OpreX™ Data Acquisition

GA10

Data Logging Software

Monitor

Monitor screen depending on the application

Real-time monitoring is possible with simple settings. In addition, you can create an original monitor by customizing the monitor screen depending on your application.
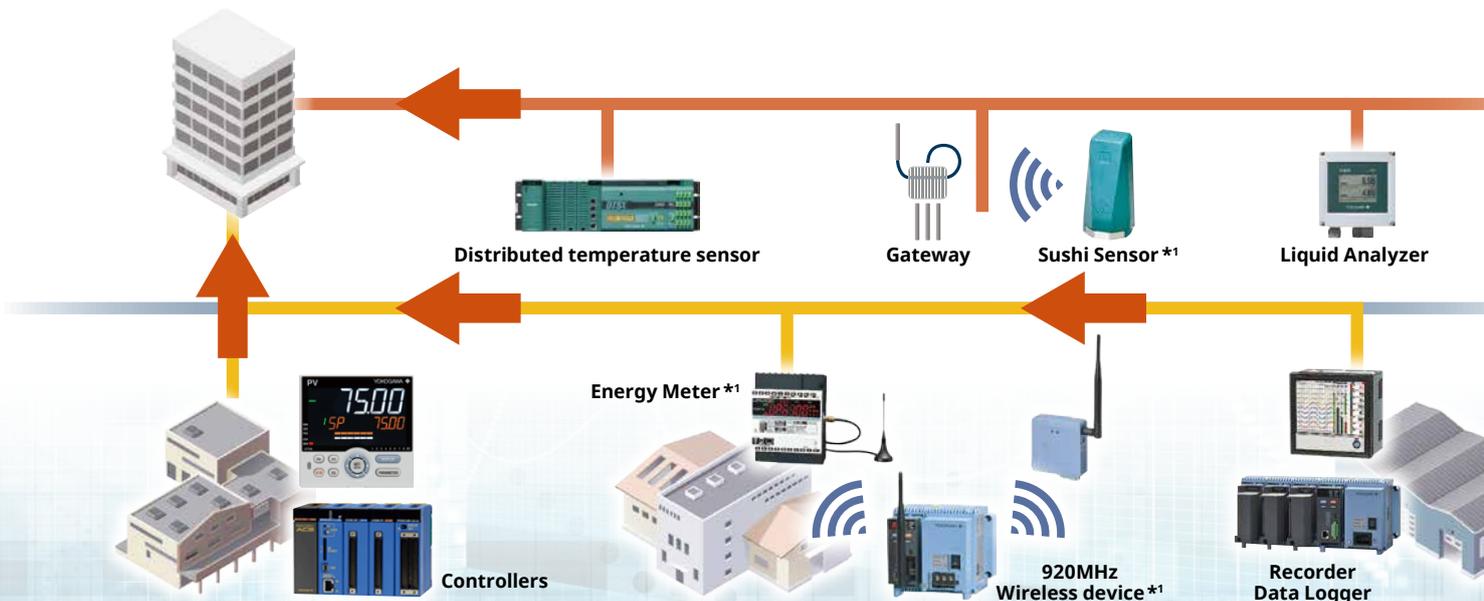
60-day free trial!

FREE DOWNLOAD!

Real-time monitor

Manufacture monitoring
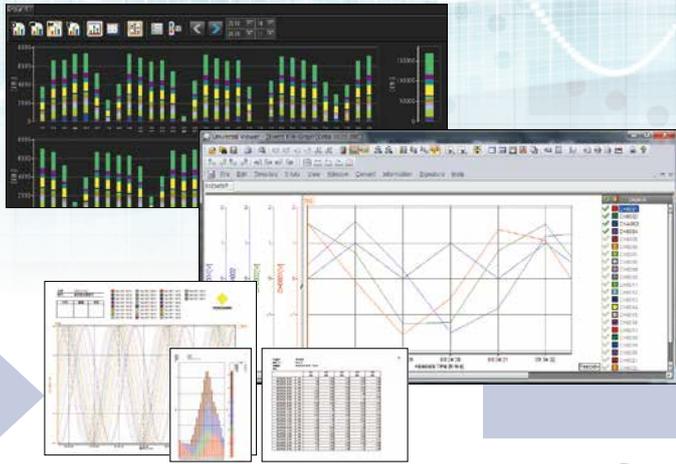
Environment monitoring
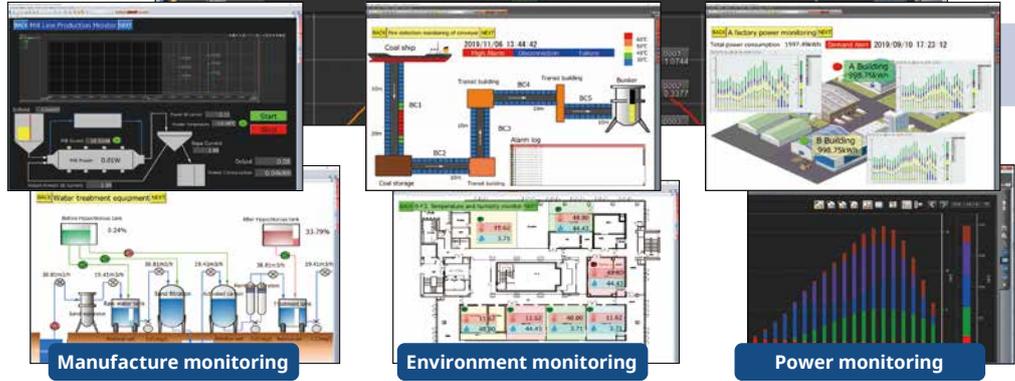
Power monitoring

GA10

Monitors and a variety of ins

GA10 is a PC-based data logging application software for monitoring and recording data by connecting devices

**Distributed temperature sensor**

Gateway

Sushi Sensor *1

Liquid Analyzer

Controllers

Energy Meter *1

920MHz Wireless device *1

Recorder Data Logger

*1 Sales area restricted.

1   Data Logging Software GA10

AI Analysis

Anomaly detection by AI

AI learns while acquiring data, allowing it to detect "unusual state" and automatically notify of any anomaly data. You can also analyze anomalies from past data and record.

Normal — **Find anomaly data** — **Abnormal**

Detects anomaly data
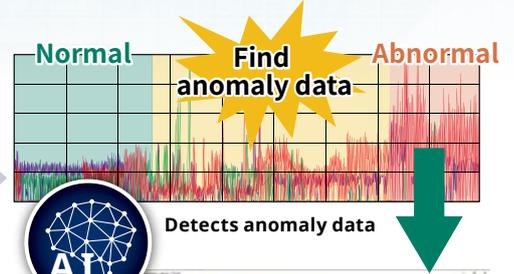
AI detects anomaly data from your equipment and highlights display

Record

Reliable monitoring and data storage

Collected data is recorded reliably in binary or Excel format. You can view the recorded data using the dedicated viewer. Also, you can output an automatic report based on the recorded data to Excel, PDF, or a printer.

records data from truments via networks

distributed in a factory or on a premises via Ethernet network.

Acquire

Collect scattered data

All the data is acquired by connecting the various devices installed in a factory to an Ethernet network.

Maximum number of connections: 100 devices

High-speed acquisition 100 ms or faster

Maximum number of data tags: 10000 Tags

Assortment of connection devices

Remote monitoring from multiple locations

Broad support covering loggers, recorders, temperature controllers, signal conditioners, power monitors, and power meters. Even acquires data from Modbus devices. The acquired data can be viewed from multiple monitoring PCs.

GA10CL — GA10 — GA10CL

Ethernet, serial, USB*[1]
*[1] GM10 only

GM	MX		GX	μR	DX		UT/VZ		WT	Sushi Sensor	Modbus Devices	Software
MW			GP	DR	MV		PR/UPM					DAQLOGGER
DA					CX		JUXTA					DAQ32Plus
												MXLOGGER

Data Loggers — Recorders — Control Instruments — Power Meters — Compact Wireless Sensor

* See back cover for compatible models

Basic Functions

Simple settings

Simply select the devices to connect and you are ready to acquire data. With data loggers and recorders, tag names are automatically reflected and multi-channel acquisition can be started easily. In addition, data processing is easy using the math function (option).

② Registration ③ Start monitoring

① Auto search

- **Start monitoring with simple steps**
- **Even data processing is possible with the math function**

Monitor data from anywhere *NEW*

Easily monitor data from anywhere on your tablet or PC.
You can use dedicated software (GA10CL) or a web browser (option) to monitor data from a remote location.

Using dedicated software (GA10CL)

Using a web browser

GA10

Monitoring from anywhere on your tablet or PC

Check errors quickly

Quickly check errors with the alarm monitor. When an alarm occurs, a beep is sounded on the PC. In addition, the e-mail function sends e-mails based on conditions such as alarm occurrence, specified period, specified time, and communication error.
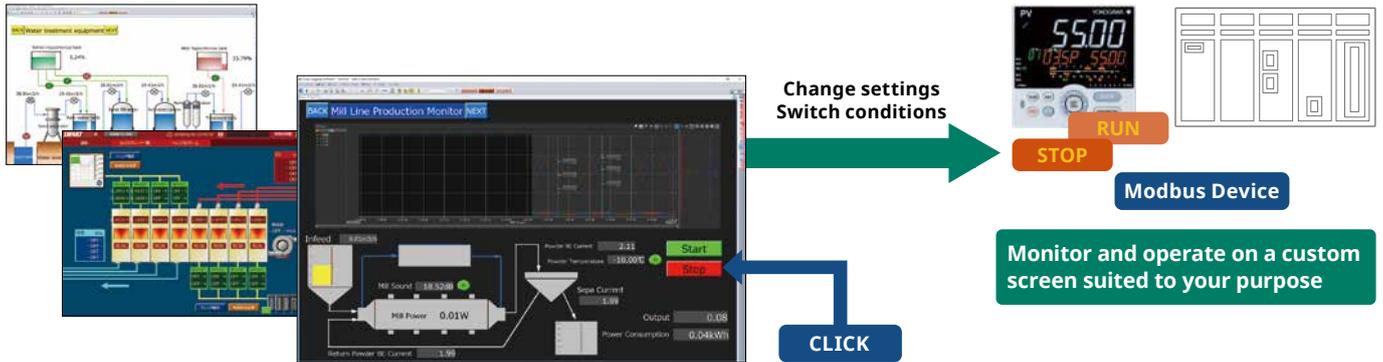
GA10

ALARM

H L

E-mail transmission

From:GA10
To:XXX.YYY@ZZZ
Title : Alarm
Alarm Level1 ON
1.0212 V

- **Quickly check errors on the monitor**
- **Even automatic e-mail delivery**

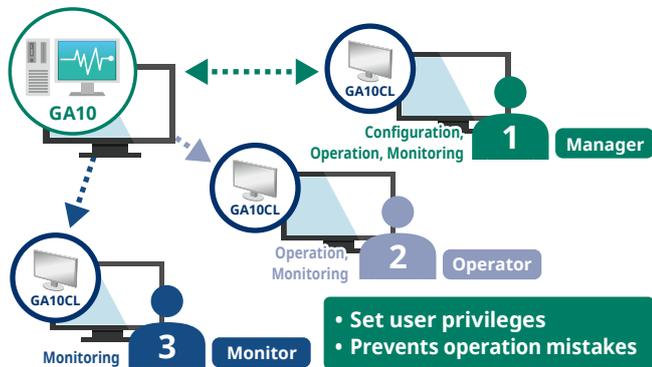# Useful Functions for Monitoring and Operation

Build an easy-to-use monitoring screen

The custom display function (option) can be used to freely create a screen with your favorite design for monitoring and operation.
The value of a connected device (Modbus device) can be changed by operating the buttons or the like on the custom screen.

Change settings
Switch conditions

RUN
STOP

Modbus Device

Monitor and operate on a custom screen suited to your purpose

CLICK

Privileges for each user

Access privileges can be assigned to each user. Select from manager (configuration, operation, monitoring), operator (operation, monitoring), and monitor (monitoring).
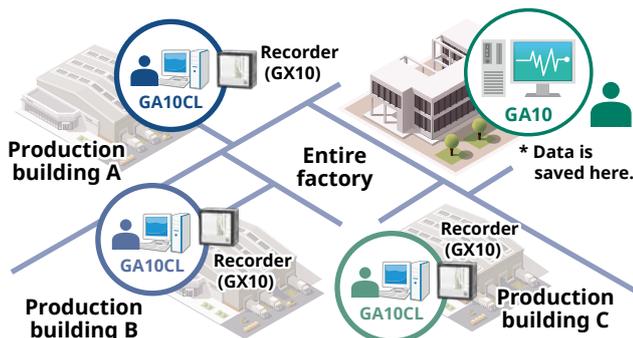
GA10

GA10CL

Configuration, Operation, Monitoring
1 Manager

GA10CL

Operation, Monitoring
2 Operator

GA10CL

Monitoring
3 Monitor

- Set user privileges
- Prevents operation mistakes

Transfer data to other systems

Data can be transferred to SCADA PLC using the OPC-UA server function (option) or Modbus server function.

Data server

SCADA/HMI

Modbus TCP

OPC FOUNDATION

Modbus server/OPCUA server

Data can be transferred to a host system
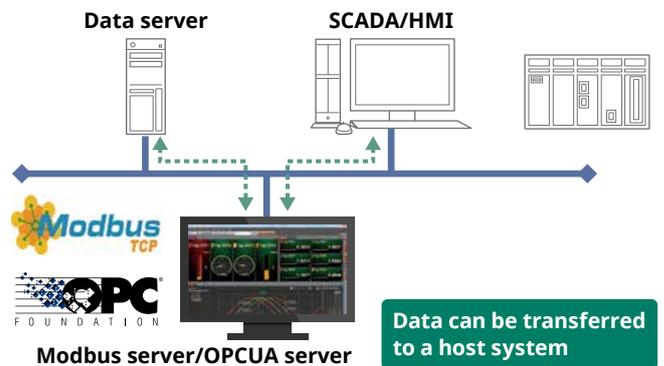
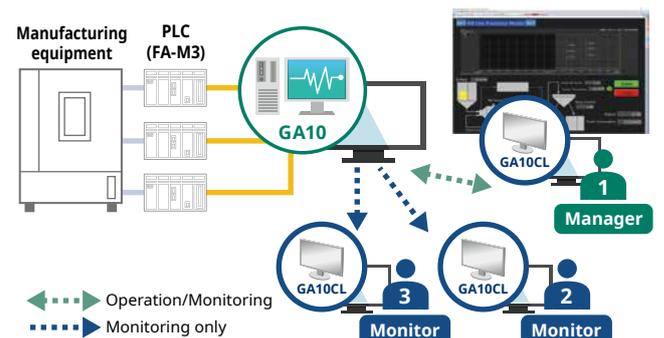## Examples of monitoring and operation applications

Example 1 — Monitor the equipment operation status in production building

GA10 can monitor the operation status of equipment in the entire factory, summarized by each production building.

Recorder (GX10)

GA10CL

Production building A

Entire factory

GA10

* Data is saved here.

GA10CL

Recorder (GX10)

Production building B

GA10CL

Recorder (GX10)

Production building C

Example 2 — Monitor and operate production equipment

The status of production equipment can be monitored on a custom screen. Only authorized users can operate from the screen.

Manufacturing equipment

PLC (FA-M3)

GA10

GA10CL
1 Manager

GA10CL
3 Monitor

GA10CL
2 Monitor

Operation/Monitoring
Monitoring only

Functions Useful for Evaluation and Testing

Data analysis while collecting and recording

Many useful functions are available for data analysis, which can also be used to analyze data while collecting and recording data.

Select and display only the waveforms of interest

When a range is specified, the maximum, minimum, average, and the like between the two points are calculated on the spot.

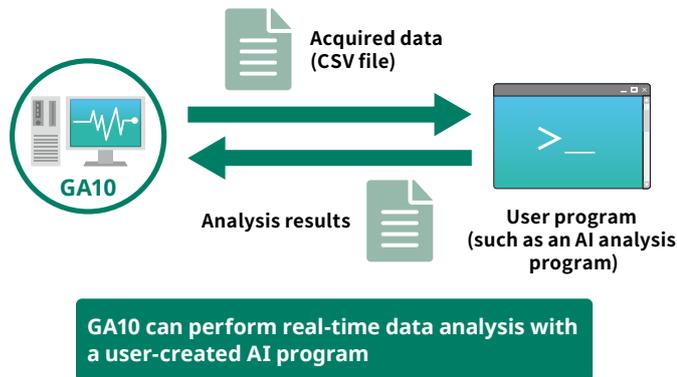Play back data all the way back to when recording was started, even during recording

Range 11:00 to 12:00
Maximum: XXXX
Minimum: YYYY
Average: AAAA

Detailed analysis with a dedicated viewer even during recording

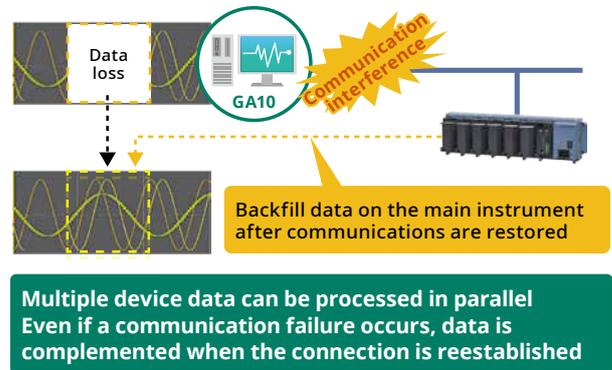**Data can be analyzed during evaluation and testing**

Data Analysis with AI *NEW*

Write AI programs with tools such as TensorFlow to perform real-time analysis of the acquired data.

Acquired data (CSV file)

GA10

Analysis results

User program (such as an AI analysis program)

GA10 can perform real-time data analysis with a user-created AI program
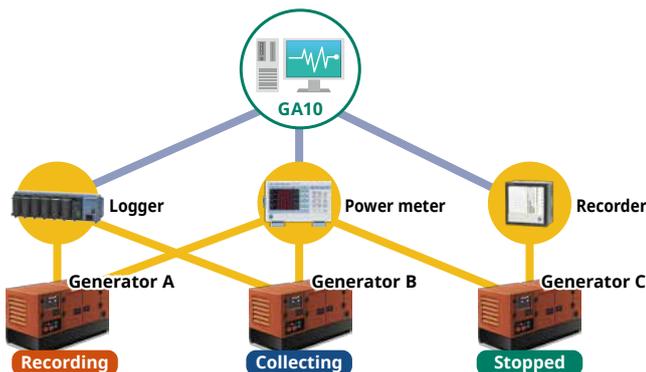
High reliability

The data supplementing function (backfill function) automatically complements data when communication is disconnected (set the acquisition mode to Device time, when a GX/GP/GM/DX/MV is in use).

Data loss

GA10

Communication interference

Backfill data on the main instrument after communications are restored

Multiple device data can be processed in parallel
Even if a communication failure occurs, data is complemented when the connection is reestablished

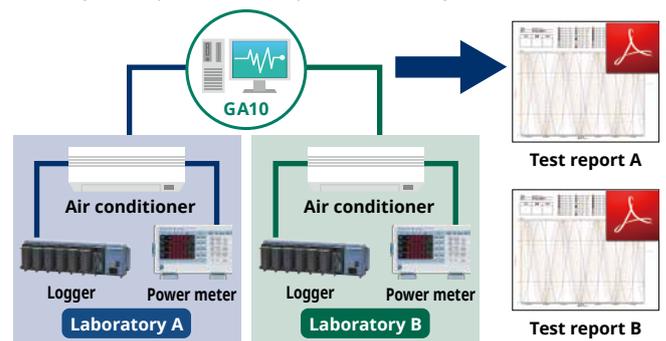## Examples of evaluation and experiment applications

Example 1 — **Simultaneous evaluation tests of multiple generators**

Evaluation tests can be performed on different types of generators in parallel in multiple projects.

GA10

Logger   Power meter   Recorder

Generator A   Generator B   Generator C

Recording   Collecting   Stopped

Example 2 — **Air conditioner performance test**

In an air conditioner performance test, data from all laboratories can be collected, and the recorded data can be saved for each room.
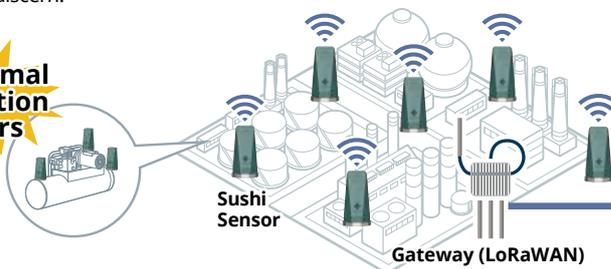A weekly test report can be output automatically.

GA10

Air conditioner   Air conditioner

Logger   Power meter   Logger   Power meter

Laboratory A   Laboratory B

Test report A

Test report B

Factory Visualization

Using AI to monitor for anomaly sign

AI can learn what normal operating data "looks like" by acquiring measured data on the GA10 from Sushi Sensors, recorders, loggers, and other devices added to the production equipment. This enables it to identify anomaly data and notify the user. Anomaly detection looks at correlations among multiple data to make determinations, and can be utilized to catch signs of malfunctions that are difficult for humans to discern.
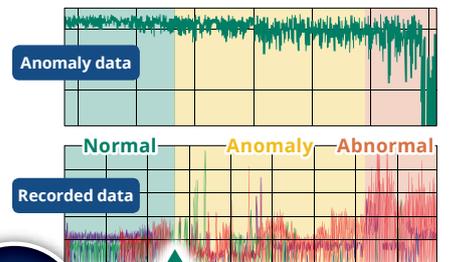
Notifies you of anomalies in real time

Find anomaly data

View trends in anomalies from past data

Anomaly data

Normal   Anomaly   Abnormal

Recorded data

Abnormal operation occurs

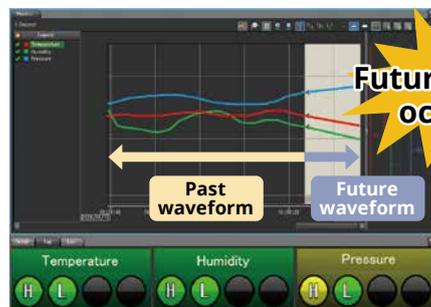Sushi Sensor

Gateway (LoRaWAN)

AI

GA10

AI supports equipment management

Predict the future with AI

Use acquired data to predict future data, and display predicted future waveforms along with real time data on the trend screen. You can also set alarms against predicted data to detect problems in advance when they occur in the future so you can deal with them beforehand.

Future Pen

AI

Future alarm occurs

Past waveform   Future waveform

E-mail sent

From:GA10
To:XXX.YYY@ZZZ
Title : Alarm

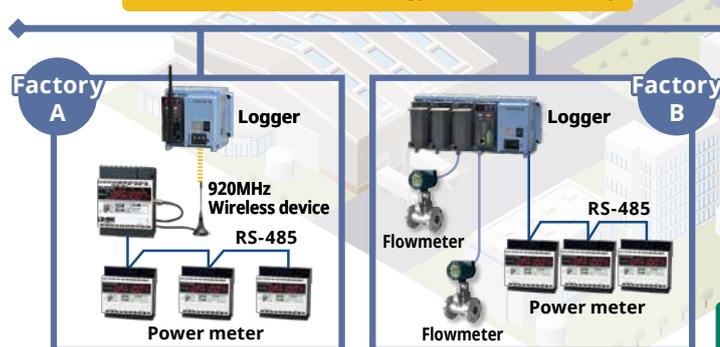Alarm Level1 ON
1.0212 V

Temperature   Humidity   Pressure

AI predicts the future condition

Support for visualizing power

The integration display function (option) collects electrical energy and flow rate data measured by wattmeters and flowmeters and helps to visualize energy with integration graphs and demand monitoring. In addition, the report function can be used to automatically output daily and monthly reports.

Centralize distributed energy data in the factory

GA10

A convenient monitor for energy monitoring

Ethernet

Factory A

Logger

920MHz Wireless device

RS-485

Power meter

Factory B

Logger

Flowmeter

RS-485

Flowmeter

Power meter

▶ **Comprehensively monitor multiple groups**
Up to 10000 tags can be monitored

▶ **Easy visualization with custom display**
The power usage status can be visualized in an intuitive manner by customizing the display screen

▶ **Support peak cuts with demand monitoring**
Demand monitoring enables graph display and alarm notification

The energy in the factory can be monitored comprehensively

Specifications (Overview)

○ Max. connectable units: 100 ○ Max. recording tags (channels): 10000
○ Max. recording MATH tags (channels): 2000
○ Max. connectable clients: Unlimited (verified with 32)
○ Scan interval: 100 ms or higher (using PC time), or scan interval of instruments (using instrument time)

Operating Environment

OS	Windows 10, Windows 11, Windows Server 2016, Windows Server 2019, Windows Server 2022
CPU *[1]	Intel Core2 Duo E6300 or faster x64 or x86 processor
Main memory *[1]	2GB or more
Hard disk *[1]	500MB or more of free space, 2GB NTFS recommended.
Display	A resolution of 1024 x 768 or higher, 65,536 colors (16-bit, high color) or more
Communication port	RS-232, Ethernet, or USB port *[2] supporting the OS Use a converter (ML2 recommended) for RS-422/485 communication.

*[1] For the recommended operating environment with 5000 ch or more, see the General Specifications (GS 04L65B01-01EN).
*[2] GM10 only

Connectable Devices and Software

	Products to be connected
Data Logger	GM10, MX100, MW100, DA100
Recorder	GX10, GX20, GP10, GP20, DX1000, DX1000N, DX2000, DX1000T, DX2000T, FX1000, FW1000, MV1000, MV2000, CX1000,CX2000, μR10000, μR20000, DR130, DR230, DR240
Sushi Sensor *[3]	XS770A, XS550, XS530, XS822
Control Instrument	UT75A, UT52A, UT55A, UT35A, UT32A, UP55A, UP35A, UM33A, YS1500, YS1700, VZ20X
	Connect the following as Modbus instruments FA-M3V (F3SP7x), VJU7, VJS7, VJA7, VJH7, VJP8, VJQ7, VJQ8, VJX7, MVHK, MVRK, MVTK
Energy Meter	PR300, PR720, UPM100, UPM101
Power Meter	WT300, WT500, WT1800 *[4], WT1600 *[4], WT3000, WT3000E
Modbus Device	Instruments supporting Modbus communication
Software	DAQLOGGER, DAQ32Plus, MXLOGGER

*[3] Option code "/SU" is required for Sushi Sensor connection.
*[4] Free connection software GateWT for GA10 available

Model and Suffix Codes

● **Data logging software**

Model	Suffix Code	Optional Suffix Code	Description
GA10			Data Logging Software Basic license
Number of channels	-01		100ch
	-02		200ch
	-05		500ch
	-10		1000ch
	-20		2000ch
	-50		5000ch *[5]
	-A0		10000ch *[5]
Optional features		/RP	Report/Print function
		/MT	Math function (Max. 2000 ch)
		/UA	OPC-UA server function
		/CG	Custom display function
		/WH	Integration display function *[6]
		/SU	GateSushi function
		/DM	Data merge function
		/WA	WEB server function : Number of users 5
		/WB	WEB server function : Number of users 10
		/WC	WEB server function : Number of users 20
		/EA	External access function

*[5] For the recommended operating environment with 5000 ch or more, see the General Specifications (GS 04L65B01-01EN).
*[6] /MT option must be separately specified when the /WH is selected.

● **If adding channels or features**

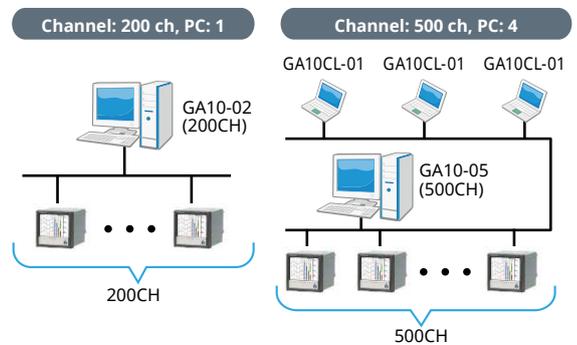| Model	Suffix Code	Description
GA10UP		Upgrade license for GA10
Upgrade	-01	Channel upgrade 100 ch⇒200 ch, 200 ch⇒500 ch,500 ch⇒1000 ch, 1000 ch⇒2000 ch
	-02	Channel upgrade 100 ch⇒500 ch, 200 ch⇒1000 ch, 500 ch⇒2000 ch
	-03	Channel upgrade 100 ch⇒1000 ch, 200 ch⇒2000 ch
	-04	Channel upgrade 100 ch⇒2000 ch
	-0A	Channel upgrade 2000 ch⇒5000 ch *[7]
	-0B	Channel upgrade 5000 ch⇒10000 ch *[7]
	-0C	Channel upgrade 2000 ch⇒10000 ch *[7]
	-RP	Add Report/Print function
	-MT	Add Math function (Max. 2000 ch)
	-UA	Add OPC-UA server function
	-CG	Custom display function
	-WH	Integration display function *[8]
	-SU	GateSushi function
	-DM	Data merge function
	-WA	WEB server function : Number of users 5
	-WB	WEB server function : Number of users 10
	-WC	WEB server function : Number of users 20
	-EA	External access function

*[7] For the recommended operating environment with 5000 ch or more, see the General Specifications (GS 04L65B01-01EN).
*[8] If the GA10 does not have the math function (/MT), you also need to upgrade to add the math function (-MT).

● **If increasing the number of monitoring PCs (clients)**

Model	Suffix Code	Description
GA10CL		Client license for GA10
Number of licenses	-01	1 license
	-05	5 licenses
	-10	10 licenses
	-50	50 licenses

● **Configuration example**

Channel: 200 ch, PC: 1

GA10-02
(200CH)

200CH

Channel: 500 ch, PC: 4

GA10CL-01 GA10CL-01 GA10CL-01

GA10-05
(500CH)

500CH

- **Software Download**
  Download software from our website. Enter your license key in the trial version to unlock the full version.

- **The user's manual Can be downloaded from the website.**

- **For DAQWORX customers**
  An introductory guide for GA10 is available. You can also use your existing instrument and software as-is.Target software: DAQLOGGER, DAQ32Plus, MXLOGGER
  * See the website for details.

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