DAQMaster

Autonics SPRM, SPRS

User Manual MWA-DAQMaster_SPRM, SPRS-V1.0_EN

저희 (주)오토닉스 제품을 구입해 주셔서 감사합니다.
사용 전에 안전을 위한 주의 사항을 반드시 읽고 정확하게 사용하십시오.

Autonics

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1. DAQMaster

1.1. DAQMaster Introduction

DAQMaster is a comprehensive device management program that provides GUI control for easy and convenient management of parameters and multiple device data monitoring.
The version of program is divided into general and pro. Pro version supports variety of additional functions such as user convenience, device and data management as compared with general version.

1.2. Features

- **Multiple Device Support**
  Simultaneously connect and monitor multiple devices and set parameters.
- **Device Scan**
  In cases of multiple units (with different addresses) connected together, the unit scan function automatically searches for units.
- **Convenient User Interface**
  Freely arrange windows for data monitoring, properties, and projects.
  Saving a project also saves the screen layout.
- **Project Management**
  Saving and loading data as a project file includes added device information, data monitoring screen layouts, and I/O source selection. Organizing project list makes managing project files easier.
- **Data Analysis**
  Analyses DAQMaster data files (*.duf) or database using data analysis tool by grid and graph. Grid data can be saved directly to .rtf, .txt, .html, or .csv files in Data Grid.
- **Monitoring Data Log**
  When monitoring, data log files can be saved in either DAQMaster data files (*.duf) or CSV (*.csv) files. Define log data file naming/saving rules and destination folders to make file management convenient.
- **Tag Calculation Editing**
  Read tag value is available to calculate the set formula for the desired value.
- **Print Modbus Map Table Report**
  Print address map reports of registered Modbus devices. Modbus map table reports can be saved in pdf (*.pdf) formats.
- **Multilingual Support**
  Supports Korean, English, Japanese, and Simplified Chinese.

1.3. Pro Version Features

- **Modbus Device Editor**
  Can add the any Modbus devices which are not supported at DAQMaster to set and monitor the property and I/O.
- **Trigger Event, Scheduler, Action**
  Conducts preset action by user set condition (Trigger) and time (Schedule) automatically.
- **Database**
  Database managing system turns information into database in real-time, making creation and management easier.
- **Real time log**
  Makes log file in real time following to the time set by user. Data is saved in CSV file.
- **TCP/IP Server**
  Displays and monitors the communication data through TCP/IP protocol.
- **OPC DA**
  It is Interface method for better compatibility among application programs based on OLE/COM and DCOM technology of Microsoft. It provides industry standard mechanism for communication and data conversion between client and server.
- **OPC UA**
  As a communication standard protocol for transmitting data such as sensors or PLCs, various data can be collected through the OPC UA protocol from the Server.
- **MQTT Publisher/Subscriber**
  Collected data can be published to the broker or subscribed to data from the broker through the MQTT protocol.
- **DDE Server/Client**
  Supports communication among process embedded in Microsoft Window system (IPC), allowing application programs to share and exchange information between the applications.
- **Modbus Master/Slave**
  Conducts read and write request from the outside through Modbus protocol.
- **Virtual Tag**
  It is possible to collect user-customized data or transfer multiple data through virtual tag.
- **User Manager**
  Adds account, creates user group, and manages authority of program usage function per each group individually.

1.4. Function

Ribbon menu

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

Project

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

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

Supported Device List

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

My System

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

I/O List / DAQ List / Message

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

Runtime Screen / DAQ Space

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

1.5. Install / Uninstall

1.5.1. System Requirements

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

Operations

Microsoft Windows 7/10/11

Computer specifications

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

1.5.2. Installing the Program

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

1.5.3. Installation Folder Structure

After DAQMaster installs completely, total 7 folders are created and programs and all documents are saved.
If you select the default installation path during installation, a DAQMaster folder is created under [C:\Program Files\Autonics] as a sub-folder. If you select a new destination folder, DAQMaster folder is located in that folder.

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

1. device

Device folder contains the device information files (*.dev), which can be monitored and set with DAQMaster. When the program is executed, the files in this folder automatically add related devices to the program.
If devices are added or upgraded after the program is installed, copy the device information file and put it into this folder. The list of available devices will be updated. However, if a communication related function is added or modified, it also changes the contents of the [plug-in] folder. Therefore, changes may or may not be applied depending on the level of upgrade.

2. plugin

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

1.5.4. Pro License - Connecting USB dongle

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

1.5.5. Uninstalling the Program

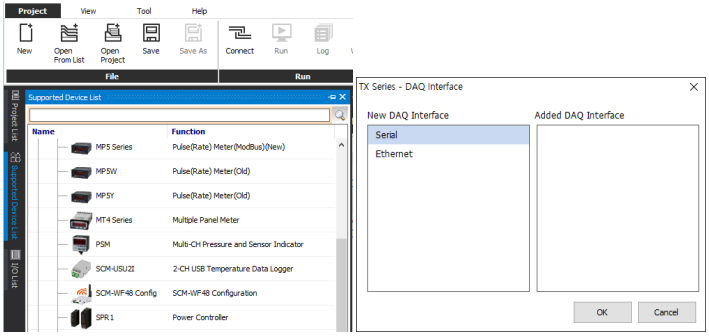
There are two ways to uninstall DAQMaster.
If you select Remove, a confirmation window will appear. Click **Yes** to remove DAQMaster from the computer.

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

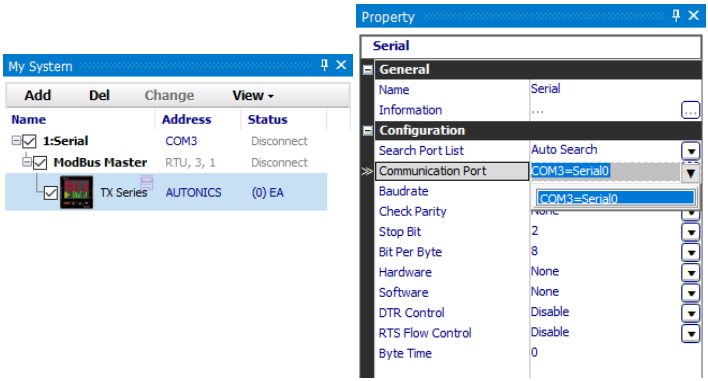
2. Getting Started

This chapter explains the basic contents in sequence to use DAQMaster for the first time.
For specific information on each function, refer to the related chapter in the user manual.
Device connection, parameter setting and basic monitoring will be proceeded when using TX Series as follows. After check the contents of instruction manual for the product to connect, apply it to the following steps.

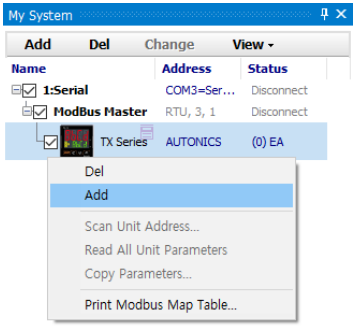
1. Install DAQMaster program at Master device (ex. PC), connect to the product and run DAQMaster. Double-click DAQMaster icon on the desktop or select 'Start > Program > DAQMaster' to execute DAQMaster.
2. Open the control panel by clicking 'Support Device List' and double-click the series or model name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



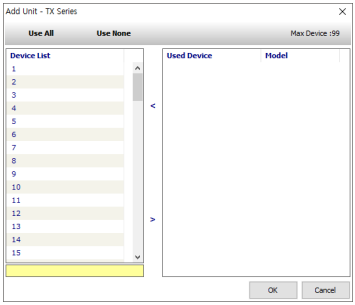
3. Proper communication port setting is needed to connect the device. Select Serial in 'My System' control panel. In 'Property' control panel, click pull-down icon ▼ on 'communication port' and select the communication port currently in use.



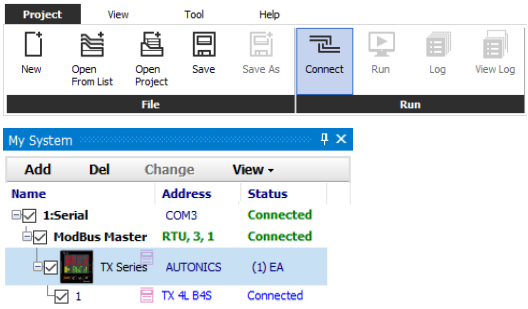
4. In control panel, right-click a newly added 'Support Device name' (TX Series) and click 'Add'.



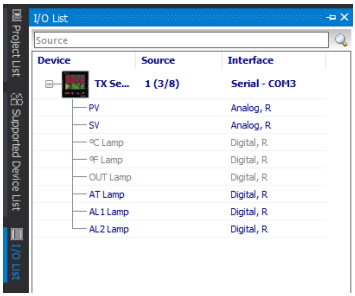
5. When 'Add Unit' window pops up, double-click the connected device address to add and then click **OK** button.

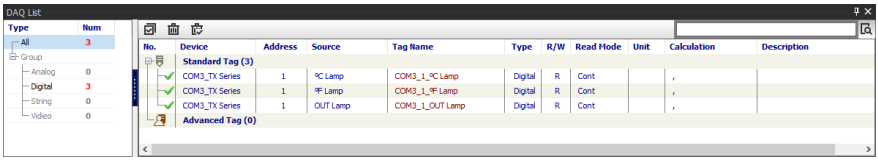


6. Click the **Connect** button on the 'Project – Run' menu and check the 'My System' control panel. If the connection is successful, 'Statues' row displays 'Connected'. Click **Disconnect** button to unlink the communication, then continue with setup.
   For more information about the default address and setting method of each device, refer to the manual of the device.
   If there is a problem in connection, check the related settings again ‘Communication type / Communication port’

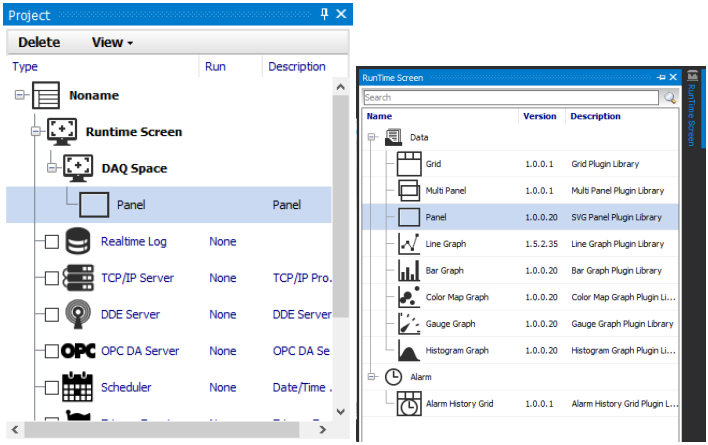


7. To monitor the data of the device that user needs, add I/O sources to DAQ List. Double-click I/O source in the 'I/O List' control panel, then adds to the 'DAQ List'. The added sources are changed to gray color and displayed in the 'DAQ List'

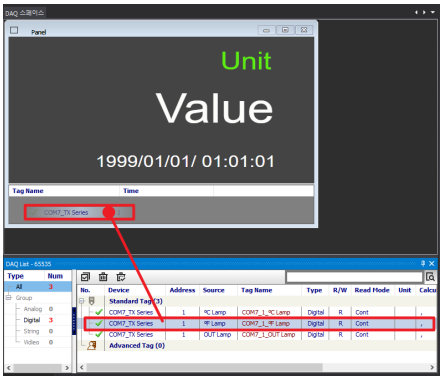




8. For visualized monitoring, double-click the desired runtime screen in the 'RunTime Screen' and import to 'DAQ Space'. Imported runtime screen is displayed in the 'Project' control panel as well.

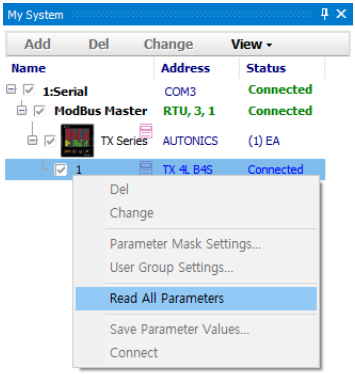


9. Drag the I/O source to be monitored from the 'DAQ List' and drop it onto the RunTime Screen.

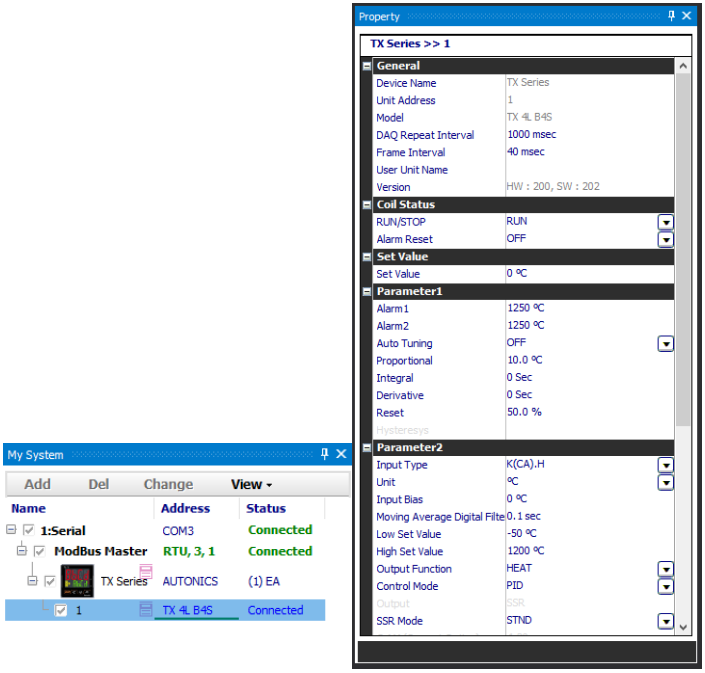


10. Basic settings for monitoring is finished now. To connect the device to DAQMaster, click the **Connect** button in the 'Project-Run' menu.

11. To check parameters of the device, right-click either the 'Series name' in the 'My System' or 'address number', then click 'Read All Parameters'



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



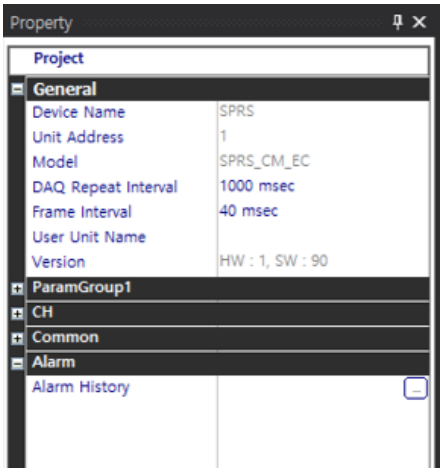
13. Click the **Run** button in the 'Project – Run' menu to record data monitoring and data files of the device.
    It is possible to monitor real-time data and use the data logging function in the DAQ WorkSpace.
14. Click × button on the top right corner of the screen to end the program.
    Projects are not saved automatically. Please make sure whether the project is saved when close the program.

3. Autonics SPRM, SPRS Series Special Features

3.1. Alarm History

All alarms occurring within 1 minute after the SPRM and SPRS series devices switch from a normal status (no alarms) to an alarm status (at least one alarm active) are saved.

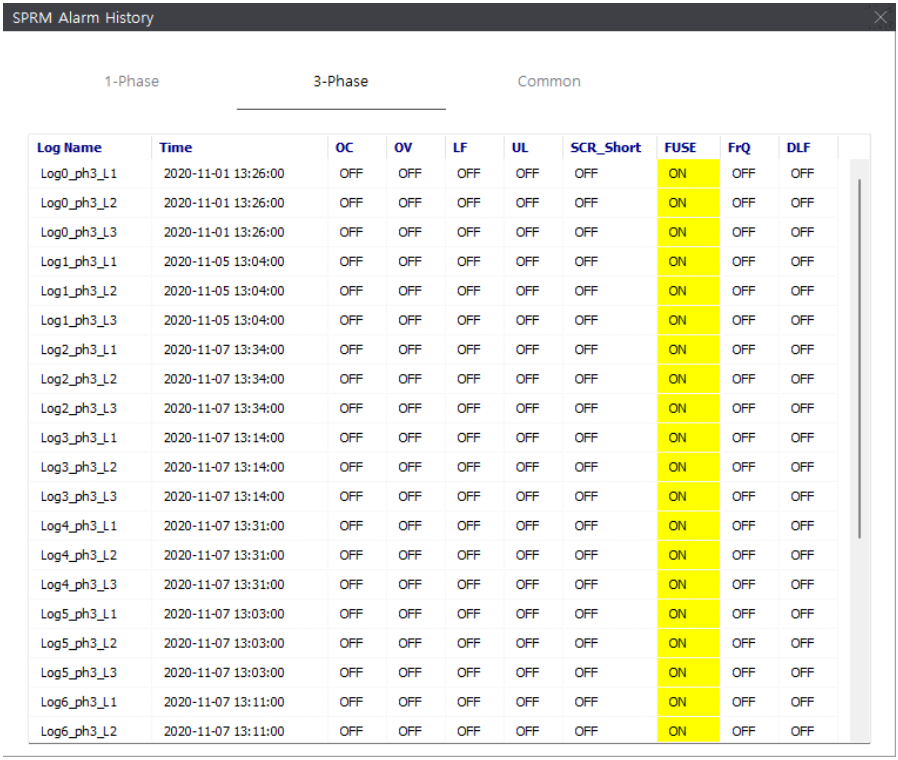
1. To check the alarm history in the product, click ··· button located on the right of Alarm History in the “Property” control panel.



2. The alarm history screen for each module type appears.
   When the number of alarms exceeds the limit, the earliest record is deleted, and alarms are listed with the most recent at the top
   If an alarm status is 'ON', the corresponding alarm is highlighted in yellow.

SPRM Log Data

Provides alarm history data for single-phase/3-phase/common modules, and it is possible to check up to 10 log data (Log 0 to 9)



Log Name	Time	OC	OV	LF	UL	SCR_Short	FUSE	FrQ	DLF
Log0_ph3_L1	2020-11-01 13:26:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log0_ph3_L2	2020-11-01 13:26:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log0_ph3_L3	2020-11-01 13:26:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log1_ph3_L1	2020-11-05 13:04:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log1_ph3_L2	2020-11-05 13:04:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log1_ph3_L3	2020-11-05 13:04:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log2_ph3_L1	2020-11-07 13:34:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log2_ph3_L2	2020-11-07 13:34:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log2_ph3_L3	2020-11-07 13:34:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log3_ph3_L1	2020-11-07 13:14:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log3_ph3_L2	2020-11-07 13:14:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log3_ph3_L3	2020-11-07 13:14:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log4_ph3_L1	2020-11-07 13:31:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log4_ph3_L2	2020-11-07 13:31:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log4_ph3_L3	2020-11-07 13:31:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log5_ph3_L1	2020-11-07 13:03:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log5_ph3_L2	2020-11-07 13:03:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log5_ph3_L3	2020-11-07 13:03:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log6_ph3_L1	2020-11-07 13:11:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Log6_ph3_L2	2020-11-07 13:11:00	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF

SPRM Log Alarm Details

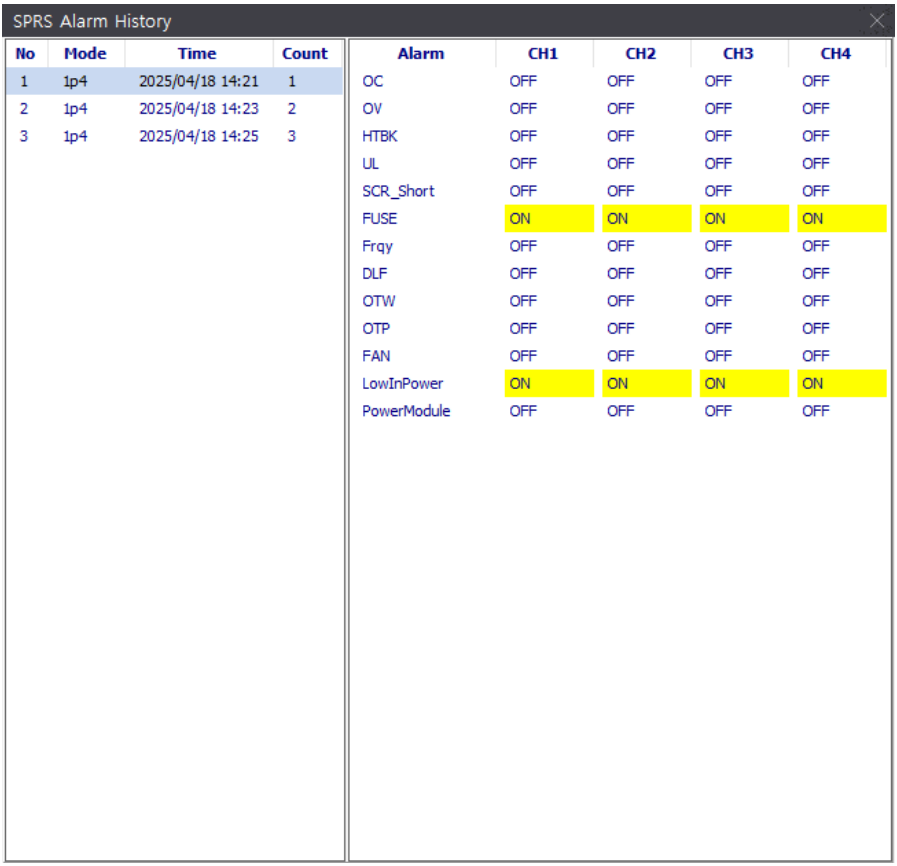
For more information about the alarms, refer to the SPRM communication manual.

Module type	Alarm	Description
Single-phase, 3-phase	OC	Overcurrent alarm
	OV	Overvoltage alarm
	LF	Heater break alarm
	UL	Load imbalance alarm
	SCR_Short	SCR error alarm
	FUSE	Fuse break alarm
	FrQ	Frequency error alarm
	DLF	Partial heater break alarm
Common	OT60	Heatsink overheat alarm
	OT80	Heatsink overheat protection alarm
	FAN	FAN error alarm
	RUN_STOP	RUN / STOP switch
	AUTO_MANU	AUTO / MANU switch

SPRS Log Data

Provides alarm history data for single-phase/single-phase dual/3-phase modules, and it is possible to check up to 50 log data (Log 1 to 50)

'Mode' indicates the wiring method when the alarm occurred, and when selected, it is possible to check the alarm history for each channel of the selected Mode.



SPRS Log Alarm Details

For more information about the alarms, refer to the SPRS communication manual.

Alarm	Description
OC	Overcurrent alarm
OV	Overvoltage alarm
HTBK	Heater break alarm
UL	Load imbalance alarm
SCR_Short	SCR error alarm
FUSE	Fuse break alarm
Frqy	Frequency error alarm
DLF	Partial heater break alarm
OTW	Heatsink overheat alarm
OTP	Heatsink overheat protection alarm
FAN	FAN error alarm
LowInPower	Input low voltage alarm
PowerModule	Module connection error alarm

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