General Specifications

GA10
Data Logging Software

SMARTDAC+

GS 04L65B01-01EN

■ Overview

Data Logging Software GA10 (hereafter referred to as GA10) is used to collect data from measuring instruments and controllers via communication and monitor and record the collected data.

GA10 has two setting modes for configuring data collection, monitoring, and recording: Simple Settings mode and Detail Settings mode.

Recorded data can be displayed and printed from the Viewer software.

■ Specifications

Item	Description
Max. number of simultaneous device connections	100
Max. number of simultaneous client connections [1]	No limit (operation guaranteed up to 32 clients)
Max. number of simultaneous device connections per project	100
Max. number of simultaneous operation projects	30
Max. number of device registrations	1000
Max. number of project registrations	10000
Max. number of user registrations	100
Max. number of clients that can run simultaneously on the same PC	Multiple clients possible (See "Starting Multiple Screens" described later.)
Monitor interval (when set to PC time)	100 ms, 200 ms, 500 ms, 1 s, 2 s, 5 s, 10 s, 20 s, 30 s, 1 min, 2 min, 5 min, 10 min
Monitor interval (when set to device time)	The acquisition interval of each device. [2]
Record interval (when set to PC time)	100 ms, 200 ms, 500 ms, 1 s, 2 s, 5 s, 10 s, 20 s, 30 s, 1 min, 2 min, 5 min, 10 min (limited to an integer multiple of the monitor interval)
Record interval (when set to device time)	Same as the monitor interval of GA10.
Maximum number of recording tags (channels) per project	2000 Models with the math function: 4000 (including the maximum math tags of 2000)
Number of display groups	50
Number of channels (tags) per display group	50
Language	English, Japanese, Chinese, French, German, Russian, Korean

1 Make sure that the version of the added client is the same as the server version.
2 GX10/GX20/GP10/GP20/GM10 (R4.0 or later): 1 ms (shortest).
MX100/MW100, MXLOGGER: 10ms (shortest).
WT3000/WT3000E: Same as the WT's data update rate. (Except for 50 ms.) 100 ms , shortest.
3 Make sure to use the same language setting for this software,

Windows OS, and the recorders that data is to be collected from.

■ Connectable Devices and Software

The following table lists the devices and software applications that GA10 can connect to. Data can be collected by registering devices to the GA10 and connecting via communication interfaces. Target devices can be registered either online (communication enabled) or offline (communication disabled.)

Name	Release Number	Interface [1]			
		RS-232	RS-422/485	USB	Ethernet
GM10	R2.02 or later	No	Yes	Yes	Yes
GX10	R1.01 or later (R2.01 is supported from GA10 R1.02 onwards.)	Yes	Yes	No	Yes
GX20					
GP10		Yes	Yes	No	Yes
GP20					
DX1000 [2]	R2.01 or later	Yes	Yes	No	Yes
DX1000N [2]		Yes	Yes	No	Yes
DX2000 [2]		Yes	Yes	No	Yes
DX1000T [2]	R4.11 or later	Yes	Yes	No	Yes
DX2000T [2]		Yes	Yes	No	Yes
CX1000	R3.20 or later	Yes	Yes	No	Yes
CX2000		Yes	Yes	No	Yes
FX1000	R1.11 or later	Yes	Yes	No	Yes
MV1000	R1.01 or later	Yes	Yes	No	Yes
MV2000		Yes	Yes	No	Yes
μR10000	R1.31 or later	Yes	Yes	No	Yes
μR20000		Yes	Yes	No	Yes
MX100	R3.01 or later	No	No	No	Yes
MW100	R3.01 or later	No	No	No	Yes

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Name	Release Number	Interface [1]			
		RS-232	RS-422/485	USB	Ethernet
DA100	Models released on Nov., 2002 and later	Yes	Yes	No	Yes
DR130	Models released on Dec., 1999 and later	Yes	Yes	No	Yes
DR230 DR240	• DR231/241 Released on Dec., 1999 and later • DR232/242 Released on Nov., 2002 and later	Yes	Yes	No	Yes
UT32A	No release number. (Supported from GA10 R1.02 onwards.)	No	Yes	No	See note 3
UT35A		No	Yes	No	Yes
UT52A		No	Yes	No	See note 3
UT55A		No	Yes	No	Yes
UT75A		No	Yes	No	Yes
UP35A		No	Yes	No	Yes
UP55A		No	Yes	No	Yes
UM33A		No	Yes	No	See note 3
Devices supporting the Modbus protocol [4] (Includes Yokogawa control products.)		No	Yes	No	Yes
WT3000 [5]	R2.01 or later	Yes	No	No	Yes
WT3000E [5]	R6.01 or later	Yes	No	No	Yes
GateWT for GA10 [6]	R2.06 or later	No	No	No	Yes
DAQLOGGER [7]	R7.11 or later	No	No	No	Yes
DAQ32Plus [7]	R11.08 or later	No	No	No	Yes
MXLOGGER [7]	R2.08 or later	No	No	No	Yes

1 Yes: Supported , No: Not supported
2 When connecting GA10 to the DXAdvanced (DX1000, DX1000N, DX1000T, DX2000, DX2000T) with Security Function (/AS1) through the Ethernet interface, specify the access user to “Administrator.” Additionally, note that the “Administrator” who can login to the DX is limited to one administrator.
3 Open network function is not built in. Ethernet connection requires VJET (Yokogawa Ethernet/RS-485 Converter).
4 Modbus ASCII protocol is not supported.
5 The WT3000 and WT3000E are precision power analyzers by Yokogawa Meters & Instruments Corporation. GA10 network searching is valid on R6.21 and later for both WT3000 and WT3000E.
6 GateWT for GA10 is YOKOGAWA’s driver software. It is software for connecting to the WT series power meters of Yokogawa Meters & Instruments Corporation. (This is not used for connecting to the WT3000/WT3000E.)
7 MXLOGGER, DAQLOGGER, DAQ32Plus are YOKOGAWA’s data collection applications.

■ Functions

Configuration

There two setting modes for configuring the software: Simple Settings and Detail Settings. The settings that you can configure in each mode is shown below.

- Simple Settings mode: Devices to connect, collection and recording intervals, data file save destination.
- Detail Settings mode: Devices, tags, display groups, collect & monitor, recording, mail, access privileges, others.

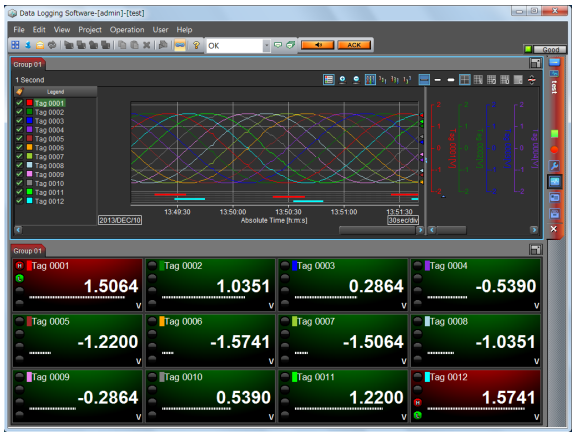
Export/Import

You can export/import a project, tag numbers, and tag comments in a server to use it.

Monitoring

The values of data being collected can be monitored from multiple clients. You can create display groups, each consisting of channels of multiple devices, and display vast amounts of collected data in an efficient manner.

- Simple Settings mode: A fixed monitor page consisting of a trend display and digital display.
- Detail Settings mode: Four types of displays (trend, digital, meter, and alarm) can be divided into up to 16 displays. You can arrange these displays for easy monitoring of data.



Starting Multiple Screens

You can display multiple client screens on the same PC. This makes it possible to display different projects on the same PC screen or on several displays.

Operating conditions

- When multiple screens are shown, the screens use the same display conditions stored in the PC. If a setting included in these conditions is changed on a given screen, the change are applied the next time the clients are started.
- Limitations may be placed on the number of screens that can be started depending on the PC performance, collection and recording environment, and the like. See the table below for the CPU and memory usage rates.

• When running a single project with four monitor sets.

Clients	Tags	Acquisition interval	CPU usage	Memory usage
2	2000	500 msec	Approx. 19%	Approx. 470 MB
4	2000	500 msec	Approx. 36%	Approx. 940 MB
2	500	100 msec	Approx. 18%	Approx. 400 MB
4	500	100 msec	Approx. 38%	Approx. 800 MB

This example was verified in the following environment. CPU: Intel Core i5 (2.67GHz), Memory: 4.0 GB, OS: Windows 7 Ultimate SP1

Alarm Feature

The alarm feature monitors alarms set on recorders and data loggers and notifies the user when alarms occur.

- Alarm display: When an alarm occurs, the corresponding tag or group on the monitor page blinks in red. The indication returns to its original state when the alarm is cleared. Also, the client window can be shown in front when an alarm occurs.
- Alarm sound: The PC generates beeps when an alarm occurs. You can stop the beeping by clicking a button. You can select whether to share button operations between clients. An alarm sound file in MP3 format can be registered to the each alarm level of the tag.
- Alarm ACK: You can stop the blinking alarm display and reflect the alarm-acknowledged condition on the display. For each project, you can select whether to share displays.
- Acknowledge of Device Communication Interface: You can view the communication errors that occur during data collection and recording and the affected projects.
- Alarm log: The occurrence and clearance of alarms can be logged. The alarm log can be cleared.

Email sending

GA10 can send email when alarms occur or when the communication status changes. Instantaneous values or alarm information can be attached on the email. The test mail can be also sent.

- Conditions for sending email can be specified up to 20 sets of mail settings of your choice.
- You can specify up to 20 transmission conditions as you like.
- You can set data ranges and specify individual tags for the data to be included in attached files.
- Support for SMTP Authentication(CRAM-MD5) / POP before SMTP

Conditions for sending email

Alarm occurrence, alarm release, alarm occurrence or release, Disconnect/Recovery, Specified period, Specified time, Data file created, Data loss

2 Time modes

The timestamp is selectable from PC time or Device time.

Recording

Collected data can be recorded to the PC.

Data can be saved to GA10 binary files or Excel files.

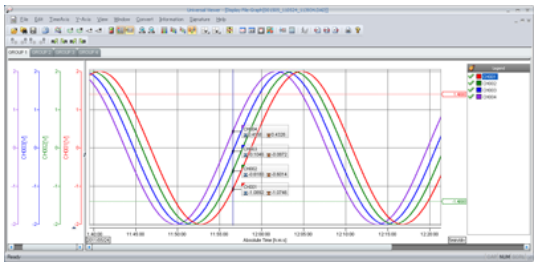
In addition, while recording, data files can be saved in sections by using the button (Manual save).

Recording can be manually controlled or automatically started and stopped based on the following conditions: Specified time, specified period, alarm, level

Viewer

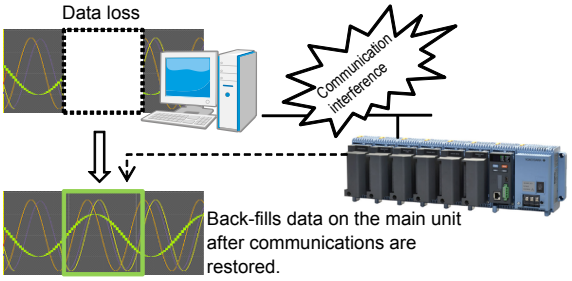
The universal viewer can display the following data generated by the recorder on the screen and print it out on the printer.

- Viewer function: Waveform display, digital display, circular display, list display, etc.
- Data conversion: File conversion to ASCII or MS-Excel format



Data supplementing function (Backfill function)

If a data dropout occurs in the data file that is being recorded due to a communication interference, this function automatically acquires data from the internal memory of the device and restores the data loss in the file.



Operating conditions

On the GA10 side

- Applicable data: Binary data (Excel data is not included)
- Data time is set to Device time.

On the connected device side

- Applicable devices: GM10, GX10, GX20, GP10, GP20, DX1000, DX2000, DX1000N, DX1000T, DX2000T, FX1000, MV1000, MV2000
- Device's internal memory contains the event data file corresponding to the data loss location.
- The scan interval of the device is the same as the recording interval of the event data.
- FTP transferring of files is enabled.(FTP server function: ON, Port number: 21)
- The multi batch function is not in use.
- The time zone and daylight saving (DST) settings on the main unit are the same as those on the PC.

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- GX/GP/GM with the advanced security function (/AS option)
  - » If the advanced security function (/AS option) is disabled, backfill operates.
  - » If enabled, backfill operates when Communication in Security basic settings is set to Off.
  - » If Communication in Security basic settings is set to Login, backfill operates only when a Monitor user is connected.
- DX with the advanced security function (/AS1 option)
  - » Backfill operates regardless of whether the /AS1 advanced security option is enabled or disabled.

Multi-logging

You can register multiple configurations (projects) and collect data at different times.

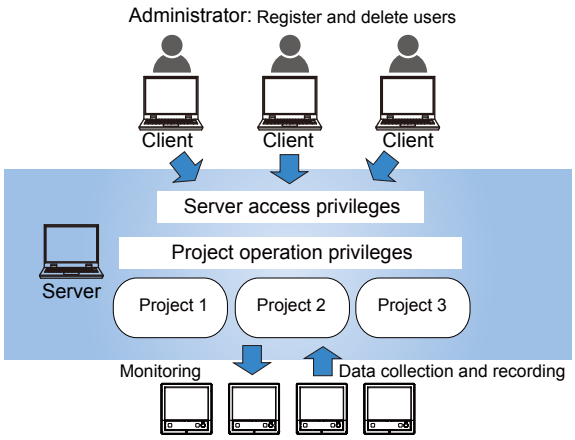
Additional Monitoring PCs (Clients)

By installing GA10CL to other PCs connected to the network, you can control GA10 from and share collected data between multiple PCs. It is possible for multiple PCs to access a single GA10 simultaneously.

User Management

GA10 users are registered and managed on each server. There are two user levels: administrator and user. Administrators are responsible for registering and deleting all users.

Users enter their IDs and passwords to access a server. Of the users registered in a server, only those that have been granted privileges can access projects. If a user is accessing a project, other users cannot access that project.



The operation scope of each user can be managed by assigning one of four levels: owner, manager, operator, and monitor. The table below shows the available project access privilege types and their operation scope.

Level	Privilege Type	Allowed Operations	Operation Details
1	Owner	All operations	All operations (including deleting the project) Set project access privileges.
2	Manager	Settings Operation Monitor	Edit setup data. Start/stop data monitoring or recording. View recorded data files. Open data files. Delete data files. Monitor collected data.
3	Operator	Operation Monitor	View setup data. Start/stop data monitoring or recording. View recorded data files. Open data files. Delete data files. Monitor collected data.
4	Monitor	Monitor	View recorded data files. Open data files. Monitor collected data.

Log

Up to 1000 log events that occur from when the user logs in to the server until the user logs out are displayed.

DDE Server

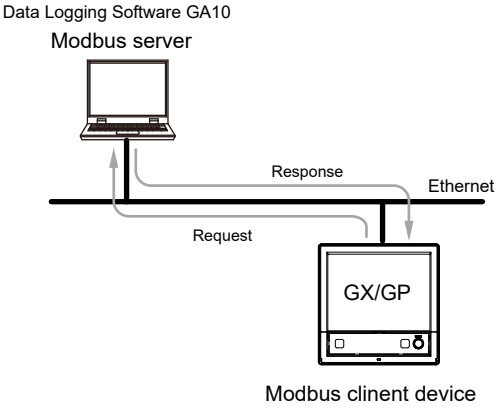
The DDE (Dynamic Data Exchange) server feature allows collected data to be loaded into Excel and other applications. It can also be used with Visual Basic 6.0.

Modbus Server

The Modbus server function receives requests from Modbus/TCP client devices and returns information about the currently running GA10 project specified by the Modbus address as responses.

A Modbus client device can carry out the following operations on the GA10.

- Read the values of tags and math tags, status, and scale upper and lower
- Load project information data



• Basic Modbus Server Specifications

Specification	Description
Protocol	ModbusTCP
Function code	3 (read hold register) 4 (read input register)
Maximum number of connectable clients	30
Data update interval	Same as the scan interval of the corresponding GA10 project

Trial mode

GA10 has a trial mode that can be used for 60 days without a license. Projects created during the trial period can be exported (output and saved as files) before you enter the license to be used later.

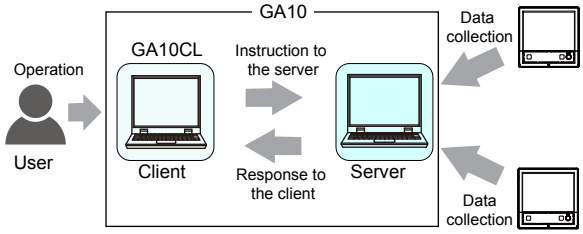
GX/GP/GM web application

Online setting can be made using Web browser. For more information, please see General Specification (GS 04L51B01-01EN or GS 04L52B01-01EN.)

Server and Client

GA10 is a client-server software application. Users perform various server operations from a client. The server collects, records, and manages data received from connected devices on the basis of the instructions received from the client.

The client function and server function are installed together in a single PC. You can also install GA10CL, which is a version that contains only the client function, in other PCs. Multiple clients can simultaneously access a single server.



Data Collection Project

GA10 collects data in units of projects. Projects are created by users to suite their purposes.

For example, a project named “Process A” can be created to collect measured data from a process called “A.” In this way, a project can be created for each set of collected data.

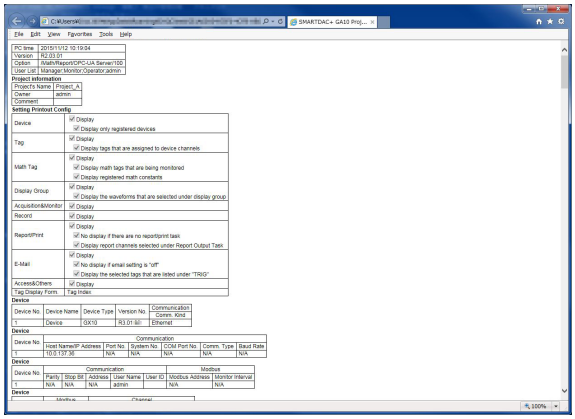
For each project, the data to be collected, data to be recorded, the monitor page layout, and the like are specified.

Multiple projects can be created in a single server.

Project Setting Display

Project settings can be displayed in tables on a browser. You can select whether to show or hide the settings for each item. Moreover, you can print or save the setting display screen using the Web browser (Note) functions.

Note: The print and save functions depend on the Browser’s functions.



Functional Addition Option

The following options can be added to the GA10.

For details on functions, see “Optional Functions.”

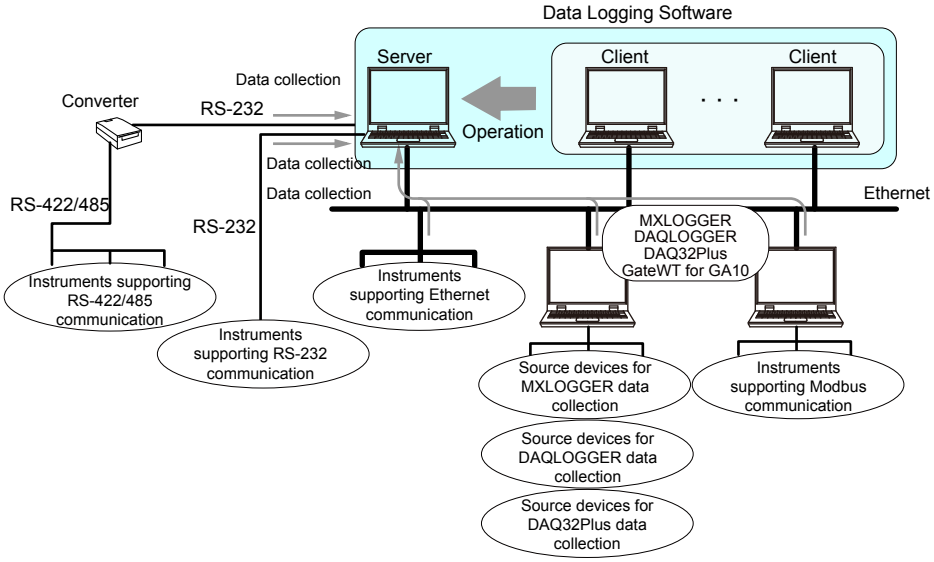
• Report/Print function (/RP option)
• Math function (/MT option)
• OPC-UA server function (/UA option)
• Custom Display function (/CG option)

■ System Structure

To use GA10, you need a PC that can connect to target devices. The connection between the PC and target devices is established through Ethernet, serial, or USB (available on GM only) communication.

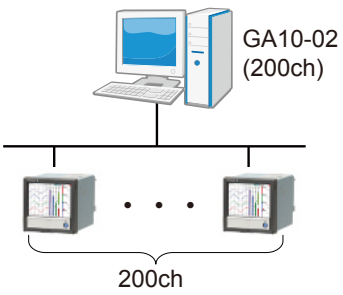
GA10 can connect to YOKOGAWA recorders and data loggers. It can also collect data that has been acquired by YOKOGAWA's data acquisition software (MXLOGGER, DAQLOGGER, and DAQ32Plus). Moreover, it supports the Modbus protocol (Note), enabling data collection from YOKOGAWA's control instruments (temperature controllers, signal conditioners, and power monitors). GA10 can also collect data from other manufacturers' devices that support Modbus communication.

Note: Modbus ASCII protocol is not supported.

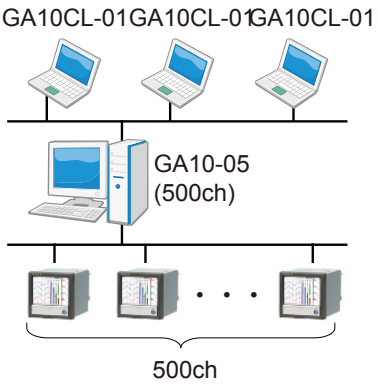


MXLOGGER, DAQLOGGER, DAQ32Plus are YOKOGAWA's data collection applications.
GateWT for GA10 is YOKOGAWA's driver software.

Example 1: 200 channels, 1 PC



Example 2: 500 channels, 4 PCs



■ Optional Functions

Report/Print Function (/RP)

Standard Print

You can select the display group and display format (trend graph, circular, sheet, alarm list, mark list) and print from a data file at the specified time on the specified printer.

Custom Print

You can select the display group and display format (trend graph, alarm list, mark list) and print from a data file according to the specified template file at the specified time on the specified printer.

Report Output

You can create a report file (PDF, Excel) from a data file according to the specified template file and specified report settings. You can create report data (PDF, Excel) of the average, Max., minimum, sum, and instantaneous values over a specified duration.

Manual Print (Custom Print & Custom Report)

In addition, custom print and report output can be performed manually from the Data files.

Print Types and Their Characteristics

		Standard	Custom	Report Output
Use		Auto printing at the specified time	Auto printing at the specified time using the specified layout	Auto printing at the specified time using the specified layout and report type
Condition		Hourly, Daily, Weekly, Monthly, Periodically, End of record	Hourly, Daily, Weekly, Monthly, Periodically, End of record	Hourly + Daily, Daily + Weekly, Daily + Monthly, Batch, Daily custom
Print Layout		Cannot be specified	Can be specified	Can be specified
		None	Report templates for PDF report files (*.tpl)	Report templates for Excel report files (*.xlsx, *.xlsm), Report templates for PDF report files (*.tpl)
Graph	Print type	Trend Graph, Circular, Sheet, Alarm List, Mark List	Trend Graph, Alarm List, Mark List	Trend Graph, Alarm List, Mark List
	Number of graphs	1 graph/setting	Up to 4 graphs/setting	Up to 4 graphs/setting
	Items	Specified with Print Header	Specified with keyword	Specified with keyword
	Output channel	Cannot be specified	Can be specified	Max. 100 ch
Print destination		Local printer	Local printer, PDF file	Local printer, PDF file, Excel file
Number of graph print pages		Multiple pages	single page	single page

Operating Conditions

- To perform custom print or report output, you must specify a template file.

  SMARTDAC+ Report Template Builder (a tool for creating and viewing report templates in PDF format) can be downloaded from the following URL:

  www.smartdacplus.com/software/en/
- The printers that can be used with the Report/Print function are the local printers registered on the server PC. Network printers are not displayed in print settings. To use a network printer, it must be registered as a local printer.
- Printing may not be possible depending on the settings, such as when security is enabled on the printer side.
- Virtual printers, such as Microsoft OneNote and Adobe PDF, cannot be used.
- Auto print schedules that have not been completed due to a PC shutdown are executed again when the server recovers. However, output results of auto print executed in this way may have up to 10 minutes of data missing before the shutdown.

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Math Function (/MT)

The GA10's Math function (/MT option) can be used to set expressions with constants, operators, and functions to display and record (save) the computed results. To use the Math function, you need to set the math tags (channels) on the Math Tag Setting Page.

- 2000 math tags are available, and expressions of up to 127 characters can be set on each.
- Computation starts when data collection starts. You can reset computation from the menu, separately from the acquisition and recording operation, and also can configure the software to reset computing automatically when recording is started.
- You can view the computation execution status with an icon.
- You can use as many user-defined constants as there are math tags. You can set up to 200 pairs of labels (constant names) and their values in advance.
- Up to four levels of alarms can be set for each math tag (channel.)
- You can choose an alarm type of upper limit, lower limit, high limit on rate of change, or low limit on rate of change.
- An hysteresis width can be assigned.
- Alarm sound: The PC makes the GA10's standard alarm sound. You can stop by button operation. Sharing / non-sharing of button operations can be selected between clients. Alarm sound file in MP3 format can be set to each math tag.

<table>
<tr><th colspan="2">Item</th><th>Description</th></tr>
<tr><td colspan="2">Computation interval</td><td>100 ms</td></tr>
<tr><td colspan="2">Number of math tags (math channels)</td><td>The number is synchronized to the number of measurement tags (number of measurement channels) as shown in the following table. (200 to 2000)
<table>
<tr><th>Measurement tags</th><th>Math tags</th></tr>
<tr><td>100</td><td>200</td></tr>
<tr><td>200</td><td>200</td></tr>
<tr><td>500</td><td>500</td></tr>
<tr><td>1000</td><td>1000</td></tr>
<tr><td>2000</td><td>2000</td></tr>
</table>
If the number of measurement tags increases due to an upgrade, the number of math tags also increases accordingly.</td></tr>
<tr><td rowspan="2">Available expressions</td><td>Operators</td><td>Four arithmetic operations, remainders, logical operations, relational operations, conditional operations, and Bit operations.</td></tr>
<tr><td>Functions</td><td>Event functions: Functions that perform specific actions (such as math reset or marking.)
Reference functions: Functions for retrieving measured values and alarm values.
Arithmetic functions, Time functions.</td></tr>
<tr><td rowspan="3">Math constants</td><td>User-defined math constants</td><td>Constants that you can set up to 200 pairs of labels and values in advance. You can use as many user-defined constants as there are math tags.</td></tr>
<tr><td>Predefined math constants</td><td>Mathematical constants, such as undefined value, over range, Pi, and e, and constants used as parameters of functions can be used as predefined constants.</td></tr>
<tr><td>Numeric math constants</td><td>Can be entered directly into expressions.</td></tr>
<tr><td rowspan="5">Setup items</td><td>Span</td><td>Decimal point, Min., Max.</td></tr>
<tr><td>Unit</td><td>Up to 6 characters</td></tr>
<tr><td>Alarms</td><td>4 levels: H, L, rH, rL</td></tr>
<tr><td>Tag number</td><td>Up to 16 characters.</td></tr>
<tr><td>Tag comments</td><td>Up to 32 characters.</td></tr>
</table>

Operating Conditions

Before using the Math function, set the data time to PC time. If set to Device time, the Math function does not work.

OPC-UA Server Function (/UA)

The GA10's OPC-UA server function enables OPC-UA clients of a host system to access GA10's data. This function can be used to deliver tag information and measured values to OPC-UA clients. Additionally, this function can be used to perform the following server certificate operations.

Installation

Installs the certificate file that the user has prepared in GA10 to make it an OPC-UA server certificate. The certificate must be generated from an internal private key.

Creating a Self-Signed Certificate

A server certificate is typically issued by a certification authority (CA) signing a certificate signing request (CSR). This function can generate a self-signed certificate that can be used when a certification authority (CA) signature is not necessary. A self-signed certificate can be generated from the internal private key and installed.

Creating a Certificate Signing Request (CSR)

A certificate signing request (CSR) to be signed by a certification authority (CA) can be created. It is created from the internal private key available at the time of execution. Basic functions of the OPC-UA server are listed below.

Specification	Description
Compatible profile	UA 1.02 Micro Embedded Server DataAccess Server Facet
Used port	4840: OPC UA TCP Protocol (can be changed)
Max. number of client connections	16 (Max.16 sessions)
Max. number of subscriptions	100/session
Max. number of monitor items	2000/session
Sampling interval	100ms, 200ms, 500ms, 1s, 2s, 5s, 10s, 20s, 30s, 1min, 2min, 5 min, 10min
Supported services	FindServers, GetEndpoints
	CreateSession, ActivateSession, CloseSession
	Browse, BrowseNext TranslateBrowsePathsToNodeIds, RegisterNodes, UnregisterNodes
	Read
	CreateMonitoredItems, ModifyMonitoredItems, DeleteMonitoredItems, SetMonitoringMode
	CreateSubscription, ModifySubscription, DeleteSubscriptions, Publish, Republish, SetPublishingMode

Data	Device status information, Device name, Device serial number, Measured value, Upper and lower range limits, Unit, Status of all alarms, Status of each alarm [1]

1 For more information, see User's Manual (IM 04L65B01-01EN.)

Operating Conditions

- There is no compatibility with OPC-DA or other types of OPC communication.
- To confirm the connection compatibility of the OPC-UA products, visit the following website: **http://www.smartdacplus.com/en/**

Custom Display Function (/CG)

With the Custom Display function you can add your original monitor screens to GA10 standard monitor screens (Trend, Meter, Digital, and Alarm.) The original monitor screen can be created by using DAQStudio (DXA170)[1].

- The original monitor screen can be saved as a display data file.
- You can register the display data files (.gacd), and use them as the monitor screen.
- 1 display data file can be registered for each project. Additionally, 50 screens can be registered in 1 display data file.
- The size and the position of a monitor screen can be set for each project.
- You can use the following components on DAQStudio to create the monitor screens of GA10. [1]

Component type	Component name
Diagram components	Line, Triangle, Rectangle, Arc, Ellipse,
Components for channel assignment	Simple digital, Digital, Simple bar meter, Bar meter, Simple analog meter, Analog meter, Alarm, Representative alarm
Status display component	Disk memory bar
Label components	Label, System label
Components with action functions [2]	Button operation, Digital output, Value list output, Controller component
Components for summary display (GA10: Components for Alarm list)	Alarm summery
Components for trend display	Trend
Components for static image display	Image

1 If you purchased the custom display function, a license for DAQStudio (DXA170), a software application for creating screens, is included.
2 You can control GA10 and devices on the custom display monitor by using the components. For more information about components or operation, see DAQStudio User's Manual (IM 04L41B01-62EN.)

■ PC System Requirements

Hardware

Item	Description
CPU	Pentium 4, 3.2 GHz or faster
Main memory	2 GB or more
Hard disk	100 MB or more of free space, NTFS recommended.
Mouse	Mouse compatible with OS
Display	1024 x 768 dots or higher, 65536 colors or more
Communication ports[1]	• RS-232 or Ethernet port compatible with the OS. • To perform RS-232 communication or RS-422/485 communication with a connected device, the server PC needs a RS-232 serial port. • A USB port is required for USB communication.

1 Operation is not guaranteed in case converter cables, such as USB-to-Serial, are used for the communication.

Operating system [1]

OS [2]	Edition	32 bit	64 bit	SP	Browser
Windows 7	Home premium	Yes	Yes	SP1	IE11
	Professional	Yes	Yes	SP1	IE11
Windows 8.1	—	Yes	Yes	Update	IE11
	Pro	Yes	Yes	Update	IE11
Windows 10	Home	Yes	Yes	No SP	IE11
	Pro	Yes	Yes	No SP	IE11
Windows Server 2008 R2	Standard	No	Yes	SP1	IE11
Windows Server 2012	Standard	No	Yes	No SP	IE10
Windows Server 2012 R2	Standard	No	Yes	Update	IE11
Windows Server 2016	Standard	No	Yes	No SP	IE11

1 Make sure to use the same language setting for this software, Windows OS, and the recorders that data is to be collected from.
2 Exclude operating systems that Microsoft has finished supporting from “PC System Requirements.”

Other Operating Environments

Item	Description
Microsoft Office Excel[1]	2007, 2010, 2013, 2016
Acrobat Reader	Adobe Reader X and later (latest version recommended)
Windows Internet Explorer	IE9, IE10, IE11 (Corresponding OSs are shown above.)
RS-232 - RS-422/485 converter	To perform RS-422/485 communication with a connected device, use a converter. (YOKOGAWA ML2 recommended)

1 Use Microsoft Office Excel 2010 or later to view Excel reports generated with the Report/Print function (/RP option).

■ Model and Suffix Codes

Basic Software

Data Logging Software

Model	Suffix Code	Optional code	Description
GA10			Data Logging Software License
Number of channels [1]	**-01**		100 ch
	-02		200 ch
	-05		500 ch
	-10		1000 ch
	-20		2000 ch
Optional functions		**/RP**	Report/Print function
		/MT	Math function (Max. 2000 ch)
		/UA	OPC-UA server function
		/CG	Custom display function [2]

1 When making an order, add the number of communication channels to the number of input channels. If you want to log the math channel of the connected device, also add "the number of math channel".

2 To create monitor screens, you need DAQStudio (DXA170), a software sold separately. The /CG option includes a license for DAQStudio.

Additional Channels or Functions

Data Logging Software Upgrade license

Model	Suffix Code	Description
GA10UP		Channels upgrade license for GA10
Upgrade	**-01**	100 ch to 200 ch, 200 ch to 500 ch, 500 ch to 1000 ch, 1000 ch to 2000 ch
	-02	100 ch to 500 ch, 200 ch to 1000 ch, 500 ch to 2000 ch
	-03	100 ch to 1000 ch, 200 ch to 2000 ch
	-04	100 ch to 2000 ch
	-RP	Report/Print function
	-MT	Math function
	-UA	OPC-UA server function
	-CG	Custom display function [1]

1 To create monitor screens, you need DAQStudio (DXA170), a software sold separately. The -CG option includes a license for DAQStudio.

Additional Monitoring PCs (clients)[1]

Data Logging Software Client license

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

Version Compatibility

- Make sure that the version of the added client is the same as the server version.
- Projects created in an older GA10 version can be used in the latest version (upper compatible). Projects are not displayed for the opposite case.
- If an option is added to the GA10, projects created in the previous configuration can be used with the GA10 in the current configuration. Projects are not displayed for the opposite case.
- Be sure to export the project (output and save) before entering the upgrade license. After registering the license, import the project (reload) for use.

■ How the software is provided

Name	Description
License sheet	Contains the license keys. Check that the correct number of licenses are present. If you purchased the custom display function, a license for DAQStudio (DXA170), a software application for creating screens, is included.
GA10 Data Logging Software Downloading Software and Manuals	1 sheet (A4 size)

Software

Download the latest version from the following URL:

www.smartdacplus.com/software/en/

User's Manual

Product user's manuals can be downloaded or viewed at the following URL. To view the user's manual, you need to use Adobe Reader 7 or later by Adobe Systems.

www.smartdacplus.com/manual/en/

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