



SMARTDAC+®

Data Acquisition & Control

Bulletin 04L51B01-01EN

www.smartdacplus.com

SMARTDAC+[®]

Data Acquisition & Control

Your business environment is complex and fast changing. You need smart and powerful systems that can adapt to your process.

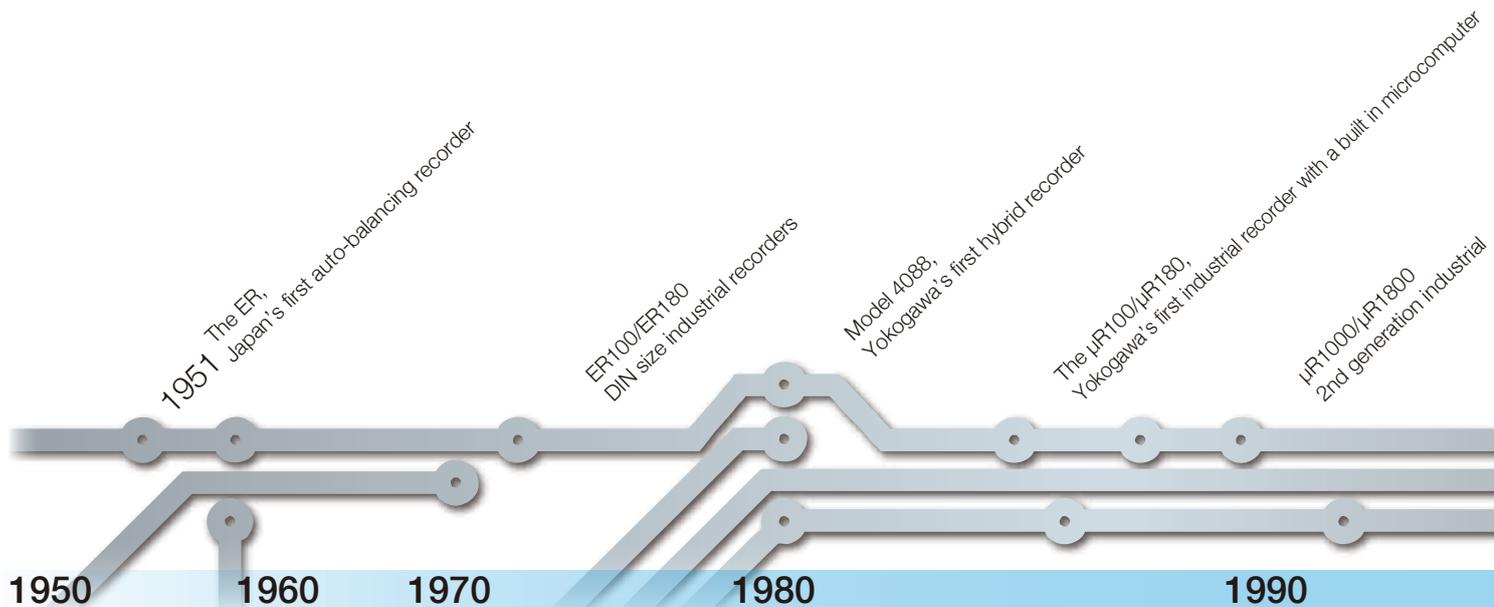
SMARTDAC+ is a fresh approach to data acquisition and control, with smart and simple touch operation as a design priority.

Measure, display and archive process data with greater levels of clarity, intelligence and accessibility.

The **SMARTDAC+** concept begins with the all-new GX/GP, an integrated I/O and recording system with a familiar touch operator interface.

Highly adaptable, very capable and easy to operate is the new GX/GP.

Now that's SMART.



Classic precision and reliability, evolving.



recorders

The VR200,
Yokogawa's first paperless recorder

DX100/DX200
2nd generation paperless recorders

μR10000/μR20000
3rd generation paperless recorders

DXAdvanced industrial recorders
3rd generation paperless recorders

2012 GX20/GX10
GP20/GP10

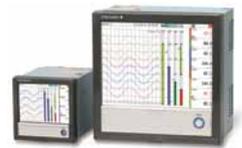
2000

2010

Year



Paperless recorders (portable type)



Paperless recorders (panel-mount type)



Data logging software



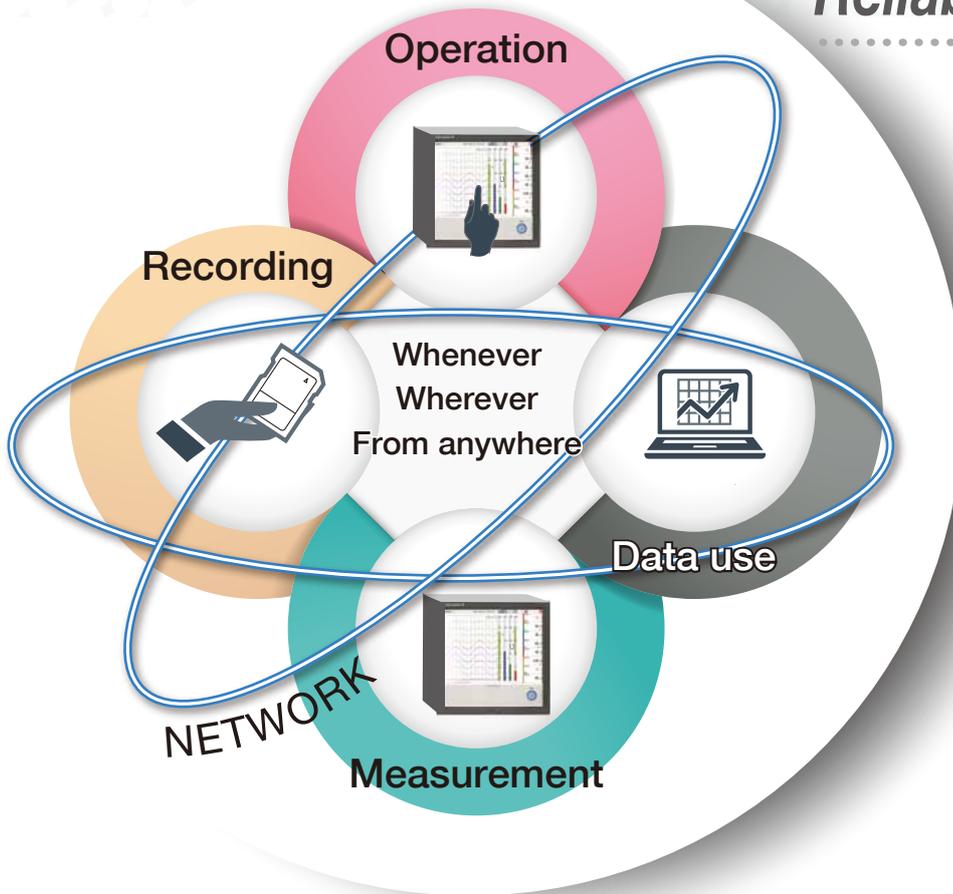
Input/output modules



Reliable technology

SMARTDAC+

Reliability meets user em



Measurement

- Inputs and outputs that support a wide range of DUTs
- Modular construction for expandable input/output
- Multichannel measurement on up to 450 channels

Recording

- Supports multichannel recording over long durations
- Redundancy through internal memory and external media
- Saves binary data for enhanced security (also supports plain text)

Display & operation

- Arrange screens any way you like with the Custom Display function (option)
- Wide variety of powerful display functions
- Touch screen for even greater ease of use
- Monitor remotely and edit GX/GP settings from a web browser

Data use

- Automatically create and print spreadsheets
- Powerful software for a variety of tasks including data analysis, settings, and acquisition
- Save to binary or text format



powerment in an expanding range of applications.



Smart User Interface

Provides a smooth, familiar user experience



Observe

- Variety of display functions
- Powerful data search functions
- Status indicator lamp functions

Interact

- Touch screen for intuitive operation
- Easy-to-navigate, user-oriented design
- Supports freehand messages

Smart Architecture

Enables a scalable data acquisition system



Adapt

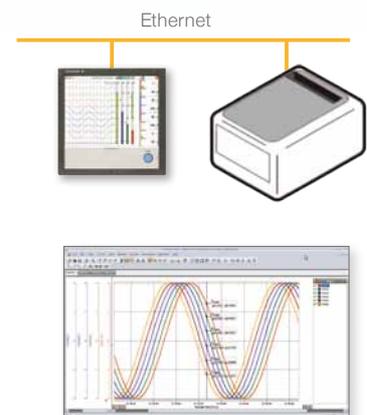
- Add I/O modules when you need more channels
- Low temperature operation
- Locking front panel for media security

Measure

- Wide-ranging input/output specifications
- Multichannel I/O
- Easy-to-read screens

Smart Functionality

Offers a seamless data transfer environment



Record

- Direct output to printers
- Convenient report creation function
- Viewer software for data analysis

Connect

- Browser-based real time monitoring
- Centralized data management via FTP server
- Powerful networking functions

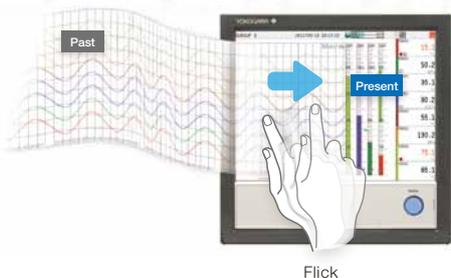
Smart User Interface

An intuitive UI engineered for ease-of-use

Efficiently search for key data

Easily review historical data

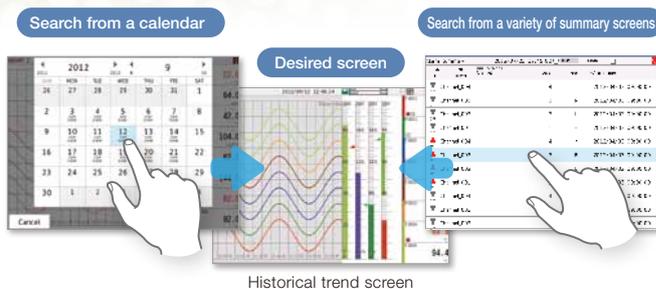
Seamless display of historical trends—flick or drag the trend display to scroll through the data, even during measurement.



Flick

Quickly find data using calendars and summary screens

From a calendar, jump to waveforms of a specific date. From the alarm summary, jump to the waveform active during the alarm.

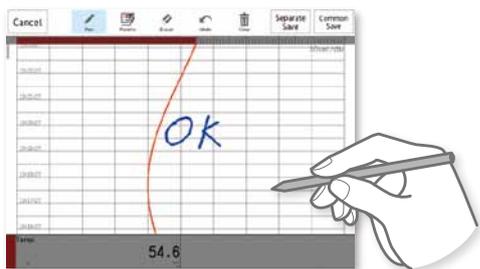


Historical trend screen

Easily check off trouble spots

Write freehand messages

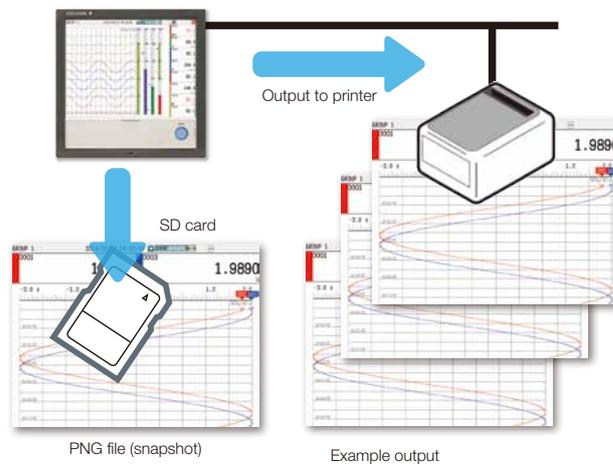
Immediately clear areas of concern with a hand-written message.



You can draw or hand-write on the waveform area using a stylus (standard accessory) or the tip of your finger. You can even select a color and line width. Alternatively, you can select from a list of preset messages.

Save and output image files

Save trend waveforms of interest or screens displayed during alarms as image (PNG) files, and print them out at the same time.



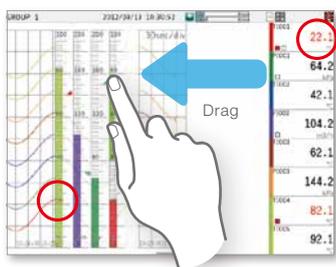
PNG file (snapshot)

Example output

Check waveforms of concern in detail

Display digital values at any location

Move the scale to display the value corresponding to that position as a numeric value. Instantly check maximum/minimum measured values.

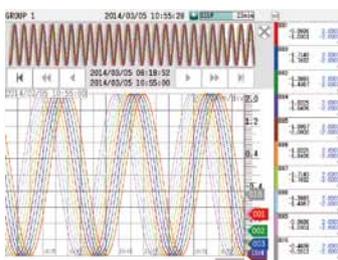


[Patent pending]

Ascertain long-duration trends at a glance

All historical trends display

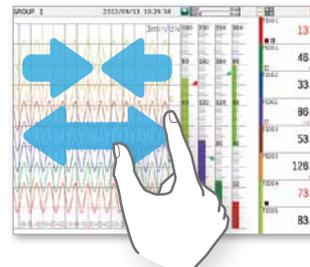
Long-duration trends can be fitted to a single screen for easy viewing.



All historical trends display

Zoom in/out on the time axis

The time axis can be compressed—simply pinch apart and together and to zoom in and out.



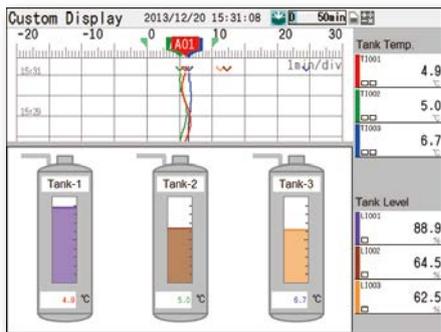
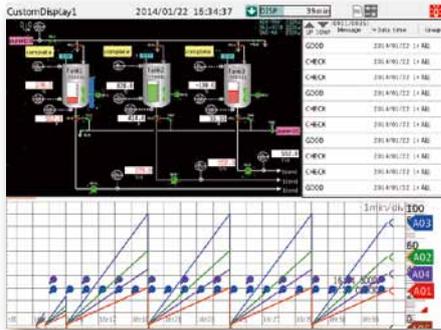
Pinch apart / Pinch together



Create your own screens

Custom display (/CG option)

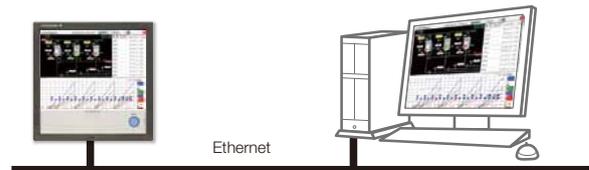
You can arrange display objects such as trend, numeric, and bar graphs any way you like to create monitor displays that are customized to the environment.



DAQStudio DXA170

Custom display building software

DAQStudio is software for creating custom displays. You can load screens you created onto the GX/GP via Ethernet or external memory media (SD/USB) and display them.



Common objects used in custom displays (DAQStudio)

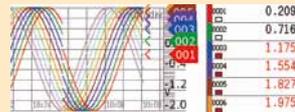
Image (displays PNG files)



Digital



Trend



Label

Label

Bar graph

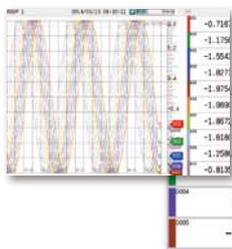


Alarm summary

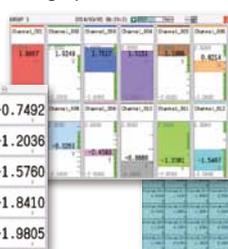
Alarm	Channel	Level	Type	Alarm Name
0003	CH001	1	H	2014/09/13 10:12:52.000
0004	CH001	1	H	2014/09/13 10:12:37.000
0005	CH001	1	H	2014/09/13 10:12:22.000
0006	CH001	1	H	2014/09/13 10:12:07.000
0007	CH001	1	H	2014/09/13 10:11:52.000
0008	CH001	1	H	2014/09/13 10:11:37.000
0009	CH001	1	H	2014/09/13 10:11:22.000
0010	CH001	1	H	2014/09/13 10:11:07.000
0001	CH001	1	H	2014/09/13 10:09:24.000
0002	CH001	1	H	2014/09/13 10:09:09.000

Variety of display screens

Trend



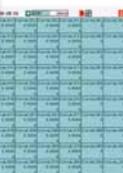
Bar graph



Digital



Overview



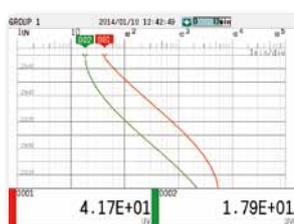
Alarm summary

Message summary

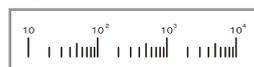
Memory summary

Physical quantities are displayed and recorded on a log scale.

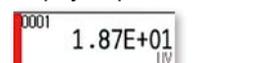
Log scale display (/LG option)



Log scale

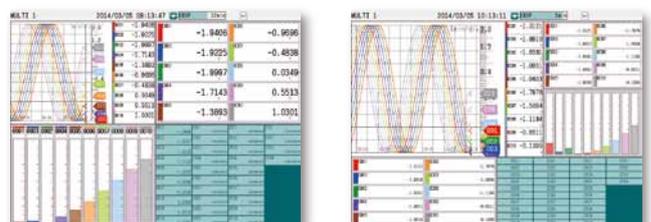


Displays exponents



Multi-panel display

You can select from 9 layouts, and save up to 20 configurations.

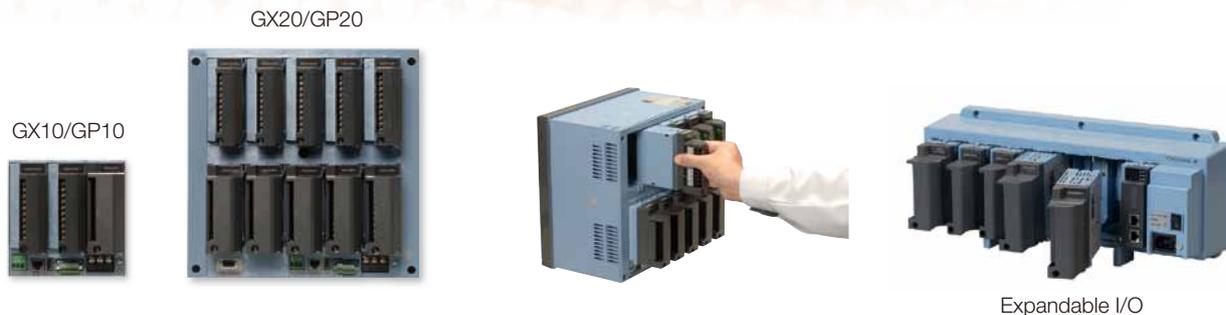


Smart Architecture

Highly flexible and scalable architecture

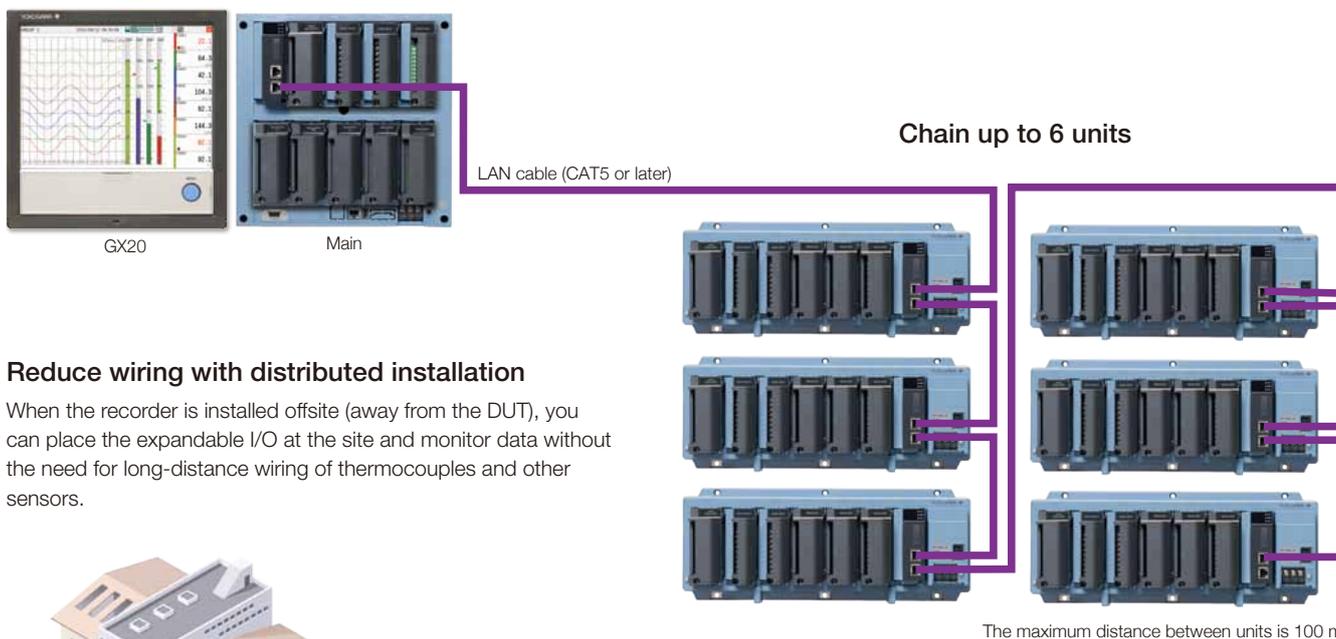
Modular input/output

Inputs and outputs are modular for easy expandability. The GX/GP multichannel paperless recorder main unit alone provides up to 100 channels (GX20/GP20) of measurement.



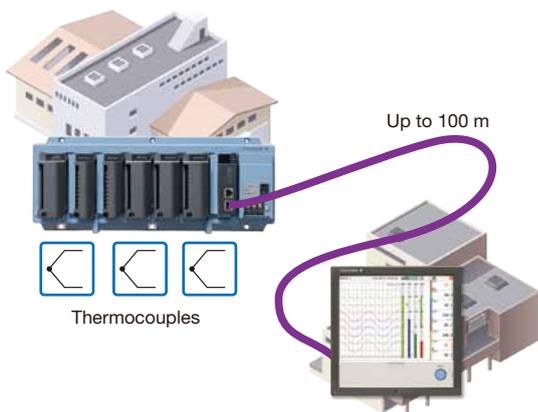
Expandable to up to 450 channels (real actual input)

Supports up to 450 channels of measurement. Note that if MATH and communication channels are included, the GX20/GP20 large memory type can record on up to 1000 channels. The GX/GP main unit and expandable I/O can both use the same input/output modules



Reduce wiring with distributed installation

When the recorder is installed offsite (away from the DUT), you can place the expandable I/O at the site and monitor data without the need for long-distance wiring of thermocouples and other sensors.



Model	Type	Max. channels	Number of channels by configuration	
GX10/GP10	Standard	100 ch	Main unit only	0-30
			Main + expandable I/O	0-100
GX20/GP20	Standard	100 ch	Main unit only	0-100
			Main + expandable I/O	0-100
	Large memory	450 ch	Main unit only	0-100
			Main + expandable I/O	0-450

Wide variety of input/output modules

Select from a wide variety of input /output modules.

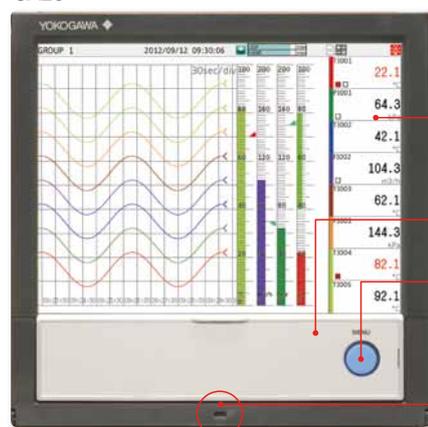


The I/O terminals are detachable.

Model	Name	Measurement/Application	Channels
GX90XA-10-U2	Analog input module	DC voltage, DC current, thermocouple, RTD, contact (semiconductor relay scanner type)	10
GX90XA-10-L1		Low withstand voltage DC voltage, thermocouple, contact	10
GX90XA-10-T1		DC voltage, thermocouple, contact (electromagnetic relay scanner type)	10
GX90XA-10-C1		DC current (mA)	10
GX90XD	Digital input module	Remote control input or operation recording	16
GX90YD	Digital output module	Alarm output	6
GX90WD	Digital input/output module	Remote control input or operation recording/alarm output	DI:8/ DO:6

Component Names

GX20



LCD screen

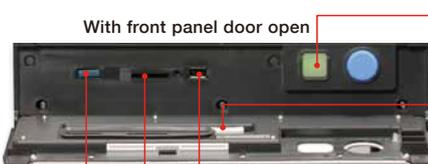
Displays operating screens such as trend graphs, and setting screens.

Operation panel

MENU key

Simply press the MENU key to display a menu for access to a variety of screens.

Front panel door lock mechanism



With front panel door open

START/STOP key

Starts and stops recording.

Stylus

For writing freehand messages.

USB port [Option]

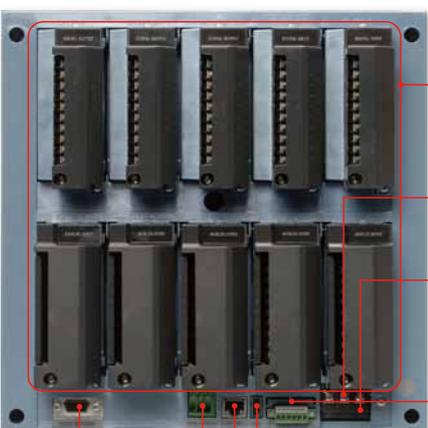
Supports USB 2.0.

SD memory card slot

SD memory card (up to 32 GB)
(format: FAT32 or FAT16), 1 GB included

Power switch

The main unit power switch.



Input/output module slots



Power inlet

(GP10/GP20)

Power and protective ground

Serial communications port [Option]

Terminal for RS-422/485 or RS-232 communications.

USB port [Option]

Supports USB 2.0.

Ethernet Port

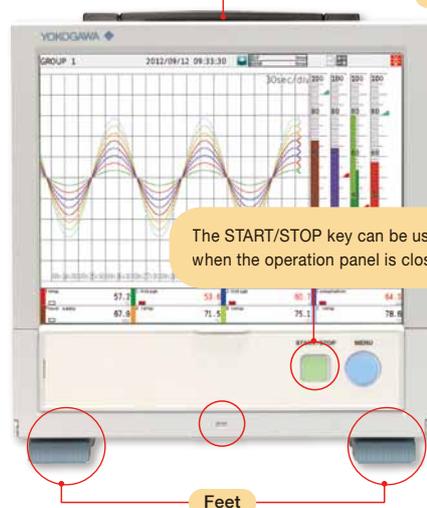
FAIL output terminal [Option] A 10Base-T/100Base-TX port.

VGA output connector [Option]

External monitor connector.

GP20

Handle



The START/STOP key can be used when the operation panel is closed.

Feet

Portable models (GP10/GP20)

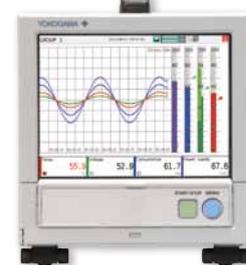


Easy-to-read display

GX20/GP20: 12.1" TFT color LCD, 800 x 600 dots
GX10/GP10: 5.7" TFT color LCD, 640 x 480 dots

GX10

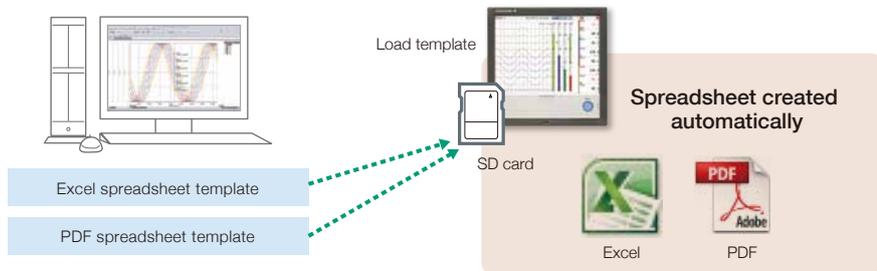
GP10





Report template function (/MT option)

This function automatically creates spreadsheets in PDF or Excel format.

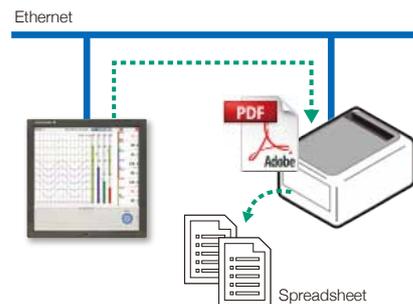


Spreadsheets are created according to the template loaded on the main unit. Templates are available for Excel and PDF. PDF spreadsheet templates are created with a free report template builder program.

Automatically generated spreadsheets (PDF or Excel) are saved to external memory media (SD card) at regular intervals. You can also transfer them via FTP.

Print spreadsheets (PDF) directly

Spreadsheets generated from PDF spreadsheet templates can be automatically output from the GX/GP to a printer through a PC.

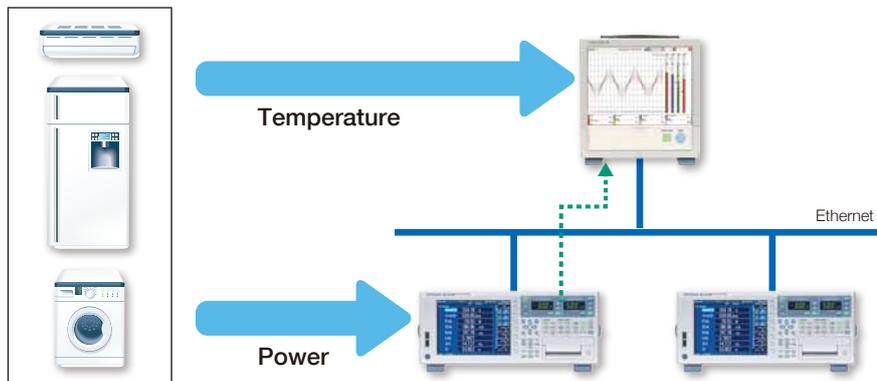


Powerful tool for instrument performance evaluation testing (/E2 and /MC options)

Highly precise measured data from power measuring instruments (WT series power analyzers) can be acquired without loss of fidelity on the GX/GP, and recorded and displayed alongside the GX/GP's own measured data. This is ideal for performance evaluation testing because you can record instrument power consumption, temperature, and other phenomena simultaneously.

Models that can be connected
Yokogawa Meters & Instruments Corp.
WT series power analyzers
WT310/WT330/WT332
WT500
WT1800

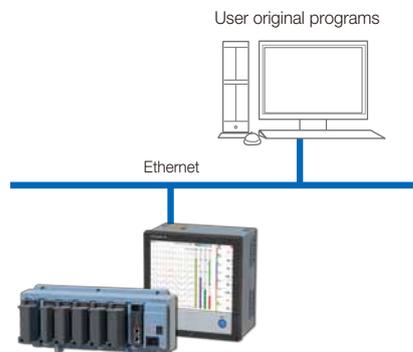
Max. no. of connections
8 (GX10/GP10), 16 (GX20/GP20)



DARWIN-compatible communication

The GX/GP supports DARWIN communication commands.

Use your current DARWIN communication programs as-is on the GX-GP.

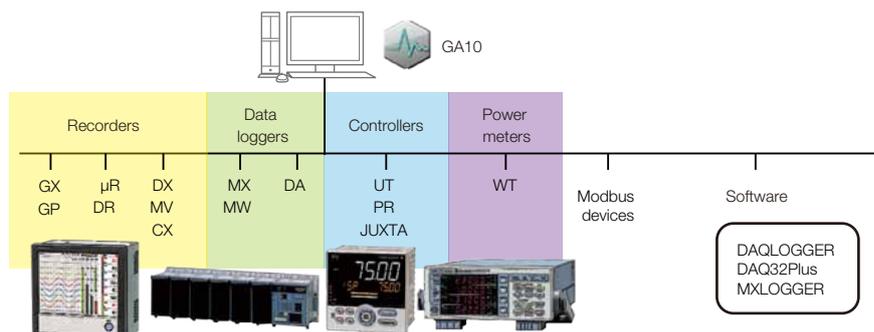


GA10 data logging software (sold separately)

Monitors and records data from a variety of instruments.



•Up to 100 units •Shortest acq. Interval of 100 ms •Up to 2000 channels (tags)

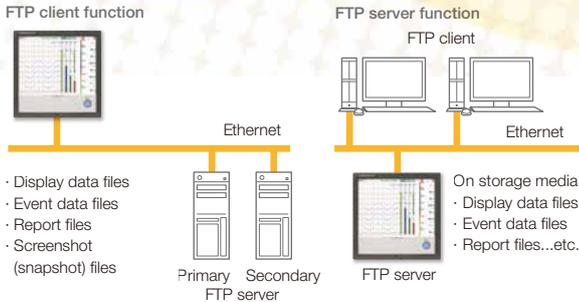


Networking

Provides a variety of convenient networking functions.....

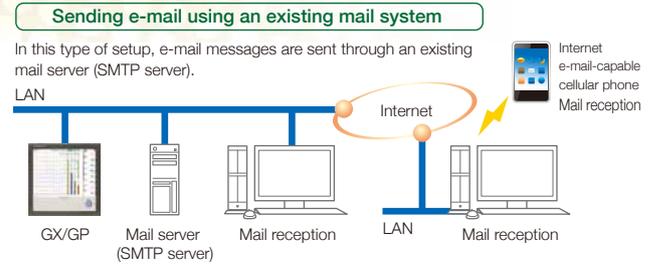
FTP-based file transfer

The FTP client/server functions allow you to easily share and manage data from a centralized file server.



E-mail messaging function

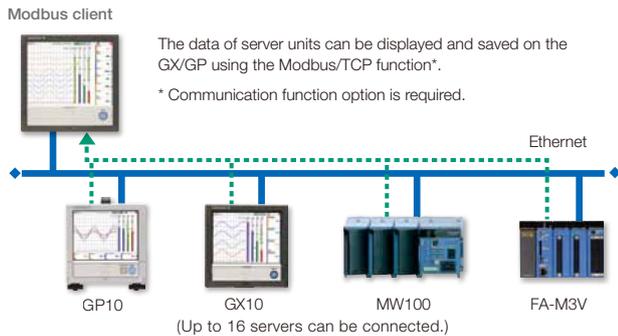
The GX/GP can send a variety of informative e-mail messages that include alarm notification reports, periodic instantaneous data values, scheduled report data and other information.



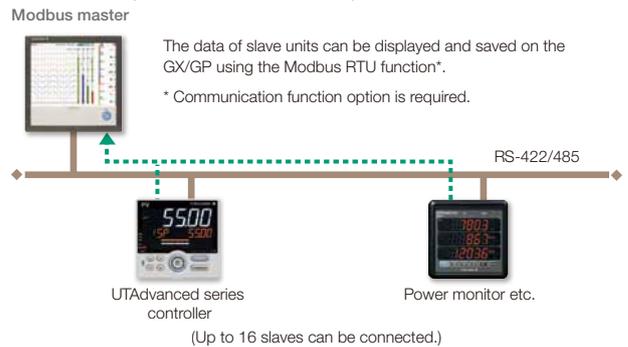
Modbus/TCP and Modbus/RTU Communications

GX/GP supports Modbus TCP/IP client and server modes for Ethernet communications and Modbus RTU master and slave modes for optional serial communications.

Modbus TCP (Ethernet connection)

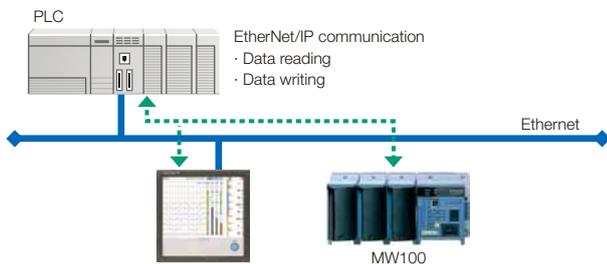


Modbus RTU (RS-422A/485 connection)



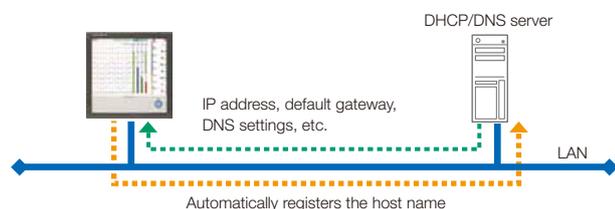
EtherNet/IP Function

GX/GP supports EtherNet/IP server functions. You can access GX/GP from PLCs or other devices and load measurement/MATH channels or write to communication input channels (max 60 CH).



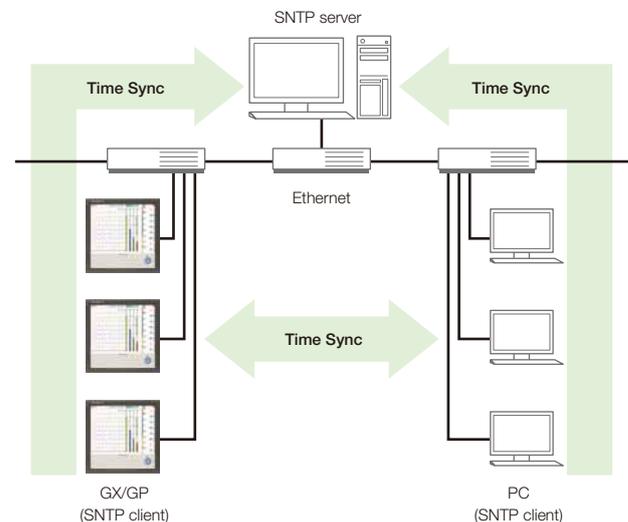
Automatic network setup (DHCP) function

Using Dynamic Host Configuration Protocol (DHCP), the GX/GP can automatically acquire the settings it needs (IP address) for network communications from a DHCP server. This makes it easier than ever to install the unit on a plant network.



Time synchronization with network time servers

GX/GP uses SNTP protocol in client mode to acquire time information from a network time-server. This function allows any number of GX/GP units within a facility to have precisely synchronized time; all units will record data with coordinated date and time stamp information. In addition, GX/GP can function as a server, providing time data to other SNTP client units on the network.



Reliability and durability

Standards supported

C US 172608
UL61010-1, UL61010-2-030(CSA NRTL/C)

Rock-solid hardware and highly secure

Reliable dust- and splash-proof construction



Dust and splashproof front panel

(Complies with IEC529-IP65 and NEMA No. 250 TYPE 4*)

With its IEC529-IP65 compliant front panel, the GX is ready for use in harsh environments.

* Except the external icing test

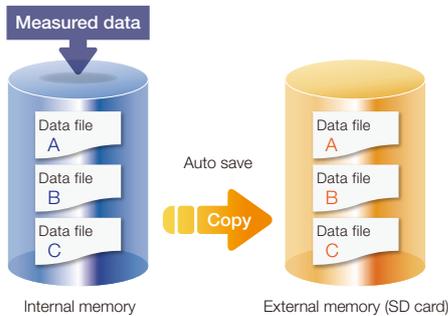
Choice of mounting designs



Cover color (/BC option)

Be confident that recorded data is saved

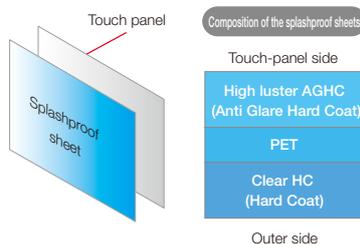
Measured and calculated data is continuously saved to secure, internal non-volatile memory. At manual or scheduled intervals, the files in memory are copied to the removable media. In addition, the files can be copied and archived to an FTP server.



Because of the inherent reliability and security of non-volatile memory, the possibility of losing data under any operating condition or power failure event is extremely small.

High environmental worthiness for use in most any setting

The protective sheets on the touch panel display have a special coating on the front and back to prevent damage from scratches, chemicals, and solvents while maintaining a high display clarity and resistance to light interference.



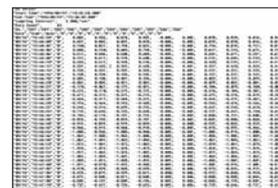
21 CFR Part 11 support (/AS option)

With the advanced security function option, GX/GP supports the USA FDA's Title 21 CFR Part 11 regulation. It gives you access to a login function for requiring user names, IDs, and passwords, plus electronic signatures, audit trails, an anti-tampering function, and other security features.



Select file formats according to your application

For increased security, measured data can be saved in binary format. This format is very difficult to decipher or modify in traditional text editors or other programs. To enable easy and direct opening of the data in text editors or spreadsheet programs, choose text format. This allows you to work with your measurement data without dedicated software.



ASCII data display



Binary data display

Multitouch operation even with gloves on

Traditional resistive touch screens can detect only one touch point. The built in controller and algorithm of the GX/GP can detect two touch points, allowing intuitive pan and zoom functions during trend monitoring—a first among paperless recorders.



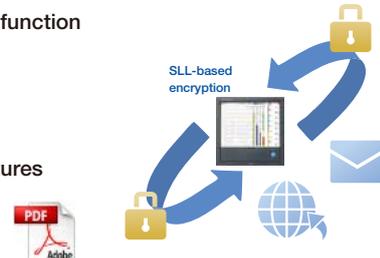
Security enhancements

Safely sends and receives customer data.

SSL support function

- FTP client
- SMTP client
- FTP server
- HTTP server

Digital signatures



SSL: An encryption protocol for data sent over TCP/IP networks.



Model	GX20		GP20	GX10		GP10
Construction	Vertical panel mount	Portable		Vertical panel mount	Portable	
	Panel thickness	2 to 26 mm		2 to 26 mm		
Display	12.1" TFT color LCD (800 × 600 dots)			5.7" TFT color LCD (640 × 480 dots)		
Touch screen	4 wire resistive touch screen, 2-point touch detection					
Max. no. of connectable modules	10 (When mounted on expansion module: 9)			3 (When mounted on expansion module: 2)		
	* The maximum number of connectable modules is limited by the maximum number of I/O channels, and differs depending on the types and combinations of modules.					
Analog input channels	Standard: 100, Large memory: 450 (with expansion unit)			Standard: 30, 100 (with expansion unit)		
No. of mathematical channels	100			50		
No. of communication channels	Standard: 300, Large memory: 500			50		
Internal memory (flash memory)	Standard: 500 MB, Large memory: 1.2 GB			500 MB		
External storage media	SD memory card (up to 32 GB) (format: FAT32 or FAT16), 1 GB included USB interface (UH option): USB 2.0 compliant (external storage media: USB flash memory) (Keyboard/mouse: HID Class Ver. 1.1 compliant)					
Communication functions	Ethernet (10BASE-T/100BASE-TX), IEEE802.3 compliant (Ethernet frame type: DIX) Connecting configuration: Cascade max. 4 level (10BASE-T), max. 2 level (100BASE-TX), segment length: Max. 100 m E-mail inform function (E-mail client), FTP client function, FTP server function, Web server function, SNMP server function, DHCP client function Modbus/TCP (client*/server functions) */MC option is required.					
	Options	Serial communications (/C2: RS-232, /C3: RS-422 or RS-485), Modbus/RTU (master/slave functions)				
Other functions	Security functions: Key lock function, login function, Clock functions: With calendar function, accuracy: ±5 ppm (0 to 50°C), LCD saver function					
Rated supply voltage	100 to 240 VAC (allowable power supply voltage range: 90 to 132 VAC, 180 to 264 VAC)					
Rated supply frequency	50/60 Hz					
Power consumption	Max. 90 VA (100 VAC), max. 110 VA (240 VAC)			Max. 45 VA (100 VAC), max. 60 VA (240 VAC)		
Insulation resistance	Between the Ethernet, RS-422/485, and each insulation terminal and earth: 20 MΩ or greater (at 500 VDC)					
Withstand voltage	Between the power terminal and earth: 3000 V AC (50/60 Hz) for one minute					
External dimensions (W × H × D)	Main Unit	288 × 288 × 169 (mm)	288 × 318 × 197 (mm)	144 × 144 × 174 (mm)	144 × 168 × 197 (mm)	
	Including modules	288 × 288 × 220 (mm)	288 × 318 × 248 (mm)	144 × 144 × 225 (mm)	144 × 168 × 248 (mm)	
Weight (main unit only)	Approx. 6.0 kg		Approx. 5.4 kg	Approx. 2.1 kg		Approx. 1.9 kg

Analog input module (Universal input module)

Model	GX90XA					
Input type (Inputs: 10)	DC voltage, standard signal, thermocouple, RTD *1 *2, DI (voltage contact), DC current (with external shunt resistor connected), DC current					
	DCV	20 mV, 60 mV, 200 mV, 1 V, 2 V, 6 V, 20 V, 50 V	RTD	Pt100, JPt100, Cu10 GE, Cu10 L&N, Cu10 WEED, Cu10 BAILEY, Cu10 (20°C) α=0.00392, Cu10 (20°C) α=0.00393, Cu25 (0°C) α=0.00425, Cu53 (0°C) α=0.00426035, Cu100 (0°C) α=0.00425, J263B, Ni100 (SAMA), Ni100 (DIN), Ni120, Pt25, Pt50, Pt100 WEED, Cu10 GOST, Cu50 GOST, Cu100 GOST, Pt46 GOST, Pt100 GOST		
	Standard signal	0.4-2 V, 1-5 V				
	Thermocouple	R, S, B, K, E, J, T, N, W, L, U, W97Re3-W75Re25, KpvsAu7Fe, Platinel 2, PR20-40, NiNiMo, W/WRe26, N(AWG14), XK GOST	DI	Level, Contact		
		DC current	0-20 mA, 4-20 mA			
Scan intervals	100 *1 *2/200 *1 *2/500 ms *1, 1/2/5 s					
Power supply and consumption	Supplied from main unit, power consumption: 0.7 W or less					
Insulation resistance	Between input circuits and internal circuitry: 20 MΩ or greater (at 500 V DC)					
Withstand voltage	Between the input circuits and the internal circuitry: 3000 V AC for one minute (current scanner type and low withstand voltage type: Between the input circuits and the internal circuitry: 1500 V AC for one minute); between analog input channels: 1000 V AC for one minute (excluding b terminals)					
Terminal types	M3 screw terminals or clamp terminals (The type suffix code -T1 is not specified.)					
Weight	Approx. 0.3 kg					

*1 Cannot be set for the electromagnetic relay type (type suffix code: -T1).
*2 Cannot be set for the low withstand voltage type (type suffix code: -L1).

Digital input module

Model	GX90XD	
Input types (inputs: 16)	Open collector or non-voltage contact	
	ON/OFF detection	Open collector: Voltage of 0.5 V DC or less when ON, leakage current of 0.5 mA or less when OFF Non-voltage contact: Resistance of 200 Ω or less when ON, 50 kΩ when OFF
Contact rating	12 V DC, 20 mA or more	
Power supply and consumption	Supplied from main unit, power consumption: 0.7 W or less	
Insulation resistance	Between input terminals and internal circuitry: 20 MΩ or greater (at 500 V DC)	
Withstand voltage	Between input terminals and internal circuitry: 1500 V AC for one minute	
Terminal types	M3 screw terminals or clamp terminals	
Weight	Approx. 0.3 kg	

Digital output module

Model	GX90YD	
Output types (outputs: 6)	Relay contact (c contact)	
Rated load voltage	100 to 240 V AC or 5 to 24 V DC	
Max. load voltage/current	264 VAC or 26.4 VDC, 3A/point (resistance load)	
Power supply and consumption	Supplied from main unit, power consumption: 1.4 W or less	
Insulation resistance	Between output terminals and internal circuitry: 20 MΩ (at 500 VDC)	
Withstand voltage	Between output terminals and internal circuitry: 3000 V AC for one minute	
Terminal types	M3 screw terminals	
Weight	Approx. 0.3 kg	

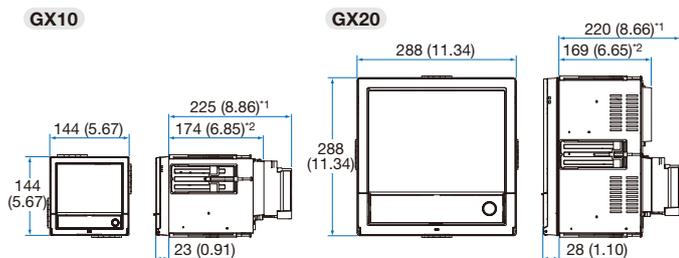
Digital input/output module

Model	GX90WD	
Input type (inputs: 8)	Open collector or non-voltage contact	
	ON/OFF detection	Open collector: Voltage of 0.5 V DC or less when ON, leakage current of 0.5 mA or less when OFF Non-voltage contact: Resistance of 200 Ω or less when ON, 50 kΩ when OFF
Output type (outputs: 6)	Contact input rating	12 VDC, 20 mA or more
	Rated load voltage	When connected to the main circuit (first-order power supply), 150 VAC or less When connected to a circuit derived from the main circuit (second-order power supply), 250 VAC or less (the main circuit is 300 VAC or less and uses an isolated transformer) or 30 VDC or less
	Max. load current	2 A (DC)/2 A (AC), resistive load
Power consumption	1.9 W or less	
Insulation resistance	Between input terminals and internal circuitry: 20 MΩ or greater (at 500 VDC) Between output terminals and internal circuitry: 20 MΩ or greater (at 500 VDC)	
Withstand voltage	Between input terminals and internal circuitry: 1500 VAC for one minute Between output terminals and internal circuitry: 3000 VAC for one minute	
Terminal types	M3 screw terminals	
Weight	Approx. 0.3 kg	

Each unit (GX/GP main unit and expandable I/O), can use 1 module only.

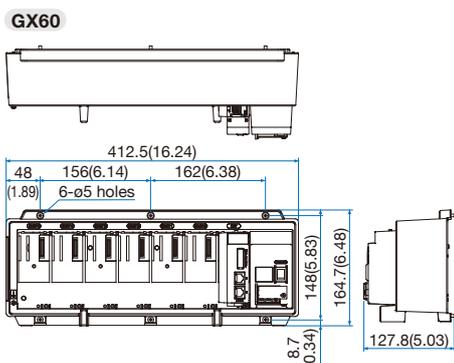
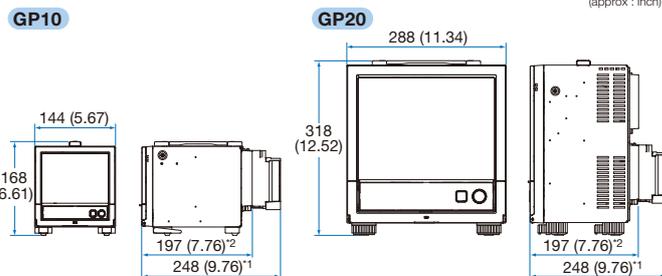
Expandable I/O

Model	GX60	
Rated supply voltage	100 to 240 VAC (allowable power supply voltage: 90 to 132 VAC, 180 to 264 VAC)	
Rated supply frequency	50 to 60 Hz	
Power consumption	Max. 40 VA (100 VAC), max. 55 VA (240 VAC)	
Insulation resistance	Between Ethernet terminal, isolated terminals, and ground 20 MΩ or more (at 500 VDC)	
Withstand voltage	Between power terminal and ground: 3000 VAC (500/60 Hz)/1 min. Between I/O modules and ground: between each module's internal circuitry and depends on the specification of I/O module.	
Weight	Approx. 3.2 kg (installing 6 modules)	



*1 With module, *2 Without modules

When panel-mounting the GX10/GX20, use two panel mounting brackets. Locate the brackets on the top and bottom, or left and right. For detailed dimensions and panel cutouts, please see the General Specifications (GS 04L51B01-01EN).



Measurement accuracy

The measuring accuracies noted in the general specifications have a margin of error that takes into account the product's components and the equipment used for adjustment and testing. However, the actual values calculated from the accuracy testing data upon shipment of the instrument from the factory are as follows.

Input type		Measuring accuracy*1 (typical value*2)
DCV	20 mV	± (0.01% of reading + 5 μV)
	6V (1-5V)	± (0.01% of reading + 2 mV)
RTD	Pt100	± (0.02% of reading + 0.2 °C)
	Pt100 (high resolution)	± (0.02% of reading + 0.16 °C)

*1 General operating conditions: 23±2 °C, 55±10% RH, supply voltage 90-132, 180-250 VAC, supply frequency within 50/60 Hz ±1%, warm-up of 30 minutes or more, no vibrations or other hindrances to performance.

*2 For the measuring accuracy (guaranteed), see the module's general specifications (GS04L53B01-01EN).

GX10/GX20 MODEL AND SUFFIX CODES

Model	Suffix Code	Optional code	Description
GX10			Paperless recorder (Panel mount type, Small display)*14
GX20			Paperless recorder (Panel mount type, Large display)*14
Type	-1		Standard
	-2		Large memory (Max. measurement channels: 500 ch) *12
Display language	E		English, degF, DST (summer/winter time) *10
Optional features	/AS		Advanced security function (Part 11)
	/BC		Black cover
	/C2		RS-232 *1
	/C3		RS-422/485 *1
	/CG		Custom display
	/D5		VGA output *2
	/E1		EtherNet/IP communication
	/E2		WT communication *13
	/FL		Fail output, 1 point
	/LG		Log scale
	/MT		Mathematical function (with report function)
/MC		Communication channel function	
/P1		24 V DC/AC power supply	
/UH		USB interface (Host 2 ports)	

GP10/GP20 MODEL AND SUFFIX CODES

Model	Suffix Code	Optional code	Description
GP10			Paperless recorder (Portable type, Small display)*14
GP20			Paperless recorder (Portable type, Large display)*14
Type	-1		Standard
	-2		Large memory (Max. measurement channels: 500 ch) *12
Display language	E		English, degF, DST (summer/winter time) *10
Power supply		1	100 V AC, 240 V AC
Power cord		D	Power cord UL/CSA standard
		F	Power cord VDE standard
		R	Power cord AS standard
		Q	Power cord BS standard
		H	Power cord GB standard*
		N	Power cord NBR standard
Optional features	/AS		Advanced security function (Part 11)
	/C2		RS-232 *1
	/C3		RS-422/485 *1
	/CG		Custom display
	/D5		VGA output *2
	/E1		EtherNet/IP communication
	/E2		WT communication *13
	/FL		Fail output, 1 point
	/LG		Log scale
	/MT		Mathematical function (with report function)
	/MC		Communication channel function
/UH		USB interface (Host 2 ports)	

Analog input module, Digital I/O module:When the built-in module

Please add the following suffix codes to the main unit model and specification codes.

Option	Optional code	Description
Optional features (Analog input) *3 *11	/UC10	With analog input module, 10 ch (Clamp terminal)
	/UC20	With analog input module, 20 ch (Clamp terminal) *7
	/UC30	With analog input module, 30 ch (Clamp terminal) *8
	/UC40	With analog input module, 40 ch (Clamp terminal) *5
	/UC50	With analog input module, 50 ch (Clamp terminal) *5
	/US10	With analog input module, 10 ch (M3 screw terminal)
	/US20	With analog input module, 20 ch (M3 screw terminal) *7
	/US30	With analog input module, 30 ch (M3 screw terminal) *8
	/US40	With analog input module, 40 ch (M3 screw terminal) *5
	/US50	With analog input module, 50 ch (M3 screw terminal) *5
Optional features (Digital I/O) *4	/CR01	With digital I/O module, (Output:0, Input:16) *8 *9
	/CR10	With digital I/O module, (Output:6, Input:0) *8 *9
	/CR11	With digital I/O module, (Output:6, Input:16) *7 *8 *9
	/CR20	With digital I/O module, (Output:12, Input:0) *6 *9
	/CR21	With digital I/O module, (Output:12, Input:16) *6 *9
	/CR40	With digital I/O module, (Output:24, Input:0) *6 *9
/CR41	With digital I/O module, (Output:24, Input:16) *6 *9	

*1 /C2 and /C3 cannot be specified together.

*2 /D5 can be specified only for the GX20 or GP20.

*3 Only one option can be specified.

*4 Only one option can be specified.

*5 /UC40, /UC50, /US40 and /US50 cannot be specified for the GX10 or GP10.

*6 /CR20, /CR21, /CR40 and /CR41 cannot be specified for the GX10 or GP10.

*7 If /UC20 or /US20 is specified, /CR11 cannot be specified for the GX10 or GP10.

*8 If /UC30 or /US30 is specified, /CR01, /CR10 and /CR11 cannot be specified for the GX10 or GP10.

*9 A digital input module has M3 screw terminals.

*10 The Display language is selectable from English, German, French, Russian, Korean, Chinese, Japanese. To confirm the current available languages, please visit the following website.
URL: <http://www.yokogawa.com/ns/language/>

*11 Solid state relay scanner type (type suffix code: -U2). If you need the electromagnetic relay scanner type, purchase it separately.

*12 Large memory type can be specified only for the GX20/GP20.

*13 /MC option must be separately specified when the WT communication is selected.

*14 To connect an expandable I/O, you will need one expansion module for the GX/GP.

* When ordering units with built-in modules, the total number of channels allowed is 100 (10 modules) including any modules ordered individually.

Analog input module, Digital I/O module:When the individual modules

MODEL and SUFFIX CODE (GX90XA)

Model	Suffix Code			Description
GX90XA				Analog Input Module for GX/GP series
Number of channels	-10			10 channels
Type	-C1			Current, scanner type (isolated between channels)
	-L1			Low withstand voltage DCV/TC/DI, scanner type (isolated between channels)
	-U2			Universal, Solid state relay scanner type (3-wire RTD b-terminal common)
	-T1			DCV/TC/DI, Electromagnetic relay scanner type (Isolated between channels)
-		N		Always N
Terminal form			-3	Screw terminal (M3)
			-C	Clamp terminal *
Area			N	General

* Cannot be specified for the electromagnetic relay scanner type (type suffix code: -T1).

MODEL and SUFFIX CODE (GX90XD)

Model	Suffix Code			Description
GX90XD				Digital Input Module for GX/GP series
Number of channels	-16			16 channels
Type	-11			Open collector/Non-voltage, contact (shared common), Rated 5 VDC
			N	Always N
Terminal form			-3	Screw terminal (M3)
			-C	Clamp terminal
Area			N	General

Expandable I/O

Model	Suffix Code			Description
GX60				I/O Base Unit
Type	-EX			I/O expansion
Area			N	General
Power supply			1	100V AC, 240V AC
Power code	D			Power cord UL/CSA standard
	F			Power cord VDE standard
	R			Power cord AS standard
	Q			Power cord BS standard
	H			Power cord GB standard
	N			Power cord NBR standard
	W			Screw terminal (power cord not included)

With GX90EX (I/O expansion module).

Standard Accessories

Product	Qty
Mounting bracket (GX10 or GX20)	2
SD memory card (1GB)	1
Stylus	1
Tag sheet	1
Sheet (paper)	1
Power cord (GP10 or GP20)	1

Optional Accessories (Sold Separately)

Product	Part Number/Model
SD memory card (1GB)	773001
Shunt resistor for screw terminal (M3) (10 Ω ± 0.1%)	X010-010-3
Shunt resistor for screw terminal (M3) (100 Ω ± 0.1%)	X010-100-3
Shunt resistor for screw terminal (M3) (250 Ω ± 0.1%)	X010-250-3
Shunt resistor for clamp terminal (10 Ω ± 0.1%)	438922
Shunt resistor for clamp terminal (100 Ω ± 0.1%)	438921
Shunt resistor for clamp terminal (250 Ω ± 0.1%)	438920
Validation Documents (For /AS option)	773230

MODEL and SUFFIX CODE (GX90YD)

Model	Suffix Code			Description
GX90YD				Digital Output Module for GX/GP series
Number of channels	-06			6 channels
Type			-11	Relay, SPDT(NO-C-NC)
-			N	Always N
Terminal form			-3	Screw terminal (M3)
Area			N	General

MODEL and SUFFIX CODE (GX90WD)

Model	Suffix Code			Description
GX90WD				Digital Input/Output Module for GX/GP series
Number of channels	-0806			8 channel DIs, 6 channel DOs
Type	-01			Open collector/non-voltage contact (shared common), rated 5 VDC; Relay, SPDT (NO-C-NC)
			N	Always N
Terminal form			-3	Screw terminal (M3)
Area			N	General

Expansion Module

Model	Suffix Code			Description
GX90EX				I/O Expansion Module
Port	-02			2 ports
Type			-TP1	Twisted pair cable
-			N	Always N
Area			-N	Standard Accessories

• Calibration certificate (sold separately)

When ordering the GX10/GX20/GP10/GP20 with options (analog input), the calibration certificate for the modules is included in and shipped with the calibration certificate of the main unit. When ordering an analog input module separately, each module gets its own calibration certificate (one certificate per module).

• Test certificate (QIC, sold separately)

When ordering the GX10/GX20/GP10/GP20 with options (analog/digital I/O), the QIC for each module is included in and shipped with the QIC of the main unit. When ordering analog input modules and digital I/O modules separately, each module gets its own QIC (one QIC per module).

• User's Manual

Product user's manuals can be downloaded or viewed at the following URL.
URL: www.smartdacplus.com/manual/en/

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NOTICE



• Before operating the product, read the instruction manual thoroughly for proper and safe operation.

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Vig-RS-6E

Printed in Japan, 403 (AZ) |Ed : 05/dj

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