

TOYO INTELLIGENT INVERTER

VF66 Series

Programming & Maintenance Tool

VF66PCTool



Operating Manual



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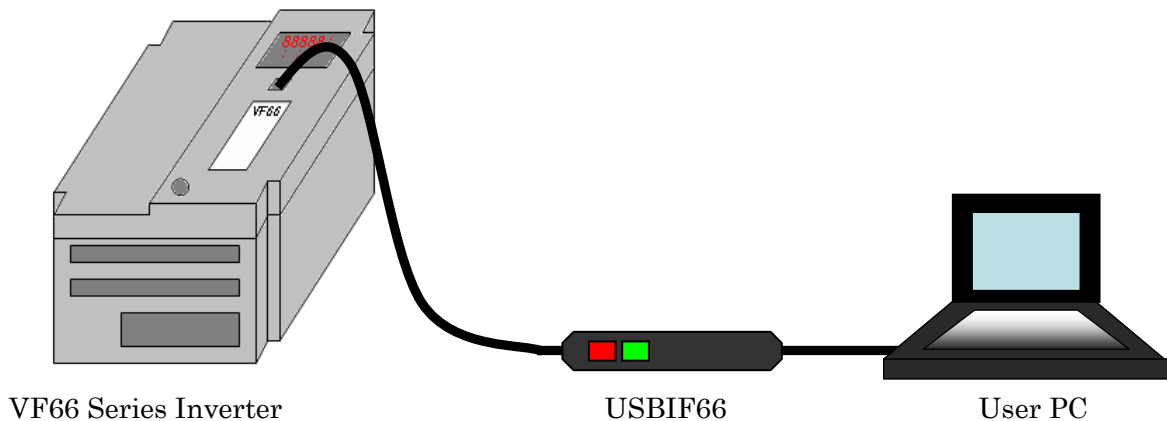
Chapter 1 Setup

VF66PCTool is PC software. It can maintain VF66 Series Inverter with customizing.

It is necessary to connect USBIF66 cable because it connects between users PC and the inverter.

1-1. Connection

The connection of inverter and user PC is as follows.



※ USBIF66 is the recommended cable. We cannot insure proper performance when using another cable and will assume responsibility if damage incurs.

[System requirements]

Correspondence language: Japanese / English

Correspondence OS: Windows® 2000 / Windows® XP / Windows Vista® / Windows® 7

(*Windows, Windows Vista are registered trademarks of Microsoft.)

Monitor: XGA (1024×768) up

※The window might be largely displayed according to PC (monitor) or OS.

1-2. Install VF66PCTool

Install VF66PCTool by the following procedure

[1] Download the *VF66PCTool* and open the folder. ⇒<http://www.toyodenki.co.jp/en/index.html>

[2] Open the "*setup.exe*".

[3] Set up according to the instruction.

1-3. Install USBIF66 Device Drivers

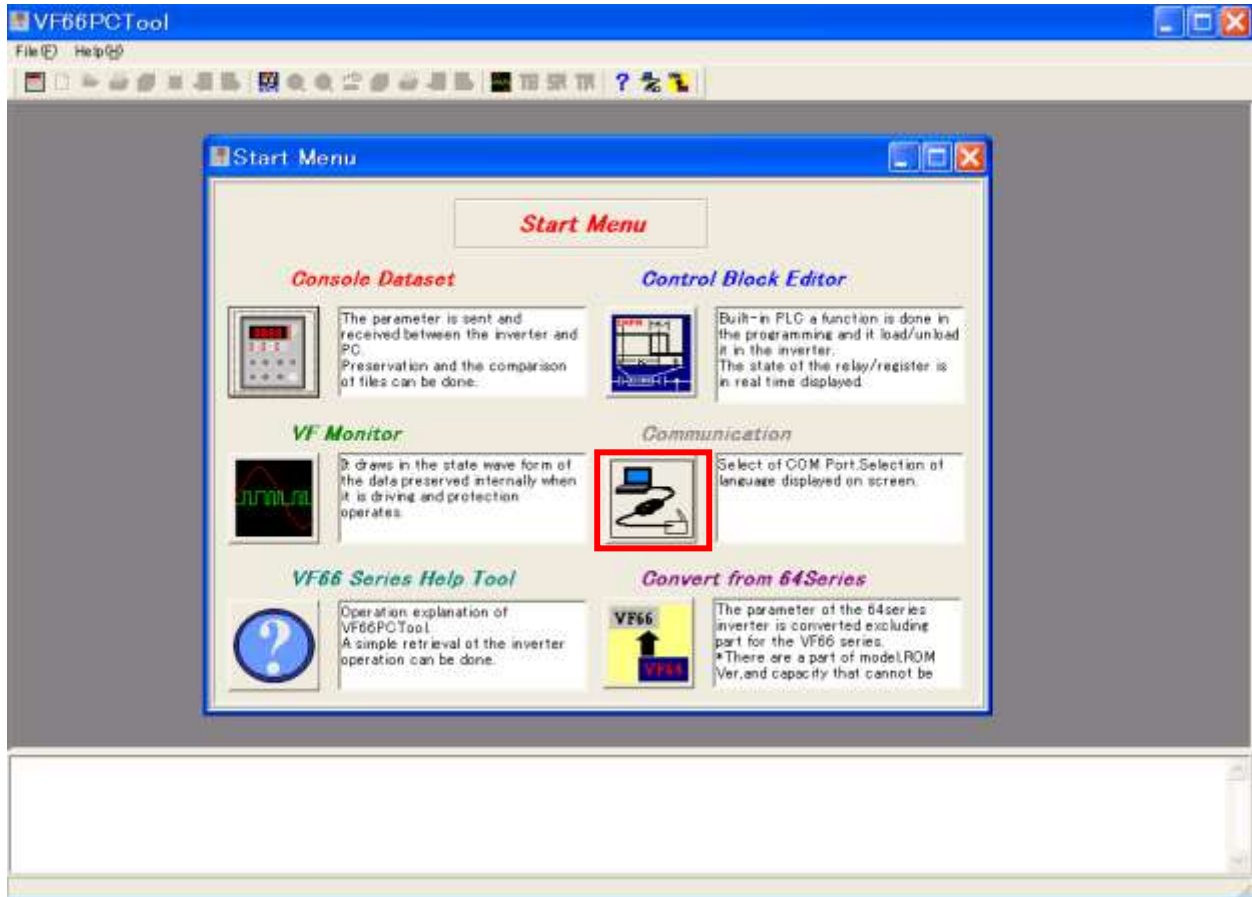
Refer to the installation manual of USBIF66 Device Driver.

1-4. Start VF66PCTool

Set the communication port and the display language as follows.

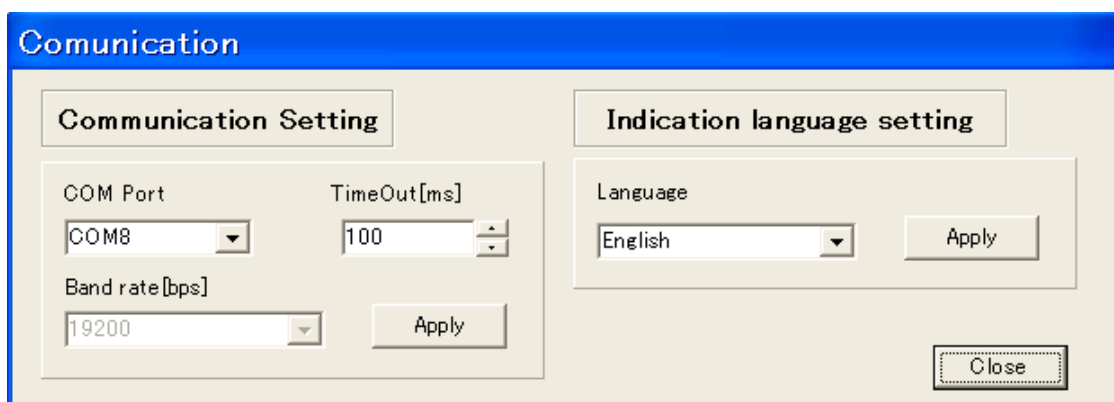
[1] Start VF66PCTool

When VF66PCTool is started, the start menu window is displayed.



[2] Set communication port and display language

[Communication] is selected from the start menu, after that the communication and the display language are set.



a) Communication Setting

COM Port:

Set the COM port where USBIF66 is assigned.

(The COM port of USBIF66 can be confirmed from the device manager of the control panel)

Time-out [ms]:

The setting of the COM port is corrected, and the cable connection of the inverter and the personal computer is normal.

The default is set to 20ms. However, the error might occur according to the personal computer when set time is short. Set the Time-out longer when the error goes out.

Band rate [bps]:

Because the Band rate is fixation by 19200bps, this item doesn't need set.

【Note】 Click [Apply] when the network transmission setting is changed.

b) Indication language setting

The display language of this software is set. Select either Japanese or English.

【Note】 When the setting of the display language is changed, click [Apply] and reboot [PC Tool].

Chapter 2 Console Dataset

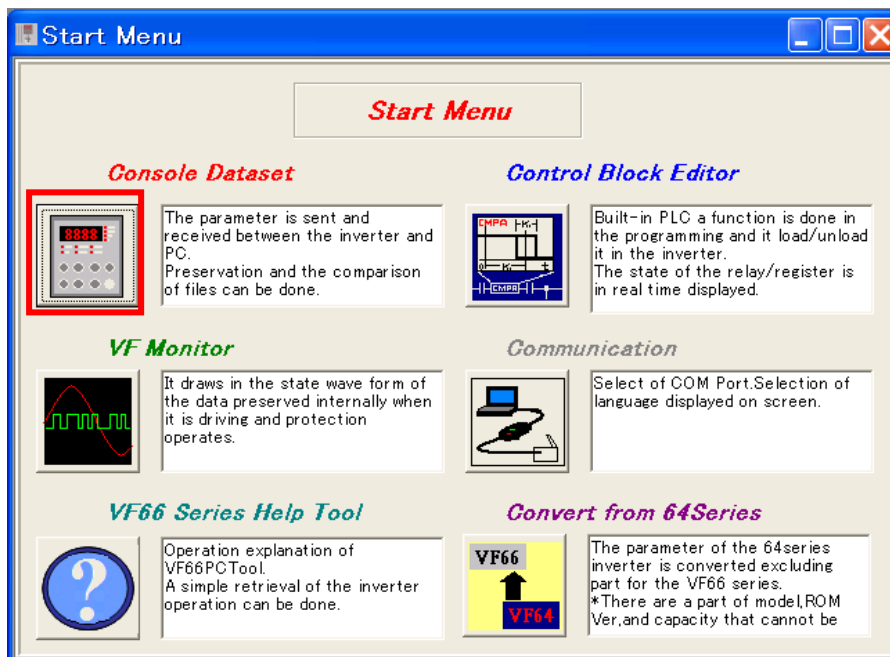
Console Dataset, the sending and receiving of the parameter (set value) from an inverter, the edit and preservation on PC can be done. It is necessary to connect the inverter and user PC with *USBIF66* to send and receive the parameter among an inverter and users PC.

2-1. Start Console Dataset

Console Dataset starts by the following procedure

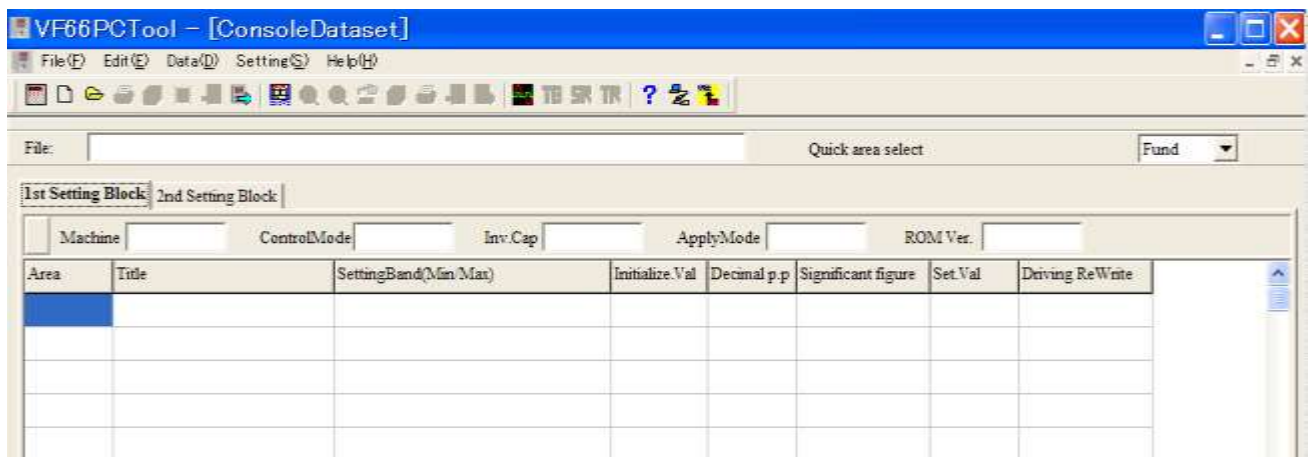
[1] Start Console Dataset

[Console Dataset] is selected from the start menu, and it is started.



[2] Main window of Console Dataset

After started, the main window is displayed as shown in the figure below.



Here easily explains each menu in the main window of Console Dataset.

File

- **File New**
The data file of the parameter is newly made. (Refer to [2-2-1.](#))
- **File Open**
Opening the preserved data file. (Refer to [2-2-3.](#))
- **Save**
Overwrite an existing file. (Refer to [2-2-4.](#))
- **Save As**
It preserves it giving the data file the name. (Refer to [2-2-4.](#))
- **Close**
The data file that is opening now is shut.
- **File Compare**
The preservation data file can be compared up to four. (Refer to [2-2-8.](#))
- **Save As CSV**
The following file compare displayed data is preserved by CSV form. (Refer to [2-2-8.](#))
- **Print**
The displayed each item is printed. (Refer to [2-2-9.](#))
- **Console Dataset Exit**
Exit the Console Dataset and the window is shut.

Edit

- **Change Inverter**
An inverter specification of the data file can be changed.

Data

- **Data Write To INV.**
The edited parameter is written in an inverter. (Refer to [2-2-6.](#))
- **One-shot Write**
Start the One-shot write mode. (Refer to [2-2-7.](#))
- **One-shot Write cancel**
Release the One-shot write mode. (Refer to [2-2-7.](#))
- **Data Load From INV.**
The parameter is read from an inverter. (Refer to [2-2-5.](#))

Setting

Communication and language setting

Select the communication port, and the language displayed on the window. (Refer to [1-4.](#))

Help

VF66 Series Help

Explain operation of VF66PCTool and a simple retrieval about operation of inverter.

Version Info

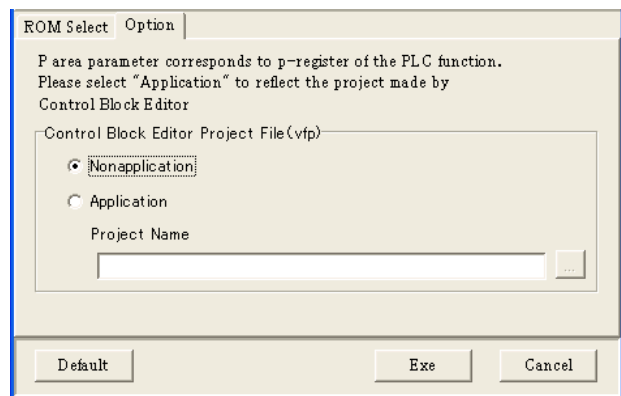
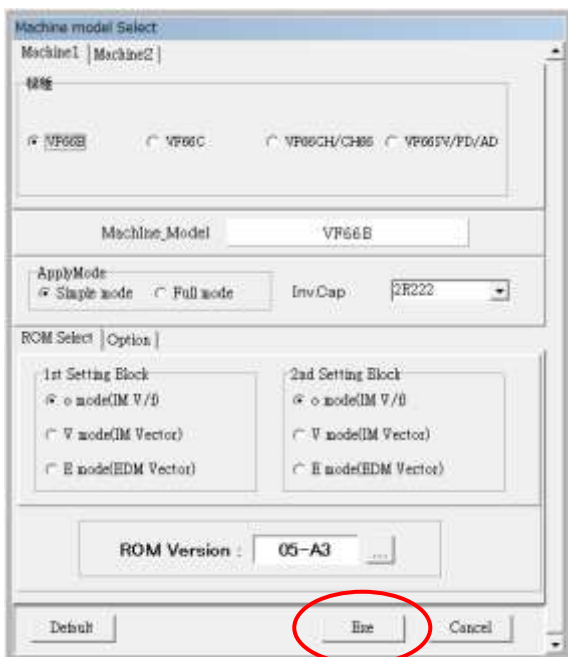
Version information is displayed.

2-2. Description of functions

2-2-1. File New

Make new data file. However, only one data file can be opened. Therefore before making the new file, the present file must be shut.

When you click [File]-[File New] in the main menu, the window is displayed as shown in the figure below. Do the setting matched to the use of products for each item on Machine model Select window.



Machine

Select the use model.

ApplyMode

Select the operation mode from the following two.

- Simple mode (To b-area)
- Full mode

Inv.Cap

Select the capacity of the inverter.

Option

The decimal point position of P area parameter can be updated by reflecting the project file made by *Control Block Editor*.

1st/2nd setting block

Select the control mode of the 1st and 2nd setting block from the following three.

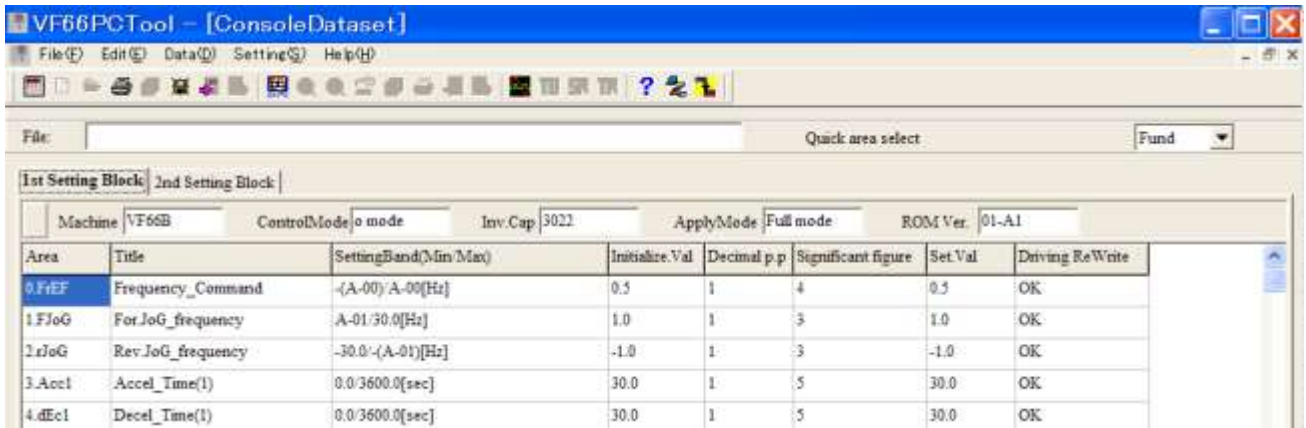
- o mode (Induction motor V/f mode)
- V mode (Induction motor vector mode)
- E mode (ED motor vector mode)

ROM Version

Select inverter ROM version. (*Seal of VFC66-Z circuit board:○○-○○)

[Note] Match each setting to the inverter that uses it without fail. Refer to the main of inverter manual for details. Moreover, the parameter is not written when not agreeing about the use of inverter to the setting inverter.

Click [Exe] when the setting ends. Each parameter is displayed as shown in the figure below.



The screenshot shows the VF66PCTool software interface. The main window displays a table of parameters for Machine VF66B. The Control Mode is set to 'o mode' and the Apply Mode is 'Full mode'. The ROM Ver. is '01-A1'. The table lists parameters for Area 0 to 4, including Frequency Command, For JoG frequency, Rev JoG frequency, Accel Time, and Decel Time.

| Area | Title | Setting Band (Min/Max) | Initialize Val | Decimal p.p | Significant figure | Set. Val | Driving ReWrite |
|--------|-------------------|------------------------|----------------|-------------|--------------------|----------|-----------------|
| 0.FrEF | Frequency_Command | -(A-00)/A-00[Hz] | 0.5 | 1 | 4 | 0.5 | OK |
| 1.FJoG | For.JoG_frequency | A-01/30.0[Hz] | 1.0 | 1 | 3 | 1.0 | OK |
| 2.rJoG | Rev.JoG_frequency | -30.0~-(A-01)[Hz] | -1.0 | 1 | 3 | -1.0 | OK |
| 3.Acc1 | Accel_Time(1) | 0.0/3600.0[sec] | 30.0 | 1 | 5 | 30.0 | OK |
| 4.dEc1 | Decel_Time(1) | 0.0/3600.0[sec] | 30.0 | 1 | 5 | 30.0 | OK |

2-2-2. Parameter Edit

◆The main window explanation

It explains each item of the main window that displays the parameter.

Refer to the inverter manual for details of each parameter.

The display of setting block is changed by this tab.

The operation history is displayed here.
Save(.txt)/Clear of the history can be executed when right-clicking in the history column.

| Area | Title | SettingBand(Min/Max) | Initialize Val | Decimal p.p |
|------|-------------------------|----------------------|----------------|-------------|
| b-00 | Rewrite_Protect | 0:OFF 1:ON | 0 | 0 |
| b-01 | Stopmode_selection | 0:2 | 1 | 0 |
| b-02 | OperationStop-frequency | 0.0-30.0[Hz] | 1.0 | 1 |
| b-03 | DChoke_operationTime | 0.0-10.0[sec] | 0.0 | 1 |
| b-04 | - | - | 0 | 0 |
| b-05 | LogStop-mode_selection | 0:2 | 0 | 0 |

SettingBand:

It is a range where the parameter can be set.

【Note】 In that case, it doesn't write it in the inverter while editing the parameter in the value that exceeds the setting range though it is possible to edit.

Initialize.Val:

It is data when the inverter is initialized. Refer to the manual of inverter for the initialization method.

Decimal p.p.:

It is the decimal point position of the parameter. The change in the parameter is not done when there is no decimal point in the proper place.

Significant figure

It is a number of significant figures of the parameter.

【Note】 In that case, it doesn't write it in the inverter in the value that exceeds the number of significant figures by editing the parameter though it is possible to edit.

Set.Val:

It is a value of the parameter set now. The value of this column is changed and the parameter is edited.

Driving Rewrite:

Whether it is possible to rewrite parameter while the inverter driving is shown.

OK: Rewritable while driving. NG: Don't rewrite while driving.

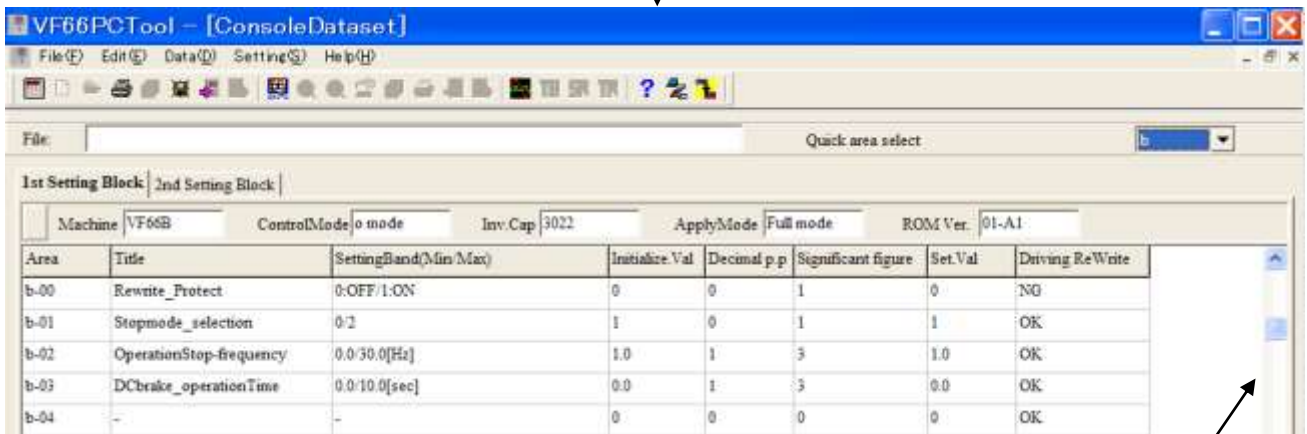
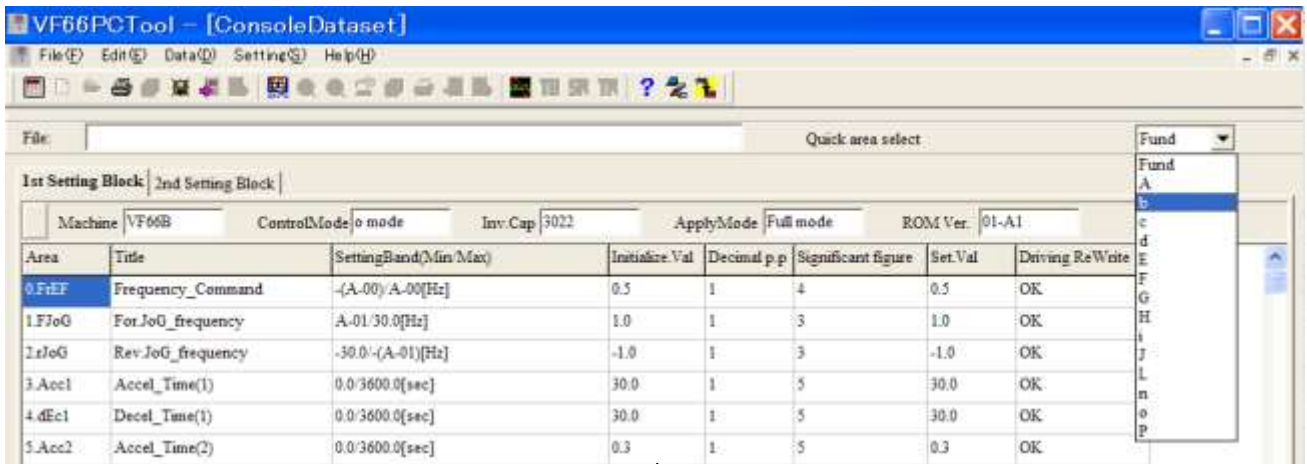
Quick area select:

The head of the selected area is displayed on top of the table.

◆Edit procedure of parameter

The parameter is edited as follows.

[1] Select the area of the parameter to be displayed on the window by the **Quick area select**.



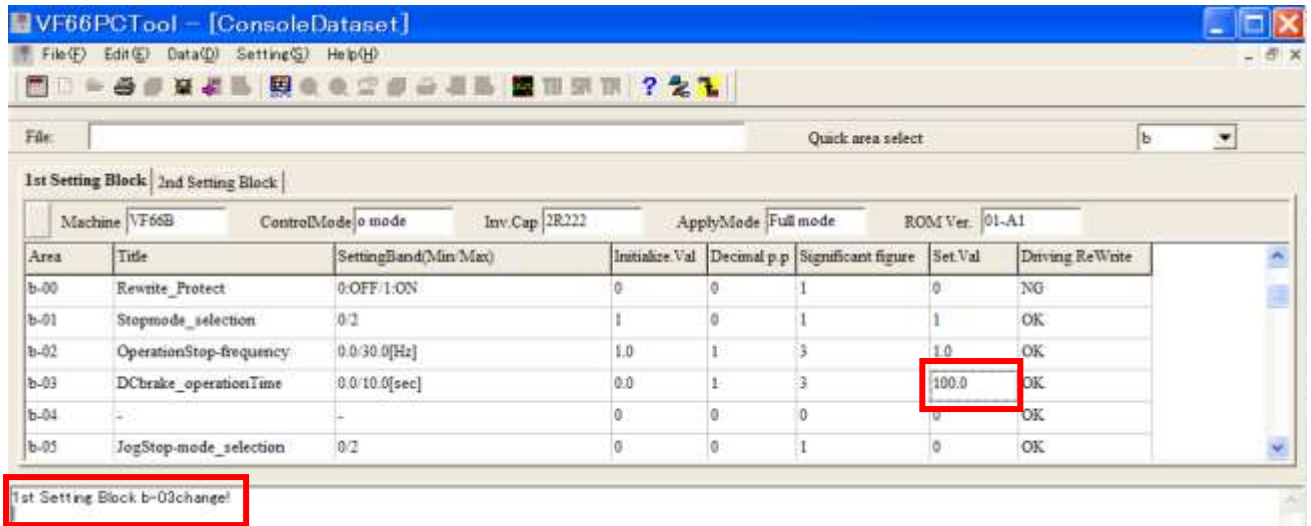
Scrollbar

In the **Quick area select**, the parameter is displayed from the top in the selected area. Move the cursor of the scrollbar on the window side up and down and display it when the parameter that changes is not displayed.

[2] Set the cursor to the column of a set value of the parameter that changes, input the value, and fix it with 'Enter'.

When the change of a set value is fixed, the input operation is displayed under the window as a history.

[Note] Input a set value noting the setting range, the decimal point position, and the number of significant figures. The details are displayed in the history column when there is a problem in the input.



[Note] c,G,J,L,P area is common area of No.1,2 Setting block. One setting blocks edit parameter of common area and automatically edit other setting block.

2-2-3. File Open

Click [File]-[Open] in the main menu and saved data file (CDS file) is opened.

If when the parameters are displayed, close a file already opened before you open a file.

2-2-4. File Save

Click [File]-[Save as] or [Save] in the main menu and the data is saved to file as *CDS*.

If you click [Save as], the data file is saved and a CSV file is created at the same time.

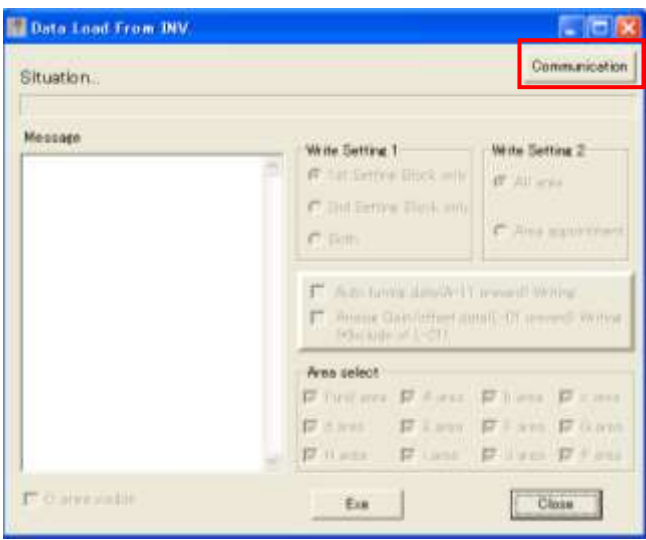
If you click [Overwrite save], the data file and the CSV file is overwritten.

[Note] When you save the display result of a file compare, click [File]-[Save as CSV] and it is saved as CSV format.

2-2-5. Data Load From INV.

The parameter value read from an inverter is displayed on the main window. Close the current data before a read. And make sure whether the inverter is connected to PC by USBIF66.

Click [Data]-[Read] in the main menu and a read execution window is displayed in the figure below.



Communication:
You may set the communication port.
(Refer to [1-4.](#))

[Note]
You can not change display language on the read execution window.

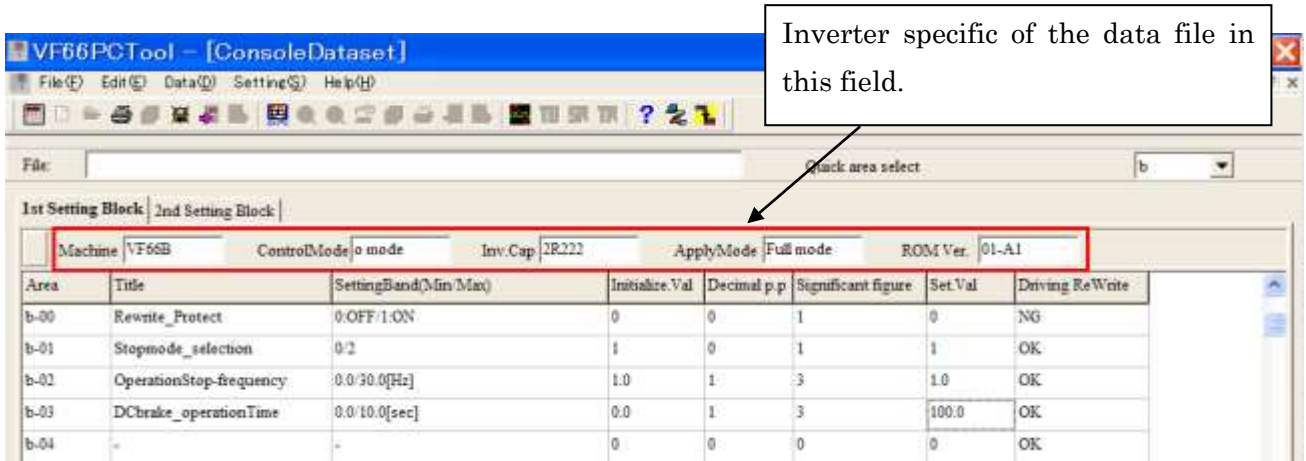
Click [Exe] and the parameter values to read and progress of read is displayed in the message field. When reading error occurs, an error message is displayed in the message field. If a reading error occurs, the read is stopped. Solve the error based on the error message and try again.

When the message “Read finished” is displayed, the read has finished. Click [Close] and the parameter values read from the inverter is displayed on the main window.

2-2-6. Data Write To INV.

You may write the parameter values of the data on the inverter. Before a write, make sure whether the inverter is connected to user's PC by *USBIF66*.

To write on the inverter, you need to conform the inverter specific of the data file to the inverter specific you use.



If you can not write on the inverter because of the discrepancy of the inverter specific, change the inverter specific of the data at [Edit] in the main menu. (Refer to [2-2-10](#).)

When you click [Data]-[Data Write To INV.] in the main menu, a write execution window is displayed. And then set each item.

The screenshot shows the "Data Write To INV." dialog box. It includes a "Message" area, "Write Setting 1" (radio buttons for 1st Setting Block only, 2nd Setting Block only, Both), "Write Setting 2" (radio buttons for All area, Area appointment), checkboxes for "Auto tuning data(A-11 onward) Writing" and "Analog Gain/offset data(L-01 onward) Writing (*Include of L-21)", and an "Area select" section with checkboxes for Fund area, A area, b area, c area, d area, E area, F area, G area, H area, I area, J area, and P area. There are also "Exe" and "Close" buttons.

Write setting1:
Select the setting block you want write.

Write setting2:
Select the writing method either of all or the area specification.

Write Auto tuning data, Analog gain and offset data:
If you check the box, you can write items below to an inverter.

- Auto tuning data(A-11 onward)
- Analog gain/offset data(L-01 to 20)

Normally, there is not check. You check the box, when you wish to write the data.

[Note] You can not change display language from this window.

Area select: (“Area appointment” only)

Select parameter area to write.

O area visible:

O area is for our engineer. If you check there, you can get on error message.

(Except O area, you always get error message.)

Communication:

Set communication port.

(Refer to 1-4.)

Click [Exe] after setting. As starting to write on the inverter, you get information of progress condition at message column. As errors occur, you get information at the message column.

If errors occur, writing on the inverter stop, at that time, check message column, and then solve the issues. Write on again.

At the end of writing on, make sure the displayed message is “*Writing end*”.

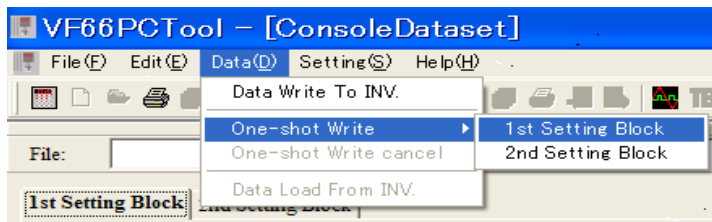
2-2-7. One-shot write mode

Using this mode, it can be done to write in inverter at the same time as only the edited item. Before starting this mode, confirm the *USBIF66* connection between PC and the inverter.

On condition to write on, the inverter specification of displayed data should be the same as the inverter specification in use. The details are referred to **2-2-6. Write on inverter.**

To start this mode: Click [Date]-[One-shot Write] in the main menu, then select the setting block. A lump of selected the Setting Block is turned on red color.

(In the figure below, Example when 1st Setting Block is selected by One-shot Write)



The screenshot shows the main data table in the 'VF66PCTool - [ConsoleDataset]' window. The '1st Setting Block' is highlighted in red. The table contains the following data:

| Area | Title | SettingBand(Min/Max) | Initialize Val | Decimal p.p | Significant figure | Set.Val | Driving ReWrite |
|--------|-----------------------|----------------------|----------------|-------------|--------------------|---------|-----------------|
| 0.FrEF | Frequency_command | -(A-00)/A-00[Hz] | 0.5 | 1 | 4 | 0.5 | OK |
| 1.FJoG | Forward_JOG_frequency | A-01/30.0[Hz] | 1.0 | 1 | 3 | 1.0 | OK |
| 2.rJoG | Reverse_JOG_frequency | -30.0/-(A-01)[Hz] | -1.0 | 1 | 3 | -1.0 | OK |
| 3.Acc1 | Acceleration_time(1) | 0.0/3600.0[sec] | 30.0 | 1 | 5 | 30.0 | OK |
| 4.dEc1 | Deceleration_time(1) | 0.0/3600.0[sec] | 30.0 | 1 | 5 | 30.0 | OK |
| 5.Acc2 | Acceleration_time(2) | 0.0/3600.0[sec] | 0.3 | 1 | 5 | 0.3 | OK |

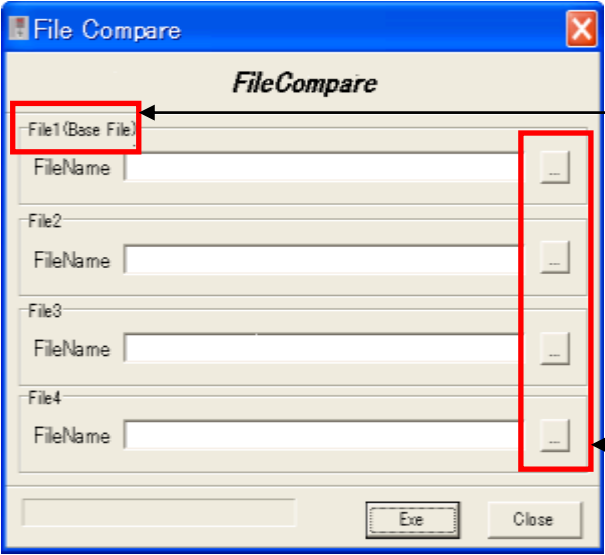
If you edit parameter at the condition of starting the mode, input and writing on the inverter start at the same time. When “Driving ReWrite” column is “NG”, this mode does not work while the inverter is driving. This mode only works for the selected set block when the mode starts. If you take the mode for other set block, you should select the other set block again.

When you cancel this mode, click [Data]-[One-shot Write cancel] in the main menu.

2-2-8. File Compare

FileCompare is used to select some data files at preserved data file, and then to compare with parameters of selected file. Close the current data before starting FileCompare.

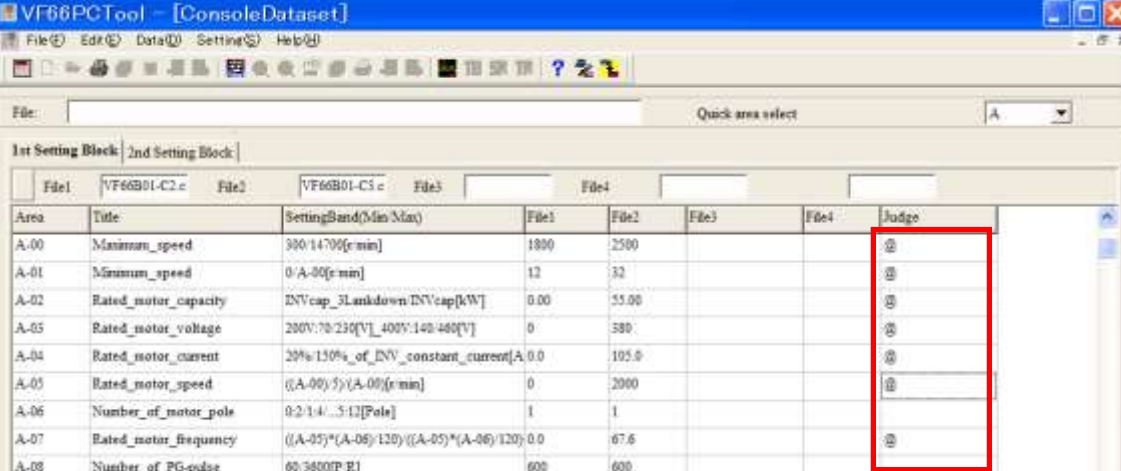
When you click [File]-[FileCompare] in the main menu, a file select window is displayed as shown in the figure below.



File1(Base File):
It is a standard in “File1” that the parameter of the selected file compares with the parameter of other files.
Also if File1 is not selected, FileCompare does not work.

Files to be compared with this button are selected.

The comparison is executed when clicking on a button after the file is selected. When comparing is finished, you get the message “Complete”, and then get the result of each file’s parameter.



| Area | Title | SettingBand(Min/Max) | File1 | File2 | File3 | File4 | Judge |
|------|-----------------------|---|-------|-------|-------|-------|-------|
| A-00 | Maximum_speed | 300/14700[r/min] | 1800 | 2500 | | | |
| A-01 | Minimum_speed | 0/A-00[r/min] | 12 | 32 | | | @ |
| A-02 | Rated_motor_capacity | INVcap_3Lamkdown[INVcap[kW]] | 0.00 | 55.00 | | | @ |
| A-03 | Rated_motor_voltage | 230V:70-230[V]_400V:140-400[V] | 0 | 580 | | | @ |
| A-04 | Rated_motor_current | 20%:150%_of_INV_constant_current[A] | 0.0 | 102.0 | | | @ |
| A-05 | Rated_motor_speed | ((A-00)/5)/(A-00)[r/min] | 0 | 2000 | | | @ |
| A-06 | Number_of_motor_pole | 0:2/14...5/12[Pole] | 1 | 1 | | | |
| A-07 | Rated_motor_frequency | ((A-05)*(A-06)/120)/((A-05)*(A-06)/120) | 0.0 | 67.5 | | | @ |
| A-08 | Number_of_PG-pulse | 00:3600[P/R] | 600 | 600 | | | |

- Area’s name, Title, and SettingBand are data of Standard File(File1).
- If set values of other files(File2~4) is difference with File1, ‘@’ is displayed “Judge” at the column.
- If you wish to save result data, click [File]-[Save As CSV] in the main menu.

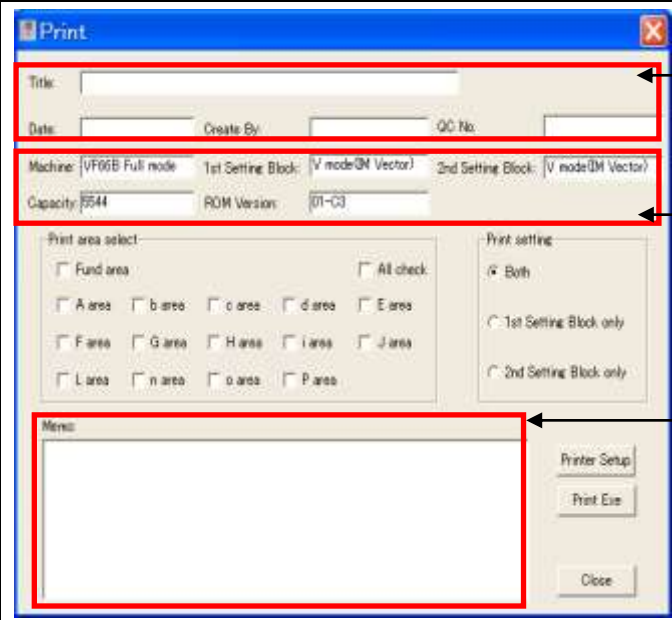
[Note] About copy, refer to **2-2-9. Print** ♦ **FileCompare window.**

2-2-9. Print

It is possible to print parameter displayed at main window, and date operated FileCompare.

When you click [File]-[Print] in the main menu, a print execution window is displayed. And then set the each item.

◆ Normally window



The screenshot shows the 'Print' dialog box with the following fields and options:

- Title: []
- Date: [] Create By: [] QC No: []
- Machine: VF06B Full mode 1st Setting Block: V mode(0M Vector) 2nd Setting Block: V mode(0M Vector)
- Capacity: 6544 ROM Version: 01-C3
- Print area select: Fund area All check, A area b area c area d area E area, F area G area H area I area J area, L area n area o area P area
- Print setting: Both, 1st Setting Block only, 2nd Setting Block only
- Memo: []
- Buttons: Printer Setup, Print Exe, Close

Annotations with arrows point to:

- The top input fields (Title, Date, Create By, QC No).
- The Machine and Capacity fields.
- The Memo column.

Print area select:

Select the printed area. Check “All check” when you wish to print all areas.

Print setting:

Select the printed setting block.

Printer Setup:

It is a setup button of the printer.

[Note] The number of items printed by the printer orientation changes. Part is omitted and it is printed at the length print.

Click [Print Exe] when the setting ends.

◆ FileCompare window

| | |
|--|---|
| | <p>← Compared the file names are displayed.</p> |
|--|---|

Print area select is same as **Normally window**.

2-2-10. Change Inverter

It is used to change the inverter's specification of data in use. It can change Operation Mode, Inverter Capacity, and Rom version. (It does not shift from Full mode to Simple mode.)

When you click [Edit]-[Change Inverter] in the main menu, [Machine model Select] window is displayed.

Do the setting matched to the use of products for each item on the Machine model Select.

| | |
|--|--|
| | <p>ApplyMode: Select operation mode. 【Note】 Full mode does not shift to Simple mode.</p> <p>Inv. Cap: Select capacity of inverter.</p> <p>ROM Version: Select inverter ROM version. (*Seal of VFC66-Z circuit board:○○-○○) 【Note】 Machine and Control mode do not change.</p> |
|--|--|

Click [Exe] when the setting ends.

Chapter 3 VF Monitor

VF Monitor has functions which are trend monitor function, trace-back function, and multi monitor tool. The trend monitor function can, in real time monitor the internal operation data (Ex. torque reference, output current, output voltage, and internal PLC function output) and each signal waveform (Ex. analog data, multi function I/O data). The trace-back function is a function used to display the graph as for the data when the inverter does the protection operation or it breaks down. Moreover, the storage function is equipped with the trigger function.

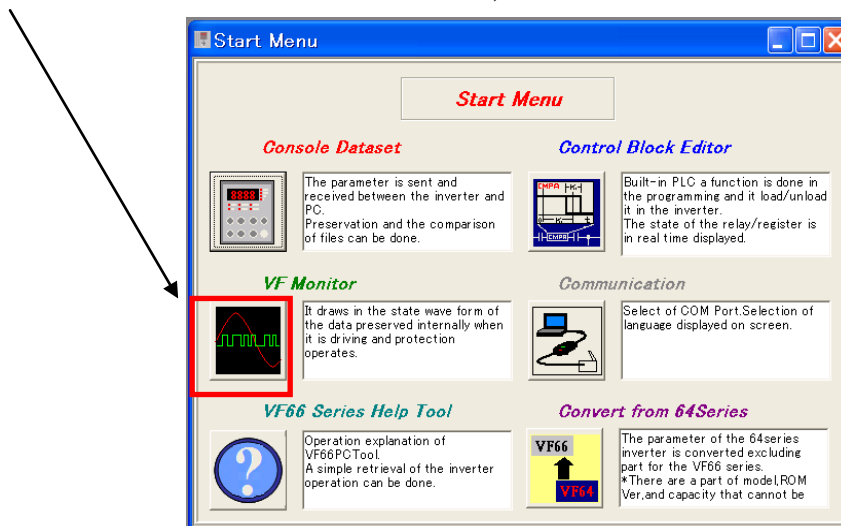
Notes : Because VF66B (EMS) is for our adjustment, the model name is displayed on the screen, but it can not be used.

3-1. Start VF Monitor

VF Monitor starts by the following procedure.

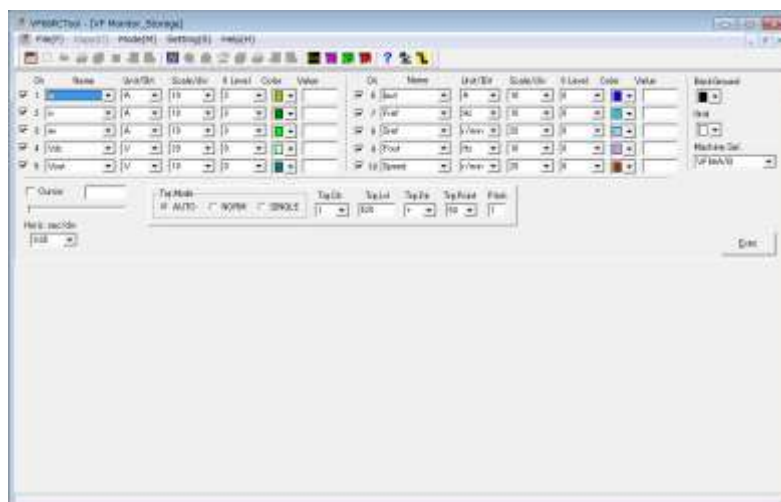
[1] Start VF Monitor

[VF Monitor] is selected from the start menu, and it is started.



[2] Display VF Monitor at main menu

After started the main window (as *Storage Mode*) below is displayed.



Here easily explains each menu in the main window of VF Monitor.

File

- **Open Log File**
Opening the preserved data log file.
- **Save Log File**
The displayed data is preserved.*
- **Save CSV file (unit)**
The displayed data is preserved by the CSV form.
- **Save CSV file (digit unit)**
The displayed data is preserved by the CSV form.
- **Screen Print**
The window is printed. It is possible to preserve it as a BMP file.
- **VF monitor Exit**
Exit the VF monitor.

*File expansion (*Trace-back Mode: .trc, Storage Mode: .str, Trend Mode: .trd*)

Copy

- Stopping of description as selecting a range, and then to copy the range at clip board.
(⇒Refer to [3-6.](#))

Mode

- **TraceBck**
Display the graph as for the data when an inverter does the protection operation or it breaks down. (⇒Refer to [3-2.](#))
- **Data Load from INV.**
Trace-back data is read from an inverter. If there are many data, select a block to describe. (⇒Refer to [3-2-1.](#))
- **Storage**
The graph display that accumulated data in an inverter by the set cycle.
(⇒Refer to [3-3.](#))
- **Trend**
The real-time data is displayed in the graph. (⇒Refer to [3-4.](#))

Setting

- **Communication and language setting**
Select the communication port, and the language displayed on the window. (Refer to [1-4.](#))

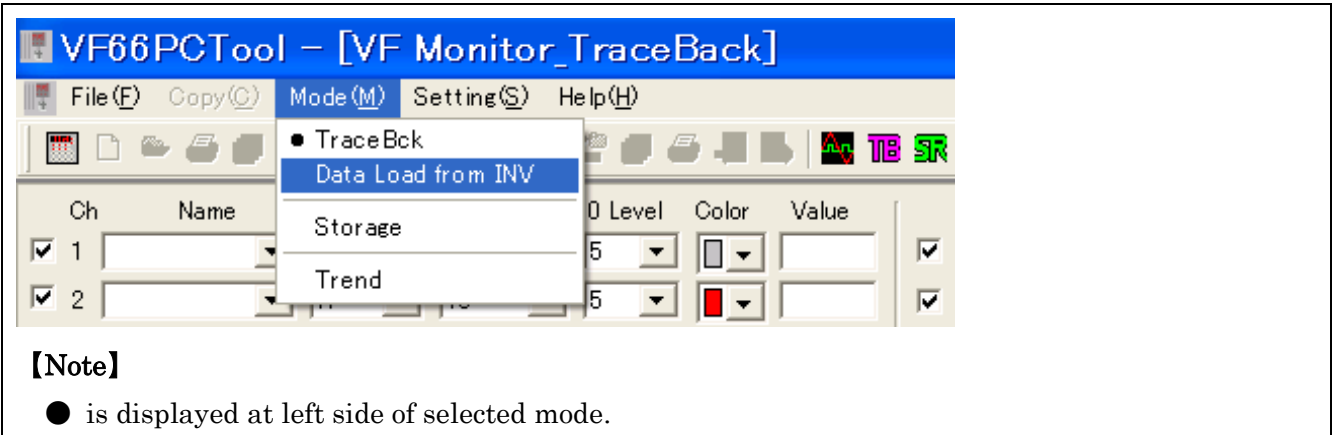
Help

- **VF66 Series Help**
Explain operation of VF66PCTool and a simple retrieval about operation of inverter.
- **Version Info**
Version information is displayed.

3-2. Trace-Back Mode

3-2-1. Get data of Trace-back

When you click [Mode]-[TraceBck] in the main menu. Select *Trace-back Mode* and then select [Date Load from INV] for reading in trace-back data.

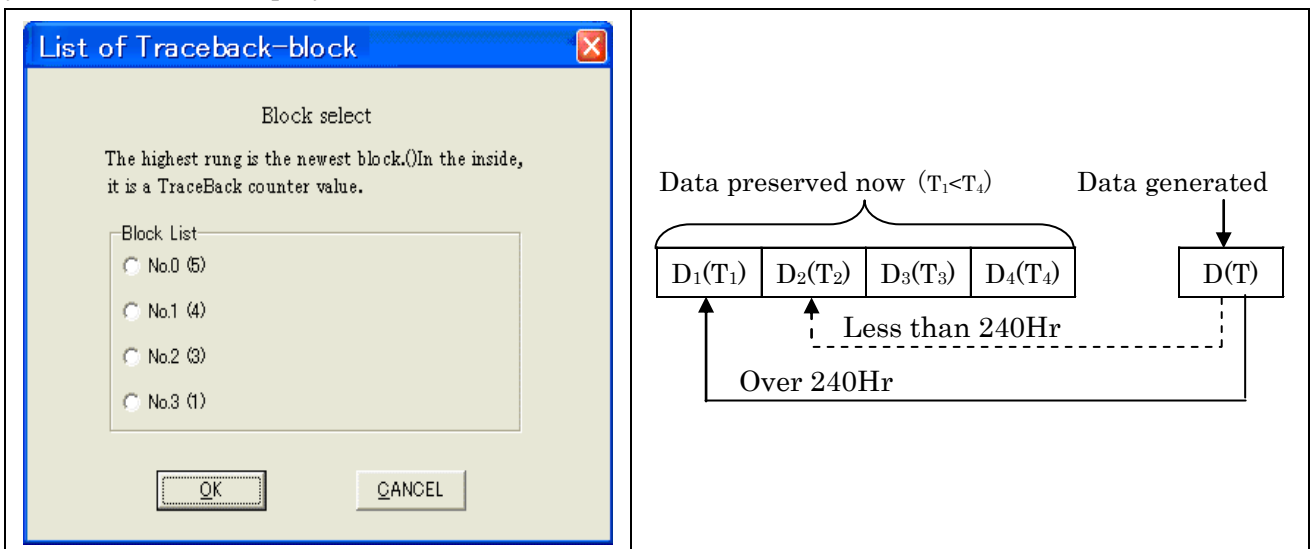


【Note】

● is displayed at left side of selected mode.

3-2-2. Select Trace-back Data.

When [Date Load from INV] is selected, the figure below is displayed. To select data block which you would like to display from trace-back data.



【Note】

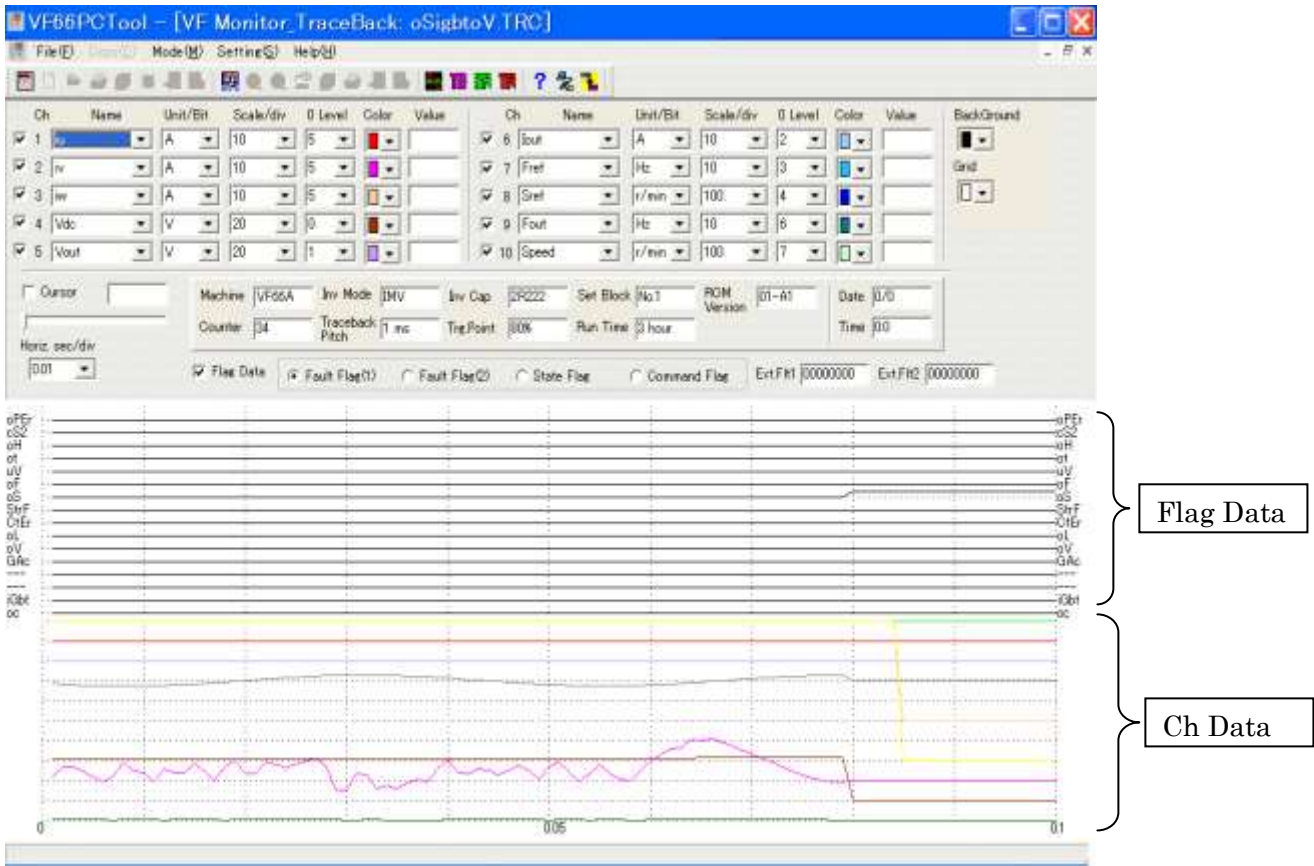
About the data superscription since the fifth times.

When the difference with the accumulation driving time (T) when trace-back function operates and the preserved latest data (T₄) is over 240 hours, data 'D' is overwrite to 'D₁'. However, overwrite to 'D₂' when less than 240 hours.

Also, if reset operation and deleting of protected record start, all data clear.

3-2-3. Display Trace-back Data

At the end of reading data from the inverter, graph is displayed.



Flag Data:

The graph is displayed upper side. Refer to **3-2-4. Operation of Trace-back Data** for a detailed explanation of each item.

(As “Flag Data” has a check mark, it is displayed)

Ch Data:

The data by the channel is displayed. (The graph is displayed bigger, if a check of “Flag Data” is uncheck.)

Flag Data can be selected also with the channel.

3-2-4. Operation of Trace-back Mode

The followings are explanation of each item.

| Items | Description | |
|------------------|--|--|
| Ch | Number of Channel | |
| Name | Measuring item | |
| Unit/Bit | Unit of measuring items | Flag: Bit data Data: Unit |
| Scale/div | Vertical line(per a grid) (⇒Refer to 3-5. Scale • 0Level) | |
| 0 Level | Off-set (⇒Refer to 3-5. Scale • 0Level) | |
| Color | Graph color | |
| Value | Cursor measurement value | |
| BackGround | Background color | |
| Grid | Grid color | |
| Cursor | If there is a check, cursor line is displayed, and value of cross point between the cursor line and graph is displayed at each channel [Value] column. | |
| Horiz. Sec/div | Horizontal line (Time per a grid) | |
| Horiz. Point/div | Horizontal line(Number of point per a grid) | |
| Machine | Machine Type of protected driving | |
| Inv Mode | Control mode at protected driving. | |
| | machine : VF66B、VF66B (EMS)、VF66SV、VF66SDS、VF66B(Tex) | machine : VF66CH |
| | o mode : Induction Motor V/f mode V mode : Induction Motor vector mode E mode : ED Motor vector mode | 66CH : Buck 66CHb : Buck(BTS) CH66 : Buck-boost |
| | machine : VF66B (DCM Drive) | machine : VF66G (Utility Interactive Inverter) |
| | DCM Mode : DC Motor Drive mode | Govener : Governor control Interconnection : Utility Connected Operation / Isolated Operation |
| | machine : VF66R (PWM Sinusoidal Wave Converter) pwmmode:PWM Sinusoidal Wave Converter 120mode: 120 degree conduction | |
| Inv Cap | Inverter capacity at protected driving | |
| Set Block | Setting block at protected driving | No.1: 1st setting block No.2: 2nd setting block |
| ROM Version | ROM Version(*Seal of VFC66-Z circuit board:○○-○○) | |
| Counter | Value of Trace-back counter | |
| Traceback Pitch | Trace-back pitch | F-13 (INV.set value) |
| Trg. Point | Trigger point | F-14 (INV.set value) |
| Run time | Accumulation driving time when protected | |
| Date | Send date from communication option when protected | *J-14:ON |
| Time | Send time from communication option when protected | *Binary data |

| | |
|---------------|--|
| Flag Data | Flag Data display switch. (check:Visible/uncheck:Invisible) (If flag data does not display, The data of channel is displayed bigger.) |
| Fault Flag(1) | Protection/Trouble Flag(1)*1 |
| Fault Flag(2) | Protection/Trouble Flag(2) *1 |
| State Flag | Inverter state flag*1 |
| Command Flag | Inverter command flag*1 |
| Ext. Flt1 | Bit information No.1 of protecting detection from GAC*1 |
| Ext. Flt2 | Bit information No.2 of protecting detection from GAC*1 |

*1: Refer to **3-2-5. Explanation of Channel/Flag**

【Note】 The data displayed by selecting the data name is changing

3-2-5. Explanation of Channel/Flag

[Channel]

[machine : VF66B、VF66B (EMS)、VF66SV、VF66SDS、VF66B(Tex)]

| Name of Channel | Description |
|-------------------------------|--|
| iu | Output current of U phase(instantaneous value) |
| iv | Output current of V phase(instantaneous value) |
| iw | Output current of W phase(instantaneous value) |
| Vdc | DC voltage |
| Vout | Output voltage(Effective value) |
| ---/Speed/Speed* ¹ | Not set/Rotation speed/Rotation speed* ¹ |
| Fref/Sref/Sref* ¹ | Frequency command/Rotation Speed command /Rotation Speed command* ¹ |
| Trq | Torque |
| Fout | Output Frequency |
| ---/Slip/id* ¹ | Not set / Slip Frequency / d axis current* ¹ |
| ---/Flx/iq* ¹ | Not set / Magnetic Flux / q axis current* ¹ |
| Temp/Temp/daxis* ¹ | Temperature / Temperature / d axis position* ¹ |
| Fault Flag(1) | Protection/Trouble flag(1) * ² |
| Fault Flag(2) | Protection/Trouble flag(2) * ² |
| State Flag | Inverter state flag* ² |
| Command Flag | Inverter command flag* ² |
| t00000~t00000B | Trace-back register* ³ [Note] 100%/20000digit |

*1: It depends on control mode, from left.

o mode: Induction V/f mode

V mode: Induction Vector mode

E mode: ED motor Vector

*2: Refer to **Flag**.

*3: You can select when use Trace-back register of internal PLC function.

[machine : VF66CH]

| Name of Channel | Description |
|-----------------------|--|
| iu | Output current of U phase(instantaneous value) |
| iv | Output current of V phase(instantaneous value) |
| iw | Output current of W phase(instantaneous value) |
| Vdc | DC voltage |
| Vout | Output voltage(Effective value) |
| AVR | AVR Current command with filter |
| Vref | Voltage Command |
| Iref | Current Command |
| DutyU | U phase Duty |
| DutyV / Iout / Iout*1 | V phase Duty / Current of controlled object / Current of controlled object*1 |
| DutyW | W phase Duty |
| Temp | Reactor Temperature |
| Fault Flag(1) | Protection/Trouble flag(1) *2 |
| Fault Flag(2) | Protection/Trouble flag(2) *2 |
| State Flag | state flag*2 |
| Command Flag | command flag*2 |
| t00000~t0000B | Trace-back register*3 【Note】 100%/20000digit |

*1: It depends on control mode, from left.

66CH / 66CHb / CH66

*2: Refer to **Flag**.

*3: You can select when use Trace-back register of internal PLC function.

[machine : VF66B (DCM Drive)]

| Name of Channel | Description |
|-----------------|--|
| --- | [Special Adjustment] |
| ia+ | Armature current (+ side DCCT detection) |
| ia- | Armature current (- side DCCT detection) |
| Vdc | Input DC Voltage |
| Vout | Output DC voltage |
| Speed | Rotation speed* ¹ |
| Sref | Rotation Speed command* ¹ |
| iaref | Armature current command |
| --- | [Special Adjustment] |
| ia | Armature current |
| --- | [Special Adjustment] |
| Temp | Temperature * ¹ |
| Fault Flag(1) | Protection/Trouble flag(1) * ² |
| Fault Flag(2) | Protection/Trouble flag(2) * ² |
| State Flag | state flag* ² |
| Command Flag | command flag* ² |
| t 00000~t0000B | Trace-back register* ³ 【Note】 100%/20000digit |

*1: Control mode is the one.

*2: Refer to **Flag**.

*3: You can select when use Trace-back register of internal PLC function.

[machine : VF66G (Utility Connected Operation)]

| Interconnection | | Govener | |
|-----------------|--------------------------------|-----------------|--------------------------|
| Name of Channel | Description | Name of Channel | Description |
| iu | U phase current | iu | U phase current |
| iv | V phase current | iv | V phase current |
| iw | W phase current | iw | W phase current |
| vdc | DC voltage | vdc | DC voltage |
| L_Vu | U phase output voltage | Vout | Output voltage |
| L_Vv | V phase output voltage | L_V | Bus-bar voltage |
| L_Vw | W phase output voltage | L_Vr | R phase voltage |
| Vu_ref | U phase output voltage command | i_crs | --- |
| Vv_ref | V phase output voltage command | fgav | Governor frequency |
| Vw_ref | W phase output voltage command | fout | Output frequency |
| vdc_ref | DC voltage command | id | Active current |
| id_ref | Active current command | iq | Reactive current |
| Fault Flag(1)_C | Fault flag (1) | Fault Flag(1)_V | Fault flag (1) |
| Fault Flag(2)_C | Fault flag (2) | Fault Flag(2)_V | Fault flag (2) |
| State Flag_C | Operation condition flag | State Flag_V | Operation condition flag |
| Command Flag_C | Command Flag | Command Flag_V | Command Flag |

[machine : VF66R (PWM Sinusoidal wave converter)]

| Name of Channel | Description |
|-----------------|--------------------------------|
| iu | U phase current |
| iv | V phase current |
| iw | W phase current |
| vdc | DC voltage |
| L_Vu | U phase output voltage |
| L_Vv | V phase output voltage |
| L_Vw | W phase output voltage |
| Vu_ref | U phase output voltage command |
| Vv_ref | V phase output voltage command |
| Vw_ref | W phase output voltage command |
| vdc_ref | DC voltage command |
| id_ref | Active current command |
| Fault Flag(1)_C | Fault flag (1) |
| Fault Flag(2)_C | Fault flag (2) |
| State Flag_C | Operation condition flag |
| Command Flag_C | Command Flag |

[Flag]

Contents of each Flag are as follows. Details refer inverter manual.

[machine : VF66B、VF66B (EMS)、VF66B(Tex)]

| Fault Flag(1) | |
|---------------|--|
| Display | Description |
| oc | Over Current protect |
| iGbt | IGBT protect operation |
| --- | --- |
| --- | --- |
| GAc | Gate amp board error (⇒refer to below:Ext.Flag) |
| oV | Over Voltage of DC input voltage |
| oL | Over Load protect |
| CtEr | Abnormal current sensor |
| StrF | Start jam |
| oS | Over Speed protect |
| oF | Over Frequency protect |
| uV | Under Voltage(Power Failure) |
| ot | Over Toque protect |
| oH | Over heat unit(IGBT) |
| cS2 | Abnormal stored memory |
| oPEr | Option error |

| Fault Flag(2) | |
|---------------|------------------------------|
| Display | Description |
| SLSE | Sensor less starting error |
| tS | Communication time out error |
| SPdE | Speed control error |
| inoH | Over heat motor |
| roH | Over heat charge resistance |
| FcL | FCL operation |
| SE--- | Setting error |
| Cut | Lacking phase |
| PSL | CPU processing glitches |
| FnF | Fan failure |
| PEr | PG error |
| SnE | Sensor error |
| EF1 | External failure1 |
| EF2 | External failure2 |
| EF3 | External failure3 |
| EF4 | External failure4 |

| State Flag | |
|------------|---|
| Display | Description |
| start | Normal operation command |
| run | Normal operation |
| jog | Jog operation |
| rev | Reverse command |
| DC | DC Excite |
| powdw | Power Failure |
| Mes | Automatic Measurement |
| Gate | IGBT drive |
| Excit | Excite |
| DcB | DC Brake |
| FlxUp | Flux intensify when start |
| PgEnd | End of program operation |
| --- | --- |
| revic | Reverse order last operation |
| --- | --- |
| fcl | High speed current limited(FCL) driving |

| Command Flag | |
|--------------|-------------------------------------|
| Display | Description |
| start | Normal Operation command |
| jog | Jog operation command |
| rev | Reverse command |
| Excit | Excite command |
| DcB | DC Brake command |
| Rst | Reset command |
| Excia | First Excite command |
| Emg | Emergency Stop command |
| DcExc | DC Excite command |
| OSpdH | Orpm speed keeping command |
| Mes | Automatic measurement command |
| EmgB | Emergency Contact-B command |
| --- | --- |
| --- | --- |
| --- | --- |
| Cnv | Constant re-calculation requirement |

[machine : VF66CH]

| Fault Flag(1) | |
|---------------|--|
| Display | Description |
| oc | Over Current protect |
| iGbt | IGBT protect operation |
| EmgA | Emergency Contact-A command |
| EmgB | Emergency Contact-B command |
| GAc | Gate amp board error (⇒refer to below:Ext.Flag) |
| oV | Over Voltage of DC input voltage |
| oL | Over Load protect |
| — | — |
| StrF | Start jam |
| — | — |
| — | — |
| uV | Under Voltage(Power Failure) |
| — | — |
| oH | Over heat unit(IGBT) |
| cS2 | Abnormal stored memory |
| oPEr | Option error |

| Fault Flag(2) | |
|---------------|------------------------------|
| Display | Description |
| LoH | Reactor overheat protect |
| tS | Communication time out error |
| AVrE | Voltage control error |
| bLnc | Abnormality Current balance |
| roH | Charging resistance overheat |
| FcL | FCL operation |
| SE-- | Setting error |
| — | — |
| PSL | CPU processing glitches |
| FnF | Fan failure |
| — | — |
| SnE | Sensor error |
| EF1 | External failure1 |
| EF2 | External failure2 |
| EF3 | External failure3 |
| EF4 | External failure4 |

| State Flag | |
|------------|--|
| Display | Description |
| start | Normal operation command |
| run | Normal operation |
| — | — |
| — | — |
| — | — |
| powdw | Power Failure |
| — | — |
| Gate | IGBT drive |
| — | — |
| — | — |
| — | — |
| — | — |
| — | — |
| — | — |
| — | — |
| fcl | High speed current limited(FCL) driving |

| Command Flag | |
|--------------|--|
| Display | Description |
| start | Normal Operation command |
| — | — |
| — | — |
| — | — |
| — | — |
| Rst | Reset command |
| — | — |
| Emg | Emergency Stop command |
| — | — |
| 0vltH | 0[V] keeping command |
| — | — |
| EmgB | Emergency Contact-B command |
| — | — |
| — | — |
| — | — |
| Cnv | Constant re-calculation requirement |

[machine : VF66SV、VF66SDS]

| Fault Flag(1) | |
|---------------|--|
| Display | Description |
| oc | Over Current protect |
| iGbt | IGBT protect operation |
| --- | --- |
| --- | --- |
| GAc | Gate amp board error (⇒refer to below:Ext.Flag) |
| oV | Over Voltage of DC input voltage |
| oL | Over Load protect |
| CtEr | Abnormal current sensor |
| StrF | Start jam |
| oS | Over Speed protect |
| oF | Over Frequency protect |
| uV | Under Voltage(Power Failure) |
| ot | Over Toque protect |
| oH | Over heat unit(IGBT) |
| cS2 | Abnormal stored memory |
| CPu2 | Second CPU error |

| Fault Flag(2) | |
|---------------|------------------------------|
| Display | Description |
| SLSE | Sensor less starting error |
| tS | Communication time out error |
| SPdE | Speed control error |
| inoH | Over heat motor |
| roH | Over heat charge resistance |
| FcL | FCL operation |
| SE--- | Setting error |
| Cut | Lacking phase |
| PSL | CPU processing glitches |
| FnF | Fan failure |
| PEr | PG error |
| SnE | Sensor error |
| EF1 | External failure1 |
| EF2 | External failure2 |
| EF3 | External failure3 |
| EF4 | External failure4 |

| State Flag | |
|------------|--|
| Display | Description |
| start | Normal operation command |
| run | Normal operation |
| jog | Jog operation |
| rev | Reverse command |
| DC | DC Excite |
| powdw | Power Failure |
| Mes | Automatic Measurement |
| Gate | IGBT drive |
| Excit | Excite |
| DcB | DC Brake |
| FlxUp | Flux intensify when start |
| PgEnd | End of program operation |
| --- | --- |
| revic | Reverse order last operation |
| --- | --- |
| fcl | High speed current limited(FCL) driving |

| Command Flag | |
|--------------|--|
| Display | Description |
| start | Normal Operation command |
| jog | Jog operation command |
| rev | Reverse command |
| Excit | Excite command |
| DcB | DC Brake command |
| Rst | Reset command |
| Excia | First Excite command |
| Emg | Emergency Stop command |
| DcExc | DC Excite command |
| OSpdH | Orpm speed keeping command |
| Mes | Automatic measurement command |
| EmgB | Emergency Contact-B command |
| --- | --- |
| --- | --- |
| --- | --- |
| Cnv | Constant re-calculation requirement |

[machine : VF66B (DCM Drive)]

| Fault Flag(1) | |
|---------------|--|
| Display | Description |
| oc | Over Current protect |
| iGbt | IGBT protect operation |
| --- | --- |
| --- | --- |
| GAc | Gate amp board error (⇒refer to below:Ext.Flag) |
| oV_i | Over Voltage of DC input voltage |
| oL | Over Load protect |
| iFoc | Field over current |
| StrF | Start jam |
| oS | Over Speed protect |
| oV_o | Over Voltage of DC output voltage |
| uV | Under Voltage(Power Failure) |
| iFEr | Field loss |
| oH | Over heat unit(IGBT) |
| cS2 | Abnormal stored memory |
| oPEr | Option error |

| Fault Flag(2) | |
|---------------|------------------------------|
| Display | Description |
| --- | --- |
| tS | Communication time out error |
| SPdE | Speed control error |
| inoH | Over heat motor |
| roH | Over heat charge resistance |
| --- | --- |
| SE--- | Setting error |
| --- | --- |
| PSL | CPU processing glitches |
| FnF | Fan failure |
| PEr | PG error |
| --- | --- |
| EF1 | External failure1 |
| EF2 | External failure2 |
| EF3 | External failure3 |
| EF4 | External failure4 |

| State Flag | |
|------------|--|
| Display | Description |
| start | Normal operation command |
| run | Normal operation |
| jog | Jog operation |
| rev | Reverse command |
| --- | --- |
| powdw | Power Failure |
| Mes | Automatic Measurement |
| Gate | IGBT drive |
| --- | --- |
| --- | --- |
| --- | --- |
| PgEnd | End of program operation |
| --- | --- |
| revic | Reverse order last operation |
| --- | --- |
| fcl | High speed current limited(FCL) driving |

| Command Flag | |
|--------------|--|
| Display | Description |
| start | Normal Operation command |
| jog | Jog operation command |
| rev | Reverse command |
| --- | --- |
| --- | --- |
| Rst | Reset command |
| --- | --- |
| Emg | Emergency Stop command |
| DcExc | DC Excite command |
| OSpdH | Orpm speed keeping command |
| Mes | Automatic measurement command |
| EmgB | Emergency Contact-B command |
| --- | --- |
| --- | --- |
| --- | --- |
| Cnv | Constant re-calculation requirement |

[machine : VF66G (Governor control)]

| Fault Flag(1)_V | |
|-----------------|------------------------------------|
| Display | Description |
| oc | Over Current protect |
| iGbt | IGBT protect operation |
| --- | --- |
| --- | --- |
| GAc | Gate amp board error |
| oV | |
| oL | Over Load protect |
| CtEr | Abnormal current sensor |
| StrF | Start jam |
| --- | --- |
| FCL | High speed current limited driving |
| uV | Under Voltage |
| oH | Over heat unit |
| --- | --- |
| cS2 | Abnormal stored memory |
| oPEr | Option error |

| Fault Flag(2)_V | |
|-----------------|------------------------------|
| Display | Description |
| --- | --- |
| tS | Communication time out error |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| SE | Setting error |
| --- | --- |
| PSL | CPU processing glitches |
| FnF | Fan failure |
| --- | --- |
| --- | --- |
| EF1 | External failure1 |
| EF2 | External failure2 |
| EF3 | External failure3 |
| EF4 | External failure4 |

| State Flag_V | |
|--------------|------------------------------------|
| Display | Description |
| start | Normal operation command |
| run | Normal operation |
| --- | --- |
| --- | --- |
| --- | --- |
| powdw | Power Failure |
| --- | --- |
| Gate | IGBT drive |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| fcl | High speed current limited driving |

| Command Flag_V | |
|----------------|--------------------------|
| Display | Description |
| start | Normal Operation command |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| Rst | Reset command |
| --- | --- |
| Emg | Emergency Stop command |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |

[machine : VF66G (Utility Connected Operation / Isolated Operation)]

| Fault Flag(1) _C | |
|------------------|------------------------------------|
| Display | Description |
| oc | Over Current protect |
| iGbt | IGBT protect operation |
| EnGA | Emergency Contact-A command |
| EnGb | Emergency Contact-B command |
| GAc | Gate amp board error |
| oV | Over Voltage of DC voltage |
| oL | Overload protection |
| CtEr | Current sensor abnormality |
| StrF | Start jam |
| FuA | Blown AC Fuse |
| FCL | High speed current limited driving |
| uV | Under Voltage |
| oH | Over heat unit |
| cFr | --- |
| cS2 | Abnormal stored memory |
| oPEr | Option error |

| Fault Flag(2) _C | |
|------------------|---|
| Display | Description |
| oVGr | Ground fault over voltage protection |
| tS | Communication time out error |
| oVr | Utility Voltage Rise protection |
| uVr | Utility under voltage protection |
| Acti | Utility power failure detection (active) |
| PASi | Utility power failure detection (passive) |
| SE | Setting error |
| ocG | Overcurrent protection |
| PSL | CPU processing glitches |
| FnF | Fan failure |
| oFr | Utility Frequency rise protection |
| uFr | Utility Frequency drop protection |
| EF1 | External failure1 |
| EF2 | External failure2 |
| EF3 | External failure3 |
| EF4 | External failure4 |

| State Flag _C | |
|---------------|---|
| Display | Description |
| MC | Magnetic Contactor state |
| RK | Utility connected switch state |
| LD | Isolated operation switch state |
| AC | AC power supply |
| DC_DROP | Under Voltage(DC) |
| AC_FAIL | Utility interactive protection operation occurs |
| SYS_Hz | 60Hz: 1,50Hz: 0 |
| --- | --- |
| RUN | Normal operation |
| PLL | Phase synchronization loop state |
| BLOCK | Gate block |
| FLT | Fault state |
| --- | --- |
| --- | --- |
| --- | --- |
| fcl | High speed current limited driving |

| Command Flag _C | |
|-----------------|----------------------------|
| Display | Description |
| start | Normal Operation command |
| BJK_CMD | isolated operation command |
| --- | --- |
| --- | --- |
| --- | --- |
| Rst | Reset command |
| --- | --- |
| Emg | Emergency Stop command |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |

[machine : VF66R (PWM sine wave converter/120-degree conduction)]

| Fault Flag(1) | |
|---------------|-----------------------------------|
| Display | Description |
| oc | overcurrent |
| iGbt | IGBT abnormal |
| EnGA | Emergency stop A contact ON |
| EnGb | Emergency stop B-contact ON |
| GA c | Gate Board error |
| oV | DC voltage overvoltage protection |
| oL | Overload protection |
| CtEr | Current sensor abnormality |
| StrF | Start-up congestion |
| FuA | AC Fuse |
| FCL | FCL behavior |
| uV | Under Voltage |
| oH | Over heat unit |
| cFr | For expansion |
| cS2 | Abnormal stored memory |
| oPEr | Option error |

| Fault Flag(2) | |
|---------------|-----------------------------------|
| Display | Description |
| oVGr | [Special Adjustment] |
| tS | Communication time out error |
| oVr | [Special Adjustment] |
| uVr | [Special Adjustment] |
| Acti | [Special Adjustment] |
| PASi | [Special Adjustment] |
| SE | Setting error |
| ocG | Overcurrent protection |
| PSL | CPU processing glitches |
| FnF | Fan failure |
| oFr | Utility Frequency rise protection |
| uFr | Utility Frequency drop |
| EF1 | External failure1 |
| EF2 | External failure2 |
| EF3 | External failure3 |
| EF4 | External failure4 |

| State Flag | |
|------------|----------------------------------|
| Display | Description |
| MC | Magnetic Contactor state |
| --- | --- |
| --- | --- |
| AC | AC power supply |
| DC_DROP | Under Voltage(DC) |
| --- | --- |
| SYS_Hz | 60Hz: 1,50Hz: 0 |
| --- | --- |
| RUN | Normal operation |
| PLL | Phase synchronization loop state |
| BLOCK | Gate block |
| FLT | Fault state |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |

| Command Flag | |
|--------------|--------------------------|
| Display | Description |
| start | Normal Operation command |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| Rst | Reset command |
| --- | --- |
| Emg | Emergency Stop command |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |

If “GAc” of FaultFlag(1) is indicated 1(0:unprotection, 1:protection) at over 30kW machines, Ext.Flt1 and ExtFIt2 are flag data for judging details of the abnormal contents, and displayed by eight figures. If not abnormality, “0000 0000” is displayed.

If inverter detects a multiple “Gate amp board error”, sum of the values representing each “Gate amp board error” is displayed in hexadecimal.

Ex.) If detects the “IGBT over current of U phase in master unit” and “IGBT over current of V phase in master unit”

Display of Ext.Flt1: “0000 0004” + “0000 0008” → “0000 000C”

About details, refer to inverter manual.

| Ext.Flt1 | | | |
|-----------|--|-----------|--|
| Display | Description | Display | Description |
| 0000 0001 | Communication error with master GAC (No response for three times) | 0001 0000 | DC over voltage in sleeve unit-1 |
| 0000 0002 | Gate power abnormal in master unit | 0002 0000 | Output fin overheat of U phase in sleeve unit-1 |
| 0000 0004 | IGBT over current of U phase in master unit | 0004 0000 | Melted fuse of DC main circuit in sleeve unit-1 |
| 0000 0008 | IGBT over current of V phase in master unit | 0008 0000 | FM trouble of sleeve unit-1 |
| 0000 0010 | IGBT over current of W phase in master unit | 0010 0000 | 15V control power down of sleeve unit-1 |
| 0000 0020 | Output fin overheat of U phase in master unit | 0020 0000 | Communication error with sleeve unit-2 (No response for three times) |
| 0000 0040 | Melted fuse of DC main circuit in master unit | 0040 0000 | Gate power abnormal in sleeve unit-2 |
| 0000 0080 | More than 290% current to all unit for more than 2 seconds | 0080 0000 | IGBT over current of U phase in sleeve unit-2 |
| 0000 0100 | Power error PRIM66-Z, PRIS66-Z board(parallel type) | 0100 0000 | IGBT over current of V phase in sleeve unit-2 |
| 0000 0200 | Master unit FM trouble | 0200 0000 | IGBT over current of W phase in sleeve unit-2 |
| 0000 0400 | — | 0400 0000 | DC over voltage in sleeve unit-2 |
| 0000 0800 | Communication error with sleeve unit-1 (No response for three times) | 0800 0000 | Output fin overheat of U phase in sleeve unit-2 |
| 0000 1000 | Gate power abnormal in sleeve unit-1 | 1000 0000 | Melted fuse of DC main circuit in sleeve unit-2 |
| 0000 2000 | IGBT over current of U phase in sleeve unit-1 | 2000 0000 | Sleeve unit-2 FM trouble |
| 0000 4000 | IGBT over current of V phase in sleeve unit-1 | 4000 0000 | 15V control power down in sleeve unit-2 |
| 0000 8000 | IGBT over current of W phase in sleeve unit-1 | 8000 0000 | Communication error with sleeve unit-3 (No response for three times) |

| Ext.Flt2 | | | |
|-----------|---|-----------|---|
| Display | Description | Display | Description |
| 0000 0001 | Gate power abnormal in sleeve unit-3 | 0001 0000 | Converter of sleeve unit-3 overheat |
| 0000 0002 | IGBT over current of U phase in sleeve unit-3 | 0002 0000 | Outside DB1 protect or communication error |
| 0000 0004 | IGBT over current of V phase in sleeve unit-3 | 0004 0000 | Outside DB2 protect or communication error |
| 0000 0008 | IGBT over current of W phase in sleeve unit-3 | 0008 0000 | Outside DB3 protect or communication error |
| 0000 0010 | DC over voltage in sleeve unit-3 | 0010 0000 | Outside DB4 protect or communication error |
| 0000 0020 | Output fin overheat of U phase in sleeve unit-3 | 0020 0000 | Outside DB5 protect or communication error |
| 0000 0040 | Melted fuse of DC main circuit in sleeve unit-3 | 0040 0000 | Outside DB6 protect or communication error |
| 0000 0080 | Sleeve unit-3 FM trouble | 0080 0000 | Output fin of V phase in master unit overheat |
| 0000 0100 | 15V control power down in sleeve unit-3 | 0100 0000 | Output fin of W phase in master unit overheat |
| 0000 0200 | MC of master unit doesn't turn on | 0200 0000 | Output fin of V phase in sleeve unit-1 overheat |
| 0000 0400 | MC of sleeve unit-1 doesn't turn on | 0400 0000 | Output fin of W phase in sleeve unit-1 overheat |
| 0000 0800 | MC of sleeve unit-2 doesn't turn on | 0800 0000 | Output fin of V phase in sleeve unit-2 overheat |
| 0000 1000 | MC of sleeve unit-3 doesn't turn on | 1000 0000 | Output fin of W phase in sleeve unit-2 overheat |
| 0000 2000 | Converter of master unit overheat | 2000 0000 | Output fin of V phase in sleeve unit-3 overheat |
| 0000 4000 | Converter of sleeve unit-1 overheat | 4000 0000 | Output fin of W phase in sleeve unit-3 overheat |
| 0000 8000 | Converter of sleeve unit-2 overheat | 8000 0000 | — |

3-3. Storage Mode

3-3-1. Operation of storage mode

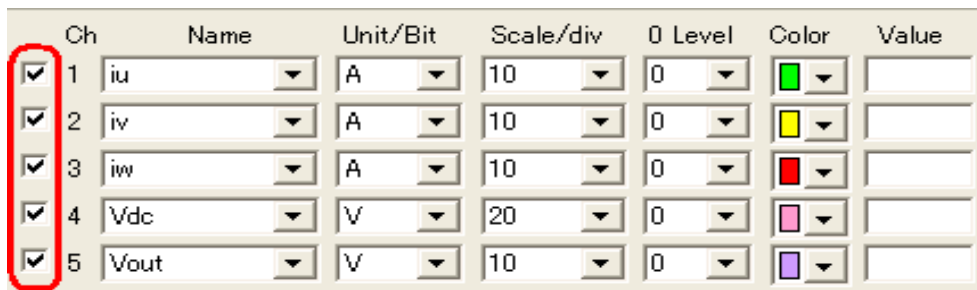
When you click [Mode]-[Storage] in the main menu. The figure below is displayed.

Click [Exec], after you set trigger mode and channel that you would like to measure, and then the measurement starts.



If you check the points, left side of channel, you can select display or not display. According to measuring condition, waveform of difference channels is overlapped. At that time, if you delete a check mark of channel, the waveform of the channel isn't displayed.

Moreover, sampling interval would be longer when you have a lot of measuring channels. (The saving is same as CSV file). If you would like to save short interval as CSV file, it is able to sample short interval when you set "End" at column of channel name, because it doesn't measure below the item set to "End".



The followings are explanation of each item.

| Items | Description |
|-------|----------------|
| Ch | Channel number |
| Name | Measuring item |

| | | |
|------------------|--|---|
| Unit/Bit | Measuring item unit | Data: unit Flag: selecting bit data Filter: time constant |
| Scale/div | Vertical line(per a grid) (⇒Refer to 3.5. Scale 0Level) | |
| 0 Level | Off-set (⇒Refer to 3.5. Scale 0Level) | |
| Color | Graph color | |
| Value | Cursor measurement color | |
| BackGround | Background color | |
| Grid | Grid color | |
| Cursor | If there is a check, cursor line is displayed, and value of cross point between the cursor line and graph is displayed at each channel [Value] column. | |
| Horiz. Sec/div | Horizontal line(Time per a grid) | |
| Horiz. Point/div | Horizontal line(Number of point per a grid) | |
| Trg. Mode | AUTO | Data is collected continuously and displayed regardless of the trigger setting. |
| | NORM | Data is collected and displayed only while it is suitable for the setting condition of the trigger. |
| | SINGLE | Data is collected and displayed only once of suitable for the setting condition of the trigger. |
| Trg.Ch | Trigger detected channel | |
| Trg.Lvl | Trigger detected level | |
| Trg.Dir | Trigger detected direction | + :more than level - :less than level |
| Trg.Point | Trigger point[%] | |
| Pitch | Sampling interval [msec] (To be torque control cycle, if select zero.*1) | |
| Button | Exec | The data collection and the graphical representation are executed. |
| | Stop-1 | Immediately stop |
| | Stop | After the data under the collection is displayed, it stops. |
| | Next | The displayed data is deleted. |

*1 Torque control cycle is changed by career frequency. (⇒Refer to **3.3.2. Point number and graph in torque control cycle.**)

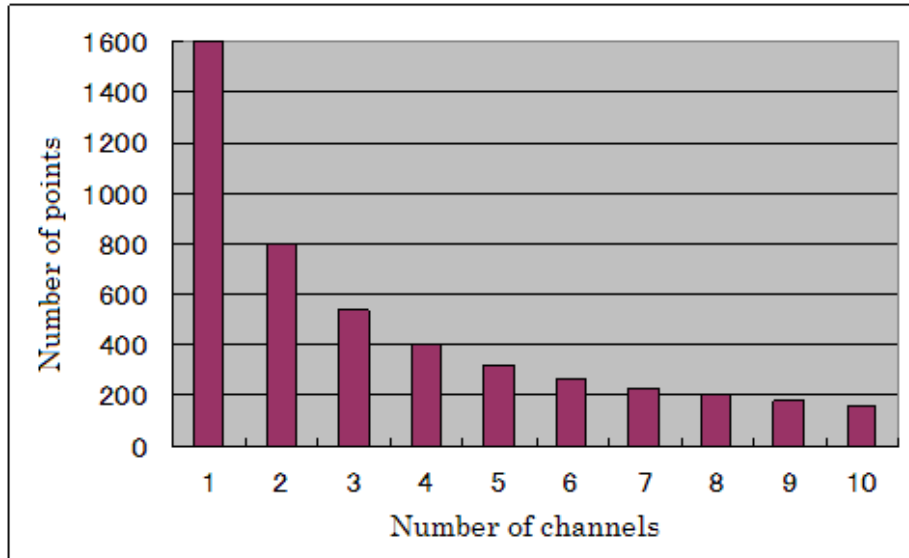
Refer to inverter manual.

3-3-2. Number of sampling points and Torque control cycle

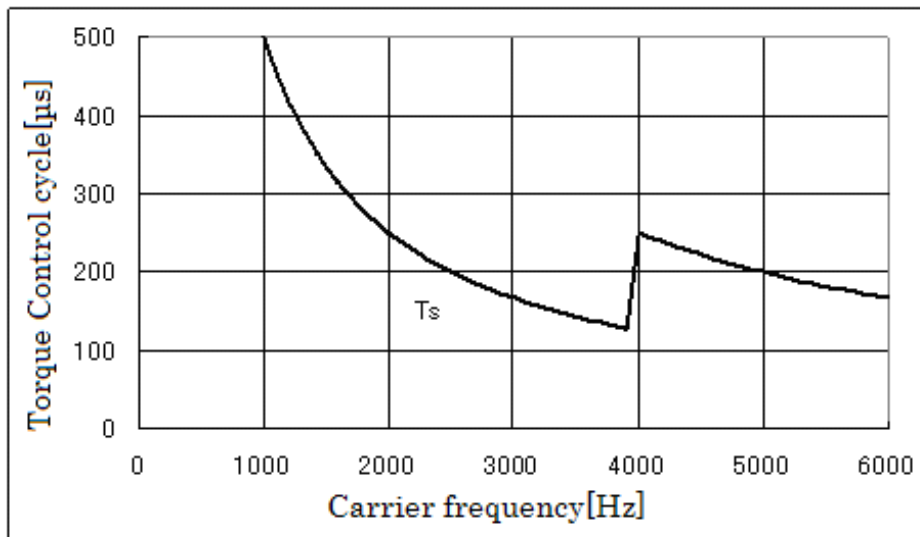
Storage Mode is a function to accumulate data in the memory built into an inverter at sampling intervals set by “Pitch”. It transfers to your computer when the memory is filled and the graph is displayed.

The data of 1600 points can be accumulated in this built-in memory. Therefore, the number of points that can be measured per channel depends on the measured number of channels it changes.

Set it referring to the graph below.



Also, when “Pitch” is set to zero, it samples it by Torque control cycle. Torque control cycle is changed by set carrier frequency (Refer to the graph below).

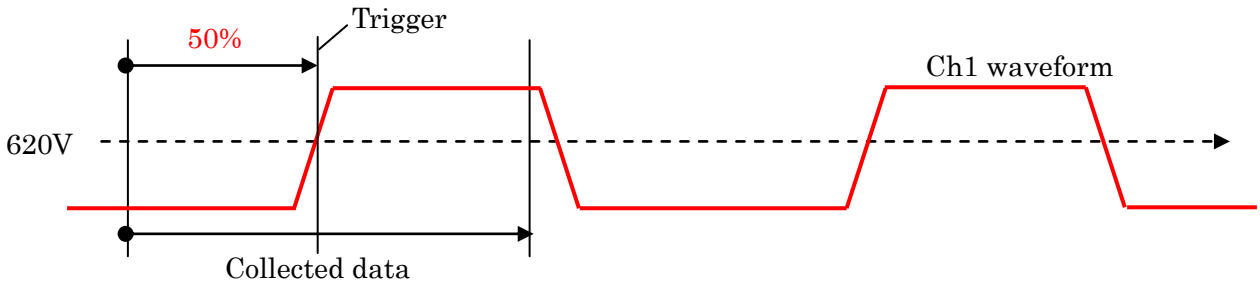
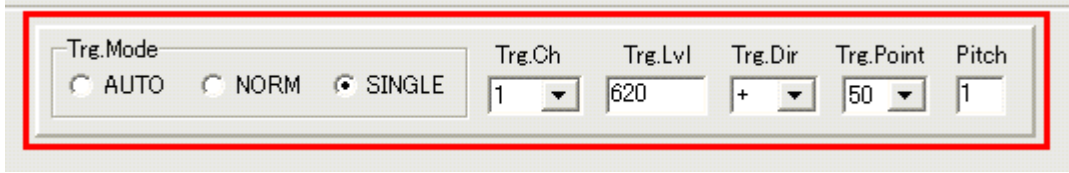


3-3-3. Trigger mode operation

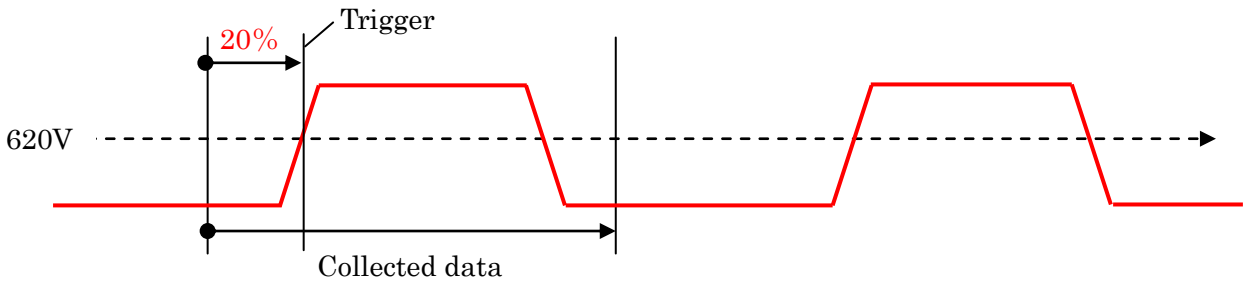
Trigger function can be used by *Storage Mode*. Refer to the following usage example.

The figure below is an example at the condition of the following.

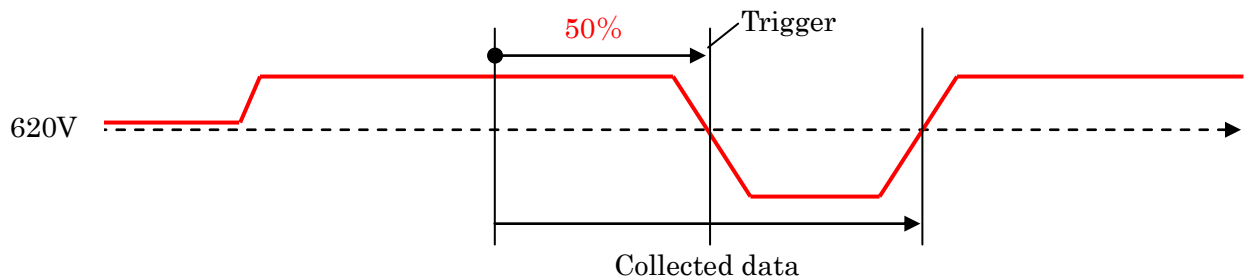
[Trigger channel: CH1, TrgLvl: 620, Trg.Dir:+, Trg.Point:50%, SINGLE mode]



- The figure below is an example when setting it to “Trg. Point: 20%”.



- The figure below is an example when setting it to “Trg. Dir: -”.



3-3-4. Explanation of Channel/Flag

[Channel]

[machine : VF66B、VF66B (EMS)、VF66SV、VF66SDS、VF66B(Tex)]

| Ch name | Unit | Description | |
|----------|-------|--|-------------------------------------|
| END | - | Don't measure below the item set to "End" | |
| iu | A | Output current of U phase(instant value) | |
| iv | A | Output current of V phase(instant value) | |
| iw | A | Output current of W phase(instant value) | |
| Vdc | V | DC voltage | |
| Vout | V | Output voltage actual value | |
| Iout | A | Output current actual value | |
| Fref | Hz | Frequency command | |
| Sref | r/min | Rotation speed command | |
| Fout | Hz | Output frequency | |
| Speed | r/min | Output rotation speed | |
| FlxRate | % | Magnetic flux command | |
| MotTemp | degC | Motor temperature | |
| AIN1 | % | Analog input1 | |
| AIN2 | % | Analog input2 | |
| AIN3 | % | Analog input3 | |
| AIN4 | % | Analog input4 | |
| AIN5 | % | Analog input5 | |
| AIN6 | % | Analog input6 | |
| Ain1SpdC | % | Analog input1 speed command | Digit display: i00006* ¹ |
| Ain2SpdC | % | Analog input2 speed command | Digit display: i00007* ¹ |
| Ain3SpdC | % | Analog input3 speed command | Digit display: i00008* ¹ |
| Ain1TrqC | % | Analog input1 torque command | Digit display: i0000A* ² |
| Ain2TrqC | % | Analog input2 torque command | Digit display: i0000B* ² |
| PlcHSpdC | % | Internal PLC control period speed command | Digit display: o00000* ¹ |
| PlcHTrqC | % | Internal PLC control period torque command | Digit display: o00001* ² |
| Trq | % | Operation torque | |
| OLcount | % | Over load counter | |
| BcdSpdC | % | BCD speed command | |
| BcdIn | % | BCD input | |
| PlcOut1 | % | Internal PLC output1 | Digit display: o00008* ³ |
| PlcOut2 | % | Internal PLC output2 | Digit display: o00009* ³ |
| PlcOut3 | % | Internal PLC output3 | Digit display: o0000A* ³ |
| PlcOut4 | % | Internal PLC output4 | Digit display: o0000B* ³ |
| PlcOut5 | % | Internal PLC output5 | Digit display: o0000C* ³ |

*1: The indicated value is a value when A-00 is converted into 20000.

*2: The indicated value is a value when 150%(-10V) is converted into 7500.

*3: The indicated value is a value when internal PLC output 5V is converted into 20000.

| Ch name | Unit | Description |
|---------------|-------|--|
| Fault Flag(1) | digit | Protection/Trouble flag(1) *4 *5 |
| Fault Flag(2) | digit | Protection/Trouble flag(2) *4 *5 |
| State Flag | digit | Inverter state flag *4 *5 |
| Command Flag | digit | Inverter command flag *4 *5 |
| M1Out1 | digit | Multi function output1 (52MA,86A,MO1,MO2) *5 |
| M1Out2 | digit | Multi function output2 (MO3~MO6) *5 |
| M1IN1 | digit | Multi function input1 (ST-F~MI5) *5 |
| M1IN2 | digit | Multi function input2 (MI6~MI17) *5 |
| IO**** | digit | Input relay*5 |
| O0**** | digit | Output relay*5 |
| LS**** | digit | Latch relay set coil*5 |
| LR**** | digit | Latch relay re-set coil*5 |
| LC**** | digit | Latch relay contact*5 |
| US**** | digit | On differential relay coil*5 |
| UC**** | digit | On differential relay contact*5 |
| DS**** | digit | Off differential relay coil*5 |
| DC**** | digit | Off differential relay contact*5 |
| TS**** | digit | On timer relay coil / instantaneous point*5 |
| TD**** | digit | On timer relay time-limit contact*5 |
| TR**** | digit | Off timer relay coil / instantaneous contact*5 |
| TC**** | digit | Off timer relay time-limit contact*5 |
| i0**** | digit | Input register |
| o0**** | digit | Output register |
| t0**** | digit | Trace-back register |
| Vout_Filter | V | Output voltage with filter function |
| Iout_Filter | A | Output current with filter function |
| Trq_Filter | % | Operation torque with filter function |
| Sref_Filter | r/min | Rotation speed reference with filter function |
| Fout_Filter | Hz | Output frequency with filter function |
| Speed_Filter | r/min | Output rotation speed with filter function |
| UserDef | - | For our engineer to arrange |

*4: Refer to **3.2.5. Explanation of Channel Flag.**

*5: Please select data you want to measure in "Unit/BIT" column. Selected data is displayed as bit data. When "Unit/BIT" column left blank, it will be displayed as word data (2 Byte).

[machine : VF66CH]

| Ch name | Unit | Description | |
|---------|------|---|-------------------------|
| END | — | Don't measure below the item set to “End” | |
| iu | A | Output current of U phase(instant value) | |
| iv | A | Output current of V phase(instant value) | |
| iw | A | Output current of W phase(instant value) | |
| Vdc | V | DC voltage | |
| Vref | V | Output voltage command | |
| Vout | A | Output voltage actual value | |
| Iref | A | Output current command | |
| Iout | A | Current of controlled object | |
| OLcount | Hz | Output frequency | |
| DcLTemp | degC | Reactor temperature | |
| AIN1 | % | Analog input1 | |
| AIN2 | % | Analog input2 | |
| AIN3 | % | Analog input3 | |
| AIN4 | % | Analog input4 | |
| AIN5 | % | Analog input5 | |
| AIN6 | % | Analog input6 | |
| Ain1VoC | % | Analog input1 voltage command | Digit display: i00006*1 |
| Ain2VoC | % | Analog input2 voltage command | Digit display: i00007*1 |
| Ain3VoC | % | Analog input3 voltage command | Digit display: i00008*1 |
| Ain1IoC | % | Analog input1 current command | Digit display: i0000A*2 |
| Ain2IoC | % | Analog input2 current command | Digit display: i0000B*2 |
| PlcHVoC | % | Internal PLC control period voltage command | Digit display: o00000*1 |
| PlcHIoC | % | Internal PLC control period torque command | Digit display: o00001*2 |
| BcdVoC | % | BCD voltage command | |
| BcdIn | % | BCD input | |
| PlcOut1 | % | Internal PLC output1 | Digit display: o00008*3 |
| PlcOut2 | % | Internal PLC output2 | Digit display: o00009*3 |
| PlcOut3 | % | Internal PLC output3 | Digit display: o0000A*3 |
| PlcOut4 | % | Internal PLC output4 | Digit display: o0000B*3 |
| PlcOut5 | % | Internal PLC output5 | Digit display: o0000C*3 |

*1: The indicated value is a value when A-00 is converted into 20000.

*2: The indicated value is a value when 150%(-10V) is converted into 7500.

*3: The indicated value is a value when internal PLC output 5V is converted into 20000.

| Ch name | Unit | Description |
|---------------|-------|---|
| Fault Flag(1) | digit | Protection/Trouble flag(1) *4 *5 |
| Fault Flag(2) | digit | Protection/Trouble flag(2) *4 *5 |
| State Flag | digit | Inverter state flag *4 *5 |
| Command Flag | digit | Inverter command flag *4 *5 |
| M1Out1 | digit | Multi function output1 (52MA,86A,MO1,MO2) *5 |
| M1Out2 | digit | Multi function output2 (MO3~MO6) *5 |
| M1IN1 | digit | Multi function input1 (ST-F~MI5) *5 |
| M1IN2 | digit | Multi function input2 (MI6~MI17) *5 |
| IO**** | digit | Input relay*5 |
| O0**** | digit | Output relay*5 |
| LS**** | digit | Latch relay set coil*5 |
| LR**** | digit | Latch relay re-set coil*5 |
| LC**** | digit | Latch relay contact*5 |
| US**** | digit | On differential relay coil*5 |
| UC**** | digit | On differential relay contact*5 |
| DS**** | digit | Off differential relay coil*5 |
| DC**** | digit | Off differential relay contact*5 |
| TS**** | digit | On timer relay coil / instantaneous point*5 |
| TD**** | digit | On timer relay time-limit contact*5 |
| TR**** | digit | Off timer relay coil / instantaneous contact*5 |
| TC**** | digit | Off timer relay time-limit contact*5 |
| i0**** | digit | Input register |
| o0**** | digit | Output register |
| t0**** | digit | Trace-back register |
| Iout_Filter | A | Current of controlled object with filter function |
| Iref_Filter | A | Output current command with filter function |
| Vref_Filter | V | Output voltage command with filter function |
| Vout_Filter | V | Output voltage with filter function |
| UserDef | - | For our engineer to arrange |

*4: Refer to **3.2.5. Explanation of Channel Flag.**

*5: Please select data you want to measure in "Unit/BIT" column. Selected data is displayed as bit data. When "Unit/BIT" column left blank, it will be displayed as word data (2 Byte).

[machine : VF66B (DCM Drive)]

| Ch name | Unit | Description | |
|----------|-------|--|-------------------------------------|
| End | — | Don't measure below the item set to “End” | |
| if | — | [Special Adjustment] | |
| ia+ | A | Armature current (+ side DCCT detection) | |
| ia- | A | Armature current (- side DCCT detection) | |
| Vdc | V | Input DC Voltage | |
| Vout | V | Output DC voltage | |
| ia | A | Armature current | |
| Vref | V | Armature voltage command | |
| Sref | r/min | Rotation speed command | |
| iaP | % | Armature current | |
| Speed | r/min | Output rotation speed | |
| --- | — | — | |
| MotTemp | degC | Motor temperature | |
| AIN1 | % | Analog input1 | |
| AIN2 | % | Analog input2 | |
| AIN3 | % | Analog input3 | |
| AIN4 | % | Analog input4 | |
| AIN5 | % | Analog input5 | |
| AIN6 | % | Analog input6 | |
| Ain1SpdC | % | Analog input1 speed command | Digit display: i00006* ¹ |
| Ain2SpdC | % | Analog input2 speed command | Digit display: i00007* ¹ |
| Ain3SpdC | % | Analog input3 speed command | Digit display: i00008* ¹ |
| Ain1TrqC | % | Analog input1 torque command | Digit display: i0000A* ² |
| Ain2TrqC | % | Analog input2 torque command | Digit display: i0000B* ² |
| PlcHSpdC | % | Internal PLC control period speed command | Digit display: o00000* ¹ |
| PlcHTrqC | % | Internal PLC control period torque command | Digit display: o00001* ² |
| iaref | % | Armature current command | |
| OLcount | % | Over load counter | |
| BcdSpdC | % | BCD speed command | |
| BcdIn | % | BCD input | |
| PlcOut1 | % | Internal PLC output1 | Digit display: o00008* ³ |
| PlcOut2 | % | Internal PLC output2 | Digit display: o00009* ³ |
| PlcOut3 | % | Internal PLC output3 | Digit display: o0000A* ³ |
| PlcOut4 | % | Internal PLC output4 | Digit display: o0000B* ³ |
| PlcOut5 | % | Internal PLC output5 | Digit display: o0000C* ³ |

*1: The indicated value is a value when A-00 is converted into 20000.

*2: The indicated value is a value when 150%(-10V) is converted into 7500.

*3: The indicated value is a value when internal PLC output 5V is converted into 20000.

| Ch name | Unit | Description |
|---------------|-------|--|
| Fault Flag(1) | digit | Protection/Trouble flag(1) *4 *5 |
| Fault Flag(2) | digit | Protection/Trouble flag(2) *4 *5 |
| State Flag | digit | state flag *4 *5 |
| Command Flag | digit | command flag *4 *5 |
| M1Out1 | digit | Multi function output1 (52MA,86A,MO1,MO2) *5 |
| M1Out2 | digit | Multi function output2 (MO3~MO6) *5 |
| M1IN1 | digit | Multi function input1 (ST-F~MI5) *5 |
| M1IN2 | digit | Multi function input2 (MI6~MI17) *5 |
| IO**** | digit | Input relay*5 |
| O0**** | digit | Output relay*5 |
| LS**** | digit | Latch relay set coil*5 |
| LR**** | digit | Latch relay re-set coil*5 |
| LC**** | digit | Latch relay contact*5 |
| US**** | digit | On differential relay coil*5 |
| UC**** | digit | On differential relay contact*5 |
| DS**** | digit | Off differential relay coil*5 |
| DC**** | digit | Off differential relay contact*5 |
| TS**** | digit | On timer relay coil / instantaneous point*5 |
| TD**** | digit | On timer relay time-limit contact*5 |
| TR**** | digit | Off timer relay coil / instantaneous contact*5 |
| TC**** | digit | Off timer relay time-limit contact*5 |
| i0**** | digit | Input register |
| o0**** | digit | Output register |
| t0**** | digit | Trace-back register |
| Vout_Filter | V | Output voltage with filter function |
| Iout_Filter | A | Output current with filter function |
| Trq_Filter | % | Operation torque with filter function |
| Sref_Filter | r/min | Rotation speed reference with filter function |
| Fout_Filter | Hz | Output frequency with filter function |
| Speed_Filter | r/min | Output rotation speed with filter function |
| UserDef | - | For our engineer to arrange |

*4: Refer to **3.2.5. Explanation of Channel Flag.**

*5: Please select data you want to measure in "Unit/BIT" column. Slected data is displayed as bit data. When "Unit/BIT" column left blank, it will be displayed as word data (2 Byte).

[machine : VF66G]

| Ch name | Unit | Description | |
|-----------------|-------|---|------------------------|
| END | | Don't measure below the item set to "End" | |
| iu | A | U phase current | |
| iv | A | V phase current | |
| iw | A | W phase current | |
| vdc | V | DC voltage | |
| L_Vu | V | U phase output voltage | |
| L_Vv | V | V phase output voltage | |
| L_Vw | V | W phase output voltage | |
| Vu_ref | V | U phase output voltage | |
| Vv_ref | V | V phase output voltage | |
| Vw_ref | V | W phase output voltage | |
| vdc_ref | V | DC voltage command | |
| id_ref | A | Active current command | |
| Fault Flag(1)_C | Bit | Fault flag (1) | |
| Fault Flag(2)_C | Bit | Fault flag (2) | |
| State Flag_C | Bit | Operation condition flag | |
| Command Flag_C | Bit | Command Flag | |
| iu | I | U phase current | |
| iv | I | V phase current | |
| iw | I | W phase current | |
| vdc | V | DC voltage | |
| Vout | V | Output voltage | |
| L_V | V | Bus-bar voltage | |
| L_Vr | V | U phase system voltage | |
| i_crs | I | [Special Adjustment] | |
| fgav | Hz | Governor frequency | |
| Fout | Hz | Output frequency | |
| id | I | Active current | |
| iq | I | Reactive current | |
| Fault Flag(1)_V | Bit | Fault flag (1) | |
| Fault Flag(2)_V | Bit | Fault flag (2) | |
| State Flag_V | Bit | Operation condition flag | |
| Command Flag_V | Bit | Command Flag | |
| AIN1 | % | [Special Adjustment] | |
| AIN2 | % | [Special Adjustment] | |
| AIN3 | % | [Special Adjustment] | |
| AIN4 | % | [Special Adjustment] | |
| AIN5 | % | [Special Adjustment] | |
| AIN6 | % | [Special Adjustment] | |
| Ain1SpdC | % | [Special Adjustment] | digit display : i00006 |
| Ain2SpdC | % | [Special Adjustment] | digit display : i00007 |
| Ain3SpdC | digit | [Special Adjustment] | digit display: i00008 |

| Ch name | Unit | Description | |
|--------------|-------|----------------------|-----------------------|
| Ain1TrqC | digit | [Special Adjustment] | digit display: i0000A |
| Ain2TrqC | digit | [Special Adjustment] | digit display: i0000B |
| PlcHIqC | digit | [Special Adjustment] | digit display: o00001 |
| PlcHIIdC | digit | [Special Adjustment] | digit display: o00000 |
| L_Vo | digit | [Special Adjustment] | |
| OLcount | digit | [Special Adjustment] | |
| BcdSpdC | digit | [Special Adjustment] | |
| BcdIn | digit | [Special Adjustment] | |
| PlcOut1 | digit | [Special Adjustment] | digit display: o00008 |
| PlcOut2 | digit | [Special Adjustment] | digit display: o00009 |
| PlcOut3 | digit | [Special Adjustment] | digit display: o0000A |
| PlcOut4 | digit | [Special Adjustment] | digit display: o0000B |
| PlcOut5 | digit | [Special Adjustment] | digit display: o0000C |
| MIOut1 | digit | [Special Adjustment] | |
| MIOut2 | digit | [Special Adjustment] | |
| MIIN1 | digit | [Special Adjustment] | |
| MIIN2 | digit | [Special Adjustment] | |
| IO**** | digit | [Special Adjustment] | |
| O0**** | digit | [Special Adjustment] | |
| LS**** | digit | [Special Adjustment] | |
| LR**** | digit | [Special Adjustment] | |
| LC**** | digit | [Special Adjustment] | |
| US**** | digit | [Special Adjustment] | |
| UC**** | V | [Special Adjustment] | |
| DS**** | A | [Special Adjustment] | |
| DC**** | % | [Special Adjustment] | |
| TS**** | r/min | [Special Adjustment] | |
| TD**** | Hz | [Special Adjustment] | |
| TR**** | r/min | [Special Adjustment] | |
| TC**** | - | [Special Adjustment] | |
| i0**** | | [Special Adjustment] | |
| o0**** | | [Special Adjustment] | |
| t0**** | | [Special Adjustment] | |
| Vout_Filter | | [Special Adjustment] | |
| Iout_Filter | | [Special Adjustment] | |
| Trq_Filter | | [Special Adjustment] | |
| Sref_Filter | | [Special Adjustment] | |
| Fout_Filter | | [Special Adjustment] | |
| Speed_Filter | | [Special Adjustment] | |
| UserDef. | | [Special Adjustment] | |

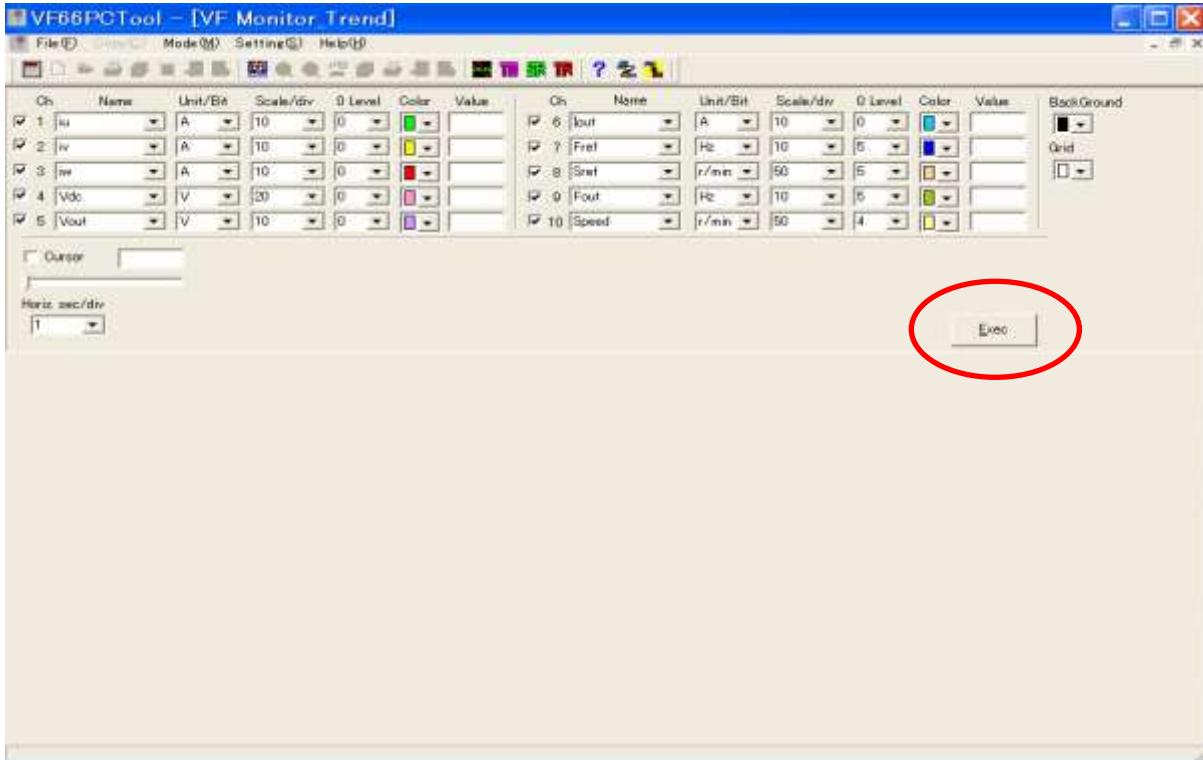
| Ch name | Unit | Description | |
|--------------|-------|----------------------|-----------------------|
| Ain1TrqC | % | [Special Adjustment] | digit display: i0000A |
| Ain2TrqC | % | [Special Adjustment] | digit display: i0000B |
| PlcHIqC | % | [Special Adjustment] | digit display: o00001 |
| PlcHIIdC | % | [Special Adjustment] | digit display: o00000 |
| L_Vo | % | [Special Adjustment] | |
| OLcount | % | [Special Adjustment] | |
| BcdSpdC | % | [Special Adjustment] | |
| BcdIn | % | [Special Adjustment] | |
| PlcOut1 | % | [Special Adjustment] | digit display: o00008 |
| PlcOut2 | % | [Special Adjustment] | digit display: o00009 |
| PlcOut3 | % | [Special Adjustment] | digit display: o0000A |
| PlcOut4 | % | [Special Adjustment] | digit display: o0000B |
| PlcOut5 | % | [Special Adjustment] | digit display: o0000C |
| MIOut1 | digit | [Special Adjustment] | |
| MIOut2 | digit | [Special Adjustment] | |
| MIIN1 | digit | [Special Adjustment] | |
| MIIN2 | digit | [Special Adjustment] | |
| I0**** | digit | [Special Adjustment] | |
| O0**** | digit | [Special Adjustment] | |
| LS**** | digit | [Special Adjustment] | |
| LR**** | digit | [Special Adjustment] | |
| LC**** | digit | [Special Adjustment] | |
| US**** | digit | [Special Adjustment] | |
| UC**** | digit | [Special Adjustment] | |
| DS**** | digit | [Special Adjustment] | |
| DC**** | digit | [Special Adjustment] | |
| TS**** | digit | [Special Adjustment] | |
| TD**** | digit | [Special Adjustment] | |
| TR**** | digit | [Special Adjustment] | |
| TC**** | digit | [Special Adjustment] | |
| i0**** | digit | [Special Adjustment] | |
| o0**** | digit | [Special Adjustment] | |
| t0**** | digit | [Special Adjustment] | |
| Vout_Filter | V | [Special Adjustment] | |
| Iout_Filter | A | [Special Adjustment] | |
| Trq_Filter | % | [Special Adjustment] | |
| Sref_Filter | r/min | [Special Adjustment] | |
| Fout_Filter | Hz | [Special Adjustment] | |
| Speed_Filter | r/min | [Special Adjustment] | |
| UserDef. | — | [Special Adjustment] | |

3-4. Trend Mode

3-4-1. Operation of Trend Mode

When you click [Mode]-[Trend] in the main menu. The figure below is displayed.

Click [Exec], after you set trigger mode and channel that you would like to measure, and then the measurement starts.



If you check the points, left side of channel, you can select display or not display. According to the measuring condition, waveform of difference channels is overlapped. At that time, if you delete a check mark of channel, the waveform of the channel isn't displayed.

Moreover, sampling interval would be longer when you have a lot of measuring channels. (The saving is same as CSV file). If you would like to save short interval as CSV file, it is able to sample short interval when you set "End" at column of channel name, because it doesn't measure below the item set to "End".

| Ch | Name | Unit/Bit | Scale/div | 0 Level | Color | Value |
|-------------------------------------|--------|----------|-----------|---------|--------|-------|
| <input checked="" type="checkbox"/> | 1 iu | A | 10 | 0 | Green | |
| <input checked="" type="checkbox"/> | 2 iv | A | 10 | 0 | Yellow | |
| <input checked="" type="checkbox"/> | 3 iw | A | 10 | 0 | Red | |
| <input checked="" type="checkbox"/> | 4 Vdc | V | 20 | 0 | Pink | |
| <input checked="" type="checkbox"/> | 5 Vout | V | 10 | 0 | Purple | |

The followings are explanation of each item.

| Items | | Description |
|----------------|------|--|
| Ch | | Channel number |
| Name | | Measuring item |
| Unit/Bit | | Measuring item unit Data: unit Flag: selecting bit data Filter: time constant |
| Scale/div | | Vertical line(per a grid) (⇒Refer to 3.5. Scale 0Level) |
| 0 Level | | Offset (⇒Refer to 3.5. Scale 0Level) |
| Color | | Graph color |
| Value | | Cursor measurement color |
| BackGround | | Background color |
| Grid | | Grid color |
| Cursor | | If there is a check, cursor line is displayed, and value of cross point between the cursor line and graph is displayed at each channel [Value] column. |
| Horiz. Sec/div | | Horizontal line(Time per a grid) *1 |
| Button | Exec | The data collection and the graphical representation are executed |
| | Stop | After the data under the collection is displayed, it stops. |
| | Next | The displayed data is deleted |

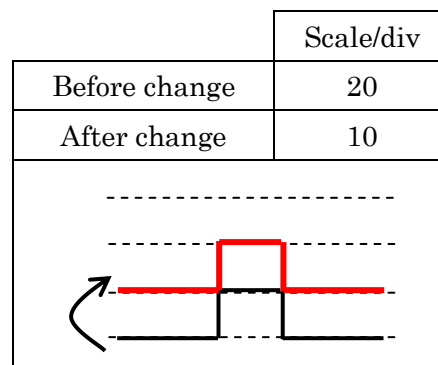
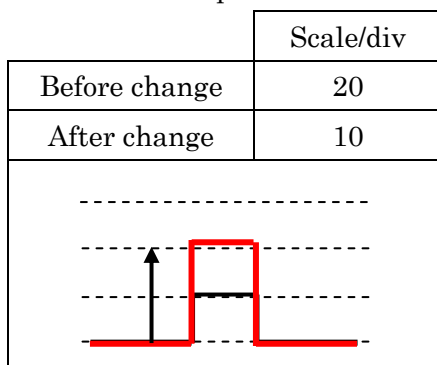
*1 The set might be long, because of load condition of your PC

3-4-2. Explanation of Channel/Flag

Follow *Storage Mode* (Refer to **3-3-4. Explanation of Channel Flag**) about kinds of channel of possible set.

3-5. Scale • 0 Level

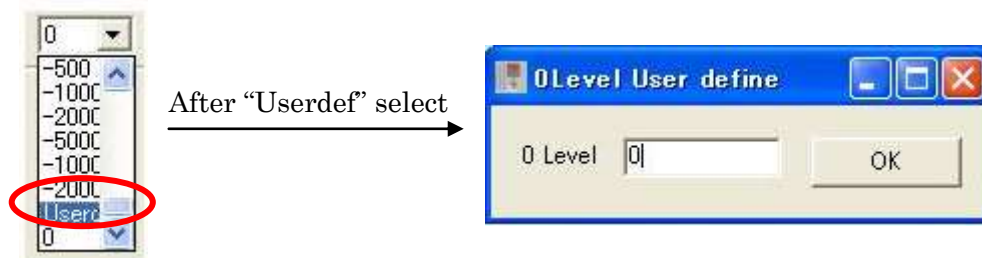
Scale/div is changed by vertical line size per a grid of graph, and you can arrange zero level about amount of offset from zero point.



If you select "Userdef" in the 0Level list, show the dialog below. It multiplies by the value set up here and a scale value. The value redraws a graph as an amount of offset.

Ex.) Speed:15000[r/min] draw on the 5th grid by 100[r/min/div]

$$\Rightarrow 500 - 15000 = -14500 [\text{r/min}] \quad -14500 / 100 = -145 \quad \therefore \text{0Level User define set to } -145$$



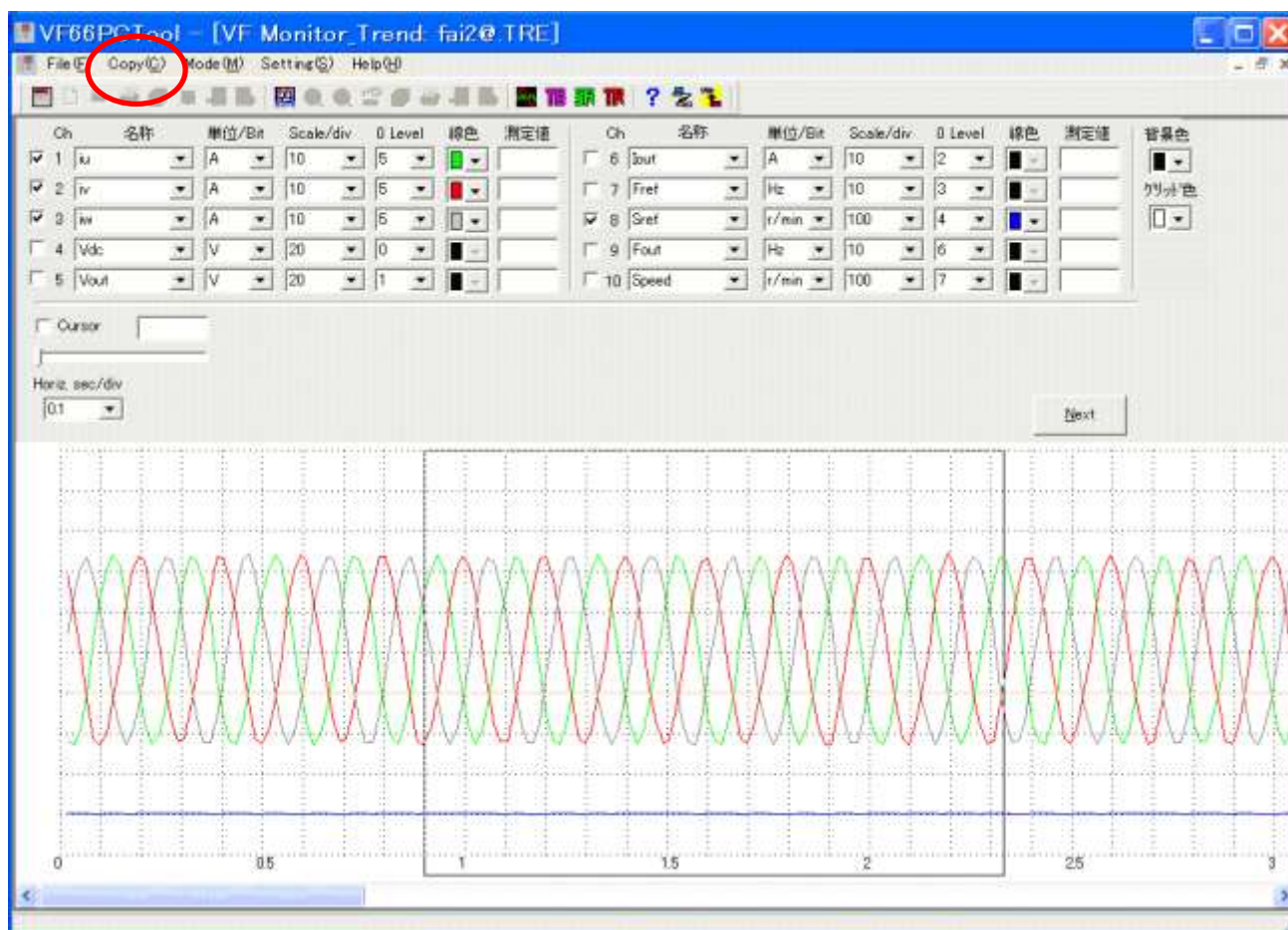
3-6. Copy

You can use hard-copy function while drawing is stopping (The figure below is *Trend Mode*).

The range copied by dragging (left-click) in the area of display the graph can be specified.

Click [Copy] in the main menu in the state, the data is saved in clip board.

Also you can edit the data by print and so on.



Chapter 4 Control Block Editor

Control Block Editor is a programming soft to customize an inverter control and sequence function for a variety of uses. Built-in an inverter control and sequence function are displayed as a symbol.

Construct the control system of inverter by connecting with those symbols.

The list below shows the programming specification.

Programming Specification

| | | |
|----------------------|--|---|
| Machine | VF66B,VF66CH | |
| Programming capacity | Maximum approx. 16 kByte (16,171 Byte)* ¹ | |
| Programming table | <ul style="list-style-type: none"> • High speed processing table*² (and below 'PLCH') • Low speed processing table*³ (and below 'PLCL') | |
| Control-block | 18 kinds (PI control, filter, field forward control, and etc.) | |
| Ladder-block | 8 kinds (Contact A, Contact B, Timer relay, and etc.) | |
| Dataflow-block | 35 kinds (Addition, Multiplication, Compare high/low/equal, and etc.) | |
| Number of page | Maximum to 7 page of each tables* ⁴ | |
| Number of divide | PLCH | Four divide* ⁵ |
| | PLCL | None |
| Divide method | PLCH | Automatic divide as compile (⇒Refer to <u>4-4-7.</u>) |
| | PLCL | Automatic measure as compile and automatic set for 5ms or 10ms. |

*1: Changing by amount of comment in circuit.

*2: Control cycle is *1ms*.

*3: Control cycle is *5ms or 10ms*.

*4: Changing by amount of programming.

*5: Maximum control cycle is *4ms*.

【CAUTION!】

* Use PLCH, you should set up *i-01=1 or 2*.

⇒Refer to next page flowchart of **PLCH and PLCL**.

* Use PLCL, you should set up *i-00=ON*. But the items below become invalid.

⇒Refer to next page **PLCH and PLCL**.

* If inverter output frequency over 800[Hz], limited to amount of the total of program.

⇒Refer to **Inverter output frequency and Internal PLC function control cycle**.

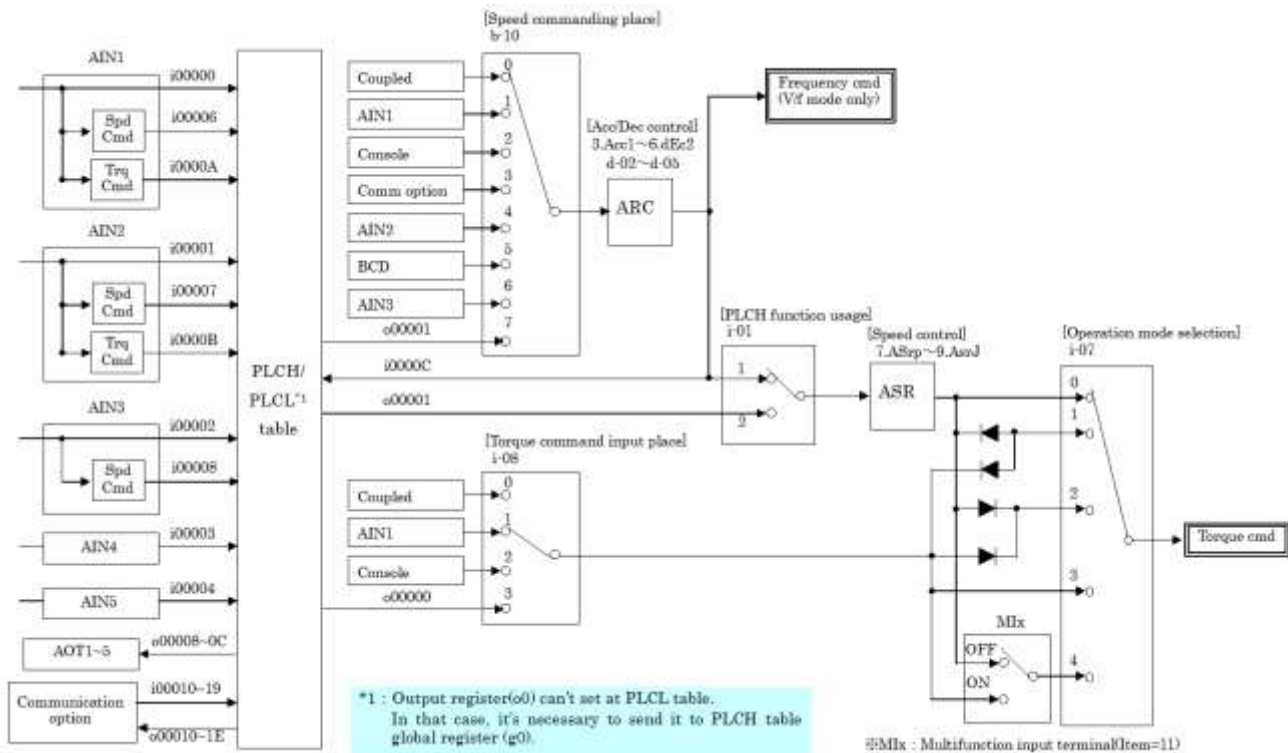
◆ PLCH and PLCL

| | PLCH | PLCL |
|---------------|--|---|
| Set data | i-01=1 or i-01=2 | i-00=ON |
| Control cycle | 1ms to 4ms (Changing by amount of total program) | 5ms or 10ms (Changing by amount of total program) |
| | Control cycle is displayed at window, after compile. | |
| Inhibition | Output relay (O0) coil set. | Output register (o0) set. |
| Regulation | <p>When i-01=2, speed reference (ASR input) becomes o00001*.</p> <p>When i-00=OFF, MI4 becomes emergency stop (Contact A) and master control*1 of PLCH regardless of c-04 setting.</p> | <p>The items below become invalid.</p> <ul style="list-style-type: none"> • b-11, b-12, c area, and H-00~H-05. <p>MI4 becomes master control*1 of both PLCH and PLCL.</p> <p>MI5 becomes protect reset.</p> <p>Necessary to operate of 52MA and 86A on PLCL circuit.</p> |
| | MI4:Multifunction input terminal(4) | MI5:Multifunction input terminal(5) |

*1: If master control is turned on, operation program is stopped. And output register is cleared to zero. Also all of relay-coil (include operation command etc.) are off.

*2: Either first setting block or second setting block if it's *i-00=ON*, only [24: Selection second set block] can be set. At both *i-00=ON*, The operation of *O00026* (2nd set-up block selection) coil become effective.

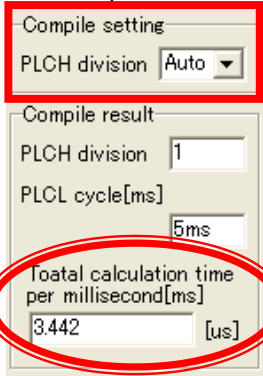
【Internal PLC function. input and output flowchart】



◆ Inverter output frequency and division of Internal PLC function program

The control cycle shortens as the frequency rises. It is necessary to shorten the internal PLC function program more than the control cycle according to the condition.

Set the approach to the manner of division according to the following procedure and do the program compilation.



See the figure (Compile procedure) to check which condition the machine applies to.

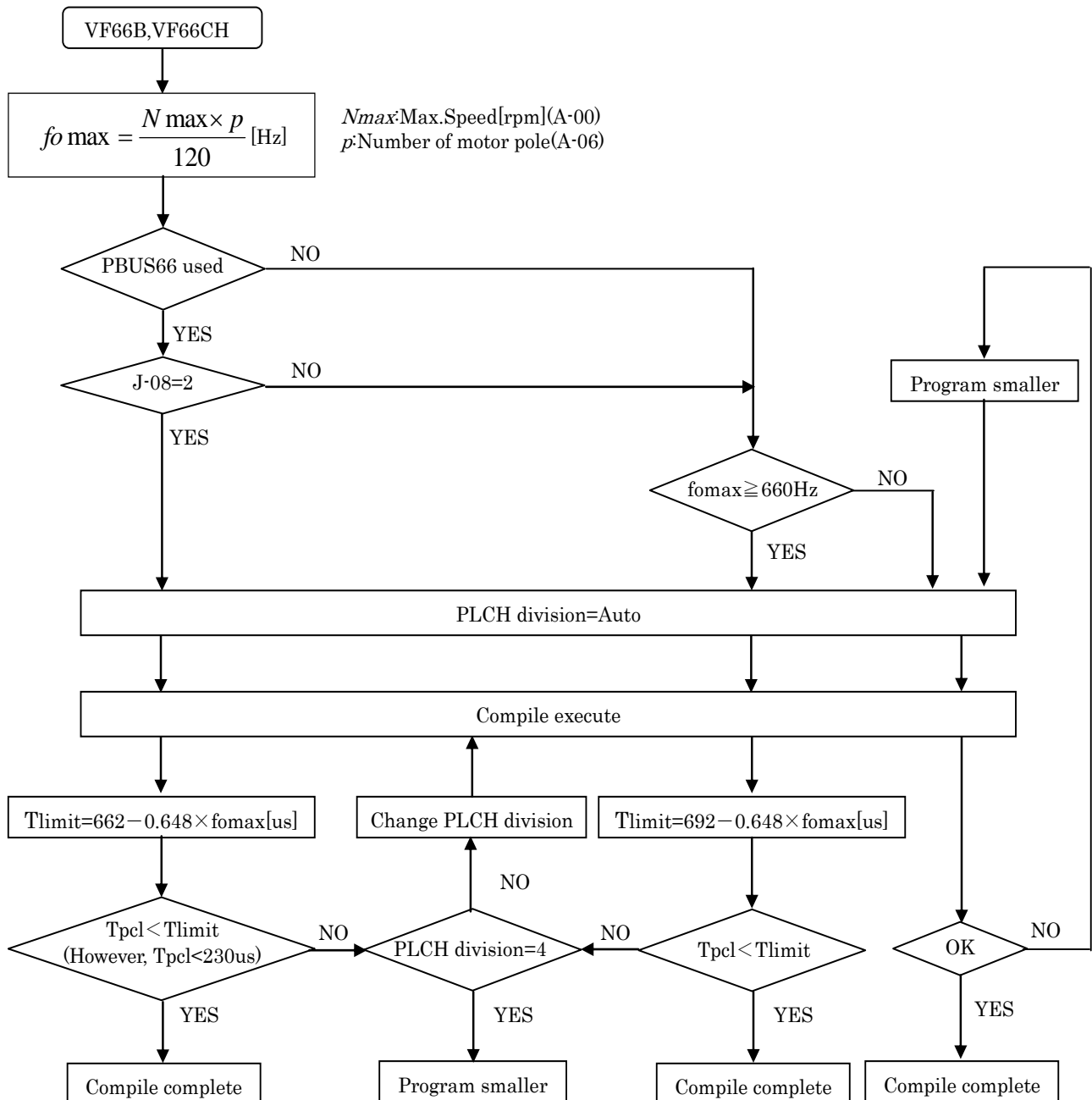
T_{pcl} is smaller than the limited value of following table then it's complete.

If T_{pcl} is bigger than limited value by PLCH division "4", make the program smaller.

* The limited value is depending on the machine condition.

The machine control may be affected, when the following procedure disregarded and into the program.

【 Compile procedure 】

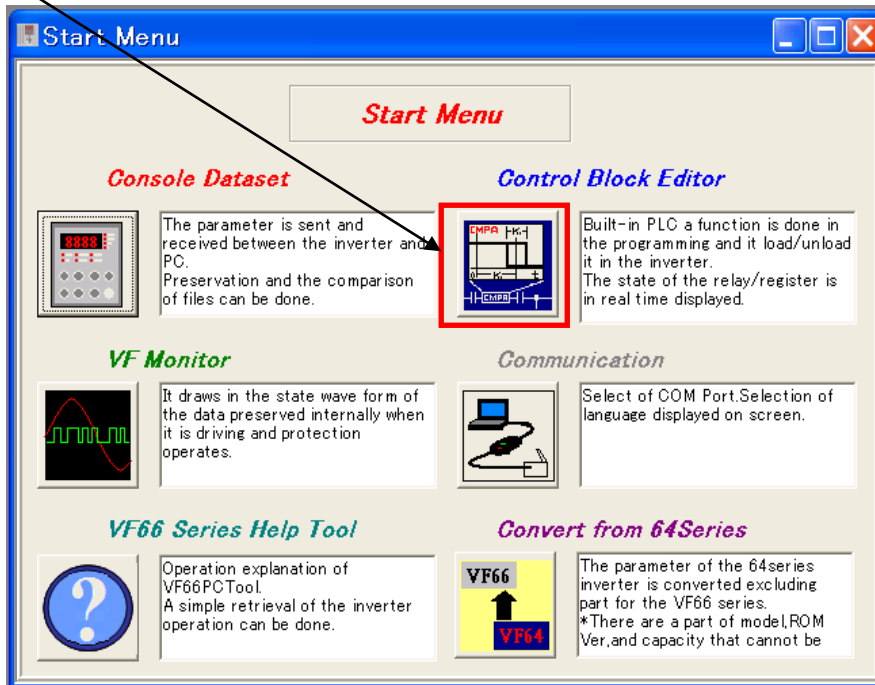


4-1. Start Control Block Editor

Control Block Editor starts by the following procedure.

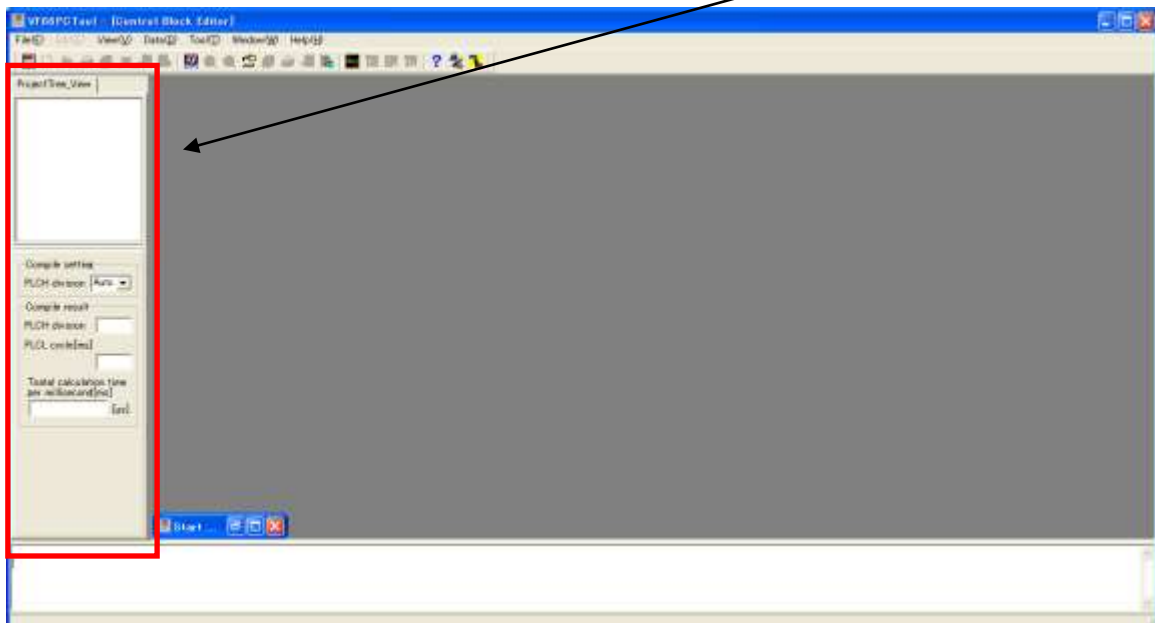
[1] Control Block Editor start

[Control Block Editor] is selected from the start menu, and it is started.



[2] Display Control Block Editor window

After started, the main window is displayed as shown in the figure below. Also "ProjectTree View" is displayed in the left of the window.



Here easily explains each menu in the main window of **Control Block Editor**.

The menu (1) below is displayed when the project circuit is not opened. The menu (2) below is displayed when editing circuit.

[menu (1)]

File

-- New Project

Make new project. (Refer to [4-2-1.](#))

-- Project Open

Opening the preserved project file.

-- Add PLCH Circuit

The circuit is made for PLCH table. (Refer to [4-2-4.](#))

-- Add PLCL Circuit

The circuit is made for PLCL table. (Refer to [4-2-4.](#))

-- Project Save

Overwrite an existing project. (Refer to [4-2-2.](#))

-- Project Save As

It names expanded projects and then saves the projects. (Refer to [4-2-2.](#))

-- Print

Parameters and circuit in a project are printed. (Refer to [4-2-3.](#))

-- Close

It closes expanded projects at present.

-- Control Block Editor Exit

Exit the Control Block Editor.

-- VF66PCTool Exit

Exit the VF66PCTool.

Edit

*Not use.

View

-- ProjectTree_View

“ProjectTree_View” display(check)/not display(no check) on the left side of window.

-- All program cross reference

The block used by the project is retrieved and the list is displayed. (Refer to [4-3.](#))

-- Tool bar

It can select display (check)/not display (no check) of dividing toolbar for kinds of each block.

-- Input-output set list

It displays lists which are each relay/register and used *p-register* of a project of Inverter or Chopper. (Refer to [4-3.](#))

-- Chopper change

For what is displayed on “Input-output set list”, either Inverter (no check) or Chopper (check) can be select.

Data

-- Project data write to INV.

It writes MOT files, that are drew by compiling, in inverters.

-- Project data read from INV.

Programs, which are written in present an inverter, are read and then displayed.

Tool

-- Circuit Window Color Setup

It sets displayed colors of background, font, and line.

Window

-- Arranges Up and Down

It displays windows arranging ups and downs.

-- Arranges On Either Side

It displays windows arranging right and left.

-- It displays again

It displays windows lapping from left side.

Help

-- VF66 series help

Explain operation of VF66PCTool and a simple retrieval about operation of inverter.

-- Version information

Version information is displayed.

【menu (2)】

File

----- View mode

Circuits of project indicate. And can check circuit and setting data of Control-block.

If editing, click [Edit mode] button. (Refer to [4-3.](#))

----- Edit mode

The circuit is edited. (Refer to [4-4.](#))

----- Monitor mode

Data calculated by an inverter indicate under the block on circuit.

Ladder-block indicates by red, if ON condition. (Refer to [4-5.](#))

----- Circuit Close

After current edit circuit compile, circuit is closed.

Edit

----- Select

Select some of symbol on circuit.

----- Cut Off

Cutting off selected part.

----- Copy

Copying selected part.

----- Paste

Pasting the part of “Cut” or “Copy”.

----- Cancel

Selected cancel.

----- Line Insert

Empty one-line insertion.

----- Line Clear

The line with the symbol is cleared.

----- Line Delete

The line with the cursor is deleted. And less space.

----- Reference

Searches the specified symbol label is in the circuit.

----- Substitution

The specified symbol label is replaced with the new symbol label.

View

Page change

The displayed page is changed.

Display magnification

Select the volume of zoom/zoom out.

CrossReference

Symbol specification search from circuit edited now.*¹ (Refer to [4-3.](#))

All Program CrossReference

Symbol specification search from project.*¹ (Refer to [4-3.](#))

Input-Output_Setting

It displays lists which are each relay/register and used *p-register* of a project of Inverter or Chopper. (Refer to [4-3.](#))

Data

Project data write to INV.

It writes MOT files, that are drew by compiling, in inverters.

Project data read from INV.

Programs, which are written in present an inverter, are read and then displayed.

Tool

Circuit Window Color Setup

It sets displayed colors of background, font, and line.

Window

Arranges Up and Down

It displays windows arranging ups and downs.

Arranges On Either Side

It displays windows arranging right and left.

It displays again

It displays windows lapping from left side.

Help

VF66 series help

Explain operation of VF66PCTool and a simple retrieval about operation of inverter.

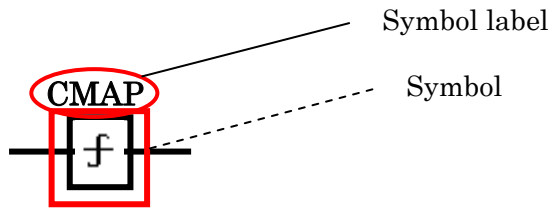
Version information

Version information is displayed.

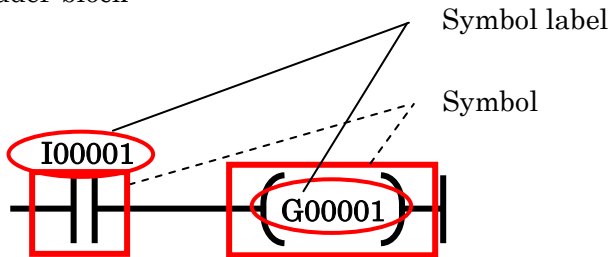
*1 Symbol label is to distinguish displayed symbol on the top side. The details are as follows.

It explains **Symbol label** and **Symbol** as follows.

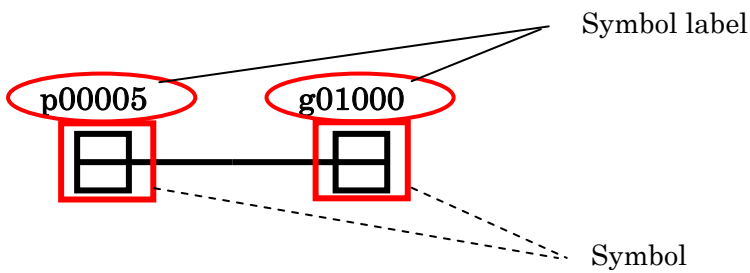
- Control-block



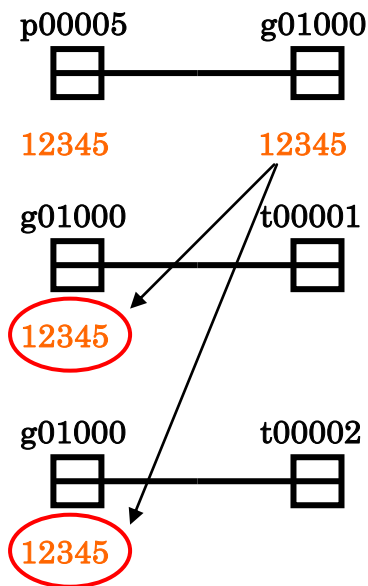
- Ladder-block



- Dataflow-block



It is able to set same label for some symbols, but all of set same label symbol are the same referring ahead. The figure below shows the example.



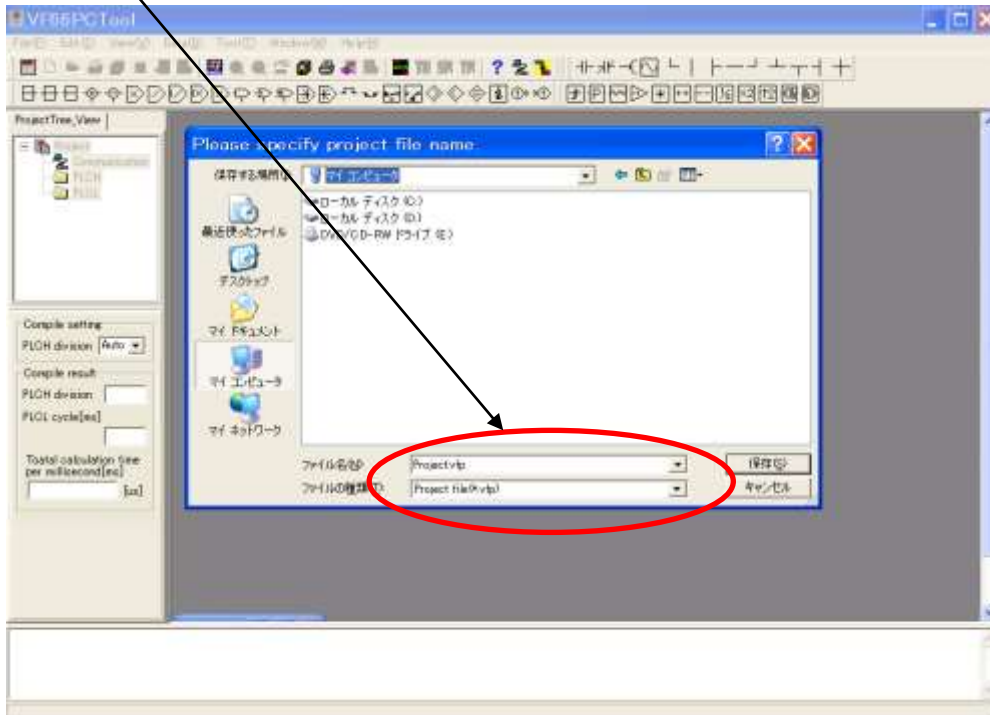
4-2. Project

4-2-1. New Project

Making a new project. If project file opened, close the project by [File]-[Close].

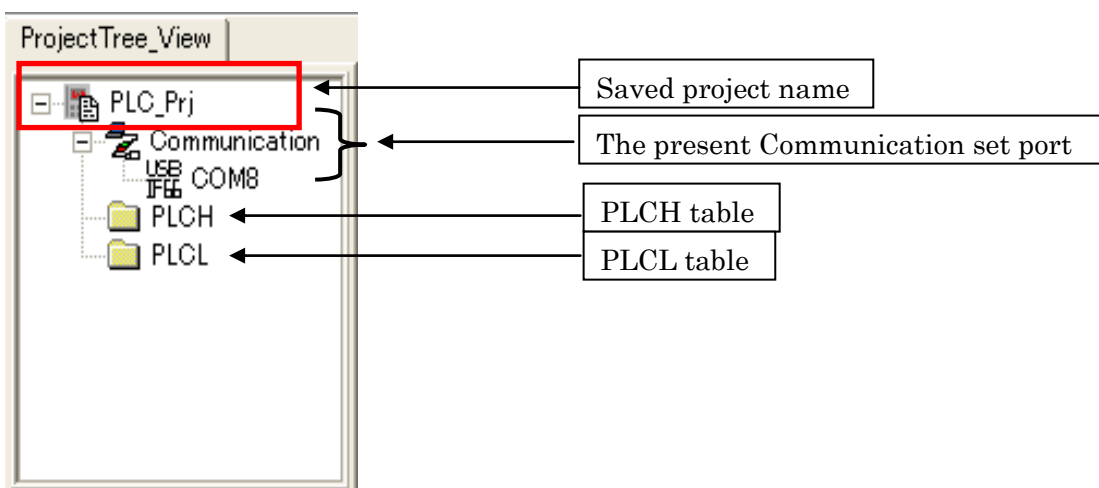
When you click [File]-[New project], save dialog is displayed.

Input the project name and the preservation place is specified.



When you click [Save] after input the project name, project name (in “ProjectTree_View”) on the top of left side window is changed to the input project name.

(Ex. Project name : “PLC_Prj”)



4-2-2. Project Save

If the compilation is not completed, the preservation of the project cannot be normalized.

- Overwrite save

[File]- [Project Save] in the main menu

- The project name change and save

[File]- [Project Save As] in the main menu

Save dialog is displayed, input the project name and the preservation place are specified.

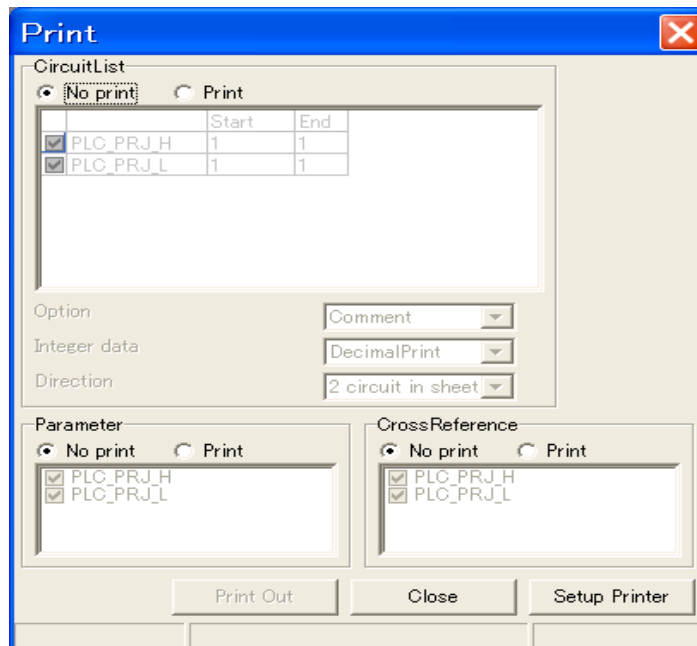
4-2-3. Print

It is possible to print project data: circuit figure, parameter, cross-references.

When you click [File]-[Print] in the main menu, print set up window is displayed. Default is set in “No print”. Therefore, “Print” is selected when printed.

When you click [Print Out], print out is started. It is finished, click [Close] back to main window.

If change the setting of the printer, click [Setup Printer].



- **CircuitList**

Circuits are printed.

- **Parameter**

Set time of timer relay is printed.

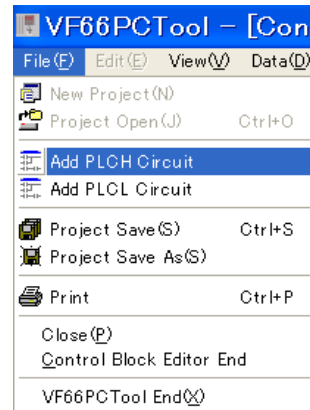
- **CrossReference**

The position and the number of blocks used are printed.

4-2-4. Make circuit

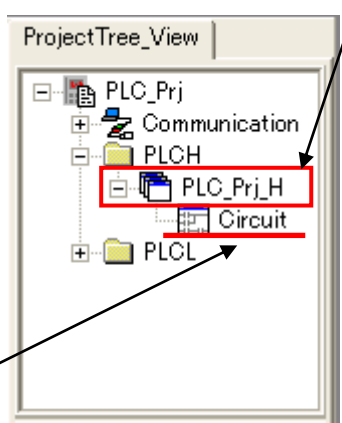
The circuit is newly made for the table of the project.

- The circuit is made for PLCH table
[File]-[Add PLCH Circuit] in the main menu
- The circuit is made for PLCL table
[File]-[Add PLCL Circuit] in the main menu



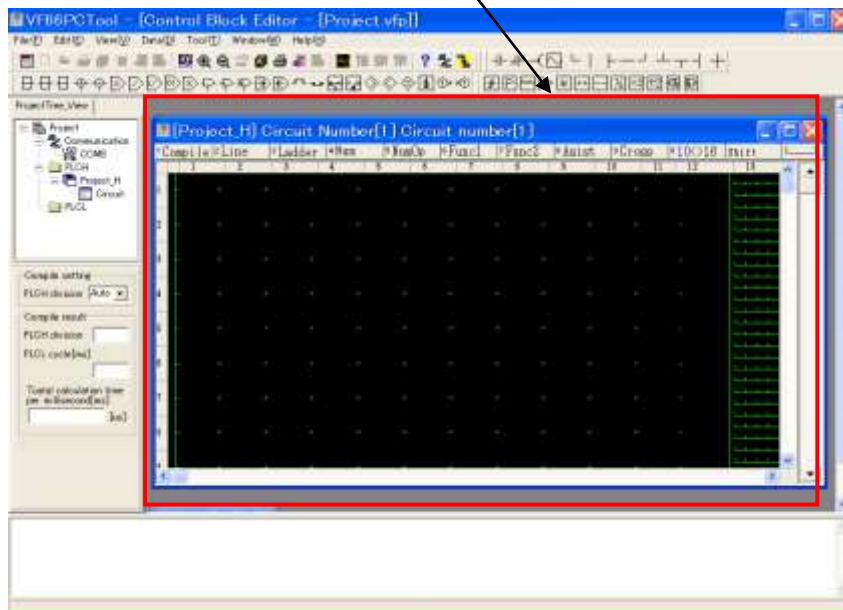
The circuit is made by name “*project name + _H(or _L)*”.

Figure below is an example that the circuit is made for PLCH table.



Double click [Circuit], the window to edit the circuit is displayed.

That is all to be ready of make a program.



4-3. View Mode

This mode has a function, which is written as follows, and list of relay and register are displayed. This mode cannot edit. If the circuit is edited, change to *Edit mode*.



- **Monitor**

Refer to [4-5. Monitor mode](#)

- **Trend**

Refer to [4-6. Trend mode](#)

- **Insert**

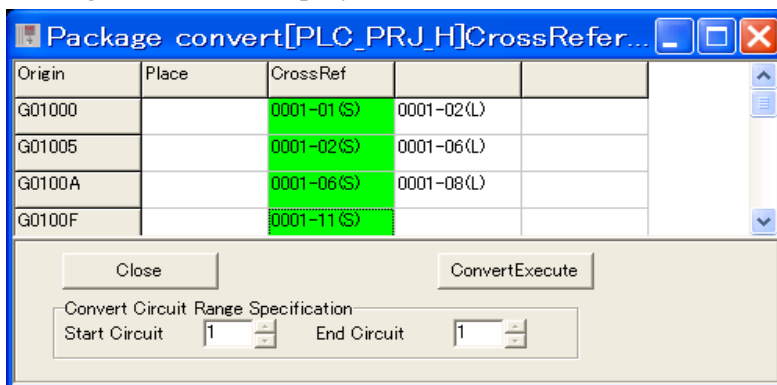
It adds circuit pages. The maximum page is 7, and it only operates at view mode.

If you add them, number of page at the top of window is increasing.

- **Convert**

When you click [Convert], the message “Is package convert former data searched?” is displayed.

If you click [Yes], the figure below is displayed.



When you click [Convert Execute] after input in *CrossRef* column, reference convert is started. Details are as follows.

Green color: symbol of end of row

Gray color: symbol in the Control-block

White color: General symbol

0001 – 12 (S)

Page No., Row No., (S): Coil

(L): Contact

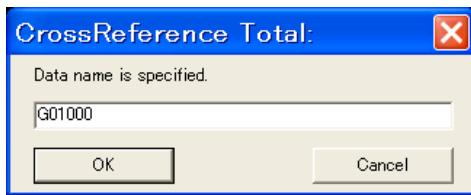
(I): Data value

Ex) Background color green and 0001-12(S) is displayed.

⇒Coil is set at twelfth row, first page.

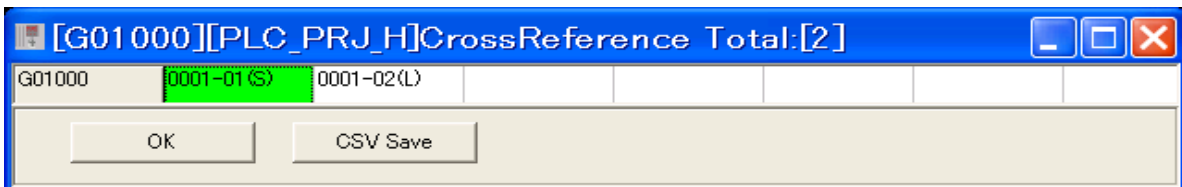
- **Cross**

When you click [Cross], the window below is displayed.



Click [OK] after input the symbol label. If it exists, the symbols positions are displayed.

Interpretation of the figure below is referring to **4-3. View mode-Convert.**



[Available relay and register block list]

The block name that can be set is display a list.

Click [View] - [Input-Output_Setting] - [Relay List] or [Register List] in the main menu.

[Used p-register List] is a list of *p-register* used in the project.

(The figure below is an example of a project)

- **Used p-register List**

A list of *p-register* in use at the project is displayed.

You can edit a column of “Function”. If you edit, click [Apply].

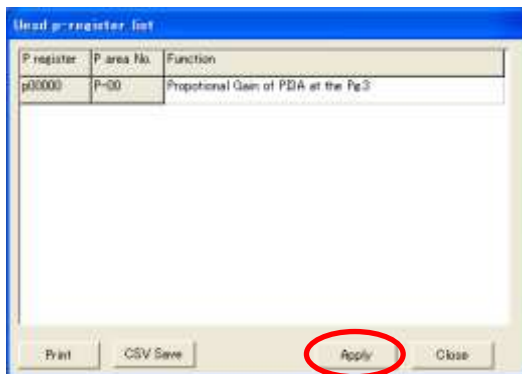
If you click [Print], print the displayed list.

If you click [CSV Save], the displayed list is saved CSV file format.

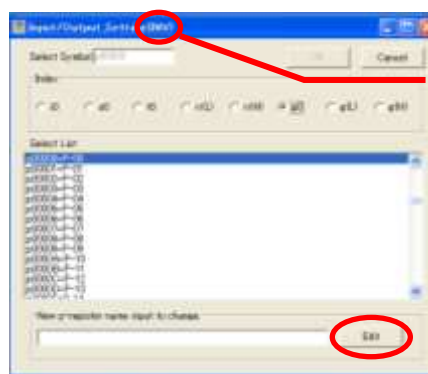
- **Input-Output_Setting**

A list of register and relay are displayed. If you select “p0”, you can edit “New p-register name input to change”. When input comments and [Edit] is clicked, the content of p-register selected by the list is changed to it.

*[Used p-register List] together with [Input-Output_Setting]. If one is changed, the other is changed, too.



Used p-register List Window



Input-Output_Setting Window

When "Chopper change" is selected, it is displayed as a "Chopper".

4-4. Edit mode

4-4-1. Circuit Edit

Double click [Circuit] in the “*Project_Tree*”, the window to edit the circuit is displayed.

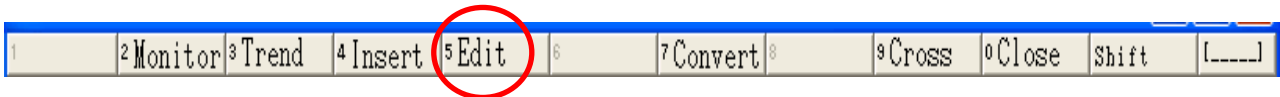
But, the manner of operation to *Edit mode* is different for case of [Project open] and [New project].

- [Project open]

You can edit as follows. Firstly to double click [Circuit] in the “*Project_Tree*”, the window to edit the circuit is displayed.

[Edit] of the section button that is below is clicked, change to *Edit Mode*.

Also you can operate [File] - [Edit Mode] in the main menu.



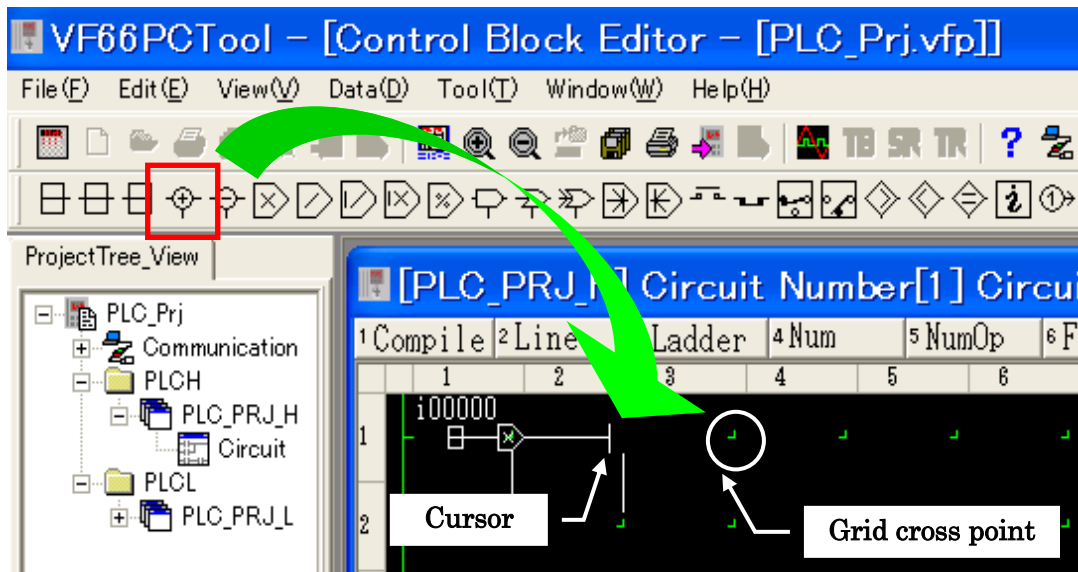
- [New project]

The circuit displayed by [New project] is already *Edit Mode*.

It edits it by selecting, arranging, and connecting the symbol. When the button of the symbol is clicked, the symbol is arranged in the place with the **cursor**.

There are three kinds of symbols: Control-block, Ladder-block, and Dataflow-block.

Control-block, contact of Ladder-block and load/store of Dataflow-block are a lot of data can be shown by the same symbol.



There is a place that cannot be arranged according to the symbol.

Generally, the symbol is arranged in **Grid cross point** and '+' as shown in the above figure. But among Dataflow-block, it is necessary to arrange the symbol with the input from the under on '+'.

4-4-2. Selection/Setting method of Control-block

Kinds of Control-block and operation time are as follows.

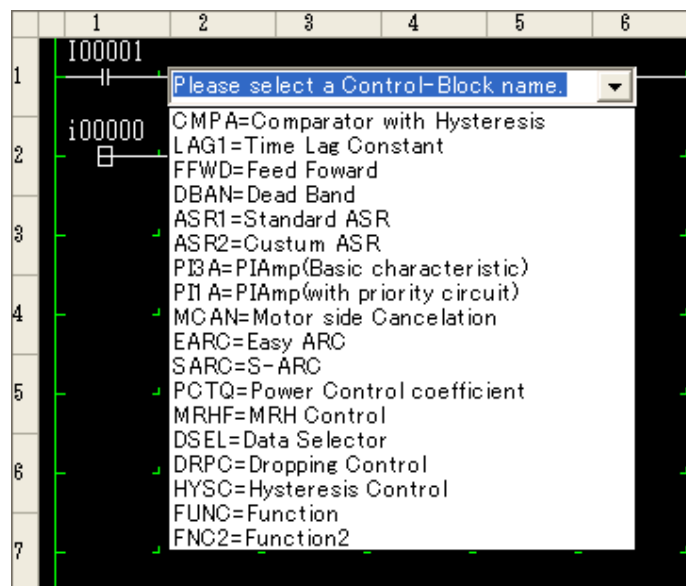
- Control-block (*Inputs name of four words on symbol)

| Name | Symbol | Operation time | Name | Symbol | Operation time |
|------|---------------------------------|----------------|------|---------------------------------|----------------|
| CMPA | $\overline{\text{C M P A}}$ | 0.5 μ s | EARC | $\overline{\text{E A R C}}$ | 0.7 μ s |
| LAG1 | $\overline{\text{L A G 1}}$ | 0.8 μ s | SARC | $\overline{\text{S A R C}}$ | 9.2 μ s |
| FFWD | $\overline{\text{F F W D}}$ | 1.9 μ s | PCTQ | $\overline{\text{P C T Q}}$ | 2.1 μ s |
| DBAN | $\overline{\text{D B A N}}$ | 0.9 μ s | MRHF | $\overline{\text{M R H F}}$ | 1.2 μ s |
| ASR1 | $\overline{\text{A S R 1}}$ | 3.5 μ s | DSEL | $\overline{\text{D S E L}}$ | 0.4 μ s |
| ASR2 | $\overline{\text{A S R 2}}$ | 4.8 μ s | DRPC | $\overline{\text{D R P C}}$ | 1.7 μ s |
| PI3A | $\overline{\text{P I 3 A}}$ | 2.1 μ s | HYSC | $\overline{\text{H Y S C}}$ | 1.2 μ s |
| PI1A | $\overline{\text{P I 1 A}}$ | 2.7 μ s | FUNC | $\overline{\text{F U N C}}$ | 1.1 μ s |
| MCAN | $\overline{\text{M C A N}}$ | 2.7 μ s | FNC2 | $\overline{\text{F N C 2}}$ | 1.0 μ s |

Control-block is set to input four words symbol label like the above symbol.

Generally, select it from the list because the list is displayed when Control-block is arranged.

Input four characters by mistake though it is possible to input from the keyboard.



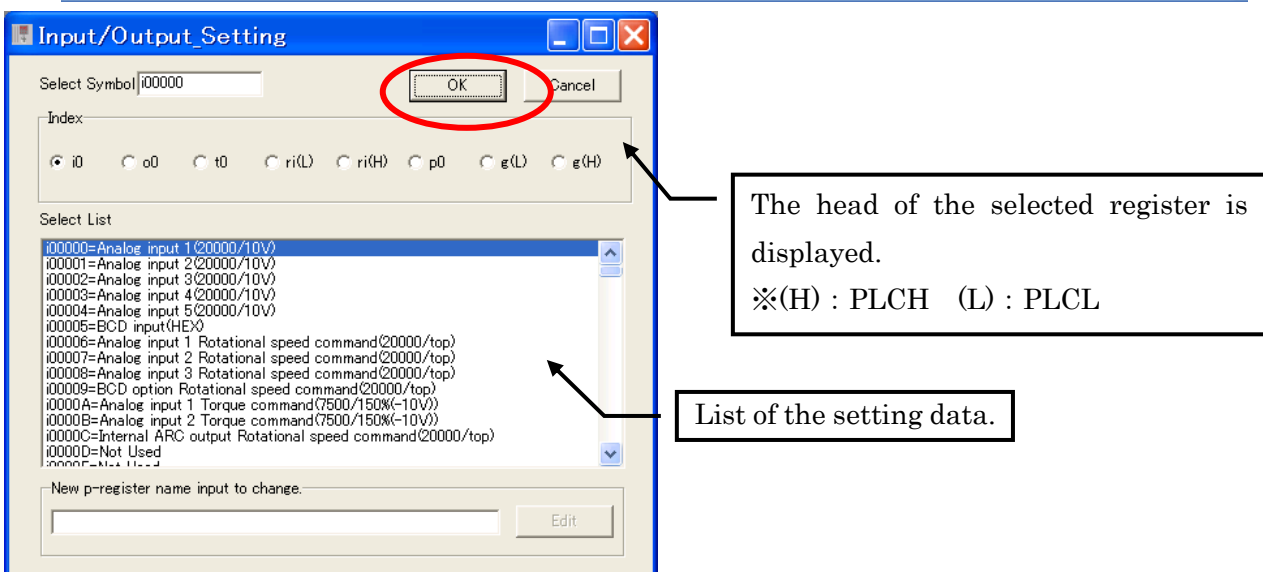
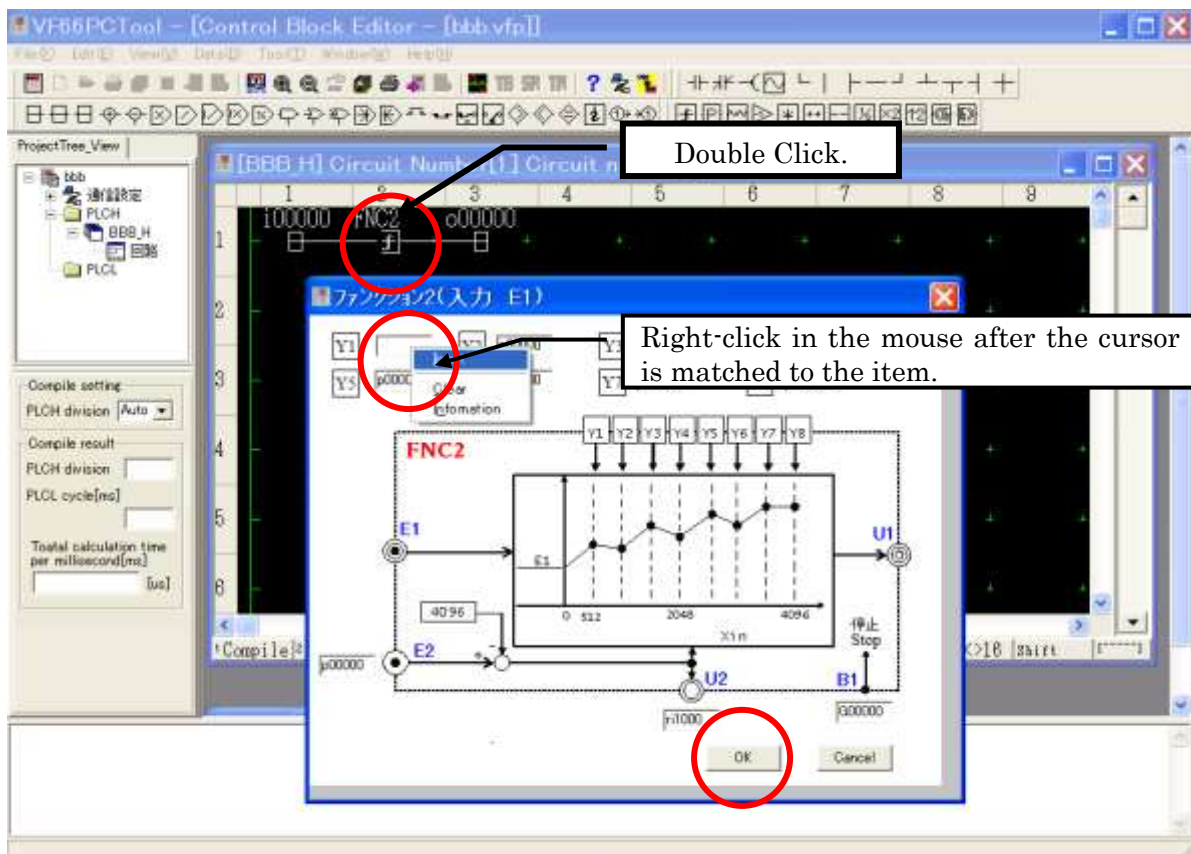
Double click the symbol; window of the Control-block is displayed. (The figure below an example “FNC2”)

The setting method to the item is as follows.

1. The cursor is matched to the set item.
2. Right-click with the mouse.
3. Select “Insert” of the popup menu.
4. “Input-Output_Setting” window is displayed.
5. It selects from the list and [OK] is clicked.

Also Input six characters by mistake though it is possible to input from the keyboard.

When the setting of all items is completed, [OK] of Control-block window is clicked.



4-4-3. Selection/Setting method of Ladder-block

Kinds of Ladder-block and operation time are as follows.

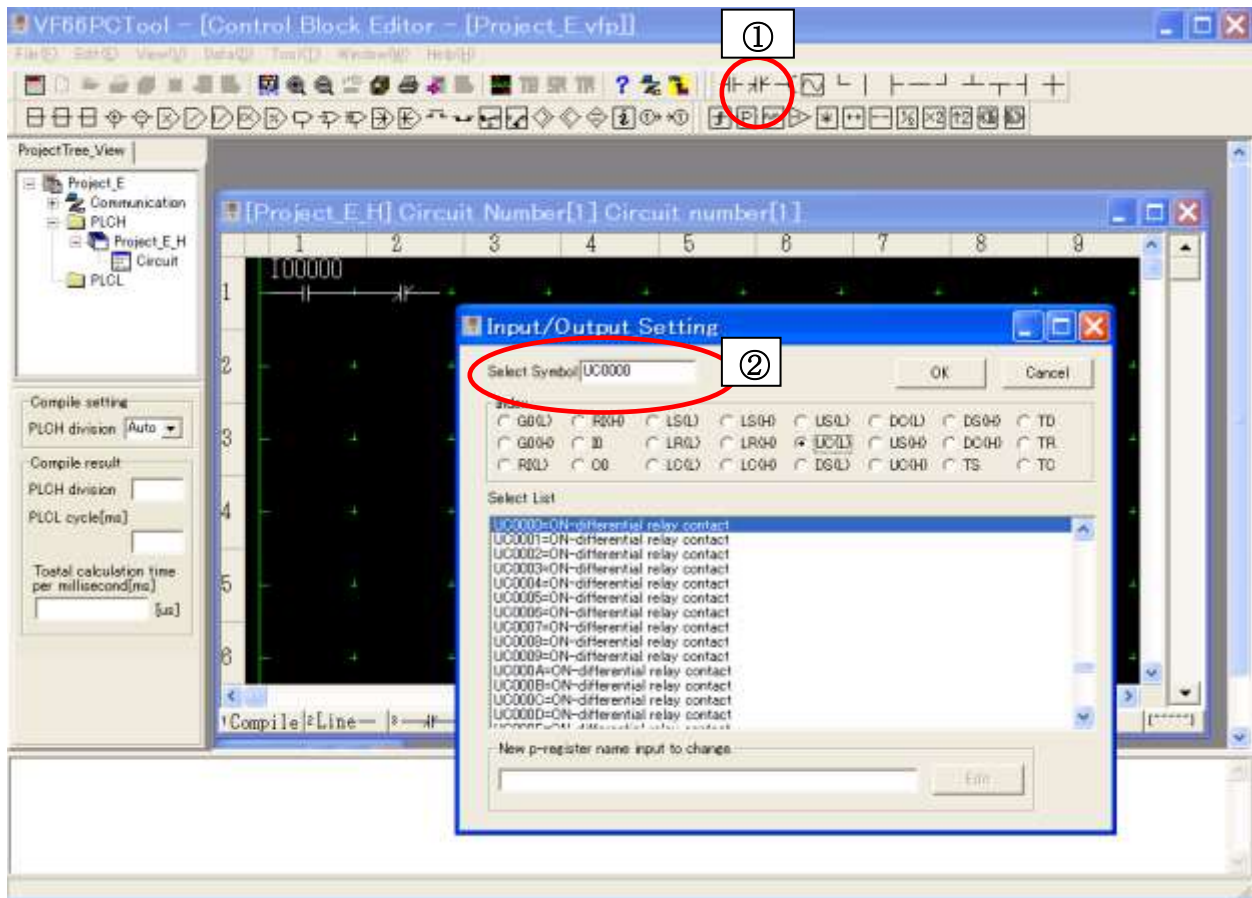
• Ladder-block

| Name | Symbol | Operation time |
|-----------------|---------------|----------------|
| Contact A | RELAY — — | 0.150μs |
| Contact B | RELAY — /— | 0.163μs |
| Coil | —(RELAY) | 0.225μs |
| PLCBRK | — | 0.313μs |
| Logic inversion | — >— | 0.088μs |

PLCBRK is a block inserted by the automatic operation when the program is divided. (PLCH only)
The max dividing is four.
(Refer to [4-4-7.Compile](#))

The figure below is the window when Contact B of Ladder-block is arranged.

1. Select Contact B (①), “Input-Output_Setting” is displayed.
2. Select data from a list, the data is displayed at [Select symbol](②).
3. Click [OK] and so the symbol of the selected data is displayed in the circuit.



Details of Contact A, Contact B and Coil are as follows.

[Mean of Symbols]

◎:Operated by both PLCL and PLCH

○:Operated by PLCL only

●:Operated by PLCH only





































×: Inoperable

| Name | | Coil | Contact | Name of Relay | Remarks |
|---|------------|------|---------|---------------|---|
| Global relay(PLCL operation) | | ○ | ◎ | G00000~G0003F | 64 points |
| Global relay(PLCH operation) | | ● | ◎ | G01000~G0103F | 64 points |
| Holding relay(PLCL operation) | | ○ | ◎ | RI0000~RI000F | 16 points |
| Holding relay(PLCH operation) | | ● | ◎ | RI1000~RI100F | 16 points |
| Input relay | | × | ◎ | I00000~I00072 | |
| Output relay(PLCL operation) | | ○ | ◎ | O00000~O0004F | |
| Latch relay (PLCL operation) | Set coil | ○ | ◎ | LS0000~LS000F | Operate Coil only PLCL. |
| | Reset coil | ○ | ◎ | LR0000~LR000F | |
| | Contact | × | ◎ | LC0000~LC000F | |
| Latch relay (PLCH operation) | Set coil | ● | ◎ | LS1000~LS1007 | Operate Coil only PLCH. |
| | Reset coil | ● | ◎ | LR1000~LR1007 | |
| | Contact | × | ◎ | LC1000~LC1007 | |
| On differential Relay (PLCL operation) | Coil | ○ | ◎ | US0000~US000F | Operate Coil only PLCL. |
| | Contact | × | ◎ | UC0000~UC000F | |
| OFF differential relay (PLCL operation) | Coil | ○ | ◎ | DS0000~DS000F | |
| | Contact | × | ◎ | DC0000~DC000F | |
| ON differential relay (PLCH operation) | Coil | ● | ◎ | US1000~US1007 | Operate Coil only PLCH. |
| | Contact | × | ◎ | UC1000~UC1007 | |
| OFF differential relay (PLCH operation) | Coil | ● | ◎ | DS1000~DS1007 | |
| | Contact | × | ◎ | DC1000~DC1007 | |
| ON-timer relay (PLCL operation) | Coil | ○ | ◎ | TS0000~TS000F | Operate Coil only PLCL Set time : |
| | Contact | × | ◎ | TD0000~TD000F | |
| OFF-timer relay (PLCL operation) | Coil | ○ | ◎ | TR0000~TR000F | 00.01S(10ms)~ 10M55S |
| | Contact | × | ◎ | TC0000~TC000F | |

4-4-4. Selection/Setting method of Dataflow-block

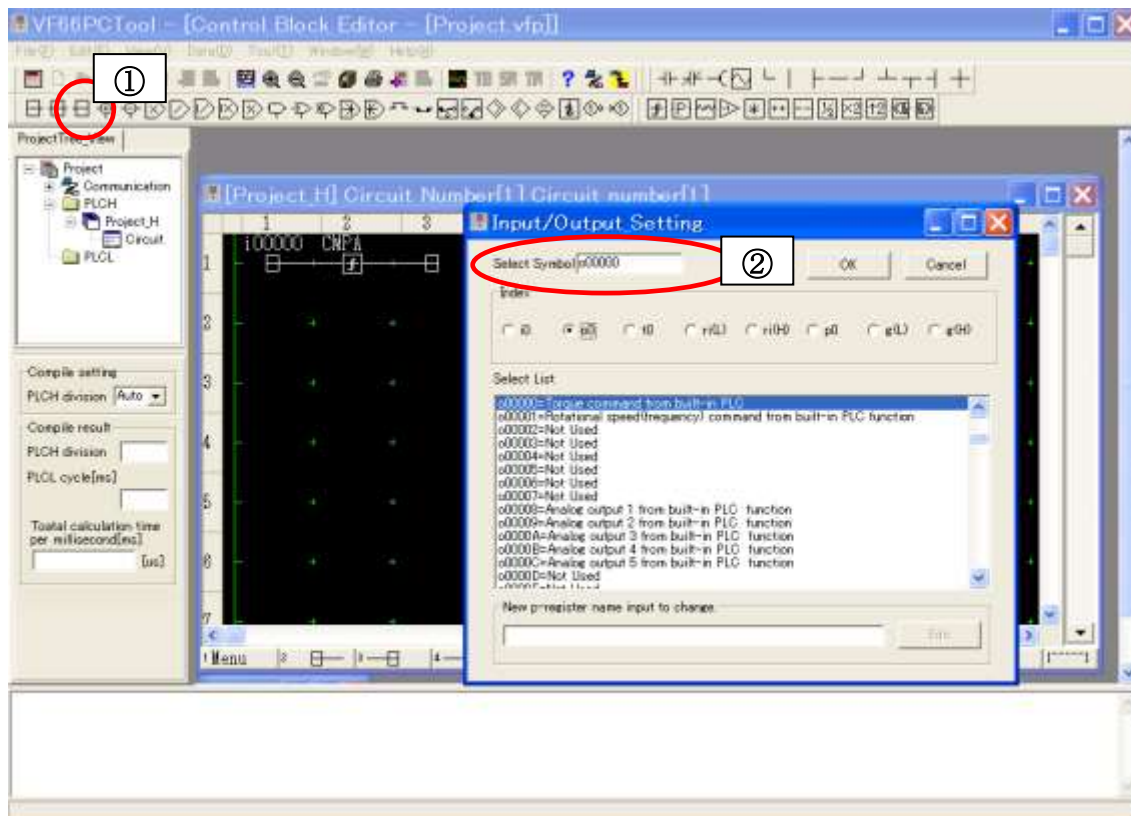
Kinds of Dataflow-block and operation time are as follows.

• Dataflow-block

| Name | Symbol | Operation time | Name | Symbol | Operation time |
|-----------------------------|---|----------------|------------------------------|---|----------------|
| Load |  | 0.113μs | Contact c (1) |  | 0.175μs |
| Store |  | 0.225μs | Contact c (2) |  | 0.175μs |
| Load and Store |  | | Compare high |  | 0.100μs |
| Addition |  | 0.088μs | Compare low |  | 0.100μs |
| Subtraction |  | 0.100μs | Compare equal |  | 0.113μs |
| Multiplication |  | 0.150μs | Sign Conversion |  | 0.088μs |
| Division |  | 1.300μs | Local constant integer |  | 0.113μs |
| Remainder |  | 1.150μs | Absolute value Conversion |  | 0.125μs |
| Multiplication (Base 20000) |  | 1.325μs | Complement of 1 |  | 0.088μs |
| Division (Base 20000) |  | 1.425μs | Increment |  | 0.088μs |
| AND |  | 0.088μs | Decrement |  | 0.088μs |
| OR |  | 0.088μs | One half |  | 0.088μs |
| EXOR |  | 0.088μs | Double |  | 0.088μs |
| High-level priority |  | 1.400μs | Square |  | 1.200μs |
| Low-level priority |  | 0.138μs | P-area parameter Coefficient |  | 0.175μs |
| Contact a |  | 0.175μs | Right shift |  | 0.100μs |
| Contact b |  | 0.175μs | Left shift |  | 0.088μs |
| Connector load |  | 0.100μs | Connector store |  | 0.088μs |

In the figure below, when store of Dataflow-block is arranged.

1. Select store (①), “Input-Output_Setting” is displayed.
2. Select data from a list, the data is displayed at [Select symbol](②).
3. Click [OK] and so the symbol of the selected data is displayed in the circuit.



Details of store and load are as follows.

[Mean of Symbols]

◎: Operated by both PLCL and PLCH

○: Operated by PLCL only

●: Operated by PLCH only

×: Inoperable

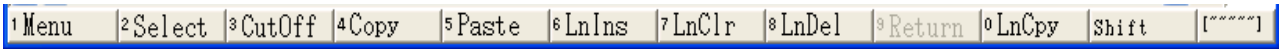
| Name | Store | Load | Register Name | Remarks |
|---|-------|------|---------------|---------------------------------|
| Trace-back register | ◎ | ◎ | t00000~t0000B | 12 points |
| Global register(for PLCL) | ○ | ◎ | g00000~g0007F | Max 128 points*1 |
| Global register (for PLCH) | ● | ◎ | g01000~g0107F | Max 128 points*1 |
| Preservation register(for PLCL) | ○ | ◎ | ri0000~ri000F | Max 16 points*1 |
| Preservation register (PLCH operation) | ● | ◎ | ri1000~ri100F | Max 16 points*1 |
| p-register (Synchronizes with console P area.) | × | ◎ | p00000~p00063 | P-00~P-99*1 (Max 100 points) |
| Input register | × | ◎ | i00000~i00031 | 50 points |
| Output register | ● | ◎ | o00000~o0001E | 31 points |

*1: The maximum number is changed by construction of program.

4-4-5. Input auxiliary function

When the [Asist] section button is clicked, change to input auxiliary function as follows.

This function can paste the circuit with the copy and package deleting.



[1. Menu]

Back to circuit edit from input auxiliary function.

[2. Select]

The head of the copied part is specified.

[3. CutOff]

Cut off selected parts.

[4. Copy]

Copy selected parts.

[5. Paste]

The data that is copied or cut is pasted in the place that the cursor shows.

[6. LnIns]

One line is inserted in the line that the cursor shows.

[7. LnClr]

All symbols of the line that the cursor shows are deleted.

[8. LnDel]

One line is deleted in the line that the cursor shows, and close up.

[9. Return]

Reverse the last action, when you execute **LnClr** or **LnDel**.

[10. LnCpy]

One line is copied in the line that the cursor shows, and paste to the following line.

[Shift]

※not in use

[“ “ “ “] or [_ _ _ _]

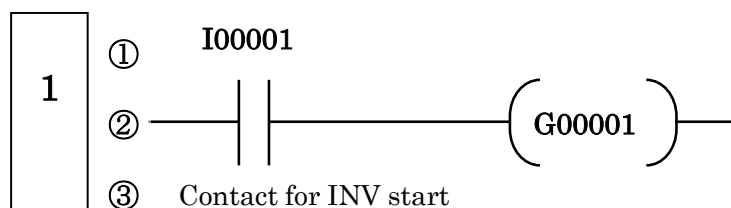
The buttons indicate at upper side or bottom side in the window.

4-4-6. Comment

You can write comments of twelve words in thirteenth row of circuit.

Also, for only Ladder-block, comments are written in the bottom of block as follows.

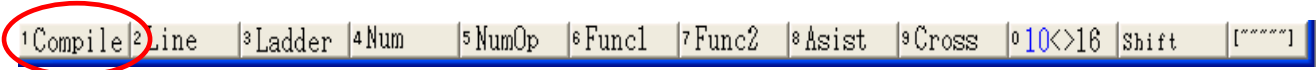
When not set block, comments are written in the third row. (Input to the part in figure below ③).



4-4-7. Compile

When the edit ends, click [Compile] of the section button. The code conversion processing to build it in an inverter is executed; “Compile Complete!” is displayed at a log of lower window, if without errors.

When the mistake is found in the edit, “Compile Error” is displayed. At the same time, substances of the error are displayed. Edit again referring to the error.



```

Program amount calculation
Address initialization
PLCH-Program is being converted...
Program conversion end
Comment compile
Program compile
Compile complete
    
```

Compile completed

```

Project_E.vfp
The set file is initialized
Project_E.vfp Compile start
[1][12]G00000:It is not possible to arrange it in PLCH.
PROJECT_E_H G00000cannot be arranged in this circuit.[ER0000]
Program conversion end
Compile error
    
```

Compile Error

PLCH division time and PLCL processing time are depending on compile. The time is displayed at items under “ProjectTree_View”. Also when PLCBRK is automatically inserted, the position is displayed at log column.

PLCH Processing division
 PLCH[ms] 1ms

PLCL Processing time
 PLCL[ms] 5ms

```

HeavyProgram.vfp Compile start
Program amount calculation
Address initialization
HEAVYPROGRAM_H Page:2 PLCBRK was inserted after [2][7] automatically.(SUM Time=208.989us)
PLCH-Program is being converted...
PLCL-Program is being converted...
Program conversion end
    
```

Processing division/time

PLCBRK inserted automatically

If the error occurred, the following are confirmed.

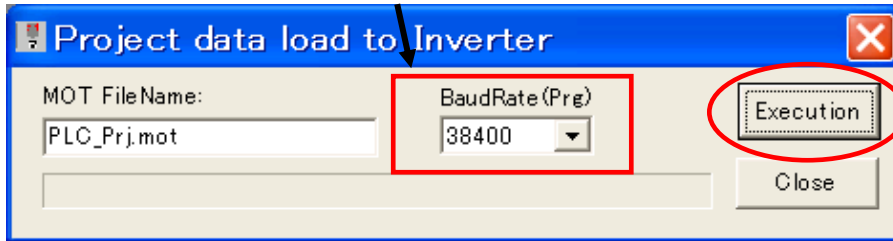
- Ladder-block and Dataflow-block are connected.
- Unconnected part somewhere
- A block is set in the table that cannot be set.
- The input symbol is connected as an output symbol.
- It connects to input symbol at as output, or the contrary case.

※Refer to **4-7. Error message**

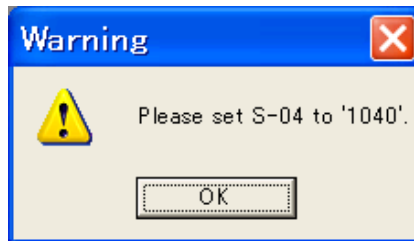
4-4-8. Write in inverter

After finishing compile, generated code (MOT file) is written in an inverter. The dialog below is displayed after you click [Data] - [Project data write to INV] in the main menu.

Make sure whether the inverter is connected to user's PC by USBIF66, and then click [Execution].
When the error occurs while writing it, BaudRate is set small.



After click, the messages below are displayed. Set *S-04* to "1040" by consol panel (SET66-Z) and then push "SET" button on consol panel.

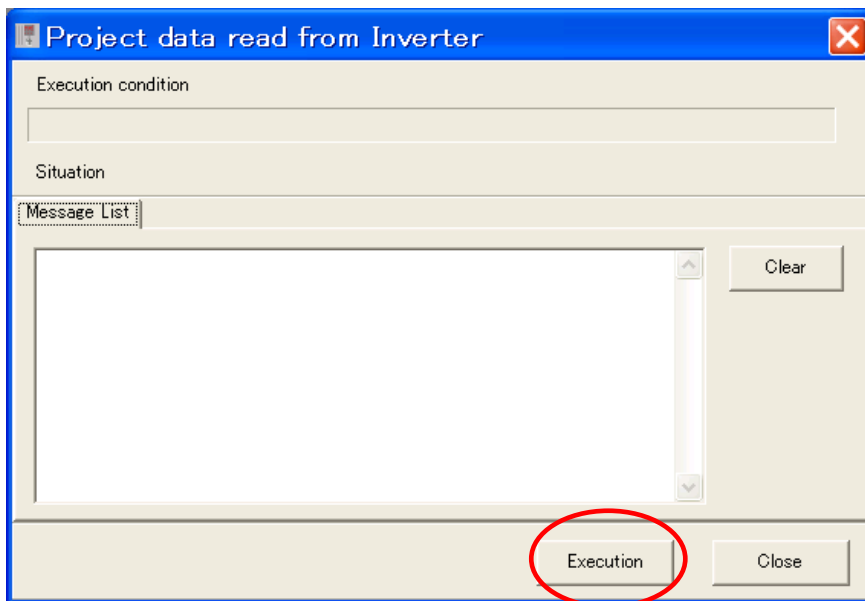


When you click [OK], writing starts.

4-4-9. Reading from inverter

The data read from an inverter is displayed in user's PC. The figure below is displayed after you click [Data] - [Project data read from INV] in the main menu.

When you click [Execution], save dialog is displayed. And then the project name and the preservation place are specified. If you finish completely reading all data without trouble, "All changing completed" message is displayed at message list.

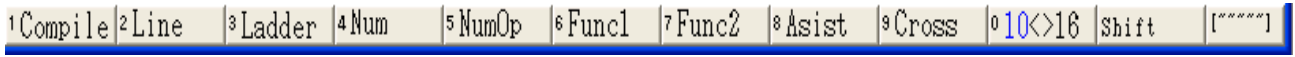


4-4-10. Other edit methods

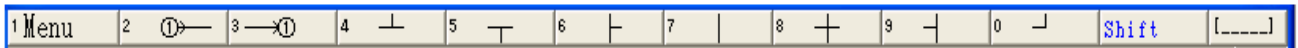
As other edit methods, as follows.

① Section button when circuit is edited.

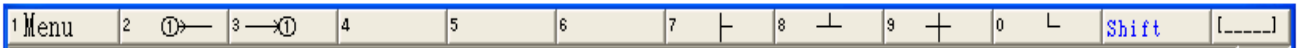
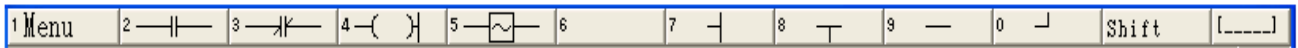
When [2. Line]~[7. Func2] buttons clicked, function of button is change as follows.



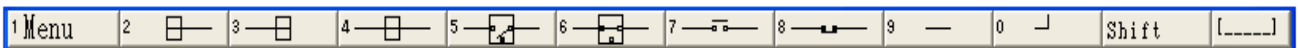
[2. Line]



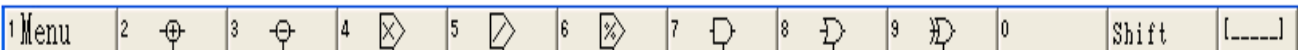
[3. Ladder]



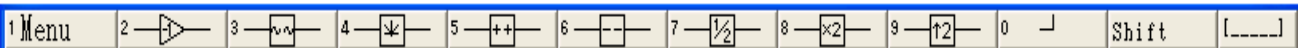
[4. Num]



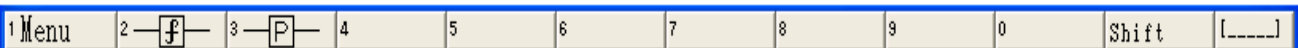
[5. NumOp]



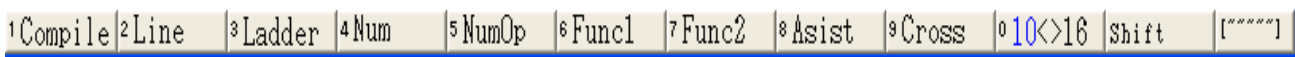
[6. Func1]



[7. Func2]



[8. Asist]



[9. Cross]

Cross-reference function executes. (Refer to [4-3.](#))

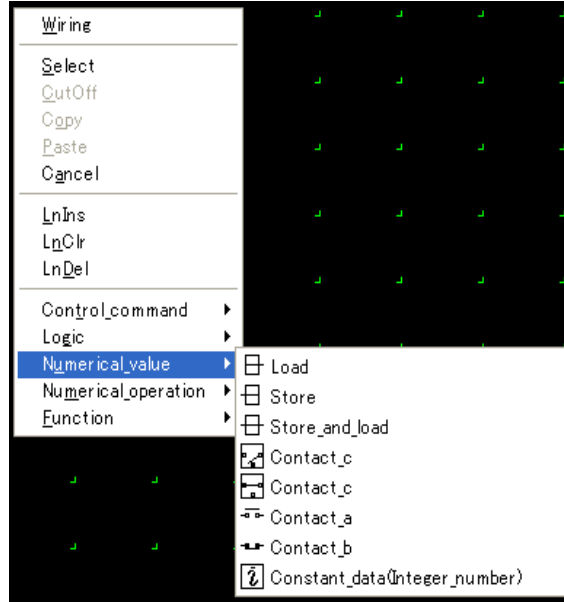
[“ “ “ “] or [_ _ _ _]

The display of the button is changed the upper side or lower of the window.

② Popup menu button of circuit edit window

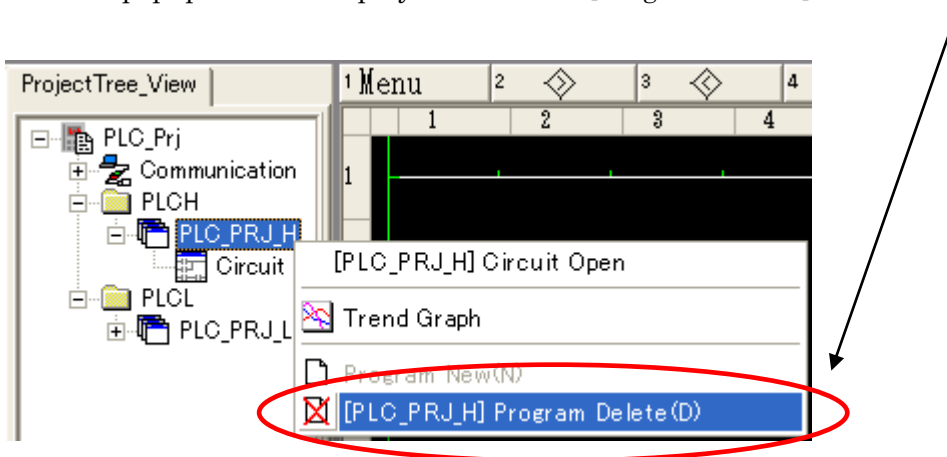
Right click with the mouse in circuit edit window; the popup menu below is displayed.

Each menu is same as the previous contents.



4-4-11. Circuit deletion

When you wish to delete the circuit, It right-clicks in the circuit to be deleted in “ProjectTree_View”, then the popup menu is displayed and select [Program Delete].



4-5. Monitor mode

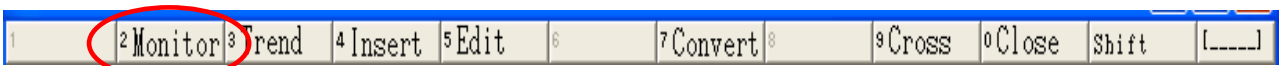
4-5-1. Monitor mode

The state of Ladder-block and the value of Dataflow-block written in an inverter are in real time displayed in the circuit edit window.

(*Cannot use **Trend mode** together.)

4-5-2. Operation proceed of monitor mode

1. Confirm whether the inverter is connected to user's PC by USBIF66.
2. Click [Data] - [Project data read from inverter] in the main menu.
(*When written in an inverter after compile, go to 5.)
3. The project file name and the preservation place are specified.
4. Open the project file.
5. Open the circuit edit window to be monitored.
6. Click [Monitor] of the section button in the circuit edit window, also click [File]-[Monitor mode] in the main menu.

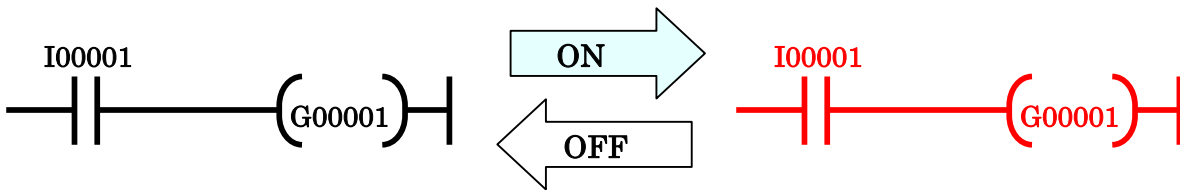


4-5-3. Status display

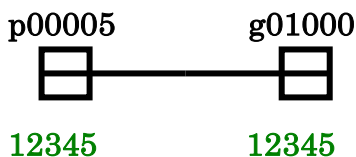
It becomes red when becoming turning on at the relay (OFF: Hold).

The value is displayed under each block for the register.

[Relay]



[Register]



4-6. Trend mode

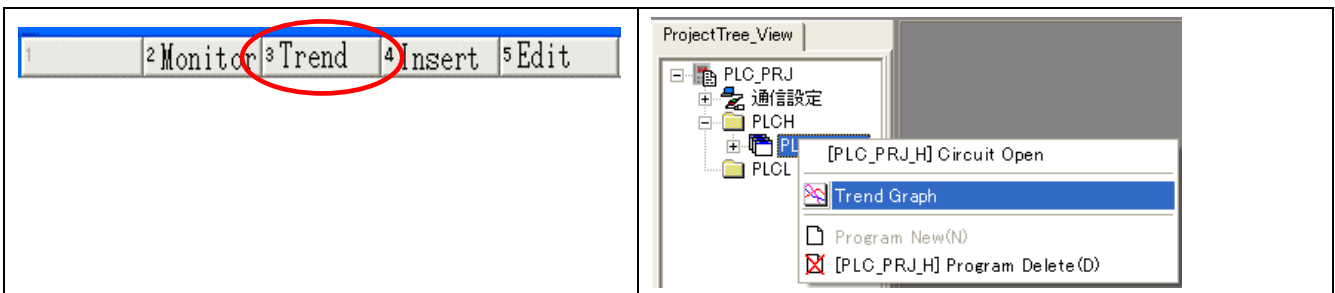
4-6-1. Trend mode

The state of Ladder-block and the value of Dataflow-block written in an inverter are in real time displayed in the graph.

(*Cannot use **Monitor mode** together.)

4-6-2. Operation proceed of trend mode

1. Confirm whether the inverter is connected to user's PC by USBIF66.
2. Click [Data] - [Project data read from inverter] in the main menu.
(※When written in an inverter after compile, go to 5.)
3. The project file name and the preservation place are specified.
4. Open the project file.
5. Open the circuit edit window to be monitored.
6. Click [Trend] of the section button in the circuit edit window, also right-clicks in the circuit to be monitored, then select [Trend Graph] in the popup menu.
7. Display the graph window.
8. Set up channel and describe graph.



4-6-3. Describe graph

When right-click with mouse on graph window, popup menu is displayed.

[Stop / ReStart]

Drawing stop and re-drawing by restart.

[Ruled line display]

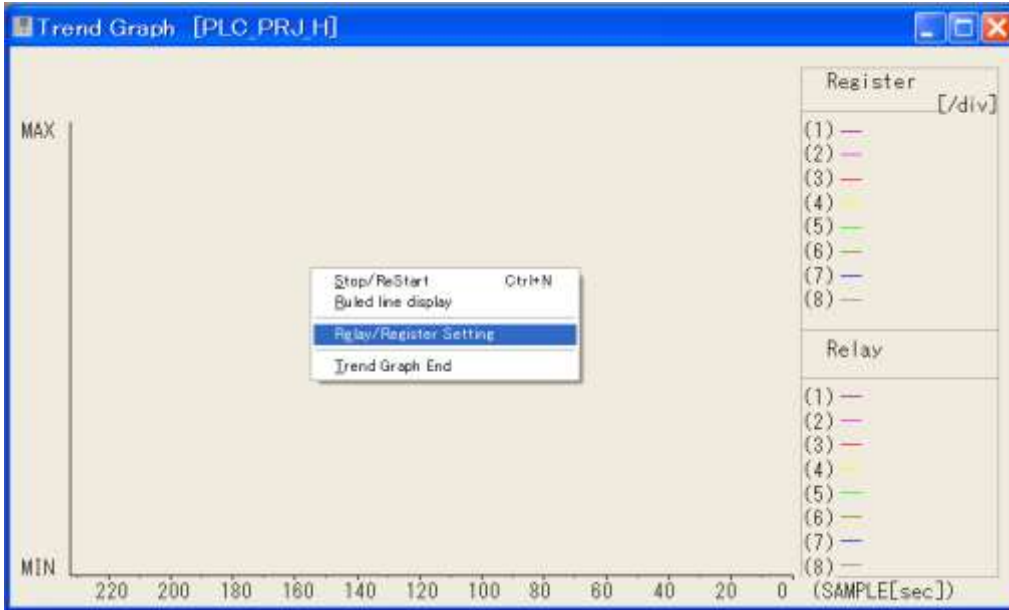
Grid is display or no display.

[Relay/Register setting]

The window to set relay and register is displayed.

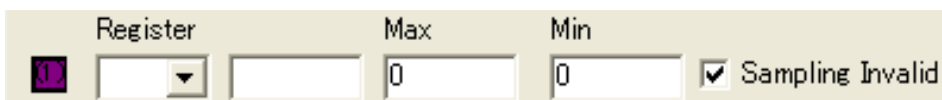
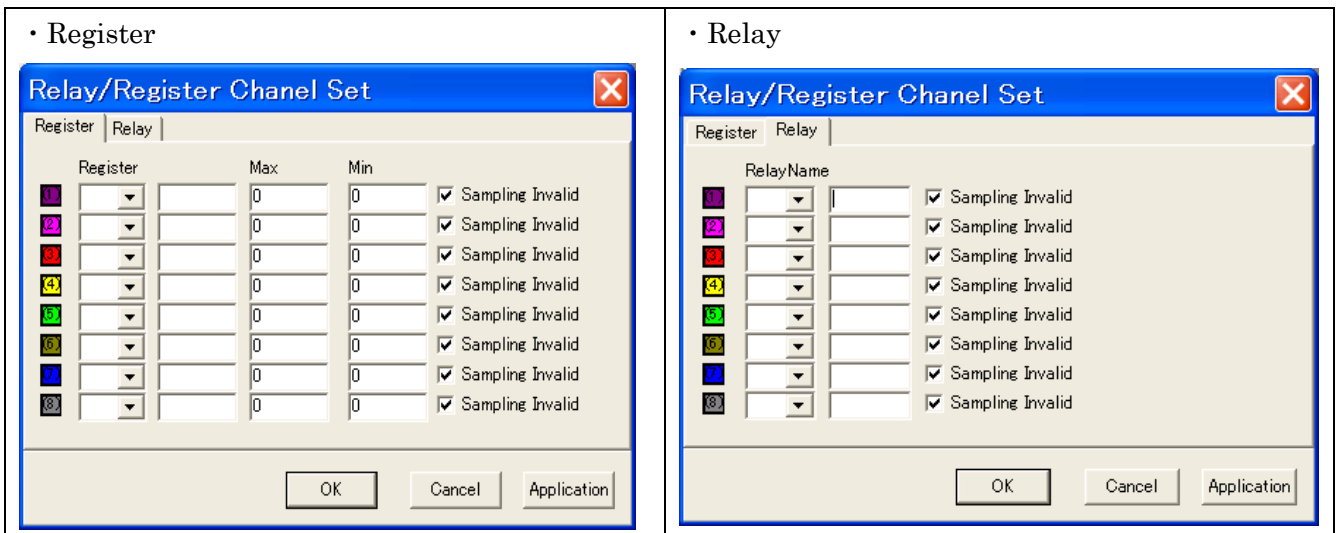
[Trend Graph End]

Trend Graph Mode is canceled.



4-6-4. Set description

The set window below is displayed when you operate [Relay/Register Setting] at menu.
 [OK] is clicked after each items set.



- ↑ The color of the line is changed when you click number of channel.
- ↑ The kind is selected.
- ↑ Input four words of symbol label.
- ↑ The maximum value of graph. (Only register)
- ↑ The minimum value of graph. (Only register)
- ↑ Check, when you wish to describe.

4-7. Error message

The explanation of each error and the method of settlement are shown in the following.

| Error code | Method of settlement |
|---------------|--|
| ER0000 | The arrangement of the symbol is a mistake. Confirm connection at block. Whether the block of a different character is connected is confirmed. |
| ER0001 | The symbol not defined is used. The symbol that has not been described to this manual cannot be used. |
| ER0002 | The system file is not found, so software cannot be normally executed. Uninstall the software, and then re-install. (※We recommend you take backups just in case.) |
| ER0003 | The error is whether you take input relay and contact instead of coil, or whether you take <i>i0-register</i> or <i>p-register</i> instead of store. It is not possible to use it as a coil/store for loading data alone. |
| ER0004 | The label of the set symbol exceeded the setting range. It is corrected that the setting range is not exceeded. |
| ER0005 | The amount of the program of PLCH exceeded capacity. It is necessary to decrease the amount of the program of PLCH. |
| ER0006 | The amount of a total program including the comment exceeded capacity. It is necessary to decrease the comment or the program. |
| ER0007 | The capacity of a temporary memory was exceeded because there were a lot of numbers of <i>OR circuits</i> . It is necessary to decrease the number of <i>OR circuits</i> . |
| ER0008 | The capacity of a temporary memory was exceeded because there were a lot of numbers of branch. It is necessary to decrease the number of branch of the Dataflow-block. |
| ER0009 | The number of total use of <i>g0-register</i> and <i>p-register</i> exceeded the upper bound. It is necessary to decrease the number of use. |
| ER0010 | The number of total use of <i>ri-register</i> exceeded the upper bound. It is necessary to decrease the number of use. |
| ER0011 | The label of not being possible to use it by register or relay is set. It corrects it to an appropriate label. |
| ER0012 | There is an item not set in Control-block. After it sets it, re-compile. |
| ER0013 | The store and other blocks are arranged without data loading. Arrange various blocks after arranging loading (Dataflow-block). |
| ER0014 | When the bit data is used, the contact is necessary for the row. |

| | |
|---------------|--|
| ER0015 | It is necessary to arrange the contact before logic inversion. |
| ER0016 | It confirms it because there is a possibility that the block of a different attribute is connected. |
| ER0017 | The label only for the coil is used for the contact. The label of the contact is confirmed and corrected. |
| ER0018 | The symbol only for the input is used as an output. The symbol is confirmed and corrected. |
| ER0019 | There is a circuit with which the output is not connected. The terminal of the circuit should connect the terminal symbol. |
| ER0020 | Capacity in which the operation result of Control-block is preserved is insufficient. Control-block preserves the operation result in the same area as <i>g0-register</i> (include <i>p0-register</i>). Therefore, when there are a lot of numbers of use of register, the preserved area cannot be secured and it becomes an error. To solve this problem; 1. The number of use of registers is decreased. 2. The number of use of Control-block is decreased. However, possession amount of save area is different by Control-block. |
| ER0021 | <i>i0-register</i> or <i>p-register</i> are set to a set item of Control-block. Set output registers. |

※ We do not guarantee, when you write with ignoring error messages.

Chapter 5 Convert from 64 series

Convert from 64Series automatically converts parameter of 64Series inverter into VF66 series inverter. (Not possible to convert it according to the condition.).

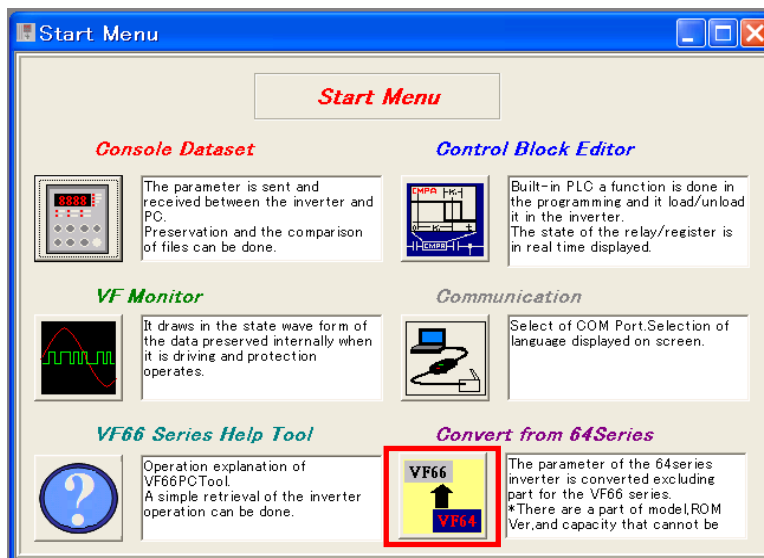
After the converting, CDS files are made. And it is possible to use it by *Console Dataset*.

5-1. Start Convert from 64Series

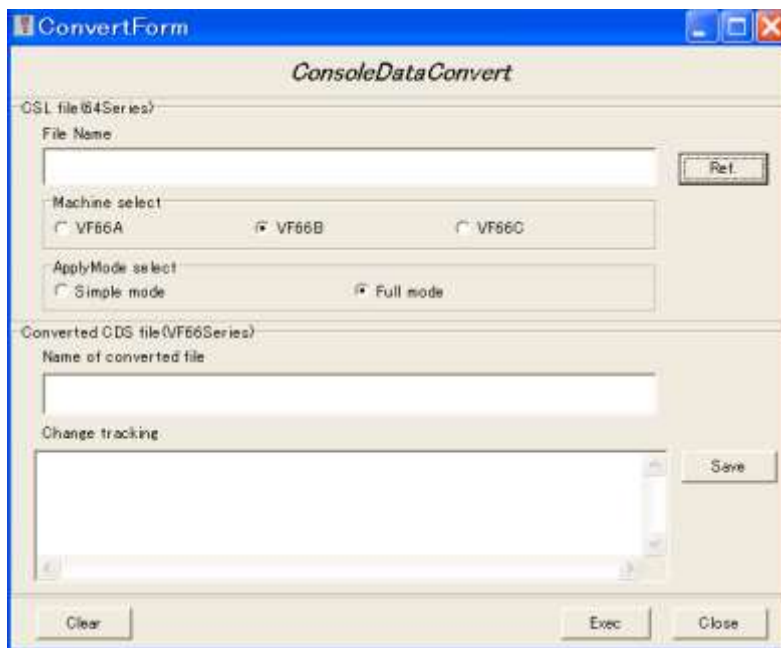
Start **Convert from 64Series** by the following procedure.

[1] Start Convert from VF64Series

[Convert from 64Series] is selected from the start menu, Convert from 64Series is started.



[2] Convert from 64Series window is displayed



5-2. Convert a parameter file

To convert the parameter file, follow these steps.

[1] Selection of 64Series parameter file

The parameter file of *64Series inverter (.csl)* is selected by click [Ref.] button.

Full pass of selected file is displayed at **File Name**.

[2] Selection of Machine select and ApplyMode

Machine select and **ApplyMode select** of applied an inverter are selected.

[3] Execution

[Exec] is clicked; the conversion of parameter is executed. When a set value is changed by the specification while converting it, the changed contents is displayed at **Change tracking**.

If you wish to save the change tracking, click [Save]. Also all columns are deleted by [Clear].

[4] End of conversion

When end the conversion, CDS file is generated. Full pass name of the file is displayed at **Name of converted file**.

The list below is convertible ROM version of 64Series VFC control board.

| Model | Convertible 64Series ROM version |
|--------|--|
| VF64 | 02-A1,02-A2,02-A4~A7,21-A1,21-B1~B9 |
| VF64A | A1-A2,A1-B1~B9 |
| ED64sp | 02-A2,02-A4~-A9,02-B1~B8,21-A1~-A3,21-B1,21-B2,21-B9,21-C1~-C9 |
| ED64A | A1-A1,A1-B1,A1-B2,A1-C1~-C9 |

5-3. Convert items of parameter

At converting 64Series parameter into 66Series parameter, the data is copied. But, apply the data to equation of conversion, set to initial value by each item.

The list below is shows the changed content of each item of each control mode.

【Note】

- * Multi input terminal function is different with 64Series. Confirm set value of terminals and wiring.
- * i-22~32(only Vector mode) are used for special mode of ASYC66-Z(Communication option).
- * Dead time (A-11~16): If control mode is vector, necessary to execute auto tuning.

【1】 VF66 induction motor V/f mode(IM-V/f)

| VF66 Series V/f mode (File converted) | | VF64 Series O mode(Old file) | |
|---------------------------------------|---|------------------------------|---|
| Item | Item contents | Item | Changed contents |
| Standard area | Standard set items for driving | Standard area | Data is copied |
| A-00~-07 | Motor specification | A-00~-07 | Data is copied |
| A-09 | PWM career frequency | A-10 | Upper Limit 6.0[kHz] |
| A-11~-16 | Dead time compensation amount | A-11~-16 | Our dead time of each capacity is set |
| A-17 | Motor primary resistance | A-17 | Conversion is applied |
| b-00 | Setting data rewrite protection | — | Set default value |
| b-01 | Stop mode selection | b-03 | Data is copied |
| b-02 | Stop frequency | b-04 | Data is copied |
| b-03 | DC brake operation time | b-05 | Data is copied |
| b-05 | JOG stop mode selection | b-07 | Data is copied |
| b-06 | JOG stop frequency | b-08 | Data is copied |
| b-07 | Instantaneous power interruption restart | b-11 | Data is copied |
| b-08 | Reverse prohibition mode selection | b-12 | Data is copied |
| b-09 | Command place when coupled | b-15 | Data is copied |
| b-10 | Frequency commanding place selection | b-16 | Data is copied |
| b-11 | Operation commanding place selection | b-17 | Data is copied |
| b-12 | JOG commanding place selection | b-18 | Data is copied |
| b-13 | Powering torque limit | E-00 | Data is copied |
| b-14 | Regenerative torque limit | E-01 | Data is copied |
| b-15 | Powering torque limit usage selection | E-02 | Data is copied |
| b-16 | Regenerative torque limit usage selection | E-03 | Data is copied |
| b-17 | Analog frequency command characteristic selection | G-02 | If used Pulse train by G-00(Analog speed command) of 64Series, set 1. Besides above case, data is copied. |

| | | | |
|---------|--|---------|--|
| b-18 | Analog frequency command upper limit frequency | G-03 | Data is copied |
| b-19 | Analog frequency command upper limit frequency | G-04 | Data is copied |
| b-20 | Analog input Zero limit voltage | G-05 | Data is copied |
| b-21 | Analog output (1) characteristics selection | G-06 | Data is copied |
| c-00 | Selection of multifunction input position | c-00 | Data is copied |
| c-01~05 | Multi-function input terminal (1) ~ (5) function selection | — | Set default value |
| c-06 | Multi-function input terminal (6) function selection | c-01 | Data is copied |
| c-07 | Multi-function input terminal (7) function selection | c-02 | Data is copied |
| c-08 | Multi-function input terminal (8) function selection | c-03 | Data is copied |
| c-09 | Multi-function input terminal (9) function selection | c-04 | Data is copied |
| c-10 | Multi-function input terminal (10) function selection | c-05 | Data is copied |
| c-11 | Multi-function input terminal (11) function selection | c-06 | Data is copied |
| c-12~17 | Multifunction input terminal (12)~(17) function selection | — | Set default value |
| d-00~14 | Accel / decel time and S pattern accel / decel selection | d-00~14 | Data is copied |
| d-15 | Preset frequency (1) | H-00 | Data is copied |
| d-16 | Preset frequency (2) | H-01 | Data is copied |
| d-17 | Preset frequency (3) | H-02 | Data is copied |
| d-18 | Preset frequency (4) | H-03 | Data is copied |
| d-19 | Preset frequency (5) | H-04 | Data is copied |
| d-20 | Preset frequency (6) | H-05 | Data is copied |
| d-21 | Preset frequency (7) | H-06 | Data is copied |
| d-22 | Jump frequency (1) | d-18 | Data is copied |
| d-23 | Jump frequency (2) | d-19 | Data is copied |
| d-24 | Jump frequency (3) | d-20 | Data is copied |
| d-25 | Jump frequency (4) | d-21 | Data is copied |
| d-26 | Jump frequency width | d-22 | Data is copied |
| d-27 | MRH function usage selection | d-23 | Data is copied |
| d-28 | MRH upper limit frequency | d-24 | Data is copied |
| d-29 | MRH lower limit frequency | d-25 | Data is copied |
| E-00 | Regeneration stall prevention function usage selection | b-13 | Data is copied |
| E-01 | Regeneration stall prevention Voltage | F-00 | Decimal point position of set value is changed |
| E-02 | Start mode selection | b-02 | Data is copied |

| | | | |
|---------|---|---------|--|
| E-03 | Forward direction change | — | Set default value |
| E-04 | Simulation mode | — | Set default value |
| E-05 | Autoboost mode | b-09 | Data is copied |
| E-06 | Restart delay time | b-06 | Data is copied |
| E-07 | V/f pattern selection | E-04 | Data is copied |
| E-08 | Voltage at turnoff point | E-05 | Data is copied |
| E-09 | Frequency at turnoff point | E-06 | Data is copied |
| F-00 | Built-in DB (dynamic brake) operation level | F-00 | Data is copied |
| F-01 | Forward over frequency setting | F-01 | Conversion is applied |
| F-02 | Reverse over frequency setting | F-02 | Conversion is applied |
| F-03 | Overload protection setting | F-03 | Data is copied |
| F-04 | Cumulative operation timer (1-Capacitor) | — | Set default value |
| F-05 | Cumulative operation timer (2-Fan) | — | Set default value |
| F-06 | Motor overheat protection operation selection | F-12 | Data is copied |
| F-07 | Protection relay (86A) operation selection upon power failure | F-13 | Data is copied |
| F-08 | Protection retry count setting | F-14 | Data is copied |
| F-09 | External failure (1) detection delay Time | — | Set default value |
| F-10 | External failure (2) detection delay Time | — | Set default value |
| F-11 | External failure (3) detection delay Time | — | Set default value |
| F-12 | External failure (4) detection delay Time | — | Set default value |
| F-13 | Traceback pitch | F-15 | Data is copied |
| F-14 | Traceback trigger point | F-16 | Data is copied |
| F-15~26 | Traceback CH selection | F-17~28 | Set default value |
| G-00 | Temperature detection selection | — | If used by F-12=1 of 64Series, set 2. Except the above case, 0 is set. |
| G-01 | Temperature detection offset adjustment | G-19 | Data is copied |
| G-02 | Temperature detection gain adjustment | G-20 | Data is copied |
| G-03 | Analog input (2) characteristics selection | G-11 | Set value of 64 series+1 |
| G-04 | Analog input (2) upper limit frequency | G-12 | Data is copied |
| G-05 | Analog input (2) lower limit frequency | G-13 | Data is copied |
| G-06 | Analog input (3) characteristics selection | — | If used Pulse train by G-00(Analog speed command) of 64Series, set 3. Besides above case, set 1. |
| G-07 | Analog input (3) upper limit frequency | — | Set default value |

| | | | |
|---------|--|---------|---|
| G-08 | Analog input (3) lower limit frequency | — | Set default value |
| G-09 | Analog output (2) characteristics Selection | G-16 | If set value of 64 series is 8 or more: Set value of 64 series-8 0~7: Data is copied |
| G-10 | Analog output (3) characteristics selection | G-16 | Data is copied |
| G-11 | Analog input (4) characteristics selection | — | Set default value |
| G-12 | Analog input (5) characteristics selection | — | Set default value |
| G-13 | Analog output (4) characteristics selection | — | Set default value |
| G-14 | Analog output (5) characteristics selection | — | Set default value |
| G-15 | Line speed monitor adjustment | n-00 | Data is copied |
| G-16 | Analog input monitor display selection | — | Set default value |
| H-00 | Multifunction output terminal (1) function selection | c-07 | Data is copied |
| H-01 | Multifunction output terminal (2) function selection | c-08 | Data is copied |
| H-02 | Multifunction output terminal (3) function selection | c-09 | Data is copied |
| H-03 | Multifunction output terminal (4) function selection | c-10 | Data is copied |
| H-04 | Multifunction output terminal (5) function selection | — | Set default value |
| H-05 | Multifunction output terminal (6) function selection | — | Set default value |
| H-06 | Frequency detection (1) | c-11 | Data is copied |
| H-07 | Frequency detection (2) | c-12 | Data is copied |
| H-08 | Frequency detection width | c-13 | Data is copied |
| H-09 | Torque detection (with polarity) | c-14 | Data is copied |
| H-10 | Torque detection(absolute value) | c-15 | Data is copied |
| H-11 | Overload pre-alarm operation level setting | c-16 | Data is copied |
| H-12 | Maximum frequency reduction rate | c-17 | Data is copied |
| i-00 | PLCL function usage selection | b-14 | Set default value |
| i-01 | PLCH function usage selection | b-00 | Set default value |
| i-02 | Droop control usage selection | i-00 | Data is copied |
| i-03 | Droop start frequency | i-01 | Data is copied |
| i-04 | Droop rate changeover frequency | i-02 | Data is copied |
| i-05 | Droop rate | i-03 | Data is copied |
| i-06 | Droop start torque | i-04 | Data is copied |
| J-00 | Digital communication option selection | J-00 | Set default value |
| J-01~08 | Communication option selection | J-01~08 | Data is copied |

| | | | |
|--------|---|------|-------------------|
| J-09 | DNET66-Z output instance number setting | J-17 | Data is copied |
| J-10 | DNET66-Z input instance number setting | J-18 | Data is copied |
| J-11 | DNET66-Z speed scale setting | J-19 | Data is copied |
| J-12 | DNET66-Z monitor data number setting | J-20 | Data is copied |
| J-13 | Highspeed response input selection | — | Set default value |
| J-14 | Date/Time data selection from communication | — | Set default value |
| J-15 | Connected number of outside DB (Dynamic Brake) units with communication | — | Set default value |
| L area | Analog input/output setting | — | Set default value |
| n-00 | Inverter control mode | S-01 | Data is copied |
| n-01 | Capacity / voltage class | S-02 | Data is copied |
| P area | P register constant setting | — | Set default value |

【2】 VF66 Induction motor Vector mode(IM-V)

| VF66 Series IM Vector mode (File converted) | | VF64 Series S/V mode(Old file) | |
|---|---|--------------------------------|--|
| Item | Item contents | Item | Changed contents |
| Standard area | Standard set items for driving | Standard area | Data is copied |
| A-00~-07 | Motor specification | A-00~-07 | Data is copied |
| A-08 | Number of PG-pulse | A-09 | Data is copied |
| A-09 | PWM career frequency | A-10 | Upper Limit 6.0[kHz] |
| A-10 | PG selection | — | Control mode of 64Series is S mode: Set 0 V mode: Set 1 |
| A-11~-16 | Dead Time compensation amount | A-11~-16 | Our dead time of each capacity is set |
| A-17 | Motor primary resistance | A-17 | Conversion is applied |
| A-18 | Motor secondary resistance | A-18 | Conversion is applied |
| A-19 | Motor leakage inductance | A-19 | Conversion is applied |
| A-20 | Motor mutual inductance | A-20 | Conversion is applied |
| A-21 | Motor inductance saturation coefficient (1) | A-21 | Data is copied |
| A-22 | Motor inductance saturation coefficient (2) | A-22 | Data is copied |
| A-23 | Motor core loss torque compensation | — | Conversion is applied |
| A-24 | Motor loss coefficient (1) | A-24 | Data is copied |
| A-25 | Motor loss coefficient (2) | A-25 | Data is copied |
| b-00 | Setting data rewrite protection | — | Set default value |
| b-01 | Stop mode selection | b-03 | Data is copied |
| b-02 | Stop speed | b-04 | If 64Series sensor less mode, Conversion is applied. Besides above case, data is copied. |
| b-03 | DC brake operation time | b-05 | Data is copied |
| b-04 | DC brake gain | b-06 | Data is copied Lower limit 20.0[%] |
| b-05 | JOG stop mode selection | b-07 | Data is copied |
| b-06 | JOG stop speed | b-08 | Conversion is applied |
| b-07 | Instantaneous power interruption restart | b-11 | Data is copied |
| b-08 | Reverse prohibition mode selection | b-12 | Data is copied |
| b-09 | Command place when coupled | b-15 | Data is copied |
| b-10 | Speed commanding place selection | b-16 | Data is copied |
| b-11 | Operation commanding place selection | b-17 | Data is copied |
| b-12 | JOG commanding place selection | b-18 | Data is copied |
| b-13 | Forward powering torque limit | E-00 | Data is copied |
| b-14 | Forward regenerative torque limit | E-01 | Data is copied |

| | | | |
|---------|--|---------|---|
| b-15 | Reverse powering torque limit | E-02 | Data is copied |
| b-16 | Reverse regenerative torque limit | E-03 | Data is copied |
| b-17 | Analog speed command characteristic selection | G-02 | If used Pulse train by G-00(Analog speed command) of 64Series, set 1. Besides above case, data is copied. |
| b-18 | Analog speed command upper limit speed | G-03 | Data is copied |
| b-19 | Analog speed command lower limit speed | G-04 | Data is copied |
| b-20 | Analog input Zero limit voltage | G-05 | Data is copied |
| b-21 | Analog output (1) characteristics selection | G-06 | Data is copied |
| c-00 | Multifunction input place selection | c-00 | Data is copied |
| c-01~05 | Multi-function input terminal (1) ~ (5) function selection | — | Set default value |
| c-06 | Multi-function input terminal (6) function selection | c-01 | Data is copied |
| c-07 | Multi-function input terminal (7) function selection | c-02 | Data is copied |
| c-08 | Multi-function input terminal (8) function selection | c-03 | Data is copied |
| c-09 | Multi-function input terminal (9) function selection | c-04 | Data is copied |
| c-10 | Multi-function input terminal (10) function selection | c-05 | Data is copied |
| c-11 | Multi-function input terminal (11) function selection | c-06 | Data is copied |
| c-12~17 | Multi-function input terminal (12) ~ (17) function selection | — | Set default value |
| d-00~14 | Accel / decel time and S pattern accel / decel selection | d-00~14 | Data is copied |
| d-15 | Preset speed (1) | H-00 | Data is copied |
| d-16 | Preset speed (2) | H-01 | Data is copied |
| d-17 | Preset speed (3) | H-02 | Data is copied |
| d-18 | Preset speed (4) | H-03 | Data is copied |
| d-19 | Preset speed (5) | H-04 | Data is copied |
| d-20 | Preset speed (6) | H-05 | Data is copied |
| d-21 | Preset speed (7) | H-06 | Data is copied |
| d-22 | Jump speed (1) | d-18 | Data is copied |
| d-23 | Jump speed (2) | d-19 | Data is copied |
| d-24 | Jump speed (3) | d-20 | Data is copied |
| d-25 | Jump speed (4) | d-21 | Data is copied |
| d-26 | Jump speed width | d-22 | Data is copied |

| | | | |
|------|---|------|--|
| d-27 | MRH function usage selection | d-23 | Data is copied |
| d-28 | MRH upper limit speed | d-24 | Data is copied |
| d-29 | MRH lower limit speed | d-25 | Data is copied |
| d-30 | Speed deviation limiting command selection | d-15 | Data is copied |
| d-31 | Maximum deviation (positive) | d-16 | Data is copied |
| d-32 | Maximum deviation (negative) | d-17 | Data is copied |
| E-00 | Regeneration stall prevention function usage selection | b-13 | Data is copied |
| E-01 | Regeneration stall prevention voltage | F-00 | Decimal point position of set value is changed |
| E-02 | High-efficient mode usage selection | b-02 | Data is copied |
| E-03 | Forward direction change | — | Set default value |
| E-04 | Simulation mode | — | Set default value |
| E-05 | Torque command mode selection | E-05 | Data is copied |
| E-06 | Flux reinforcing rate at start | E-11 | Data is copied |
| E-07 | Current control proportion gain | E-12 | Set default value |
| E-08 | Current control integral gain (1) | E-13 | Set default value |
| E-09 | Current control integral gain (2) | E-13 | Set default value |
| E-10 | Motor temperature compensation | E-15 | Data is copied |
| E-11 | Flux-command | E-10 | Data is copied |
| E-12 | Motor cooling fan (Sensor-less drive) | A-08 | Data is copied |
| F-00 | Built-in DB (Dynamic Brake) operation level | F-00 | Data is copied |
| F-01 | Forward over speed setting | F-01 | Conversion is applied |
| F-02 | Reverse over speed setting | F-02 | Conversion is applied |
| F-03 | Over load protection setting | F-03 | Data is copied |
| F-04 | Cumulative operation timer (1-Capacitor) | — | Set default value |
| F-05 | Cumulative operation timer (2-Fan) | — | Set default value |
| F-06 | Motor overheat protection operation selection | F-12 | Data is copied |
| F-07 | Protection relay (86A) operation selection upon power failure | F-13 | Data is copied |
| F-08 | Protection retry count setting | F-14 | Data is copied |
| F-09 | External failure (1) detection delay time | — | Set default value |
| F-10 | External failure (2) detection delay time | — | Set default value |
| F-11 | External failure (3) detection delay time | — | Set default value |
| F-12 | External failure (4) detection delay time | — | Set default value |
| F-13 | Trace back pitch | F-15 | Data is copied |

| | | | |
|---------|--|---------|---|
| F-14 | Trace back trigger point | F-16 | Data is copied |
| F-15~26 | Trace back CH selection | F-17~28 | Set default value |
| F-27 | Over torque protection function selection | F-05 | Data is copied |
| F-28 | Over torque protect level setting | F-06 | Data is copied |
| F-29 | Over torque protection operation standard torque | F-07 | Data is copied |
| F-30 | Speed control error function usage selection | F-08 | Data is copied |
| F-31 | Speed control error detection speed width (positive) | F-09 | Conversion is applied |
| F-32 | Speed control error detection speed width (negative) | F-10 | Conversion is applied |
| G-00 | Temperature detection selection | — | If used by E-15=1 or F-12=1 of 64Series, set 2. Except the above case, 0 is set. |
| G-01 | Temperature detection offset adjustment | G-19 | Data is copied |
| G-02 | Temperature detection gain adjustment | G-20 | Data is copied |
| G-03 | Analog input (2) characteristics selection | G-11 | Set value of 64 series+1 |
| G-04 | Analog input (2) upper limit speed | G-12 | Data is copied |
| G-05 | Analog input (2) lower limit speed | G-13 | Data is copied |
| G-06 | Analog input (3) characteristics selection | — | If used Pulse train by G-00(Analog speed command) of 64Series, set 3. Besides above case, set 1. |
| G-07 | Analog input (3) upper limit speed | — | Set default value |
| G-08 | Analog input (3) lower limit speed | — | Set default value |
| G-09 | Analog output (2) characteristics selection | G-16 | If set value of 64 series is 8 or more: Set value of 64 series-8 0~7: Data is copied |
| G-10 | Analog output (3) characteristics selection | G-16 | Data is copied |
| G-11 | Analog input (4) characteristics selection | — | Set default value |
| G-12 | Analog input (5) characteristics selection | — | Set default value |
| G-13 | Analog output (4) characteristics selection | — | Set default value |
| G-14 | Analog output (5) characteristics selection | — | Set default value |
| G-15 | Line speed monitor arrangement | n-00 | Data is copied |
| G-16 | Analog input monitor display selection | — | Set default value |
| H-00 | Multifunction output terminal (1) function selection | c-07 | Data is copied |
| H-01 | Multifunction output terminal (2) function selection | c-08 | Data is copied |

| | | | |
|------|--|------|----------------------------------|
| H-02 | Multifunction output terminal (3) function selection | c-09 | Data is copied |
| H-03 | Multifunction output terminal (4) function selection | c-10 | Data is copied |
| H-04 | Multifunction output terminal (5) function selection | — | Set default value |
| H-05 | Multifunction output terminal (6) function selection | — | Set default value |
| H-06 | Detected speed (1) | c-11 | Data is copied |
| H-07 | Detected speed (2) | c-12 | Data is copied |
| H-08 | Speed detection width | c-13 | Data is copied |
| H-09 | Torque detection (with polarity) | c-14 | Data is copied |
| H-10 | Torque detection (absolute value) | c-15 | Data is copied |
| H-11 | Overload pre-alarm operation level setting | c-16 | Data is copied |
| H-12 | Maximum speed reduction rate | c-17 | Data is copied |
| i-00 | PLCL function usage selection | b-14 | Set default value Data is copied |
| i-01 | PLCH function usage selection | b-00 | Set default value Data is copied |
| i-02 | Droop control usage selection | i-00 | Data is copied |
| i-03 | Droop start speed | i-01 | Data is copied |
| i-04 | Droop rate changeover speed | i-02 | Data is copied |
| i-05 | Droop rate | i-03 | Data is copied |
| i-06 | Droop start torque | i-04 | Data is copied |
| i-07 | Operation mode selection | b-01 | Data is copied |
| i-08 | Torque command input place selection | b-19 | Data is copied |
| i-09 | Analog torque command gain | G-14 | Data is copied |
| i-10 | Speed control proportion gain (2) | b-09 | Data is copied |
| i-11 | Speed control integral time constant (2) | L-19 | Set default value |
| i-12 | Speed control system moment of inertia (2) | — | Set default value |
| i-13 | JOG proportion gain selection | b-10 | Data is copied |
| i-14 | ASR cancellation usage selection | E-06 | Data is copied |
| i-15 | ASR feed-forward usage selection | E-07 | Data is copied |
| i-16 | Variable structure proportion gain start speed | E-08 | Data is copied |
| i-17 | Variable structure proportion gain minimum gain percentage | E-09 | Data is copied |
| i-18 | Initial excitation selection | b-20 | Data is copied |
| i-19 | Mechanical loss compensation usage selection | i-05 | Data is copied |
| i-20 | Mechanical loss offset amount | i-06 | Data is copied |
| i-21 | Gradient of mechanical loss | i-07 | Data is copied |
| i-22 | Positing speed (0) | J-09 | Data is copied |

| | | | |
|---------|---|---------|-------------------|
| i-23 | Positing speed (1) | J-10 | Data is copied |
| i-24 | Positing acceleration time | J-11 | Data is copied |
| i-25 | Positing deceleration time | J-12 | Data is copied |
| i-26 | Creep speed | J-13 | Data is copied |
| i-27 | Number of moving pulse within a creep period | J-14 | Data is copied |
| i-28 | Number of stop pulse | J-15 | Data is copied |
| i-29 | Positioning emergency stop selection | J-16 | Data is copied |
| i-30 | Proportion gain for positioning | L-18 | Data is copied |
| i-31 | Integral time constant for positioning | L-19 | Data is copied |
| i-32 | System moment of inertia for positioning | L-20 | Data is copied |
| J-00 | Digital communication option selection | J-00 | Set default value |
| J-01~08 | ASYC66-Z/CC66-Z option baud rate | J-01~08 | Data is copied |
| J-09 | DNET66-Z output instance number setting | J-17 | Data is copied |
| J-10 | DNET66-Z input instance number setting | J-18 | Data is copied |
| J-11 | DNET66-Z speed scale setting | J-19 | Data is copied |
| J-12 | DNET66-Z monitor data number setting | J-20 | Data is copied |
| J-13 | HighSpeed response input selection | — | Set default value |
| J-14 | Date/Time data selection from communication | — | Set default value |
| J-15 | Connected number of outside DB (Dynamic brake) units with communication | — | Set default value |
| L area | Analog input/output setting | — | Set default value |
| n-00 | Inverter control mode | S-01 | Data is copied |
| n-01 | Capacity / voltage class | S-02 | Data is copied |
| P area | P register constant setting | — | Set default value |

【3】 VF66 ED(IPMSM) motor Vector mode(ED-V)

| VF66 Series ED Vector mode (File converted) | | ED64 Series all mode(Old File) | |
|---|--|--------------------------------|--|
| Item | Item contents | Item | Changed contents |
| Standard area | Standard set items for driving | Standard area | Data is copied |
| A-00~-06 | Motor specification | A-00~-06 | Data is copied |
| A-07 | q-axis pulse pole | A-09 | Data is copied |
| A-08 | Number of PG-pulse determination current | A-07 | Data is copied |
| A-09 | PWM career frequency | A-08 | Upper Limit 6.0[kHz] |
| A-10 | PG selection | — | Control mode of 64Series is S mode: Set 0 V mode: Set 1 P mode: Set 2 |
| A-11~-16 | Dead time compensation amount | A-11~-16 | Our dead time of each capacity is set |
| A-17 | Motor primary resistance | A-17 | Conversion is applied |
| A-18 | Motor d-axis inductance | A-18 | Conversion is applied |
| A-19 | Motor q-axis inductance | A-19 | Conversion is applied |
| A-20 | Motor magnetic flux | A-20 | Data is copied |
| A-21 | Motor core loss torque compensation | — | Conversion is applied |
| A-22~-29 | Lq-change rate at 30% q-axis current | A-22~-29 | Data is copied |
| A-30 | d-axis position (Magnetic Pole position) | A-30 | Data is copied |
| A-31 | Pole determination selection | A-31 | Data is copied |
| A-32 | d-axis measurement pulse width | A-32 | Data is copied |
| A-33 | d-axis measurement pulse voltage amplitude | A-33 | Data is copied |
| b-00 | Setting data rewrite protection | — | Set default value |
| b-01 | Stop mode selection | b-03 | Data is copied |
| b-02 | Stop speed | b-04 | Data is copied |
| b-03 | DC brake operation time | b-05 | Data is copied |
| b-04 | DC brake gain | b-06 | Data is copied |
| b-05 | JOG stop mode selection | b-07 | Data is copied |
| b-06 | JOG stop speed | b-08 | Data is copied |
| b-07 | Instantaneous power interruption restart | b-11 | Data is copied |
| b-08 | Reserve prohibition mode selection | b-12 | Data is copied |
| b-09 | Command place when coupled | b-15 | Data is copied |
| b-10 | Speed commanding place selection | b-16 | Data is copied |
| b-11 | Operation commanding place selection | b-17 | Data is copied |

| | | | |
|---------|--|---------|---|
| b-12 | JOG commanding place selection | b-18 | Data is copied |
| b-13 | Forward powering torque limit | E-00 | Data is copied |
| b-14 | Forward regenerative torque limit | E-01 | Data is copied |
| b-15 | Reverse powering torque limit | E-02 | Data is copied |
| b-16 | Reverse regenerative torque limit | E-03 | Data is copied |
| b-17 | Analog speed command characteristic selection | G-02 | If used Pulse train by G-00(Analog speed command) of 64Series, set 1. Besides above case, data is copied. |
| b-18 | Analog input speed command upper limit speed | G-03 | Data is copied |
| b-19 | Analog input speed command lower limit speed | G-04 | Data is copied |
| b-20 | Analog input Zero limit voltage | G-05 | Data is copied |
| b-21 | Analog output (1) characteristic selection | G-06 | Data is copied |
| c-00 | Multifunction input place selection | c-00 | Data is copied |
| c-01~05 | Multi-function input terminal (1) ~ (5) function selection | — | Set default value |
| c-06 | Multifunction input terminal(6) function selection | c-01 | Data is copied |
| c-07 | Multifunction input terminal (7) function selection | c-02 | Data is copied |
| c-08 | Multi-function input terminal (8) function selection | c-03 | Data is copied |
| c-09 | Multi-function input terminal (9) function selection | c-04 | Data is copied |
| c-10 | Multi-function input terminal (10) function selection | c-05 | Data is copied |
| c-11 | Multi-function input terminal (11) function selection | c-06 | Data is copied |
| c-12~17 | Multi-function input terminal (12) ~ (17) function selection | — | Set default value |
| d-00~14 | Accel / decel time and S pattern accel / decel selection | d-00~14 | Data is copied |
| d-15 | Preset speed (1) | H-00 | Data is copied |
| d-16 | Preset speed (2) | H-01 | Data is copied |
| d-17 | Preset speed (3) | H-02 | Data is copied |
| d-18 | Preset speed (4) | H-03 | Data is copied |
| d-19 | Preset speed (5) | H-04 | Data is copied |
| d-20 | Preset speed (6) | H-05 | Data is copied |
| d-21 | Preset speed (7) | H-06 | Data is copied |
| d-22 | Jump speed (1) | d-18 | Data is copied |
| d-23 | Jump speed (2) | d-19 | Data is copied |

| | | | |
|------|---|------|--|
| d-24 | Jump speed (3) | d-20 | Data is copied |
| d-25 | Jump speed (4) | d-21 | Data is copied |
| d-26 | Jump speed width | d-22 | Data is copied |
| d-27 | MRH function selection | d-23 | Data is copied |
| d-28 | MRH upper limit speed | d-24 | Data is copied |
| d-29 | MRH lower limit speed | d-25 | Data is copied |
| d-30 | Speed deviation limiting command selection | d-15 | Data is copied |
| d-31 | Maximum Deviation (positive) | d-16 | Data is copied |
| d-32 | Maximum deviation (negative) | d-17 | Data is copied |
| E-00 | Regeneration stall prevention function usage selection | b-13 | Data is copied |
| E-01 | Regeneration stall prevention voltage | F-00 | Decimal point position of set value is changed |
| E-02 | High-efficient mode usage selection | b-02 | Data is copied |
| E-03 | Forward direction change | — | Set default value |
| E-04 | Simulation mode | — | Set default value |
| E-05 | Torque command mode selection | E-05 | Data is copied |
| E-06 | Restart prohibition time | E-14 | Data is copied |
| E-07 | Current control proportion gain | E-12 | Set default value |
| E-08 | Current control integral gain (1) | E-13 | Set default value |
| E-09 | Current control integral gain (2) | E-13 | Set default value |
| E-10 | Motor temperature compensation | E-15 | Data is copied |
| E-11 | Free start maximum | b-20 | Data is copied |
| E-12 | Inverter output maximum voltage | b-21 | Data is copied |
| F-00 | Built-in DB (DynamicBrake) operation level | F-00 | Data is copied |
| F-01 | Forward overspeed setting | F-01 | Conversion is applied |
| F-02 | Reverse overspeed setting | F-02 | Conversion is applied |
| F-03 | Over load protection setting | F-03 | Data is copied |
| F-04 | Cumulative operation timer (1-Capacitor) | — | Set default value |
| F-05 | Cumulative operation timer (2-Fan) | — | Set default value |
| F-06 | Motor overheat protection operation selection | F-12 | Data is copied |
| F-07 | Protection relay (86A) operation selection upon power failure | F-13 | Data is copied |
| F-08 | Protection retry count setting | F-14 | Data is copied |
| F-09 | External failure (1) detection delay time | — | Set default value |
| F-10 | External failure (2) detection delay time | — | Set default value |

| | | | |
|---------|--|---------|---|
| F-11 | External failure (3) detection delay time | — | Set default value |
| F-12 | External failure (4) detection delay time | — | Set default value |
| F-13 | Trace-back pitch | F-15 | Data is copied |
| F-14 | Trace back trigger point | F-16 | Data is copied |
| F-15~26 | Trace back CH selection | F-17~28 | Set default value |
| F-27 | Overtorque protection function selection | F-05 | Data is copied |
| F-28 | Overtorque protect level setting | F-06 | Data is copied |
| F-29 | Overtorque protection operation standard torque | F-07 | Data is copied |
| F-30 | Speed control error function usage selection | F-08 | Data is copied |
| F-31 | Speed control error detection speed width (positive) | F-09 | Conversion is applied |
| F-32 | Speed control error detection speed width (negative) | F-10 | Conversion is applied |
| G-00 | Temperature detection selection | — | If used by E-15=1 or F-12=1 of 64Series, set 2. Except the above case, 0 is set. |
| G-01 | Temperature detection offset adjustment | G-19 | Data is copied |
| G-02 | Temperature detection gain adjustment | G-20 | Data is copied |
| G-03 | Analog input (2) characteristics selection | G-11 | Set value of 64 series+1 |
| G-04 | Analog input (2) upper limit speed | G-12 | Data is copied |
| G-05 | Analog input (2) lower limit speed | G-13 | Data is copied |
| G-06 | Analog input (3) characteristics selection | — | If used Pulse train by G-00(Analog speed command) of 64Series, set 3. Besides above case, set 1. |
| G-07 | Analog input(3)upper limit speed | — | Set default value |
| G-08 | Analog input(3)lower limit speed | — | Set default value |
| G-09 | Analog input (2) characteristics selection | G-16 | If set value of 64 series is 8 or more: Set value of 64 series-8 0~7: Data is copied |
| G-10 | Analog output (3) characteristics selection | G-16 | Data is copied |
| G-11 | Analog input (4) characteristic selection | — | Set default value |
| G-12 | Analog input (5) characteristics selection | — | Set default value |
| G-13 | Analog output (4) characteristics selection | — | Set default value |
| G-14 | Analog output (5) characteristics selection | — | Set default value |
| G-15 | Line speed monitor adjustment | n-00 | Data is copied |

| | | | |
|------|--|------|-------------------|
| G-16 | Analog input monitor display selection | — | Set default value |
| H-00 | Multifunction output terminal (1) function selection | c-07 | Data is copied |
| H-01 | Multifunction output terminal (2) function selection | c-08 | Data is copied |
| H-02 | Multifunction output terminal (3) function selection | c-09 | Data is copied |
| H-03 | Multifunction output terminal (4) function selection | c-10 | Data is copied |
| H-04 | Multifunction output terminal (5) function selection | — | Set default value |
| H-05 | Multifunction output terminal (6) function selection | — | Set default value |
| H-06 | Speed detection (1) | c-11 | Data is copied |
| H-07 | Speed detection (2) | c-12 | Data is copied |
| H-08 | Speed detection width | c-13 | Data is copied |
| H-09 | Torque detection (with polarity) | c-14 | Data is copied |
| H-10 | Torque detection(absolute value) | c-15 | Data is copied |
| H-11 | Overload pre-alarm operation level setting | c-16 | Data is copied |
| H-12 | Maximum speed reduction rate | c-17 | Data is copied |
| i-00 | PLCL function usage selection | b-14 | Set default value |
| i-01 | PLCH function usage selection | b-00 | Set default value |
| i-02 | Droop control usage selection | i-00 | Data is copied |
| i-03 | Droop start speed | i-01 | Data is copied |
| i-04 | Droop rate changeover speed | i-02 | Data is copied |
| i-05 | Droop rate | i-03 | Data is copied |
| i-06 | Droop start torque | i-04 | Data is copied |
| i-07 | Operation mode selection | b-01 | Data is copied |
| i-08 | Torque command input place selection | b-19 | Data is copied |
| i-09 | Analog torque command gain | G-14 | Data is copied |
| i-10 | Speed control proportion gain (2) | b-09 | Data is copied |
| i-11 | Speed control integral time constant (2) | L-19 | Set default value |
| i-12 | Speed control system moment of inertia (2) | — | Set default value |
| i-13 | JOG proportion gain selection | b-10 | Data is copied |
| i-14 | ASR cancellation usage selection | E-06 | Data is copied |
| i-15 | ASR feed-forward usage selection | E-07 | Data is copied |
| i-16 | Variable structure proportion gain start speed | E-08 | Data is copied |
| i-17 | Variable structure proportion gain minimum gain percentage | E-09 | Data is copied |

| | | | |
|---------|---|---------|-------------------|
| i-19 | Mechanical loss compensation usage selection | i-05 | Data is copied |
| i-20 | Mechanical loss offset amount | i-06 | Data is copied |
| i-21 | Gradient of mechanical loss | i-07 | Data is copied |
| i-22 | Positioning speed (0) | J-09 | Data is copied |
| i-23 | Positioning speed (1) | J-10 | Data is copied |
| i-24 | Positioning acceleration time | J-11 | Data is copied |
| i-25 | Positioning deceleration time | J-12 | Data is copied |
| i-26 | Creep speed | J-13 | Data is copied |
| i-27 | Number of moving pulse within a creep period | J-14 | Data is copied |
| i-28 | Number of stop pulse | J-15 | Data is copied |
| i-29 | Positioning emergency stop Selection | J-16 | Data is copied |
| i-30 | Proportion gain for positioning | L-25 | Data is copied |
| i-31 | Integral time constant for positioning | L-26 | Data is copied |
| i-32 | System moment of inertia for positioning | L-27 | Data is copied |
| J-00 | Digital communication option selection | J-00 | Set default value |
| J-01~08 | Communication option selection | J-01~08 | Data is copied |
| J-09 | DNET66-Z output instance number setting | J-17 | Data is copied |
| J-10 | DNET66-Z input instance number setting | J-18 | Data is copied |
| J-11 | DNET66-Z speed scale setting | J-19 | Data is copied |
| J-12 | DNET66-Z monitor data number setting | J-20 | Data is copied |
| J-13 | High speed response input selection | — | Set default value |
| J-14 | Date/Time data selection from communication | — | Set default value |
| J-15 | Connected number of outside DB (Dynamic Brake) units with communication | — | Set default value |
| L area | Analog input/output setting | — | Set default value |
| n-00 | Inverter control mode | S-01 | Data is copied |
| n-01 | Capacity / voltage class | S-02 | Data is copied |
| P area | P resister constant setting | — | Set default value |

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In addition, the contents of this the "operation manual" may be changed without a preliminary announcement by specification change of a product etc.

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Contents of this manual are subject to change without notice.

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