	- 4.550	- 8.07	- 4.540	- 4.55	- 4.57
10:34:24.813000	- 4.540	- 4.550	- 2.421	- 4.544	- 8.06	- 4.540	- 4.53	- 4.55
10:34:24.814000	- 4.544	- 4.548	- 2.426	- 4.544	- 8.07	- 4.544	- 4.56	- 4.52
10:34:24.815000	- 4.544	- 4.545	- 2.426	- 4.544	- 8.06	- 4.540	- 4.57	- 4.58
10:34:24.816000	- 4.548	- 4.541	- 2.423	- 4.547	- 8.06	- 4.539	- 4.56	- 4.56
10:34:24.817000	- 4.548	- 4.548	- 2.423	- 4.550	- 8.06	- 4.541	- 4.56	- 4.55
10:34:24.818000	- 4.548	- 4.546	- 2.428	- 4.546	- 8.08	- 4.537	- 4.57	- 4.54
10:34:24.819000	- 4.542	- 4.543	- 2.425	- 4.546	- 8.08	- 4.536	- 4.57	- 4.56
10:34:24.820000	- 4.541	- 4.543	- 2.420	- 4.543	- 8.05	- 4.540	- 4.56	- 4.56
10:34:24.821000	- 4.542	- 4.542	- 2.424	- 4.542	- 8.07	- 4.542	- 4.57	- 4.57
10:34:24.822000	- 4.540	- 4.543	- 2.426	- 4.547	- 8.06	- 4.537	- 4.56	- 4.53
10:34:24.823000	- 4.540	- 4.543	- 2.423	- 4.546	- 8.05	- 4.535	- 4.57	- 4.54
10:34:24.824000	- 4.539	- 4.546	- 2.422	- 4.545	- 8.05	- 4.539	- 4.56	- 4.53
10:34:24.825000	- 4.539	- 4.545	- 2.425	- 4.543	- 8.08	- 4.539	- 4.56	- 4.53
10:34:24.826000	- 4.542	- 4.539	- 2.423	- 4.542	- 8.07	- 4.540	- 4.54	- 4.52
10:34:24.827000	- 4.539	- 4.540	- 2.420	- 4.542	- 8.05	- 4.539	- 4.56	- 4.50
10:34:24.828000	- 4.542	- 4.546	- 2.423	- 4.546	- 8.05	- 4.536	- 4.53	- 4.53
10:34:24.829000	- 4.538	- 4.545	- 2.426	- 4.545	- 8.05	- 4.537	- 4.57	- 4.48
10:34:24.830000	- 4.544	- 4.543	- 2.422	- 4.543	- 8.07	- 4.536	- 4.57	- 4.51
10:34:24.831000	- 4.547	- 4.540	- 2.420	- 4.543	- 8.06	- 4.537	- 4.57	- 4.51
10:34:24.832000	- 4.545	- 4.540	- 2.422	- 4.544	- 8.06	- 4.538	- 4.54	- 4.53
10:34:24.833000	- 4.541	- 4.541	- 2.425	- 4.544	- 8.06	- 4.542	- 4.57	- 4.54
10:34:24.834000	- 4.538	- 4.545	- 2.421	- 4.545	- 8.05	- 4.538	- 4.54	- 4.53
10:34:24.835000	- 4.538	- 4.540	- 2.420	- 4.546	- 8.08	- 4.539	- 4.57	- 4.54
10:34:24.836000	- 4.540	- 4.540	- 2.426	- 4.542	- 8.07	- 4.540	- 4.56	- 4.54
10:34:24.837000	- 4.538	- 4.536	- 2.421	- 4.540	- 8.03	- 4.544	- 4.58	- 4.54
10:34:24.838000	- 4.534	- 4.540	- 2.420	- 4.540	- 8.06	- 4.540	- 4.55	- 4.55
10:34:24.839000	- 4.537	- 4.540	- 2.425	- 4.542	- 8.06	- 4.544	- 4.55	- 4.51
10:34:24.840000	- 4.539	- 4.541	- 2.420	- 4.544	- 8.05	- 4.539	- 4.55	- 4.50

10:34:24.030000	- 4.506	- 4.506	- 2.406	- 4.508	- 8.01	- 4.505	- 4.51	- 4.55
10:34:24.031000	- 4.506	- 4.508	- 2.408	- 4.509	- 7.98	- 4.511	- 4.51	- 4.53
10:34:24.032000	- 4.507	- 4.512	- 2.405	- 4.509	- 8.00	- 4.509	- 4.51	- 4.55
10:34:24.033000	- 4.508	- 4.515	- 2.404	- 4.510	- 8.00	- 4.508	- 4.53	- 4.55
10:34:24.034000	- 4.509	- 4.508	- 2.408	- 4.511	- 8.01	- 4.509	- 4.52	- 4.57
10:34:24.035000	- 4.510	- 4.506	- 2.405	- 4.506	- 8.01	- 4.505	- 4.51	- 4.57
10:34:24.036000	- 4.511	- 4.507	- 2.402	- 4.508	- 8.01	- 4.502	- 4.51	- 4.55
10:34:24.037000	- 4.505	- 4.505	- 2.404	- 4.507	- 7.99	- 4.503	- 4.54	- 4.54
10:34:24.038000	- 4.504	- 4.507	- 2.405	- 4.503	- 7.99	- 4.499	- 4.50	- 4.54
10:34:24.039000	- 4.505	- 4.506	- 2.402	- 4.509	- 8.01	- 4.501	- 4.49	- 4.52
10:34:24.040000	- 4.502	- 4.504	- 2.401	- 4.510	- 8.01	- 4.501	- 4.49	- 4.54
10:34:24.041000	- 4.500	- 4.501	- 2.404	- 4.508	- 7.99	- 4.499	- 4.51	- 4.55
10:34:24.042000	- 4.501	- 4.505	- 2.401	- 4.505	- 7.99	- 4.499	- 4.51	- 4.56
10:34:24.043000	- 4.497	- 4.508	- 2.401	- 4.501	- 7.99	- 4.505	- 4.53	- 4.58
10:34:24.044000	- 4.498	- 4.500	- 2.402	- 4.504	- 7.98	- 4.498	- 4.51	- 4.55
10:34:24.045000	- 4.502	- 4.504	- 2.405	- 4.507	- 7.98	- 4.506	- 4.50	- 4.54
10:34:24.046000	- 4.497	- 4.499	- 2.403	- 4.503	- 7.97	- 4.499	- 4.50	- 4.55
10:34:24.047000	- 4.500	- 4.498	- 2.397	- 4.502	- 8.01	- 4.500	- 4.51	- 4.55
10:34:24.048000	- 4.504	- 4.506	- 2.405	- 4.503	- 7.99	- 4.496	- 4.51	- 4.56
10:34:24.049000	- 4.504	- 4.501	- 2.402	- 4.497	- 8.01	- 4.495	- 4.50	- 4.53

MIN.	- 4.550	- 4.550	- 2.428	- 4.553	- 8.09	- 4.548	- 4.58	- 4.61
MAX.	- 4.487	- 4.498	- 2.397	- 4.497	- 7.97	- 4.495	- 4.49	- 4.48
AVE.	- 0.454	- 0.454	- 0.484	- 0.454	- 4.04	- 0.454	- 4.54	- 4.54

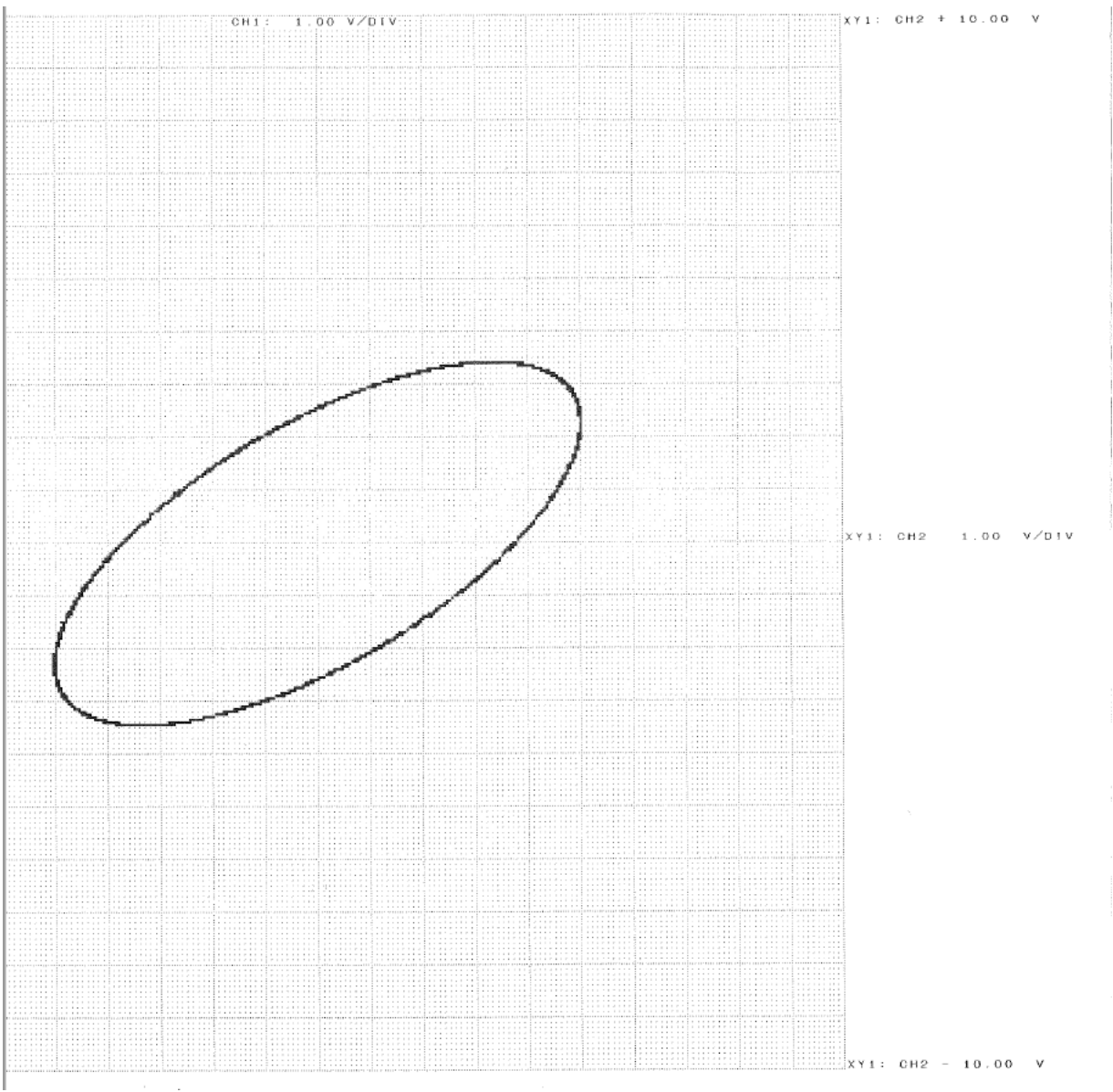
↑  
Max., Min. and Avg.

10:34:24.998000	- 4.525	- 4.525	- 2.411	- 4.525	- 8.04	- 4.518	- 4.53	- 4.56
10:34:24.999000	- 4.524	- 4.523	- 2.413	- 4.522	- 8.02	- 4.517	- 4.54	- 4.54
10:34:24.000000	- 4.522	- 4.523	- 2.414	- 4.525	- 8.03	- 4.518	- 4.52	- 4.55
10:34:24.001000	- 4.518	- 4.518	- 2.412	- 4.522	- 8.03	- 4.521	- 4.54	- 4.55
10:34:24.002000	- 4.519	- 4.519	- 2.412	- 4.523	- 8.01	- 4.519	- 4.54	- 4.53

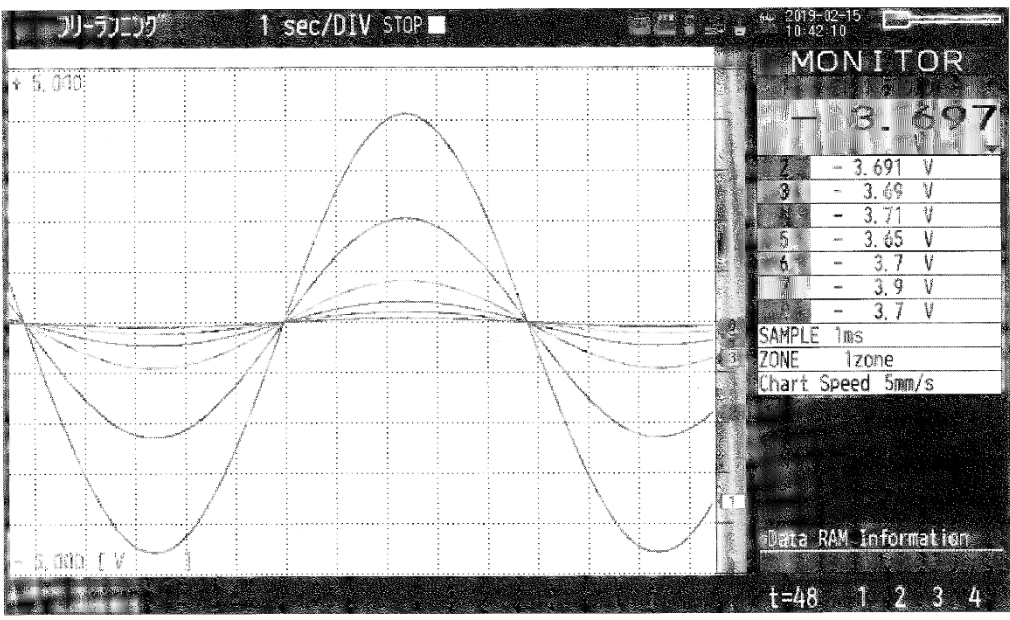
2019-02-15	CH1 [ CH 1 # ] ( V )	CH2 [ CH 2 ] ( V )	CH3 [ CH 3 ] ( V )	CH4 [ CH 4 ] ( V )	CH5 [ CH 5 ] ( V )	CH6 [ CH 6 ] ( V )	CH7 [ CH 7 ] ( V )	CH8 [ CH 8 ] ( V )
10:34:24.003000	- 4.519	- 4.521	- 2.413	- 4.527	- 8.03	- 4.514	- 4.53	- 4.52
10:34:24.004000	- 4.518	- 4.520	- 2.411	- 4.523	- 8.03	- 4.515	- 4.55	- 4.51
10:34:24.005000	- 4.515	- 4.515	- 2.412	- 4.520	- 8.01	- 4.513	- 4.52	- 4.53
10:34:24.006000	- 4.515	- 4.518	- 2.413	- 4.520	- 8.01	- 4.511	- 4.52	- 4.51
10:34:24.007000	- 4.516	- 4.518	- 2.412	- 4.523	- 8.02	- 4.513	- 4.51	- 4.51
10:34:24.008000	- 4.520	- 4.521	- 2.412	- 4.524	- 8.05	- 4.515	- 4.53	- 4.52
10:34:24.009000	- 4.520	- 4.522	- 2.410	- 4.525	- 8.02	- 4.514	- 4.52	- 4.52

Printed each 100 lines

Printing example (X-Y printing)



### Printing example (screenshot)



← Screenshot in Y-T display

Screenshot in X-Y display →

