CC-Link MASTER MODULE
(YOKOGAWA ELECTRIC PLC USE)

PC CONFIGURATOR SOFTWARE
Model: FAMCLCFG

USERS MANUAL

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Contents

1. INTRODUCTION

1.1 GENERAL DESCRIPTION

The FAMCLCFG is used to program parameters for the model FAMCL CC-Link Master Module (Yokogawa Electric PLC FA-M3 use). The following major functions are available:
1) Edit parameters
2) Download parameters to the device, upload parameters from the device
3) Save parameters as files, read parameters from files

1.2 CORRESPONDING VERSION

This users manual supports the FAMCLCFG Ver. 1.04.XX.

1.3 PC REQUIREMENTS

The following PC performance is required for adequate operation of the software program.

OS	Windows 10 (32-bit, 64-bit) Windows 11 (64-bit) The software may not operate adequately in certain conditions.
Communication port	COM port (COM1 through COM32)
Programming tool	PC with FA-M3 Programming Tool WideField3 version R.4 or later.

1.4 NUMBER OF CONNECTABLE MODULES

The FAMCLCFG recognizes maximum 2 units of FAMCL on a FA-M3 main unit, and does not recognize the FAMCL on a sub unit.

1.5 DRIVER SOFTWARE

The FAMCLCFG runs on the PC where the FA-M3 Programming Tool WideField3*1 (R.4 or later) is installed.

*1. FA-M3 Programming Tool provided by Yokogawa Electric Corporation

1.6 INSTALLING & DELETING THE PROGRAM

1.6.1 TO INSTALL THE PROGRAM

The program is provided as compressed archive.
Decompress the archive and execute 'setup.exe'.
Follow the instructions on the screen to install the program.
Note that it is required to log on as administrator to install the program.

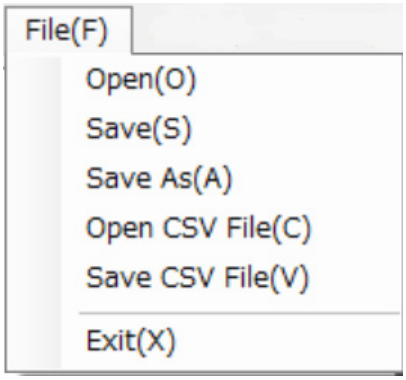
1.6.2 TO DELETE THE PROGRAM

For Windows 10, open Settings from Start menu > Apps > Apps & features.
Select the TC10CFG from the program list and click [Uninstall] button.
Follow the instructions on the screen to uninstall the program.
For Windows 11, open Settings from Start menu > Apps > Installed apps.
Select the [...] of TC10CFG from the program list and click [Uninstall] button.
Follow the instructions on the screen to uninstall the program.

2. GETTING STARTED

Open the FAMCLCFG on the Windows PC.

2.1 FILE (F) MENU



2.1.1 FILE (F) > OPEN (O)

Open an existing configuration file.
Not usable in selecting a slave station.

2.1.2 FILE (F) > SAVE (S)

Overwrite and save current master station settings.
Usable after Open or Save As.

2.1.3 FILE (F) > SAVE AS (A)

Name and save current master station settings.

2.1.4 FILE (F) > OPEN CSV FILE (C)

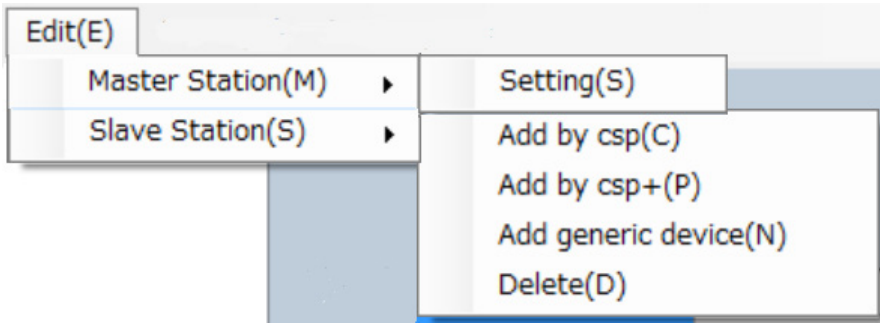
Open a configuration file in a CSV text format.
Not usable in selecting a slave station.

2.1.5 FILE (F) > SAVE CSV FILE (V)

Save current master station settings to a CSV text format file.

> CAUTION
>
> A CSV text format file can be read and edited on other application software. Note the followings:
> 1. The character code in CSV files is Unicode (UTF-8).
>   Application software needs to conform to Unicode (UTF-8) to edit the files.
> 2. When increasing or decreasing the number of connected slave stations in editing, also modify the item 'number of connected stations' .

2.2 EDIT (E) MENU

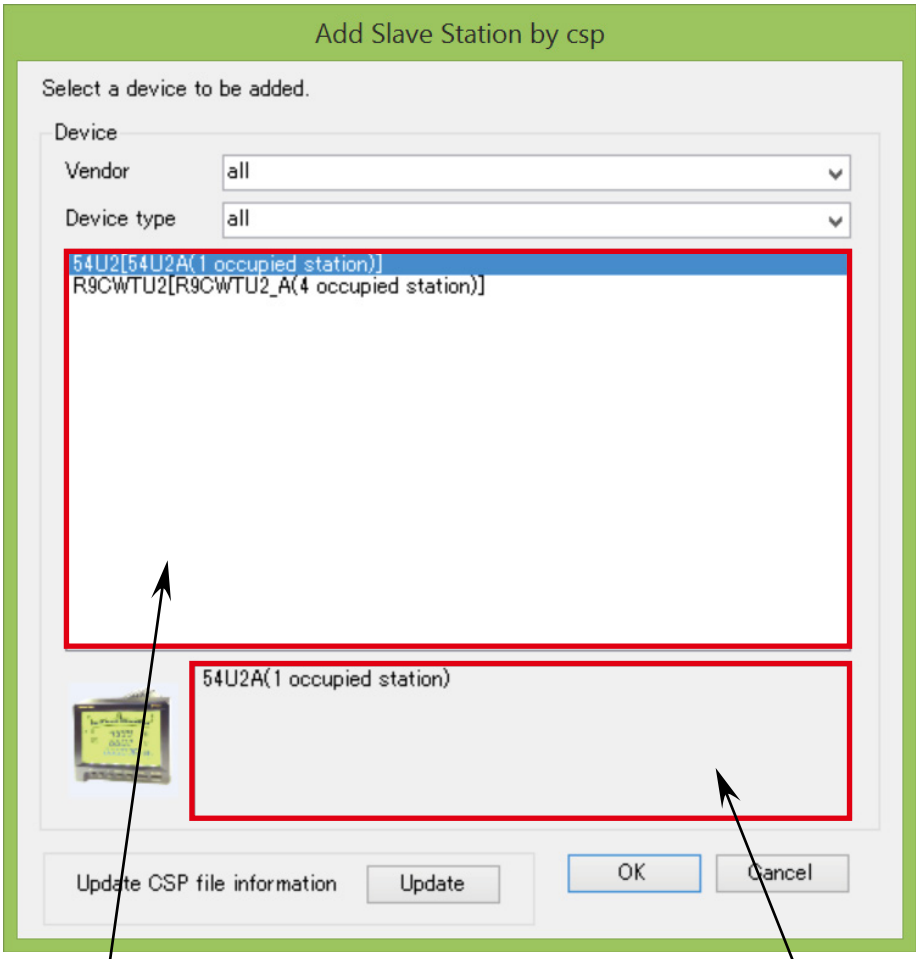


2.2.1 EDIT (E) > MASTER STATION (M) > SETTING (S)

Select the above menu, and the master station view will appear.

2.2.2 EDIT (E) > SLAVE STATION (S) > ADD BY CSP (C)

Set a slave station using a CSP file.
Select the above menu, and the following window will appear.
Select a device and click [OK] button.



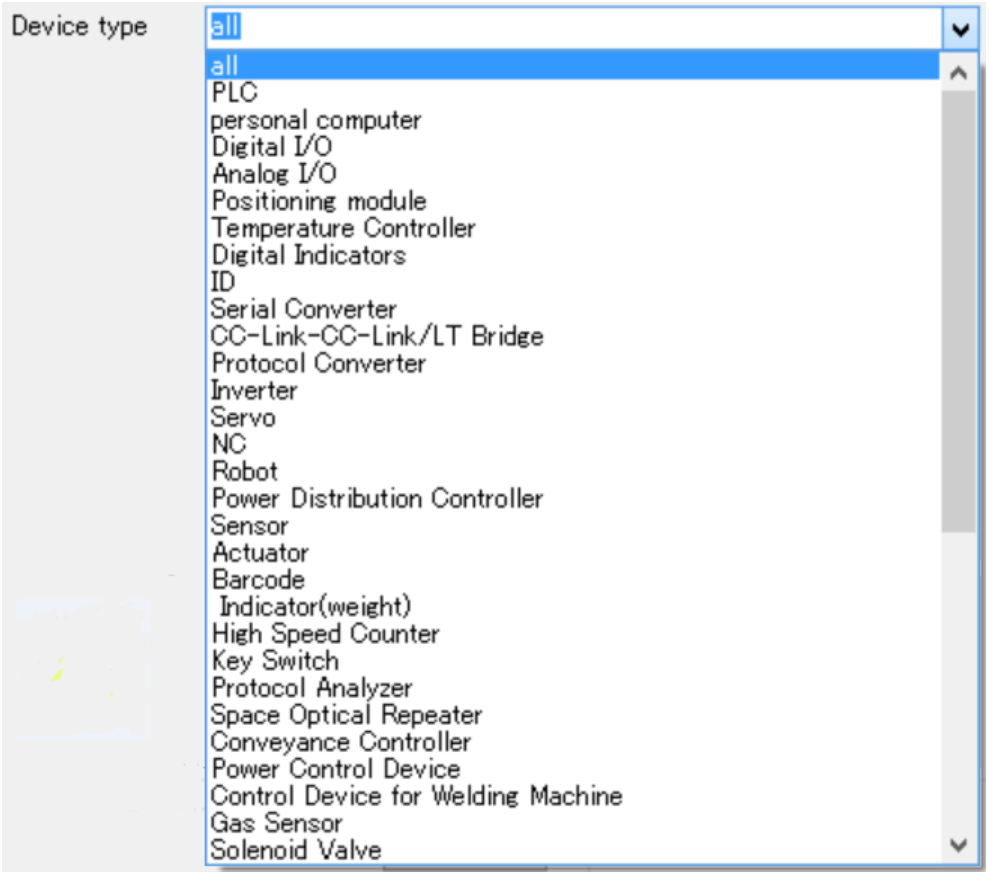
CSP files (device models) are listed.
Click to select.

Information of the selected CSP file is shown.

2.2.2.1 VENDOR

Select a Vendor and their CSP files will be listed.

2.2.2.2 DEVICE TYPE



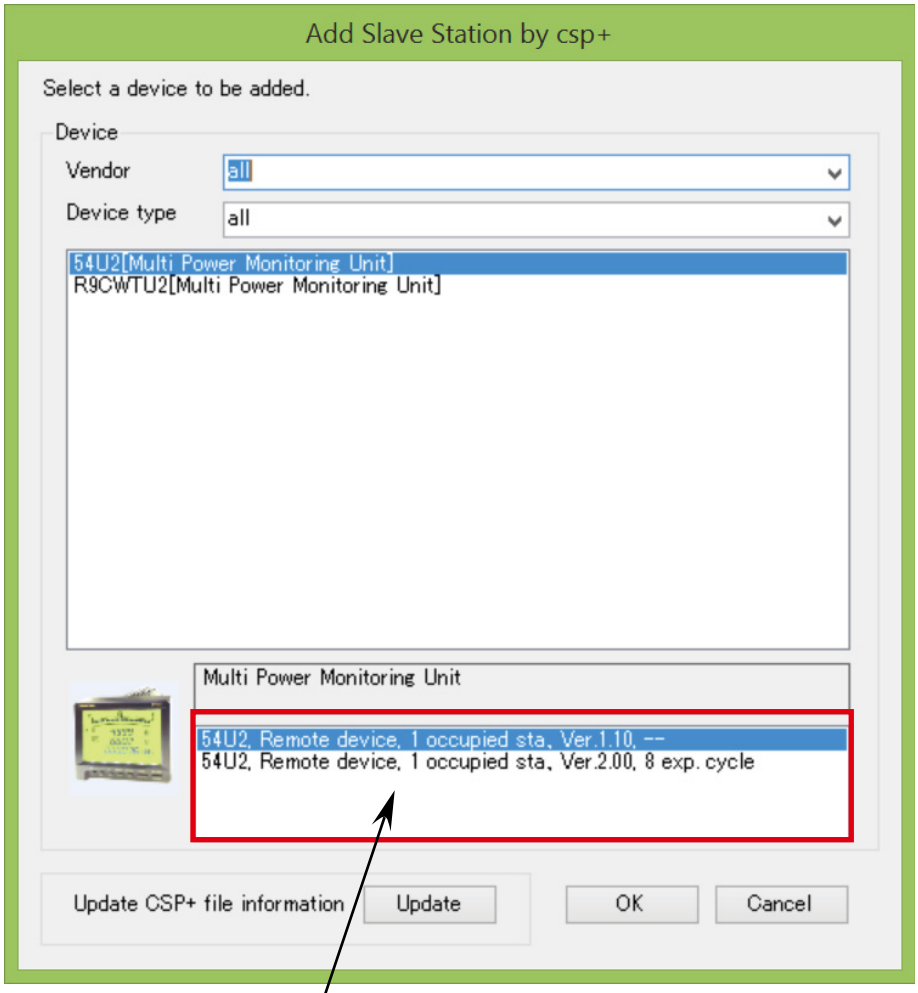
Select a device type and its CSP files will be listed.

2.2.2.3 UPDATING CSP FILE INFORMATION

When new CSP files are saved in the CSP folder, click [Update] button to update the vendor information files.

2.2.3 EDIT (E) > SLAVE STATION (S) > ADD BY CSP+ (P)

Set a slave station using a CSP+ file.
Select the above menu, and the following window will appear.
Select a device and setting, and click [OK] button.

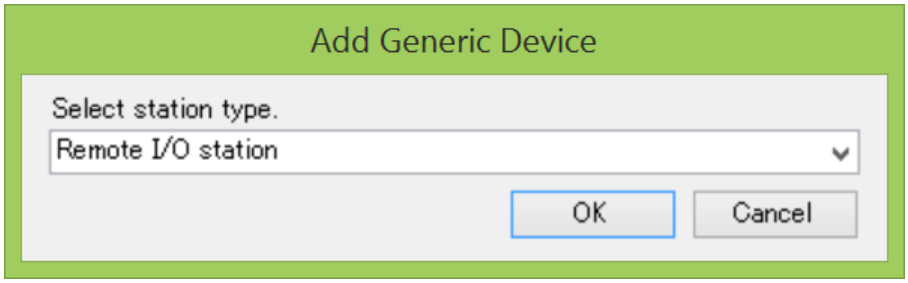


2.2.3.1 UPDATING CSP+ FILE INFORMATION

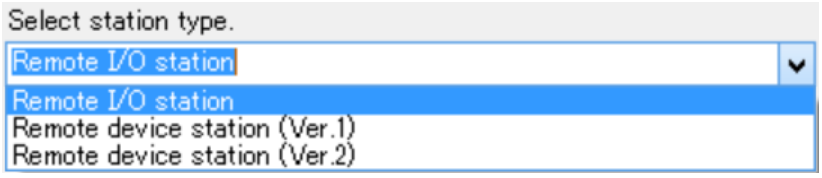
When new CSP+ files are saved in the CSPP folder, click [Update] button to update the vendor information files.

2.2.4 EDIT (E) > SLAVE STATION (S) > ADD GENERIC DEVICE (N)

Use when CSP and CSP+ files do not exist.



2.2.4.1 STATION TYPE



Select one among following 3 station types:

(1) Remote I/O station
(2) Remote device station (CC-Link Ver.1.XX)
(3) Remote device station (CC-Link Ver.2.XX)

After selecting a station type, set 'number of occupied stations' and 'expanded cyclic setting' (with Ver. 2 only) in the slave station view.

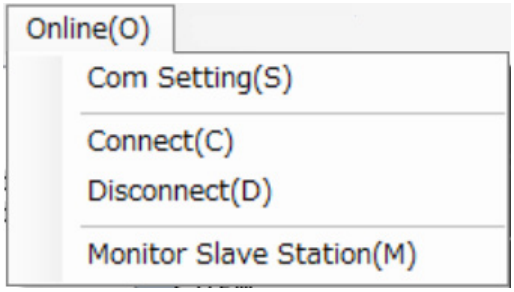
> Example: To connect the Remote I/O model R3-NC3,
>
> - Select 'remote device station (CC-Link Ver. 2)' in the dialog box 'Add Generic Device' .
> - Set 'number of occupied stations' to 4 in the slave station view.
> - Set 'station No.' and 'expanded cyclic setting' in the slave station view to those set with the switches on the R3-NC3.

2.2.5 EDIT (E) > SLAVE STATION (S) > DELETE (D)

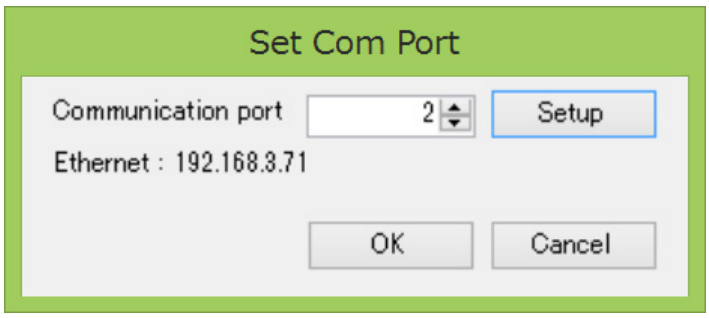
Delete a selected slave station. The slave station numbers will be closed up to reassign.
Deleting the master station is not available.

2.3 ONLINE (T) MENU

Set communication with a FA-M3 CPU module, connect and disconnect the communication.



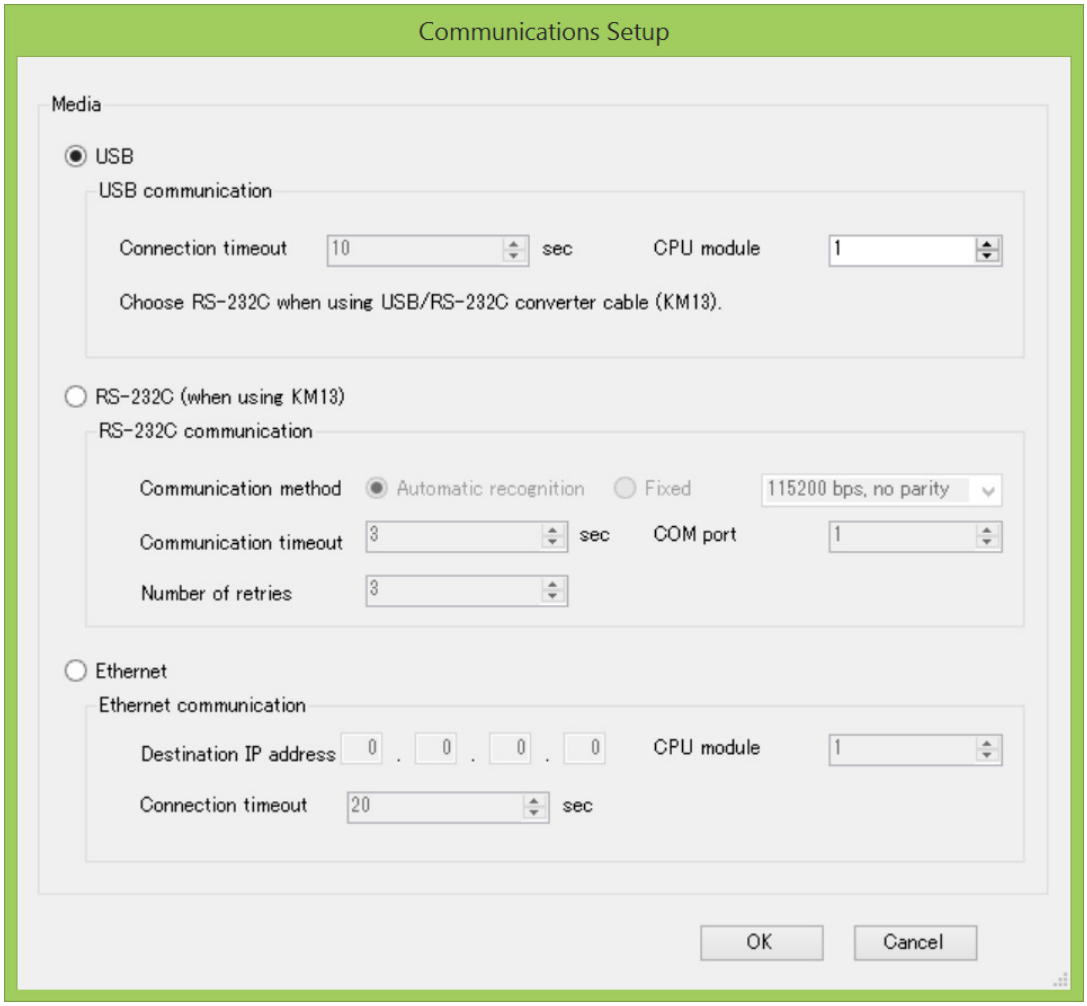
2.3.1 ONLINE (T) > COM SETTING (S)



Set communication conditions per port. The above example shows the port No. 2 with Ethernet communication and the destination IP address 192.168.3.71.
Set a communication port No. to select other communication conditions.

2.3.1.1 ONLINE (T) > COM SETTING (S) > [SETUP] BUTTON

Set communication conditions of the selected port No.



2.3.1.2 MEDIA

Select a medium.

- USB
- RS-232C (when using KM13)
- Ethernet

2.3.1.3 USB COMMUNICATION - CONNECTION TIMEOUT

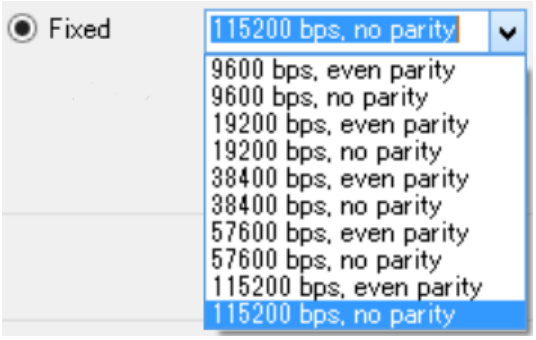
Timeout (second) in connecting communication. 10 seconds fixed.

2.3.1.4 USB COMMUNICATION - CPU MODULE

Set the destination CPU module No.
Set to 0, and the CPU module to which the USB cable is connected will be connected.
(Setting range: 0 to 4)

2.3.1.5 RS-232C COMMUNICATION - COMMUNICATION METHOD

Select 'automatic recognition' or 'fixed'.
With 'automatic recognition', the settings including baud rate are configured automatically.
With 'fixed', select communication conditions from the drop-down list.



2.3.1.6 RS-232C COMMUNICATION - COMMUNICATION TIMEOUT

Set timeout for the RS-232C communication.
(Setting range: 1 to 100 seconds)

2.3.1.7 RS-232C COMMUNICATION - COM PORT

Set COM port No. of the PC for the RS-232C communication.
(Setting range: COM1 to COM32)

2.3.1.8 RS-232C COMMUNICATION - NUMBER OF RETRIES

Set number of times to retry the RS-232C communication.
(Setting range: 0 to 100)

2.3.1.9 ETHERNET COMMUNICATION - DESTINATION IP ADDRESS

Set IP address of a destination CPU module.

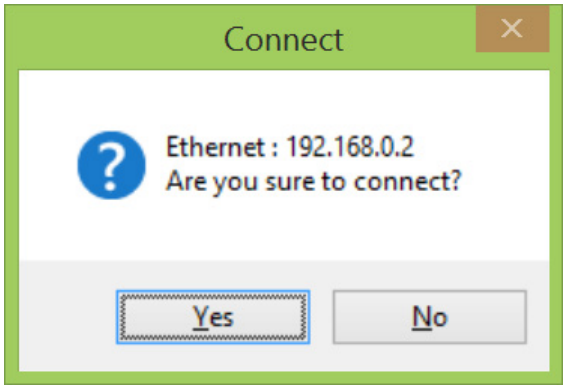
2.3.1.10 ETHERNET COMMUNICATION - CPU MODULE

Set destination CPU module No.
(Setting range: 1 to 4)

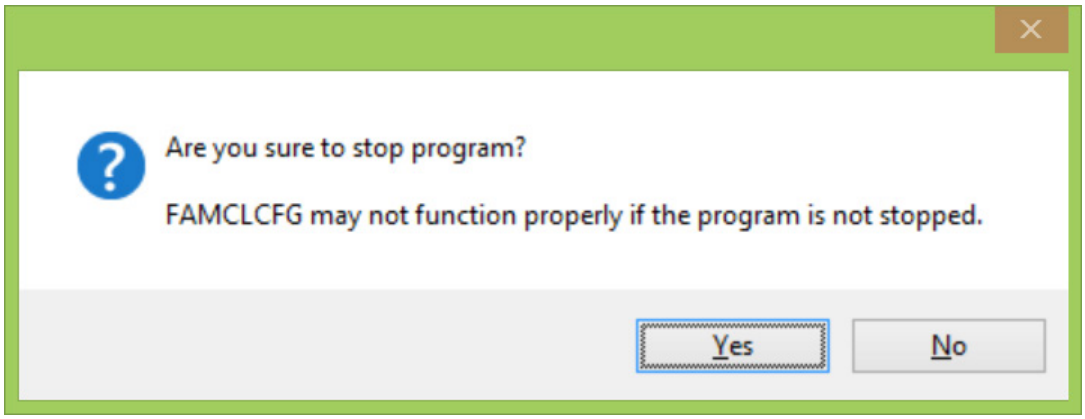
2.3.1.11 ETHERNET COMMUNICATION - CONNECTION TIMEOUT

Set timeout in connecting.
(Setting range: 1 to 120 seconds)

2.3.2 ONLINE (T) > CONNECT (C)



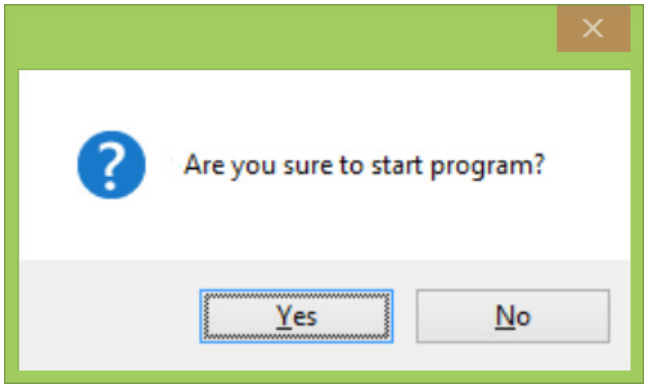
Select the above menu, and the above confirmation dialog box will appear.
Click [Yes] button, and the communication will start with the selected port No. setting.



Then the above confirmation dialog box will appear to stop the program of the CPU module. Even if you click [No] button, you can continue to use the FAMCLCFG. However, the FAMCLCFG may not function properly when the CPU module program rewrites Y relays of the FAMCL.
Also depending the CPU module settings, Y relays of the installed modules may be reset in stopping the program. Then the CC-Link communication will be stopped.

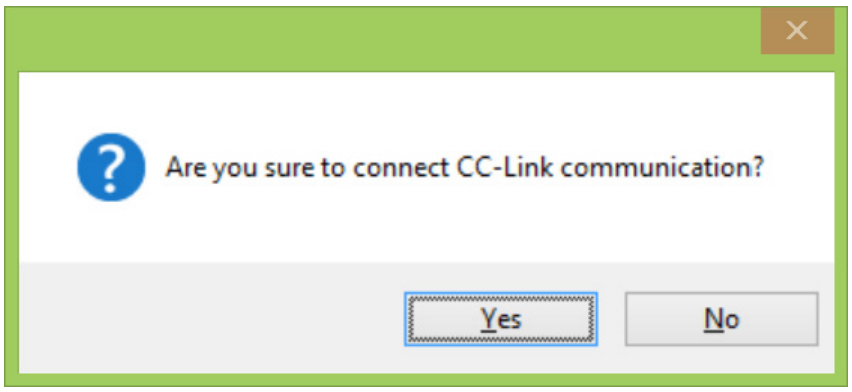
2.3.3 ONLINE (T) > DISCONNECT (D)

Disconnect the communication.
The following confirmation dialog box will appear to start the program of the CPU module. If you click [No] button, the communication will be disconnected with the program stopped.

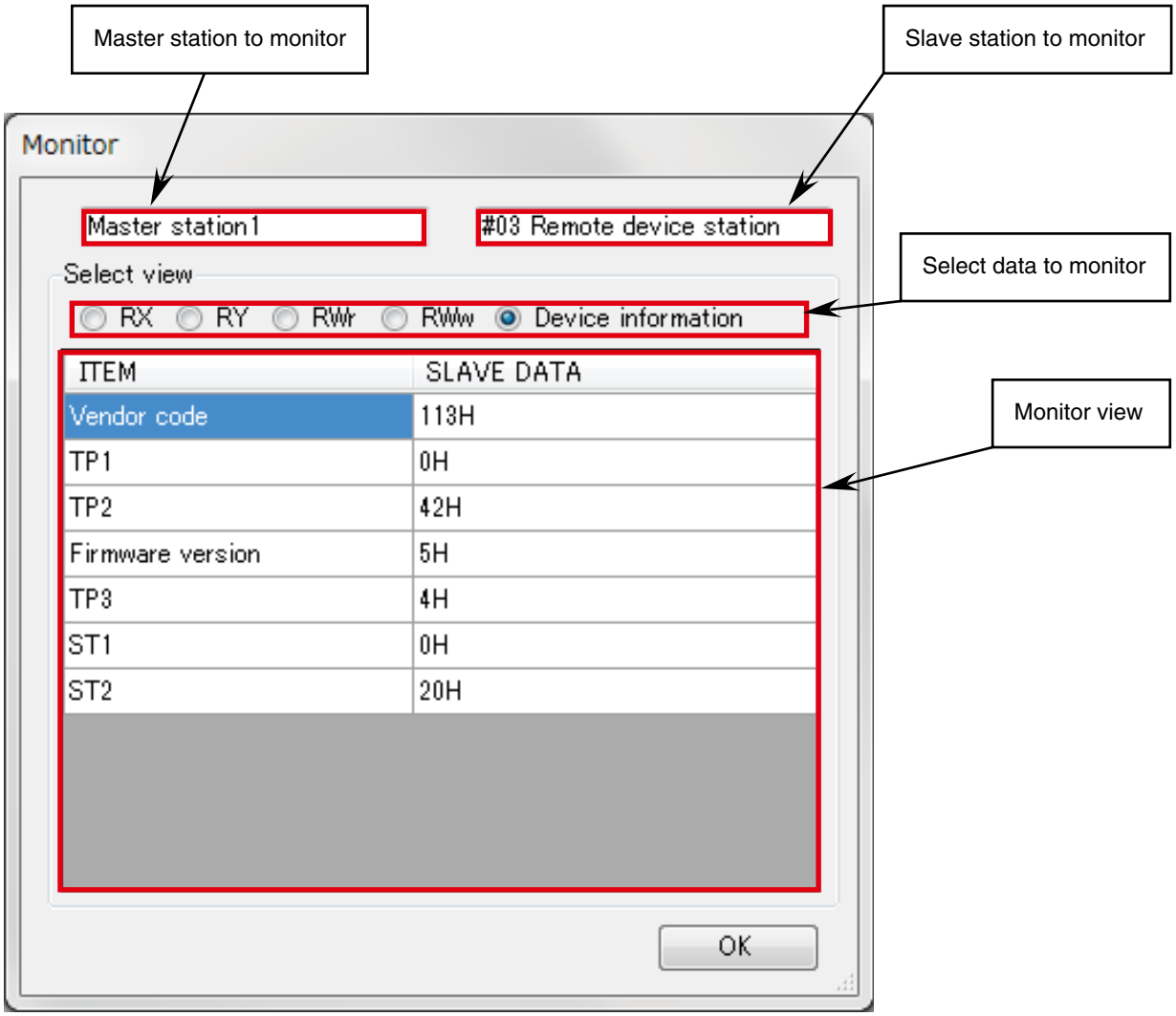


2.3.4 ONLINE (T) > MONITOR SLAVE STATION (M)

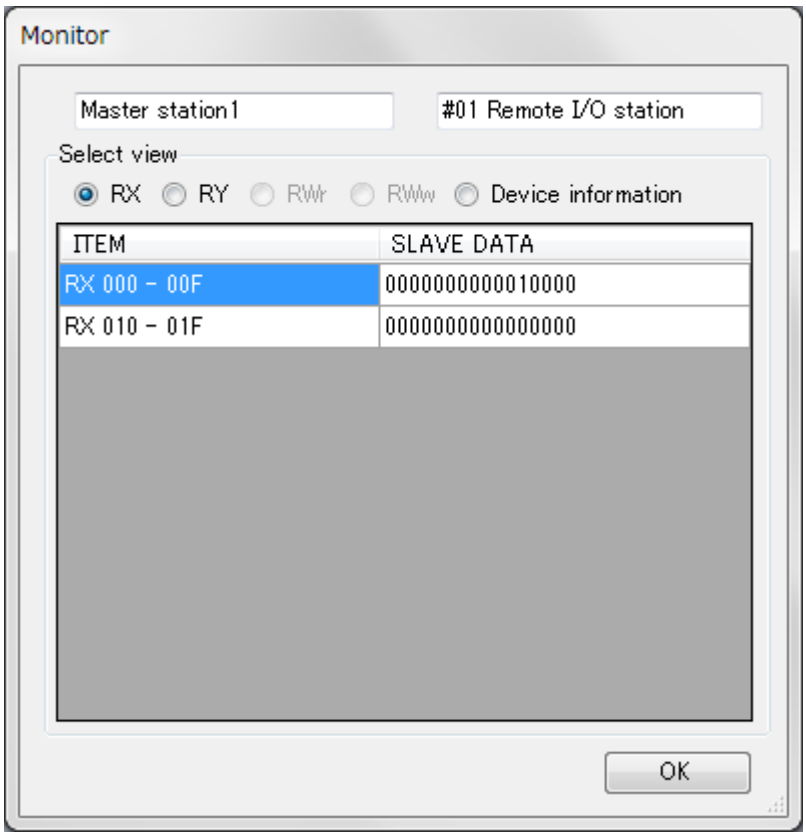
When the CC-Link communication is disconnected, the following confirmation dialog box will appear to connect the communication.
If you click [No] button, monitoring will not be available.



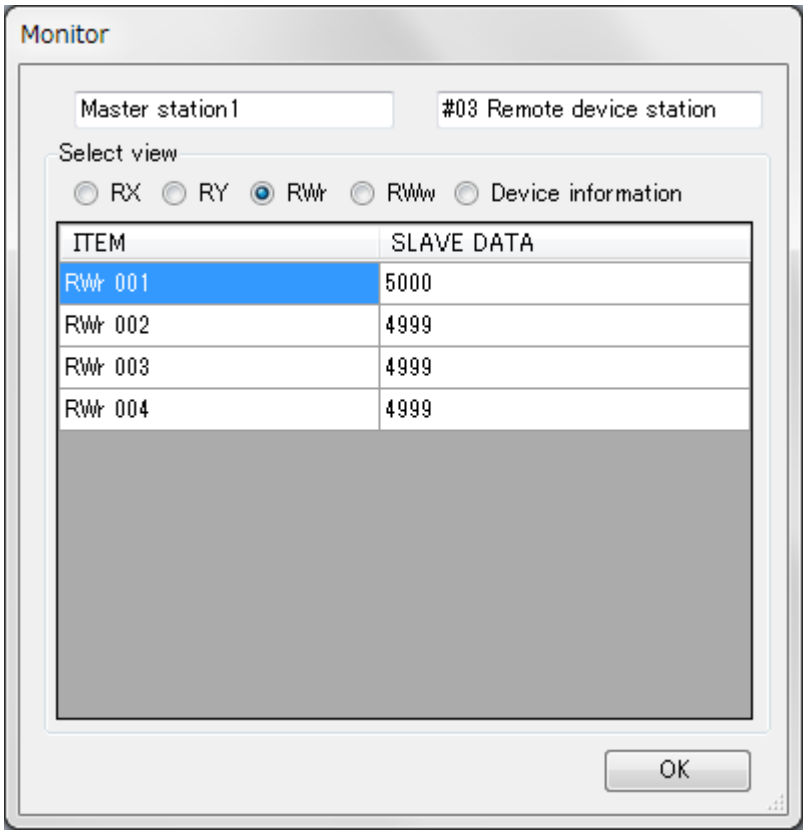
The selected slave station information will appear (and be updated approximately every second).



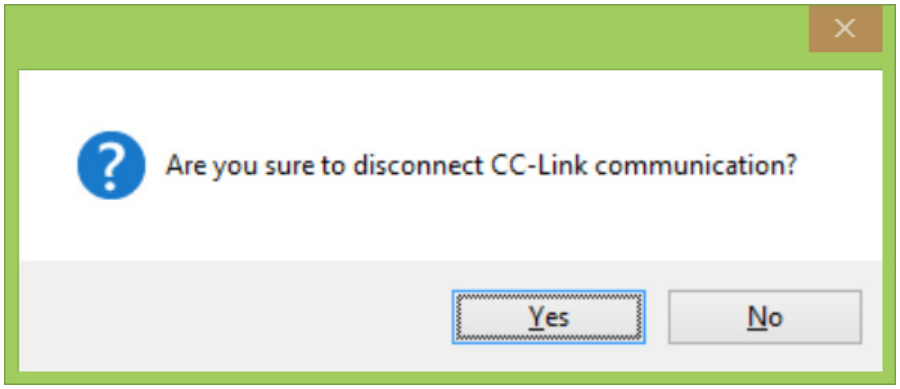
- Rx monitor



- RWr monitor



Click [OK] button to quit the monitor. The confirmation dialog box will appear to disconnect the CC-Link communication.

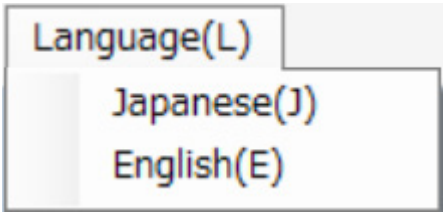


If you click [No] button, the CC-Link communication will not be disconnected and continue.

* When an error occurs in starting the CC-Link communication and the ERR LED turns on, it will not turn off even when the communication is disconnected. It turns on until the CC-Link is normally communicated.

2.4 LANGUAGE (L) MENU

Set a language, and the setting will be enabled at the next startup.



2.5 BASIC VIEW (MASTER STATION)

The following view appears after startup, where the master station is selected.

2.5.1 UNIT NO., SLOT NO.

The unit No. and slot No. of the selected master station are indicated.
Unit No. 0 to 7
Slot No. 1 to 16
The information is taken from the CPU module in connecting communication.

2.5.2 NUMBER OF CONNECTED STATIONS

Total number of the slave stations set in the selected master station is indicated.
Not modifiable.

2.5.3 RETRY COUNT

Set number of times to retry polling a slave station when it does not reply.
(Setting range: 1 to 7)

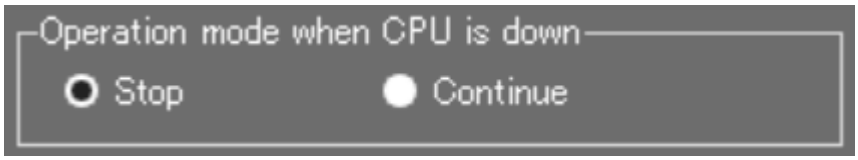
2.5.4 AUTOMATIC RECONNECTION STATION COUNT

Set number of slave stations to reconnect by a single link scan when data link error stations are reconnected.
(Setting range: 1 to 10)

2.5.5 TRANSMISSION SPEED

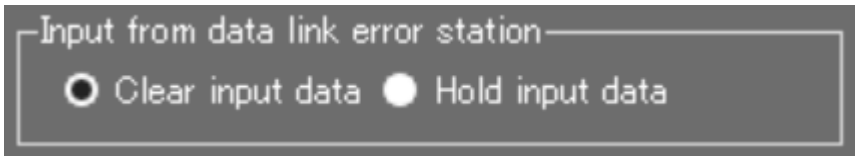
The transmission speed of the CC-Link system set in the master station is indicated.
The transmission speed of the FAMCL is set with the rotary switch on the device and is not configurable with the FAM-CLCFG.

2.5.6 OPERATION MODE WHEN CPU IS DOWN



Set the CC-Link communication when a CPU error of the FAMCL occurs.
Stop ..... The CC-Link data link communication is stopped when a CPU error occurs.
Continue ..... The CC-Link data link communication continues when a CPU error occurs.

2.5.7 INPUT FROM DATA LINK ERROR STATION



Set input data processing from a data link error station.
Clear input data ..... The input from the data link error station is cleared. (RX area cleared, RWr area not cleared)
Hold input data ..... The input from the data link error station is held.

2.5.8 AUTO STATION NO. ASSIGNMENT

Each slave station No. to be set in the FAMCL is calculated from station Nos. and number of occupied stations, and assigned.
The station No. on each slave station needs to be changed separately.

Enabled (checked) ..... Assigns slave station Nos. closed up automatically.
The station No. setting in the slave station view will be disabled.
It is necessary to change the No. on each slave station according to the setting.
Disabled (unchecked) ..... Assigns slave station Nos. manually.

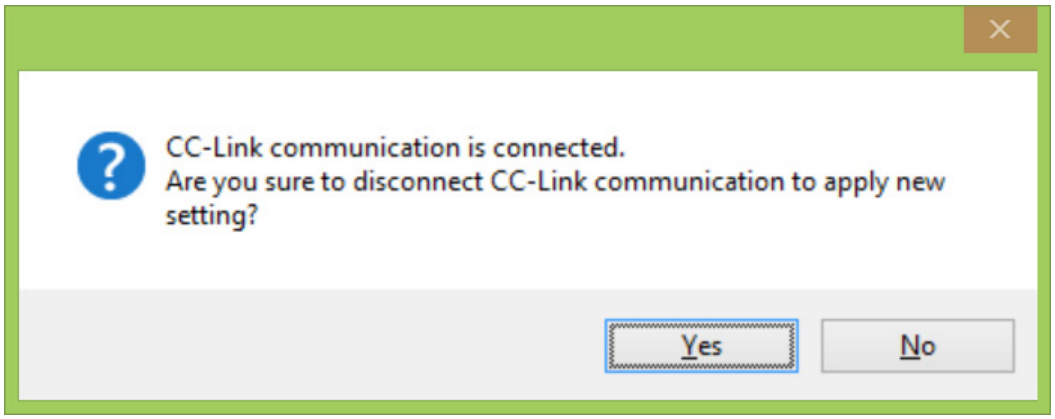
* In clicking [Download] button (writing settings to the FAMCL), overlap of the station Nos. is checked. If a number overlaps, a warning message appears and downloading is stopped.

2.5.9 UPLOAD, DOWNLOAD

Upload ..... Reads settings of the selected master station (FAMCL).
Download ..... Writes settings to the selected master station (FAMCL).

* The buttons are disabled (grayed out) in the following cases:
  - in disconnecting, or
  - in processing upload or download.

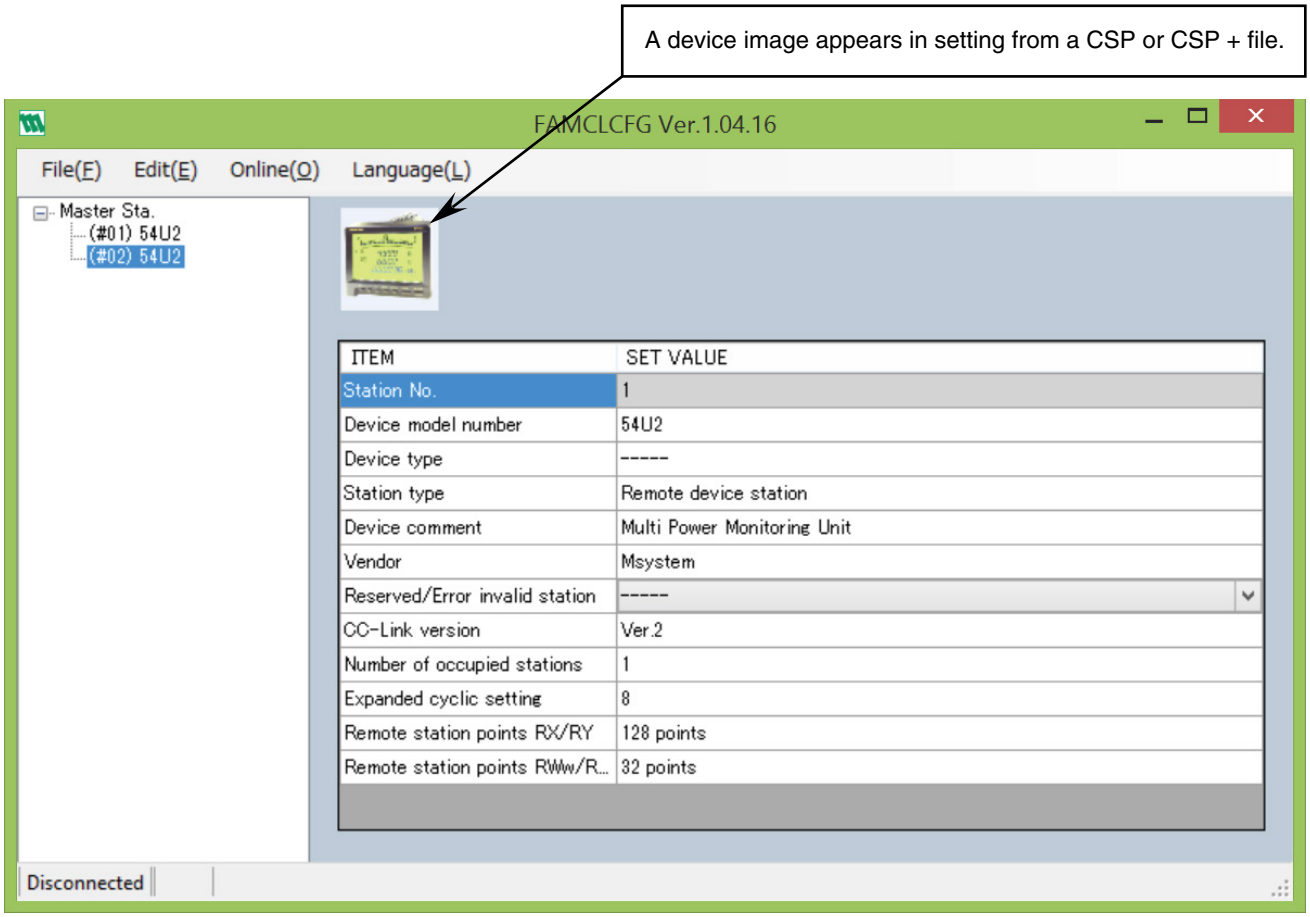
* When you download in connecting the CC-Link communication, the following dialog box appears to disconnect the CC-Link communication after writing the settings and before updating the settings in the FAMCL.



If you click [Yes] button, the CC-Link communication will be disconnected, the settings will be updated and reflected in connecting the next CC-Link communication. (The settings will be reflected also when the power of the FAMCL is restarted.)
If you click [No] button, the downloaded settings are not updated at that time. They will be updated and reflected when the power of the FAMCL is restarted.

2.6 BASIC VIEW (SLAVE STATION)

Select a slave station in the configuration area, and the following view showing the selected slave station will appear.



2.6.1 STATION NO.

The slave station No. is indicated.
When the auto station No. assignment is enabled, the station No. setting is disabled here (background color: white). When the auto assignment is disabled, the setting is enabled (background color: gray).

2.6.2 DEVICE MODEL NUMBER

The model No. of the slave station device is indicated.
Not modifiable.

2.6.3 DEVICE TYPE

The remote device type that CC-Link Partner Association defines is indicated.
Not modifiable.

2.6.4 STATION TYPE

The station type ('remote I/O station' or 'remote device station') is indicated.
Not modifiable in setting from a CSP or CSP+ file.

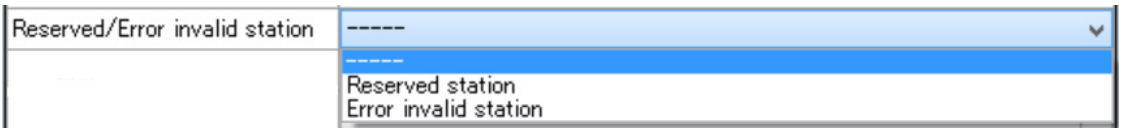
2.6.5 DEVICE COMMENT

A slave station comment is indicated.
Modifiable. The device comment is saved in a configuration file, but not written to the FAMCL. In uploading from the FAMCL, a device comment is created based on the station type information.

2.6.6 VENDOR

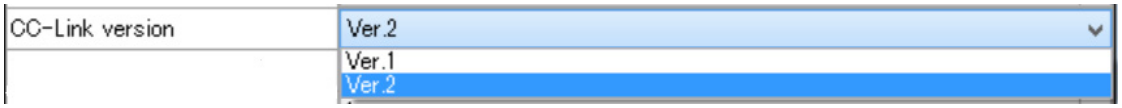
A vendor of the slave station is indicated. Without vendor information, '-----' is indicated.
Not modifiable.

2.6.7 RESERVED/ERROR INVALID STATION



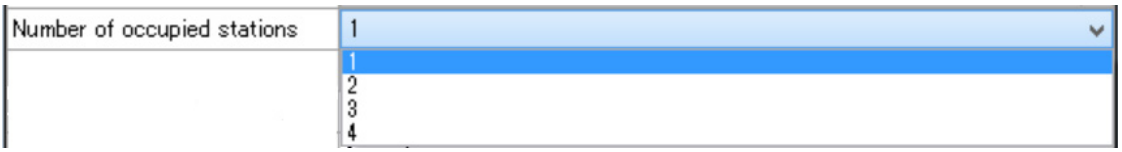
Set the slave station as a reserved or error invalid station. Otherwise set '-----'.
Modifiable.

2.6.8 CC-LINK VERSION



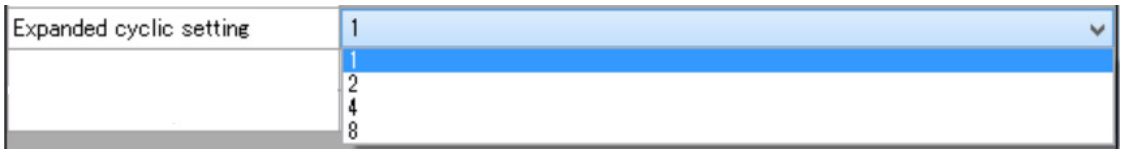
Set the CC-Link version No.
Not modifiable in setting from a CSP or CSP+ file.

2.6.9 NUMBER OF OCCUPIED STATIONS



Set number of occupied stations.
Not modifiable in setting from a CSP or CSP+ file.

2.6.10 EXPANDED CYCLIC SETTING



Set expanded cyclic.
Configurable only with the CC-Link Ver. 2.
Not modifiable in setting from a CSP or CSP+ file.

2.6.11 REMOTE STATION POINTS RX/RY

Maximum number of points by the number of occupied stations and expanded cyclic is indicated.
Not modifiable.

2.6.12 REMOTE STATION POINTS RWw/RWr

Maximum number of points by the number of occupied stations and expanded cyclic is indicated.
Not modifiable.

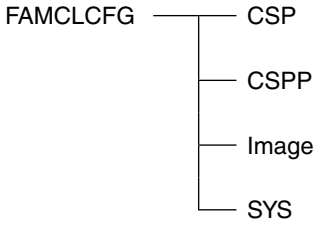
> CAUTION
>
> In adding a slave station from a CSP or CSP+ file, the items other than 'station No.' and 'reserved/error invalid station' are not modiable.
> Besides them, 'CC-Link version' , 'number of occupied stations' and 'expanded cyclic setting' are also modifiable for an uploaded slave station.

3. FAMCLCFG FILES

3.1 FAMCLCFG FOLDERS

The FAMCLCFG creates folders in the Documents folder in the PC in starting up, unless the FAMCLCFG folder already exists.

Folder configuration



3.2 CSP FILES

CSP files are definition files for the CC-Link devices.
Save CSP files in the CSP folder.
Save image (bmp) files in the Image folder.
* Do not change the CSP and image file names.

3.3 CSP+ FILES

CSP+ files are definition files for the CC-Link devices.
Save CSP+ files in the CSPP folder.
Save image (bmp) files in the Image folder.
* Do not change the CSP+ and image file names.

3.4 CONFIGURATION FILES

The extension of the configuration files the FAMCLCFG creates is cfg.

4. REMAKRS

4.1 SLAVE SETTINGS TO BE SAVED AND DISPLAY ITEMS

ITEM	UPLOAD FROM FAMCL	CONFIGURATION FILE	CONFIGURATION FILE (csv)
Station No.	√	√	√
Device model number	×	√	×
Device type	×	√	×
Station type	√	√	√
Device comment	×	√	×
Vendor	×	√	×
Reserved/error invalid station	√	√	√
CC-Link version	√	√	√
Number of occupied stations	√	√	√
Expanded cyclic setting	√	√	√
Remote station points RX/RY	√	√	×
Remote station points RWw/RWr	√	√	×
Path of image files	×	√	×

In uploading setting information from the FAMCL, the device model number, vendor and image file are not read, and such information is not shown on the slave station view.
In creating a configuration file after uploading setting information from the FAMCL, the device model number, vendor and image file are not written to the configuration file.

4.2 VERSION HISTORY

Ver.1.00.XX .....first version
Ver.1.01.XX .....monitor function added
Ver.1.04.XX .....English display, CSV configuration file and slave station monitor supported.

5. APPENDIX

5.1 APPENDIX 1 GENERIC TERMS AND ABBREVIATIONS

This manual uses following abbreviations and terms.

GENERIC TERM / ABBREVIATION	DESCRIPTION
Master station	The station that controls the entire CC-Link system. One master station is required per system and the FAMCL is the master station. The station number for this station is fixed to 0.
Remote station	A generic station name for remote I/O stations and remote device stations
Remote I/O station	A remote station that handles bit unit data only
Remote device station	A remote station that handles both bit unit and word unit data
Slave station	Remote I/O station, remote device station and local station
Reserved station	Slave stations that exist on the CC-Link network parameters set in the master station but are not actually connected. In setting reserved stations, the data link can be performed without error. (Data link to the reserved stations is not performed.) Such a slave station, if not specified as a reserved station, is treated as data link error station.
Error invalid station setting	With this setting, a slave station that is powered off is not treated as data link error station.
Station	A device that exists on the CC-Link system, where the station number assignment can be from 0 to 64.
Number of stations	The total station numbers occupied by all slave stations connected in the CC-Link system
Station number	The number assigned to each station connected to the CC-Link system 0: master station No. 1 to 64: slave station No.
Number of occupied stations	The CC-Link system allows 32 points of bit data I/O respectively and 4 points of word data I/O respectively per station. Each slave station needs to occupy a certain number of stations corresponding to the information sent to or received from other stations, which is called number of occupied stations.
Automatic reconnection	A function that a unit not joining the data link due to power off recovers the normal status and automatically joins the data link
RX	Information entered in bit units from the remote station to the master station
RY	Information output in bit units from the master station to the remote station
RWr	Remote register (read area for CC-Link) Information entered in 16-bit units from the remote device station to the master station
RWw	Remote register (write area for CC-Link) Information output in 16-bit units from the master station to the remote device station

5.2 APPENDIX 2 TROUBLESHOOTING

PROBLEM	CHECK ITEM	REMEDY
Unable to perform data link for the entire system.	Aren't there any disconnected cables?	Check the cable connection visually or with continuity test.
	Are the terminating resistors connected to the terminal stations located at each end of the CC-Link system?	Connect the supplied terminating resistors to the terminal stations at each end of the CC-Link system.
	Are appropriate terminating resistors connected?	Connect terminating resistors that match the cable type to the terminal stations at each end of the CC-Link system.
	Doesn't an error occur at the master station?	Check the status indicator LEDs of the FAMCL.
Unable to receive input from a remote I/O station.	Does the remote I/O station perform data link?	Check the LED of the remote I/O station.
	Is the slave station information set with the FAMCLCFG correct?	Confirm that the following parameter conforms to that of the station: - Station type: remote I/O station
	Does the transmission speed coincide with that set with the FAMCL?	Check the transmission speed.
	Does the master station recognize the remote I/O station?	Select Online > Monitor slave station from the menu of the FAMCLCFG to confirm.
	Isn't the station set as a reserved station?	Check the settings of the slave station with the FAMCLCFG.
	Aren't there any overlapped station numbers?	Check the station No. setting.
Unable to output data from a remote I/O station.	Is data written to the correct address of remote output RY (buffer memory)?	Check the sequence program.
Unable to receive data to the remote register RWr in a remote Device station.	Does the remote device station perform data link?	Check the LED of the remote device station.
	Does the remote I/O station perform data link?	Check the LED of the remote I/O station.
	Is the slave station information set with the FAMCLCFG correct?	Confirm that the following parameters conform to those of the station: - Station type: remote device station - CC-Link version - Number of occupied stations - Expanded cyclic setting (in case of Ver. 2)
	Does the transmission speed coincide with that set with the FAMCL?	Check the transmission speed.
	Does the master station recognize the remote device station?	Select Online > Monitor slave station from the menu of the FAMCLCFG to confirm.
	Isn't the station set as a reserved station?	Check the settings of the slave station with the FAMCLCFG.
	Aren't there any overlapped station numbers?	Check the station No. setting.
Unable to write data to the remote register RWw in a remote device station.	Is data written to the correct address of remote register RWw (buffer memory)?	Check the sequence program.

5.3 APPENDIX 3 CSV FILE FORMAT

This section describes the file format in saving settings as a CSV text format file.
The character code is Unicode (UTF-8). In order to edit a file, use the software that can read and write the Unicode files.

1. application (FAMCLCFG), FAMCLCFG
2. file version (1), 1
3. Number of connected stations (1 - 64), 3
4. Retry count (1 - 7), 3
5. Automatic reconnection station count (1 - 10), 1
6. Operation mode when CPU is down (0:Stop / 1:Continue), 1
7. Input from data link error station (0:Clear / 1:Hold), 0
8. Station No. (1 - 64), Station type (0:Remote I/O / 1:Remote device), Reserved/Error invalid station (0:----- / 1:Reserved / 2:Invalid), CC-Link version (1:Ver.1 / 2:Ver.2), Number of occupied station (1 - 4), Expanded cyclic setting (1/2/4/8)
9. 1,0,0,1,1,1
10. 2,1,0,1,1,1
11. 3,1,0,2,1,1

1 to 2: CSV file information. Do not modify.
3 to 7: Master (FAMCL) settings. Editable within the setting ranges.
8: Setting items of slave station
9: Settings of the slave station No. 1. Editable within the setting ranges.
10 -: Settings of the slave station No. 2 and following stations. Editable within the setting ranges.
* In increasing or decreasing the slave stations, also modify the item 'number of connected stations'.