Foreword

This document describes the setup for integration display function (/WH) of GA10 Data Logging Software.

Precautions

- The contents of this manual are subject to change without notice as a result of continuing improvements to the instrument’s performance and functions.
- Every effort has been made to ensure accuracy in the preparation of this manual. Should any errors or omissions come to your attention, however, please inform Yokogawa Electric’s sales office or sales representative.
- Under no circumstances may the contents of this manual, in part or in whole, be transcribed or copied without our permission.
- The images used in this manual may differ from those that actually appear in the software. Such differences do not affect the procedural explanation.

Trademarks

- The Yokogawa company and brand names used in this manual are trademarks or registered trademarks of Yokogawa Electric Corporation.
- Microsoft and Windows are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries.
- Modbus is a registered trademark of AEG Schneider.
- Adobe and Adobe Acrobat are trademarks of Adobe Systems Incorporated in the United States and/or other countries.
- The company trademarks and registered trademarks used in this manual are not accompanied by the trademark or registered trademark symbols (™ and ®).
- The product names used in this manual are trademarks or registered trademarks of their respective holders.
Contents

Foreword ................................................................................................................................. i

1. Overview of GA10 Integration Display Function (/WH) ............................................. 1
   What is GA10 Integration Display Function (/WH)? .................................................. 1

2. Setting up integral graphs ......................................................................................... 5
   Setup ............................................................................................................................... 5
   1 Connect GA10 with measuring instrument ......................................................... 6
   2 Register integration tags ......................................................................................... 7
   3 Register integration groups .................................................................................... 8
   4 Enter display settings ............................................................................................. 8
   5 Display integral graphs ......................................................................................... 9
   Supp Supplement: About integration data .............................................................. 9

3. Setting up demand monitoring .............................................................................. 11
   Setup ........................................................................................................................... 11
   4 Register integration groups .................................................................................... 12
   5 Enter display settings ............................................................................................. 12
   6 Display demand monitoring ................................................................................ 13

4. Other convenient functions .................................................................................. 15
   Display integral graphs with custom graphics .................................................... 15
   Daily or Hourly integration value display ............................................................ 16
   Digital output of demand alarms ......................................................................... 16

Revision Information ...................................................................................................... i
1. Overview of GA10 Integration Display Function (/WH)

What is GA10 Integration Display Function (/WH)?

- A software option for integrated monitoring of compact power packages
  - Integrated monitoring of a plant’s energy usage (power, flow, etc.)
    - Integrated monitoring of multiple groups (Max. 100 device)
    - Visualize with custom graphics (easy-to-understand visualization of usage conditions)
    - Check power usage with demand monitors

---

Centrally manage multiple groups

Co-innovating tomorrow™
What is GA10 Integration Display Function (/WH)?

**Adds a convenient screen for energy monitoring**
- Display daily, weekly, monthly, and yearly integral data (usage of power, flow, and other values)
- Demand monitoring display for monitoring peak power

**Save energy usage and demand data**
- Record data in binary or Excel format
- Display daily, weekly, monthly, and yearly reports in a dedicated viewer
- Print reports and export to PDF

---

**Check daily usage (power, flow).** Helps re-evaluate your production plan.

**Demand monitoring informs you when reference power is exceeded. Alarms provide quick discovery.**
What is GA10 Integration Display Function (/WH)?

- Add custom graphics (/CG) for easy monitoring
  - Intuitive visualization of data and facilities with location-specific displays.
  - Compare current and past data.

Visualize current usage conditions.

Check the details screen, and compare with past data.

Co-innovating tomorrow

© Yokogawa Electric Corporation
2. Setting up integral graphs

1. Connect GA10 with the measuring instrument
2. Register integration tags
3. Register integration groups
4. Enter display settings
5. Display integral graphs

Display active energy, integral flow, integral pulse, and other values…

...on a hour-by-hour integral bar graph or integral trend display.
1. Connect GA10 with the measuring instrument

- **Connection method**
  - Gather data on the GM10 and connect to GA10 via Ethernet
  - Connect Modbus instruments to GA10 via Ethernet
  - Connect power monitors (UPM100, 101) to GA10 via serial communication

- **Acquired data**
  - Active energy, integral pulse, integral flow, etc.

- **Required items**
  - GA10 (with /MT and /WH options)
  - Instruments that can measure integral values

In the following example, four UPM100 power monitors are connected to the GM10.

---

1. Connect GA10 with measuring instruments

GM10-to-UPM100 connection settings omitted
(active energy acquired on GM10)

- **Ga10**
  - IP: 192.168.2.10
- **GM10**
  - IP: 192.168.2.10
- **UPM100**
  - Ethernet cable

GM10 connects to GA10 via Ethernet

**Specify detailed settings**

Start GA10, log in, and then start system configuration.

Find devices on the network, and then drag onto the devices list.
2. Register integration tags

- **Use MATH tags to select integration target tags**

  1. **Select Tag**
     - GM10 data is automatically registered.
  2. **Select MATH tag**
     - Register active energy, integral pulse, and integral flow to integration target tags.
  3. **Click the button of the Integration target**

- **Select integration target tags using MATH tags**

  1. **Select a tag**
     - The tag is registered to the integration target, and HourlyIntegration is automatically registered in the formula.
  2. **In the same manner, select other tags you want to register on the integral graph**

- **If you want to add a coefficient to the integral values...**

  - Adjust decimal place, span, and units as needed.
3. Register integration groups

Register integration tags to integration groups

- Select Integration
- Set an integration group name
- Select an integration tag
- Select integration tags to register to the integration group

Integral graphs are displayed in units of integration group

4. Enter display settings

Set the monitor type to Integration Graph

- Select Acquisition & Monitor
- Set Data time to PC time
- Set the monitor type to Integration Graph
5. Display integral graphs

- The integral graph is displayed when acquisition starts

Start acquisition

Wait until integral data is displayed (1 to 5 min.)

Displays graphs of each integration group

Switch between integral trends and integral bar graphs. Switch between daily, weekly, monthly, and yearly. Display past data. Use split screens and other options.

Change integration groups

Supplement: About integration data

- Recorded integration data can be browsed with Universal Viewer

Integration Report File Name Naming Rule:
Integration Report File Output Folder:

Integration data is saved to the output folder above.

Launch Universal Viewer

Select Integration Data Open

Browse on Universal Viewer

Enter the integration data folder and then click OK.
3. Setting up demand monitoring

Setup

1. Connect GA10 with the measuring instruments
2. Register integration tags
3. Register integration groups
4. Set up demand monitoring
5. Enter display settings
6. Display demand monitors

Same as integral graph display setting

Display active power, integral flow, integral pulse and other values...

…in 30-minute segments on the Demand Monitor
4. Register integration groups

- Demand settings by integration group

Demand monitors displayed for each integration group

5. Enter display settings

- Set the monitor type to Demand Monitor
6. Display demand monitoring

- The demand monitor appears when acquisition starts

Start acquisition

Wait until demand data is displayed (1 to 5 min.)

Current and expected demand are displayed
4. Other convenient functions

Display integral graphs with custom graphics

- Register integral graphs on DAQStudio

1. Select an integral graph
2. Specify the scope and register the integral graph
3. Drag integration groups
4. Save custom graphics

A custom graphic screen with an integral graphs can be displayed
Daily or Hourly integration value display

Create hourly or daily tags with MATH tags

If hourly
Enter HourlyIntegration (tag number) in the formula. Enter a group’s worth of tags in 1 row.

If daily
Enter DailyIntegration (tag number) in the formula. Enter a group’s worth of tags in 1 row.

Daily or hourly integration value can be displayed with MATH tag

Digital output of demand alarms

Using GM10 for digital output of demand alarms

GM10 settings

Modbus client settings
- Client function: ON
- Server to connect to: IP address of GA10

Modbus client command settings
- Type: Read
- Server: Number of the server to connect to above
- Unit number: Modbus address set on GA10
- Data type: UINT16
- Register: 364001
- Channel type: Communication
- First channel: 0001
- Last channel: 0001

Communication channel alarm settings
- Type: H: Upper limit
- Alarm value: 0
- Output destination type: Relay
- Output destination number: Select the DO module channel

GA10 settings

Select Access&Others

Turn Modbus Server ON

GM10 (MC) + DO module

Ethernet cable

For details on demand alarms, see IM 04L65B01-01EN