

Device Integrated Management Program DAQMaster

USER MANUAL



Thank you very much for selecting Autonics products. For your safety, please read the following before using.

Preface

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.

User Manual Guide

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.

- Please familiarize yourself with the information in this manual before using the product.
- This manual provides detailed information on the product's features. It does not offer any guarantee concerning matters beyond the scope of this manual.
- This manual may not be edited or reproduced in either part or whole without permission.
- A user manual is not provided as part of the product package. Visit <u>www.autonics.com</u> to download a copy.
- The manual's content may vary depending on changes to the product's software and other unforeseen developments within Autonics, and is subject to change without prior notice.
- This manual is produced based on DAQMaster 2.0 version.

User Manual Symbols

Symbol	Description		
Note	Supplementary information for a particular feature.		
Warning Failure to follow instructions can result in serious injury or death.			
A Caution	Failure to follow instructions can lead to a minor injury or product damage.		
Ex.	An example of the concerned feature's use.		
×1	Annotation mark.		

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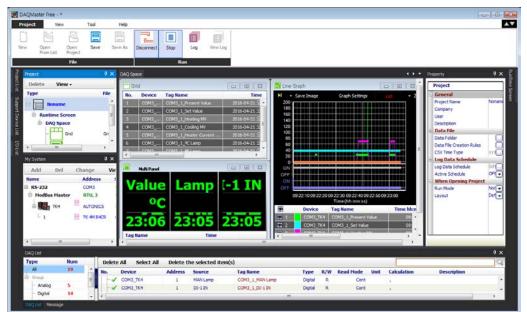
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1 DAQMaster Overview

1.1 Overview

DAQMaster is a comprehensive device management program that can be used with Autonics communication supporting products.

DAQMaster provides GUI control for easy and convenient management of parameters and multiple device data monitoring.



1.2 Features

DAQMaster has the following features:

(1) Multiple Device Support

- Simultaneously monitor multiple devices and set parameters.
- Simultaneously connect units with different addresses in a single device.
- Multiple RS-233 ports are available for communications using Modbus remote terminal unit.

(2) Device Scan

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

(3) Convenient User Interface

Freely arrange windows for data monitoring, properties, and projects. Saving a project also saves the screen layout.

(4) Project Management

You can save added device information, data monitoring screen layouts, and I/O source selection as project files. Opens project files to load the saved settings. Provides a project list for simple and easy project file management.

(5) Monitoring Data Log

When monitoring, data log files can be saved as either DAQMaster data files (.ddf) or CSV (.csv) files. Open files saved in .csv format directly from Microsoft Excel. Define log data file naming/saving rules and destination folders to make file management convenient.

(6) Data Analysis

Performs grid and graph analyses of data files (.ddf) using DAQMaster's data analysis feature. Saves grid data as .rtf, .txt, .html, or .csv files in Data Grid.

(7) Print Modbus Map Table Report

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

(8) Multilingual Support

Supports Korean, English, Japanese, Simplified Chinese. To add a different language, modify the files in the Lang folder, rename, and save.

(9) Script Support

Uses the Lua Script language and deals with different I/O processes for individual devices.

2 Installing the Program

2.1 System Requirements

Item	Minimum specifications
System	IBM PC compatible computer with Intel Pentium III or above
Operations	Windows 98/NT/XP/Vista/7/8/10
Memory	256 MB+
Hard disk	1GB+ of available hard disk space
VGA	Resolution: 1024×768 or higher
Others	RS232C serial port (9-pin), USB port

2.2 Preparations

- 1st Download DAQMaster program at Autonics' web page(www.autonics.com).
- 2nd Close all programs before you start DAQMaster installation.

Double-click DAQMaster setup.exe to start installation.

3rd Installer Language window appears. Select the language and click OK button. DAQMaster supports English, Japanese, Korean and Simplified Chinese.

Installer L	anguage	۲			
Please select the language of the installer					
	Korean	-			
	English				
	Japanese Korean				
	Simplified Chinese	님			
Installer L	anguage	۲			
	Please select the language of the insta	ller			
	English	*			
	OK Cance				



5th Choose Install Location window appears. Default installation path is C:\Program Files

(x86)\DAQMaster.

其 DAQMaster Free 2.0.0.2705 Setup		⊜ ⊗
Choose Install Location Choose the folder in which to install DAQMaster	Free 2.0.0.2705.	•
Setup will install DAQMaster Free 2.0.0.2705 in folder, dick Browse and select another folder. C		erent
Destination Folder C: \Program Files (x86) \DAQMaster	Browse	
Space required: 125.0MB Space available: 15.6GB		
Autonics, Inc. DAQMaster Free		
	< Back Install (Cancel

4th Click Next in the installation welcome window.

6th Click Install button to choose the default path for installation. Click Browse button to change the installation path. In the Browse Folder window, select the desired destination folder and then click OK to start installation.

🚦 Browse For Folder	8
Select the folder to install DAQMaster Free 2,0,0,2705 in	
3DP Autonics Documents and Settings IzexTemp Nextepmsn NVIDIA Program Files Adobe Adobe Adobe Adobe Media Player Adobe ComPlus Applications DAQMaster DAQMaster for ASONE	•
Make New Folder OK Cancel	

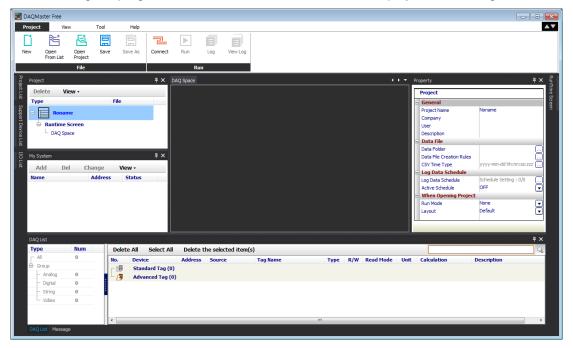
7th Installation progress is displayed in the status window as follows.

📮 DAQMaster Free 2.0.0.2705 Setup	0
Installing Please wait while DAQMaster Free 2.0.0.2705 is being installed.	
Extract: autonics.tk4.dev 100%	
Autonics, Inc. DAQMaster Free	

8th Installation Complete window appears after installation is completed. If the check box in the Installation Complete window is checked, DAQMaster runs upon completion of installation. You can now run DAQMaster by double-clicking the DAQMaster icon on the desktop.



When running the program for the first time, the initial screen displays the following.



2.2.1 Installation Folder Structure

This section explains the folder structure created when you installed DAQMaster.

After DAQMaster installs completely, folders are created as below. The program and all relevant documents are stored in these folders.

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

DAQMaster

 data
device
help
Lang
 plugin
sample
tools

(1) Device folder

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) Lang folder

The language information files (*.lang) available in this program are contained here. The program reads all files in the folder and automatically adds them to the program when it runs. The language information files are written in a text file format, so you can modify and add text using XML Notepad. Korean, English, Japanese, Simplified Chinese language files are in this folder by default.

(3) Plug-in folder

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

2.2.2 Uninstalling the Program

There are procedures to uninstall DAQMaster. Select Start > Program > DAQMaster > Uninstall or Start > Setting > Control Panel > Add/Remove a Program > DAQMaster.

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

2.3 Start and Exit

2.3.1 Start

Double-click DAQMaster on the desktop or select Start > Program > DAQMaster to start DAQMaster.

2.3.2 Exit

Click X button on the top right corner of the screen to end the program.

Projects are not saved automatically. Please make sure you save the project before you exit.

This project was <mark>changed</mark> , Do you want to Save this project?	
OK Cancel Exit	

• × 🔣 DAQMaster Free 1 Project View Tool Help Ň Ē P ▶ ٨ E Nev Open From List Open Project Save Save As Connect Run Log View Log File Run 11 2 я× perty Ψ× Delete View -Project Type File General General Project Name Company User Description Data File Data File Data File Creation Rules CSV Time Type Lea Pata Echeckule 3 Runtime Screen DAQ Space Δ Ψ× Add Del Change View -Log Data Schedule Log Data Schedule Active Schedule When Opening Project ... Address Status lame OFF • Run Mode Layout None Default я× DAQ Lis Туре Delete All Select All Delete the selected item(s) Num No. Device Address Source Tag Name Type R/W Read Mode Unit Calculation Description Standard Tag (0) Advanced Tag (0) Analoo 0 Digital String ist <mark>(</mark>M

2.4 DAQMaster Screen Layout

The program screen is divided into sections as shown in the preceding screenshot and each section is composed of the following items.

NO.	Item	Description
1	Menu	Displays DAQMaster menus by category. If you select a menu, submenus appear.
2	Project List	Displays recent projects or usually used project list to manage the files.
3	Support Device List	Displays a list of devices supported by DAQMaster.
4	I/O List	Displays parameter items of devices added to My System.
5	Project	Shows the basic information of the current project.
6	My System	Shows list and connection status of devices connected to DAQMaster.
7	DAQ List	Shows added parameter items in I/O List.
8	Message	Records events. It displays communication connection and disconnection, errors.
9	DAQ WorkSpace	Displays added UI items in RunTime Screen.
10	Property	Allows checking and modification of information for items in Project, My System, DAQ List and setting unit parameters.
11	Run Time Screen	Displays screen library for data monitoring.

2.4.1 Menu

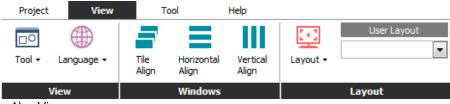
(1)	Project								
	Project	Viev	v	Tool	Help				
	Ľ		臣			P			
	New	Open From List	Open Project	Save	Save As	Connect	Run	Log	View Log
			File				Ri	IN	
	1) File	е							

- 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 as a file 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.
- View Log: Views log data during logging. Check the data from starting log to executing view log.

(2) View



- 1) View
 - Tool: Set for Property, Support Device List, My System, Project, I/O List, Run Time Screen, DAQ List, Message of the project.
 - Language: Changes the program language.
- 2) Windows

Chooses a screen align option from Horizontal Align and Vertical Align and aligns screens when multiple runtime screens (Data: Grid, Multi Panel, Panel, Line Graph, Bar Graph, Color Map Graph, Gauge Graph, Histogram Graph, Device: Alarm History Grid) are open.

3) Layout

Executes saving, deleting, loading layout. You can select the saved layout at User Layout.

Layu	ui.		
Lay	+ : out +	User Lay	yout
	Defau Runti		
		Layout e Layout	

- Default: Changes docking screen layout to default layout. ٠ Runtime: Displays only run time screen. Select the hidden docking screen at ٠ View menu. Save Layout: Saves the current layout and adds it at User Layout. ٠ Save Layout.. Standard Ŧ OK Cancel Delete Layout: Select the saved layout and delete it. ٠ X Delete Layout.. OK Cancel (3) **Tool** Project View Tool Help \sim (!:≡ Time Display Data Analysis Tool Time Display: Displays monitoring time. Data Analysis: Runs the data analysis program. Allows analysis of DAQMaster data file • (*.ddf).
- (4) Help

	Project	View	Tool	Help
	2			
	Help	Check Update	About	
		Help		
•	Help	: Starts the h		

- Check Update: Checks and automatically updates the latest version on the update server.
- About: Check the DAQMaster version.

2.4.2 Support Device List (Docking Screen)

Support Device List shows list of devices supported by DAQMaster. The Support Device List will be updated continuously.

Support Device List			x
Search Device			Q
Name		Function	
	NICS (16)		
	ARM Series	Digital Remote I/O-Modbus	
	BF5-Series	Digital Fiber Sensor Communication	
	CT Series	Counter Timer	
- 3 8	DS(A)-xT Series	Display Unit RS485 input type	
- 3 8 1	DS-RRT Series	Display Unit PT Sensor input type	
- 📰	MP5 Series	Pulse(Rate) Meter(ModBus)	
	MP5W	Pulse(Rate) Meter	≡
	MP5Y	Pulse(Rate) Meter	
	MT4 Series	Multi Digital Panel Meter	
	SCM-USU2I	USB 2CH Temp	
	THD	Temperature/Humidity Controller	
- 15,	TK4	Temperature / Process Controller	
2	TM2	Multi-Channel Modular Temperature Controller	
	TM4	Multi-Channel Modular Temperature Controller	
	TX Series	TX Series	
	TZ/TZN	Dual PID auto tuning controller	
Proces	ss Automation (7)		
	DPU (1-Phase)	DIGI POWER 2000	Ŧ

2.4.3 Project

Project saves runtime screen information and I/O source. Allows you to work in previously used environments again. In Property, you can change general information, data file, log data schedule, project open of project. For more information, refer to '2.4.9 Property'.

Project	×
Delete View -	
Туре	File
Bername Noname	
Runtime Screen	
DAQ Space	
- Grid	Grid
Multi Panel	Multi Panel

2.4.4 I/O List (Docking Screen)

I/O List shows parameters you can monitor for devices added to My System. I/O List appears depending on connected devices.

To monitor units of the connected device, parameter sources displayed in I/O List should be added to the DAQ List. You can search the desired I/O and add it.

evice	Source	Interface
∋— 🏭 тк4	1 (0/19)	R5-232 - COM3
- Prese	nt Value	Analog, R
— Set V	alue	Analog, R
— Heati	ng MV	Analog, R
— Coolir	ng MV	Analog, R
- Heate	er Current Monitoring	Analog, R
— ºC La	mp	Digital, R
- ºF La	mp	Digital, R
— % La	mp	Digital, R
- OUT1	Lamp	Digital, R
- OUT2	Lamp	Digital, R
— AT La	mp	Digital, R
- SV1L	amp	Digital, R
— SV2 L	amp	Digital, R
— SV3 L	amp	Digital, R
— AL1 L	amp	Digital, R
— AL2 L	amp	Digital, R
— MAN	amp	Digital, R
— DI-11	N	Digital, R
DI-21	N	Digital, R

Displays parameter sources added to DAQ List in gray.

Note

I/O source cannot be added to DAQ List when the Status is Run.

2.4.5 My System

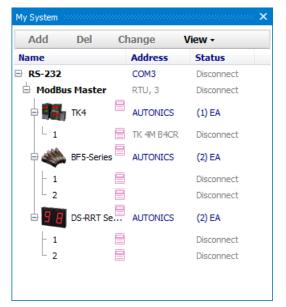
My System displays devices and units added from the device list in a tree structure. You can also check and configure connection status.

You can add, change or delete devices and units (addresses) added to My System.

		× My System				·····)
Change	View -	Add	Del	С	hange	View -
Address	Status	Name			Address	Status
COM3	Disconnect	🖻 RS-232			COM3	Connected
RTU, 3	Disconnect	🖶 ModBu	ıs Master		RTU, 3	Connected
AUTONICS	(1) EA		TK4		AUTONICS	(1) EA
TK 4M B4CR	Disconnect	L 1		8	TK 4M B4CR	Connected
	Address COM3 RTU, 3 AUTONICS	Address Status COM3 Disconnect RTU, 3 Disconnect AUTONICS (1) EA	Change View - Add Address Status Name COM3 Disconnect RS-232 RTU, 3 Disconnect ModBu AUTONICS (1) EA Image: Comparison of the second se	Change View - Add Del Address Status Name COM3 Disconnect RS-232 RTU, 3 Disconnect ModBus Master AUTONICS (1) EA Image: Compare to the second s	Change View - Add Del COM Address Status Name COM3 Disconnect RS-232 RTU, 3 Disconnect ModBus Master AUTONICS (1) EA Image: Common text state	Change View - Add Del Change Address Status Name Address COM3 Disconnect RS-232 COM3 RTU, 3 Disconnect ModBus Master RTU, 3 AUTONICS (1) EA TK4 AUTONICS

- RS-232: Allows modification of RS-232 related communications in Property when disconnecting.
- ModBus Master: Allows property modification related to ModBus Master protocol while disconnected (mode and the number of re-try are displayed).
- Device (TK4): Allows you to see connected device information.
- Unit (1): Allows read and write of parameters as well as check the reading process while connected.

Connects a device to multiple communications ports as displayed in following image.



2.4.6 DAQ List

DAQ List is a list of I/O sources that will be communicated.

DAQ List displays the number of I/O sources by signal type on the left, and rearranges them on the right when selected.

DAQ L	ist coccocc	000000000000000000000000000000000000000		000000		100010000								0000000000		*****	ч н
Туре		Num		D)elet	te All	Select All	Delete t	he selected item(s)								\bigcirc
		19		No).	Dev	rice	Address	Source	Tag Name	Туре	R/W	Read Mode	Unit	Calculation	Description	
🖻 Gro			- 1	₽		Sta	ndard Tag (19)									~
	Analog	5					43_TK4	1	Present Value	COM3_1_Present Value	Analog	R	Cont		1		E
	Digital	14					43_TK4	1	Set Value	COM3_1_Set Value	Analog	R	Cont		1		
	String	0					43_TK4	1	Heating MV	COM3_1_Heating MV	Analog	R	Cont	%			
L .	Vidieo	0	- 1				43_TK4	1	Cooling MV	COM3_1_Cooling MV	Analog	R	Cont	%	,		
			- 1				43_TK4	1	Heater Current M	COM3_1_Heater Current M	Analog	R	Cont	Α	1		-
				•							1						F.

You can search the desired tag (standard or user) at the right-top of the l	N/ I // I		N 1 1	
יוטע למון פרמולון נווב עבפוובע נמע ופנמוועמוע טו עפרו מנ נווב וועוונ-נטט טו נווב ו	You can search the de	sired tag (standard	or user) at the	right-top of the DAQList.

Delete	All Select All	Delete ti	he selected item(s))					Present		0
No.	Device	Address	Source	Tag Name	Туре	R/W	Read Mode Un	it C	alculation	Description	
P 🗊	Standard Tag (1)										
L - 🗸	COM3_TK4	1	Present Value	COM3_1_Present Value	Analog	R	Cont				
L 🖉	Advanced Tag (0)										
4				111							- F

🖉 Note

DAQ List cannot be added to a runtime screen when the Status is Run.

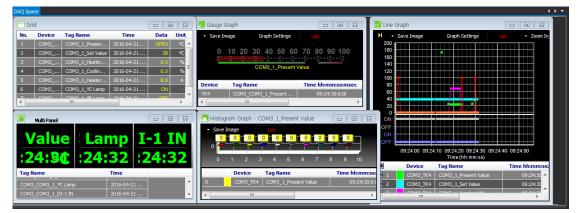
2.4.7 Message

Records events during executing program.

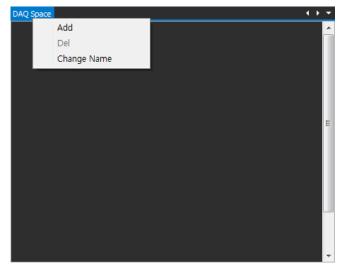
E.g.) Communication status (start/stop communication, communication error), log status (start/stop log), etc.

2.4.8 DAQ WorkSpace

Displays added UI screen (Data: Grid, Multi Panel, Panel, Line Graph, Bar Graph, Color Map Graph, Gauge Graph, Histogram Graph, Device: Alarm History Grid) in RunTime Screen.



To add or delete DAQ WorkSpace or change DAQ WorkSpace name, click "DAQ Space" of DAQ Space screen.



Click pull-down icon (▼) on the upper right of DAQ WorkSpace to select the activated space.

Ex.

The below two DAQ WorkSpaces are changed name as 'Gauge and Color' and 'Graph'.



2.4.9 Property

The Property window allows item checking and modification of Project, My System and DAQ List.

There are check-only items and modifiable items. Modifiable items are displayed as edit type, combo box type, run type and mixed edit/combo type.

(1) Edit type

4
-
1

Allows number or text entry. Input range (if applicable) is displayed at the bottom.

(2) Combo box type

≫ Active Schedule	OFF 🔽			
When Opening Project	OFF			
Run Mode	Apply			

Click the combo button on the right to see a list of items to select.

(3) Run type

≫ Data File Creation Rule	es)
Click [] button on	the right to s	tart the relevant function
Data File Creation Rules		
View		
noname		
Run at Save Dialog Automatic Sequential Numbers		
Date(mm.dd.hh.nn.ss) Project Name		

Automatic Sequi Date(mm.dd.hh. Project Name - Space Date(yyyy-mm-	nn.ss)			
Data File	DDF File	•		
Data Folder				
Reset			ок	Cancel

(4) Mixed edit-combo type

≫	Stop Bit	2
	Bit Per Byte	1
	Hardware	1.5
	Software	2

Allows number or text entry (within the range specified at the bottom) and selection of a value from the list. Items out of range can only be selected from the combo box list.

2.4.9.1 Project Properties

Clicking Project Name (initial status: Noname) allows you to set and enter general (project name, company, worker, description), data file (data folder, data file creation rules, CSV time type, etc.), log data schedule (log data schedule, active schedule), and project open (run mode, layout).

		Property X				
		Project				
		- General				
			Project Name	Noname		
			Company			
Project			User			
	A		Description			
Delete View -		Ε	Data File			
Туре	File		Data Folder			
Noname			Data File Creation Rules			
			CSV Time Type	yyyy-mm-dd hh:nn:ss:zz	z	
Runtime Screen		Ξ	Log Data Schedule			
DAQ Space			Log Data Schedule	Schedule Setting : 0/0		
			Active Schedule	OFF	⊡	
		Ξ	When Opening Project			
			Run Mode	None	•	
			Layout	Default	⊡	
					_	

(1) General

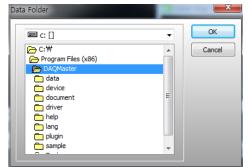
You can enter project name, company, worker, description for project management.

(2) Data File

Designates the folder to save log data and log data file's creation rules, CSV time type when it is created automatically.

Log data is available to save as *.csv or *.ddf file type.

• Data Folder: Designates the folder to save project data.



٠

Data File Creation Rules: Designates data file's creation rules.

Data File Creation Rules
View
noname
Run at Save Dialog Automatic Sequential Numbers Date(nm.dd.hin.n.ss) Project Name - Space Date(yyyy-mm-dd)
Data File DDF File
Data Folder
Reset OK Cancel

CSV Time Type: Sets CSV time type.

CSV Time Type	
Date	Year/Month/Day(yyyy-mm-dd 🔻
Time	Hour/Min/Sec/MSec(hh:nn:ss:: 💌
Date Type	yyyy-mm-dd
Time Format	hh:nn:ss:zzz
	Apply All Project
	OK Cancel

(3) Log Data Schedule

Saves log data when the set scheduled time automatically.

Log Data Schedule: Sets log data save time.

1	Add Save 3 Del					
	Starting Time(hh:mm) : 00:00 1 End Time(hh:mm) : 24:00 Splite Log(hh:mm) ::					
	Starting Time(hh:mm) : 00:00 2 End Time(hh:mm) : 24:00 Splite Log(hh:mm) :: OFF	5 Starting Time(hh:mm) 6 End Time(hh:mm) 24 0 7 Splite Log(hh:mm) 1 0 8 Date Repetition Sun Mon Tue Wed Thu Fri				
		9 OK Cancel				
No	Description					
1	Adds log data schedule items.					
2	Displays scheduled log data items. You can delete the scheduled item by ch 'Delete' button.	necking the left check box and clicking 3				
3	Saves or deletes the set items.					
1	Designates log data name. The file name of data file creation rule is displayed next to the data name.					
5	Designates start time.					
6	Designates end time.					
7	Designates split save time. When you set 1 hour 30 minutues, it sav another file and saves it.	es the file for 1 hour 30 min. and create				
	Designates repetition day of week.					
3	Designates repetition day of week.					

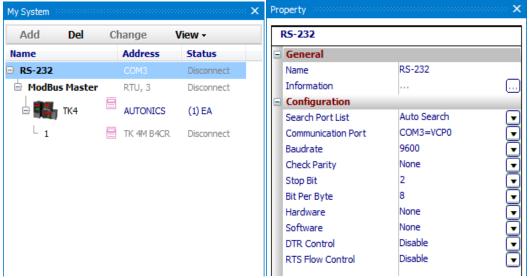
(4) When Opening Project

- Run Mode: Sets run mode when opening the saved project file.
- Layout : Designates the screen layout (default, runtime, current layout) when opening the project.

2.4.9.2 My System Properties

(1) RS-232

Click RS-232 in My System to modify Name in RS-232 general properties.



You can also modify Search Port List, Communication Port, Baudrate, Check Parity, Stop Bit, Per Byte, Hardware, Software, DTR Control, RTS Flow Control in Configuration.

(2) Modbus Master

You can modify Name in ModBus Master general properties by clicking ModBus Master in My System. You can also modify Mode and Timeout in Configuration.

My System			× Property consistents	
Add Del	Change	View -	ModBus Master	
Name	Address	Status	- General	
RS-232	COM3	Disconnect	Name	ModBus Master
🗄 ModBus Mas	ter RTU, 3	Disconnect	Information	
🗆 🏭 ТК4		(1) EA	ID Configuration	
	🗄 TK 4M B4CR	Disconnect	Mode	RTU
			Timeout	2000 msec
			Retries	3

(3) Device (TK4)

Click a device (TK4) in My System to see basic device information in the Property window.

My System				Property coccesso	************************************
Add	Del	Change	View -	TK4	
Name		Address	Status	🖃 File	
■ RS-232		COM3	Disconnect	Description	Temperature / Process Contr
🗄 ModBus	Master	RTU, 3	Disconnect	Date	2009.06.02
			(4) = 1	Date Modified	2011.07.11
- 5	TK4	AUTONICS	(1) EA	Creation	
L 1		🗄 TK 4M B4CR	Disconnect	Revision	1.0
				Version	
				Vendor	AUTONICS
				Product	TK4
				Major Revision	1
				Minor Revision	1

(4) Address (1)

Click the device address (1) in My System to see detailed device information. You can also change Device Name and set DAQ Repeat Interval.

			Pr	operty	
				TK4 >> 1	
			E	General	
				Device Name	TK4
y System			×	Unit Address	1
Add Del	Change	View -		Model	TK 4M B4CR
	-		_	DAQ Repeat Interval	1000 msec
Name	Address	Status		Frame Interval	20 msec
RS-232	COM3	Disconnect		User Unit Name	
🗄 ModBus Master	RTU, 3	Disconnect		Version	HW: 200, SW: 520
		(4) = 1	Œ	Parameter 0	1
🖻 🎆 ТК4	AUTONICS	(1) EA		Parameter 1	
L 1	TK 4M B4CR	Disconnect	±	Parameter 2	
			E	Parameter 3	
			E	Parameter 4	
			Œ	Parameter 5	

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

2.4.9.3 DAQ List Properties

(1) General

If you select items that were added from I/O List for communication, the Property window displays item information. You can change Tag Name, Decimal Point and Unit, Scrept variables and edit Tag value formulas by calcuating I/O data of an item.

Туре		Num		De	lete	All Select All	Delete t	he selected item(s))					[Q.
		19	15	No.		Device	Address	Source	Tag Name	Туре	R/W	Read Mode	Unit	Calc	culation Description	
🗄 Gro			G	- 1		Standard Tag (1))									*
	Analog	5		-	-	COM3_TK4	1	Present Value	COM3_1_Present Value	Analog	R	Cont		1		E
	Digital	14		-	1	COM3_TK4	1	Set Value	COM3_1_Set Value	Analog	R	Cont				
	String /idieo	0		-		COM3_TK4	1	Heating MV	COM3_1_Heating MV	Analog	R	Cont	%	1		
- 1	nuleo	U		-		COM3_TK4	1	Cooling MV	COM3_1_Cooling MV	Analog	R	Cont	%	1		
				Ŀ	~	COM3_TK4	1	Heater Current M	COM3_1_Heater Current M	Analog	R	Cont	A	1		-
21012	t Message				-					-	-		-	-		•
DAQ LIS	et message	:														
Prop	perty								×							
Т	K4 >>	1 >>	Pre		ent	t Value										
<u> </u>						- Tulue										
	Gene	ral														
	Device					TK4										
						INT										
	Addres	ss				1										
	Source	2				Preser	nt Value									
	Tag Na	ame				COM3	_1_Prese	ent Value								
		al Point				0										
	Unit															
		Variable				Tag1										
	-															
	Descrip	otion														
	I/O D	ata Ca	lcul	at	ior	1										
	Edit Ca	alculatio	n													
	cont of	incentratio				r		e								
						I			11							

(2) I/O Data Calculation

You can edit tag values at "Property > I/O Data Calculation > Edit Calculation". When reading the tag value via editing calcuation at DAQMaster, you can get the desired data by applying the calcuation at data. 'x' means the output tag value from device. This function displays the calcuated output value at DAQMaster.

	-	
Edit Calculation		Template
Read Calculation	x= 1	Test Delete nal Point Not Used
Write Calculation	x= 1	Test Delete nal Point Not Used
Example x + x*2 + (x - 10) + (x + 10) + x^2 + sin(x)	
csch,	cos, tan, asin, atan, sinh, cosh, tanh, asinh, , sqrt, log, ln, exp, abs, int, pi	acosh, atanh, sec, csc, cot, asec, acsc, acot, sech,
		OK Cancel

Click 'Templete' to edit at the top-right of the dialog and save the usually used calculations. It is useful to apply read/write calculation directly.

dit Calculation		
Edit Calculation		Template
Read Calculation	x= 1	Test Delete nal Point Not Used
Write Calculation	x= 1	Test Delete nal Point Not Used V
Example x + x*2 + (x - 10) + ($x + 10) + x^2 + \sin(x)$	
csch,	cos, tan, asin, atan, sinh, co n, sqrt, log, ln, exp, abs, int,	sh, tanh, asinh, acosh, atanh, sec, csc, cot, asec, acsc, acot, sech, pi
		OK Cancel

Enter the desired formular and click the 'Save' and 'Apply'. The saved template is applied the 'Edit Calculation' dialog box.

Add Del Delete All	Name	Save
	°F to ℃	
	Description	
	converts from °F to °C	
	Read Calculation	Apply
	(x-32)*(5/9)	Decimal P
	Write Calculation	Apply
		Decimal F 0.0 ▼
+, -, *, /, ^, E, (,), sin, cos, tan, asin, atar csch, coth, asech, acsch, acoth, sqrt, log, ln, exp x : Tag Value	n, sinh, cosh, tanh, asinh, acosh, atanh, sec, csc, cot, a: , abs, int, pi	sec, acsc, acot, sech,
	Api	oly Close

Autonics

Edit Calculation		×
Edit Calculation		Template
Read Calculation	x= 20 Calculation	on OK!, -6.67 Test Delete
(x-32)*(5/9)		nal Point Not Used 💌
Write Calculation	x= 1	Test Delete
		nal Point
		Not Used 🔻
Example		
$x + x^{*2} + (x - 10) + (x - 10)$	$x + 10) + x^2 + \sin(x)$	
csch,	os, tan, asin, atan, sinh, cosh, sqrt, log, ln, exp, abs, int, pi	n, tanh, asinh, acosh, atanh, sec, csc, cot, asec, acsc, acot, sech, i
x : Tag Value		
		OK Cancel

2.4.9.4 Runtime Properties

You can desigante added runtime screen (Data: Grid, Multi Panel, Panel, Line Graph, Bar Graph, Color Map Graph, Gauge Graph, Histogram Graph, Device: Alarm History Grid) name, update interval, and the others.

You can modify the name of the Grid in Run UI general properties by clicking Grid on the project's runtime screen. You can also modify Update Interval time in Config. (Default: 1,000 ms.)

Name	Version	Description
🗗 🖳 Data		
Grid	1.0.0.1	Grid Plugin Library
- Multi Panel	1.0.0.1	Multi Panel Plugin Library
- Panel	1.0.0.1	Panel Plugin Library
- 📈 Line Graph	1.5.2.35	Runtime Line Graph Plugin
- Bar Graph	1.0.0.20	Runtime Bar Graph Plugin
Color Map Graph	1.0.0.20	Runtime Color Map Graph
Gauge Graph	1.0.0.20	Runtime Gauge Graph Plu.
Histogram Graph	1.0.0.20	Runtime Histogram Graph
- C Alarm		

Property		
Run UI		
 General 		
Name	Grid	
Information		
Configuration		
Update Interval	1000 msec	

2.5 Runtime Screen Library

Double-click UI item in Runtime Screen Library and the item is added in DAQ WorkSpace.



Runtime Screen Library is a list of runtime screens for data monitoring.

Runtime screens support Data: Grid, Multi Panel, Panel, Line Graph, Bar Graph, Color Map Graph and Gauage Graph, Histogram Graph, Device: Alarm History Grid. You can open multiple screens at the same time for monitoring. Information such as screen position, screen size and I/O source is saved when saving the project.

2.5.1 Data

(1) Grid

Device	Tag Name	Time	Data	Unit
СОМ3	COM3_1_Present Value	2016-04-20	25	°C
COM3	COM3_1_Set Value	2016-04-20	38	۹C
COM3	COM3_1_ ^o C Lamp	2016-04-20	ON	
COM3	COM3_1_9F Lamp	2016-04-20	OFF	-
СОМ3	COM3_1_⁰F Lamp	2016-04-20	OFF	-
	COM3 COM3 COM3	COM3 COM3_1_Present Value COM3 COM3_1_Set Value COM3 COM3_1_C Lamp	COM3 COM3_1_Present Value 2016-04-20 COM3 COM3_1_Set Value 2016-04-20 COM3 COM3_1_ºC Lamp 2016-04-20	COM3 COM3_1_Present Value 2016-04-20 25 COM3 COM3_1_Set Value 2016-04-20 38 COM3 COM3_1_ºC Lamp 2016-04-20 ON

(2) Multi panel

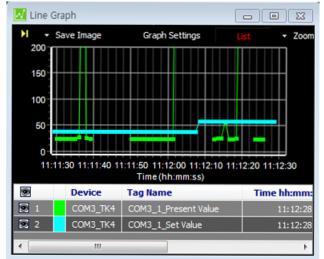


(3) Panel

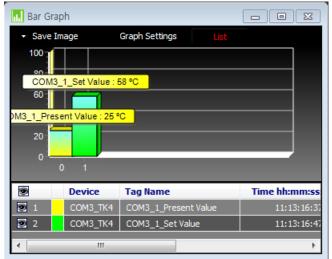


Autonics

(4) Line Graph



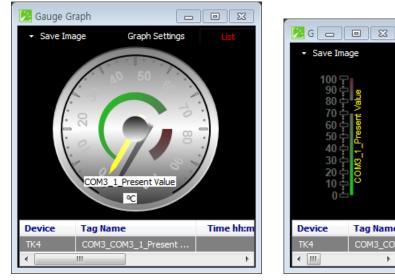
(5) Bar Graph



(6) Color Map Graph

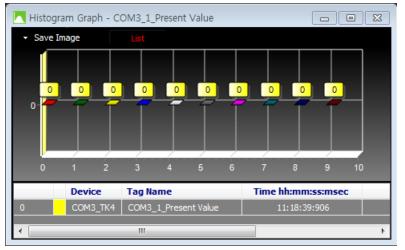
Color N	lap Graph		8
- Save In	nage	Graph Settings	List
	_		
)	
۲	Device	Tag Name	
2 1	COM3_TK4	COM3_1_Present	Value
2	COM3_TK4	COM3_1_Set Value	e
•			Þ

(7) Gauge Graph





(8) Histogram Graph



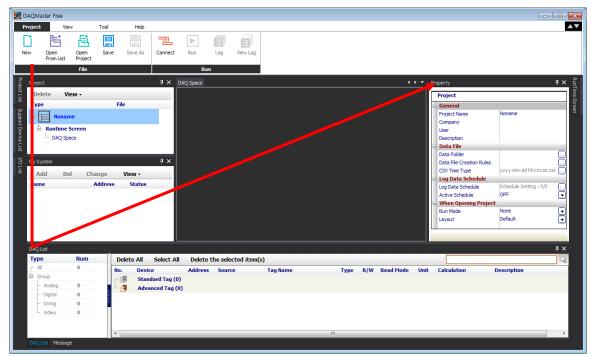
2.5.2 Alarm

(1) Alarm History Grid

🐻 Alar	rm 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
•			4
No.	Device	Tag Name	
1	COM3_TK4	COM3_1_Present Value	^
~	2010 T//	20112 4 2 10 L	· ·

3 Getting Started

On a default layout screen, you generally work from left to right.



The basic work order is as follows:

- 1st Select a device from the support device list on the top left and add it to My System.
- 2nd Select a device from My System and add a relevant unit (address).
- 3rd From the top left I/O List, add I/O for monitoring to DAQ List at the bottom.
- 4th Select a monitoring screen from runtime screen library on the top right.
- 5th Drag an I/O source from DAQ List and drop it onto the runtime screen.
- 6th Configure RS-232 or Modbus TCP environment.
- 7th Connect (you can read and set the device parameters).
- 8th Run (data file logging is available).

3.1 Support Device List - Selecting a Device

For example: TK4 (Address 4) is connected to RS-232 Port 1.

First, select the device to communicate with from the Supported Device List. The Support Device List (docking screen) is a list of devices supported by DAQMaster. You can only communicate with listed devices.(The Support Device List will be updated continuously).

Below is the example screen for the currently supported devices(as of April, 2016).

Support D	Device List			×
Search D)evice			Q
Name			Function	
		DNICS (16)		
-	-U	ARM Series	Digital Remote I/O-Modbus	_
-	-	BF5-Series	Digital Fiber Sensor Communication	_
-		CT Series	Counter Timer	
-	<u> 9</u> 8	DS(A)-xT Series	Display Unit RS485 input type	
-	<u> 9</u> 8	DS-RRT Series	Display Unit PT Sensor input type	
-	100	MP5 Series	Pulse(Rate) Meter(ModBus)	
-	200	MP5W	Pulse(Rate) Meter	≡
-	200	MP5Y	Pulse(Rate) Meter	
-		MT4 Series	Multi Digital Panel Meter	
-		SCM-USU2I	USB 2CH Temp	
-	-	THD	Temperature/Humidity Controller	
-	- 15	TK4	Temperature / Process Controller	
-	2	TM2	Multi-Channel Modular Temperature Controller	
-		TM4	Multi-Channel Modular Temperature Controller	
-	Becd	TX Series	TX Series	
	-	TZ/TZN	Dual PID auto tuning controller	
-	Proce	ess Automation (7)		
	- 689)	DPU (1-Phase)	DIGI POWER 2000	-

When a device is selected, you can see basic information about the device in Property window as follows.

File	
Description	Temperature / Process Con
Date	2009.06.02
Date Modified	2011.07.11
Creation	
Revision	1.0
Version	
Vendor	AUTONICS
Product	TK4
Major Revision	1
Minor Revision	1

If you click or double-click the device expand button (+), the support device list will appear.

Select the device you want to add to My System (Temperature Controller TK4). Double-click or mouse right-click the selected device and select Add to My System to add the device.

- ᡝ тно	Temperature/Humidit	y Controller	=		
— 🌇 ТК4	🖏 Refresh	s Controller			
— 1112	Add to My system	Temperature Controller			
— 114	Expand All Collapse All	Temperature Controller			
TX Series	TX Series	1			
TZ/TZN	Dual PID auto tuning	controller			
⊕− Process Automation (7)					

- Refresh: Updates Support Device List when device files (*.dev) are added.
- Add to my system: Adds device to communicate with to My System.
- Expand all: Shows the list of all supported devices.
- Collapse all: Hides the list of all supported devices.

Double-click RS-232 or TCP/IP on the new DAQ interface, or select it and click OK.

(TK4 supports RS-232 communication and it displays only RS-232.)

You can modify the configuration of the added RS 232 or TCP/IP in properties.

TK4 - DAQ Interface	
New DAQ Interface	Added DAQ Interface
RS-232	
TCP/IP	
	OK Cancel

If My System has added devices, you can see added RS-232-COM1 on the Added DAQ Interface.

TK4 - DAQ Interface	
New DAQ Interface	Added DAQ Interface
RS-232	RS-232 - COM3
TCP/IP	
	OK Cancel

3.2 Setting RS-232, TCP/IP

3.2.1 RS-232C

Set up RS-232 for communication. Select RS-232 in My System and check Property window.

			Pr	operty		
			IГ	RS-232		
			G	General		
				Name	RS-232	
				Information		
			G	Configuration		
My System			 × 	Search Port List	Auto Search	
Add Del	Change	View -		Communication Port	COM3=VCP0	•
	_			Baudrate	9600	
Name	Address	Status		Check Parity	None	
■ R5-232	COM3	Disconnect		Stop Bit	2	⊡
🗄 ModBus Master	RTU, 3	Disconnect		Bit Per Byte	8	⊡
🖬 🖬 тка 🖡	AUTONICS	(1) EA		Hardware	None	$\overline{\bullet}$
	AUTONICS	(1) LA		Software	None	
L 1		Disconnect		DTR Control	Disable	
				RTS Flow Control	Disable	Ī

Property window displays information about the communication port currently in use.

If you want to change the name in My System, modify Name in Property window.

The items are under Config.

ltem		Description	
Search	Fix Init List	Gets computer's communication port list at the point when RS-232 is added, saves it to the Port List and then fixes it.	
Port List	Auto Search	If the computer's port list (such as USB 232) has changed, this rearranges the list.	
Communi	cation Port	Shows choice of connectable COM Ports.	
Communi	cation Port	Designate the connected COM Port.	
Baudrate		1,200, 2,400, 4,800, 9,600, 19,200, 38,400, 57,600, 115,200 bps	
Check Pa	rity/	Allows communication parity selection. (none, odd, even, mark,	
CHECKFA	iity	space)	
Stop Bit		Selects Stop Bits. (1, 1.5, 2)	
Bit Per By	/te	Selects Byte Size. (5, 6, 7, 8)	
Hardware		None, RTS/CTS	
Software		None, XON/XOFF	
DTR Control		Disable, enable, handshake	
RTS Flow Control		Disable, enable, handshake, toggle	

3.2.2 TCP/IP

Set up TCP/IP for communication. Select TCP/IP in My System and check Property window.

			Property	
			TCP/IP	
My System		×	 General Name 	TCP/IP
Add Del	Change V	'iew -	Information	
Name	Address	Status	Configuration	1
TCP/IP	127.0.0.1	Disconnect	Socket Type	Client
🛓 ModBus Master	RTU, 3	Disconnect	Address	127.0.0.1
🖶 🚎 KRN 100	Process Au	(1) EA	Port Connection Timeout	502 3000
		Disconnect	Client Type Auto Connection Mode	Nonblocking Mode Use

Property window displays information about the communication port currently in use. If you want to change the name in My System, modify Name in Property window.

Item		Description	
Socket	Client	Sets as client mode (when connecting KRN100)	
Туре	Server	Sets as server mode.	
Address		Enters the designated IP Address from the main device.	
Port		Sets port number.	
Connection	Timeout	Connection Timeout	
	Non Blocking	After transmission, next transmission is available to process without response.	
Client Type	Blocking	After transmission, this mode waits for response. After receiving the response, next transmission is available to process.	
Auto	Use	Uses auto connection mode.	
Connection Mode	Not used	Not use auto connection mode.	

At ModBus Master property, set Mode of Config as ModBus TCP.

Property ModBus Master		Ч×
General		
Name	ModBus Master	
Information		
ID		
Configuration		
≫ Mode	ModBus TCP	•
Timeout	RTU	
Retries	ASCII ModBus TCP	
	Modbus TCP	

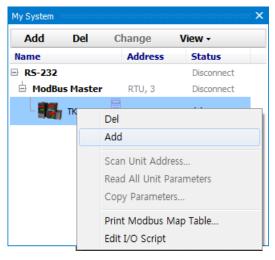
3.3 Adding a Unit to My System

My System displays device and communication interfaces added from the support device list in a tree structure. It also displays connection status, and you can add, change and delete device units (addresses).

By selecting an item, you can set or modify it in Property window.

My System					
Add	C	hange	View -		
Name			Address	Status	
RS-232			COM3	Disconnect	
🗄 ModBus	Master		RTU, 3	Disconnect	
- 13	TK4	2	AUTONICS	(1) EA	
L 1				Disconnect	

Selecting TK4 device enables Add button. To add a unit(address), click the Add button on the tab or right-click on mouse to select Add.



Select address (number 1) set to TK4 device. Double-click or use '>' button to add, then click OK button.

dd Unit - TK4		_		X
Use All	Use None			Max Device :99
Device List			Used Device	Model
1				
2	=			
3				
4		<		
5				
6				
7				
8				
9				
10				
11				
12		>		
13		-		
14				
15	-			
		I	L	OK Cancel

Use All	Use None			Max Device :99
Device List]	Used Device	Model
	A		1	
2	=			
3				
4		<		
5				
6				
7				
8				
9				
10				
11				
12		>		
13		1		
14				
15	-			
	· ·	1		

You will see the unit (address: 1) added under the device in My System. If you want add more than one of the same type of device, click Add button. (Up to 99 devices can be added.)

Add Del	Change	View -
ame	Address	Status
R5-232	COM3	Disconnect
ModBus Master	RTU, 3	Disconnect
🗄 🎆 тк4		6 (1) EA
L 1		Disconnect

Selecting the unit address (1) enables Change button. To change the unit address, click the Change button on the tab or right-click on mouse to select Change.

Add	Del	С	hange	View -
Name			Address	Status
RS-232				Disconnect
🖶 ModBus	Master		RTU, 3	Disconnect
- 14	TK4	E	AUTONICS	(1) EA
L 1		Del		Pik
		Cha	nge	
		Para	meter Mask	Settings
		User	Group Sett	ings
		Read	d All Parame	eters
		Save	e Parameter	Values
		Con	nect	

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

Use All Use None Max Device :99 Device List	Change Unit - TK4 - 1	_	-		×
1	Use All	Use None			Max Device :99
2 3 4 5 6 7 8 9 10 11 12 13 14 15 •	Device List			Used Device	Model
3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - 14 -	1	<u> </u>		1	
3 4 5 6 7 8 9 10 11 12 13 14 15	2	=			
4 5 6 7 8 9 10 11 12 13 14 15	3				
6 7 8 9 10 11 12 13 14 15 •	4		<		
7 8 9 10 11 12 13 14 15	5				
8 9 10 11 12 13 14 15 •					
9 10 11 12 13 14 15 •	7				
10 11 12 13 14 15 -					
11 12 13 14 15 		_			
12 13 14 15					
13 14 15 •					
			>		
ОК Сапсе	15	-			
OK Cancel					
					OK Cancel

Note

Unit (address) cannot be deleted, changed or added while the Status is Connect.

3.4 Scan Unit

Scan Unit feature scans multiple connected device units. You can check the detected units and add them to My System by using this feature.

1st Add TK4 device and configure RS-232 environment as below. And then connect.

Add	Del		Del Change		View -	
lame			Address	Status		
RS-232			COM3	Disconnect		
ModBu	s Master		RTU, 3	Disconnect		
- 👪	TK4		AUTONICS	(1) EA		
L 1				Disconnect		

2nd When connected, select TK4 device, and right-click to select Scan Unit Address.

Address COM3 RTU, 3	View - Status Connected Connected	
COM3 RTU, 3	Connected	
RTU, 3		
	Connected	
AUTONICS	(0) EA	
Del		
Add		
Scan Unit A	ddress	
Read All Uni	t Parameters	
Copy Param	eters	
	Del Add Scan Unit A Read All Uni Copy Param Print Modbu	Del

3rd If you select Scan Unit Address menu, the following Scan Unit dialog appears.

Scan Unit - TK4	×
Scan Unit Address Range 1 - ~ 99 -	Retry O
Scan Status	Other Scanned Unit 0
No. Address Model Version	No. Address Model Version
	OK Cancel

4th Set an address range to scan and click Start Scan button to automatically scan units. Scanned units are listed on the left side. Other searched units are listed on the right side.

Scan Unit			
Address Range 1	• ~ 99 •	Retry 0 -	Stop Scan
Scan Status 3			
Scanned Unit 0		Other Scanned Unit	0
No. Address Model	Version	No. Address Mo	del Version
			OK Cancel
Scan Unit - TK4			
			×
Scan Unit			×
	• ~ 99 •	Retry 0 -	Stop Scan
Scan Unit	▼ ~ 99 ▼	Retry 0	
Scan Unit	• ~ 99 •	Retry 0 •	
Scan Unit Address Range	▼ ~ 99 ▼	Retry 0	
Scan Unit Address Range Scan Status 4	▼~ 99 ▼		Stop Scan
Scan Unit Address Range Scan Status Scanned Unit No. Address Model	• ~ 99 •	Retry 0 •	Stop Scan
Scan Unit Address Range Scan Status Address Range Scanned Unit 1		Other Scanned Unit	Stop Scan
Scan Unit Address Range Scan Status Scanned Unit No. Address Model	Version	Other Scanned Unit	Stop Scan
Scan Unit Address Range Scan Status Scanned Unit No. Address Model	Version	Other Scanned Unit	Stop Scan
Scan Unit Address Range Scan Status Scanned Unit No. Address Model	Version	Other Scanned Unit	Stop Scan
Scan Unit Address Range Scan Status Scanned Unit No. Address Model	Version	Other Scanned Unit	Stop Scan
Scan Unit Address Range Scan Status Address Model	Version	Other Scanned Unit	Stop Scan
Scan Unit Address Range Scan Status 4 Scanned Unit 1 No. Address Model	Version	Other Scanned Unit	Stop Scan

5th Check a unit to add from the list and click OK. It is added and marked as Connected.

Add	Del	Ch	nange	View -
ame			Address	Status
RS-232			COM3	Connected
HodBus	Master		RTU, 3	Connected
占 🏭 т	К4		AUTONICS	(1) EA
L 1		E	TK 4M B4CR	Connected

3.5 Adding an I/O to the I/O List

 $\ensuremath{\text{I/O}}$ sources are used to read and control data. To monitor a source listed in the $\ensuremath{\text{I/O}}$ 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.

urce		
evice	Source	Interface
— 🏭 тка	1 (0/19)	R5-232 - COM3
- Preser	nt Value	Analog, R
— Set Va	lue	Analog, R
— Heatin	ig MV	Analog, R
— Coolin	g MV	Analog, R
- Heate	r Current Monitoring	Analog, R
- ºC Lar	np	Digital, R
- ºF Lan	np	Digital, R
— % Lan	np	Digital, R
- OUT1	Lamp	Digital, R
- OUT2	Lamp	Digital, R
— AT Lar	mp	Digital, R
— SV1La	amp	Digital, R
— SV2 La	amp	Digital, R
— SV3 La	amp	Digital, R
— AL1La	amp	Digital, R
— AL2 La	amp	Digital, R
- MAN L	amp	Digital, R
— DI-1 I	N	Digital, R
DI-2 I	N	Digital, R

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

Autonics

ce		Sour	œ	Interface
ŝ	TK4	1 (0/	19)	RS-232 - COM3
\vdash	Present Value	2		Analog, R
_	Set Value			Analog, R
	Heating MV			Analog, R
_	Cooling MV			Analog, R
_	Heater Curre	nt Mo	nitoring	Analog, R
_	⁰C Lamp			Digital, R
	9F Lamp			Diaital D
	% Lamp	82	Add to DA	AQ list
	OUT1 Lamp	Ţ≣	Expand Al	l
	OUT2 Lamp	-3	Collapse A	MI
_	AT Lamp		View Only	Available I/O
	SV1Lamp	_		
	SV2 Lamp			Digital, R
_	SV3 Lamp			Digital, R
_	AL1 Lamp			Digital, R
	AL2 Lamp			Digital, R
	MAN Lamp			Digital, R
	DI-1 IN			Digital, R
	DI-2 IN			Digital, R

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

уре	Num	0)elete	All Select All	Delete t	he selected item(s)								
All	19	No).	Device	Address	Source	Tag Name	Туре	R/W	Read Mode	Unit	Calculation	Description	
Group		₽		Standard Tag (19))									
 Analog 	5			COM3_TK4	1	Present Value	COM3_1_Present Value	Analog	R	Cont		,		
 Digital 	14			COM3_TK4	1	Set Value	COM3_1_Set Value	Analog	R	Cont		,		
 String 	0			COM3_TK4	1	Heating MV	COM3_1_Heating MV	Analog	R	Cont	%	,		
Vidieo	0			COM3_TK4	1	Cooling MV	COM3_1_Cooling MV	Analog	R	Cont	%	1		
				COM3_TK4	1	Heater Current M	COM3_1_Heater Current M	Analog	R	Cont	Α	,		
		1												

🖉 Note

I/O source cannot be added to DAQ List when the Status is Run.

To delete resources added to DAQ List, select and right-click the sources. 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.

be	Num	- 11	D	elete	All Select All	Delete t	he selected item(s))								
All	19		No.		Device	Address	Source	Tag	lame	Туре	R/W	Read Mode	Unit	Calculation	Description	
roup		0	-		Standard Tag (19)										
Analog	5			- 🗸	COM3_TK4	1	Present Value	1_Pre		Analan	R	Cont	۹C	,		
Digital	14			- 🗸	COM3_TK4	1	Set Value	1_Set	Delete the selected it	tem(s)	R	Cont	°C	,		
String	0			- 🗸	COM3_TK4	1	Heating MV	1_He	Delete All		R	Cont	%	1		
Vidieo	0			- 🗸	COM3_TK4	1	Cooling MV	1_Co	Select All		R	Cont	%	,		
		- 11		- 🗸	COM3 TK4	1	Heater Current M			PUBLIC	R	Cont	A			

Sources added to DAQ List are grayed out in the I/O List. The image below shows Present Value, Set Value, Heater Current Monitoring, OUT1 Lamp, OUT2 Lamp, AL1 Lamp, and AL2 Lamp added to DAQ List.

e	Source	Interface
駶 тк4	1 (11/19)	R5-232 - COM3
- Preser	nt Value	Analog, R
— Set Va	lue	Analog, R
— Heatin	g MV	Analog, R
— Coolin	g MV	Analog, R
— Heate	r Current Monitoring	Analog, R
- ºC Lan	np	Digital, R
- •F Lan	ιp	Digital, R
— % Lan	ιp	Digital, R
- OUT1	Lamp	Digital, R
- OUT2	Lamp	Digital, R
- AT Lar	np	Digital, R
— SV1La	imp	Digital, R
— SV2 La	imp	Digital, R
— SV3La	imp	Digital, R
— AL1La	imp	Digital, R
— AL2 La	imp	Digital, R
— MAN L	amp	Digital, R
— DI-1 I	N	Digital, R
— DI-2 I	N	Digital, R

3.6 DAQ List

DAQ List shows a list of sources added from I/O List.

уре	Num	0)elete	All Select All	Delete t	he selected item(s)								(
- All	19	No) .	Device	Address	Source	Tag Name	Туре	R/W	Read Mode	Unit	Calculation	Description	
Group		₽		Standard Tag (19)										
 Analog 	5		F.	COM3_TK4	1	Present Value	COM3_1_Present Value	Analog	R	Cont		,		
 Digital 	14			COM3_TK4	1	Set Value	COM3_1_Set Value	Analog	R	Cont		,		
 String 	0			COM3_TK4	1	Heating MV	COM3_1_Heating MV	Analog	R	Cont	%	1		
Vidieo	0			COM3_TK4	1	Cooling MV	COM3_1_Cooling MV	Analog	R	Cont	%	,		
				COM3_TK4	1	Heater Current M	COM3_1_Heater Current M	Analog	R	Cont	Α	,		
		1												F

To add I/O sources in the DAQ List to the runtime screen, select the sources to add, then drag and drop them onto the screen. Make sure to place the mouse cursor on the text of the source when selecting a source to drag and drop.

You can select a source in the DAQ List and check/modify it in Property window.

Property	×
TK4 >> 1 >> Presen	t Value
General	
Device	TK4
Address	1
Source	Present Value
Tag Name	COM3_1_Present Value
Decimal Point	0
Unit	
Script Variable	Tag1
Description	
I/O Data Calculation	n
Edit Calculation	,

General items of Property is as below.

- 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)

I/O Data Calcualation items of Property is as below.

• Edit Calcuation: When reading tag value, apply the data formular to get the desired data.



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

3.7 Adding from DAQ List to Runtime Screen Library

Runtime screens monitor data and support 4 types of screen, Data: Grid, Multi Panel, Panel, Line Graph, Bar Graph, Color Map Graph, Gauge Graph, and Histogram Graph, Alarm: Alarm History Grid. You can search the desired runtime screen and select it. Runtime screens can be set and added according to the user environment. If an error occurs while adding Panel to Runtime Screen Library, install Adobe Flash Player.

Name		Version	Description
e 🗐 🛛	ata		
	Grid	1.0.0.1	Grid Plugin Library
	Multi Panel	1.0.0.1	Multi Panel Plugin Library
	Panel	1.0.0.1	Panel Plugin Library
	Line Graph	1.5.2.35	Runtime Line Graph Plugin
- 11	Bar Graph	1.0.0.20	Runtime Bar Graph Plugin
	Color Map Graph	1.0.0.20	Runtime Color Map Graph .
-12	Gauge Graph	1.0.0.20	Runtime Gauge Graph Plu
	Histogram Graph	1.0.0.20	Runtime Histogram Graph
<u>⊢</u> () ▲	larm		
	Alarm History Grid	1.0.0.1	Alarm History Grid Plugin L

To add a runtime screen to runtime screen library, double-click the type as required.

Below is an example runtime screen library. (Grid, Multi Panel, Line Graph are applied.)



3.7.1 Data

3.7.1.1 Grid

Grid displays multiple I/O source data as text for monitoring.

Whenever data is updated in Run status, the color of Time column inverts.

💾 Grie	d							
No.	Device	Tag Name	Time	Data	Unit	Min	Max	Avera
1	COM3	1_Present V	2016-04-20	27	۹C	27	28	^
2	COM3	1_Set Value	2016-04-20	38	۹C	38	38	
3	COM3	1_Heating MV	2016-04-20	54.4	%	0.0	54.4	
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	Ξ
6	COM3	1_ºC Lamp	2016-04-20	ON	-	-	-	
7	COM3	1_⁰F Lamp	2016-04-20	OFF	-	-	-	
8	COM3	1_OUT2 Lamp	2016-04-20	OFF	-	-	-	
9	COM3	1_SV1Lamp	2016-04-20	OFF	-	-	-	
10	COM3	1_SV3 Lamp	2016-04-20	OFF	-	-	-	-
•								

If you did not check Show When Updated from the pop-up menu (see below), the color does not invert upon update. If you selected Init Min/Max Values in the pop-up menu of data that has Min and Max columns, it shows Min/Max values from that point on.

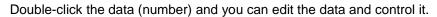
No.	Device	Tag Name	Time	Data	Unit	Min	Max	Ave
1	СОМ3	1_Present V	2016-04-20		Delete Se	ected I/O	28	
2	СОМ3	1_Set Value	2016-04-20		Delete All		38	
3	СОМ3	1_Heating MV	2016-04-20		Delete All	1/0	55.3	
4	COM3	1_Cooling MV	2016-04-20		Display W	hen Updated	0.0	
5	СОМЗ	1_Heater C	2016-04-20		Reset Min	./Max.	0.0	
6	COM3	1_⁰C Lamp	2016-04-20	*	Up	Ctrl+Up	-	
	COM3	1_⁰F Lamp	2016-04-20		Down	Ctrl+Down	-	
8	COM3	1_OUT2 Lamp	2016-04-20	× .	Down	Ctri+Down	-	
9	COM3	1_SV1Lamp	2016-04-20		Row Color		-	
10	COM3	1_SV3 Lamp	2016-04-20		Default Ro	ow Color	-	

No.	Device	Tag Name	Time	Data	Unit	Min	Max	Ave
1	COM3	1_Present V	2016-04-20	OPEN	°C	26	28	-
2	COM3	1_Set Value	2016-04-20	38	۹C	38	38	
	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		0.0	0.0	=
6	COM3	1_⁰C Lamp	2016-04-20	ON	-	-	-	
7	СОМ3	1_⁰F Lamp	2016-04-20	OFF	-	-	-	
8	COM3	1_OUT2 Lamp	2016-04-20	OFF	-	-	-	
9	COM3	1_SV1Lamp	2016-04-20	OFF		-	-	
10	СОМ3	1_SV3 Lamp	2016-04-20	OFF	-	-	-	

If a parameter value causes an alarm (see Device Specifications), it flashes as below.

In case of ARM Series, when Input IO, Output IO is added, the output by bit is available.

No	Device	Tag Name	Time	Data	Unit	Min	Маж	Average
	ARM Slim	1_Input IO#1						
	ARM Sim	1_Input IO#2						
	ARM Slim	1_Input IO#3			52		7	
	ARM Sim	1_Input IO#4		ALIGATES -				
	ARM Slim	1_Output IO#1		00000000 -				



1_OutputIO#	1	×
Bit Data		
HEX	0000	0
DEC	0	0000
HEX DATA	LOW HIGH	00
	ок	Cancel

3.7.1.2 Multi panel

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



You can change align mode, color, update interval, etc. at Property.

		Pro	operty according to the second		$\sim \mathbf{x}$
			Run UI		
			General		
			Name	Multi Panel	
			Information		
Designat	×	Ξ	Configuration		
Project	~		Align Mode	Horizontal Align	⊡
Delete View -			Display Mode	Normal View	⊡
Туре	File		Update Interval	1000 msec	
			View Input I/O	🗹 true	⊡
□ Noname			Bottom Color	dBlack	$\overline{\mathbf{I}}$
Buntime Screen			Alarm Color	dRed	$\overline{\mathbf{I}}$
DAQ Space			User Alarm Settings		
		Ξ	Normal View Font S	etting	
Multi Panel	Multi Panel		Unit Font	Tahoma,26,clLime	
			Value Font	Tahoma,48,dLime	
			Tag Name Font	Tahoma, 26, dLime	
			Time Font	Tahoma,26,dLime	

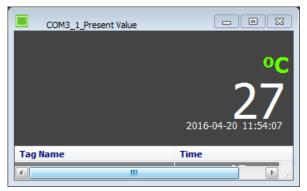
 Align mode: Set the align mode for several I/O source. It supports horizontal, vertical, horizontal grid align, vertical grid align. The below is the vertical grid align (grid: 3).

Multi Panel				
Value	Lam	ıр	[-1	IN.
٥C				
30	C	DN		OFF
! 11:51:14	1 11:51	:15	! 11	:51:15
Tag Name		Time		
COM3_COM3_1_Preser	nt Value 2016-0)4-20	^
COM3_COM3_1_°C Lar	mp	2016-0)4-20	-

%The other settings are same as Panel graph. Refer to the '3.7.3 Panel'.

3.7.1.3 Panel

Panel displays I/O source data in Flash. A Panel can display only one I/O source. If a parameter value causes an alarm (see Device Specifications), it flashes as the set alarm color.

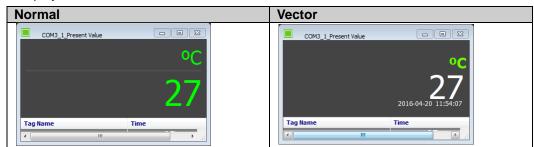


Select Panel on the runtime screen in the project window to modify properties (such as color, update interval) in the Property window.

		Pr	operty		··· 🔨
			Run UI		
		E	General		
Project		× •	Name	COM3_1_Present Value	
			Information		
Delete View -			Configuration		
Туре	File		Display Mode	View Vector	•
B Noname			Update Interval	1000 msec	
			View Input I/O	🗹 true	⊡
Runtime Screen			Bottom Color	\$00444444	
DAQ Space			Alarm Color	\$00FF80FF	
Panel	COM3_1_Prese	E	Normal View Font	Setting	
			Unit Font	Tahoma, 26, clLime	
			Value Font	Tahoma,48,clLime	

Config section in the Property window contains the following items:

Display Mode: You can select Normal or Vector.



- Update Interval: Panel update interval.
- View Input I/O: Show/hide settings of the input source list.
- Bottom Color: Background color of the panel.
- Alarm Color: Invert color when an alarm is issued.

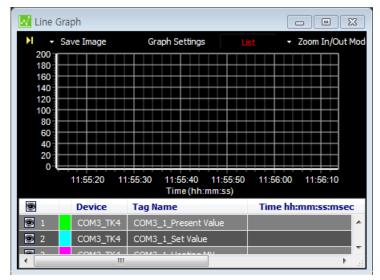
Normal View Text Font section in the Property window contains the following items:

- Unit Font: Unit font setting for normal view of display mode.
- Value Font: Value font setting for normal view of display mode.

3.7.1.4 Line Graph

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

At the bottom is added I/O source list. Use the checkbox for 🖻 item to show/hide the graph.

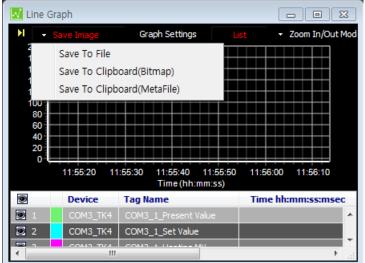


To change the color by each I/O source, double-click the color front of device.

Color
Basic Colors:
Custom Colors:
Define Custom Colors >>
OK Cancel

(1) 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 as '*.bmp', or '*.wmf' format.



- Save To File: Saves as Bitmap (*.bmp) or Windows metafile (*.wmf).
- Save To Clipboard (Bitmap): To use this image directly for other application program, saves as Bitmap (*.bmp) file on clipboard.
- Save To Clipboard (MetaFile): To use this image file directly for other application program, saves as MetaFile (*.wmf) on clipboard.

(2) Graph settings

Graph Settings allows you to change the general Graph environment.

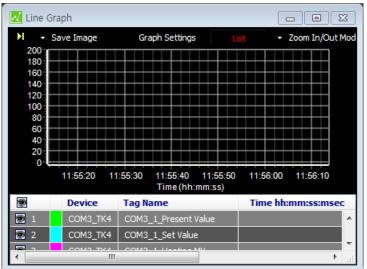
pri settings					
Axis Settings					
		_			
Time Axis Se	ttings 💽	•	Y /	Axis Settings	
Time 0				Min -50.00	
Min 1			N	4ax 200.00	
Sec 0					
2 Time Format h	i:nn:ss	Hou	ur/Min/Sec	:(hh:nn:ss) 🔻	
2 📼	View Point		A Sa	uare 🔻	
	·		•		
5 Line Width 1			6Point	2	
7					
7 📃 View Dat	a <mark>8</mark> 30	J	Digital Ax	as (%)	
9 Line					
	Y Value	Color	Width	Line Color	
Upper Limit	0.00		2	Change	
Reference	0.00		2		
Lower Limit	0.00		2	Change	
		ſ	OK	Cancel	
		L.			

No	Item	Description
	Auria Optiliana	 Time Axis Settings: sets time (Hours, Min and Sec).
1	Axis Settings	 Y Axis: sets the range of Min and Max values
2	Time Format	Sets time expression for the Time Axis (X Axis)
3	View Point	Shows data when selected (hides data when not selected).
4	Point Type	Sets point type.
5	Line Width	Sets thickness of the graph line.
6	Point	Sets point size.
7	View Data	Shows data value when selected (hides data value when not selected).
8	Digital Axis (%)	Sets digital axis as a percentage.
9	Line	Sets upper limit, reference, lower limit line's Y value, color, width, etc.

(3) List

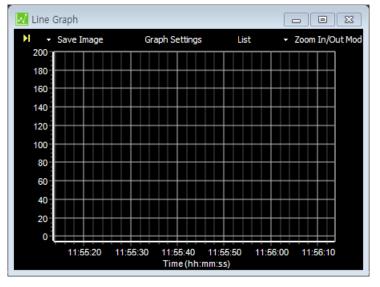
List displays or hides I/O source list items at the bottom of the graph. Clicking the List button toggles item display on and off.

List ON



List OFF

.



(4) Zoom

Zoom controls Zoom In/Zoom Out of the graph.

Zoom In/Out Mode	
Data Analysis Mode	
Data Display Mode	

Zoom

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.

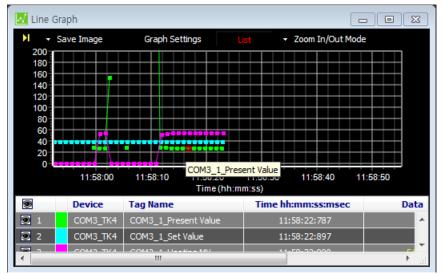
The program preserves user-changed graph scale and axes positions. It considers this as graph analysis mode.

Mouse wheel functions

Operation	Function
Ctrl + mouse wheel up	Increases X axis
Ctrl + mouse wheel down	Decreases X axis
Shift + mouse wheel up	Increases Y axis
Shift + mouse wheel down	Decreases Y axis
Mouse wheel	Increases/decreases X/Y axes at the same time.

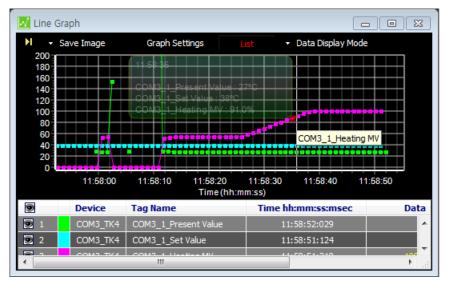
Data Analysis Mode

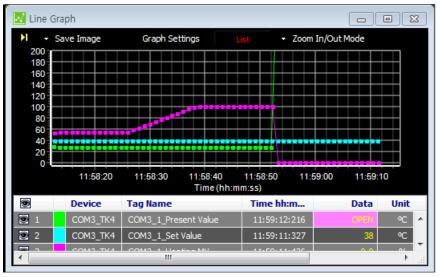
Shows X axis (Time) and Y axis values of the mouse position on the graph.



Data Display Mode

Displays all data values of the mouse position.



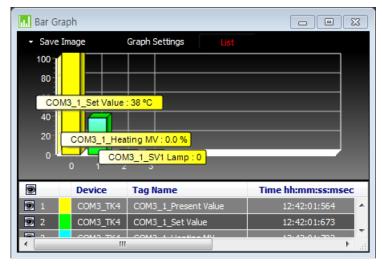


If any parameter value causes an alarm (see Device Specifications), it flashes as below.

3.7.1.5 Bar Graph

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

At the bottom is added I/O source list. Use the checkbox for 🖻 item to show/hide the graph.

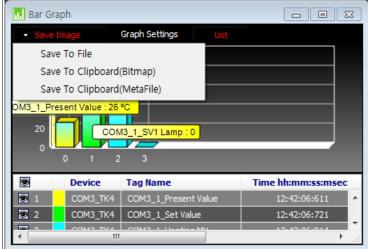


To change the color by each I/O source, double-click the color front of device.

Color		×
Basic Colors:		
🔳 📕 🔳		
		i 🔳 🔳 🔰
Custom Colors:		
Defin	e Custom Colors	>>
ОК	Cancel	

(1) 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 as '*.bmp', or '*.wmf' format.



- Save To File: Saves as Bitmap (*.bmp) or Windows metafile (*.wmf).
- Save To Clipboard (Bitmap): To use this image directly for other application program, saves as Bitmap (*.bmp) file on clipboard.
- Save To Clipboard (MetaFile): To use this image file directly for other application program, saves as MetaFile (*.wmf) on clipboard.

(2) Graph settings

Graph Settings allows you to change the general Graph environment.

Graph	Settings		
1	xis Settings		
	X Axis Settings	Y Axis Setti	ngs
	Min -0.50 Max 10.00	Min 0.00 Max 100.	
	Max 10.00	Max 100.	00
	2 View 3D		
	3 Bar Style		
	 Horizontal Ba Vertical Bar 	ir	
	Ver ucar bar		
		ОК	Cancel

No	Item	Description
1	Axis Set	Sets the range of Min. and Max. values for the X/Y axis.
2	3D View	Sets the display status of the bar.
3	Bar Style	Sets the horizental and vertical styles of the bar.

(3) List

List displays or hides list items at the bottom of the graph. Clicking the List button toggles item display on and off.

List ON



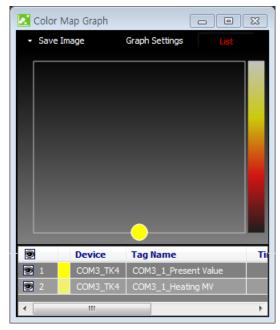
List OFF

🔝 Bar Graph		
 Save Image 	Graph Settings List	
100		
90		
80		
70		
60		
COM3_1_Set	Value : 38 °C	
40 30 20 10 COM3		
	1_Heating MV : 0.0 % COM3_1_SV1 Lamp : 0	

3.7.1.6 Color Map Graph

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

At the bottom is added I/O source list. Use the checkbox for 🖻 item to show/hide the graph.



(1) 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 as '*.bmp', or '*.wmf' format.

C 🖸	olor Ma	ap Graph			8
•	Save Im	age	Graph Settings	List	
	Save	To File			
	Save 7	To Clipboard	l(Bitmap)		
	Save 7	To Clipboard	l(MetaFile)		
			<u> </u>		
۲		Device	Tag Name		Ti
۲	1	COM3_TK4	COM3_1_Prese	ent Value	
	2	COM3_TK4	COM3_1_Heat	ing MV	

- Save To File: Saves as Bitmap (*.bmp) or Windows metafile (*.wmf).
- Save To Clipboard (Bitmap): To use this image directly for other application program, saves as Bitmap (*.bmp) file on clipboard.
- Save To Clipboard (MetaFile): To use this image file directly for other application program, saves as MetaFile (*.wmf) on clipboard.

(2) Graph settings

iraph Se	ttings				×	.	
2 ×	Min 0.00 Min Max 100.00 Max	Settings a 0.00 c 100.00		<mark>5 сыс</mark> Нот	r Map		
	Circle Size						
4 _{Ta}	ig Name	Х Ро	Y Po	Min	Max		
0 C	DM3_1_Present Value	0.00	0.00	-1999.00	9999.00		
1 C	DM3_1_Heating MV	0.00	0.00	0.00	1000.00		
No	ltem	Descri • Norr		OK	Cancel		
			or Map Graph we Image	Graph Settings			

No	Item	Description				
2	X/ Y Axis set	Sets max./min. value of X/Y axis range.				
3	Circle size	Sets displayed circle size.				
4	List	Displays added I/O source list. Double-click the item to set X,Y coordinate (Normal) or angle and distance (Polar Bar) depending on graph type setting.				
5	Color Map	Sets color map. Color map supports HSV, JET, HOT, COOL, and GRAY.				

(3) List

List displays or hides list items at the bottom of the graph. Clicking the List button toggles item display on and off. • List ON

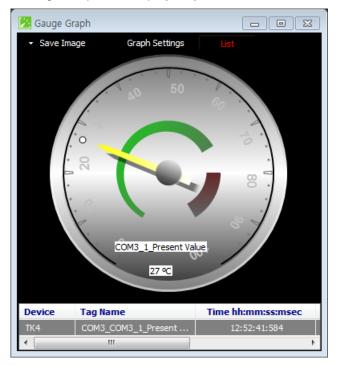
Color M	lap Graph			83
 Save In 	nage	Graph Settings		
		$\overline{}$		
	Device	Tag Name		Ti
1	COM3_TK4	COM3_1_Pres		
2	COM3_TK4	COM3_1_Hea	ting MV	
•				Þ

List OFF ٠

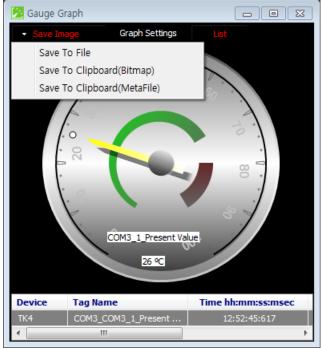
🛃 Color Map Graph		
	Graph Settings	List
<u> </u>		

3.7.1.7 Gauge Graph

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

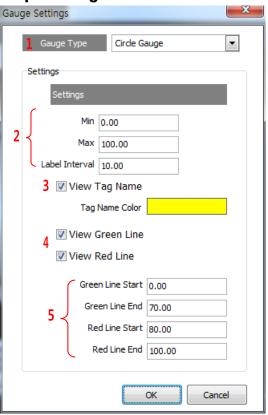


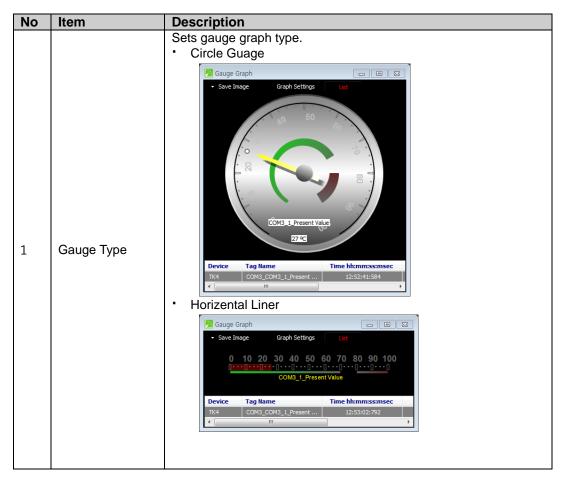
(1) Save image



- Save To File: Saves as Bitmap (*.bmp) or Windows metafile (*.wmf).
- Save To Clipboard (Bitmap): To use this image directly for other application program, saves as Bitmap (*.bmp) file on clipboard.
- Save To Clipboard (MetaFile): To use this image file directly for other application program, saves as MetaFile (*.wmf) on clipboard.

(2) Graph settings



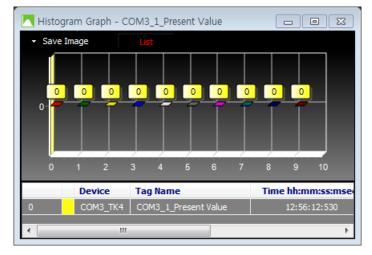


Autonics

No	Item	Description
		Vertical Linear
		Save Image Graph Save Image Graph Settings List 100 90 90 100 1255 1
		Numeric Gauge Gauge Graph
		Coddge Graph Craph Settings Coddge Graph Setings Coddge Graph Settings Coddge Graph Settings Codd
		LED Gauge
		Cauge Graph Save Image Graph Settings List COHSELEPresent Value
2	Minimum, Maximum, Label Interval	Sets minimum/maximum value and label interval displayed on graph.
3	TagName Visible	Sets tagname of added I/O source display and color.
4	Green/Red Line Visible	Sets green/red line of graph display.
5	Green/Red Line Setting	Sets start/end value of green/red line.

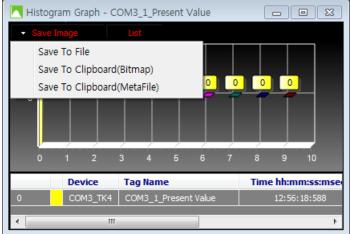
3.7.1.8 Histogram graph

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



(1) 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 as '*.bmp', or '*.wmf' format.

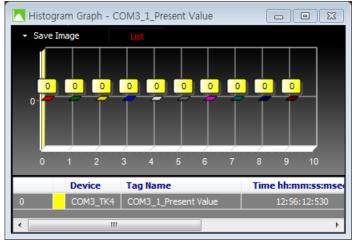


- Save To File: Saves as Bitmap (*.bmp) or Windows metafile (*.wmf).
- Save To Clipboard (Bitmap): To use this image directly for other application program, saves as Bitmap (*.bmp) file on clipboard.
- Save To Clipboard (MetaFile): To use this image file directly for other application program, saves as MetaFile (*.wmf) on clipboard.

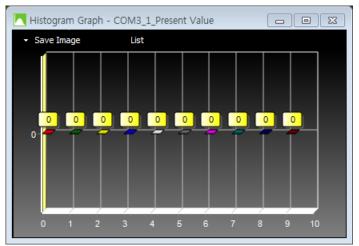
(2) List

List displays or hides list items at the bottom of the graph. Clicking the List button toggles item display on and off.

List ON



List OFF



3.7.2 Alarm

3.7.2.1 Alarm History Grid

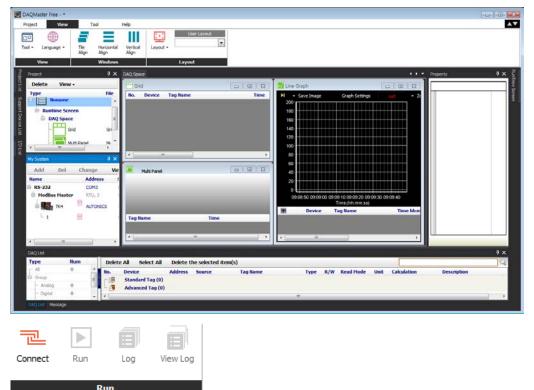
Alarm History Grid displays alarm data of I/O source data as text for monitoring.

Whenever alarm data is updated in Run status, the data is added.

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
•			
`	Device	III Tag Name	
∢ No.			

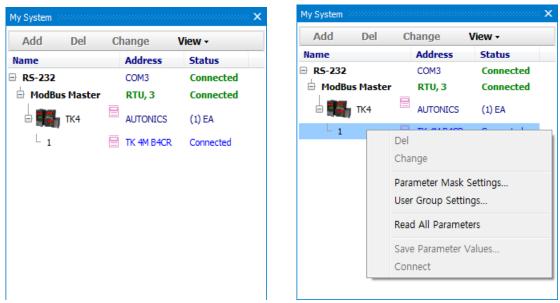
3.8 Connection

The screenshot below shows all necessary settings for complete connection with a device.



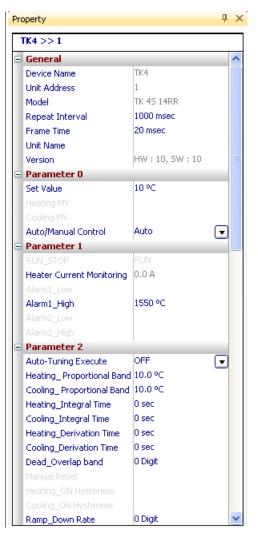
Click the Connect button on the toolbar and check the connection status in My System. If the connection is successful, Status displays Connected.

To set the DAQMaster Program parameters, you should load the parameters of connected unit. Select TK4 Unit 1 in My System and then right-click it to execute the 'Read All Parameters'.



When the reading is completed, the Property window displays the parameters. Parameter change is also available.

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If you only want to monitor (and not change parameters), click Run button on the toolbar.

When parameter values are changed in the Property window, changed values are immediately applied through communication to the device. While a parameter change request is in progress, all property values are displayed in gray (not modifiable). They are restored to the original color after the resulting values are received.

To apply the changed value, change the value and press Enter (for edit type), or select an item with the mouse or the Alt + arrow keys, and press enter (for list type).

If a unit related item in a parameter is changed, all unit values of the related parameter will change. If a range related item is changed, this range will be applied to all items for the parameter.

If an out-of-range value is entered for a property with a value range, the input is ignored and original value restored. The range is displayed at the below.

The parameter which input format is set only available to input in a specified format.

Parameters in Disabled status do not have displayed values and the names are grayed out. In Reading mode, parameters, names and values are grayed out.

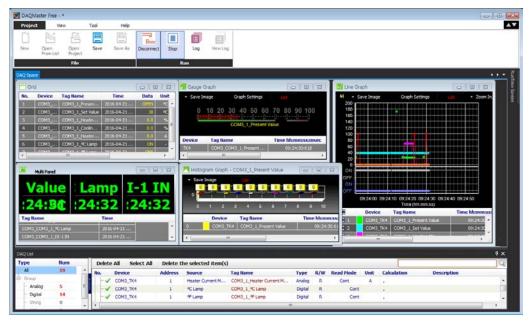
The language of the parameters does not change (regardless of the language selected when installing the program).

3.9 Running the Program

Below is an image of the program in progress.



If you changed the layout from default to runtime on the toolbar, the monitoring screen displays as below.

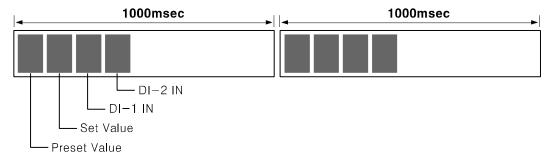


Note

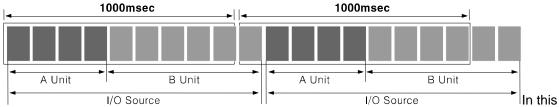
Setting a repeat reading for the unit

The Repeat Interval (under General in the Property window) of a unit sets an interval of repeated reading of I/O source for the unit connected when run. The default value is 1000 ms.

If four I/O sources are added to DAQ List, it gets data for four I/O sources and another four after 1000 ms as shown in the diagram below. If I/Os do not exceed the defined Repeat Interval (1000 ms), it brings data according to the set Repeat Interval.



A large number of added I/O sources may exceed the defined Repeat Interval as in the image below.



case, communication occurs at the minimum interval instead of the preset Repeat Interval.

Therefore, if reading time exceeds the range of the set Repeat Interval value, extra communication occurs at the minimum required time to read I/O sources.

If the environment requires a precise set value, add RS-232 port(s) and split the device connection.

3.10 Logging

When the Status is Run, the Log button on the toolbar is enabled.

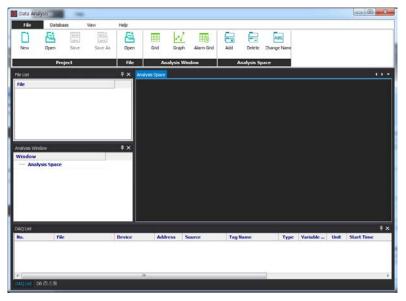
Disconnect	Stop	Log	View Log	
	R	IN		
Disconnect	Stop	Stop Logging	View Log	Log Start Time 04-20 21:05:27 Elapsed Time 00 00:00:50
	R	un		Log

If you start logging, log start time and elapsed time display on the right side.

If you click Stop Logging, the Save As window appears. Files are saved as DAQ Data File (*.ddf) and CSV File (*.csv) format.

Save As		<u> </u>	×
Save in:	📔 New Folder	- 🧐 🤣 😕	
My Recent Documents Desktop My Documents My Computer	noname		
My Network	File name: Save as type:	noname DAQ Data File(*,ddf) CSV File(*,csv)	OK Cancel

DAQ Data Files (*.ddf) can be analyzed using Tool > Data Analysis in DAQMaster Program.

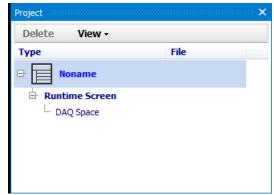


3.11 Saving Project

You can save the project you were monitoring.

Device, RS-232 configuration, repeat interval, runtime screen set values are saved. Specify project properties as follows before saving.

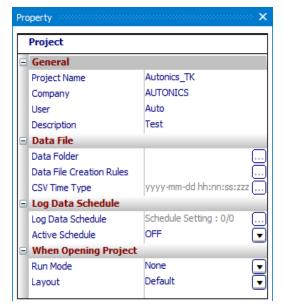
1st Select Noname at the top of the project tree.



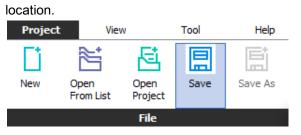
2nd In the Property window, the project name is marked as Noname. Company name,

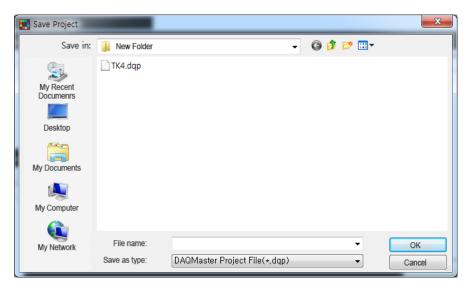
worker, and descriptio	n are empty.
Property	×
Project	
🖃 General	
Project Name	Noname
Company	
User	
Description	
🖃 Data File	
Data Folder	
Data File Creation Rules	
CSV Time Type	yyyy-mm-dd hh:nn:ss:zzz
🖃 Log Data Schedule	
Log Data Schedule	Schedule Setting : 0/0
Active Schedule	OFF 💽
When Opening Project	
Run Mode	None 🔽
Layout	Default 💽

Enter basic project information, such as company name, worker, and other descriptions as below.



3rd Select Project > File > Save Project from main menu to save the project in the desired





3.12 Opening a Project

Opens a saved project.

There are two ways to open a project: Open Project and Open Project List. You can only open a project when communications are not connected.

3.12.1 Open Project

Directly selecting a project file is the most common way to open a project file.

 Project
 View
 Tool
 Help

 Image: New
 Open
 Image: Open
 Image: Open
 Image: Open
 Image: Open

 New
 Open
 Project
 Save
 Save As

 File

3.12.2 Open Project List:

This method opens a file from a list of frequently used projects.

This is a convenient project file management system. Similar to a favorites menu on an Internet browser, you can add frequently used projects to the list.

Project	Viev	v	Tool	Help
		臣		Ē
New	Open From List	Open Project	Save	Save As
		File		

You can even add a folder to the project list and project files to the subfolder. You can also change folder/file names as well as add or delete folders/files.

Selecting a folder enables Add Folder, Change Name, Add, Delete menus. Selecting a project file enables Add and Delete menus.

dd Folder Change Name Project Name	Add	Del	Current Project	C
	Descr	iption		
L Autonics_TK	Test			AL

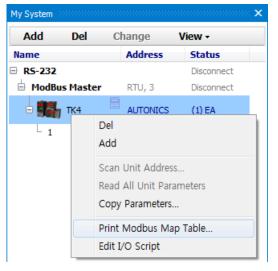
No	Item	Description				
1	Add Folder	Adds a folder.				
2	Change Name	Changes the name of folder.				
3	Add	Adds a project file. Click the Add and the Add Project List window is open.				
4	Delete	Removes selected folder or file.				

3.13 Modbus Map Table Report

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 as a PDF File (*.pdf) or Html File (*.html) format.

Right-click the device in My System after the device is added. Select Print ModBus Map Table from the pop-up menu.



	•	www.uudow.							
Preview	2 3								
		Page: 1/4		Μ	icrosof	t XF	S D	ocument Writer	
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			Compan		TONICS			19 M	
			Dete:	Name : T19 201	# 18-09-20				
			No	ModBus	Address		See.	Parameter	
			1	40001	00.00		1	Set Value	
		· · · · · · · · · · · · · · · · · · ·		40002	00.01	R/W R/W	1	Heath p IV Cooling IV	
			4	40004	00.03	R/W	-	Auto, Manual Control	
			5	40051	00 32	R/W	1	RUNLETOP	
			6	40052	00.33	R/W	4	Multi SV No	
			7	40052	00.24	R R/W	1	Heater Current Monitoling Alantia_Low	
			-	40055	00.36	R/W	-	Abrri_Hph	
			10	40056	00.37	R/W	1	Airm2_Low	
			11	40057	00.36	R/W	1	Abrr0_Hgh	
			12	40058	00 39 00 34	R/W R/W	1	SV-0 Setting Value SV-4 Setting Value	
			14	40060	00.38	R/W	4	SV-2 Setting Value	
			15	40061	00.30	R/W	4	SV-3 Setting Value	
			16	40101	00.64	R/W R/W		Auto-Tun hig Execute	
•			17	40102	00.65	R/W R/W	1	Heath g_ Popotional Sand Cooling, Proportional Sand	
			19	40104	00.67	R/W	-	Heath g_Integral Time	
			20	40105	00.66	R/W	1	Cooling_Integral Time	
			21	40105	00.69	R/W	4	Heating_Derivation Time	
		· · · · · · · · · · · · · · · · · · ·	11	40107	00 6A 00 6B	R/W R/W		Cooling_Derivation Time Dead_Overlap.band	
		· · · · · · · · · · · · · · · · · · ·	24	40109	00.60	R/W	4	Manual Reset	
			25	40110	00.60	R/W	1	Heat hg_ON Hyst erects	
			26	40111	35.00	R/W	1	Hasting_OFF Office	
			27	40112	00.6F	R/W R/W	1	Cooling_ON Hysterest Cooling_OFF Offeet	
			29	40114	00.71	RW	-	MV Low Link	
			30	40115	0072	R/W	4	MV High Limit	
			21	40116	0073	R/W	1	Ramp_Up Rate	
			32	40117		R/W	1	Ramp_Dow n Rate	
			ModBus M	lemory Map	Table AUT	ONIES / 1	K4 🗮	1	· · · · · · · · · · · · · · · · · · ·
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2	Print	Pr	ints	the	Mode	Bus	ma	ap table.	
3	Close							ew window.	
	0.000		2000		- Piili	• P'	241		

Below is a preview window.

4 Changing Program Language

4.1 Change Language

Changes the program language. Language is set based on the language selected at program installation.



Select Tool > Language > from the main menu. It is applied immediately and changes to the selected language.

DAQMaster Free - *		a #
프로젝트 보기 도구 도용말		A.
시작업 리스트에서 열기 정장 다른 이름 연결해제 실행 로그 로그보기 열기		
파일 실행		
프로팩트 후× DAQ 스웨이스		••• 48 • ×
48 17.	2 P2 24E	· · · · · · · · · · · · · · · · · · ·
석제<보기· 그리도 그리도 타암 II No 디바이 테그 이름 시간	N · 이미지 저장 그래프 성정 리스타 · 확대/축소모드	- 이미지 저장 그래프 설정 리스트 · 알반사람
□ □ 1 COM7 COM7 COM7 2016-04-11 2 = \$132:12 2 2 COM7 COM7 COM7 COM7 2016-04-11 2 = \$132:12 2 2 COM7 COM7 2016-04-11 2 = \$132:12 2 2 COM7	200	EIBIOI스 104 주소 1
실 전당 화면 2 COM7 COM7 COM7 2015-04-11 오류 3/2/12 슬 DAQ 스페이스 3 COM7 COM7 2015-04-11 오류 3/2/12	150	소스 Present Value
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		문위 약C 스크립트 변수 Tag1
Mult Panel	15:31:50 15:32:00 15:32:10 15:32:20 15:32:30 15:32:40 15:32:50 Time (hh:mm:ss)	49
Panel	■ 디바이스 테그이름 시간 hhmm:ss:msec 테이터	COM7_1_Present Value = I/0 업데티 개산 수석 편집
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L 1 TK 418402 COM7_COM7_1.5et Value 2016-04-11 2 = 3.32:13	Image: CLUB/OI △ EI □ OI 副 A/ 2t hhummssemec EI OI EI Image: All Of All O	
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CON7_1_Present Yalue CON7_1_2	• 000 772 JHE 42 BLAR	
°C		
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2016-04-11 ♀≢ 3:32:13		DB0A BJ0E A2 hhmmes
2016-04-11 도 후 3:32:13 태그 애플 시간	문 디바이스 테그이름 시간 hhmmssmsec 데이터	0 COM7_TM4 COM7_1_Present Value 15:52:12
✓ COM7_COM7_1_Present Value. 2016-04-11 S.\$ 3:32:13	t CON7_TO1 CON7_1_Present Value 15:32:12:510	x
DAQ 리스트		*×
타입 계수 모두 삭제 모두 선택 선택 마이명 삭제하기 모두 삭제 모두 신택 신택 마이명 삭제하기		
	그에름 타입 R/W Read Mode 단위 수식 설명	
- Analog 5 COM7_TK4 1 Present Value CC	M7_1_Present Value Analog R Cont 9C ,	
DAG BLE HAR		

4.2 Modifying and Adding Languages

DAQMaster program allows you to add and modify the language. Language files reside in lang folder in the installation folder. Its default format is XML.

To modify language, open the file in Notepad as below, modify and save.

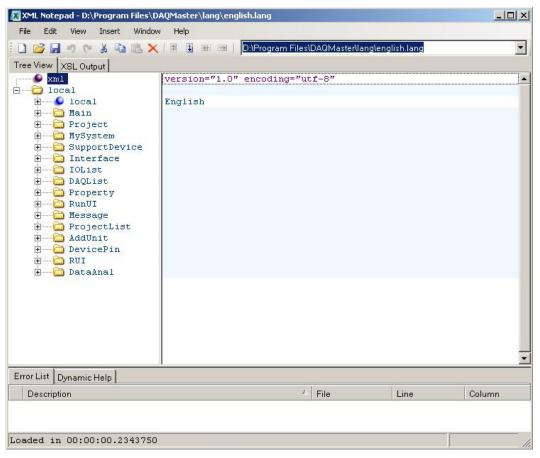
📄 english.lang - Notepad	
File Edit Format View Help	
xml version="1.0" encoding="utf-8"? <local> <local>English</local> <datetime>YYYY-MM-DD hh:nn:ss:zzz</datetime> <daqmaster> <main> <_D>File<!--_D--> <_1>Yiew<!--_1--> <_2>Run<!--_2--> <_3>Tool<!--_3--> <_4>Windows<!--_4--></main></daqmaster></local>	
<pre><+*/indoxs</pre> <_5>Help _5] <_6 New _6 <_7>Open From List _7 <_8>Open Project _8 <_9>Save _9 <_10>Save	
<pre><11>0pen Data<!--_11--> </pre>	
	▼

To add a language, copy and rename the existing file.

In <local>English</local> section (highlighted with a square in the image below), change the English contents to your desired language and save. (For example, to change to Korean:

Change 'File' to '파일'.)

The default language file format is XML, so you can edit the file as below using XML Notepad (a freeware provided by Microsoft).

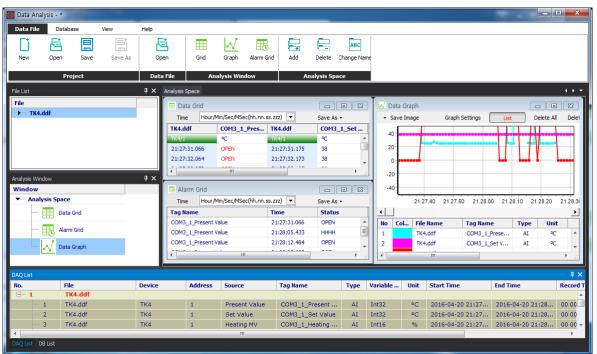


5 Data Analysis

With this program you can analyze monitored data files (*.ddf) through Grid or Graph screen.

You can save monitored data files as a different file name.

The screen below shows data analysis in progress.



5.1 Screen Layout

DAQMaster's data analysis screen is divided into sections as shown in the below screenshot and each section is composed of following items.

Data	a Analy	sis - *		_							_							-			х
Data	File	Databa	se	View	Help																
Nev	j v	Open	Save	Save As		ben	Grid	Graph A	larm Grid	Add	Delete	ABC Change Nar	ne								
		Proj	ect		Dat	a File	Ana	alysis Windo	N	Ar	nalysis Spa	ice									
File Lis	+					Analysis	Snace													4	→ +
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						TK4/1		°C	ТК		•C	C		40					╋╍╋╋╋╍		1 🛛
						21:27	:31.066	OPEN	21	:27:31.175	38			20						••	
						21:27	:32.064	OPEN	21	:27:32.173	38			0				- 14		L	
					а 4 х	-								-20							
Analys	is Windo	W			~ + ×	9 Ala	arm Grid					• 33		-40							
		is Space			_	Tim		1in/Sec/MSec(h	h nn ss 77	7) 💌	Save As			1		1.27.40 21.27.5	0 21 28 0	0 21.28	10 21.28.2	0 21.2	8.34
	L	Data G	hid			Tag N		in yoccyn locc(i	Tir		Status			•	2	1.27.40 21.27.0	0 21.20.0	0 21.20.	10 21.20.2		•
		_				-	_1_Present V	'alue		:27:31.066	OPEN				ol F	ile Name	Tag Nam	e	Type l	nit	-
	E	Alarm	Grid			СОМЗ	_1_Present V	alue	21	:28:05.433	нннн	E		1	1	TK4.ddf	COM3_1_	Prese	AI	°C	^
	L.	🗸 🗸 Data G	aph			COM3	_1_Present V	alue	21	:28:12.484	OPEN			2	1	TK4.ddf	COM3_1_	Set V	AI	°C	-
		-				•								•		m				Þ	
	et over																				4 ×
No.	51	File			Device		Address	Source		Tag Name		Туре	Va	riable	Unit	t Start Time		End Tim	e	Rec	
-	1	ТК	4.ddf																		-
	- 1		4.ddf		TK4		1	Present V		COM3_1_		AI		t32	°C				4-20 21:28		
	- 2		4.ddf		TK4		1	Set Value		COM3_1_5		AI		t32	°C				4-20 21:28.		_
4	- 3	TK4	1.ddf		TK4		1	Heating M	IV	COM3_1_1	Heating	AI	In	t16	%	2016-04-2	0 21:27	2016-04	4-20 21:28.	00 0)0 -
	ist DB	List																			

No	Item	Description
1	Menu	Menus are displayed by category. Select a menu to display submenus.
2	File List	Shows a list of project files to analyze.
3	Analysis Window	Shows items at the Analysis Space.
4	DAQ List	Shows I/O source list is saved in the data file.
5	DB List	Shows DB list.
6	Analysis Space	Space for displaying data grid, data graph, Alarm Grid.
7	Data Grid	Shows I/O data as grid data.
8	Data Graph	Shows I/O data as graph data.
9	Alarm Grid	Shows alarm data as grid data.

5.1.1 Menu

5.1.1.1 Data File

Data File	Databa	ise	View	Help						
		E	Save As	Open	Grid	Graph	Alarm Grid	Add	Delete	ABC Change Name
		ject		Data File		alysis Win	dow	A	nalysis Sp	-

(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 anaylsis windows.
- Save As: Saves the opened data file or anaylsis windows as other file name.

(2) File

• Open: Opens DAQMaster log file (*.ddf, *.krd, *.t5d).

(3) Analysis Window

You can add the items (grid, graph, alarm grid) for displaying Analysis Space.

(4) Analysis Space

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

5.1.1.2 Database

Data File	Database	View	Help
Connect DB	Grid DB G	raph	
Connect	DB Chart		

(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.

5.1.1.3 View

Data File	Database	e Vi	ew	Help	
File List	nalysis Windov	DAQ List	Tile Align	lorizontal Ali	gVertical Align
	View			Windows Ali	gn

(1) View

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

(2) Align Windows

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

5.1.1.4 Help

Data File	Database	View	Help
Information			
Help			

Information for DAQMaster data analysis program.

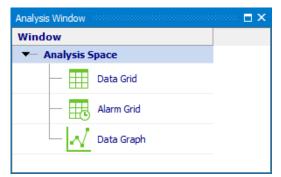
5.1.2 File List

Shows a list of opened Data Files (*.ddf).

File	
▼ 1	K4.ddf
	— Data Type : DAQMaster Data File(
	— File Version : 2705
	— Log Time : 2016-04-20 오후 9:28:52
	— Title : Noname
	— Company :
	- Worker :
	Description :

5.1.3 Analysis Window

Shows items at the Analysis Space.



5.1.4 DAQ List

DAQ List shows I/O source list saved in the data file.

I/O sources can be analyzed through the analysis screen.

DAQ List												Ψ×
No.		File	Device	Address	Source	Tag Name	Туре	Variable	Unit	Start Time	End Time	Record Tir
=- 1		TK4.ddf										
	- 1	TK4.ddf	TK4	1	Present Value	COM3_1_Present	AI	Int32	°C	2016-04-20 21:27	2016-04-20 21:28	00 00:
	- 2	TK4.ddf	TK4	1	Set Value	COM3_1_Set Value	AI	Int32	°C	2016-04-20 21:27	2016-04-20 21:28	00 00:0
	- 3	TK4.ddf	TK4	1	Heating MV	COM3_1_Heating	AI	Int16	%	2016-04-20 21:27	2016-04-20 21:28	00 00:1 🔻
•					III							F.

5.1.5 Analysis Space

(1) Grid

Analyzes I/O data as grid data. Drag the I/O source from the DAQ List and drop onto the data graph screen to analyze it.

🔟 Data Gr	rid				X
Time	Hour/M	/in/Sec/MSec(hh.nn.s	ss.zzz) 💌	Save As -	
TK4.ddf		COM3_1_Pres	TK4.ddf	COM3_1_Se	t
TK4/1		°C	TK4/1	<u>●</u> •C	
21:27:31.0	66	OPEN	21:27:31.175	38	
21:27:32.0	64	OPEN	21:27:32.173	38	
21:27:33.0	78	OPEN	21:27:33.187	38	
21:27:34.0	92	OPEN	21:27:34.201	38	-
۲ II	1				▶

(2) Graph

Analyzes I/O data as graph data. 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 (tag, view point, Y Auto scale).



(3) Alarm Grid

Analyzes alarm data as grid data. Drag the alarm source from the DAQ List and drop onto the data graph screen to analyze it.

🔣 Alarm Grid					
Time	Hour/Min/Sec/MSec(hh.nn.	Save As 👻			
Tag Nam	e	Time	Status		
COM3_1_	Present Value	21:27:31.066	OPEN		
COM3_1_	Present Value	21:28:05.433	ННН		
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	ННН		
•	III	1	•		

5.2 Analyzing Data

5.2.1 Opening Data Files

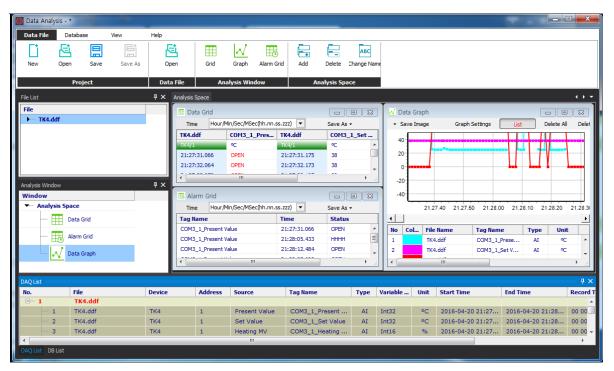
Select Data File > Data File > Open to open a data file.

Open		? 🔀
Look in:		
	(alarm_history test(dq1s)	
My Recent Documents	i date test ☐ KRN1000_20131002_112047	
Desktop	Binoname Binoname1111	
	noname_longtime bemp_20130524_105041 test2	
My Documents	liest2	
My Computer		
My Network Places	File name: temp_20130524_105041	Open
	Files of type: All Files(*.ddf,*.krd)	Cancel

5.2.2 Add Analysis Screen

DAQ List contains I/O source list of the file. At 'Data File > Analysis Window', select the added Data Grid, Data Graph, Alarm Grid for Analysis Space.

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



The file displayed on the Data Grid screen and the Alarm Grid can be saved as a different file name in *.txt, *csv, *.html or *rtf formats.

🔲 Data Gri	id				
Time	Hour/Min/Sec/MSec(hh.nn	.ss.zzz) 🔻	Save As 👻	Delete All Dele	te Channel Print
TK4.ddf	COM3_1_Pres	TK4.ddf	*.txt	. TK4.ddf	COM3_1_Hea
21:27:36.13	20 OPEN	21:27:36.	*.csv	21:27:36.339	0.0
21:27:37.1	19 OPEN	21:27:37.	* html	21:27:37.337	0.0
21:27:38.13	33 512	21:27:38.	*.rtf	21:27:38.351	0.0
21:27:39.14	47 26	21:27:39.		21:27:39.349	62.8
21:27:40.10	51 25	21:27:40.270	38	21:27:40.363	62.8
21:27:41.13	75 25	21:27:41.284	38	21:27:41.377	62.9
21:27:42.18	89 25	21:27:42.298	38	21:27:42.391	59.8
21:27:43.20	03 27	21:27:43.312	38	21:27:43.405	61.9
21:27:44.2	17 26	21:27:44.326	38	21:27:44.419	63.0
21:27:45.2	15 25	21:27:45.324	38	21:27:45.418	63.2 .

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

📈 Data	Graph					C	- • ×
 Sav 	e Image	Graph :	Settings	List		elete All	Delete Channel
50							
40					┝╍╋╍┝	<mark>┼╍┼╂</mark> ╉	
30	-						
20							
10							
0					1-1	teet t	
-10							
-20							
-30							
-40							
-50-1	21.27	7.40 21.3	27.50	21.28.00	21.28.	10 21.2	8.20 21.28.30
						-	•
No C	ol File Na	ame	Tag Na	me	Туре	Unit	Min
1	TK4.d			_Prese	AI	۹C	
2	TK4.d	df	COM3_1	_Set V	AI	۹C	
•							+

You can set time axis, time format, graph line width, etc for the graph.

Graph Settings			×
Axis Settings			
Time Axis Setti	ings	Y Axis Settin	igs
Hour 0		Min -50.0	0
Min 1		Max 50.00)
Sec 0			
Time Format hh.nn	.ss Hour A	1in(hh.nn)	-
Line Width 2	w Point	Daint D	
	•	Point 2	-
DI Axis(%) 30			
Line			
	Y Value	Color	Width
🔲 Upper Limit	0.00		2
C Reference	0.00		2
🔲 Lower Limit	0.00		2
View Tag Na	ame Panel		
🔽 View Tag C	heck Box		
	(
	C	К	Cancel

5.2.3 Print

Data Analysis program supports printing graph, grid, etc.

🔟 Data Grid						8
Time Hour/N	1in/Sec/MSec(hh.nn.s	ss.zzz) 💌	Save As 👻	Delete All Delet	te Channel Prin	t
TK4.ddf	COM3_1_Pres	TK4.ddf	COM3_1_Set	TK4.ddf	COM3_1_Hea	
TK4/1	°C	TK4/1	°C	TK4/1	%	~
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	

Click the 'Print' and the 'Preview' dialog box appears.

Preview	<u>n</u> 1		15	8
Page : 1/3	Se	nd To OneN	ote 2013	
	Data Analy	SIS	_	
	THAdd CO	M3_1_Present Valuef	COMS_1_Set Valmeddf	COM3_1_Heating MV
	TH8/1 TC		S TH#/1	N
	2127 21.055 09		36 212721264	0.0
	2127 22.054 0P		36 212722262	0.0
	2127 23.076 OP		36 212722297	0.0
	2127 24.092 OF		36 212724311 36 212725325	0.0
	212725.005 0P			0.0
	2127 26 120 0P		36 212726339 36 212727327	0.0
	212726.122 513		26 212726251	0.0
	2127 29.147 26	21:07:29.356	30 210709349	G.6
	2127 40.161 25	21:27:40.270	36 212740363	614
	2127 41 17 5 25	21:27:41.294	26 212741277	0.9
	2127 42.199 25	21:27:42.296	36 212742391	59.6
	2127 42 202 27	21:27:42.212	26 212742405	61.9
	2127 #4 217 26	21:27:44.326	36 212744419	G.0
	2127 45 21 5 25	21:27:45.324	20 212745410	0.1
	2127 46 21 2 25	21:27:45.222	20 212746416	62.0
	2127 \$7.227 25	21:27:47.227	36 212747430	62.0
	2127 49 22 6 25	21:27:49.325	26 212746429	62.2
	2127 49 32 4 25	21:27:49.333	36 212749427	G.1
	2 1 27 50 22 8 25	21:27:50.247	36 212750441	62.0
	212751252 25	21:27:51.261	20 212751455	£1.9
	1 1 27 52 36 6 35	21:27:52.375	36 212752469	61.0
	212753280 25	21:27:53.369	36 212752462	61.0
	1127 54 39 4 15	21:27:54.402 21:27:55.402	26 212754497 26 212755495	64.0 64.5
	2127 56 307 25	21:27:56.416	20 212756509	72.4
	2127 57 221 25	21:27:57,420	26 212757522	76.7
	2127 56 33 5 35	21:27:59.444	34 212756527	81.3
	2127 59 349 25	21:27:59.459	24 212759551	65.5
	2129 00 363 25	21:29:00.472	20 212000565	91.5 E
	2129 01 277 25	21:29:01.465	20 212001579	94.1
	212602391 25	21:29:02.500	36 212603593	83
	Data Analysis			1

6 Special Features

This chapter describes special features when connecting the device and DAQMaster. Each special feature is different by the device, refer to the below descriptions of each device.

6.1 TK Series(high accuracy standard PID control temperature controller)

Save parameter values, copy parameters, parmaeter mask and user parameter group is available by DAQMaster.

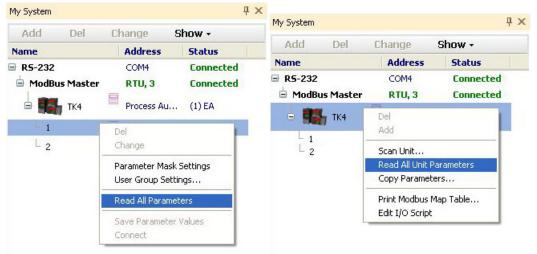
(1) Save parameter values

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.

1st Connect the TK device which parameters are saved.

2nd Click 'Read All Parameters' of the unit device which parameters are saved or 'Read

All Unit Parameters' of TK at My System.



3rd Select TK at My System and right-click to select 'Copy Parameters' and Parameter



4th 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.

Sult Gener Device Unit Ac	e Name	
Unit Ac		
Model		
The second se		RUN
	Frame Unit N. Set Va Heatin Coolin Auto// E Parar RUN_3 Mult S Heate Alarmi Alarmi Alarmi Alarmi SV-0 S SV-1 S	Frame Time Unit, Name Version Parameter 0 Set, Value Heating MV Cooling MV Auto[Manual Control Parameter 1 PUN_STOP

5th Click 'Save' and it saves parameters as *.prx file.

o o		😴 Сору	Open	Save		SW:10, HW:1
Unit List	Result	Result	- Parameter 0			
🖌 1, TK 4S 14RR	SW:10, HW:10		Set Value		0.0 %	
2, TK 4S 14RR	SW:-1, HW:-1		Heating MV		0.0 %	
	Provide the second second		Cooling MV		0.2 %	
			Auto/Manual C	ontrol	Manual	
			Parameter 1			
			RUN_STOP			
			Multi SV No		SV-0	
			Heater Curren	t Monitoring	0.0 A	
			Alarm1_Low			
			Alarm1_High		100.0 %	
			Alarm2_Low			
			Alarm2_High			
			SV-0 Setting V		0.0 %	
			SV-1 Setting V			
			SV-2 Setting V			
			SV-3 Setting V			
			Parameter 2		1	
			Auto-Tuning E			
			Heating_Prop			
			Cooling_Propo			
			Heating_Integ		0 sec	
			Cooling_Integr		0 sec	
			Heating_Deriv		0 sec	
			Cooling Deriva	ation Time	In sec	

(2) Copy parameters

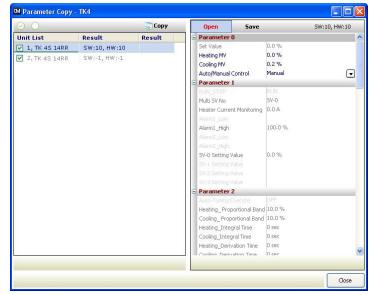
To connect the several same model units at once, you can copy the parameters. You can copy the saved parameter file or the parameter settings of the dedicated device(standard unit) to the other devices(target units).

• To copy the saved parameter file,

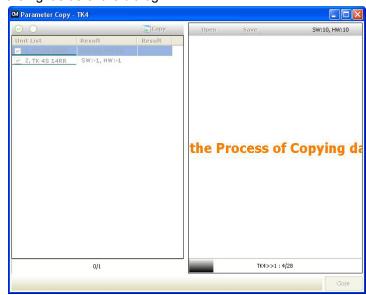
1st Same orders 1st to 3rd of the Save parameter values.

2nd Check the units to be copied at the check box of the left side of the dialog.

3rd Click 'Open' and select the parameter file and it loads at the right side of the dialog.



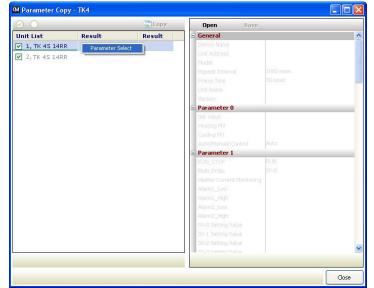
4th Click 'Copy' and copy is progressing. 'the Process of Copying data' text appears at the right side of the dialog.



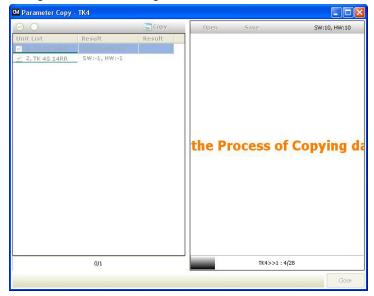
5th After completing copy, 'Copy Complete!' dialog box appears. Click 'OK' and copy is finish.

- To copy the parameter settings of the dedicated device(standard unit) to the other devices(target units),
- 1st Same orders 1st to 3rd of the Save parameter values.
- 2nd Check the units to be copying (standard unit) and to be copied (target unit) at the check box of the left side of the dialog.
- 3rd Right-click the unit to be copying(standard unit) and select 'Parameter Select'. The

parameter values of the unit is loaded at the right side of the dialog.



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



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

(3) Parameter mask

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

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

Parameter 1	PAr I	Parameter 2	Par 2	Parameter 3	PAr3	Parameter 4	PAry	Oevice Name
1 Heating MV	H-āu	Auto-Tuning Execute	RE	Input Type	Lo-F	Alarm1 Mode	81 - 1	TK4
Cooling MV		Heating_Propotional Band	1		Unit	Alarm1 Type		Unit Address
RUN_STOP	r-5	Cooling_Propotional band		Low Input Range		Alarm1 Hysteresis		
Multi SV No		Heating_Integral band		High Input Range		Alarm1 N0/NC		4
eater Current Monitoring	Ct-ñ	Cooling_Integral Time	E-1	Scailing	dot	Alarm1 ON Delay Time	A Lon	Model
Alarm1_Low	AL I.L	Heating_Derivation Time	H-d	Low Scailing	L-SC	Alarm1 OFF Delay Time	R LoF	TK 4W 14RN
Alarm1_High	AL I.H	Cooling_Derivation Time	C-d	High Scailing	H-SC	Alarm2 Mode	RL-2	
Alarm2_Low	AL2.L	Dead_Overlap Band	dЬ	Display Unit Lamp	d.Unt	Alarm2 Type	AL 2F	Version
Alarm2_High	RL2.H	Manual Reset	rESt	Input Bias	In-b	Alarm2 Hysteresis	RSHA	H/W : 100
SV-0 Setting Value	50-0	Heating_ON Hysteresis	Н.НУ5	Input Digital Filter	d.F	Alarm2 NO/NC	n5R	
SV-1 Setting Value	5u-1	Heating_OFF Offset	H.oSt	SV Low Limit	L-Su	Alarm2 ON Delay Time	no.5R	S/W : 401
SV-2 Setting Value	50-2	Cooling_ON Hysteresis	С.НУ5	SV High Limit	H-Su	Alarm2 OFF Delay Time	70.5R	
SV-3 Setting Value	50-3	Cooling_OFF Offset	C.oSt	Operating Type	o-Ft	Alarm3 Mode	AL-3	Download
Alarm3_Low	AL 3.L	MV Low Limit	L-ñu	Control Method	[-nd	Alarm3 Type	RL3E	E Dominoad
Alarm3_High	AL 3.H	MV High Limit	H-ñu	Auto-Tuning Type	AFF	Alarm3 Hysteresis	АЗНА	6
		Ramp_Up Rate	- AnU	Output1 (SSR_Curr) Type	oUt I	Alarm3 NO/NC	RBn	3 Save
		Ramp_Down Rate	r Rid	Out1 SSR Function	o 15r	Alarm3 ON Delay Time	R3.on	(A) Open
		Ramp Time Unit	r.Unt	OUT1 Current Range	o IñR	Alarm3 OFF Delay Time	R3.oF	
				Output2(SSR_Curr) Type	oUES	LBA Time	L B R.E	Initialize factory default
				Out2 Current Range	0268	LBA Set Level	<u>L Б Я. 5.</u>	
				Heating Control Time	H-F	Analog Output1 Mode	Ron I	
				Cooling_Control Time	[-E	Low Out1 Scale	FSL I	
						High Out1 Scale	FSH I	
						Unit Address		
						Bit Per Second		
						Parity Bit	Prty	Close

No	Item	Description
1	Parameter mask selection	Select the to-be masked parameters. Right-click the to-be masked parameters and they turn gray.
2	Download	Applies the set masked parameters to the device.
3	Save	Saves the set masked parameters as a mask information file.
4	Open	Opens the saved mask information file.
5	Initialize factory default	Clears the set for the masked parameters. Download this setting to apply it to the device.
6	Close	Closes the Parameter Mask Settings dialog.
7	Device information	Displays device name, unit address, model name, and version.



Parameter 1	PAr I	Parameter 2 PAr 2	Parameter 3	PArg	Parameter 4	PR-4	Device Name
							TK4
Heating_MV		Auto-Tuning Execute RL	Input Type		Alarm1 Mode	81-1	
Cooling_MV		Heating_Propotional Band H-P	Unit		Alarm1 Type	AL IL	Unit Address
RUN_STOP		Cooling_Propotional band	Low Input Range	L_rG	Alarm1 Hysteresis		4
Multi SV No		Heating_Integral band H-1	High Input Range		Alarm1 NO/NC		
leater Current Monitoring	Ct-ñ	Cooling_Integral Time [-]	Scailing		Alarm1 ON Delay Time	R l.on	Model
		Heating_Derivation Time H-d	Low Scailing		Alarm1 OFF Delay Time		TK 4W 14RM
		Cooling_Derivation Time	High Scailing		Alarm2 Mode		
		Dead_Overlap Band <mark> </mark>	Display Unit Lamp		Alarm2 Type		Version
		Manual Reset 「ES と	Input Bias	1.00	Alarm2 Hysteresis		H/W : 100
		Heating_ON Hysteresis <mark>H.HYS</mark>	Input Digital Filter	d.F	Alarm2 NO/NC	820	
		Heating_OFF Offset H.o5E	SV Low Limit	L-Su	Alarm2 ON Delay Time	na.58	S/W : 401
		Cooling_ON Hysteresis [.HY5	SV High Limit	H-Su	Alarm2 OFF Delay Time	R2.0F	
		Cooling_OFF Offset [.o5 E	Operating Type	o-Ft	Alarm3 Mode	81-3	Download
		MV Low Limit <mark>ได้บ</mark>	Control Method	E-nd	Alarm3 Type	RL36	
		MV High Limit <mark>H - กับ</mark>	Auto-Tuning Type	REE	Alarm3 Hysteresis	RBHS	
		Ramp_Up Rate <mark>「RiiU</mark>	Output1 (SSR_Curr) Type	oUt I	Alarm3 NO/NC	Ran	Save
		Ramp_Down Rate <mark>r And</mark>	Out1 SSR Function	o 15r	Alarm3 ON Delay Time	R3.on	Open
		Ramp Time Unit <mark>に.Unと</mark>	OUT1 Current Range	o lāß	Alarm3 OFF Delay Time	R3.0F	Initialize factory
			Output2(SSR_Curr) Type	oUE2	LBA Time	LBR.E	default
			Out2 Current Range	8750	LBA Set Level	L & R.S.	
			Heating Control Time	H-F	Analog Output1 Mode	Ront	
			Cooling_Control Time	C-E	Low Out1 Scale	FSL I	
						FSH L	
						Rdr5	
						685	
						Pres	Close

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

(4) User parameter group [PR-U]

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

User parameter group can have up to 30 parameters.

M User Group Settings								
User Group Settings	Parameter 1	PAr I	Parameter 2	PAr2	Parameter 3	PAr 3	14	O Device Name
					Y7			TK4
	Set_Value	50	Auto-Tuning Execute	RE	Input Type	In-t	1	TIXT.
	Heating_MV	H-ñu	Heating_Proportional B	H-P	Unit	Unit	1	Unit Address
	Cooling_MV	E-ñu	Cooling_Proportional B	E-P	Low Input Range	L-rG	1	4
	RUN_STOP	r-5	Heating_Integral Time	H-I	High Input Range	H-rG	1	2.82
	Multi SV No	Surn	Cooling_Integral Time	[-I	Scaleing Decimal Point	dot	1	Model
	Heater Current Monitori	CE-8	Heating_Derivation Time	H-d	Low Scailing	L-SC	1	TK 4W 14RN
	Alarm1_Low	AL IL	Cooling_Derivation Time	E-d	High Scailing	H-SE	1	
	Alarm1_High	RL IH	Dead_Overlap band	db	Display Unit Lamp	dUnt	1	Version
	Alarm2_Low	AL 2L	Manual Reset	rESE	Input Bias	In-b	1	H/W : 100
	Alarm2_High	RL2H	Heating_ON Hysteresis	ннуб	Input Digital Filter	ARUF	1	
	SV-0 Setting Value	50-0	Heating_OFF Offset	HoSt	SV Low Limit	L-Su	1	S/W:401
	SV-1 Setting Value	5u-1	Cooling_ON Hysteresis	CHYS	SV High Limit	H-Su	1	
	SV-2 Setting Value	50-2	Cooling_OFF Offset	CoSt	Operating Type	o-Ft	1	3 Download
	SV-3 Setting Value	50-3	MV Low Limit	L-ñu	Control Method	[-ñd	1	Download
	Alarm3_Low	RL3L	MV High Limit	H-ñu	Auto-Tuning Type	REE	1	6
	Alarm3_High	RL3H	Ramp_Up Rate	- RAU	Output1 (SSR_Curr) Type	oUt I	1	4 Save
	89.922 - 307		Ramp_Down Rate	- Rād	OUT1 SSR Function	o 15r	1	5 Open
			Ramp Time Unit	- Rñd	OUT1 Current Range	o lāß	1	
					Output2(SSR_Curr) Type	oUE2	ι	6 pitialize factory default
					OUT2 Current Range	8ñSo	1	
					Heating_Conrol Time	H-E	1	
					Cooling_Conrol Time	C-E	ı	
							' F	
							ι	
							ł	
All initialize							١.,	(D) (Internet
) All initialize 🛛 🐺 💐	<			1			>	B Close

No	ltem	Description		
1	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.		
2	User group selection- All initialize: Initializes the set user group ↑, ↓: Changes the selected parameter order up/down.			
3	Download	Applies the set user group to the device.		
4	Save	Saves the set user group as a user group information file.		
(5)	Open	Opens the saved user group file.		
6	Initialize factory default	Clears the set for the user group. Download this setting to apply it to the device.		
\bigcirc	Close	Closes the User Group Settings dialog.		
8	Device information	Displays device name, unit address, model name, and version.		

User Group Setti	ngs	Parameter 1	PAr 1	Parameter 2	PAr 2	Parameter 3	PAr 3	Parameter 4	PAry	^	Device Name
User Group Setti Set_Value RUN_STOP 5V-0 Setting Value 5V-1 Setting Value 5V-3 Setting Value Manual Reset Input Blas Marm1 Node Alarm1 Type Alarm1 Nyteresis Alarm1 NoRefay Alarm1 OFF Delay	50 r - 5 50 - 0 50 - 1 50 - 2 50 - 3 r E5E 1 n - 6 AL - 1 AL 1E A 1H9 A 1n A 1n	Parameter 1 Der Steller Heating "MV Cooling "MV Auft SV No Heater Current Manitori Alarm1_High Alarm2_Low Alarm2_High MAIm2_High MAIm2_High MAIm2_High MAIm2_High MAIm3_Low Alarm3_Low Alarm3_High	PAr 1 50 H-A0 C-A0 SU-A SU-A RL IL RL IL RL 2H RL 2H RL 3H RL 3H	Parameter 2 Auto-Tuning Execute Heating_Proportional B., Cooling_Proportional B., Heating_Integral Time Cooling_Integral Time Cooling_Otervation Time Cooling_Otervation Time Dead_Overfap band Heating_Oter Other Heating_Oter Other Cooling_Oter Other Cooling_Oter Other My Low Limit My High Limit Ramg_Up Rate Ramg_Down Rate Ramp Time Unit	RE H-P C-P H-1 C-1	Parameter 3 Input Type Unal Low Input Range Scaleing Decimal Point Low Scaling High Scaling Display Unit Lamp High Scaling Display Unit Lamp High Scaling Display Unit Lamp High Scaling Objet Unit SV Low Limit SV Low Limit Operating Type Control Method Auto-Tuning Type Output (SSR_Cum) Type OUTT Scarent Range Heating_Corrol Type	1 n-L Unit L-rG H-rG dot L-SC H-SC dUnt N-SC dUnt K-SU o-Ft C-rG RLt o ISr o ISR	Parameter 4 Alarmi Hode Alarmi Tape Alarmi Tape Alarmi Homo Alarmi OK Oster Time Alarmi OK Oster Time Alarmi Zhyte Alarmi Zhyteresis Alarmi Zhyteresis Alarmi Zhyteresis Alarmi Zhyteresis Alarmi Zhyteresis Alarmi Zhyteresis Alarmi NolNC Alarmi NolNC	PR-4 RL-1 RL-2 RL-2 RL-2 RL-2 R2-1 R3-1	*	Device Name TK4 Unit Address 4 Model TK 4W 14RN Version H/W : 100 S/W : 401 Download Serve Open Initialse factory
						Cooling_Contol Time	C-E	Low Out1 Scale High Out1 Scale Low Out2 Scale	FSL I FSH I FSL2		
								High Out2 Scale Unit Address Bit Per Second	FSH2 Rdr5 bP5	8	Close

Example of the set user group with SV setting, control output RUN/STOP, alarm output 1 low/high-limit, SV-0/1/2/3 set value, manual reset, input correction, alarm output 1 mode/option/hysteresis/contact type/ON delay time/OFF delay time parameters.

6.2 **DS/DA**-**T**

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 window. A display unit screen is open at DAQ Workspace.

Pr	roperty		Ψ×
Γ	DS(A)-xT Series >	>1	
E	General		
	Device Name	DS(A)-xT Series	
	Unit Address	1	
	Model		
	Repeat Interval	1000 msec	
	Frame Time	40 msec	
	Unit Name		
	Version		
E	Config		
	Setting	Setting	
			1
D	AQ WorkSpace		
1	DS(A)-xT #1		
	and the second		

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

DPU Setting -	DS(A)-xT #1		2		3			a	D							×
1 NUM	10 🗘 D	git(1~24)		Mode		erlap	Mode			ap Iı	nterv	al	20)00	*	ms
1 2 3 8. 8. 8 .	456 888	789 8.8.6	10 3. <i>B</i>.	11 12	13 (5)	14	15	16	17	18	19	20	21	22	23	24
6 Add Date/Tir	me ⑦Add I	Jser Display		8	D	el					10	Data	3			
No Source		Offset Num	Displ	ау Туре	Text	Align			Displa					TagNar		
									010		e		Use	-	ne	
		9							Fext /			(Righ	nt		
								S	Durce	, [
1) 7 Segment	н 8 🗸	I B	J	8 -	к	8	*	N	um			1	*			_
Data Type	N 8 🖌	08	T	8 •	x	8						Sav	e			
12 DPU Update	Interval	500 🛟	msec(50	I~10000)		(13) C) olor		88	8						
															Close	,

No.	Item	Description
1	NUM	Set the number of display units. Set range is 1 to 24.
2	Line Mode	Displays the added sources of list at the connected display units in a line.
3	Overlap Mode	Displays the added sources of list at the connected display units by overlapping at the set interval time.
4	Overlap Interval	Activated for overlap mode. Set the interval time for overlap display.
\$	Display parts	Displays the connected display units and that source in the set color. Right-click this parts and select the segment. 7 segment 16 segment 16 segment When selecting unit segment, unit type dialog box appears to select the unit display mode. Unit Type One unit Upper Unit ON Flash Up Unit Upper-Lower Unit CFF Upper-Lower Unit Flash Up/Down ON CK
6	Add Date/Time	Select one of date and time information types.

No.	Item	Description
		Date/Time 01-3-14 01-3-14 01-3-14 01-3-14 01-3-14 01-3-14 01-3-14 2001-3-14 13:30 13:30:55 13:30:55:123
7	Add User Display	Add the desired characters. Enter the characters at Source of DPU Data.
8	Del	Delete the added source of list.
9	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.
0	Data	Add Date/Time Add User Display Del Deta No Source Offset Num Display Type Text Align 1 1 Network Power V 0 5 User Right 0 1 1 2 3 3 K 2 Num 5 Source Text Align User Text Align User Num 5 Source Source Num 5 Source Source Num 5 Source Source </th
(1)	7 Segment Data Type	Sets the display type for H, I, J, K, N, O, T, X characters.
12	DPU Update Interval	Sets the update interval for data value.
13	Color	Sets the displayed color at run time screen.

No.	Item	Description
		Color Basic colors: Custom colors: Define Custom Colors >> DK: Cancel

Ex.

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

DPU Setting -	DS(A)-xT	#1															×
NUM	12	🚬 Digit (1~24)	Line Mo	de	Ov	erlap	Mode		Over	lap I	nter	val	20	000	*	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.	<u>8</u> . 8.	<u>8.</u>	3. <i>8</i> . 8.	<u>8.</u> 8.	<u>8</u> .												
Add Date/Ti	me	Add User	Display			De	el						Dat				
No Source 1 2001-3	3-14	Off: 0	11	Display Date/Ti	me	Text Right	:			Displ				010	TagNa	ame	
2 1:30:5	5 PM	0	12	Date/Ti	me	Right				010	Unit			Dal	te/Tim	e	
									ſ	Text		-		💿 Rig	ы		
										ourc	_	30:55		Und a			
7 Seament	н 8	•	I <i>8</i> ×	J (8 🗸	к	8	· •		lum				*			
Data Type	N 8	*	0 8 -	T	8 🗸	х	٤	~					Sav	/e			
DPU Update	Interval		500 🗘 n	nsec(50~1	.0000)		C	olor		Be	98						
																Clos	e

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

🖬 DPU #1	
	卫四
10 DPU #1	
l pra	

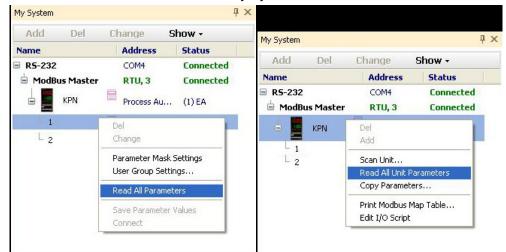
6.3 KPN Series (high performance, high accuracy process controller)

Save parameter values, copy parameters, parmaeter mask and user parameter group is available by DAQMaster.

(1) Save parameter values

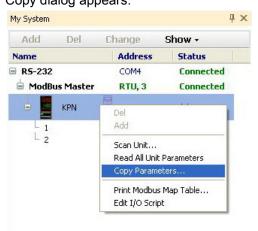
When several same model units cannot be connected to DAQMaster at once and parameter copy is not available, you can save the setting of the device as a file and utlize the file at a later.

- 1st Connect the KPN device which parameters are saved.
- 2nd Click 'Read All Parameters' of the unit device which parameters are saved or 'Read



All Unit Parameters' of KPN at My System.

3rd Select KPN at My System and right-click to select 'Copy Parameters' and Parameter Copy dialog appears.



4th 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.

		Copy	Open Sa	ave	
Jnit List	Result	Result	🗉 General		
1, KPN55 0023	SW-100 HW-10		Device Name		
2, KPN55 0023	Parameter Sele	ct	Unit Address		
			Model		
			Repeat Interval		
			Frame Time		
			Unit Name		
			Version		
			Parameter 0		
			Set Value		
			Heating MV		
			Cooling MV		
			Auto/Manual Control		
			Parameter 1		
			RUN_STOP		
			Multi SV No		
			Heater Current Monit		
			Alarm1_Low		
			Alarm1_High		
			Alarm2_Low		
			Alarm2_High		
			Alarm3_Low		
			Alarm3_High		
			SV-0 Setting Value		
			QU_1 Sattine Value		

5th Click 'Save' and it saves parameters as *.prx file.

	Copy	Open Save		SW:100, HW:100
Result	Result	Parameter 0		
SW:100, HW:100 SW:100, HW:100		Set Value Heating MV Cooling MV Auto(Manual Control	10.0 % AUTO	Ţ
		Parameter 1		<u></u>
		Alarm1_Low Alarm2_Low Alarm2_Low Alarm3_Low Alarm3_Low Alarm3_High SV=1054ting Value SV=1054ting Value	RUN SV-0 100.0 % 100.0 %	
		Parameter 2		
				Ţ
	SW:100, HW:100	Result Result SW:100, HW:100	Result Result SW:100, HW:100 Set Value SW:100, HW:100 Set Value SW:100, HW:100 Set Value Heating MY Coding MY Auto/Manual Control Parameter 1 RUN_STOP Multi SV No Heating MY Auto/Manual Control Jama Jama Jama Jama Jama Jama Jama Joint SV-0 Setting Value SV-2 Setting Value SV-2 Setting Value SV-3 Setting Value SV-3 Setting Value SV-3 Setting Value	Result Result SW:100, HW:100 Set Value 10.0 % SW:100, HW:100 Set Value 10.0 % SW:100, HW:100 Parameter 0 Auto/Manual Control Parameter 1 RUN Auto/Manual Control AUTO Parameter 1 RUN Multi SW No SV-0 Heater Current Monitoring 0.0 4/4mil Low Alarm2 Low Alarm2 Low 100.0 % Alarm2 Low 100.0 % SV-1 Setting Value SV-3 Setting Value 10.0 % SV-3 Setting Value SV-3 Setting Value 10.0 % SV-3 Setting Value 10.0 % SV-3 Setting Value SV-3 Setting Value 10.0 % SV-3 Setting Value SV-3 Setting Value 10.0 % 10.0 % Contract Functional Band 10.0 % Contract Functional Band Heating_Integral Time 0 % 10.0 %

(2) Copy parameters

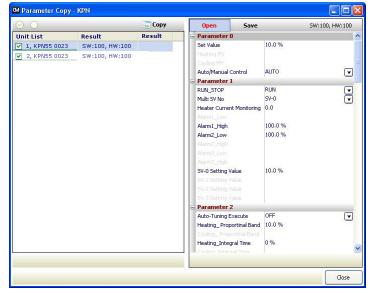
To connect the several same model units at once, you can copy the parameters. You can copy the saved parameter file or the parameter settings of the dedicated device(standard unit) to the other devices(target units).

• To copy the saved parameter file,

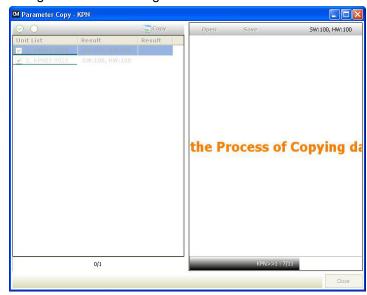
1st Same orders 1st to 3rd of the Save parameter values.

2nd Check the units to be copied at the check box of the left side of the dialog.

3rd Click 'Open' and select the parameter file and it loads at the right side of the dialog.



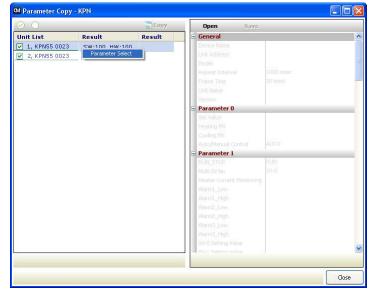
4th Click 'Copy' and copy is progressing. 'the Process of Copying data' text appears at the right side of the dialog.



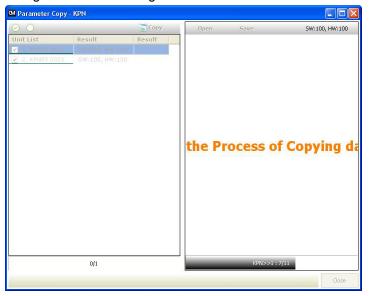
5th After completing copy, 'Copy Complete!' dialog box appears. Click 'OK' and copy is finish.

- To copy the parameter settings of the dedicated device(standard unit) to the other devices(target units),
- 1st Same orders 1st to 3rd of the Save parameter values.
- 2nd Check the units to be copying (standard unit) and to be copied (target unit) at the check box of the left side of the dialog.
- 3rd Right-click the unit to be copying(standard unit) and select 'Parameter Select'. The

parameter values of the unit is loaded at the right side of the dialog.



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



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

(3) Parameter mask

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

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

M Parameter Mask Settings¤						
Parameter 1 PAr 1	Parameter 2 PAr 2	Parameter 3	PAr 3	Parameter 4	የጸተ ዛ 📤	⑦ Device Name
1						U Device Name
Heating_MV <mark>H-ñu</mark>	Auto-Tuning Execute RE	Input Type	In-E	Alarm1 Mode	AL-I	KPN
Cooling_MV [-āu	Heating_Propotional Band H-P	Unit	Uni E	Alarm1 Type	AL IE	
RUN_STOP5	Cooling_Propotional band	Low Input Range	L_rG	Alarm1 Hysteresis	A I.HA	Unit Address
Multi SV No <mark>Surn</mark>	Heating_Integral band H-1	High Input Range	H-rG	Alarm1 NO/NC	A I.n	4
Heater Current Monitoring	Cooling_Integral Time [- 	Scailing	dot	Alarm1 ON Delay Time	A l.on	1
Alarm1_Low <mark>RL I.L</mark>	Heating_Derivation Time H-d	Low Scailing	L-5C	Alarm1 OFF Delay Time	A LoF	Model
Alarm1_High <mark> RL I.H</mark>	Cooling_Derivation Time	High Scailing	H-SE	Alarm2 Mode	8L-5	
Alarm2_Low RL 2.L	Dead_Overlap Band db	Display Unit Lamp	d.Unt	Alarm2 Type	AL SF	
Alarm2_High <mark>RL2.H</mark>	Manual Reset <u>⊢ESE</u>	Input Bias	l n-b	Alarm2 Hysteresis	85HR	
Alarm3_Low RL 3.L	Heating_ON Hysteresis H.HY5	Input Digital Filter	ōRu,F	Alarm2 NO/NC	n58	Version
Alarm3_High <mark> RL 3.H</mark>	Heating_OFF Offset <mark>H.o5</mark> E	SV Low Limit	L-Su	Alarm2 ON Delay Time	R2.on	H/W : -1
SV-0 Setting Value 5 u = 0	Cooling_ON Hysteresis [.HY5	SV High Limit	H-Su	Alarm2 OFF Delay Time	70.5R	1900.1
SV-1 Setting Value 5u - 1	Cooling_OFF Offset E.o5 E	Operating Type	o-Ft	Alarm3 Mode	8L-3	S/W:-1
SV-2 Setting Value 5u-2	MV Low Limit L - กับ	Control Method	[-ād	Alarm3 Type	AL SF	
SV-3 Setting Value 5u-3	MV High Limit H-ñu	Auto-Tuning Type	REE	Alarm3 Hysteresis	85HA	
	Ramp_Up Rate	Output1 (SSR_Curr) Type	oUE I	Alarm3 NO/NC	n58	2 Download
	Ramp_Down Rate _ Rid	OUT1 Current Range	o lāR	Alarm3 ON Delay Time	no.5R	
	Ramp Time Uni <mark>t にしのと</mark>	Output2(SSR_Curr) Type	oUE2	Alarm3 OFF Delay Time	70.5R	3 Save
		Out2 Current Range	02ñR	LBA Time	<u>L Б Я.Е</u>	(4) Open
		Heating Control Time	H-F	LBA Band	L Б Я.Б	-
		Cooling_Control Time	C-F	Analog Output Mode	Ro-n	5 Initialize factory default
				Low Out Scale	FS-L	
				High Out Scale	F5-H	
				Unit Address	RdrS	
				Bit Per Second	6P5	
				Parity Bit	Prty .	6 Close
<	1111				>	2

No	Item	Description					
1	Parameter mask selection	Select the to-be masked parameters. Right-click the to-be masked parameters and they turn gray.					
2	Download	Applies the set masked parameters to the device.					
3	Save	Saves the set masked parameters as a mask information file.					
4	Open	Opens the saved mask information file.					
5	Initialize factory default	Clears the set for the masked parameters. Download this setting to apply it to the device.					
6	Close	Closes the Parameter Mask Settings dialog.					
\bigcirc	Device information	Displays device name, unit address, model name, and version.					

Ex.	B	Ex.
-----	---	-----

Parameter 1	PAr I	Parameter 2 PAr 2	Parameter 3	PAr 3	Parameter 4	PAry	^	
Heating_MV	H-ñu	Auto-Tuning Execute						KPN
Cooling_MV	[-ñu	Heating_Propotional Band H-P					Digit	
RUN_STOP	r-5	Cooling_Propotional band	Low Input Range	L_rG				
Multi SV No	50-0	Heating_Integral band H-1	High Input Range	H-rG				
rrent Monitoring	CE-R	Cooling_Integral Time [-]	Scailing	dot				1
		Heating_Derivation Time H-d	Low Scailing	L-SE				
		Cooling_Derivation Time	High Scailing	H-SE				hodei
		Dead_Overlap Band db	Display Unit Lamp	d.Unt				
		Manual Reset FESE	Input Bias	l n-b				
		Heating_ON Hysteresis H.HY5	Input Digital Filter	ñRu.F				
		Heating_OFF Offset H.o5E	SV Low Limit	L-Su			=	H/W : -1
		Cooling_ON Hysteresis E.HYS	SV High Limit	H-Su				11,0001
-1 Setting Value		Cooling_OFF Offset E.oSE	Operating Type	o-Ft				S/W:-1
		MV Low Limit Linu	Control Method	[-ād				
		MV High Limit <u>H-ก</u> ับ	Auto-Tuning Type	REE				
		Ramp_Up Rate	Output1 (SSR_Curr) Type	oUt I				Download
		Ramp_Down Rate _ And	OUT1 Current Range	o lāA				
		Ramp Time Unit <mark>「.Unと</mark>	Output2(SSR_Curr) Type	oUt 2				Save
			Out2 Current Range	o2ñA			Ĩ	Open
			Heating Control Time	H-F				
			Cooling_Control Time	C-E				Initialize factor default
							,	
					Parity Bit		~	Close

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

(4) User parameter group [PR-U]

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

User parameter group can have up to 30 parameters.

M User Group Settings								
(1) User Group Settings	Parameter 1	PAr 1	Parameter 2	P8-2	Parameter 3	PAr 3	1^	8 Device Name
								Ĭ
	Set_Value	50	Auto-Tuning Execute	AF	Input Type	10-5	1	KPN
	Heating_MV	H-ñu	Heating_Proportional B	H-P	Unit	Uni E	1	
	Cooling_MV	E-ñu	Cooling_Proportional B	E-P	Low Input Range	L-rG	1	Unit Address
	RUN_STOP	r-5	Heating_Integral Time	H-I	High Input Range	H-rG	÷	1
	Multi SV No	50-0	Cooling_Integral Time	C - I	Scaleing Decimal Point	dot	1	1
	Heater Current Monitori	CE-R	Heating_Derivation Time	H-d	Low Scailing	L-5C	1	Model
	Alarm1_Low	RL IL	Cooling_Derivation Time	C-d	High Scailing	H-SC	Ļ	
	Alarm1_High	RL IH	Dead_Overlap band	db	Display Unit Lamp	dUnt	÷	
	Alarm2_Low	AL SL	Manual Reset	rESt	Input Bias	In-b	Ļ	
	Alarm2_High	AL SH	Heating_ON Hysteresis	HHY5	Input Digital Filter	ñRuF	1	Version
	Alarm3_Low	AL 3L	Heating_OFF Offset	HoSt	SV Low Limit	L-5u	1	H/W : -1
	Alarm3_High	AL 3H	Cooling_ON Hysteresis	CHYS	SV High Limit	H-Su	1	11/001
	SV-0 Setting Value	50-0	Cooling_OFF Offset	CoSt	Operating Type	o-Ft	4	S/W : -1
	SV-1 Setting Value	50-1	MV Low Limit	L-ñu	Control Method	[-ñd	Ļ	
	SV-2 Setting Value	50-2	MV High Limit	H-ñu	Auto-Tuning Type	REE	1	6
	SV-3 Setting Value	50-3	Ramp_Up Rate	- AñU	Output1 (SSR_Curr) Type	oUt I	4	3 Download
			Ramp_Down Rate	r Añd	OUT1 Current Range	o lõß	1	
			Ramp Time Unit	r Añd	Output2(SSR_Curr) Type	oUE2	1	4 Save
					OUT2 Current Range	8ñ5o	ι	
					Heating_Conrol Time	H-F	ι	5 Open
					Cooling_Conrol Time	C-E	ţ	6 Initialize factory default
							ı	
							Ł	
							τ	
							E	
2) All initialize							F 🗸	Close
2) All initialize	<						>	L Close

No	Item	Description
1	User group parameters	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.
2	User group selection	 All initialize: Initializes the set user group. ↑, ↓: Changes the selected parameter order up/down.
3	Download	Applies the set user group to the device.
4	Save	Saves the set user group as a user group information file.
(5)	Open	Opens the saved user group file.
6	Initialize factory default	Clears the set for the user group. Download this setting to apply it to the device.
7	Close	Closes the User Group Settings dialog.
8	Device information	Displays device name, unit address, model name, and version.

User Group Settir	ngs	Parameter 1	PAr I	Parameter 2	PAr 2	Parameter 3	PAr 3	Parameter 4	PAry 📤	
Bet_Value	5				01					
RUN_STOP	r-5	Set_Value	50	Auto-Tuning Execute	RE	Input Type	In-E	Alarm1 Mode		KPN
SV-0 Setting Value	50-0	Heating_MV	H-ñu	Heating_Proportional B		Unit	Unit	Alarm1 Type		Unit Address
SV-1 Setting Value	50-1	Cooling_MV	<u>[-ñu</u>	Cooling_Proportional B	E-P	Low Input Range	L-rG			Unit Address
SV-2 Setting Value	50-2		5	Heating_Integral Time	H-I	High Input Range	H-rG			1
SV-3 Setting Value	50-3	Multi SV No	50-0	Cooling_Integral Time	E-1	Scaleing Decimal Point	dot	Alarm1 ON Delay Time		
danual Reset	rESt	Heater Current Monitori	CE-R	Heating_Derivation Time	H-d	Low Scailing	L-SC	Alarm1 OFF Delay Time	A IoF	Model
nput Bias	In-b	Alarm1_Low	AL IL	Cooling_Derivation Time	E-d	High Scailing	H-SC	Alarm2 Mode	RL-2	
Narm1 Mode	AL - 1	Alarm1_High	AL IH	Dead_Overlap band	db	Display Unit Lamp	dUnt	Alarm2 Type	RL-2	
Alarm1 Type	AL IL	Alarm2_Low	AL SL		rESE		I n-b	Alarm2 Hysteresis	85HA	
Varm 1 Hysteresis	A INY	Alarm2_High	AL SH	Heating_ON Hysteresis	ннуб	Input Digital Filter	<u>ARu</u> F	Alarm2 NO/NC	R2n	Version
Alarm1 NO/NC	A In	Alarm3_Low	AL 3L	Heating_OFF Offset	HoSt	SV Low Limit	L-Su	Alarm2 ON Delay Time	R2on	H/W : -1
Alarm1 ON Delay		Alarm3_High	AL 3H	Cooling_ON Hysteresis	СНУБ	SV High Limit	H-Su	Alarm2 OFF Delay Time	R2oF	.,
Alarm1 OFF Delay		SV-0 Setting Value		Cooling_OFF Offset	CoSt	Operating Type	o-Ft	Alarm3 Mode	RL-3	S/W : -1
alainin on Delay				MV Low Limit	L-ñu	Control Method	[-ād	Alarm3 Type	RL3E	
				MV High Limit	H-ñu	Auto-Tuning Type	REE	Alarm3 Hysteresis	R3H3	
		SV-3 Setting Value		Ramp_Up Rate	- AñU	Output1 (SSR_Curr) Type	oUt I	Alarm3 NO/NC	RBn	Download
				Ramp_Down Rate	- Añd	OUT1 Current Range	o IñA	Alarm3 ON Delay Time	RBon	
				Ramp Time Unit	- Añd	Output2(SSR_Curr) Type	oUt 2	Alarm3 OFF Delay Time	RBoF	Save
						OUT2 Current Range	a2ñR	LBA Time	L.bRE	
						Heating_Conrol Time	H-E	LBA Band	LBRB	Open
						Cooling_Conrol Time	C-E	Analog Output Mode	Ron I	Initialize facto default
								Low Out Scale	FSL I	Landak
								High Out Scale	FSH I	
								Unit Address	RdrS	
	1							Bit Per Second	БР 5	

Example of the set user group with SV setting, control output RUN/STOP, alarm output 1 low/high-limit, SV-0/1/2/3 set value, manual reset, input correction, alarm output 1 mode/option/hysteresis/contact type/ON delay time/OFF delay time parameters.

6.4 KRN50 (50mm compact hybrid recorder)

The following are special features for KRN50 while in communication with DAQMaster.

(1) Accessing Record Backup Data

To get the recorded data, click '...' button located on the right of Record Backup in the Property window.

roperty	t x
KRN50 >> 2	
= General	
Device Name	KRN50
Unit Address	2
Model	
Repeat Interval	1000 msec
Frame Time	40 msec
Unit Name	
Version	
= Record	
Record Run	Stop
Rec Mode	Graphic
Memo	OFF
Rec Speed	10 mm/h
Rec Period	
Memo Period	30 min
Language	Korea
Alarm Speed	10 mm/h
Paper Feed	STOP
Parameter List Print	STOP
Record Backup	Get Record Backup Data 🛛
User Image Download	Logo/Boot/Unit
± Option	
+ RS485	
± Date/Time	
Environment	
+ Reservation	
 Input Type 	
🛨 Alarm	

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 Memor	y Data	X
Memory Information	Upload Data	_
Memory Information Start Time End Time		
UpLoad Data Size Start Time End Time Available depending on Env (R/W - Off)	12 Mon 12 Day 12 Mon 12 Day vironment>>Setting Lock	12 V Hour 12 V Min 12 V Hour 12 V Min Setup
Data UpLoad Status		Cancel Reading Data
To do this, device should be conr	nected to the network.	OK Cancel

Once all conditions are met and ready to get memory data, follow the steps below:

- 1st Run [Memory Information] in KRN50 Record Memory Data window. It gets the information from currently saved memory.
- 2nd Set [Uploaded Data Size].
- 3rd Run [Upload Data].
- 4th You can cancel the operation while data is being uploaded. When data reading is complete, OK button is enabled.
- 5th If you click OK, recorded data will be shown in two screens the Grid and the Graph.

(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.

1) 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 KRN50 User Image 🛛 🗙						
Logo	Unit	Boot	_	Init	Download	
Logo I	mage					
Preview Logo 80						
			384			
Data D	ownload Sta	tus				
To do this, d	levice should	be connecte	ed to the network	C.	Close	

2) Download Units

There are 0-9 user units.

The download procedure is: select a unit list \rightarrow select a destination to save \rightarrow double-click a unit image to add the image \rightarrow download.

Download KRN5	D User Image		X
Logo Unit	Boot	Įnit	Download
Unit KRN50 Default Length Area Volume Flow Time Velosity Mass Density Force Energy	List	Save in Folder:	Delete Add Save
Data Download Sta	atus		
L To do this, device should	be connected to the	network.	Close

3) 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.

Download KRN50 User Image 🛛 🔀						
Logo	Unit	Boot		Init	Download	
Boot In	nage					
			Boot Preview		32	
			128			
Data Do	wnload Stat	us				
To do this, de	evice should	be connecte	ed to the network.		Close	

6.5 KRN100 (100mm hybrid recorder)

The following are special features for KRN100 while in communication with DAQMaster.

(1) Accessing Record Backup Data

It is available to access saved backup data of KRN100 and to analyze backup data by data analysis feature.

1st To get the recorded data, click '...' button located on the right of Record Backup from

User Memory in the Property window.

Pro	perty	Ψ×
	(RN100 >> 1	
Ξ	General	
	Device Name	KRN100
	Unit Address	1
	Model	
	Repeat Interval	1000 msec
	Frame Time	40 msec
	Unit Name	
	Version	
±	Print Control Status	
÷	Mounting Slot	
÷	INPUT SETUP	
±	ALARM SETUP	
±	ALARM OUTPUT STATUS	SETUP
_	DIGITAL INPUT SETUP	
_	COMMUNICATION SETUP	
	RECORD SETUP	
	SYSTEM SETUP	
	FILE/MEMORY SETUP	
	USER/INFORMATION SET	TUP
	User Memory	475
≫	Record Backup	LogData Download 🛛 🛄
	User Unit/Logo Image	User Unit/Logo Image Dow()
		Capture

According to the USER INFORMATION SETUP of KRN100, it cannot read the memory. (Refer to the user manual for KRN100.)

2nd Designate the folder for record backup data to be saved.

KRN100 Record Memory Data				×
Name	Size	The Numb	Start Time	End Time
Data Folder	tings		OK Cancel	
Download Folder C: \Documents and Settings \Administrator	My Documents	₩DAQMaster₩		
To do this, device should be connected to the network.				OK Cancel

3rd 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.

KRN100 Record Memory Data				
Name	Size	The Numb	Start Time	End Time
🖙 🛅 2012				
🖨 🛅 4				
🖨 🛅 10				
KRN100_20120410_090540.KRD	6,980	2	2012.04.11 09:05:40	2012.04.11 09:08:56
🖻 🛅 3				
– B KRN100_20120403_094941.KRD				
- B KRN100_20120403_090532 KPD	20,252	2	2012.04.04 09:05:32	2012.04.04 09:16:42
- B KRN100_20120403_08465 Download Log File				
B KRN100_20120403_08091 Data Anal				
- 🔁 3				
- 🔁 2				
🚽 🛅 2011				
i - i 12				
- 🚞 26				
- 🛅 23				
- 🔁 22				
- 🔁 21				
Download Folder C: WDocuments and Settings WAdministrator	₩My Documents	₩DAQMaster₩		
To do this, device should be connected to the network.				OK Cancel

4th After completing download to the desginated folder, the below message appears.

Download Completed
Ok

(2) Downloading User Images

You can add user unit and boot images of KRN100.

- 1) 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	KRN100 User Image			×
Unit	Boot	_	Delete	Download
User0 User1 User2 User3 User4 User5 User6 User7 User8 User9	User Unit Position	Image	Small Unit(32×1 mA/h Middle Unit(32× mA/h Big Unit(72×64)	12)
Data D	ownload Status			
L				
				Close

2) 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.



6.6 ModBus Master

Select ModBus Master of My System and click '...' of property. ModBus Master dialog box opens.

My System			4 ×	ModBus Master	
Add	Del	Change S	how +	🖃 General	
Name		Address	Status	Name	ModBus Master
🖻 R5-232	2	COM5	Disconnected	≫ About	
🖨 ModB	us Master	RTU, 3	Disconnected	Config	
- 15	TK4	Factory Au	(1) EA	Mode	RTU
L 4		8	Disconnected	Timeout Retry	1000 msec 3

(1) ModBus Master Communication test

Click 'Communication Test' and it executes communication test.

ModBus Master			
	Test CRC16 Calculate A	bout	
Support Function	01 READ COIL STATUS		
01 READ COIL STATUS 02 READ INPUT STATUS 03 READ HOLDING REGISTERS 04 READ INPUT REGISTERS 05 WRITE SINGLE COIL 06 WRITE SINGLE REGISTER 15 WRITE MULTIPLE COILS 16 WRITE MULTIPLE REGISTERS	Slave ID(Dec) Starting Address(Hex) Quantity of Outputs(Dec) Byte Count(Dec) Write Data(Hex) 01 01 00 00 00 01 FD CA		Test
			<u>^</u>
<			> .::

(2) CRC16 calculate

This is calculating CRC16 of protocol.

To calculate CRC16, enter Hex data to data and click 'CRC16 Calculate'. It creates two CRC16 data.

ModBus Master	
Information Communication Test CRC16 Calculate About	
Data (HEX Data. Ex - 01 00 01 0A AB CD EF) 01 10 00 00 00 01 CRC16 Calculate 01 C9	

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