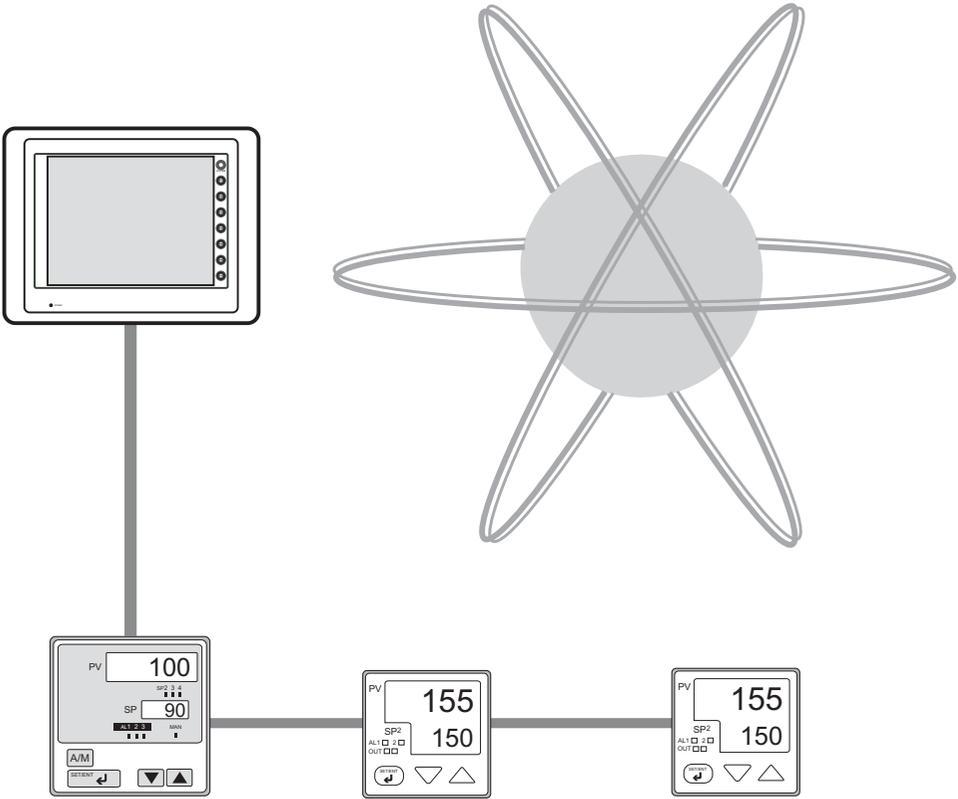


Temperature Control Network



Record of Revisions

Reference numbers are shown at the bottom left corner on the back cover of each manual.

Printing Date	Reference No.	Revised Contents
May, 2000	1033NE0	First Edition
July, 2000	1033NE0a	
December, 2000	1033NE0b	
March, 2004	1033NE1	Second Edition
December, 2004	1033NE2	Third Edition <ul style="list-style-type: none"> • Periodical/synchronized writing • \$s764 • RKC REX-B800 • OMRON 3G3MV • MITSUBISHI ELECTRIC MR-J2S-*A, MR-J2S-*CL • SAMSUNG MOSCON-E7 • SUNX LP-200 • SANYO PB1 Series • Gammaflux TTC2100

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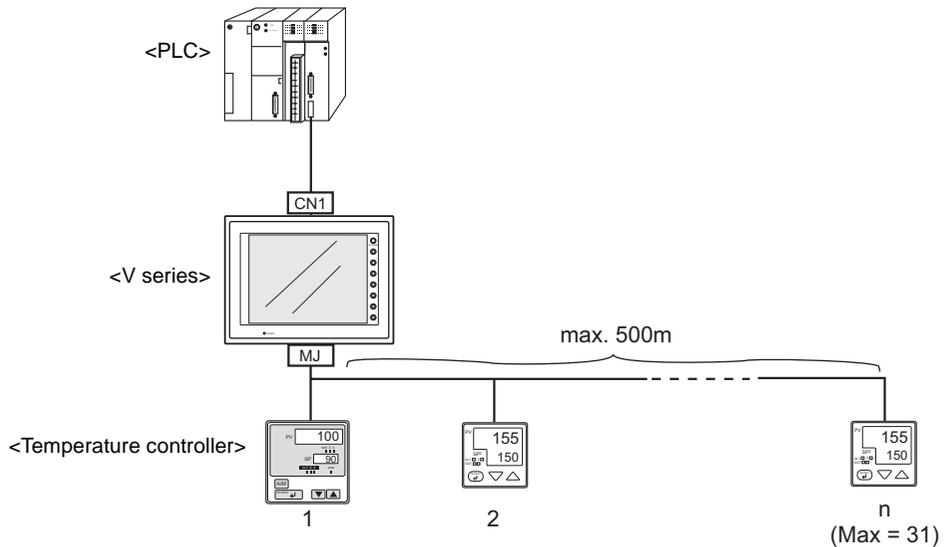
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1. Overview of Temperature Control Network

Using the temperature control network, the V series can be connected to the temperature controller, inverter, etc.

With RS-232C, one temperature controller can be connected; with RS-485 (two-wire connection), a maximum of 31 temperature controllers can be connected.

For details on the temperature controllers that can be connected, refer to "Appendix".



The V series can monitor or set the data on the temperature controller that is connected.

Periodical reading/sampling of temperature controller data

When the temperature controller memory is set on the temperature control network/PLC2Way table (refer to page 12), the data can be read into the PLC memory or V series internal memory at regular intervals. It is also possible to save (sample) the read data in the V series internal buffer, SRAM or CF card.

Data writing into the temperature controller (V7 series only)

When the temperature controller memory is set on the temperature control network/PLC2Way table (refer to page 12), background writing from the PLC memory or the V series internal memory into the temperature controller is possible.

Data transfer

It is also possible to transfer (write) data in the PLC memory, V series internal memory or a memory card to the temperature controller at one time using a macro command "TEMP_WRITE" and the temperature control network/PLC2Way table (refer to page 12).

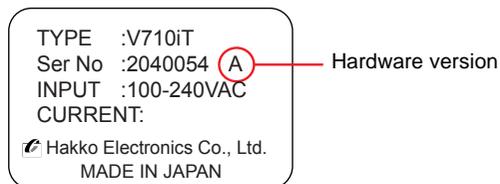
Conversely, data in the temperature controller can be transferred to the PLC memory, V series internal memory or a memory card at one time using a macro command "TEMP_READ" and the temperature control network/PLC2Way table (refer to page 12).

Notes

1. Applicable models

For temperature control network connection, use the unit of the following hardware versions.

The hardware version is indicated at "Ser No" on the backside of the unit.



Unit	Model	Analog type	Matrix type
V7 series	All	All hardware versions	
V6 series	V612T	D and later	All hardware versions
	V612C	C and later	
	V610T	D and later	
	V610S	D and later	---
	V610C	D and later	All hardware versions
	V608C	F and later	---
	V606C/M	All hardware versions	All hardware versions
	V606iT/C/M		
	V606eM/C		
V609E	---		

2. MONITOUCH program version, V-SFT version

Use the following versions.

	V7 Series	V6 Series
SYSTEM PROG Ver.	Ver. 1.000 and later*	Ver. 1.220 and later
V-SFT Ver.	Ver. 2.0.0.0 and later**	Ver. 1.2.9.0 and later

* When using temperature control network and multi-link 2 at the same time, use ver. 1.010 and later.

** When using temperature control network and multi-link 2 at the same time, use ver. 2.0.2.0 and later.

The MONITOUCH program version is indicated for "SYSTEM PROG. VER." on the Main Menu screen of the V series. If your program version is earlier than the above, transfer the program from V-SFT (refer to the version indicated above).

3. When using temperature network and multi-link 2 at the same time on the V7 series, use the system program version 1.010 or later.

It is not possible to use temperature control network and multi-link 2 at the same time on the V6 series.

4. Connection should be made via RS-232C or RS-485 (two-wire connection). It is not possible to connect to the unit equipped only with RS-422 (four-wire connection) interface.

5. Even if a communication error occurs, it is not possible to stop communications.

The statuses of respective stations are stored in the V series internal memory addresses \$s730 to 761.

6. For details on the temperature controllers that can be connected, refer to the list of temperature controllers in "Appendix".

Also visit our website for the most recent list of the available temperature controllers.

URL <http://www.monitouch.com>

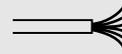
2. Connecting Cable (V6-TMP)

To connect a temperature controller to the V series (MJ1/2), use Hakko Electronics' optional cable "V6-TMP".

V6-TMP (3m)

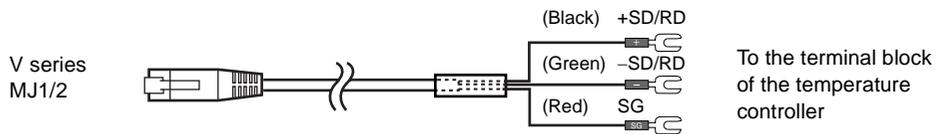


V6-TMP is a 6-core cable. Which core wires are used depends on the type of the port, RS-485 or RS-232C (as shown below), to which the cable is connected. Properly insulate wires not in use with tape, etc.



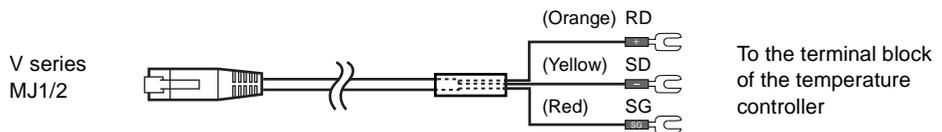
Brown: +5 V
Red: 0 V SG
Orange: RD
Yellow: SD
Black: +SD/RD
Green: -SD/RD

RS-485 Connection



*The shielded frame ground of V6-TMP must be connected to the V series.

RS-232C Connection



*The shielded frame ground of V6-TMP must be connected to the V series.



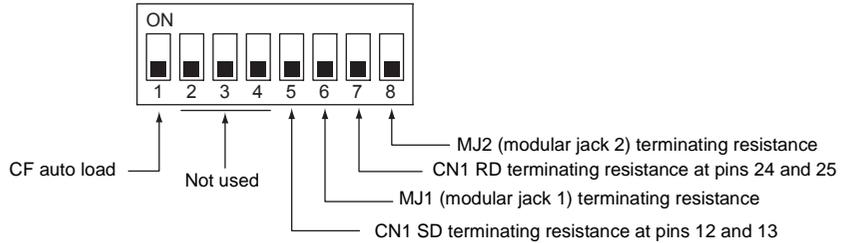
When using RKC's control unit SR-Mini (for RS-422), be sure to use Hakko Electronics' cable "V6-SR422" (3 m). (Refer to "Appendix".)

* For details on connection with temperature controllers, refer to the relevant manuals for temperature controllers.

3. Terminating Resistance Setting

For connection via RS-485 interface, the terminating resistance of the V series should be set on the DIP switch in the backside of the unit.

V7 Series

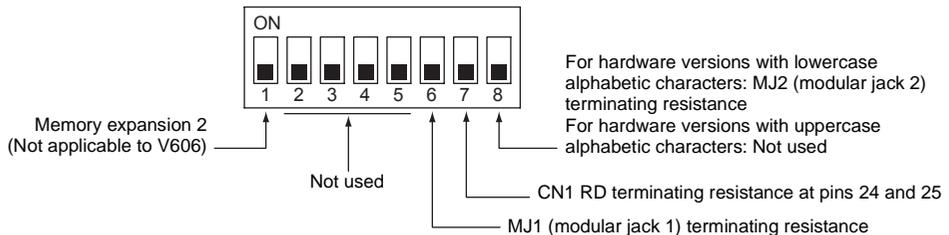


When MJ1 is used: Set DIPSW6 to the ON position.

When MJ2 is used: Set DIPSW8 to the ON position.

* For details on the other DIP switch setting, refer to the V7 Hardware Specifications.

V6 Series



For hardware versions with lowercase alphabetic characters:

When MJ1 is used: Set DIPSW6 to the ON position.

When MJ2 is used: Set DIPSW8 to the ON position.

For hardware versions with uppercase alphabetic characters:

When MJ1 is used: Set DIPSW6 to the ON position.

When MJ2 is used: Terminating resistance is always ON.

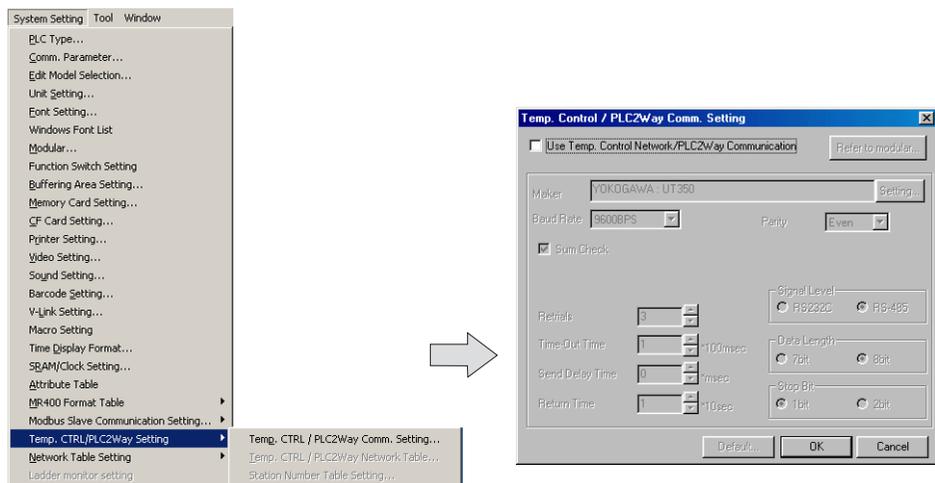
* For details on the other DIP switch setting, refer to "10. DIP Switch Setting" in the V6 Hardware Specifications.

4. Temp. CTRL/PLC2Way Setting

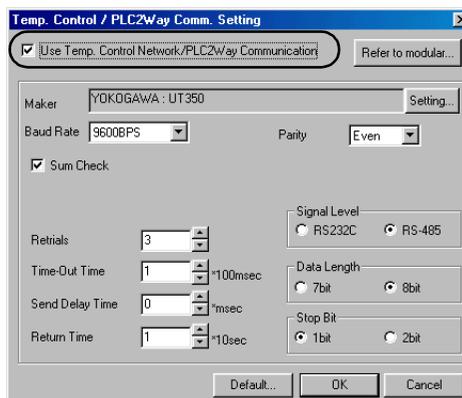
Select the model to be connected at the MJ port for temperature control network and perform parameter settings.

◆ Setting Procedure

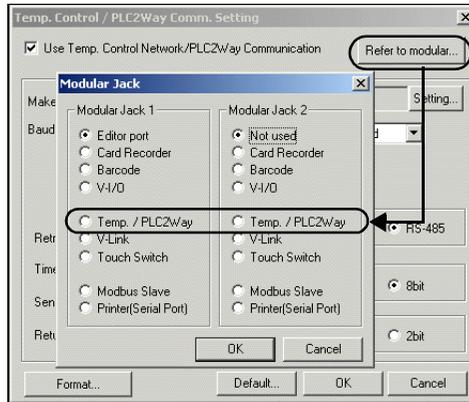
1. Click [System Setting] → [Temp. CTRL/PLC2Way Setting] → [Temp. CTRL/PLC2Way Comm. Setting]. The [Temp. Control/PLC2Way Comm. Setting] dialog is displayed.



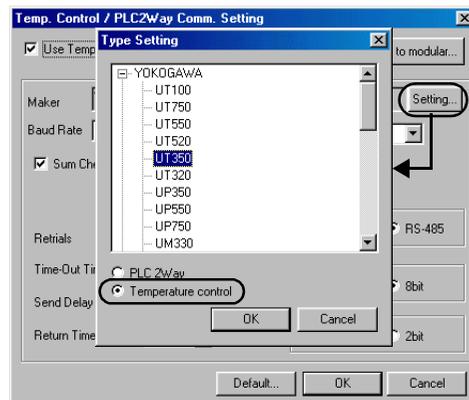
2. Check [Use Temp. Control Network/PLC2Way Communication].



3. Select the MJ port.

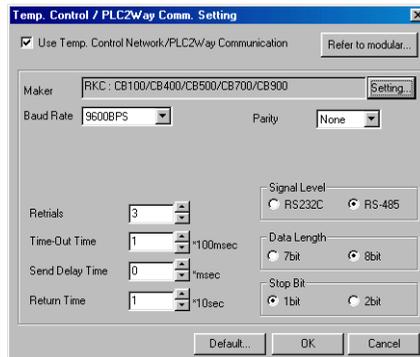


- 1) Click the [Refer to Modular] button. The [Modular Jack] dialog is displayed.
 - 2) Select [Temp./PLC2Way] for modular jack 1 or 2 that is used for temperature control network.
4. Select the temperature controller model to be connected at the MJ port.



- 1) Click the [Setting] button. The [Type Setting] dialog is displayed.
- 2) Select [Temperature Control].
- 3) The manufacturer names of temperature controllers that can be connected at the MJ port for temperature control network are shown.
- 4) Click [+]. The available model names of the selected manufacturer are displayed.
- 5) Select the temperature controller model name and click [OK]. The message "Will take default on Comm. Parameter. OK?" is displayed.
- 6) Click [Yes].

5. Set communication parameters between the V series and the temperature controller.



[Baud Rate] (4800, 9600, 19200, 38400, 57600, 115k bps)

Select the communication speed with the temperature controller.

[Parity] (None/Odd/Even)

Select the parity setting for communications with the temperature controller.

[Signal Level] (RS-232C/RS-485)

Select the signal level for communications with the temperature controller.

[Data Length] (7 bits/8 bits)

Select the data length for communications with the temperature controller.

[Stop Bit] (1 bit/2 bits)

Select the stop bit for communications with the temperature controller.

[Retrials]

Set the number of retrials to be attempted in the case that a communication error occurs.

[Time-out Time] (*100 msec)

Select the receiving of the response from the temperature controller. If no response is received within the specified time, a retrial is attempted.

[Send Delay Time] (*msec)

Set a time delay in sending the response to the temperature controller after receipt of data from the temperature controller.

[Return Time] (*10 sec)

When the connected temperature controller is turned off or a timeout occurs, data read from the temperature controller is temporarily prohibited. An inquiry for restoration is sent each time the specified return time has elapsed.



Depending on the model selected, settings other than listed above may be required. Make settings in accordance with those on the temperature controller.

Examples:

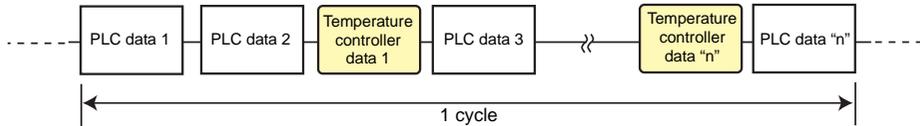
- Sum Check (Yokogawa M&C)
- CR/LF (MITSUBISHI ELECTRIC)
- Divisions Group (OHKURA)

6. To reset the setting, click the [Default] button, or set the desired value.

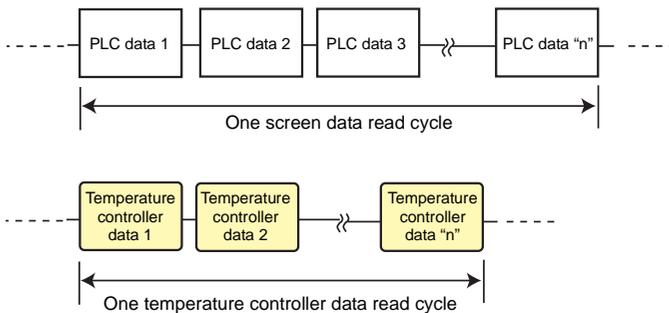
5. Processing Cycle

The processing cycle on the V series with temperature control network is explained.

(a) When the temperature control network table is not used:



(b) When the temperature control network table is used:



When the temperature control network/PLC2Way table is not used (Fig. a), the V series does not communicate with the PLC while it is communicating with the temperature controller.

When the temperature control network/PLC2Way table is used (Fig. b), the V series communicates with the PLC and the temperature controller at the same time.

Consequently, the V series can communicate with the temperature controller without reducing the processing capacity for communication with the PLC.



When the temperature control network/PLC2Way table is used:

If periodical reading/writing or synchronized reading/writing based on the temperature control network/PLC2Way table takes place while the V series is accessing the temperature controller memory via a macro command, the progress of the macro execution may be delayed. To avoid this, it is possible to temporarily stop reading from/writing into the temperature controller memory using the system memory addresses (\$s762 and 764). For more information, refer to page 46.

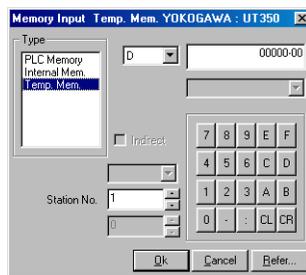
6. Temperature Controller Memory Setting

The following operations are possible during screen creation when placing parts allocated in the temperature controller memory:

- Monitoring the current temperature and setting value of the temperature controller on a data display
- Using the lamp/relay mode to show the upper/lower limits of an alarm display
- Using the entry mode to change a temperature controller setting

◆ Setting Procedure

1. Open the [Memory Input] dialog for the part where the temperature controller memory should be allocated.
2. Select [Temp. Mem.] for [Type], and set the temperature controller station number and memory.

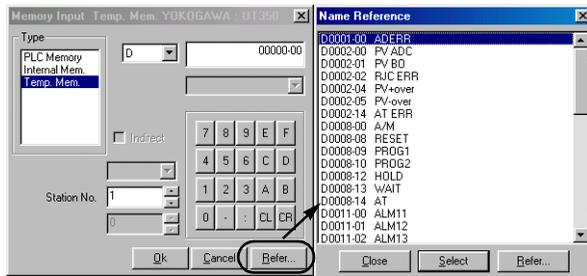


With V-SFT, station numbers ranging from 0 to 31 (DEC) can be set. Set a number from 0 to 31 for the station number to be connected.

[Refer...] button

Names are given to temperature memory addresses. When the [Refer...] button is pressed, the list of comments for temperature controllers is displayed so that you can refer to the list when setting the memory address.

1. Click the [Refer...] button on the [Memory Input] dialog.
The comment list is displayed on the [Name Reference] dialog.



* If the list for another temperature controller is displayed, press the [Refer...] button on the [Name Reference] dialog, select the list file of the temperature controller to be used, and click [Open].

2. Double-click the memory address on the comment list, or select the memory address and click the [Select] button to set the memory.



The temperature controller memory addresses are handled as the DEC code within the V series. When a temperature controller memory address is set for a numerical display, select [DEC] for [Input Type]. In addition, when using a macro command to transfer temperature controller data to the PLC, use a CVP command (*) to change the PLC data code if necessary.

However, when setting the temperature controller memory for a bar graph, data will automatically be read as DEC code data even if [BCD] is selected for [Code] on the [Detail] tab window of the [Comm. Parameter] dialog.

* For more information, refer to the Reference Manual (Function).



When multiple parts with temperature controller memory address settings are placed, the communication speed may be slowed down. (Refer to "Processing Cycle" (page 8).)

In such a case like this, it is recommended to use the Temperature Control Network/PLC2Way Table (refer to page 12) and place data display parts that are read into the V series internal memory.



List Files

It is possible to alter or modify the contents of the list files that are browsed when setting the temperature controller memory address.

Procedure

Go to Windows Accessories and activate the Notepad.

Open the temperature controller list file (extension “.Lst”) in the V6W folder.

Example: Yokogawa M&C UT350/320 list file name: UT350.Lst

```
//YOKOGAWA UT350/320
```

```
TempType=5,6
```

```
DeviceTypeStr="D,I"
```

```
DeviceType=0
```

```
AddressType=DEC
```

```
Address,SymbolName
```

```
W1,ADERROR
```

```
W2,ERROR
```

```
W3,PV
```

```
W4,CSP
```

```
::
```

```
END
```

Add a comment here.
W: Word device

```
DeviceType=0
```

```
AddressType=DEC
```

```
Address,SymbolName
```

```
W0001-00,ADERR
```

```
W0002-00,PV ADC
```

```
W0002-01,PV BO
```

```
::
```

```
END
```

Add a comment here.
W: Word device

```
DeviceType=1
```

```
AddressType=DEC
```

```
Address,SymbolName
```

```
B1,ADERROR
```

```
B18,PV, BO
```

```
B19,RJC ERR
```

```
::
```

```
END
```

Add a comment here.
B: Bit device

```
UT350.Lst - Notepad
File Edit Search Help
//YOKOGAWA UT350/320
TempType=5,6
DeviceTypeStr="D,I"

DeviceType=0
AddressType=DEC
Address,SymbolName
W0001,ADERROR
W0002,ERROR
W0003,PV
W0004,CSP
W0005,OUT
W0006,HOUT
W0007,COUT
W0008,MOD
W0009,PIDNO
W0010,CSPNO
W0011,ALM
W0027,OR
W0028,HC1
W0029,HC2
W0035,PARAERR
W0201,A/M
W0207,SPNO
W0215,C,RSP
W0217,MOUT
W0218,MOUTC
W0231,A1
```

* When altering or modifying, be sure to change the underlined data.
If any other data is changed, communications will not be performed correctly.

7. Temperature Control Network/PLC2Way Table

The following operations are available when the temperature control network/PLC2Way table is used.

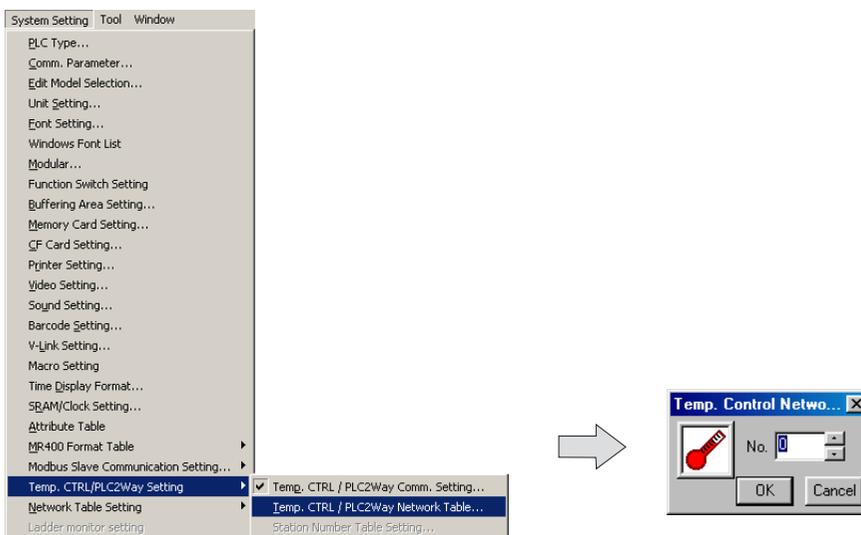
- Reading from the temperature controller memory page 18
- Writing into the temperature controller memory page 22
- Sampling from the temperature controller memory page 27
- Transferring data in the temperature controller memory page 31

7-1. Editing the Temperature Control Network/PLC2Way Table

Starting

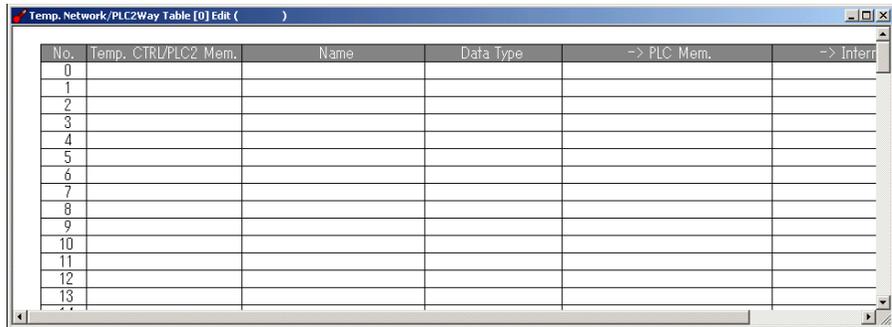
1. Click [System Setting] → [Temp. CTRL/PLC2Way Setting] → [Temp. CTRL/PLC2Way Network Table].

([Temp. CTRL/PLC2Way Network Table] becomes active only when the setting in the [Temp. Control/PLC2way Comm. Setting] dialog has been completed as described in the previous section.



2. Set the temperature control network/PLC2Way table number (0 to 31) and click [OK].

3. The [Temp. Network/PLC2Way Table Edit] window is opened.

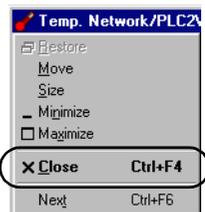


No.	Temp. CTRL/PLC2 Mem.	Name	Data Type	-> PLC Mem.	-> Interr
0					
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					

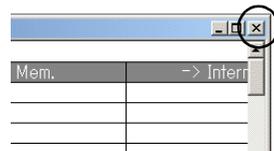
There are 32 tables of temperature control network/PLC2Way table No. 0 to 31.
A maximum of 128 addresses of the temperature controller memory can be set to each table.

Closing

Click [Close] in the drop-down menu, or click the [Close] button at the top right corner.



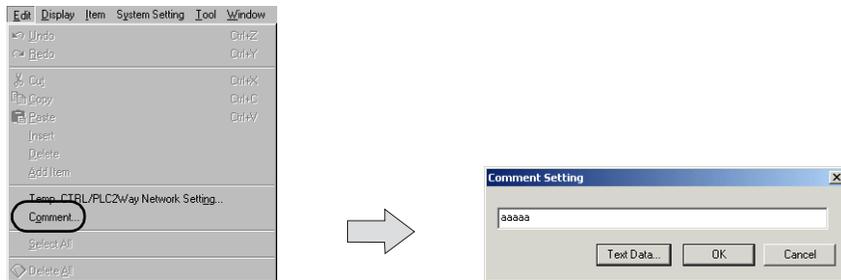
or



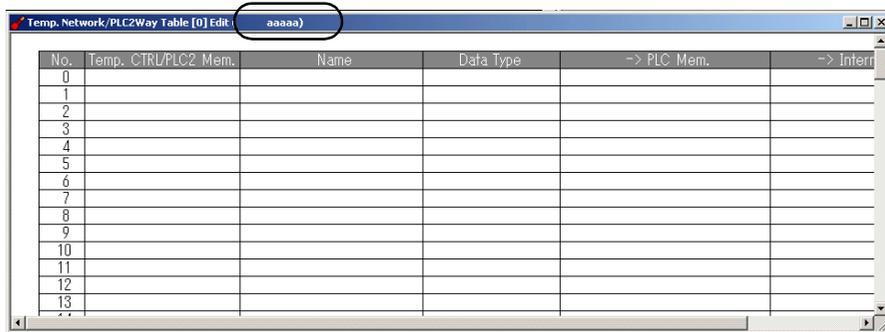
Comment Setting

There are 32 temperature control network/PLC2Way tables and a comment can be set for each table.

1. Click [Edit] → [Comment]. The [Comment Setting] dialog is displayed.

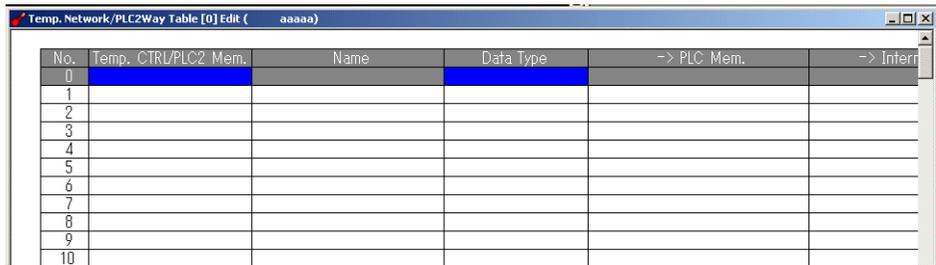


2. Enter the desired comment and click [OK]. The entered comment is displayed as shown.

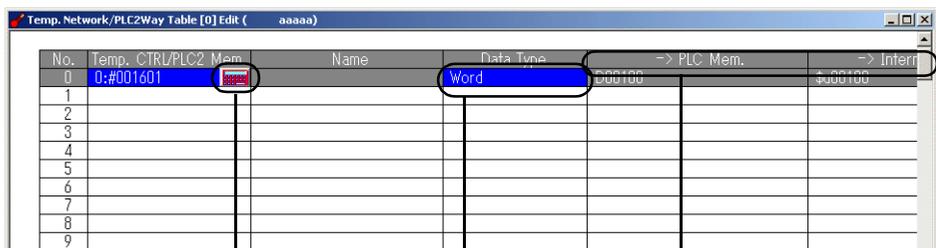


Setting Procedure

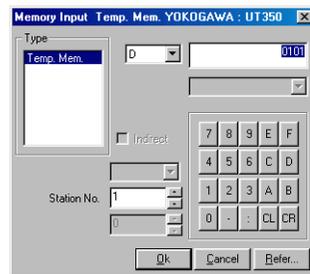
1. Click on a line in the table. The selected line turns blue.



2. Double-clicking brings up the default setting for the temperature controller memory, data code, etc.



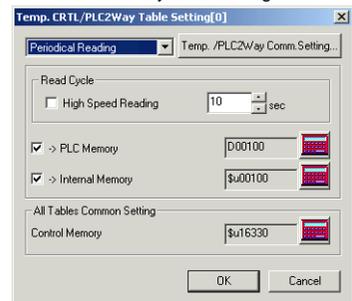
Memory input



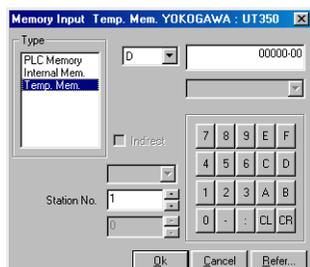
Data code



Temperature control network/PLC2Way table setting

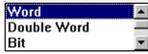


◆ [Memory Input] dialog



Set the temperature controller memory.

◆ Data code



- Word

Data in the temperature controller memory is handled as numerical data of one word. The numerical data of the temperature controller is converted into the DEC code and is transferred to the target memory address.

For the temperature controller that handles data in BCD code

	Code	Bit																															
Temperature control/PLC2 memory	BCD	MSB LSB																															
		<table border="1" style="width:100%; text-align:center;"> <tr><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr> <tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> </table>	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																		
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0																		
Store target internal memory	DEC	MSB LSB																															
		<table border="1" style="width:100%; text-align:center;"> <tr><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr> <tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr> </table>	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																		
0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0																		
Target PLC memory	Communication parameter setting: DEC	MSB LSB																															
		<table border="1" style="width:100%; text-align:center;"> <tr><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr> <tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr> </table>	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																	
	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0																	
Communication parameter setting: BCD	MSB LSB																																
	<table border="1" style="width:100%; text-align:center;"> <tr><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr> <tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> </table>	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																		
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0																		

- Double-word

Data in the temperature controller memory is handled as numerical data of two words. The numerical data of the temperature controller is converted into the DEC code and is transferred to the target memory address.

Notes on transferring to the PLC memory

- Temperature controller: Double-word
- Data type on the temperature control network/PLC2Way table: Double-word
- Target PLC memory: Double-word

When data is transferred under the above conditions, it is stored as follows:

Temp. CTRL Mem.	31		16 15		0
0000		High-order word		Low-order word	
		↓ Transfer			
PLC memory	31		16 15		0
0000		0		High-order word	
0001		0		Low-order word	

- Bit

Data in the temperature controller memory is handled as bit information of one word.
Data is transferred to the target memory address without conversion.

For the temperature controller that handles data in BCD code

	Code	Bit
Temperature control/PLC2 memory	BCD	MSB
		LSB
Store target internal memory Target PLC memory	DEC	15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
		0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0

- Dummy word/Dummy double

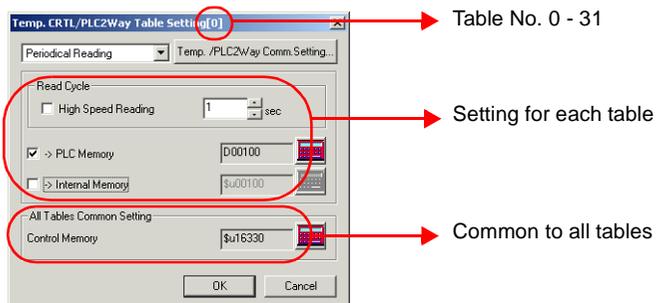
The memory addresses for [PLC Memory] and [Internal Memory] are automatically allocated consecutively in the [Temp. CTRL/PLC2Way Table Setting] dialog.
If you would like to skip any memory address, keep the cell in the [Temp. CTRL/PLC2 Mem.] column blank (no setting). It is regarded as a dummy word or double-word.

- For reading: "0" is always stored in the specified memory address. The address is not usable for any other purposes.
- For writing: The address is usable for other purposes.

◆ [Temp. CTRL/PLC2Way Table Setting] Dialog

In this dialog, set the use of each table.

- TEMP_READ, TEMP_WRITE
- Periodical Reading
- Synchronized Reading
- Periodical Writing
- Synchronized Writing

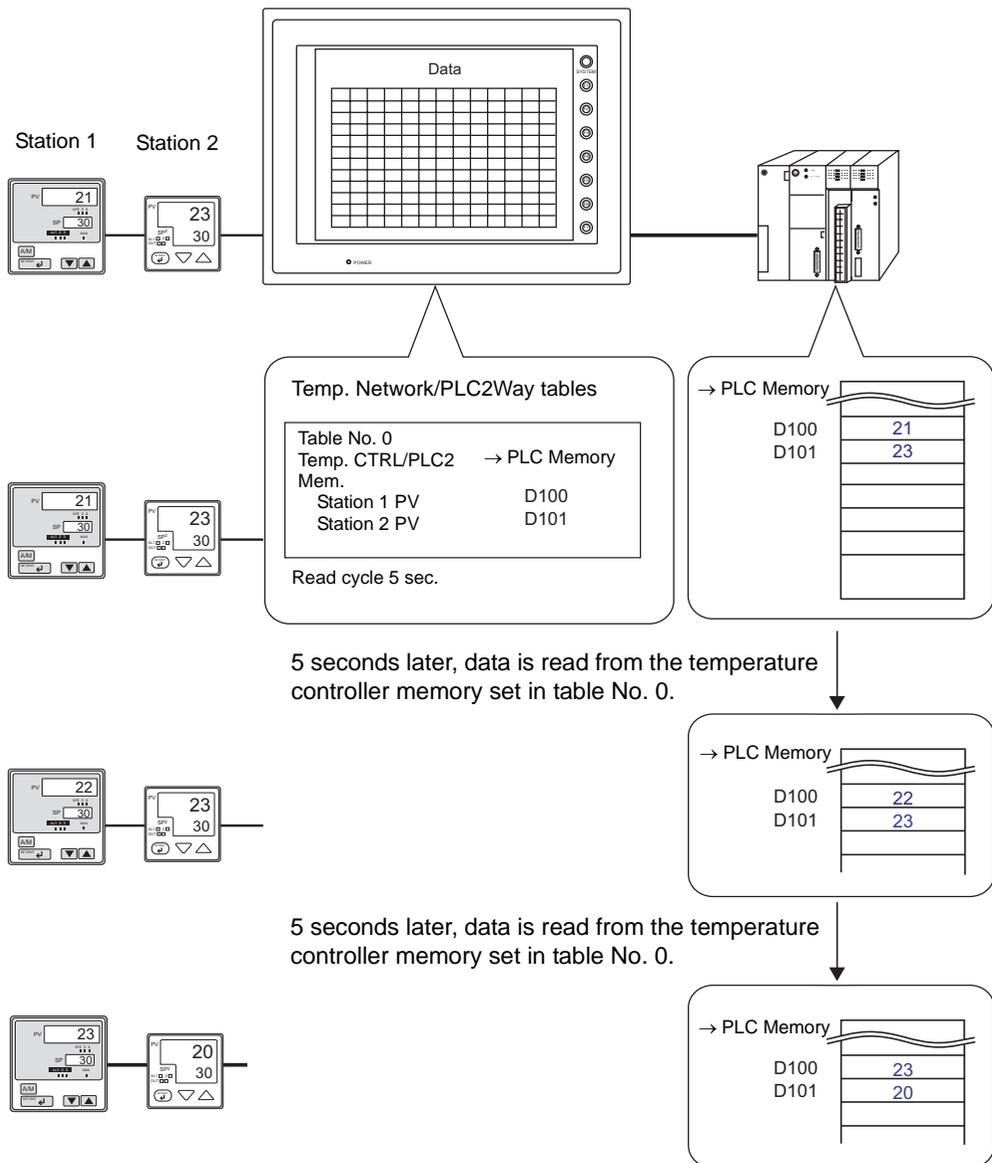


7-2. Reading from Temperature Controller Memory

It is possible to read data from the temperature controller memory registered in the temperature control network/PLC2Way table into the PLC memory (or the V series internal memory). Reading can occur at regular intervals ([Periodical Reading]) or at the time of bit setting ([Synchronized Reading]).

Periodical Reading

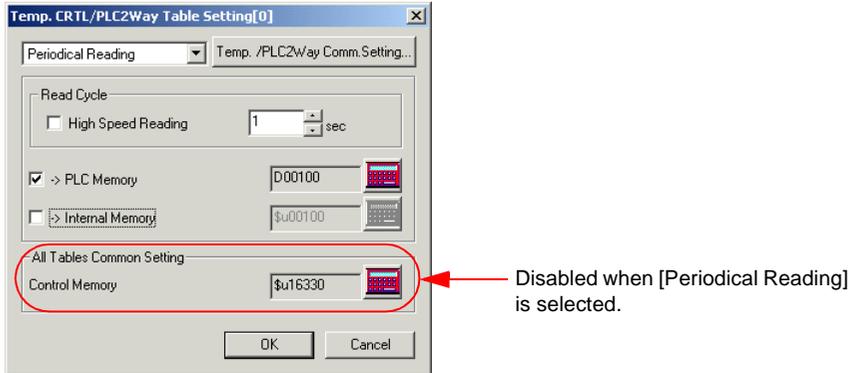
Data is read from the temperature controller memory into the PLC memory (or the V series internal memory) at regular intervals as set in the [Temp. CTRL/PLC2Way Table Setting] dialog.



Setting Items

- Temperature control network/PLC2Way table (refer to page 12)
- Temperature control network/PLC2Way table setting

◆ Temperature Control Network/PLC2Way Table Setting



[Periodical Reading]

Select [Periodical Reading]. The following setting items become active.

[Read Cycle] (sec)

Set the cycle of reading data in the temperature controller memory.

High Speed Reading*	Read Cycle	
	Setting Range	Unit
Unchecked	1 - 3600	1 s
Checked	1 - 3600	100 ms

* Enabled for the V7 series and V-SFT editor version 2.1.0.0 or later

[→ PLC Memory]

When storing data read from the temperature controller memory into the PLC memory, check this box and set the desired top memory address.

[→ Internal Memory]

When storing data read from the temperature controller memory into the V series internal memory, check this box and set the desired top memory address.

[Control Memory]

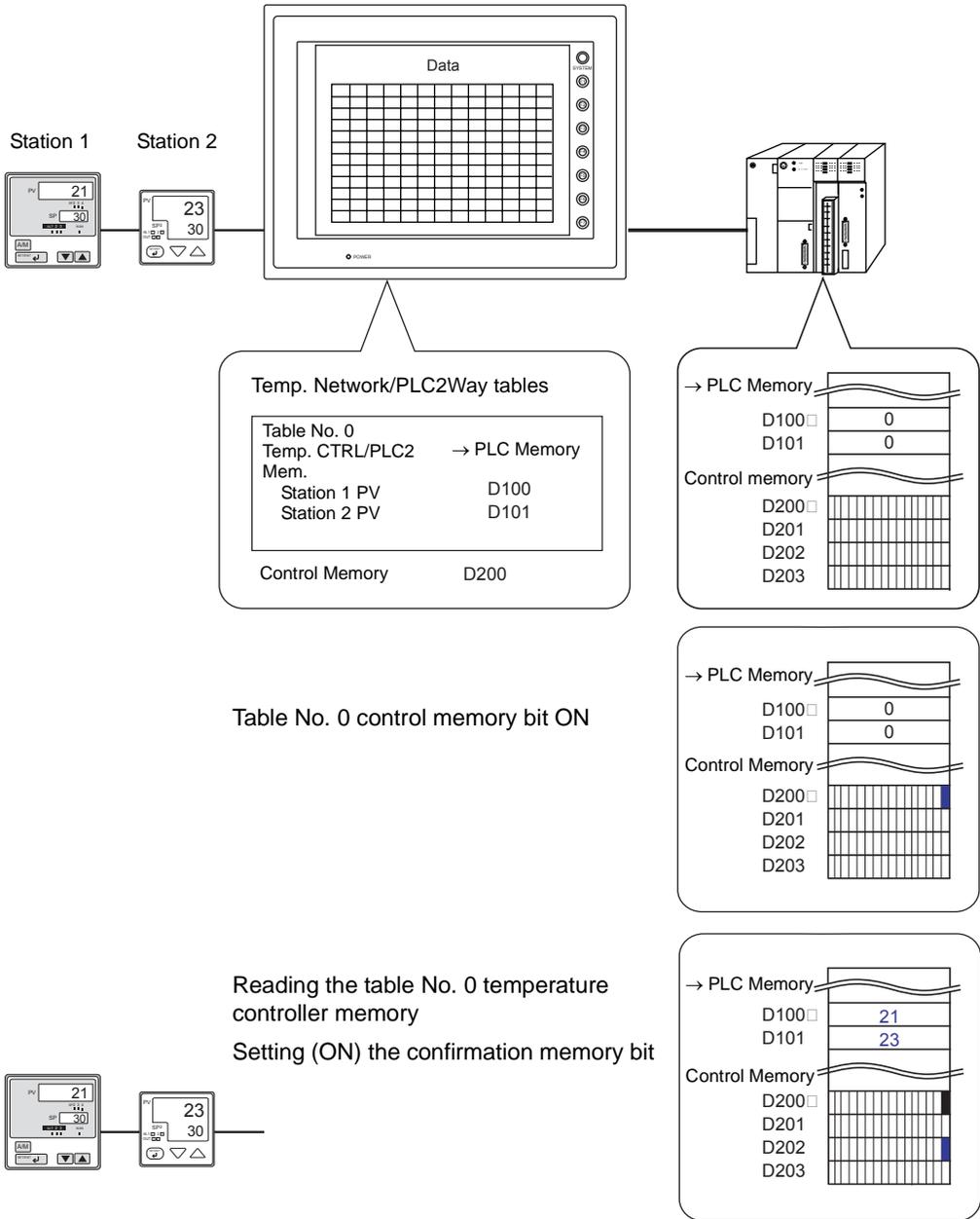
This option is disabled when [Periodical Reading] is selected.

[Temp./PLC2Way Comm. Setting]

Clicking this button brings up the [Temp./PLC2Way Comm. Setting] dialog and allows you to review the setting.

Synchronized Reading(V7 series only)

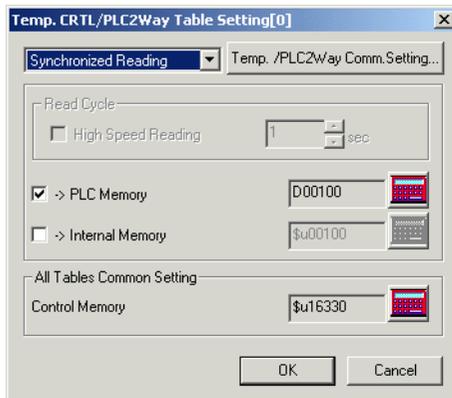
It is possible to read from the temperature control network/PLC2Way table memory into the PLC memory (V series internal memory) at the leading edge (0 → 1) of a control memory bit.



Setting Items

- Temperature control network/PLC2Way table (refer to page 12)
- Temperature control network/PLC2Way table setting

◆ Temperature Control Network/PLC2Way Table Setting



[Synchronized Reading]

Select [Synchronized Reading]. The following setting items become active.

[→ PLC Memory]

When storing data read from the temperature controller memory into the PLC memory, check this box and set the desired top memory address.

[→ Internal Memory]

When storing data read from the temperature controller memory into the V series internal memory, check this box and set the desired top memory address.

[Control Memory]

Select the memory address as a trigger for reading the temperature control network/PLC2Way memory.

The specified memory address is used for temperature control network/PLC2Way table Nos. 0 to 31. For more information, refer to “Control Memory” (page 26).

[Temp./PLC2Way Comm. Setting]

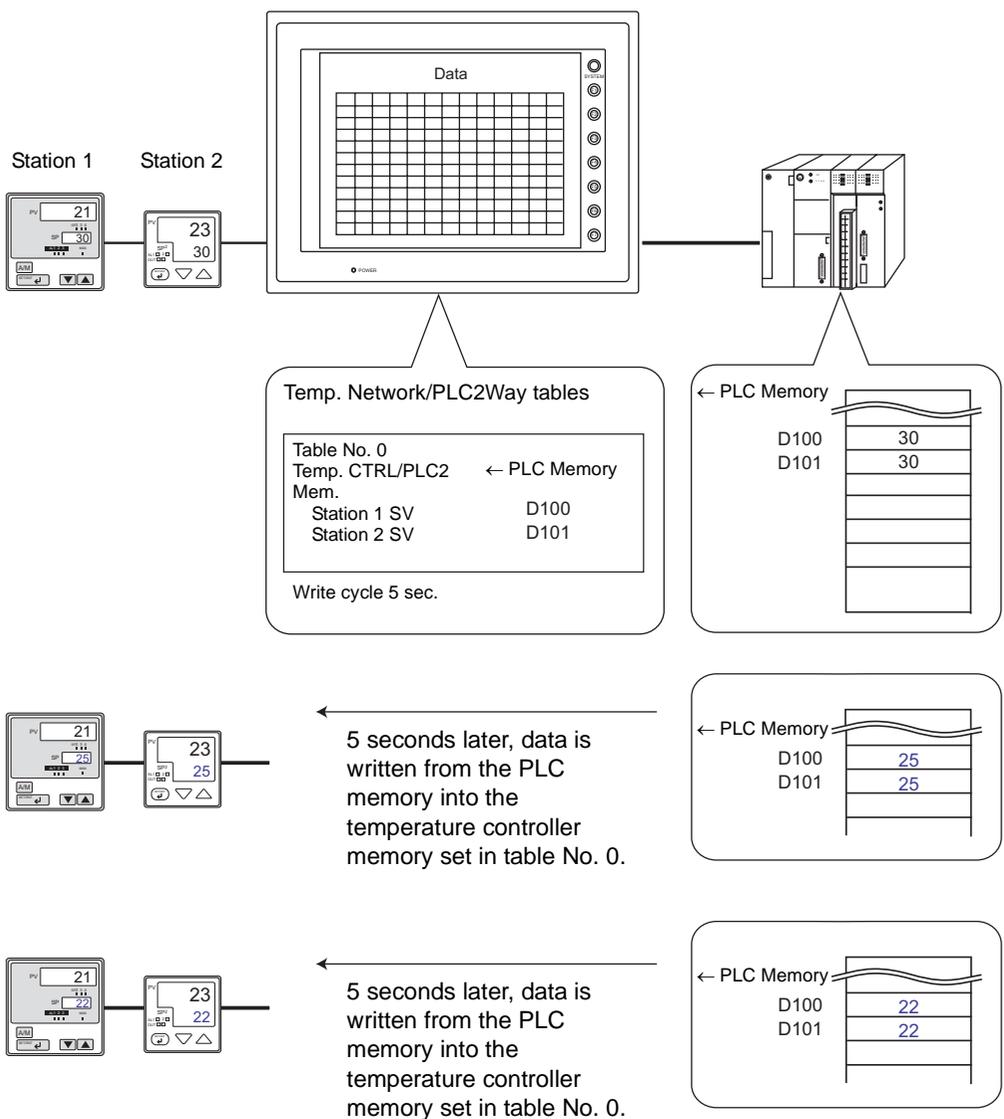
Clicking this button brings up the [Temp./PLC2Way Comm. Setting] dialog and allows you to review the setting.

7-3. Writing into Temperature Controller Memory (V7 series only)

It is possible to write data from the PLC memory or the V series internal memory into the temperature controller memory registered in the temperature control network/PLC2Way table. Writing can occur at regular intervals ([Periodical Writing]) or at the time of bit setting ([Synchronized Writing]).

Periodical Writing

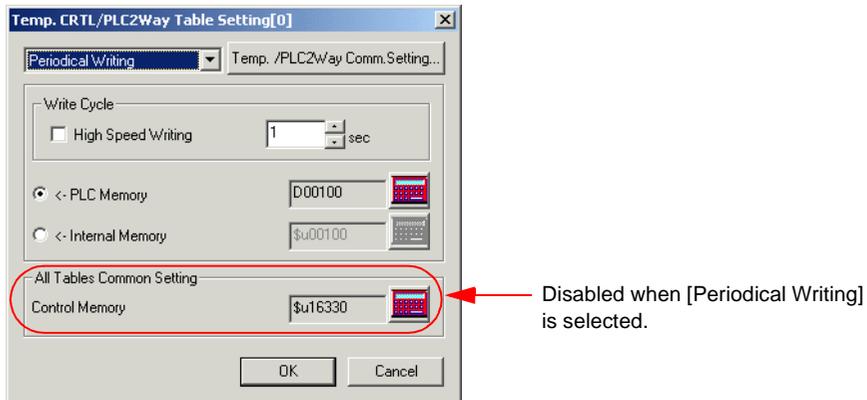
Data is written from the PLC memory or the V series internal memory into the temperature controller memory at regular intervals as set in the [Temp. CTRL/PLC2Way Table Setting] dialog.



Setting Items

- Temperature control network/PLC2Way table (refer to page 12)
- Temperature control network/PLC2Way table setting

◆ Temperature Control Network/PLC2Way Table Setting



[Periodical Writing]

Select [Periodical Writing]. The following setting items become active.

[Write Cycle] (sec)

Set the cycle of writing data in the temperature controller memory.

Periodical Writing*	Write Cycle	
	Setting Range	Unit
Unchecked	1 - 3600	1 s
Checked	1 - 3600	100 ms

* Enabled for the V7 series and V-SFT editor version 2.1.0.0 or later

[← PLC Memory]

Check this item when writing data from the PLC memory into the temperature controller memory. Enter the desired top memory address.

[← Internal Memory]

Check this item when writing data from the internal memory into the temperature controller memory. Enter the desired top memory address.

[Control Memory]

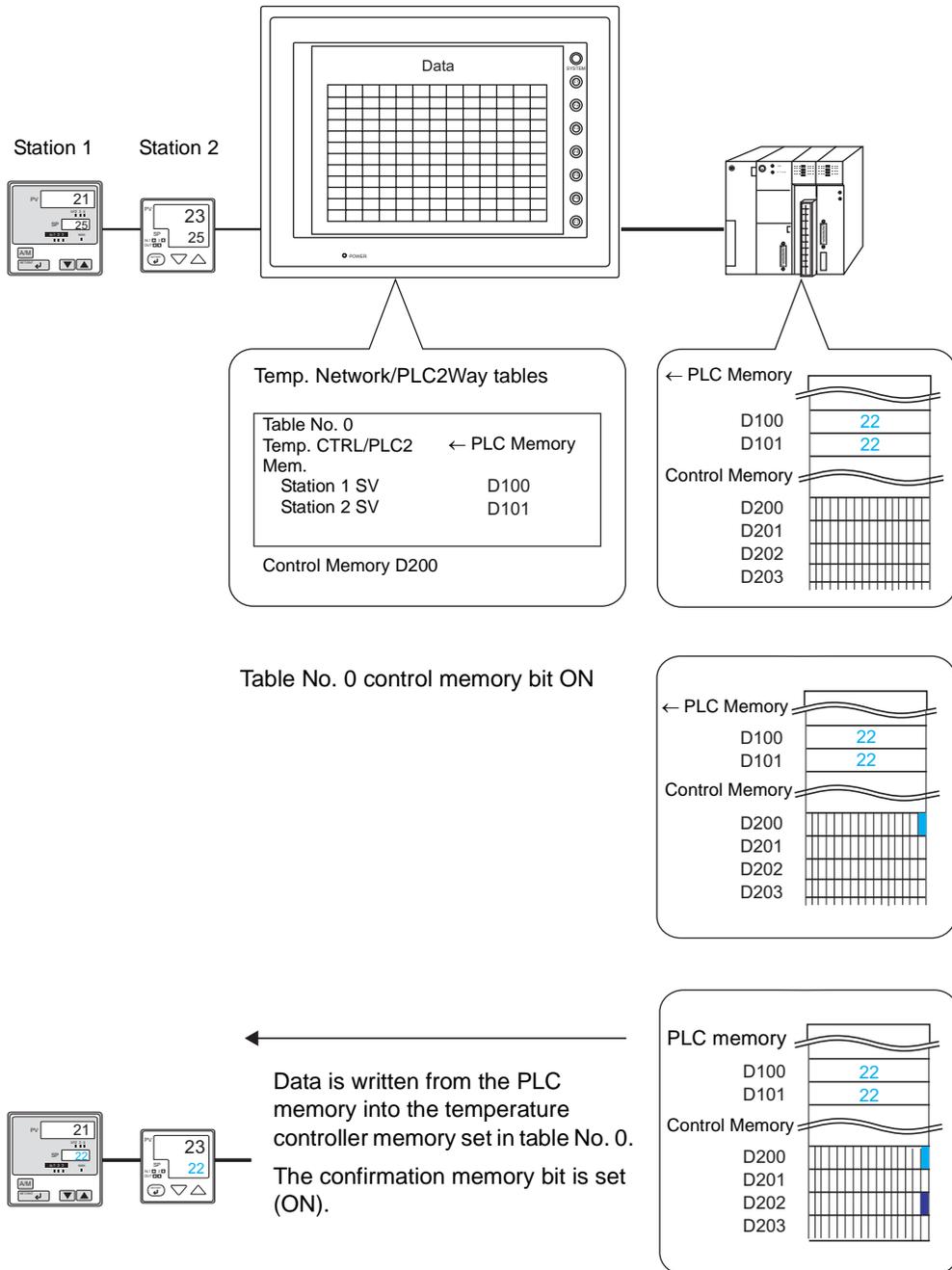
This option is disabled when [Periodical Writing] is selected.

[Temp./PLC2Way Comm. Setting]

Clicking this button brings up the [Temp./PLC2Way Comm. Setting] dialog and allows you to review the setting.

Synchronized Writing

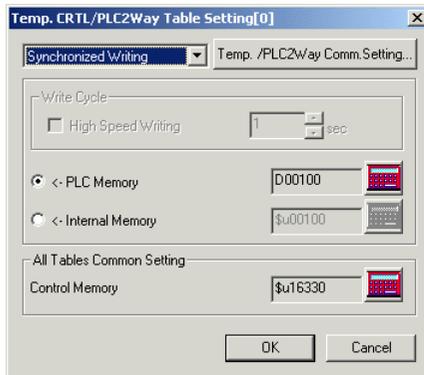
Data is written from the PLC memory or the V series internal memory into the temperature controller memory set in the temperature control network/PLC2Way table at the leading edge (0 → 1) of the control memory bit.



Setting Items

- Temperature control network/PLC2Way table (refer to page 12)
- Temperature control network/PLC2Way table setting

◆ Temperature Control Network/PLC2Way Table Setting



[Synchronized Writing]

Select [Synchronized Writing]. The following setting items become active.

[← PLC Memory]

Check this item when writing data from the PLC memory into the temperature controller memory. Enter the desired top memory address.

[← Internal Memory]

Check this item when writing data from the internal memory into the temperature controller memory. Enter the desired top memory address.

[Control Memory]

Enter a memory address as the trigger for writing from the PLC memory (or the V series internal memory).

The specified memory address is used for temperature control network/PLC2Way table Nos. 0 to 31. For more information, refer to "Control Memory" (page 26).

[Temp./PLC2Way Comm. Setting]

Clicking this button brings up the [Temp./PLC2Way Comm. Setting] dialog and allows you to review the setting.

Control Memory

Control memory becomes effective for executing synchronized reading/synchronized writing.*

Consecutive four words starting from control memory “n” are allocated.

Control Memory n	Contents	Memory Type
n	Read/Write command memory	→ V
n + 1		
n + 2	Read/Write confirmation memory	← V
n + 3		

* Effective for periodical reading as well when an OMRON ID controller V600/620 is used

[Read/Write command memory] (control memory “n” and “n + 1”)

One bit is allocated to each table.

At the leading edge (0 → 1) of a bit, reading from or writing to memory set in the corresponding temperature control network/PLC2Way table occurs.

n

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	← Bit number
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	←

Temperature control network/PLC2Way table Nos. 0 - 15

n + 1

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	← Bit number
31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	←

Temperature control network/PLC2Way table Nos. 16 - 31

[Read/Write confirmation memory] (control memory “n + 2” and “n + 3”)

One bit is allocated to each table.

When a bit of the control memory “n” or “n + 1” is set (0 → 1), the confirmation memory bit for the corresponding table number is set (0 → 1). When a bit of the control memory “n” or “n + 1” is reset (1 → 0), the confirmation memory bit for the corresponding table number is reset (1 → 0).

n + 2

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	← Bit number
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	←

Temperature control network/PLC2Way table Nos. 0 - 15

n + 3

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	← Bit number
31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	←

Temperature control network/PLC2Way table Nos. 16 - 31



Confirmation memory bit ON (0 → 1) timing

When the bit of the command memory is set (0 → 1) and the resulting reading or writing is complete, the bit of the confirmation memory is set (0 → 1).

7-4. Sampling from the Temperature Controller Memory

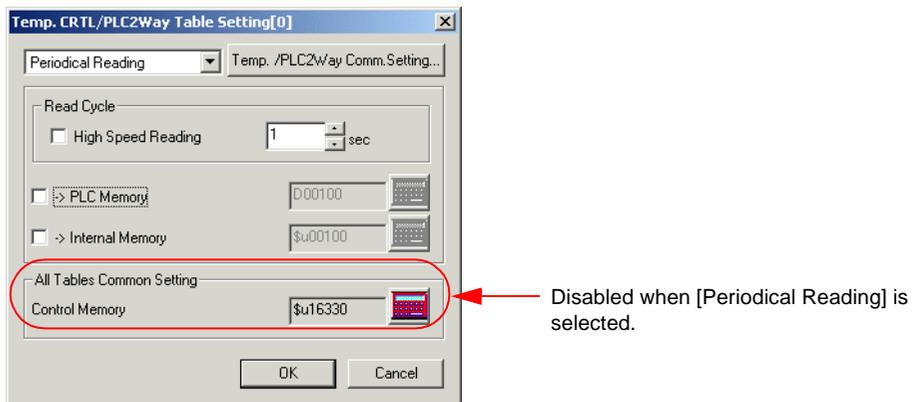
It is possible to sample data in the temperature controller at regular intervals.

Setting Items

Items that must be set to perform constant sampling

- Temperature control network/PLC2Way table (refer to page 12)
- Temperature control network/PLC2Way table setting
- Buffering area setting
- Trend sampling/data sampling
- Memory card setting (when [SRAM] or [CF Card] is selected for [Store Target] in the [Buffering Area Setting] dialog)

◆ Temperature Control Network/PLC2Way Table Setting



[Periodical Reading]

Select [Periodical Reading]. The following setting items become active.

[Read Cycle] (sec)

Set the cycle of reading data in the temperature controller memory.

[→ PLC Memory] [→ Internal Memory]

Do not check these boxes.

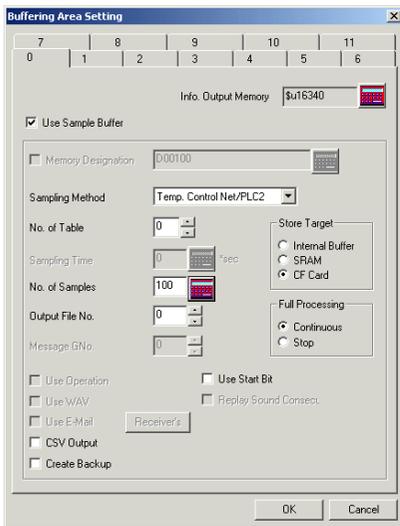
Since sampling data is stored in the internal buffer, SRAM or CF card, it is not necessary to set these items.

[Control Memory]

This option is disabled when [Periodical Reading] is selected.

◆ **Buffering Area Setting**

Click [System Setting] → [Buffering Area Setting]. The [Buffering Area Setting] dialog is opened.



[Sampling Method]

Temp. Control Net/PLC2



When sampling with bit activation, select “Bit Synchronize” instead of “Constant Sample”.

[No. of Table]

Select the temperature control network/PLC2Way table number for sampling.

[No. of Samples]

Specify the number of sampling times.

[Output File No.]

This item becomes active when [SRAM] or [CF Card] is selected for [Store Target].

* Refer to “Memory Card Setting” (page 30).

[Store Target]

(Internal Buffer/SRAM/CF Card)

Choose the desired medium for storing sampling data.

- Internal Buffer: Stores data in the internal buffer of the V series. (RAM)
- SRAM: Stores data in the SRAM area.
 V7 series: SRAM mounted on the unit, V7EM-S, REC-MCARD SRAM, V706EM-S
 V6 series: V6EM/RS, V6EM/RSi, REC-MCARD SRAM
- CF Card: Stores data in the CF card. (V7 series, V608CH)

[Full Processing] (Continuous/Stop)

Choose the desired processing when the target medium space has been used up.

- Continuous: When [No. of Samples] has been exceeded, data from the oldest is discarded.
- Stop: When [No. of Samples] has been exceeded, sampling is stopped.

Calculating the buffering area capacity

When [Internal Buffer] is selected for [Store Target] in the [Buffering Area Setting], the maximum available capacity is 32k words.

When [Temp Control Net/PLC2] is selected for [Sampling Method], the required capacity can be calculated as shown below.

$$1 \text{ sample} = [\text{Word Count}^*] + 2 \text{ words}$$

$$\text{Buffer size} = [\text{No. of Samples}] \times 1 \text{ sample}$$

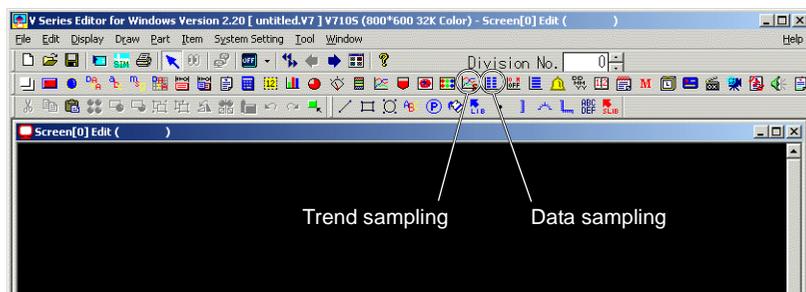
- * [Word Count] here means the number of words in the memory addresses used in the temperature control network/PLC2Way table that is set for [No. of Table].

◆ Trend Sampling or Data Sampling Setting

To show data stored in the specified buffer number, trend sampling or data sampling must be set.

Click the [Trend Sampling] or [Data Sampling] icon and make the setting.

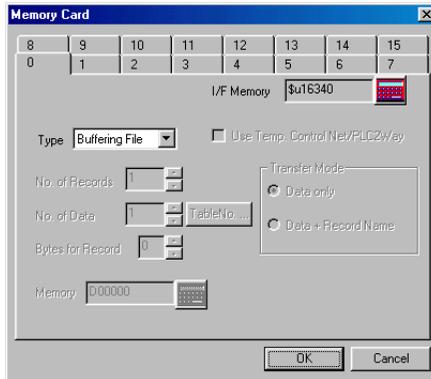
For more information, refer to the Reference Manual (Function).



◆ Memory Card Setting

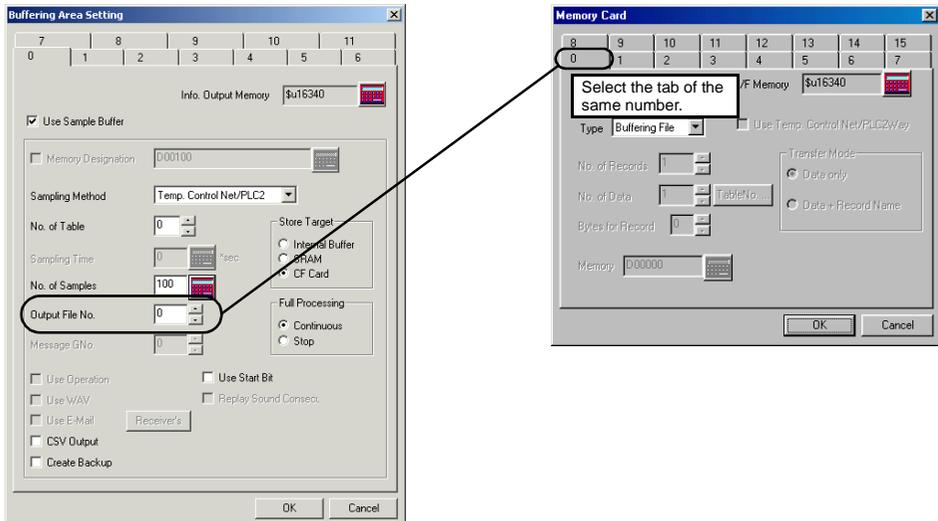
When [SRAM] or [CF Card] is selected for [Store Target] in the [Buffering Area Setting] dialog, the memory card setting is required.

1. Click [System Setting] → [Memory Card Setting]. The [Memory Card] dialog is opened.



2. Select [Buffering File] for [Type].

3. Match the file number (tab) in the [Memory Card] dialog with [Output File No.] in the [Buffering Area Setting] dialog.



* The used memory capacity of SRAM and CF card can be calculated in the same way as the buffering area.

7-5. Transferring Data in the Temperature Controller Memory

Data in the temperature controller memory can be transferred to the PLC memory, V series internal memory or a memory card at one time according to the temperature control network/PLC2Way table. Conversely, it is also possible to transfer data in the PLC memory, V series internal memory or a memory card to the temperature controller memory at one time.

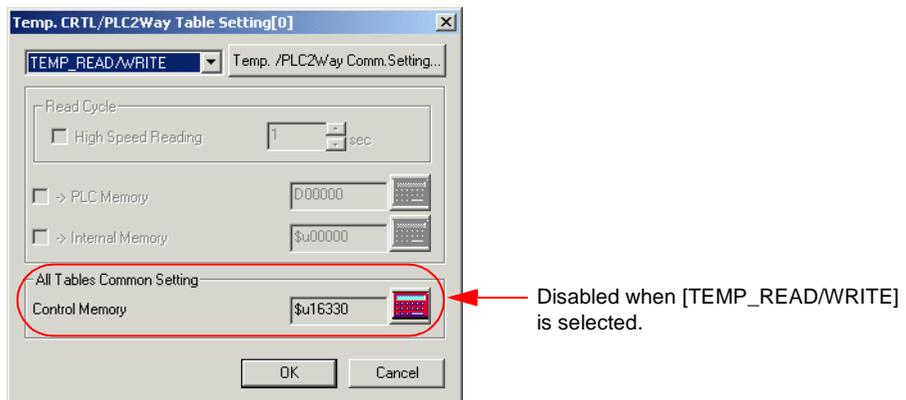
To transfer data at one time, use a macro command (TEMP_READ/TEMP_WRITE).

Setting Items

Items that must be set to transfer data

- Temperature control network/PLC2Way table (refer to page 12)
- Temperature control network/PLC2Way table setting
- Macro
- Memory card setting (when a memory card is used)

◆ Temperature Control Network/PLC2Way Table Setting



[TEMP_READ/WRITE]

Select [TEMP_READ/WRITE].

◆ **Macro**

[TEMP_READ]

Data in the temperature controller memory addresses set in the temperature control network/PLC2Way table specified for F1 is transferred to the memory addresses starting from F0 at one time.

Usable Devices

	PLC Memory	Internal Memory	Constant (Temperature Control Table No.)	Memory Card	Indirect Designation
F0	○	○		○	○
F1		○	○		

TEMP_READ: Temperature control network table read

TEMP_READ F0 <- TABLE : F1

[TEMP_WRITE]

Data in memory addresses starting from F1 is transferred to the temperature controller memory of the temperature control network/PLC2Way table specified for F0 at one time.

Usable Devices

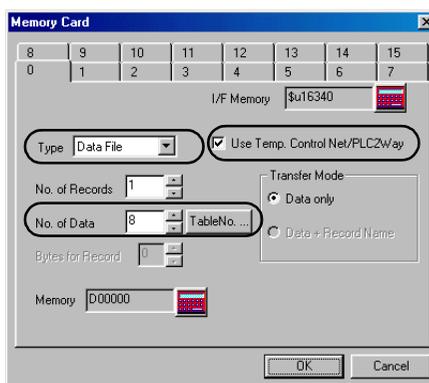
	PLC Memory	Internal Memory	Constant (Temperature Control Table No.)	Memory Card	Indirect Designation
F0		○	○		
F1	○	○		○	○

TEMP_WRITE: Temperature control network table write

TEMP_WRITE TABLE : F0 <- F1

◆ Memory Card Setting

1. Click [System Setting] → [Memory Card Setting]. The [Memory Card] dialog is opened.



2. Select [Data File] for [Type].
Check Use Temp. Control Net/PLC2Way].
3. Click the [Table No.] button and select the table number to be used. The appropriate number is automatically set for [No. of Data].

8. Indirect Memory Designation

It is possible to have access to the temperature controller memory using the indirect memory designation as a macro command.

In this section, the indirect designation of the temperature controller memory is explained.

For more information on the indirect designation of the PLC memory or internal memory, refer to the Reference Manual (Function).

The internal user memory \$u/\$T must be used for the indirect memory designation. \$L and \$LD cannot be used.

Designating the Indirect Memory

- When the temperature controller memory addresses are from 0 to 65535 (less than 16 bits):

	15	8	7	0
n + 0	Model (03)		Memory type	
n + 1	Memory number (address)			
n + 2	00		Bit designation	
n + 3	00		Station number	

- When the temperature controller memory addresses are 65536 and greater (less than 32 bits):

	15	8	7	0
n + 0	Model (83)		Memory type	
n + 1	Memory number (address) upper			
n + 2	Memory number (address) lower			
n + 3	00		Bit designation	
n + 4	00		Station number	



Depending on the temperature controller model, another designation may be required.

Refer to "Indirect Designation Memory" for each temperature controller included in "Appendix".

- Memory type

Depends on the temperature controller model.

When setting, refer to "Available Memory" for each temperature controller included in "Appendix".

- Station number

Specify the station number of the temperature controller.

9. Controlling the Temperature Controller

The temperature controller can be controlled using a macro command (TEMP_CTL).

Controllable operations that are available vary depending on the temperature controller model.

For more information about controllable operations, refer to “TEMP_CTL” for each temperature controller included in “Appendix”.

◆ Macro

[TEMP_CTL]

This macro command controls the operation set in the memory addresses starting from the one specified for F0 for the number of words specified for F1.

Usable Devices

	PLC Memory	Internal Memory	Constant (Words)	Memory Card	Indirect Designation
F0		○			
F1			○		

TEMP_CTRL: Temperature controller/PLC2Way control function

TEMP_CTL F0 F1

◆ **Macro Setting Example**

Setting example for setting the communication with OMRON's E5AN (station No. 1) to "RUN" from the MONITOUCH:

When F0 = \$u100:

- \$u100 = 1 (W) Station number setting
- \$u101 = 0030H (W) Command setting
- \$u102 = 0100H (W) RUN
- TEMP_CTL \$u100 3 TEMP_CTL execution of macro

Contents	F0 (= \$u n)	= \$u100	F1	
Operation instructions	n	= \$u100	Station No. *	
	n + 1	= \$u101	Command: 0030H	
	n + 2	= \$u102	0000H: Communication writing OFF (disabled) 0001H: Communication writing ON (enabled)	
			0100H: RUN 0101H: STOP	
			0200H: Multi-SP (Set point 0) 0201H: Multi-SP (Set point 1) 0202H: Multi-SP (Set point 2) 0203H: Multi-SP (Set point 3)	
			0300H: AT cancel 0301H: AT execute	
			0400H: Write mode (Backup) 0401H: Write mode (RAM)	
			0500H: Save RAM data	
			0600H: Software reset	
			0700H: Move to set area 1	
		0800H: Move to protect level		

* 8000 (HEX): broadcasting

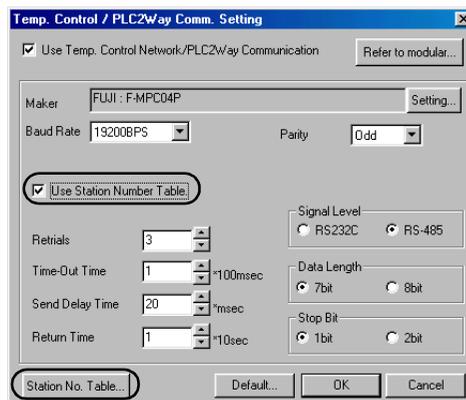
10. Station Number Table

As of May 2004, the station number table is usable only for FUJI's MPC04.

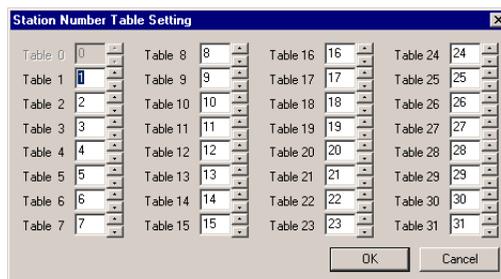
- On the temperature control network, one V series unit can be connected to a maximum of 31 temperature controllers. Station numbers from 0 to 31 can be set on the [Memory Setting] dialog of V-SFT; however, depending on the temperature controller, station numbers exceeding 32 may be available. In such a case, use the station number table to enable communications with devices with station number 32 or greater.
- It is easier to specify station numbers for each network in the field by making the screen for setting the station number when creating screen data. In this case, it is not necessary to transfer screen data again.

◆ Setting Procedure of the Station Number Table

1. Click [System Setting] → [Temp. CTRL/PLC2Way Setting] → [Temp. CTRL/PLC2Way Comm. Setting]. The [Temp. Control/PLC2Way Comm. Setting] dialog is displayed. Check [Use Station Number Table].



2. Click the [Station No. Table] switch.
3. The [Station Number Table Setting] dialog is displayed. Set up station numbers of temperature controllers to be connected on the network.



◆ Rewriting the Station Number Table

To rewrite the station number table on the V series screen, use a macro command [FROM_WR].

[FROM_WR]

As many words as specified for F1 from the memory address set for F0 is written in the FP-ROM.

Usable Devices

	PLC Memory	Internal Memory	Constant (Words)	Memory Card	Indirect Designation
F0	○	○		○	○
F1			○		

FROM_WR: Writing to FP-ROM

FROM_WR F0 F1

- 32 words from the memory address set for F0 must be secured. Set the station numbers from 0 to 31 for the memory addresses.
For the station numbers not used, set [-1].
- Be sure to set "32" for F1. If any other value than "32" is set, the write error occurs. (Refer to "System Memory" (page 38).)

Notes

- 1) The maximum possible number of write operations to the FP-ROM is 100,000 times. This is not connected to the number of words that are written.
- 2) Do not include the FROM_WR command in a cycle macro, etc.
- 3) It will take some time to write data into the FP-ROM.
- 4) When the station number table has been rewritten using the FROM_WR command, be sure to execute the RESTART command (refer to page 39).
- 5) When the station number table is used, it is not possible to use [Use Internal Flash ROM as Back-up Area] on the [Environment Setting] tab window of the [Unit Setting] dialog. Be sure to leave this box unchecked.

System Memory

The result of FROM_WR macro execution is stored in \$s728.

[0]: Normal

[1]: Error

◆ **Reconnecting the Network Using a Macro**

The network can be reconnected using the RESTART command.

[(RESTART) F1]

This macro command reconnects the temperature control network after the time specified for F1.

Range for F1: 0 to 60 (sec)

Usable Devices

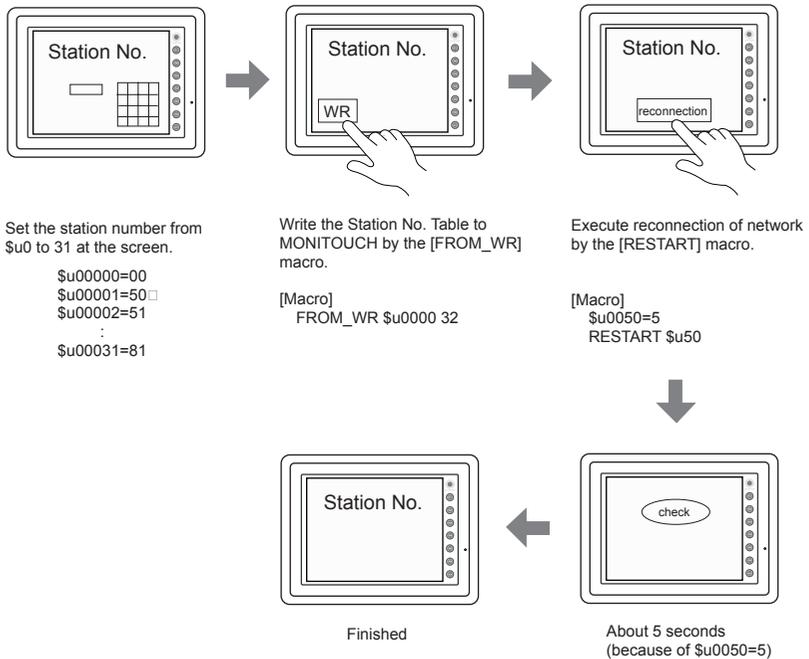
	PLC Memory	Internal Memory	Constant	Memory Card	Indirect Designation
F0	Command name				
F1		○			○

RESTART: Reconnecting the temperature control network

(RESTART)F1

When the station number table has been rewritten using the FROM_WR command, be sure to execute this command.

◆ **Example of Procedure for Rewriting the Station Number Table**

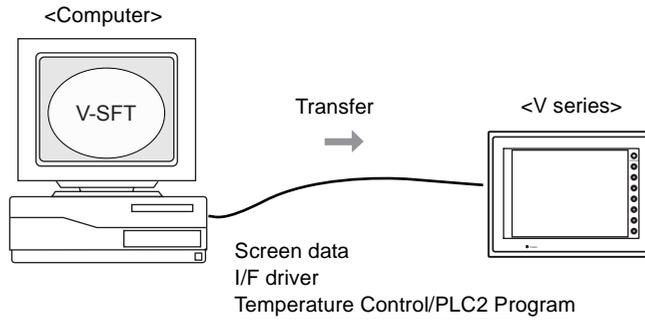


11. Notes on Screen Data Transfer

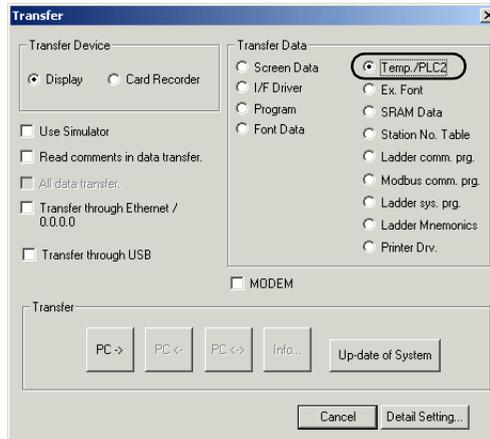
Temperature Control/PLC2 Program

When using the temperature control network communications, it is necessary to transfer the temperature control/PLC2 program to the V series.

When the temperature control network/PLC2Way setting has been made on V-SFT, the program is automatically transferred together with screen data.



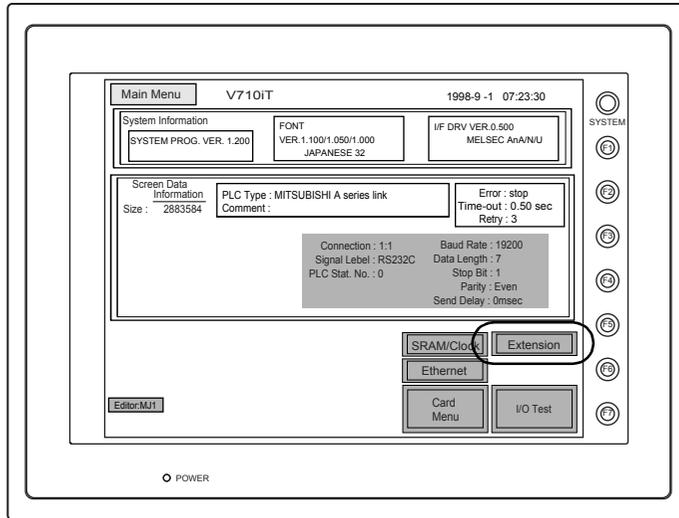
When [Temp./PLC2] is selected in the [Transfer] dialog, only the temperature control/PLC2 program can be transferred to the V series.



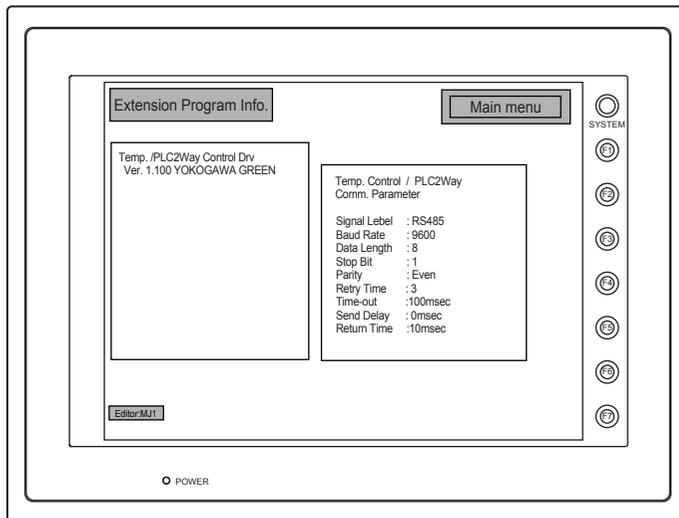
When the Main Menu screen is displayed after transferring screen data, the [Extension] switch appears.



If the [Extension] switch does not appear, transfer font data.



Pressing the switch brings up the “Extension Program Info.” screen where the temperature control/PLC2Way driver setting and temperature control network/PLC2way setting can be reviewed.

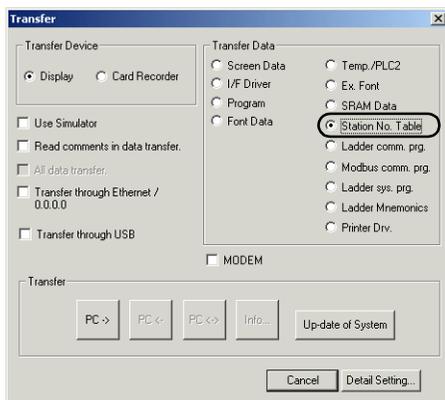


Station Number Table

When using the station number table, it is necessary to transfer the station number table data to the V series.

The station number table is transferred to the unit in the following cases:

- When the station number table is set on V-SFT and no station number table information exists in the V series data
- When [Station No. Table] is selected on the [Transfer] dialog



 If the changed screen data is transferred to the V series, which already has the station number table data, the screen data is renewed, but the station number table is not renewed.
In this case, transfer the station number table only.

 Depending on the setting on the [Temp. Control/PLC2Way Comm. Setting] dialog, the available memory capacity for screen data varies.
Check the remaining capacity by selecting [Tool] → [Memory Use].

Example:

V606 (font: English)	
Temperature control network not used	1,437,696 bytes
Temperature control network used	1,306,624 bytes
Temperature control network and station number table used	1,175,552 bytes

12. System Memory

The temperature controller status is output to the system memory (\$s) of the V series.

This section explains the memory addresses (\$s729 to 764) where the temperature controller status is output.

For other memory addresses, refer to the Reference Manual (Function).

List

Address	Contents	
:	:	
\$s729	TEMP_READ/TEMP_WRITE/TEMP_CTL macro execution result	
730	Temperature controller	Station No. 00 status
731	Temperature controller	Station No. 01 status
732	Temperature controller	Station No. 02 status
733	Temperature controller	Station No. 03 status
734	Temperature controller	Station No. 04 status
735	Temperature controller	Station No. 05 status
736	Temperature controller	Station No. 06 status
737	Temperature controller	Station No. 07 status
738	Temperature controller	Station No. 08 status
739	Temperature controller	Station No. 09 status
740	Temperature controller	Station No. 10 status
741	Temperature controller	Station No. 11 status
742	Temperature controller	Station No. 12 status
743	Temperature controller	Station No. 13 status
744	Temperature controller	Station No. 14 status
745	Temperature controller	Station No. 15 status
746	Temperature controller	Station No. 16 status
747	Temperature controller	Station No. 17 status
748	Temperature controller	Station No. 18 status
749	Temperature controller	Station No. 19 status
750	Temperature controller	Station No. 20 status
751	Temperature controller	Station No. 21 status
752	Temperature controller	Station No. 22 status
753	Temperature controller	Station No. 23 status
754	Temperature controller	Station No. 24 status
755	Temperature controller	Station No. 25 status
756	Temperature controller	Station No. 26 status
757	Temperature controller	Station No. 27 status
758	Temperature controller	Station No. 28 status
759	Temperature controller	Station No. 29 status
760	Temperature controller	Station No. 30 status
761	Temperature controller	Station No. 31 status

Address	Contents
762	Other than "0": Periodical/synchronized reading suspended
763	Other than "0": Temperature control network/PLC2Wayr macro forced execution
764	Other than "0": Periodical/synchronized writing suspended

Details

\$s729

Stores the execution result of macro command [TEMP_READ], [TEMP_WRITE] or [TEMP_CTL].

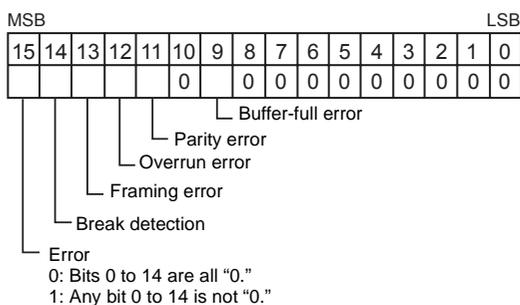
- [0]: A command has been executed successfully.
- [Other than "0"]: A command execution has resulted in an error.

\$s730-761

The following status code for the temperature controller is stored.

Code	Contents
0000H	Normal
FFFFH	Timeout
8001H	Check code error
8002H	Data error
800BH	Abnormal code from the temperature controller received

Errors other than the above are stored as shown below.



Error	Details	Solution
Timeout	Although a request to send is given to the temperature controller, no answer is returned within the specified time.	Check 1), 2) and 3) described below.
Check code error	The check code in the temperature controller response was not correct.	Check 1), 2) and 3) described below.
Data error	The code of the received data is invalid.	Check 1), 2) and 3) described below.
Error code received	An error occurs on the temperature controller.	Refer to the instruction manual for the temperature controller.
Buffer full	The V series buffer is full.	Contact your local distributor.
Parity	An error occurred in parity check.	Check 2) and 3) described below.
Overrun	After one character is received, the next character is received before internal processing is completed.	Check 1) and 3) described below.
Framing	Although the stop bit must be [1], it is detected as [0].	Check 1), 2) and 3) described below.
Break detection	The temperature controller's SD (TXD) remains at the low level.	Examine the connection between the temperature controller's SD (TXD) and the V series' RD (RXD).

- Solution

- 1) Check the parameter setting of the temperature controller and the setting in the [Temp. CTRL/PLC2Way Comm. Setting] dialog.
- 2) Check the cable connection.
- 3) Data may be disrupted because of noise. Fix noise.

* **If you still cannot solve the error even after following the suggestions above, contact your local distributor.**

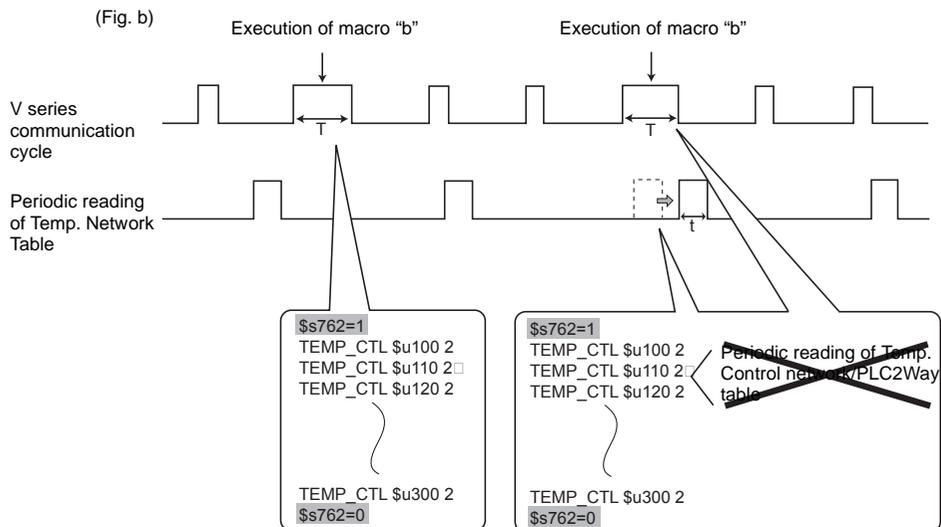
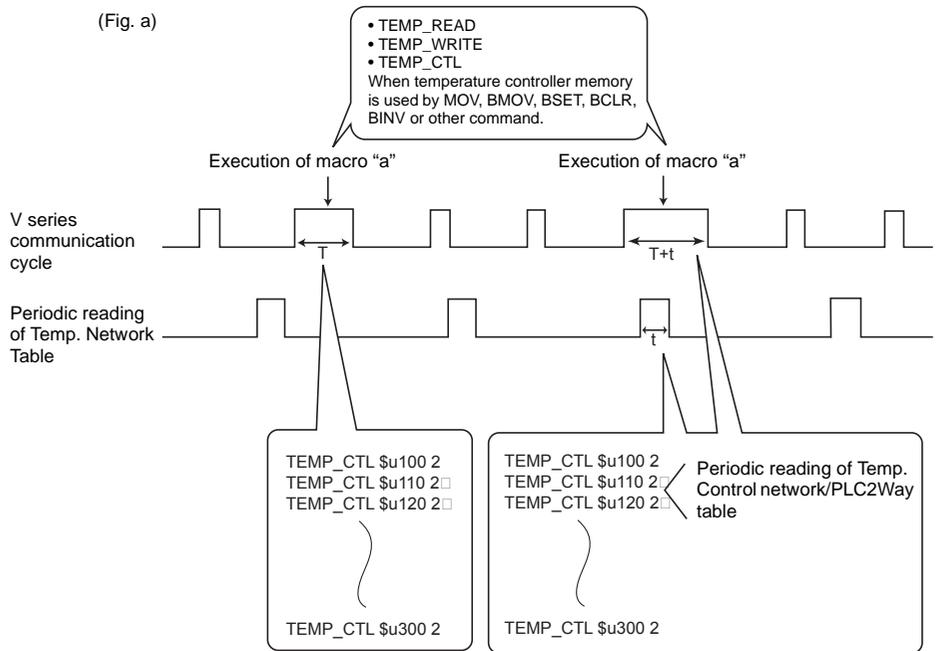
\$\$s762

Periodical or synchronized reading set in the [Temp. CTRL/PLC2Way Table Setting] dialog can be suspended.

- [0]: Periodical/synchronized reading is performed.
- [Other than "0"]: Periodical/synchronized reading is suspended.

• Example: Periodical reading

If periodical reading of the temperature control network/PLC2Way table is performed while the temperature controller is being accessed using a macro command, the macro execution will be delayed (Fig. a). To avoid this, periodical reading can be suspended using memory address \$\$s762 (Fig. b).



\$s763

Forced execution of macro commands [TEMP_READ] and [TEMP_WRITE] using the temperature control network/PLC2Way table

- [0]: When any station that has failed is included in the specified table, the macro command is not executed.
- [Other than "0"]: The macro command is forcibly executed to the stations that are working properly.

\$s764

Periodical or synchronized writing set in the [Temp. CTRL/PLC2Way Table Setting] dialog can be suspended.

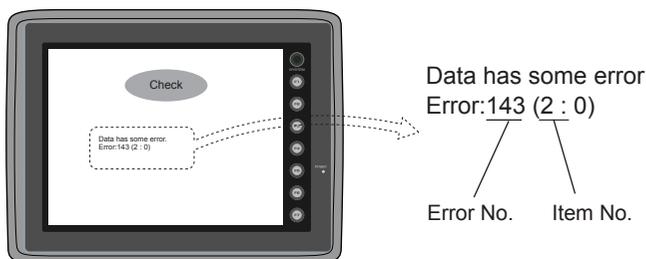
- [0]: Periodical/synchronized writing is performed.
- [Other than "0"]: Periodical/synchronized writing is suspended.

For the example of the use of the address, refer to "\$s762" (page 46).

13. Error Display

If a screen data error occurs, an error message is displayed on the V series.
This section describes the errors relating to the temperature control network.
For other error messages, refer to the Reference Manual (Function).

Check



Error No. (refer to the chart below)

Note:

Errors marked with “*” do not occur under normal circumstances.

If any of these errors has occurred, contact your local distributor.

Error No.	Contents	Remedy
140	The system program does not match the temperature control/PLC2Way driver on the V series.	Check that the system program version is compatible with temperature control network/PLC2Way, and if necessary, update the system program.
141	Multi-link 2 connection is set. (Communication parameter setting)	It is not possible to use PLC2Way and multi-link 2 connections at the same time on the V6 series.
142	Temperature control network/PLC2Way driver is not found.	Transfer the temperature control network/PLC2Way driver.
143	The temperature control network table is not set.	Check or set the temperature control network/PLC2Way table.
144	Modular jack setting has not been made.	Check the modular jack setting for temperature control network/PLC2Way.
145	The temperature control network table is overlapping.	Check that table numbers are duplicated on the [Buffering Area Setting] dialog, and reset the numbers as appropriate.
*146	The memory addresses set on the temperature control network/PLC2Way table are not correct.	Contact your local distributor.
147	The temperature control network/PLC2Way model does not match the temperature control/PLC2Way driver.	Check the extension information on the Main Menu screen, and transfer the screen data or temperature control/PLC2Way driver.

Error No.	Contents	Remedy
155	<p>FP-ROM data is not registered. The default.dtm file has not been transferred though [<input checked="" type="checkbox"/> Use Internal Flash ROM as Back-up Area] is checked on the [Environment Setting] tab window of the [Unit Setting] dialog. Or, no station number table is found though [<input checked="" type="checkbox"/> Use Station Number Table] is checked for temperature controller network.</p>	<p>When it is checked, the available memory capacity indicated on the Main Menu screen decreases by 128 kbyte. Check the setting. If the same memory capacity is indicated regardless of the check box status, contact your local distributor.</p>
156	<p>[<input checked="" type="checkbox"/> Use Internal Flash ROM as Back-up Area] is checked on the [Environment Setting] tab window of the [Unit Setting] dialog, and [<input checked="" type="checkbox"/> Use Station Number Table] is checked for temperature controller network.</p>	<p>It is not possible to use both functions at the same time. Uncheck either box, and transfer screen data again.</p>
157	<p>The station numbers on the station number table are overlapping.</p>	<p>When rewriting the station number table using a macro command (FROM_WR), be sure to set station numbers without overlapping.</p>
187	<p>Synchronized/periodical writing is selected for the temperature control network/PLC2Way table selected in the [Buffering Area Setting] dialog.</p>	<p>Recheck the settings of the buffering area and the temperature control network/PLC2Way table, and make a correction as necessary.</p>
188	<p>The same memory address is allocated repeatedly in one table.</p>	<p>Recheck the memory settings of the temperature control network/PLC2Way table and make a correction as necessary.</p>

MEMO

Please use this page freely.

14. Appendix

Applicable Models	App-1
Yokogawa M&C	App-3
Yamatake	App-6
OMRON	App-12
RKC.....	App-31
Fuji Electric.....	App-39
MITSUBISHI ELECTRIC.....	App-56
CHINO.....	App-63
NIKKI DENSO	App-68
OHKURA	App-70
SHINKO TECHNOS.....	App-78
SANMEI	App-84
TOSHIBA	App-88
San Rex	App-92
A&D.....	App-94
IAI	App-96
LG	App-117
EUROTHERM.....	App-120
UNIPULSE	App-122
Hitachi	App-125
Yaskawa Electric.....	App-128
M-SYSTEM	App-130
SAMSUNG.....	App-133
SUNX	App-135
SANYO.....	App-142
Gammaflux.....	App-150
Modbus Free Format.....	App-153

Applicable Models

At present (May, 2004), the following temperature controller models can be connected.



Use the devices provided with the communication function.
However, devices that only support 4-wire connection at the RS-422 interface cannot be used.

Temperature controller	Yokogawa M&C	UT100/130/150/152/155	App - 3
		UT750/550/520/350/320	
		UP350/550/750	
		UM330/350	
		UT2400/2800	
	Yamatake	SDC10/20/21/30/31/40A/40G	App - 6
		DMC10/50	
	OMRON	E5AK/E5AK-T	App - 12
		E5CK/E5CK-T	
		E5EK/E5EK-T	
		E5ZE	
		E5ZD	
		E5AN/E5EN/E5CN/E5GN	
		E5ZN	
		E5AR/E5ER	
	RKC	SR-Mini (MODBUS RTU)	App - 31
		MA900/MA901 (MODBUS RTU)	
		CB100/400/500/700/900 (MODBUS RTU)	
		SR-Mini (Standard Protocol)	
		REX-F400/F700/F900/F9000 (Standard Protocol)	
		SRV (MODBUS RTU)	
		REX-B800 (Standard Protocol)	
	Fuji Electric	PYX (MODBUS RTU)	App - 39
		PYH	
		PXR (MODBUS RTU)	
	CHINO	DZ1000/DZ2000 (MODBUS RTU)	App - 63
		KP1000	
LT400 Series (MODBUS RTU)			
OHKURA	EC5500S/EC5800	App - 70	
	EC5600S/EC5900A		
SHINKO TECHNOS	C Series	App - 78	
	FC Series		
	GC-300		
	DCL-33A		
	JCx-300 Series		

Inverter, etc.	OMRON	V600/620	App - 12
		3G3MV (MODBUS RTU)	
	Fuji Electric	F-MPC04P (1φ2W/3φ3W/3φ4W)	App - 39
		FVR-E11S/C11S	
		FRENIC5000G11S/P11S	
		FRENIC5000VG7S	
		FRENIC-Mini (MODBUS RTU)	
		HFR-C9K	
		PPMC (MODBUS RTU)	
		FALDIC-alpha series	
		PH series	
	MITSUBISHI ELECTRIC	FR-*500	App - 56
		MR-J2S-*A	
		MR-J2S-*CL	
	NIKKI DENSO	SQB-6432B	App - 68
	SANMEI	Cuty Axis	App - 84
	TOSHIBA	VF-S7	App - 88
		VF-S9	
		VF-A7	
	San Rex	DC AUTO (HKD type)	App - 92
	A&D	AD4402 (MODBUS RTU)	App - 94
		AD4404 (MODBUS RTU)	
	IAI	Super SEL Controller	App - 96
		X-SEL Controller	
	LG	IS5/IG5	App - 117
	EUROTHERM	2400 Series (MODBUS RTU)	App - 120
	UNIPULSE	F340A/F371	App - 122
	Hitachi	SJ300 Series/L300P Series	App - 125
	Yaskawa Electric	VS mini V7 Series	App - 128
	M-SYSTEM	R1M Series (MODBUS RTU)	App - 130
R5 Series (MODBUS RTU)			
SAMSUNG	MOSCON-E7	App - 133	
SUNX	LP-200	App - 135	
SANYO	PB1 Series	App - 142	
Gammaflux	TTC2100	App - 150	
Modbus Free	—	App - 153	

Yokogawa M&C

Model List

Temperature Controller	Lst File	Tem File
UT100/130/150/152/155	UT100.Lst	GreenS.tem
UT750	UT750.Lst	
UT520/550	UT550.Lst	
UT320/350	UT350.Lst	
UP350	UP350.Lst	
UP550	UP550.Lst	
UP750	UP750.Lst	
UM330/350	UM350.Lst	
UT2400/2800	UT2000.Lst	

UT100/750/550/520/350/320, UP350/550/750, UM330/350

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Station number	1 to 31 ^{*1}	1 to 31
Parity	Even	Even
Data length	8	8
Stop bit	1	1
Protocol ^{*2}	–	Computer link (fixed)
Sumcheck	Not provided	Not provided

*1 Set this parameter on the [Memory Input] dialog.

*2 When "Modbus" (RTU mode) is selected for the temperature controller, select "Modbus Free" instead of "Yokogawa M&C" for model selection on the V-SFT editor.

◆ Available Memory

Memory	Type	Remarks
D (register)	0	
I (relay)	1	
B (register)	2	Available only with UP550 and UP750

◆ TEMP_CT

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

UT2400/2800

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller	
Baud rate	9600 bps	9600 bps	Rotary switch 2
Station number	1 - 16 ^{*1}	1 - 16 ^{*2}	Rotary switch 3
Parity	Even	Even	Rotary switch 2
Data length	8 (fixed)	8 (fixed)	-
Stop bit	1 (fixed)	1 (fixed)	-
Communication mode	-	Computer link communication mode (fixed)	DIP switch 1 (ON)
CR	Provided	Provided	-
CPU No.	01:1 - 4CH ^{*1} 02:5 - 8CH ^{*1}	01:1 - 4CH 02:5 - 8CH	-

*1 Set this parameter on the [Memory Input] dialog.

*2 The number that is one greater than the rotary switch number (0 to F) should be the station number (1 to 16).

◆ Available Memory

Memory	Type	Remarks
D (register)	0	
I (relay)	1	

◆ TEMP_CT

Unavailable

◆ Indirect Memory Designation

- When the temperature controller memory addresses are from 0 to 65535 (less than 16 bits):

	15	8	7	0
n + 0	Model (03)		Memory type	
n + 1	Memory number (address)			
n + 2	CPU number		Bit designation	
n + 3	00		Station number	

- When the temperature controller memory addresses are 65536 and greater (less than 32 bits):

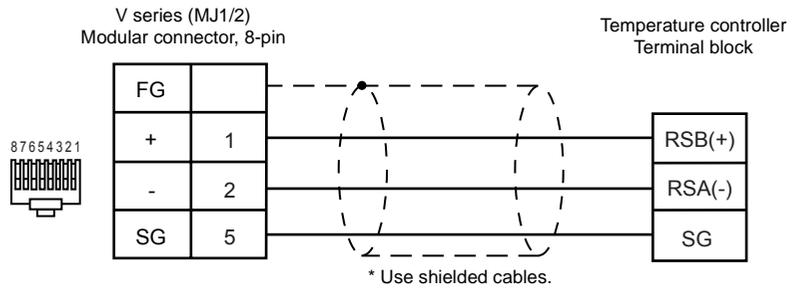
	15	8	7	0
n + 0	Model (83)		Memory type	
n + 1	Memory number (address)			
n + 2	CPU number		Bit designation	
n + 3	00		Station number	

Wiring

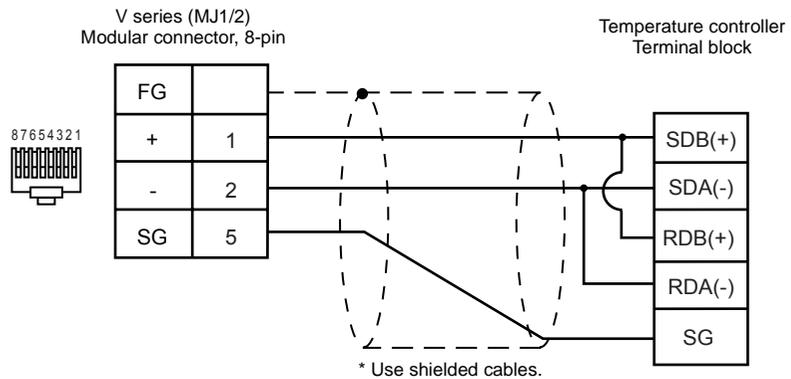


Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-485 (UT100 series/UT750/UP750)

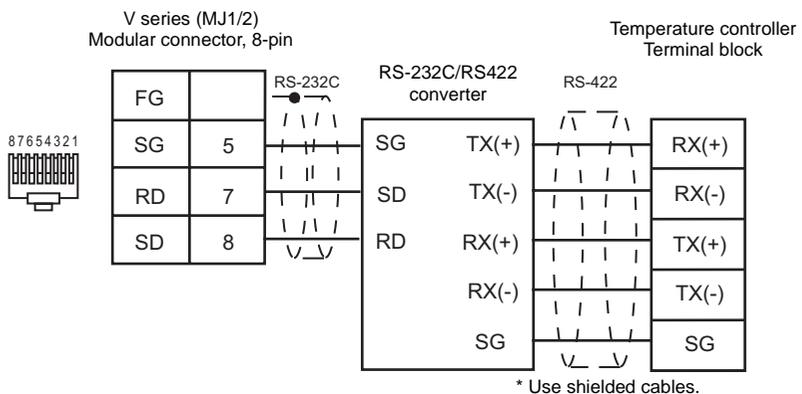


RS-485 (UT320/350/520/550/750, UP350/550/750, UM330/350)



RS-422 (UT2400/2800)

Use an RS-232C/RS-422 converter. In the [Temp. Control/PLC2Way Comm. Setting] dialog for the V-SFT editor, check [RS232C] for [Signal Level].



Yamatake

Model List

Temperature Controller	Lst File	Tem File
SDC10	SDC10.Lst	Digitro.tem
SDC20/21	SDC20.Lst	
SDC30/31	SDC30.Lst	
SDC40A	SDC40A.Lst	
SDC40G	SDC40G.Lst	
DMC10	DMC10.Lst	
DMC50 ^{*1}	DMC50.Lst	

*1 Display communication port is used

SDCxx

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even	Even
Data length	8	8
Stop bit	1	1
Station number	1 to 31 ^{*2}	1 to 31 ^{*1}
Protocol	–	CPL (fixed)

*1 If the temperature controller is set as station No. 0, communications are not available. Be sure to set a value other than "0".

*2 Set this parameter on the [Memory Input] dialog.



- To change parameters of SDC20/21 through communications frequently, set "1" (enable) for the RAM write enable bit word address (312W) before writing. When the RAM write enable bit is "0" (prohibited), it is possible to write only to EEPROM addresses. In this case, 100,000 write operations are guaranteed.
 - To change parameters of SDC10/30/31/40A/40G through communications frequently, select "RAM" for the target memory.
- * For more information, refer to the instruction manual for the temperature controller.

◆ Available Memory

Memory	Type	Remarks
–	0	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

DMC10

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller	
Baud rate	19200 bps	19200 bps	-
Parity	Even	Even	-
Data length	8 (fixed)	8 (fixed)	-
Stop bit	1	1	-
Station number	1 - 15 ² (DEC)	1 - F ¹ (HEX)	Rotary switch
Protocol ³	-	CPL (fixed)	-
Terminating resistance	OFF	-	-

*1 If the temperature controller is set as station No. 0, communications are not available. Be sure to set a value other than "0".

*2 Set this parameter on the [Memory Input] dialog.

*3 When "Modbus" (RTU mode) is selected for the temperature controller, select "Modbus Free" instead of "Yamatake" for model selection on the V-SFT editor.

◆ Available Memory

Memory	Type	Remarks
-	0	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

DMC50

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even (fixed)	Even (fixed)
Data length	8 (fixed)	8 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	1 to 15 ⁻² (DEC)	1 to F ⁻¹ (HEX)
Protocol	-	CPL (fixed)

*1 If the temperature controller is set as station No. 0, communications are not available. Be sure to set a value other than "0".

*2 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

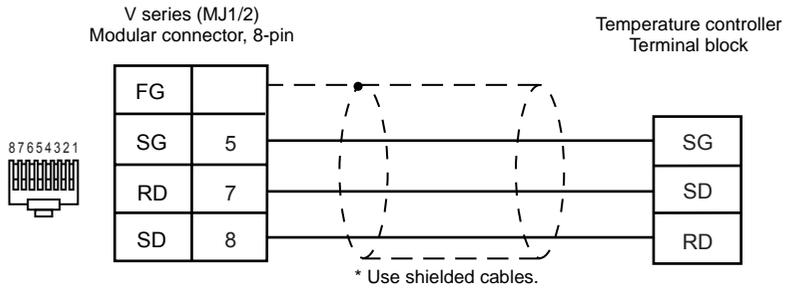
Memory (parameter type ID)	Type	Remarks
000 (NA area)	0	Double-word
001 (H/W information)	1	Double-word, read only
002 (calendar time setting)	2	Double-word
021 (AI setting) high-resolution monitor: for standard input	3	Double-word
022 (AI setting) special monitor	4	Double-word
021 (AI setting) high-resolution monitor: for option input	5	Double-word
041 (AUX-IN setting)	6	Double-word
045 (AO setting)	7	Double-word
061 (DO setting)	8	Double-word
071 (TP setting)	9	Double-word
074 (zener barrier adjustment value)	10	Double-word
0A1 (communication setting: for ME200)	11	Double-word, read only
0A2 (communication setting: for MR200)	12	Double-word, read only
0A3 (communication setting: front port)	13	Double-word, read only
0C1 (system status)	14	Double-word, read only
0C3 (calendar time display)	15	Double-word, read only
0C4 (log: system alarm)	16	Double-word
0C5 (log: AI alarm)	17	Double-word
0C6 (log: AUX-IN alarm)	18	Double-word
0E1 (AI status)	19	Double-word, read only
0E2 (AUX-IN status)	20	Double-word, read only
0E3 (AO status)	21	Double-word
0E5 (DI status)	22	Double-word, read only
0E6 (DO status)	23	Double-word
0E7 (TP status)	24	Double-word
0E8 (zener barrier adjustment count)	25	Double-word, read only
0F1 (communication setting in use: for ME200)	26	Double-word, read only
0F2 (communication setting in use: for MR200)	27	Double-word, read only
0F3 (communication setting in use: front port)	28	Double-word, read only
201 (PID_A setting)	29	Double-word
202 (PID_A constant)	30	Double-word

Wiring

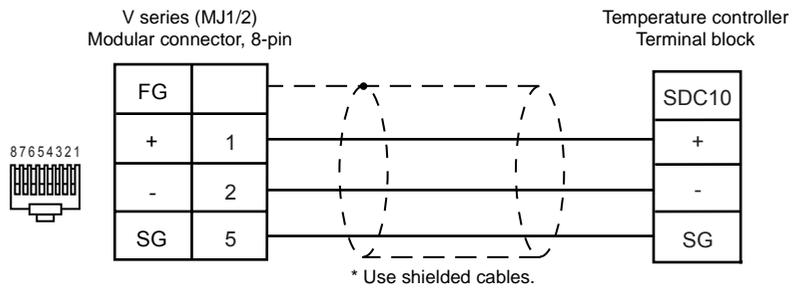


Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

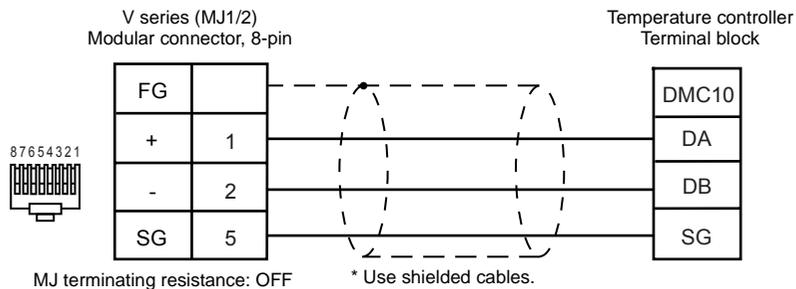
RS-232C



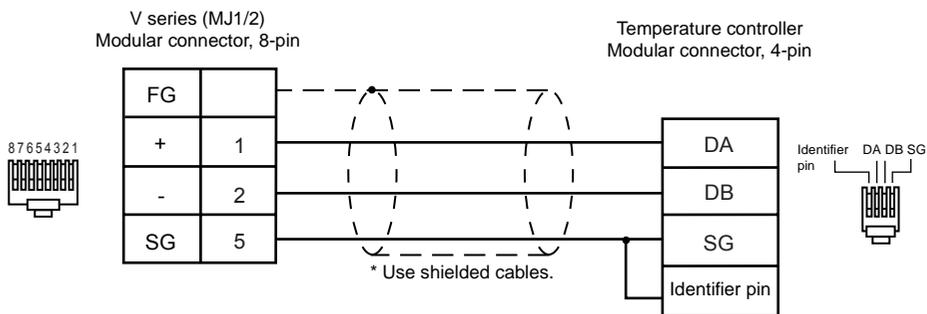
RS-485 (SDC10)



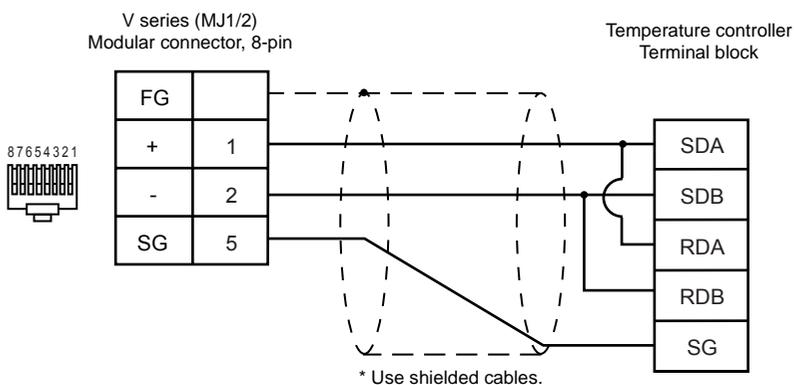
RS-485 (DMC10)



RS-485 (DMC50)



RS-485 (SDC20/SDC21/SDC30/SDC31/SDC40A/SDC40G)



OMRON

Model List

Temperature Controller, etc.	Lst File	Tem File
E5AK/E5AK-T	E5AK/E5AKT.Lst	Thermac.tem
E5CK/E5CK-T	E5CK/E5CKT.Lst	
E5EK/E5EK-T	E5EK/E5EKT.Lst	
E5ZE	E5ZE.Lst	E5ZE.tem
E5ZD	E5ZD.Lst	
E5AN/E5EN/E5CN/E5GN	E5AN.Lst	E5AN.tem
E5ZN	E5ZN.Lst	
E5AR/E5ER	E5AR.Lst	
V600/620	OM_V600.Lst	OM_V600.tem
3G3MV (MODBUS RTU)	Vsmini.Lst	VSmini.tem

E5AK/E5AK-T/E5CK/E5CK-T/E5EK/E5EK-T

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even	Even
Data length	7	7
Stop bit	2	2
Station number	0 to 31 ^{*1}	0 to 31

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
D (parameter)	0	
S (special command)	1	
P (program parameter)	2	Available only with E5*K-T

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

E5ZE

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

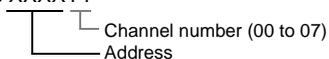
Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even	Even
Data length	7	7
Stop bit	2	2
Station number	0 to 15 ^{*1}	0 to F

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
-	0	

Address denotations XXXXY



When setting the memory, it is necessary to set a memory bank number (0 to 7).

For the following addresses, be sure to set bank No. 0.

0001, 0002, 0003, 0004, 000A, 000B, 000C, 000D, 000E, 0011, 0014, 0018, 001E, 001F, 0020, 0021

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
Auto-tuning	n	Station number	3
	n + 1	Command: 0	
	n + 2	0 - 7: Control point 10: Simultaneous auto-tuning of control points 11: Sequential auto-tuning of all control points 12: Stop	
Ramp Value Write	n	Station number	5
	n + 1	Command: 1	
	n + 2	Bank/control point	
	n + 3	Ramp value	
Ramp Value Read	n	Station number	3
	n + 1	Command: 2	
	n + 2	Bank/control point	
	n + 3	Ramp value	
	n + 4	Time 0: Second 1: Minute 2: Hour	

Contents	F0 (=\$u n)		F1
Setting data	n	Station number	3
	n + 1	Command: 3	
	n + 2	0: Save 1: Initial	
Control	n	Station number	4
	n + 1	Command: 4	
	n + 2	0: Start 1: Stop	
	n + 3	Control point	
Manual operation	n	Station number	3
	n + 1	Command: 5	
	n + 2	Control point	

 Response code: data stored from temperature controller to V series

◆ Indirect Memory Designation

	15	8 7	0
n + 0	Model (83)		Memory type
n + 1	Memory number (low)		Channel number
n + 2	00		Memory number (high)
n + 3	Bank number		Bit designation
n + 4	00		Station number

E5ZD

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

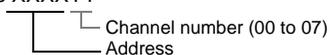
Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even (fixed)	Even (fixed)
Data length	7 (fixed)	7 (fixed)
Stop bit	2 (fixed)	2 (fixed)
Station number	0 to 15 ^{*1}	0 to F
Setting unit	0.1	0.1

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
-	0	

Address denotations XXXXY



When setting the memory, it is necessary to set a memory bank number (0 to 7).
For the following addresses, be sure to set bank No. 0.
0001, 0002, 0003, 0004, 000A, 000B, 000C, 000D, 000E, 0011, 001F, 0021

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
	n	Station number	
Auto-tuning	n + 1	Command: 0	3
	n + 2	0 - 7: Control point 12: Stop	
	n	Station number	
Setting data	n + 1	Command: 3	3
	n + 2	0: Save 1: Initial	
	n	Station number	
Control	n + 1	Command: 4	4
	n + 2	0: Start 1: Stop	
	n + 3	Control point	
	n	Station number	

◆ Indirect Memory Designation

	15	8 7	0
n + 0	Model (83)		Memory type
n + 1	Memory number (low)		Channel number
n + 2	00		Memory number (high)
n + 3	Bank number		Bit designation
n + 4	00		Station number

E5AN/E5EN/E5CN/E5GN

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even	Even
Data length	7	7
Stop bit	2	2
Station number	0 to 31 ^{*1}	0 to 31

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
C0 (setting area 0)	0	Double-word, read only
C1 (setting area 0)	1	Double-word
C3 (setting area 1)	2	Double-word

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
	n	Station number	
Read controller status	n + 1	Command: 0006H	2
	n + 2	Status	
	n	Station No. *	
Operation instructions	n + 1	Command: 0030H	3
	n + 2	0000H: Communication writing OFF (disabled) 0001H: Communication writing ON (enabled)	
		0100H: RUN 0101H: STOP	
	n + 2	0200H: Multi-SP (Set point 0) 0201H: Multi-SP (Set point 1) 0202H: Multi-SP (Set point 2) 0203H: Multi-SP (Set point 3)	
		0300H: AT cancel 0301H: AT execute	
		0400H: Write mode (Backup) 0401H: Write mode (RAM)	
		0500H: Save RAM data	
		0600H: Software reset	
		0700H: Move to set area 1	
		0800H: Move to protect level	

 Response code: data stored from temperature controller to V series

* 8000 (HEX): broadcasting

◆ Indirect Memory Designation

- When the temperature controller memory addresses are from 0 to 65535 (less than 16 bits):

	15	8 7	0
n + 0	Model (03)		Memory type
n + 1	Memory number (address)		
n + 2	Bit designation		
n + 3	00	Station number	

- When the temperature controller memory addresses are 65536 and greater (less than 32 bits):

	15	8 7	0
n + 0	Model (83)		Memory type
n + 1	Memory number (address)		
n + 2	Memory number (address)		
n + 3	Bit designation		
n + 4	00	Station number	

E5ZN

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even	Even
Data length	7	7
Stop bit	2	2
Station number	0 to 15 *1 (DEC)	0 to F (HEX)

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
C0 (setting area 0)	0	Double-word, read only
C1 (setting area 0)	1	Double-word
C3 (setting area 1)	2	Double-word

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
Read controller status	n	Station number	2
	n + 1	Command: 0006H	
	n + 2	Status	
Operation instructions	n	Station *1	3
	n + 1	Command: 0030H	
	n + 2	0000H or 0010H: Communication writing OFF (disabled) 0001H or 0011H: Communication writing ON (enabled)	
		0100H: Channel 1 Run 0101H: Channel 1 Stop 0110H: Channel 2 Run 0111H: Channel 2 Stop 01F0H: Channel 1/2 Run *2 01F1H: Channel 1/2 Stop *2	
	n + 2	0200H: Select target value 0 for channel 1 0201H: Select target value 1 for channel 1 0210H: Select target value 0 for channel 2 0211H: Select target value 1 for channel 2 02F0H: Select target value 0 for channel 1/2 02F1H: Select target value 1 for channel 1/2	
		0300H: AT cancel for channel 1 0301H: AT execute for channel 1 0310H: AT cancel for channel 2 0311H: AT execute for channel 2 03F0H: AT cancel for channel 1/2 *2 03F1H: AT execute for channel 1/2 *2	
		Write mode 0400H or 0410H: Backup 0401H or 0411H: RAM	
		0500H or 0510H: Save RAM data	
	n + 2	0600H or 0610H: Software reset	

Contents	F0 (= \$u n)		F1
Operation instructions	n + 2	0700H or 0710H: Move to set area 1	3
		0800H or 0810H: Move to protect level	
		0900H: Channel 1 Auto 0901H: Channel 1 Manual 0910H: Channel 2 Auto 0911H: Channel 2 Manual 09F0H: Channel 1/2 Auto *2 09F1H: Channel 1/2 Manual *2	
		0A00H or 0A10H: PV hold	
		0B00H or 0B10H: Initialize	
		*2 0C00H: Channel 1 warning 1 unlatch 0C01H: Channel 1 warning 2 unlatch 0C02H: Channel 1 warning 3 unlatch 0C0FH: Channel 1 all warning unlatch 0C10H: Channel 2 warning 1 unlatch 0C11H: Channel 2 warning 2 unlatch 0C12H: Channel 2 warning 3 unlatch 0C1FH: Channel 2 all warning unlatch 0CF0H: Channel 1/2 warning 1 unlatch 0CF1H: Channel 1/2 warning 2 unlatch 0CF2H: Channel 1/2 warning 3 unlatch 0CFFH: Channel 1/2 all warning unlatch	

*1 8000 (HEX): broadcasting

*2 Enabled for higher-performance pulse output type or analog output type

Response code: data stored from temperature controller to V series

◆ Indirect Memory Designation

- When the temperature controller memory addresses are from 0 to 65535 (less than 16 bits):

	15	8 7	0
n + 0	Model (03)		Memory type
n + 1	Memory number (address)		
n + 2	Bit designation		
n + 3	00	Station number	

- When the temperature controller memory addresses are 65536 and greater (less than 32 bits):

	15	8 7	0
n + 0	Model (83)		Memory type
n + 1	Memory number (address)		
n + 2	Bit designation		
n + 3	00		
n + 4	Station number		

E5AR/E5ER

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even	Even
Data length	7	7
Stop bit	2	2
Station number	0 to 31 ^{*1}	0 to 31
Communication mode ^{*2}	-	CompoWay (fixed)

*1 Set this parameter on the [Memory Input] dialog.

*2 When "Modbus" (RTU mode) is selected, select "Modbus Free" instead of "OMRON" for model selection on the V-SFT editor.

◆ Available Memory

Memory	Type	Remarks
C0 (communication monitor)	0	Double-word
C1 (communication monitor)	1	Double-word
C4 (communication monitor)	3	Double-word
C5 (protect level)	4	Double-word
C6 (run level)	5	Double-word
C7 (adjustment level)	6	Double-word
C8 (adjustment 2 level)	7	Double-word
C9 (bank setting level)	8	Double-word
CA (PID setting level)	9	Double-word
CB (approximation setting level)	10	Double-word
CC (default setting level for input)	11	Double-word
CD (default setting level for control)	12	Double-word
CE (default setting 2 level for control)	13	Double-word
CF (warning setting level)	14	Double-word
D0 (display adjustment level)	15	Double-word
D1 (communication setting level)	16	Double-word
D2 (high-performance setting level)	17	Double-word
D3 (extended control setting level)	18	Double-word

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1	
Read controller status	n	Station number	2	
	n + 1	Command: 0006H		
	n + 2	Status		
	n + 3	Relevant information		
Operation instructions	n	Station *1	3	
	n + 1	Command: 0030H		
	n + 2	Communication writing 0000H: Communication writing OFF (disabled) 0001H: Communication writing ON (enabled)		
		Control start/stop 0100H: Channel 1 Run 0101H: Channel 1 Stop 0110H: Channel 2 Run 0111H: Channel 2 Stop 0120H: Channel 3 Run 0121H: Channel 3 Stop 0130H: Channel 4 Run 0131H: Channel 4 Stop 01F0H: All channels Run 01F1H: All channels Stop		
		Bank selection 0200 to 0207H: Channel 1 Bank Nos. 0 to 7 0210 to 0217H: Channel 2 Bank Nos. 0 to 7 0220 to 0227H: Channel 3 Bank Nos. 0 to 7 0230 to 0237H: Channel 4 Bank Nos. 0 to 7 02F0 to 02F7H: All channels Bank Nos. 0 to 7		
		AT execution 0300H: Channel 1 PID group number currently selected 0301 to 0308H: Channel 1 PID group Nos. 1 to 8 designation 0310H: Channel 2 PID group number currently selected 0311 to 0318H: Channel 2 PID group Nos. 1 to 8 designation 0320H: Channel 3 PID group number currently selected 0321 to 0328H: Channel 3 PID group Nos. 1 to 8 designation 0330H: Channel 4 PID group number currently selected 0331 to 0338H: Channel 4 PID group Nos. 1 to 8 designation 03F0H: All channels PID group number currently selected 03F1 to 03F8H: All channels PID group Nos. 1 to 8 designation		
		AT cancellation 0A00H: Channel 1 0A10H: Channel 2 0A20H: Channel 3 0A30H: Channel 4 09F0H: All channels		
		Write mode 0400H: Backup mode 0401H: RAM write mode		
		0500H: Save RAM data		
		0600H: Software reset		
		0700H: Move to set area 1		
		0800H: Move to protect level		

Contents	F0 (= \$u n)		F1
Operation instructions	n + 2	Auto/manual 0900H: Channel 1 Auto mode 0901H: Channel 1 Manual mode 0910H: Channel 2 Auto mode 0911H: Channel 2 Manual mode 0920H: Channel 3 Auto mode 0921H: Channel 3 Manual mode 0930H: Channel 4 Auto mode 0931H: Channel 4 Manual mode 09F0H: All channels Auto mode 09F1H: All channels Manual mode	3
		0B00H: Initialize	
		Unlatch 0C00H: Channel 1 Warning unlatch 0C10H: Channel 2 Warning unlatch 0C20H: Channel 3 Warning unlatch 0C30H: Channel 4 Warning unlatch 0CF0H: All channels Warning unlatch	
		SP mode 0D00H: Channel 1 Local SP 0D01H: Channel 1 Remote SP 0D10H: Channel 2 Local SP (Cascade open) 0D11H: Channel 2 Remote SP (Cascade close)	

*1 8000 (HEX): broadcasting

 Response code: data stored from temperature controller to V series

◆ Indirect Memory Designation

- When the temperature controller memory addresses are from 0 to 65535 (less than 16 bits):

	15	8 7	0
n + 0	Model (03)		Memory type
n + 1	Memory number (address)		
n + 2	Bit designation		
n + 3	00	Station number	

- When the temperature controller memory addresses are 65536 and greater (less than 32 bits):

	15	8 7	0
n + 0	Model (83)		Memory type
n + 1	Memory number (address)		
n + 2	Bit designation		
n + 3	Bit designation		
n + 4	00	Station number	

ID Controller (V600/620)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	19200 bps	19200 bps
Parity	Even	Even
Data length	7	7
Stop bit	2	2
Station number	0 to 7 ^{*1} 0 to 15 ^{*1}	CD1D: 0 to 7 CAxA: 0 to 15
Communication procedure setting	-	1 : n procedure (fixed)

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
Data carrier memory	0	

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
Read (ASCII code designation) Channel 1	n	Station number	4
	n + 1	Command: 0	
	n + 2	Top address	
	n + 3	Number of words: m	
	- n + (3 + m)	Read data	
Write (ASCII code designation) Channel 1	n	Station number	4 + m
	n + 1	Command: 1	
	n + 2	Top address	
	n + 3	Number of words: m	
	- n + (3 + m)	Write data	
Command processing abortion	n	Station number	2
	n + 1	Command: 2	
Data control Channel 1 Data check command: check	n	Station number	4
	n + 1	Command: 3	
	n + 2	Top address	
	n + 3	Number of bytes	
Data control Channel 1 Data check command: calculation	n	Station number	4
	n + 1	Command: 4	
	n + 2	Top address	
	n + 3	Number of updates	
Data control Channel 1 Data check command: subtraction	n	Station number	4
	n + 1	Command: 5	
	n + 2	Top address	
	n + 3	Number of bytes	

Contents	F0 (= \$u n)		F1
Data control Channel 1 Data check command: add	n	Station number	4
	n + 1	Command: 6	
	n + 2	Top address	
	n + 3	Number of updates	
Write processing repeat	n	Station number	2
	n + 1	Command: 7	
Controller control	n	Station number	4
	n + 1	Command: 8	
	n + 2	OUT1 operation 0: No operation 1: ON 2: OFF	
	n + 3	OUT1 operation 0: No operation 1: ON 2: OFF	
	n + 4	Current input status (IN1) 0: OFF 1: ON	
	n + 5	Current input status (IN2) 0: OFF 1: ON	
	n + 6	Output status after operation (OUT1) 0: OFF 1: ON	
n + 7	Output status after operation (OUT2) 0: OFF 1: ON		
Error log readout	n	Station number	2
	n + 1	Command: 9	
	n + 2 to n + 4	Most recent error log (new)	
	n + 5 to n + 7	Most recent error log (old)	
Abort (reset)	n	Station number	2
	n + 1	Command: 10	
Polling time setting Channel 1	n	Station number	3
	n + 1	Command: 11	
	n + 2	Polling time (unit: 10 ms) When "0" is set: time equivalent to the retry times	
Read (ASCII code designation) Channel 2	n	Station number	4
	n + 1	Command: 100	
	n + 2	Top address	
	n + 3	Number of words: m	
	- n + (3 + m)	Read data	
Write (ASCII code designation) Channel 2	n	Station number	4 + m
	n + 1	Command: 101	
	n + 2	Top address	
	n + 3	Number of words: m	
	- n + (3 + m)	Write data	
Data control Channel 2 Data check command: check	n	Station number	4
	n + 1	Command: 103	
	n + 2	Top address	
	n + 3	Number of bytes	

Contents	F0 (= \$u n)		F1
Data control Channel 2 Data check command: calculation	n	Station number	4
	n + 1	Command: 104	
	n + 2	Top address	
	n + 3	Number of updates	
Data control Channel 2 Data check command: subtraction	n	Station number	4
	n + 1	Command: 105	
	n + 2	Top address	
	n + 3	Number of bytes	
Data control Channel 2 Data check command: add	n	Station number	4
	n + 1	Command: 106	
	n + 2	Top address	
	n + 3	Number of updates	
Polling time setting Channel 2	n	Station number	3
	n + 1	Command: 111	
	n + 2	Polling time (unit: 10 ms) When "0" is set: time equivalent to the retry times	

 Response code: data stored from temperature controller to V series

◆ **Indirect Memory Designation**

Refer to page 34.

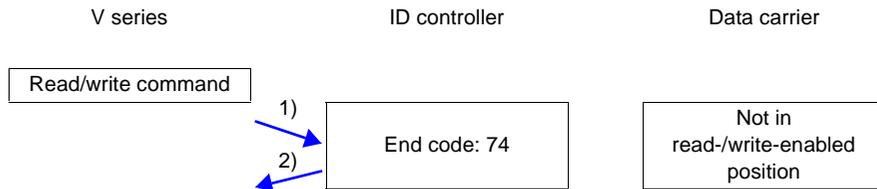
Operation Overview

The read and write functions are available.



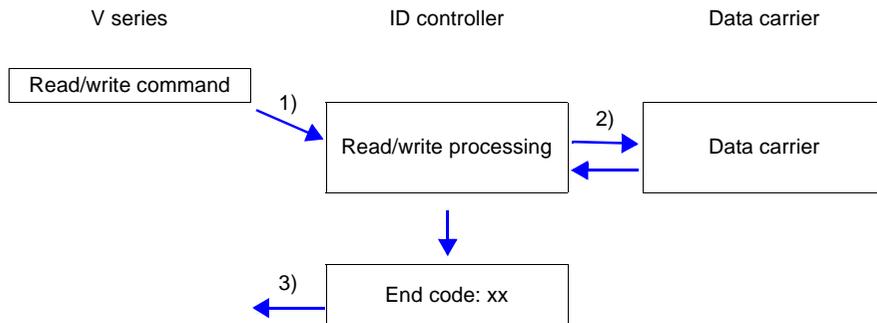
The read and write functions are usable together with the synchronized read function. The steps mentioned below are executed when the control memory bit is set (ON).

◆ When the data carrier is not in a position where read/write is enabled:



- 1) The V series sends a read/write command.
- 2) The ID controller sends end code 74.

◆ When the data carrier is in a position where read/write is enabled:



- 1) The V series sends a read/write command.
- 2) The ID controller executes a read/write processing on the data carrier.
- 3) The ID controller sends an end code to the V series.
 - End code (00, 74): End
 - End code (other than 00 and 74): Steps 1 through 3 to be repeated the number of retry times

3G3MV (MODBUS RTU)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the inverter.

Item	V-SFT Setting	Setting on Inverter	
Baud rate	9600 bps	9600 bps	n154
Parity	Even	Even	n155
Data length	8 (fixed)	8 (fixed)	---
Stop bit	1 (fixed)	1 (fixed)	---
Station number	0 - 31 ^{*2}	0 - 31 ^{*1}	n153
RTS control	---	0: RTS control provided (fixed)	n157

*1 If the inverter is set as station No. 0, communications are not available. Be sure to set a value other than "0".

*2 Set this parameter on the [Memory Input] dialog.
Select station number 0 for a broadcast command.

◆ Available Memory

Memory	Type	Remarks
4 Holding register	2	

◆ TEMP_CTL

Unavailable

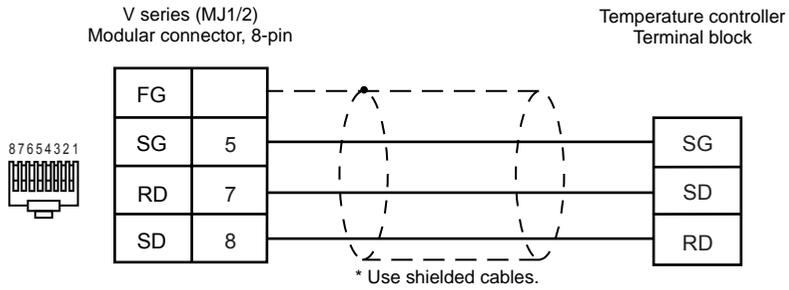
◆ Indirect Memory Designation

Refer to page 34.

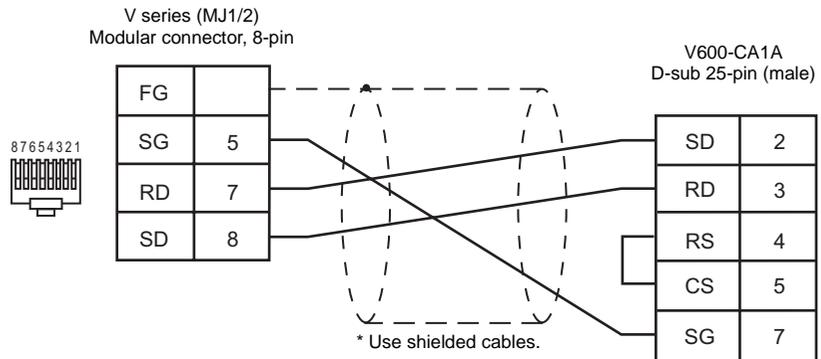
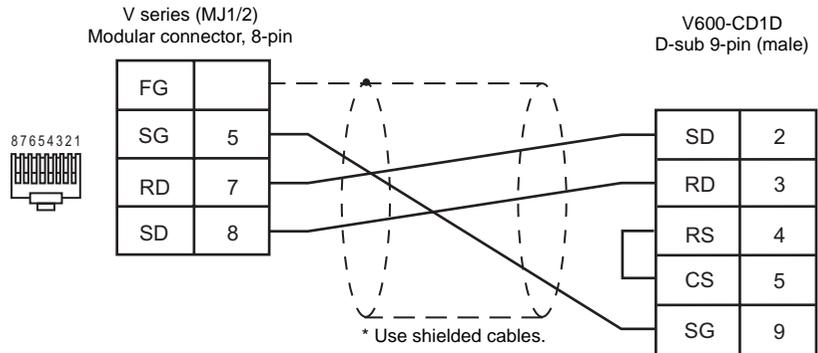
Wiring

 Pin Nos. 3 and 4 on the V series are those for external power supply. To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

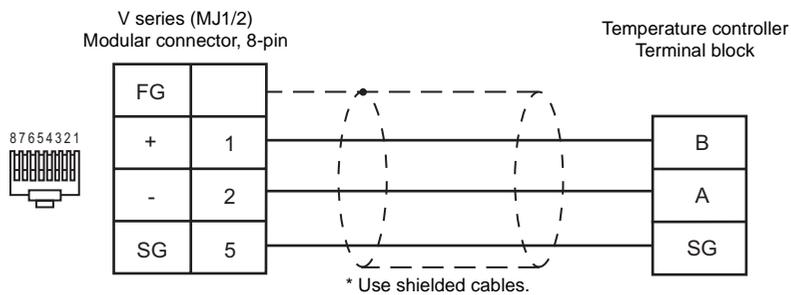
RS-232C (E5AK/E5AK-T/E5CK/E5CK-T/E5EK/E5EK-T/E5EN)



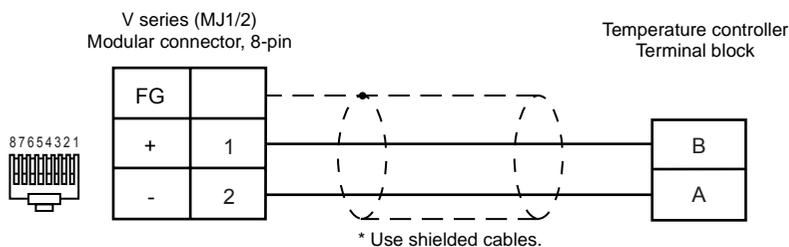
RS-232C (V600)



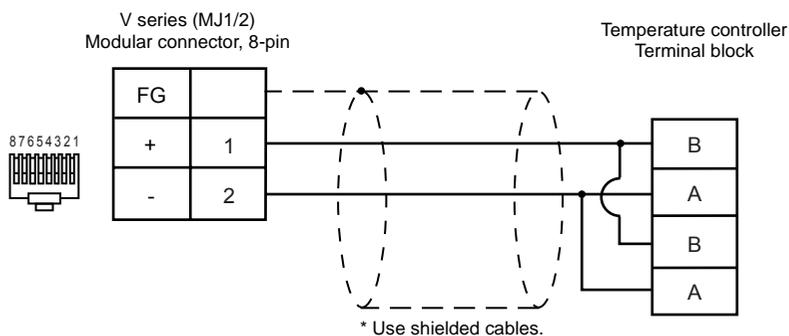
RS-485 (E5ZE)



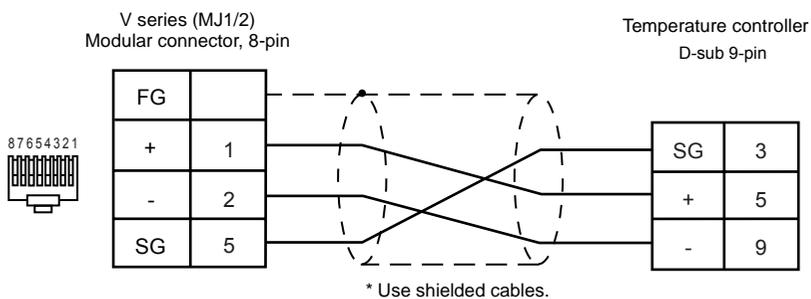
RS-485 (E5CK/E5CK-T/E5ZN/E5AN/E5EN/E5CN/E5GN/E5AR/E5ER)



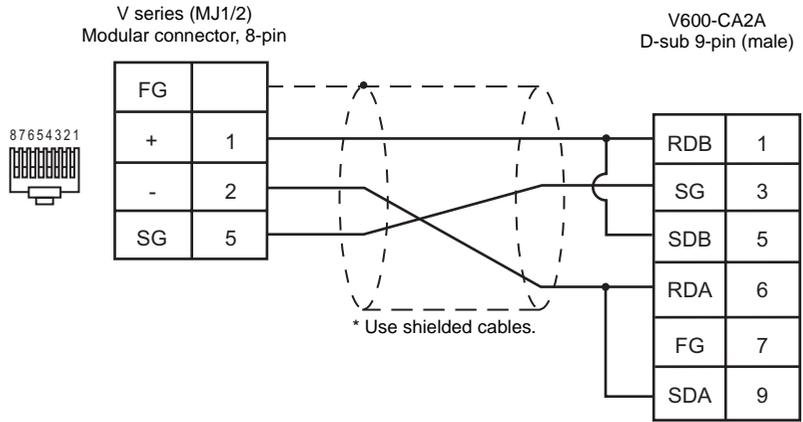
RS-485 (E5AK/E5AK-T/E5EK/E5EK-T)



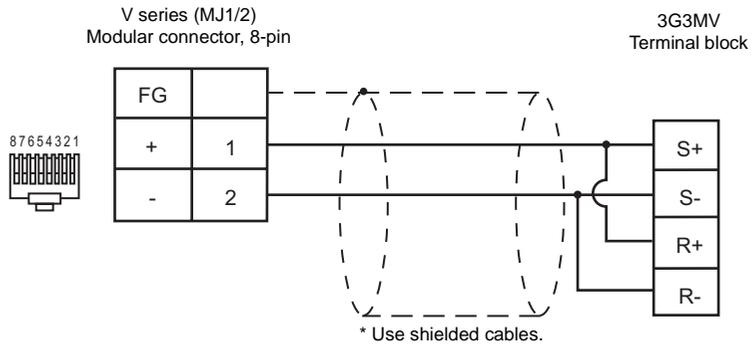
RS-485 (E5ZD)



RS-485 (V600)



RS-485 (3G3MV)



RKC

Model List

Temperature Controller	Lst File	Tem File
SR-Mini (MODBUS RTU)	SR-Mini.Lst	RKC.tem
MA900 ^{*1}	RKC_MA900.Lst	
MA901 ^{*1}	RKC_MA901.Lst	
CB100/400/500/700/900 (MODBUS RTU)	CB100.Lst	
SRV (MODBUS RTU)	RKC_SRV.Lst	
SR-Mini (Standard Protocol)	RKC_Std.Lst	RKC_Std.tem
REX-F400/F700/F900 (Standard Protocol)	RKC_F400.Lst	RKC_Std2.tem
REX-F9000 (Standard Protocol)	RKC_F9000.Lst	
REX-B800 (Standard Protocol)	RKC_B800.Lst	

*1 For MA900/MA901, select SR-Mini (MODBUS RTU) for the temperature controller.



The CB series/SR-mini temperature controllers that support Modbus have a suffix "Z-1021" in the product name.

SR-Mini/SRV (MODBUS RTU)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	None	None
Data length	8	8
Stop bit	1	1
Station number	1 to 16 ^{*3}	SR-Mini 0 to F ^{*1}
	1 to 31 ^{*3}	MA900/MA901 1 to 31 ^{*2}
	1 to 31 ^{*3}	SRV 0 to 30 ^{*1}

*1 A set value plus "1" becomes the station number.

*2 If MA900/901 is set as station No. 0, communications are not available.

*3 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
–	0	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

CB Series (MODBUS RTU)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	None	None
Data length	8	8
Stop bit	1	1
Station number	1 to 31 ^{*2}	1 to 31 ^{*1}
Protocol	–	Modbus

*1 If the temperature controller is set as station No. 0, communications are not available.

*2 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
–	0	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

SR-Mini (Standard Protocol)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

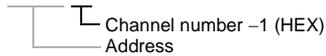
Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	None	None
Data length	8	8
Stop bit	1	1
Station number	0 to 15 ^{*1}	0 to F

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
GRP0 (normal: R)	0	Read only
GRP1 (normal: RW)	1	
GRP2 (initial: R)	2	Read only
GRP3 (initial: RW)	3	

Address denotations XXXXYY



* On the signal name reference list, all channel numbers are designated as "00". Input the channel number to be accessed minus "1" by manual operation.

Example:

For channel 2 measured temperature input, set "GRP000001".

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

	15	8 7	0
n + 0	Model (83)		Memory type
n + 1	Memory number (low)		Channel number
n + 2	00		Memory number (high)
n + 3	Expansion code		Bit designation
n + 4	00		Station number

REX-F400/F700/F900/F9000 (Standard Protocol)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	None	None
Data length	8	8
Stop bit	1	1
Station number	0 to 31 ^{*1}	0 to 31

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
GRP0	0	Read only
GRP1	1	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

REX-B800 (Standard Protocol)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

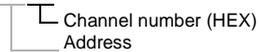
Item	V-SFT Setting	Setting on Temperature Controller	
Baud rate	9600 bps	9600 bps	SW203: 0
Parity	None	None	SW200-2: ON
Data length	8	8	SW200-1: OFF
Stop bit	2	2	SW200-4: OFF
Station number	0 - 15 ^{*1}	0 - F	SW202

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
GRP0	0	Read only
GRP1	1	

Address denotations XXYY



◆ TEMP_CTL

Unavailable

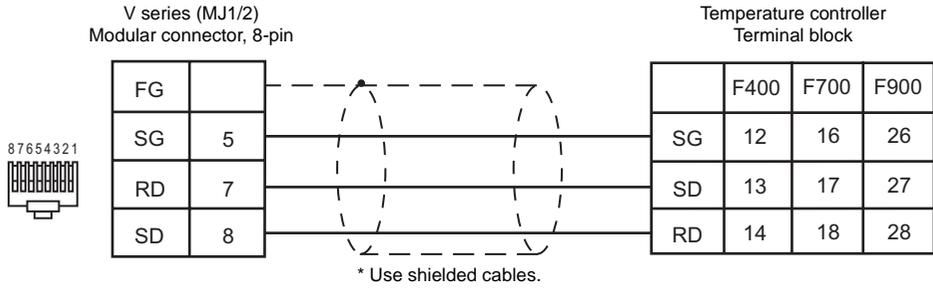
◆ Indirect Memory Designation

Refer to page 34.

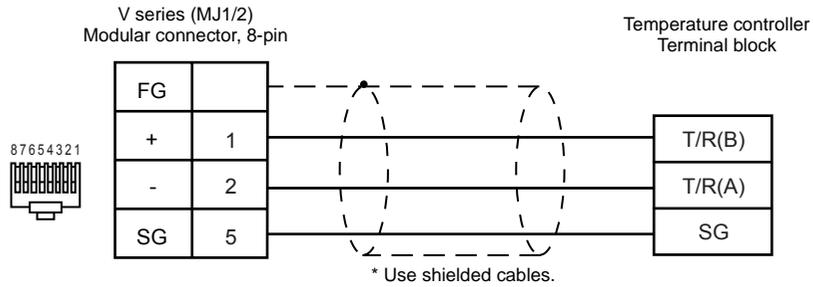
Wiring

 Pin Nos. 3 and 4 on the V series are those for external power supply. To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

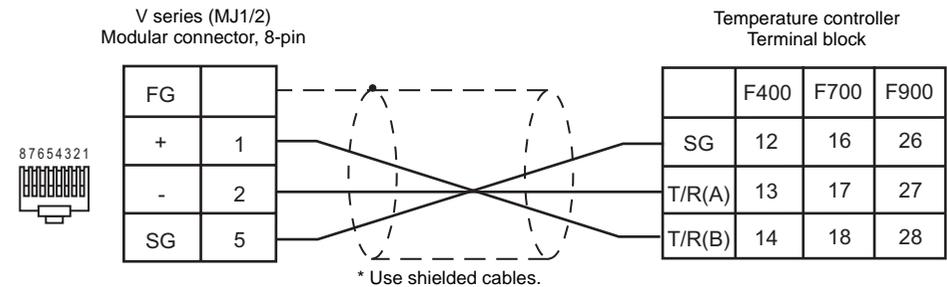
RS-232C (REX-F400/F700/F900)



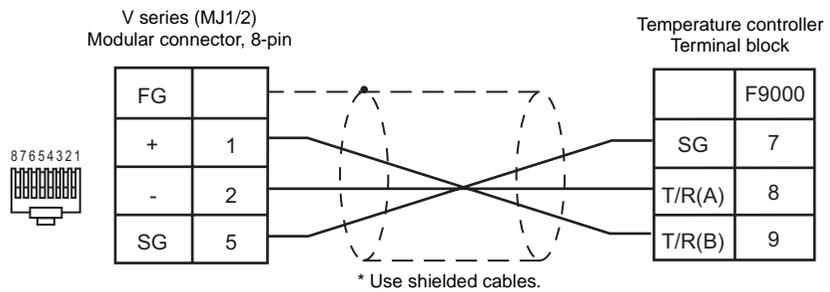
RS-485 (CB Series/SRV)



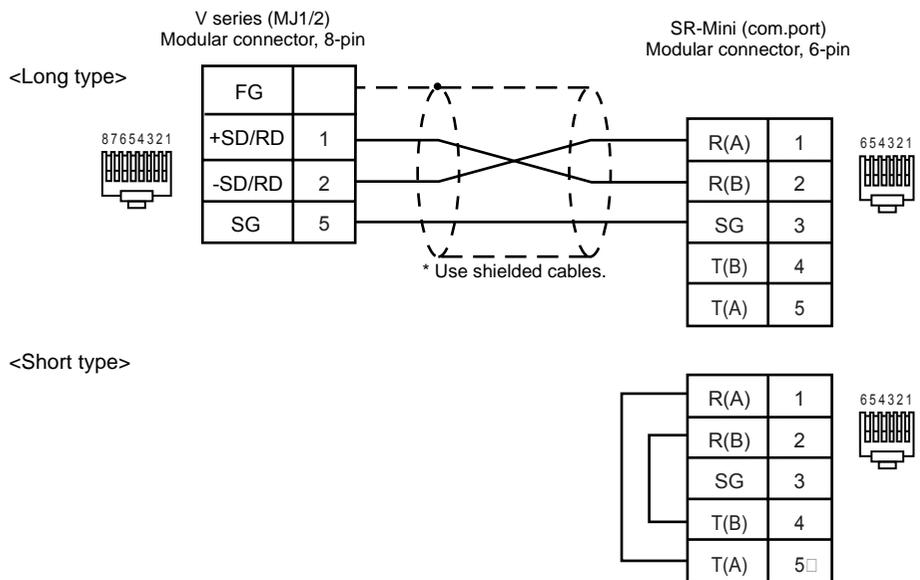
RS-485 (REX-F400/F700/F900)



RS-485 (REX-F9000)

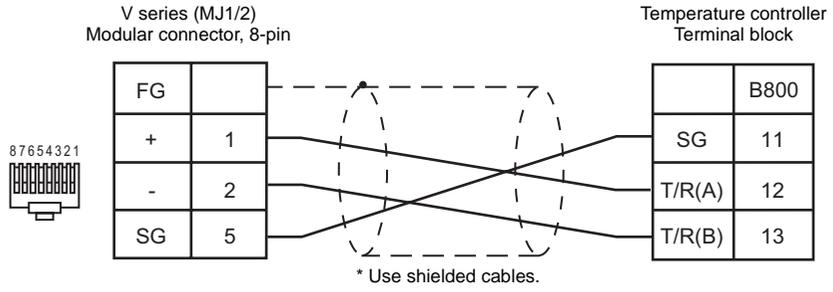


RS-485 (SR-Mini)



! When using SR-Mini, be sure to use Hakko Electronics' temperature controller connecting cable V6-SR422 (3 m).
For connections between the V series and SR-Mini, use V6-SR422 (long type); for SR-Mini at the termination, use V6-SR422 (short type).

RS-485 (REX-B800)



Fuji Electric

Model List

Temperature Controller/Inverter	Lst File	Tem File
PYX (MODBUS RTU)	PYX.Lst	FujiTC.tem
PYH	PYH.Lst	FujiPYH.tem
PXR (MODBUS RTU)	PXR.Lst	FujiTC.tem
1φ2W (F-MPC04P)	F-MPC04P.Lst	MPC04P.tem
3φ3W (F-MPC04P)		
3φ4W (F-MPC04P)		
FVR-E11S	FVR-E11S.Lst	FujiFVR.tem
FVR-C11S	FVR-C11S.Lst	
FRENIC5000G11S/P11S	F-G11S.Lst	
FRENIC5000VG7S	F-VG7S.Lst	
FRENIC-Mini (MODBUS RTU)	F-Mini.Lst	FujiFVRM.tem
HFR-C9K	F_HFR.Lst	F_HFR.tem
PPMC (MODBUS RTU)	F-PPMC.Lst	FujiPPM.tem
FALDIC-alpha Series	F_FAL-A.Lst	FujiFalA.tem
PH Series	F-PHC.Lst	FujiPYH.tem

PYX (MODBUS RTU)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Odd	Odd
Data length	8	8
Stop bit	1	1
Station number	1 to 31 ^{*1}	1 to 31
Protocol	–	Modbus

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
0	0	
1	1	Read only
4	2	
3	3	Read only

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

PYH

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Odd	Odd
Data length	8	8
Stop bit	1	1
Station number	0 to 31 ^{*1} (DEC)	0 to 1F (HEX)

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
J00 (SCC)	0	
J03 (secondary module)	1	Read only
J04 (secondary module parameter)	2	
J08 (constant terminal board)	3	Read only
J12 (system table)	4	

◆ TEMP_CTL

	F0 (= \$u n)		F1
	n	n + 1	Words
Control message	Station No.	Command: 0	2

* If any number other than "0" is set for n + 1 memory (command), an error is output to the system memory. (For more information on the system memory, refer to page 34.)

◆ Indirect Memory Designation

Refer to page 34.

PXR (MODBUS RTU)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps (fixed)	9600 bps (fixed)
Parity	Odd	Odd
Data length	8 (fixed)	8 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	1 to 31 ^{*2}	1 to 31 ^{*1}
Protocol	–	Modbus

*1 If the temperature controller is set as station No. 0, communications are not available. Be sure to set a value other than "0".

*2 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
0	0	
1	1	Read only
4	2	
3	3	Read only

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

1φ2W/3φ3W/3φ4W [Power Monitor Unit (F-MPC04P)]

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the power monitor unit.

Item	V-SFT Setting	Setting on Power Monitor Unit
Baud rate	19200 bps	19200 bps
Parity	Odd	Odd
Data length	7	7
Stop bit	1	1 (fixed)
Station number	1 to 99 ^{*1}	1 to 99

*1 Set this parameter on the [Memory Input] dialog.
To use station number 32 to 99, use the station number table.

◆ Available Memory

Memory	Type	Remarks
–	0	

* All memory addresses in double-word

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

FVR-E11S/FVR-C11S/FRENIC5000G11S/P11S

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the inverter.

Item	V-SFT Setting	Setting on Inverter
Baud rate	9600 bps	9600 bps
Parity	None	None
Data length	8	8
Stop bit	2	2
Station number	1 to 31 ^{*1}	1 to 31

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
S (command data)	0	
M (monitor data)	1	Double-word
F (basic function)	2	
E (terminal function)	3	
C (control function)	4	
P (motor 1)	5	
H (high level function)	6	
A (motor 2)	7	Not available with C11S
O (option function)	8	

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
	n	Station number	
Reset command	n + 1	Command: 0	2

◆ Indirect Memory Designation

Refer to page 34.

FRENIC5000VG7S

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the inverter.

Item	V-SFT Setting	Setting on Inverter
Baud rate	38400 bps	38400 bps
Parity	Even	Even
Data length	8	8
Stop bit	1	1
Station number	1 to 31 ^{*1}	1 to 31

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
S (command data)	0	
M (monitor data)	1	
F (basic function)	2	
E (terminal function)	3	
C (control function)	4	
P (motor 1)	5	
H (high level function)	6	
A (motor 2)	7	
O (option function)	8	
L (lifter function)	9	
U (user function)	10	

◆ TEMP_CTL

	F0 (= \$u n)		F1
Reset command	n	Station number	2
	n + 1	Command: 0	

◆ Indirect Memory Designation

Refer to page 34.

FRENIC-Mini (MODBUS RTU)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the inverter.

Item	V-SFT Setting	Setting on Inverter
Baud rate	19200 bps	19200 bps
Parity	None	None
Data length	8 (fixed)	8 (fixed)
Stop bit	2 ^{*3}	2
Station number	1 to 31 ^{*2}	1 to 31 ^{*1}
Protocol	–	MODBUS RTU

*1 If the inverter is set as station No. 0, communications are not available. Be sure to set a value other than "0".

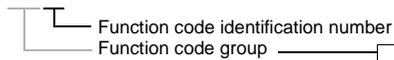
*2 Set this parameter on the [Memory Input] dialog.

*3 When no parity setting is made, set "2" for stop bit.
When a parity setting (even or odd) is made, set "1" for stop bit.

◆ Available Memory

Memory	Type	Remarks
–	2	

Address denotations XXYY



Group	Code	Name
F	00H	Basic function
E	01H	Terminal function
C	02H	Control function
P	03H	Motor parameter
H	04H	High level function
S	07H	Command/function data
M	08H	Monitor data
J	0DH	Application function
y	0EH	Link function
W	0FH	Monitor 2
X	10H	Alarm 1
Z	11H	Alarm 2

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

HFR-C9K

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the inverter.

Item	V-SFT Setting	Setting on IH Inverter
Baud rate	19200 bps	19200 bps
Parity	None	None
Data length	7	7
Stop bit	1	1
Station number	1 to 31 ^{*1}	1 to 31

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
-	0	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

PPMC (MODBUS RTU)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the AC power monitor.

Item	V-SFT Setting	Setting on AC Power Monitor
Baud rate	9600 bps	9600 bps
Parity	Odd	Odd
Data length	8	8
Stop bit	1 (fixed)	1 (fixed)
Station number	1 to 31 ^{*2}	1 to 31 ^{*1}
Protocol	–	MODBUS RTU

*1 If the temperature controller is set as station No. 0, communications are not available. Be sure to set a value other than "0".

*2 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
4 (holding register)	2	
3 (input register)	3	

* Remarks on data format for the following memory:
 40022 (fixed voltage), 40028 (Ip fixed power factor): 6-byte character string
 40046 (calendar): 14-byte character string
 Measurement data: Real type (Float)

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

FALDIC-alpha Series

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the servo.

Item	V-SFT Setting	Setting on Servo
Baud rate	9600 bps	9600 bps
Parity	Even (fixed)	Even (fixed)
Data length	8 (fixed)	8 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	1 to 31 ^{*1}	1 to 31

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
00 (monitor data)	0	Read only, double-word
01 (data on positioning being executed)	1	Read only, double-word
10 (sequence mode)	2	Read only
11 (control I/O signal)	3	Read only
12 (alarm detection history)	4	Read only
13 (alarm detection contents)	5	Read only
20 (standard parameter)	6	Double-word, *1
21 (system parameter)	7	Double-word, *1
30 (positioning data)	8	Double-word, *2
40 (control command)	9	Write only, double-word

*1 Input a parameter number by manual operation.

*2 Address denotations XXYY



◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
	n	Station number	
Positioning data (immediate) setting	n + 1	Command: 9	6
	n + 2	ABS/INC	
	n + 3	Speed selection	
	n + 4 to n + 5	Position data	
	n	Station number	
Automatic start (immediate)	n + 1	Command: 11	6
	n + 2	ABS/INC	
	n + 3	Speed selection	
	n + 4 to n + 5	Position data	
	n	Station number	
Automatic start (positioning data number)	n + 1	Command: 12	3
	n + 2	Start number	
	n	Station number	

Contents	F0 (= \$u n)		F1
Override setting	n	Station number	4
	n + 1	Command: 33	
	n + 2	Data type	
	n + 3	Setting	

◆ **Indirect Memory Designation**

Refer to page 34.

PH Series

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the recorder.

Item	V-SFT Setting	Setting on Recorder
Baud rate	19200 bps	19200 bps
Parity	Odd	Odd
Data length	8 (fixed)	8 (fixed)
Stop bit	1	1
Station number	1 to 31 ^{*1}	1 to 31

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
F00 (set value file)	0	
F01 (range file CH1)	1	
F02 (range file CH2)	2	
F03 (range file CH3)	3	
F04 (range file CH4)	4	
F05 (range file CH5)	5	
F06 (range file CH6)	6	
F07 (range file CH7)	7	
F08 (range file CH8)	8	
F09 (range file CH9)	9	
F10 (range file CH10)	10	
F11 (range file CH11)	11	
F12 (range file CH12)	12	
F13 (warning setting file)	13	
F14 (system file)	14	
F15 (command file)	15	
F16 (input error information file)	16	Read only
F17 (input data file)	17	Read only
F19 (alarm output file)	19	Read only
F21 (transmission input data file)	21	Write only
F22 (message file)	22	
F33 (daily log file 1)	33	Read only
F34 (daily log file 2)	34	Read only
F35 (daily log file 3)	35	Read only
F37 (integral file 1)	37	Read only
F38 (integral file 2)	38	Read only
F51 (status information control file)	51	

◆ TEMP_CTL

Unavailable

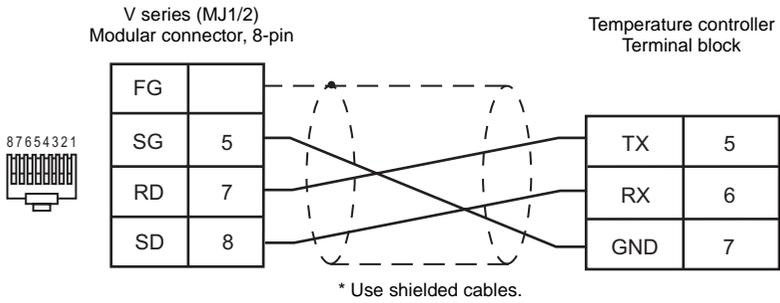
◆ Indirect Memory Designation

Refer to page 34.

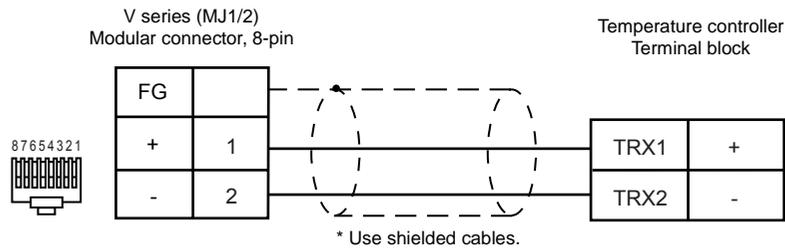
Wiring

 Pin Nos. 3 and 4 on the V series are those for external power supply. To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

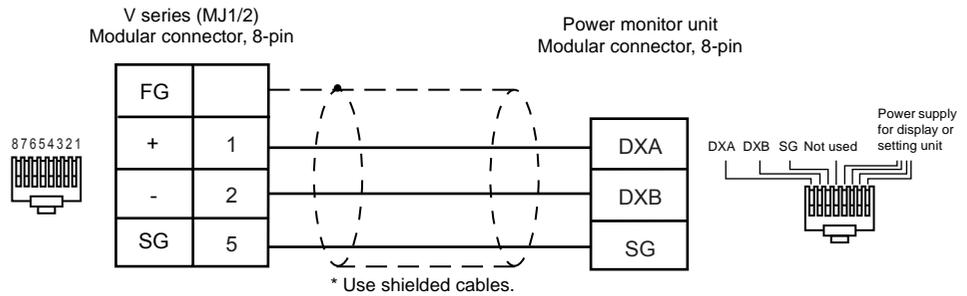
RS-232C (PPMC)



RS-485 (PYX/PYH/PXR)



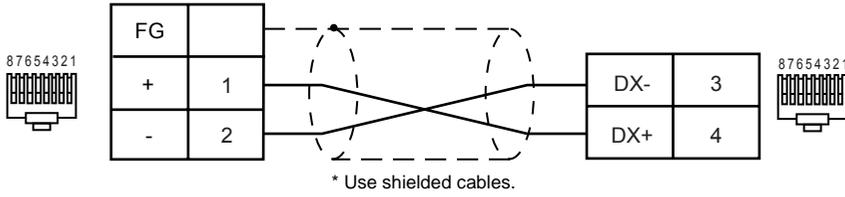
RS-485 (F-MPC04P)



RS-485 (FVR-E11S)

V series (MJ1/2)
Modular connector, 8-pin

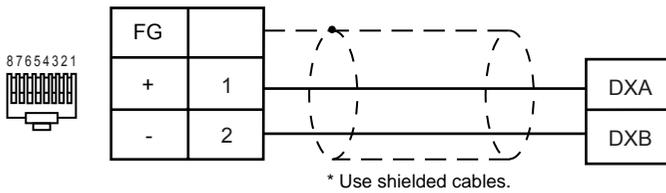
Inverter
Modular connector, 8-pin



RS-485 (FVR-C11S)

V series (MJ1/2)
Modular connector, 8-pin

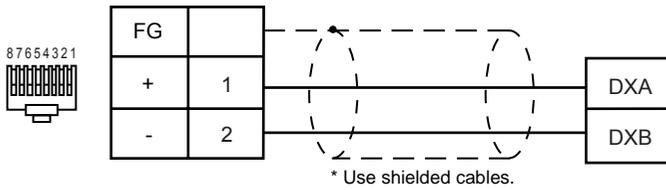
Inverter
Option PCB (OPC-C11S-RS)



RS-485 (FRENIC500G11S/P11S)

V series (MJ1/2)
Modular connector, 8-pin

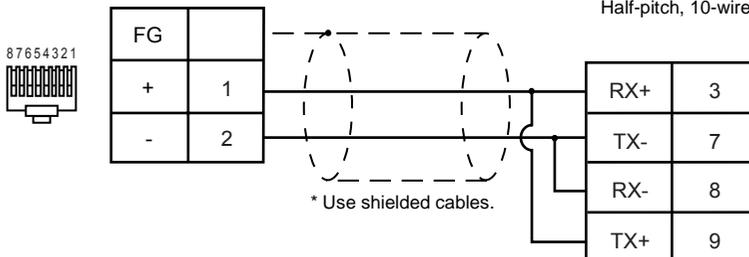
Inverter
Terminal block



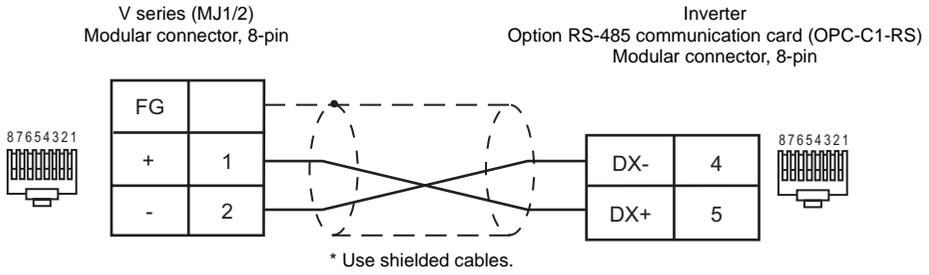
RS-485 (FRENIC500VG7S)

V series (MJ1/2)
Modular connector, 8-pin

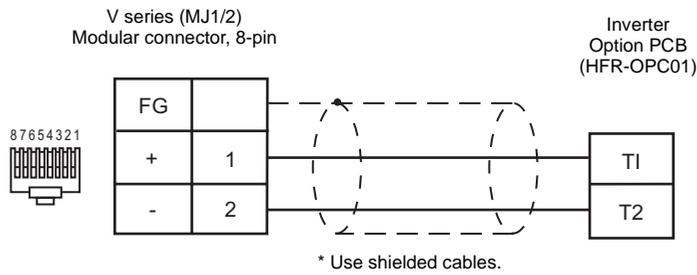
Inverter
Half-pitch, 10-wire



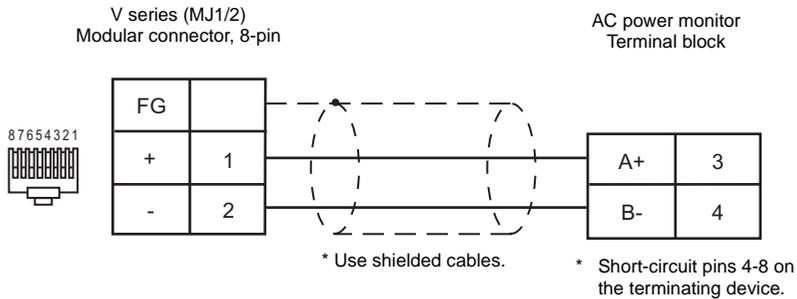
RS-485 (FRENIC-Mini)



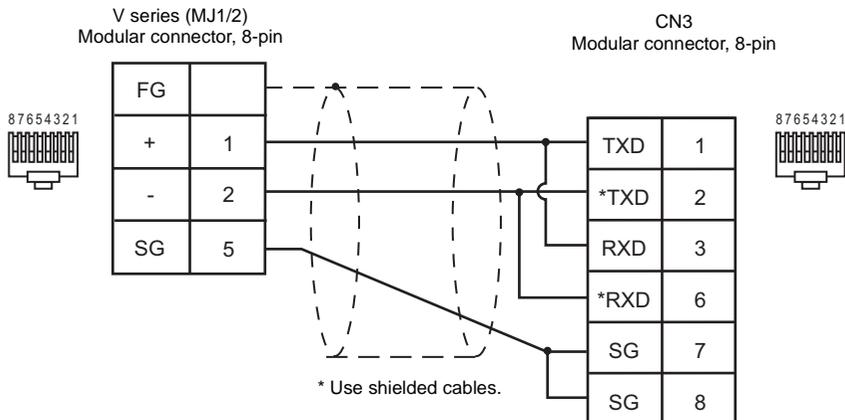
RS-485 (HFR-C9K)



RS-485 (PPMC)

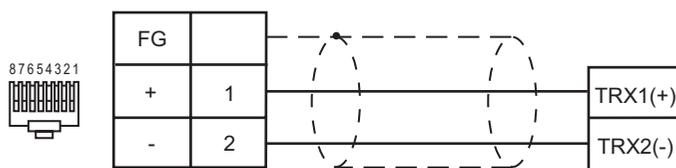


RS-485 (FALDIC-α Series)



RS-485 (PH Series)V series (MJ1/2)
Modular connector, 8-pin

Terminal block



* Use shielded cables.

MITSUBISHI ELECTRIC

Model List

Inverter	Lst File	Tem File
FR-A500/FR-E500 FR-F500/FR-S500	FR-E500.Lst	FR_E500.tem
MR-J2S-*A	M_J2S_A.Lst	MeIMRJ2S.tem
MR-J2S-*CL	M_J2S_CL.Lst	

FR-A500/FR-E500/FR-F500/FR-S500

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the inverter.

Item	V-SFT Setting	Setting on Inverter
Baud rate	19200 bps	19200 bps
Parity	Even	Even
Data length	8	8
Stop bit	2	2
Station number	0 to 31*1	0 to 31
CR/LF	CR	CR

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
P (parameter)	0	Refer to the parameter list for the inverter.
D (parameter)	1	Refer to the table below.

Memory D (parameter)

Address	Name
D0	Operation mode
D1	Output frequency (rpm)
D2	Output current
D3	Output voltage
D4	Error information*1
D5	Error information*1
D6	Error information*1
D7	Error information*1
D8	Inverter status monitor*2
D9	Changeover to second parameter

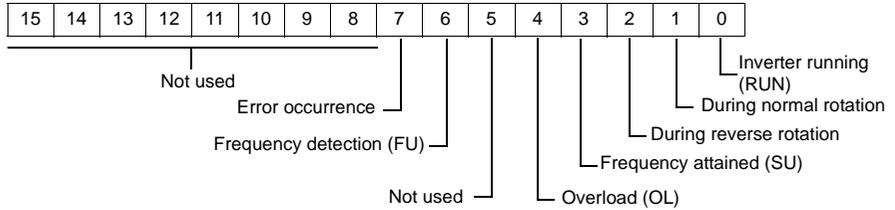
→ When issuing a command, such as a run command, from the V series, select "Communication and Run".
 FR-E500: 0002 H
 FR-A500: 0002 H
 FR-F500: 0002 H
 FR-S500: 0000 H

*1 The error information contains two error logs in one word.

	Upper 8-bit	Lower 8-bit
D4	Previous	Present
D5	Two before previous	One before previous
D6	Four before previous	Three before previous
D7	Six before previous	Five before previous

} Not available with FR-S500

*2 D8



Note on Setting the Memory

The "List" file that can be browsed by pressing the [Refer...] button contains parameters for FR-E500.

When using the inverters A500, F500 or S500, refer to the parameter list included in the relevant manual and set the memory correctly.

◆ TEMP_CTL

Contents	F0 (= \$u n)					F1	
Running frequency write (EEPROM)	n	Station number				3	
	n + 1	Command: 00EEH					
	n + 2	Running frequency					
Running frequency write (inverter RAM)	n	Station number				3	
	n + 1	Command: 00EDH					
	n + 2	Running frequency					
Operation command	n	Station number				3	
	n + 1	Command: 00FAH					
	n + 2	0000H: Stop 0002H: Normal rotation (STF) 0004H: Reverse rotation (STR)					
Inverter reset	n	Station number				2	
	n + 1	Command: 00FDH					
All parameter clear	n	Station number				3	
	n + 1	Command: 00FCH					
	n + 2	Pr.	Communication Pr.	Calibration	Other Pr.		00ECH 00F3H 00FFH
		9696H	○	×	○		○
		9966H	○	○	○		○
		5A5AH	×	×	○		○
55AAH	×	○	○	○			

◆ Indirect Memory Designation

Refer to page 34.

MR-J2S-*A

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the servo amplifier.

Item	V-SFT Setting	Setting on Servo Amplifier	
Baud rate	9600 bps	0: 9600 bps	Parameter No. 16
Parity	Even	Even	-
Data length	8	8	-
Stop bit	1	1	-
Station number	0 - 31 ^{*1}	0 - 31	Parameter No. 15
Communication selection	RS-232C	0: RS-232C	Parameter No. 16
Sumcheck	-	0: Provided	Parameter No. 53
Protocol selection	-	0: Provided	Parameter No. 53

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
F01 (status display)	0	Real number, read only
05 (parameter)	1	Double-word
F05 (parameter)	2	Real number
12 (external I/O signal)	3	Double-word, partially read-only
33 (alarm history)	4	Double-word, read only
02 (current alarm)	5	Read only
F35 (status display at the time of alarm)	6	Real number, read only
42 (other command)	13	Double-word
81 (status display deletion)	14	Write only
82 (alarm reset)	15	Write only
8B (operation mode selection)	16	Write only
90 (I/O device prohibition/prohibition cancel)	17	Write only
92 (input device ON/OFF)	18	Double-word, write only
A0 (data for test run mode)	19	Double-word, write only

Set the target memory on the [Memory Input] dialog.

- RAM: Stored in RAM
- EEPROM: Stored in RAM + EEPROM

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
	n	Station number	
Software version	n + 1	Command: 0002H	3
	n + 2	Data No. 0070H	
	n + 3 to n + 10	Software version	

n + 3 to n + 10 Response code: Data stored from temperature controller to V series

MR-J2S-*CL

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the servo amplifier.

Item	V-SFT Setting	Setting on Servo Amplifier	
Baud rate	9600 bps	0: F9600 bps	Parameter No. 16
Parity	Even	Even	-
Data length	8	8	-
Stop bit	1	1	-
Station number	0 - 31 ^{*1}	0 - 31	Parameter No. 15
Communication selection	RS-232C	0: RS-232C	Parameter No. 16
Sumcheck	-	0: Provided	Parameter No. 57
Protocol selection	-	0: Provided	Parameter No. 57

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
F01 (status display)	0	Real number, read only
05 (parameter)	1	Double-word
F05 (parameter)	2	Real number
12 (external I/O signal)	3	Double-word, partially read-only
33 (alarm history)	4	Double-word, read only
02 (current alarm)	5	Read only
F35 (status display at the time of alarm)	6	Real number, read only
F6C (current position latch data)	7	Real number, read only
6D (general-purpose register Rx value)	8	Double-word
F6D (general-purpose register Rx value)	9	Real number
6E (general-purpose register Rx value)	10	Double-word
F6E (general-purpose register Rx value)	11	Real number
81 (status display deletion)	14	Write only
82 (alarm reset)	15	Write only
8B (operation mode selection)	16	Write only
90 (I/O device prohibition/prohibition cancel)	17	Write only
92 (input device ON/OFF)	18	Double-word, write only
A0 (data for test run mode)	19	Double-word, write only

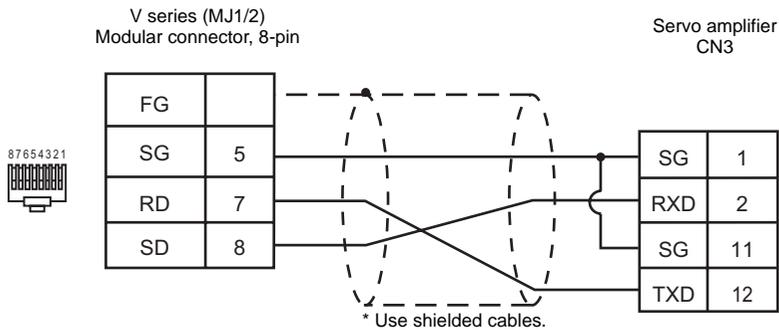
Set the target memory on the [Memory Input] dialog.

- RAM: Stored in RAM
- EEPROM: Stored in RAM + EEPROM

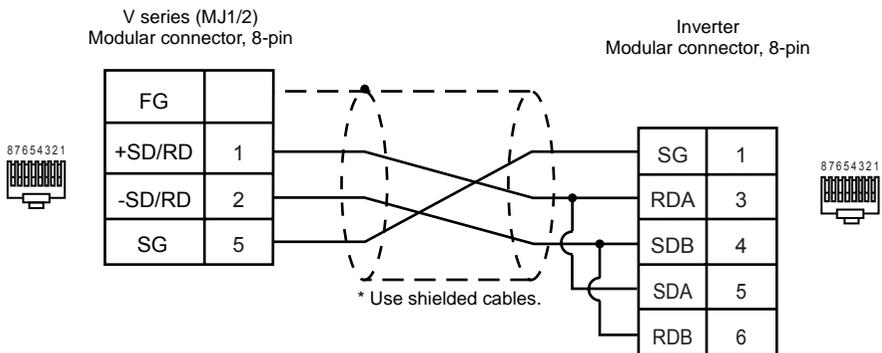
Wiring

 Pin Nos. 3 and 4 on the V series are those for external power supply; pin Nos. 2 and 8 on the inverter (FR-*500) are those for power supply to the parameter unit. To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly. When inserting the cable into the modular jack, double-check the cable orientation and insert the connectors correctly into the V series and the inverter.

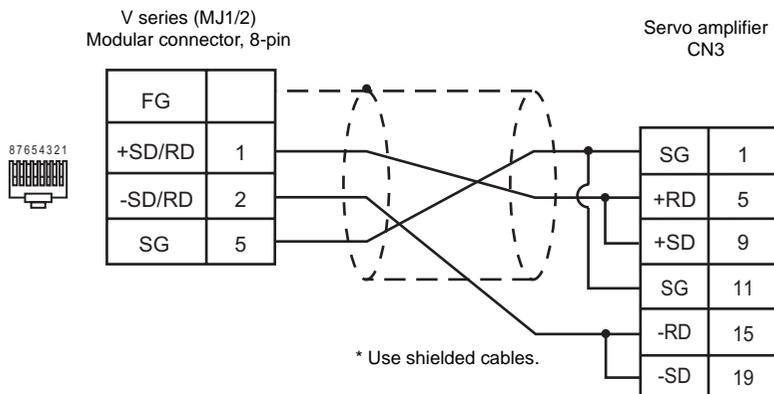
RS-232C (MR-J2S)



RS-485 (FR-*500)



RS-485 (MR-J2S)



CHINO

Model List

Temperature Controller	Lst File	Tem File
DZ1000 (MODBUS RTU)	DZ1000.Lst	ChinoDZ.tem
DZ2000 (MODBUS RTU)	DZ2000.Lst	
KP1000	KP1000.Lst	ChinoKP.tem
LT400 series (MODBUS RTU)	LT400.Lst	ChinoDZ.tem

DZ1000/DZ2000 (MODBUS RTU)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	None (fixed)	None (fixed)
Data length	8 (fixed)	8 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	1 to 31 ^{*2}	1 to 31 ^{*1}

*1 If the temperature controller is set as station No. 0, communications are not available. Be sure to set a value other than "0".

*2 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
4 (analog parameter)	0	
3 (analog input data)	1	Read only
0 (digital parameter)	2	
1 (digital input data)	3	Read only

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

KP1000

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even (fixed)	Even (fixed)
Data length	7 (fixed)	7 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	1 to 31 ^{*2}	1 to 31 ^{*1}
Communication function selection	-	COM.

*1 Be sure to set a value other than "0".

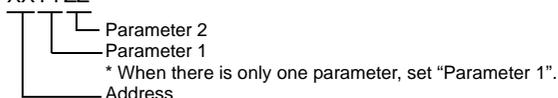
*2 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
D (data)	0	
DN (specific data)	1	
PG (program)	2	

Address denotations:

XXYYZZ



* BMOV macro command disabled

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
	n	Station number	
Alarm reset	n	Station number	2
	n + 1	Command: 0	
Pattern select	n	Station number	3
	n + 1	Command: 1	
	n + 2	Pattern number	
Step repeat	n	Station number	6
	n + 1	Command: 2	
	n + 2	Pattern number	
	n + 3	Starting step	
	n + 4	End step	
Pattern copy	n	Station number	4
	n + 1	Command: 3	
	n + 2	Source pattern number	
	n + 3	Destination pattern number	
Pattern clear	n	Station number	3
	n + 1	Command: 4	
	n + 2	Pattern number (00: ALL)	

◆ Indirect Memory Designation



When indirectly designating a memory address, do not access an address that is not defined in the memory map.

	15	8 7	0
n + 0	Model (83)		Memory type
n + 1	Memory number (low)		
n + 2	Memory number (high)		
n + 3	Expansion code	Bit designation	
n + 4	Station number		

LT400 Series (MODBUS RTU)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	None	None
Data length	8 (fixed)	8 (fixed)
Stop bit	1	1
Station number	1 to 31 ^{*1}	1 to 31
Protocol	–	MODBUS RTU

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
4 (analog parameter)	0	
3 (analog input data)	1	Read only
0 (digital parameter)	2	
1 (digital input data)	3	Read only

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

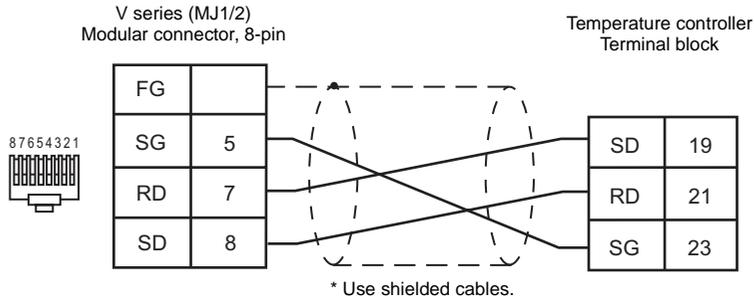
Refer to page 34.

Wiring

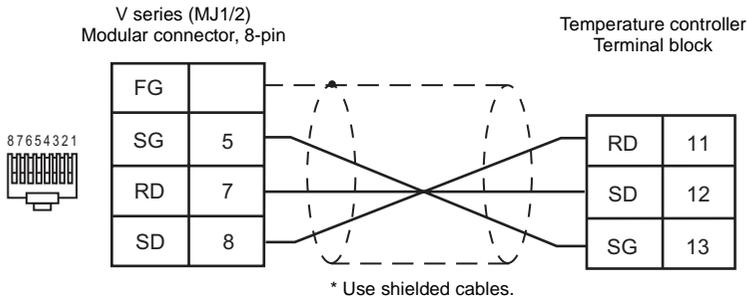


Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

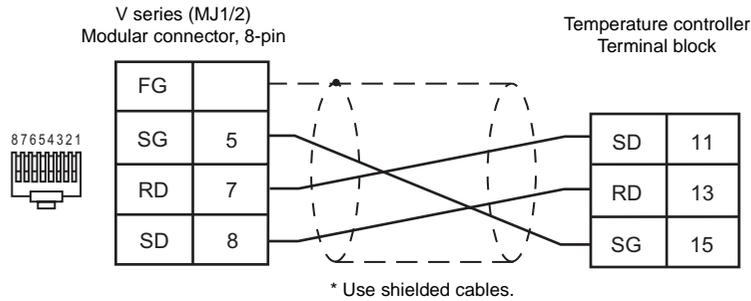
RS-232C (DZ1000/DZ2000)



RS-232C (KP1000)



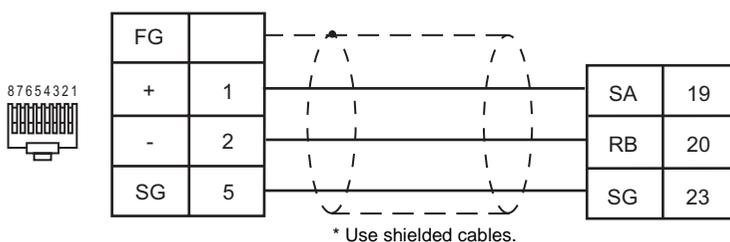
RS-232C (LT400)



RS-485 (DZ1000/DZ2000)

V series (MJ1/2)
Modular connector, 8-pin

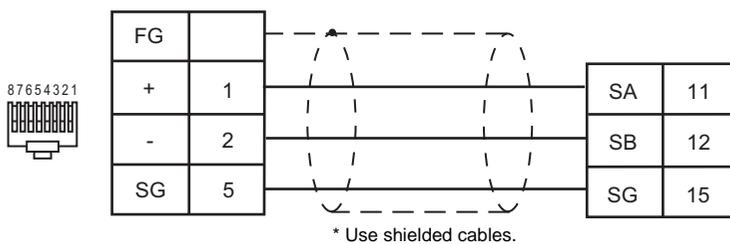
Temperature controller
Terminal block



RS-485 (LT400)

V series (MJ1/2)
Modular connector, 8-pin

Temperature controller
Terminal block



NIKKI DENSO

Model List

Servo Controller	Lst File	Tem File
SQB-6432B	SQB-6432.Lst	MelAnA.tem

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Odd	Odd
Data length	8	8
Stop bit	1	1
Station number	1 to 17 ^{*1}	1 to 17
Transmission mode	-	4 (fixed)

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
D (data register)	0	
M (auxiliary relay)	6	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

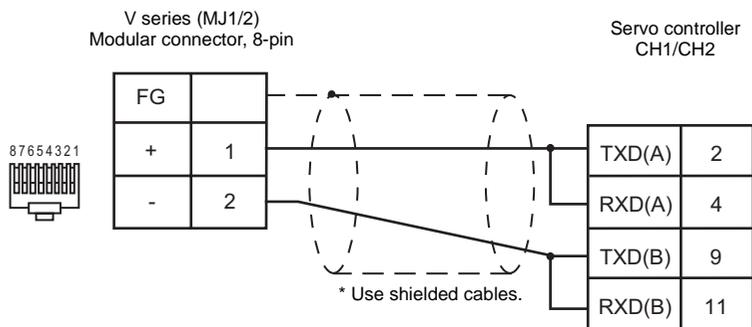
Refer to page 34.

Wiring



Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-485



OHKURA

Model List

Digital Indicating Controller	Lst File	Tem File
EC5500S EC5800	EC5300.Lst	EC5.tem
EC5600S EC5900A	EC5600.Lst	

EC5500S/EC5800

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even	Even
Data length	7	7
Stop bit	2	2
Station number	0 to 31 ^{*1}	0 to 31
Divisions Group	I type (TC, mV, V, mA)	I type (TC, mV, V, mA)

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
D0	0	
D1	1	Input the multi number 0 to 8 for "CPU No."

Memory D0

Address	Name	Data
0000	Local/Remote	0: Local 1: Remote
0010	Status of alarm 1	0: No alarm occurred 1: Waiting due to alarm 2: In alarm condition
0011	Status of alarm 2	
0012	Status of alarm 3	
0013	Status of alarm 4	
0020	Execution SP No.	
0021	SP remote/local	0: SP remote 1: SP local
0022	Auto/Manual	0: Auto 1: Manual
0023	Auto/Self-tuning	0: Auto-tuning 1: Self-tuning 2: None
0024	Ramping RUN/STOP	0: Ramping RUN 1: Ramping STOP
0025	Control RUN/STOP	0: Control RUN 1: Control STOP

Address	Name	Data
0026	SP in abnormality	0: Not used 1: Used
0030	PV indication	
0031	PV error	0: Normal 1: PV error: upper limit over 2: PV error: lower limit over
0040	Execution SP	
0050	SP in abnormality	
0060	Second output proportional band	
0070	Dead band	
0080	Remote SP bias	
0090	Ramping rate of increase	
00A0	Ramping rate of decrease	
00B0	Output upper limit	
00C0	Output lower limit	
00D0	First output	
00E0	Second output	

Memory D1

Address	Name
0000	Multi-SP
0010	Proportional band
0020	Integral time
0030	Manual reset
0040	Derivative time
0050	Alarm
0060	Heater resistance (Ω)
0070	Heater current (A)
0080	Resistance upper limit alarm
0090	Resistance ultimate limit alarm
00A0	Resistance rate of change upper limit alarm
00B0	Temperature upper limit alarm
00C0	Set temperature

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
Local/Remote changeover	n	Station number	2
	n + 1	Command: 0	
Manual/Auto changeover	n	Station number	3
	n + 1	Command: 1	
	n + 2	A: Auto M: Manual	
Auto-/Self-tuning START/STOP	n	Station number	3
	n + 1	Command 2	
	n + 2	A: Auto S: Self N: Stop	
Multi-SP No. changeover	n	Station number	3
	n + 1	Command: 3	
	n + 2	Multi-SP Nos. 0 to 8	
Output RUN/STOP changeover	n	Station number	3
	n + 1	Command: 4	
	n + 2	R: Output RUN S: Output STOP	
SP remote/local changeover	n	Station number	3
	n + 1	Command: 5	
	n + 2	R: SP remote L: SP local	
Anti-overshoot enable/disable	n	Station number	3
	n + 1	Command: 6	
	n + 2	0: Disable 1: Enable	
PV start enable/disable	n	Station number	3
	n + 1	Command: 7	
	n + 2	0: Disable 1: Enable	
Reset all	n	Station number	2
	n + 1	Command: 8	

◆ Indirect Memory Designation

- When the temperature controller memory addresses are from 0 to 65535 (less than 16 bits):

	15	8 7	0
n + 0	Model (03)		Memory type
n + 1	Memory number (address)		
n + 2	Multi number	Bit designation	
n + 3	00		Station number

- When the temperature controller memory addresses are 65536 and greater (less than 32 bits):

	15	8 7	0
n + 0	Model (83)		Memory type
n + 1	Memory number (address)		
n + 2			
n + 3	Multi number	Bit designation	
n + 4	00		Station number

EC5600S/EC5900A

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even	Even
Data length	7	7
Stop bit	2	2
Station number	0 to 31 ^{*1}	0 to 31
Divisions Group	I type (TC, mV, V, mA)	I type (TC, mV, V, mA)

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
D0	0	
D1	1	Input the multi number 1 to 19 for "CPU No."

Memory D0

Address	Name	Data
0000	A alarm hysteresis width	
0010	B alarm hysteresis width	
0020	C alarm hysteresis width	
0030	D alarm hysteresis width	
0040	A alarm waiting enable/disable	0: Disable 1: Enable
0050	B alarm waiting enable/disable	
0060	C alarm waiting enable/disable	
0070	D alarm waiting enable/disable	
0080	PV error H	
0090	PV error L	
00A0	Scaling decimal point position	
00A1	Scaling unit	
00A2	Scaling upper limit	
00A3	Scaling lower limit	
00B0	Fixed SP	
00C0	Second output P (proportional band)	
00D0	Dead band	
00E0	A alarm set value	
00F0	B alarm set value	
0100	C alarm set value	
0110	D alarm set value	
0120	Sensor correction	
0130	Execution pattern No.	
0131	Execution step No.	
0132	RUN/STOP	0: RUN 1: STOP
0133	Execution SP	

Address	Name	Data
0134	Time remained	
0135	Current DO	
0136	Remaining DI	
0137	Existence of link	0: None 1: Exist
0138	Remaining repeat times	
0140	MAN/AUTO	0: MAN 1: AUTO
0150	Communication remote/local	0: Remote 1: Local
0160	Input range	
0170	PV	
0180	Execution P	
0190	Execution I	
01A0	Execution D	
01B0	Execution output upper limit	
01C0	Execution output lower limit	
01D0	Execution manual reset	
01E0	Alarm status (A)	0: Alarm occurred 1: Waiting due to alarm 2: Other than above
01E1	Alarm status (B)	
01E2	Alarm status (C)	
01E3	Alarm status (D)	

Memory D1

Address	Name
0000	Cycle time
0010	Output hysteresis width
0020	P (proportional band)
0030	I (integral time)
0040	D (derivative time)
0050	Manual reset
0060	Output value
0070	Output upper limit
0080	Output lower limit
0090	Reference point
00A0	Pattern link

◆ TEMP_CTL

Contents	F0 (=Su n)		F1
Local/Remote changeover	n	Station No.	2
	n + 1	Command: 0	
Manual/Auto changeover	n	Station No.	3
	n + 1	Command 1	
	n + 2	0: Manual → Auto 1: Auto → Manual	
Program	n	Station No.	3
	n + 1	Command: 2	
	n + 2	0: RUN 1: STOP 2: RESET 4: ADVANCE	
Execution pattern No. changeover	n	Station No.	3
	n + 1	Command: 3	
	n + 2	Pattern No.	
Tuning	n	Station No.	3
	n + 1	Command: 4	
	n + 2	0: Execute program tuning 1: Execute point 1 2: Execute point 2 3: Execute point 3 4: Consecutively execute points 1, 2 and 3 5: Immediately execute 6: Stop tuning	
Read program (step data)	n	Station No.	4
	n + 1	Command: 5	
	n + 2	Pattern No.	
	n + 3	Step No.	
	n + 4	Target SP	
	n + 5	Time	
	n + 6	DO	
	n + 7	DI	
	n + 8	0: Next step 1: END step	
	n + 9	0: GS not exist 1: GS exist	
	n + 10	PID No.	
n + 11	Output limit No.		

Contents	F0 (= \$u n)		F1
Write program (step data)	n	Station No.	12
	n + 1	Command: 6	
	n + 2	Pattern No.	
	n + 3	Step No.	
	n + 4	Target SP	
	n + 5	Time	
	n + 6	DO	
	n + 7	DI	
	n + 8	0: Next step 1: END step	
	n + 9	0: GS not exist 1: GS exist	
	n + 10	PID No.	
n + 11	Output limit No.		
Read repeat times	n	Station No.	3
	n + 1	Command: 7	
	n + 2	Pattern No.	
	n + 3	Repeat times	
	n + 4	Starting step No.	
n + 5	End step No.		
Write repeat times	n	Station No.	6
	n + 1	Command: 8	
	n + 2	Pattern No.	
	n + 3	Repeat times	
	n + 4	Starting step No.	
n + 5	End step No.		

Response code: data stored from temperature controller to V series

◆ Indirect Memory Designation

- When the temperature controller memory addresses are from 0 to 65535 (less than 16 bits):

	15	8 7	0
n + 0	Model (03)		Memory type
n + 1	Memory number (address)		
n + 2	Multi number	Bit designation	
n + 3	00		Station number

- When the temperature controller memory addresses are 65536 and greater (less than 32 bits):

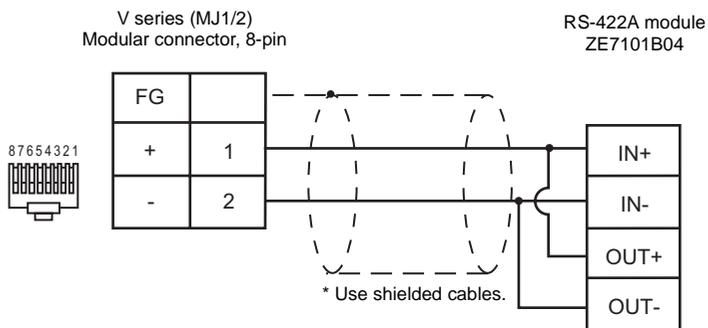
	15	8 7	0
n + 0	Model (83)		Memory type
n + 1	Memory number (address)		
n + 2	Memory number (address)		
n + 3	Multi number	Bit designation	
n + 4	00		Station number

Wiring



Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-485 (EC5500S,EC5800,EC600S,EC5900A)



SHINKO TECHNOS

Model List

Temperature Controller	Lst File	Tem File
C Series	S-C.Lst	Shinko.tem
FC Series (FCD-13A, FCD-15A, FCR-13A, FCR-15A) Option C, C5	S-FC.Lst	
GCS-300 (Option C5)	S-GC.Lst	
DCL-33A (Option C5)	S-DCL.Lst	
JCx-300 Series	S-JC.Lst	

C Series

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even (fixed)	Even (fixed)
Data length	7 (fixed)	7 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	0 to 15 ^{*1}	0 to 15
Communication form	–	SHINKO standard protocol

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
–	0	

Address denotations:

In the comment list, all the channel numbers are set to "00".
Set the channel number to be used in the HEX code.



◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

FC Series/GCS-300

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even (fixed)	Even (fixed)
Data length	7 (fixed)	7 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	0 to 31 ^{*1}	0 to 31

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
-	0	

Address denotations:

In the comment list, all the sub addresses are set to "00".

Set the sub address to be used in the HEX code.



◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

DCL-33A

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even (fixed)	Even (fixed)
Data length	7 (fixed)	7 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Send delay time	1	–
Station number	0 to 31 ^{*1}	0 to 31
Communication protocol ^{*2}	–	Standard protocol
Terminating resistance	OFF	–

*1 Set this parameter on the [Memory Input] dialog.

*2 When "Modbus RTU" is selected, select "Modbus Free" instead of "SHINKO TECHNOS" for model selection on the V-SFT editor.

◆ Available Memory

Memory	Type	Remarks
–	0	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

JCx-300 Series

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Temperature Controller
Baud rate	9600 bps	9600 bps
Parity	Even (fixed)	Even (fixed)
Data length	7 (fixed)	7 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	0 - 31 ^{*1}	0 - 31
Communication protocol ^{*2}	---	Standard protocol

*1 Set this parameter on the [Memory Input] dialog.

*2 When "Modbus RTU" is selected, select "Modbus Free" instead of "SHINKO TECHNOS" for model selection on the V-SFT editor.

◆ Available Memory

Memory	Type	Remarks
----	0	

◆ TEMP_CTL

Unavailable

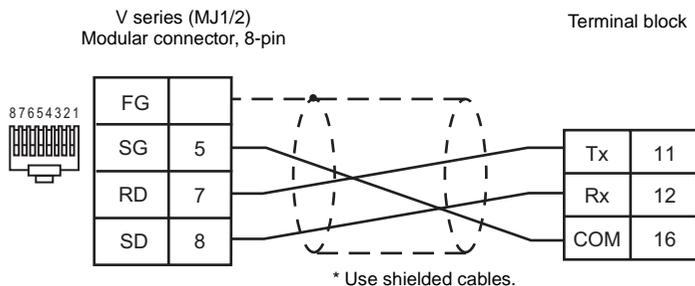
◆ Indirect Memory Designation

Refer to page 34.

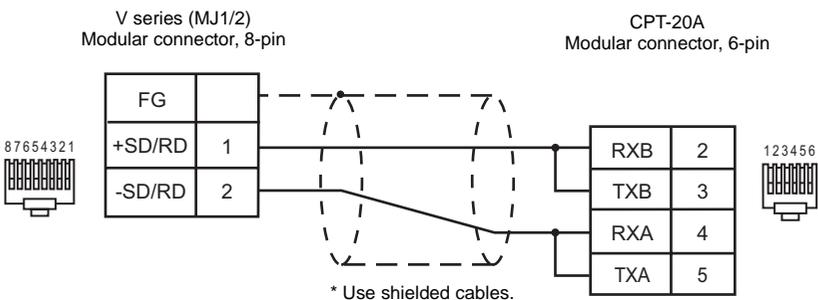
Wiring

Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

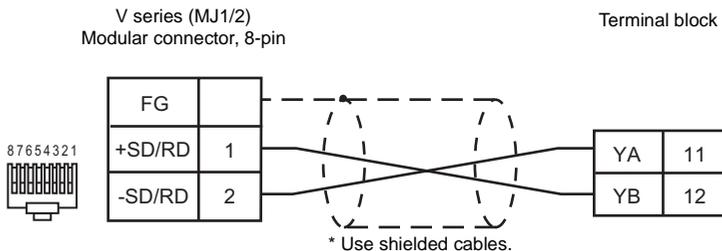
RS-232C (FC Series)



RS-485 (C Series)



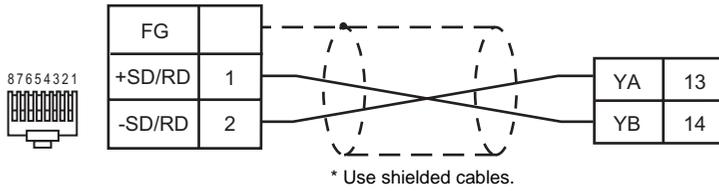
RS-485 (FC Series)



RS-485 (GCS-300)

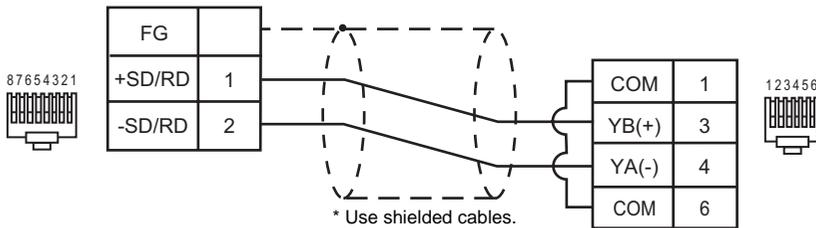
V series (MJ1/2)
Modular connector, 8-pin

Terminal block

**RS-485 (DCL-33A)**

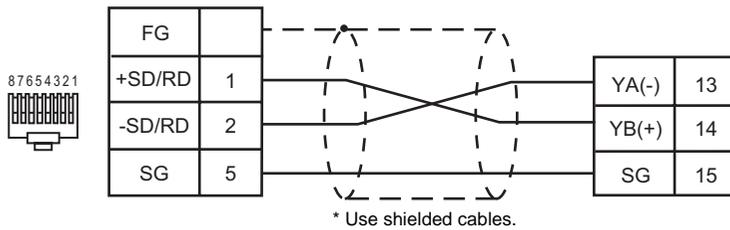
V series (MJ1/2)
Modular connector, 8-pin

Modular connector, 6-pin

**RS-485 (JCS-33A)**

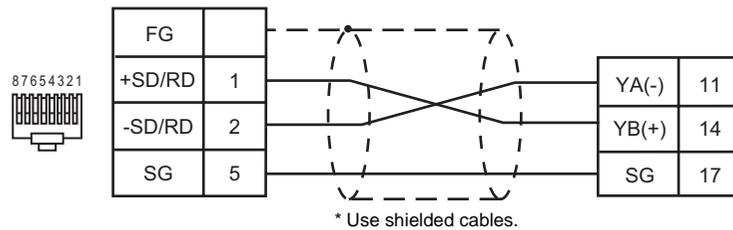
V series (MJ1/2)
Modular connector, 8-pin

Terminal block

**RS-485 (JCR-33A, JCD-33A)**

V series (MJ1/2)
Modular connector, 8-pin

Terminal block



◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
All axes write When the target device is not set as point table:	n	Earlier than version 2.50: 7F (HEX) Version 2.50 or later: FF (HEX)	5
	n + 1	Device number	
	n + 2	Address	
	n + 3	Data (high-order)	
	n + 4	Data (low-order)	
All axes write * When the target device is set as point table and the CutyAxis version is earlier than 2.50:	n	7F (HEX)	19
	n + 1	01 (HEX)	
	n + 2	00YY (HEX) (YY: point number)	
	n + 3 to n + 4	Absolute/relative value	
	n + 5 to n + 6	Traverse amount (pulse)	
	n + 7 to n + 8	Traverse speed	
	n + 9 to n + 10	Acceleration/deceleration time constant	
	n + 11 to n + 12	Wait time	
	n + 13 to n + 14	With/without successive operation	
	n + 15 to n + 16	Branch point number	
n + 17 to n + 18	S-shape ON/OFF		
All axes write * When the target device is set as point table and the CutyAxis version is 2.50 or later:	n	FF (HEX)	23
	n + 1	01 (HEX)	
	n + 2	00YY (HEX) (YY: point number)	
	n + 3 to n + 4	Absolute/relative value	
	n + 5 to n + 6	Traverse amount (pulse)	
	n + 7 to n + 8	Traverse speed	
	n + 9 to n + 10	Acceleration/deceleration time constant	
	n + 11 to n + 12	Wait time	
	n + 13 to n + 14	With/without successive operation	
	n + 15 to n + 16	Branch point number	
	n + 17 to n + 18	S-shape ON/OFF	
	n + 19 to n + 20	Expansion 1	
n + 21 to n + 22	Expansion 2		
Teaching	n	Station No.	2
	n + 1	0	
	n + 2	Data (low-order)	
	n + 3	Data (high-order)	
T wave monitor sampling	n	Station No.	5
	n + 1	1	
	n + 2	Control code	
	n + 3	Trigger position	
	n + 4	Servo status bit	
	n + 5	Servo status	
	n + 6	Torque	
	n + 7	Speed	
	n + 8	Servo status	
	:	:	
	n + 51	Torque	
	n + 52	Speed	

Contents	F0 (= \$u n)		F1
	n	Station No.	
Get servo status	n + 1	2	2
	n + 2, 3	Servo status	
	n + 4, 5	Command point	
	n + 6, 7	Motor type	
	n + 8, 9	ROM version	
	n + 10, 11	System data	
	n + 12, 13	System data	
	n + 14, 15	System data	
	n + 16, 17	System data	
	Internal monitor	n	
n + 1		3	
n + 2, 3		System data	
n + 4, 5		System data	
n + 6, 7		System data	
n + 8, 9		System data	
n + 10, 11		System data	
n + 12, 13		System data	
n + 14, 15		System data	
n + 16, 17		System data	
n + 18, 19		Speed [rpm]	
n + 20, 21		Torque [%]	
n + 22, 23		Torque (+-) peak [%]	
n + 24, 25		Current position [pulse]	
n + 26, 27		Position command [pulse]	
n + 28, 29		Position deviation [pulse]	
n + 30, 31		Servo status	
n + 32, 33		I/O status	
n + 34, 35		System data	
n + 36, 37		System data	
n + 38, 39	System data		
n + 40, 41	Currently executed point		

 Response code: data stored from temperature controller to V series

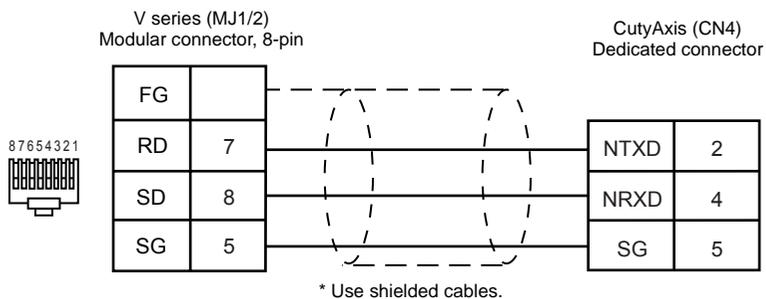
* When the target device is set as point table in the case of all-axis writing:
 All CutyAxis drivers to be connected must be of either versions earlier than 2.50 or versions 2.50/later. Using
 drivers from both categories is not allowed.

◆ Wiring



Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-232C



TOSHIBA

Model List

Inverter	Lst File	Tem File
VF-S7	VFS7.Lst	TOSVERT.tem
VF-S9	VFS9.Lst	
VF-A7	VFA7.Lst	

VF-S7/VF-S9

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the inverter.

Item	V-SFT Setting	Setting on Inverter
Baud rate	9600 bps	9600 bps
Parity	Even*1	Even
Data length	8 (fixed)	8 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	0 to 31*2	0 to 31

*1 When "None" is selected on the V-SFT editor, it is regarded as "Even".

*2 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
-	0	

Set the target memory on the [Memory Input] dialog.

- RAM: Stored in RAM
- EEPROM: Stored in RAM + EEPROM

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

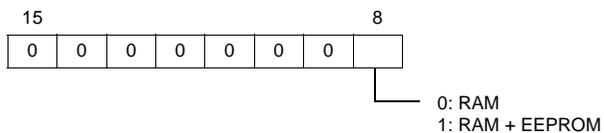
- When the temperature controller memory addresses are from 0 to 65535 (less than 16 bits):

	15	8 7	0
n + 0	Model (03)		Memory type
n + 1	Memory number (address)		
n + 2	Expansion code ^{*1}		Bit designation
n + 3	00		Station number

- When the temperature controller memory addresses are 65536 and greater (less than 32 bits):

	15	8 7	0
n + 0	Model (83)		Memory type
n + 1	Memory number (address)		
n + 2	Memory number (address)		
n + 3	Expansion code ^{*1}		Bit designation
n + 4	00		Station number

*1 Expansion code

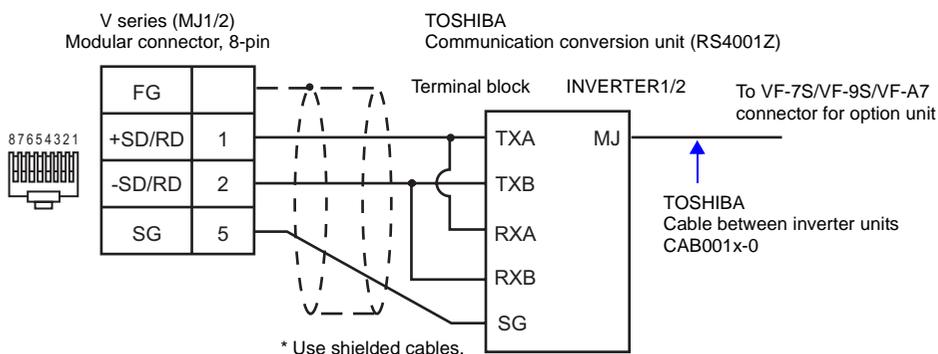


Wiring

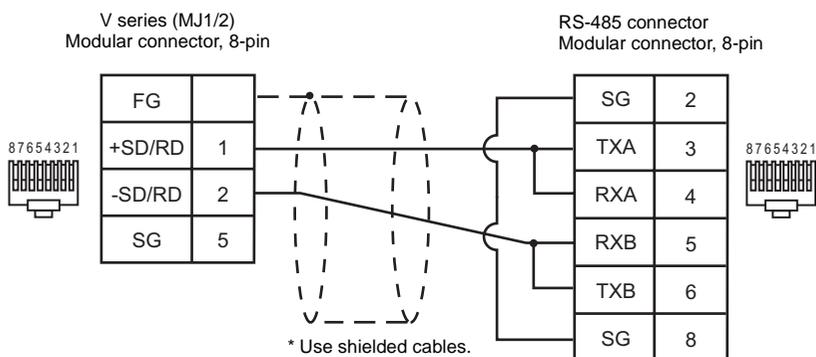


Pin Nos. 3 and 4 on the V series and 1 and 7 on the VF-A7 (RS-485 connector) are provided for external power supply.
 To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.
 When inserting the cable into the modular jack, double-check the cable orientation and insert the connectors correctly into the V series and the inverter.

RS-485 (VF-S7, VF-S9, VF-A7)



RS-485 (VF-A7)



San Rex

◆ Model List

Rectifier	Lst File	Tem File
DC AUTO (HKD type)	HKD.Lst	HKD.tem

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the rectifier.

Item	V-SFT Setting	Setting on Rectifier
Baud rate	9600 bps (fixed)	9600 bps (fixed)
Parity	Even (fixed)	Even (fixed)
Data length	8 (fixed)	8 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	1 to 31 ^{*1}	1 to 31
REMOTE/PANEL key	—	REMOTE (Remote control mode)

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
M (monitor data)	0	Read only
MD (monitor data)	1	Double-word, read only
S (set data)	2	
SD (set data)	3	Double-word

Memory: M, MD (monitor data)

Address	Name
M0	(Reserved for system)
M1	System status
M2	Error status
M3	DC output current
M4	DC output voltage
M5	Cumulative current
M6	Activation time
M8	Read data type
M9	Read memory No.
M10	Pulse ON time
M11	Pulse OFF time
M12	Output set value 1
M13	Output set value 2
M14	Preset value
M15	Unit for current
M16	Unit for voltage
M17	Rated output current
M18	Rated output voltage
MD7	Total cumulative current

Memory: S, SD (set data)

Address	Name
S0	Data setting mode
S1	Memory No. 1
S2	Memory No. 2
S3	Pulse ON time
S4	Pulse OFF time
S5	Output set value 1
S6	Output set value 2
S7	Preset value
S8	System control
S9	Unit, operation mode
S10	Low-voltage starting time
S11	Starting low voltage (ratio)
S12	Starting low-voltage current
S13	Software starting time
S14	Software stop time
S16	Ratio of detected output error
S17	Ratio of detected output high error
S18	Ratio of detected output low error
SD15	Total preset value

* When writing to memory S and SD (set data), be sure to write data to the addresses from S0 at one time.

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

◆ Wiring

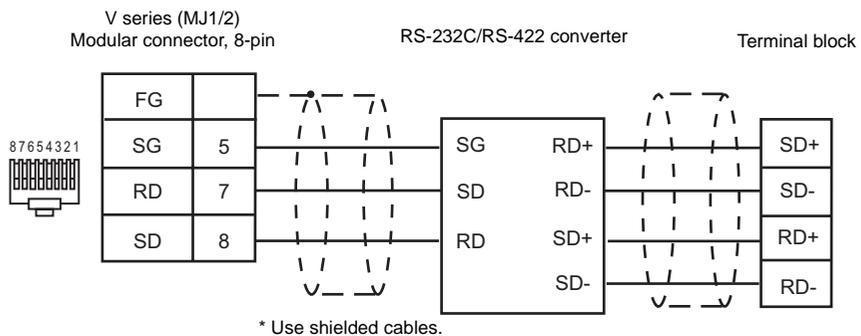


Pin Nos. 3 and 4 on the V series are those for external power supply.

To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-485

Use an RS-232C/RS-422 converter. In the [Temp. Control/PLC2Way Comm. Setting] dialog for the V-SFT editor, check [RS232C] for [Signal Level].



A&D

◆ Model List

Weight Indicator	Lst File	Tem File
AD4402 (MODBUS RTU)	AD4402.Lst	Modbus.tem
AD4404 (MODBUS RTU)	AD4404.Lst	

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the weight indicator.

Item	V-SFT Setting	Setting on Weight Indicator
Baud rate	9600 bps (fixed)	9600 bps (fixed)
Parity	None	None
Data length	8	8
Stop bit	1	1
Station number	1 to 31 ^{*1}	1 to 31

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
0 (output coil)	0	
1 (input relay)	1	
4 (holding register)	2	
3 (input register)	3	

◆ TEMP_CTL

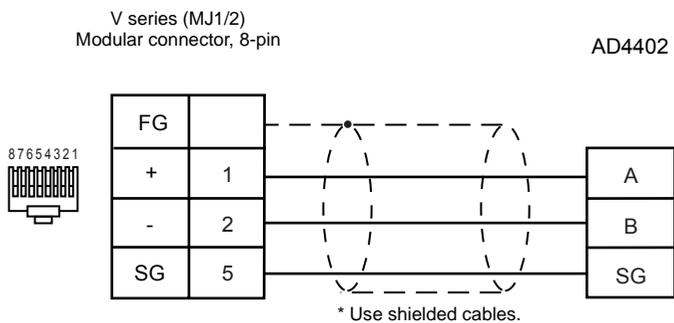
Unavailable

◆ Indirect Memory Designation

Refer to page 34.

◆ Wiring

Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-485

IAI

Model List

Model	Lst File	Tem File
Super SEL Controller ^{*1}	IAI-SEL.Lst	IAI_SEL.tem
X-SEL Controller	IAI-XSEL.Lst	IAI_XSEL.tem

*1 E type, G type

Super SEL Controller

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the controller.

Item	V-SFT Setting	Setting on Controller
Baud rate	9600 bps (fixed)	9600 bps (fixed)
Parity	None (fixed)	None (fixed)
Data length	8 (fixed)	8 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	0 ^{*1}	0

*1 Set this parameter on the [Memory Input] dialog.

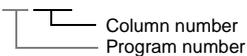
◆ Available Memory

Memory	Type	Remarks
INP (input port)	0	Read only
OUT (output port)	1	
FLG (flag)	2	Read only
VAR (variable) ^{*1}	3	Double-word
STR (string) ^{*2}	4	

*1 For VAR (variable) XXYYY



*2 For STR (string) XXYYY



◆ TEMP_CTL

Refer to the next page.

◆ Indirect Memory Designation

Refer to page 34.

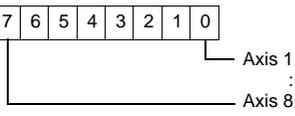
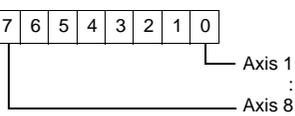
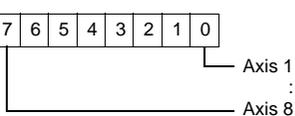
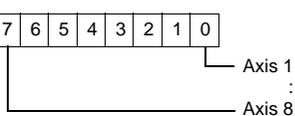
◆ TEMP_CTL

Contents	F0 (= \$u n)		F1	
Version inquiry	n	Station number	4	
	n + 1	Command: 0		
	n + 2	Type M: Main, S: Servo		
	n + 3	Axis number 0: Axis 1, 1: Axis 2, 2: Axis 3, 3: Axis 4, 4: Axis 5, 5: Axis 6, 6: Axis 7, 7: Axis 8		
	n + 4 to n + 9	Version		
	n + 10	Month		
	n + 11	Day		
	n + 12	Year		
	n + 13	Hour		
	n + 14	Minute		
Program remaining area inquiry	n	Station number	2	
	n + 1	Command: 1		
	n + 2	Step number		
Program parameter inquiry	n	Station number	2	
	n + 1	Command: 2		
	n + 2	Auto start program number		
	n + 3	Emergency stop program number		
	n + 4	Number of programs		
	n + 5	Number of tasks		
	n + 6	Program step number		
	n + 7	Time slice value (1/100 sec)		
Program status inquiry	n	Station number	3	
	n + 1	Command: 3		
	n + 2	Program number		
	n + 3	Status 0: Stop, 1: Executing		
	n + 4	Controller error code		
	n + 5	Step number		
Program step contents inquiry	n	Station number	4	
	n + 1	Command: 4		
	n + 2	Program number		
	n + 3	Step number		
	n + 4	A/D		
	n + 5	Condition 1		N
	n + 6 to n + 7			Input/output flag
	n + 8 to n + 9	Command		
	n + 10 to n + 14	Operation item 1		
	n + 15 to n + 19	Operation item 2		
	n + 20 to n + 21	Result		
	n + 22 to n + 30	Comment		

Contents	F0 (= \$u n)		F1
SIO parameter inquiry	n	Station number	2
	n + 1	Command: 5	
	n + 2	Timeout (sec)	
	n + 3	Baud rate 0: 1200, 1: 2400, 2: 4800, 3: 9600, 4: 19200	
	n + 4	Bit length 0: 8 bits, 1: 7 bits	
	n + 5	Parity 0: none, 1: even, 2: odd	
	n + 6	Stop bit 0: 1 bit, 1: 2 bits	
Point parameter inquiry	n	Station number	2
	n + 1	Command: 6	
	n + 3	Number of points	
Servo parameter inquiry	n	Station number	2
	n + 1	Command: 7	
	n + 2	Number of axes	
	n + 3	Numerator	
	n + 4	Denominator	
	n + 5	Override	
	n + 6	Operation speed (mm/sec)	
	n + 7	Maximum speed (mm/sec)	
	n + 8	Acceleration (1/100g)	
	n + 9	Maximum acceleration (1/100g)	
Axis servo parameter inquiry	n	Station number	3
	n + 1	Command: 8	
	n + 2	Axis number 0: Axis 1, 1: Axis 2, 2: Axis 3, 3: Axis 4, 4: Axis 5, 5: Axis 6, 6: Axis 7, 7: Axis 8	
	n + 3	Axis name	
	n + 4	Service times (times/sec)	
	n + 5	Numerator	
	n + 6	Denominator	
	n + 7	Override	
	n + 8	Jog speed (mm/sec)	
	n + 9	Positioning range (pulse)	
	n + 10	Soft limit (+) (1/1000 mm)	
	n + 11	Soft limit (-) (1/1000 mm)	
	n + 12 to n + 13	Soft limit offset (1/1000 mm)	
	n + 14	Acceleration (1/100g)	

Contents	F0 (= \$u n)		F1
Axis origin return parameter inquiry	n	Station number	3
	n + 1	Command: 9	
	n + 2	Axis number 0: Axis 1, 1: Axis 2, 2: Axis 3, 3: Axis 4, 4: Axis 5, 5: Axis 6, 6: Axis 7, 7: Axis 8	
	n + 3	Direction 0: Origin side, 1: Anti-origin side	
	n + 4	Method 0: Pushing, 1: Limit	
	n + 5	Order 0: first, 1: second, 2: third, 3: 4th, 4: 5th, 5: 6th, 6: 7th, 7: 8th, 8: 9th, 9: 10th	
	n + 6	Limit polarity 0: 0 at limit, 1: 1 at limit	
	n + 7	Z-phase edge 0: 0 at Z-phase, 1: 1 at Z-phase	
	n + 8	Creep speed (mm/sec)	
	n + 9	Run-in speed (mm/sec)	
	n + 10	Z-phase search speed (mm/sec)	
	n + 11	Offset move amount (mm)	
	n + 12	Pushing deviation (pulse)	
	n + 13	Current limit	
Axis motor parameter inquiry	n	Station number	3
	n + 1	Command: 10	
	n + 2	Axis number 0: Axis 1, 1: Axis 2, 2: Axis 3, 3: Axis 4, 4: Axis 5, 5: Axis 6, 6: Axis 7, 7: Axis 8	
	n + 3	Motor maximum speed	
	n + 4	Number of encoder pulses	
	n + 5	Screw lead (mm)	
	n + 6	Multiplication	
	n + 7	Position gain	
	n + 8	Speed gain	
	n + 9	Feed/forward gain	
	n + 10	Integral gain	
	n + 11	Total gain	
	n + 12	Integral voltage limiter	
	n + 13	Over speed constant	
	n + 14	Accumulated error (pulse)	
	n + 15	Motor maximum current	
	n + 16	Brake time (1/100 sec)	
n + 17 to n + 18	Motor overload lower limit		
Arc parameter inquiry	n	Station number	2
	n + 1	Command: 11	
	n + 2 to n + 3	Slice angle (1/10 degrees)	
	n + 4	Speed increment (mm/sec)	

Contents	F0 (= \$u n)		F1										
Axis status inquiry	n	Station number	2										
	n + 1	Command: 12											
	n + 2	Number of axes: m											
	n + 3	Status (m = 1)		Servo 0: Servo off, 1: Servo on									
	n + 4			Origin 0: Origin return not finished 1: Origin return finished									
	n + 5			Move 0: Stop, 1: Moving									
	n + 6			Error code									
	n + 7 to n + 8			Present position (1/1000 mm)									
n + 9 -	Status (m = 2):	:											
		:											
Task status inquiry	n	Station number	2										
	n + 1	Command: 13											
	n + 2	Number of tasks: m											
	n + 3	Task status (m = 1)		Status Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>-</td><td>3</td><td>2</td><td>1</td><td>0</td></tr> </table> <ul style="list-style-type: none"> └─ 0: During execution └─ 1: Execution possible └─ 2: Wait └─ 3: Forced wait 	-	3	2	1	0				
	-			3	2	1	0						
	n + 4			Level 0: Priority high : 9: Priority low									
n + 5	Program number												
n + 6 -	Task status (m = 2)	:											
		:											
Number of steps inquiry	n	Station number	3										
	n + 1	Command: 14											
	n + 2	Program number											
	n + 3	Number of steps											
Point data inquiry	n	Station number	3										
	n + 1	Command: 15											
	n + 2	Point number											
	n + 3	Axis pattern: m (number of ON bits)		Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr> </table> <ul style="list-style-type: none"> └─ 0: Axis 1 └─ 1: : └─ 7: Axis 8 	-	7	6	5	4	3	2	1	0
	-	7		6	5	4	3	2	1	0			
	n + 4	Acceleration (1/100g)											
	n + 5	Speed (mm/sec)											
	n + 6 to n + 7	Axis pattern 1		Position data (1/1000 mm)									
n + 8 -	Axis pattern 2	:											
		:											

Contents	F0 (= \$u n)		F1									
Error messages inquiry	n	Station number	3									
	n + 1	Command: 16										
	n + 2	Controller error code										
	n + 3 to n + 10	Error message										
Servo On/Off	n	Station number	4									
	n + 1	Command: 17										
	n + 2	Axis pattern Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr> </table> 		-	7	6	5	4	3	2	1	0
	-	7		6	5	4	3	2	1	0		
n + 3	On/Off 0: On, 1: Off											
Origin return	n	Station number	4									
	n + 1	Command: 18										
	n + 2	Axis pattern Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr> </table> 		-	7	6	5	4	3	2	1	0
	-	7		6	5	4	3	2	1	0		
n + 3	Speed (mm/sec)											
Move to the specified position	n	Station number	(m*2) + 5									
	n + 1	Command: 19										
	n + 2	Axis pattern: m (number of ON bits) Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr> </table> 		-	7	6	5	4	3	2	1	0
	-	7		6	5	4	3	2	1	0		
	n + 3	Acceleration (1/100g)										
	n + 4	Speed (mm/sec)										
	n + 5 to n + 6	Axis pattern 1 Position (1/1000 mm)										
	n + 7 -	Axis pattern 2 Position (1/1000 mm)										
	: :											
Jog move	n	Station number	6									
	n + 1	Command: 20										
	n + 2	Axis pattern Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr> </table> 		-	7	6	5	4	3	2	1	0
	-	7		6	5	4	3	2	1	0		
	n + 3	Acceleration (1/100g)										
	n + 4	Speed (mm/sec)										
n + 5	Direction 0: Origin side, 1: Anti-origin side											

Contents	F0 (= \$u n)		F1	
Traverse by point number command	n	Station number	6	
	n + 1	Command: 21		
	n + 2	Axis pattern		
		Bit		
	n + 3	Acceleration (1/100g)		
	n + 4	Speed (mm/sec)		
	n + 5	Point number		
Program delete	n	Station number	3	
	n + 1	Command: 22		
	n + 2	Program number		
Program step add	n	Station number	31	
	n + 1	Command: 23		
	n + 2	Program number		
	n + 3	Step number		
	n + 4	A/D		
	n + 5	Condition 1		N
	n + 6 to n + 7			Input/output flag
	n + 8 to n + 9	Command		
	n + 10 to n + 14	Operation item 1		
	n + 15 to n + 19	Operation item 2		
	n + 20 to n + 21	Result		
	n + 22 to n + 30	Comment		
	Program change	n		Station number
n + 1		Command: 24		
n + 2		Program number		
n + 3		Step number		
n + 4		A/D		
n + 5		Condition 1	N	
n + 6 to n + 7			Input/output flag	
n + 8 to n + 9		Command		
n + 10 to n + 14		Operation item 1		
n + 15 to n + 19		Operation item 2		
n + 20 to n + 21		Result		
n + 22 to n + 30		Comment		
Program execute		n	Station number	3
	n + 1	Command: 25		
	n + 2	Program number		
Program stop	n	Station number	3	
	n + 1	Command: 26		
	n + 2	Program number		

Contents	F0 (= \$u n)		F1										
Program step insert	n	Station number	31										
	n + 1	Command: 27											
	n + 2	Program number											
	n + 3	Step number											
	n + 4	A/D											
	n + 5	Condition 1		N									
	n + 6 to n + 7			Input/output flag									
	n + 8 to n + 9	Command											
	n + 10 to n + 14	Operation item 1											
	n + 15 to n + 19	Operation item 2											
	n + 20 to n + 21	Result											
	n + 22 to n + 30	Comment											
Program area reorganize	n	Station number	2										
	n + 1	Command: 28											
Program step delete	n	Station number	4										
	n + 1	Command: 29											
	n + 2	Program number											
	n + 3	Step number											
Point data set	n	Station number	(m*2) + 6										
	n + 1	Command: 30											
	n + 2	Point number											
	n + 3	Axis pattern: m (number of ON bits)											
		Bit		<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>-</td> <td>7</td> <td>6</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>1</td> <td>0</td> </tr> </table> <div style="display: inline-block; vertical-align: middle; margin-left: 100px;"> Axis 1 : Axis 8 </div>	-	7	6	5	4	3	2	1	0
	-	7		6	5	4	3	2	1	0			
	n + 4	Acceleration (1/100g)											
	n + 5	Speed (mm/sec)											
	n + 6 to n + 7	Axis pattern 1		Position data (1/1000 mm)									
n + 8 -	Axis pattern 2	Position data (1/1000 mm)											
	:	:											
Point data clear	n	Station number	4										
	n + 1	Command: 31											
	n + 2	Start point number											
	n + 3	End point number											
Point data copy	n	Station number	5										
	n + 1	Command: 32											
	n + 2	Copy source start point number											
	n + 3	Copy source end point number											
	n + 4	Copy target start point number											
Point data shift	n	Station number	5										
	n + 1	Command: 33											
	n + 2	Shift source start point number											
	n + 3	Shift source end point number											
	n + 4	Shift target start point number											

Contents	F0 (= \$u n)		F1
Servo parameter set	n	Station number	10
	n + 1	Command 34	
	n + 2	Number of axes	
	n + 3	Numerator	
	n + 4	Denominator	
	n + 5	Override	
	n + 6	Operation speed (mm/sec)	
	n + 7	Maximum speed (mm/sec)	
	n + 8	Acceleration (1/100g)	
	n + 9	Maximum acceleration (1/100g)	
Axis servo parameter set	n	Station number	15
	n + 1	Command: 35	
	n + 2	Axis number	
	n + 3	Axis name	
	n + 4	Service times (times/sec) "0400" (fixed)	
	n + 5	Numerator	
	n + 6	Denominator	
	n + 7	Override	
	n + 8	Jog speed (mm/sec)	
	n + 9	Positioning range (pulse)	
	n + 10	Soft limit (+) (1/1000 mm)	
	n + 11	Soft limit (-) (1/1000 mm)	
	n + 12 to n + 13	Soft limit offset (1/1000 mm)	
	n + 14	Acceleration (1/100g)	
Axis origin return parameter set	n	Station number	14
	n + 1	Command: 36	
	n + 2	Axis number	
	n + 3	Direction 0: Origin side, 1: Anti-origin side	
	n + 4	Method 0: Pushing, 1: Limit	
	n + 5	Order 0: first, 1: second, 2: third, 3: 4th, 4: 5th 5: 6th, 6: 7th, 7: 8th, 8: 9th, 9: 10th	
	n + 6	Limit polarity 0: 0 at limit, 1: 1 at limit	
	n + 7	Z-phase edge 0: 0 at Z-phase, 1: 1 at Z-phase	
	n + 8	Creep speed (mm/sec)	
	n + 9	Run-in speed (mm/sec)	
	n + 10	Z-phase search speed (mm/sec)	
	n + 11	Offset move amount (mm)	
	n + 12	Pushing deviation (pulse)	
	n + 13	Current limit	

Contents	F0 (= \$u n)		F1							
Axis motor parameter set	n	Station number	18							
	n + 1	Command: 37								
	n + 2	Axis number								
	n + 3	Motor maximum speed								
	n + 4	Number of encoder pulses								
	n + 5	Screw lead (mm)								
	n + 6	Multiplication								
	n + 7	Position gain								
	n + 8	Speed gain								
	n + 9	Feed/forward gain								
	n + 10	Integral gain								
	n + 11	Total gain								
	n + 12	Integral voltage limiter								
	n + 13	Over speed constant								
	n + 14	Accumulated error (pulse)								
	n + 15	Motor maximum current								
	n + 16	Brake time (1/100 sec)								
n + 17	Motor overload lower limit									
Arc parameter set	n	Station number	4							
	n + 1	Command: 38								
	n + 2	Slice angle (1/10 degrees)								
	n + 3	Speed increment (mm/sec)								
Deceleration stop	n	Station number	3							
	n + 1	Command: 39								
	n + 2	Axis pattern <div style="text-align: center;"> Bit <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">-</td> <td style="padding: 2px 5px;">7</td> <td style="padding: 2px 5px;">6</td> <td style="padding: 2px 5px;">5</td> <td style="padding: 2px 5px;">4</td> <td style="padding: 2px 5px;">3</td> <td style="padding: 2px 5px;">2</td> <td style="padding: 2px 5px;">1</td> <td style="padding: 2px 5px;">0</td> </tr> </table> </div> <div style="margin-left: 150px; margin-top: 5px;"> Axis 1 : Axis 8 </div>		-	7	6	5	4	3	2
-	7	6	5	4	3	2	1	0		
Global flag set	n	Station number	4							
	n + 1	Command: 40								
	n + 2	Number 00 to 35								
	n + 3	Data								
Memory clear	n	Station number	5							
	n + 1	Command: 41								
	n + 2	Parameters 0: Do not clear, 1: Clear								
	n + 3	Program 0: Do not clear, 1: Clear								
	n + 4	Point 0: Do not clear, 1: Clear								
Reset	n	Station number	2							
	n + 1	Command: 42								

 Response code: data stored from controller to V series

X-SEL Controller

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the controller.

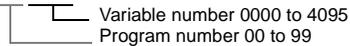
Item	V-SFT Setting	Setting on Controller	
		I/O parameter	Setting
Baud rate	38400 bps	I/O parameter 92	38400 bps
Parity	None (fixed)	I/O parameter 95	None (fixed)
Data length	8 (fixed)	I/O parameter 93	8 (fixed)
Stop bit	1 (fixed)	I/O parameter 94	1 (fixed)
Station number	0 to 31 ^{*1}	I/O parameter 91	0 to 31
Channel 1 usage	-	I/O parameter 90	2 (IAI protocol B)
Bit pattern	-	Other parameter 46	1

*1 Set this parameter on the [Memory Input] dialog.

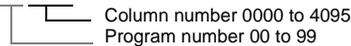
◆ Available Memory

Memory	Type	Remarks
20B (input port)	0	Read only
20C (output port)	1	
20D (flag)	2	Read only
20E (variable) ^{*1}	3	Double-word
210 (string) ^{*2}	4	
208 (effective point data count)	5	Read only
212 (axis status)	6	Double-word, read only
213 (program status)	7	Read only
215 (system status)	8	Read only
253 (program)	9	Write only

*1 For 20E (variable) XYYYYY



*2 For 210 (string) XYYYYY



Memory: 208 (effective point data count)

Address	Name
0	Effective point data count

Memory: 212 (axis status)

Address	Name
0	Axis 1 axis status
1	Axis 1 axis sensor input status
2	Axis 1 axis-related error code
3	Axis 1 encoder status
4	Axis 1 current position
10	Axis 2 axis status
11	Axis 2 axis sensor input status

Address	Name
12	Axis 2 axis-related error code
13	Axis 2 encoder status
14	Axis 2 current position
20	Axis 3 axis status
21	Axis 3 axis sensor input status
22	Axis 3 axis-related error code
23	Axis 3 encoder status
24	Axis 3 current position
30	Axis 4 axis status
31	Axis 4 axis sensor input status
32	Axis 4 axis-related error code
33	Axis 4 axis-related error code
34	Axis 4 encoder status

Memory: 213 (program status)

Address	Name
0	Status
1	Running program step number
2	Program-sensitive error code
3	Error occurrence step

Memory: 215 (system status)

Address	Name
0	System mode
1	Most significant level system error number
2	Most recent system error number
3	System status byte 1
4	System status byte 2
5	System status byte 3
6	System status byte 4

Memory: 253 (program)

Address	Name	Value
Program number	Program	0: Program end 1: Program execution 2: Program pause 3: Program one step execution 4: Program execution restart

◆ Indirect Memory Designation

Refer to page 34.

◆ TEMP_CTL

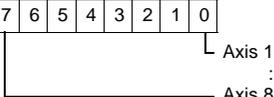
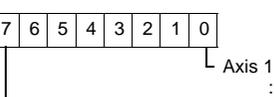
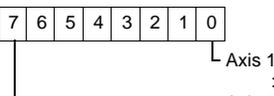


Real numbers used on the V series are IEEE 32-bit single precision ones.

Contents	F0 (= \$u n)		F1									
Version inquiry	n	Station number	4									
	n + 1	Command: 201 (HEX)										
	n + 2	Unit type 0: Main CPU application area 1: Main CPU core area 2: Driver CPU										
	n + 3	Device number										
	n + 4	Model code										
	n + 5	Unit code										
	n + 6	Version number										
	n + 7	Year (4-digit)										
	n + 8	Month										
	n + 9	Day										
	n + 10	Hour										
	n + 11	Minute										
	n + 12	Second										
Effective point data count inquiry	n	Station number	2									
	n + 1	Command: 208 (HEX)										
	n + 2	Effective point data count										
Effective point data inquiry	n	Station number	3									
	n + 1	Command: 209 (HEX)										
	n + 2	Inquiry point number										
	n + 3	Effective point data count										
	n + 4	Point number										
	n + 5	Axis pattern: m (number of ON bits) <div style="display: flex; align-items: center; justify-content: center;"> Bit <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td> </tr> </table> <div style="margin-left: 10px;"> Axis 1 : Axis 8 </div> </div>		-	7	6	5	4	3	2	1	0
	-	7		6	5	4	3	2	1	0		
	n + 6	Acceleration										
	n + 7	Deceleration										
	n + 8	Speed										
	n + 9 to n + 10	Axis pattern 1		Position data								
n + 11 -	:											
	Axis pattern m	Position data										

Contents	F0 (= \$u n)		F1									
Real variable inquiry Disabled for X-SEL version 0.41 or earlier	n	Station number										
	n + 1	Command: 20F (HEX)										
	n + 2	Program number										
	n + 3	Inquiry start variable number										
	n + 4	Inquiry data count: m (1 to 10)										
	n + 5	Response start variable number										
	n + 6	Response variable data count: m										
	n + 7 to n + 8	Data count 1	Data for variable									
	n + 9 -	:										
	Data count m	Data for variable										
Axis status inquiry	n	Station number										
	n + 1	Command: 212 (HEX)										
	n + 2	Inquiry axis pattern: m (number of ON bits) <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">Bit</div> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="width: 15px;">-</td> <td style="width: 15px;">7</td> <td style="width: 15px;">6</td> <td style="width: 15px;">5</td> <td style="width: 15px;">4</td> <td style="width: 15px;">3</td> <td style="width: 15px;">2</td> <td style="width: 15px;">1</td> <td style="width: 15px;">0</td> </tr> </table> <div style="margin-left: 10px; text-align: right;"> Axis 1 ⋮ Axis 8 </div> </div>		-	7	6	5	4	3	2	1	0
	-	7	6	5	4	3	2	1	0			
	n + 3	Status m = 1	Axis status									
	n + 4		Axis sensor input status									
	n + 5		Axis-related error code									
	n + 6		Encoder status									
	n + 7 to n + 8		Current position									
n + 9 -	Status (m = 2)	:										
	:											
Program status inquiry	n	Station number										
	n + 1	Command: 213 (HEX)										
	n + 2	Program number										
	n + 3	Status										
	n + 4	Running program step number										
	n + 5	Program-sensitive error code										
	n + 6	Error occurrence step number										
System status inquiry	n	Station number										
	n + 1	Command: 215 (HEX)										
	n + 2	System mode										
	n + 3	Most significant level system error number										
	n + 4	Most recent system error number										
	n + 5	System status byte 1										
	n + 6	System status byte 2										
	n + 7	System status byte 3										
n + 8	System status byte 4											

Contents	F0 (= \$u n)		F1									
Error detailed information inquiry	n	Station number	5									
	n + 1	Command: 216 (HEX)										
	n + 2	Type 1 0: System error 1: Axis error 2: Program error 3: Error in error list record										
	n + 3	Type 2 In the event of a system error: 0: most significant level error 1: most recent error In the event of an axis error: Axis number In the event of a program error: Program number In the event of an error in error list record: Record number										
	n + 4	Error number										
	n + 5 to n + 6	Detailed information 1										
	n + 7 to n + 8	Detailed information 2										
	n + 9 to n + 10	Detailed information 3										
	n + 11 to n + 12	Detailed information 4										
	n + 13 to n + 14	Detailed information 5										
	n + 15 to n + 16	Detailed information 6										
	n + 17 to n + 18	Detailed information 7										
	n + 19 to n + 20	Detailed information 8										
	n + 21 to n + 27	System reserved										
n + 28	Number of message bytes											
n + 29 -	Message character string (equivalent to message bytes)											
Servo ON/OFF	n	Station number	4									
	n + 1	Command: 232 (HEX)										
	n + 2	Axis pattern <div style="display: flex; align-items: center;"> Bit <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="width: 15px;">-</td> <td style="width: 15px;">7</td> <td style="width: 15px;">6</td> <td style="width: 15px;">5</td> <td style="width: 15px;">4</td> <td style="width: 15px;">3</td> <td style="width: 15px;">2</td> <td style="width: 15px;">1</td> <td style="width: 15px;">0</td> </tr> </table> <div style="margin-left: 10px; text-align: right;"> Axis 1 : Axis 8 </div> </div>		-	7	6	5	4	3	2	1	0
-	7	6	5	4	3	2	1	0				
n + 3	Servo 0: ON 1: OFF											
Origin return	n	Station number	5									
	n + 1	Command: 233 (HEX)										
	n + 2	Axis pattern <div style="display: flex; align-items: center;"> Bit <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="width: 15px;">-</td> <td style="width: 15px;">7</td> <td style="width: 15px;">6</td> <td style="width: 15px;">5</td> <td style="width: 15px;">4</td> <td style="width: 15px;">3</td> <td style="width: 15px;">2</td> <td style="width: 15px;">1</td> <td style="width: 15px;">0</td> </tr> </table> <div style="margin-left: 10px; text-align: right;"> Axis 1 : Axis 8 </div> </div>		-	7	6	5	4	3	2	1	0
	-	7		6	5	4	3	2	1	0		
n + 3	End search speed for origin return (mm/sec)											
n + 4	Creep speed for origin return (mm/sec)											

Contents	F0 (= \$u n)		F1									
Traverse by absolute command	n	Station number	6 + (2*m)									
	n + 1	Command: 234 (HEX)										
	n + 2	Axis pattern: m (number of ON bits) Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td> </tr> </table> 		-	7	6	5	4	3	2	1	0
	-	7		6	5	4	3	2	1	0		
	n + 3	Acceleration										
	n + 4	Deceleration										
	n + 5	Speed										
	n + 6 to n + 7	Axis pattern (m = 1)		Absolute coordinate data								
	n + 8 -	Axis pattern (m = 2)		Absolute coordinate data								
	:											
Traverse by relative command	n	Station number	6 + (2*m)									
	n + 1	Command: 235 (HEX)										
	n + 2	Axis pattern: m (number of ON bits) Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td> </tr> </table> 		-	7	6	5	4	3	2	1	0
	-	7		6	5	4	3	2	1	0		
	n + 3	Acceleration										
	n + 4	Deceleration										
	n + 5	Speed										
	n + 6 to n + 7	Axis pattern (m = 1)		Relative coordinate data								
	n + 8 -	Axis pattern (m = 2)		Relative coordinate data								
	:											
Jog/inching traverse	n	Station number	9									
	n + 1	Command: 236 (HEX)										
	n + 2	Axis pattern m Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td> </tr> </table> 		-	7	6	5	4	3	2	1	0
	-	7		6	5	4	3	2	1	0		
	n + 3	Acceleration										
	n + 4	Deceleration										
	n + 5	Speed										
	n + 6 to n + 7	Inching distance (absolute command) 0: Distance not designated = jog										
n + 8	Direction 0: Negative direction 1: Positive direction											

Contents	F0 (= \$u n)		F1										
Traverse by point number command	n	Station number	7										
	n + 1	Command: 237 (HEX)											
	n + 2	Axis pattern Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td> </tr> </table> 		-	7	6	5	4	3	2	1	0	
	-	7		6	5	4	3	2	1	0			
	n + 3	Acceleration											
	n + 4	Deceleration											
	n + 5	Speed											
n + 6	Point number												
Operation stop and cancel	n	Station number	4										
	n + 1	Command: 238 (HEX)											
	n + 2	Stop axis pattern Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td> </tr> </table> 		-	7	6	5	4	3	2	1	0	
	-	7		6	5	4	3	2	1	0			
n + 3	Additional command												
Successive writing within designated point data range	n	Station number	α										
	n + 1	Command: 244 (HEX)											
	n + 2	Change start point data number											
	n + 3	Change point data count: t (1 to 2)											
	n + 4	Point data t = 1		Axis pattern: m (number of ON bits) Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td> </tr> </table> 	-	7	6	5	4	3	2	1	0
	-			7	6	5	4	3	2	1	0		
	n + 5			Acceleration									
	n + 6			Deceleration									
	n + 7			Speed									
	n + 8 to n + 9			Axis pattern (m = 1)	Position data								
				Axis pattern (m = 2)	Position data								
	n + 10 to α			:									
Point data (t = 2)			:										
α + 1	Change start point data number												
α + 2	Change complete point data count												

Contents	F0 (= \$u n)		F1									
Change point data successive writing	n	Station number	α									
	n + 1	Command: 245 (HEX)										
	n + 2	Change point data count: t (1 to 2)										
	n + 3	Point data		Change point data number								
	n + 4			Axis pattern: m (number of ON bits)								
				Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td> </tr> </table> <div style="display: inline-block; vertical-align: middle; margin-left: 100px;"> └─ Axis 1 : └─ Axis 8 </div>	-	7	6	5	4	3	2	1
	-			7	6	5	4	3	2	1	0	
	n + 5			t = 1	Acceleration							
	n + 6				Deceleration							
	n + 7				Speed							
	n + 8 to n + 9				Axis pattern (m = 1)	Position data						
Axis pattern (m = 2)			Position data									
n + 10 to α	:											
	Point data (t = 2)											
$\alpha + 1$	Change complete point data count											
Point data clear	n	Station number	4									
	n + 1	Command: 246 (HEX)										
	n + 2	Clear start point data number										
	n + 3	Clear point data count										
Real variable change	n	Station number	$5 + (2^*m)$									
	n + 1	Command: 24D (HEX)										
	n + 2	Program number										
	n + 3	Change start variable number										
	n + 4	Change variable data count: m (1 to 10)										
	n + 5 to n + 6	Variable data (m = 1)		Real variable data								
		Variable data (m = 2)		Real variable data								
	n + 7 -	:										
n + [5 + (2*m)]	Change complete data count											
Alarm reset	n	Station number	2									
	n + 1	Command: 252 (HEX)										
Program execute	n	Station number	3									
	n + 1	Command: 253 (HEX)										
	n + 2	Program number										
Program end	n	Station number	3									
	n + 1	Command: 254 (HEX)										
	n + 2	Program number										
Program pause	n	Station number	3									
	n + 1	Command: 255 (HEX)										
	n + 2	Program number										
Program one step execution	n	Station number	3									
	n + 1	Command: 256 (HEX)										
	n + 2	Program number										
Program execution restart	n	Station number	3									
	n + 1	Command: 257 (HEX)										
	n + 2	Program number										

Contents	F0 (= \$u n)		F1						
Software reset	n	Station number	2						
	n + 1	Command: 25B (HEX)							
Request for drive source recovery	n	Station number	2						
	n + 1	Command: 25C (HEX)							
Request for operation pause cancel	n	Station number	2						
	n + 1	Command: 25E (HEX)							
Speed change	n	Station number	4						
	n + 1	Command: 262 (HEX)							
	n + 2	Axis pattern							
		Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>-</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td> </tr> </table> Axis 1 : Axis 8		-	7	6	5	4	3
-	7	6	5	4	3	2	1	0	
n + 3	Speed								

 Response code: data stored from temperature controller to V series

Wiring

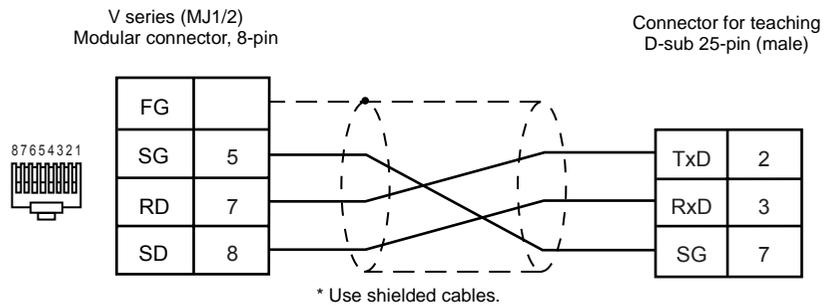


Pin Nos. 3 and 4 on the V series and 18, 23 and 25 on the super SEL controller are provided for external power supply.

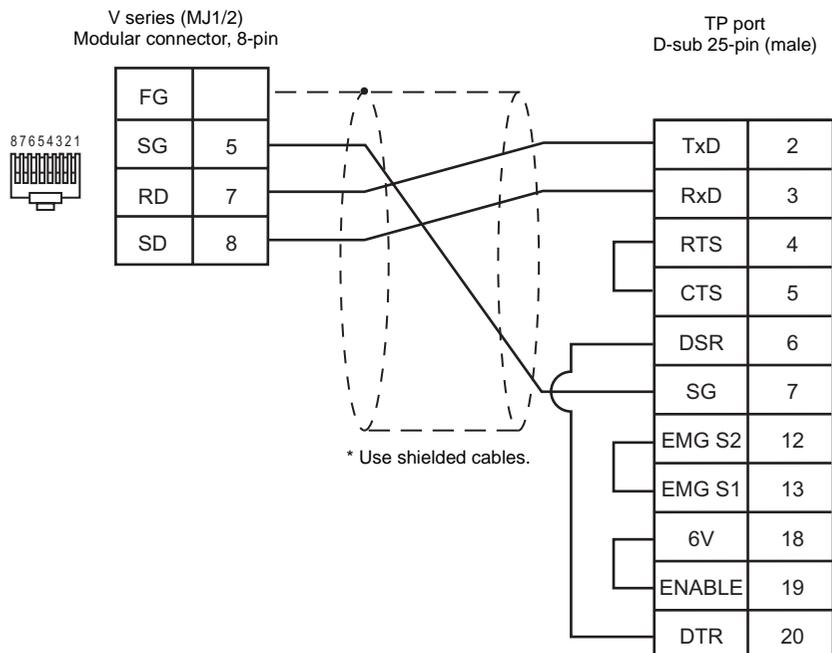
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

When using an X-SEL controller (general-purpose type), connect the HOST port to the V series. The TP port is not usable.

RS-232C (Super SEL controller)



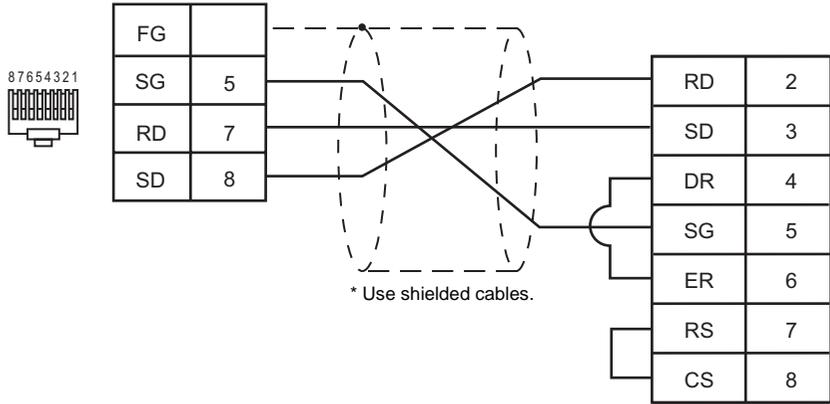
RS-232C (X-SEL controller)



RS-232C (X-SEL controller)

V series (MJ1/2)
Modular connector, 8-pin

HOST port
D-sub 9-pin (female)



LG

Model List

Model	Lst File	Tem File
iS5	LG_iS5.Lst	LG_iS3.tem
iG5	LG_iG5.Lst	

iS5

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the inverter.

Item	V-SFT Setting	Setting on Inverter
Baud rate	9600 bps	9600 bps
Parity	None (fixed)	None (fixed)
Data length	8 (fixed)	8 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	1 to 31 ^{*1}	1 to 31
Optional board type	-	6: RS485

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
-	0	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

iG5

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the inverter.

Item	V-SFT Setting	Setting on Inverter
Baud rate	9600 bps	9600 bps
Parity	None (fixed)	None (fixed)
Data length	8 (fixed)	8 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	1 to 31 ^{*1}	1 to 31
Operation mode	-	3: RS485
Frequency	-	5: RS485
Communication protocol selection	-	0: LG protocol

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
-	0	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

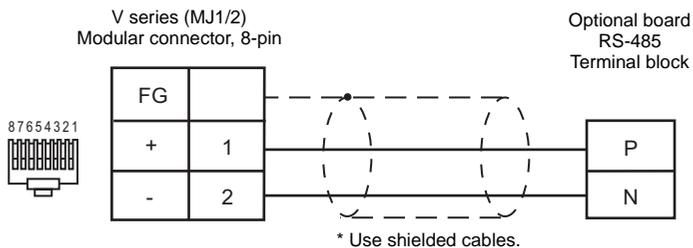
Refer to page 34.

Wiring

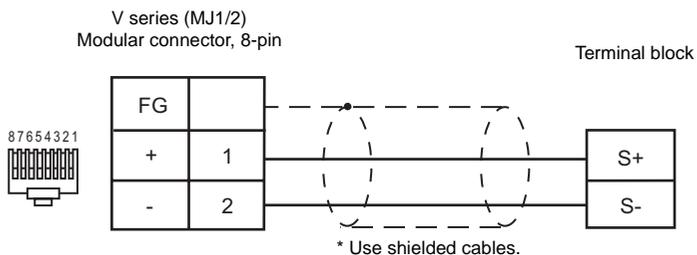


Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-485 (iS5)



RS-485 (iG5)



EUROTHERM

Model List

Model	Lst File	Tem File
2400 Series (MODBUS RTU)	ET_2400.Lst	Modbus.tem

2400 Series (MODBUS RTU)

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the controller.

Item	V-SFT Setting	Setting on Controller
Baud rate	9600 bps	9600 bps
Parity	None	None
Data length	8 (fixed)	8 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	1 to 31 ^{*1}	1 to 31

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
0 (output coil)	0	
4 (holding register)	2	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

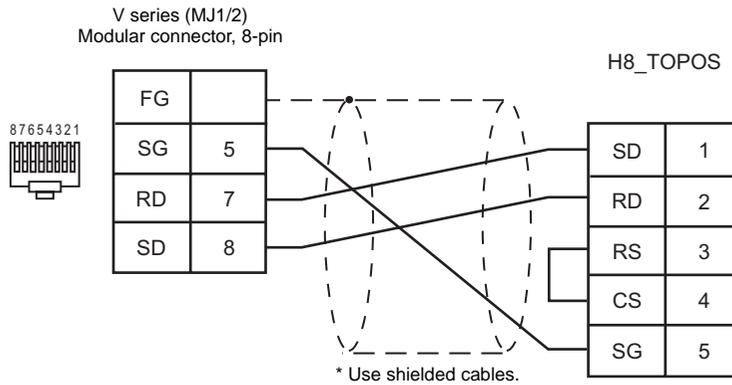
Refer to page 34.

Wiring

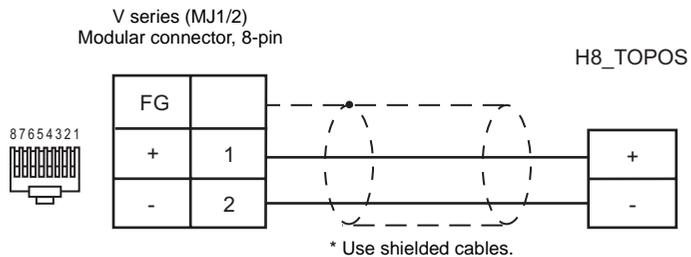


Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-232C



RS-485



UNIPULSE

Model List

Model	Lst File	Tem File
F340A	UP_F340A.Lst	UP_F3.tem
F371	UP_F371.Lst	

F340A

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the weight indicator.

Item	V-SFT Setting	Setting on Controller
Baud rate	4800 bps	4800 bps
Parity	None	None
Data length	7	7
Stop bit	1	1
Station number	0 to 31 ^{*1}	0 to 31
Communication mode	–	0 (communication by command)

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
R (designated value/status readout)	0	Read only
W (set value)	1	Read only for W24 and W34

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
	n	Station number	
Hold	n	Station number	2
	n + 1	Command: 0	
Hold reset	n	Station number	2
	n + 1	Command: 1	
Digital zero	n	Station number	2
	n + 1	Command: 2	
Digital zero reset	n	Station number	2
	n + 1	Command: 3	
Print command	n	Station number	2
	n + 1	Command: 4	

◆ Indirect Memory Designation

Refer to page 34.

F371

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the controller.

Item	V-SFT Setting	Setting on Controller
Baud rate	4800 bps	4800 bps
Parity	None	None
Data length	7	7
Stop bit	1	1
Station number	0 to 31 ^{*1}	0 to 31
Communication mode	-	Communication mode 0 ^{*2}

*1 Set this parameter on the [Memory Input] dialog.

*2 Required for communications via RS-232C

◆ Available Memory

Memory	Type	Remarks
R (designated value/status readout)	0	Read only
W (set value)	1	
RG (waveform data readout)	2	Read only

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
Digital zero	n	Station number	2
	n + 1	Command: 2	
Digital zero reset	n	Station number	2
	n + 1	Command: 3	
Print command	n	Station number	2
	n + 1	Command: 4	
Waveform hold point data readout	n	Station number	2
	n + 1	Command: 5	
	n + 2	Data number	
	n + 3 to n + 4	Data	

 Response code: data stored from controller to V series

◆ Indirect Memory Designation

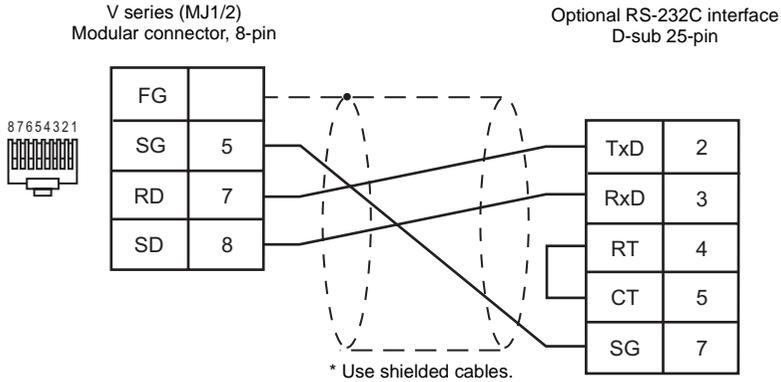
Refer to page 34.

Wiring

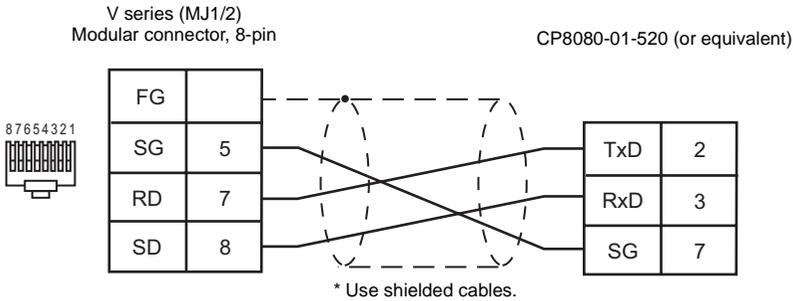


Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

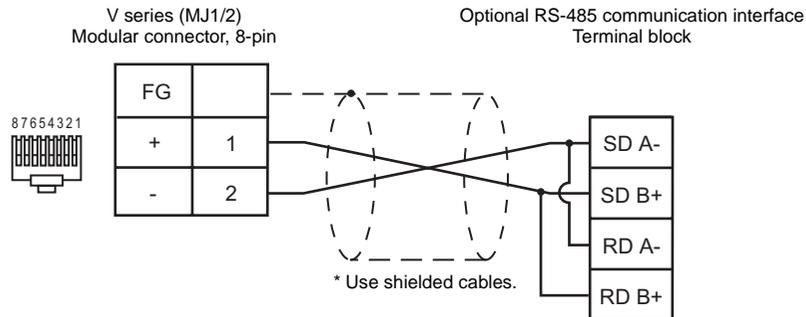
RS-232C (F340A)



RS-232C (F371)



RS-485 (F371)



Hitachi

Model List

Model	Lst File	Tem File
SJ300 Series	H_SJ300.Lst	H_VX.tem
L300P Series	H_L300P.Lst	

SJ300 Series/L300P Series

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the inverter.

Item	V-SFT Setting	Setting on Inverter
Baud rate	4800 bps	4800 bps
Parity	None	None
Data length	7	7
Stop bit	1	1
Station number	1 to 31 ^{*1}	1 to 31

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
d	0	Read only
F	1	
A	2	
b	3	
C	4	
H	5	
P	6	
T (relay after trip)	7	Read only

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
Normal rotation/reverse rotation/stop command	n	Station number	3
	n + 1	Command 0	
	n + 2	0: Stop 1: Normal rotation 2: Reverse rotation	
Frequency command setting	n	Station number	4
	n + 1	Command 1	
	n + 2 to n + 3	Frequency	

Contents	F0 (= \$u n)		F1
	n	Station number	
Intelligent terminal status setting	n + 1	Command 2	6
	n + 2	Data (HH) Bit 0*: STAT: pulse string input permission	
	n + 3	Data (HL) Bit 0: SF1: multispeed (bit operation) Bit 1: SF2: multispeed (bit operation) Bit 2: SF3: multispeed (bit operation) Bit 3: SF4: multispeed (bit operation) Bit 4: SF5: multispeed (bit operation) Bit 5: SF6: multispeed (bit operation) Bit 6: SF7: multispeed (bit operation) Bit 7: OLR: overload limit setting Bit 8*: TL: with/without torque limit Bit 9*: TRQ1: torque limit setting 1 Bit 10*: TRQ2: torque limit setting 2 Bit 11*: PPI: P/PI selection Bit 12*: BOK: brake confirmation Bit 13*: ORT: orientation Bit 14*: LAC: LAD cancel Bit 15*: PCLR: position deviation clear	
	n + 4	Data (LH) Bit 0: AT: analog input setting Bit 1*: SET3: third control Bit 2: RS: reset Bit 3: - Bit 4: STA: 3-wire start Bit 5: STP: 3-wire holding Bit 6: F/R: 3-wire normal/reverse rotation Bit 7: PID: PID selection Bit 8: PIDC: PID integral reset Bit 9: - Bit 10*: CAS: control gain setting Bit 11: UP: remote control acceleration Bit 12: DWN: remote control deceleration Bit 13: UDC: remote control data clear Bit 14: - Bit 15: OPE: forced operation	
	n + 5	Data (LL) Bit 0: FW: normal rotation command Bit 1: RV: reverse rotation command Bit 2: CF1: multispeed 1 (binary operation) Bit 3: CF2: multispeed 2 (binary operation) Bit 4: CF3: multispeed 3 (binary operation) Bit 5: CF4: multispeed 4 (binary operation) Bit 6: JG: jogging (inching) Bit 7: DB: external DC brake Bit 8: SET: second control Bit 9: 2CH: 2-step acceleration/deceleration Bit 10: - Bit 11: FRS: free-run stop Bit 12: EXP: external trip Bit 13: USP: restart prevention at power-on again Bit 14: CS: commercial power selection Bit 15: SFT: software lock (control terminal block)	
Inverter status readout	n	Station number	2
	n + 1	Command 4	
	n + 2	Status A	
	n + 3	Status B	
	n + 4	Status C	
Returning set values to defaults	n	Station number	2
	n + 1	Command 8	
EEPROM storage permission check	n	Station number	2
	n + 1	Command 9	
	n + 2	01: Allowed	

Contents	F0 (= \$u n)		F1
	Set value storage in EEPROM	n	
n + 1		Command 10	
Internal constant recalculation	n	Station number	
	n + 1	Command 11	

 Response code: data stored from inverter to V series

* Enabled for SJ300 only

◆ **Indirect Memory Designation**

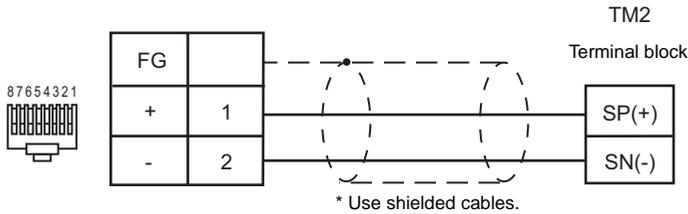
Refer to page 34.

Wiring

Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-485

V series (MJ1/2)
Modular connector, 8-pin



Yaskawa Electric

Model List

Model	Lst File	Tem File
VS mini V7 Series	Vsmini.Lst	Vsmini.tem

VS mini V7 Series

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the inverter.

Item	V-SFT Setting	Setting on Inverter
Baud rate	9600 bps	9600 bps
Parity	Even	Even
Data length	8 (fixed)	8 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	0 to 31 ^{**2}	1 to 31 ^{**1}
RTS control	–	0: Provided

*1 If the inverter is set as station No. 0, communications are not available. Be sure to set a value other than "0".

*2 Set this parameter on the [Memory Input] dialog.
Select station number 0 for a broadcast command.

◆ Available Memory

Memory	Type	Remarks
4 (holding register)	2	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

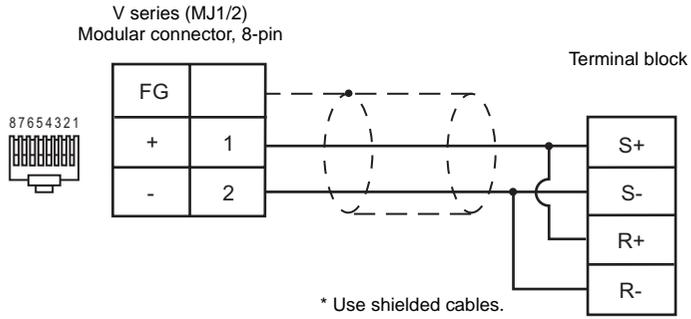
Refer to page 34.

Wiring



Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-485



M-SYSTEM

Model List

Model	Lst File	Tem File
R1M Series (MODBUS RTU)	MSYS_R1M.Lst	Modbus.tem
R5 Series (MODBUS RTU)	MSYS_R5.Lst	

R1M Series

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the controller.

Item	V-SFT Setting	Setting on Controller
Baud rate	38400 bps	38400 bps
Parity	Odd	Odd
Data length	8 (fixed)	8 (fixed)
Stop bit	1	1
Station number	1 to 31 ^{**1}	1 to 31

* Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
0 (coil)	0	
1 (input status)	1	Read only
4 (holding register)	2	
3 (input register)	3	Read only

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

R5 Series

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the temperature controller.

Item	V-SFT Setting	Setting on Controller
Baud rate	19200 bps	19200 bps
Parity	Odd	Odd
Data length	8 (fixed)	8 (fixed)
Stop bit	1	1
Station number	1 to 31 ^{*1}	1 to 31

*1 Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
0 (coil)	0	
1 (input status)	1	Read only
4 (holding register)	2	
3 (input register)	3	Read only

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

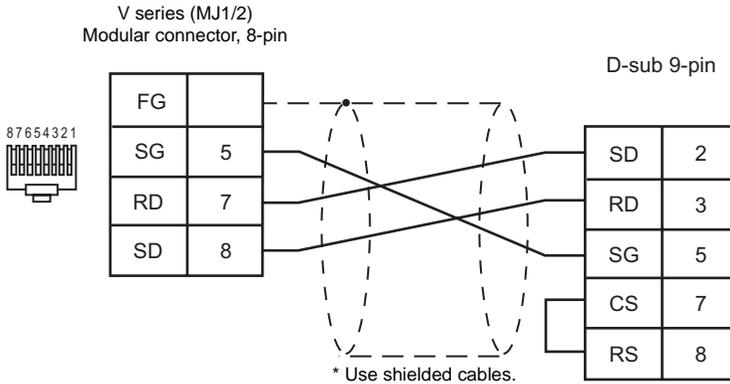
Refer to page 34.

Wiring

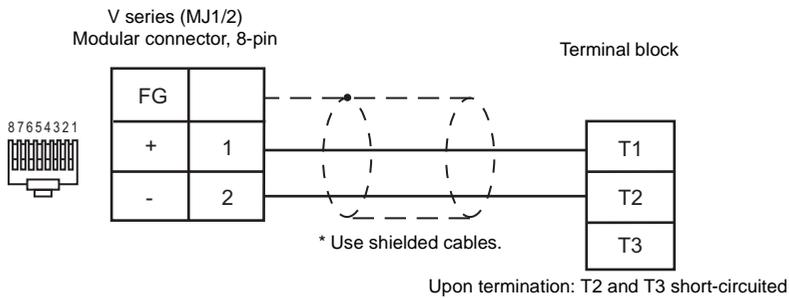


Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

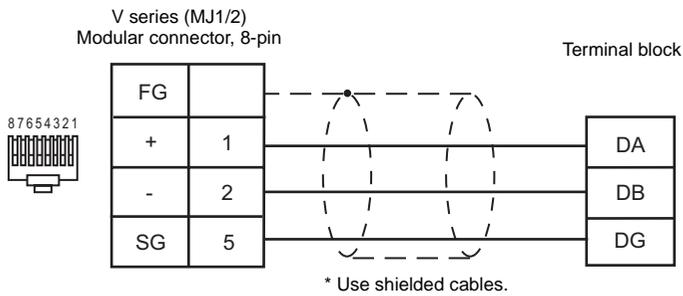
RS-232 (R1M series)



RS-485 (R1M series)



RS-485 (R5 series)



SAMSUNG

Model List

Model	Lst File	Tem File
MOSCON-E7	MOSCON-E7.Lst	MOSCON-E7.tem

MOSCON-E7

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the inverter.

Item	V-SFT Setting	Setting on Inverter
Baud rate	9600 bps	9600 bps
Parity	None	None
Data length	8	8
Stop bit	1	1
Station number	1 - 31 ^{**1}	1 - 31

* Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
U (Monitoring Functions)	0	
UU (Monitoring Functions Fault List)	1	Double-word
B (Basic Setup Functions)	2	
F (Frequency Control Functions)	3	
S (System Adjustment Functions)	4	
C (H/W Functionality Setup)	5	
H (I/O Control Functions)	6	
P (Protective Functions)	7	
E (Error Status)	8	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

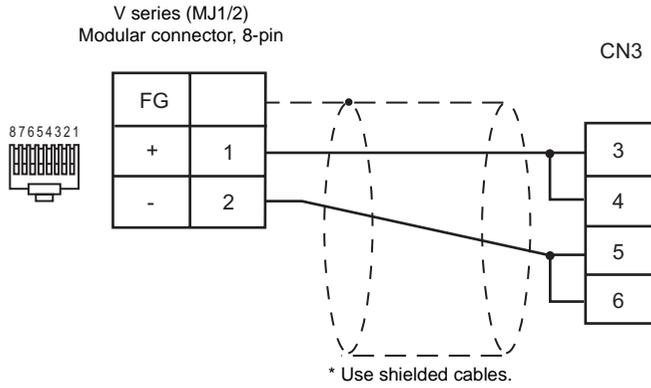
Refer to page 34.

Wiring



Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-485



SUNX

Model List

Model	Lst File	Tem File
LP-200	LP-200.Lst	SUNXLP.tem

LP-200

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the laser marker.

Item	V-SFT Setting	Setting on Laser Marker
Baud rate	9600 bps	9600 bps
Parity	None	None
Data length	8 (fixed)	8 (fixed)
Stop bit	1	1
Sumcheck	Not provided	Not provided
CR/LF	CR	CR

◆ Available Memory

Memory	Type	Remarks
FNM (registered file name)	0	String (10 words)
FNO (file number change)	1	
STR (printed string)	2	String (30 words)
MCS (printed string: 1-byte character)	3	String (15 words)
LMT (date of limit)	4	
CNT (counter)	5	
LTC (lot condition)	6	
CDF (CAD file)	7	String (4 words)
ALC (all conditions)	8	
CDC (CAD file)	9	
FST (file setting)	10	
WDC (printed line width correction)	11	
WTC (print quality adjustment)	12	
TRG (trigger condition)	13	
DLY (delay)	14	
YMD (year, month, day and time)	15	
ERA (name of the era)	16	
ENV (I/O environment)	17	
PST (print setting)	18	
STS (status request)	19	Read only

◆ TEMP_CTL

Contents	F0 (= \$u n)		F1
File overwriting registration	n	Station number: 0 (fixed)	2
	n + 1	Command: 00A1H	
File registration	n	Station number: 0 (fixed)	3
	n + 1	Command: 00A2H	
	n + 2	File number	
Lot string Readout	n	Station number: 0 (fixed)	4
	n + 1	Command: 0023H	
	n + 2	Lot function number	
	n + 3	Period number	
	n + 4 to n + 5	Start period	
	n + 6 to n + 7	End period	
Lot string Setting	n	Station number: 0 (fixed)	8 + t
	n + 1	Command: 00A3H	
	n + 2	Lot function number	
	n + 3	Period number	
	n + 4 to n + 5	Start period	
	n + 6 to n + 7	End period	
	n + 8 -	Set string: t (0 - 9 words)	
Step and repeat setting Readout	n	Station number: 0 (fixed)	3
	n + 1	Command: 0024H	
	n + 2	List line: 00 - 99	
	n + 3	Adjustment type: 0 (setting deletion) Adjustment type: 1 (single adjustment) Adjustment type: 2 (print OFF) Adjustment type: 3 (all-column adjustment) Adjustment type: 4 (all-line adjustment) Adjustment type: 5 (column adjustment) Adjustment type: 6 (line adjustment)	
	n + 4	Adjustment type 1, 2, 4, or 6: target line Adjustment type 3 or 5: target column	
	n + 5	Adjustment type 1 or 2: target column Adjustment type 3, 4, 5, or 6: X-axis adjustment	
	n + 6	Adjustment type 1: X-axis adjustment Adjustment type 3, 4, 5, or 6: Y-axis adjustment	
	n + 7	Adjustment type 1: Y-axis adjustment	
Step and repeat setting Setting deletion	n	Station number: 0 (fixed)	4
	n + 1	Command: 00A4H	
	n + 2	List line: 00 - 99	
	n + 3	Adjustment type: 0 (setting deletion)	
Step and repeat setting Single adjustment	n	Station number: 0 (fixed)	88
	n + 1	Command: 00A4H	
	n + 2	List line: 00 - 99	
	n + 3	Adjustment type: 1 (single adjustment)	
	n + 4	Target line	
	n + 5	Target column	
	n + 6	X-axis adjustment	
n + 7	Y-axis adjustment		

Contents	F0 (= \$u n)		F1
	n		
Step and repeat setting Print OFF	n	Station number: 0 (fixed)	6
	n + 1	Command: 00A4H	
	n + 2	List line: 00 - 99	
	n + 3	Adjustment type: 2 (print OFF)	
	n + 4	Target line	
	n + 5	Target column	
Step and repeat setting All-column adjustment	n	Station number: 0 (fixed)	7
	n + 1	Command: 00A4H	
	n + 2	List line: 00 - 99	
	n + 3	Adjustment type: 3 (all-column adjustment)	
	n + 4	Target column	
	n + 5	X-axis adjustment	
Step and repeat setting All-line adjustment	n	Station number: 0 (fixed)	7
	n + 1	Command: 00A4H	
	n + 2	List line: 00 - 99	
	n + 3	Adjustment type: 4 (all-line adjustment)	
	n + 4	Target line	
	n + 5	X-axis adjustment	
Step and repeat setting Column adjustment	n	Station number: 0 (fixed)	7
	n + 1	Command: 00A4H	
	n + 2	List line: 00 - 99	
	n + 3	Adjustment type: 5 (column adjustment)	
	n + 4	Target column	
	n + 5	X-axis adjustment	
Step and repeat setting Line adjustment	n	Station number: 0 (fixed)	7
	n + 1	Command: 00A4H	
	n + 2	List line: 00 - 99	
	n + 3	Adjustment type: 6 (line adjustment)	
	n + 4	Target column	
	n + 5	X-axis adjustment	
n + 6	Y-axis adjustment		

Contents	F0 (= \$u n)		F1
	n		
Character condition reading Straight/straight proportional	n	Station number: 0 (fixed)	3
	n + 1	Command: 0025H	
	n + 2	Condition number: 1 - 30	
	n + 3	Start line: 1 - 30	
	n + 4	End line: 1 - 30	
	n + 5	Text flow 0: straight, 4: straight proportional	
	n + 6	Character height: 0.20 - 90.00 mm	
	n + 7	Character width: 0.20 - 90.00 mm	
	n + 8	X position: -45.00 - +45.00 mm	
	n + 9	Y position: -45.00 - +45.00 mm	
	n + 10	Character spacing: 0.0 - 45.00 mm	
	n + 11	Line spacing: 0.0 - 45.00 mm	
	n + 12	Font setting: 1: font 1, 2: font 2	
	n + 13	Character thickness: 0.0 - 5.76 mm	
	n + 14	Laser power correction: 0 - 200%	
n + 15	Scan speed correction: 50 - 200%		
Character condition reading Gradient/gradient proportional	n	Station number: 0 (fixed)	3
	n + 1	Command: 0025H	
	n + 2	Condition number: 1 - 30	
	n + 3	Start line: 1 - 30	
	n + 4	End line: 1 - 30	
	n + 5	Text flow 1: gradient, 4: gradient proportional	
	n + 6	Character height: 0.20 - 90.00 mm	
	n + 7	Character width: 0.20 - 90.00 mm	
	n + 8	X position: -45.00 - +45.00 mm	
	n + 9	Y position: -45.00 - +45.00 mm	
	n + 10	Character spacing: 0.0 - 45.00 mm	
	n + 11	Line spacing: 0.0 - 45.00 mm	
	n + 12	Gradient angle: -180.0 - +180.0	
	n + 13	Font designation: 1: font 1, 2: font 2	
	n + 14	Character thickness: 0.0 - 5.76 mm	
n + 15	Laser power correction: 0 - 200%		
n + 16	Scan speed correction: 50 - 200%		

Contents	F0 (= \$u n)		F1
Character condition reading Sector shape	n	Station number: 0 (fixed)	3
	n + 1	Command: 0025H	
	n + 2	Condition number: 1 - 30	
	n + 3	Start line: 1 - 30	
	n + 4	End line: 1 - 30	
	n + 5	Text flow 2: outside the clockwise sector 3: inside the counterclockwise sector	
	n + 6	Character height: 0.20 - 90.00 mm	
	n + 7	Character width: 0.20 - 90.00 mm	
	n + 8	Center position X: -300.00 - +300.00 mm	
	n + 9	Center position Y: -300.00 - +300.00 mm	
	n + 10	Radius: 0.0 - +300.00 mm	
	n + 11	Line pitch radius: 0.0 - 45.00 mm	
	n + 12	Start angle: -180.0 - +180.0°	
	n + 13	Character spacing angle: -180.0 - +180.0°	
	n + 14	Font designation: 1: font 1, 2: font 2	
	n + 15	Character thickness: 0.0 - 5.76 mm	
	n + 16	Laser power correction: 0 - 200%	
n + 17	Scan speed correction: 50 - 200%		
Character condition writing Straight/straight proportional	n	Station number: 0 (fixed)	16
	n + 1	Command: 00A5H	
	n + 2	Condition number: 1 - 30	
	n + 3	Start line: 1 - 30	
	n + 4	End line: 1 - 30	
	n + 5	Text flow 0: straight, 4: straight proportional	
	n + 6	Character height: 0.20 - 90.00 mm	
	n + 7	Character width: 0.20 - 90.00 mm	
	n + 8	X position: -45.00 - +45.00 mm	
	n + 9	Y position: -45.00 - +45.00 mm	
	n + 10	Character spacing: 0.0 - 45.00 mm	
	n + 11	Line spacing: 0.0 - 45.00 mm	
	n + 12	Font setting: 1: font 1, 2: font 2	
	n + 13	Character thickness: 0.0 - 5.76 mm	
	n + 14	Laser power correction: 0 - 200%	
n + 15	Scan speed correction: 50 - 200%		

Contents	F0 (= \$u n)		F1
Character condition writing Gradient/gradient proportional	n	Station number: 0 (fixed)	17
	n + 1	Command: 00A5H	
	n + 2	Condition number: 1 - 30	
	n + 3	Start line: 1 - 30	
	n + 4	End line: 1 - 30	
	n + 5	Text flow 1: gradient, 4: gradient proportional	
	n + 6	Character height: 0.20 - 90.00 mm	
	n + 7	Character width: 0.20 - 90.00 mm	
	n + 8	X position: -45.00 - +45.00 mm	
	n + 9	Y position: -45.00 - +45.00 mm	
	n + 10	Character spacing: 0.0 - 45.00 mm	
	n + 11	Line spacing: 0.0 - 45.00 mm	
	n + 12	Gradient angle: -180.0 - +180.0	
	n + 13	Font designation: 1: font 1, 2: font 2	
	n + 14	Character thickness: 0.0 - 5.76 mm	
	n + 15	Laser power correction: 0 - 200%	
n + 16	Scan speed correction: 50 - 200%		
Character condition writing Sector shape	n	Station number: 0 (fixed)	18
	n + 1	Command: 00A5H	
	n + 2	Condition number: 1 - 30	
	n + 3	Start line: 1 - 30	
	n + 4	End line: 1 - 30	
	n + 5	Text flow 2: outside the clockwise sector 3: inside the counterclockwise sector	
	n + 6	Character height: 0.20 - 90.00 mm	
	n + 7	Character width: 0.20 - 90.00 mm	
	n + 8	Center position X: -300.00 - +300.00 mm	
	n + 9	Center position Y: -300.00 - +300.00 mm	
	n + 10	Radius: 0.0 - +300.00 mm	
	n + 11	Line pitch radius: 0.0 - 45.00 mm	
	n + 12	Start angle: -180.0 - +180.0°	
	n + 13	Character spacing angle: -180.0 - +180.0°	
	n + 14	Font designation: 1: font 1, 2: font 2	
	n + 15	Character thickness: 0.0 - 5.76 mm	
	n + 16	Laser power correction: 0 - 200%	
n + 17	Scan speed correction: 50 - 200%		
Counter reset	n	Station number: 0 (fixed)	2
	n + 1	Command: 00A6H	
Shutter	n	Station number: 0 (fixed)	3
	n + 1	Command: 00A7H	
	n + 2	Shutter status 0: closed, 1: open	
Print trigger	n	Station number: 0 (fixed)	3
	n + 1	Command: 00A8H	
	n + 2	Shutter status 0: stop, 1: start	

Contents	F0 (= \$u n)		F1
Laser 1-point irradiation	n	Station number: 0 (fixed)	3
	n + 1	Command: 00A9H	
	n + 2	Shutter status 0: stop, 1: start, 2: suspended	

 Response code: Data stored from temperature controller to V series

◆ Indirect Memory Designation

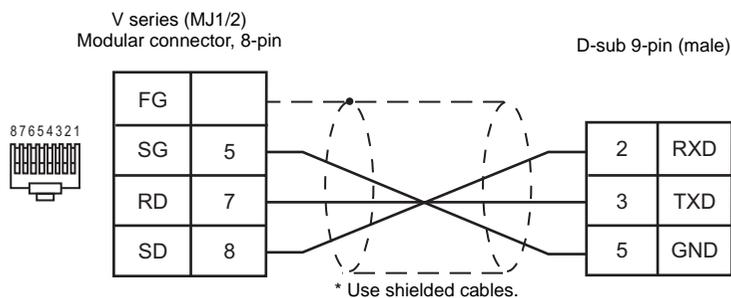
Refer to page 34.

Wiring



Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-232C



SANYO

Model List

Model	Lst File	Tem File
PB1 Series	SANYO_PB1.Lst	SanyoPB1.tem

PB1 Series

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the servo amplifier.

Item	V-SFT Setting	Setting on Servo Amplifier	
		Baud rate	9600 bps
Parity	Even (fixed)	Even (fixed)	-
Data length	8 (fixed)	8 (fixed)	-
Stop bit	1	1	-
Station number	0 - 15 ^{*1}	0 - F	Rotary switch

* Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
SS (command B)	0	
SW (command W)	1	
SD (command D)	2	Double-word
RS (R command B)	3	Read only
RW (R command W)	4	Read only
RD (R command D)	5	Read only, double-word

◆ TEMP_CTL

Contents	F0 (=Su n)		F1
Initialization	n	Station number	2
	n + 1	Command: 0001H	
Parameter clearing	n	Station number	2
	n + 1	Command: 0002H	
Parameter saving	n	Station number	2
	n + 1	Command: 0003H	
Parameter loading	n	Station number	2
	n + 1	Command: 0004H	
ABS counter presetting	n	Station number	4
	n + 1	Command: 0034H	
	n + 2 to n + 3	ABS counter presetting	
Relative movement 1	n	Station number	4
	n + 1	Command: 0038H	
	n + 2 to n + 3	Signed relative movement amount	
Absolute movement command 1	n	Station number	4
	n + 1	Command: 003AH	
	n + 2 to n + 3	Absolute movement amount	
Relative movement 2	n	Station number	14
	n + 1	Command: 003BH	
	n + 2 to n + 3	Speed	
	n + 4 to n + 5	Acceleration	
	n + 6 to n + 7	Deceleration	
	n + 8 to n + 9	Signed relative movement amount	
	n + 10 to n + 11	Current limit for pressing	
n + 12 to n + 13	Movement amount for pressing		
Absolute movement command 2	n	Station number	14
	n + 1	Command: 003DH	
	n + 2 to n + 3	Speed	
	n + 4 to n + 5	Acceleration	
	n + 6 to n + 7	Deceleration	
	n + 8 to n + 9	Absolute movement amount	
	n + 10 to n + 11	Current limit for pressing	
n + 12 to n + 13	Movement amount for pressing		
Low-speed movement command	n	Station number	8
	n + 1	Command: 003EH	
	n + 2 to n + 3	Speed	
	n + 4 to n + 5	Current for low-speed drive	
	n + 6 to n + 7	Relative movement amount	
Scan operation	n	Station number	7
	n + 1	Command: 0040H	
	n + 2	Rotation direction	
	n + 3	Speed	
	n + 4	Acceleration	
	n + 5	Deceleration	
n + 6	Current limit for pressing		

Contents	F0 (= \$u n)		F1
Scan stop	n	Station number	2
	n + 1	Command: 0041H	
Relative movement 3	n	Station number	14
	n + 1	Command: 0042H	
	n + 2 to n + 3	Speed	
	n + 4 to n + 5	Acceleration	
	n + 6 to n + 7	Deceleration	
	n + 8 to n + 9	Signed relative movement amount	
	n + 10 to n + 11	Current limit for pressing	
	n + 12 to n + 13	Movement amount for pressing	
Relative movement command 3	n	Station number	14
	n + 1	Command: 0044H	
	n + 2 to n + 3	Speed	
	n + 4 to n + 5	Acceleration	
	n + 6 to n + 7	Deceleration	
	n + 8 to n + 9	Absolute movement amount	
	n + 10 to n + 11	Current limit for pressing	
	n + 12 to n + 13	Movement amount for pressing	
Origin return	n	Station number	14
	n + 1	Command: 0045H	
	n + 2 to n + 3	Origin return type, rotation direction	
	n + 4 to n + 5	Origin return speed	
	n + 6 to n + 7	Origin return low speed	
	n + 8 to n + 9	Grid shift amount	
	n + 10 to n + 11	Current limit for pressing during origin return	
n + 12 to n + 13	Counter preset value		
Origin return without counter presetting	n	Station number	12
	n + 1	Command: 0046H	
	n + 2 to n + 3	Origin return type, rotation direction	
	n + 4 to n + 5	Origin return speed	
	n + 6 to n + 7	Origin return low speed	
	n + 8 to n + 9	Grid shift amount	
n + 10 to n + 11	Current limit for pressing during origin return		
Deviation clear	n	Station number	2
	n + 1	Command: 0047H	
Pause command	n	Station number	2
	n + 1	Command: 0048H	
Pause cancel	n	Station number	2
	n + 1	Command: 0049H	
Alarm reset	n	Station number	2
	n + 1	Command: 004AH	
Bit out	n	Station number	3
	n + 1	Command: 004BH	
	n + 2	General-purpose output port status	
Stop command	n	Station number	2
	n + 1	Command: 004CH	

Contents	F0 (= \$u n)		F1
Stop cancel	n	Station number	2
	n + 1	Command: 004DH	
Interlock	n	Station number	2
	n + 1	Command: 004EH	
Interlock cancel	n	Station number	2
	n + 1	Command: 004FH	
Start	n	Station number	2
	n + 1	Command: 0050H	
Step operation	n	Station number	4
	n + 1	Command: 0051H	
	n + 2	Program number	
	n + 3	Line number	
	n + 4	Next execution line	
Program stop	n	Station number	2
	n + 1	Command: 0052H	
EXE3 origin return storage	n	Station number	14
	n + 1	Command: 0053H	
	n + 2 to n + 3	Origin return type, rotation direction	
	n + 4 to n + 5	Origin return speed	
	n + 6 to n + 7	Origin return low speed	
	n + 8 to n + 9	Grid shift amount	
	n + 10 to n + 11	Current limit for pressing during origin return	
n + 12 to n + 13	Counter preset value		
Origin return start	n	Station number	2
	n + 1	Command: 0054H	
Designation of communication start target	n	Station number	4
	n + 1	Command: 0055H	
	n + 2	Point/program selection	
	n + 3	Point number/program number	
Point data RD * For details of direct commands and data (m), refer to "page 146".	n	Station number	3
	n + 1	Command: 0081H	
	n + 2	Point No.	
	n + 3	Direct command code *	
	n + 4 -	Data (m words) *	
Point storage command * For details of direct commands and data (m), refer to "page 146".	n	Station number	4 + m
	n + 1	Command: 0056H	
	n + 2	Point number	
	n + 3	Direct command code *	
	n + 4 -	Data (m words) *	
Program RD * For details of command codes and data (m), refer to "page 146".	n	Station number	4
	n + 1	Command: 0082H	
	n + 2	Program number	
	n + 3	Line number	
	n + 4	Command code *	
	n + 5 -	Data (m words) *	

Contents	F0 (= \$u n)		F1
	n	Station number	
Program storage * For details of command codes and data (m), refer to "page 146".	n + 1	Command: 0057H	5 + m
	n + 2	Program number	
	n + 3	Line number	
	n + 4	Program command code	
	n + 5 -	Data (m words) *	

Response code: Data stored from servo amplifier to V series

Direct command codes and program command codes

Contents	Command	F0 (= \$u n)		Point	Program
Power limit	20H	n	Current for positioning complete in SON status (Idele)	○	○
		n + 1	Current limit during driving		
		n + 2	Current limit in ALM/STOP status		
Servo parameter	21H	n	Servo parameter	○	○
Low-pass filter	22H	n	Low-pass filter	○	○
Correction coefficient	24H	n	Enabled/disabled selection	○	○
		n + 1	Correction coefficient		
Judgment time for pressing	25H	n	Judgment time for pressing	○	○
Pressing speed	26H	n	Pressing speed	○	○
In-Position	30H	n to n + 1	In-Position	○	○
ZONE	31H	n to n + 1	Zone (small)	○	○
		n + 2 to n + 3	Zone (large)		
+ soft limit	32H	n to n + 1	+ soft limit	○	○
- soft limit	33H	n to n + 1	- soft limit	○	○
ABS counter presetting	34H	n to n + 1	ABS counter presetting	○	○
Break enable	35H	n	Break enable	○	○
Speed	36H	n	Speed	○	○
Acceleration/deceleration	37H	n	Acceleration	○	○
		n + 1	Deceleration		
Relative movement 1	38H	n to n + 1	Signed relative movement amount	○	○
Absolute movement command 1	3AH	n to n + 1	Absolute movement amount	○	○
Relative movement 2	3BH	n to n + 1	Speed	○	×
		n + 2 to n + 3	Acceleration		
		n + 4 to n + 5	Deceleration		
		n + 6 to n + 7	Signed relative movement amount		
		n + 8 to n + 9	Current limit for pressing		
		n + 10 to n + 11	Movement amount for pressing		
		n + 10 to n + 11	In-Position		

Contents	Command	F0 (= \$u n)		Point	Program
Absolute movement command 2	3DH	n to n + 1	Speed	○	×
		n + 2 to n + 3	Acceleration		
		n + 4 to n + 5	Deceleration		
		n + 6 to n + 7	Absolute movement amount		
		n + 8 to n + 9	Current limit for pressing		
		n + 10 to n + 11	Movement amount for pressing		
		n + 10 to n + 11	In-Position		
Scan operation	40H	n	Rotation direction	○	○
		n + 1	Speed		
		n + 2	Acceleration		
		n + 3	Deceleration		
		n + 4	Current limit for pressing		
Scan stop	41H	-		○	○
Relative movement 3	42H	n to n + 1	Speed	○	○
		n + 2 to n + 3	Acceleration		
		n + 4 to n + 5	Deceleration		
		n + 6 to n + 7	Signed relative movement amount		
		n + 8 to n + 9	Current limit for pressing		
		n + 10 to n + 11	Movement amount for pressing		
Absolute movement command	44H	n to n + 1	Speed	○	○
		n + 2 to n + 3	Acceleration		
		n + 4 to n + 5	Deceleration		
		n + 6 to n + 7	Absolute movement amount		
		n + 8 to n + 9	Current limit for pressing		
		n + 10 to n + 11	Movement amount for pressing		
Origin return	45H	n to n + 1	Origin return type, rotation direction	○	○
		n + 2 to n + 3	Origin return speed		
		n + 4 to n + 5	Origin return low speed		
		n + 6 to n + 7	Grid shift amount		
		n + 8 to n + 9	Current limit for pressing during origin return		
		n + 10 to n + 11	Counter preset value		
Origin return without counter presetting	46H	n to n + 1	Origin return type, rotation direction	○	○
		n + 2 to n + 3	Origin return speed		
		n + 4 to n + 5	Origin return low speed		
		n + 6 to n + 7	Grid shift amount		
		n + 8 to n + 9	Current limit for pressing during origin return		
Deviation clear	47H	-		○	○
Pause command	48H	-		○	○
Pause cancel	49H	-		○	○
Alarm reset	4AH	-		○	×

Contents	Command	F0 (= \$u n)		Point	Program
Bit out	4BH	n	Output status of general-purpose output port	○	○
Stop command	4CH	-		○	×
Stop cancel	4DH	-		○	○
Interlock	4EH	-		○	○
Interlock cancel	4FH	-		○	○
Program end	60H	-		×	○
Timer wait	61H	n	Delay timer value	×	○
In-Position jump	62H	n	Jump condition	×	○
		n + 1	Jump target line number		
In-Port jump	63H	n	Jump condition	×	○
		n + 1	Input port branch condition		
		n + 2	Jump target line number		
Zone jump	64H	n	Jump condition	×	○
		n + 1	Jump target line number		
Comparison condition	65H	n to n + 1	Comparison condition	×	○
		n + 2 to n + 3	Absolute position of comparison target		
		n + 4 to n + 5	Jump target line number		
Unconditional jump	66H	n	Jump target line number	×	○
Motor stop	67H	n	Jump condition	×	○
		n + 1	Jump target line number		
For	6AH	n	Variable designation	×	○
		n + 1	Loop counter		
Next	6BH	n	Variable designation	×	○
Gosub	6CH	n	Sub-routine top number	×	○
Return	6DH	-		×	○

◆ Indirect Memory Designation

Refer to page 34.

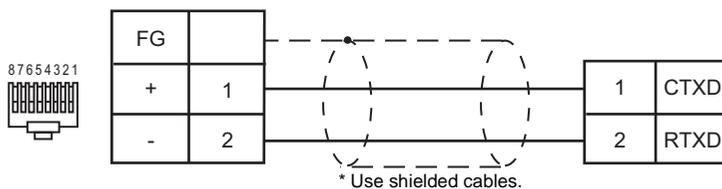
Wiring



Pin Nos. 3 and 4 on the V series are those for external power supply.
To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-485

V series (MJ1/2)
Modular connector, 8-pin



Gammaflux

Model List

Model	Lst File	Tem File
TTC2100	TTC2100.Lst	Gflux.tem

TTC2100 Series

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the TTC2100.

Item	V-SFT Setting	Setting on TTC2100
Baud rate	57600 bps	57600 bps
Parity	None	None
Data length	8	8
Stop bit	1	1
Station number	0 - 10 ^{*1}	0 - 10

* Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
TD (Temperature Data)	0	Read only, *1
ZC (Zone Commands)	1	Partially read-only, *2
ZD (Zone Commands2)	2	Partially read-only, *3

*1 For TZ (Temperature Data) **XXYYY**

*2 For ZC (Zone Commands) **XXYYZ**

*3 For ZD (Zone Commands 2) **00XXY**

◆ Indirect Memory Designation

	15	8 7	0
n + 0	Model (83)		Memory type
n + 1	Memory number (address)		
n + 2			
n + 3	Expansion code *		Bit designation
n + 4	00		Station number

* Expansion code
00 (HEX): Volatile
01 (HEX): Nonvolatile

◆ TEMP_CTL

Contents	F0 (=Su n)		F1						
Data concentrator Resettable alarm relays	n	Station number	4						
	n + 1	0000H							
	n + 2	Zone command: 0091H							
	n + 3	Bit0: Set output1, resettable alarm Bit1: Set output2, nonresettable alarm Bit2: Set output3 Bit3: Set output4 (alarm Bar) Bit8: Clear1, resettable alarm Bit9: Clear2, nonresettable alarm Bit10: Crear output3 Bit11: Clear output4 Bit12: Clear overtemp occurred							
Turn all zone on/off	n	Station number	7						
	n + 1	0000H							
	n + 2	Zone command: 0099H (volatile) 8099H (nonvolatile)							
	n + 3	Zone: Bit <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>15</td><td>14</td><td>-</td><td>2</td><td>1</td><td>0</td></tr></table> Zone 16 Zone 1		15	14	-	2	1	0
	15	14		-	2	1	0		
	n + 4	Zone: Bit <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>15</td><td>14</td><td>-</td><td>2</td><td>1</td><td>0</td></tr></table> Zone 32 Zone 17		15	14	-	2	1	0
	15	14		-	2	1	0		
n + 5	Zone: Bit <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>15</td><td>14</td><td>-</td><td>2</td><td>1</td><td>0</td></tr></table> Zone 48 Zone 33	15	14	-	2	1	0		
15	14	-	2	1	0				
n + 6	Zone: Bit <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>15</td><td>14</td><td>-</td><td>2</td><td>1</td><td>0</td></tr></table> Zone 64 Zone 49	15	14	-	2	1	0		
15	14	-	2	1	0				
Zone temporarily in group	n	Station number	7						
	n + 1	0000H							
	n + 2	Zone command: 009AH (volatile) 809AH (nonvolatile)							
	n + 3	Zone: Bit <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>15</td><td>14</td><td>-</td><td>2</td><td>1</td><td>0</td></tr></table> Zone 16 Zone 1		15	14	-	2	1	0
	15	14		-	2	1	0		
	n + 4	Zone: Bit <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>15</td><td>14</td><td>-</td><td>2</td><td>1</td><td>0</td></tr></table> Zone 32 Zone 17		15	14	-	2	1	0
15	14	-	2	1	0				
n + 5	Zone: Bit <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>15</td><td>14</td><td>-</td><td>2</td><td>1</td><td>0</td></tr></table> Zone 48 Zone 33	15	14	-	2	1	0		
15	14	-	2	1	0				

Contents	F0 (= \$u n)		F1						
Zone temporarily in group	n + 6	Zone: Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>15</td><td>14</td><td>-</td><td>2</td><td>1</td><td>0</td> </tr> </table> Zone 64 Zone 49	15	14	-	2	1	0	7
15	14	-	2	1	0				
External standby group	n	Station number							
	n + 1	0000H							
	n + 2	Zone command: 008CH (volatile) 808CH (nonvolatile)							
	n + 3	Zone: Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>15</td><td>14</td><td>-</td><td>2</td><td>1</td><td>0</td> </tr> </table> Zone 16 Zone 1	15	14	-	2	1	0	
	15	14	-	2	1	0			
	n + 4	Zone: Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>15</td><td>14</td><td>-</td><td>2</td><td>1</td><td>0</td> </tr> </table> Zone 32 Zone 17	15	14	-	2	1	0	
15	14	-	2	1	0				
n + 5	Zone: Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>15</td><td>14</td><td>-</td><td>2</td><td>1</td><td>0</td> </tr> </table> Zone 48 Zone 33	15	14	-	2	1	0		
15	14	-	2	1	0				
n + 6	Zone: Bit <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>15</td><td>14</td><td>-</td><td>2</td><td>1</td><td>0</td> </tr> </table> Zone 64 Zone 49	15	14	-	2	1	0		
15	14	-	2	1	0				

Response code: Data stored from temperature controller to V series

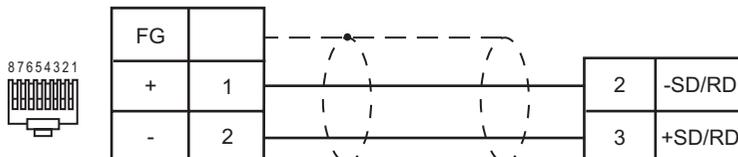
Wiring



Pin Nos. 3 and 4 on the V series are those for external power supply. To prevent damage to the device due to wrong connection, check the pin numbers and connect wires correctly.

RS-485

V series (MJ1/2)
Modular connector, 8-pin



* Use shielded cables.

Modbus Free Format

◆ Model

It is possible to connect not only temperature controllers but also other devices that support Modbus (RTU).

◆ Communication Setting

Default settings on the V-SFT are shown below. It is possible to change settings within the range of specifications. Be sure to match the settings on the V-SFT and the device to be connected.

Item	V-SFT Setting	Setting on Device
Baud rate	9600 bps	9600 bps
Parity	Odd	Odd
Data length	8 (fixed)	8 (fixed)
Stop bit	1 (fixed)	1 (fixed)
Station number	1 - 31 ^{*1}	1 - 31

* Set this parameter on the [Memory Input] dialog.

◆ Available Memory

Memory	Type	Remarks
0 (output coil)	0	
1 (input relay)	1	
4 (holding register)	2	
3 (input register)	3	

◆ TEMP_CTL

Unavailable

◆ Indirect Memory Designation

Refer to page 34.

◆ Setting for Temperature Controller Communications

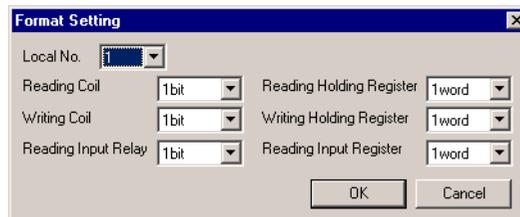
Click [System Setting] → [Temp. CTRL/PLC2Way Setting] → [Temp. CTRL/PLC2Way Comm. Setting]. The [Temp. Control/PLC2Way Comm. Setting] dialog is displayed.

Click [Format ...].

The [Format Setting] dialog is displayed.

Set the communication format for each station.

Set the station number for [Local No.] first and then set other items.



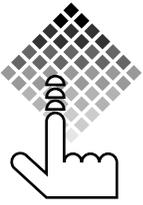


Format setting means not only setting the number words to be read or written at one communication but also setting the function code of Modbus protocol.

The available function codes vary depending on the device used. Refer to the manual for the device and the table shown below, and set the items on the dialog correctly.

For example, to use a device that corresponds to function code 10H, set "2 words" or more for [Writing Holding Register] on the V-SFT editor. If "1 word" is set, it is recognized as 6H and an error occurs.

V-SFT Format Setting		Modbus Function Code
Reading coil		1H
Writing coil	1 bit	5H
	16 bits or more	FH
Reading input relay		2H
Reading holding register		3H
Writing holding register	1 word	6H
	2 words or more	10H
Reading input register		4H



MONITOUCH

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