

DAQMaster

DAQ Software

User Manual MWA-DAQU1-V5.7-EN

Thank you for purchasing an Autonics product.

This user manual contains information about the product and its proper use,
and should be kept in a place where it will be easy to access.

Autonics

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Preface

Thank you for purchasing Autonics products.

Be sure to read and follow the **Safety Precautions** thoroughly before use.

This manual contains information about the product and how to use it properly, so keep it in a place where users can easily find it.

Manual Guide

- Use the product after fully reading the contents of the manual.
- The manual explains the product functions in detail and does not guarantee the contents other than the manual.
- Any or all of the manual may not be edited or copied without permission.
- The manual is not provided with the product.
Download and use from our website (www.autonics.com).
- The contents of the manual are subject to change without prior notice according to the improvement of the product's performance, and upgrade notices are provided through our website.
- We put a lot of effort to make the contents of the manual a little easier and more accurate.
Nevertheless, if you have any corrections or questions, please feel free to comment through our website.

Common Symbols in the Manual



Failure to follow instructions may result in serious injury or death.



Failure to follow instructions may result in injury or product damage.



Supplementary explanation of the function



Example of that function



Important information about the feature

Safety Considerations

Safety Considerations when using USB.

Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.

Warning

1. Do not use the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact or salinity may be present.
Failure to follow this instruction may result in fire or explosion.
2. Do not disassemble or modify the unit.
Failure to follow this instruction may result in fire.

Caution

1. Use the unit within the rated specifications.
Failure to follow this instruction may result in fire or product damage.
2. Use a dry cloth to clean the unit, and do not use water or organic solvent.
Failure to follow this instruction may result in fire.

Important

1. Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
2. Do not connect to a bad USB port. The storage device may be damaged or not recognized properly.
3. If you use multiple USB devices together, they may not be recognized or an error may occur.
4. When disconnecting the USB, remove it safely.
5. If the USB will not be used for a long period of time, disconnect the USB from the PC and store it.
6. Be careful of loss or theft.
7. Do not arbitrarily delete or modify data stored on the USB.

The specifications, etc are subject to change without notice for product improvement Some models may be discontinued without notice.

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

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1. DAQMaster

1.1. DAQMaster Introduction

DAQMaster is a comprehensive device management program that provides GUI control for easy and convenient management of parameters and multiple device data monitoring.

The version of program is divided into general and pro. Pro version supports variety of additional functions such as user convenience, device and data management as compared with general version.

1.2. Features

- **Multiple Device Support**

Simultaneously connect and monitor multiple devices and set parameters.

- **Device Scan**

In cases of multiple units (with different addresses) connected together, the unit scan function automatically searches for units.

- **Convenient User Interface**

Freely arrange windows for data monitoring, properties, and projects.

Saving a project also saves the screen layout.

- **Project Management**

Saving and loading data as a project file includes added device information, data monitoring screen layouts, and I/O source selection. Organizing project list makes managing project files easier.

- **Data Analysis**

Analyses DAQMaster data files (*.duf) or database using data analysis tool by grid and graph. Grid data can be saved directly to .rtf, .txt, .html, or .csv files in Data Grid.

- **Monitoring Data Log**

When monitoring, data log files can be saved in either DAQMaster data files (*.duf) or CSV (*.csv) files.

Define log data file naming/saving rules and destination folders to make file management convenient.

- **Tag Calculation Editing**

Read tag value is available to calculate the set formula for the desired value.

- **Print Modbus Map Table Report**

Print address map reports of registered Modbus devices. Modbus map table reports can be saved in pdf (*.pdf) formats.

- **Multilingual Support**

Supports Korean, English, Japanese, and Simplified Chinese.

1.3. Pro Version Features

- **Modbus Device Editor**

Can add the any Modbus devices which are not supported at DAQMaster to set and monitor the property and I/O.

- **Trigger Event, Scheduler, Action**

Conducts preset action by user set condition (Trigger) and time (Schedule) automatically.

- **Database**

Database managing system turns information into database in real-time, making creation and management easier.

- **Real time log**

Makes log file in real time following to the time set by user. Data is saved in CSV file.

- **TCP/IP Server**

Displays and monitors the communication data through TCP/IP protocol.

- **OPC DA**

It is Interface method for better compatibility among application programs based on OLE/COM and DCOM technology of Microsoft. It provides industry standard mechanism for communication and data conversion between client and server.

- **OPC UA**

As a communication standard protocol for transmitting data such as sensors or PLCs, various data can be collected through the OPC UA protocol from the Server.

- **MQTT Publisher/Subscriber**

Collected data can be published to the broker or subscribed to data from the broker through the MQTT protocol.

- **DDE Server/Client**

Supports communication among process embedded in Microsoft Window system (IPC), allowing application programs to share and exchange information between the applications.

- **Modbus Master/Slave**

Conducts read and write request from the outside through Modbus protocol.

- **Virtual Tag**

It is possible to collect user-customized data or transfer multiple data through virtual tag.

- **User Manager**

Adds account, creates user group, and manages authority of program usage function per each group individually.

1.4. Function

Ribbon menu

| Ribbon menu | Name | Description |
|-------------|----------------------|---|
| Project | File | Creates a new project or open a saved project. Saves the project file you are working on or save it under a different name. |
| | Run | Logging by connecting or running the device. |
| View | View | Sets the panel display and display language. |
| | Window | Arrange multiple windows in DAQ space. |
| | Layout | Selects the layout of DAQMaster. |
| Tool | Time Display | Starts/Stops DAQ, log data, user time, or display the current time. |
| | Data Analysis | Runs the Data Analysis program. Analyze DAQ data file (.duf). * Supported Analysis Window: Grid, Graph, Vertical Graph, Alarm Grid, Analysis Space * Supported Database Chart: Grid, DB Graph |
| | Edit ModBus Device | Only for Pro version. Runs the Modbus Editor. |
| | User Manager | Only for Pro version. Runs the User Manager. |
| | Script Device Editor | Only for Pro version. Runs the Script Device Editor. |
| Help | Help | Runs the Help or check the DAQMaster Update and Information. You can check a Pro license. |

Project

| Name | Description |
|----------------|--|
| Project List | Displays the Project List. You can manage (add/delete) multiple projects by adding folders. |
| Project | Displays the currently running project and runtime screen. Runs the Project management program. When select the Project, you can make settings related to Data File, Log Data Schedule, When Opening Project in Property. |
| Runtime Screen | Runtime screen registered in DAQ space is displayed as a list. You can delete the selected Runtime Screen from DAQ space or add it to its properties. |

| Name | Description |
|----------------|---|
| Realtime Log | <p>The set Realtime Log related matters are displayed in a list and can be managed (add/copy/delete).</p> <p>Runs the log editor and set it. Logging data can be saved as a CSV file, and the Pro version also supports database.</p> <p>* Databases supported in the Pro version: Oracle, SQL Server, MySQL, DB2, SQLite, PostgreSQL, InterBase, Nexus DB, Firebird, Sybase ASE, Sybase ADS, MS Access, DBF, Advantage, NoSQL Mongo DB</p> |
| TCP/IP Server | <p>Only for Pro version.</p> <p>DAQMaster performs as TCP/IP Server and exchanges monitoring data with DAQMaster Client in JSON format. Network data can be displayed in server, allowing data monitoring.</p> <p>* Supported features: Monitoring, Security (Login/Protocol), Reading/writing Tag</p> |
| DDE Server | <p>Only for Pro version.</p> <p>DAQMaster performs as DDE(Dynamic Data Exchange) Server, allowing communication among programs in Microsoft Windows system .</p> <p>* Support items: CF_Text (Format), XL_Table (Format), Server, Client</p> |
| OPC DA Server | <p>Only for Pro version.</p> <p>DAQMaster performs as OPC DA Server and can exchange data with OPC clients.</p> <p>* Supported DA version: 1.0 (Format), 2.0 (Format), 3.0 (Format), Server, Client</p> <p>* Supported AE version: 1.0 (Format), 1.10 (Format), Client</p> <p>* Supported UA version: TCP (Format), HTTP (Format), HTTPS (Format), Client</p> |
| Scheduler | <p>Only for Pro version.</p> <p>Conducts preset action by user set time (Schedule) automatically.</p> <p>* Supported Action: Log Start/Stop, Send to Telegram, Alarm Sound Play, Tag Error Message/Alarm/Output, Export Report, SMS, E-mail</p> |
| Trigger Event | <p>Only for Pro version.</p> <p>Conducts preset action by user set condition (Trigger) automatically.</p> <p>* Supported Action: Log Start/Stop, Send to Telegram, Alarm Sound Play, Tag Error Message/Alarm/Output, Export Report, SMS, E-mail</p> |
| Report | <p>Only for Pro version.</p> <p>Prints the data that DAQMaster collects based on the template, type and interval through the designated path.</p> |
| MQTT Publisher | <p>Only for Pro version.</p> <p>DAQMaster performs as MQTT Publisher and publish Topics.</p> |

Supported Device List

| Name | Description |
|------------------|---|
| Supported Device | Displays a list of devices supported by DAQMaster. Click to add it to my system. Supports multi-device. Supported device list will be updated continuously * Pro version Supported device: CCLink IEF Basic Product, DDE Client, Database, MQTT Subscribe, Modbus Slave, OPC DA Client, OPC UA Client, Virtual Tag, WMI Manager |

My System

| Name | Description |
|-----------|--|
| My System | Devices and units are displayed in a tree structure. It support Scan Unit Address, Read/Copy Parameters, Print Modbus Map Table. When select a Unit, you can access it from Property |

I/O List / DAQ List / Message

| Name | Description |
|----------|--|
| I/O List | Displays the parameter items of the added device. Click on the parameter you want to monitor and add it to the DAQ List. |
| DAQ List | Displays added sources in the I/O List. Once you select a source, you can edit the formula that can calculate the I/O data. |
| Message | Displays events and log status that occurred during program run. |

Runtime Screen / DAQ Space

| Name | Description |
|----------------|--|
| Runtime Screen | Selects a Runtime Screen that can monitor data. * Supported Runtime Data Screen: Grid, Multi Panel, Panel, Line Graph, Bar Graph, Color Map Graph, Gauge Graph, Histogram Graph * Supported Runtime Alarm Screen: Alarm History Grid |
| DAQ Space | DAQ Space displays "Runtime screen" and runs the programs of the functions that the DAQMaster supports. |

1.5. Install / Uninstall

1.5.1. System Requirements

The operating system and computer specifications required to use DAQMaster are as follows.

Operations

Microsoft Windows 7/10/11

Computer specifications

| Item | Recommended specifications |
|------------|---|
| CPU | ≥ Quad Core (Clock Speed by Core ≥ 2.0 GHz) |
| Memory | ≥ 8 GB |
| Hard disk | ≥ 10 GB |
| Resolution | 1024×768 or higher |
| Others | RS232C serial port(9-pin), USB port, RJ45 Ethernet port |

1.5.2. Installing the Program

1. Download DAQMaster program at Autonics web page(www.autonics.com).
2. Close all programs before installing DAQMaster. Double-click DAQMaster setup.exe to start installation.
3. Installer Language window appears. Select the language and click **OK** button.
4. If you click **OK** button, the “Setup Wizard” window appears in the selected language. Click **Next** to proceed or click **Cancel** to stop the installation.
5. If click **Next** button, the “License agreement procedure” window appears. Read all the details of the “License agreement”. After considering the information, click **Agree** button to continue the installation.
6. If click **Agree** button, “Installation components” window appears. Choose the components to setup and click **Next**.
7. If click **Next** button, “Install Location” window appears. Default installation path is already set. If you need to change the default path, click **Browse** button and select the desired destination folder. And then click **OK** to start installation.
8. If click **OK** button, installation progress is displayed. Wait until the installation is complete.
9. “Installation Complete” window appears after installation is completed. Click **Finish** button to run DAQMaster. It is possible not to run the program by unchecking the box of **Run DAQMaster** and click **Finish** button.

1.5.3. Installation Folder Structure

After DAQMaster installs completely, total 7 folders are created and programs and all documents are saved.

If you select the default installation path during installation, a DAQMaster folder is created under [C:\Program Files\Autonics] as a sub-folder. If you select a new destination folder, DAQMaster folder is located in that folder.

- Sub-folder: device / document / driver / lang / plugin /sample / tools

1. device

Device folder contains the device information files (*.dev), which can be monitored and set with DAQMaster. When the program is executed, the files in this folder automatically add related devices to the program.

If devices are added or upgraded after the program is installed, copy the device information file and put it into this folder. The list of available devices will be updated. However, if a communication related function is added or modified, it also changes the contents of the [plug-in] folder. Therefore, changes may or may not be applied depending on the level of upgrade.

2. plugin

This folder contains core library files (*.dll) for ModBus communications as well as runtime screen files (*.rpu). The [prop] folder under the [plugin] folder stores library files that have special functions for each specific device.

1.5.4. Pro License - Connecting USB dongle

1. Plug the USB dongle for DAQMaster Pro license to your PC and run the DAQMaster Pro.
2. The license key is installed automatically. (it may take some time.)

1.5.5. Uninstalling the Program

There are two ways to uninstall DAQMaster.

If you select Remove, a confirmation window will appear. Click **Yes** to remove DAQMaster from the computer.

- Select Start > Program > DAQMaster > Uninstall
- Start > Setting > Control Panel > Add/Remove a Program > Select DAQMaster to remove it

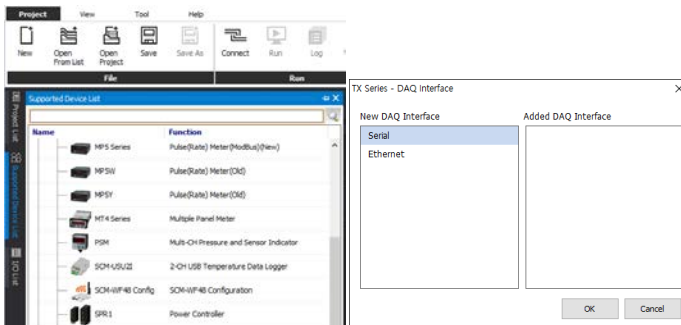
2. Getting Started

This chapter explains the basic contents in sequence to use DAQMaster for the first time.

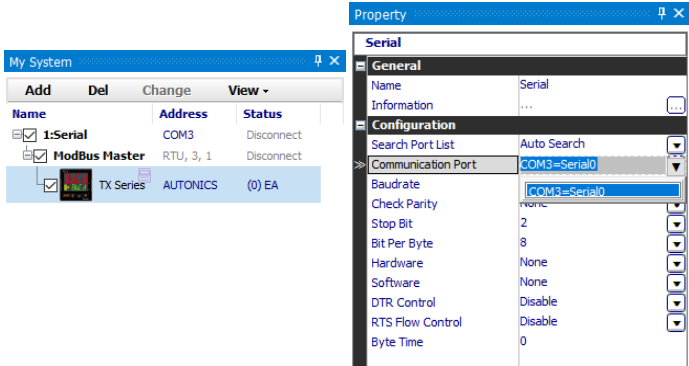
For specific information on each function, refer to the related chapter in the user manual.

Device connection, parameter setting and basic monitoring will be proceeded when using TX Series as follows. After check the contents of instruction manual for the product to connect, apply it to the following steps.

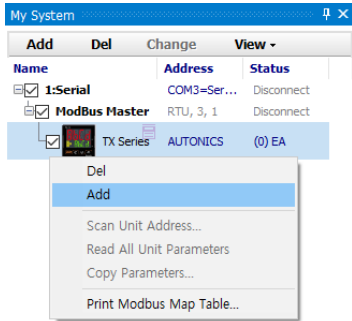
1. Install DAQMaster program at Master device (ex. PC), connect to the product and run DAQMaster.
Double-click DAQMaster icon on the desktop or select 'Start > Program > DAQMaster' to execute DAQMaster.
 - Refer to **1.5.2, “Installing the Program”**
2. Open the control panel by clicking 'Support Device List' and double-click the series or model name to communicate with. When DAQ Interface panel pops up, select the communication port currently in use and click **OK** button.
 - Refer to **6, Supported Device**



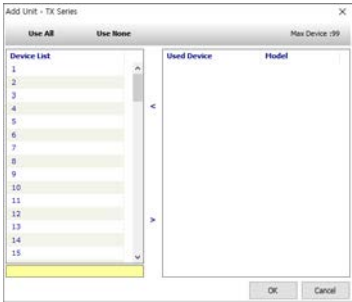
3. Proper communication port setting is needed to connect the device. Select Serial in 'My System' control panel. In 'Property' control panel, click pull-down icon ▼ on 'communication port' and select the communication port currently in use.
- Refer to 7.1, “My system property”



4. In control panel, right-click a newly added 'Support Device name' (TX Series) and click 'Add'.



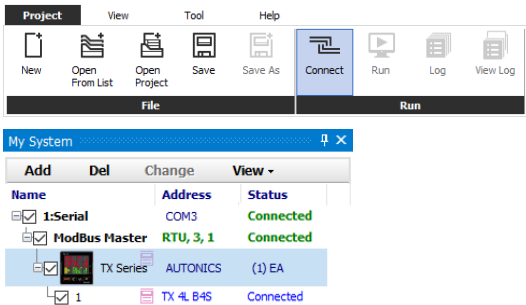
5. When 'Add Unit' window pops up, double-click the connected device address to add and then click **OK** button.



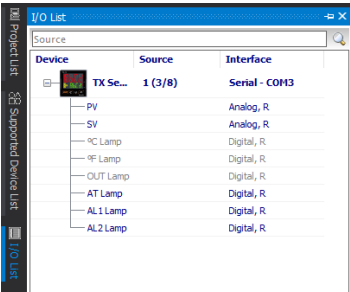
6. Click the **Connect** button on the 'Project - Run' menu and check the 'My System' control panel. If the connection is successful, 'Statues' row displays 'Connected'. Click **Disconnect** button to unlink the communication, then continue with setup.

For more information about the default address and setting method of each device, refer to the manual of the device.

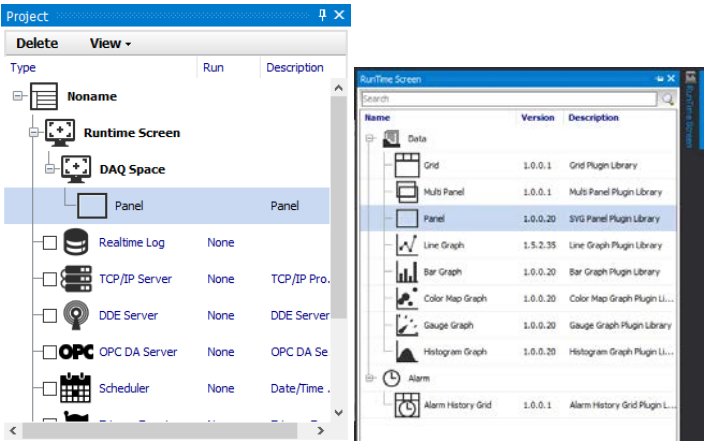
If there is a problem in connection, check the related settings again 'Communication type / Communication port'



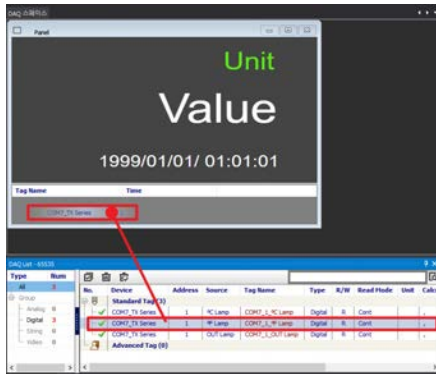
7. To monitor the data of the device that user needs, add I/O sources to DAQ List. Double-click I/O source in the 'I/O List' control panel, then adds to the 'DAQ List'. The added sources are changed to gray color and displayed in the 'DAQ List'



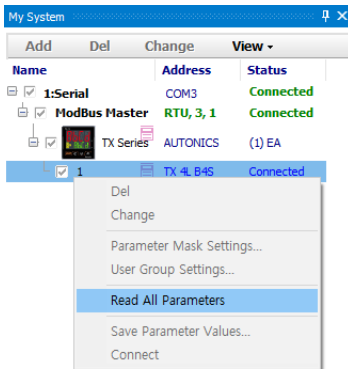
8. For visualized monitoring, double-click the desired runtime screen in the 'RunTime Screen' and import to 'DAQ Space'. Imported runtime screen is displayed in the 'Project' control panel as well.



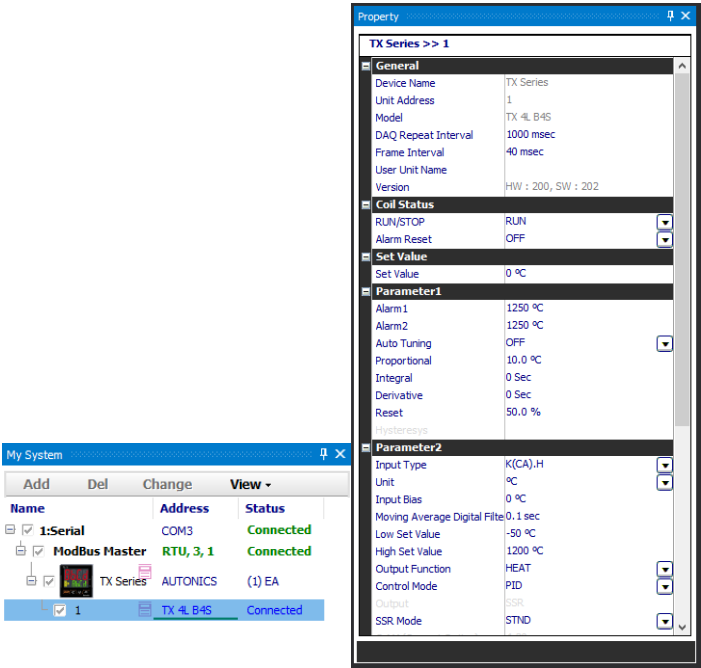
9. Drag the I/O source to be monitored from the 'DAQ List' and drop it onto the RunTime Screen.



- Basic settings for monitoring is finished now. To connect the device to DAQMaster, click the **Connect** button in the 'Project-Run' menu.
- To check parameters of the device, right-click either the 'Series name' in the 'My System' or 'address number', then click 'Read All Parameters'



12. It is possible to check the progress for 'read parameters' at the bottom of the model in 'Add' row of the 'My System' control panel. Checking and setting parameter values is available in the 'Property' control panel.



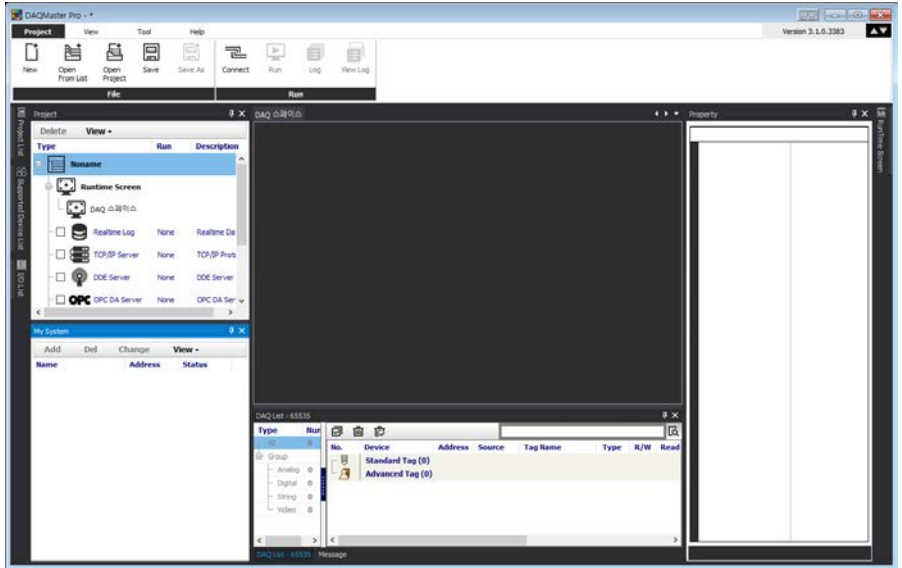
13. Click the **Run** button in the 'Project – Run' menu to record data monitoring and data files of the device.

It is possible to monitor real-time data and use the data logging function in the DAQ WorkSpace.

14. Click **x** button on the top right corner of the screen to end the program.

Projects are not saved automatically. Please make sure whether the project is saved when close the program.

3. Screen



3.1. Ribbon menu

Displays DAQMaster menus by tab.

- | | |
|----------------|---|
| Project | You can create/save or load project files. You can connect the device and Run / Log / View Log. |
| View | You can set the panel display and display language. You can set the window arrangement and DAQMaster layout of DAQ Space. |
| Tool | Various functions are supported using monitored data files. It supports time display and data analysis, and the Pro version supports Modbus device editing, user management, and script editor. |
| Help | Run DAQMaster's help, check update and version information, and the license for the Pro version. |

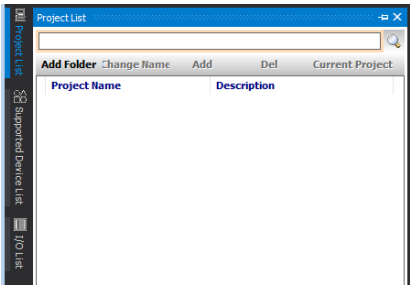
3.2. Panel

The panel appears in its default layout. Each panel can be activated by selecting it from the View > Tools menu.

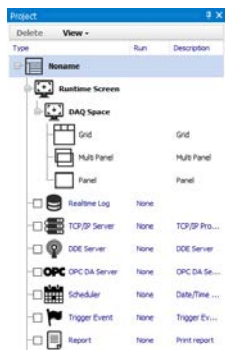
You can change the position of the panel to suit your environment.

When you drag the title of the panel you want to move, a **panel location guide** will appear. If you drag and drop a title onto the guide at the desired location, the panel will move to that location.

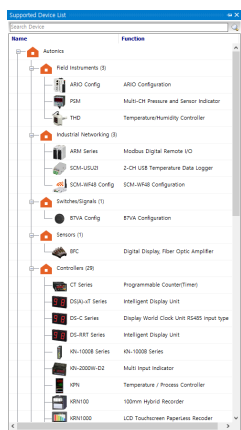
Project List It is possible to conveniently open and manage frequently used project files by adding to the list.



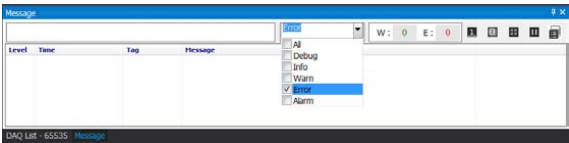
Project Displays the basic information of the currnet project and the runtime screen. It is possible to check the status of project management function DAQMaster supported and execute the program. Additional settings are possible in the “Property” control panel.



Supported Device List “Supported Device List” control panel shows a list of devices supported by DAQMaster. Double-click or right-click a supported device to connect and add it to My System. Supported device list will be updated continuously.



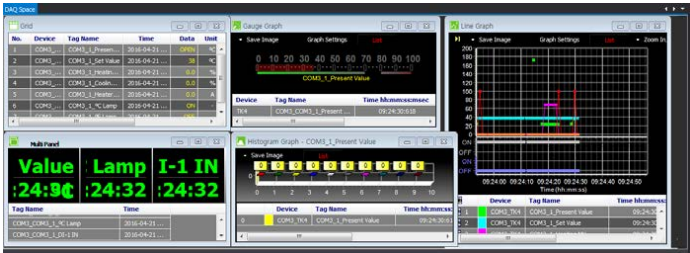
Message Displays and saves events (communication status (start/stop communication, error), log status (start/stop log), etc.) during running the program.



RunTime Screen Double-click “RunTime Screen” to add it to “DAQ WorkSpace”



DAQ Space DAQ WorkSpace displays “Runtime screen” and runs the programs of the functions that the DAQMaster supports. The DAQ Space shows each UI and program screen.



Property It is possible to check the conditions and change the values of each item in the “Property” control panel.

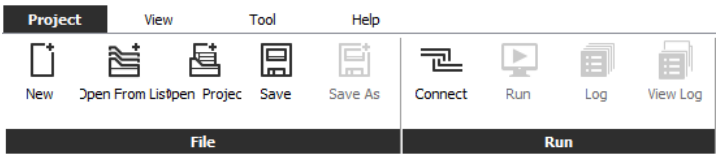
The screenshot shows a window titled "Property" with a tree view on the left and a corresponding settings area on the right. The tree view has the following structure:

- Project**
 - General**
 - Project Name: Noname
 - Company:
 - User:
 - Description:
 - Data File**
 - Data Folder: [Browse]
 - Data File Creation Rules: [Browse]
 - CSV Time Type: yyyy/mm/dd hh:mm:ss.zzz [Browse]
 - Log Data Schedule**
 - Log Data Schedule: Schedule Setting : 0/0 [Browse]
 - Active Schedule: OFF [Dropdown]
 - When Opening Project**
 - Run Mode: None [Dropdown]
 - Layout: Default [Dropdown]

The settings area on the right displays the values for the selected item in the tree view.

4. Ribbon menu

4.1. Project



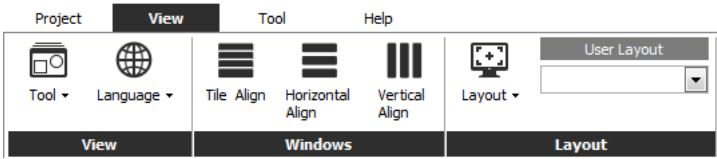
1. File

- New** Creates a new project.
- Open From List** Opens a project from the project list.
- Open Project** Opens a saved project.
- Save** Saves the project you are working on.
- Save As** Saves the project under a different name.

2. RUN

- Connect/Disconnect** Connects or disconnects the device and communication.
- Run/Stop** Starts or stops monitoring data in the connected devices.
- Log/Stop logging** Saves or stops logging currently monitored data. If you start logging, log start time and elapsed time are displayed. If you click [Stop Logging], saving file is available. Files are saved as DAQ Data File (*.duf) and CSV File (*.csv) format.
- View Log** Views log data during logging. You can check data between Log running point and View Log executing point.
If you click [View Log], the data analysis program is activated. For the information about data analysis program, refer to **11, Data Analysis**

4.2. View



1. View

- Tool** Brings up a panel window to use the function.
 - Property, Supported Device List, My System, Project, I/O List, Run Time Screen, DAQ List, Message
- Language** Changes the program language.

2. Windows

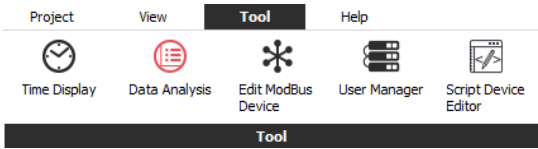
Aligns multiple runtime screens diagonally, horizontally, and vertically.

3. Layout

Applies the default layout or executes saving, deleting, and loading user-defined layout.

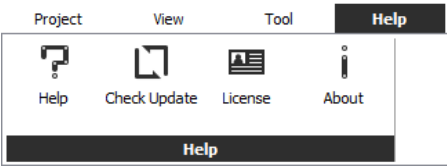
- Default** Changes control panels to the default layout.
- Runtime** Displays the run time screen only.
It is possible to load the hidden control panel at “View-Tool” menu.
- Save Layout** Saves the current layout.
Click [OK] in the “Save Layout” window and add the user layout.
- Delete Layout** Select the saved layout and delete it. Click [OK] in the “Delete Layout” window.
- User Layout** Displays the control window with the saved Layout.

4.3. Tool



| | |
|---------------------------|---|
| Time Display | <p>Displays monitoring time. If you right-click on the time, you can select the standard time.</p> <ul style="list-style-type: none"> • DAQ Run/Stop, Run/Stop Log Data, User Run/Stop, Current Time |
| Data Analysis | <p>Runs the data analysis program. Allows analysis of DAQMaster data file (.duf).</p> <p>For the information about Data Analysis, refer to 11, Data Analysis</p> |
| Edit ModBus Device | <p>Only for Pro version. Runs Modbus Editor.</p> <p>For the information about Edit ModBus Device, refer to 10.1, “Edit ModBus Device”</p> |
| User Manager | <p>Only for Pro version. Runs User Manager.</p> <p>For the information about User Manager, refer to 10.2, “User Manager”</p> |
| Script Editor | <p>Only for Pro version. Runs Script Device Editor</p> <p>For the information about Script Editor, refer to 10.3, “Script Editor”</p> |

4.4. Help



| | |
|--------------|---|
| Help | Opens the help file. |
| Check Update | Checks the version of the program via the internet update server and automatically updates to the latest version. |
| License | Checks license. For the information, refer to 1.5.4, “Pro License - Connecting USB dongle” |
| About | Checks the DAQMaster version. |

5. Project

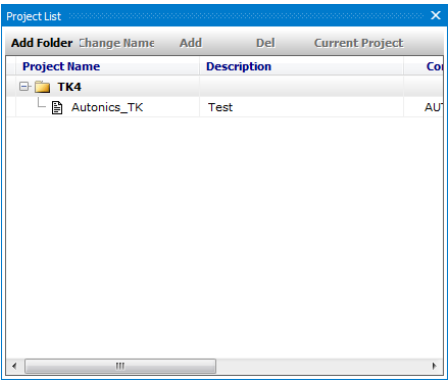
5.1. Project List

You can manage the project files conveniently by adding frequently used projects like the favorites menu of the Internet browser.

You can create a folder in the Project List by clicking [Add Folder] and manage saved project files under the parent folder. You can also change folder/file names as well as add or delete folders/files.

Selecting a folder in the Project List activates Add Folder, Change Name, Add, and Delete menus.

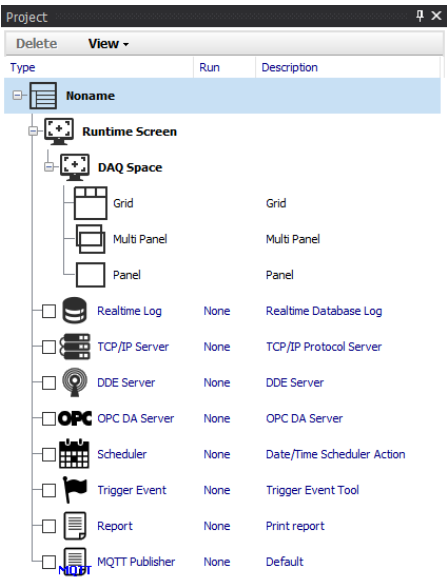
Selecting a project file in the Project List activates Add folder, Add and Delete menus.



- Add Folder** Adds a folder.
- Change Name** Changes the name of folder.
- Add** Adds a project file. Click add opens “Project List” control panel.
- Delete** Removes selected folder or file.

5.2. Project control panel

Displays the the currnet project and the runtime screen. It is possible to execute the project management program.



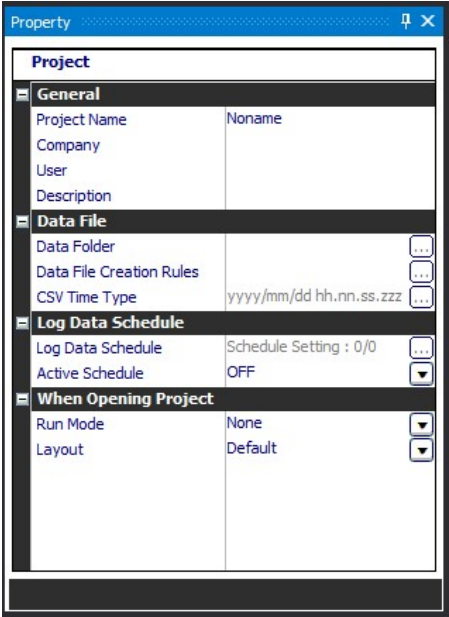
Project After select the related item, it is possible to set in the “Property” control window on the right.
For the information, refer to **5.3, “Project Property”**

Runtime Screen After select the related item, it is possible to set in the “Property” control window on the right.
For the information, refer to **9.1, “RunTime Screen”**

Project management You can check and execute the conditions of project management functions supported by the DAQMaster.
For the information, refer to **5.4, “Project Run”**

5.3. Project Property

After click the project name (default: noname) in the “Project” control panel, can change the values of parameter in the “Property” control panel.



1. General

It is possible to describe the basic project information such as project name, company name, worker and other descriptions.

2. Data File

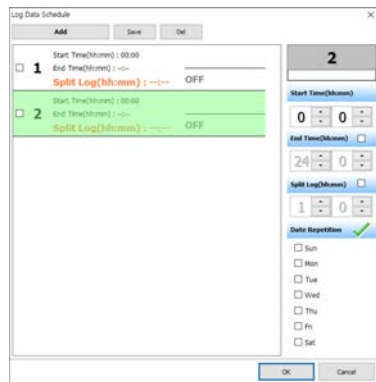
It is possible to set the value of the path of Data Folder, Data File Creation Rules, and CSV Time Type. Log data files are saved in *.csv or *.duf file format.

| | |
|---------------------------------|--|
| Data Folder | Sets the path of the folder that project data is saved. |
| Data File Creation Rules | Sets the rules of making file name, format and path of the folder. |
| CSV Time Type | Sets the form of time to be recorded in the log data. |

3. Log Data Schedule

Saves log data at the scheduled time automatically.

Log Data Schedule Sets time of log data to be saved.



- Add**

Adds log data schedule items.
Log data schedule is displayed below and you can set the log data name on the top right corner.
The file name of data file creation rule is displayed next to the data name.
- Del**

Deletes the set items. You can delete the scheduled item by checking the left check box and the “Del” button.
- Start Time(hh:mm)**

Sets start time.
- End Time(hh:mm)**

Sets end time.
- Spilit Log(hh:mm)**

Sets split save time.
In case of setting 1 hour 30 minutes, it saves the file for 1 hour 30 min. and creates another file to save.
- Date Repetition**

Sets repetition day of week.
- OK**

Saves log data schedule items.

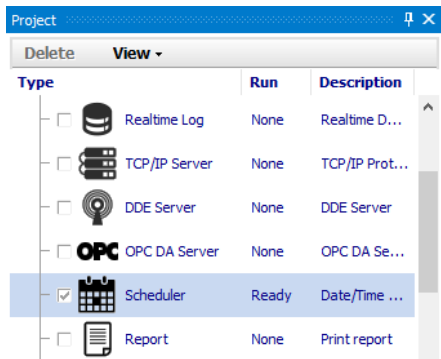
Active Schedule Sets whether to activate log data schedule.

4. When Opening Project

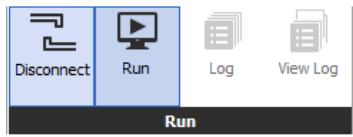
| | |
|-----------------|---|
| Run Mode | Sets running mode when opening the saved project file. |
| Layout | sets the screen layout (default, runtime, current layout) when opening the project. |

5.4. Project Run

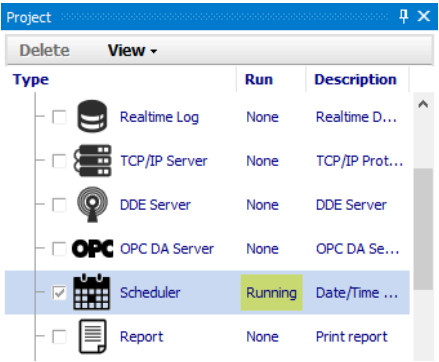
1. Check the checkbox next to the name of project management in the “Project” control panel whether activate it.
- Select the checkbox. When the phrase of “Run” row is changed as “Ready”, function is activated to use.









2. Click [Connect] button in the “Project - Run” menu.



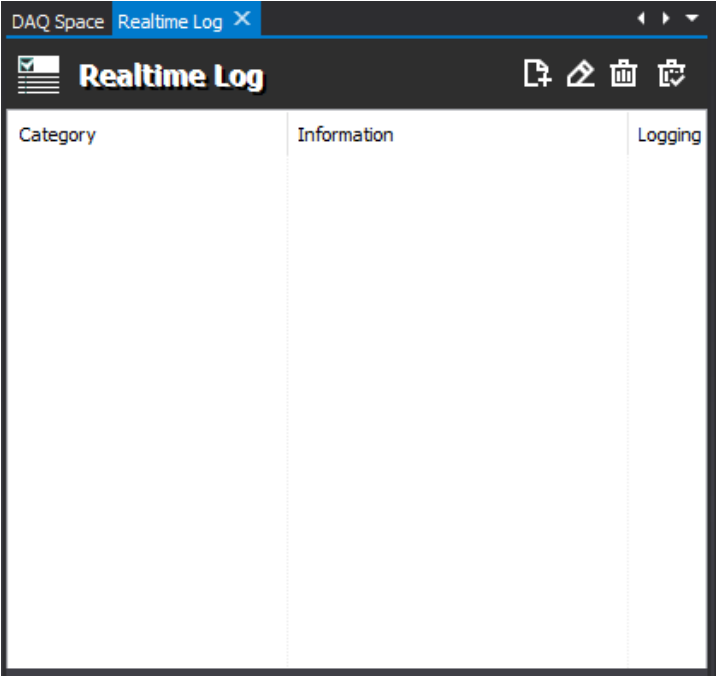
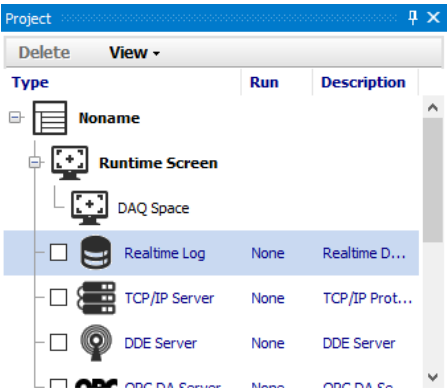
3. Click [Run] button in the “run” tab. The phrase of “Run” row in the “Project” control panel is changed as “Running” and that function is activated.






| Project | | | |
|-------------------------------------|---|---------|----------------|
| Delete | | View ▾ | |
| Type | | Run | Description |
| <input type="checkbox"/> |  Realtime Log | None | Realtime D... |
| <input type="checkbox"/> |  TCP/IP Server | None | TCP/IP Prot... |
| <input type="checkbox"/> |  DDE Server | None | DDE Server |
| <input type="checkbox"/> |  OPC DA Server | None | OPC DA Se... |
| <input checked="" type="checkbox"/> |  Scheduler | Running | Date/Time ... |
| <input type="checkbox"/> |  Report | None | Print report |

5.5. Realtime log

Executes logging per each I/O following to set cycle and condition.
When double-click [Realtime Log] button in the “Project” control panel, “Realtime Log” window is opened on “DAQ Space” and it is possible to modify the detail setting.



| | |
|---|--|
| Condition | Set real-time log conditions. |
|  | No condition. |
| = | When selected tag value is equal to the set value, logging starts. |
| < | Execution when selected tag value is less than the set value. |
| > | Execution when selected tag value is greater than the set value. |
| ≤ | Execution when selected tag value is equal or less than the set value. |
| ≥ | Execution when selected tag value is equal or greater than the set value. |
| != | Execution when selected tag value is not equal to the set value. |
|  | Execution when selected tag value is rising edge, logging starts. |
|  | Execution when selected tag value is falling edge, logging starts. |
| Reset | Initialize all parameter settings of the Log Editor. |
| Logging | Starts logging when DAQMaster is executed. If “logging” is checked, a file (*.csv) is created in the designated folder and log is written. |
| Save Interval | Set time interval to save log. |
| File Devision | When save type is 'CSV File', set the file devision cycle. |

| | |
|--------------------|--|
| Information | Set database-related matters, file path, tag list information, etc. according to 'Save Type'. |
| Database | When save type is 'Database', set the 'Database Connection Info' and 'Table Columns Info'. For the information about Database, refer to 6.5, “Database” |
| CSV File | When save type is 'CSV File', set the 'File Path Information' and 'Tag List Information'. For the information, refer to 5.5.1, “Information Settings” |

5.5.1. Information Settings

Proceed the information settings as below.

1. Click [...] button in “File Path Information” to set “File Path Settings: Folder, File Name, File Name Rule”.

CSV Log Editor

File Path Settings

Folder

File Name

File Name Rule

[Time{hh:mm:ss}] + [Date{yyyy-mm-dd}]

Automatic Sequential Numbers
File Name
Space
Date{yyyy-mm-dd}
Time{hh:mm:ss}

Time{hh:mm:ss}
Date{yyyy-mm-dd}

Delete All

OK

Cancel

2. Click [...] button in “Tag List Information” to set “Tag List Settings”

CSV Log Editor

Tag List Settings

Add

Del

Delete All

Device

Tag Name

OK

Cancel

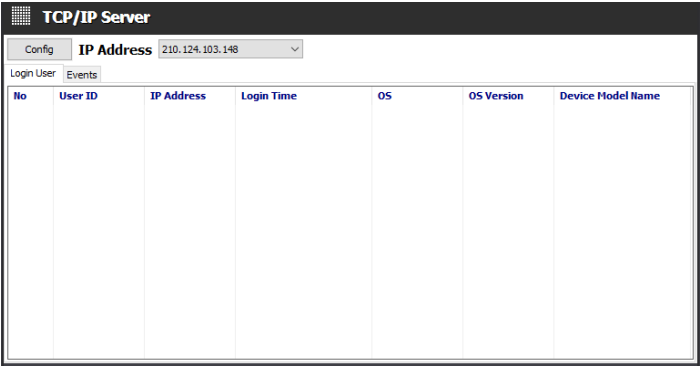
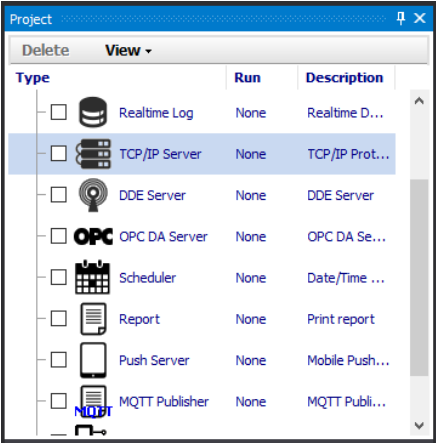
3. Click [Add] button in the “Tag List Settings” and add tags.

| DAQ Tag List | | | | | | | | |
|-----------------|----------------|---------|----------|-----------------|---------|-----|--------|-------------|
| No. | Device | Address | Source | Tag Name | Type | R/W | Unit | Description |
| Standard Tag... | | | | | | | | |
| ✓ | COM1_TX Series | 1 | PV | COM1_1_PV | Analog | R | | |
| ✓ | COM1_TX Series | 1 | SV | COM1_1_SV | Analog | R | | |
| ✓ | COM1_TX Series | 1 | °C Lamp | COM1_1_°C Lamp | Digital | R | | |
| ✓ | COM1_TX Series | 1 | °F Lamp | COM1_1_°F Lamp | Digital | R | | |
| ✓ | COM1_TX Series | 1 | AL1 Lamp | COM1_1_AL1 Lamp | Digital | R | | |
| ✓ | COM1_TX Series | 1 | AL2 Lamp | COM1_1_AL2 Lamp | Digital | R | | |
| ✓ | COM1_TX Series | 2 | °C Lamp | COM1_2_°C Lamp | Digital | R | | |
| ✓ | COM1_TX Series | 2 | °F Lamp | COM1_2_°F Lamp | Digital | R | | |
| ✓ | COM1_TX Series | 2 | OUT Lamp | COM1_2_OUT Lamp | Digital | R | | |
| Advanced Ta... | | | | | | | | |
| | | | | | | OK | Cancel | |

5.6. TCP/IP Server

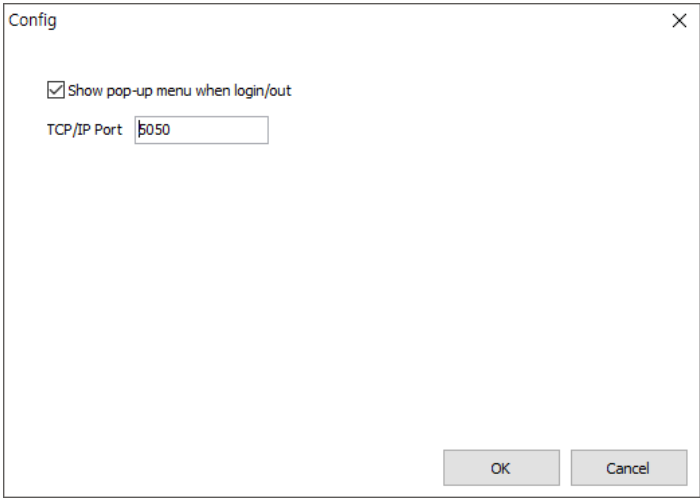
DAQMaster performs as TCP/IP Server and exchanges monitoring data with DAQMaster Client in JSON format. Network data can be displayed in server, allowing data monitoring.

- 1. Double-click [TCP/IP Server] in the “Project” control panel to operate TCP/IP server.



2. Select IP Address item as the currently connected wifi address and click [Config] button to connect the port. (Default: 5050).

Click [Connect] button to operate TCP/IP Server.

A dialog box titled "Config" with a close button (X) in the top right corner. It contains a checked checkbox labeled "Show pop-up menu when login/out". Below this is a label "TCP/IP Port" followed by a text input field containing the value "5050". At the bottom right, there are two buttons: "OK" and "Cancel".

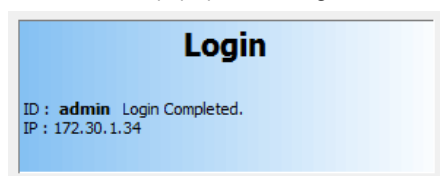
Config

☒ Show pop-up menu when login/out

TCP/IP Port

OK Cancel

3. The ID and password set in the “User Manager” function allow access to the server. The ID connected to the server will pop up as a message as shown below.

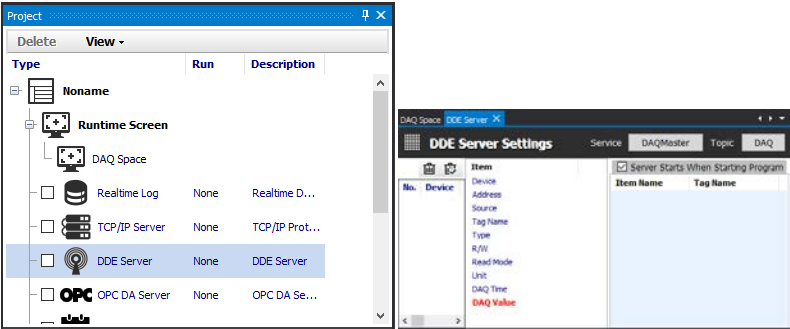


- For more information about the “User Manager”, refer to the **10.2, “User Manager”**
- In “Login User” tab, you can check log-in/log-out time and detailed connection information of the client users. In “Events” tab, you can see every events related to logged communication.

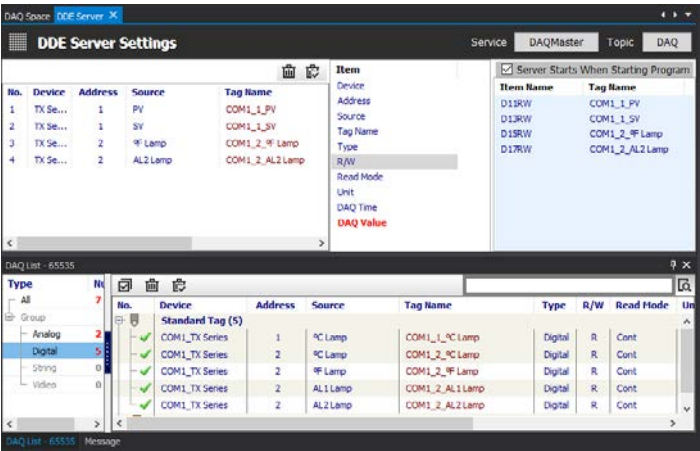
5.7. DDE Server

Performs as a DDE(Dynamic Data Exchange) Server, allowing communication among programs in Microsoft Windows system and provides protocol or format of instructions and message to applications. External programs can exchange data of DAQMaster with each other through DDE Server.

- 1. To open “DDE Server Settings” window appears in the DAQ Space window, double-click [DDE Server] in the “Project” control panel.




- 2. Enter a each name of “Service” and “Topic” (e.g. Service: DAQMaster, Topic: DAQ) and select and drag tags to provide to DDE Client from “DAQ List” control panel.

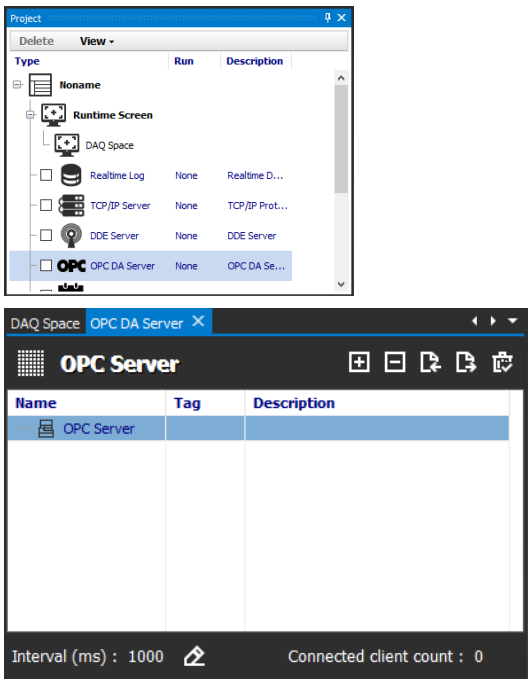



5.8. OPC DA Server

It is Interface method for better compatibility among application programs based on OLE/COM and DCOM technology of Microsoft. It provides industry standard mechanism for communication and data conversion between client and server.

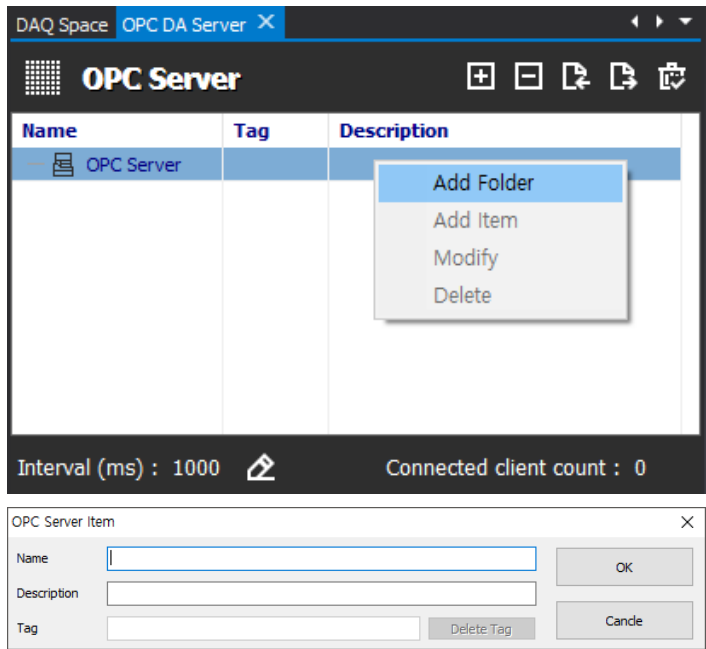
 For more information about the OPC Client, refer to **6.8, “OPC DA Client”**

- 1. Double-click [OPC DA Server] in the “Project” window to open “OPC DA Server” window in the DAQSpace window.

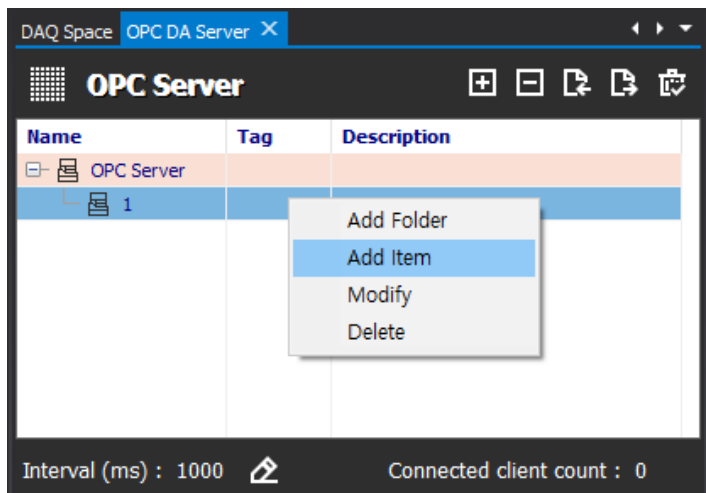


 Top-level folder is only available to add folders.

2. Right-click “OPC Server” and select [Add Folder], then “OPC Server Item” window appears. You can enter name, description and tag.

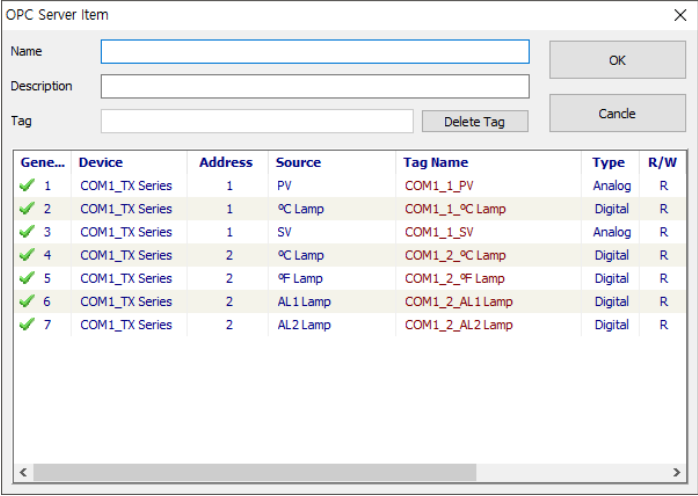


3. To add item (sub folder, I/O tag), right-click the added folder and click [Add item].



4. “OPC Server Item” window appears showing I/O list that is registered to the DAQ List. Double-click the name of I/O list item to register the name.

You can load the desired I/O item by dragging it from the DAQ List. But, two or more I/O items with same name are not registered in an one folder.

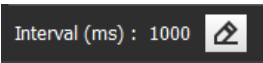
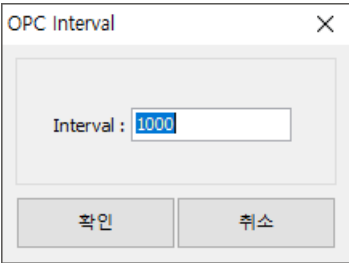


| Gene... | Device | Address | Source | Tag Name | Type | R/W |
|---------|----------------|---------|----------|-----------------|---------|-----|
| ✓ 1 | COM1_TX Series | 1 | PV | COM1_1_PV | Analog | R |
| ✓ 2 | COM1_TX Series | 1 | °C Lamp | COM1_1_°C Lamp | Digital | R |
| ✓ 3 | COM1_TX Series | 1 | SV | COM1_1_SV | Analog | R |
| ✓ 4 | COM1_TX Series | 2 | °C Lamp | COM1_2_°C Lamp | Digital | R |
| ✓ 5 | COM1_TX Series | 2 | °F Lamp | COM1_2_°F Lamp | Digital | R |
| ✓ 6 | COM1_TX Series | 2 | AL1 Lamp | COM1_2_AL1 Lamp | Digital | R |
| ✓ 7 | COM1_TX Series | 2 | AL2 Lamp | COM1_2_AL2 Lamp | Digital | R |

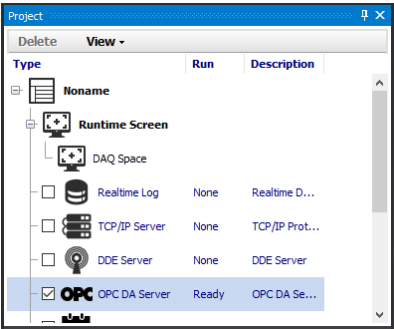


Register the I/O items with same name is available on the folders with different locations.

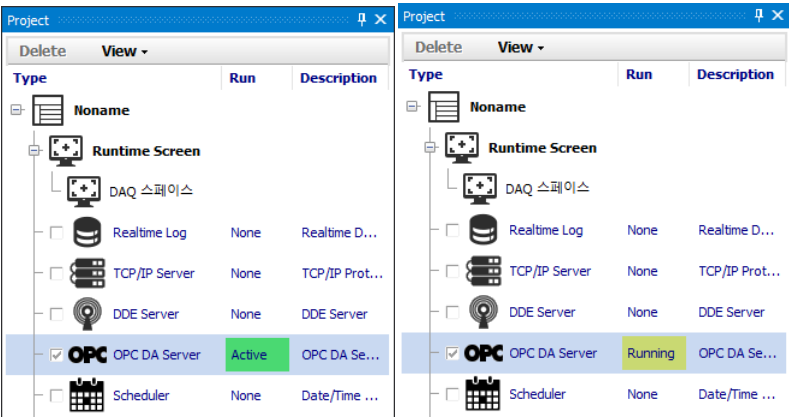
5. To change “OPC Server” running interval, click [Change Interval] button. When “OPC Interval” window pops up, enter a value of interval.

6. Above all, click the checkbox next to the OPC DA Server in the “Project” control panel. And check the phrase of “Run” row is changed to “Ready” to operate OPC Server.



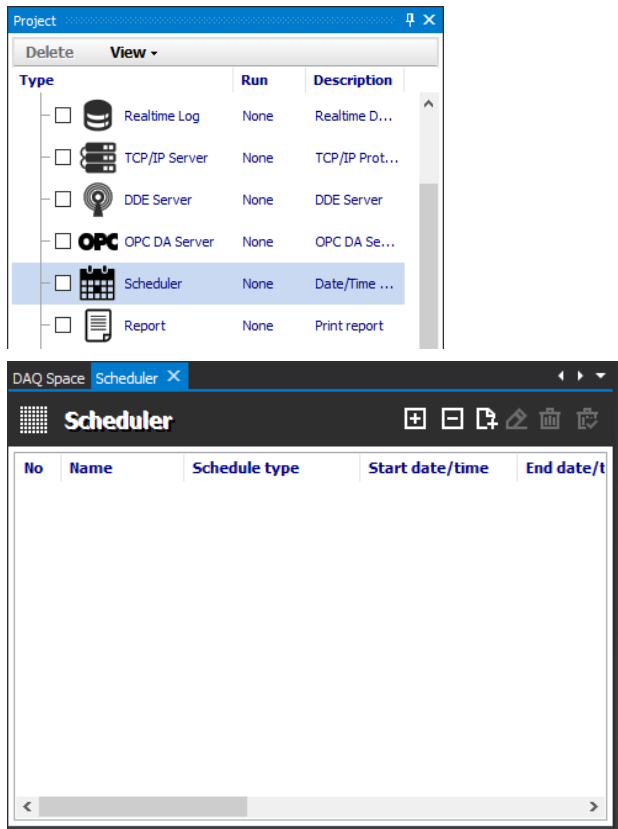
7. Click [Connect] button on the “Project - Run” menu, then “Ready” is changed to “Active” on “Project” control panel. Click [Run] button in the “Project - Run” menu, then “Active” is changed to “Running” on “Project” control panel and OPC Server is activated.




5.9. Scheduler

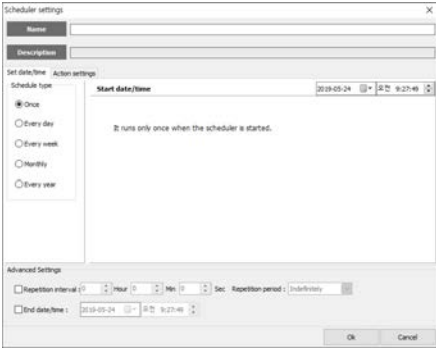
Conducts preset action by user set time (Schedule) automatically.

1. Double-click [Scheduler] in the “Project” control panel, then “Scheduler” window appears in the DAQ Sapce.



2. To add a schedule, click  icon and open the “Scheduler settings” window.

3. Select the date and time to execute an event in the date/time tab.

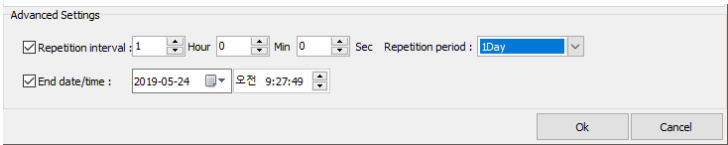


| | |
|----------------------|--|
| Schedule type | Sets the time delay of the execution after the scheduler starts. |
| Once | Run once when the scheduler starts. |
| Every day | Run every day |
| Every week | Run for every week on certain day |
| Monthly | Run for every month on certain day or week. |
| Every year | Run for every certain year. |

Advanced Settings Set repetition interval, repetition period and end date/time.

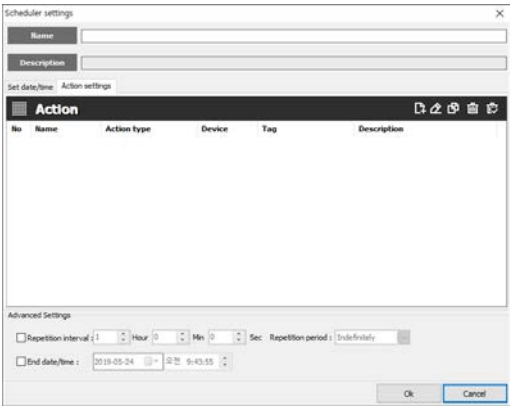

| | |
|----------------------------|--|
| Repetition interval | Sets the repetition interval of the schedule. |
| Repetition period | Sets the repetition period of the schedule to be executed. |
| End date/time | Sets the date/time to end repetition interval of the schedule. |

This is an example of advanced settings. Repetition interval and period is 1 hour and 1 days.



4. Click “Action settings” tab to set the detailed event of schedule. To add an action, click [Add] button and then “Action settings” window appears.

Setting an action related to the tag is only available to the I/O items that is added to the DAQ List. For the method of Adding I/O items to the DAQ List, refer to **8.1, “I/O List”**



Action management



Adds an action. You can set an action name and type.



Modify an action on the list.



Copy an action on the list.

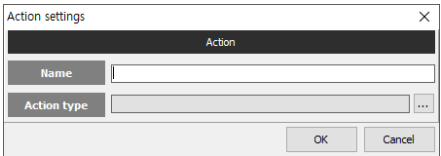



Delete a trigger on the trigger list.



Delete all triggers on the trigger list.

5. Click [...] button to open “Action type” in “Action settings” window.

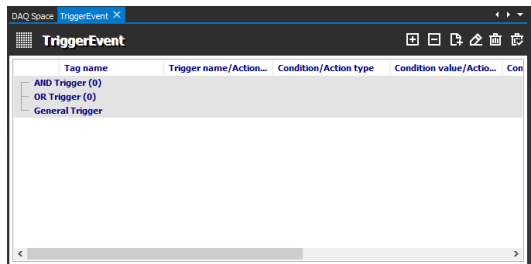
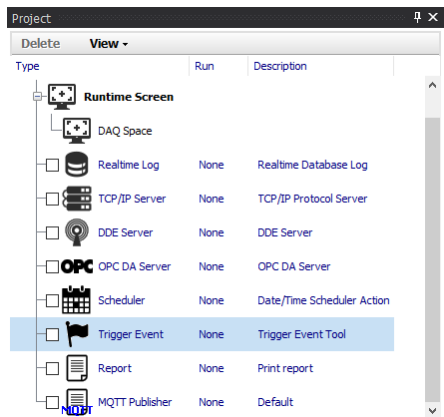


Action type: Refer to the **5.13, “Action”** for the details.

5.10. Trigger Event

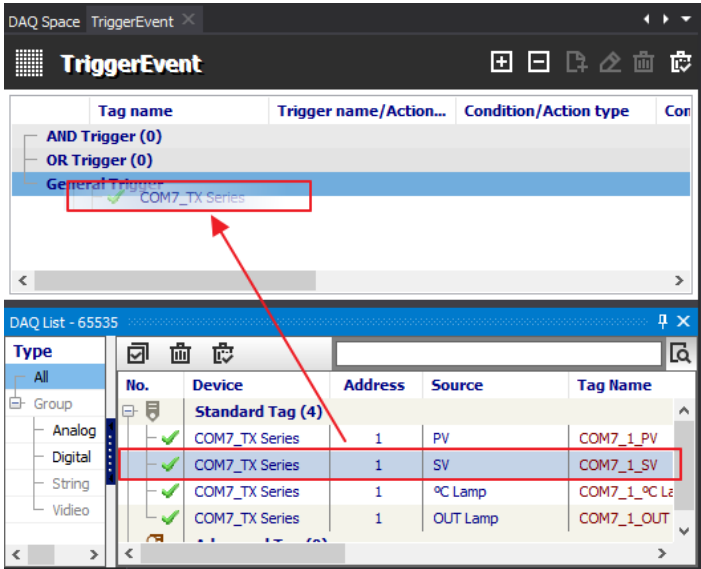
Conducts preset action by user set condition (Trigger) automatically.

- 1. Double click [TriggerEvent] button in “Project” control panel, “TriggerEvent” window is opened on “DAQSpace”.

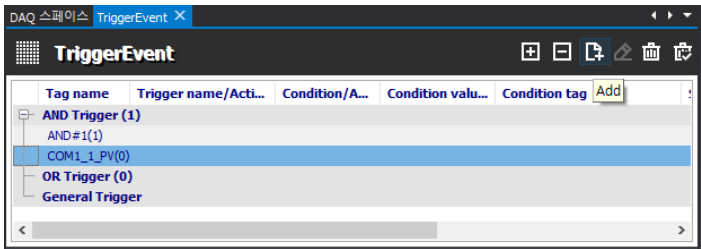


- AND Trigger** If all registered tags meet the criteria, perform an “action”.
- OR Trigger** If at least one of the registered tags meets the criteria, perform an “action”.
- General Trigger** If each single registered tag meets the criteria, perform an “action” independently.

2. Drag I/O tag from “DAQ List” control panel to one of the trigger types (AND, OR, General) on “TriggerEvent” window.



3. Select I/O tag on “TriggerEvent” window and click [Add] button to open “Tag Trigger Event” window.



4. Input the items in “Tag Trigger Event” by referring to below descriptions.
Click the [Add] button in the action window, the ‘Action Settings’ window appears to add an action.

Tag Trigger Event - 1_CH1 LED

1_CH1 LED

Trigger Name

Condition

No Condition

Value

Tag

Static Maintain Time

0 Hour 0 Min 5 Sec

Check Time

9:46:05

Use

9:46:05

Action

No

Name

Action type

Device

Tag





Desc

OK

Cancel

Trigger name

Set the name of trigger.

| | |
|---|--|
| Trigger conditions | Set the conditions of trigger. |
|  | No Condition |
| = | When selected tag value is equal to the set value, trigger starts. |
| < | When selected tag value is less than the set value, trigger starts. |
| > | When selected tag value is greater than the set value, trigger starts. |
| ≤ | When selected tag value is equal or less than the set value, trigger starts. |
| ≥ | When selected tag value is equal or greater than the set value, trigger starts. |
| != | When selected tag value is not equal to the set value, trigger starts. |
|  | When rising edge signal is input, trigger starts. |
|  | When falling edge signal is input, trigger starts. |
|  | When the value is maintained during the set time, trigger starts. |
| Trigger Value/Tag | Enter a value or select a tag to set the trigger. |
| Static Maintain Time | Execute an action after set time. |
| Check Time | When the set trigger condition is satisfied during the set check time, trigger starts. |

Action management



Adds an action. You can set an action name and type.



Modify an action on the list.



Copy an action on the list.



Delete a trigger on the trigger list.



Delete all triggers on the trigger list.

5. Click [...] button to open “Action type” in “Action settings” window.

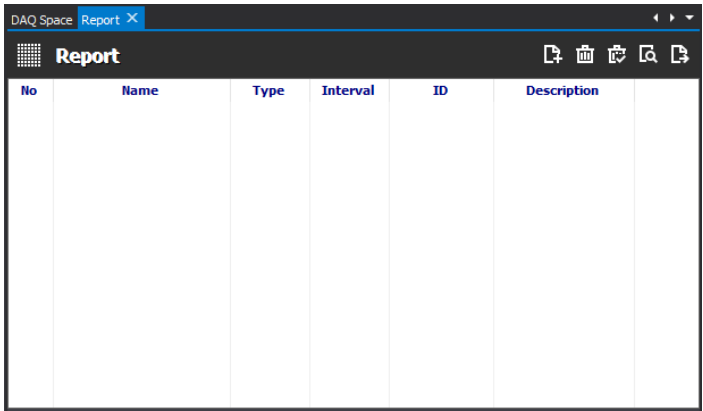
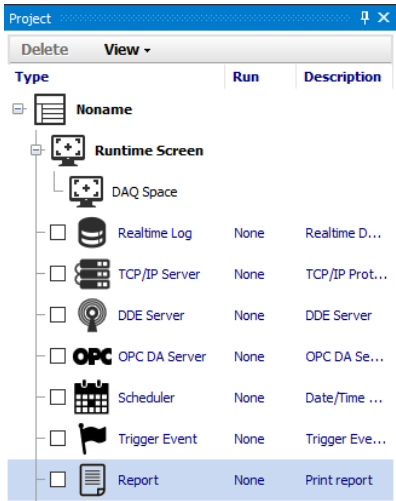


Action type: Refet to the **5.13**, “**Action**” for the details.

5.11. Report

Prints the data that DAQMaster collects based on the template, type and interval through the designated path.

- 1. Double-click “Report” in the “Project” window to open “Report” window and click the [Add] button to open “Report setting” window.



To use “Report export” action, It is needed to set the “Report” function first.

2. Editing template, print out path, type, start and end time, print interval and etc is available. Set the items and click the [Setting] button to open “Database Settings” window.

Report Setting

Name

Description

Template Path

C:\Users\W10118003\Documents\WDAQMaster\Report\...

Print Out Path

C:\Users\W10118003\Documents\WDAQMaster\Report\...

Report Type

☐ Custom

☒ Daily

☐ Weekly

☐ Monthly

☐ Yearly

Export Start Time

Year

Mon

Day

Hour

Min

Sec

Export End Time

Year

Mon

Day

Hour

Min

Sec

Data Interval

1

☐ Day

☒ Hour

☐ Minute

Data Value Type

☐ Current

☒ Agerage

☐ Minimum

☐ Maximum

Data Decimal

☐ 0

☒ 0.0

☐ 0.00

☐ 0.000

Database Setting

Setting

OK

Cancel

3. Enter the details of Database server and click [Next] button. If the connection is successful, Table/field settings appears and downloads table and value of timefield. Select the desired field item and click [OK], then DB setting is completed.

Database Settings

Database Connection Settings

Provider

MySQL

Server

127.0.0.1

Port

3306

User Name

daq

Password

Database

daqmaster

Next

Cancel

Database Settings

Table/Fields Settings

Table

log_data

Time Filed

time

Field

☒ Use All

Use

☒ Use

☒ Use

☒ Use

☒ Use

☒ Use

☐ Unused

Table

log_id

value

value_type

message

unit

time

Field

Integer

Float

Integer

String

String

DateTime

OK

Cancel

4. After the report setting is complete, list is added to the report window as below. You can check the created report by clicking the [View Report] button.

| DAQ Space Report | | | | | |
|------------------|------|-------|----------|----------------|-------------|
| No | Name | Type | Interval | ID | Description |
| 1 | aaa | Daily | 1 Hour | {117224C0-3... | aaa |

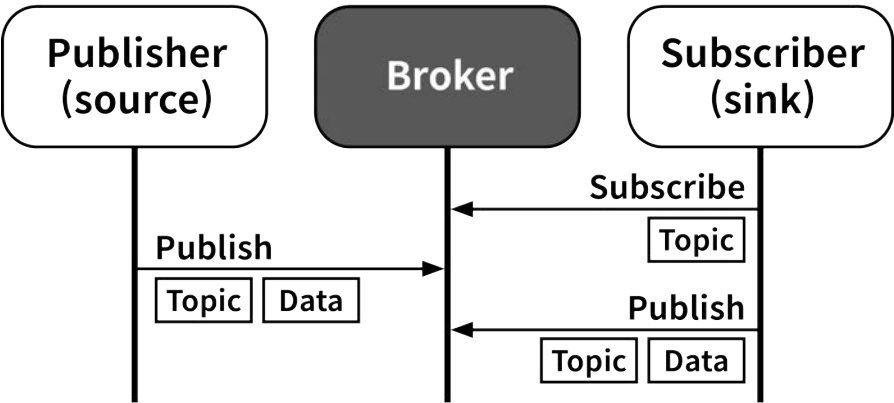
Report

| | | | | Custom Report | | |
|---------------------|-------|-------|-------|---------------|--|--|
| | data1 | data2 | data3 | | | |
| 2018/08/29 10:19:34 | 48.4 | 51.5 | 49.9 | | | |
| 2018/08/29 10:20:00 | 43 | 56.1 | 46.6 | | | |
| 2018/08/29 10:21:00 | 55.3 | 53.3 | 38.6 | | | |
| 2018/08/29 10:22:00 | 58.6 | 53.5 | 52 | | | |
| 2018/08/29 10:23:00 | 57.2 | 50 | 44 | | | |
| 2018/08/29 10:24:00 | 57.7 | 49.5 | 51.7 | | | |
| 2018/08/29 10:25:00 | 50.5 | 48.4 | 49.7 | | | |
| 2018/08/29 10:26:00 | 53.5 | 50.5 | 46.1 | | | |
| 2018/08/29 10:27:00 | 47 | 56.3 | 50.7 | | | |
| 2018/08/29 10:28:00 | 46 | 47.4 | 53.3 | | | |
| 2018/08/29 10:29:00 | 47 | 49.5 | 49.4 | | | |
| 2018/08/29 10:30:00 | 47.4 | 49 | 47.4 | | | |
| 2018/08/29 10:31:00 | 57.1 | 51.6 | 44.6 | | | |
| 2018/08/29 10:32:00 | 46.8 | 49.5 | 52 | | | |
| 2018/08/29 10:33:00 | 46.4 | 54 | 52 | | | |
| 2018/08/29 10:34:00 | 51.6 | 45.8 | 52 | | | |
| 2018/08/29 10:35:00 | 53.8 | 49 | 50.2 | | | |
| 2018/08/29 10:36:00 | 54.8 | 53.1 | 54 | | | |
| 2018/08/29 10:37:00 | 48.9 | 48 | 52.8 | | | |
| 2018/08/29 10:38:00 | 54.5 | 49 | 54.6 | | | |
| 2018/08/29 10:39:00 | 53.5 | 49 | 53.3 | | | |
| 2018/08/29 10:40:00 | 52.6 | 50.3 | 49.7 | | | |
| 2018/08/29 10:41:00 | 44.3 | 55.7 | 48.8 | | | |
| 2018/08/29 10:42:00 | 50.2 | 53.3 | 52.2 | | | |
| 2018/08/29 10:43:00 | 54.1 | 51.4 | 51.4 | | | |
| 2018/08/29 10:44:00 | 54.6 | 52.5 | 51.1 | | | |
| 2018/08/29 10:45:00 | 50.3 | 60.4 | 50.7 | | | |
| 2018/08/29 10:46:00 | 53.8 | 52.8 | 55.7 | | | |
| 2018/08/29 10:47:00 | 48.5 | 50.5 | 53.3 | | | |
| 2018/08/29 10:48:00 | 54.6 | 55 | 46.2 | | | |
| 2018/08/29 10:49:00 | 52.6 | 47.2 | 46 | | | |
| 2018/08/29 10:50:00 | 59.7 | 54.8 | 48 | | | |

5.12. MQTT

MQTT is a protocol designed to enable communication with minimal power and packet in consideration of limited communication environments, optimized for M2M (Machine To Machine) and Internet of Things (IoT).

MQTT consists of a “Broker, Publisher, Subscriber” structure, not a “client - server” structure such as HTTP, TCP, etc.



“Publisher” publishes, “Subscribers” subscribe to “Topic”, and “Broker” relay them. This is useful for 1:N communication because multiple subscribers can subscribe to a single Topic.

5.12.1. Mosquitto (MQTT Server/Broker)

Mosquitto is an MQTT open-source message broker program that is light and supports most essential functions.

1. Install and test

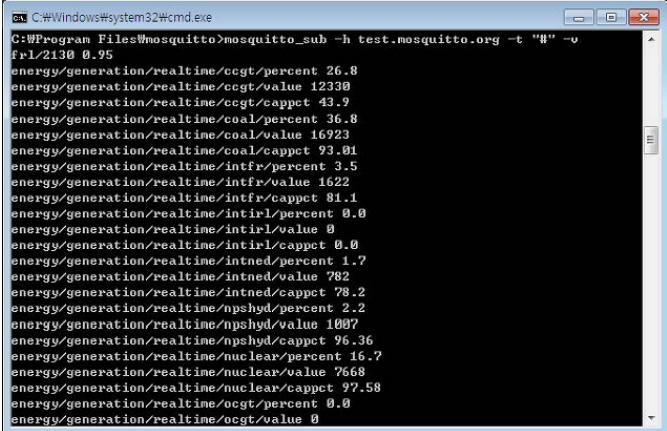
1. Download and install the installation file from the Mosquitto manufacturer's website (<http://mosquitto.org>).
2. Check the executable files below in the installation folder.

| | |
|--------------------------|--------------------------------|
| mosquitto.exe | Mosquitto Server/Broker |
| mosquitto_sub.exe | Mosquitto client for subscribe |
| mosquitto_put.exe | Mosquitto client for publish |

3. Run the "Command Prompt" and navigate to the path where the program is installed, enter the command below and check the Topic output.

Command `mosquitto_sub -h test.mosquitto.org -t "#" -v`

Topic print

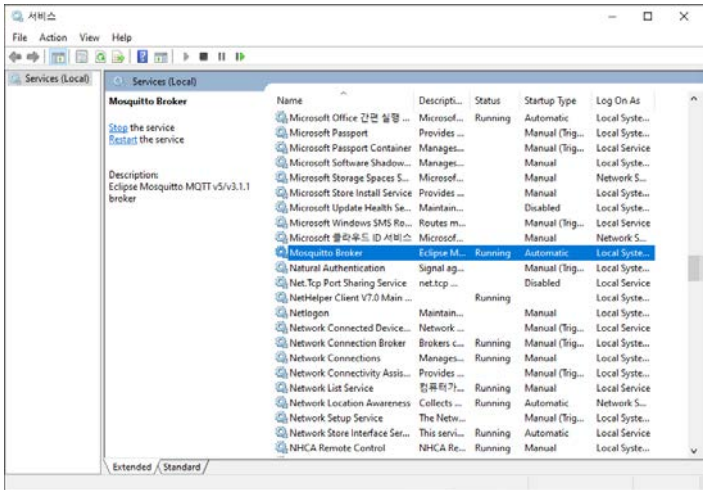


```
C:\Windows\system32\cmd.exe
C:\WProgram Files\Mosquitto>mosquitto_sub -h test.mosquitto.org -t "#" -v
fr1/2130 0.95
energy/generation/realtime/ccgt/percent 26.8
energy/generation/realtime/ccgt/value 12330
energy/generation/realtime/ccgt/cappct 43.9
energy/generation/realtime/coal/percent 36.8
energy/generation/realtime/coal/value 16923
energy/generation/realtime/coal/cappct 93.01
energy/generation/realtime/intfr/percent 3.5
energy/generation/realtime/intfr/value 1622
energy/generation/realtime/intfr/cappct 81.1
energy/generation/realtime/intfrl/percent 0.0
energy/generation/realtime/intfrl/value 0
energy/generation/realtime/intfrl/cappct 0.0
energy/generation/realtime/intnrd/percent 1.7
energy/generation/realtime/intnrd/value 782
energy/generation/realtime/intnrd/cappct 78.2
energy/generation/realtime/npshyd/percent 2.2
energy/generation/realtime/npshyd/value 1007
energy/generation/realtime/npshyd/cappct 96.36
energy/generation/realtime/nuclear/percent 16.7
energy/generation/realtime/nuclear/value 7668
energy/generation/realtime/nuclear/cappct 97.58
energy/generation/realtime/ccgt/percent 0.0
energy/generation/realtime/ccgt/value 0
```

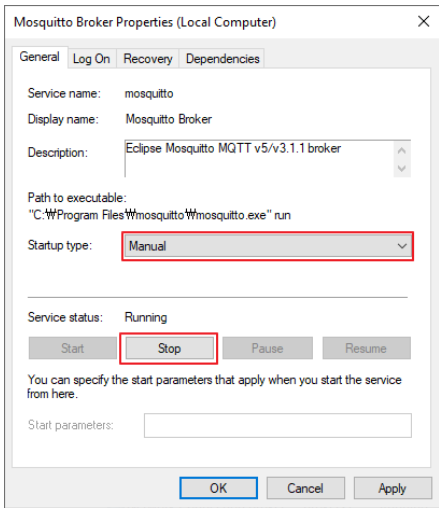
2. Setting

When installing the Windows version, the Mosquito service runs automatically at boot time. If the service is in operation, manual server will not work.

- 1. Double-click “Mosquito Broker” in “Control Panel - Administrative Tools - Services” to open “Mosquito Broker Property” window



- 2. In general tap, change the value of start item “Manual” and “Service status” to “Stop”.

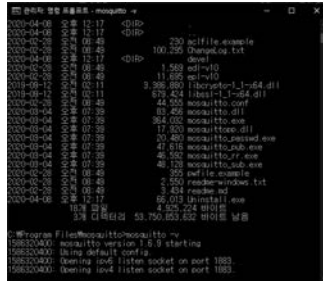


3. Run

Run the “command prompt” in administrator mode and move to the installation folder to input the commands below.

Server (mosquito)

- Command: `mosquitto -v`
- Running screen



Publish (mosquitto_pub)

- ```
· Command: mosquitto_pub -h localhost -i testPub -t debug
-m "TESTNG"
```

- **Command**

- h Specify sever
- i Specify Client ID (omitable)
- t Specify subscription topic
- m Specify publishing message

### Subscribe (mosquitto\_sub)


- Command: `mosquitto_sub -h localhost -i testSub -t /DAQMaster`

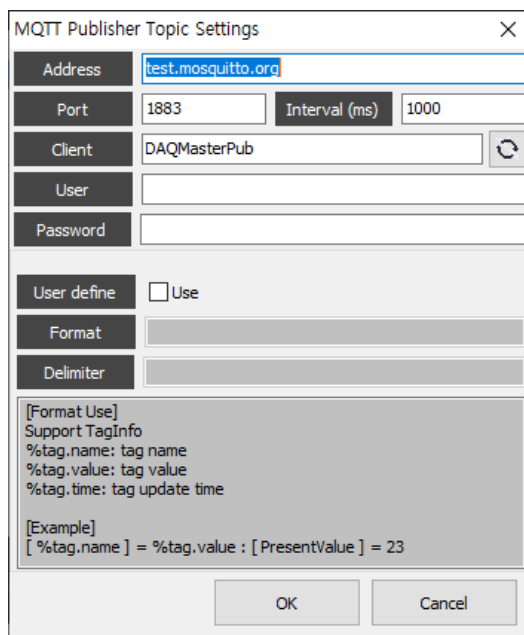


For more detailed instructions and instructions, refer to the manufacturer's website (<http://mosquitto.org>).

### 5.12.2. MQTT Publisher

1. Check the MQTT Publisher entry in the “Project” control panel and double-click to launch the “MQTT Publisher” and click the [Settings] button at the top to open the “MQTT Publisher Topic Settings” window.

| MQTT Publisher                                                                                                                                            |     |             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-------------|
| <a href="#">Settings</a> <a href="#">Expand All</a> <a href="#">Collapse All</a> <a href="#">Import</a> <a href="#">Export</a> <a href="#">Delete All</a> |     |             |
| Topic Name                                                                                                                                                | Tag | Description |
|  MQTT Publisher                                                          |     |             |



The dialog box is titled "MQTT Publisher Topic Settings" and contains the following fields and sections:

- Address:** A text field containing "test.mosquitto.org".
- Port:** A text field containing "1883".
- Interval (ms):** A text field containing "1000".
- Client:** A text field containing "DAQMasterPub" with a refresh button to its right.
- User:** An empty text field.
- Password:** An empty text field.
- User define:** A section with a checkbox labeled "Use" which is currently unchecked.
- Format:** An empty text field.
- Delimiter:** An empty text field.
- Format Help:** A scrollable area containing the following text:
 

```
[Format Use]
Support TagInfo
%tag.name: tag name
%tag.value: tag value
%tag.time: tag update time

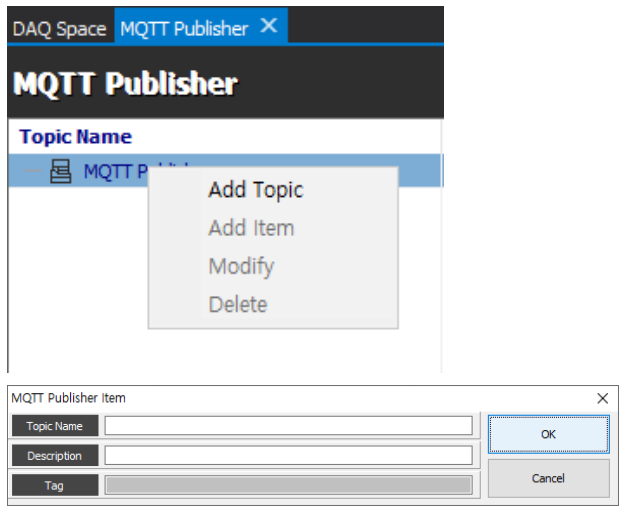
[Example]
[%tag.name] = %tag.value : [PresentValue] = 23
```
- Buttons:** "OK" and "Cancel" buttons at the bottom right.

- Address**            Address of broker server
- Port**             Port of broker server
- Interval**        Communication interval
- User**             Input the user ID that set on the broker server
- Password**        Input the user password that set on the broker server
- User define**     Uses user-specified data formats and separator.

- **Default**

- tag name = tag.name
  - tag value = tag.value
  - tag time = tag.time
  - separator = %

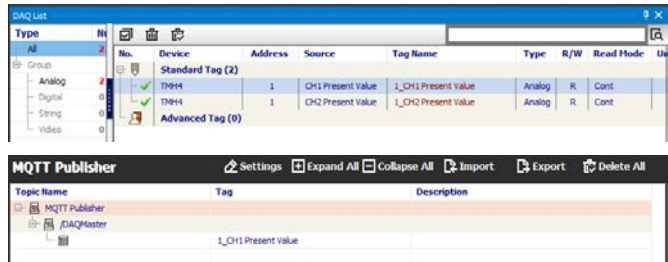
2. Right-click the topic item in the “MQTT Publisher” settings window, select [Add Topic] to open the “MQTT Publisher Item” settings window, create each item, and click the [OK] button.



**Topic name**      Name of Topic to publish

**Description**      Description of Topic to publish

**Tag**      Select a tag to register with Topic.  
An added tag can be registered to the “DAQ List” by dragging to the topic time in the “MQTT Publisher” window.






3. Click the [Connect] button on the Project - Run menu to try to connect to the broker server and display the results at the bottom. After connecting, clicking the [Run] button initiates monitoring and sends the value of the registered tag to the server.

DAQ Space MQTT Publisher X

**MQTT Publisher** Settings Expand All

| Topic Name     | Tag     |
|----------------|---------|
| MQTT Publisher |         |
| /DAQMster      |         |
|                | 1_data1 |

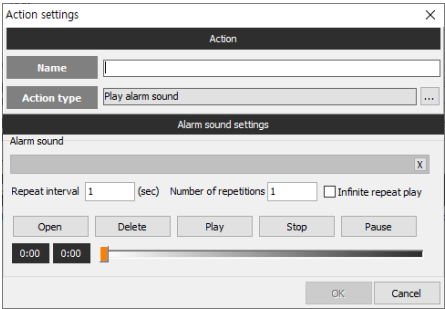
The client is connected. Host : test.mosquitto.org, Port : 1883

 Refer to **6.6, “MQTT Subscribe”** for the details about MQTT Subscribe.

# 5.13. Action

This function is executed when the conditions set in “Trigger Event” or “Scheduler” is met.

|                                |                                                                                                                                |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Start log</b>               | starts the log function.                                                                                                       |
| <b>End log</b>                 | stops the log function.                                                                                                        |
| <b>Send a telegram message</b> | sends a telegram message. For more information about the telegram settings, refer to <b>5.13.1, “Telegram message setting”</b> |
| <b>Play alarm sound</b>        | plays the selected sound file. Select [Open] button to choose desired sound file and click [OK] to apply it.                   |



**Tag Out**

Outputs user-defined value to the specified tag in the “Tag Out” Settings.

Click [Tag list] and select the desired tag. And enter the value to the “Value” and click [OK] to apply it.

×

Action settings

Action

Name

Action type

Tag Out

Tag Out settings

Tag

Device

TagName

Description

Value

0

Tag list

OK

Cancel

**Tag error**

Outputs the user-defined tag error to the specified tag.

Click [Tag list] and select the desired tag. And click [OK] to apply it.

×

Action settings

Action

Name

Action type

Tag Error

Tag error setting

Tag

Device

TagName

Description

Tag list

OK

Cancel

**Tag alarm**

prints the user-defined tag alarm to the specified tag.  
Click [Tag list] and select the desired tag. And click [OK] to apply it

The screenshot shows the 'Action settings' dialog box with the 'Action' tab selected. The 'Action type' is set to 'Tag Alarm'. Under the 'Tag alarm setting' section, there are input fields for 'Device', 'TagName', and 'Description'. A 'Tag list' button is located to the right of these fields. At the bottom right, there are 'OK' and 'Cancel' buttons.

**Send SMS text message**

Sends a telegram message.  
For more information about the telegram settings, refer to **5.13.2, “SMS text message setting”**.

**Send email message**

Sends a telegram message.  
For more information about the telegram settings, refer to **5.13.3, “Email message setting”**.

**Export csv file**

Saves tag information to csv file in the selected path.

The screenshot shows the 'Action settings' dialog box with the 'Action' tab selected. The 'Action type' is set to 'Export csv file'. Under the 'Setting csv file' section, there is a 'File info' sub-section with input fields for 'File name', 'File export path', and 'Message'. Below this is a 'Tag settings' section with input fields for 'Device', 'TagName', and 'Description', and a 'Tag list' button. At the bottom right, there are 'OK' and 'Cancel' buttons.

**Report export**

Export the one of selected report file which is set by “Report” function.  
For more information about the “Report”, refer to 5.11, “Report”.

Action settings

Action

Name

Action type

Report export

...

Report settings

| No | Name | Description |
|----|------|-------------|
| 1  | aaa  | aaa         |
| 2  | bbb  | bbb         |
| 3  | ccc  | ccc         |

Report

GUID

Name

tion

OK

Cancel

**Realtime log**

Runs the real time log which have already set.  
For the information about realtime log, refer to 5.5, “Realtime log”.  
Select realtime log name on the list and click [OK] button.

Action settings

Action

Name

Action type

Realtime Log

...

RealtimeLog Setting

| No | Name | Description |
|----|------|-------------|
|----|------|-------------|

Report

GUID

Name

☐ Start log

OK

Cancel

**Parameter write**

Writes a preset value for the specified parameter.  
In the “Parameter” window, select the desired parameter, enter the channel and the desired value to the “Parameter Value Setting” window, and click the [OK] button.

The screenshot shows the 'Action settings' dialog box with the 'Action' tab selected. The 'Action type' is set to 'Parameter Write'. Below this, the 'Parameter Write Setting' section is active. It features a tree view on the left under the heading 'Parameter', showing a hierarchy: '1:RS-232' (COM5), 'ModBus' (RTU, 3, 1), 'TMHC' (Autonics), '1' (TMHC-22LE-), and '2:DDE Cl...' (Miscellaneous). The '1-1' item is selected. To the right of the tree is a 'DDE Client >> 1' panel with 'General' and 'DDE Client' sub-sections. The 'DDE Client' section has a 'Settings...' button. Below this is a 'DAQ Settings' section with a 'DAQ Repeat Interval' set to '500 msec'. At the bottom, the 'Parameter Value Setting' section has 'Channel' and 'Service' dropdown menus, and 'OK' and 'Cancel' buttons.

**Reset value**

Initializes the selected tag value.  
Click the [Tag list] button to select a tag and click the [OK] button.

The screenshot shows the 'Action settings' dialog box with the 'Action' tab selected. The 'Action type' is set to 'Reset value'. Below this, the 'Tag error setting' section is active. It contains a 'Tag' section with 'Device', 'TagName', and 'Description' text boxes. To the right of these text boxes is a 'Tag list' button. At the bottom, there are 'OK' and 'Cancel' buttons.

### 5.13.1. Telegram message setting

Telegram is a nonprofit open source internet messenger, available in diverse operating system such as Android, iOS, Window, MAC and Linux. It provides users with source code, encouraging them to develop desired functions with the messenger.

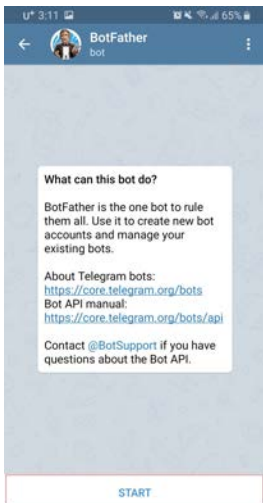
By the Bot, virtual conversation contact, when tag value matches the set condition, Telegram message is sent to the designated person. (Internet connection is required.).

By telegram functions, you can share the message to the other groups and search the messages. Please refer to the telegram usage. (Android and iOS system have an identical setting process. This manual explains with Android)

1. Search “Telegram” at the Android Play store and download the application.
2. You have to create and register a virtual robot called Bot to receive messages from DAQMaster. In the telegram (at the upper the magnifying glass icon), search and select @Botfather.



3. Click [Start] button of the display as below.



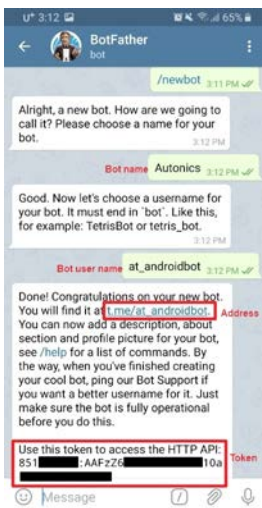
4. Enter '/newbot' in the chat window.

According to the BotFather message, name a Bot name, Bot user name (must end with “bot” or “Bot”). User name is a name that identifies at the telegram, if the other named the designated name already, it is not used in duplicate.

(E.g. Bot name: Autonics, user name:at\_androidbot)

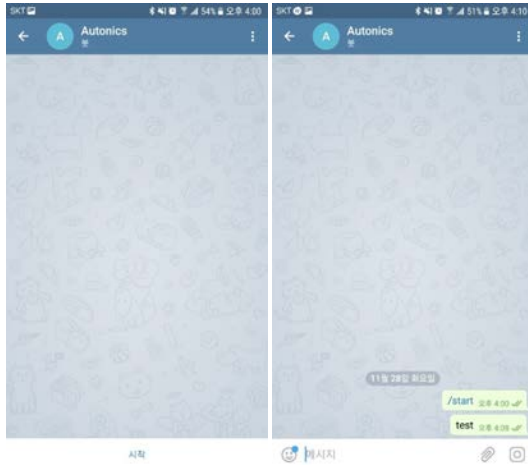


5. Then you are provided with address to chat with the created Bot and token. Token is as same function as the serial number or register code, so it is essential to find chat groups and send messages. Click the given address to join chat with the Bot.

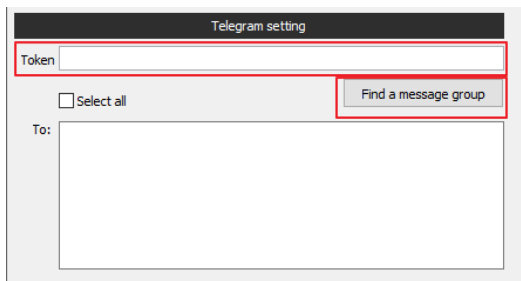




6. Click [Start] at the button of the display. One or two times of message are necessary prior to receiving message from your Bot. If you do not send the messages, the group may not be searched.



7. In the DAQMaster, double-click “Send a telegram message” in action type to open “Telegram setting” window. Enter the token issued in 5th step to the “Token” item and click [Find a message groups] button.



8. Check the desired receiver, select chat to use and choose alarm message format among “Time”, “Tag Name”, “Present Value” and “Screen Image”.

After entering test message in the bottom blank, click [Test] button.

Tag settings

Tag

Device

TagName

Description

Tag list

Message settings

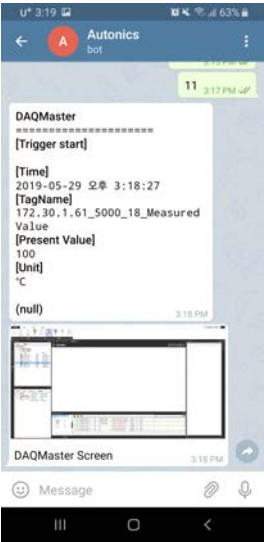
☐Time ☐Tag Name ☐Present Va ☐Screen Image

<strong>DAQMaster </strong>  
<pre>=====</pre>

Send a telegram(test)

OKCancel

9. Message is delivered to Telegram.



### 5.13.2. SMS text message setting

Send an SMS text message to the designated address with tag information

1. Click [Set] button in the “Set caller information” item and edit SMS transmission medium, SMS ID and SMS Password and then click [connect] button. Edit caller’s phone number at the “Caller’s mobile number” and click [OK] to save it.

Action settings

Action

Name

Action type

Send SMS text message

...

Set caller information

Set

Add

Modify

Delete

| No. | Recipient name | Recipient's mobile num... | Output text message |
|-----|----------------|---------------------------|---------------------|
|     |                |                           |                     |

Send text messages(test)

OK

Cancel

Set caller information

Caller Information

SMS transmission medium

Web(neona ul)

SMS ID

SMS Password

connect

Number of text messages

0

Status information

Caller's mobile number

OK

Cancel

5.13. Action 95

2. Click [Add] button in the “Set caller information” item and open “Set recipient information” window. Click [Tag list] button to select the desired tag. And select message type to send. (Time, Tag Name, Present Value)

Action settings

Action

Name

Action type

Send SMS text message

...

Set caller information

Set

Add

Modify

Delete

| No. | Recipient name | Recipient's mobile num... | Output text message |
|-----|----------------|---------------------------|---------------------|
|     |                |                           |                     |

Send text messages(test)

OK

Cancel

Set recipient information

Recipient information

Recipient name

Recipient's mobile number

Tag settings

Tag

Device

TagName

Description

Tag list

Message settings

☐ Time

☐ Tag Name

☐ Present Value

Number of text messages

0

OK

Cancel

3. Click [Send text messages (test)] to check whether the message is properly sent or not.

Action settings

Action

Name

Action type

Send SMS text message

...

Set caller information

Set

Add

Modify

Delete

| No. | Recipient name | Recipient's mobile num... | Output text message       |
|-----|----------------|---------------------------|---------------------------|
| 1   | aaa            | 01012345678               | [Time] 2020-05-08 13:3... |
|     |                |                           |                           |
|     |                |                           |                           |
|     |                |                           |                           |

Send text messages(test)

OK

Cancel



The cost is at the caller's expense.  
Only short messages can be sent and only one destination can be set.  
Depending on the text message service provider, overseas receiving may be restricted.  
For more information, contact the SMS text service provider.

### 5.13.3. Email message setting

Send an email to the designated address with tag information.

- 1. Enter the “Login information” and “Received information” in the “Email settings” item.

Email settings

Login information

Host

Port

ID

Password

Received information

Recipient mail address

Subject

- 2. Click [Tag list] to select the desired tag and select Message type (Time, Tag Name, Present Value) and Attachments.

Tag settings

Tag

Device

TagName

Description

Tag list

Message settings

☐ Time

☐ Tag Name

☐ Present Value

3. Click [Send email (test)] to check whether the message is properly sent or not.

Message settings

☐ Time ☐ Tag Name ☐ Present Value

Attachments

Send email(test)

OK

Cancel

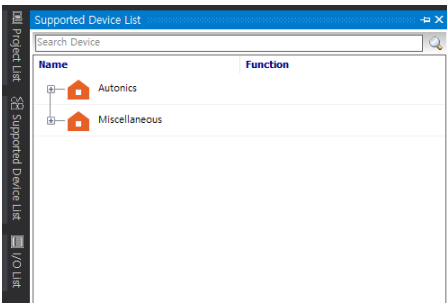




# 6. Supported Device

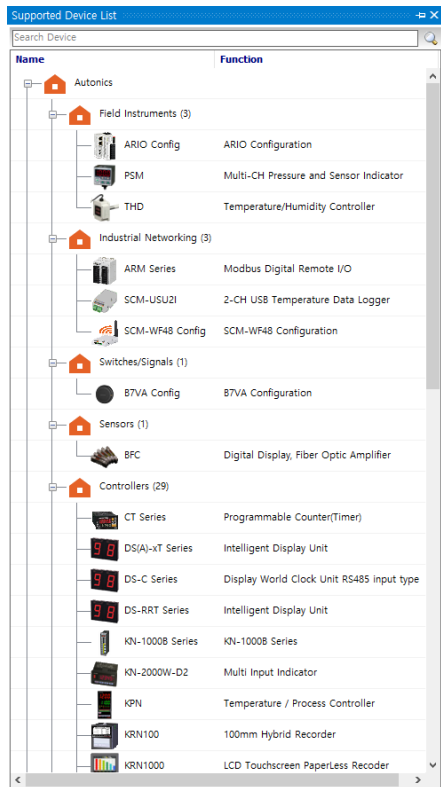
## 6.1. Supported Device List

“Supported Device List” control panel shows a list of devices supported by DAQMaster. You can double-click or right-click a supported device to connect and add it to My System. Supported device list will be updated continuously.

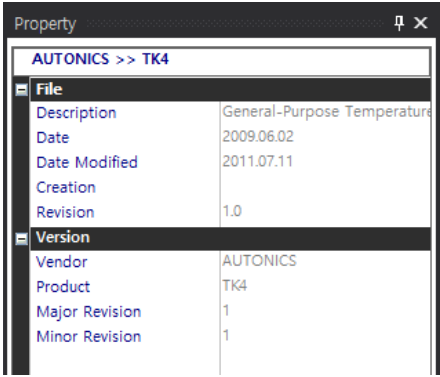


# 6.1.1. Add Device

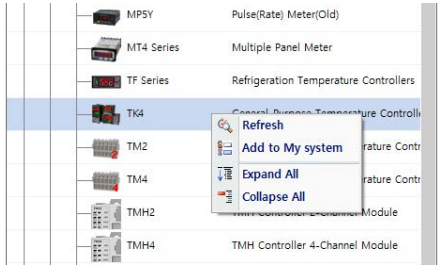
1. If you double-click a name of series/model or click the device expand button [+] in the “Supported Device List”, supported device list will appear.



- When selecting a device, you can see the basic information about the device in the “Property” control panel as follows.

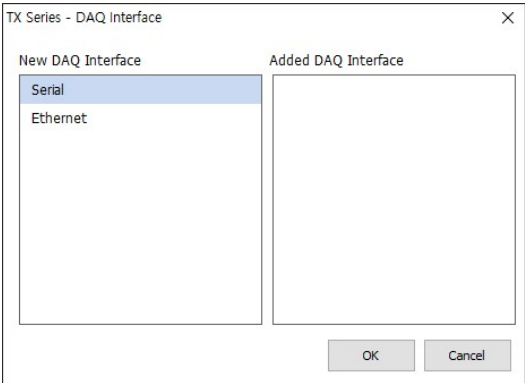


- Select the series/device name (TX Series) you want to add to “My System”. Double-click or right-click the selected device and click [Add to My System] to add the device.

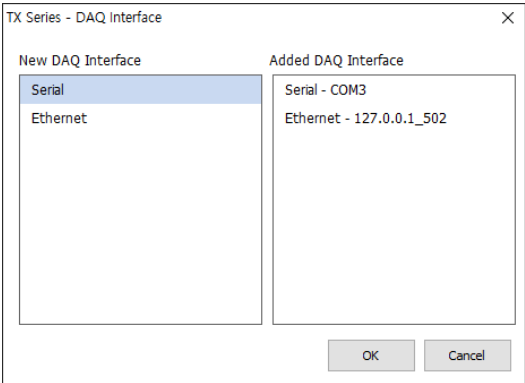


|                         |                                                                                    |
|-------------------------|------------------------------------------------------------------------------------|
| <b>Refresh</b>          | Updates “Supported Device List” control panel when device files (*.dev) are added. |
| <b>Add to my system</b> | Adds device to My System to communicate.                                           |
| <b>Expand all</b>       | Shows the list of all supported devices.                                           |
| <b>Collapse all</b>     | Hides the list of all supported devices.                                           |

4. Select Serial or Ethernet on the new “DAQ interface” and click **OK** or double-click the interface. You can modify the configuration of the added Serial or Ethernet in properties.

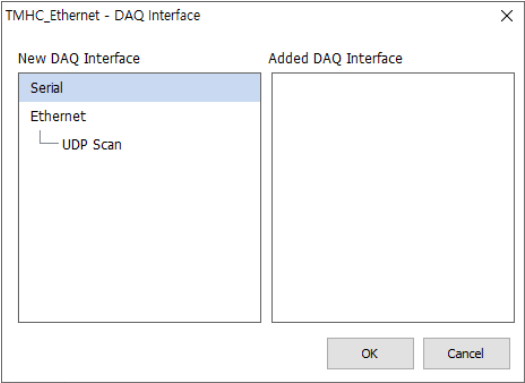


5. If there is another devices added earlier, you can see added “Protocol-Port Name” on the Added DAQ Interface.

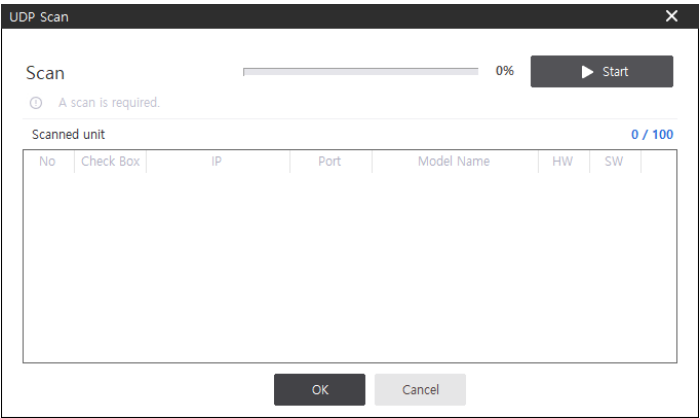


### 6.1.2. UDP Scan

1. Devices that support UDP scanning can select 'UDP Scan' in the interface selection window.



2. Select UDP Scan and click OK button or double-click, "UDP Scan" window pops up.



3. Press the start button to proceed with UDP scanning.

UDP Scan

Scan

100%

▶ Start

○ A scan is required.

Scanned unit

1/100

| No | Check Box                           | IP           | Port | Model Name | HW  | SW  |
|----|-------------------------------------|--------------|------|------------|-----|-----|
| 1  | <input checked="" type="checkbox"/> | 192.168.0.15 | 502  | TMHC-22EE  | 102 | 301 |

OK

Cancel

4. Select the scanned unit to add the device to “My System”.

My System

Add

Del

Change

View ▾

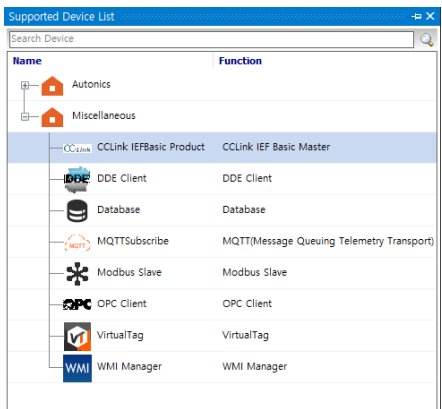
| Name                                                    | Address          | Status     |
|---------------------------------------------------------|------------------|------------|
| <input checked="" type="checkbox"/> 1:Ethernet          | 192.168.0.15_502 | Disconnect |
| <input checked="" type="checkbox"/> ModBus Master       | ModBus TCP, 3, 1 | Disconnect |
| <input checked="" type="checkbox"/> <div>TMHC_Eth</div> | Autonics         | (1) EA     |
| <input checked="" type="checkbox"/> 1                   |                  | Disconnect |

# 6.2. Miscellaneous (User-defined device)

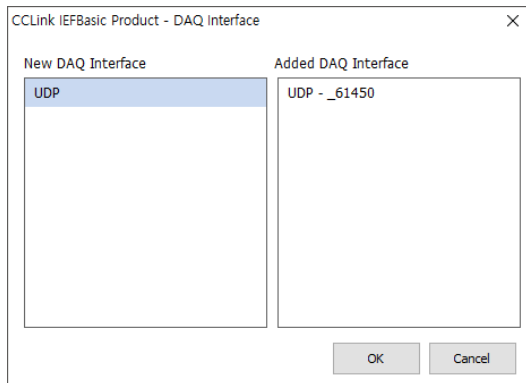
You can add or edit the miscellaneous devices which are not supported at DAQMaster.

## 6.2.1. Add User-defined device

1. Double-click the device type of “Miscellaneous” in “Support Device List” control panel and add it to “My System”.



- When “DAQ Interface” window pops up, select the currently used interface and click **OK**.  
(If there is no selectable option, this step is skipped)



- When selecting the device name in “My System” control panel, [Add] button is enabled. To add a unit (address), click the **Add** button in upper
- Select each item in “My System” control panel to check and edit the detailed information in “Property” control panel.



## 6.3. CCLink IEF Basic Product

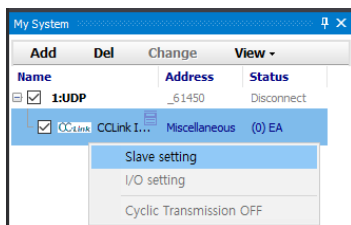
DAQMaster performs as a master of CC-Link Field Basic device, supporting I/O monitoring and the function outputs the tag.



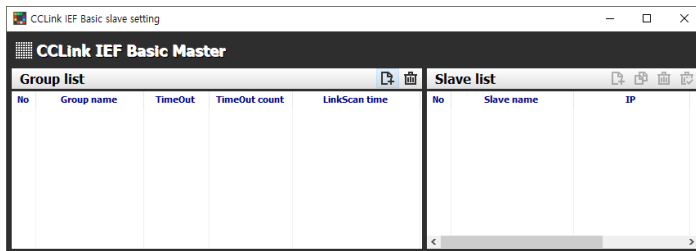
CC-Link IE Field Basic Device: HMI, I/O Unit, Inverter of Mitsubishi Electric.

### 6.3.1. Add Slave Device

1. Add the “CCLink IEF Basic Product” to “My System” control panel and right-click it. Click the **Slave setting** button to open “CCLink IEF Basic slave setting” window.



2. When “CCLink IEF Basic slave setting” window pops up, click **Add** of “Group list” to add a group.



3. In “Group setting” window, enter “Name”, “TimeOut”, “TimeOut count” and “LinkScan Time” (check a checkbox to use) to add a group.

Group setting

Name: Group No. 1

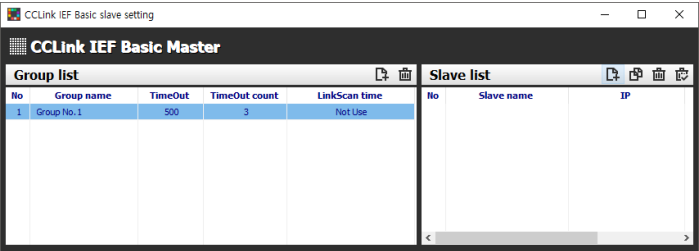
TimeOut: 500 (100 to 65535 ms)

TimeOut count: 3

☐ LinkScan time: 0 (1 to 2000 ms)

Ok Cancel

4. In “Slave list” window, click **Add** to add a slave device.



5. When “Slave setting” window pops up, enter “Name”, “IP address” and “Occupied number” and click **OK** to add a slave device.

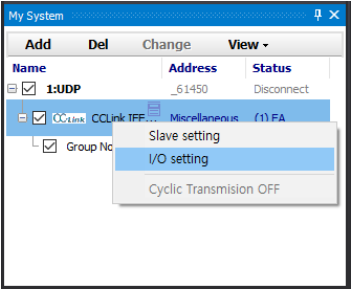
The 'Slave setting' dialog box is shown with the following fields and values:

- Name:** slave No. 1
- IP address:** 192 . 168 . 0 . 1
- Port:** 61450
- Occupied number:** 1 (selected from a dropdown menu)

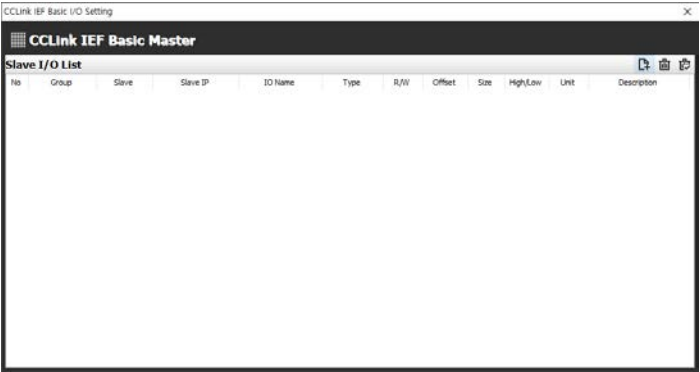
At the bottom of the dialog are 'Ok' and 'Cancel' buttons.

### 6.3.2. Add Slave I/O

1. After adding “IEF Basic Product” to “My System” control panel and add “Slave device”, right-click the added CCLink IEF Basic Product and select “I/O setting”. Then, “CCLink IEF Basic I/O Setting” window pops up.



2. Select an item of “Slave I/O List” and click **Add** to add, then “Add Slave IO” window pops up.



3. Check the descriptions of the items and fill out the items in this window. Click **Add** to add a slave I/O.

Group number

1

Slave IP

Name

READ/WRITE

READ

Data type

RWr

Offset

Size

2

High/Low

Low

Unit

Description

Add

☐ I/O Optional input

RX/RX Data(Occupied number:0)

0x0f

0xf0

RWw/RWw Data(Occupied number:0)

+0

+1

+2

+3

+4

+5

+6

+7

|                    |                                                                                                 |
|--------------------|-------------------------------------------------------------------------------------------------|
| Group number       | Select group number.                                                                            |
| Slave IP           | Select the added slave IP address.                                                              |
| Name               | Enter I/O tag name.                                                                             |
| READ/WRITE         | Select I/O type either READ or WRITE                                                            |
| Data type          | RWr / RWw: Word type (memory allocation: 64Byte),<br>RX/RX: Bit type (memory allocation: 8Byte) |
| Offset             | I/O Offset                                                                                      |
| Size               | Size × 1Byte                                                                                    |
| High/Low           | Select Little-endian or Big-endian, when the size is 1.                                         |
| Unit               | Unit of I/O tag                                                                                 |
| Description        | I/O description                                                                                 |
| I/O Optional input | Automatically set by clicking I/O offset.                                                       |

### 6.3.3. IP Setting

It is needed to set Master IP address and Slave IP address on the same network router.

When a range of Master IP is from x.x.x.1 to x.x.x.255, a Slave IP should be set in the range from x.x.x.1 to x.x.x.255. (set a Slave IP address excepts for the Master IP.)

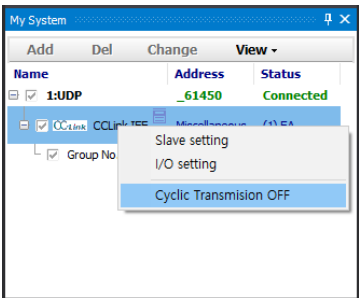


- The example of IP setting  
In case the Master IP address is 192.168.3.250,  
Slave 1 IP is 192.168.3.1  
Slave 2 IP is 192.168.3.2  
Slave 3 IP is 192.168.3.3

### 6.3.4. Cyclic Transmission ON/OFF

This function features the constant packet transmission among the connected devices on the same network

In the “My System” control panel, right-click the added “CCLink IEFBasic Product” and select [Cyclic Transmissions ON/OFF] to on/off this function.



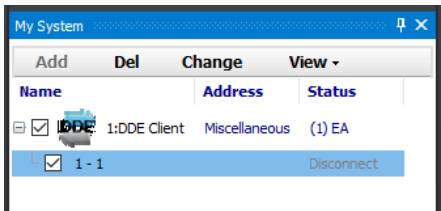
# 6.4. DDE Client

DAQMaster performs as a DDE Client, connecting to DDE Server and data communication.

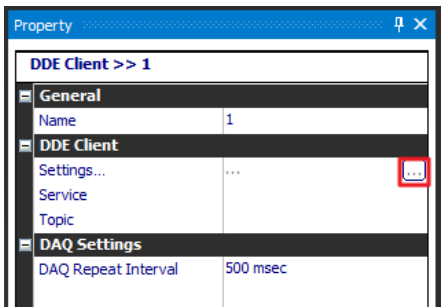


Refer to the 5.7, “DDE Server” for the details about DDE server.

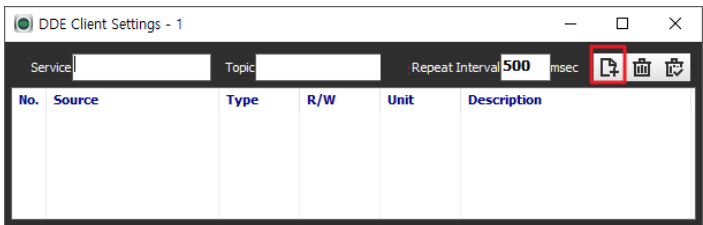
1. Add the “DDE Client” to “My System” control panel and select it. To add the unit, click **Add** button.



2. Select the added unit, and click the **...** button next to the “Setting” in the “Property” control panel to open “DDE Client Configuration-1” window.



3. For connecting DDE Server, enter the “Service” and “Topic” values of DDE Server to “DDE Client Configuration-1” window. Click the **Add** item to open “DDE Item” window.



4. Enter a value for each item and click the **OK** button.

The screenshot shows the 'DDE Item' dialog box. It contains the following elements:

- Service** and **Topic**: Text input fields with yellow highlights.
- Item Name**: Text input field.
- Description**: Text input field.
- Unit**: Text input field.
- R/W**: Dropdown menu with 'R' selected.
- Type**: Dropdown menu with 'Int16' selected.
- Decimal Point**: Text input field with '0'.
- List**: A button on the left side of a table.
- Table**: A table with 4 columns: 'No', 'Name', 'Value', and an empty column. It has 5 rows.
- Add**: A button on the right side of the table.
- Delete All** and **Del**: Buttons at the bottom right.
- OK** and **Cancel**: Buttons at the bottom right. The **OK** button is highlighted with a red box.

**Item Name** Enters the name of DDE Server item.

**Description** Enters description of the item.

**Unit** Sets data unit.

**R/W** **R** Reading is only available.

**W** Writing is only available.

**R/W** Reading and Writing are available.

**Type** Set method of data display.

**Decimal Point** Set decimal point.

**List** Displays item list.

5. Below is when two items are added.

DDE Client Settings - 1

Service

Topic

Repeat Interval500msec

| No. | Source         | Type   | R/W | Unit | Description    |
|-----|----------------|--------|-----|------|----------------|
| 1   | DDEServeritem1 | Analog | RW  | mm   | DDEServeritem1 |
| 2   | DDEServeritem2 | Analog | RW  | unit | DDEServeritem2 |
|     |                |        |     |      |                |

6. Check the added item at I/O List and it is available to be added to DAQ List.

DAQ List - 65535

Type

All

Group

Analog

Digital

String

Video

| No.              | Device     | Address | Source         | Tag Name         | Type   |
|------------------|------------|---------|----------------|------------------|--------|
| Standard Tag (2) |            |         |                |                  |        |
| ✓                | DDE Client | 1       | DDEServeritem1 | 1_DDEServeritem1 | Analog |
| ✓                | DDE Client | 1       | DDEServeritem2 | 1_DDEServeritem2 | Analog |
| Advanced Tag (0) |            |         |                |                  |        |
|                  |            |         |                |                  |        |

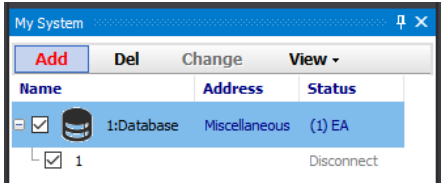
7. At runtime screen, monitoring is available by various graph types.



# 6.5. Database

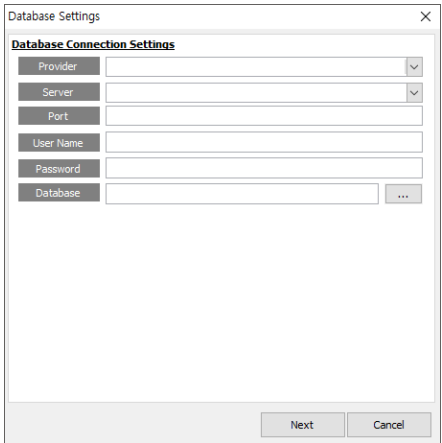
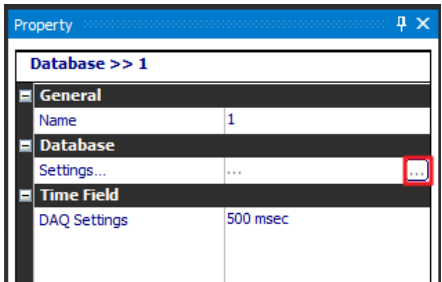
Database managing system turns information into database in real-time, making creation and management easier.

1. Add the “Database” to “My System” control panel and select it. To add the unit, click the **Add** button.



2. Select the added unit, and click the **...** button next to the “Settings” in the “Property” control panel to open “Database Settings” window.

Set the Provider, Server, Port, User Name, Password and Database type, and click **Next** to connect the server.



3. If the connection with the server is successful, “Database Table Settings” window appears. You can select a table to be added and click [Add] button to edit the database. When the settings is complete, click **Next**.

The screenshot shows the "Database Table Settings" window for "Database1.accdb". It features a "Table" dropdown menu with "Add", "Del", and "Delete All" buttons. Below is a "New Table" section with a "Table" input field. A table with columns "Field" and "Type" is present. To the right, there are input fields for "Field", "Type", "Scale" (set to 1), and "Precision" (set to 0), along with "Add Field", "Delete Field", "Edit Field", and "Delete All" buttons. At the bottom are "New Table" and "Cancel" buttons. The main window has "Prev", "Next", and "Cancel" buttons at the very bottom.

4. Select “Save Type” and “Time Field” in “Database Time Field Settings” window.

The screenshot shows the "Database Time Field Settings" window for "Database1.accdb". It has a "Save Type" section with two radio buttons: "DB Field : Tag" (selected) and "DB Field : Tag List". Below is a "Time Field" dropdown menu. At the bottom are "Prev", "Next", and "Cancel" buttons.

5. Set the database field and click **OK**.

| Field | Type   | Tag Type | Tag Name |
|-------|--------|----------|----------|
| Test2 | String |          | [Time]   |

6. After the settings is complete, executes “Realtime Log”, then the information about database connection is displayed and **...** button of “Table Columns Info” is activated.

Save Type: Database

Log Name:

Condition: Periodic Auto Save (No Condition)

Save Interval: 0 Hour 0 Min 1 Sec

Reset

Logging

**Information**

**Database Connection Info** ...

Provider: Access

Server: 0

Port: 0

User Name:

Database:

Table: Test2

**Table Columns Info (DB Field : Tag)** ...

| Field | Type   | Tag Type | Tag Name |
|-------|--------|----------|----------|
| Test2 | String | [Time]   | -        |

OK Cancel

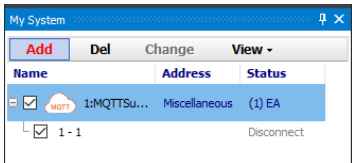
# 6.6. MQTT Subscribe

Explains instructions for adding subscribe of MQTT protocol communication.

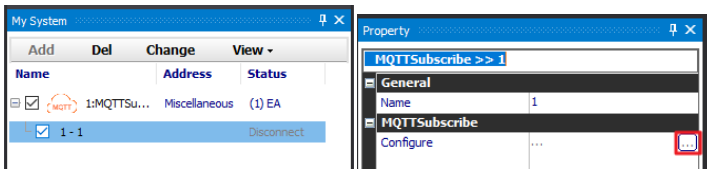


For information related to MQTT protocol and Publisher, refer to the **5.12, “MQTT”**.

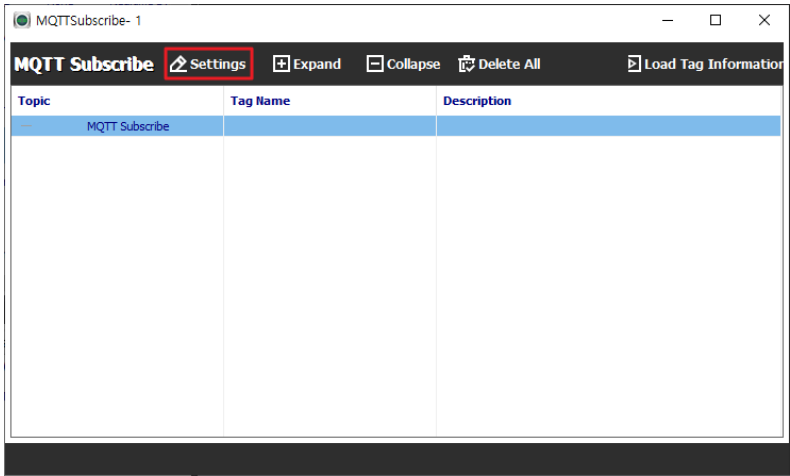
1. Add the “MQTTSubscribe” to “My System” control panel and select it. To add the unit, click the **Add** button.



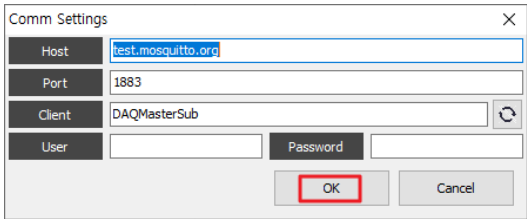
2. Select the added unit, and click the **...** button next to the “Configure” in the “Property” control panel to open “MQTTSubscribe” window.



3. Click **Settings** button to open “Comm Settings” window.



4. Enter the value by referring to the below description per each item, click **OK** button.



The 'Comm Settings' dialog box contains the following fields and buttons:

- Host:** test.mosquitto.org
- Port:** 1883
- Client:** DAQMasterSub
- User:** (empty field)
- Password:** (empty field)
- Buttons:** OK (highlighted with a red box), Cancel

- Host** Address of broker server
- Port** Port of broker server
- Client** Name of a client which connect broker server
- User, Password** User ID and password set by broker server



Address and port are required. Enter the user ID and password as the value set by the broker server, and leave blank if it is not set.

5. Click the **Connect** button on the “Project - Run” menu to try to connect to the broker server and display the results at the bottom.

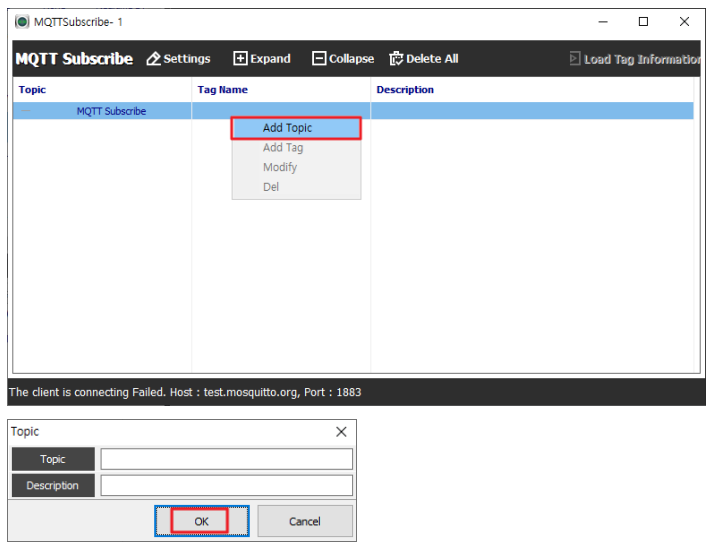


The 'MQTT Subscribe' window displays a table with the following data:

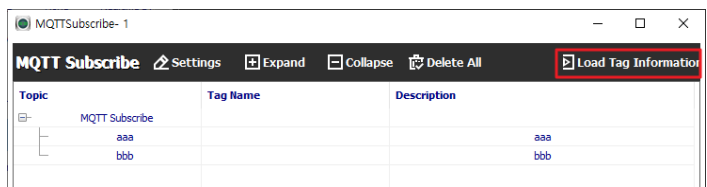
| Topic          | Tag Name | Description |
|----------------|----------|-------------|
| MQTT Subscribe |          |             |

At the bottom of the window, a status bar indicates: "The client is connected. Host : m16.cloudmqtt.com, Port : 13474"

6. When connecting successfully, right click the topic item and click **Add Topic** button to open “Topic” window. Enter topic name to receive from MQTT broker and description in the “Topic” window, and click **OK** button.



7. When clicking [Load Tag Information] on connecting status, the list of tags is loaded.



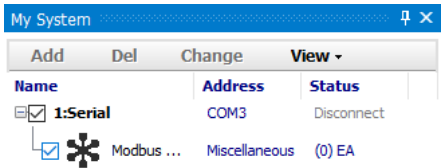
The [Load Tag Information] button is disabled while data is being loaded after clicking. If there is no data to load, the button is reactivated after 5 seconds, and “No tag information received” message is printed.

8. The added tag can be found in the “I/O List” control window and can be added to “DAQ List” or monitored by the runtime screen.

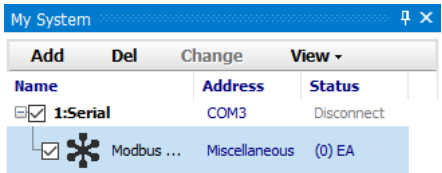
# 6.7. Modbus Slave

DAQMaster performs as a Modbus Slave responding to the reading and writing requirements. It supports Serial, Ethernet interface and RTU, ASCII, ModbusTCP Protocol.

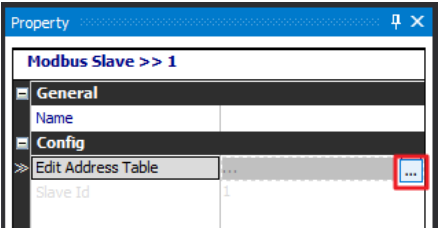
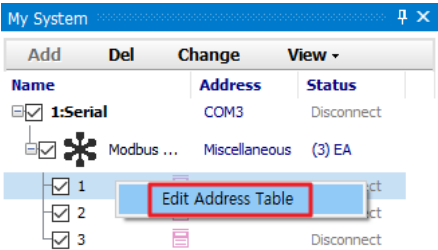
1. Add the “Modbus Slave” to “My System” control panel and select it. Set “Mode” and “Start Address” in “Property” control panel.



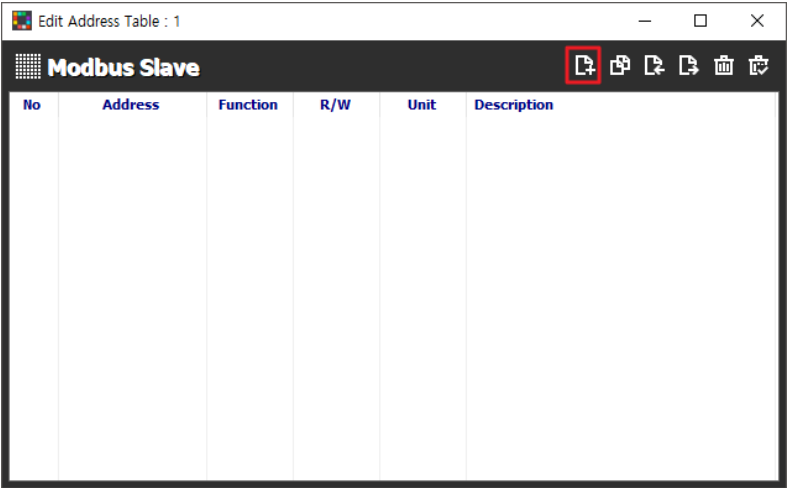
2. Select added “Modbus Slave” in “My System” control panel and click the **Add** button to add the unit.



3. Right-click the added slave unit address in “My System” control panel and click “Edit Address Table”.  
Or click ... of “Edit Address Table” of “Property” control panel and open “Edit Address Table” window.



4. Click [Add] button on the top of the “Edit Address Table” window, then “Edit Address” window pops up. In “Edit Address” window, setting the detailed information on the slave device is available. Edit the value of these items and click **OK** to set up.







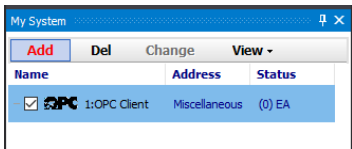
# 6.8. OPC DA Client

DAQMaster performs as a OPC Client, transmitting collected data to the connected OPC Server.

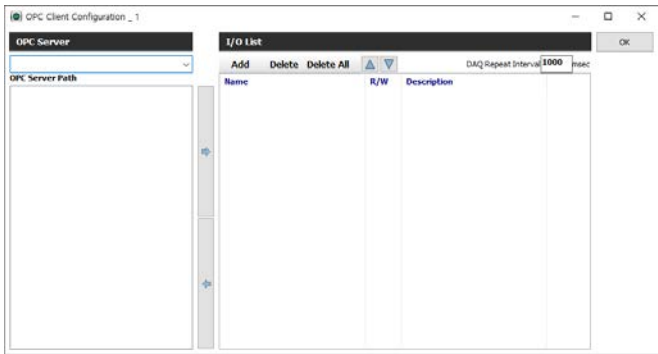
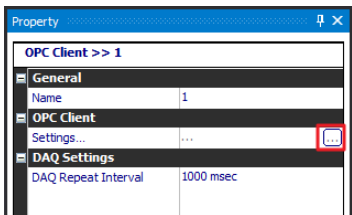


For more information about OPC Server, refer to **5.8, “OPC DA Server”**

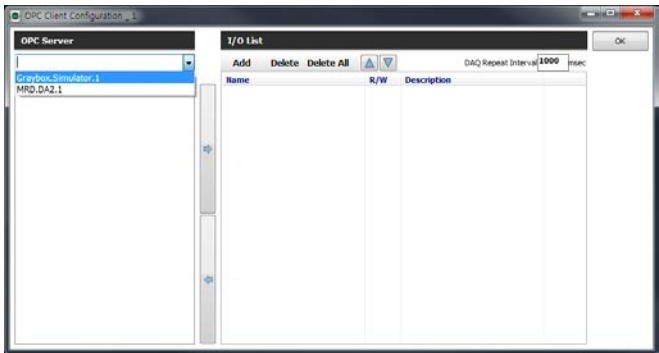
1. Add the “OPC Client” to “My System” control panel and select it. To add the unit, click **Add** button.



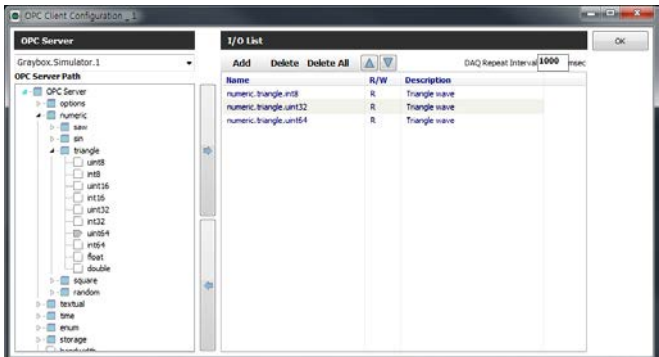
2. Select the added unit, and click the **...** button next to the “Setting” in the “Property” control panel to open “OPC client Configuration” window.



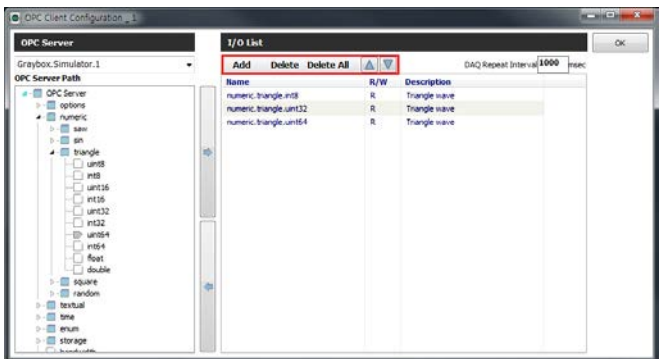
3. Click ▼ button at OPC Server to select the desired OPC server.



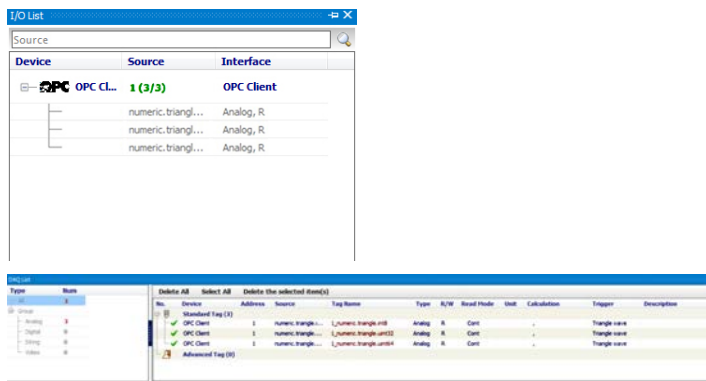
4. When selecting OPC Server, OPC server path is displayed as list. Double-click OPC server path or click → button, the path is added at I/O List.



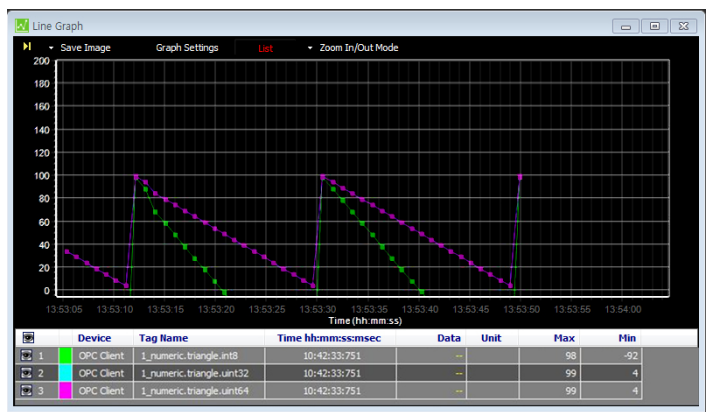
5. It is possible to add or delete OPC server path by “Add, Delete, Delete All” of upper menu of I/O List.



6. Check the added path at I/O List and and it is available to be added at DAQ List.



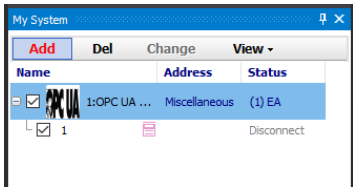
7. At runtime screen, monitoring is available by various graph types.



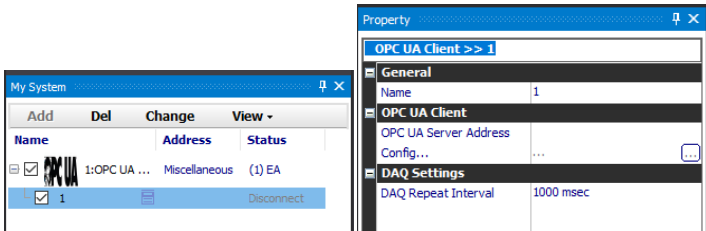
# 6.9. OPC UA Client

DAQMaster becomes the OPC UA Client and sends the collected data to the accessed OPC UA Sever.

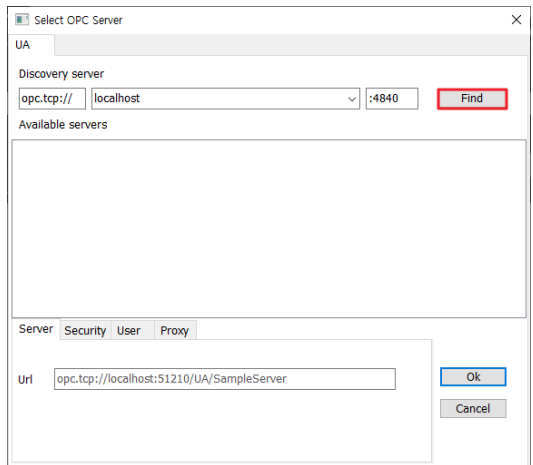
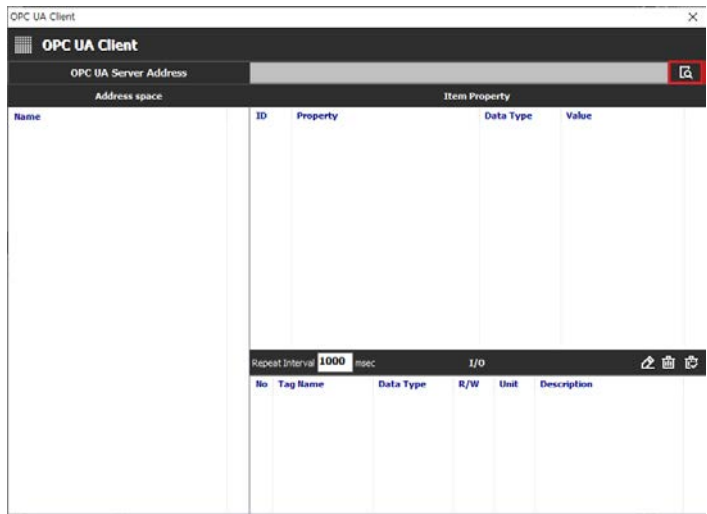
1. Add the “OPC UA Client” to “My System” control panel and select it. To add the unit, click **Add** button.



2. Select the added unit, and click the **...** button next to the “Config” in the “Property” control panel to open “OPC UA Client” window.



3. Click the [Select Server] button to open the “Select OPC Server” window. To search for a server that matches certain criteria, enter the address and port number in the “Discovery server” and click the **Find** button. It is possible to enter the full address of the server in the “Url” on the “Server” tab when knowing it.



4. Security mode related settings are available on “Security” tab of the “Select OPC Server” window.

Server Security User Proxy

Security Mode None

Security Policy None

Private key file

Certificate file

Ok Cancel

The “User” tab allows settings related to user authentication.

Server Security User Proxy

Authentication Anonymous

User

Pass Please note: password will be saved unencrypted

Ok Cancel

The “Proxy” tab allows entering the Proxy server path and information.

Server Security User Proxy

Proxy urn://User:Password@ProxyIP:8080

Ok Cancel

5. If the connection is successful by searching for a server or entering a full address, the server’s folders and files appear in the “Address space” entry in the “OPC UA Server Settings” window.

Config OPC UA Server

OPC UA Client

OPC UA Server Address opc.tcp://WIN-M9GP-4J2H946.localdomain:52030/OPCUASimulationServer

Address space

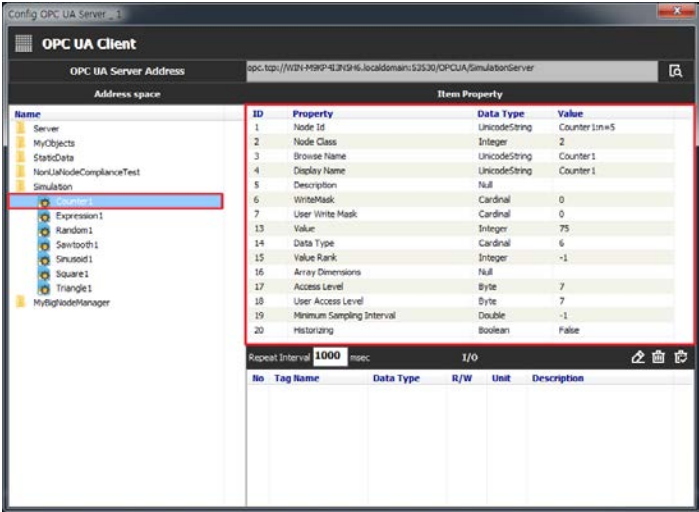
Item Property

Repeat Interval 1000 msec

I/O

| No. | Tag Name | Data Type | R/W | Unit | Description |
|-----|----------|-----------|-----|------|-------------|
|-----|----------|-----------|-----|------|-------------|

6. When selecting the item in “Address space”, the properties appear in “Item Property” window.





7. Double-click the item in the “Address space” to open the “OPC UA Client Item” window. Enter the contents of each item and click the **OK** button to add it to the I/O.

OPC UA Client Item

Item Name: Counter1

Description:

Signal Type: Int16 Decimal: 0

Unit:

R/W: R

확인 취소

Config OPC UA Server

OPC UA Client

OPC UA Server Address: opc.tcp://192.168.0.42:4840/OPCUA/SimulationServer

Address space

Item Property

| ID | Property                  | Data Type     | Value              |
|----|---------------------------|---------------|--------------------|
| 1  | Node Id                   | UnicodeString | Expression1=5      |
| 2  | Node Class                | Integer       | 2                  |
| 3  | Browse Name               | UnicodeString | Expression1        |
| 4  | Display Name              | UnicodeString | Expression1        |
| 5  | Description               | Null          |                    |
| 6  | WriteMask                 | Cardinal      | 0                  |
| 7  | User Write Mask           | Cardinal      | 0                  |
| 13 | Value                     | Double        | -0.666841127599457 |
| 14 | Data Type                 | Cardinal      | 11                 |
| 15 | Value Rank                | Integer       | -1                 |
| 16 | Array Dimensions          | Null          |                    |
| 17 | Access Level              | Byte          | 7                  |
| 18 | User Access Level         | Byte          | 7                  |
| 19 | Minimum Sampling Interval | Double        | -1                 |
| 20 | Historizing               | Boolean       | False              |

Repeat Interval: 1000 msec

| No | Tag Name    | Data Type | R/W | Unit | Description |
|----|-------------|-----------|-----|------|-------------|
| 1  | Counter1    | INT16     | R   |      |             |
| 2  | Expression1 | INT16     | R   |      |             |

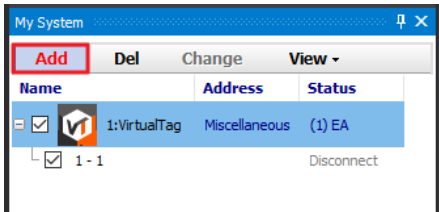
I/O List

| Device      | Source  | Interface     |
|-------------|---------|---------------|
| OPC UA...   | 1 (0/7) | OPC UA Client |
| Counter1    |         | Analog, R     |
| Expression1 |         | Analog, R     |
| Random1     |         | Analog, R     |
| Sawtooth1   |         | Analog, R     |
| Sinusoid1   |         | Analog, R     |
| Square1     |         | Analog, R     |
| Triangle1   |         | Analog, R     |

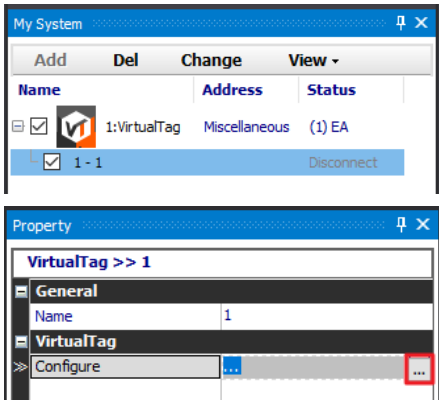
# 6.10. Virtual Tag

Connects multiple READ type tag values and apply formulas to a virtual tag to obtain the desired form of data, or enter data into a virtual tag to transfer that data to multiple WRITE type tags.

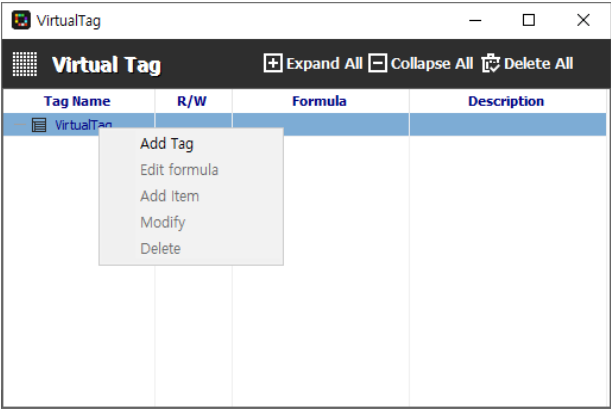
- 1. Add the “VirtualTag” to “My System” control panel and select it. To add the unit, click **Add** button.



- 2. Select the added unit, and click the **...** button next to the “Configure” in the “Property” control panel to open “VirtualTag” window.



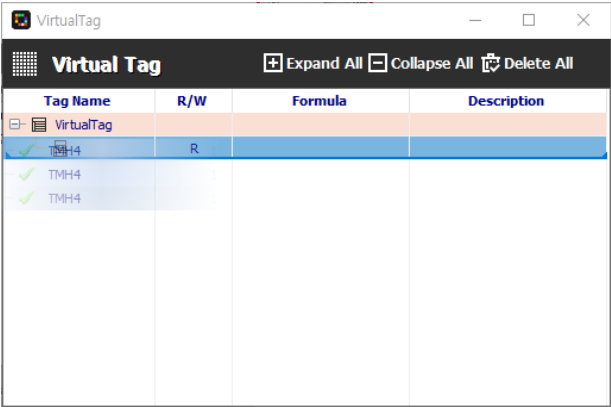
3. Right click “VirtualTag” item and click **Add Tag** button.



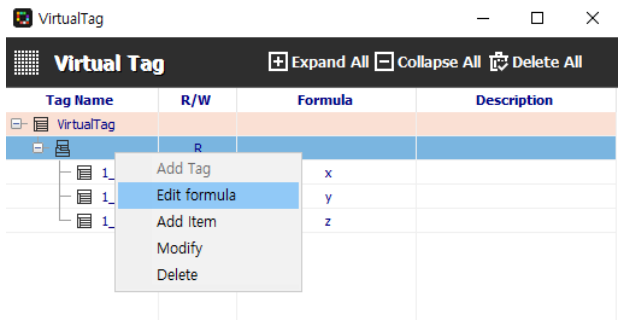
4. Enter name of virtual tag, type of R/W, description of tag in “Virtual Tag Item” and click **OK** button.

The 'Virtual Tag Item' dialog box is shown. It contains three input fields: 'Virtual Tag' (with a text box), 'R/W' (a dropdown menu set to 'R'), and 'Description' (with a text box). There are also 'OK' and 'Cancel' buttons.

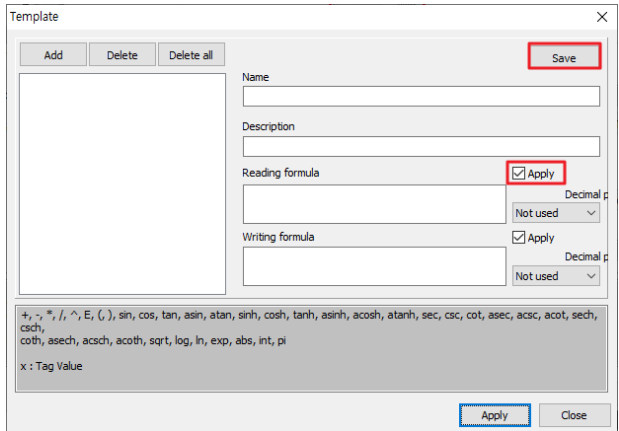
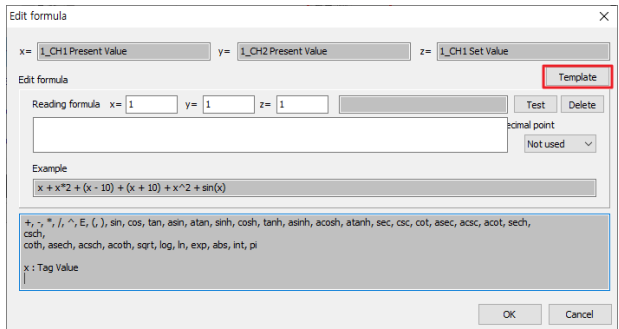
5. Drag the device tag from “DAQ List” control panel.



6. To apply the formula, right click the added virtual tag item and click the [Edit Formula] button.



7. In the “Edit Formula window”, click the **Template** button to edit the formula. Check the check box next to “Apply” to apply the formula immediately and click the **Save** button to save the formula.



8. To transfer data of virtual tag to other tag, create a virtual tag of a write property. In the “Virtual Tag Item” window, select “W” as the setting value of “R/W” item and click **OK** button.

Virtual Tag Item

Virtual Tag: [ ] R/W: **W** OK Cancel

Description: [ ]

Tag: [ ]

9. Select the generated virtual tag name of a write property, enter the value in the “Write - Value” item in the “Property” control panel.

| No. | Device     | Address | Source         | Tag Name         | Type   | R/W | Read Mode | Unit |
|-----|------------|---------|----------------|------------------|--------|-----|-----------|------|
| ✓   | TMH4       | 1       | CH1 Set Value  | 1_CH1 Set Value  | Analog | R   | Cont      |      |
| ✓   | TMH4       | 1       | CH2 Set Value  | 1_CH2 Set Value  | Analog | R   | Cont      |      |
| ✓   | TMH4       | 1       | CH1 Heating MV | 1_CH1 Heating MV | Analog | R   | Cont      |      |
| ✓   | TMH4       | 1       | CH2 Heating MV | 1_CH2 Heating MV | Analog | R   | Cont      |      |
| ✓   | VirtualTag | 1       | VirtualTag_w   | w                | Analog | W   | -         |      |

Advanced Tag (0)

Property

VirtualTag >> 1 >> VirtualTag\_w

**General**

Device: VirtualTag

Address: 1

Source: VirtualTag\_w

Tag Name: w

Decimal Point: 0

Unit: [v]

Description: [ ]

**I/O Data Calculation**

Edit Calculation: [ ]

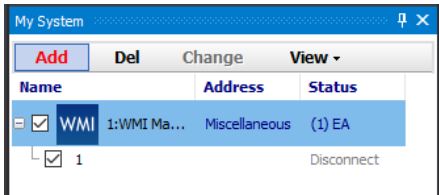
**Write**

>> Value: [ ]

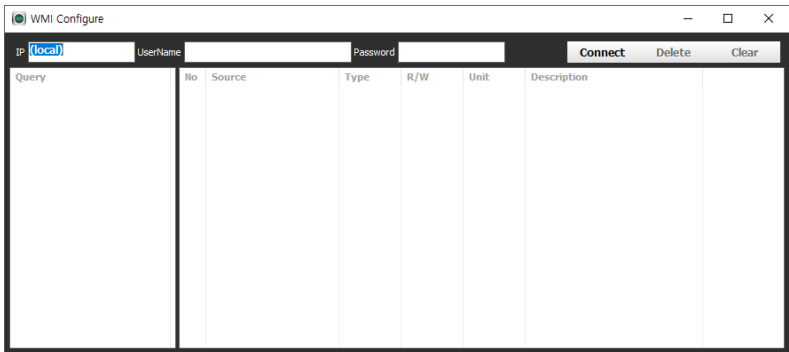
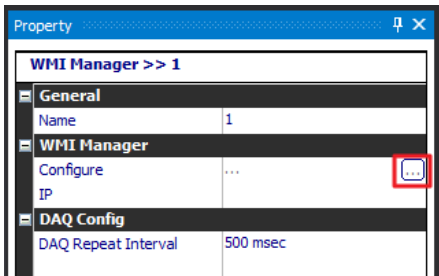
# 6.11. WMI Manager

This function features that DAQMaster accesses and shares the managment information in the network using the Window Standards. It is able to collect and show the system configuration.

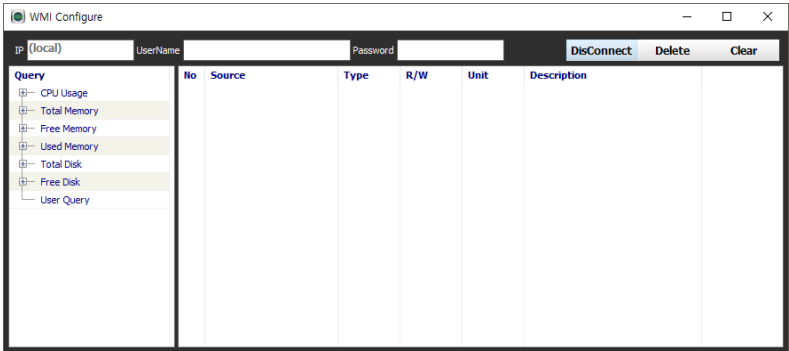
- 1. Add the “WMI Manager” to “My System” control panel and select it. To add the unit, click the **Add** button.



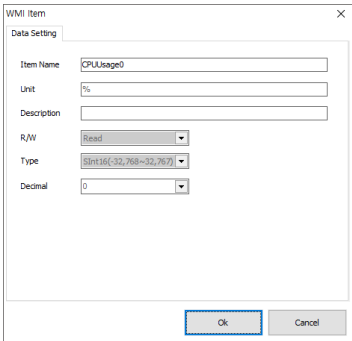
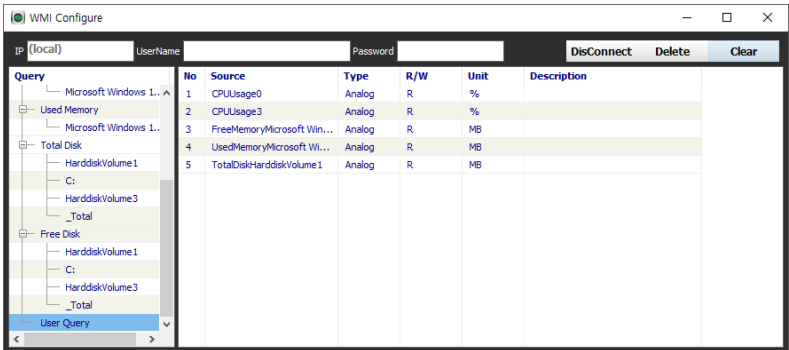
- 2. Select the added unit, and click the **...** button next to the “Configure” in the “Property” control panel to open “WMI Configure” window.



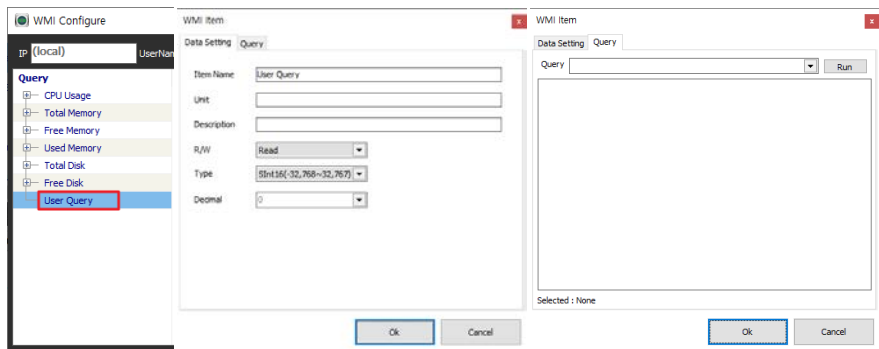
3. Click **Connect** button to monitor local CPU load. When connecting is completed, items such as CPU Usage, Total Memory, Free Memory appears in the Query list.



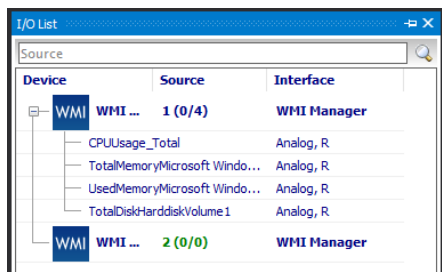
4. Double-click item to open setting window to monitor and click **OK** to add it to the tag item. It is possible to delete "WMI item" by using **Delete** and **Clear** buttons.



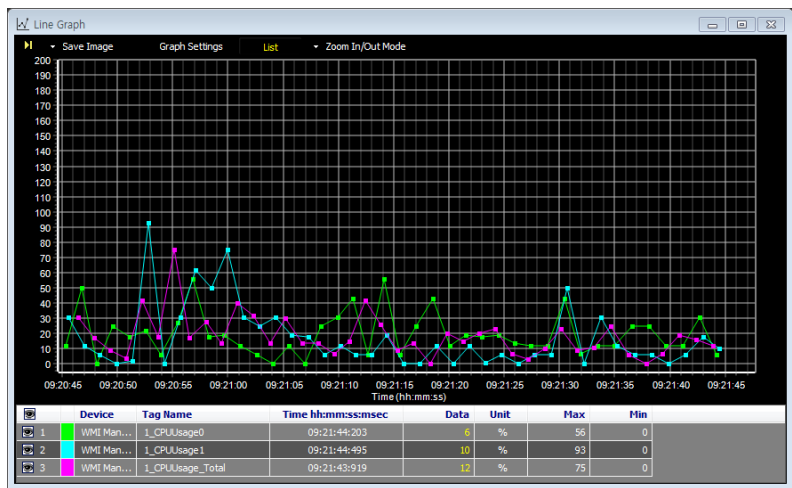
5. Double click the “User Query” to preview customized WMI query format.



6. Added query items to source list are registered automatically in I/O list. The items can be listed in DAQ list like another I/O source.



7. You can monitor selected query items at the runtime screen in various kinds of graph style.





# 7. My System

“My System” control panel displays device and communication interfaces added from the “Support Device List” control panel in a tree structure as well as connection status. You can also add, change and delete device units.

| My System                                         |     |           |            |
|---------------------------------------------------|-----|-----------|------------|
| Add                                               | Del | Change    | View       |
| Name                                              |     | Address   | Status     |
| <input checked="" type="checkbox"/> 1:Serial      |     | COM3      | Disconnect |
| <input checked="" type="checkbox"/> ModBus Master |     | RTU, 3, 1 | Disconnect |
| <input checked="" type="checkbox"/> TX Series     |     | AUTONICS  | (1) EA     |
| <input checked="" type="checkbox"/> 1             |     |           | Disconnect |

| My System                                         |     |           |           |
|---------------------------------------------------|-----|-----------|-----------|
| Add                                               | Del | Change    | View      |
| Name                                              |     | Address   | Status    |
| <input checked="" type="checkbox"/> 1:Serial      |     | COM3      | Connected |
| <input checked="" type="checkbox"/> ModBus Master |     | RTU, 3, 1 | Connected |
| <input checked="" type="checkbox"/> TX Series     |     | AUTONICS  | (1) EA    |
| <input checked="" type="checkbox"/> 1             |     | TX 4L B4S | Connected |

Select enable/disable by checking check box on the left side of items.  
It is possible to set or modify by selecting an item in “Property” control panel.

| My System     |              |               |
|---------------|--------------|---------------|
| Add           | Del          | Change View ▾ |
| Name          | Address      | Status        |
| 1:Serial      | COM3         | Disconnect    |
| ModBus Master | RTU, 3, 1    | Disconnect    |
| TX Series     | AUTONICS     | (2) EA        |
| 1             |              | Disconnect    |
| 2             |              | Disconnect    |
| 2:Serial      | COM3         | Disconnect    |
| ModBus Master | RTU, 3, 1    | Disconnect    |
| TMHC_...      | Autonics     | (0) EA        |
| 3:Ethernet    | 127.0.0.1... | Disconnect    |
| ModBus Master | RTU, 3, 1    | Disconnect    |
| PSM           | AUTONICS     | (0) EA        |
| 4:Serial      | COM3         | Disconnect    |
| ModBus Master | RTU, 3, 1    | Disconnect    |
| TMHC_...      | Autonics     | (0) EA        |

### Select the protocol (Serial, Ethernet etc.)

modify communication related items in the “Property” control panel.

### Select Modbus Master

check the information about Modbus Master and set the preferences in the “Property” control panel.

### Select the device name (TX Series)

check the information about the connected device in the “Property” control panel.

### Select Unit (1)

displays parameter information of the connected device in the “Property” control panel.



Connects a device to multiple communications ports.

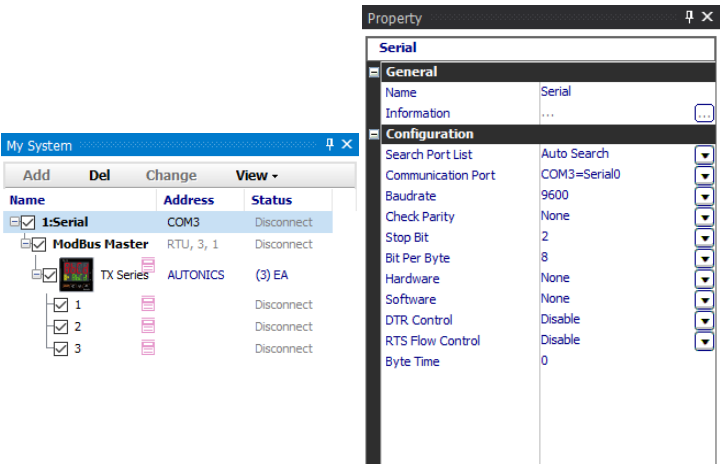
Some of the communication-related items are able to be changed in “Disconnect” status only.

For more information about setting properties of each parameter, refer to **7.1, “My system property”**.

# 7.1. My system property

## 7.1.1. Serial

It is possible to change the Serial related settings. Click Serial in “My System” control panel and check the “Property” control panel.



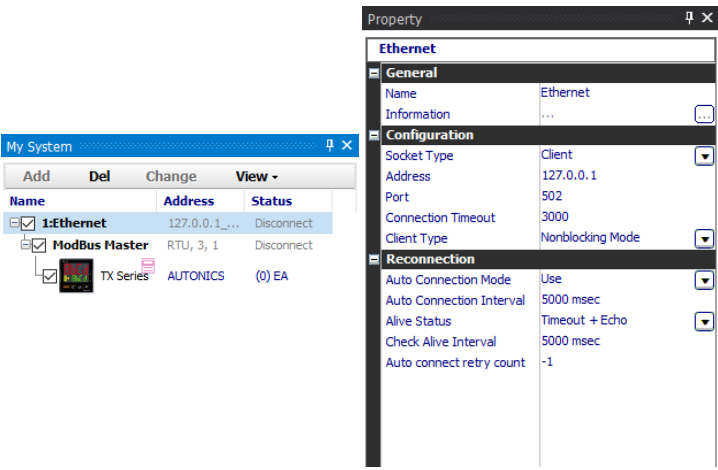
The “Property” control panel displays the information about the communication port currently in use.

|                           |                      |                                                                                                                          |
|---------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Search Port List</b>   | <b>Fix Init List</b> | Loads communication port list of computer at the time when Serial is added, saves it to the port list and then fixes it. |
|                           | <b>Auto Search</b>   | Rearranges the port list automatically when it is changed.                                                               |
| <b>Communication Port</b> |                      | Shows available COM Ports and can select it. Set the connected COM Port.                                                 |
| <b>Baud rate</b>          |                      | 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200bps                                                                   |
| <b>Check Parity</b>       |                      | Selects the parity bit for communication.<br>(none, odd, even, mark, space)                                              |
| <b>Stop Bit</b>           |                      | Selects the stop bit for communication. (1, 1.5, 2)                                                                      |
| <b>Bit per Byte</b>       |                      | Selects Byte Size. (5, 6, 7, 8)                                                                                          |

|                         |                                            |
|-------------------------|--------------------------------------------|
| <b>Hardware</b>         | None, RTS/CTS                              |
| <b>Software</b>         | None, XON/XOFF                             |
| <b>DTR Control</b>      | Disable, enable, handshake                 |
| <b>RTS Flow Control</b> | Disable, enable, handshake. toggle         |
| <b>Byte Time</b>        | Sets transfer interval of packet per byte. |

### 7.1.2. Ethernet

Sets Ethernet protocol for communication. Select the Ethernet in “My System” and check “Property” control panel.



“Property” control panel displays information about the communication port currently in use. The name that is displayed in “Property” control panel can be modified by clicking “Name” in “Property” control panel.

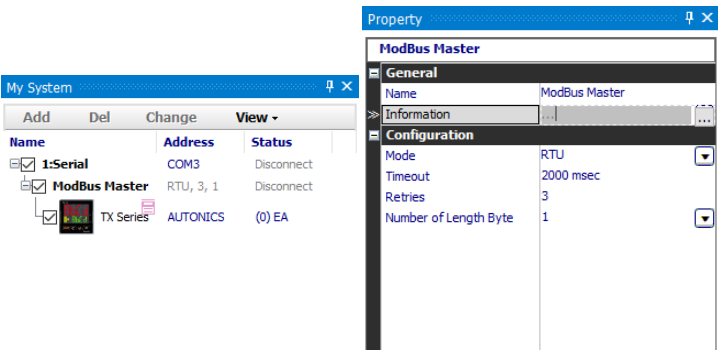
Refer to the following table to check the “Configuration” items.

|                           |                                                        |                                                        |
|---------------------------|--------------------------------------------------------|--------------------------------------------------------|
| <b>Socket Type</b>        | <b>Client</b>                                          | Sets as Client Mode.                                   |
|                           | <b>Server</b>                                          | Sets as Server mode.                                   |
| <b>Address</b>            | Enters the designated IP Address from the main device. |                                                        |
| <b>Port</b>               | Sets port number.                                      |                                                        |
| <b>Connection Timeout</b> | Sets the time of the timeout for connection.           |                                                        |
| <b>Client Type</b>        | <b>Non-Blocking</b>                                    | Progresses next transmission without the response.     |
|                           | <b>Blocking</b>                                        | Progresses next transmission after receiving response. |

|                                   |                                                                                                                                    |                                                                                                        |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Auto Connection Mode</b>       | <b>Use</b>                                                                                                                         | Attempts to reconnect when Ethernet is disconnected or connection failure occurred for the first time. |
|                                   | <b>Not Used</b>                                                                                                                    | Not use auto connection mode.                                                                          |
| <b>Auto Reconnection Interval</b> | Sets interval time of Auto Reconnection.                                                                                           |                                                                                                        |
| <b>Alive Status</b>               | Attempts to reconnect after receiving the error message (Timeout, Echo) from Ethernet Server without disconnection.                |                                                                                                        |
| <b>Check Alive Interval</b>       | Sets check cycle of the Alive status.                                                                                              |                                                                                                        |
| <b>Auto connect retry count</b>   | Sets the number of retries for Auto connection.<br>When set to '-1', infinite automatic connection Proceed with retry. (-1 to 100) |                                                                                                        |

### 7.1.3. Modbus Master

Can change protocol related setting for ModBus. After selecting “ModBus Master” and clicking “[...]” of the “Property” control panel, “ModBus Master” window is opened

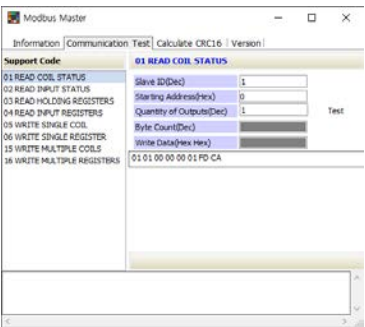


#### 1. General

'Modbus Master Communication Test' and 'Calculate CRC16' functions can be performed. Next to the 'Information' item in the 'Properties' control window When you click “[...]” the button, the 'Modbus Master' information screen appears.

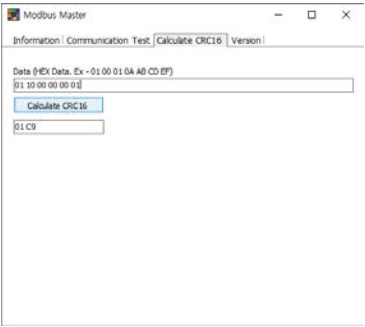
##### Modbus Master Communication Test

Conducts the test to check whether the communication is normal. Enter the “Communication Test” tab, and click [Test] button to execute communication test.



### Calculate CRC16

Verifies the protocol by CRC16. Input the Hex data to “Data” section and click [Calculate CRC16] to convert CRC16 data.



## 2. Configuration

|                              |                                                                                                            |
|------------------------------|------------------------------------------------------------------------------------------------------------|
| <b>Mode</b>                  | RTU, ASCII, ModBus TCP                                                                                     |
| <b>Timeout</b>               | Set the timeout time.                                                                                      |
| <b>Retries</b>               | Set the number of retries. When set to '-1', infinite automatic connection Proceed with retry. (-1 to 100) |
| <b>Number of Length Byte</b> | You can choose the data byte length. (1,2)                                                                 |



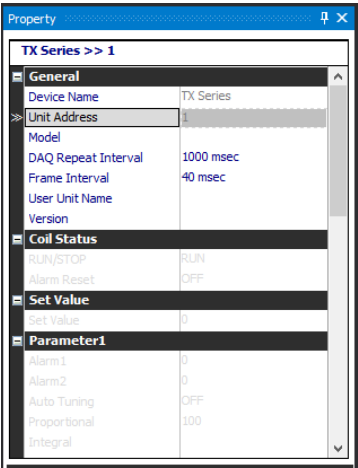
### 7.1.4. Device

Click the device name in “Name” of “My System” control panel to see basic device information in “Property” control panel.

| TX Series           |                               |
|---------------------|-------------------------------|
| File                |                               |
| Description         | LCD Display Temperature Contr |
| Date                | 2013.10.15                    |
| Date Modified       | 2013.09.26                    |
| Creation            |                               |
| Revision            | 1.0.0                         |
| Version             |                               |
| Vendor              | AUTONICS                      |
| Product             | TX Series                     |
| Major Revision      | 1                             |
| Minor Revision      | 0                             |
| DAQ Config          |                               |
| DAQ Repeat Interval | 1000 msec                     |
| Frame Interval      | 40 msec                       |

# 7.1.5. Unit Address

Click the connected address number in “My System” control panel to see detailed device information.

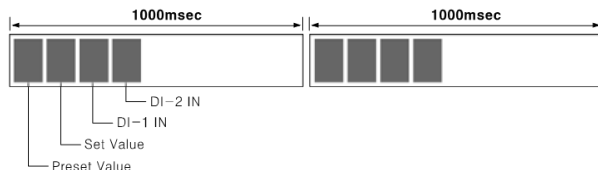


|                     |                                                                                                                                                                             |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device Name         | Displays device name.                                                                                                                                                       |
| Unit Address        | Displays unit address.                                                                                                                                                      |
| Model               | Displays Model name.                                                                                                                                                        |
| DAQ Repeat Interval | Sets the repeat reading cycle for the I/O source when running the connected unit. (0 to , default value: 1000 msec)                                                         |
| Frame Interval      | Sets the Frame reading cycle. (4 to 5000 msec, default value: 40 msec)                                                                                                      |
| User Unit Name      | Sets the user unit name.                                                                                                                                                    |
| Version             | Displays HW(Hardware)/ SW(Software) version of device.<br>If the firmware versions of connected devices are different, extra settings may be required for normal operation. |

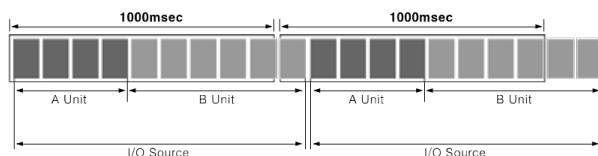


You can check and modify device parameters by reading parameters while devices are connected.

For the information about reading parameters, refer to 7.9, “Read All Parameters”



Example of setting the DAQ Interval to 1000 msec and adding 4 I/O sources to DAQlist. When the number of I/O do not exceed the Repeat Interval value(1000 ms), the program brings data base on the cycle.



When a large number of I/O sources are added, data reading cycle may exceed the defined Repeat Interval, as shown above.

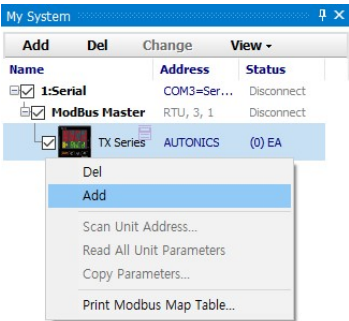
As a result, if actual I/O data reading time exceeds the set “DAQ Repeat Interval” set value(time), the program and the units communicate on the minimum time interval required to read all I/O sources.

If the environment requires a precise set value and rapid repetition interval, add Serial port(s) and split the device connection.

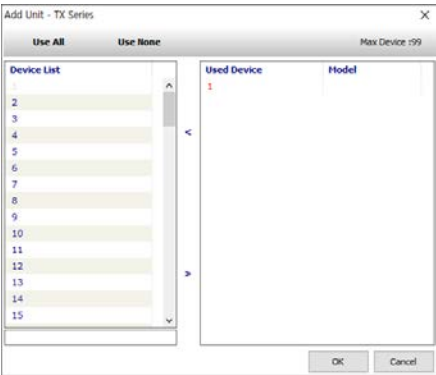
# 7.2. Adding a Unit

This is used to connect few of devices or when you know the address number of each unit.

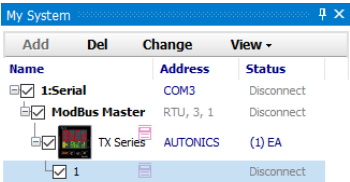
- 1. When selecting the device name in “My System” control panel, [Add] button is enabled. To add a unit (address), click the [Add] button in upper menu, or right-click the device name and select [Add].



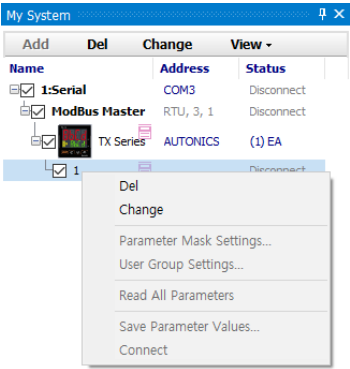
- 2. Select address number, Double-click or use [>] button to add, and click [OK] button.



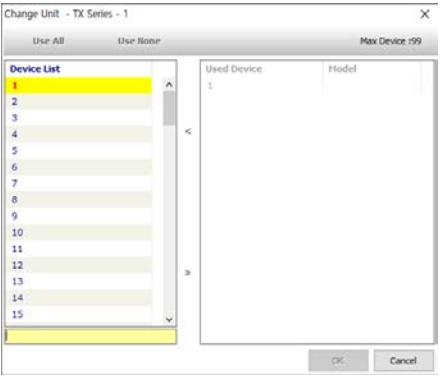
3. You can see the unit (address: 1) added under the device in My System after click [OK] button. If you want to add multiple devices, click [Add] button. (Up to 99 devices can be added.)



4. When selecting the unit address (1), [Change] button is activated. To change the unit address, click the [Change] button on menu or right-click and select "Change"



5. If you click [Change] button, the current address (1) highlights in yellow. Select a new address and click [OK] to change the unit address.

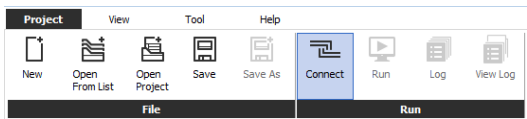


Unit (address) cannot be deleted, changed or added while the status is "Connect"

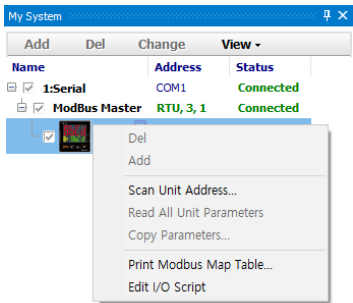
# 7.3. Scan Unit Address

“Scan Unit” features scanning multiple connected device units or adding the units you does not know the address number per each unit.

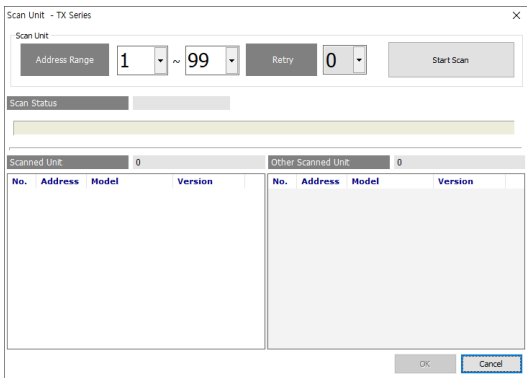
- 1. Click [Connect] button on the “Project – Run” menu to connect.



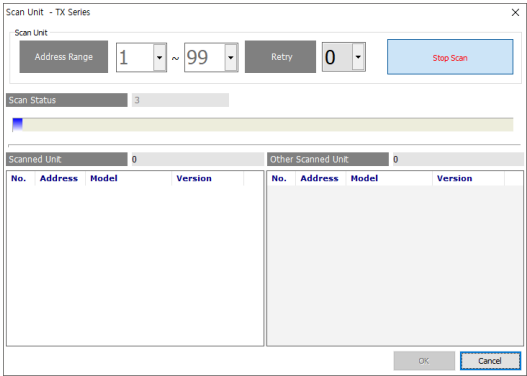
- 2. Right-click the series name (ex. TX Series) in “My System” control panel and click the “Scan Unit Address”.



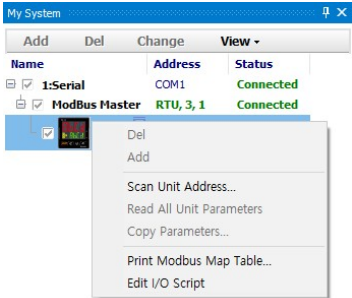
- 3. When “Scan Unit” window pops up, click [Start Scan] to start.



4. All desired units are listed in the window, click [Stop Scan] to stop scanning and select the Unit. Click [OK] button to add it to the “My System”.

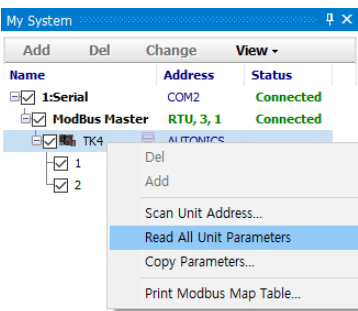


5. If “Status” rows are marked as “Connected” in “My System” control panel, the connection status is normal. Click [Disconnect] to disconnect, and go on the settings.



# 7.4. Read All Unit Parameters

Read all unit parameters allows you to save and copy parameters.  
After selecting the device in my system, right-click and execute 'Read All Unit Parameters'.



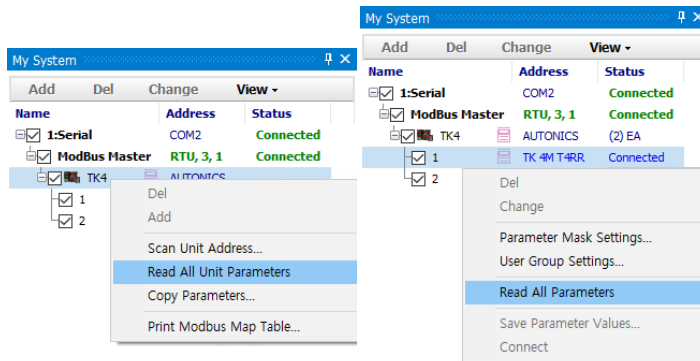


## 7.5. Save and Copy parameters

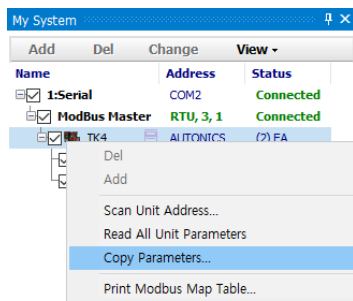
### 7.5.1. Save parameter values

When several same model units cannot be connected to DAQMaster at once and parameter copy is not available, you can save the setting of the device as a file and utilize the file at a later. If the firmware version of the devices are different, parameter copy function may not be available. Following explanation is based on TK.

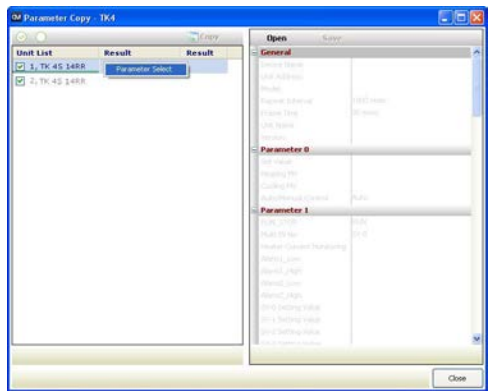
1. Connect the TK device which parameters are saved.
2. Click “Read All Parameters” of the unit device which parameters are saved or “Read All Unit Parameters” of TK at My System.



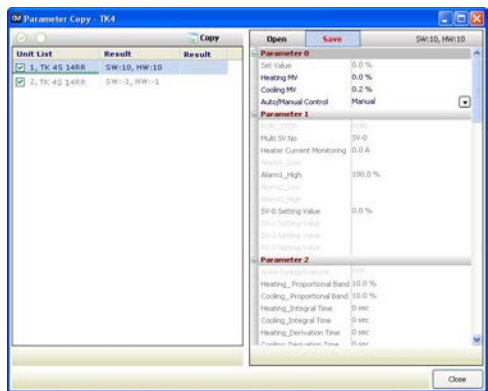
3. Select TK at My System and right-click to select “Copy Parameters” and Parameter Copy dialog appears.



4. Right-click the unit which parameters are saved and select “Parameter Select”. The parameter values of the unit is loaded at the right side of the dialog.



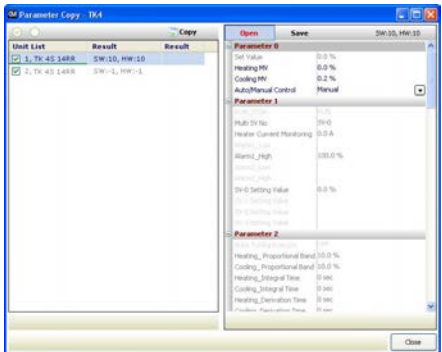
5. Click “Save” and it saves parameters in \*.prx file.



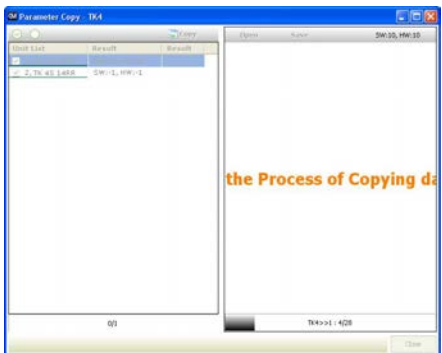
### 7.5.2. Copy parameters

To connect the several same model units at once, you can copy the parameters. You can copy the saved parameter file to the other devices(target units).

1. Same orders 1st to 3rd of the Save parameter values.
2. Check the units to be copied at the check box of the left side of the dialog.
3. Click “Open” and select the parameter file and it loads at the right side of the dialog.



4. Click “Copy” and copy is progressing. “the Process of Copying data” text appears at the right side of the dialog.



5. After completing copy, “Copy Complete!” dialog box appears. Click “OK” and copy is finish.

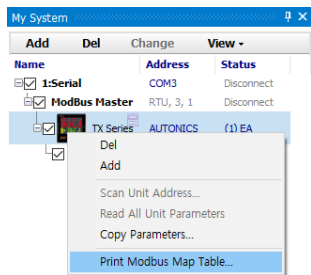


Depending on the device series or device firmware version, the above features may not be supported.

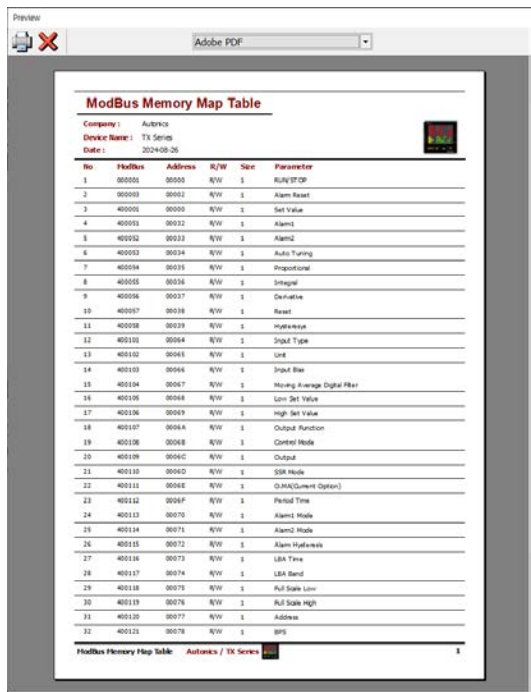
# 7.6. Print Modbus Map Table

This feature outputs ModBus map table of a device, which uses ModBus communications, as a report. Direct print out is available and you can save in a PDF File (\*.pdf) format.

- 1. In the status that a device is added, right-click the device in My System and Select Print ModBus Map Table from the pop-up menu.



- 2. In the preview window, setting Print, Print, and save are available.



## 7.7. Parameter mask Settings

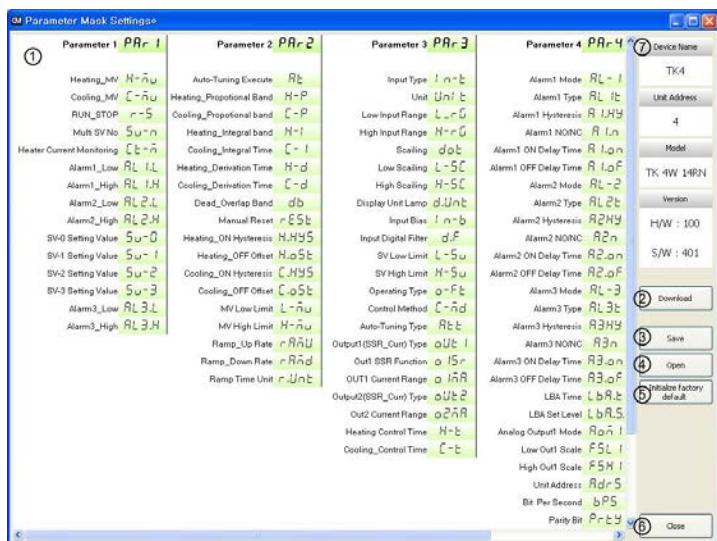
This feature is able to hide unnecessary parameters to user environment or less frequently used parameters in parameter group.

Masked parameters are not only displayed. The set values of masked parameters are applied.



This function is only available for TK, TF3, KPN, and TN Series products. Since the parameters supported by each product are different, please refer to the instruction manual for each product.

1. Right-click the unit for which you want to set the parameter mask and select 'Parameter Mask Setting'.



### Parameter mask selection

Select the to-be-masked parameters.

Right-click the to-be-masked parameters and they turn gray.

### Download

Applies the set masked parameters to the device.

### Save

Saves the set masked parameters as a mask information file.

### Open

Opens the saved mask information file.

## Initialize factory default

Clears the set for the masked parameters.  
Download this setting to apply it to the device.

## Close

Closes the Parameter Mask Settings dialog.

## Device information

Displays device name, unit address, model name, and version.



Example of masking alarm, SV setting parameters of parameter 1 group, input type, unit of parameter 3 group, and all of parameter 4 group.

## 7.8. User Group Settings

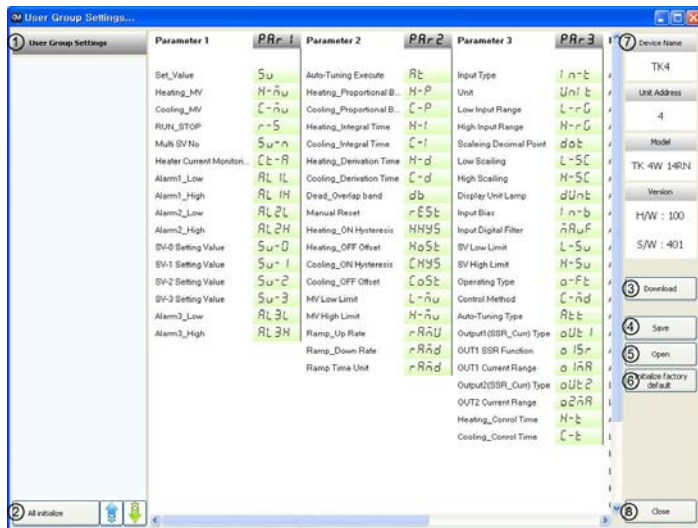
This feature is able to set the frequently used parameters to the user parameter group. You can quickly and easily set parameter settings.

User parameter group can have up to 30 parameters.



This function is only available for TK, TF3, KPN, and TN Series products. Since the parameters supported by each product are different, please refer to the instruction manual for each product.

1. Right-click the unit for which you want to set a user group, and then select 'User Group Settings'.



### User parameter group

Displays the selected parameters as user group parameter. Double-click the parameters for the user group, and these parameters turn gray.

To delete the parameters at the user group, double-click the parameters.

### User group selection

#### All initialize

Initializes the set user group.



Changes the selected parameter order up/down.

### Download

Applies the set user group to the device.

- Save** Saves the set user group as a user group information file.
- Open** Opens the saved user group file.
- Initialize factory default** Clears the set for the user group.  
Download this setting to apply it to the device.
- Close** Closes the User Group Settings dialog.
- Device information** Displays device name, unit address, model name, and version.



| Parameter 1         | Parameter 2             | Parameter 3           | Parameter 4           |
|---------------------|-------------------------|-----------------------|-----------------------|
| Set_Value           | Auto-Tuning Enable      | Input Type            | Alarm1 Mode           |
| RUN_STOP            | Heating_MV              | Unit                  | Alarm1 Type           |
| SV-0 Setting Value  | Heating_Proportional B. | Low Input Range       | Alarm1 Hysteresis     |
| SV-1 Setting Value  | Cooling_MV              | High Input Range      | Alarm1 NO/NC          |
| SV-2 Setting Value  | Heating_Integral Time   | Scaling Decimal Point | Alarm1 ON Delay Time  |
| SV-3 Setting Value  | Cooling_Integral Time   | Low Scaling           | Alarm1 OFF Delay Time |
| Manual Reset        | Heating_Derivation Time | High Scaling          | Alarm2 Mode           |
| Input Bias          | Cooling_Derivation Time | Display Unit Lamp     | Alarm2 Type           |
| Alarm1 Mode         | Dead_Overlap band       | Input Digital Filter  | Alarm2 Hysteresis     |
| Alarm1 Type         | Heating_ON Hysteresis   | SV Low Limit          | Alarm2 NO/NC          |
| Alarm1 Hysteresis   | Heating_OFF Offset      | SV High Limit         | Alarm2 ON Delay Time  |
| Alarm1 ON Delay...  | Cooling_ON Hysteresis   | Operating Type        | Alarm2 OFF Delay Time |
| Alarm1 OFF Delay... | Cooling_OFF Offset      | Control Method        | Alarm3 Mode           |
|                     | MC High Limit           | Auto-Tuning Type      | Alarm3 Type           |
|                     | Ramp-Up Rate            | Output1 SSR Function  | Alarm3 Hysteresis     |
|                     | Ramp_Down Rate          | Output2 SSR Function  | Alarm3 NO/NC          |
|                     | Ramp Time Unit          | Output3 SSR Function  | Alarm3 ON Delay Time  |
|                     |                         | Output4 SSR Function  | Alarm3 OFF Delay Time |
|                     |                         | LBA Time              | LBA Band              |
|                     |                         | LBA Band              | Analog Output Mode    |
|                     |                         | Heating_Conrol Time   | Low Out1 Scale        |
|                     |                         | Cooling_Conrol Time   | High Out1 Scale       |
|                     |                         |                       | Low Out2 Scale        |
|                     |                         |                       | High Out2 Scale       |
|                     |                         |                       | Unit Address          |
|                     |                         |                       | Bit Per Second        |

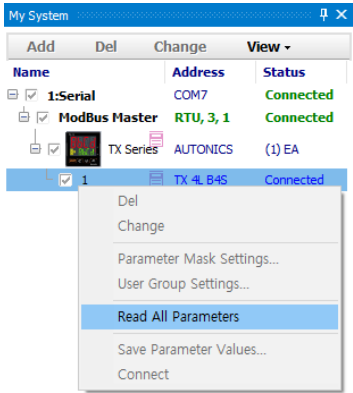
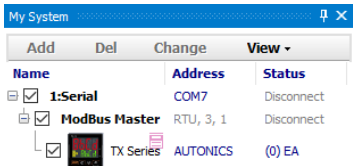
Example of the set user group with SV setting, control output RUN/STOP, SV-0/1/2/3 set value, manual reset, input Bias, alarm output 1 mode/type/hysteresis/NO/NC/ON delay time/OFF delay time parameters.



# 7.9. Read All Parameters

To edit a parameter of a connected unit in DAQMaster, it is needed to load parameters of the connected unit.

1. Select “Unit address number” in “My System” control panel and then right-click it to execute the “Read All Parameters”.



- When the reading is completed, the “Property” control panel displays the parameters. Checking and changing parameter is also available.

Property

TX Series >> 1

**General**

|                     |                    |
|---------------------|--------------------|
| Device Name         | TX Series          |
| Unit Address        | 1                  |
| Model               | TX 4L 64S          |
| DAQ Repeat Interval | 1000 msec          |
| Frame Interval      | 40                 |
| User Unit Name      |                    |
| Version             | HW : 200, SW : 202 |

**Coil Status**

|             |     |
|-------------|-----|
| RUN/STOP    | RUN |
| Alarm Reset | OFF |

**Set Value**

|           |      |
|-----------|------|
| Set Value | 0 °C |
|-----------|------|

**Parameter1**

|              |         |
|--------------|---------|
| Alarm1       | 1250 °C |
| Alarm2       | 1250 °C |
| Auto Tuning  | OFF     |
| Proportional | 10.0 °C |
| Integral     | 0 Sec   |
| Derivative   | 0 Sec   |
| Reset        | 50.0 %  |

**Parameter2**

|                               |         |
|-------------------------------|---------|
| Input Type                    | K(CA).H |
| Unit                          | °C      |
| Input Bias                    | 0 °C    |
| Moving Average Digital Filter | 0.1 sec |
| Low Set Value                 | -50 °C  |
| High Set Value                | 1200 °C |
| Output Function               | HEAT    |
| Control Mode                  | PID     |
| Output                        | SSR     |

Range : 4 ~ 5000 msec

- If you only want to monitor parameter without editing, click [Run] button on “Project – Run” menu.
- When parameter values are changed in the “Property” control panel, changed values are immediately applied through communication with the device.
- During a parameter value change, all property values are displayed in gray (not modifiable). After changing, they are restored to the original color.
- To apply the changed value, change the value and press Enter key (for edit type), or select an item with the mouse or the Alt + arrow keys, and press enter (for list type).
- If a unit or a range related parameter is changed, all the parameters related to both are changed.
- If an out-of-range value is entered, the input is ignored and the value is restored to the original. The range is displayed at the bottom of the “Property” control panel.

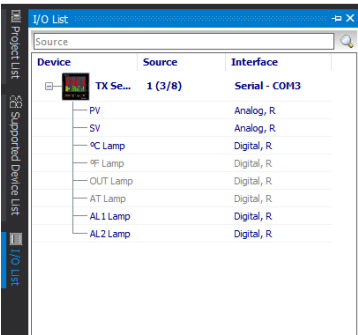
- The input format fixed parameter is only editable in the format.
- Values of parameters in “Disable” status are not displayed and the item names are grayed out.
- In Reading mode, name and value of parameters are grayed out.
- The language of the parameters is not changed regardless of the selected language when installing the program.




# 8. I/O List / DAQ List / Message

## 8.1. I/O List

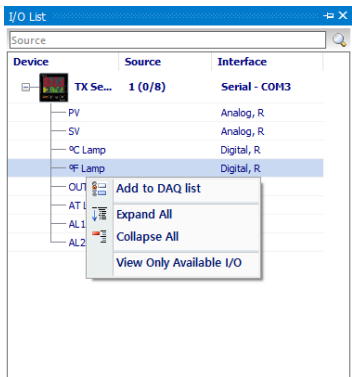
After connecting the device, “I/O List” shows parameters for monitoring the added devices.



I/O sources are used to read and control data. To monitor a source listed in the I/O List, you must add the source to DAQ List.

I/O List shows which units are added to My System. If you click expand button , it displays a list of available I/O sources to add. You can search the desired I/O and add it.

1. Double-click or right-click sources you want to communicate, and select Add to DAQ List.



2. I/O sources are added to DAQ List as below.

| No. | Device           | Address | Source   | Tag Name        | Type    | R/W | Read Mode | Unit | Calculation | Description |
|-----|------------------|---------|----------|-----------------|---------|-----|-----------|------|-------------|-------------|
| 1   | COM3_TX Series   | I       | PV       | COM3_L_PV       | Analog  | R   | Cont      |      |             |             |
| 2   | COM3_TX Series   | I       | SV       | COM3_L_SV       | Analog  | R   | Cont      |      |             |             |
| 3   | COM3_TX Series   | I       | OUT Lamp | COM3_L_OUT Lamp | Digital | R   | Cont      |      |             |             |
| 4   | COM3_TX Series   | I       | AL1 Lamp | COM3_L_AL1 Lamp | Digital | R   | Cont      |      |             |             |
| 5   | COM3_TX Series   | I       | AL2 Lamp | COM3_L_AL2 Lamp | Digital | R   | Cont      |      |             |             |
| 6   | Advanced Tag (0) |         |          |                 |         |     |           |      |             |             |

Sources added to DAQ List are grayed out in the I/O List. The image below shows that PV(Present Value), SV(Set Value), OUT Lamp, AL1 Lamp, and AL2 Lamp are added to DAQ List.

| Device   | Source  | Interface     |
|----------|---------|---------------|
| TX Se... | 1 (5/8) | Serial - COM3 |
| PV       |         | Analog, R     |
| SV       |         | Analog, R     |
| OUT Lamp |         | Digital, R    |
| AL1 Lamp |         | Digital, R    |
| AL2 Lamp |         | Digital, R    |

3. To delete added source in DAQ List, select and right-click the source. If you select a source or sources you want to delete and right-click on mouse, a pop-up menu will appear as below. Then click “Delete the selected item(s)”, “Remove all” or “Select All” to delete.

| No. | Device           | Address | Source   | Tag Name | Type | R/W | Read Mode | Unit | Calculation | Description |
|-----|------------------|---------|----------|----------|------|-----|-----------|------|-------------|-------------|
| 1   | COM3_TX Series   | I       | OUT Lamp |          |      | R   | Cont      |      |             |             |
| 2   | COM3_TX Series   | I       | AT Lamp  |          |      | R   | Cont      |      |             |             |
| 3   | Advanced Tag (0) |         |          |          |      |     |           |      |             |             |

I/O source cannot be added to DAQ List in “Run” status.

## 8.2. DAQ List

“DAQ List” displays a list of sources added from I/O List.

To add DAQ list, double-click each source, or right-click and select “Add to DAQ list.”

The left side of the control panel shows the number of I/O sources and if select that number, the devices are rearranged by the signal type.

It is easy to find the general and user-defined tag by the function for searching tag on the right corner of the “DAQ List”.

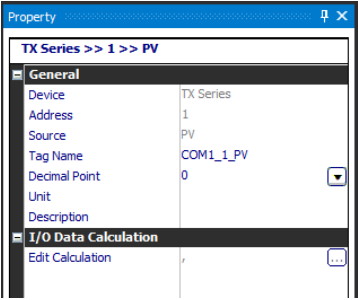
When selecting a source in the “DAQ List”, it is possible to check/modify it in Property control panel.

| Type    | Num |
|---------|-----|
| All     | 3   |
| Group   |     |
| Analog  | 0   |
| Digital | 3   |
| String  | 0   |
| Video   | 0   |

| No.              | Device         | Address | Source   | Tag Name        | Type    | R/W | Read Mode | Unit | Calcu |
|------------------|----------------|---------|----------|-----------------|---------|-----|-----------|------|-------|
| Standard Tag (3) |                |         |          |                 |         |     |           |      |       |
| ✓                | COM7_TX Series | 1       | °C Lamp  | COM7_1_°C Lamp  | Digital | R   | Cont      |      | ,     |
| ✓                | COM7_TX Series | 1       | °F Lamp  | COM7_1_°F Lamp  | Digital | R   | Cont      |      | ,     |
| ✓                | COM7_TX Series | 1       | OUT Lamp | COM7_1_OUT Lamp | Digital | R   | Cont      |      | ,     |
| Advanced Tag (0) |                |         |          |                 |         |     |           |      |       |

### 8.2.1. DAQ List Property

If you select items in “DAQ List” that were added from “I/O List”, “Property” control panel displays item information, I/O Data calculation and Trigger setting.



#### 1. General

You can change Tag Name, Decimal Point, Unit, and Script variables in General properties and edit Tag value formulas in I/O Data Calculation.


|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| Device          | Device name                                                    |
| Address         | Unit address                                                   |
| Source          | I/O source name                                                |
| Tag name        | Saves tag name as “address_I/O source name” and is changeable. |
| Decimal point   | Changes the decimal point of data.                             |
| Unit            | Allows you to change the unit of data.                         |
| Script Variable | Tag value                                                      |
| Description     | Allows you to enter the description. (Read/write mode)         |

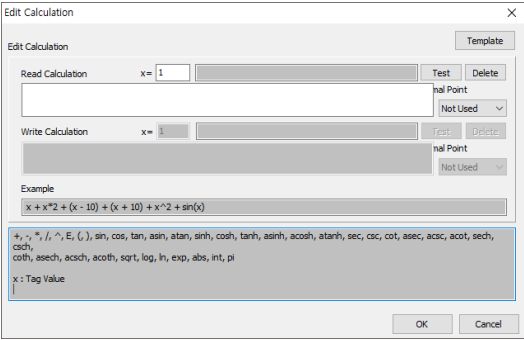


## 2. I/O Data Calculation

You can get the calculated data by editing formula. “x” is input or output tag value from the device.

|                         |                                                                                  |
|-------------------------|----------------------------------------------------------------------------------|
| <b>Edit Calculation</b> | When reading a tag value, apply the data formula to get the desired data.        |
| <b>Trigger</b>          | Set the event is activated when a tag value matches the user-defined conditions. |

1. Click  button next to “Edit Calculation” to open “Edit Calculation” window.
2. Click “Template” at the top-right of the “Edit Calculation” window to edit and save. It is useful to apply read/write calculation directly.



Edit Calculation

Template

Read Calculation x=  Test Delete

Final Point  
Not Used

Write Calculation x=  Test Delete

Final Point  
Not Used

Example

$x + x^2 + (x - 10) + (x + 10) + x^2 + \sin(x)$

+ , - , \* , / , ^ , E , ( , ) , sin , cos , tan , asin , atan , sinh , cosh , tanh , asinh , acosh , atanh , sec , csc , cot , asec , acsc , acot , sech , csch , coth , asech , acsch , acoth , sqrt , log , ln , exp , abs , int , pi

x: Tag Value

OK Cancel

3. Enter the desired formular and click the **Save** and **Apply**. The saved template is applied the “Edit Calculation” dialog box.

Template

Add Del Delete All Save

이름도 단위도 변경  
Change Temperature Unit

Name: Change Temperature Unit

Description: °C -> °F

Read Calculation:  ☒ Apply  Decimal F

Write Calculation:  ☒ Apply  Decimal F

+ , - , \* , / , ^ , E , ( , ) , sin , cos , tan , atan , asin , sinh , cosh , tanh , asinh , acosh , atanh , sec , csc , cot , asec , acsc , acot , sech , coth , asech , acsch , acoth , sqrt , log , ln , exp , abs , int , pi

x : Tag Value

Apply Close

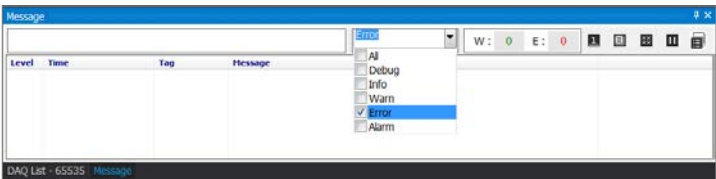
4. This function displays the value on DAQMaster or enter the value to device which is calculated from x. the calcuated output value at DAQMaster or enter a value.



For certain I/O sources, decimal point and unit will be set automatically. In this case, they conform to the parameter set values.

### 8.3. Message

Records events (communication status (start/stop communication, error), log status (start/stop log), etc.) during running the program.

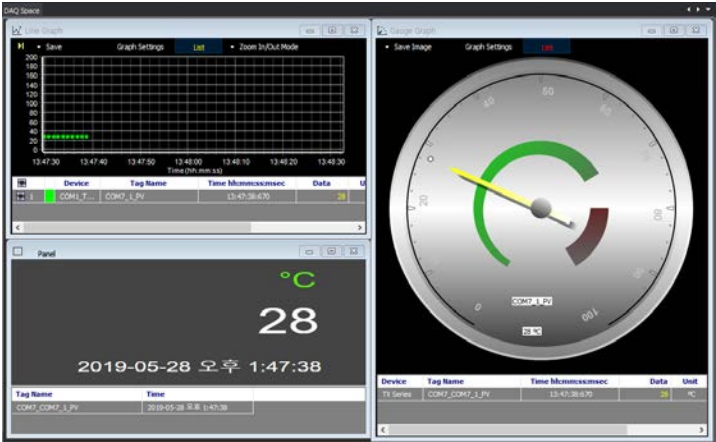


Messages are saved as \*.txt file or log file. Log file is reside in “Message” folder in the installation folder.



# 9. RunTime Screen / DAQ Space

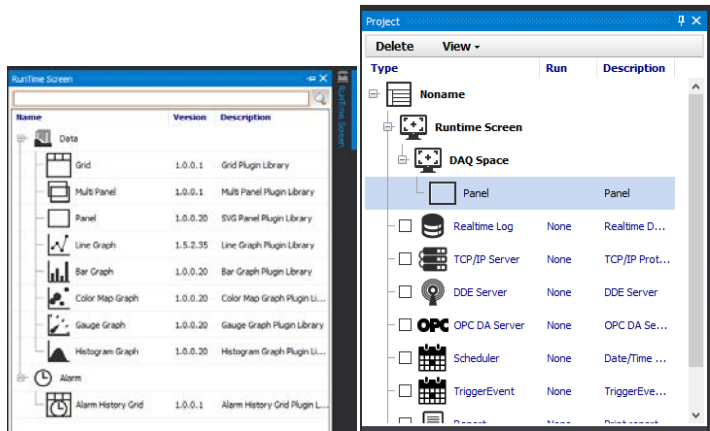
This function is for visual data monitoring.  
Double-click UI item in “RunTime Screen” to add it to “DAQ Workspace”



# 9.1. RunTime Screen

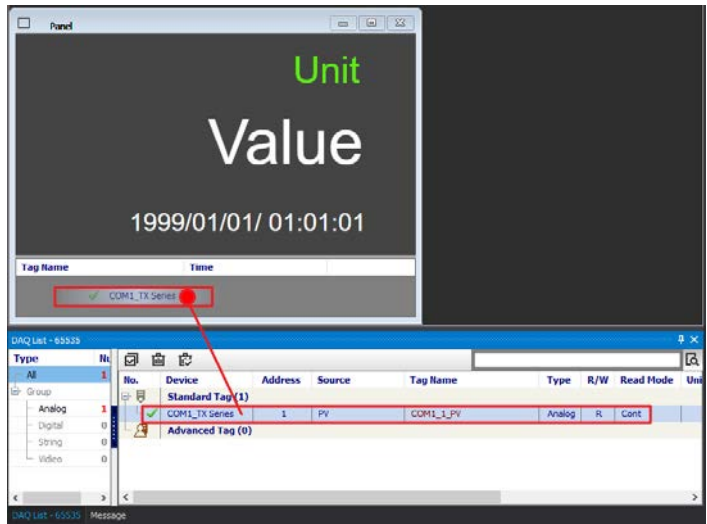
## Load RunTime Screen

Double-click UI item in the Runtime Screen Library to load to the “DAQ WorkSpace”. The loaded runtime screen is also displayed in the “Project” control panel.



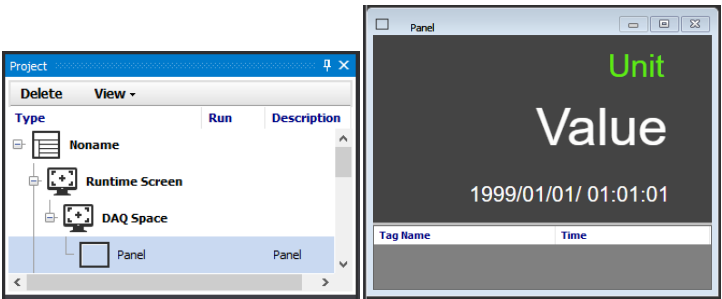
## Add I/O sources

Click the I/O source to be monitored in the “DAQ list” window and drag it to the panel of that list in the runtime screen.



## 9.2. RunTime Screen Property

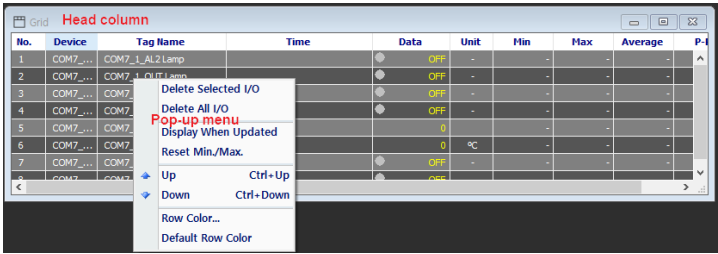
Select the items of RunTime screen in the “DAQ Space” or “Project” control panel, to change the value of basic parameters in the “Property” control panel.



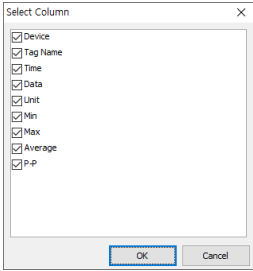
The property parameters have a different option per each item.

### 9.3. Grid

Grid displays multiple I/O source data in text for monitoring.  
Whenever data is updated in “Run” status, the color of “Time” column inverts.



**Edit grid column** Right-click the head of grid, “Select Column” dialog box appears. You can check the desired item to show.



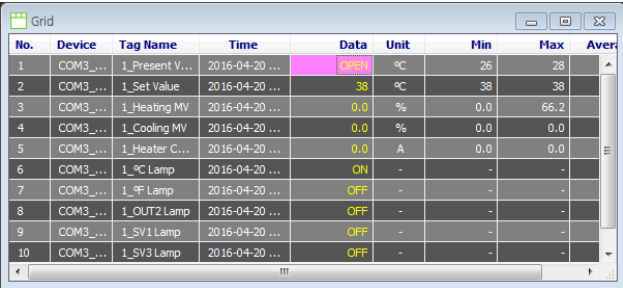
**Display updates** The color of “Time” column inverts upon updates by checking “Display When Updated” from the pop-up menu.

**Reset** Select “Reset Min./Max.” in the pop-up menu to renew the time of data collection.



Display alarm

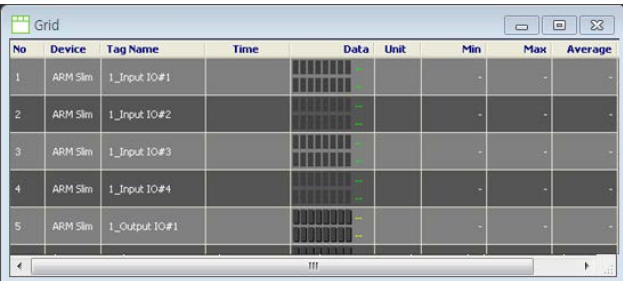
If a parameter value causes an alarm, it flashes as below.



| No. | Device  | Tag Name       | Time           | Data    | Unit | Min | Max  | Average |
|-----|---------|----------------|----------------|---------|------|-----|------|---------|
| 1   | COM3... | 1_Present V... | 2016-04-20 ... | COM3... | °C   | 26  | 28   | -       |
| 2   | COM3... | 1_Set Value    | 2016-04-20 ... | 38      | °C   | 38  | 38   | -       |
| 3   | COM3... | 1_Heating MV   | 2016-04-20 ... | 0.0     | %    | 0.0 | 66.2 | -       |
| 4   | COM3... | 1_Cooling MV   | 2016-04-20 ... | 0.0     | %    | 0.0 | 0.0  | -       |
| 5   | COM3... | 1_Heater C...  | 2016-04-20 ... | 0.0     | A    | 0.0 | 0.0  | -       |
| 6   | COM3... | 1_°C Lamp      | 2016-04-20 ... | ON      | -    | -   | -    | -       |
| 7   | COM3... | 1_°F Lamp      | 2016-04-20 ... | OFF     | -    | -   | -    | -       |
| 8   | COM3... | 1_OUT2 Lamp    | 2016-04-20 ... | OFF     | -    | -   | -    | -       |
| 9   | COM3... | 1_SV1 Lamp     | 2016-04-20 ... | OFF     | -    | -   | -    | -       |
| 10  | COM3... | 1_SV3 Lamp     | 2016-04-20 ... | OFF     | -    | -   | -    | -       |

The Output by bit

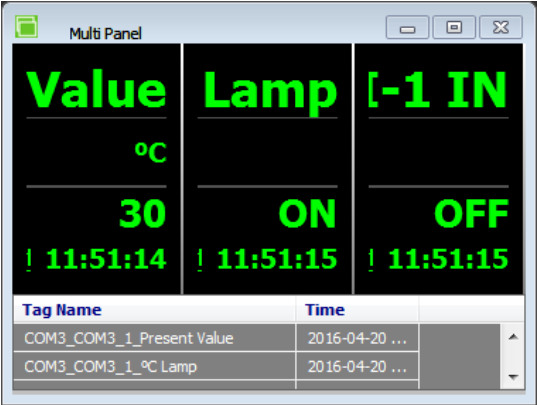
Only in case of the device that supports this function, the output data is represented by bit as below. Double-click the value of a row of “data” and edit it.



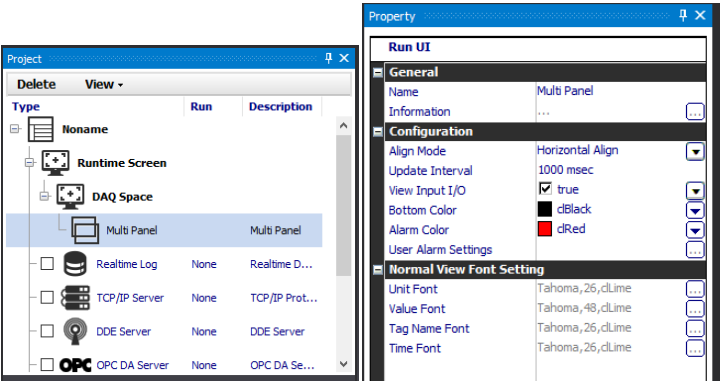
| No | Device   | Tag Name      | Time | Data     | Unit | Min | Max | Average |
|----|----------|---------------|------|----------|------|-----|-----|---------|
| 1  | ARM Slim | 1_Input IO#1  |      | 00000000 |      | -   | -   | -       |
| 2  | ARM Slim | 1_Input IO#2  |      | 00000000 |      | -   | -   | -       |
| 3  | ARM Slim | 1_Input IO#3  |      | 00000000 |      | -   | -   | -       |
| 4  | ARM Slim | 1_Input IO#4  |      | 00000000 |      | -   | -   | -       |
| 5  | ARM Slim | 1_Output IO#1 |      | 00000000 |      | -   | -   | -       |

# 9.4. Multi panel

It displays I/O source data as Flash type. Multi Panel Viewer can display several I/O source in a screen. If alarm of parameter value occurs among data (refer to the manual of the device) and it flashes in the set alarm color.



You can change align mode, color, update interval and etc. in the “Property” control panel by selecting “Runtime screen – Multi Panel” in the “Project” control panel.



**Align mode** Set the align mode for several I/O source. It supports horizontal, vertical, horizontal grid align and vertical grid align.

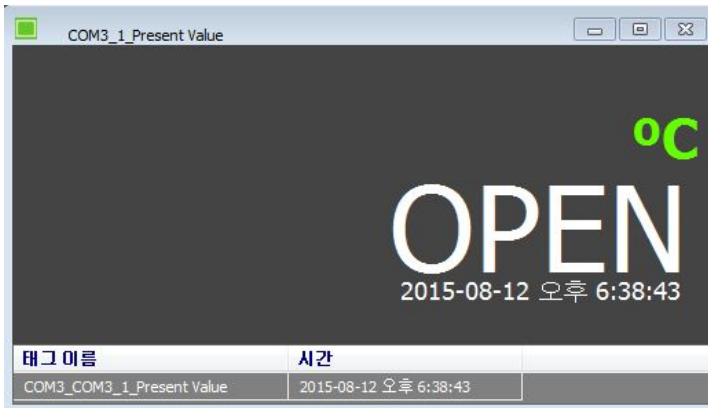
**User Alarm Settings** Sets user alarm option to the user-defined items



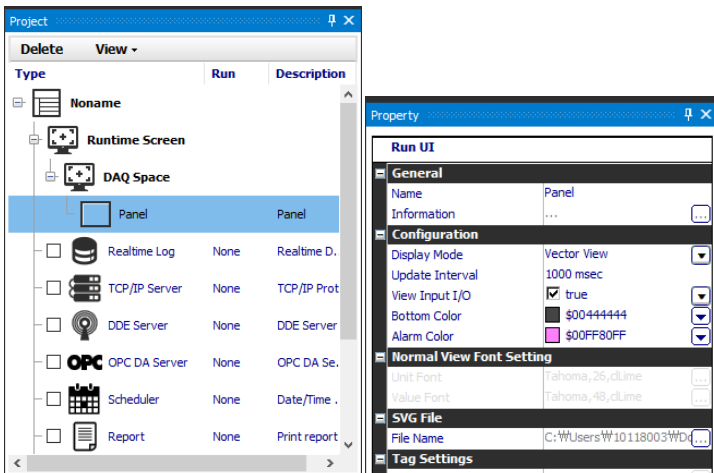
The other settings are same as “Panel graph”. Refer to the 9.5, “Panel”

## 9.5. Panel

Panel displays a I/O source data in character. A Panel can display one I/O source only. If a parameter value causes an alarm (refer to the manual of the device), it flashes as the set alarm color.



Select Panel on the runtime screen in the “Project” control panel to modify properties (such as color, update interval) in the “Property” control panel.



**Configuration**

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Display Mode</b>    | <p>You can select Normal or Vector.</p> <ul style="list-style-type: none"><li>• <b>Vector View:</b> It is possible to display by the mapping process of a tag in SVG file and device tag item. The character property edit is possible by the SVG editor except the color of background and alarm.</li><li>• <b>Normal View:</b> Display 1 information of device tag item, and changing the color of character is possible through “Normal View Font Setting” in “Property” control panel.</li></ul> |
| <b>Update Interval</b> | <p>Interval of the panel update.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>View Input I/O</b>  | <p>Show/hide settings of the I/O source list.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Bottom Color</b>    | <p>Sets the background color of the panel. In case of the SVG file, it is possible to apply the background color when the name of SVG tag ID is designated as “DAQMasterSvg”.</p>                                                                                                                                                                                                                                                                                                                    |
| <b>Alarm Color</b>     | <p>The value of the device tag item exceeds the limit, the background color of the panel flashes as defined alarm color. In case of the SVG file, it is possible to apply the background color when the name of SVG tag ID is designated as “DAQMasterSvg” and it is applied when the number of registered tag item is under 1.</p>                                                                                                                                                                  |

**Normal View Font Setting**

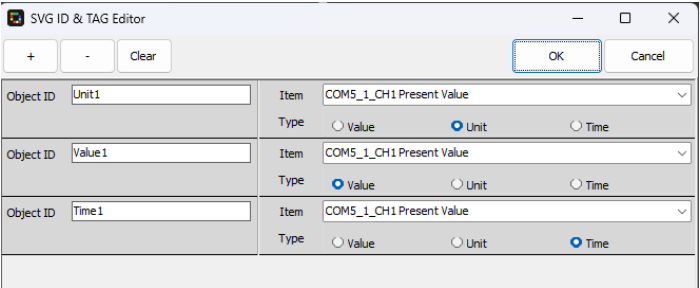
|                   |                                                            |
|-------------------|------------------------------------------------------------|
| <b>Unit Font</b>  | <p>Unit font setting for normal view of display mode.</p>  |
| <b>Value Font</b> | <p>Value font setting for normal view of display mode.</p> |

**SVG file**

|                  |                                                                                                                                                                                                                                                     |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>File name</b> | <p>Select registered SVG file list, preview it, and apply it to the “Panel”. Selected file path saved as a project file of each panel, but the SVG Panel does not display data if there are differences between save path and actual file path.</p> |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**TAG settings**

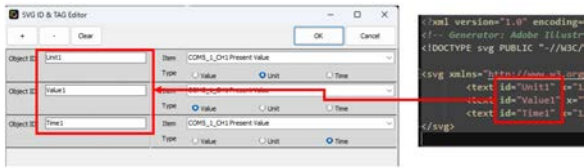
TAG setting is activated when 1 or more tag item of device is registered in “Vector View” mode.  
Edit (OBJECT ID & TAG Editor): Mapping the information of text tag and device item is possible in the SVG file. After mapping is complete, refresh the screen as the information of the actual device item when connecting the communication. If delete the device tag item of registered panel, related mapping data is also deleted.



- +(Add)** The item is created by base on “OBJECT ID”, and it is possible to connect to value of item
- (Delete)** The last added item is deleted.
- Clear (Delete all)** All items are deleted.

**Interlocking SVG file**

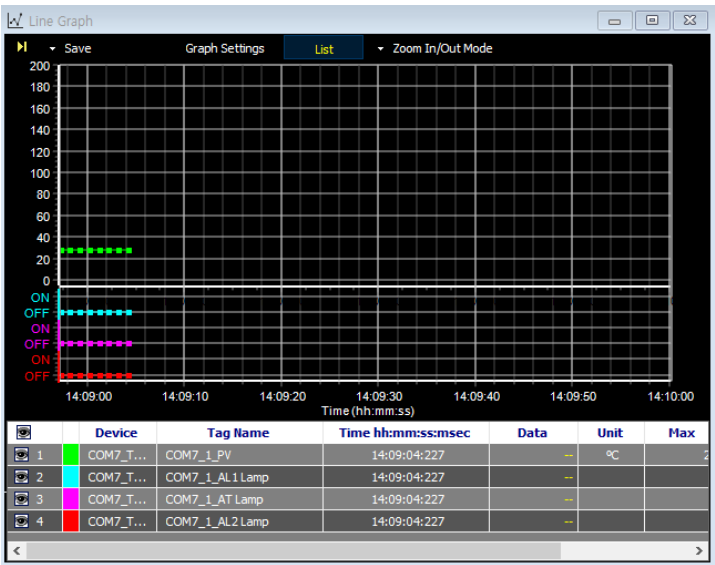
1. Enter the text ID information in the SVG file to OBJECT ID in the “OBJECT ID & TAG Editor”.



2. Select the device tag item and type (Value, Unit and Time).

# 9.6. Line Graph

Line Graph displays multiple I/O source data as a graph for monitoring.



## I/O source list

Use the checkbox of “” to show/hide the graph.

## Change graph color

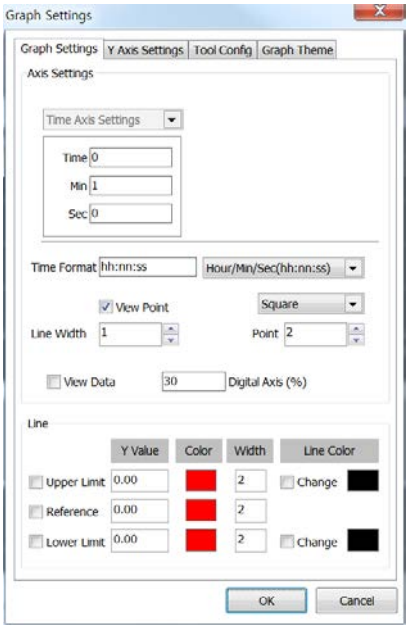
To change the color by each I/O source, double-click the color in front of the device.

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                                                      |                                   |                                                                                                      |                                     |                                                                                                        |                 |                           |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------|-----------------|---------------------------|
| <b>Save image</b>                   | Save image feature saves the current graph screen as an image.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                                                      |                                   |                                                                                                      |                                     |                                                                                                        |                 |                           |
|                                     | <table><tr><td><b>Save To File</b></td><td>Saves in Bitmap (*.bmp) or Windows metafile (*.wmf).</td></tr><tr><td><b>Save To Clipboard (Bitmap)</b></td><td>To use this image directly for other application program, saves in Bitmap (*.bmp) file to clipboard.</td></tr><tr><td><b>Save To Clipboard (MetaFile)</b></td><td>To use this image file directly for other application program, saves in MetaFile (*.wmf) to clipboard.</td></tr><tr><td><b>Save CSV</b></td><td>Saves in CSV file(*.csv).</td></tr></table> | <b>Save To File</b> | Saves in Bitmap (*.bmp) or Windows metafile (*.wmf). | <b>Save To Clipboard (Bitmap)</b> | To use this image directly for other application program, saves in Bitmap (*.bmp) file to clipboard. | <b>Save To Clipboard (MetaFile)</b> | To use this image file directly for other application program, saves in MetaFile (*.wmf) to clipboard. | <b>Save CSV</b> | Saves in CSV file(*.csv). |
| <b>Save To File</b>                 | Saves in Bitmap (*.bmp) or Windows metafile (*.wmf).                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                                                      |                                   |                                                                                                      |                                     |                                                                                                        |                 |                           |
| <b>Save To Clipboard (Bitmap)</b>   | To use this image directly for other application program, saves in Bitmap (*.bmp) file to clipboard.                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                                                      |                                   |                                                                                                      |                                     |                                                                                                        |                 |                           |
| <b>Save To Clipboard (MetaFile)</b> | To use this image file directly for other application program, saves in MetaFile (*.wmf) to clipboard.                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                                                      |                                   |                                                                                                      |                                     |                                                                                                        |                 |                           |
| <b>Save CSV</b>                     | Saves in CSV file(*.csv).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                                                      |                                   |                                                                                                      |                                     |                                                                                                        |                 |                           |
| <b>Graph Settings</b>               | Graph Settings allows you to change the general Graph environment, Y Axis Settings, Tool Config, Graph Theme. For the information, refer to <b>9.6.1, “Line Graph Settings”</b> .                                                                                                                                                                                                                                                                                                                                        |                     |                                                      |                                   |                                                                                                      |                                     |                                                                                                        |                 |                           |
| <b>List</b>                         | List displays or hides I/O source list items at the bottom of the graph. Whenever click the List button, the graph screen switched between On and Off mode.                                                                                                                                                                                                                                                                                                                                                              |                     |                                                      |                                   |                                                                                                      |                                     |                                                                                                        |                 |                           |
| <b>Graph display mode</b>           | <p>Set the graph display mode. For the information, refer to <b>9.6.2, “Line Graph display mode”</b>.</p> <ul style="list-style-type: none"><li>• <b>Set range:</b> Zoom In/Out Mode, Data Analysis Mode, Data Display Mode</li></ul>                                                                                                                                                                                                                                                                                    |                     |                                                      |                                   |                                                                                                      |                                     |                                                                                                        |                 |                           |

# 9.6.1. Line Graph Settings

## 1. Graph Settings tab

Graph Settings allows you to change the general Graph environment.



|                           |                                                                      |
|---------------------------|----------------------------------------------------------------------|
| <b>Time Axis Settings</b> | Sets time (Hours, Min and Sec).                                      |
| <b>Time Format</b>        | Sets time expression for the Time Axis (X Axis)                      |
| <b>View Point</b>         | Shows data point when selected (hides data point when not selected). |
| <b>Point Type</b>         | Sets point type.                                                     |
| <b>Line Width</b>         | Sets thickness of the graph line.                                    |
| <b>Point</b>              | Sets point size.                                                     |
| <b>View Data</b>          | Shows data value when selected (hides data value when not selected). |
| <b>Digital Axis (%)</b>   | Sets digital axis as a percentage.                                   |



## Line

Sets displaying or not upper limit, reference, lower limit line. Sets Y value, color, width and line color of upper limit, reference, lower limit line.

## 2. Y Axis Settings tab

Set Y axis direction and range of each tag.

Graph Settings

Graph Settings

Y Axis Settings

Tool Config

Graph Theme

Left Y Axis

Min

-50.00

Unit

☐ Auto Scale

Max

200.00

☐ Inverted

Grid Increment

0

Right Y Axis

Min

-50.00

Unit

☐ Auto Scale

Max

200.00

☐ Inverted

Grid Increment

0

Y Axis Settings

| No | Tag Name | Type | Axis |
|----|----------|------|------|
|----|----------|------|------|

☒ Left Y Axis

☐ Right Y Axis

OK

Cancel

- Left/Right Y Axis Setting

Sets the left/right Y axis auto scale, max/min range, and unit of the selected tag. Sets the inversion of Y axis.
- Tag List

Shows s list of tag added at the graph.  
Selects the tag to be appeared as Y axis.
- Left/Right Y Axis

Sets the Y axis type (left/right) of the selected tag.

### 3. Tool Config tab

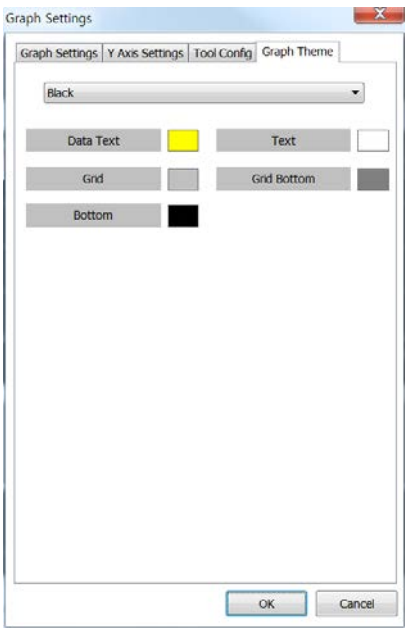
You can set the color band to recognize and emphasize the desired range.



|                              |                                                  |
|------------------------------|--------------------------------------------------|
| <b>Add/Delete/Delete all</b> | Adds/Deletes/Deletes all color band.             |
| <b>Band list</b>             | Displays the added color bands list.             |
| <b>Band name</b>             | Sets color band name.                            |
| <b>Band standard</b>         | Sets Y axis (left/right) of color band standard. |
| <b>Start/End range</b>       | Sets color band's start/end range.               |
| <b>Transparent</b>           | Sets color band transparent.                     |
| <b>Color</b>                 | Sets color band color.                           |

## 4. Graph Theme

You can set the graph theme (text color, grid color, background color).



**Graph theme**

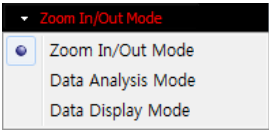
Selects graph theme.

- Set range: Black, White

**Data text/Text/Grid/Grid bottom/Bottom**

According to the set graph theme, sets colors of data text/ text/grid/grid bottom/bottom separately.

# 9.6.2. Line Graph display mode



## 1. Zoom In/Out Mode

Zoom controls Zoom In/Zoom Out of the graph.

### Zoom In



On the graph, hold left mouse button and drag to lower right-hand corner to enlarge the selected area.

### Zoom Out



On the graph, hold left mouse button and drag to upper left-hand corner to return to default scale.

### Change X/Y Axis



On the graph, hold right mouse button and drag to change positions of X/Y axes. If the graph is enlarged or X/Y axes positions have changed, X axis does not automatically move when data has updated.

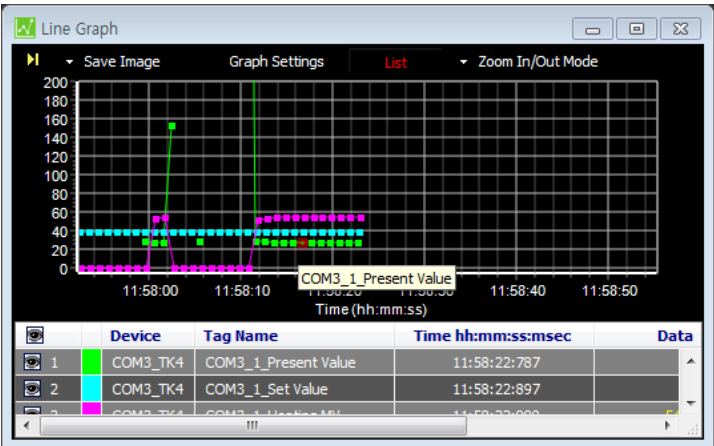
The program preserves user-changed graph scale and axes positions. It considers this as graph analysis mode.

### Mouse wheel functions

|                              |                                                |
|------------------------------|------------------------------------------------|
| <b>Ctrl + mouse wheel ↑</b>  | Decreases X axis                               |
| <b>Ctrl + mouse wheel ↓</b>  | Increases X axis                               |
| <b>Shift + mouse wheel ↑</b> | Decreases Y axis                               |
| <b>Shift + mouse wheel ↓</b> | Increases Y axis                               |
| <b>Mouse wheel</b>           | Increases/decreases X/Y axes at the same time. |

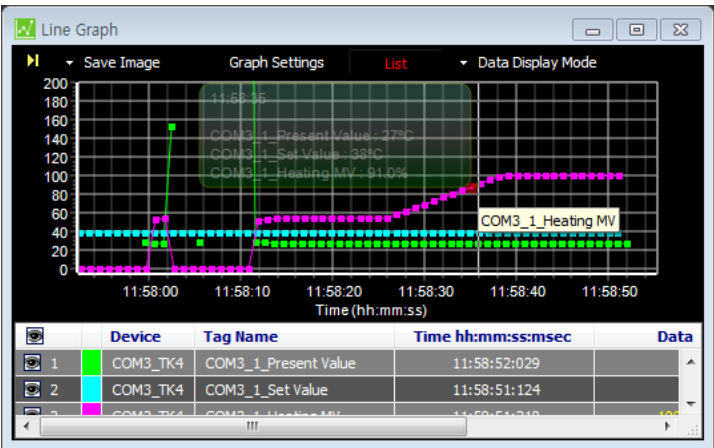
## 2. Data Analysis Mode

Shows X axis (Time) and Y axis values of the mouse position on the graph.

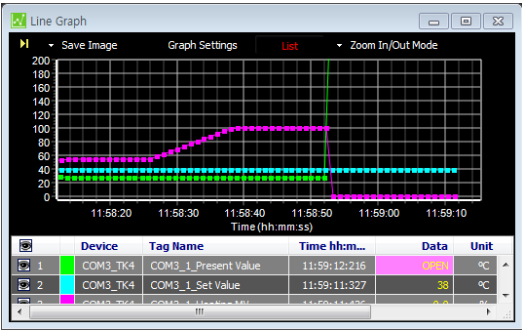


## 3. Data Display Mode

Displays all data values of the mouse position on the graph.

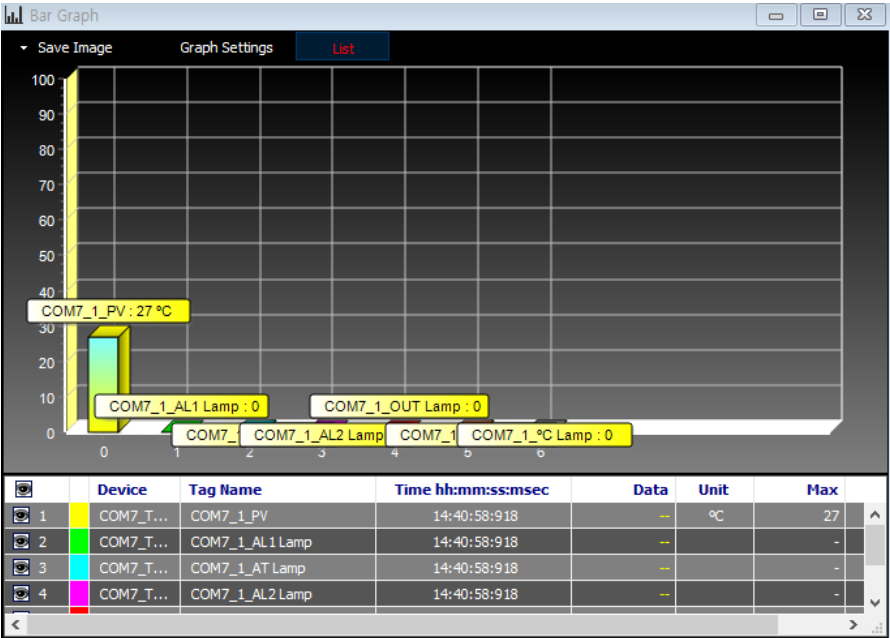


If any parameter value causes an alarm (refer to the manual of the device), it flashes as below.



## 9.7. Bar Graph

Bar graph displays multiple I/O source data as a bar graph for monitoring.  
Added I/O source list items are displayed at the bottom of the graph.



**I/O source list**      Use the checkbox of “” to show/hide the graph of each I/O source.

**Change graph color**      To change the color of each I/O source, double-click the color in front of the device.



## Save image

Saves the current graph screen as an image.

### Save To File

Saves in Bitmap (\*.bmp) or Windows metafile (\*.wmf).

### Save To Clipboard (Bitmap)

To use this image directly for other application program, saves in Bitmap (\*.bmp) file to clipboard.

### Save To Clipboard (MetaFile)

To use this image file directly for other application program, saves in MetaFile (\*.wmf) to clipboard.

**Graph Settings**

Graph Settings allows you to change the general Graph environment.

Graph Settings

Axis Settings

X Axis Settings

Y Axis Settings

Min -0.50

Max 10.00

Min 0.00

Max 100.00

Origin 0.00

☒ View 3D

Bar Style

☐ Horizontal Bar

☒ Vertical Bar

OK

Cancel

- Axis Set

Sets the range of Min. and Max. values of the X/Y axes.
- Origin

Sets the start value of bar's Y Axis.
- 3D View

Sets the display status of the bar.
- Bar Style

Sets the horizontal and vertical styles of the bar.

**List**


List displays or hides the I/O source list at the bottom of the graph. Clicking the List button toggles item display on and off.

# 9.8. Color Map Graph

Color Map Graph displays multiple I/O source data as a color map graph for monitoring. At the bottom is added I/O source list.



- I/O source list

Use the checkbox of “” to show/hide the graph of each I/O source.
- Display graph color

Displays the color of the graph according to the value.

**Save image**

Save Image feature saves the current graph screen as an image. Save Image dialog appears when Save Image button is clicked. Images can be saved in “\*.bmp”, or “\*.wmf” format.

|                                     |                                                                                                        |
|-------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Save To File</b>                 | Saves in Bitmap (*.bmp) or Windows metafile (*.wmf).                                                   |
| <b>Save To Clipboard (Bitmap)</b>   | To use this image directly for other application program, saves in Bitmap (*.bmp) file to clipboard.   |
| <b>Save To Clipboard (MetaFile)</b> | To use this image file directly for other application program, saves in MetaFile (*.wmf) to clipboard. |

Graph Settings

Graph Type

Normal

Color Map

HOT

X Axis Settings

Y Axis Settings

Min 0.00

Max 100.00

Min 0.00

Max 100.00

Circle Size

10

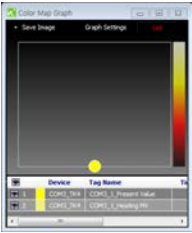
| Tag Name | X Po...              | Y Po... | Min  | Max       |          |
|----------|----------------------|---------|------|-----------|----------|
| 0        | COM3_1_Present Value | 0.00    | 0.00 | -19999.00 | 99999.00 |
| 1        | COM3_1_Heating Mtr   | 0.00    | 0.00 | 0.00      | 10000.00 |

OK

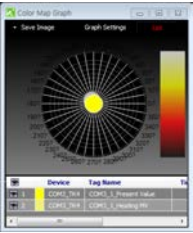
Cancel

Graph Type

Normal



Polar



X/ Y Axes set

Sets max./min. value of X/Y axes range.

Circle size

Sets displayed circle size.

List

Shows s list of tag added at the graph. Double-click an item to set X, Y coordinate (Normal) or angle and distance (Polar Bar) depending on graph type setting.

Color Map

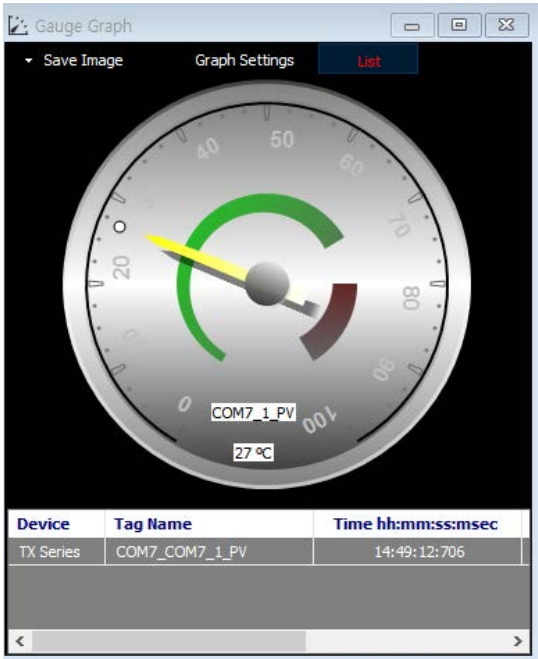
Sets color map. Color map supports HSV, JET, HOT, COOL, and GRAY mode.

List

displays or hides the I/O source list at the bottom of the graph. Clicking the List button toggles item display on and off.

# 9.9. Gauge Graph

A Gauge Graph can display only one I/O source.  
One Gauge Graph represents the only one I/O source.



**Save image** Save Image feature saves the current graph screen as an image. Save Image dialog appears when **Save Image** button is clicked. Images can be saved in “\*.bmp”, or “\*.wmf” format.

- Save To File

Saves in Bitmap (\*.bmp) or Windows metafile (\*.wmf).
- Save To Clipboard (Bitmap)

To use this image directly for other application program, saves in Bitmap (\*.bmp) file to clipboard.
- Save To Clipboard (MetaFile)

To use this image file directly for other application program, saves in MetaFile (\*.wmf) to clipboard.

**Graph Settings**

Gauge Settings

Gauge Type: Circle Gauge

Settings

Min: 0.00

Max: 100.00

Label Interval: 10.00

☒ View Tag Name

Tag Name Color: Yellow

☒ View Green Line

☒ View Red Line

Green Line Start: 0.00

Green Line End: 70.00

Red Line Start: 80.00

Red Line End: 100.00

OK Cancel

**Gauge Type** Sets gauge graph type.

- Setting range: Circle Gauge, Horizontal Liner, Vertical Linear, Numeric Gauge, LED Gauge

**Minimum, Maximum, Label Interval** Sets minimum/maximum value and label interval displayed on graph.

**TagName Visible** Sets display and color option of tagname.

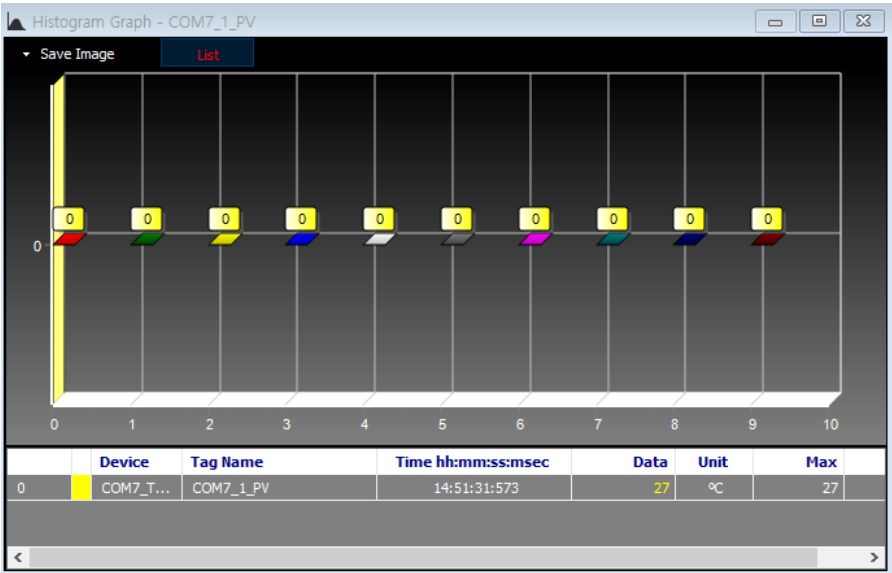
**Green/Red Line Visible** Sets display option of green/red line in graph.

**Green/Red Line Setting** Sets start/end value of green/red line.

**List** List displays or hides the I/O source list at the bottom of the graph. Clicking the List button toggles item display on and off.

# 9.10. Histogram Graph

It divides and displays data by the set update interval and the number of deviation.  
You can specify the update interval, upper/lower limit and the number of deviation at Property.



- Save image

Save Image feature saves the current graph screen as an image.
- Save To File

Saves in Bitmap (\*.bmp) or Windows metafile (\*.wmf).
- Save To Clipboard (Bitmap)

To use this image directly for other application program, saves in Bitmap (\*.bmp) file to clipboard.
- Save To Clipboard (MetaFile)

To use this image file directly for other application program, saves in MetaFile (\*.wmf) to clipboard.
- List

displays or hides the I/O source list at the bottom of the graph. Clicking the List button toggles item display on and off.



# 9.11. Alarm History Grid

Alarm History Grid displays alarm data of I/O source in text for monitoring.  
Whenever an alarm occurs in Run status, the alarm list is updated directly.

Alarm History Grid

| No. | Time                    | Device   | Tag Name             |
|-----|-------------------------|----------|----------------------|
| 1   | 2016-04-20 11:19:05:277 | COM3_TK4 | COM3_1_Present Value |
| 2   | 2016-04-20 11:19:14:387 | COM3_TK4 | COM3_1_Present Value |
| 3   | 2016-04-20 11:19:15:401 | COM3_TK4 | COM3_1_Present Value |

| No. | Device   | Tag Name             |  |
|-----|----------|----------------------|--|
| 1   | COM3_TK4 | COM3_1_Present Value |  |
| 2   | COM3_TK4 | COM3_1_Present Value |  |

# 9.12. DAQ Space

DAQ WorkSpace displays “Runtime screen” and runs the programs of the functions that the DAQMaster supports. The DAQ Space shows each UI and program screen.



- Settings

Right-click “DAQ Space” tab to add or delete the DAQ Space, or change DAQ Space name.
- Switch

Click left/right icon(◀/▶) on the upper right side of the DAQ space window to switch among the different spaces. Click pull-down icon(▼) to select activating space in the list.

# 10. Tool

## 10.1. Edit ModBus Device

You can add the any modbus device which are not supported at DAQMaster and set and monitor the property and I/O.

### 10.1.1. Creating Device File

1. Double-click “Tool” of menu and Edit Modbus executes at DAQ Space.

The screenshot shows the 'Edit Modbus' dialog box with three tabs: 'Modbus Device File Setting', 'Properties and I/O List', and 'Properties and I/O Edit'.

**Modbus Device File Setting:** This tab contains fields for File Name, Vendor, Product, Description, Icon (with a preview), Start Address (set to 'Start at 1'), Communication Device (with checkboxes for RS-232 and TCP/IP), and Frame Interval (set to 40 msec).

**Properties and I/O List:** This tab contains two tables. The first table, titled 'Properties', has columns: Address, Name, R/W, Size, and User Group. The second table, titled 'I/O', has the same columns. Below the I/O table, it says 'No. of Parameters: 0'.

**Properties and I/O Edit:** This tab contains a 'Save Type' dropdown set to 'Category'. Below it are various settings: Name (text field), Icon (dropdown set to 'Not Used'), Color (dropdown set to 'Not Used'), Address (text field), Data (checkbox), Name Type (dropdown set to 'Start16(-32,768~32,767)'), Name Type (dropdown set to 'Analog'), Name Range (dropdown set to 'Inverse'), Reading when Running (dropdown set to 'Continue Reading'), and Read Group (text field).

2. At Modbus Device File Settings, you can create new device file (\*.udv) or load the saved user device file (\*.udv).

Enter vendor name, product name, description, etc. and click “Save” or “Save As” to save the file.

NewLoadSaveSave As

File Name

Vendor

Product

Description

Icon  
(32X32)

Add

Delete

Icon

Start Address

Start at 1

ommunication Devi

☒ RS-232

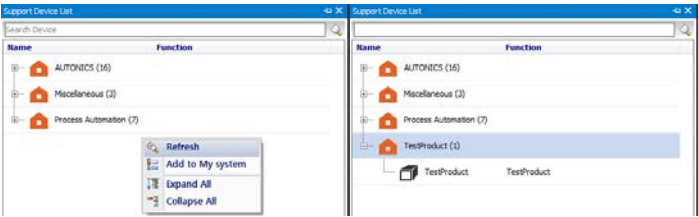
☒ TCP/IP

Frame Interval

40 msec

3. “Save” or “Save As” dialog box appears. Enter file name. The save file name is displayed at File Name of Modbus Device File Settings

4. Refresh Support Device List and check the newly added device.



Refreshing “Support Device List” is only possible when any device is not added to “My System”

# 10.1.2. Adding device properties and I/O

## 1. Add One

1. Click “Add” at Properties and I/O List” of Edit Modbus and “Add” dialog box appears. Select “Add One” and click “OK”

The screenshot shows the 'Add' dialog box with the 'Properties' tab selected. The 'Add One' radio button is chosen. The 'Save Type' dropdown is set to 'Properties'. The fields are as follows:

| Field                | Value                  |
|----------------------|------------------------|
| Name                 |                        |
| Read                 | Not Used               |
| Write                | Not Used               |
| Start Address        | 0                      |
| Value Type           | Sint16(-32,768~32,767) |
| Signal Type          | Analog                 |
| Value Mode           | Inverse                |
| Reading When Running | Continue Reading       |
| Start Address (I/O)  | 1                      |
| Add Num (I/O)        | 1                      |
| User Group (I/O)     | 0                      |

2. Set save type and the desired contents at Properties and I/O Edit of Edit Modbus.  
In case of add one, set the one save type among category, properties, or I/O.

The screenshot shows the 'Properties' tab of the 'Add' dialog box. The 'Save Type' dropdown is set to 'Category'. The 'Category' dropdown is open, showing the following options:

- Category
- Properties
- I/O

The 'I/O' option is highlighted. The other fields are as follows:

| Field                    | Value                  |
|--------------------------|------------------------|
| Name                     |                        |
| Read                     | Not Used               |
| Write                    | Not Used               |
| Address                  |                        |
| Size(x2bytes)            | 1                      |
| Value Type               | Sint16(-32,768~32,767) |
| Signal Type              | Analog                 |
| Value Mode               | Inverse                |
| Reading When Running DAQ | Continue Reading       |
| User Group               | 0                      |
| Description              |                        |

3. When save type is “category”, set the category name. Click “Save” and the category is added at the properties list.

The screenshot shows the DAQMaster interface with the 'Properties' tab selected. The 'Save Type' is set to 'Category'. The 'Name' field contains 'PA1'. The 'Read' and 'Write' fields are set to 'Not Used'. The 'Address' field is set to '0'. The 'Size (bytes)' field is set to '0'. The 'Data' checkbox is unchecked. The 'Signal Type' is set to 'SMB (128~127)'. The 'Signal Mode' is set to 'Analog'. The 'Invert Mode' is set to 'Inverse'. The 'Reading When Running DAQ' is set to 'Continue Reading'. The 'User Group' field is set to '0'. The 'Description' field is empty. The 'Properties' list on the left shows one entry: 'PA1'.

| Address | Name | R/W | Size | User Group |
|---------|------|-----|------|------------|
|         | PA1  | 0   | 0    | 0          |

No. of Parameters: 1

4. When save type is “properties”, set name, read/write type, address, size, value type, etc of properties. Click “Save” and the properties is added at the properties list.

The screenshot shows the DAQMaster interface with the 'Properties' tab selected. The 'Save Type' is set to 'Properties'. The 'Name' field contains 'Alarm 1'. The 'Read' field is set to '01 Read Cells'. The 'Write' field is set to 'Not Used'. The 'Address' field is set to '20001'. The 'Size (bytes)' field is set to '1'. The 'Data' checkbox is unchecked. The 'Value Type' is set to 'SMB16 (-32,768~32,767)'. The 'Signal Type' is set to 'Analog'. The 'Signal Mode' is set to 'Inverse'. The 'Reading When Running DAQ' is set to 'Continue Reading'. The 'User Group' field is set to '0'. The 'Default Value' field is set to '0'. The 'Min' field is set to '-32768'. The 'Max' field is set to '32768'. The 'Unit' field is empty. The 'Decimal Point' field is set to '0'. The 'Description' field is empty. The 'Properties' list on the left shows two entries: 'PA1' and 'Alarm 1'.

| Address | Name    | R/W | Size | User Group |
|---------|---------|-----|------|------------|
|         | PA1     | 0   | 0    | 0          |
| 20001   | Alarm 1 | R   | 1    | 0          |

No. of Parameters: 2

5. When save type is “I/O”, set name, read/write type, address, size, value type, etc of I/O. Click “Save” and the properties is added at the I/O list.

**Properties**

| Address | Name    | R/W | Size | User Group |
|---------|---------|-----|------|------------|
| 20001   | Alarm 1 | R   | 1    | 0          |

**I/O**

| Address | Name | R/W | Size | User Group |
|---------|------|-----|------|------------|
| 130001  | PV1  | R   | 1    | 0          |

**Save Type** I/O

Name PV1

Read 02 Read Discrete Input

Write Not Used

Address 20001

Size (xBytes) 1

☒ Data

Value Type Sint16(-32,768~32,767)

Signal Type Analog

Value Mode Inverse

Reading When Running DAQ Continue Reading

User Group 0

Default Value 0

Min -32768

Max 32768

Unit

Decimal Point 0

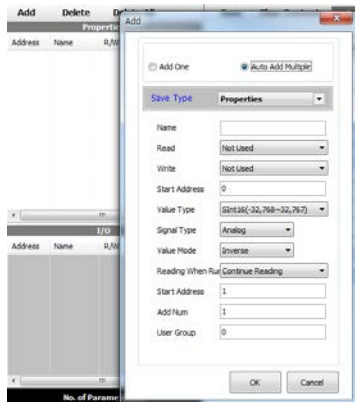
Description

No. of Parameters: 3

6. To edit the properties and I/O, click the desired one at Properties or I/O List. At the Properties and I/O Edit, the contents are displayed. After the edit, click “Save”.

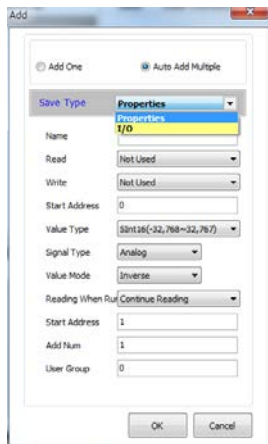
## 2. Auto Add Multiple

1. Click “Add” at Properties and I/O List” of Edit Modbus and “Add” dialog box appears. Select “Auto Add Multiple” and below menu is activated.



2. Select save type at “Add” dialog box.

In case of auto add multiple, set the one save type between properties, or I/O.



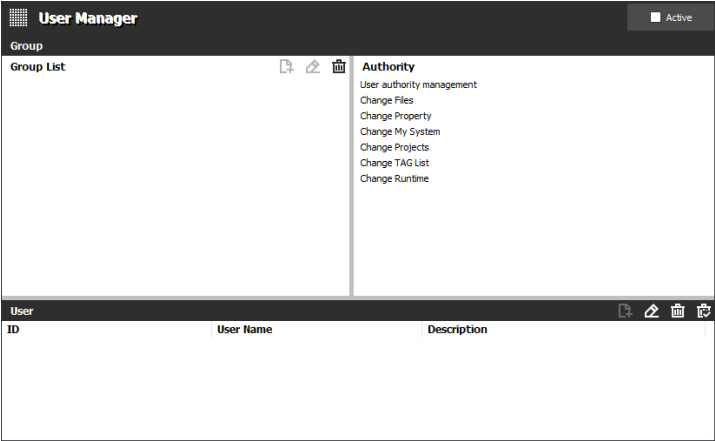




# 10.2. User Manager

Set and manage program feature permissions for each group by adding a login account to DAQMaster and creating user groups.

Click the Manage Users button on the Tools menu to run it.



## Group List

Manages the list of groups The highest administrator group, admin group, cannot be modified or deleted, and authorities for each group are managed individually.

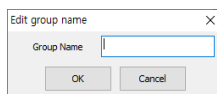
### Add group



A dialog box titled "Add Group" with a close button (X) in the top right corner. It contains a text input field labeled "Group Name" and two buttons at the bottom: "OK" and "Cancel".

Enter the name of the group to add to the “Group Name” and click the [OK] button.

### Edit group name



A dialog box titled "Edit group name" with a close button (X) in the top right corner. It contains a text input field labeled "Group Name" and two buttons at the bottom: "OK" and "Cancel".

In the “Group List” window, select the group to change and click the [Edit group name] button. Enter the name of the group to change in the “Group Name” item and click the [OK] button.

### Delete group



Deletes the selected group from the “Group List”.

**Authority** Each group can have authority independently. Select the list of groups to modify in the “Group List” window, and click the check box to set.

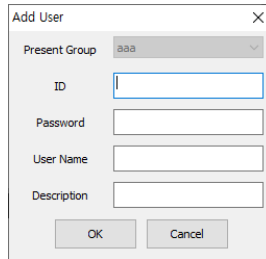
**Authority**

- ☐ User authority management
- ☐ Change Files
- ☐ Change Property
- ☐ Change My System
- ☐ Change Projects
- ☐ Change TAG List
- ☐ Change Runtime

|                                  |                                                                                                                                                                                         |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>User authority management</b> | Authority of each user group and account modification                                                                                                                                   |
| <b>Change Files</b>              | Authority to use the “New”, “Open Project”, “Save” functions in the “Project - File” menu<br>(The “Open from List” and “Save As” functions are available regardless of this authority.) |
| <b>Change Property</b>           | Authority to write parameters on the device                                                                                                                                             |
| <b>Change My System</b>          | Authority to use “My System” control panel (add and change device)                                                                                                                      |
| <b>Change Projects</b>           | Authority to use “Project” control panel                                                                                                                                                |
| <b>Change TAG List</b>           | Authority to add and delete tags in the “DAQ list” control panel                                                                                                                        |
| <b>Change Runtime</b>            | Authority to add and delete “Runtime screen”                                                                                                                                            |

**User** Manages user accounts.

### Add User

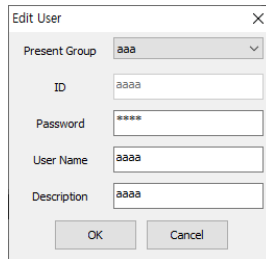


The 'Add User' dialog box contains the following fields and controls:

- Present Group:** A dropdown menu with 'aaa' selected.
- ID:** An empty text input field.
- Password:** An empty text input field.
- User Name:** An empty text input field.
- Description:** An empty text input field.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

Enter the information for the user account to add and click the [OK] button.

### Edit User



The 'Edit User' dialog box contains the following fields and controls:

- Present Group:** A dropdown menu with 'aaa' selected.
- ID:** A text input field containing 'aaaa'.
- Password:** A text input field containing '\*\*\*\*'.
- User Name:** A text input field containing 'aaaa'.
- Description:** A text input field containing 'aaaa'.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

In the “User” window, select the user account name to change, and click the [Edit User] button. Enter the changes and click the [OK] button.

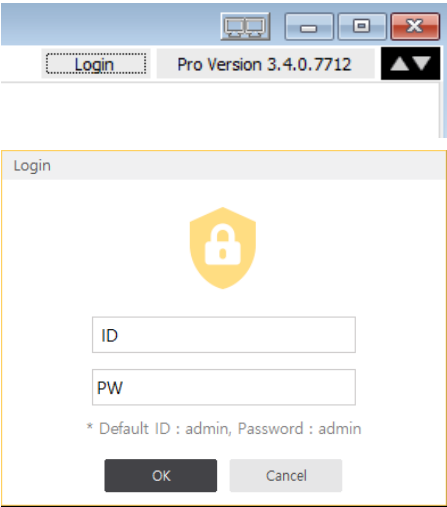
### Delete User



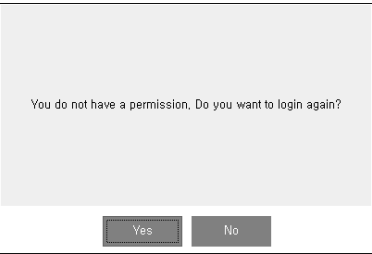
Deletes selected user account in the “User” window.

# 1. Log in

To log in, click the [Login] button in the upper right corner of “DAQMaster” window to open the Login window, enter ID and password, and click the [OK] button.

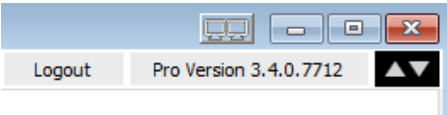


Default ID and password of the administrator account are “admin”.  
The following message pops up when performing an action without authority. Please log in again



# 2. Log out

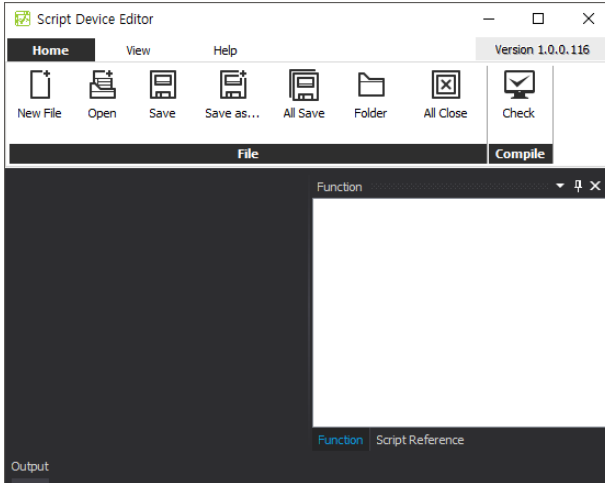
To log out, click the [Logout] button in the upper right corner of the “DAQMaster” window.



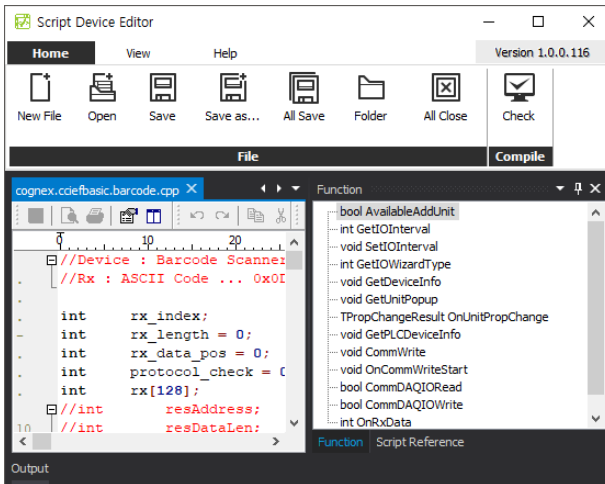
## 10.3. Script Editor

With Script Editor, it is possible to use and add the any device which is not supported by DAQMaster, and analyze input/output data.

1. Click [Script Editor] in “Tool” menu to execute “Script Device Editor”.

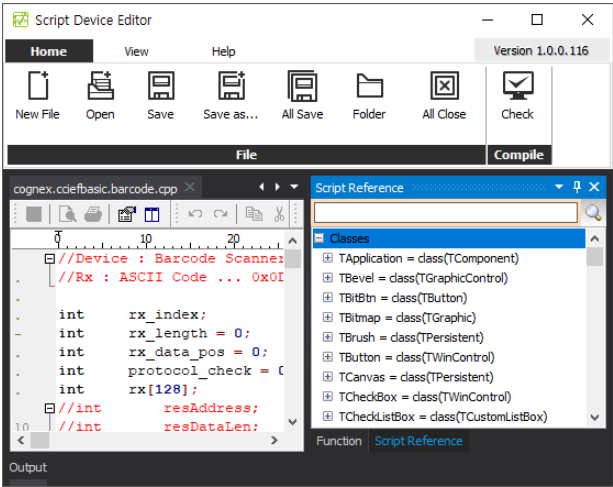


2. On the top of “File” menu, click [Open] to open the file to edit or click [New File] to create a Script.

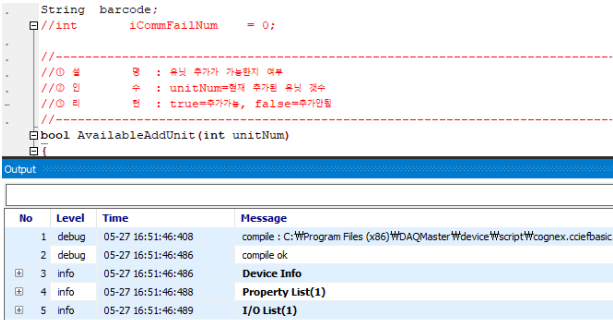


3. The “Function” window at the right side of screen shows the list of functions that are being used. Double-click the function name to move that location.

4. Click “Script Reference” tab on the bottom of the screen, “Script Reference” window is activated and provides list of script reference supported by the script editor. (The supported scripting language is C, JS, Basic, and PAS.)



5. Click [Check] on the top of “Compile” menu whether scripting language has error or not. When errors are detected in the scripting language, output window shows the details about error and leads you to the error location.



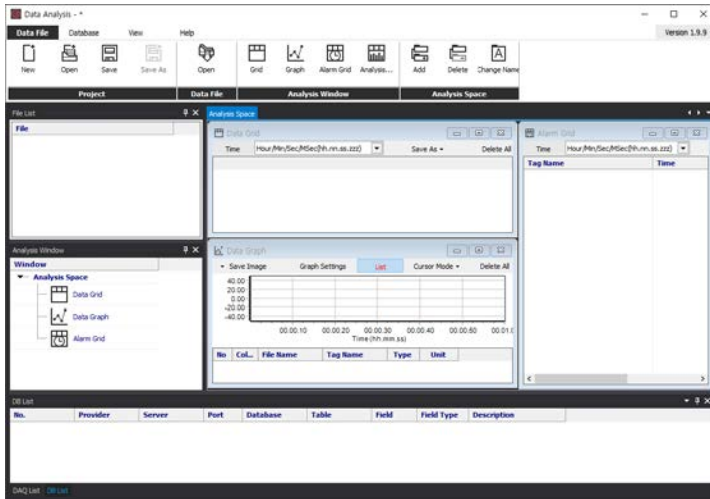
If checking is over without error, modified script language is loaded automatically and is ready to use when running DAQMaster.



## 11. Data Analysis

With this program, it is possible to analyze monitored data files (\*.duf) through Grid, Graph, Alarm Grid and Analysis Spread.

You can run the data analysis program by clicking the Tool › Data Analysis button or in Project › Connect › Run › Log › View Log.



## Menu

Menus are displayed by category. Select a menu to display sub-menus.

## Data File

It consists of Project, Data file, Analysis Window, and Analysis Space. For the information about Data File, refer to **11.1, “Data File”**.

## Database

This menu is available only for DAQMaster Pro version. For the information about Database, refer to **11.2, “Database”**.

## View

It consists of View and Window Align. For the information about View, refer to **11.3, “View”**.

**Help**

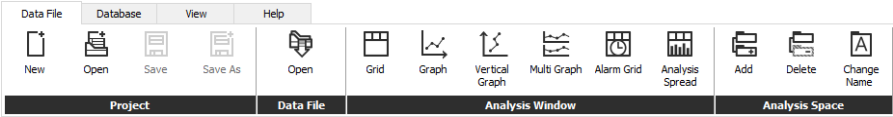
Information for DAQMaster data analysis program.

## File List

Shows a list of project files to analyze.

|                        |                                                         |
|------------------------|---------------------------------------------------------|
| <b>Analysis Window</b> | Shows items at the Analysis Space.                      |
| <b>DAQ List</b>        | Shows I/O source list is saved in the data file.        |
| <b>DB List</b>         | Shows DB list.                                          |
| <b>Analysis Space</b>  | Space for displaying data grid, data graph, Alarm Grid. |
| <b>Data Grid</b>       | Shows I/O data as grid data.                            |
| <b>Data Graph</b>      | Shows I/O data as graph data.                           |
| <b>Alarm Grid</b>      | Shows alarm data as grid data.                          |

# 11.1. Data File



## 1. Project

- New**                Initializes the opened Data file and the analysis screen.
- Open**             Opens the saved data file (\*.dap).
- Save**              Saves the opened data file or analysis windows.
- Save As**          Saves the opened data file or analysis windows as other file name.

## 2. Data File

- Open**             Opens DAQMaster log file (\*.duf, \*.krd, \*.t5d)

## 3. Analysis Window

You can add the items (grid, graph, alarm grid) for displaying Analysis Space. For the information about Analysis Window, refer to the **11.1.1, “AnalysisWindow”**.

## 4. Analysis Space

You can add and delete a tab, or change the tab name at the Analysis Space.

# 11.1.1. AnalysisWindow

## 1. Grid

Analyzes I/O data in grid. Drag the I/O source from the DAQ List and drop onto the data graph screen to analyze it. The file can be saved as a different file name in \*.txt, \*.csv, \*.html or \*.rtf formats.

Data Grid

Time

Hour/Min/Sec/MSec(hh.nn.ss.zzz)

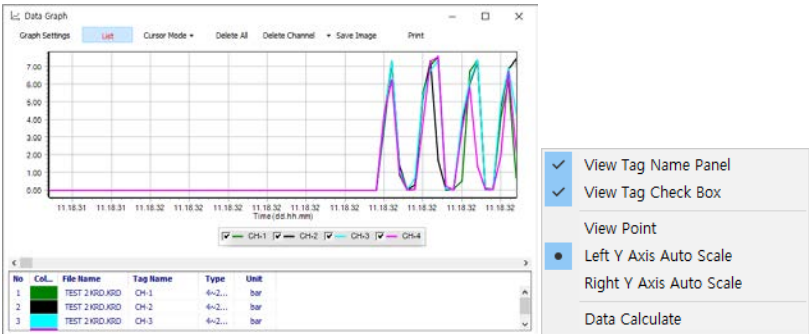
Save As

|              |                |              |                |
|--------------|----------------|--------------|----------------|
| TK4.ddf      | COM3_1_Pres... | TK4.ddf      | COM3_1_Set ... |
| TK4/1        | °C             | TK4/1        | °C             |
| 21:27:31.066 | OPEN           | 21:27:31.175 | 38             |
| 21:27:32.064 | OPEN           | 21:27:32.173 | 38             |
| 21:27:33.078 | OPEN           | 21:27:33.187 | 38             |
| 21:27:34.092 | OPEN           | 21:27:34.201 | 38             |

## 2. Graph

Analyzes I/O data in graph. (X Axis: Time / Y Axis: Value)

Drag the I/O source from the DAQ List and drop onto the data graph screen to analyze it. Right-click to set the display setting of graph.

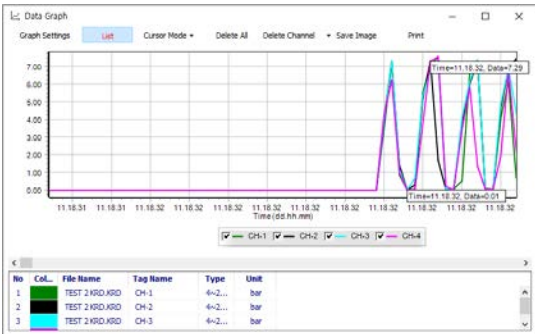


You can use zoom with the mouse wheel feature on the data graph screen for analysis.

Click on the desired value on the graph, the label (time, data value) is fixed.

Right-click the label, it will be deleted.

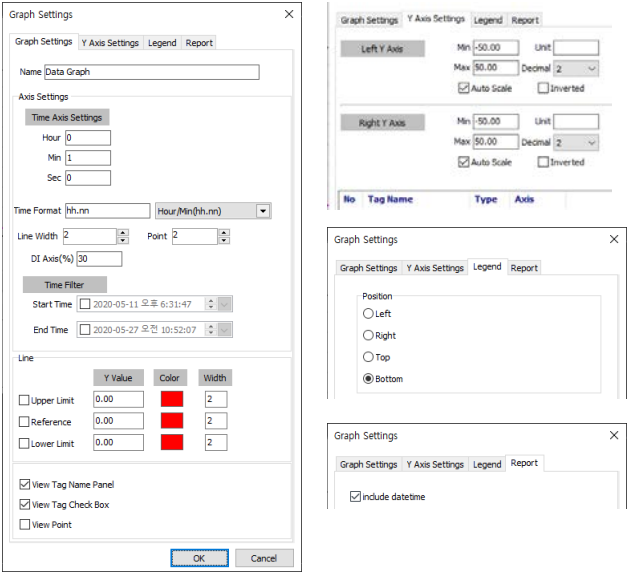
When printing, the fixed label is also printed.



**Graph Settings**

Set Name, Time Axis Settings, Time Filter, Line, Y axis, Legend position, include date etc.

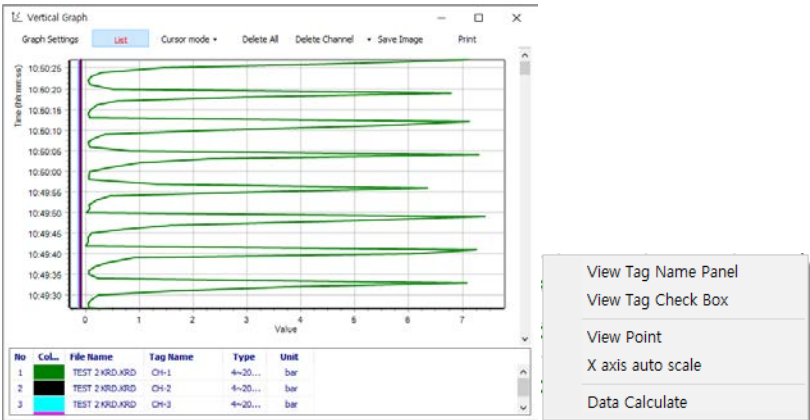
When the time filter is set, only data for the desired time period can be output.



### 3. Vertical Graph

Analyzes I/O data in graph. (X Axis: Value / Y Axis: Time)

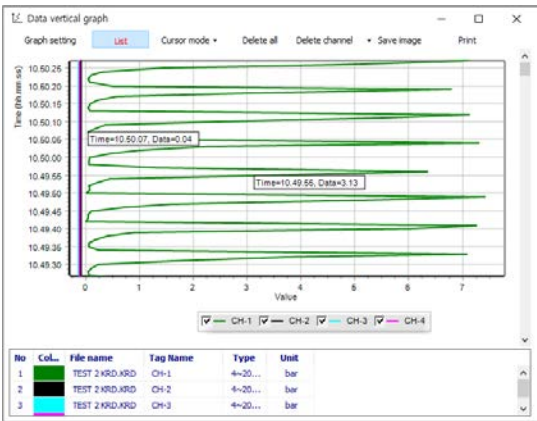
Drag the I/O source from the DAQ List and drop onto the data graph screen to analyze it. Right-click to set the display setting of graph.



Use ctrl + mouse wheel to zoom in and out for analysis on the graph screen.

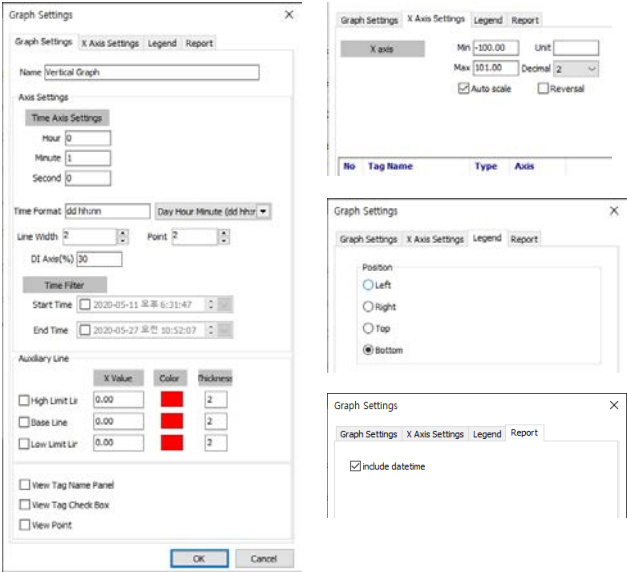
Click on the desired value on the graph, the label (Time, Data value) will be fixed. Right-click the label, it will be deleted.

When printing, the fixed label will be printed together.



**Graph Settings**

Set Name, Time Axis Settings, Time Filter, Line, X axis, Legend position, include date etc. When the time filter is set, only data for the desired time period can be output.

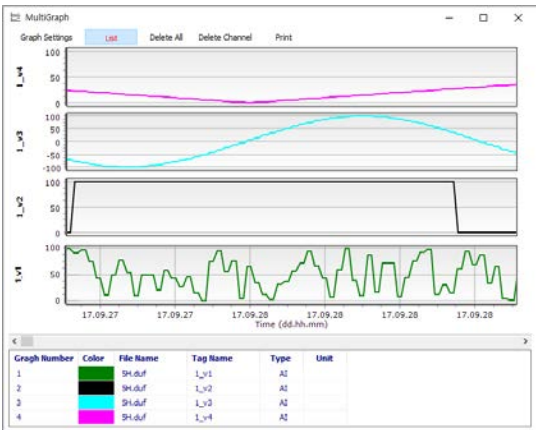




### 4. Multi Graph

Analyze I/O data using individual graphs. (2 to 6 ea)

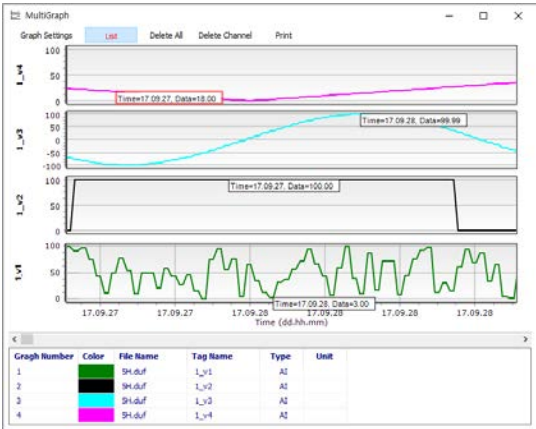
Drag the I/O source to analyze from the DAQ List and drop onto the list or drop them directly onto the graph at the desired location. Double-click the Graph Number and the display setting of graph menu appears.



Click on the desired value on the graph, the label (time, data value) is fixed.

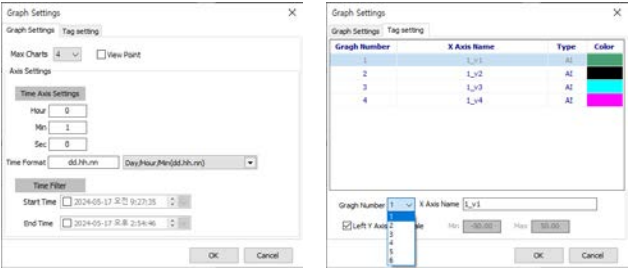
Right-click the label, it will be deleted.

When printing, the fixed label is also printed.



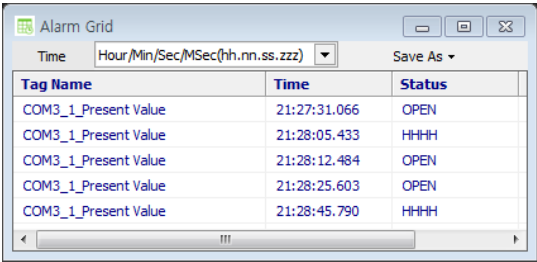
**Graph Settings**

Set the Max Charts, Time Axis Settings, Time Filter, and Tag setting. When the time filter is set, only data for the desired time period can be output. Change the position of the graph or display multiple data on one graph by changing the graph number in the tag settings.



## 5. Alarm Grid

Analyzes alarm data in grid. Drag the alarm source from the DAQ List and drop onto the data graph screen to analyze it. The file can be saved as a different file name in \*.txt, \*.csv, \*.html or \*.rtf formats.



| Tag Name             | Time         | Status |
|----------------------|--------------|--------|
| COM3_1_Present Value | 21:27:31.066 | OPEN   |
| COM3_1_Present Value | 21:28:05.433 | HHHH   |
| COM3_1_Present Value | 21:28:12.484 | OPEN   |
| COM3_1_Present Value | 21:28:25.603 | OPEN   |
| COM3_1_Present Value | 21:28:45.790 | HHHH   |

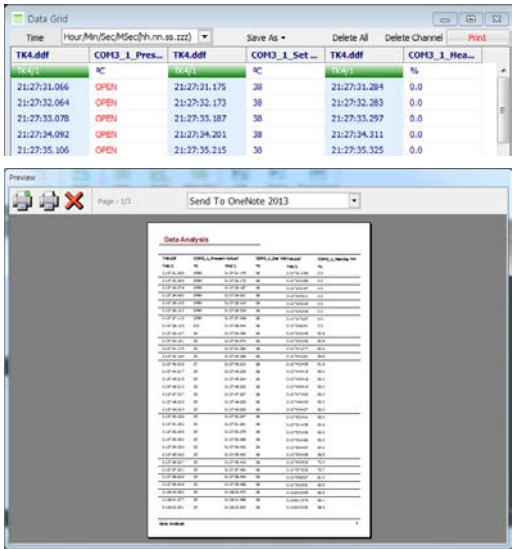
## 6. Analysis Spread

This function is for KRN100, KRN1000.

Analyzes tag values in spread. Displays data with in designated range, which is set by users.

- Save Image: Saves the current graph screen as an image in Graph or Vertical Graph.
- Print: Click the [Print] button to print the analysis screen in Grid, Graph, Vertical Graph, Multi Graph or Alarm Grid.

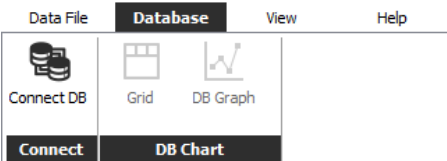
If there are fixed labels, they are also printed.



| Time         | COM3_1_Pres... | TK4.dff      | COM3_1_Set... | TK4.dff      | COM3_1_Hea... |
|--------------|----------------|--------------|---------------|--------------|---------------|
| 21:27:31.066 | OPEN           | 21:27:31.175 | 38            | 21:27:31.284 | 0.0           |
| 21:27:32.064 | OPEN           | 21:27:32.173 | 38            | 21:27:32.283 | 0.0           |
| 21:27:33.078 | OPEN           | 21:27:33.187 | 38            | 21:27:33.297 | 0.0           |
| 21:27:34.092 | OPEN           | 21:27:34.201 | 38            | 21:27:34.311 | 0.0           |
| 21:27:35.106 | OPEN           | 21:27:35.215 | 38            | 21:27:35.325 | 0.0           |

# 11.2. Database

This menu is available only for DAQMaster Pro version.



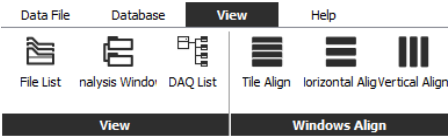
## 1. Connect

You can check the data of connected database.

## 2. DB Chart

It displays database data as grid or graph via field setting, etc.

# 11.3. View

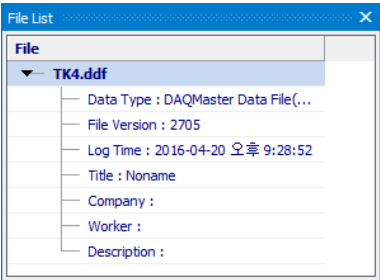


## 1. View

Opens file list, analysis window, DAQ List at Data Analysis.

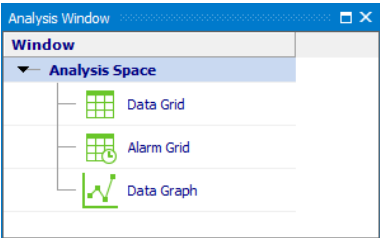
### File List

Shows a list of opened Data Files (\*.duf).



### Analysis Window

Shows items at the Analysis Space.



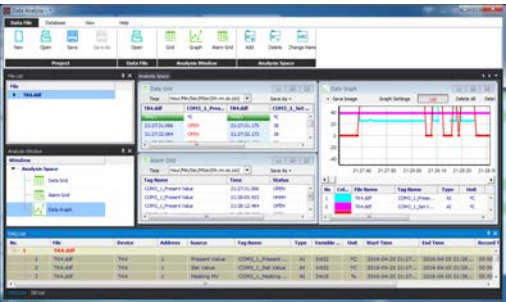
**DAQ List**

DAQ List shows I/O source list saved in the data file. I/O sources can be analyzed through the analysis screen.



| No. | File    | Source | Address | Source        | Tag Name          | Type | Unit  | Start Time | End Time            | Remark              |
|-----|---------|--------|---------|---------------|-------------------|------|-------|------------|---------------------|---------------------|
| 1   | TKA.dbf | TKA    | 0       | Present Value | COMPL_1_Present   | AI   | 16400 | NC         | 2018-04-20 22:27:12 | 2018-04-20 22:28:12 |
| 2   | TKA.dbf | TKA    | 0       | Set Value     | COMPL_1_Set Value | AO   | 16400 | NC         | 2018-04-20 22:27:12 | 2018-04-20 22:28:12 |
| 3   | TKA.dbf | TKA    | 0       | Reading No.   | COMPL_1_Reading   | AI   | 16400 | NC         | 2018-04-20 22:27:12 | 2018-04-20 22:28:12 |

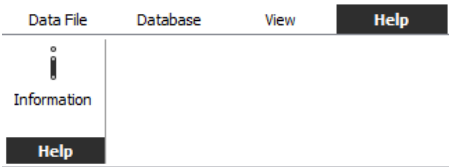
Select I/O source on the DAQ List screen, then drag and drop onto the Data Grid, Data Graph, Alarm Grid.



**2. Windows Align**

Aligns analysis windows. Select Tile Align, Horizontal Align, or Vertical Align according to the environment.

# 11.4. Help



Information for DAQMaster data analysis program.









# Appendix A: Autonics TMH Series Special Features

## A.1. Modules scan

For scanning and connecting control/option modules of TMHC, click [Scan] in “Use Module List”.

| Module List                                                                              |                                                |             |         |
|------------------------------------------------------------------------------------------|------------------------------------------------|-------------|---------|
| Module Name                                                                              | Unit Range                                     |             |         |
|  TMH2/4 | 1~16                                           |             |         |
|  TMHA   | 33~48                                          |             |         |
|  TMHE   | 49~64                                          |             |         |
|  TMHCT  | 65~80                                          |             |         |
| Use Module List                                                                          |                                                |             |         |
| <b>Scan</b>                                                                              | <b>Initialize</b> <b>Delete</b> <b>ReadAll</b> |             |         |
| Address                                                                                  | Module                                         | Module Name | Version |
|                                                                                          |                                                |             |         |

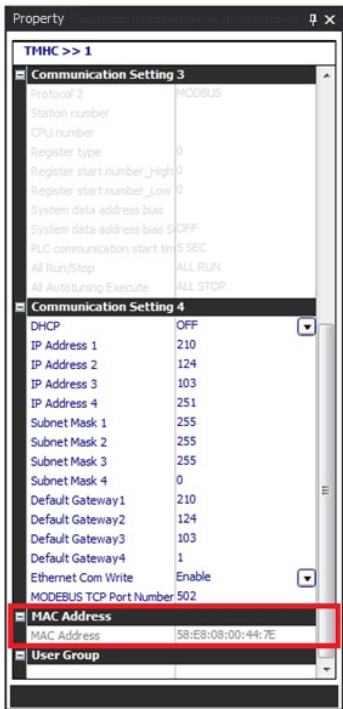
If [Scan] is not activated, click the [Disconnect] to disconnect and re-connect the module.



# A.2. Mac Address

Check Mac address of Ethernet module (TMHC-22E) via DAQMaster.  
(Mac address is the network address for Ethernet communication)

- 1. Connect the TMH device with the DAQMaster to check the Mac address.
- 2. Find the Mac address [Property - Mac Address] on the right side.




## **A.3. Parameter User Group Setting**

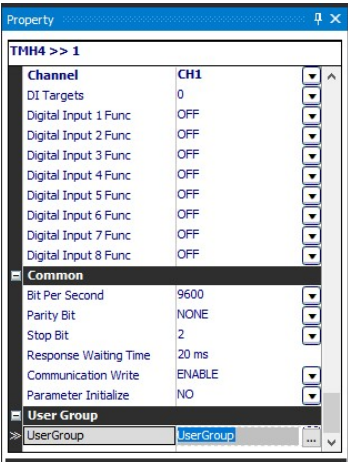
### **A.3.1. Control / Option module**


This feature is able to set the frequently used parameters to the user parameter group. You can quickly and easily set parameter settings.

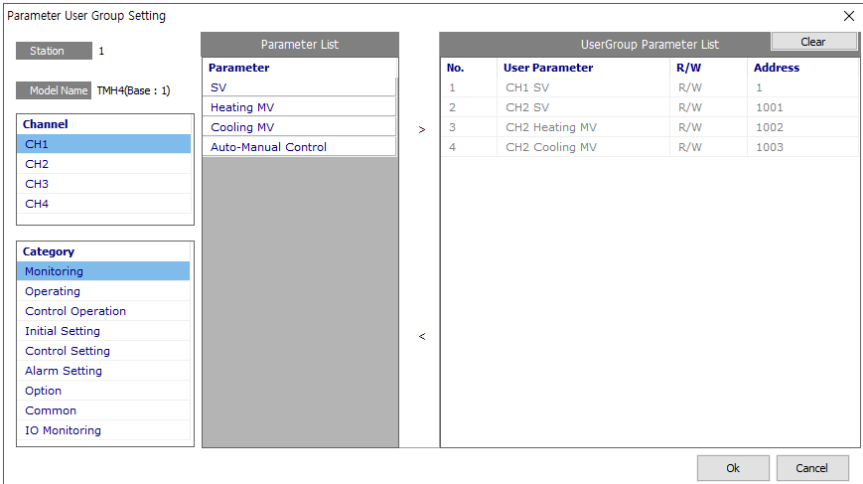
The user group parameters of PLC ladderless module are configured sequentially and consecutively in the device, so it can improve efficiency of communication with the master device via batch read/write process.





For the information about communication address, refer to manual for communication.

1. After “Read All Unit Parameters” ,double click the name or click  button at “User Group” of the lowermost “Property” control panel to run UserGroup parameter.



2. Select the parameter to add the user group and double-click it or click . Set the user group number and click **Ok**.



|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                                    |             |                                |                |                                                                                                                                                                                                               |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------------------|-------------|--------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Station</b>                   | Displays unit address.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                                    |             |                                |                |                                                                                                                                                                                                               |
| <b>Model Name</b>                | Displays model name of the device.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                    |             |                                |                |                                                                                                                                                                                                               |
| <b>Channel</b>                   | In case of multi channel model, displays channel number.<br>In case of none channel model, displays 'NONE'.                                                                                                                                                                                                                                                                                                                                                                                   |            |                                    |             |                                |                |                                                                                                                                                                                                               |
| <b>Category</b>                  | Displays parameter category.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                                    |             |                                |                |                                                                                                                                                                                                               |
| <b>Parameter List</b>            | Displays device parameters as list.<br>Select the parameter to add the user group and double-click it or click  .                                                                                                                                                                                                                                                                                            |            |                                    |             |                                |                |                                                                                                                                                                                                               |
| <b>User Group Parameter List</b> | Displays the registered parameters for user group parameter as list. <table> <tr> <td><b>No.</b></td><td>Order of user parameter in device.</td></tr> <tr> <td><b>User</b></td><td>User parameter name of device.</td></tr> <tr> <td><b>Address</b></td><td>User parameter address of device.<br/>Select the parameter to delete the user group and double-click it or click the  button.</td></tr> </table> | <b>No.</b> | Order of user parameter in device. | <b>User</b> | User parameter name of device. | <b>Address</b> | User parameter address of device.<br>Select the parameter to delete the user group and double-click it or click the  button. |
| <b>No.</b>                       | Order of user parameter in device.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                    |             |                                |                |                                                                                                                                                                                                               |
| <b>User</b>                      | User parameter name of device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                                    |             |                                |                |                                                                                                                                                                                                               |
| <b>Address</b>                   | User parameter address of device.<br>Select the parameter to delete the user group and double-click it or click the  button.                                                                                                                                                                                                                                                                                 |            |                                    |             |                                |                |                                                                                                                                                                                                               |
| <b>Clear</b>                     | Delete all the set user group parameter.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                                    |             |                                |                |                                                                                                                                                                                                               |
| <b>Ok</b>                        | Apply the set user group parameter to module.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                                    |             |                                |                |                                                                                                                                                                                                               |
| <b>Cancel</b>                    | Close the dialog window.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                                    |             |                                |                |                                                                                                                                                                                                               |

- After adding all parameters you want, click [Ok] to set user group parameter.



For more information about all address of user group parameter, refer to user manual for communication.

### A.3.2. Ethernet communication module

1. Scan the using modules refer to the A.1, “Modules scan”.

TMH-C(Unit1) X DAQ Space

Module List

| Module Name | Unit Range |
|-------------|------------|
| TMH2/4      | 1~16       |
| TMHA        | 33~48      |
| TMHE        | 49~64      |
| TMHCT       | 65~80      |

Use Module List

| Scan    | Initialize | Delete      | ReadAll        | Copy all |
|---------|------------|-------------|----------------|----------|
| Address | Module     | Module Name | Version        |          |
| 1       | TMH2/4     | TMH4-N2C-L  | SW:300, HW:200 |          |
| 2       | TMH2/4     | TMH4-N2S    | SW:300, HW:200 |          |
| 3       | TMH2/4     | TMH4-N2R-L  | SW:300, HW:200 |          |
| 4       | TMH2/4     | TMH4-N2C-L  | SW:300, HW:200 |          |

1 - 1

TMH4

TMH4-N2C-L

Autonics

2 - 2

TMH4

TMH4-N2S

Autonics

3 - 3

TMH4

TMH4-N2R-L

Autonics

4 - 4

TMH4

TMH4-N2C-L

Autonics

2. Right click the module to add user group parameter, and click [Read Parameter] button.  
It is possible to read parameters of all connected modules by clicking [ReadAll] button.

TMH-C(Unit1) X DAQ Space

Module List

| Module Name | Unit Range |
|-------------|------------|
| TMH2/4      | 1~16       |
| TMHA        | 33~48      |
| TMHE        | 49~64      |
| TMHCT       | 65~80      |

Use Module List

| Scan    | Initialize | Delete      | ReadAll        | Copy all |
|---------|------------|-------------|----------------|----------|
| Address | Module     | Module Name | Version        |          |
| 1       | TMH2/4     | TMH4-N2C-L  | SW:300, HW:200 |          |
| 2       | TMH2/4     | TMH4-N2S    | SW:300, HW:200 |          |
| 3       | TMH2/4     | TMH4-N2R-L  | SW:300, HW:200 |          |
| 4       | TMH2/4     | TMH4-N2C-L  | SW:300, HW:200 |          |

1 - 1

TMH4

TMH4-N2C-L

Autonics

2 - 2

TMH4

TMH4-N2S

Autonics

3 - 3

TMH4

TMH4-N2R-L

Autonics

4 - 4


TMH4

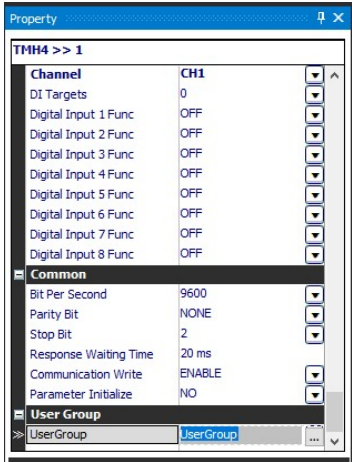
TMH4-N2C-L

Autonics

Copy Parameter...

Read Parameter


- After selecting the module to add user group parameter, double click "Property" [User Group] or click  button to open "User Group Parameter Setting" window.

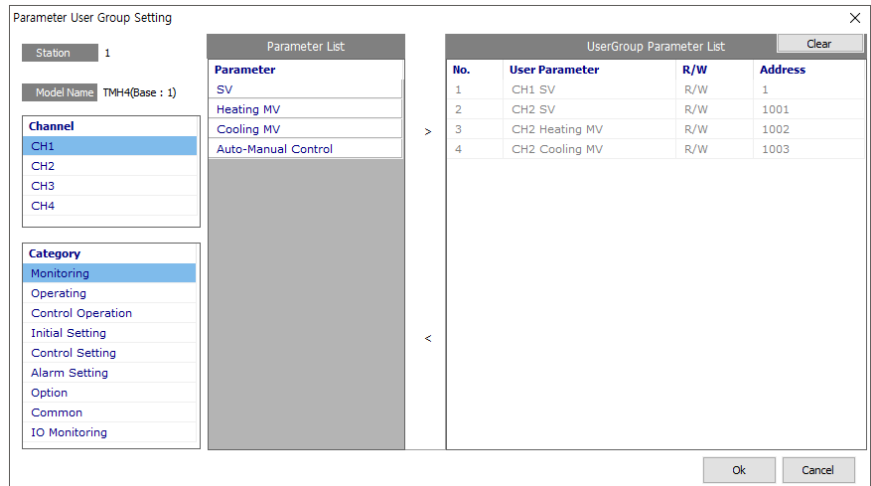


**Property**

TMH4 >> 1

|                       |           |
|-----------------------|-----------|
| <b>Channel</b>        | CH1       |
| DI Targets            | 0         |
| Digital Input 1 Func  | OFF       |
| Digital Input 2 Func  | OFF       |
| Digital Input 3 Func  | OFF       |
| Digital Input 4 Func  | OFF       |
| Digital Input 5 Func  | OFF       |
| Digital Input 6 Func  | OFF       |
| Digital Input 7 Func  | OFF       |
| Digital Input 8 Func  | OFF       |
| <b>Common</b>         |           |
| Bit Per Second        | 9600      |
| Parity Bit            | NONE      |
| Stop Bit              | 2         |
| Response Waiting Time | 20 ms     |
| Communication Write   | ENABLE    |
| Parameter Initialize  | NO        |
| <b>User Group</b>     |           |
| > UserGroup           | UserGroup |

- Select the parameter to add to user group, and double click the name or click  button. To add the parameter of other station number, close the setting window, select the module in "TMH-C" window, and enter the setting window again.



**Parameter User Group Setting**

Station: 1

Model Name: TMH4(Base : 1)

**Channel**

- CH1
- CH2
- CH3
- CH4

**Category**

- Monitoring
- Operating
- Control Operation
- Initial Setting
- Control Setting
- Alarm Setting
- Option
- Common
- IO Monitoring

**Parameter List**

| Parameter           |
|---------------------|
| SV                  |
| Heating MV          |
| Cooling MV          |
| Auto-Manual Control |

**UserGroup Parameter List**

| No. | User Parameter | R/W | Address |
|-----|----------------|-----|---------|
| 1   | CH1 SV         | R/W | 1       |
| 2   | CH2 SV         | R/W | 1001    |
| 3   | CH2 Heating MV | R/W | 1002    |
| 4   | CH2 Cooling MV | R/W | 1003    |

Ok Cancel

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                                    |             |                                |                |                                                                                                                                   |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------------------|-------------|--------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Station</b>                   | Displays unit address.                                                                                                                                                                                                                                                                                                                                                                                               |            |                                    |             |                                |                |                                                                                                                                   |
| <b>Model Name</b>                | Displays model name of the device.                                                                                                                                                                                                                                                                                                                                                                                   |            |                                    |             |                                |                |                                                                                                                                   |
| <b>Channel</b>                   | In case of multi channel model, displays channel number.<br>In case of none channel model, displays 'NONE'.                                                                                                                                                                                                                                                                                                          |            |                                    |             |                                |                |                                                                                                                                   |
| <b>Category</b>                  | Displays parameter category.                                                                                                                                                                                                                                                                                                                                                                                         |            |                                    |             |                                |                |                                                                                                                                   |
| <b>Parameter List</b>            | Displays device parameters as list.<br>Select the parameter to add the user group and double-click it or click [ > ].                                                                                                                                                                                                                                                                                                |            |                                    |             |                                |                |                                                                                                                                   |
| <b>User Group Parameter List</b> | Displays the registered parameters for user group parameter as list. <table> <tr> <td><b>No.</b></td><td>Order of user parameter in device.</td></tr> <tr> <td><b>User</b></td><td>User parameter name of device.</td></tr> <tr> <td><b>Address</b></td><td>User parameter address of device.<br/>Select the parameter to delete the user group and double-click it or click the [ &lt; ] button.</td></tr> </table> | <b>No.</b> | Order of user parameter in device. | <b>User</b> | User parameter name of device. | <b>Address</b> | User parameter address of device.<br>Select the parameter to delete the user group and double-click it or click the [ < ] button. |
| <b>No.</b>                       | Order of user parameter in device.                                                                                                                                                                                                                                                                                                                                                                                   |            |                                    |             |                                |                |                                                                                                                                   |
| <b>User</b>                      | User parameter name of device.                                                                                                                                                                                                                                                                                                                                                                                       |            |                                    |             |                                |                |                                                                                                                                   |
| <b>Address</b>                   | User parameter address of device.<br>Select the parameter to delete the user group and double-click it or click the [ < ] button.                                                                                                                                                                                                                                                                                    |            |                                    |             |                                |                |                                                                                                                                   |
| <b>Clear</b>                     | Delete all the set user group parameter.                                                                                                                                                                                                                                                                                                                                                                             |            |                                    |             |                                |                |                                                                                                                                   |
| <b>Ok</b>                        | Apply the set user group parameter to module.                                                                                                                                                                                                                                                                                                                                                                        |            |                                    |             |                                |                |                                                                                                                                   |
| <b>Cancel</b>                    | Close the window.                                                                                                                                                                                                                                                                                                                                                                                                    |            |                                    |             |                                |                |                                                                                                                                   |

5. After adding all parameters you want, click [Ok] to set user group parameter.



For more information about all address of user group parameter, refer to user manual for communication.



### A.3.3. PLC ladderless communication module

1. Scan the using modules refer to the **A.1, “Modules scan”**.
2. To add user group parameter, click [User Group Parameter Setting] button at the bottom of “TMH-C” – “User Module List” window.

| TMH-C(Unit:1) X DAQ Space    |                                    |
|------------------------------|------------------------------------|
| Module List                  |                                    |
| Module Name                  | Unit Range                         |
| TMH2/4                       | 1~16                               |
| TMHA                         | 33~48                              |
| TMHE                         | 49~64                              |
| TMHCT                        | 65~80                              |
| Use Module List              |                                    |
| Scan                         | Initialize Delete ReadAll Copy all |
| Address                      | Module Module Name Version         |
| 1                            | TMH2/4 TMH4-N2C-L SW:300, HW:200   |
| 2                            | TMH2/4 TMH4-N2S SW:300, HW:200     |
| 3                            | TMH2/4 TMH4-N2R-L SW:300, HW:200   |
| 4                            | TMH2/4 TMH4-N2C-L SW:300, HW:200   |
| User Group Parameter Setting |                                    |

3. Double click the name of parameter to add to “User Group Parameter List”

User Group Parameter Setting

UserGroup Parameter List

Total UserGroup Parameter Number : 12




| No.                      | User Parameter         | R... | Address |
|--------------------------|------------------------|------|---------|
| Station1 : TMH4-N2C-L(0) |                        |      |         |
| Station2 : TMH4-N2S(6)   |                        |      |         |
| 1                        | CH2 Cooling MV         | R/W  | S2031   |
| 2                        | CH2 Run Stop           | R/W  | S2032   |
| 3                        | CH2 SV-0 Setting V...  | R/W  | S2033   |
| 4                        | CH2 SV-2 Setting V...  | R/W  | S2034   |
| 5                        | CH2 Heating Proport... | R/W  | S2035   |
| 6                        | CH2 Cooling Integra... | R/W  | S2036   |
| Station3 : TMH4-N2R-L(5) |                        |      |         |
| 1                        | CH2 Cooling MV         | R/W  | S2061   |
| 2                        | CH2 Run Stop           | R/W  | S2062   |
| 3                        | CH2 Multi SV No        | R/W  | S2063   |
| 4                        | CH2 Run Stop           | R/W  | S2064   |
| 5                        | CH2 Unit               | R    | S2065   |
| Station4 : TMH4-N2C-L(0) |                        |      |         |

Parameter List

| Station1 : TMH4-N2C-L | Station2 : TMH4-N2S   | Station3 : TMH4-N2R-L | Station4 : TMH4-N2C-L |
|-----------------------|-----------------------|-----------------------|-----------------------|
| Parameter             | Parameter             | Parameter             | Parameter             |
| CH1(132)              | CH1(132)              | CH1(132)              | CH1(132)              |
| SV                    | CH2(132)              | CH2(132)              | CH2(132)              |
| Heating MV            | CH3(132)              | CH3(132)              | CH3(132)              |
| Cooling MV            | CH4(132)              | CH4(132)              | CH4(132)              |
| Auto-Manual Control   | Common(6)             | Common(6)             | Common(6)             |
| Run Stop              | IO Monitoring(30)     | IO Monitoring(30)     | IO Monitoring(30)     |
| Multi SV No           | Bit Per Second        | CH1 Present Value     |                       |
| SV-0 Setting Value    | Parity Bit            | CH2 Present Value     |                       |
| SV-1 Setting Value    | Stop Bit              | CH3 Present Value     |                       |
| SV-2 Setting Value    | Response Waiting T... | CH4 Present Value     |                       |
| SV-3 Setting Value    | Communication Write   | CH1 Dot               |                       |
| Auto-Tuning Execut    | Parameter Initialize  | CH2 Dot               |                       |
| Heating Proportions   | IO Monitoring(30)     | CH3 Dot               |                       |
| Cooling Proportions   |                       | CH4 Dot               |                       |
| Heating Integral Tin  |                       | CH1 Unit              |                       |
| Cooling Integral Tin  |                       | CH2 Unit              |                       |
| Heating Derivation .  |                       | CH3 Unit              |                       |
| Cooling Derivation .  |                       | CH4 Unit              |                       |
| Dead Overlap band     |                       | CH1 Set Value         |                       |
| Manual Reset          |                       | CH2 Set Value         |                       |

Ok

Cancel

|                                                                                   |                                                                                                                             |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>User Group Parameter List</b>                                                  | Displays the list of user group parameters which is added from “Parameter List”                                             |
| <b>Total User Group Parameter Number</b>                                          | Displays a number of user group parameters which are added from “Parameter List”                                            |
|  | Expands or collapses all the list of user group parameter list.                                                             |
|  | Deletes the selected parameter in “User Group Parameter List”.                                                              |
|  | Deletes all the parameters in “User Group Parameter List”.                                                                  |
| <b>User parameter</b>                                                             | Displays information for user parameter.                                                                                    |
| <b>R/W</b>                                                                        | Displays read/write availability of user parameter.<br>R: Read, W: Write, R/W: Read/Write                                   |
| <b>Address</b>                                                                    | Displays address of user parameter.                                                                                         |
| <b>Parameter List</b>                                                             | Displays additional parameters of connected modules.<br>Double click the parameter name to add “User Group Parameter List”. |
| <b>Ok</b>                                                                         | Apply the set user group parameter to module.                                                                               |
| <b>Cancel</b>                                                                     | Close the window.                                                                                                           |

4. After adding all parameter you want, click [Ok] to set user group parameter.



For more information about all address of user group parameter, refer to user manual for communication.

## A.4. Firmware Version

If the firmware versions of connected modules are different, extra settings are needed for normal operation. Refer to below details to check the firmware version and change the settings.

### A.4.1. Major changed firmware version

#### Control module TMH2/4

- Version 2.00**
- Added control output "RUN/STOP" setting when Alarm output
  - Added initial operation "RUN/STOP" setting when power is ON.
  - Added alarm output RESET "NO/YES" setting

**Version 3.01**      User group 30EA → 60EA

#### Communication module TMHC-22L

- Version 1.04**
- Adds PLC protocol
    - MELSEC3(QnA-compatible 3C frame (format 4))
  - Added TMH4/2 additional parameter activation settings (TMH4/2 Version 2.00 or higher)
    - Initial operation when power is ON [OFF / ON]
    - Control output when alarm occurs [OFF / ON]
    - Alarm reset [OFF / ON]
- Version 3.01**
- Added dynamic/static allocation function
    - For versions below Version 3.01, only dynamic allocation is applied.
  - Add user group (TMH4/2 Version 3.01 or higher)
    - TMH4/2 User group setting 30EA → 60EA

# Communication module TMHC-22E

- Version 1.04

Added KeepAlive function (0: Disabled, 1 to 3600 sec)
- Version 1.05

- Added control output "RUN/STOP" setting when Alarm output
  - Added initial operation "RUN/STOP" setting when power is ON.
  - Added alarm output RESET "NO/YES" setting
- Version 3.01

- Added UDP broadcast function (IP scan using Ethernet cable)
  - Add user group (TMH4/2 Version 3.01 or higher)
    - TMH4/2 User group setting 30EA → 60EA

## A.4.2. Setting by firmware version combination

### **(1) When connecting control module TMH2/4 [SW version 200] or over to communication module TMHC-22LE(Old model) [SW version 103] or under**

The 3 parameters (POWER ON RUN/STOP, ALARM OUT RUN/STOP, ALARM RESET) which are added in TMH2/4 [SW version 200] must be disabled.



The system using TMHC-22LE [SW version 103] or under cannot use the 3 parameters which are added in TMH2/4 [SW version 200].

1. Scan the using modules refer to the **A.1, “Modules scan”**.
2. Select TMH2/4 module SW version 200 or over in “TMH-C” window.

TMH-C(Unit:1) X

DAQ 스테이션

Module List

| Module Name | Unit Range |
|-------------|------------|
| TMH2/4      | 1~16       |
| TMHA        | 33~48      |
| TMHE        | 49~64      |
| TMHCT       | 65~80      |


Use Module List

| Scan    | Initialize | Delete      | ReadAll        | Copy all |
|---------|------------|-------------|----------------|----------|
| Address | Module     | Module Name | Version        |          |
| 1       | TMH2/4     | TMH4-N2CE   | SW:200, HW:101 |          |
| 2       | TMH2/4     | TMH4-N2RB   | SW:200, HW:101 |          |
| 3       | TMH2/4     | TMH2-22CE   | SW:200, HW:101 |          |

1 - 1

TMH4


TMH4-N2CE



2 - 2

TMH4


TMH4-N2RB



3 - 3

TMH2

TMH2-22CE



3. Change the value of “POWER ON RUN\_STOP, Alarm Out RUN\_STOP” to “STOP” and “Alarm Reset” to “NO” in “Property” control panel.

Property

TMH4 >> 2

Control Setting

|                    |          |
|--------------------|----------|
| Channel            | CH1      |
| Multi SV           | 1EA      |
| Initial Manual MV  | AUTO-MV  |
| Preset Manual MV   | 0.0 %    |
| Sensor Error MV    | 0.0 %    |
| Stop MV            | 0.0 %    |
| Stop Alarm Out     | Continue |
| POWER ON RUN_STOP  | STOP     |
| Alarm Out RUN_STOP | STOP     |

|             |     |
|-------------|-----|
| CT Target 4 | 0   |
| CT Input 1  | CT1 |
| CT Input 2  | CT1 |
| CT Input 3  | CT1 |
| CT Input 4  | CT1 |
| Alarm Reset | NO  |

## (2) When connecting control module TMH2/4 [SW version 104] or under to communication module TMHC-22LE(Old model) [SW version 104] or over

The 3 parameters (POWER ON RUN/STOP, ALARM OUT RUN/STOP, ALARM RESET) support function of TMHC-22LE must be disabled.

1. Scan the using modules refer to the **A.1, “Modules scan”**.
2. Select TMHC-22LE module SW version 104 or over in “My System” window.
3. Change the value of “POWER ON RUN\_STOP, Alarm Out RUN\_STOP” and “Alarm Reset” to “Disable” in “Property” control panel.




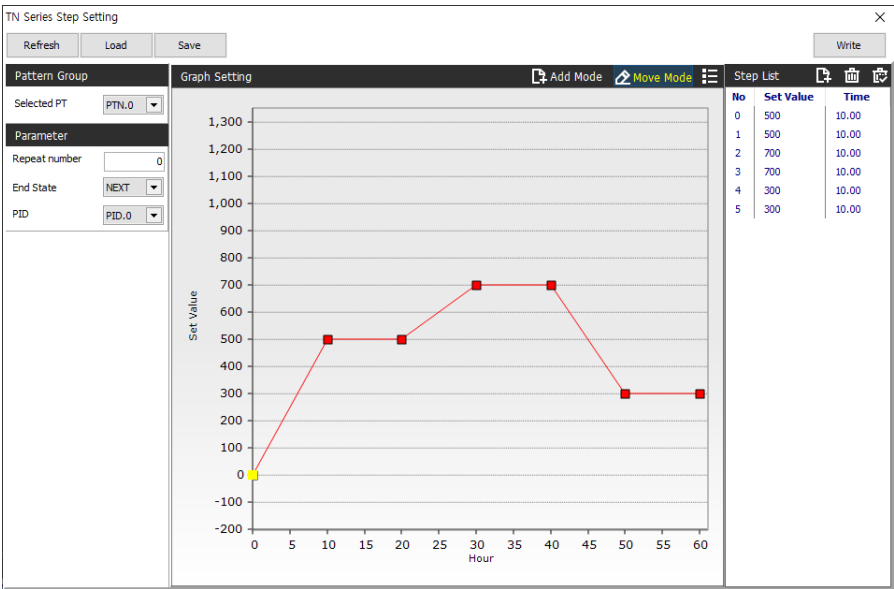




# Appendix B: Autonics TN Series Special Features

## B.1. Step setting for pattern


In case of program control mode, set steps for each pattern. It is available to set the SV (set value) and time for each step by clicking the desired coordinates in the graph or directly from the step list. It can be set in STEP in the parameter Pattern Config group. Click the right  and the TN Series Step Setting dialog box appears.



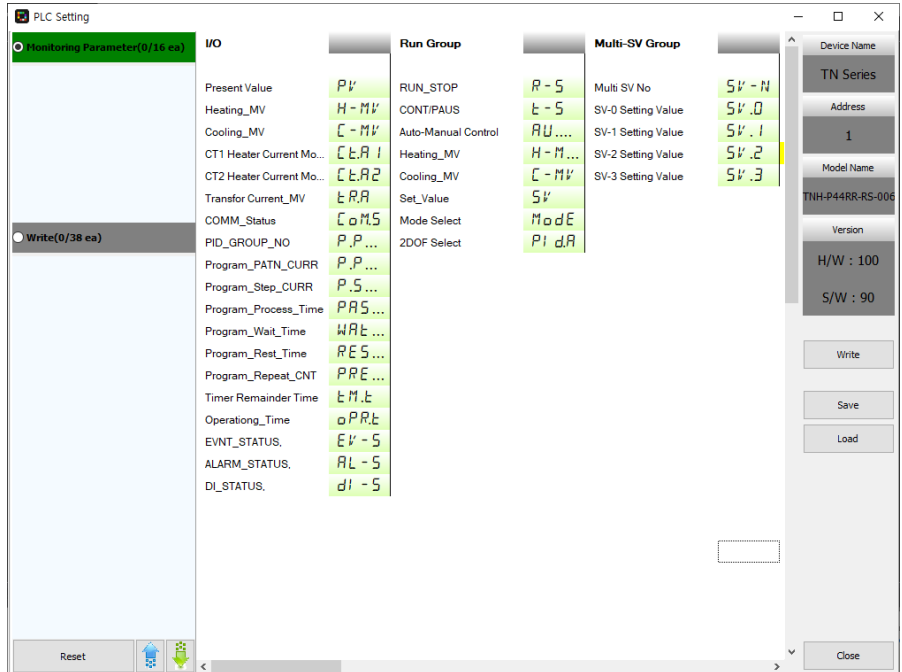
|                                     |                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                                                                                                   |                  |                                                                     |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------|
| <b>Refresh</b>                      | Returns to the changed data.                                                                                                                                                                                                                                                                                                                                                                          |                 |                                                                                                   |                  |                                                                     |
| <b>Load</b>                         | Loads saved Step group information file (*.pau) data.                                                                                                                                                                                                                                                                                                                                                 |                 |                                                                                                   |                  |                                                                     |
| <b>Save</b>                         | Saves the current data as a Step group information file (*.pau).                                                                                                                                                                                                                                                                                                                                      |                 |                                                                                                   |                  |                                                                     |
| <b>Write</b>                        | Writes the current data to the connected device.                                                                                                                                                                                                                                                                                                                                                      |                 |                                                                                                   |                  |                                                                     |
| <b>Pattern group and parameters</b> | <p>You can set parameters (repeat number, End state, PID) for each pattern group.</p> <p>If the current device is in RUN mode or if step setting is made without reading all parameters, pattern group cannot be set.</p>                                                                                                                                                                             |                 |                                                                                                   |                  |                                                                     |
| <b>Graph Settings</b>               | <p>Click the coordinates for each step, and it is available to check/add/edit (shortcut key F2)/delete in the step list.</p> <table><tr><td><b>Add mode</b></td><td>Click the X-axis: Time (minutes), Y-axis: SV (Setpoint) coordinates in the graph to set the step.</td></tr><tr><td><b>Move mode</b></td><td>Click-drag the coordinates of the set step to edit the coordinates.</td></tr></table> | <b>Add mode</b> | Click the X-axis: Time (minutes), Y-axis: SV (Setpoint) coordinates in the graph to set the step. | <b>Move mode</b> | Click-drag the coordinates of the set step to edit the coordinates. |
| <b>Add mode</b>                     | Click the X-axis: Time (minutes), Y-axis: SV (Setpoint) coordinates in the graph to set the step.                                                                                                                                                                                                                                                                                                     |                 |                                                                                                   |                  |                                                                     |
| <b>Move mode</b>                    | Click-drag the coordinates of the set step to edit the coordinates.                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                   |                  |                                                                     |

## B.2. PLC setting

In case of PLC ladderless communication, you can set PLC monitoring/writing parameters.

It can be set in PLC Group within the parameter PLC group. Click the right  and the PLC setting dialog box appears.

Click each parameter to add it in PLC monitoring/writing parameters.



### PLC monitoring

A total of 16 parameters to be monitored in PLC can be set.

### PLC write parameters

A total of 38 parameters to be written in PLC can be set. Non-writable parameters are displayed in grayscale.

### Reset/ ↑ / ↓

Resets by deleting all set parameters or changes the order.

### Write

Writes the current data to the connected device.

### Save


Saves the current data as PLC group information file (\*.pap).

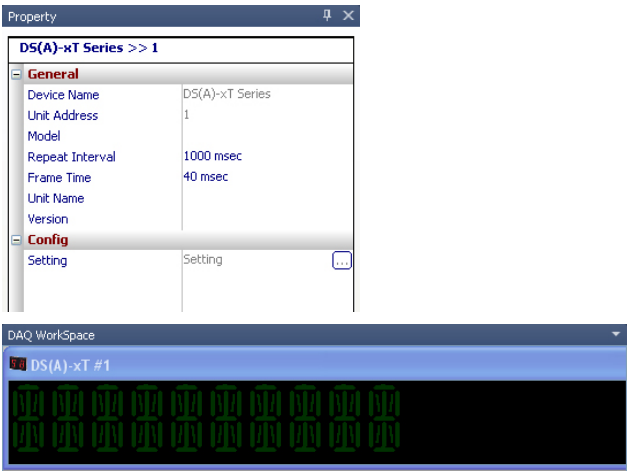
### Open

Loads saved PLC group information file (\*.pap) data.



# Appendix C: Autonics DS/DA-T Series Special Features

DS/DA displays I/O source value, unit, and user set value by DAQMaster.  
Connect DAQMaster and DS, DA(RS485 input type) and click  button located on the right of Setting at Config in the “Property” control panel. A display unit screen is open at DAQ Workspace.



Double-click a monitoring screen of a display unit screen at DAQ Workspace and Setting dialog appears.

### C.1. DPU Setting

DPU Setting - DS(A)-xT #1

① NUM 10 Digit(1~24) ② Line Mode ③ Overlap Mode ④ Overlap Interval 2000 ms

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

⑤

⑥ Add Date/Time ⑦ Add User Display ⑧ Del

No Source Offset Num Display Type Text Align

⑨

⑩ Data

Display Type

☐ IO Source ☐ IO TagName

☐ IO Unit ☐ User

Text Align

☒ Left ☐ Right

Source

Num 1

Save

⑪ 7 Segment Data Type

H I J K

N O T X

⑫ DPU Update Interval 500 msec(50~10000) ⑬ Color

DPU

Close

**NUM** Set the number of display units. Set range is 1 to 24.

|                  |                                                                              |
|------------------|------------------------------------------------------------------------------|
| <b>Line Mode</b> | Displays the added sources of list at the connected display units in a line. |
|------------------|------------------------------------------------------------------------------|

|                     |                                                                                                            |
|---------------------|------------------------------------------------------------------------------------------------------------|
| <b>Overlap Mode</b> | Displays the added sources of list at the connected display units by overlapping at the set interval time. |
|---------------------|------------------------------------------------------------------------------------------------------------|

|                         |                                                                        |
|-------------------------|------------------------------------------------------------------------|
| <b>Overlap Interval</b> | Activated for overlap mode. Set the interval time for overlap display. |
|-------------------------|------------------------------------------------------------------------|

## Display parts

Displays the connected display units and sources in the set color.  
Right-click this part to select the segment.

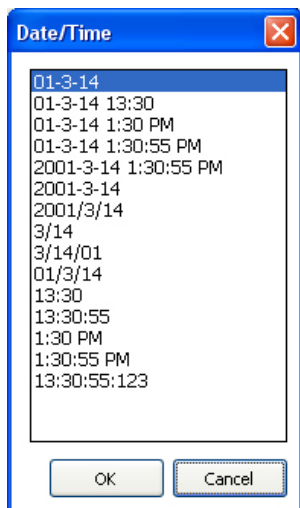


When selecting unit segment, Unit Type dialog box appears to select the unit display mode.



## Add Date/Time

Select one of date and time information types.



## Add User Display

Add the desired characters.  
Enter the characters at Source of DPU Data.

## Del

Delete the added source of list.

## List

Displays the added I/O sources.  
Add I/O sources by dragging them at DAQ list.  
Press "Ctrl+ ↑ or ↓" to change the order of sources.

Data



Display type

- IO Source** Displays the value of the source.
- IO TagName** Displays the name of the source.
- IO Unit** Displays the unit of the source.  
Text Align: Sets the alignment at the display units.  
Source: Displays the name of I/O source and it is editable.  
Num: Sets the desired number of display units.  
Save: Saves the settings.

**7 Segment Data Type** Sets the display type for H, I, J, K, N, O, T, X characters.

**DPU Update Interval** Sets the update interval for data value.

**Color** Sets the displayed color at run time screen.





Example of adding two date/time sources, overlap mode and 2000ms of overlap interval.



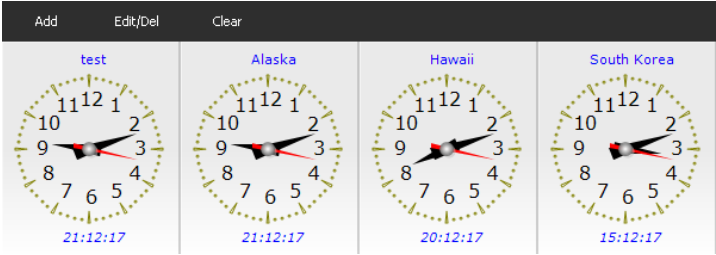
It displays 2012-04-13 for 2 sec.(2000ms) at first then displays 03:20:06 PM for 2 sec. alternately.



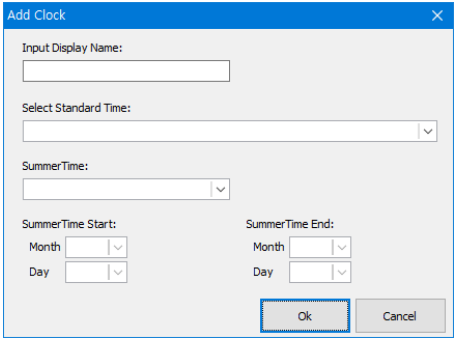


# Appendix D: Autonics DS/DA-C Series Special Features

DS, DA-C model synchronizes time, checks world times and sets the summer time via DAQMaster.



**Add**



**Input Display Name**

Set the clock name to display.

**Select Standard Time**

Select the time zone based on the coordinated universal time (UTC).  
Select the set time zone of display unit (DS-C Series).

**Summer Time**

Select the summer time (+0:30, +1:00, -1:00, -0:30) to apply. If not applying summer time, select 'Not Apply'.

**Summer Time Start(End)  
Month/Day**

Set the summer time period.  
Summer time starts from the set start month/day to the set end month/day.

Summer time starts August 1st and ends August 31st,  
Summer time applied from 00 hour 00 min, August 1st to 24 hour 00 min, August 31st.  
Next day, 00 hour 00 min, September 1st, summer time is not applied automatically.



**Edit/Delete**

×

Select Clock:

Delete

Edit

Detail Setting Data

Input Display Name:

Select Standard Time:

SummerTime:

SummerTime Start:

Month

Day

SummerTime End:

Month

Day

Ok

Cancel

**Select Clock**

Select the added clock to edit or delete.

**Detail Setting Data**

Edit the clock as same method with adding clock.

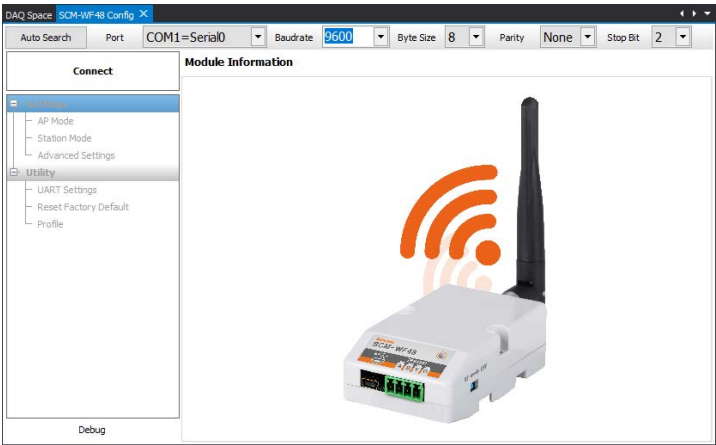
**Clear**

Clear (delete) all added clocks of the Clock space.



# Appendix E: Autonics SCM-WF48 Series Special Features

Communication setting of SCM-WF48 is editable with DAQMaster.



## E.1. Differences and method of distinction between new and old models

### 1. Difference between new and old models

Based on the manufacturing date, the products produced after September 2019 are new model and the products produced before are old model. Firmware upgrade is only available for old model.

## 2. Method of distinction

After connecting the device, it is possible to check the text at the top right of the “SCM-WF48 Config” window. This is the old model if the firmware version statement appears, as like “S2W APP VERSION=X.X.X.” and a new model if only the product version appears, as like “V X.X.XX”. Refer to the image below.

Old model



New model



- For more information about connecting devices, refer to the “Connecting device” chapter below.
- For more information on the differences between old and new products, refer to the contents at Autonics website ([www.autonics.com](http://www.autonics.com)).



## E.2. Connecting device

You can connect SCM-WF48 to DAQMaster in manual mode or auto mode.  
Connect DAQMaster and SCM-WF48 after setting communication mode to USB with USB/485 communication mode switch on the side of the SCM-WF48 device.  
Double-click SCM-WF48 in My System to open SCM-WF48 Config tab in DAQ Space.

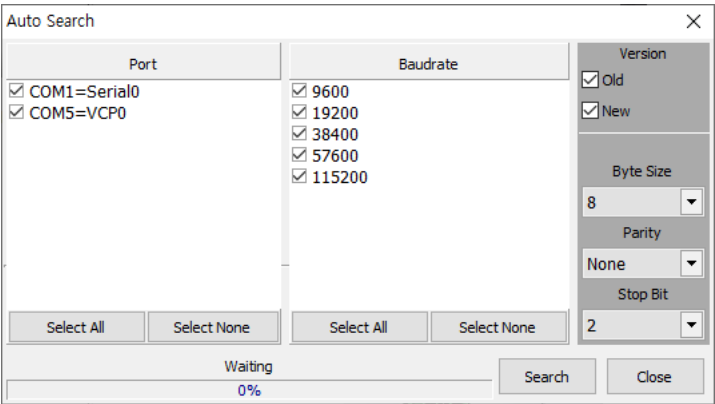
### 1. Manual connection



Enter the port, baudrate, byte size, parity, stop bit values in the upper side of the SCM-WF48 Config tab equal to SCM-WF48 device and click **Connect**.  
Followings are default values of SCM-WF48.

|           |      |
|-----------|------|
| Baudrate  | 9600 |
| Byte Size | 8    |
| Parity    | None |
| Stop Bit  | 1    |

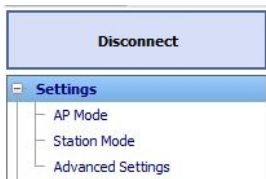
### 2. Auto connection



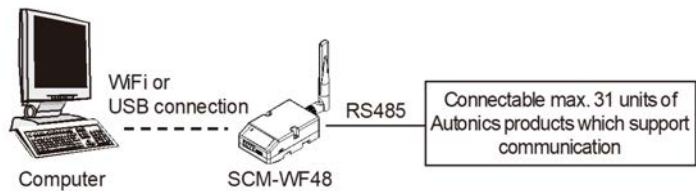
Click **Auto Search** to open “Auto Search” dialog.  
If you select items to search and click **Search** button, DAQMaster displays accessible SCM-WF48.  
When PC is connected with over 2 SCM-WF48 devices, DAQMaster is automatically connected with first SCM-WF48 in numerical order of port number.  
In “Version” window, it is possible to select what version to search for. Check the desired version of “Old” (old model) or “New” (new model) and click the **Search** button.

# E.3. Setting communication mode

Select communication mode of SCM-WF48 from AP mode and Station mode.

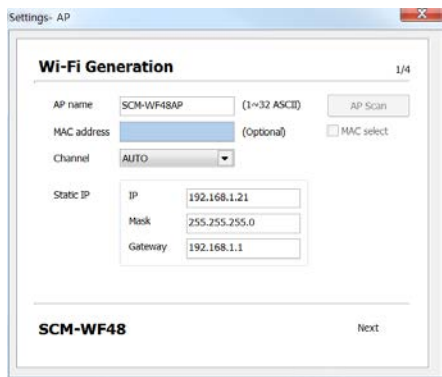


## 1. AP mode



SCM-WF48 performs as AP (access point).  
PC, smart phone, PLC are connected directly with SCM-WF48 using Wi-Fi to communicate with other devices which are connected to SCM-WF48 with RS485 wired connection.

- 1. Click “AP Mode” to operate AP mode setup wizard.
- 2. Set Wi-Fi generation.



**AP name**        Sets displaying name.  
                    Default is SCM-WF48AP.

**Channel** Sets Wi-Fi frequency. (setting range: Auto, 1~14)  
If the number of channel is same or next to each other with another wirelessly connected devices, communication interference occurs and makes communication status unstable.

**Static IP** Sets IP, Mask, Gateway as follows.  
Please check network environment ahead of setting.

|                |               |
|----------------|---------------|
| <b>IP</b>      | 192.168.1.1   |
| <b>Mask</b>    | 255.255.255.0 |
| <b>Gateway</b> | 192.168.1.1   |

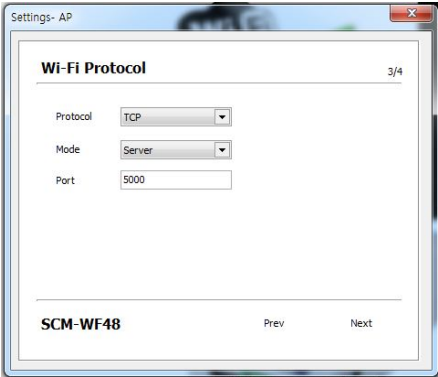
### 3. Set Wi-Fi authentication.



Followings are types of authentication.

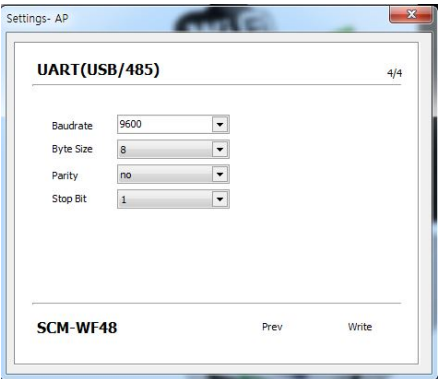
| Type |          | Description                                                                                                                                                                                |
|------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Auto |          | Selects mode of authentication automatically.<br>Passphrase is required for connection.<br>If you enter passphrase at the first time, DAQMaster connects automatically without passphrase. |
| Open |          | Selecting SSID connects AP, without passphrase.                                                                                                                                            |
| PWA  | WEP      | Encrypts connection and communication.                                                                                                                                                     |
|      | WPA      | In order to strengthen security, PWA mode is recommended.                                                                                                                                  |
|      | WPA2     | Passphrase is required for connection.                                                                                                                                                     |
|      | WPAAES   | Order of security safety: WPA2TKIP > WPA2AES > WPAAES, WPA2 > WPA > WEP                                                                                                                    |
|      | WPA2AES  |                                                                                                                                                                                            |
|      | WPA2TKIP |                                                                                                                                                                                            |

4. Set Wi-Fi protocol.



- Protocol**      Select Wi-Fi protocol from TCP, UDP.
- Mode**        “AP mode” only supports Server mode.
- Port**         A set of server and client has set in same port value.  
(In Modbus communication, 502 port is used in general)

5. Set UART.



Enter the Baudrate, Byte Size, Parity, Stop Bit values equal to the device which is connected to SCM-WF48 device with RS485 or USB and click “Write”.

6. On the SCM-WF48 Config tab, setting values are displayed on the left side and progress for connection is shown on the right side.

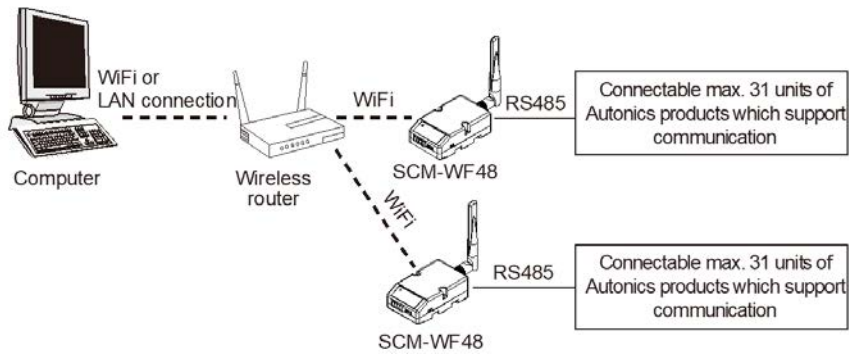
When applying setting values is completed, message saying “Write OK!” pops up.



7. AP mode setting is finished.

Please reboot SCM-WF48 device in order to apply setting values to the device.

2. Station mode



SCM-WF48 is linked to another AP.  
Wireless router and SCM-WF48 is connected using Wi-Fi therefore PC, smart phone, PLC connected to wireless router can communicate with other devices which are connected to SCM-WF48 with RS485 wired connection.

- 1. Click “Station Mode” to operate Station mode setup wizard.
- 2. Set Wi-Fi generation.



**AP name**                      Sets displaying name.  
Default is SCM-WF48AP.

**AP Scan**                      Scans AP.  
When scanning AP, it may be necessary to repeat again.

- MAC select/address** Check the “MAC select” and you can enter MAC address.  
When the same SSIDs exist, enter the MAC address and connect the desired SSID.
- Channel** Sets Wi-Fi frequency. (setting range: Auto, 1 to 14)  
If the number of channel is same or next to each other with another wirelessly connected devices, communication interference occurs and makes communication status unstable.
- IP** Selects IP from DHCP and Static IP.
- DHIP**                      DAQMaster sets IP automatically.
- Static IP**                  User sets IP manually.
- Static IP** Sets IP, Mask, Gateway as follows.  
Please check network environment ahead of setting.

|                |               |
|----------------|---------------|
| <b>IP</b>      | 192.168.1.1   |
| <b>Mask</b>    | 255.255.255.0 |
| <b>Gateway</b> | 192.168.1.1   |

### 3. Set Wi-Fi authentication.

The screenshot shows a window titled "Settings-Station" with a sub-tab "Wi-Fi Authentication". Inside, there is a section for "Authentication Mode" with a dropdown menu currently set to "Auto". Below this is a "Password" input field with a character count "(8~63)" and a "Show Password" checkbox. At the bottom of the window, the device name "SCM-WF48" is displayed, along with "Prev" and "Next" navigation buttons.

Followings are types of authentication.

| Type | Description                                                                                                                                                                                |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Auto | Selects mode of authentication automatically.<br>Passphrase is required for connection.<br>If you enter passphrase at the first time, DAQMaster connects automatically without passphrase. |

| Type |          | Description                                                             |
|------|----------|-------------------------------------------------------------------------|
| Open |          | Selecting SSID connects AP, without passphrase.                         |
| PWA  | WEP      | Encrypts connection and communication.                                  |
|      | WPA      | In order to strengthen security, PWA mode is recommended.               |
|      | WPA2     | Passphrase is required for connection.                                  |
|      | WPAAES   | Order of security safety: WPA2TKIP > WPA2AES > WPAAES, WPA2 > WPA > WEP |
|      | WPA2AES  |                                                                         |
|      | WPA2TKIP |                                                                         |

4. Set Wi-Fi protocol.



- Protocol

Select Wi-Fi protocol from TCP, UDP.
- Mode

Select Mode from Server and Client.

Server

SCM-WF48 operates as server.

Client

SCM-WF48 operates as client. Connecting information of server is required.
- Server IP

Enter server IP.
- Port

A set of server and client has set in same port value.

(In Modbus communication, 502 port is used in general)

5. The other settings are same as AP mode.



### 3. Advanced settings

Set network communication at once without setup wizard.

You can save/ load/save as the communication settings.

Advanced Settings S2W APP VERSION=5.2.3

Wi-Fi Mode **AP Mode**

Write

Wi-Fi

AP nameSCM-WF48IAPAP Scan

MAC addressMAC select

Channel6

IPStatic IP

Static IP

IP192.168.50.100

Mask255.255.255.0

Gateway192.168.50.1

Authentication ModeAuto

Password (8~63)

Show Password

ProtocolTCP

ModeClient

Destination

IP192.168.50.100

Port5000

Local Port5000

UART(USB/485)

Baudrate9600

Parityno

Byte Size8

Stop Bit1

#### Notes for SCM-WF48 communication setting

- Single Wi-Fi network needs at least one AP.
- Single network consisting of wire and wireless connection needs at least one DHCP server.
- At least one set of server and client is necessary.

# E.4. Utility

“UART Settings”, “Reset Factory Default”, “Profile” allows you to check or edit the setting value.



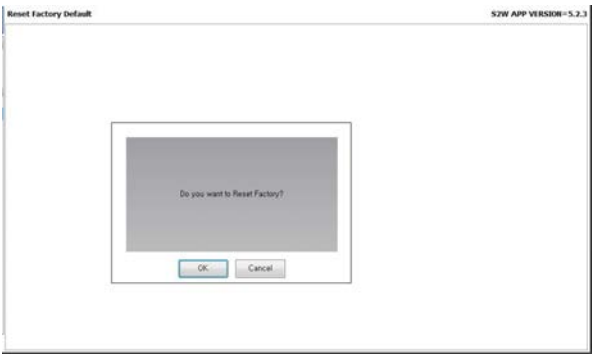
## UART Settings

You can check or edit VCP(USB), RS-485 communication setting values.



## Reset Factory Default

Initializes Baudrate, Byte Size, Parity, Stop Bit of SCM-WF48 to its factory default settings.






## E.5. Firmware version upgrade

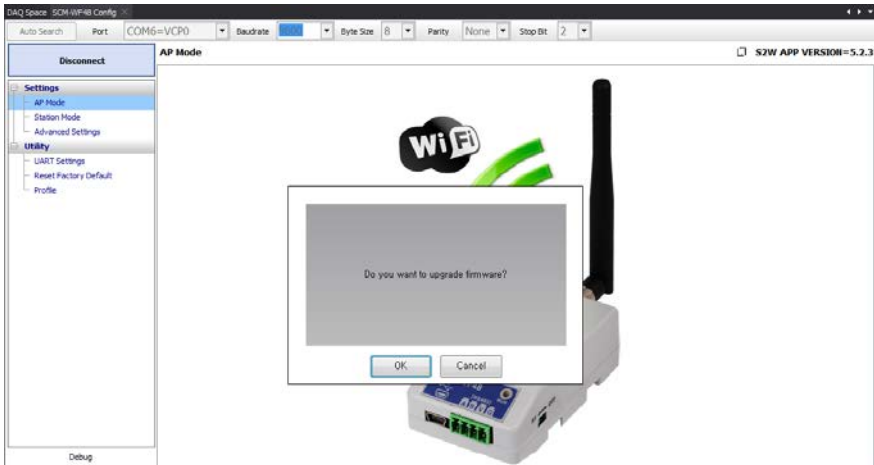
After connecting SCM-WF48, you can check the firmware version and upgrade it at top-right of SCM-WF48 Config tab.



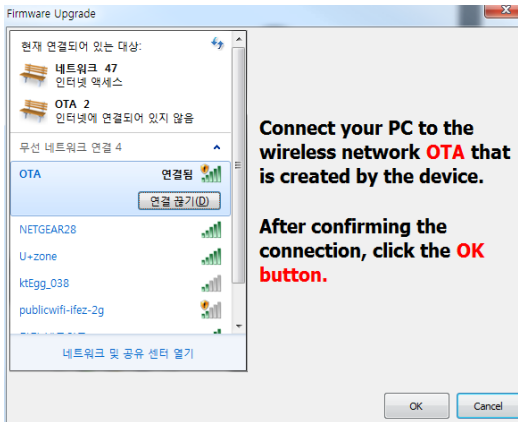
Firmware version upgrade is only available on old versions of SCM-WF48.  
It is needed to be connected to the wireless LAN and the Internet.

### **S2W APP VERSION=5.2.3**

1. Click the  icon.
2. The dialog for firmware version upgrade appears.  
Click the **OK** button.

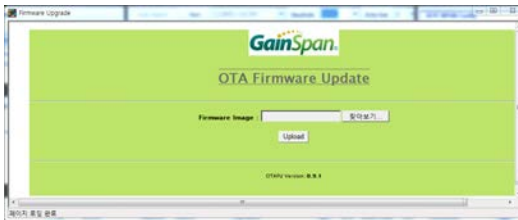


3. The “Firmware Upgrade” dialog box appears.



Wireless network connection of PC sets as OTA and click **OK**.

4. It connects to “OTA Firmware Update”.



Add the SCM-WF48 firmware which is downloaded at Autonics web site.


Click the **Upload** button.

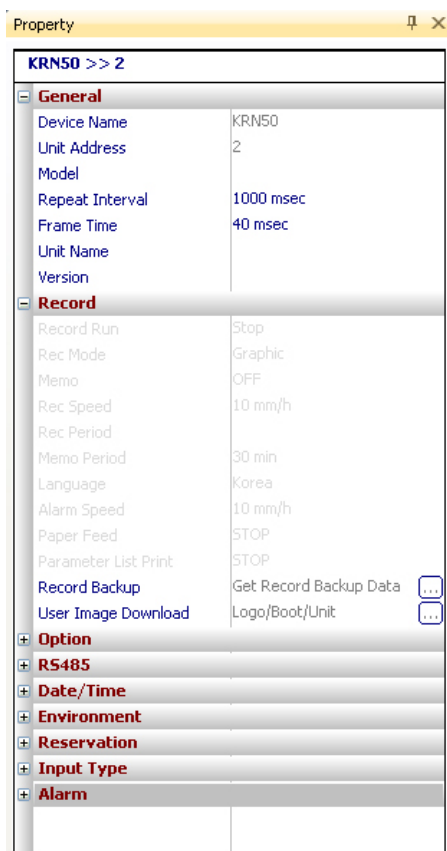
5. Firmware upgrade is completed.



# Appendix F: Autonics KRN50 Series Special Features

## F.1. Accessing Record Backup Data

To get the recorded data, click  button located on the right of Record Backup in the “Property” control panel.



To read memory information, the device status must be Connected and not Run.  
There are also cases in which you cannot read from memory depending on KRN50 parameter setting.  
(Refer to “KRN50 user manual”).

KRN50 Record Memory Data

Memory Information      Upload Data

Memory Information

Start Time     

End Time     

Upload Data Size

Start Time      12 Mon 12 Day 12 Hour 12 Min

End Time      12 Mon 12 Day 12 Hour 12 Min

Available depending on Environment>>Setting Lock (R/W - Off)

Setup

Data Upload Status      Cancel Reading Data

To do this, device should be connected to the network.      OK      Cancel

Once all conditions are met and ready to get memory data, follow the steps below:

1. Run [Memory Information] in KRN50 Record Memory Data window. It gets the information from currently saved memory.
2. Set [Uploaded Data Size].
3. Run [Upload Data].
4. You can cancel the operation while data is being uploaded. When data reading is complete, **OK** button is enabled.
5. If you click **OK**, recorded data will be shown in two screens - the Grid and the Graph.



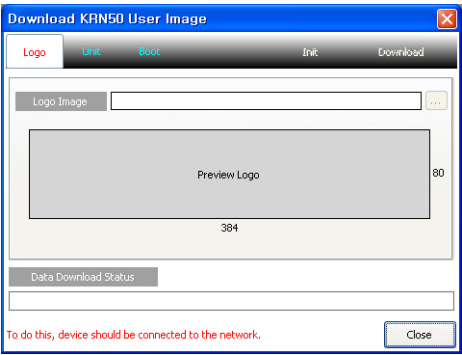
## F.2. Downloading User Images

User Image allows you to download images to KRN50 and change logo, unit and boot images. You can also reset images back to the original status. This is also a self protocol, so cannot download images during Run.

### Download logo

You can change the company logo image on contents that are printed on recording paper.

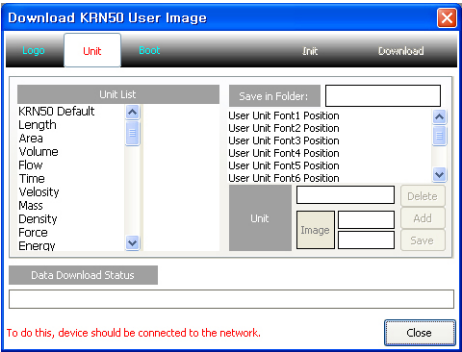
Logo image should be 384 X 80 pixel of bitmap file.



### Download Units

There are 0-9 user units.

The download procedure is: select a unit list → select a destination to save → double-click a unit image to add the image → download.

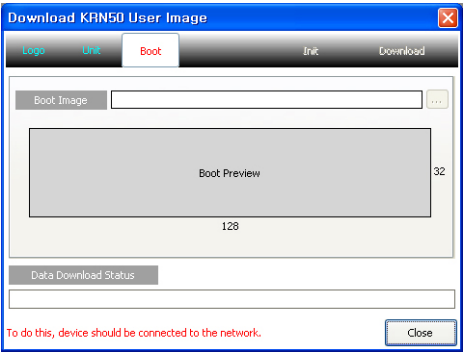


**Download boot images**

The boot image (logo image) appears on LCD upon initial power supply to KRN50.

You can change booting logo image which displays when KRN50 is power ON.


The image should be 128 X 32 pixel of bitmap file.



# Appendix G: Autonics KRN100 Series Special Features

## G.1. Accessing Record Backup Data

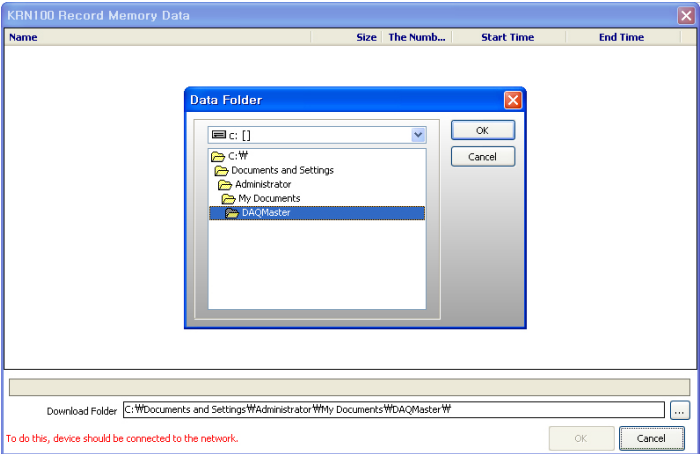
It is available to access saved backup data of KRN100 and to analyze backup data by data analysis feature.

To get the recorded data, click  button located on the right of Record Backup from User Memory in the “Property” control panel.



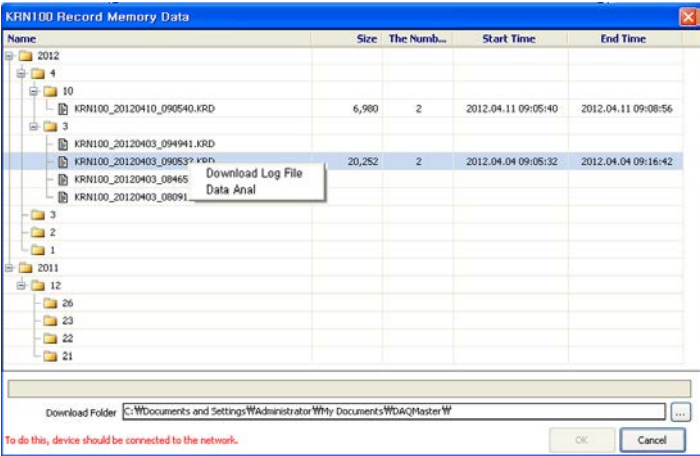
According to the USER INFORMATION SETUP of KRN100, it cannot read the memory. (Refer to the user manual for KRN100.)

1. Designate the folder for record backup data to be saved.

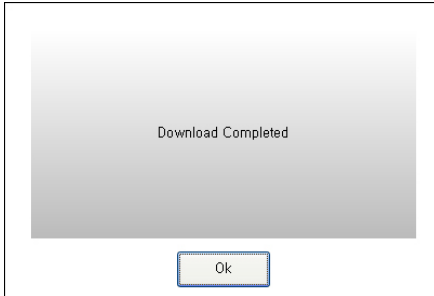


2. Select the record backup data to download. Click the right mouse button and select “Download Log File”.

Double click the backup data and it enters to data analysis.



3. After completing download to the designated folder, the below message appears.

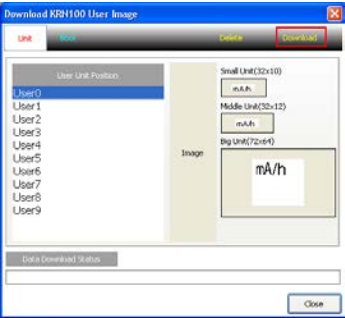


## G.2. Downloading User Images

You can add user unit and boot images of KRN100.

### Download units

There are 0-9 user units.  
The download procedure is selecting User Unit Position, double-click Small Unit, Middle Unit, Big Unit image, and selecting the image. After this, Download button is active.



### Download boot images


The boot image (logo image) appears on LCD upon initial power supply to KRN100. You can change booting logo image which displays when KRN100 is power ON.  
The image should be 320×120 pixel of bitmap file.

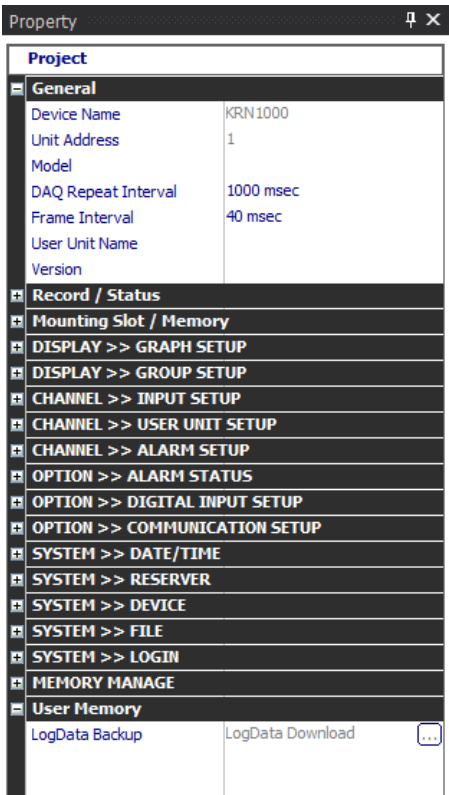


# Appendix H: Autonics KRN1000 Series Special Features

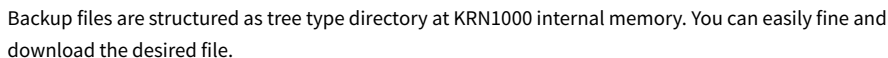
## H.1. LogData Backup

You can download backup data which is saved in KRN1000 internal memory from “Record Backup” section.

To get the backup data, click  button located on the right of 'LogData Backup' from User Memory in the “Property” control panel.



To download backup file, click the file name with right mouse button and select “Download Log File” menu.



If there is an error in the backup file, the Start and End Time are displayed as '0000.00.00 00:00:00'.



# Appendix I: Autonics ARIO Series Special Features

You can easily read and set information for the ARIO series couplers and modules using DAQMaster. It also allows you to control the input/output signals of each module and offers a function that lets you virtually configure ARIO units and conduct simulations without having to physically connect the actual products. For information on the dedicated functions of the ARIO series provided by DAQMaster, refer to the table below.

## Communication mode

You can use the following functions when the DAQMaster and ARIO unit are properly connected through Run > Connect in the top menu of DAQMaster. Before using the function, check whether the communication between DAQMaster and ARIO unit is working properly.

| Function                          | Access path                                                                           |
|-----------------------------------|---------------------------------------------------------------------------------------|
| Property & parameter setting      | Module > Click coupler/module image > Property window > Protocol item                 |
| Input & Output signals control    | Module > Click module image > Property window > I/O setting item                      |
| Input & Output signals monitoring | Run > I/O Monitor                                                                     |
| Tag monitoring                    | I/O List > ARIO Config > Tag                                                          |
| Check & save address map          | AddressMap                                                                            |
| Coupler firmware update           | Module > Click coupler image > Property window > Protocol item > System configuration |

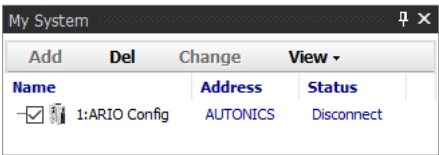
## Virtual mode

| Function                  | Access path |
|---------------------------|-------------|
| ARIO system configuration | Module      |
| Check & save address map  | AddressMap  |

# I.1. Communication Mode

## I.1.1. Connection

- 1. Connect the USB port of the device with DAQMaster software installed to the CONFIG port of the ARIO coupler using a USB cable.
- 2. Double click Supported Device List > AUTONICS > ARIO Config in DAQMaster.  
The list of ARIO Config devices is added to the 'My System' window at the bottom left of the screen.



- 3. When you click **scan** button in the 'ARIO Config' window, the connected ARIO unit appears on the screen. At this time, check whether the communication mode is applied.



- 4. Click Run > Connect button in the top menu to enter the communication connection state.




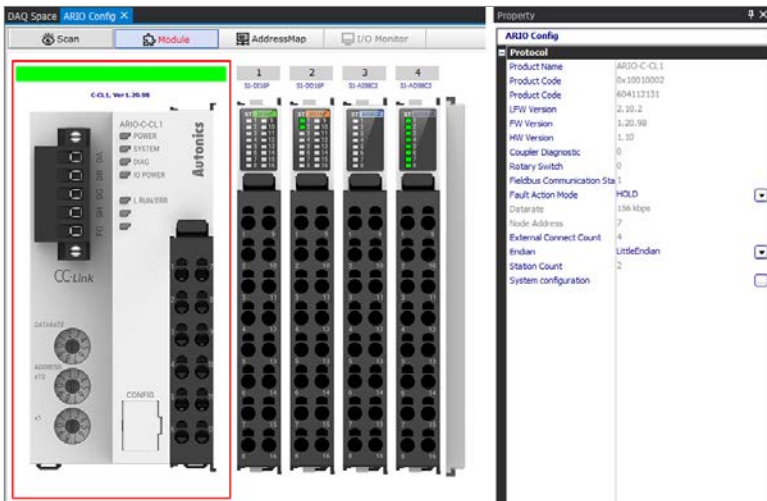
Even if the connection status between DAQMaster and the ARIO unit is normal, there may be cases where the unit's information does not update.  
In such situations, you can update the unit's information by turning off and on the power to the ARIO unit, and then clicking **scan** button in DAQMaster.

## I.1.2. Property and parameter setting

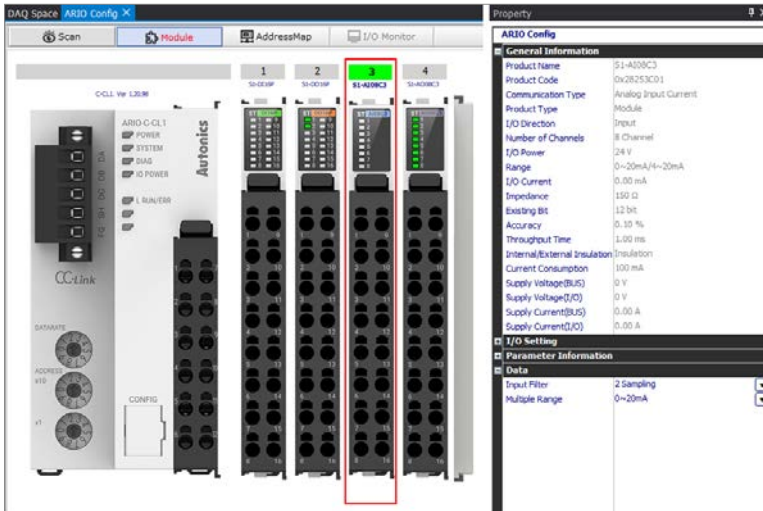
You can use DAQMaster to set the property and parameter value supported by ARIO couplers and modules.

### Device selection and parameter setting

1. In the 'ARIO Config' window, click  **Module** button to open the Module tab.
2. Select the desired coupler or module. In the 'Property' window on the right side of the screen, you can see the current property information or parameters of the device and modify the values as necessary. For more information about modifiable properties and parameters, refer to the manual for your product.
  - Coupler: Check [**Protocol**] item in the 'Property' window.



- Module: Check **[Data]** item in the 'Property' window.




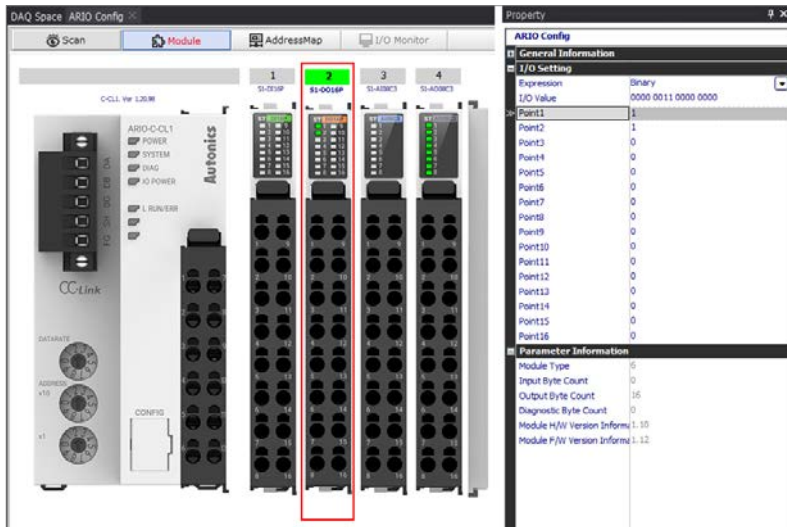
## Property change detection

- When a property item of a coupler or module is changed, a guidance message to restart the ARIO unit will appear. It will be displayed above the coupler image in the format **[Setting changes. Please click here.]**.
- Click the guidance message to proceed with the reset. After the reset is complete, click **Scan** button again to apply the changed information.

### I.1.3. Input and output signals control

You can control the input and output signals of connected modules.


1. In the 'ARIO Config' window, click  **Module** button to open the Module tab.
2. In the Module tab, select the module to control input or output signal. Check the **[I/O Setting]** item in the 'Property' window on the right side of the screen.
3. For example, to set the output signal to ON for a specific channel on an output module, select the module and enter the value for the desired channel. After you complete the setting, you can verify that the output signal is ON through the channel indicator LED on the module.



When you enter the signal value, consider the 'Expression (binary, decimal, hexadecimal)' and enter the correct value.

### 1.1.4. Input and output signals monitoring

You can monitor the input and output signals of connected modules in real time.

- 1. Click Run > Run button in the top menu.
- 2. Click  **I/O Monitor** button in the 'ARIO Config' window to open the I/O Monitor tab.
- 3. You can monitor input and output data sorted by Channel or Address by clicking [Sort] button at the top right of the screen.
  - Sorted by channel




| Slot Number | Module Name | Type | Channel | Data                           | Note |
|-------------|-------------|------|---------|--------------------------------|------|
| 01          | 1-DO16V     | A    | 0       | 0x0                            |      |
| 02          | 1-ADW42     | A    | +       | 0x0000, 0x0000, 0x0000, 0x0000 |      |
| 03          | 1-ADW470    | A    | +       | 0x0000, 0x0000, 0x0000, 0x0000 |      |
| 04          | 1-DO16P     | A    | 0       | 0x000                          |      |
| 05          | 1-ADW42     | A    | +       | 0x0000, 0x0000, 0x0000, 0x0000 |      |

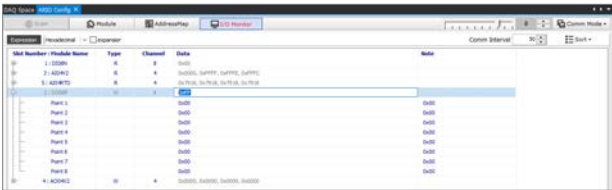
- Sorted by address



| Slot Number | Module Name                  | Address         | Type | Decadecimal | Hexadecimal | F | E | D | C | B | A | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|------------------------------|-----------------|------|-------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1           | ADW42 (Channel 1, 2) DO16V   | 0x0000 (0x0000) | A    | 0           | 0x0000      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2           | ADW42 (Channel 1)            | 0x0000 (0x0000) | A    | 0x0000      | 0x0000      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3           | ADW42 (Channel 2)            | 0x0000 (0x0000) | A    | 0x0070      | 0x0070      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4           | ADW42 (Channel 3)            | 0x0000 (0x0000) | A    | 0x0000      | 0x0000      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5           | ADW470 (Channel 1, 3) ADW470 | 0x0000 (0x0000) | A    | 0x0070      | 0x0070      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6           | ADW470 (Channel 1)           | 0x0000 (0x0000) | A    | 0x0000      | 0x0000      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7           | ADW470 (Channel 2)           | 0x0000 (0x0000) | A    | 0x0000      | 0x0000      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8           | ADW470 (Channel 3)           | 0x0000 (0x0000) | A    | 0x0000      | 0x0000      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9           | ADW470 (Channel 4)           | 0x0000 (0x0000) | A    | 0x0000      | 0x0000      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10          | ADW42 (Channel 1, 2) DO16P   | 0x0000 (0x0000) | A    | 0x0000      | 0x0000      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11          | ADW42 (Channel 1)            | 0x0000 (0x0000) | A    | 0           | 0x0000      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12          | ADW42 (Channel 2)            | 0x0000 (0x0000) | A    | 0x0000      | 0x0000      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13          | ADW42 (Channel 3)            | 0x0000 (0x0000) | A    | 0x0000      | 0x0000      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14          | ADW42 (Channel 4)            | 0x0000 (0x0000) | A    | 0           | 0x0000      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

### Input and output signals control

- 1. On the  **I/O Monitor** screen, set the sort by channel to control the input/output signals of the module.
- 2. After selecting the desired module, click the Data cell or press F2 and enter the value.




| Slot Number | Module Name | Type | Channel | Data                           | Note |
|-------------|-------------|------|---------|--------------------------------|------|
| 01          | 1-DO16V     | A    | 0       | 0x0                            |      |
| 02          | 1-ADW42     | A    | +       | 0x0000, 0x0000, 0x0000, 0x0000 |      |
| 03          | 1-ADW470    | A    | +       | 0x0000, 0x0000, 0x0000, 0x0000 |      |
| 04          | 1-DO16P     | A    | 0       | 0x0                            |      |
| 05          | 1-ADW42     | A    | +       | 0x0000, 0x0000, 0x0000, 0x0000 |      |
| 06          | 1-DO16V     | A    | 0       | 0x0                            |      |
| 07          | 1-ADW470    | A    | +       | 0x0000, 0x0000, 0x0000, 0x0000 |      |
| 08          | 1-DO16P     | A    | 0       | 0x0                            |      |
| 09          | 1-ADW42     | A    | +       | 0x0000, 0x0000, 0x0000, 0x0000 |      |
| 10          | 1-DO16V     | A    | 0       | 0x0                            |      |
| 11          | 1-ADW470    | A    | +       | 0x0000, 0x0000, 0x0000, 0x0000 |      |
| 12          | 1-DO16P     | A    | 0       | 0x0                            |      |
| 13          | 1-ADW42     | A    | +       | 0x0000, 0x0000, 0x0000, 0x0000 |      |
| 14          | 1-DO16V     | A    | 0       | 0x0                            |      |
| 15          | 1-ADW470    | A    | +       | 0x0000, 0x0000, 0x0000, 0x0000 |      |
| 16          | 1-DO16P     | A    | 0       | 0x0                            |      |

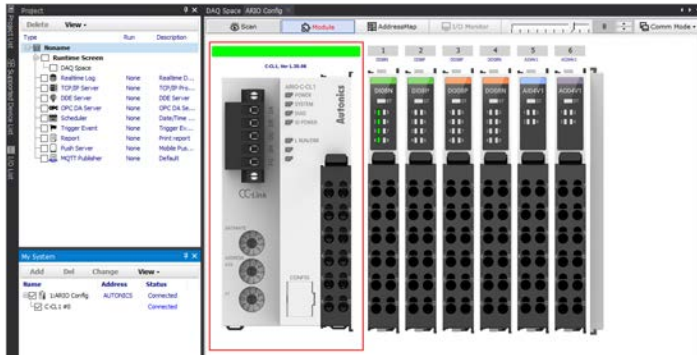


When you enter the signal value, consider the 'Expression (binary, decimal, hexadecimal)' and enter the correct value.

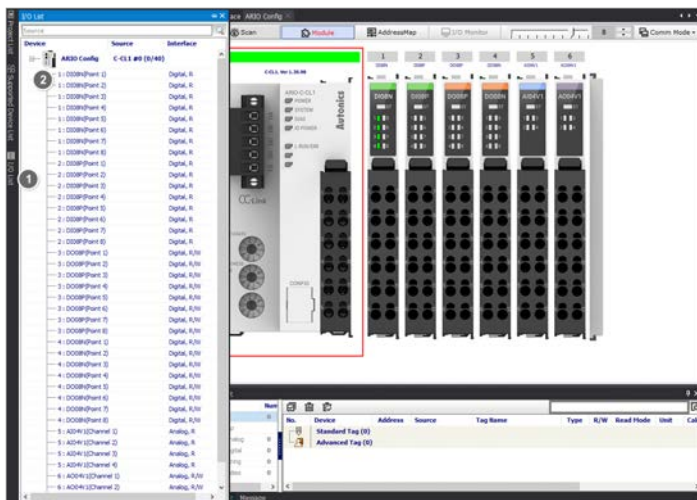
## I.1.5. Tag monitoring

You can visualize and monitor the data from connected modules in real time.

1. To establish a communication connection between DAQMaster and ARIO unit, click Run > Connect button in the top menu. And then in the 'ARIO Config' window, click  **scan** button to load the connected ARIO unit.



2. To check the module configuration of the connected ARIO unit, select I/O List > ARIO Config. Double click the channel you need to monitor.

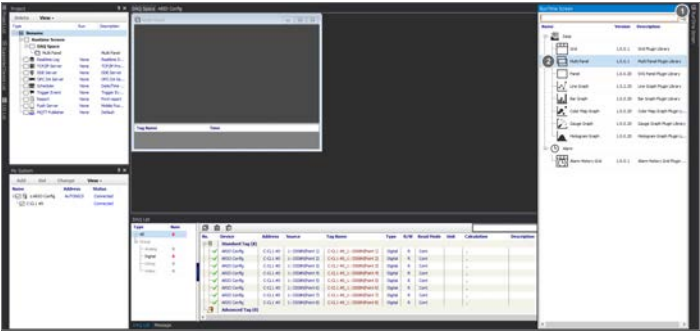


3. As shown in the figure below, the selected channel is added in the form of a tag in the 'DAQ List' window.

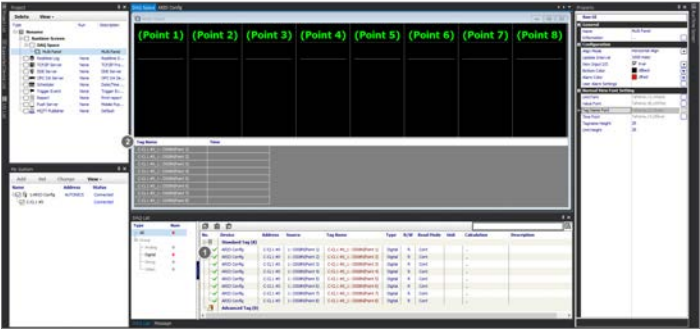
| Type             | Name | Address    | Source               | Tag Name                      | Type    | R/W | Read Mode | Unit | Calculation | Description |
|------------------|------|------------|----------------------|-------------------------------|---------|-----|-----------|------|-------------|-------------|
| Standard Tag (8) |      |            |                      |                               |         |     |           |      |             |             |
| ANalog           | 1    | C-CL1 #9   | 1: C-CL1#9 (Point 1) | C-CL1 #9_1: C-CL1#9 (Point 1) | Digital | R   | Cont      |      |             |             |
| Digital          | 2    | AN00 ConfQ | 1: C-CL1#9 (Point 2) | C-CL1 #9_2: C-CL1#9 (Point 2) | Digital | R   | Cont      |      |             |             |
| ANalog           | 3    | AN00 ConfQ | 1: C-CL1#9 (Point 3) | C-CL1 #9_3: C-CL1#9 (Point 3) | Digital | R   | Cont      |      |             |             |
| Digital          | 4    | AN00 ConfQ | 1: C-CL1#9 (Point 4) | C-CL1 #9_4: C-CL1#9 (Point 4) | Digital | R   | Cont      |      |             |             |
| ANalog           | 5    | AN00 ConfQ | 1: C-CL1#9 (Point 5) | C-CL1 #9_5: C-CL1#9 (Point 5) | Digital | R   | Cont      |      |             |             |
| Digital          | 6    | AN00 ConfQ | 1: C-CL1#9 (Point 6) | C-CL1 #9_6: C-CL1#9 (Point 6) | Digital | R   | Cont      |      |             |             |
| ANalog           | 7    | AN00 ConfQ | 1: C-CL1#9 (Point 7) | C-CL1 #9_7: C-CL1#9 (Point 7) | Digital | R   | Cont      |      |             |             |
| Digital          | 8    | AN00 ConfQ | 1: C-CL1#9 (Point 8) | C-CL1 #9_8: C-CL1#9 (Point 8) | Digital | R   | Cont      |      |             |             |
| Advanced Tag (9) |      |            |                      |                               |         |     |           |      |             |             |

4. To configure the visualized monitoring screen, double click RunTime Screen > Data > (example) Multi Panel.

The multi panel appears in the 'DAQ Space' window.



5. Drag and drop the tags added to the 'DAQ List' window into the tag name area of the multi panel.





- You can monitor the status of the tag in real time by clicking Run > Run button in the top menu.



### I.1.6. Address map

You can verify the communication address of the connected ARIO unit and save this information to a file, which can be utilized during the configuration of the ARIO system.

- Click **AddressMap** button in the 'ARIO Config' window.
- The device list of connected ARIO unit is displayed on the left side of the screen, and the communication address of each device is displayed on the right side.
- Click [Save] button on the top menu to save it in .CSV or .UDV<sup>01)</sup> file format.

#### 01) UDV file format

This is a file format that can only be used in coupler models (ARIO-C-MT / ARIO-C-MR) that support the Modbus communication. Input and output information can be set or monitored when using the 'Edit Modbus Device' function.


### I.1.7. Coupler firmware update

You can update the firmware of the ARIO coupler in DAQMaster.




- When downloading or updating the coupler's firmware, ensure that you verify whether the firmware version is v1.20 or v1.30, and select the appropriate file for that version.
- If the firmware version is v1.20.\*\* or below, upgrading to version v1.30 is not supported.
- If the firmware version is v1.30.\*\* or above, downgrading to version v1.20 is not supported.
- If the firmware version is v1.30.\*\* or above, install the latest DAQMaster software version v3.5.13 or higher.

#### Online state

1. Establish the communication state between the DAQMaster and the ARIO unit by selecting communication mode › Connect from the menu, and then click the coupler image in the 'ARIO Config' window.
2. In the 'Property' window on the right side of the screen, click  button of **[System configuration]** item to open the 'System Setting' window.
3. Click **[Firmware update]** button in the 'System Setting' window to perform the update.

#### Offline state

1. Download the latest firmware version for the ARIO coupler from our website.  
Be sure to keep the downloaded '\*.zip' file in its original, unextracted state.
2. Establish the communication state between the DAQMaster and the ARIO unit by selecting communication mode › Connect from the menu, and then click the coupler image in the 'ARIO Config' window.
3. In the 'Property' window on the right side of the screen, click  button of **[System configuration]** item to open the 'System Setting' window.
4. Select the version of the downloaded firmware at the bottom of the 'System Setting' window, then click **[Load firmware file]** to load the update file (.zip) corresponding to the selected firmware version.
5. Select the desired version from the 'Firmware version list' and click **[Firmware update]** button to perform the update.

## Bootloader active state (firmware update failure)



- Maintain the physical connection between the device with DAQMaster installed and the ARIO unit.
- Always verify the model name of the coupler in use before proceeding with the firmware update.
- Ensure that the model name selected during the firmware update matches the actual model name of the coupler being used to avoid potential product damage.


If you are unable to load the information of the ARIO unit, or if the SYSTEM status indicator on the coupler lights up in orange, follow the instructions below to perform the firmware update.

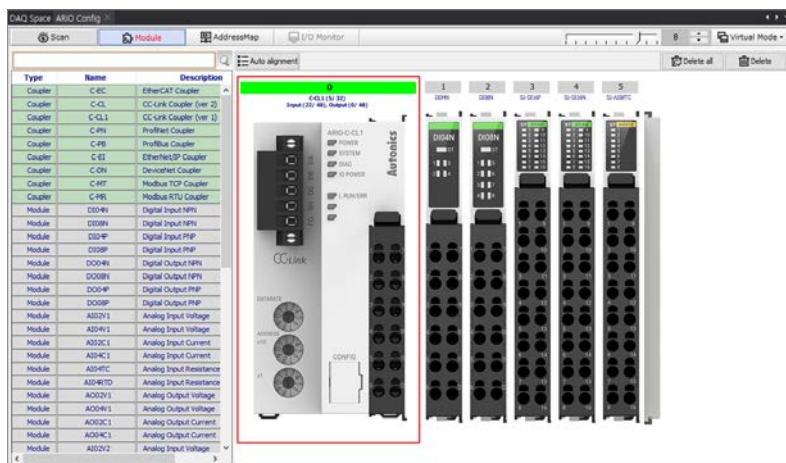
1. To disconnect from DAQMaster, click Project > Run > Disconnect button.
2. Click [mode] button in the 'ARIO Config' window and select **Firmware update (when entering boot loader)**. The 'System Setting' window opens.
3. Select the version and coupler model to be updated from the drop-down menu in **[Firmware version list]**, and then click **[Firmware update]** button to perform the update.

## I.2. Virtual Mode

This function allows you to configure an ARIO unit by selecting the desired coupler and module through 'Virtual Mode', even in the absence of the actual product. It can be utilized during the planning phase of system configurations.

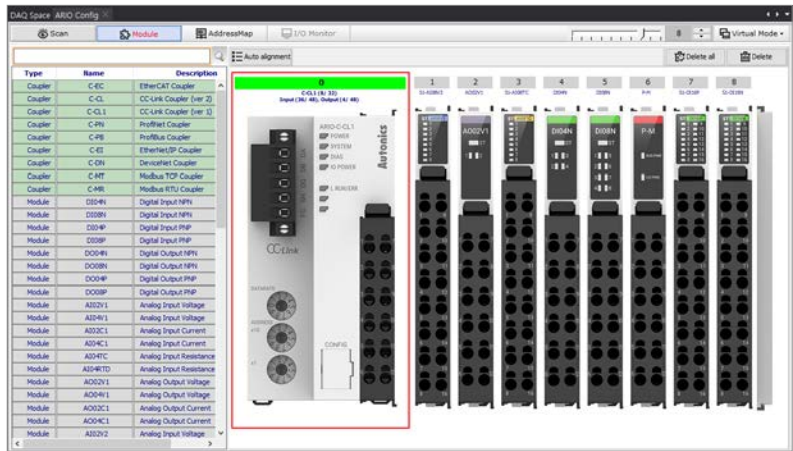
### I.2.1. ARIO system configuration

1. Select **Virtual Mode** in the 'ARIO Config' window.
2. A list of coupler and modules is displayed on the left side of the  **Module** tab. Double click the desired coupler and module from this list to configure a virtual ARIO unit.



- **Delete all:** Deletes all added products at once.
- **Delete:** Deletes selected module one by one. Deleting a coupler will delete all added products.

- Clicking [Auto alignment] button will align your module configuration with our recommended module setup. Additional power modules can be added depending on the number of connected input and output modules.



### Check and save the address map

- Click **AddressMap** to check the communication address of the ARIO unit configured by the user.
- Click [Save] button to save the address map in .CSV file format.



# Appendix J: Autonics B7VA Series Special Features

This document describes how to configure a playlist on the DAQMaster and save it to a micro SD card for use with the B7VA Series (external memory model) or as a project file.


## J.1. Before You Begin

Before configuring a playlist on the DAQMaster, refer to the table below to prepare the necessary equipment and audio (sound) files.

|                                        |                                                                                                                            |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Buzzer</b>                          | B7VA Series (external memory model)                                                                                        |
| <b>Micro SD card</b>                   | BSD-16G                                                                                                                    |
| <b>SD card adapter, SD card reader</b> | If you are using a device without a built-in micro SD card slot, prepare an appropriate SD card adapter or SD card reader. |
| <b>DAQMaster device</b>                | PC or laptop with the DAQMaster software installed                                                                         |
| <b>Audio (sound) file</b>              | Prepare audio files in .mp3 or .wav format for use with the buzzer.                                                        |

## J.2. Property

In case of B7VA-AKD-E model, set the below menus and it applied to all channels.  
For more information, refer to the B7VA product manual.

|                   |                                                                                                                                                                                                                                                                                                   |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Play mode</b>  | Set playback mode.<br>Click the  button to check the operation timing chart for each mode. <ul style="list-style-type: none"><li>Setting range: A to E mode (default: A mode)</li></ul>                        |
| <b>Input mode</b> | Set input method. Depending on the set input method, supply the signal to the desired channel.<br>Channel range is varied by model or input method. (BIT input: 6 channels / Binary input: 63 channels) <ul style="list-style-type: none"><li>Setting range: Bit, Binary (default: Bit)</li></ul> |

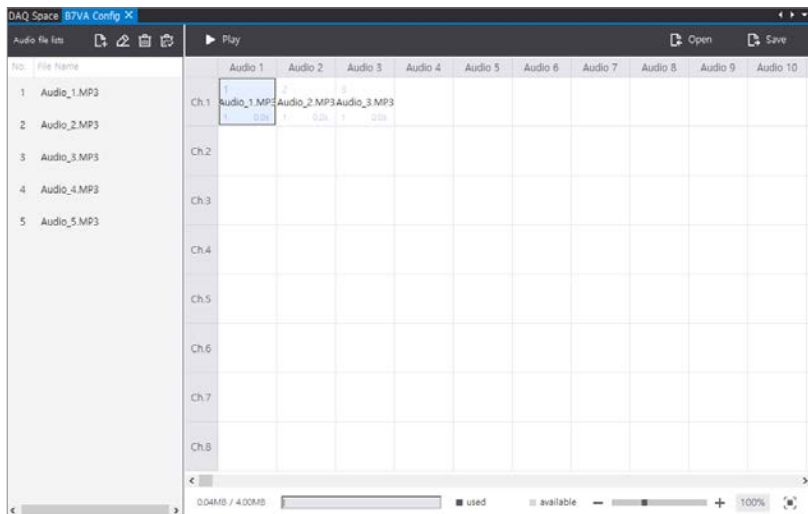
**Volume reduction rate**

Set volume down rate. Based on the volume control switch (100%), it plays audio sources at reduced volume while signal is input to VOL DOWN terminal.

- Setting range: 1 to 100% (default: 80%)



## J.3. Playlist



### Audio file list function



**Add**

Add audio files.



**Edit**

Modify the properties of the added audio file.



**Delete**

Delete a file from the audio file lists.



**Delete all**

Delete all files from the audio file lists.

### Playlist function



**Play**

Play the configured playlist per channel.



**Stop**

Stop playing the playlist.



**Open**

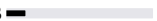


Import the saved project file (.scf) into the DAQMaster.



**Save**


Export the configured playlist for the SD card (.bin) or project file (.scf) format.

**Convenience**



|                                                                                                                   |                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Storage size</b>                                                                                               | The storage space occupied by audio files is displayed.<br>( 0.00 MB / 4.00 MB  ) |
| <b>Screen zoom in / out</b>                                                                                       | Zoom in or out the playlist configuration screen.<br>( -  + )                     |
|  <b>Auto screen aspect ratio</b> | The aspect ratio is automatically set to 100%.                                                                                                                     |

### J.3.1. Configure the Playlist

#### 1. Import audio files

1. Double-click Supported Device List > AUTONICS > B7VA Config. The B7VA Config window is created.
2. Click  [Add] button on the audio file lists tab. Select the saved audio file and then click the [Open] button. A file list will be created on the audio file lists. At this time, the .wav files are automatically converted to the .mp3 files. Other audio files are encoded depending on the specifications shown in the table below.

| Items              | Specifications |
|--------------------|----------------|
| Compression format | LAME           |
| Bit rate           | 32 kbps        |
| Sampling frequency | 24000 Hz       |
| Channel            | mono           |

3. If you want to modify the properties of the imported audio file, click the desired audio file.  
 [Edit] button on the audio file lists tab is activated.
4. Click  button to open the edit window.  
Enter the appropriate value refer to the table below and then click the [OK] button.

Edit

File name

Volume

H-pass filter

L-pass filter

Audio 1.MP3

100

0

0

Ok

Cancel

| Items            | Setting range |
|------------------|---------------|
| Volume           | 50 to 150%    |
| High pass filter | 0 to 15       |
| Low pass filter  | 0 to 15       |

## 2. Set a Playback

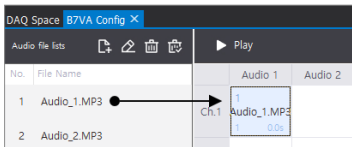


Channel range is varied by model or input method. 16 audio sources are supported per channel.

[B7VA-8KD-E] BIT input: 8 channels (up to 128 audio source)

[B7VA-AKD-E] BIT input: 6 channels (up to 96 audio source) / Binary input: 63 channels (up to 1008 audio source)

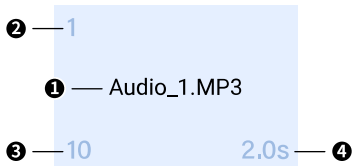
1. Drag the audio file from the audio file lists tab.
2. Drag and drop the file by navigating to the channel and audio order you want.



3. When you click the file, you can check or set the items below in the property control window on the right side of the screen.

| Items             |                   | Access | Setting range                 |
|-------------------|-------------------|--------|-------------------------------|
| Settings          | Channel           | RO     | -                             |
|                   | Audio             | RO     | -                             |
| MP3 properties    | File name         | RO     | -                             |
|                   | File size         | RO     | -                             |
|                   | Bit rate          | RO     | -                             |
|                   | Length (duration) | RO     | -                             |
| Playback settings | Playback counts   | RW     | 0 to 255 (0: continuous loop) |
|                   | Playback latency  | RW     | 0 to 3600.0 seconds           |

You can also check the information about the audio source through the UI as shown below.



- 1: The file name of audio source
- 2: The number of the audio file lists
- 3: The value of playback counts

4: The value of playback latency

3. Play a Channel

- 1. **Shift + click** to select a segment of audio sources and click ► [Play] button.
- 2. The selected segment will be played as shown below.

|        |                          |                          |                          |         |         |         |         |         |         |
|--------|--------------------------|--------------------------|--------------------------|---------|---------|---------|---------|---------|---------|
| ■ Stop | 00:02 / 00:02            |                          | Playback counts 1/1      |         | Ch. 1   |         | Audio 1 |         |         |
|        | Audio 1                  | Audio 2                  | Audio 3                  | Audio 4 | Audio 5 | Audio 6 | Audio 7 | Audio 8 | Audio 9 |
| Ch.1   | 1<br>Audio_1.MP3<br>1.0s | 2<br>Audio_2.MP3<br>3.0s | 3<br>Audio_3.MP3<br>5.0s |         |         |         |         |         |         |

J.4. Export the Playlist

- 1. When you have completed the playlist configuration, click [Save] button.
- 2. (1) To save the playlist on the SD card, select the **Playlist for SD card (.bin)**.  
(2) To save the configured playlist as a project file, select the **B7VA project file (.scf)**.
- 3. When the file save dialog box appears, select a location to save the file and click [Save] button.



- The playlist file for the SD card (.bin) is created with the file name [B7VA-8KD-E model] **B7VA-E\_VoiceFile.bin** or [B7VA-AKD-E model] **B7VA-A\_VoiceFile.bin**. The playlist will not be played properly on the buzzer if the file name is modified, so refrain from renaming the file and keep it unchanged.
- When transferring a playlist saved on the SD card to the buzzer, ensure that the existing .bin file stored on the buzzer is deleted and replaced with the new file. When transferring it for the first time, the buzzer’s built-in eight alarm sounds will be deleted.

J.4.1. Import the Playlist

- 1. Click [Open] button.
- 2. When the file open dialog box appears, select the desired B7VA project file (.scf) and then click the [Open] button.
- 3. The audio file list and playlist of the project file will appear on the screen.



- The **.bin** file cannot be imported into the DAQMaster after export. The .bin file is a playlist for the SD card and is intended to be saved in the buzzer.

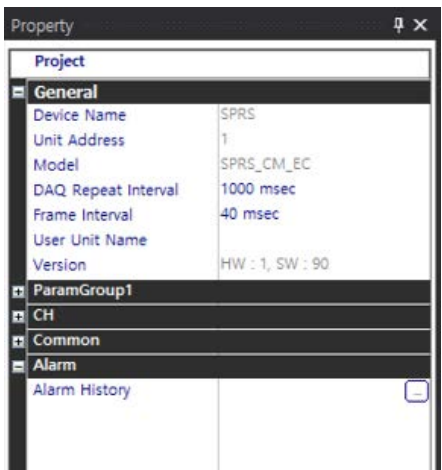


# Appendix K: Autonics SPRM, SPRS Series Special Features

## K.1. Alarm History

All alarms occurring within 1 minute after the SPRM and SPRS series devices switch from a normal status (no alarms) to an alarm status (at least one alarm active) are saved.

1. To check the alarm history in the product, click ... button located on the right of Alarm History in the “Property” control panel.



## 2. The alarm history screen for each module type appears.

When the number of alarms exceeds the limit, the earliest record is deleted, and alarms are listed with the most recent at the top

If an alarm status is 'ON', the corresponding alarm is highlighted in yellow.

### SPRM Log Data

Provides alarm history data for single-phase/3-phase/common modules, and it is possible to check up to 10 log data (Log 0 to 9)

| SPRM Alarm History |                     |     |         |     |     |           |      |     |     |  |
|--------------------|---------------------|-----|---------|-----|-----|-----------|------|-----|-----|--|
| 1-Phase            |                     |     | 3-Phase |     |     | Common    |      |     |     |  |
| Log Name           | Time                | OC  | OV      | LF  | UL  | SCR_Short | FUSE | FrQ | DLF |  |
| Log0_ph3_L1        | 2020-11-01 13:26:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log0_ph3_L2        | 2020-11-01 13:26:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log0_ph3_L3        | 2020-11-01 13:26:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log1_ph3_L1        | 2020-11-05 13:04:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log1_ph3_L2        | 2020-11-05 13:04:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log1_ph3_L3        | 2020-11-05 13:04:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log2_ph3_L1        | 2020-11-07 13:34:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log2_ph3_L2        | 2020-11-07 13:34:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log2_ph3_L3        | 2020-11-07 13:34:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log3_ph3_L1        | 2020-11-07 13:14:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log3_ph3_L2        | 2020-11-07 13:14:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log3_ph3_L3        | 2020-11-07 13:14:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log4_ph3_L1        | 2020-11-07 13:31:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log4_ph3_L2        | 2020-11-07 13:31:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log4_ph3_L3        | 2020-11-07 13:31:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log5_ph3_L1        | 2020-11-07 13:03:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log5_ph3_L2        | 2020-11-07 13:03:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log5_ph3_L3        | 2020-11-07 13:03:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log6_ph3_L1        | 2020-11-07 13:11:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |
| Log6_ph3_L2        | 2020-11-07 13:11:00 | OFF | OFF     | OFF | OFF | OFF       | ON   | OFF | OFF |  |



### SPRM Log Alarm Details

For more information about the alarms, refer to the SPRM communication manual.

| Module type              | Alarm     | Description                        |
|--------------------------|-----------|------------------------------------|
| Single-phase,<br>3-phase | OC        | Overcurrent alarm                  |
|                          | OV        | Overvoltage alarm                  |
|                          | LF        | Heater break alarm                 |
|                          | UL        | Load imbalance alarm               |
|                          | SCR_Short | SCR error alarm                    |
|                          | FUSE      | Fuse break alarm                   |
|                          | FrQ       | Frequency error alarm              |
|                          | DLF       | Partial heater break alarm         |
| Common                   | OT60      | Heatsink overheat alarm            |
|                          | OT80      | Heatsink overheat protection alarm |
|                          | FAN       | FAN error alarm                    |
|                          | RUN_STOP  | RUN / STOP switch                  |
|                          | AUTO_MANU | AUTO / MANU switch                 |

**SPRS Log Data**

Provides alarm history data for single-phase/single-phase dual/3-phase modules, and it is possible to check up to 50 log data (Log 1 to 50)

'Mode' indicates the wiring method when the alarm occurred, and when selected, it is possible to check the alarm history for each channel of the selected Mode.

| SPRS Alarm History |      |                  |       |             |     |     |     |     |  |
|--------------------|------|------------------|-------|-------------|-----|-----|-----|-----|--|
| No                 | Mode | Time             | Count | Alarm       | CH1 | CH2 | CH3 | CH4 |  |
| 1                  | 1p4  | 2025/04/18 14:21 | 1     | OC          | OFF | OFF | OFF | OFF |  |
| 2                  | 1p4  | 2025/04/18 14:23 | 2     | OV          | OFF | OFF | OFF | OFF |  |
| 3                  | 1p4  | 2025/04/18 14:25 | 3     | HTBK        | OFF | OFF | OFF | OFF |  |
|                    |      |                  |       | UL          | OFF | OFF | OFF | OFF |  |
|                    |      |                  |       | SCR_Short   | OFF | OFF | OFF | OFF |  |
|                    |      |                  |       | FUSE        | ON  | ON  | ON  | ON  |  |
|                    |      |                  |       | Fraq        | OFF | OFF | OFF | OFF |  |
|                    |      |                  |       | DLF         | OFF | OFF | OFF | OFF |  |
|                    |      |                  |       | OTW         | OFF | OFF | OFF | OFF |  |
|                    |      |                  |       | OTP         | OFF | OFF | OFF | OFF |  |
|                    |      |                  |       | FAN         | OFF | OFF | OFF | OFF |  |
|                    |      |                  |       | LowInPower  | ON  | ON  | ON  | ON  |  |
|                    |      |                  |       | PowerModule | OFF | OFF | OFF | OFF |  |

**SPRS Log Alarm Details**

For more information about the alarms, refer to the SPRS communication manual.

| Alarm       | Description                        |
|-------------|------------------------------------|
| OC          | Overcurrent alarm                  |
| OV          | Overvoltage alarm                  |
| HTBK        | Heater break alarm                 |
| UL          | Load imbalance alarm               |
| SCR_Short   | SCR error alarm                    |
| FUSE        | Fuse break alarm                   |
| Frqy        | Frequency error alarm              |
| DLF         | Partial heater break alarm         |
| OTW         | Heatsink overheat alarm            |
| OTP         | Heatsink overheat protection alarm |
| FAN         | FAN error alarm                    |
| LowInPower  | Input low voltage alarm            |
| PowerModule | Module connection error alarm      |

# Autonics

Dimensions or specifications on this manual are subject to change and some models may be discontinued without notice.

[www.autonics.com](http://www.autonics.com)