# Hardware Specifications

## MONITOUCH V6

## Record of Revision

| Printing Date | Reference No. | Revised Contents |
|---|---|---|
| February, 1998 | 2006NE0 | (First Edition) |
| February, 1999 | 2006NE0a | (Second Edition) |
| January,1999 | 2006NE0b | [A partial revision]<br>Matrix type<br>Multi-Link 2<br>Temperature Control Network<br>Change model names of V6<br>CBM printer supported<br>MITSUBISHI FX2N series, QnH<br>OMRON SYSMAC CS1<br>A,B Micro Logix1000<br>SIEMENS S7-200<br>KEYENCE KZ-A500 CPU Port, KV series<br>FATEK AUTOMATION FB series<br>IDEC MICRO3<br>MODICON Modbus RTU<br>YAMATAKE MX 200/50 |
| March, 2000 | 2006NE1 | [A partial revision]<br>SIEMENS S5 PG port<br>TAIANTP02 |
| November, 2000 | 2006NE2 | [A partial revision]<br>V606i<br>MITSUBISHI QnH CPU port<br>YOKOGAWA FA-M3R<br>OMRON CS1 DNA<br>LG MKX00S CPU port<br>FATEK AUTOMATION FB series |
| July, 2001 | 2006NE3 | [A partial revision]<br>Koyo SU/SG(K-Sequence)<br>KEYENCE KV700 seriese CPU<br>LG MASTER-KxxxS CNET, GLOFA CNET<br>SAIA PCD<br>MOELLER PS4<br>Automationdirect<br>Direct LOGIC,Direct LOGIC(K-Sequence)<br>CE Marking and UL Mark |
| August, 2002 | 2006NE4 | [A partial revision] |

| Printing Date | Reference No. | Revised Contents |
|---|---|---|
| April, 2003 | 2006NE5 | [A partial revision]<br>VIGOR<br>DELTA<br>BALDOR<br>Appendix : Ladder Transfer Function |
| | | |

**Printed in Japan**

# Preface

Thank you for selecting the MONITOUCH V6 series.
For proper set-up, you are requested to read through this booklet to understand more about the product.

For more information about V6 series, refer to the Reference Manual.
For further details about the PLC, see the manual attached to each PLC.

# Notes on safe usage of MONITOUCH

In this "Hardware Specifications", you will find various notes categorized under the following three levels with the signal words "Danger," "Warning," and "Caution."
These signal words are to warn the user of possible misuse of the unit. To comprehend the critical notes on the safe procedure, you must go through this manual before you install MONITOUCH and operate it correctly.

**DANGER**

Danger
indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

**WARNING**

Warning
indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION**

Caution
indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury and could cause property damage.

# Notes on System Design

| | |
|---|---|
| **WARNING** | Never use the input function of MONITOUCH such as the touch switch for an emergency switch because it could threaten a human life or break a part of the unit.<br>Please design the system of the unit in order to respond to a malfunction of the touch switch. |
| **CAUTION** | Prevent the static electricity from being charged on the sheet metal where MONITOUCH is mounted to avoid malfunction caused by noise. |
| | Never bundle input/output cables with high-voltage and large-current cables such as power supply cables. Keep input/output cables at least 200mm away from power supply cables in order to avoid malfunction caused by noise. |
| | As for the use in the facilities related to nuclear energy or in the facilities of official importance, please consult with our distributer about it. |

# Notes on Installation

| | |
|---|---|
| **CAUTION** | Operate MONITOUCH under the conditions indicated by the manual. |
| | If you don't set the conditions indicated by the manual for the unit, it could cause fire, malfunction, physical damage or deterioration. |
| | Maintain the following conditions in order to avoid fire or trouble.<br>Don't let the unit come in contact with corrosive gas, flammable gas, solvents, grinding fluids or cutting oil.<br>Never let the unit be exposed to high temperature, high humidity, and other outside weather conditions.<br>Don't allow the unit to be exposed to excessive dust, salt, and metallic particles.<br>Don't allow the unit to be shaken or hit by other objects. |
| | Equipment must be correctly mounted so that the main terminal will not inadvertently be touched during an application. |

## Notes on Cable Connection

| | |
|---|---|
|  **DANGER** | Turn off the power supply when you set up the system or connect the cables, otherwise you will get an electric shock or damage the unit. |
|  **CAUTION** | Connect the cables correctly to the terminals of MONITOUCH in accordance with the specified voltage and wattage. Over-voltage, over-wattage and the incorrect cable connection could cause the unit to be damaged physically or functionally and also could result in fire. |
| | Ground FG terminal which must be for the unit. The level of grounding resistance is less than 100Ω. |
| | Prevent any conductive particles from entering into MONITOUCH. The conductive particles could cause fire, trouble, or malfunction of the unit. |

## Notes on Maintenance and Operation

| | |
|---|---|
|  **DANGER** | Never touch the terminals while the power supply is on, otherwise you will get an electric shock. |
| | You must put the cover of the terminals on the unit when you turn on the power and operate it. |
| | The liquid crystal in the LCD panel is a hazardous substance. If the LCD panel is damaged, never swallow the leaked liquid crystal. If the liquid crystal spills on your skin or clothing, use soap and wash off thoroughly. |
|  **CAUTION** | Hakko Electronics Co., Ltd. is not responsible for an unauthorized person who may fix, disassemble, or reconstruct any unit. |
| | Switch resolution of the MONITOUCH V6 series is determined by the analog-type resistance film. Do not press two or more positions on the screen at the same time.<br>If two or more positions are pressed at the same time, the switch located between the pressed positions activates. Please take note of this. |
| | Avoid displaying the same patterns for hours.<br>It may cause afterimages due to the property of LCD display. If you use the fixed patterns for hours, use the auto-OFF function of the backlight. |

# Notes on Disposal

**CAUTION**

At the time of disposal, MONITOUCH must be treated as industrial waste.

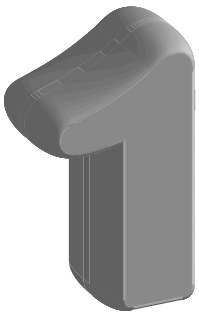
# Contents

## 1. Hardware Specifications



## 2. Connection to Link Units

## Appendix



# Hardware Specifications

# 1 Special Features

1) 128-color Display
   128-color display makes colorful expression possible. Not only drawings but also bitmap files are clearly displayed.

2) Data Sheet Printing Function
   It is possible to make the original data sheet screen by the panel editor (= the editing software). Daily reports or monthly reports that the operator must fill out can be printed in an instant.

3) Sampling Function
   This function makes it possible to store the sampling data in an IC card. The stored data can be edited easily by a personal computer. It can be used widely in various fields.

4) Macro Function
   With this function, V6 series can make programs which previously had to be produced by PLC.

5) Multi Window Function
   Up to three windows can be displayed simultaneously on a screen.
   It is easy to move or delete the displayed windows.

6) Video Function
   V6 series can be connected to a video or a CCD camera, and the image which is taken by a video or a camera can be displayed directly in a screen of V6 series.

7) V606, V606i
   A 5.7 inch display with 320 X 240 dot resolution.

8) V608C
   A 7.7 inch display with VGA (640 X 480 dot resolution).

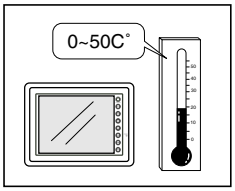
9) V610
   A 10.4 inch standard model display which uses the previous screen data.

10) V612
   A 12.1 inch large display with SVGA (800 X 600 dot resolution).

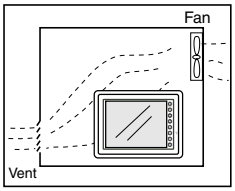
# 2 Notes on Usage

## Environmental Limits

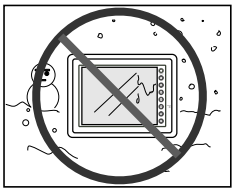
1. Use MONITOUCH at an ambient temperature of 0~50ºC, and a relative humidity of 85 %RH. (But, a V610 STN multi-color display can be used at 0-40ºC.)



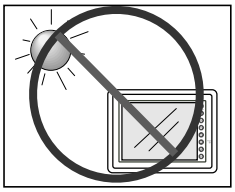

2. Install a forced fan or an air conditioner to maintain the ambient temperature when it is higher than the above mentioned range.



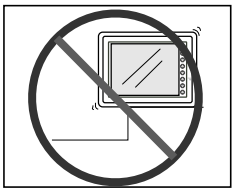

3. Avoid places where moisture may easily condense due to sudden temperature changes.



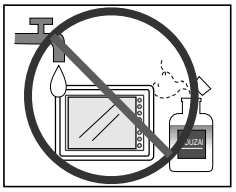
4. Avoid direct sunlight.



5. Never install MONITOUCH in a place where impacts or vibrations may be transmitted.

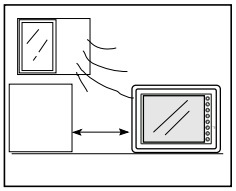


6. Avoid any place in which there is the possibility that water, corrosive gas, flammable gas, solvents, grinding fluids or cutting oil can come in contact with the unit. Never install the unit in a place where dust, salt and metallic particles are present.



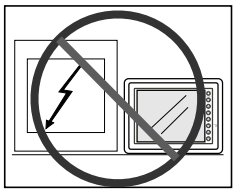
## Locations

1. Secure sufficient space around MONITOUCH for ventilation.



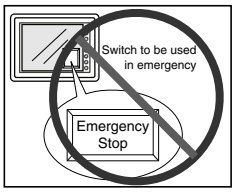
2. Never attach MONITOUCH to the top of any apparatus generating high levels of heat (heater, transformer, large-capacity resistor, etc.).

3. Never install MONITOUCH in the same compartment as high-voltage equipment. The unit should be at least 200 mm away from high-voltage lines or power cables.

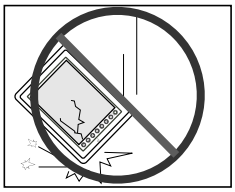


## Usage

1. An emergency stop circuit must be composed of an external relay circuit with a start signal for MONITOUCH built in. Do not create switches on MONITOUCH to be used in case of emergency.




2. MONITOUCH has a glass screen. Never drop or subject the unit to strong impacts.

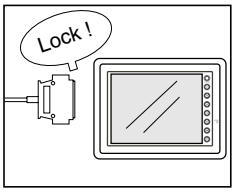


3. Tighten mounting screws with the following torques.

| Type \ Screw | Screw Size | Torque (N·m(kgf·cm)) |
|---|---|---|
| V606/608 | M3 | 0.3-0.5 (3-5) |
| V606i | M4 | 0.3-0.5 (3-5) |
| V610/612 | M4 | 0.5-0.7 (5~7) |

Note :Never fasten these screws too tightly, otherwise the cover of MONITOUCH may be deformed.

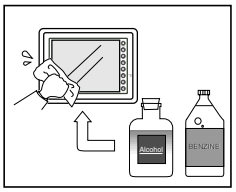
4. Securely fasten and lock every connector for each cable. Double-check this before turning the power on.



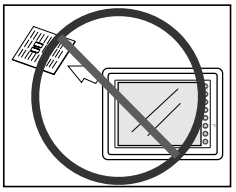

5. In a dry environment, MONITOUCH may generate a large amount of static electricity. Therefore, before touching the unit, touch a grounded metallic section to discharge the static electricity.

6. A receiving error may occur on a device that is connected to MONITOUCH such as a PLC or a temperature controller by starting up both equipments at the same time. In such case, follow the instructions of such device's manuals to handle the error.

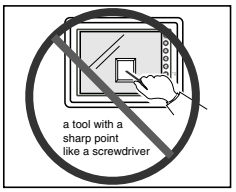
7. Application of thinner may discolor MONITOUCH. Use alcohol or benzine available commercially for cleaning.




8. Never remove any printed circuit board from MONITOUCH. (This will harm the unit.)



9. Never operate the display by using a tool with a sharp point like a screwdriver.
Touch the display by fingers.

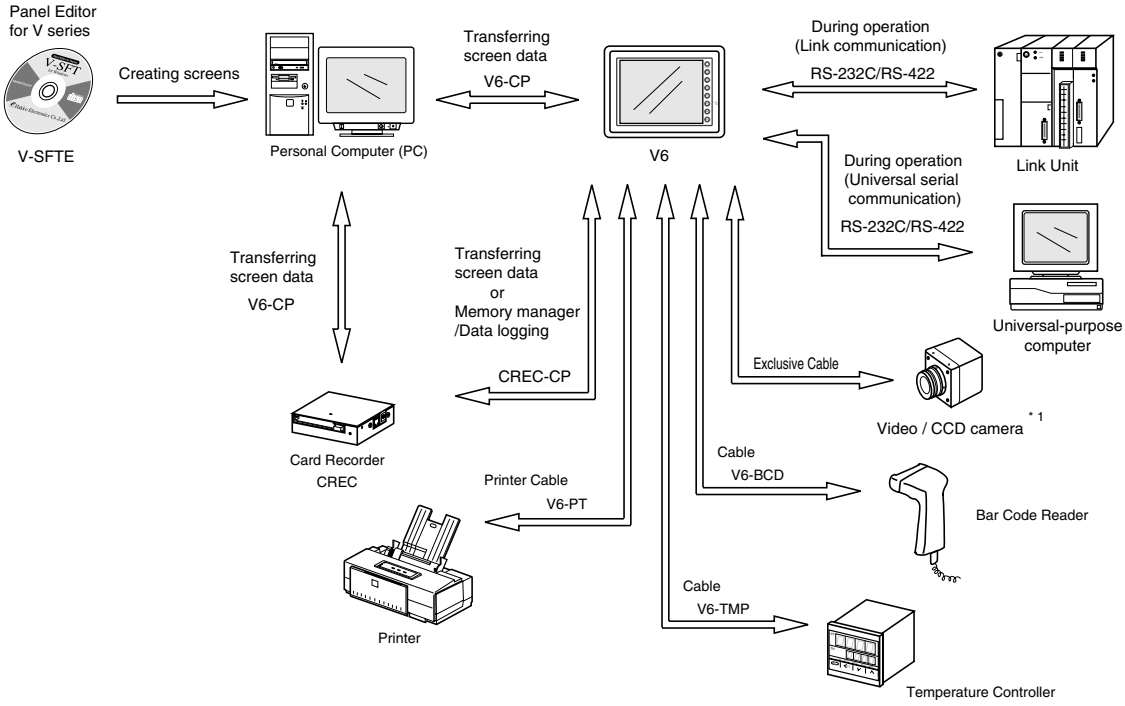


# 3 System Composition

System Composition / Model Indication / Peripheral Equipment

## System Composition

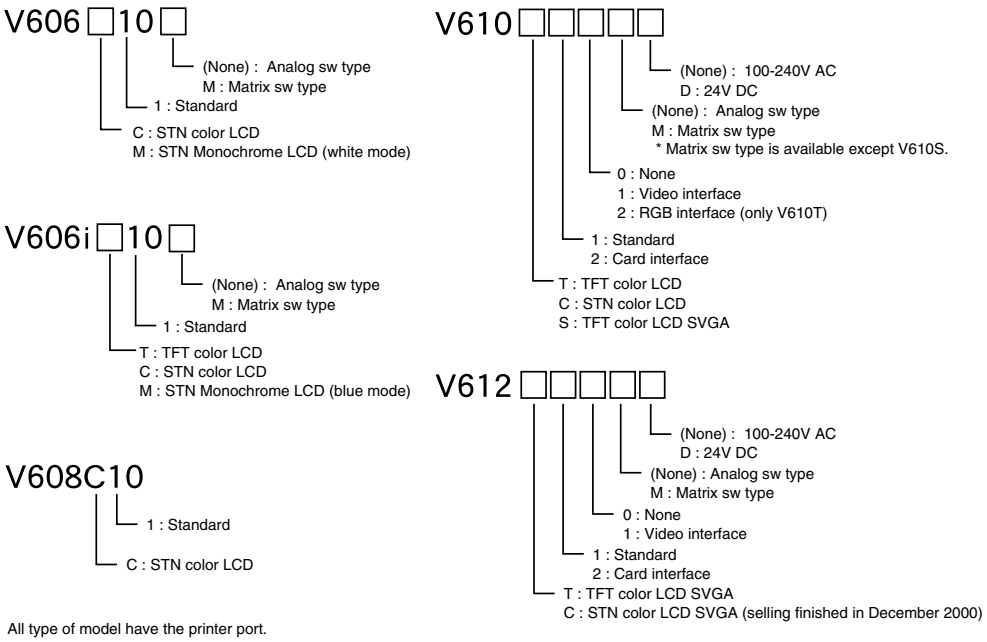
The following illustration shows possible system configurations using V6.




*1 The interface for video function (using only in V610T/S and V612T) is optional for Maker.

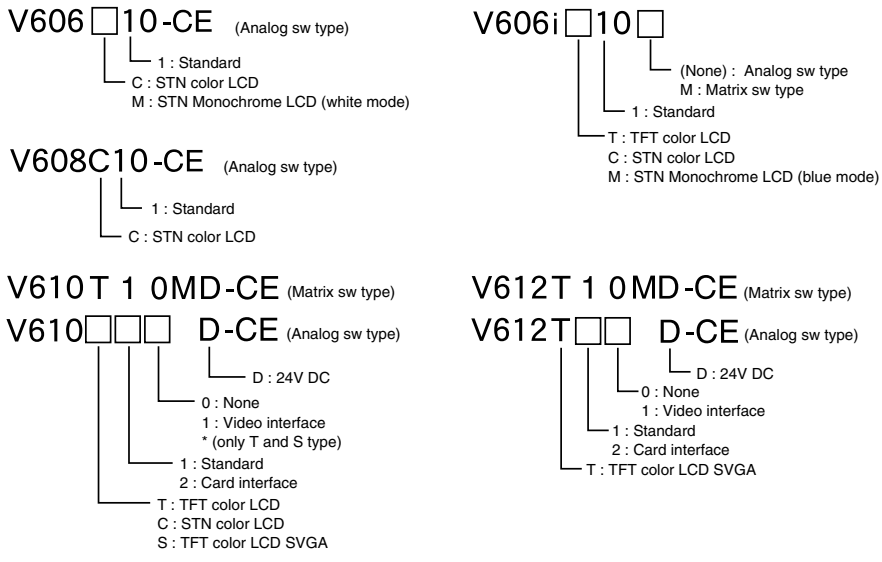
## List of Models

The characters on the right of model names represent optional features and special specifications.




All type of model have the printer port.

## Models compatible with Overseas Specifications (CE Marking and UL Mark)




All type of model have the printer port.

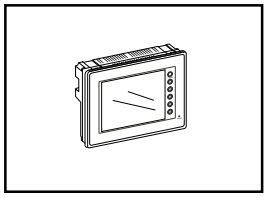
## List of Options

| Item \ Type | | | V606 C/M | V606i T/C/M | V608C | V610C | V610T | V610S | V612C | V612T |
|---|---|---|---|---|---|---|---|---|---|---|
| Optional by Manufacturer | Card Interface *1 | | × | × | × | ○ | | ○ | ○ | |
| | Video Interface | | × | × | × | × | ○ | ○ | × | ○ |
| | Analog RGB Input Interface | | × | × | × | × | ○ | × | × | |
| Optional by User | Extension I/O Unit : E-I/O (16 inputs / 16 outputs) | | × | × | × | ○ | | ○ | ○ | |
| | Serial Extension I/O : V-I/O (16 inputs / 16 outputs) | | ○ | ○ | ○ | ○ | | ○ | ○ | |
| | FPROM Cassette (4Mbyte) | V6EM/4 | × | × | ○ | ○ | | ○ | ○ | |
| | | V6EM/4i | × | ○ | × | × | | × | × | |
| | SRAM Cassette (512kbyte) | V6EM/RS | × | × | ○ | ○ | | ○ | ○ | |
| | | V6EM/RSi | × | ○ | × | × | | × | × | |
| | Communication Interface Unit : CU-00, 01, 02, 03, 04, 05 *2 | | × | ○ | ○ | ○ | | ○ | ○ | |
| | Communication Interface Unit for V606 : CUS-00, 01 *2 | | ○ | × | × | × | | × | × | |
| | Card Recorder *1 : CREC | | ○ | ○ | ○ | ○ | | ○ | ○ | |
| | Terminal Converter : TC485 | | ○ | ○ | ○ | ○ | | ○ | ○ | |

*1 Prepare for V6 with card interface, or V6 and CREC(card recorder).

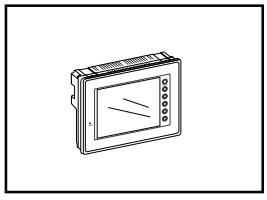
*2 CU-00/CUS-00 : JPCN-1, CU-01/CUS-01: T-LINK, CU-02 : CC-LINK, CU-03 : Ethernet or FL-net, CU-04 : PROFIBUS, CU-05 : MELSEC-NET10

## Model Indication



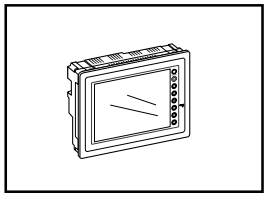
### V606

A 5.7 inch display.



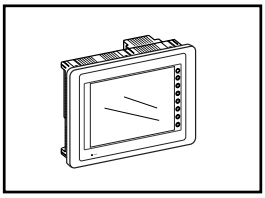
### V606i

A 5.7 inch display.



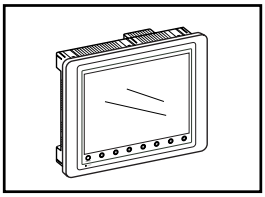
### V608

A 7.7 inch display.



### V610

A 10.4 inch display.

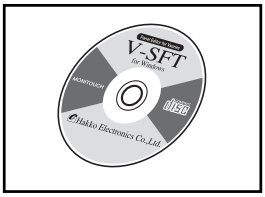


### V612

A 12.1 inch display.

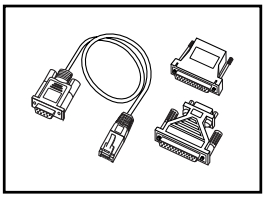
## Peripheral Equipment

The following options are available for using V6 series more effectively.



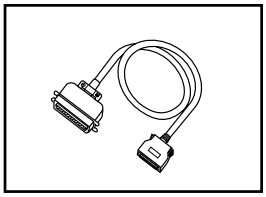

### V-SFT
### (Panel Editor for Windows98/NT4.0/Me/2000/XP)

Application software for editing display data for V series.



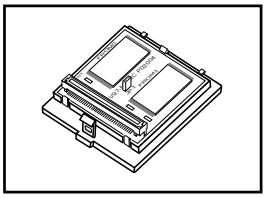
### V6-CP (Data Transfer Cable) 3m

Connects V6 to a personal computer, or a personal computer to CREC.



### V6-PT (Printer Cable) 2.5m

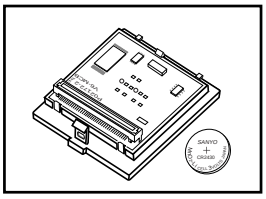
Connects V6 to a printer.
When using CBM292/293 printer, our printer cable “V6-PTCBM” is available.



### V6EM/4 · V6EM/4i (FPROM Cassette)

· V6EM/4 : for V608, V610, V612
· V6EM/4i : for V606i

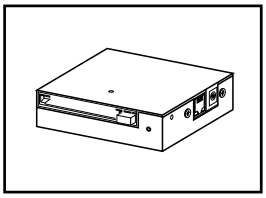
Extension print circuit board to extend the memory for display data back-up. There is 4Mbyte type.



### V6EM/RS · V6EM/RSi (SRAM Cassette)

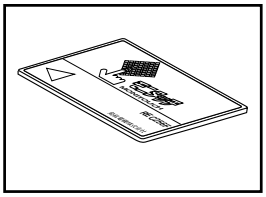
· V6EM/RS : for V608, V610, V612
· V6EM/RSi : for V606i

Extension print circuit board to back-up the memory for sampling data, Internal Memory and Memo Pad. There is 512kbyte type. It is also possible to set the calendar for displaying in V6 at this cassette.



### CREC (Card Recorder)

Reads display data created by personal computer, or works as an external memory storage system for the memory manager and data logging functions.

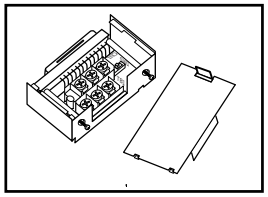


### REC-MCARD (Memory Card) complies with JEIDA Ver.4.0

Used as a recording medium for display data back-up and for the memory manager or data logging function.
SRAM 256K, 512K, 1M, 2M, 4Mbyte
FLASH ROM 256K, 512K, 1M, 16Mbyte

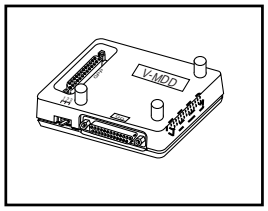
### M-CARD SFT (Memory Card Editor)

Application software for editing data stored in a memory card.
(For Windows98/NT 4.0/Me/2000/XP)



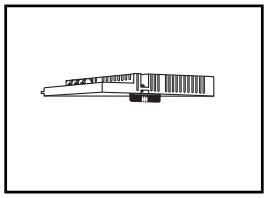
### TC485 (Terminal Converter)

Used for connection between a V6 and a PLC at the RS-422/485 terminal block.



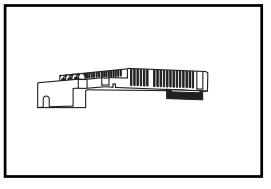

### V-MDD (ACPU/QnACPU/FXCPU Dual Port Interface)

Add-on connector with two ports, specifically designed for the connector on the MITSUBISHI's ACPU/QnACPU/FXCPU programmer. This can improve operability of the ACPU/QnACPU/FXCPU programmer that is directly connected.



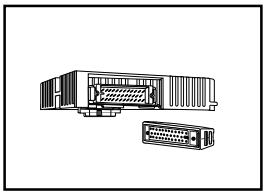
### CU-xx [xx : 00 -> JPCN1, 01 -> T-LINK, 02 -> CC-LINK, 03 -> Ethernet or FL-net, 04 -> PROFIBUS, 05 -> MELSEC-NET10] (Communication Interface Unit)

Used to communicate with each network.
It makes it possible to connect multiple V6 series to a PLC. This system, which enables other devices to connect to the same network, brings about the reduction in costs of the whole system.



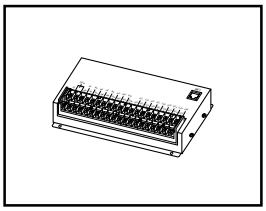
### CUS-XX [00 -> JPCN1, 01 -> T-LINK] (Communication Interface Unit)

Used for V606 to communicate with each network.



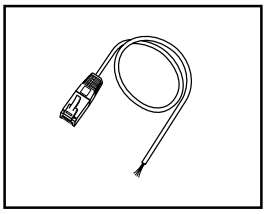
### E-I/O (Extension I/O Unit)

Used as an external I/O unit for PLC. It has 16 inputs and 16 outputs. (It cannot be used for V606, V606i and V608.)



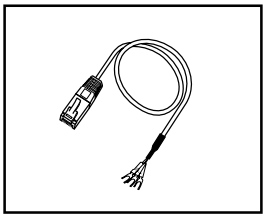
### V-I/O (Serial Extension I/O)

Used as an external I/O unit for PLC. It has 16 inputs and 16 outputs.



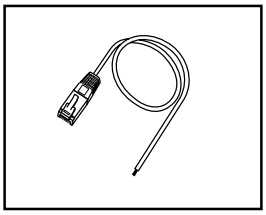
### V6-BCD (Cable for Bar Code Reader) 3m

Connects V6 to a bar code reader.



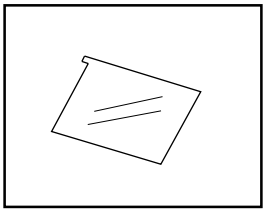
### V6-MLT (Cable for Multi-Link 2 master station) 3m

A cable which is used for connecting the V6 master station and the V6 slave station in the Multi-Link 2 connection.



### V6-TMP (Cable for Temperature Controller) 3m

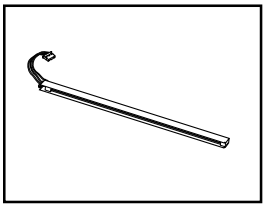
Connects V6 to a temperature controller.



### V6XX-GS [XX: 06 -> V606/V606i, 08 -> V608, 10 -> V610, 12 -> V612]

### (Protection Sheet)

Protects the operation panel surface. Five sheets are included in one package.



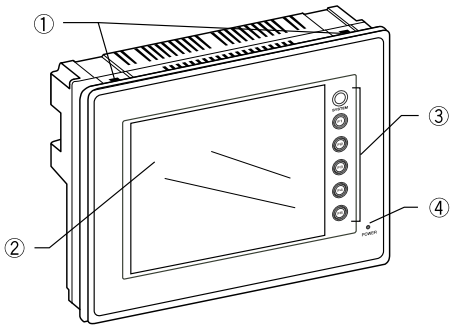
### V6XXX-FL [XXX : 06C -> V606C, 06M -> V606M, 08C -> V608C, 10C -> V610C, 10T -> V610T, 10S -> V610S, 12C -> V612C, 12T -> V612T]

### (Backlight for Replacement)

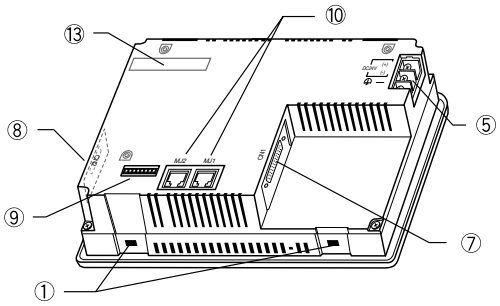
Placement backlight parts for V6 series.

# 4 Names of Components

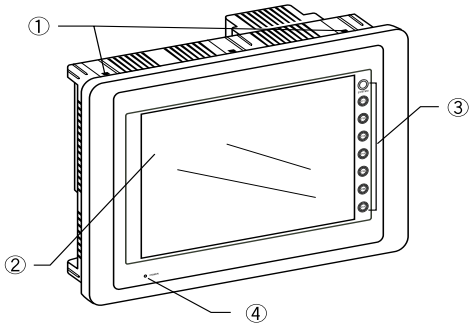
### Front Side of V606



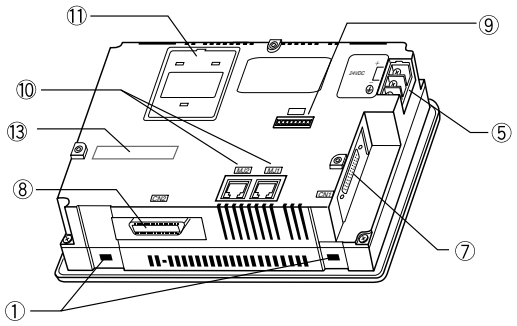

### Rear Side of V606




### Front Side of V606i

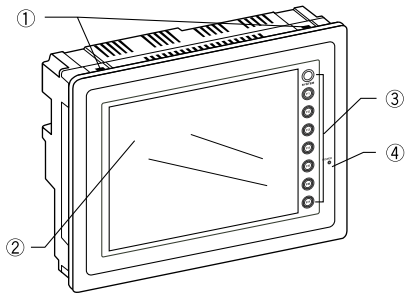



### Rear Side of V606i

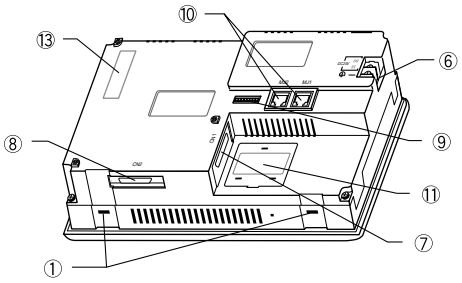



1. Mounting holes for fixtures
2. Display
3. Function keys (Refer to P1-49.)
4. Power lamp
5. DC input terminal of power supply
7. CN1: for PLC (RS-232C, RS-422)
8. CN2: for printer
9. Dip switches
10. MJ1, 2: for data transfer and for temperature controller and for bar-code reader and for CREC (option)
11. for V6EM/X (option)
13. for CU-XX/CUS-XX (option)

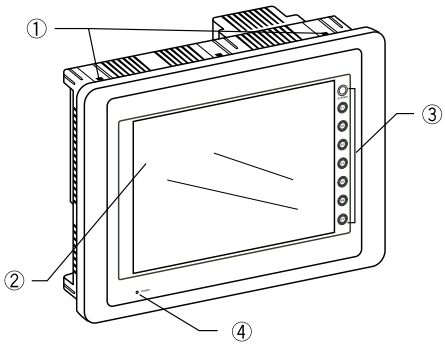
### Front Side of V608



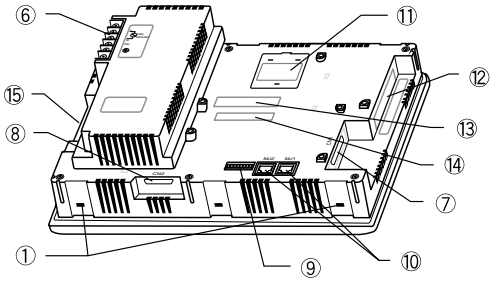

### Rear Side of V608



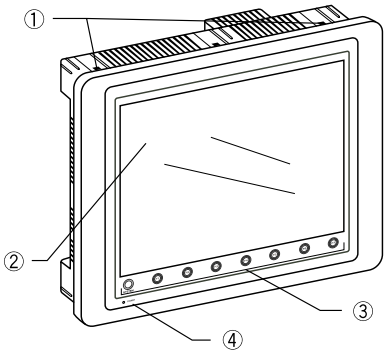

### Front Side of V610



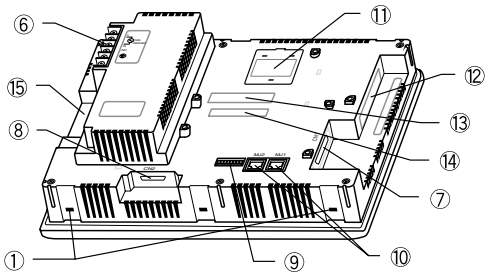

### Rear Side of V610




### Front Side of V612




### Rear Side of V612



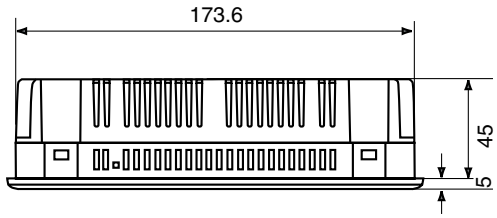

1. Mounting holes for fixtures
2. Display
3. Function keys (Refer to P1-49.)
4. Power lamp
6. AC / DC input terminal of power supply
7. CN1: for PLC (RS-232C, RS-422)
8. CN2: for printer
9. Dip switches
10. MJ1, 2: for data transfer and for temperature controller and for bar-code reader and for CREC (option)
11. for V6EM/X (option)
12. for video (option)
13. for CU-XX (option)
14. for E-I/O (option)
15. Card interface (option)

# 5 Dimensions and Panel Cut-out

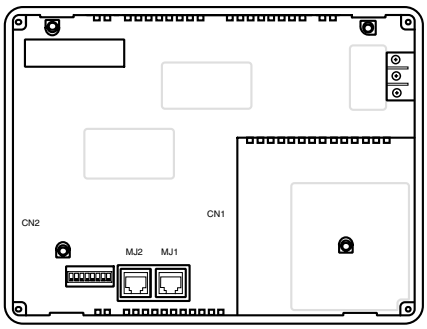
## Dimensions of V606

Unit : mm

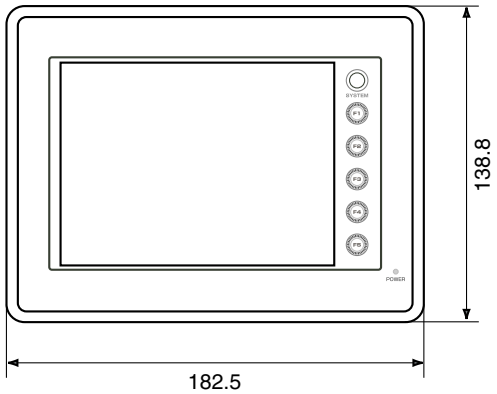
○ Top View



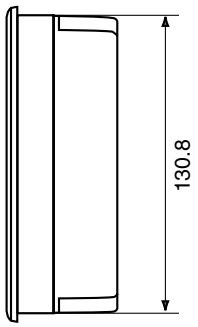

○ Rear View




○ Front View

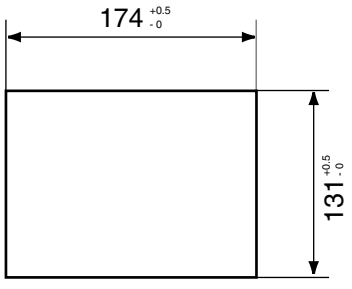



○ Side View




## Panel Cut-out of V606

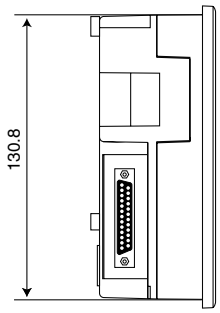
Unit : mm



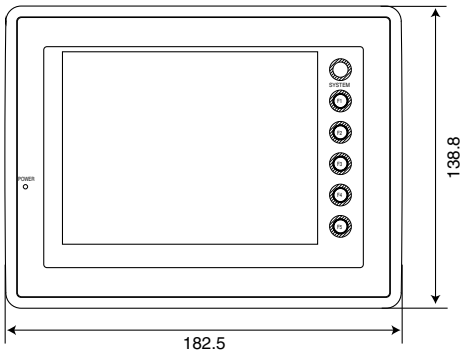
## Dimensions of V606i

Unit : mm

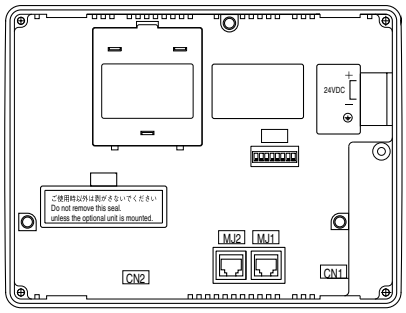
○ Side View



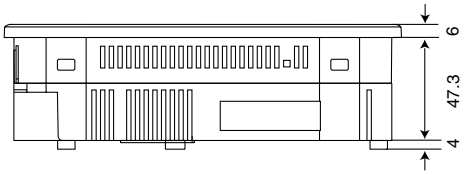

○ Front View




○ Rear View

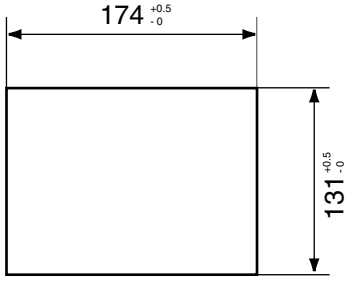



○ Bottom View




## Panel Cut-out of V606i

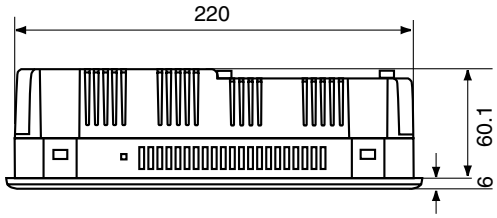
Unit : mm



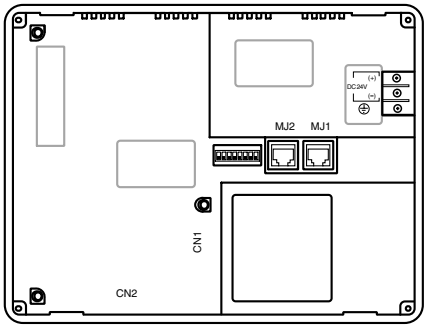
## Dimensions of V608

Unit : mm

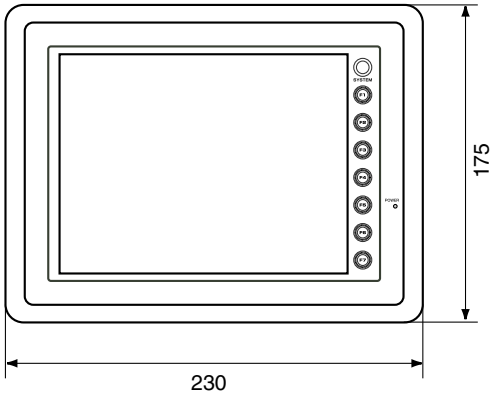
○Top View



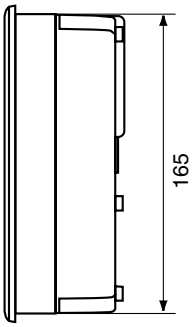

○Rear View




○Front View

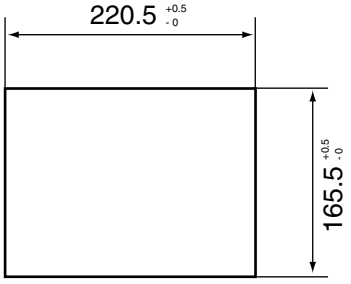



○Side View




## Panel Cut-out of V608

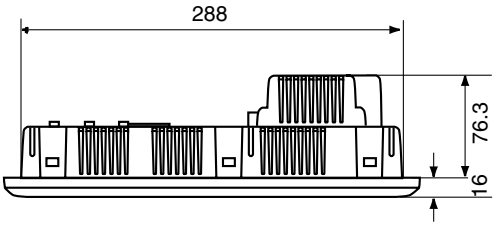
Unit : mm



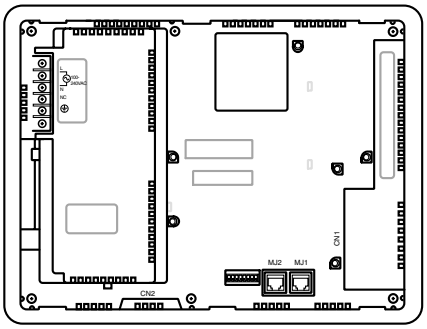
## Dimensions of V610

Unit : mm

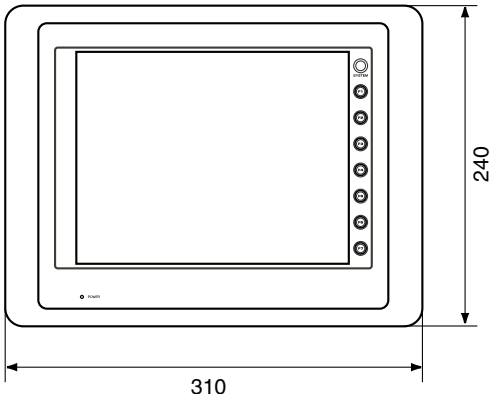
◯Top View



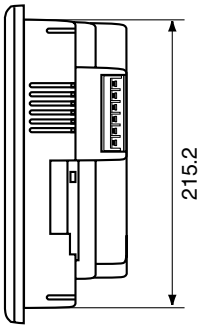

◯Rear View




◯Front View

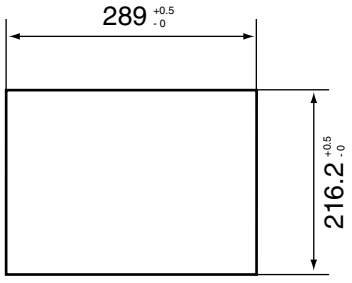



◯Side View




## Panel Cut-out of V610

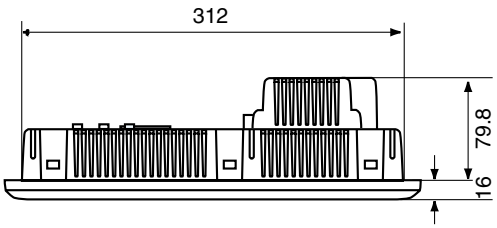
Unit : mm



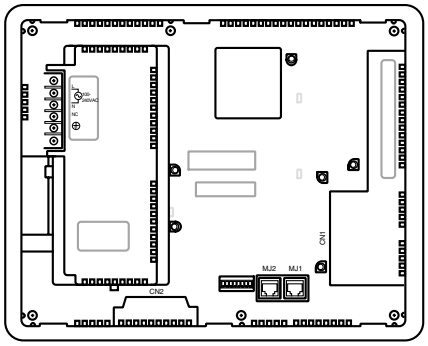
## Dimensions of V612

Unit : mm

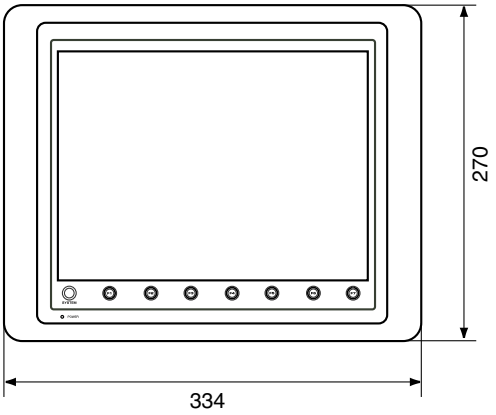
◯Top View



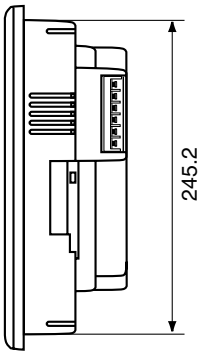

◯Rear View




◯Front View

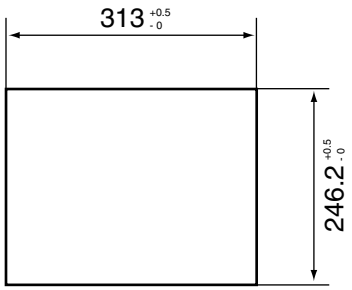



◯Side View




## Panel Cut-out of V612

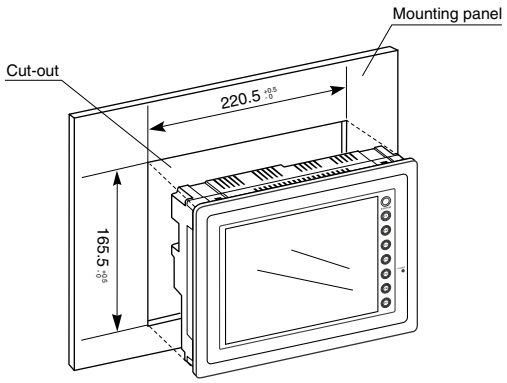
Unit : mm

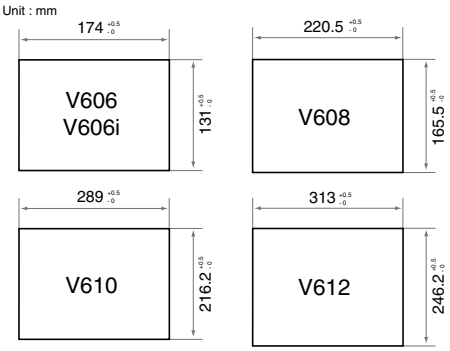


# 6 Mounting Procedure

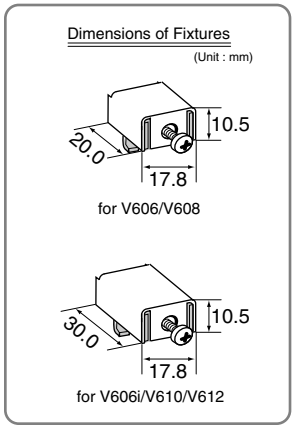
## Mounting Procedure

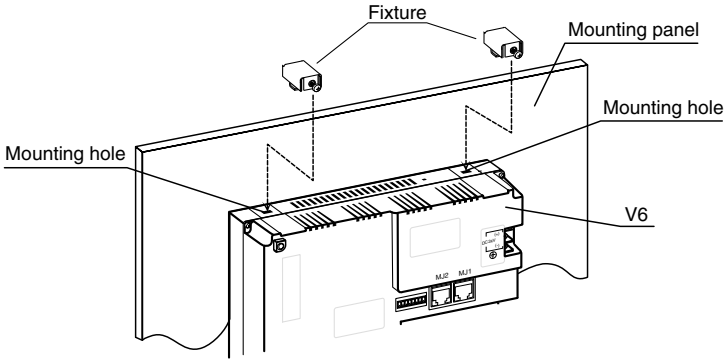
1. Cut out the mounting panel (Max. thick: 3.2 mm) to match the dimensions shown below.




2. Insert the fixtures attached to V6 into the mounting holes on V6. Tighten them with the locking screws.
   Number of the fixtures : 4 pcs
   torque :V606/V606i/V608 0.3~0.5N·m (3~5kgf·cm)
   :V610/V612 0.5~0.7N·m (5~7kgf·cm)

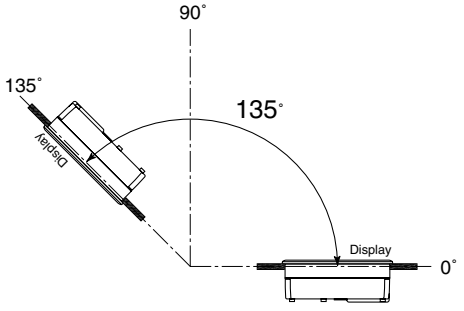



3. Mount unit flash with mounting plate with gasket tight against outside of mounting unit.

## Mounting Angle

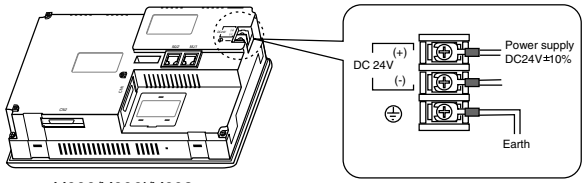
The unit (V6) shall be installed within the angle of 0 to 135 degrees as shown below.



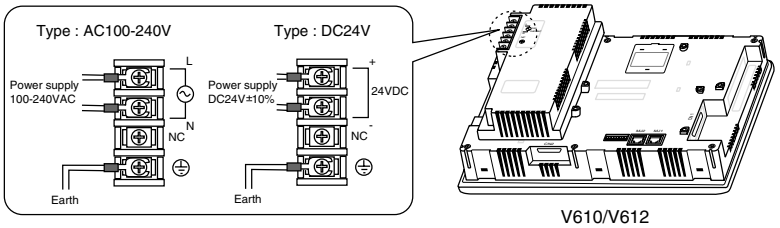
# 7 Wiring

## Electrical Wiring

○Connects the cable for power supply to TB1 on the rear side of V6.




V606/V606i/V608




V610/V612

○When TB1 is used for wiring, refer to the following table.

| Type \ Screw | Screw Size | Torque (N·m) | Clamp Terminal (Unit : mm) |
|---|---|---|---|
| V606/V606i/V608 | M3.5 | 0.5 (5kgf·cm) | 7.1MAX 7.1MAX |
| V610/V612 | M3 | 0.5 (5kgf·cm) | 7.9MAX 7.9MAX |

○The power source used must be within the allowable voltage fluctuation.

○Use a power source with low noise between the cables or ground and the cable.

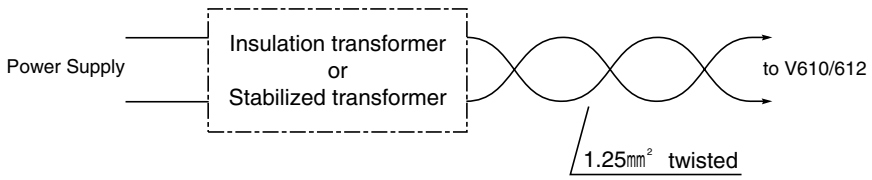
○Use as thick a power cable as possible to minimize any drop in voltage.

○Keep cables of 100V AC and 24V DC sufficiently away from high-voltage, large-current cables.

## Notes on Usage of V610/612 100-240V AC Specifications

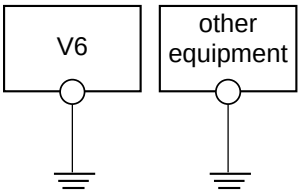
○Generally, an isolating transformer improves noise resistance. However, if the display unit is far away from the secondary port of the transformer and noise gets mixed in, an isolating transformer becomes unnecessary.

○If any power voltage fluctuation caused by noise is expected, it is recommended that a voltage stabilizer (effective in noise resistance) be used.



## Grounding

**This equipment must be earthed.**

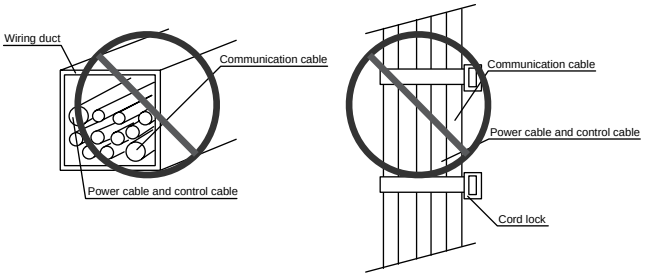



- ○An independent earth pole shall be used for MONITOUCH. (The level of grounding resistance should be less than 100 Ω.)
- ○Use a cable which has a nominal cross section of more than 2mm$^2$ for grounding.
- ○Grounding point shall be near the MONITOUCH to shorten the distance of grounding wires.

Grounding resistance : less than 100Ω

## Wiring for Communication

- ○Never place the communication cable with electric circuits.
- ○Never bundle these cables together with other wires in ducts or electric boxes using cord locks. Although it is tempting to bundle all the cables neatly together, this does not necessarily lead to a noise-resistant configuration.
- ○It is recommended that the communication cable be independently wired.



# 8 Specifications

## General Specifications

| Item \ Type | | V606 | V606i | V608 |
|---|---|---|---|---|
| Power Supply | Rated Voltage | 24V DC | | |
| | Permissible Range of Voltage | 24V±10% DC | | |
| | Permissible Momentary Power Failure | 10ms or less | | |
| | Demand | 10W or less | | 20W or less |
| | Rushed Electric Current | 15A<br>1ms | | 15A<br>1.5ms |
| | With-stand voltage | DC external terminals to FG : 500V AC per min. | | |
| | Insulation Resistance | 500V DC, 10MΩor more | | |
| Physical Environment | Ambient Temperature | 0˚C~+50˚C(V610 STN Color : 0˚C~+40˚C) | | |
| | Storage Ambient Temperature | -10˚C~+60˚C | | |
| | Ambient Humidity | 85% RH or less (without dew condensation) | | |
| | Dust | No conductive dust | | |
| | Solvent Resistance | No cutting oil or no organic solvent to cling to the unit | | |
| | Corrosive Gas | No corrosive gas | | |
| Mechanical Working Conditions | Vibration Resistance | Vibration frequency: 10~150Hz, Acceleration: 9.8m/s$^2$(1.0G)<br>Single amplitude: 0.075mm, 3 directions of X, Y and Z: one hour | | |
| | Shock Resistance | Pulse shape: Sine half wave,<br>Peak acceleration: 147m/s$^2$ (15G), 3 directions of X, Y and Z: six times | | |
| Electrical Working Conditions | Noise Resistance | Noise voltage: 1500Vp-p, noise width: 1$\mu$s | | |
| | Static Electricity Discharge Resistance | Contact: 6kV , Air: 8kV | | |
| Mounting Conditions | Grounding | Grounding resistance: less than 100Ω | | |
| | Structure | Protection structure: front panel complies with IP65 (when using gasket)<br>rear panel complies with IP20<br>Form: in a body<br>Mounting procedure: inserted in a mounting panel | | |
| | Cooling System | Cooling naturally | | |
| | Weight | Approx. 0.8kg | Approx. 0.8kg | Approx. 1.1kg |
| | Dimensions W X H X D (mm) | 182.5 X 138.8 X 50 | 182.5 X138.8 X 57.3*1 | 230 X 175 X 66.1 |
| | Panel Cut-out (mm) | $174^{+0.5}_{-0}$ X $131^{+0.5}_{-0}$ | $174^{+0.5}_{-0}$ X $131^{+0.5}_{-0}$ | $220.5^{+0.5}_{-0}$ X $165.5^{+0.5}_{-0}$ |
| | Case Color | GREY | BLACK*2 | GREY |
| | Material | PC/ABS | PC/PS | PC/ABS |

*1 including 4mm, the size of boss for communication unit
*2 equivalent to the Munsell color system N-2.0

| V610 | | V612 | |
|---|---|---|---|
| AC Power Supply | DC Power Supply | AC Power Supply | DC Power Supply |
| 100/240V AC | 24V DC | 100/240V AC | 24V DC |
| 85-265V AC (47-440Hz) | 24V ±10% DC | 85-265V AC (47-440Hz) | 24V ±10% DC |
| 20ms or less | 10ms or less | 20ms or less | 10ms or less |
| 45VA or less | 25W or less | 50VA or less | 25W or less |
| 20A : 100V AC 30A : 200V AC | 30A 6ms | 20A : 100V AC 30A : 200V AC | 30A 6ms |
| AC external terminals to FG : 1500V AC per min. | DC external terminals to FG : 500V AC per min. | AC external terminals to FG : 1500V AC per min. | DC external terminals to FG : 500V AC per min. |
| 500V DC, 10MΩor more | | | |
| 0˚C~+50˚C(V610 STN Color : 0˚C~+40˚C) | | | |
| -10˚C~+60˚C | | | |
| 85% RH or less (without dew condensation) | | | |
| No conductive dust | | | |
| No cutting oil or no organic solvent to cling to the unit | | | |
| No corrosive gas | | | |
| Vibration frequency: 10~150Hz, Acceleration: 9.8m/s$^2$(1.0G) Single amplitude: 0.075mm, 3 directions of X, Y and Z: one hour | | | |
| Pulse shape: Sine half wave, Peak acceleration: 147m/s$^2$ (15G), 3 directions of X, Y and Z: six times | | | |
| Noise voltage: 1500Vp-p, noise width: 1$\mu$s | | | |
| Contact: 6kV , Air: 8kV | | | |
| Grounding resistance: less than 100Ω | | | |
| Protection structure: front panel complies with IP65 (when gasket using) rear panel complies with IP20 Form: in a body Mounting procedure: inserted in a mounting panel | | | |
| Cooling naturally | | | |
| Approx. 2.5kg | | Approx. 3.0kg | |
| 310 X 240 X 92.3 | | 334 X 270 X 95.8 | |
| $289^{+0.5}_{-0}$ X $216.2^{+0.5}_{-0}$ | | $313^{+0.5}_{-0}$ X $246.2^{+0.5}_{-0}$ | |
| GREY | | | |
| PC/ABS | | | |

## Display Specifications

| Item \ Type | V606M | V606C | V606iM | V606iC | V606iT | V608C |
|---|---|---|---|---|---|---|
| Display Device | STN Monochrome LCD | STN Color LCD | STN Monochrome LCD | STN Color LCD | TFT Color LCD | STN Color LCD |
| Resolution W X H (dots) | 320 X 240 | | | | | 640 X 480 |
| Dot Pitch W X H (mm) | 0.36 X 0.36 | 0.12 X 0.36 | 0.36 X 0.36 | 0.12 X 0.36 | 0.36 X 0.36 | 0.082X0.246 |
| Effective Display Area W X H (mm) | 115.2 X 86.4 (5.7 inches) | | | | | 157.4 X 118.1 (7.7 inches) |
| Color | Monochrome 8 gradation + blinking | 16 colors + blinking | Monochrome 8 gradation + blinking | 16 colors + blinking | | 128 colors + blinking 16 colors |
| Back-light | Cold cathode rectifier (which can be exchanged by a user except for V606i ) | | | | | |
| Contrast Adjustment | By function switches (only in case of STN type) | | | | | |
| Back-light Average Life* | Approx. 40,000h | | Approx. 50,000h | | | Approx. 40,000h |
| Power Lamp | The lamp is lit when the power is supplied. | | | | | |

| Item \ Type | V610C | V610T | V610S | V612C | V612T |
|---|---|---|---|---|---|
| Display Device | STN Color LCD | TFT Color LCD | | STN Color LCD | TFT Color LCD |
| Resolution W X H (dots) | 640 X 480 | | 800 X 600 | | |
| Dot Pitch W X H (mm) | 0.11 X 0.33 | 0.33 X 0.33 | 0.264 X 0.264 | 0.1025 X 0.3075 | 0.3075 X 0.3075 |
| Effective Display Area W X H (mm) | 211.2 X 158.4 (10.4 inches) | | | 246.0 X 184.5 (12.1 inches) | |
| Color | 128 colors + blinking 16 colors | | | | |
| Back-light | Cold cathode rectifier (which can be exchanged by a user) | | | | |
| Contrast Adjustment | By function switches (only in case of STN type) | | | | |
| Back-light Average Life* | Approx. 25,000h | | | | |
| Power Lamp | The lamp is lit when the power is supplied. | | | | |

* When the normal temperature is 25°C, and the surface luminance of the display is 50% of the default.

## Display Function Specifications (All the V6 series)

| Item | | Specifications | | | | |
|---|---|---|---|---|---|---|
| Display Language | | Japanese | Eng./W. Europe | Chinese | Chinese (simplified) | Korean |
| Characters | 1/4-size, 1-byte | ANK code | Latin 1 | ASCII code | ASCII code | ASCII code |
| | 2-byte (16-dot) | JIS 1st and 2nd | ——— | Chinese | Chinese (simplified) | Hangul (without Kanji) |
| | 2-byte (32-dot) | JIS 1st | ——— | | | |
| Size of Characters | | 1/4-size : 8 X 8 dots<br>1-byte : 8 X 16 dots<br>2-byte : 16 X 16 dots or 32 X 32 dots<br>Enlarge : W, 1-8 H, 1-8 | | | | |
| Number of Characters | | Resolution | 320 X 240 | 640 X 480 | 800 X 600 | |
| | | 1/4-size | 40 columns X 30 lines | 80 columns X 60 lines | 100 columns X 75 lines | |
| | | 1-byte | 40 columns X 15 lines | 80 columns X 30 lines | 100 columns X 37 lines | |
| | | 2-byte | 20 columns X 15 lines | 40 columns X 30 lines | 50 columns X 37 lines | |
| Property of Characters | | Display property : normal, reverse, blinking, bold, shadow<br>Color : 128 colors + blinking 16 colors / 16 colors + blinking<br>/ Monochrome 8 gradation + blinking | | | | |
| Kind of Drawing | | Lines : line, continuous lines, box, parallelogram, polygon<br>Circles : circle, arc, sector, ellipse, elliptical arc, elliptical sector<br>Others : tile patterns | | | | |
| Property of Drawing | | Type of lines : 6 types (fine, thick, dot, chain, broken, two-dot chain)<br>Tile patterns : 16 types (incl. user-definable 8 types)<br>Display property : normal, reverse, blinking<br>Display color : 128 colors + blinking 16 colors / 16 colors + blinking<br>/ Monochrome 8 gradation + blinking<br>Color specification : foreground, background, boundaries (line) | | | | |

## Function Performance Specifications (All the v6 series)

| Item | | Specifications |
|---|---|---|
| Screens | | Max. 1024 |
| Screen Memory | | FP-ROM (flash ROM), Appox. 2,816kbytes*1 (different from the language) |
| Switches | | 768 per screen (192 per screen for V606/V606i) |
| Actions of Switch | | Set, reset, momentary, alternate, to light<br>(possible to press a function switch and a display switch at the same time)<br>(Matrix type : 2 switches on the display can be pressed at the same time) |
| Lamps | | Reverse, blinking, exchange of graphics<br>768 per screen (192 per screen for V606/V606i) |
| Graphs | | Pie, bar, panel meter and closed area graph can be displayed without limit.<br>Total capacity per screen: within 128kB *2<br>Statics and trend graphs: Max. 256 per layer*3 |
| Data Setting | Numerical Data Display | No limits, total capacity per screen: within 128 kB *2 |
| | Character Display | No limits, total capacity per screen: within 128 kB *2 |
| | Message Display | Resolution : 320X240, Max. 40 characters<br>640X480, Max. 80 characters<br>800X600, Max. 100 characters<br>No limits, total capacity per screen: within 128 kB *2 |
| Messages | | 6144 lines |
| Sampling | | Sampling display of buffer data<br>(constant sample, bit synchronize, bit sample, relay sample, alarm function) |
| Multi-Overlaps | | Max. 1024 |
| Data Blocks | | Max. 1024 |
| Graphic Libraries | | Max. 2560 |
| Patterns | | Max. 1024 |
| Macro Blocks | | Max. 1024 |
| Page Blocks | | Max. 1024 |
| Direct Blocks | | Max. 1024 |
| Screen Blocks | | Max. 1024 |
| Temperature Control Network Table | | Max. 32 |
| Calendar | | provided |
| Hard-Copy | | provided |
| Buzzer | | provided, 2 types (intermittent short and long sounds) |
| Back-light Auto OFF Function | | ON at all time, specified freely |
| Self-diagnostic Function | | Self-test function of switches<br>Check function of communication parameter setting<br>Check function of communication |

*1 If the hardware version is the following version, or V606/V606i is used, the screen memory is approx. 760kbytes.
Analog type: V612T→A~E, V612C →A~D, V610S →A~E, V610T→A~F, V610C→A~E, V608C →A~C
Matrix type : V612T→only D, V612C→only C, V610C→only D

*2 The number of the setting memory is limited to 256 per screen for V606/V606i, and 1024 per screen for other models.

*3 Layer : 4 per screen (base + 3 overlaps) In case of V606/V606i, it is limited to 256 per screen.

## Touch Panel Specifications (All the V6 series)

| Item | Specifications |
|---|---|
| Switch Resolution | Analog type, 1024(W) X 1024(H)<br>Matrix type, V612 : 50(W) X 30(H) pcs V610 : 40(W) X 24(H) pcs<br>V606/V606i : 20(W) X 12(H) pcs |
| Form | Resistance film form |
| Life of Touch Panel | Use of one million times or more |

## Function Switch Specifications (All the V6 series)

| Item | Specifications |
|---|---|
| Number of Switches | 8 (6 for V606/V606i) |
| Type of Switch | Pressure sensitive switches |
| Life of Switch | Use of one million times or more |

## Interface Specifications (All the V6 series)

| Item | Specifications |
|---|---|
| Serial Interface<br>for connecting PLC<br>(D-sub 25 pins, female) | RS-232C, RS-422/485<br>Asynchronous type<br>Data length: 7, 8 bits<br>Parity: even, odd, none<br>Stop bit: 1, 2 bits<br>Baud rate: 4800, 9600, 19200, 38400, 57600, 76800, 115000bps<br>(115200bps is invalid for V606/V606i.) |
| Serial Interface 1 and 2 for<br>transferring data<br>/other external<br>(modular jack, 8 pins) | RS-232C, RS-422/485 (2-wire connection)<br>CREC, Bar code, V-I/O, Multi-link 2, Temperature control network,<br>V-Link |
| Printer Interface | Complies with centronics, half pitch 36 pins (for PC98x1)<br>NEC : PR201<br>EPSON : compatibles with ESC/P24-84 or later<br>HP : PCL Level 3<br>CBM292/293 printer (The screen copy cannot be printed out.) |

## Drawing Environment (All the V6 series)

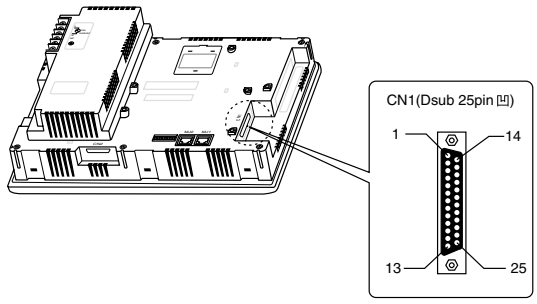
| Item | Specifications |
|---|---|
| Drawing Method | Exclusive drawing software |
| Drawing Tool | Name of exclusive drawing software : V-SFT<br>Personal computer : Pentium II 450 MHz or above recommended<br>OS : Microsoft Windows 98/Me/NT version 4.0/2000/XP<br>Capacity of hard disk required : free area of approx. 460MB or more<br>(for minimum installation: approx. 105 Mbyte)<br>Display : resolution of 640 X 480 or more<br>(800 X 600 is recommended) |

# 9 Serial Connector (CN1)

CN1 is used for communicating between a PLC and a V6 (RS-232C, RS-422/485).

## Serial Connector (CN1)

The pin arrangement of serial connector is as follows:



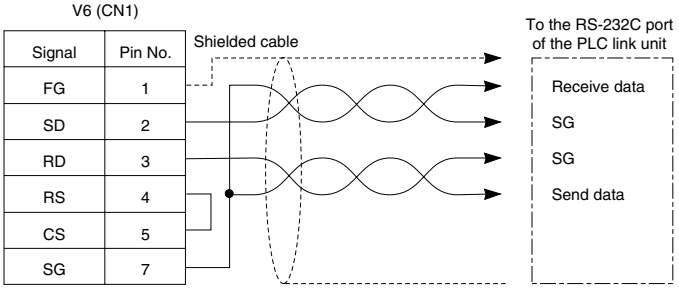

| Pin No. | Signal | Contents |
|---|---|---|
| 1 | FG | Frame ground |
| 2 | SD | RS-232C send data |
| 3 | RD | RS-232C receive data |
| 4 | RS | RS-232C RS request to send |
| 5 | CS | RS-232C CS clear to send |
| 6 | | Not used |
| 7 | SG | Signal ground |
| 8 | | Not used |
| 9 | +5V | Use prohibited |
| 10 | 0V | Use prohibited |
| 11 | | Not used |
| 12 | +SD | RS-422 send data (+) |
| 13 | -SD | RS-422 send data (-) |
| 14 | +RS | RS-422 RS send data (+) |
| 15 | | Not used |
| 16 | | Not used |
| 17 | -RS | RS-422 RS send data (-) |
| 18 | -CS | RS-422 CS receive data (-) |
| 19 | +CS | RS-422 CS receive data (+) |
| 20 | | Not used |
| 21 | | Not used |
| 22 | | Not used |
| 23 | | Not used |
| 24 | +RD | RS-422 receive data (+) |
| 25 | -RD | RS-422 receive data (-) |

## Communication Cable of RS-232C/RS-422

### RS-232C

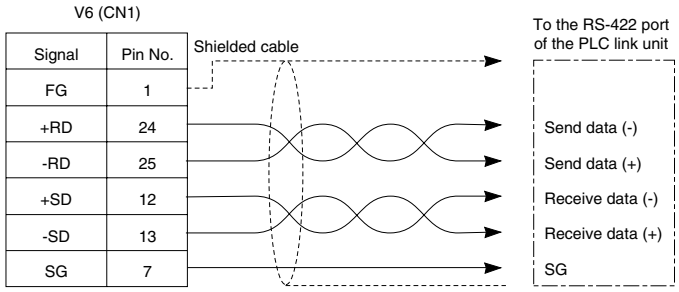
○In case of RS-232C, SD and SG, and RD and SG form a pair.

○Connect the shielded cable to pin No. 1 or the connector case cover.



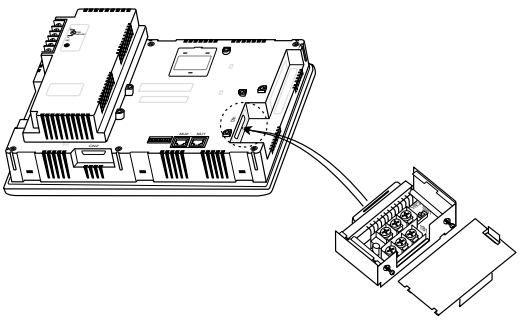
## RS-422

- In case of RS-422, +SD and -SD, and +RD and -RD form a pair.
- Use SG if possible.
- Connect the shielded cable to pin No. 1 or the connector case cover.
- Use TC485 which is the optional equipment made by Hakko Electronics Co., Ltd. in case of using terminal blocks in RS-422/485 connection.
- Specify terminal resistance by the dip switches on V6. (Refer to the next page.)

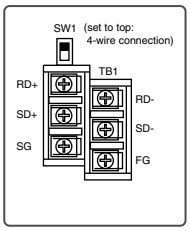



## Terminal Blocks of RS-422/485

- Connect TC485 (Terminal Converter) which is the optional equipment made by Hakko Electronics Co., Ltd. to V6 via the serial connector on V6 (CN1) in case of using terminal blocks in RS-422/485 connection.




- The RS-422 signal wiring of TC485 is connected to the serial connector (CN1).



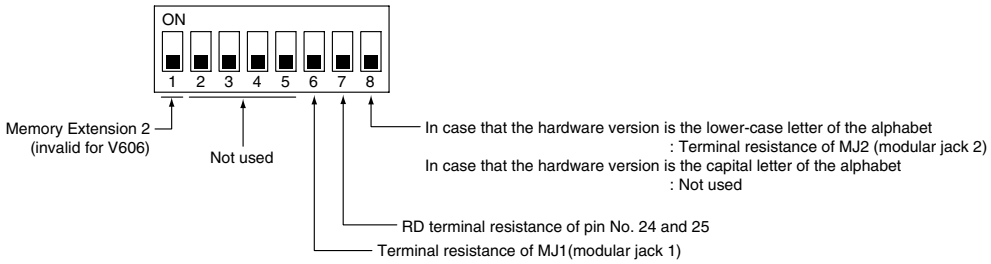

CN1

| Signal | Pin No. |
|---|---|
| FG | 1 |
| SG | 7 |
| +SD | 12 |
| -SD | 13 |
| +RD | 24 |
| -RD | 25 |

- Specify 4-wire connection or 2-wire connection by the dip switch on TC485 (SW1). (set to top: 4-wire connection)

# 10 Setting of Dip Switches

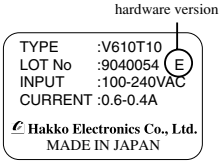
## Setting of Dip Switches (DIPSW)




○ Keep DIPSW 2, 3, 4and 5 (not used) OFF.

○ Setting of Memory Extension 2 (This dip switch is invalid for V606. Keep DIPSW 1 OFF.)
- Set DIPSW 1 ON in case of selecting “Memory Extension 2.”
  (Refer to “Operation Instruction for V6EM/4·V6EM/4i (FPROM cassette).”)

○ Setting of Terminal Resistance depends on the hardware version of the unit.
Hardware version is mentioned in the "LOT No:" column on the back of the unit.




◊ In case that the hardware version is the lower-case letter of the alphabet.
- Set DIPSW 7 ON in case of connecting with CN1 by connection of RS-422/485.
- Set DIPSW 6 (DIPSW8) ON in case of connecting with Modular Jack 1/2 by the connection as below.

  Multi-link2 communication (master)
  Temperature controller communication by connection of RS-485
  Card Recorder : CREC (option) is used
  Serial Extension I/O : V-I/O (option) is used
  Terminal V6 connected with V-Link by connection of RS-485

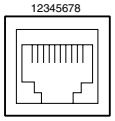
◊ In case that the hardware version is the capital letter of the alphabet
- Set DIPSW 7 ON in case of connecting with CN1 by connection of RS-422/485.
- Set DIPSW 6 ON in case of connecting with Modular Jack 1 by the connection as below.

  Multi-link2 communication (master)
  Temperature controller communication by connection of RS-485
  Card Recorder : CREC (option) is used
  Serial Extension I/O : V-I/O (option) is used
  Terminal V6 connected with V-Link by connection of RS-485
- The terminal resistance of MJ 2 is always ON.

# 11 Modular Jack 1 & 2

## Modular Jack 1 & 2 (MJ1/2)

The right diagram is the pin arrangement and the signal name of modular jack 1 & 2.




| MJ1/2 | Pin No. | Signal | Contents |
|---|---|---|---|
| | 1 | +SD/RD | RS-485 + data |
| | 2 | -SD/RD | RS-485 - data |
| | 3 | +5V | Output power supply Max. 150mA |
| | 4 | +5V | |
| | 5 | 0V | Signal ground |
| | 6 | 0V | |
| | 7 | RD | RS-232C receive data |
| | 8 | SD | RS-232C send data |

## Setting of Modular Jack 1 & 2 (MJ1/MJ2)

○Specify the use of MJ1/MJ2 by the software (V-SFTE).

○Select [System Setting] from [Item], and click [Others]. The [Others] dialog is displayed. The setting items of [Modular Jack 1] and [Modular Jack 2] in the [P2] menu are as follows.

| Modular Jack 1 | Modular Jack 2 |
|---|---|
| [Editor port] | [Not used] |
| [Memory Card] | [Memory Card] |
| [Barcode] | [Barcode] |
| [V-I/O] | [V-I/O] |
| [Multi-Link]*1 *2 | [Multi-Link]*1 *2 |
| [Temp. CTRL Net]*2 | [Temp. CTRL Net]*2 |
| [V-Link]*2 | [V-Link]*2 |
| [Touch Switch]*3 | [Touch Switch]*3 |
| [Ladder Tool] | [Ladder Tool] |
| [Serial Printer] | [Serial Printer] |

It is impossible to select both [Multi-Link] and [Temp. CTRL Net] in each setting of modular jack.

*1 It is possible to select this item when [Multi-Link 2] is selected for [Connection] and [Local Port] is set to [1] in the [Comm. Parameter] dialog.

*2 [Multi Link 2 (master)] and [Temperature Control Network] and [V-Link] are available in the following hardware version or later of V6. As for V606/V606i, any version can be used.
· Analog type : V612T→D V612C→C V610S→D V610T→D V610C→D V608C→F
· Matrix type : All version

*3 As for [Touch Switch], refer to the “Analog RGB Input” manual.

## Editor Transferring

○Use modular jack 1 (MJ1) in case of editor transferring.

○When [Editor port] is selected for [Modular Jack 1] in the [P2] menu, it is also possible to transfer the data while running, because the auto change of the local mode and the run mode is valid.
When [Editor port] is selected, on-line editing and the simulation mode are also available.

○When the item other than [Editor port] is selected for [Modular Jack 1] in the [P2] menu, be sure to transfer the data by the software in the local mode. On-line editing and the simulation mode are not available.

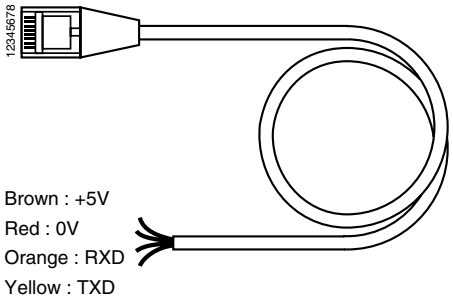
○When the data is transferred by software, use the cable for data transferring which is the optional equipment made by Hakko Electronics Co., Ltd. (V6-CP: 3m) to connect V6 to a personal computer.

# 12 Bar Code Reader Interface

○ It is possible to receive the signal from a bar code reader by connecting a bar code reader to V6 via the modular jack (MJ1/MJ2) of V6 series.

○ To connect a bar code reader to V6 via MJ1/MJ2, use the cable which is the optional equipment made by Hakko Electronics Co., Ltd. (V6-BCD).

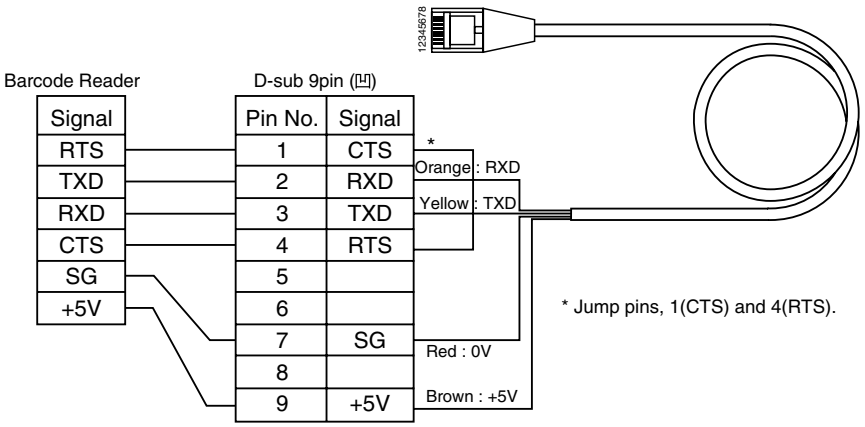
Length : 3m
Accessory : Modular Plug




○ Notes on Connection

- In case of using the bar code reader which uses the CTS and RTS control, the bar code reader may not work normally without jumping RTS and CTS.
- The output power supply (+5V) is max. 150mA. (Refer to the preview page.)

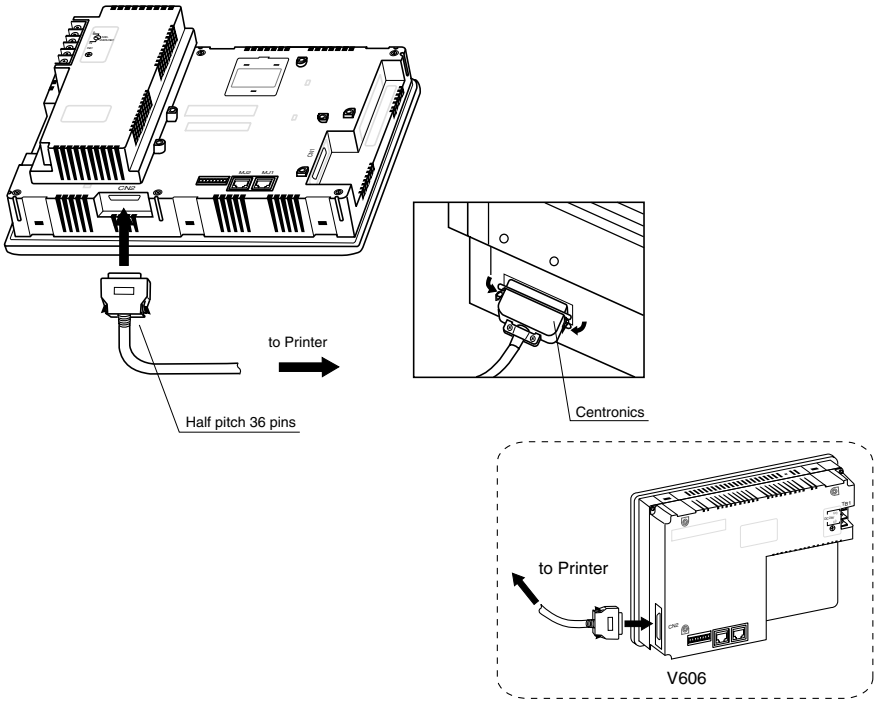
○ When the bar code reader connected to V4 is used, connect it to V6 by the following cable.



# 13 Printer Interface (CN2)

○ When a printer is connected to V6 via the connector (CN2), it is possible to hard-copy the screen display of V6, the data sheet, or the sampling data.

○ To connect a printer to V6, use the parallel interface cable of 36 pins which is optional equipment made by Hakko Electronics Co., Ltd. (V6-PT: 2.5m)
When using CBM292/293 printer, our printer cable “V6-PTCBM” is available.




○ Compatible Printer Control Code System and Printer Models

| | |
|---|---|
| NEC | PC-PR201 series |
| EPSON | Compatibles with ESC/P24-84 or later |
| HP(HEWLETT PACKARD) | PCL Level 3 |
| CBM292/293 | Line thermal panel printer made by CBM Corporation. (The screen copy cannot be printed out.) |

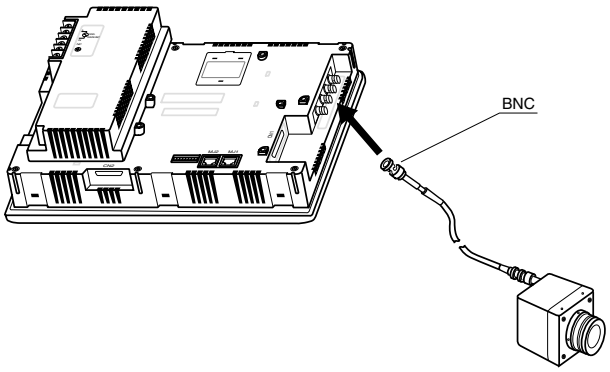
Note of Usage of SRAM Memory Card or SRAM Cassette ;

In case of connecting a printer to V6 series with a “REC-MCARD(Memory Card:SRAM)” or “V6EM/RS · V6EM/RSi (SRAM cassette)” at all times, be sure to turn off a printer at the same time when turning off V6. If a printer is not turned off when V6 is turned off, the voltage will circulate from the power supply line of a printer to make the power consumption of SRAM cassette’s backup battery increase, and finally, the backup battery will consume drastically within a few months.

# 14 Video Interface

○ When a video or a CCD camera is connected to the optional V6 which has a video interface, the image which is taken by a video or a camera is displayed directly in a screen of V6 series (only in case of V610T/S and V612T).

○ Video Interface of V6: BNC



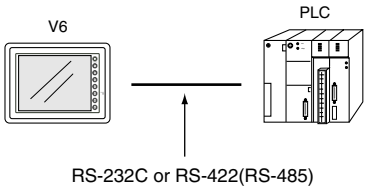

○ Video Display Specifications

| | |
|---|---|
| Display Color | : 262,144 colors |
| Input Channel | : 4 Channels |
| Signal Form | : NTSC type, PAL type |
| Video Input | :1.0$V_{P-P}$ 75 ohm unbalance |
| Display Size | : 640 X 480, 640 X 240, 320 X 240, 160 X 120 dots (possible to change the size) |
| Color Adjustment | : contrast (256 steps), brightness (256 steps), color gain (256 steps) |

# 15 Connection

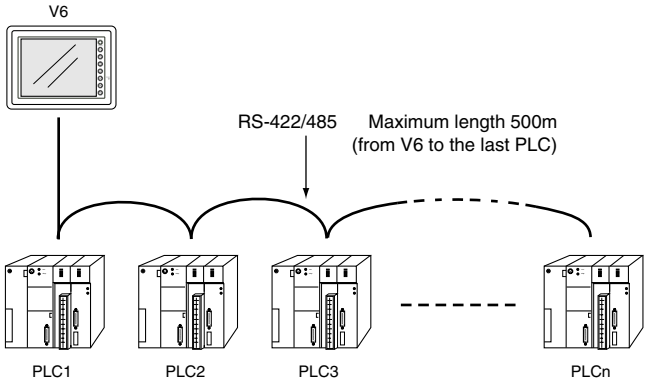
## 1 : 1 Link Communication

One V6 and one PLC are connected.




## 1 : n Link Communication (Multi-drop)

○ One V6 and multiple PLCs are connected. (n = 1 to 32)

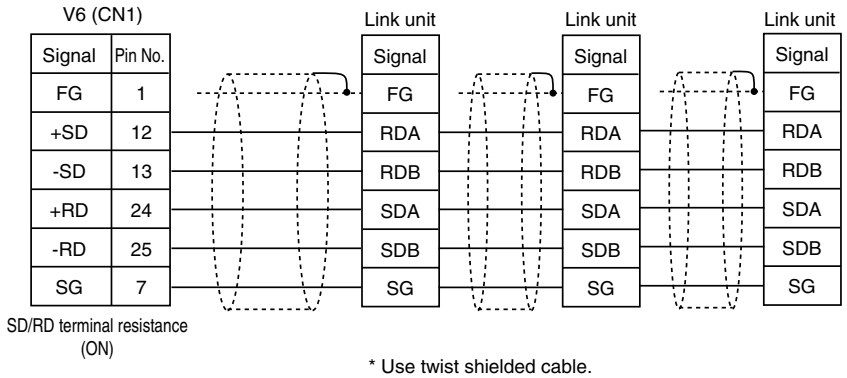



○ Available PLC for multi-drop communication

| Manufacturer | Models |
|---|---|
| MITSUBISHI | AnA/N/U series, QnA series, QnH(Q)series, A link+Net10, FX series(A prt) |
| OMRON | SYSMAC C, CV, CQM1, CS1 DNA |
| SHARP | JW series, JW100/70H COM Port, JW20/30 COM Port |
| HITACHI | HIDIC-H |
| MATSUSHITA | MEWNET |
| YOKOGAWA | FA500, FA-M3, FA-M3R |
| YASKAWA | Memobus, CP9200SH/MP900 |
| TOYOPUC | TOYOPUC |
| FUJI | MICREX-F series, FLEX-PC series, FLEX-PC COM |
| Koyo | SU/SG, SR-T |
| Allen-Bradley | PLC-5, SLC500, Micro Logix 1000 |
| GE Fanuc | 90 series |
| TOSHIBA | T series |
| SIEMENS | S7-200 PPI |
| SHINKO | SELMART |
| SAMSUNG | SPC series, N_plus, SECNET |
| KEYENCE | KZ series, KV series |
| LG | MASTER-K500 / K1000, MASTER-K xxxS CNET |
| FATEK | FACON FB series |
| IDEC | MICRO3 |
| MODICON | Modbus RTU |
| TAIAN | TP02 |
| | Universal Serial |

○ Multi-drop Communication (RS-485)
Refer to the PLC manual of each manufacturer for connection.

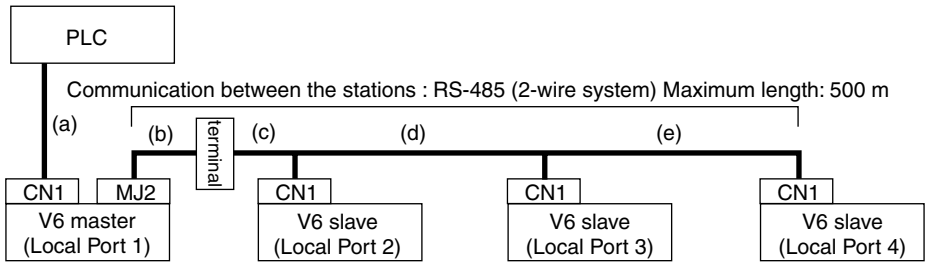
<E.g.>
The following example describes how one V4 is connected to three PLCs made by MITSUBISHI.
See MITSUBISHI's manual for further details.




* Use twist shielded cable.

## n : 1 Link Communication (Multi-link2)

Up to 4 units can be connected to one PLC.
* Between a PLC and the V6 master station is the same as those for 1:1 communication.




○ Available PLCs for multi-link2.
As of July 2001, the PLCs supported are as follows. All the PLCs which are usable for 1:1 communication will be supported.

For the I/F driver, the Multi-Link 2 is supported by the version of 1.100 or later and as for a V6 master station, make sure the hardware version of the unit is as follows.
As for V606/V606i, any version can be used.
· Analog type : V612T→D, V612C→C, V610S→D, V610T→D, V61C→D, V608C→F
· Matrix type : All version

***** The Multi-Link 2 cannot be used with a communication interface unit such as CU-00, 01, 02, 03, 04, 05, CUS-00, 01.
* The Multi-Link 2 cannot be used with Temperature controll network.

| <Type> | <Calendar> |
|---|---|
| MITSUBISHI : AnA/N/U series | Provided |
| MITSUBISHI : QnA series | Provided |
| MITSUBISHI : ACPU Port | Provided |
| MITSUBISHI : FX series | Depends on the model |
| MITSUBISHI : QnACPU Port | Provided |
| MITSUBISHI : QnHCPU Port (A) | Provided |
| MITSUBISHI : QnHCPU Port (Q) | Provided |
| MITSUBISHI : FX series(A prt) | Provided |
| MITSUBISHI : FX2N series | Depends on the model |
| MITSUBISHI : FX1S series | Provided |
| OMRON : SYSMAC C | Depends on the model |
| OMRON : SYSMAC CV | Provided |
| OMRON : SYSMAC CS1 | Provided |
| SHARP : JW series | Provided |
| SHARP : JW100/70H COM Port | Provided |
| SHARP : JW20 COM Port | Provided |
| HITACHI : HIDIC-H | Provided |
| HITACHI : HIDIC-S10/2 alpha | Not provided |
| HITACHI : HIDIC-S10/ABS | Not provided |
| MATSUSHITA : MEWNET | Depends on the model |
| YOKOGAWA : FA500 | Provided |
| YOKOGAWA : FA-M3 | Provided |
| YOKOGAWA : FA-M3R | Provided |
| YASKAWA : Memobus | Depends on the model |
| YASKAWA : CP9200SH/MP900 | Not provided |
| TOYOPUC | Provided |
| FUJI : MICREX-F series | Provided |
| FUJI : MICREX-F series V4 | Provided |
| FUJI : FLEX-PC series | Provided |
| FUJI : FLEX-PC CPU | Provided |
| FUJI : FLEX-PC COM | Provided |
| FUJI : FLEX-PC(T) | Provided |
| FUJI : FLEX-PC CPU(T) | Provided |
| KOYO : SU/SG | Depends on the model |
| KOYO : SR-T | Provided |
| KOYO : SR-T(K prt) | Not provided |
| KOYO : SU/SG(K-Sequence) | Depends on the model |
| A.B : PLC-5 | Not provided |
| A.B : SLC500 | Provided |
| A.B : Micro Logix 1000 | Not provided |

| <Type> | <Calendar> |
|---|---|
| GE Fanuc : 90 series | Not provided |
| GE Fanuc : 90 series(SNP-X) | Not provided |
| TOSHIBA : T series | Provided |
| SIEMENS : S5 | Not provided |
| SIEMENS : S7 | Not provided |
| SIEMENS : S5 V4 | Not provided |
| SIEMENS : TI500/505 | Provided |
| SIEMENS : TI500/505(V4) | Provided |
| SIEMENS : S5 PG port | Not provided |
| SIEMENS : S7-300MPI(HMI ADP) | Not provided |
| SIEMENS : S7-300MPI(PC ADP) | Not provided |
| SAMSUNG : SPC series | Not provided |
| SAMSUNG : N_plus | Provided |
| SAMSUNG : SECNET | Depends on the model |
| KEYENCE : KZ series | Not provided |
| KEYENCE : KZ-A500 CPU Port | Provided |
| KEYENCE : KV series | Not provided |
| KEYENCE : KZ24/300 series CPU | Not provided |
| KEYENCE : KV10/24 series CPU | Not provided |
| KEYENCE : KV700 series CPU | Provided |
| LG : MASTER-K10/60/200 | Not provided |
| LG : MASTER-K500/1000 | Not provided |
| LG : LGMKX00S | Not provided |
| LG : MASTER-KxxxS CNET | Not provided |
| LG : GLOFACNET | Not provided |
| FANUC : Power Mate | Not provided |
| FATEK AUTOMATION: FACON FB series | Provided |
| IDEC : MICRO3 | Provided |
| MODICON : Modbus RTU | Depends on the model |
| YAMATAKE : MX series | Provided |
| TAIAN : TP02 | Provided |
| SAIA : PCD | Provided |
| MOELLER : PS4 | Not provided |
| Telemecanique : TSX Micro | Not provided |
| Automationdirect : Direct LOGIC | Depends on the model |
| Automationdirect : Direct LOGIC(K-Sequence) | Depends on the model |

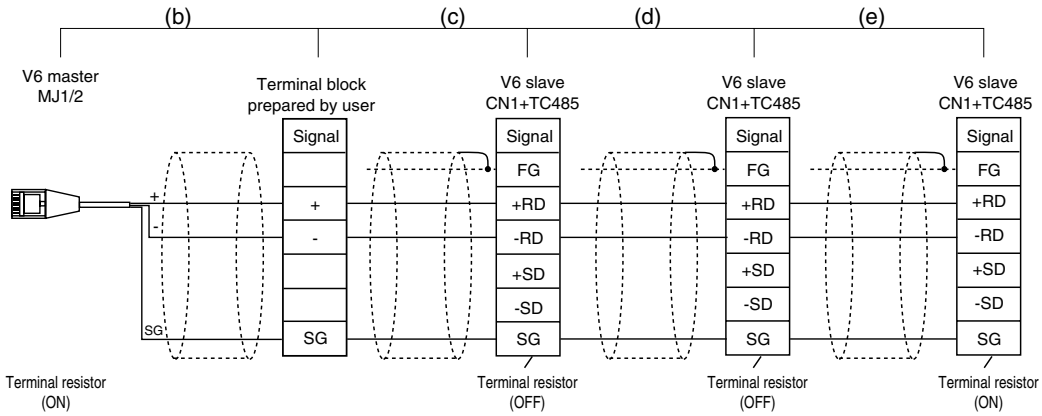
Up to 4 units can be connected to one PLC.

Use the terminal converter (TC485), the optional equipment made by Hakko Electronics Co., Ltd.

See Multi-link2 manual for further details.

* Wire the shielded FG only at the one of both sides so that they are not connected.

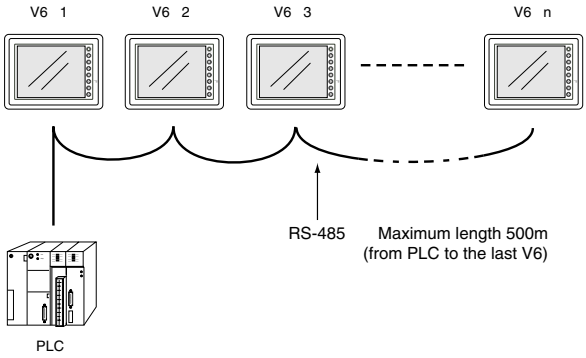
• Set the dip switch (SW1) of TC485 as 2-wire connection when the TC485 terminal converter is used.

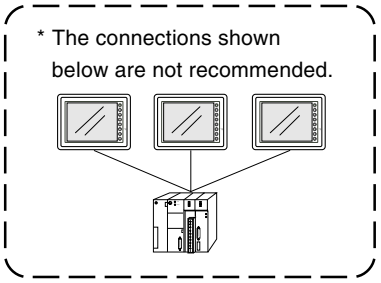



• Short-circuit between +RD and +SD, and -RD and -SD when the TC485 terminal converter is not used.

## n : 1 Link Communication (Multi-link)

Multiple V6 and a PLC are connected. (n=1 to 32)



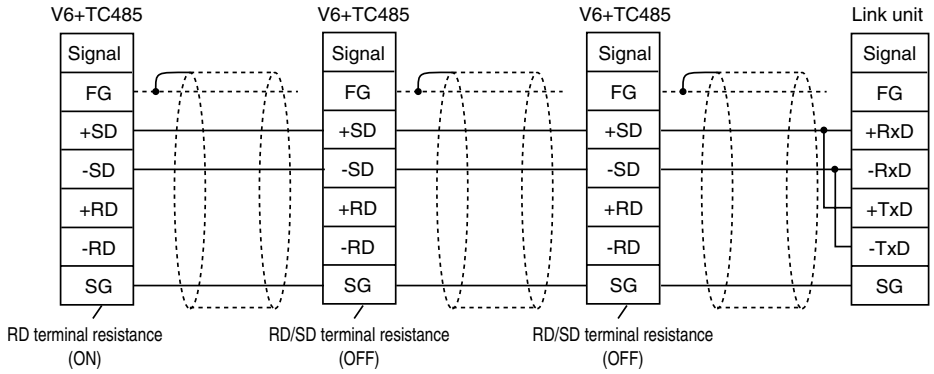




○ Available PLCs for multi-link

| Manufacturer | Models |
|---|---|
| MITSUBISHI | AnA/N/U series, A link+Net10, FX series(A prt) |
| MITSUBISHI | QnA CPU port (with V-MDD) |
| OMRON | SYSMAC C, CV |
| SHARP | JW series, JW100/70H COM Port, JW20/30 COM Port |
| HITACHI | HIDIC-H |
| MATSUSHITA | MEWNET |
| YOKOGAWA | FA500, FA-M3, FA-M3R |
| YASKAWA | Memobus, CP9200SH/MP900 |
| TOYOPUC | TOYOPUC |
| FUJI | MICREX-F series, FLEX-PC COM |
| TOSHIBA | T series |
| SIEMENS | S7-200 PPI |
| SHINKO | SELMART |
| SAMSUNG | SPC series, SECNET |
| LG | MASTER-K500 / K1000 |

○ When multiple V6 are connected to a link unit of PLC, use the terminal converter (TC485), the optional equipment made by Hakko Electronics Co., Ltd. for RS-485 connection.

• Set the dip switch (SW1) of TC485 as 2-wire connection when the TC485 terminal converter is used.

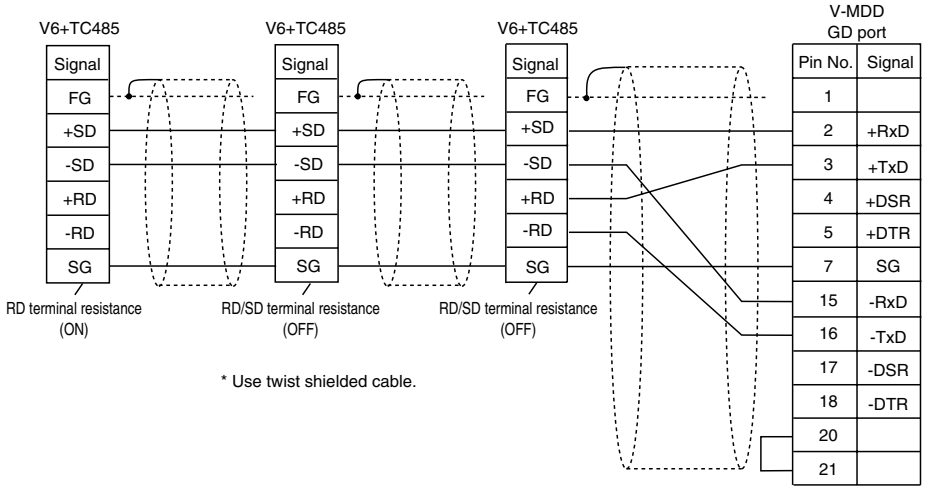



* Use twist shielded cable.

• Short-circuit between +RD and +SD, and -RD and -SD when the TC485 terminal converter is not used.

○ When multiple V6 are connected directly to MITSUBISHI's QCPU port, the optional equipment, GD-MDD2 is required.

• Set the dip switch (SW1) of TC485 as 2-wire connection when the TC485 terminal converter is used.




* Use twist shielded cable.

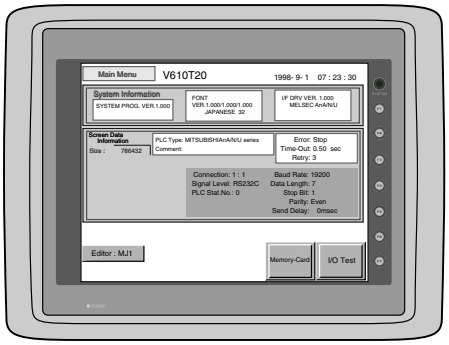
• Short-circuit between +RD and +SD, and -RD and -SD when the TC485 terminal converter is not used.

# 16 Operation of V6 Main Menu

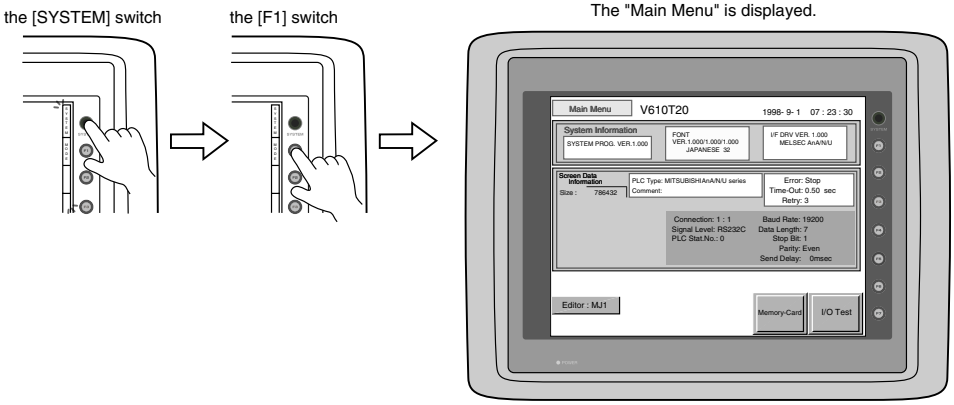
When the power of V6 is turned on for the first time, the screen on the below left is displayed. After transferring the screen data to V6, the following "Main Menu" is displayed.

When power is turned on for the first time:


"Main Menu" after trasferring data

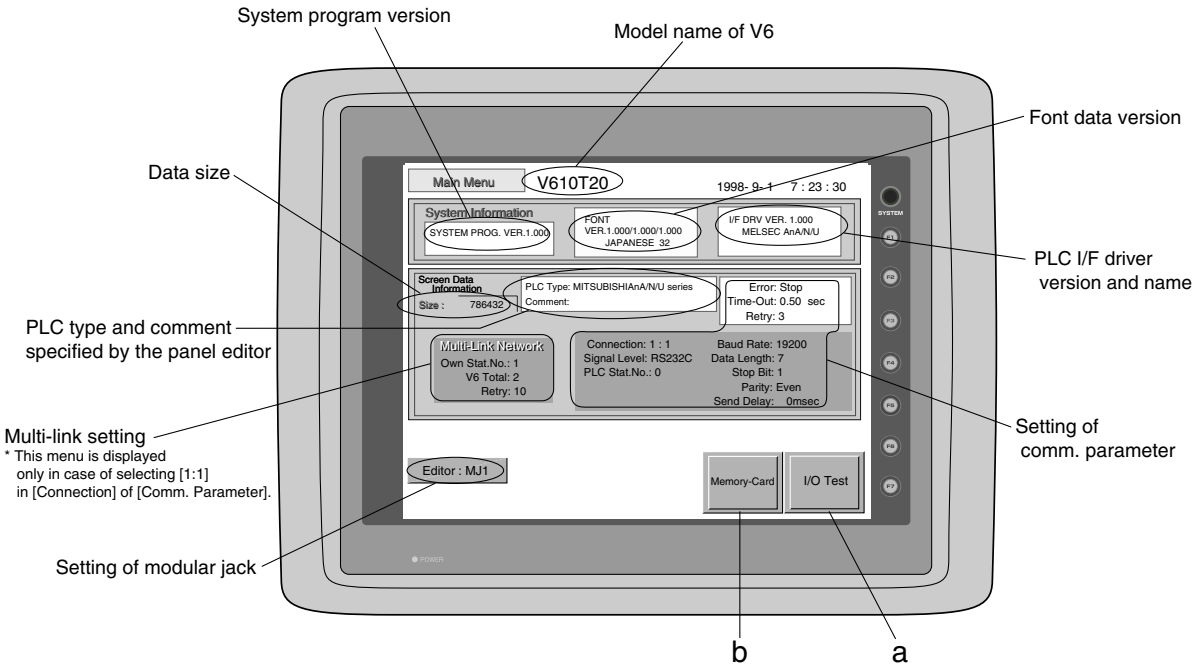


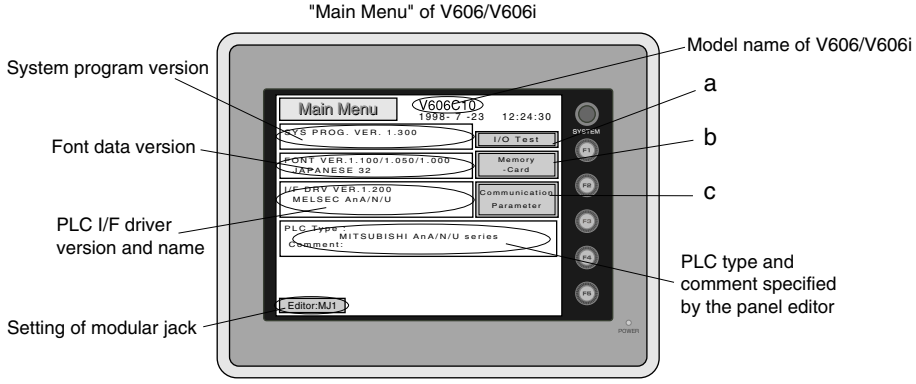

If the screen data has been already transferred to V6, press the [SYSTEM] switch, then press the [F1] switch. The [Main Menu] is displayed.



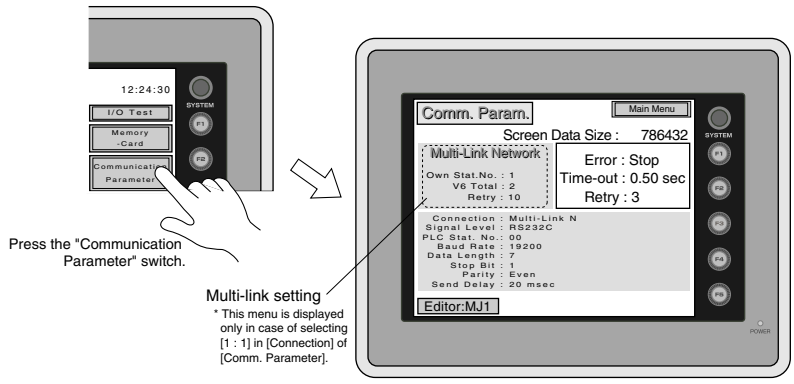

## Main Menu

The "Main Menu" is the system menu for transferring the data between a personal computer and V6.
When the screen data is transferred from a personal computer to V6, the "Main Menu" must be displayed. (If [Editor port] is selected for [Modular Jack 1] in the [P2] menu of the editing software or the on-line editing is executed, it is not necessary to display the "Main Menu".



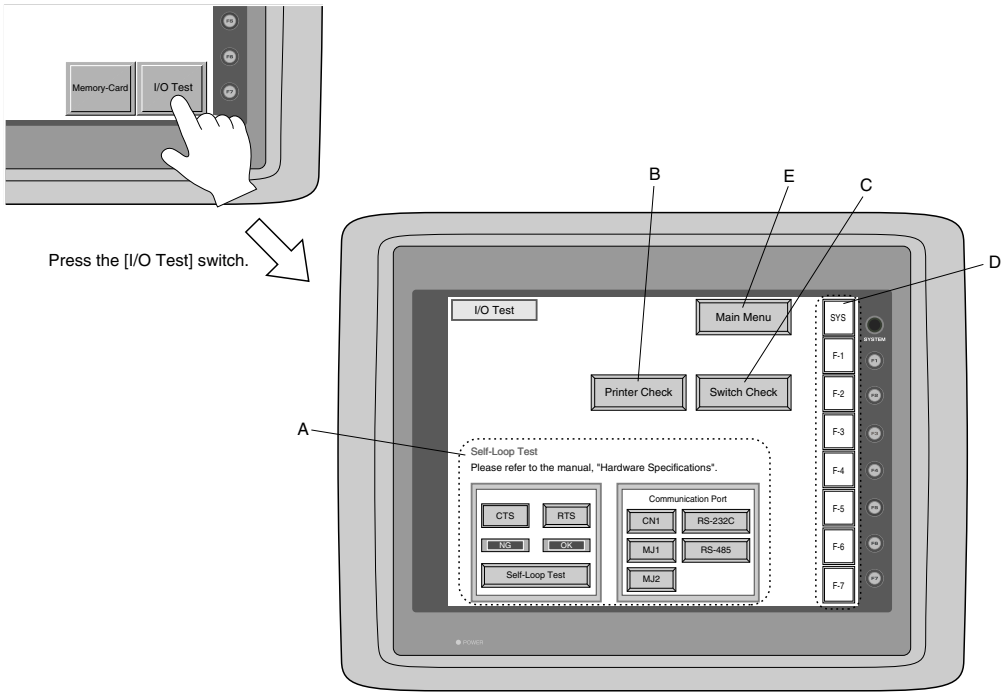




* In case of V606/V606i, when the “Communication Parameter” switch on the “Main Menu” is pressed, the following “Comm. Param.” is displayed.

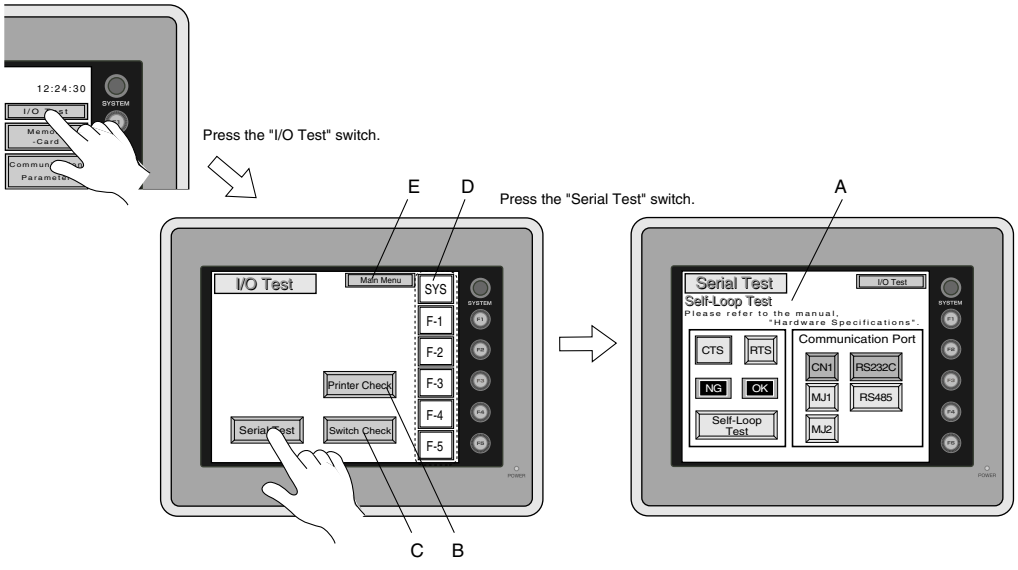


## I/O Test

When the switch 'A' on the "Main Menu" is pressed, the following "I/O Test" is displayed.
This is the test menu to check only V6 hardware.




* In case of V606/V606i, when the switch “A” on the “Main Menu” is pressed, the following “I/O Test” is displayed.
Then, the “Serial Test” switch on the “I/O Test” is pressed. The following “Serial Test” is displayed.
The self-loop test can be executed on this screen.

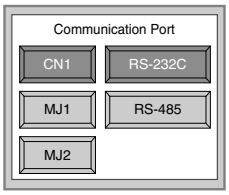


### A. Self-loop Test

This is the test menu to check the signals necessary for V6 to communicate with PLC or a personal computer by using only V6.

○Signal Test of RS-232C in CN1

Select [CN1] and [RS-232C] in [Communication Port] by pressing each switch.

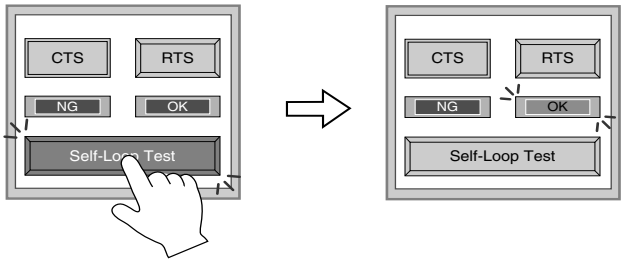



- Loop-back Test

  Check the signals, [SD] and [RD].

  1. Jump pins, 2 and 3 of CN1.
  2. The test is OK, if the [OK] lamp turns on when the [Self-Loop Test] switch is pressed.

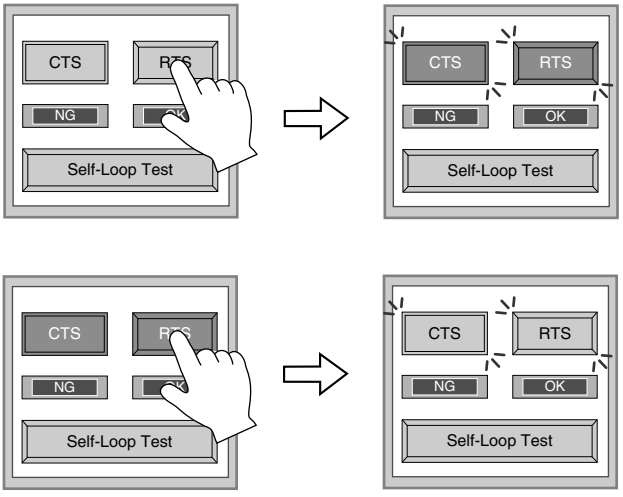
*** If the [NG] lamp turns on when the same switch as above is pressed, ask the advice of your distributor.**




- Test of CTS/RTS

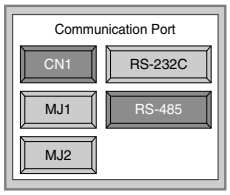
  Check the signals, [CTS] and [RTS].

  1. Jump pins, 4(RTS) and 5(CTS) of CN1.
  2. The test is OK if the [CTS] lamp and the [RTS] lamp turn on at the same time that the [RTS] switch is pressed. Similarly, the test is OK if the [CTS] turns off at the same time that the [RTS] is turned off.



○Signal Test of RS-485 in CN1

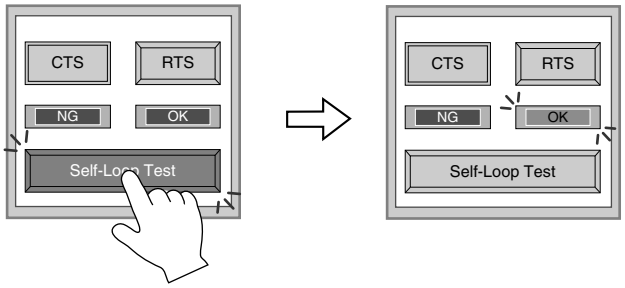
Select [CN1] and [RS-485] in [Communication Port] by pressing each switch.




• Loop-back Test

Check the signals, [SD] and [RD].

1. Jump each pin, 12 and 24, 13 and 25 of CN1.
2. The test is OK, if the [OK] lamp turns on when the [Self-Loop Test] switch is pressed.

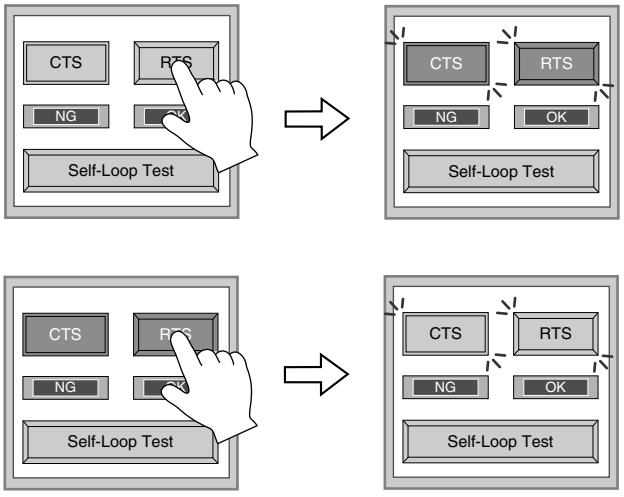



*** If the [NG] lamp turns on when the same switch as above is pressed, ask the advice of your distributor.**

• Test of CTS/RTS

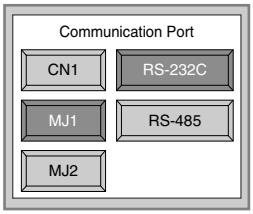
Check the signals, [CTS] and [RTS].

1. Jump each pin, 14(+RTS) and 19(+CTS), 17(-RTS) and 18(-CTS) of CN1.
2. The test is OK if the [CTS] lamp and the [RTS] lamp turn on at the same time that the [RTS] switch is pressed. Similarly, the test is OK if the [CTS] turns off at the same time that the [RTS] is turned off.



○Signal Test of RS-232C in MJ1 and MJ2

Select [MJ1] (or [MJ2]) and [RS-232C] in [Communication Port] by pressing each switch.

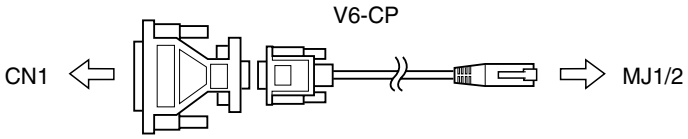



• Loop-back Test

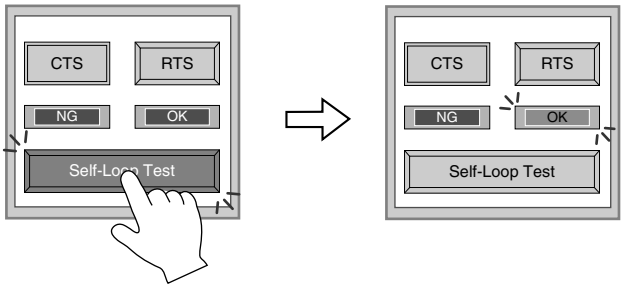
Check the signals, [SD] and [RD].

Execute the test by connecting the data transfer cable (V6-CP) to CN1.

1. Set the adaptor, ADP25-9, which is attached to V6-CP, to V6-CP. And connect the modular jack side of V6-CP to MJ1 (or MJ2), ADP25-9 side of V6-CP to CN1.




2. The test is OK, if the [OK] lamp turns on when the [Self-Loop Test] switch is pressed.




*** If the [NG] lamp turns on when the same switch as above is pressed, ask the advice of your distributor.**

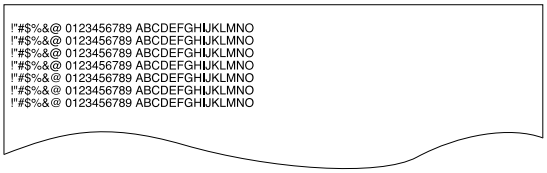
○Signal Test of RS-485 in MJ1 and MJ2

When you execute the signal test of RS-485 in MJ1 and MJ2, ask the advice of your distributor.

### B. Printer Check

Check the signal of printer.

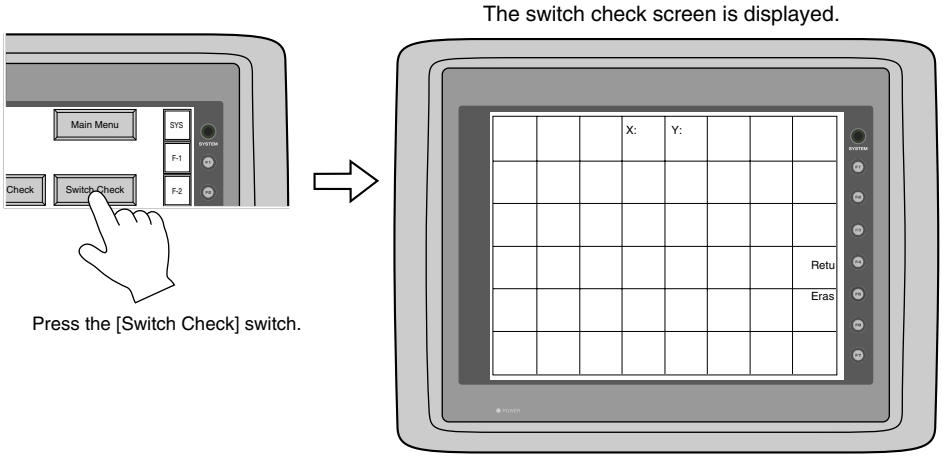
The test is OK if the test printout is executed satisfactorily when connecting V6 to a printer and pressing this [Printer Check] switch.




### C. Switch Check

Check the reaction of the touch switches on the V6 panel.

When the [Switch Check] switch is pressed, the following screen is displayed.

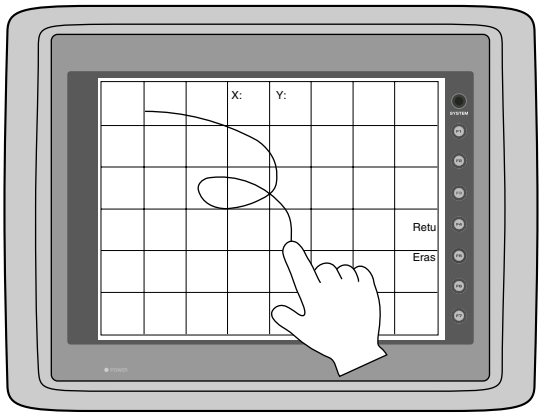



Confirm that the color of the pressed area changes into white.

The white color means that the switch reacts to the touch normally.

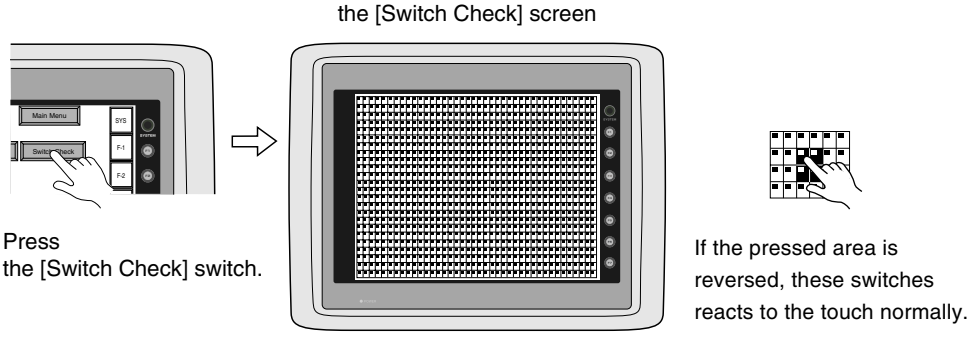
Pressing the [F4] switch leads to the previous [I/O Test] screen.

Pressing the [F5] switch deletes all the white dots.



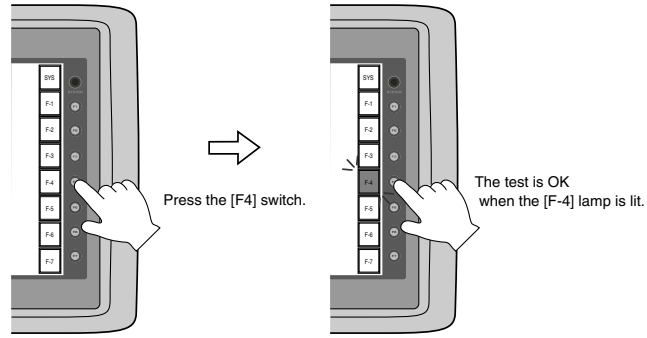
* In case of matrix type

When pressing the [Switch Check] switch, the following screen which is divided by a minimum size of switch is displayed. Confirm that the color of the pressed switch changes into white. Pressing the corner right below leads to the previous [I/O Test] screen.



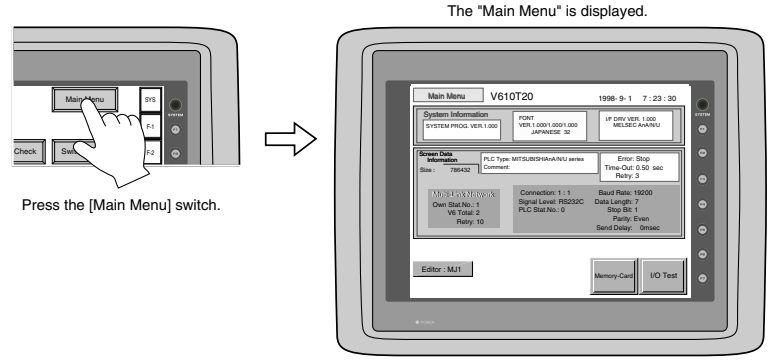

## D. Test of SYSTEM & Function Switches

Check the eight switches (six switches for V606) placed vertically on the right side of the V6 panel. The test is OK if the lamps on the screen turn on when each switch is pressed.



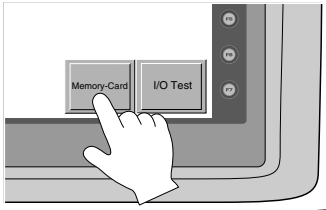

## E. Main Menu

Pressing this [Main Menu] switch leads to the previous [Main Menu].



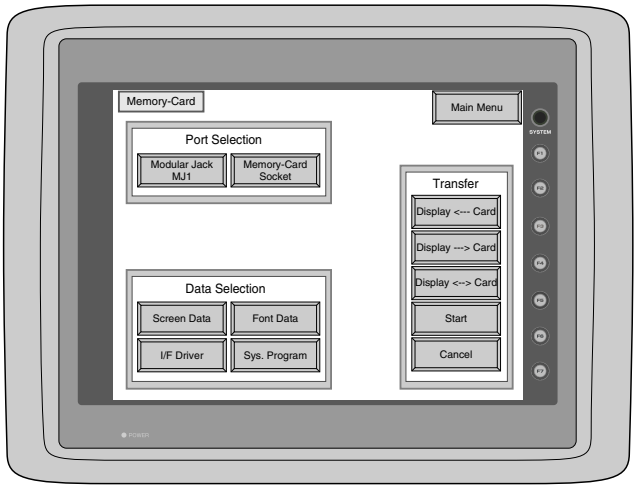
## Memory-Card

When the [Memory-Card] switch on the "Main Menu" is pressed, the following "Memory-Card" is displayed. This screen is to transfer the screen data between V6 and a memory-card.

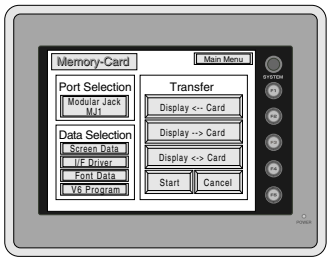



Press the [Memory-Card] switch.

The "Memory-Card" screen is displayed.



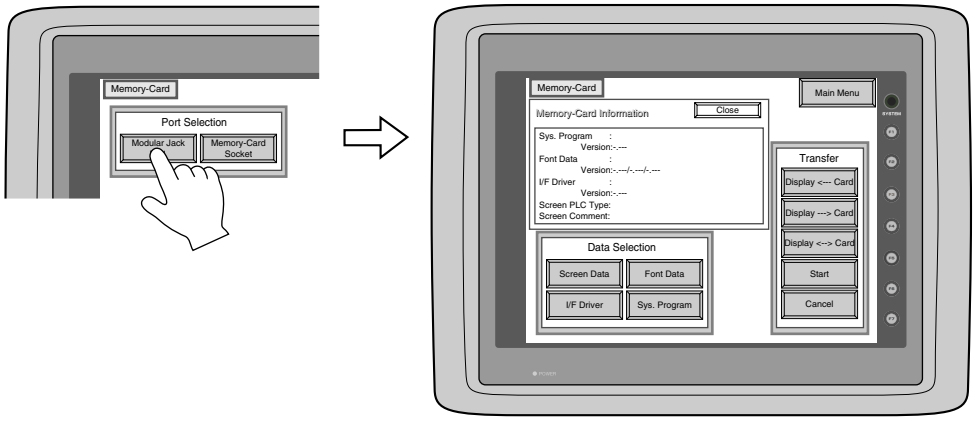

"Memory-Card" of V606/V606i




○ Procedure of Data Transferring

1) Port Selection

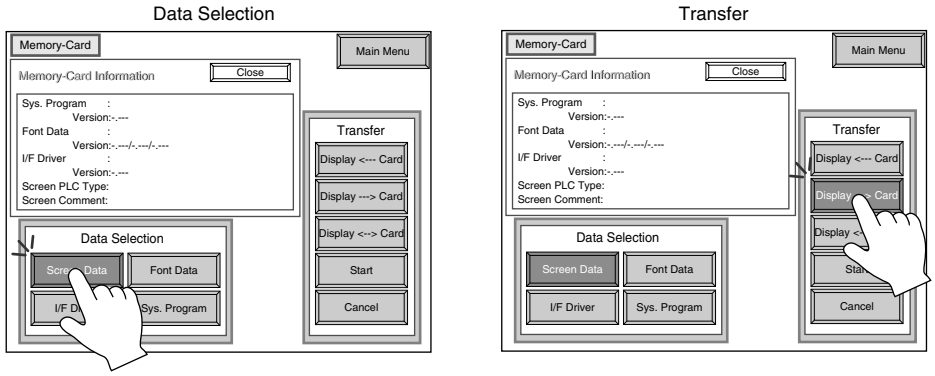
Select the [Modular Jack MJ1] switch (or [Modular Jack MJ2]) in case of using a modular jack.
Select the [Memory-Card Socket] switch in case of using a memory-card interface. When each switch is pressed, the “Memory-Card Information” window is displayed.
In case of V606/V606i, pressing the “Close” switch leads to the original screen after checking the memory card information.




**In case of selecting [Memory Card] from [Modular Jack 2] in the [Others] dialog of V-SFTE, it is possible to select the [Modular Jack 2] switch in the [Port Selection] menu of the [Memory-Card] screen on V6.**

2) Data Selection, Transfer

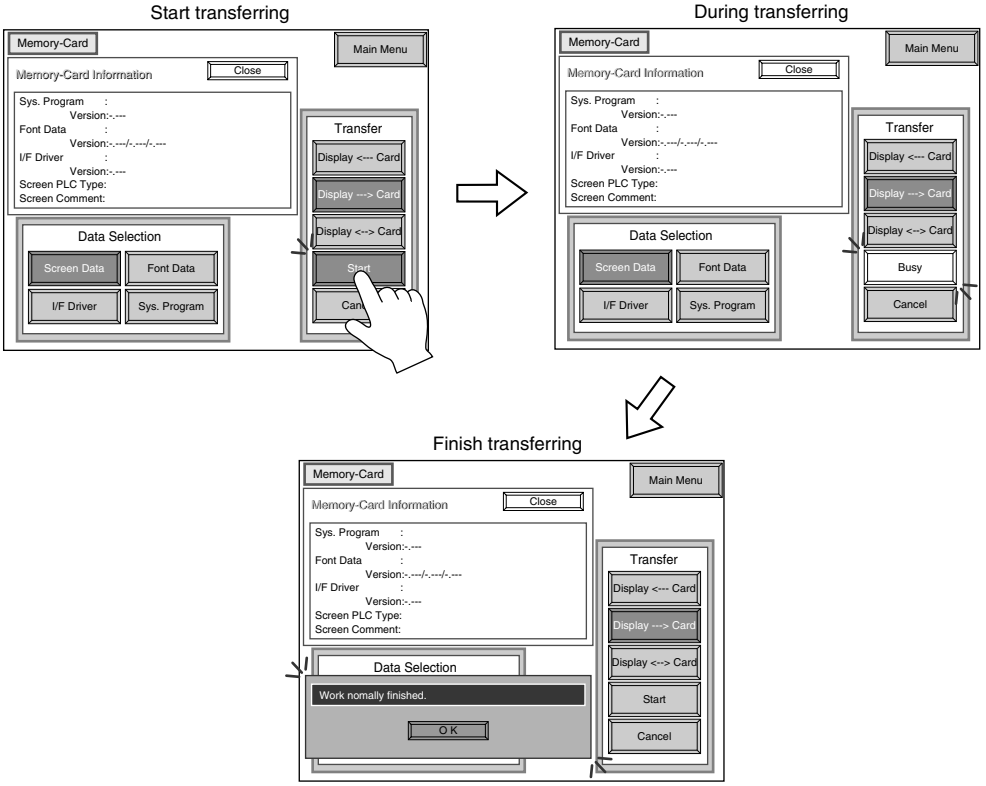
Pressing each switch leads to selection of the target for data transferring. (Possible to select multiple items.)




3) Start

When the [Start] switch is pressed, the data transferring starts. During data transfer, the character, 'Start', on the switch changes into the character, 'Busy', and the switch starts blinking.

After transferring data, the following message is displayed. Press the [OK] switch.




*** When transfer the data from V6 to memorycard via the card interface(= [Memory-Card Socket]) of V6, use SRAM type memory card. FROM type memory card is not used.**

○ Message Display in Data Transferring

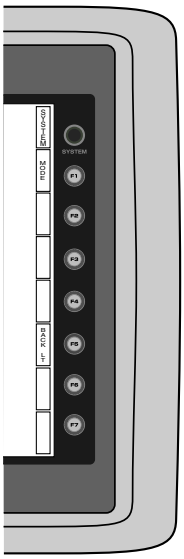
If an error occurs during transferring data, the message display window shown on the right is displayed. The kinds and the contents of the messages are as shown below.


| Message | Contents |
|---|---|
| Work normally finished. | The specified operation has been concluded normally. |
| CREC not connecting | CREC is not connecting when selecting a modular jack. |
| CREC Communication Error | A communication error occurred between V6 and CREC when selecting a modular jack. |
| Memory-Card not setting | A memory card is not inserted. (Or in case of trying to write data into a memory card when inserting FROM type memory card) |
| Memory-Card Capacity over | Cannot write the data into a memory card because the data size in V6 is larger than the capacity of a memory card. |
| Write Protect : ON | Cannot write data into a memory card because the write protect switch in a memory card is ON. |
| Writing Error occurred. | The error occurred while writing data into a memory card. |
| Selected data does not exist. | The data in the reading target does not exist. |
| V6 type is different. | The specified type of the data in V6 is different from the type of the memory card data. |
| Selected data can not be read. | The data in a memory card cannot be read. |
| Reading Error occurred. | The error occurred during writing data into a flash ROM of V6. |
| Data discrepant | There is some discrepancy in data, when comparing data between a memory card and V6. |
| Screen data on V6 will be broken. | This message appears to inform the user that the data in V6 will be broken by transferring the font data (the size which is larger than the present data) from a memory card to V6. (The [OK] switch continues the transferring. The [Cancel] switch stops transferring.) |
| Undefined Error occurred. | The error occurred due to some cause other than the above mentioned. |

# 17 Function Switches

## Type

[SYSTEM], [F1], [F2], [F3], [F4], [F5], [F6], [F7]
(V606/V606i : [SYSTEM], [F1]~[F5])



## the [SYSTEM] switch

By pressing this switch, the functions of the switches [F1] ~ [F7] are defined.
The type of the [SYSTEM] switch is alternate. When this switch is pressed once, the switch menu is displayed by the side of the function switches [F1] ~ [F5], and each function switch corresponds to an item on the displayed switch menu.
When the [SYSTEM] switch is pressed again, the switch menu which is displayed on the screen will disappear, and the functions of switches [F1] ~ [F7] are defined for the purpose of the user. The data of these function switches is allocated to the memory area of PLC.

## Function of [F1] ~ [F5] when the switch menu is displayed

○ [F1] : Mode
This switch changes the operation mode.
Main Menu Mode --> RUN Mode
Run Mode --> Main Menu Mode (possible to specify the changing time)

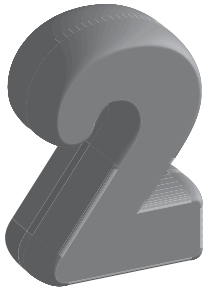
○ [F2] : Contrast Adjustment (dark) ------- invalid in case of the TFT color type
This switch adjusts the contrast of LCD. When the [F2] switch is pressed once, the LCD color becomes dark. If this switch is held down for 1 second, the LCD color changes rapidly into darkness.

○ [F3] : Contrast Adjustment (intermediate) ------- invalid in case of the TFT color type
This switch also adjusts the contrast of LCD. When the [F3] switch is pressed once, the LCD color becomes intermediate.

○ [F4] : Contrast Adjustment (light) ------- invalid in case of the TFT color type
This switch adjusts the contrast of LCD. When the [F4] switch is pressed once, the LCD color becomes light. If this switch is held down for 1 second, the LCD color changes rapidly into lightness.

○ [F5] : Backlight
This switch turns the backlight of V6 on or off.
If you want to use this function, you have to set [Backlight] of the [Others] dialog in [System Setting].
The following list shows the backlight function specified in the editing software.

| Backlight | Function Switch (F5) |
|---|---|
| ON | Ignored. |
| Auto 1<br>Auto 2 | The following actions are added to the regular functions of these items :<br>Even if the time does not reach the setting time, the backlight will turn off if the [F5] switch is pressed (provided that bit 11(Backlight) of Read Area n+1 is OFF level). (Refer to the Reference Manual.) |
| Manual<br>Manual2 | If you select [Manual], the backlight will turn on or off only when this switch is pressed. Also, you can specify the item, [Backlight Power ON Time Control].<br>When you turn the power supply of V6 on ...<br>[ON] : the backlight is lit.<br>[OFF] : the backlight is off. |



# Connection to Link Units

# 1 MITSUBISHI PLC • 1

(A/QnA/QnH (Q) series link)

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-5, 6) |
|---|---|---|---|
| A series link | A2A, A3A | AJ71C24-S6<br>AJ71C24-S8<br>AJ71UC24 | RS-232C [Wiring Diagram 2]<br>RS-422 [Wiring Diagram 3] |
| | A2U, A3U, A4U | AJ71UC24 | |
| | A1, A2, A3<br>A1N, A2N, A3N<br>A3H, A3M, A73 | AJ71C24<br>AJ71C24-S3<br>AJ71C24-S6<br>AJ71C24-S8<br>AJ71UC24 | |
| | A0J2, A0J2H | A0J2C214-S1 | |
| | A2US | A1SJ71UC24-R2 | RS-232C [Wiring Diagram 1] |
| | | A1SJ71UC24-R4 | RS-422 [Wiring Diagram 3] |
| | | A1SJ71UC24-PRF | RS-232C [Wiring Diagram 1] |
| | A1S, A1SJ, A2S | A1SJ71C24-R2 | RS-232C [Wiring Diagram 1] |
| | | A1SJ71C24-R4 | RS-422 [Wiring Diagram 3] |
| | | A1SJ71C24-PRF | RS-232C [Wiring Diagram 1] |
| | A2CCPUC24 | CPU built-in port | RS-232C [Wiring Diagram 1] |
| | QnH(A mode) | A1SJ71UC24-R2<br>A1SJ71UC24-R4 | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 3] |
| QnA series link | Q2A, Q3A, Q4A<br>Q2ASx | AJ71QC24N | RS-232C [Wiring Diagram 2]<br>RS-422 [Wiring Diagram 3] |
| | | AJ71QC24 | RS-232C [Wiring Diagram 2]<br>RS-422 [Wiring Diagram 3] |
| | | A1SJ71QC24 | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 3] |
| | | AJ71QC24-R4(CH1) | RS-422 [Wiring Diagram 4] |
| | | AJ71QC24-R4(CH2) | RS-422 [Wiring Diagram 3] |
| QnH(Q) series link | QnH(Q mode) | QJ71C24 | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 3] |
| | Q00, Q01, Q00J | | |
| | Q00, Q01 | Tool port *1 | RS-232C<br>Hakko Electronics' cable<br>"QCPU2" |

*1 When connecting V6 series to the tool port of Q00 or Q01 CPU, refer to page 2-2.
About the ladder transfer function, refer to Appendix.

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

♦A series link

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 0 for both STATION X 10 and X1 | 0 |
| Parity | | Even | Even |
| Transmission Control Mode *1 | RS-232C | MODE1 | Trans. Mode 1 |
| | RS-422 | MODE5 | Trans. Mode 1 |
| Transmission Code | Data Length | 7 (ASCII) | 7 |
| | Stop Bit | 1 | 1 |
| Sumcheck | | Provided (fixed) | ——— |
| Write while running | | Available (fixed) | ——— |
| Terminal Resistor at Sender | | Provided (fixed) | ——— |
| Terminal Resistor at Receiver | | Provided (fixed) | ——— |

*1 Mode 1: without CR/LF, Mode 4: with CR/LF
If [Trans. Mode 4] is selected from [Trans. Mode] in [Comm. Parameter] of the panel editor, specify [MODE4] in case of RS-232C, or select [MODE8] in case of RS-422.

♦QnA series link, QnH(Q) series link

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 0 for both STATION X 10 and X1 | 0 |
| Parity | | Even | Even |
| Transmission Control Mode | RS-232C | When QnA series link is connected: MODE5 (Binary Mode) (fixed). When QnH(Q) series link is connected: MC Protocol Type 5 (fixed). | ——— |
| | RS-422 | | |
| Transmission Code | Data Length | 8 (fixed) | ——— |
| | Stop Bit | 1 | 1 |
| Sumcheck | | Provided (fixed) | ——— |
| Write while running | | Available (fixed) | ——— |

♦Q00/Q01 CPU

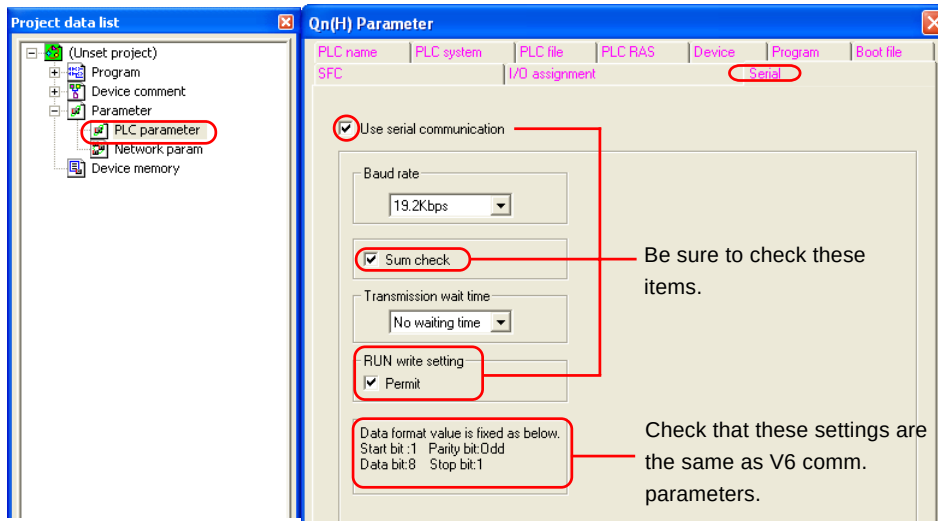
When connecting the V6 seires to the tool port of Q00 or Q01 CPU, it is neccessary to specify [serial communication] setting on PLC parameter. Note on the following setting.

V-SFT

Select [QnH(Q) series link] in [PLC type].

GX Developer (Application software for programming MITSUBISHI PLCs)

1. Double click [PLC parameter].
2. Click the [Serial] tab menu of the [Qn(H) Parameter] dialog.
3. Check [Use serial communication] to specify communication parameters such as Baud rate, Sum check, etc.

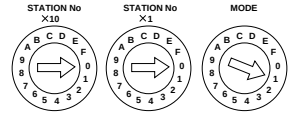


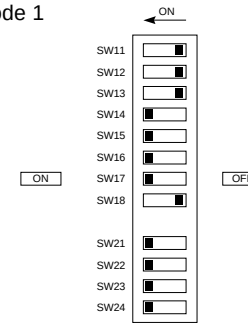

## Switch Setting

The following is an example to show the settings for both rotary dip switches and dip switches on PLC.

<E.g. 1> Signal Level: RS-232C, Baud Rate: 19200bps, Trans. Mode: Trans. Mode 1

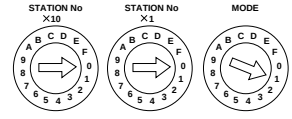
**AJ71UC24**

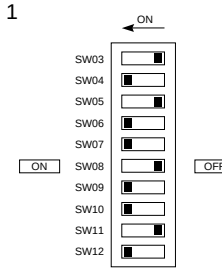



<E.g. 2> Signal Level: RS-232C, Baud Rate: 19200bps, Trans. Mode: Trans. Mode 1

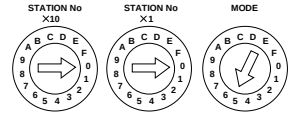
**A1SJ71C24-R2**
**A1SJ71UC24-R2**

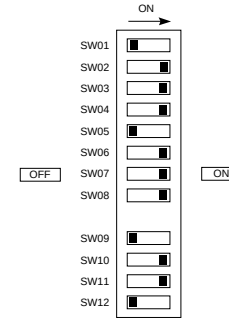



<E.g. 3> Baud Rate: 19200bps

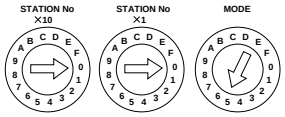
**AJ71QC24**
**A1SJ71QC24**
**AJ71QC24N**

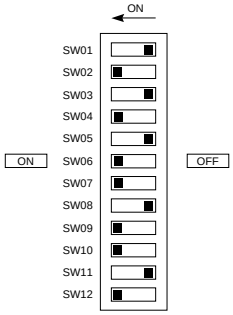


<E.g. 4> Signal Level: RS-422, Baud Rate: 19200bps, Trans. Mode: Trans. Mode 1

**A1SJ71UC24-R4**
**A1SJ71C24-R4**




## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| W (link register) | 1 | |
| R (file register) | 2 | |
| TN (timer/current value) | 3 | |
| CN (counter/current value) | 4 | |
| SPU (special unit) | 5 | Unit No. *1 |
| M (internal relay) | 6 | |
| L (latch relay) | 7 | |
| B (link relay) | 8 | |
| X (input relay) | 9 | |
| Y (output relay) | 10 | |
| TS (timer/contact) | 11 | |
| TC (timer/coil) | 12 | |
| CS (counter/contact) | 13 | |
| CC (counter/coil) | 14 | |
| H (link buffer) | 15 | |
| SD (special register) | 16 | QnA, QnH(Q) series only |
| SM (special relay) | 17 | QnA, QnH(Q) series only |
| SB (special link relay) | 18 | QnA, QnH(Q) series only |
| SW (special link register) | 19 | QnA, QnH(Q) series only |
| ZR (file register [continuous access]) | 20 | QnA, QnH(Q) series only |

*1 The unit number is required in addition to the memory type and the address.
Convert a byte address into a word address to enter the data if the memory device of link unit is byte address.

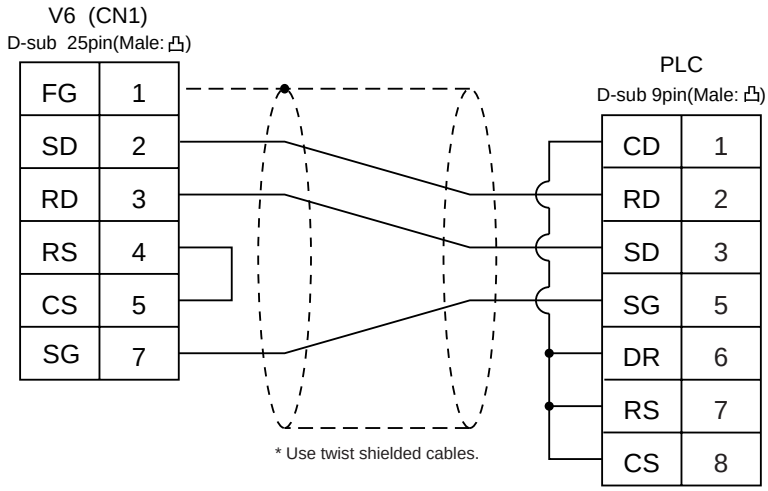
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

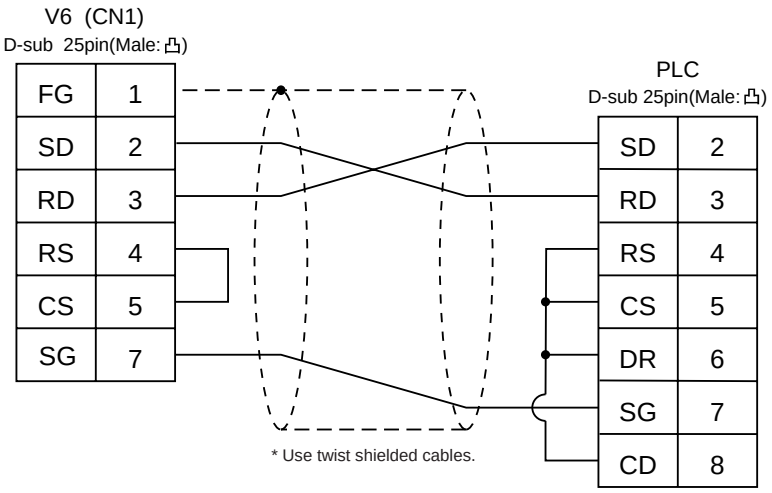
The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

#### Wiring Diagram 1

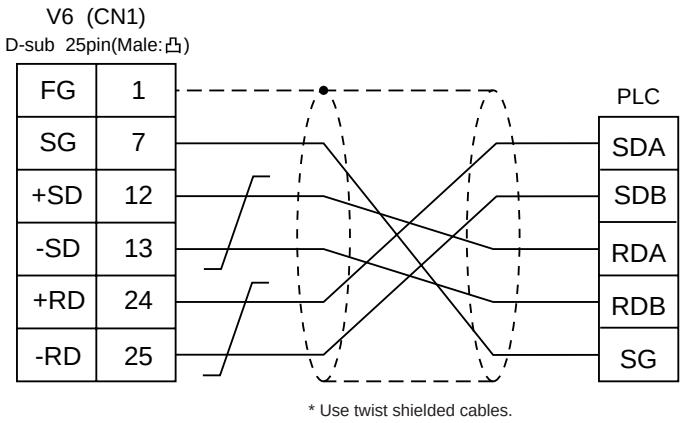



#### Wiring Diagram 2

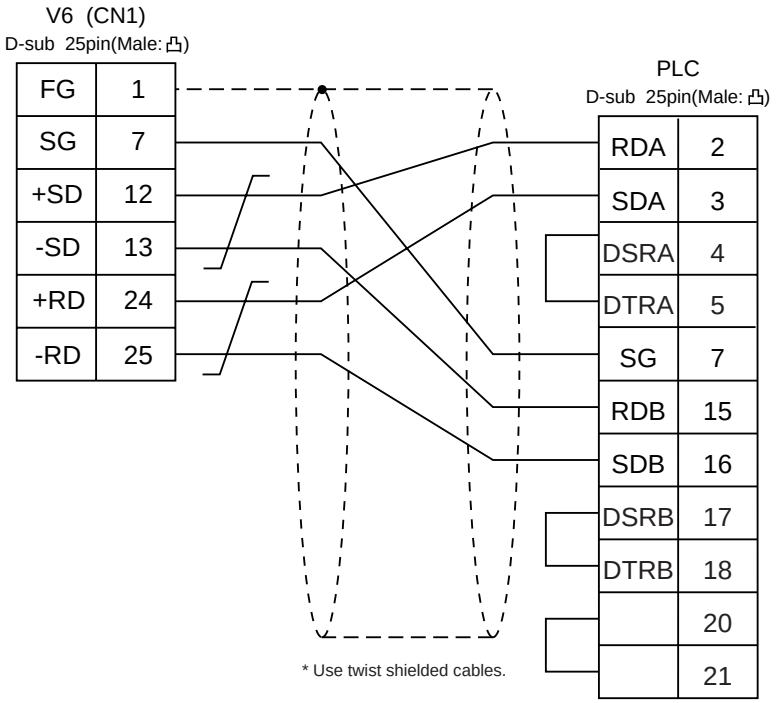


**RS-422**

**Wiring Diagram 3**




**Wiring Diagram 4**



# 2 MITSUBISHI PLC • 2

(A/QnA series CPU)

## Connection

Connect to the A/Q series CPU port.
The communication parameter setting of V6 is done automatically.

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-9) |
|---|---|---|
| A series CPU | A2A, A3A<br>A2U, A3U, A4U<br>A2US(H)<br>A1N, A2N, A3N<br>A3V, A73<br>A3H, A3M<br>A0J2H<br>A1S, A1SJ(H), A2S(H)<br>A2CCPUC24<br>A1FX | RS-422 [MB-CPUQ] made by Hakko Electronics or [Wiring Diagram 1] |
| QnA series CPU | Q2A, Q3A, Q4A<br>Q2AS(H) | |

**When the CPU is updated, or the specifications are changed, there is some possibility that V6 cannot be connected to the PLC.**

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| W (link register) | 1 | |
| R (file register) | 2 | |
| TN (timer/current value) | 3 | *2 |
| CN (counter/current value) | 4 | |
| SPU (special unit) | 5 | Unit No. *1 |
| M (internal relay) | 6 | |
| L (latch relay) | 7 | |
| B (link relay) | 8 | |
| X (input relay) | 9 | |
| Y (output relay) | 10 | |
| TS (timer/contact) | 11 | |
| TC (timer/coil) | 12 | |
| CS (counter/contact) | 13 | |
| CC (counter/coil) | 14 | |
| SD (special register) | 16 | only in QnA |
| SM (special relay) | 17 | only in QnA |
| SB (special link relay) | 18 | only in QnA |
| SW (special link register) | 19 | only in QnA |
| ZR (file register [continuous access]) | 20 | only in QnA |

*1 The unit number is required in addition to the memory type and the address.
Convert a byte address into a word address to enter the data if the memory device of link unit is byte address.

*2 File register(R) cannot be used in case of ROM operation of A series CPU.

**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

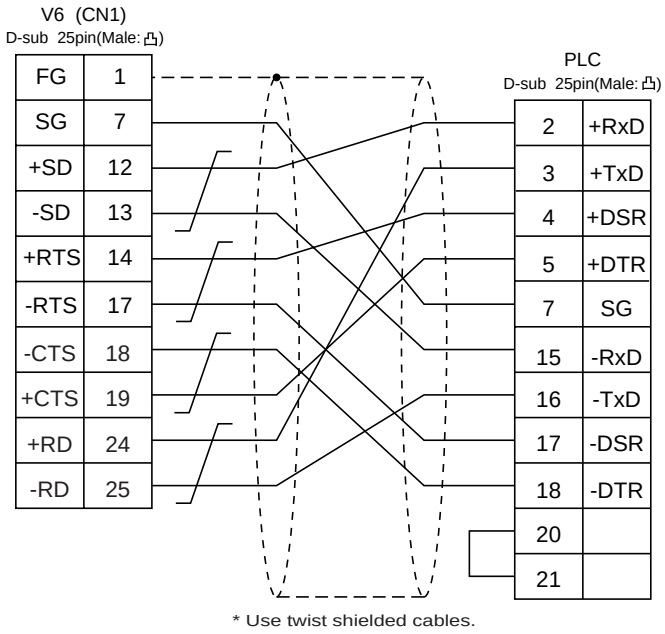
## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-422

Use the cable, [MB-CPUQ](2, 3, 5, 10, 15m) made by Hakko Electronics Co., Ltd.

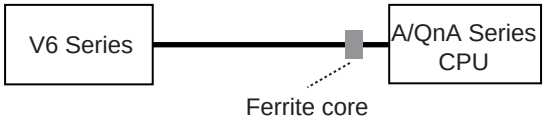
**Wiring Diagram 1 < MB-CPUQ >**




Note

**According to our noise tests, the attachment of a ferrite core improves noise voltage by 650~900V and aids in preventing communication errors.**

○ In case of direct connection with the CPU port of A/QnA series, be sure to attach the ferrite core to the cable between V6 and the CPU port of A/QnA series for noise.

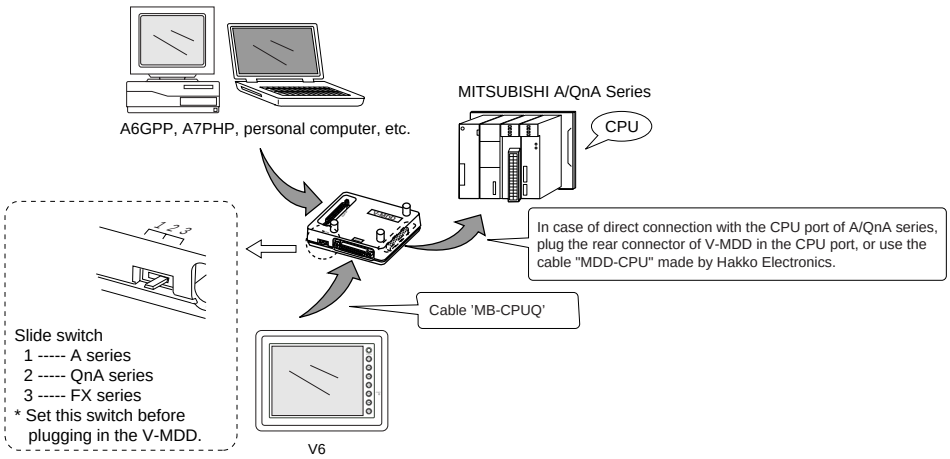



○ A Ferrite core is sold as an optional accessory.
When you buy it, specify “GD-FC (internal diameter : 8mm, external diameter : 20mm)” as the model name.

○ In consideration of such noise problems, it is recommended that the standard type link unit be used in such a case when the cable length of more than 15m is required.

## Notes on using V-MDD (Dual Port Interface)

- ○ As the V-MDD is powered by a CPU, check that the electric capacity of the CPU is at 5V (power consumption: max. 350mA).
- ○ The distance between the CPU and the V-MDD should be as short as possible (max. 1~1.5m).
- ○ For wiring, take appropriate measures to eliminate noise.
- ○ Specify the value more than 150 (=1.5 sec) in [Time-out Time] of [Comm. Parameter] in case of connecting V6 to a V-MDD.



# 3 MITSUBISHI PLC • 3

(QnH series CPU)

## Connection

Connect to the QnH series CPU port.
The communication parameter setting of V6 is done automatically.

## Available PLC

| Select PLC Type | CPU | Wiring Diagram (refer to P2-12) |
|---|---|---|
| QnH(A) series CPU | Q06H-A | RS-232C cable [QCPU2] made by Hakko Electronics |
| QnH(Q) series CPU *1 | Q02<br>Q02H<br>Q06H<br>Q12H<br>Q25H | |

*1 About the ladder transfer function, refer to Appendix.

**When the CPU is updated, or the specifications are changed, there is some possibility that V6 cannot be connected to the PLC.**

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| W (link register) | 1 | |
| R (file register) | 2 | |
| TN (timer/current value) | 3 | |
| CN (counter/current value) | 4 | |
| SPU (special unit) | 5 | Unit No. *1 |
| M (internal relay) | 6 | |
| L (latch relay) | 7 | |
| B (link relay) | 8 | |
| X (input relay) | 9 | |
| Y (output relay) | 10 | |
| TS (timer/contact) | 11 | |
| TC (timer/coil) | 12 | |
| CS (counter/contact) | 13 | |
| CC (counter/coil) | 14 | |
| SD (special register) | 16 | only in Q mode |
| SM (special relay) | 17 | only in Q mode |
| SB (special link relay) | 18 | only in Q mode |
| SW (special link register) | 19 | only in Q mode |
| ZR (file register [continuous access]) | 20 | only in Q mode |

*1 The unit number is required in addition to the memory type and the address.
Convert a byte address into a word address to enter the data if the memory device of link unit is byte address.

**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

### RS-232C

Use the cable, [QCPU2](2, 3, 5, 10, 15m), made by Hakko Electronics Co., Ltd.

# 4 MITSUBISHI PLC • 4

(FX/FX2N/FX1S series CPU)

## Connection

Connect to the FX series CPU port.
The communication parameter setting of V6 is done automatically.

## Available PLC

| Select PLC Type | CPU | Wiring Diagram(refer to P2-15) |
|---|---|---|
| FX series CPU | FX1/2 | RS-232C [PC-CX24A] made by Hakko Electronics<br>RS-422 [MB-CPUQ] made by Hakko Electronics<br>or [Wiring Diagram 1] |
| | FX0N (tool port) | RS-422 [MI4-FX] made by Hakko Electronics<br>or<br>[MB-CPUQ] made by Hakko Electronics<br>+ [FX-20P-CADP] made by MITSUBISHI |
| FX2N series CPU | FX2N/1N (tool port)<br>FX2NC (tool port) | |
| FX1S series CPU | FX1S (tool port) | |

About the ladder transfer function, refer to Appendix.

**When the CPU is updated, or the specifications are changed, there is some possibility that V6 cannot be connected to the PLC.**

## Available Memory

○ FX1/2, FX0N, FX1S series CPU

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| TN (timer/current value) | 1 | |
| CN (counter/current value) | 2 | |
| 32CN (counter 32bits) | 3 | * 1 |
| M (internal relay) | 4 | |
| S (state) | 5 | |
| X (input relay) | 6 | Read only |
| Y (output relay) | 7 | |
| TS (timer/contact) | 8 | |
| CS (counter/contact) | 9 | |
| DX (Data register) | 10 | *2 |

*1 In case of the items which can display double word data (e.g. data display, graph, sampling), the data is managed as double word data.
Both bit data and word data are managed as lower-half 16 bits data.
Input : 16 upper-half bits are ignored.
Output : “0” is written in the 16 upper-half bits.

*2 When use D1000 ~ 2999, select DX.

○ FX2N, FX1N series CPU

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| TN (timer/current value) | 1 | |
| CN (counter/current value) | 2 | |
| 32CN (counter 32bits) | 3 | |
| M (internal relay) | 4 | * 1 |
| S (state) | 5 | |
| X (input relay) | 6 | Read only |
| Y (output relay) | 7 | |
| TS (timer/contact) | 8 | |
| CS (counter/contact) | 9 | |

*1 In case of the items which can display double word data (e.g. data display, graph, sampling), the data is managed as double word data.
Both bit data and a word data are managed as lower-half 16 bits data.
Input : 16 upper-half bits are ignored.
Output : “0” is written in the 16 upper-half bits.

**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

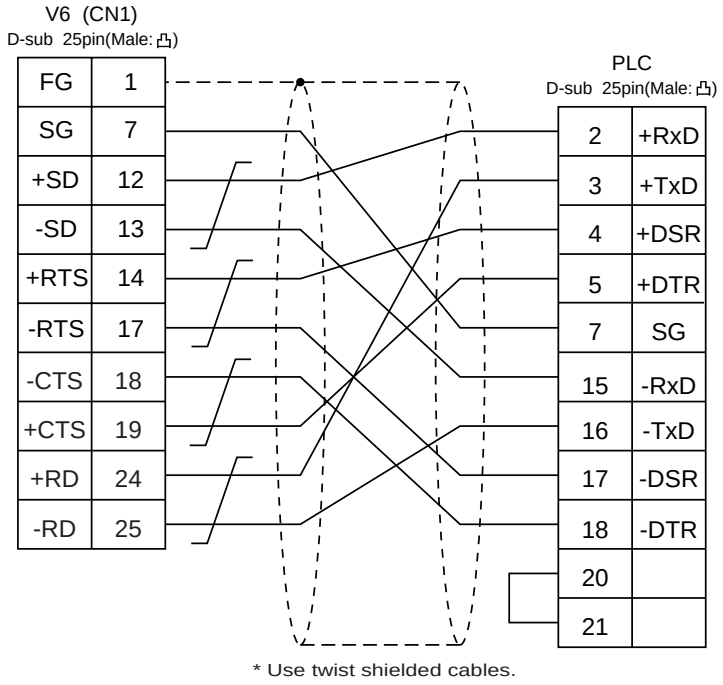
### RS-232C

Use the cable, "PC-CX24A"(3m), made by Hakko Electronics Co., Ltd. in case of RS-232C connection.

### RS-422

Use the cable, "MB-CPUQ"(2, 3, 4, 5, 10, 15m) or “MI4-FX”(2, 3, 4, 5, 10, 15m) made by Hakko Electronics Co., Ltd.

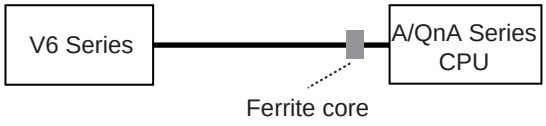
**Wiring Diagram 1 < MB-CPUQ >**




Note

**According to our noise tests, the attachment of a ferrite core improves noise voltage by 650~900V and aids in preventing communication errors.**

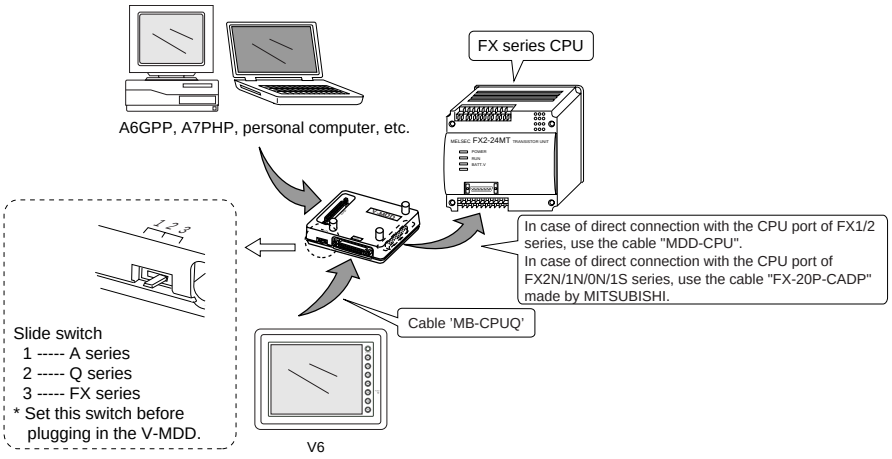
○ In case of direct connection with the CPU port of FX series, be sure to attach the ferrite core to the cable between V6 and the CPU port of FX series for noise.




○ A Ferrite core is sold as an optional accessory.
When you buy it, specify “GD-FC (internal diameter : 8mm, external diameter : 20mm)” as the model name.

## Notes on using V-MDD (Dual Port Interface)

- ○ As the V-MDD is powered by a CPU, check that the electric capacity of the CPU is at 5V (power consumption: max. 350mA).
- ○ The distance between the CPU and the V-MDD should be as short as possible (max. 1~1.5m).
- ○ For wiring, take appropriate measures to eliminate noise.
- ○ Specify the value more than 150 (=1.5 sec) in [Time-out Time] of [Comm. Parameter] in case of connecting V6 to a V-MDD.




* When use the cable "MI4-FX", it is impossible to use the V-MDD.

# 5 MITSUBISHI PLC • 5

(FX series link [A prt])

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-19) |
|---|---|---|---|
| FX series (A protocol) | FX2N | FX2N-232-BD | RS-232C [Wiring Diagram 1] |
| | | FX2N-485-BD | RS-485 [Wiring Diagram 3] |
| | | FX2N-422-BD | RS-422 [MI4-FX] made by Hakko Electronics |
| | FX1N FX1S | FX1N-232BD | RS-232C [Wiring Diagram 1] |
| | | FX1N-485-BD | RS-485 [Wiring Diagram 3] |
| | | FX1N-422-BD | RS-422 [MI4-FX] made by Hakko Electronics |
| | FX0N | FX0N-232ADP | RS-232C [Wiring Diagram 2] |
| | | FX0N-485ADP | RS-485 [Wiring Diagram 3] |
| | FX2NC | FX0N-232ADP | RS-232C [Wiring Diagram 2] |
| | | FX0N-485ADP | RS-485 [Wiring Diagram 3] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Parity | | Even | Even |
| Transmission Code | Data Length | 7 | 7 |
| | Stop Bit | 1 | 1 |
| Protcol | | Exclusive Protocol Communication (fixed) | ——— |
| H/W Type *1 | | Normally RS-232C | RS-232C |
| Sumcheck | | Provided (fixed) | ——— |
| Transmission Control Mode | | MODE 1 | Trans. Mode 1 |

*1 When the link unit, FX2N-485-BD, FX2N-422-BD, FX1N-485-BD, FX1N-422-BD, FX0N-485-ADP is used, select [RS-485] in [Signal Level].

**At the [Detail Setting] menu of the [Comm. Parameter] dialog of V-SFTE, setting the value more than [2] in [Send Delay Time] is recommended.**

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| TN (timer/current value) | 1 | |
| CN (counter/current value) | 2 | |
| 32CN (counter 32bits) | 3 | * 1 |
| M (internal relay) | 4 | * 2 |
| S (state) | 5 | |
| X (input relay) | 6 | Read only |
| Y (output relay) | 7 | |
| TS (timer/contact) | 8 | |
| CS (counter/contact) | 9 | |

*1 The meaning of CN200~CN255 is the same as the meaning of 32CN(counter 32bits).

*2 In case of the items which can display double word data (e.g. data display, graph, sampling), the data is managed as double word data.
Both bit data and a word data are managed as lower-half 16 bits data.
Input : 16 upper-half bits are ignored.
Output : “0” is written in the 16 upper-half bits.

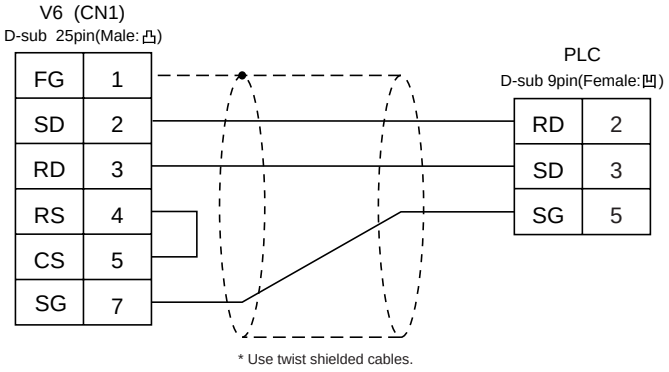
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

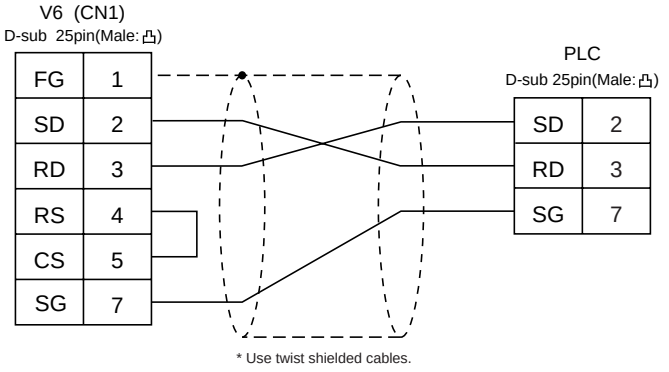
The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

#### Wiring Diagram 1




#### Wiring Diagram 2

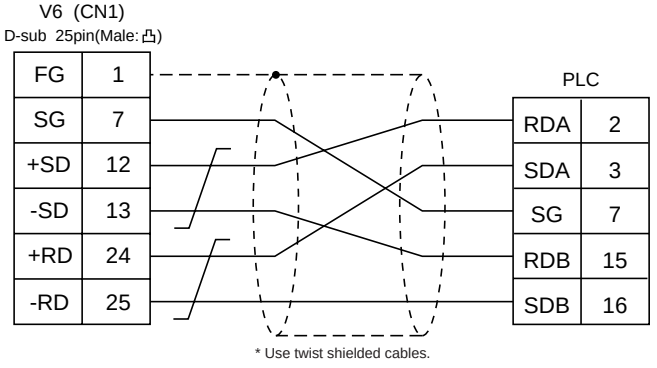



### RS-422

Use the cable, “MI4-FX”(2,3,5,10,15m), made by Hakko Electronics Co., Ltd.

### RS-485

#### Wiring Diagram 3



# 6 MITSUBISHI PLC • 6

(A link+Net10)

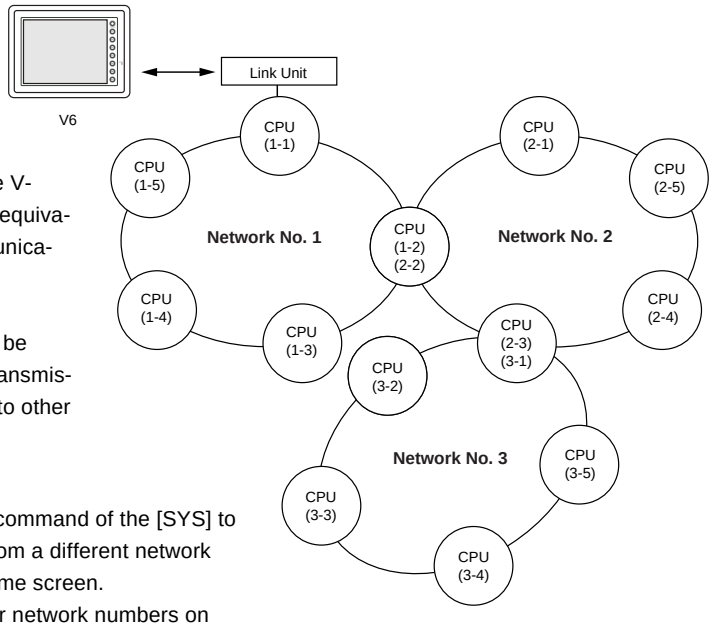
Change of PLC Type

PLC Type “Net 10,” changes to “A link+Net10,” and the new “Net10” adds to PLC Type in V-SFTE Ver.1.2.16.0 or later.
To select “Net10” as a new type, refer to “Specifications for Communication Unit [NET/10].”

○ V6 can access other CPUs on the NET II(/B) or NET/10 when V6 is connected to one of the link units that the data link system or network system consists of.
Select “Net10” as PLC setting when configuring the screen data on the V-SFTE.

○ To access other CPU on the NET II (/B) or NET/10 from V6.
- In case of NET II(/B), only the network which has the CPU with the link unit connected to the V6 (e.g. No. 1) can be accessed.
  (Available CPU No.: 0~30)
- In case of NET/10, other networks (No. 2, No. 3) can be accessed in addition to the network No. 1.
  (Available CPU No.: 1~30)

○ To read/write the memories of the CPU(e.g. 1-1 of CPU) which has the link unit to be connected to the V6:




Set the CPU No. to “31” on the V-SFTE. Response time will be equivalent to the case of 1 : 1 communication.

Please note that response will be delayed due to the transient transmission when the CPU No. is set to other than “31”.

○ In this case, use [OUT_ENQ] command of the [SYS] to program the macro. A CPU from a different network cannot be accessed on the same screen.
When accessing PLCs of other network numbers on NET/10, specify the network number to be connected with the screens Open Macro in V-SFTE.

○ Macro type to specify network • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • [OUT_ENQ] command of [SYS]

F1 Memory

| | |
|---|---|
| n+0 | 0 (fixed) |
| n+1 | Specify network: 2 (fixed) |
| n+2 | System code |
| n+3 | Network No. |

The addresses n+0 and n+1 are fixed for 0 and 2.
Specify n+2 [System code] to 1: NET/10 2: NET II(/B)
Enter "0" to n+3 [Network No.] when n+2 [System code] indicates "2", and "the number to be accessed" to n+3 [Network No.] when n+2 [System code] indicates "1".

No macros can include this command except Open Macro. Communication error will occur due to the execution of the netware change when this command is used in other kinds of macros.

Refer to the "V series Reference Manual" for further information on Macro.
Also refer to MITSUBISHI's manual for network registration.

○ See MITSUBISHI's manual for details on the NET II(/B) data link system and the NET/10 network system.

## Available Memory

See P2-1, "A/Q series link units" and P2-7, "A/QnA series CPU port" for available memory of the PLC to be accessed.
Note that CPU No. should be set on V-SFTE.

## Wiring

See the wiring diagrams on P2-5,6, "1 MITSUBISHI PLC • 1."

# 7 OMRON PLC • 1

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-25, 26) |
|---|---|---|---|
| SYSMAC C | C20H, C28H, C40H | CPU unit with a built-in RS-232C port (host link port) | RS-232C [Wiring Diagram 1] |
| | C120, C120F<br>C200H<br>C500, C500F<br>C1000H<br>C2000, C2000H | C120-LK201-V1<br>C120-LK202-V1 | RS-232C [Wiring Diagram 3]<br>RS-422 [Wiring Diagram 4] |
| | C200H<br>C200HS-CPU01,03<br>C200HS-CPU21,23<br>C200HS-CPU31,33 | C200H-LK201<br>C200H-LK201-V1<br>C200H-LK202<br>C200H-LK202-V1 | RS-232C [Wiring Diagram 3]<br>RS-422 [Wiring Diagram 4] |
| | C200HS-CPU21,23<br>C200HS-CPU31,33<br>CQM1-CPU21<br>CQM1-CPU41, 42, 43, 44 | CPU unit with a built-in RS-232C port (host link port) | RS-232C [Wiring Diagram 2] |
| | C500, C500F<br>C1000H<br>C2000, C2000H | C500-LK203 | RS-232C [Wiring Diagram 3]<br>RS-422 [Wiring Diagram 4] |
| | C200HX<br>C200HG<br>C200HE | CPU unit with a built-in RS-232C port (host link port) | RS-232C [Wiring Diagram 2] |
| | | Communication board (C200HW-COM02~06) | RS-232C [Wiring Diagram 2]<br>RS-422 [Wiring Diagram 5] *1 |
| | SRM1-C02 | RS-232C interface | RS-232C [Wiring Diagram 2] |
| | CPM1A | CPU unit (peripheral port) | [CQM1-CIF01] *2<br>made by OMRON |
| SYSMAC CV | CV500, CV1000<br>CV2000<br>CVM1 | CPU unit with a built-in RS-232C port (host link port) | RS-232C [Wiring Diagram 2]<br>RS-422 [Wiring Diagram 6] |
| | | CV500-LK201 | RS-232C<br>PORT1 [Wiring Diagram 3]<br>PORT2 [Wiring Diagram 2]<br>RS-422<br>PORT2 [Wiring Diagram 5] |
| SYSMAC CS1 | CS1 | CPU unit with a built-in RS-232C port (host link port) | RS-232C [Wiring Diagram 2] |
| | | CS1W-SCU21 | RS-232C [Wiring Diagram 2] |
| | | Communication board (CS1W-SCB41) | RS-232C [Wiring Diagram 2]<br>RS-422 [Wiring Diagram 7] *1 |
| | CJ1, CJ1M | CPU unit with a built-in RS-232C port (host link port) | RS-232C [Wiring Diagram 2] |

*1 Cannot be connected to V6 by multi-link connection.

*2 Exchange the shell, the side of D-sub25. (recommendation : 17J-25 made by DDK)

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 0 | 0 |
| Parity | | Even | Even |
| Transmission Code | Data Length | 7 (ASCII) | 7 |
| | Stop Bit | 2 | 2 |
| Command Level | | 3 (fixed) | ——— |
| 1 :1/1 : n Protocol | | 1 : n (fixed) | ——— |
| Synchronizing Switch | | Internal Synchronization (fixed) | ——— |
| CTS Switch | | 0V (normally ON) (fixed) | ——— |
| 5V Supply Switch | | OFF (fixed) | ——— |
| Terminal Resistor | | ON for RS-422 | ——— |

· Set the [Trans. Mode] for [Detail] in the [Comm. Parameter] in V-SFTE.

| Trans. Mode | Contents |
|---|---|
| Trans. Mode 1 | w/o sign BCD |
| Trans. Mode 2 | w/+/- sign BCD *1 |

*1 w/+/- sign BCD

It is possible to display the data for PLC data with signs + and -.

When higher 4 bits of the memory are [F or A], treat the data as the minus data.
[F] : regards higher 4 bits of the memory as [-0]
[A] : regards higher 4 bits of the memory as [-1]

· range 1 word : -1999 ~ +9999
2 words : -19999999 ~ +99999999

<Ex.>

| PLC memory | Display of V6 |
|---|---|
| 0000 ~ 9999 | 0 ~ 9999 |
| F001 ~ F999 | -1 ~ -999 |
| A000 ~ A999 | -1000 ~ -1999 |
| 00000000 ~ 99999999 | 0 ~ 99999999 |
| F0000001 ~ F9999999 | -1 ~ -9999999 |
| A0000000 ~ A9999999 | -10000000 ~ -19999999 |

· How to set : Num. Display
[Input Type] BCD
[Display Type] DEC(w/ -sign, w/ +sign)

## Available Memory

○ C

| Memory | TYPE | Remarks |
|---|---|---|
| DM (data memory) | 0 | |
| CH (input/output relay) | 1 | |
| HR (holding relay) | 2 | |
| LR (latch relay) | 3 | |
| AR (alarm relay) | 4 | |
| T (timer/current value) | 5 | |
| C (counter/current value) | 6 | |
| EMn (extensional data memory) | 7 | * 1 |
| TU (timer/contact) | 9 | Read only |
| CU (counter/contact) | 10 | Read only |

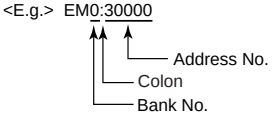
○ CV

| Memory | TYPE | Remarks |
|---|---|---|
| DM (data memory) | 0 | |
| CH (input/output relay) | 1 | |
| AR (alarm relay) | 4 | |
| T (timer/current value) | 5 | |
| C (counter/current value) | 6 | |
| EMn (extensional data memory) | 7 | * 1 |
| TU (timer/contact) | 9 | Read only |
| CU (counter/contact) | 10 | Read only |

○ CS1

| Memory | TYPE | Remarks |
|---|---|---|
| DM (data memory) | 0 | |
| CH (input/output relay) | 1 | |
| AR (alarm relay) | 4 | |
| T (timer/current value) | 5 | |
| C (counter/current value) | 6 | |
| EMn (extensional data memory) | 7 | * 1 |
| W (internal relay) | 8 | |
| TU (timer/contact) | 9 | Read only |
| CU (counter/contact) | 10 | Read only |

*1 When using EMn (extensional data memory), specify the bank number (C, CV:0 ~ 7, CS1:0 ~ C).
The assigned memory is indicated while editing the screen as illustrated:



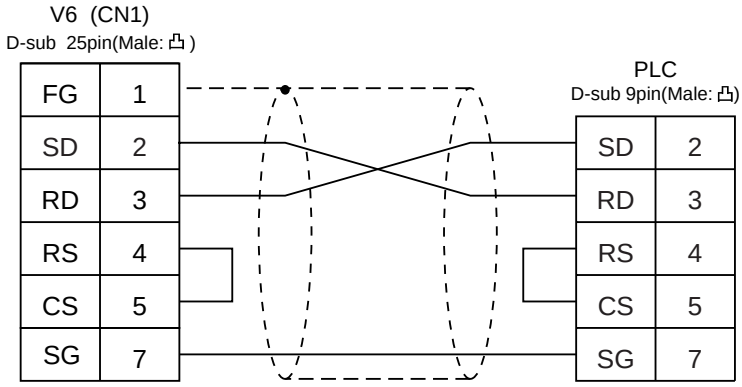

**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

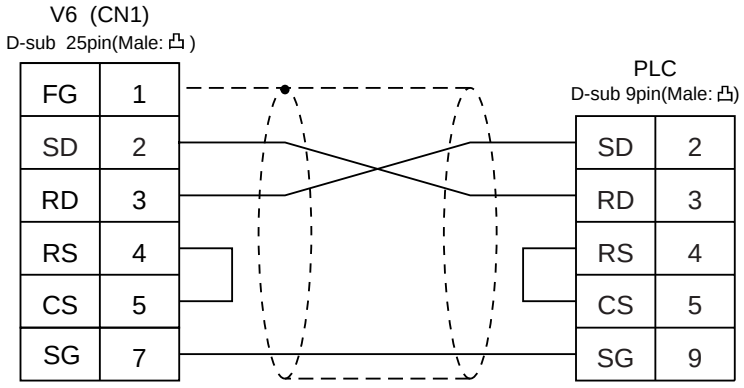
**RS-232C**

### Wiring Diagram 1



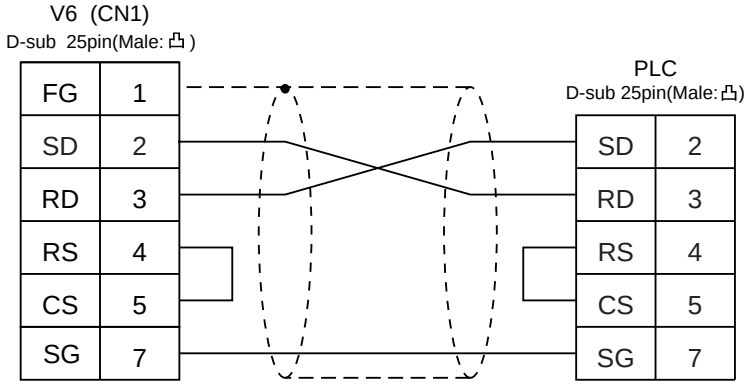

* Use twist shielded cables.

### Wiring Diagram 2




* Use twist shielded cables.

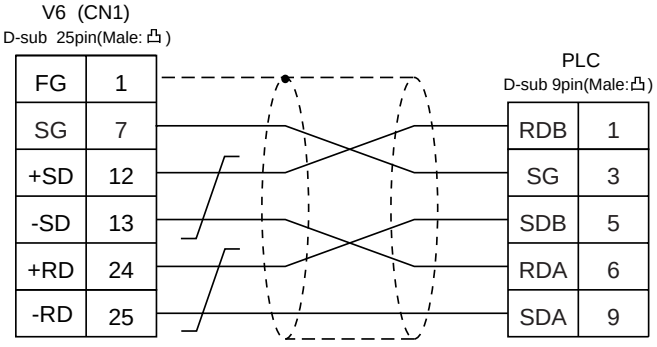
### Wiring Diagram 3




*Use twist shielded cables.

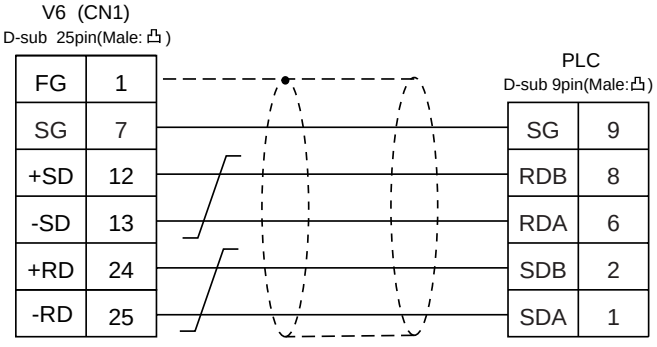
## RS-422

### Wiring Diagram 4



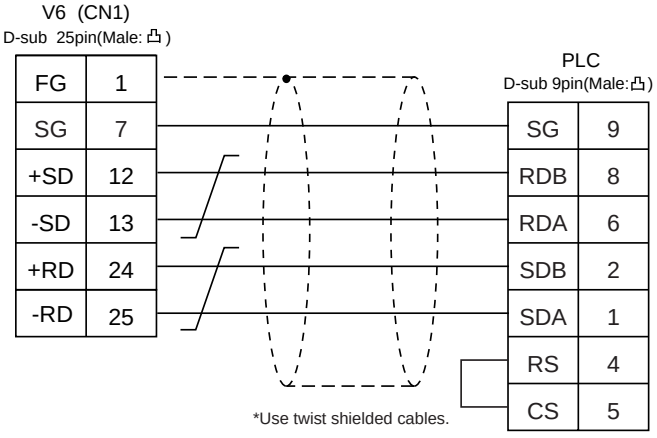

*Use twist shielded cables.

### Wiring Diagram 5



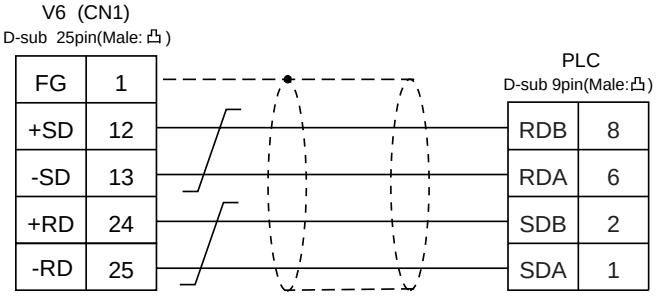

* Use twist shielded cables.

### Wiring Diagram 6




*Use twist shielded cables.

### Wiring Diagram 7

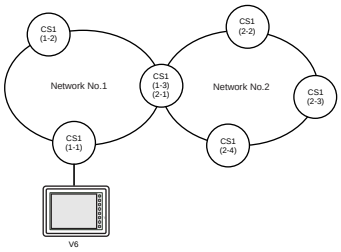



*Use twist shielded cables.

# 8 OMRON PLC • 2

(OMRON-CS1 DNA)

When connect the V6 to CS1 on a network, the V6 can also access the other CS1 on a network.




## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-25,26) |
|---|---|---|---|
| SYSMAC CS1 DNA | CS1 | CPU unit with a built-in RS-232C port (host link port) | RS-232C [Wiring Diagram 2] |
| | | CS1W-SCU21 | RS-232C [Wiring Diagram 2] |
| | | Communication board (CS1W-SCB41) | RS-232C [Wiring Diagram 2]<br>RS-422 [Wiring Diagram 7] *1 |

*1 Cannot be connected to V6 by multi-link connection.

## Available Memory

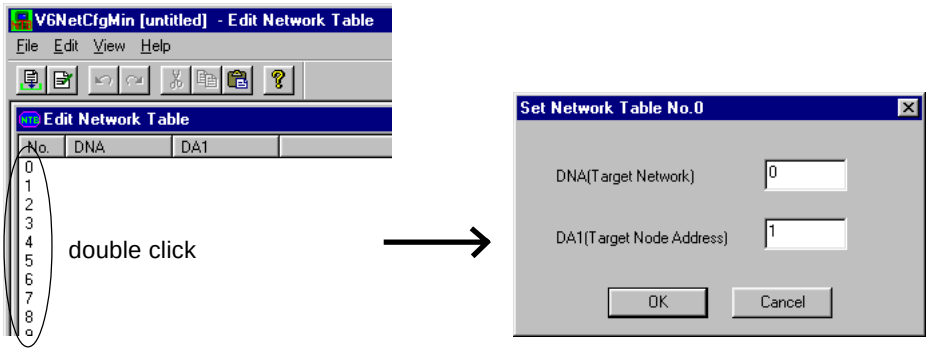
See [Available Memory] of CS1 in [7 OMRON PLC • 1].

## Wiring

See [Wiring] in [7 OMRON PLC • 1].

## V-SFTE Setting

- Select [System Setting] from [Item], and click [Comm. Parameter]. The [Comm. Parameter] dialog is displayed. Set [Connection] to [1:n] in the [Detail] tab window.
- Select [System Setting] from [Item], and click [Network Table]. [Edit Network Table] is displayed. Double click the [No.]. The dialog is displayed. Register the CS1 on the network.



# 9 Sharp PLC • 1

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram refer to P2-30 |
|---|---|---|---|
| JW series | JW50, JW70, JW100<br>JW50H, JW70H<br>JW100H | ZW-10CM<br>JW-10CM | RS-422 [Wiring Diagram 3] |
| | JW20<br>JW-31CUH | JW-21CM | RS-422 [Wiring Diagram 3] |
| JW100/70H COM port | JW70, JW100<br>JW70H, JW100H | CPU communication port | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 2] |
| JW20 COM port | JW20(JW22CU)<br>JW20H(JW22CU) | | |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|
| Baud Rate | 19200bps | 19200bps |
| Port | 0 for STA. NO x10, 1 for x1 | 0 |
| Parity | Even | Even |
| RS-422 | 4-wire system (fixed) | ——— |
| Data Length | 7 | 7 |
| Stop Bit | 2 | 2 |
| Error Check | Sumcheck (fixed) | ——— |
| Transmission Control | Command mode (fixed) | ——— |

## Switch Setting of Link Unit

Baud rate: 19200bps

| Swtich | Setting | Contents |
|---|---|---|
| SW0 | 4 | Command mode |
| SW1 | 1 | Station address (lower half) |
| SW2 | 0 | Station address (upper half) |
| SW3-1 | OFF | Not used |
| SW3-2 | ON | 4-wire system |
| SW3-3 | OFF | Not used |
| SW3-4 | ON | Even parity |
| SW4 | 0 | Baud rate<br>0: 19200 1: 9600 2: 4800 3: 2400<br>4: 1200 5: 600 |
| SW7 | ON | Teminating resistance provided |

## PLC System Memory Setting (in case of a communication port)

Baud rate: 19200bps

System memory

| | D7 | D6 | D5 | D4 | D3 | D2 | D1 | D0 |
|---|---|---|---|---|---|---|---|---|
| #0236 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| #0237 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| X9XXX (register) | 0 | |
| XXXXX (relay) | 1 | ]as word device |
| EXXXX (self-diagnosis) | 2 | |
| bXXXX (timer counter) | 3 | |
| Fn (file register) | 7 | *1 |

*1 To set up Fn (file register), input [File No.] + [: (colon)] + [address].

<E.g.> F1 : 00002

Address
Colon
File No.

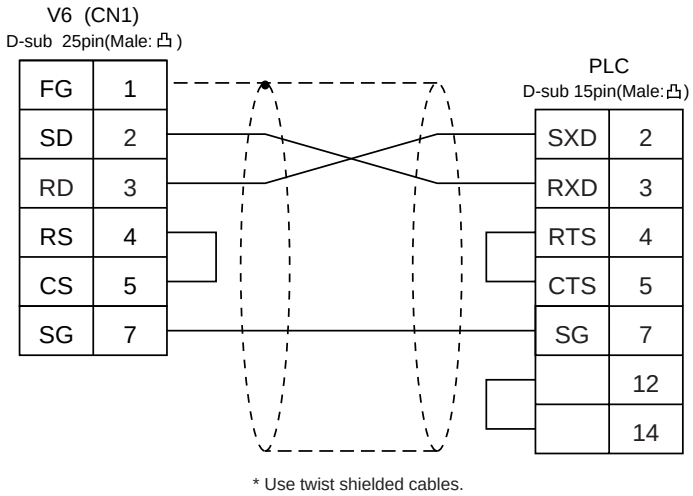
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

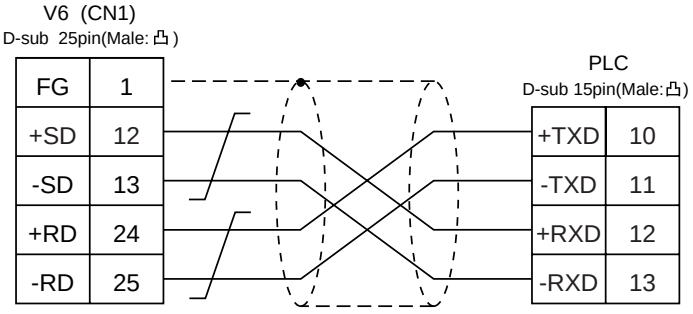
#### Wiring Diagram 1




* Use twist shielded cables.

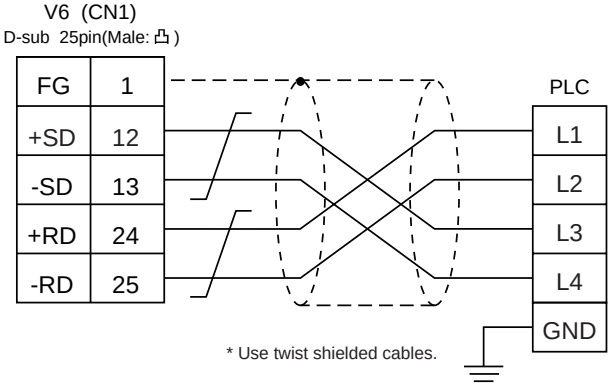
### RS-422

#### Wiring Diagram 2




*Use twist shielded cables.

#### Wiring Diagram 3




* Use twist shielded cables.

# 10 Sharp PLC • 2

(JW-32CUH/33CUH)

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-32) |
|---|---|---|---|
| JW20 COM port | JW-32CUH JW-33CUH | Communication port on a CPU unit | RS-232C PG/COMM2 [Wiring Diagram 1] RS-422 PG/COMM1 [Wiring Diagram 2] PG/COMM2 [Wiring Diagram 2] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|
| Baud Rate | 19200bps | 19200bps |
| Port | 1 | 1 |
| Parity | Even | Even |
| RS-422 | 4-wire system (fixed) | ——— |
| Data Length | 7 | 7 |
| Stop Bit | 2 | 2 |
| Error Check | Sumcheck (fixed) | ——— |
| Transmission Control | Command mode (fixed) | ——— |

## PLC System Memory Setting (in case of a communication port)

Set communication condition in the system memory #234/235(for PG/COMM port 1) or #236/237(for PG/COMM port 2) to communicate with a personal computer.

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| X9XXX (register) | 0 | |
| XXXXX (relay) | 1 | ]as word device |
| EXXXX (self-diagnosis) | 2 | |
| bXXXX (timer counter) | 3 | |
| Fn (file register) | 7 | *1 |

*1 To set up Fn (file register), input [File No.] + [: (colon)] + [address].

<E.g.> F1 : 00002

Address
Colon
File No.

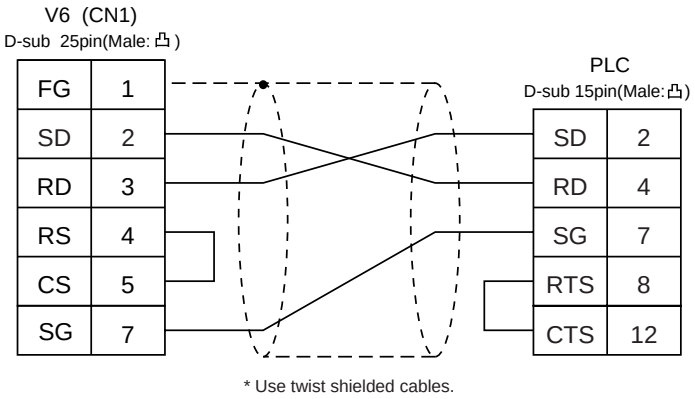
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

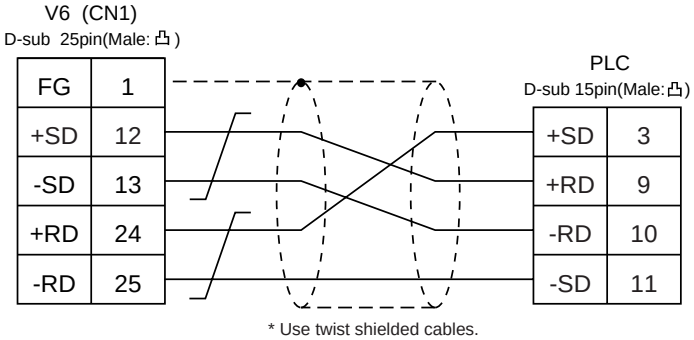
#### Wiring Diagram 1




* Use twist shielded cables.

### RS-422

#### Wiring Diagram 2




* Use twist shielded cables.

# 11 HITACHI PLC • 1

(HIDIC H series)

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-35) |
|---|---|---|---|
| HIDIC-H | HIDIC H series CPU | COMM-2H | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 2] |
| | | PERIPHERAL port on a CPU module | RS-232C [Wiring Diagram 1] |
| | | EH150 | *1 [EH-RS05] cable made by HITACHI + RS-232C [Wiring Diagram 1] |
| | | H-252C on a CPU module | PERIPHERAL 1<br>RS-232C [Wiring Diagram 1]<br>PERIPHERAL 2<br>*2 [CNCOM-05] cable made by HITACHI + RS-232C [Wiring Diagram 1] |

*1 When using [EH-RS05] cable made by HITACHI, connect the cable of [Wiring Diagram 1] to the D-sub 15 pins side of [EH-RS05] to communicate with V6.

*2 When using [CNCOM-05] cable made by HITACHI, connect the cable of [Wiring Diagram 1] to the D-sub 15 pins side of [CNCOM-05] to communicate with V6.

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

♦COMM-2H

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 0 for both STATION x10 and x1 | 0 |
| Parity | | Even | Even |
| Transmission Control Mode *1 | RS-232C | MODE7 | Protocol 2 w/ Port |
| | RS-422 | MODE9 | Protocol 2 w/ Port |
| Transmission Code | Data Length | 7 (ASCII) | 7 |
| | Stop Bit | 1 | 1 |
| Sumcheck | | Provided (fixed) | ——— |

If "Transmission control mode" is any other type except the above, specify "Transmission control mode" as below.

| | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Transmission Control Mode | RS-232C | MODE1<br>MODE2<br>MODE9 | Protocol 1 w/o Port<br>Protocol 1 w/ Port<br>Protocol 2 w/o Port |
| | RS-422 | MODE2 | Protocol 1 w/ Port *1 |

*1 Cannot be connected to V6 by multi-link connection.

♦CPU module

Peripheral port is only available with "pattern 1."

## Switch Setting

Baud rate : 19200bps
MODE switch : To connect to both RS-232C and RS-422, set MODE switch to 9.
RS-232C(pattern 2, w/o port) RS-422(pattern 2, with port)
ST No. switch : Choose "0" for both X10 and X1.

Dip Switch

| Switch | Setting | Contents |
|---|---|---|
| 1 | OFF | Bit length |
| 2 | OFF | Same as V6 (normally 19200bps) |
| 3 | ON | |
| 4 | ON | |
| 5 | ON | Parity provided |
| 6 | ON | Even |
| 7 | OFF | Stop bit 1 |
| 8 | ON | Sumcheck provided |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| WR (internal word output) | 0 | |
| X (external bit input) | 1 | WX as word device |
| Y (external bit output) | 2 | WY as word device |
| L (bit CPU link area) | 3 | WL as word device |
| M (bit data area) | 4 | WM as word device |
| TC (timer counter/elapsed time) | 5 | |
| R (relay) | 6 | |
| TD (timer counter/contact) | 7 | |
| WN (network input output) | 8 | |

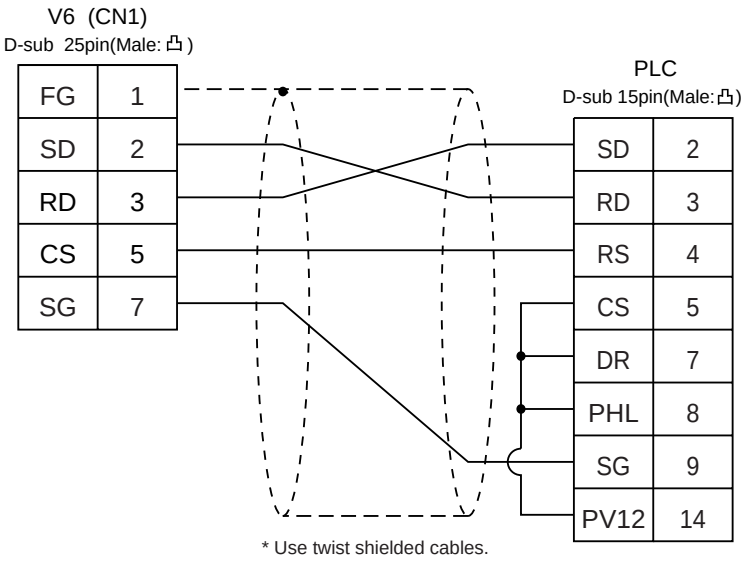
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

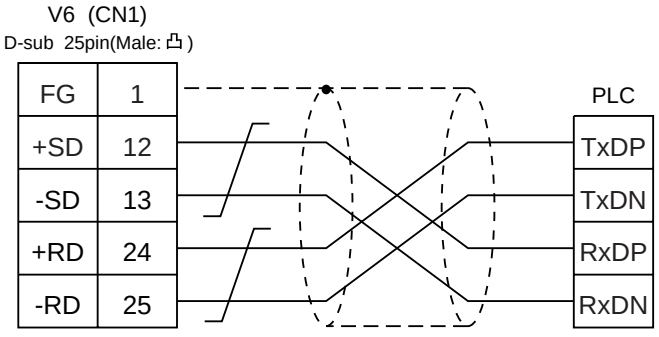
#### Wiring Diagram 1




* Use twist shielded cables.

### RS-422

#### Wiring Diagram 2




* Use twist shielded cables.

# 12 HITACHI PLC • 2

(HIDIC-S10 α)

## Available PLC

Host Link H-7338

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-37,38) |
|---|---|---|---|
| HIDIC-S10/2alpha | S10 2α | Port on a CPU unit | RS-422 [Wiring Diagram 3] |
| | S10 mini | RS-232C on a CPU unit | RS-232C [Wiring Diagram 1] |
| | | LQE060 | RS-232C [Wiring Diagram 2] |
| HIDIC-S10/ABS | ABS*1 | ——————— | RS-422 [Wiring Diagram 3] |

*1 Specify the memory by absolute addresses. For further information, refer to the relevant PLC manual.

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|
| Baud Rate | 7 | 19200bps |

## Available Memory

○ HIDIC-S10 2α

| Memory | TYPE | Remarks |
|---|---|---|
| FW (work register) | 0 | |
| X (input relay) | 1 | XW as word device |
| Y (output relay) | 2 | YW as word device |
| R (internal relay) | 3 | RW as word device |
| G (global link) | 4 | GW as word device |
| K (keep relay) | 5 | KW as word device |
| T (on-delay timer contact) | 6 | TW as word device |
| U (one shot timer contact) | 7 | UW as word device |
| C (up/down counter contact) | 8 | CW as word device |
| TS (on-delay timer set value) | 9 | |
| TC (on-delay timer elapsed value) | 10 | |
| US (one shot timer set value) | 11 | |
| UC (one shot timer elapsed value) | 12 | |
| CS (up/down counter set value) | 13 | |
| CC (up/down counter elapsed value) | 14 | |
| DW (data register) | 15 | |

| | | | |
|---|---|---|---|
| E | (event register) | 16 | EW as word device |
| S | (system register) | 17 | SW as word device |
| J | (transfer register) | 18 | JW as word device |
| Q | (resive register) | 19 | QW as word device |
| M | (extensional internal register) | 20 | MW as word device |

○ HIDIC ABS

| Memory | TYPE | Remarks |
|---|---|---|
| 0E | 0 | |
| 06 | 1 | |
| 18 | 2 | |
| 19 | 3 | |
| 1A | 4 | |
| 1B | 5 | |
| 1C | 6 | |
| 1D | 7 | |

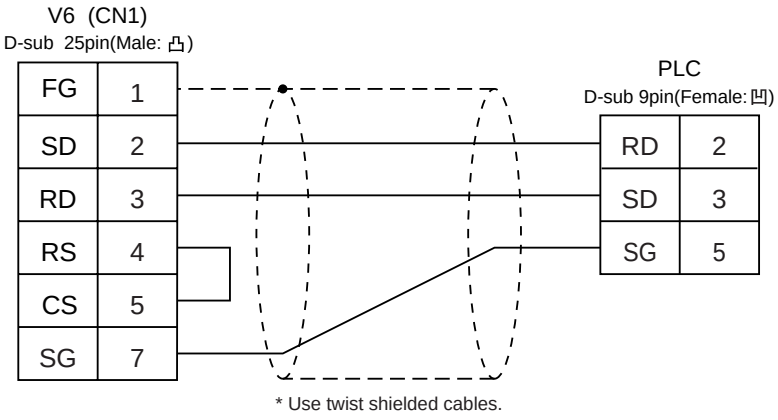
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

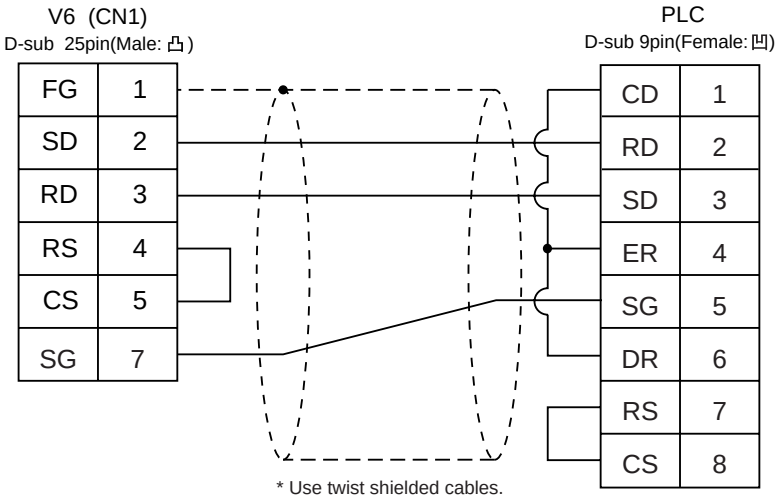
### RS-232C

#### Wiring Diagram 1



## RS-232C

### Wiring Diagram 2

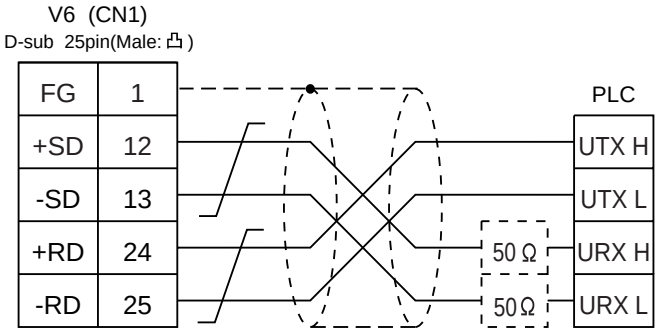



* Use twist shielded cables.

## RS-422

### Wiring Diagram 3

For connection to the S10X$\alpha$ series, use a 50 Ω(1/2W) resistance as shown below.




* Use twist shielded cables.

# 13 Matsushita PLC

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-41) |
|---|---|---|---|
| MEWNET | FP1 | RS-232C port on a CPU unit | RS-232C [Wiring Diagram 1] |
| | FP3 | AFP3462 | RS-232C [Wiring Diagram 1] |
| | | AFP3463 | RS-422 [Wiring Diagram 4] |
| | FP5 | AFP5462 | RS-232C [Wiring Diagram 1] |
| | FP10 | RS-232C port on a CPU unit | RS-232C [Wiring Diagram 1] |
| | | AFP5462 | RS-232C [Wiring Diagram 1] |
| | FP10S | RS-232C port on a CPU unit | RS-232C [Wiring Diagram 1] |
| | | AFP3462 | RS-232C [Wiring Diagram 1] |
| | | AFP3463 | RS-422 [Wiring Diagram 4] |
| | FP0 | RS-232C tool port on a CPU unit | RS-232C cable made by Matsushita AFC8513 |
| | | RS-232C port on a CPU unit | RS-232C [Wiring Diagram 3] |
| | FP2 | RS-232C tool port on a CPU unit | RS-232C cable made by Matsushita AFC8513 |
| | | RS-232C port on a CPU unit | RS-232C [Wiring Diagram 2] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | "0" for x10, "1" for x1 | 1 |
| Parity | | Even | Even |
| Transmission Code | Data Bit | 7 (ASCII) | 7 |
| | Stop Bit | 1 | 1 |
| Transmission Control | | Computer link system (fixed) | ——— |
| Control Signal | | Invalid (fixed) | ——— |

* If a tool port (the ladder port for RS-232C) of FP0 is used, the range of PLC parameter setting is limited as below. Adjust PLC parameter setting to comm. parameter setting of V6.

Baud rate : 9600, 19200bps
Parity : Odd (fixed)
Data bit : 8 (7 can be selected. Normally 8.)
Stop bit : 1 (fixed)

## Switch Setting of Link Unit

| No | Setting | Contents |
|---|---|---|
| 1 | ON | Same as V6 (normally 19200bps) |
| 2 | OFF | |
| 3 | OFF | |
| 4 | OFF | Data length 7 |
| 5 | ON | Parity provided |
| 6 | ON | Even |
| 7 | OFF | Stop bit 1 |
| 8 | OFF | CS, CD invalid |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| DT (data register) | 0 | |
| X (external input relay) | 1 | WX as word device, read only |
| Y (external output relay) | 2 | WY as word device |
| R (internal relay) | 3 | WR as word device, special relay included |
| L (link relay) | 4 | WL as word device |
| LD (link register) | 5 | |
| FL (file register) | 6 | |
| SV (timer/counter set value) | 7 | |
| EV (timer/counter elapsed value) | 8 | |
| T (counter/contact) | 9 | Read only |
| C (counter/contact) | 10 | Read only |

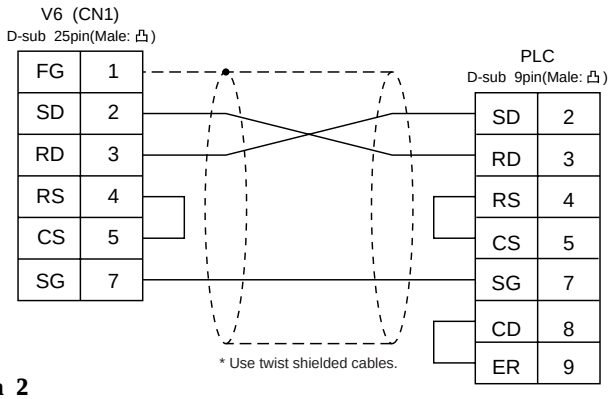
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

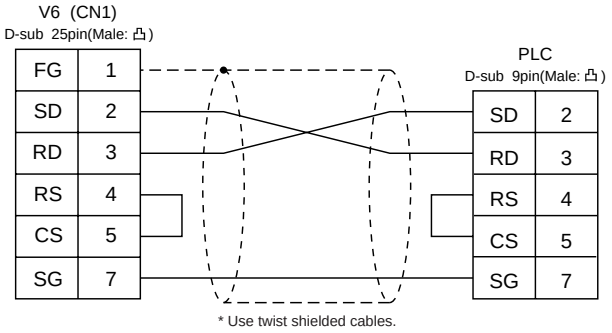
The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

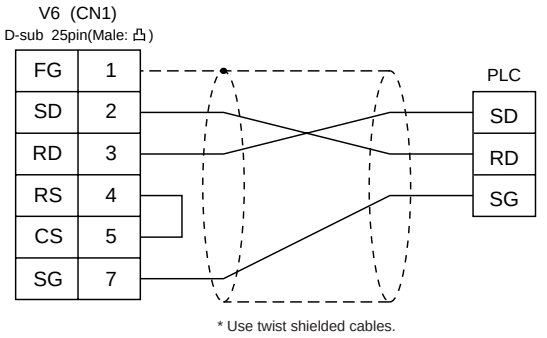
#### Wiring Diagram 1




#### Wiring Diagram 2

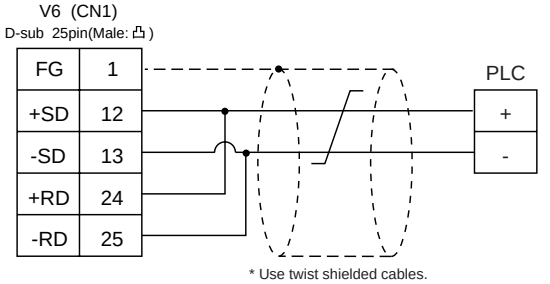



#### Wiring Diagram 3




### RS-422

#### Wiring Diagram 4



# 14 YOKOGAWA PLC • 1

(FA-500)

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-43) |
|---|---|---|---|
| FA500 | FA500 | LC01-0N | RS-232C [Wiring Diagram 1] |
| | | LC02-0N | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 2] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 1 | 1 |
| Parity | | Even | Even |
| Transmission Code | Data Length | 7 | 7 |
| | Stop Bit | 1 | 1 |
| Sumcheck | | Provided (fixed) | ——— |
| Terminal Character | | None (fixed) | ——— |
| Protection Function | | None (fixed) | ——— |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| B (common register) | 1 | |
| TP (timer/current value) | 2 | |
| TS (timer/set value) | 3 | |
| CP (counter/current value) | 4 | |
| CS (counter/set value) | 5 | |
| X (input relay) | 6 | |
| Y (output relay) | 7 | |
| I (internal relay) | 8 | |
| E (external relay) | 9 | |

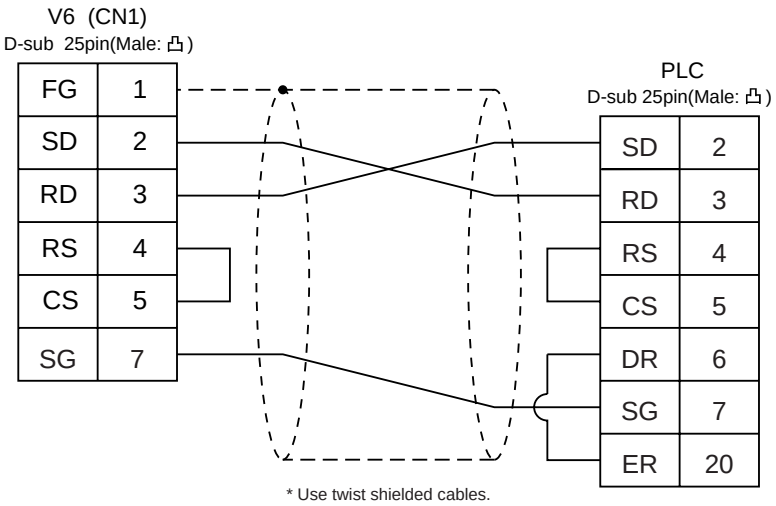
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

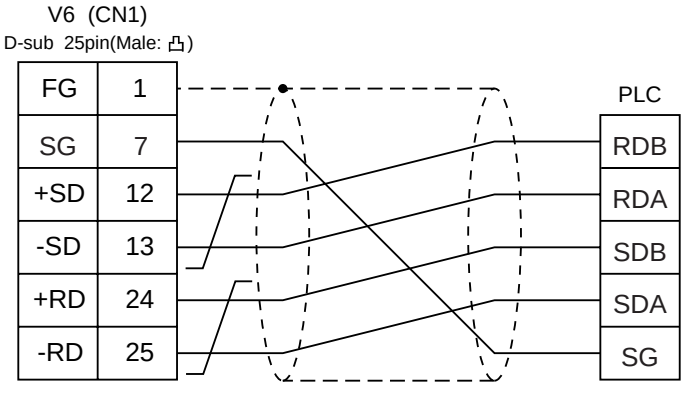
#### Wiring Diagram 1




* Use twist shielded cables.

### RS-422

#### Wiring Diagram 2




* Use twist shielded cables.

# 15 YOKOGAWA PLC • 2

(FA-M3/FA-M3R)

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-46) |
|---|---|---|---|
| FA-M3 | FA-M3 | Programming tool port on a CPU module *1 | Cable made by YOKOGAWA [KM11-2N] |
| | | F3LC01-1N *2 | RS-232C [Wiring Diagram 1] |
| | | F3LC11-1N | RS-232C [Wiring Diagram 1] |
| | | F3LC11-2N | RS-422 [Wiring Diagram 2] |
| FA-M3R | FA-M3 R | Programming tool port on a CPU module | Cable made by YOKOGAWA [KM11-2N] |
| | | F3LC12-1F | RS-232C [Wiring Diagram 1] |

*1 CPU types which can be connected directly to programming tool port on a CPU module are "F3SP21-0N," "F3SP25-2N" and "F3SP35-5N."

*2 When the link unit, F3LC01-1N, is used, the communication setting and available memory are the same as the contents of "12 YOKOGAWA PLC • 1(FA-500)," provided that B (common register) cannot be used.

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Parity | | Even | Even |
| Transmission Code | Data Length | 7 | 7 |
| | Stop Bit | 1 | 1 |
| Sumcheck | | Provided | Provided |
| Terminal Character | | None (fixed) | ——— |
| Protection Function | | None (fixed) | ——— |

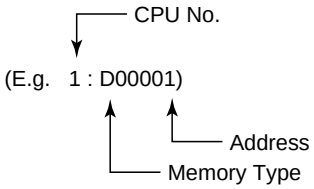
* When using programming tool port on a CPU module for direct connection to V6, set [Data Length] as [8-bit] in the [comm. Parameter] dialog of V6 because data length “8” is fixed. Also, specify the "CPU Communication Port" setting of "Configuration" in the ladder making tool as follows.

Personal Computer Link Function : Use

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| R (common register) | 1 | |
| V (index register) | 2 | |
| W (link register) | 3 | |
| Z (special register) | 4 | |
| TP (down timer current value) | 5 | |
| TS (timer set value) | 6 | Read only |
| CP (down counter current value) | 7 | |
| CS (down counter set value) | 8 | |
| X (input relay) | 9 | |
| Y (output relay) | 10 | |
| I (internal relay) | 11 | |
| E (common relay) | 12 | |
| L (link relay) | 13 | |
| M (special relay) | 14 | |
| B (file register) | 15 | |

* The CPU No. is required in addition to the memory type/address. The assigned memory is indicated while editing the screen as illustrated:



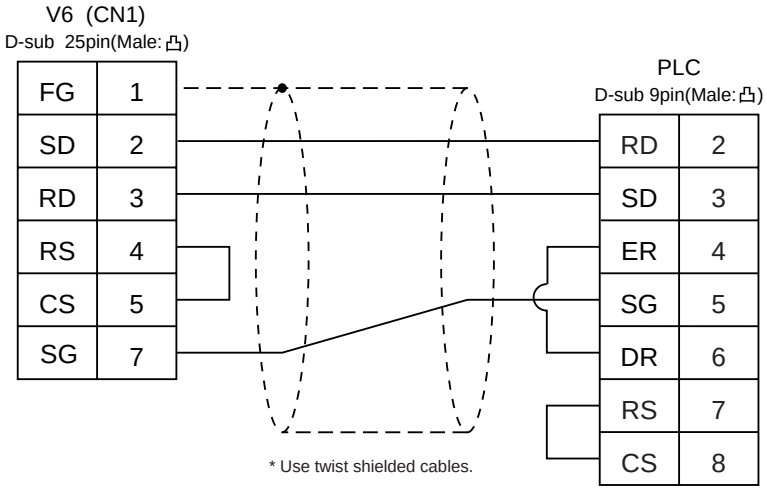

**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

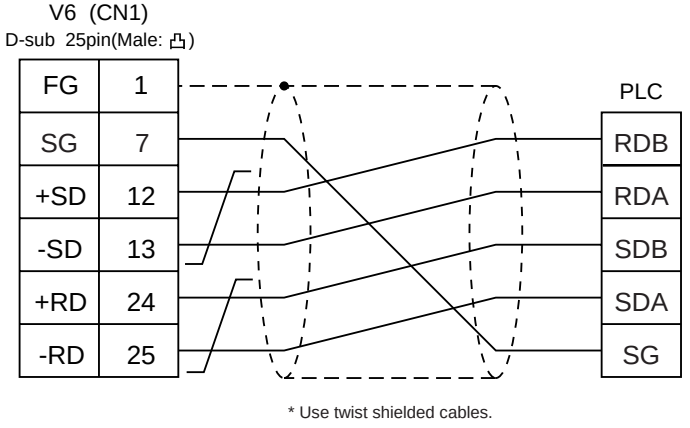
### RS-232C

#### Wiring Diagram 1




### RS-422

#### Wiring Diagram 2



# 16 YASKAWA PLC • 1

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-48, 49) |
|---|---|---|---|
| Memobus | GL60 series | JAMSC-IF60<br>JAMSC-IF61<br>JAMSC-IF611 | RS-232C [Wiring Diagram 1] |
| | | JAMSC-IF612<br>JAMSC-IF613 | RS-422 [Wiring Diagram 3] |
| | GL120, GL130 series | Memobus port on a CPU module | RS-232C [Wiring Diagram 1] |
| | | JAMSC -120NOM27100 | RS-422 [Wiring Diagram 4] |
| | PROGIC-8 | PORT2 on a CPU unit | RS-232C [Wiring Diagram 2] |

* Other kinds of MEMOBUS unit can be connected.

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 1 | 1 |
| Parity | | Even | Even |
| Transmission Code | Data Length | 8 bit RTU | ——— |
| | Stop Bit | 1 | 1 |
| Error Check | | CRC (fixed) | ——— |
| Port Delay Timer | | 0 (fixed) | ——— |

Select [TYPE 1] or [TYPE 2] from [Trans. Mode] in [Comm. Parameter] of the V-SFTE.

| PLC Type | Setting of V6 | Contents |
|---|---|---|
| GL60 series, PROGIC-8 | Type 1 | Same as before |
| GL120/130 series | Type 2 | Standard binary mode |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| 4 (word device) | 0 | |
| 3 (input register) | 1 | Constant register included Read only |
| R (link register) | 2 | |
| A (extension register) | 3 | |
| 0 (coil) | 4 | |
| D (link coil) | 5 | |
| 1 (input relay) | 6 | Read only |
| 7 (constant register) | 7 | |

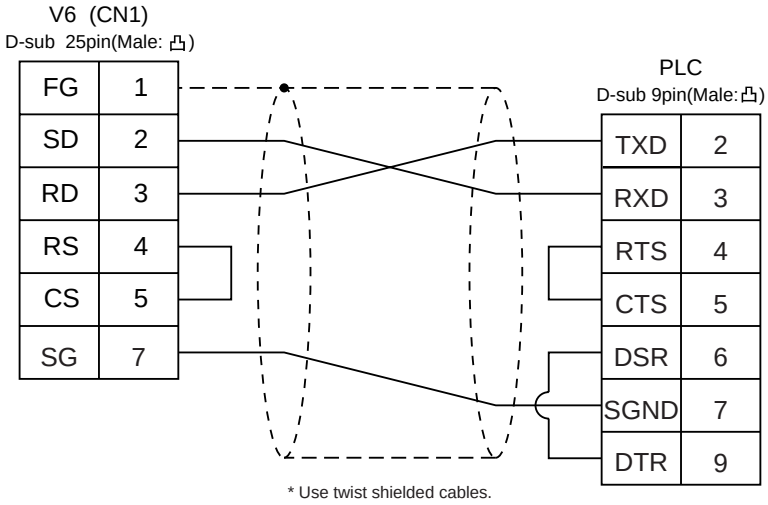
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

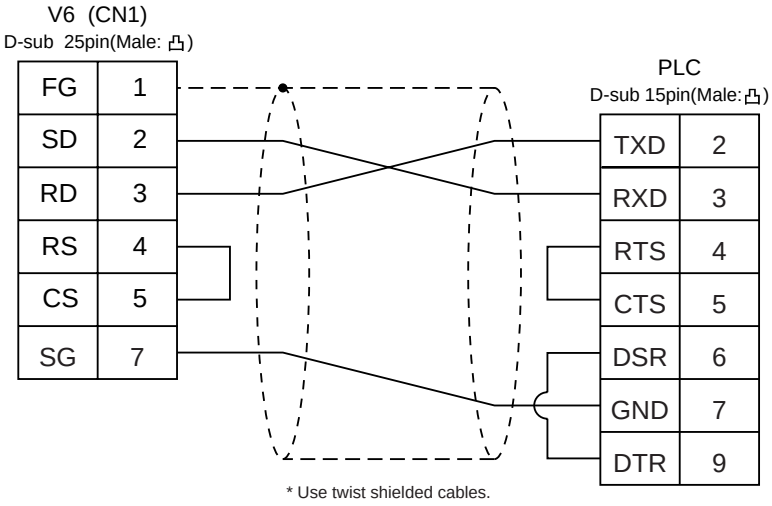
The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

#### Wiring Diagram 1



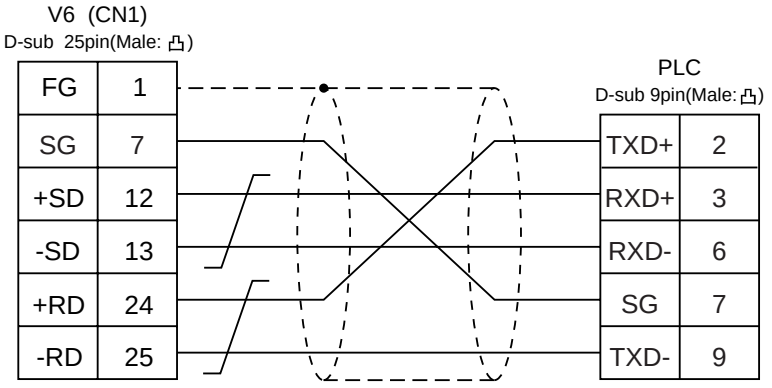
**Wiring Diagram 2**




* Use twist shielded cables.

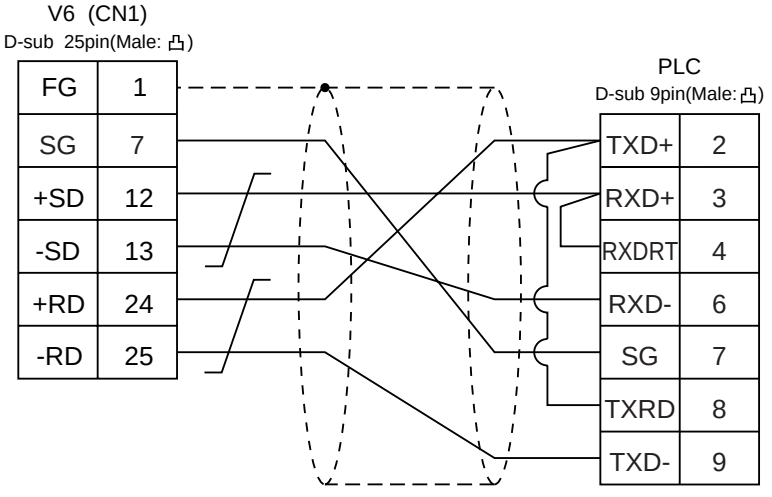
**RS-422**

**Wiring Diagram 3**




* Use twist shielded cables.

**Wiring Diagram 4**




* Use twist shielded cables.

# 17 YASKAWA PLC • 2

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-51) |
|---|---|---|---|
| CP9200SH /MP900 | CP9200SH | CP217IF | RS-232C [Wiring Diagram 1] [Wiring Diagram 2]<br>RS-422 [Wiring Diagram 3] |
| | MP920 MP930 | Memobus port on a CPU module | RS-232C [Wiring Diagram 1] |
| | | 217IF | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 4] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 1 | 1 |
| Parity | | Even | Even |
| Transmission Code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |
| Error Check | | CRC (fixed) | ——— |
| Port Delay Timer | | 0 (fixed) | ——— |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| MW (holding register) | 0 | |
| IW (input register) | 1 | Read only |
| MB (coil) | 4 | |
| IB (input relay) | 6 | Read only |

When setting the MB/IB memories, set the bit No. by HEX.

MBxxxx □
DEC
Bit No. : HEX

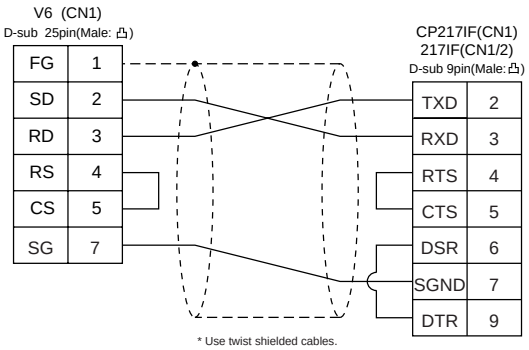
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

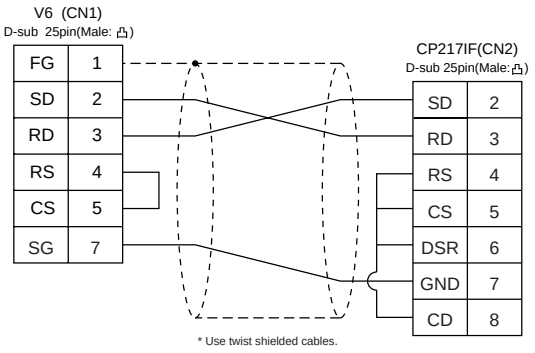
The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

#### Wiring Diagram 1

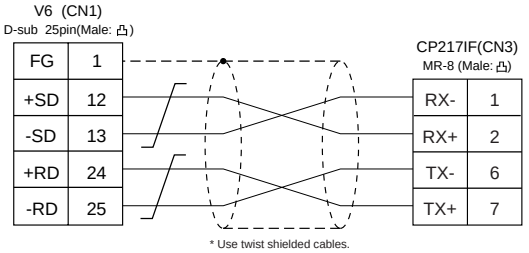



#### Wiring Diagram 2

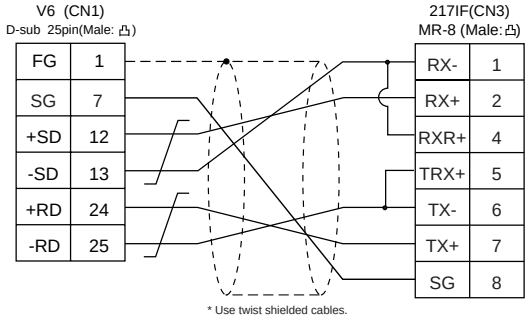



### RS-422

#### Wiring Diagram 3




#### Wiring Diagram 4



# 18 TOYOPUC PLC

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-54) |
|---|---|---|---|
| TOYOPUC | L2/PC2 series<br>PC3J | CMP-LINK | RS-422 [Wiring Diagram 1] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 0 | 0 |
| Parity | | Even | Even |
| Transmission Code | Data Length | 7 | 7 |
| | Stop Bit | 2 | 2 |

Set the [Trans. Mode] for [Detail] in the [Comm. Parameter].

· PC3J : Select [Single Data Area] or [Split Data Area].

· L2/PC2 series : Select [Single Data Area].

| Trans. Mode | Contents |
|---|---|
| Single Data Area | Data area is common. |
| Split Data Area | Divide each PLC device into a program file. |

## Switch Setting

Baud rate: 19200bps

| Switch | Setting | Contents |
|---|---|---|
| SW1 | 0 | Station address (lower half) |
| SW2 | 0 | Station address (upper half) |
| SW3 | 1 | Baud rate<br>1 : 19200 2 : 9600 3 : 4800<br>4 : 2400 5 : 1200 6 : 600 |

| Switch | Short bar | Contents |
|---|---|---|
| SET2 | Provided | Data bit 7 |
| SET3 | Provided | Stop bit 2 |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| R (link register) | 1 | |
| B (file register) | 2 | |
| N (current value register) | 3 | |
| X (input relay) | 4 | WX as word device |
| Y (output relay) | 5 | WY as word device |
| M (internal relay) | 6 | WM as word device |
| K (keep relay) | 7 | WK as word device |
| L (link relay) | 8 | WL as word device |
| T (timer/contact) | 9 | WT as word device |
| C (counter/contact) | 10 | WC as word device |
| U (extensional data register) | 11 | |
| H (extensional set value register) | 12 | |
| EN (extensional current value register) | 13 | |
| EX (extensional input relay) | 14 | WEX as word device |
| EY (extensional output relay) | 15 | WEY as word device |
| EM (extensional internal relay) | 16 | WEM as word device |
| EK (extensional keep relay) | 17 | WEK as word device |
| EL (extensional link relay) | 18 | WEL as word device |
| ET (extensional timer/contact) | 19 | WET as word device |
| EC (extensional counter/contact) | 20 | WEC as word device |
| V (special register) | 21 | WV as word device |

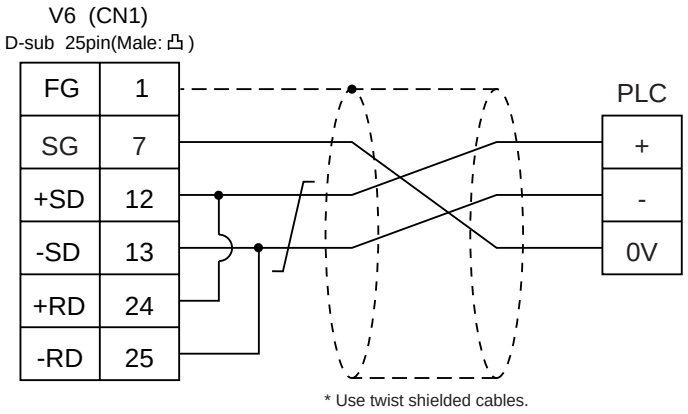
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-422

#### Wiring Diagram 1

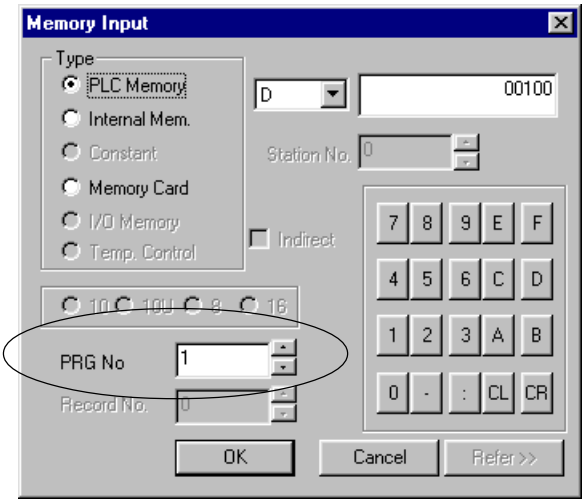



* Use twist shielded cables.

## Screen Editing (Memory Input)

If [Split Data Area] is selected at the [Trans. Mode], the [PRG No] setting is available at the [Memory Input] dialog.

· range : 1~3



# 19 FUJI PLC • 1

(MICREX-F series)

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-57) |
|---|---|---|---|
| MICREX-F series (MICREX-F series V4) | F55 | NV1L-RS2 | RS-232C [Wiring Diagram 1] |
| | F70, F70S | NC1L-RS2 | RS-232C [Wiring Diagram 1] |
| | | NC1L-RS4 | RS-485 [Wiring Diagram 2] |
| | F80H, F120H, F120S F140S, F15□S | FFU120B FFK120A | RS-232C [Wiring Diagram 1] RS-485 [Wiring Diagram 2] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 0 | 0 |
| Parity | | Even | Even |
| Transmission Control Mode | RS-232C | 1 (Asynchronous non-protocol by command) (fixed) | ——— |
| | RS-422 | 3 (Asynchronous non-protocol by command) (fixed) | ——— |
| Transmission Code | Data Length | 7 (ASCII) | 7 |
| | Stop Bit | 1 | 1 |
| Terminal Resistor at Receiver | | Provided | ——— |

## Switch Setting

MODE Switch: RS-232C: 1 RS-485: 3

RS-485 Port Setting SW: "0" for both x10, x1

RS-485 Terminal Resistor: ON

Character Switches

| No | Setting | Contents |
|---|---|---|
| 8 | ON | Switch setting |
| 7 | ON | Parity provided |
| 6 | ON | Even |
| 5 | ON | 7 bit |
| 4 | ON | 1 bit |
| 3 | ON | Same as V6 (normally 19200bps) |
| 2 | ON | |
| 1 | OFF | |

## Available Memory

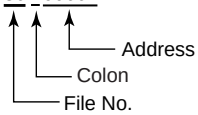
| Memory | TYPE | Remarks |
|---|---|---|
| M (auxiliary relay) | 0 | WM as word device |
| K (keep relay) | 1 | WK as word device |
| B (input/output relay) | 2 | WB as word device |
| L (link relay) | 9 | WL as word device |
| F (special relay) | 10 | WF as word device |
| TS (timer/set value) | 11 | * 1 |
| TR (timer/current value) | 12 | * 1 |
| W9 (timer/current value 0.1) | 13 | * 1 |
| CS (counter/set value) | 14 | * 1 |
| CR (counter/current value) | 15 | * 1 |
| BD (data memory) | 16 | * 1 |
| WS (step control relay) | 17 | * 2 |
| Wn (file memory) | 18 | * 3 |

*1 In case of the items which can display double word data (e.g. data display, graph, sampling), the data is managed as double word data.
Both bit data and word data are managed as lower-half 16 bits data.
Input: 16 upper-half bits are ignored. Output: "0" is written in the 16 upper-half bits.

*2 Byte device such as step relay is managed as follows;
Input: Write "0" in the 8 upper-half bits. Output: Write the data in the 8 lower-half bits.

*3 To set up Wn (file memory), input [File No.] + [: (colon)] + [address].

<E.g.> W30 : 00002




**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

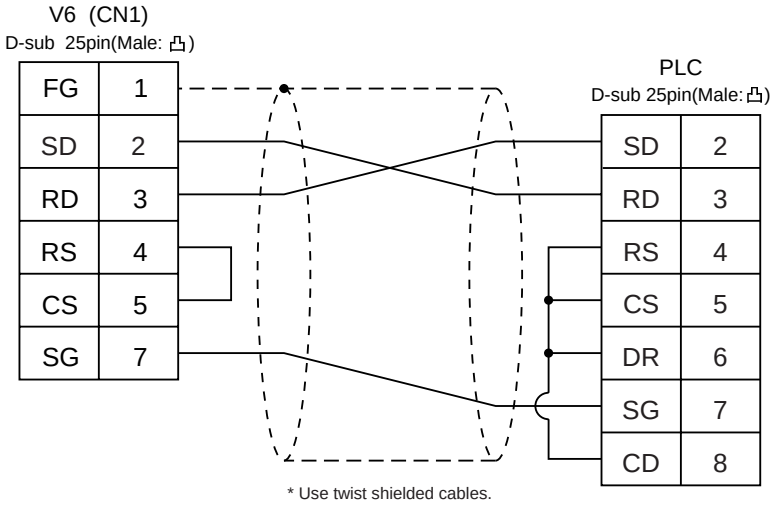
*** Notes on converting the data file of V4 (or GD-80) into the V6 data file**
**When converting the data file of V4 (or GD-80) into the V6 data file, the PLC type is automatically selected as "MICREX-F series V4."**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

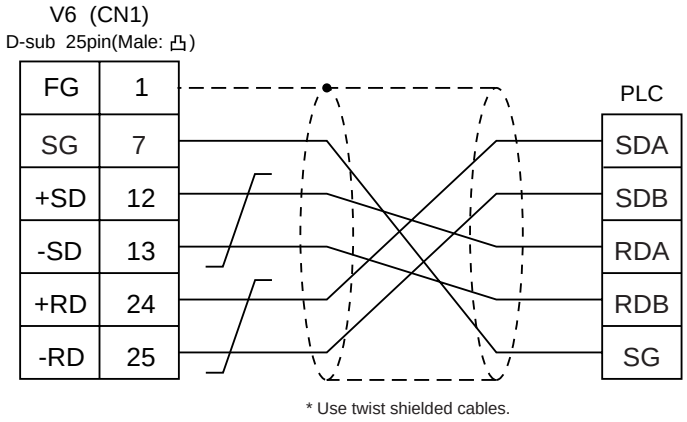
### RS-232C

#### Wiring Diagram 1




### RS-485

#### Wiring Diagram 2



# 20 FUJI PLC • 2

(FLEX-PC series)

## Available PLC

| Selkect PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-60) |
|---|---|---|---|
| FLEX-PC Series *1 | NS-T | NJRS-1 | RS-232C [Wiring Diagram 1] |
| | NJ-T | NJRS-2 | RS-232C [Wiring Diagram 1] |
| | | NJRS-4 | RS-485 [Wiring Diagram 2] |

*1 When FLEX-PC TOYOTA version is used, select "FLEX-PC(T)" in [PLC Type].

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 0 | 0 |
| Parity | | Even | Even |
| Transmission Control Mode | RS-232C | 1 (Asynchronous non-protocol by command) (fixed) | ——— |
| | RS-422 | 3 (Asynchronous non-protocol by command) (fixed) | ——— |
| Transmission Code | Data Length | 7 (ASCII) | 7 |
| | Stop Bit | 1 | 1 |
| Terminal Resistor at Receiver | | Provided | ——— |

## Switch Setting

MODE Switch: RS-232C: 1 RS-485: 3
RS-485 Port Setting SW: "0" for both x10, x1
RS-485 Terminal Resistor: ON
Character Switches

| No | Setting | Contents |
|---|---|---|
| 8 | ON | Switch setting |
| 7 | ON | Parity provided |
| 6 | ON | Even |
| 5 | ON | 7 bit |
| 4 | ON | 1 bit |
| 3 | ON | Same as V6 (normally 19200bps) |
| 2 | ON | |
| 1 | OFF | |

## Available Memory

| Standard Memory | | TOYOTA Ver. | TYPE | Remarks |
|---|---|---|---|---|
| D | (data register) | D | 0 | |
| W | (link register) | R | 1 | |
| M | (internal relay) | M | 2 | WM as word device |
| L | (latch relay) | K | 3 | WL(WK) as word device |
| X | (input relay) | X | 4 | WX as word device |
| Y | (output relay) | Y | 5 | WY as word device |
| R | (file register) | W | 6 | |
| TN | (timer/current value) | TN | 7 | |
| CN | (counter/current value) | CN | 8 | |
| T | (timer/contact) | T | 9 | |
| C | (counter/contact) | C | 10 | |
| WS | (step relay) | - | 11 | |

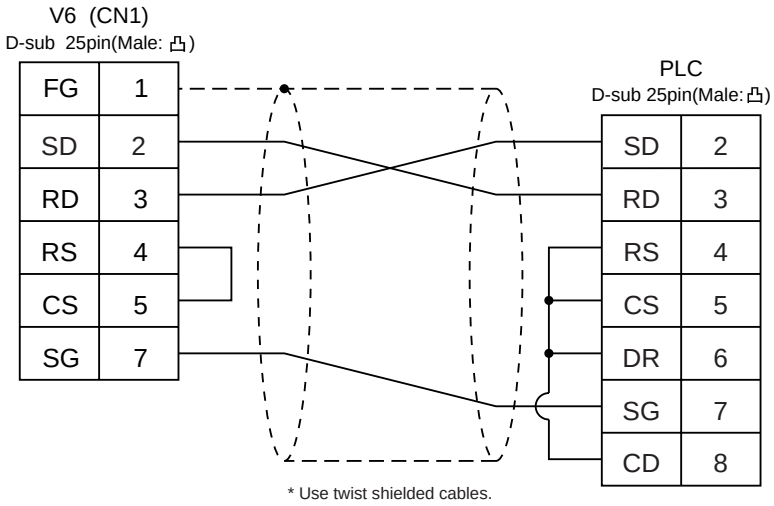
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

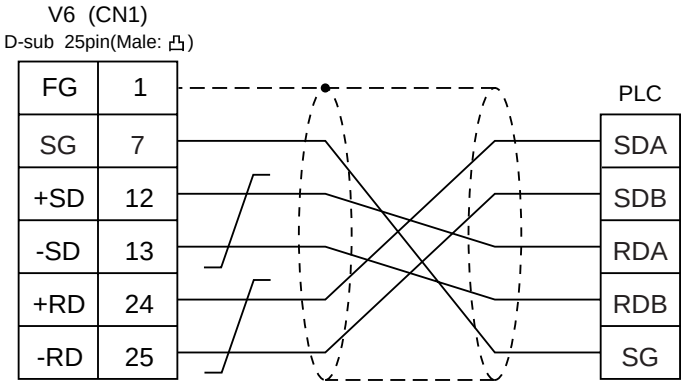
#### Wiring Diagram 1




* Use twist shielded cables.

### RS-485

#### Wiring Diagram 2




* Use twist shielded cables.

# 21 FUJI PLC • 3

(FLEX-PC CPU port)

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-62) |
|---|---|---|
| FLEX-PC CPU *1 | FLEX-PC CPU | RS-485 [FU-CPUNS] made by HAKKO |
| | NJ-B16 RS-232C port | RS-232C [Wiring Diagram 1] |

*1 When FLEX-PC CPU TOYOTA version is used, select "FLEX-PC CPU(T)" in [PLC Type].

## Communication Setting

Connect to the CPU port. The communication parameter setting of V6 is done automatically.

## Available Memory

| Standard Memory | | TOYOTA Ver. | TYPE | Remarks |
|---|---|---|---|---|
| D | (data register) | D | 0 | |
| W | (link register) | R | 1 | |
| M | (internal relay) | M | 2 | WM as word device |
| L | (latch relay) | K | 3 | WL(WK) as word device |
| X | (input relay) | X | 4 | WX as word device |
| Y | (output relay) | Y | 5 | WY as word device |
| R | (file register) | W | 6 | |
| TN | (timer/current value) | TN | 7 | |
| CN | (counter/current value) | CN | 8 | |
| T | (timer/contact) | T | 9 | |
| C | (counter/contact) | C | 10 | |
| WS | (step relay) | - | 11 | |

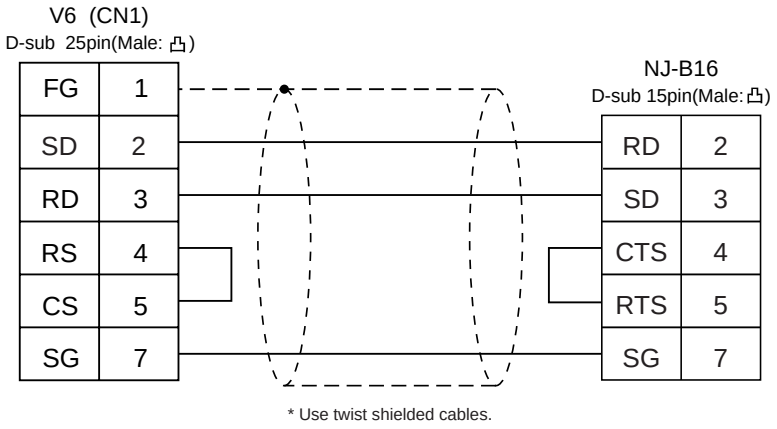
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

#### Wiring Diagram 1




* Use twist shielded cables.

### RS-485

Use the cable, "FU-CPUNS" made by Hakko Electronics Co., Ltd., for RS-485 communications.

# 22 FUJI PLC • 4

(TOYOTA version NJ Computer Link)

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-64) |
|---|---|---|
| FLEX-PC COM | Computer link of FLEX-PC NJ-JM | RS-422 [Wiring Diagram 1] |

Connect to the terminal block of the NJ-JM computer link.
For further information, refer to the FUJI's PLC manual.

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 0 | 0 |
| Parity | | Even | Even |
| Transmission Code | Data Length | 7 | 7 |
| | Stop Bit | 2 | 2 |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| R (link register) | 1 | |
| M (internal relay) | 2 | WM as word device |
| K (latch relay) | 3 | WK as word device |
| X (input relay) | 4 | WX as word device |
| Y (output relay) | 5 | WY as word device |
| W (file register) | 6 | |
| TN (timer/current value) | 7 | |
| CN (counter/current value) | 8 | |
| T (timer/contact) | 9 | |
| C (counter/contact) | 10 | |
| Z (special register) | 12 | |
| V (special relay) | 13 | WV as word device |

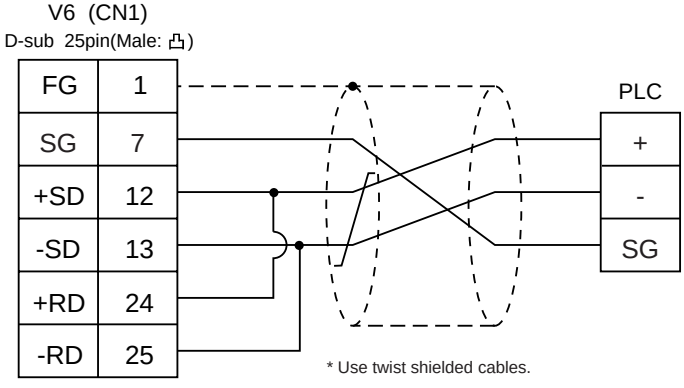
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-422

#### Wiring Diagram 1



# 23 Koyo PLC

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-68, 69) |
|---|---|---|---|
| SU/SG | SU-5/5E/6B/5M/6M | U01-DM | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 3] |
| | SU-5E/6B | Port 1 on a CPU unit | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 7] |
| | SU-5M/6M | Port 1 on a CPU unit | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 7] |
| | | Port 3 on a CPU unit | RS-485 [Wiring Diagram 8] |
| | | Port 2 on a CPU unit | RS-232C<br>Program transfer cable made by Koyo [S-30JG-E]<br>+<br>Convert connector cable made by Koyo [S-15CNJ] |
| | SZ-4 | Port 2 on a CPU unit | |
| | SZ-4M | Port 2 on a CPU unit | RS-232C<br>Program transfer cable made by Koyo [S-30JG-E]<br>+<br>Convert connector cable made by Koyo [S-15CNJ]<br>+<br>Convert connector made by Koyo [S-15HCNP1] |
| | SG-8 | G01-DM | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 4] |
| | | Port on a CPU unit | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 4] |
| | PZ3 | Universal communication port | RS-232C [Wiring Diagram 2]<br>RS-422 [Wiring Diagram 6] |
| SR-T | SR-6T (TOYOTA version) | U01-DM | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 3] |
| | | G01-DM | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 4] |
| SR-T (K prt) | SR-1T (TOYOTA version) | Terminal blocks on a CPU unit | RS-422 [Wiring Diagram 5] |
| SU/SG (K-Sequence) | SU-5E/6B | Port 1 on a CPU unit | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 7] |
| | SU-5M/6M | Programmer port on a CPU unit | RS-232C<br>Program transfer cable made by Koyo [S-30JG-E] |
| | | Port 3 on a CPU unit | RS-485 [Wiring Diagram 8] |
| | | Port 2 on a CPU unit | RS-232C<br>Program transfer cable made by Koyo [S-30JG-E]<br>+<br>Convert connector cable made by Koyo [S-15CNJ] |
| | SZ-4 | Port 1 on a CPU unit<br>Port 2 on a CPU unit | |
| | SZ-4M | Port 1 on a CPU unit | |
| | | Port 2 on a CPU unit | RS-232C<br>Program transfer cable made by Koyo [S-30JG-E]<br>+<br>Convert connector cable made by Koyo [S-15CNJ]<br>+<br>Convert connector made by Koyo [S-15HCNP1] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | "0" for x10, "1" for x1 | 1 |
| Parity | | Odd | Odd |
| Transmission Code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |
| Function | | Host link system (fixed) | ——— |
| Response Delay Time | | 0 (fixed) | ——— |
| Time-out | | None (fixed) | ——— |
| ASCII/HEX | | HEX (fixed) | ——— |

## Available Memory

○ SU/SG, SU/SG(K-Sequence)

| Memory | TYPE | Remarks |
|---|---|---|
| R (data register) | 0 | |
| I (input relay) | 1 | |
| Q (output relay) | 2 | |
| M (internal relay) | 3 | |
| S (stage) | 4 | |
| GI (global inputs) | 5 | |
| GQ (global outputs) | 6 | |
| T (timer/contact) | 7 | |
| C (counter/contact) | 8 | |

○ SR-1T/SR-T(K prt)

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| X (input relay) | 1 | X/Y common use |
| Y (output relay) | 2 | X/Y common use |
| M (internal relay) | 3 | |
| S (stage) | 4 | |
| K (keep relay) | 5 | |
| L (link relay) | 6 | |
| T (timer/contact) | 7 | |
| C (counter/contact) | 8 | |

**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Switch Setting

○ U-01DM

On-line/off-line switch: on-line

UNIT ADR switch: “0” for x10, “1” for x1

SW4 Dip Switch:

| No | Setting | Contents |
|---|---|---|
| 1 | ON | Same as V6 (normally 19200bps) |
| 2 | ON | |
| 3 | ON | |
| 4 | ON | Parity provided |
| 5 | OFF | Self-diagnosis |
| 6 | OFF | Response delay time 0msec |
| 7 | OFF | |
| 8 | OFF | |

SW5 Dip Switch:

| No | Setting | Contents |
|---|---|---|
| 1 | OFF | Master/slave control |
| 2 | OFF | Slave |
| 3 | OFF | Communication time-out |
| 4 | OFF | HEX mode |

○ G-01DM

On-line/off-line switch: on-line

Short plug 1: open

Short plug 2 RS-232C: ENABLE

RS-422: DISENABLE

SW1 Dip Switch:

| No | Setting | Contents |
|---|---|---|
| 1 | ON | Unit No. 01 |
| 2 | OFF | |
| 3 | OFF | |
| 4 | OFF | |
| 5 | OFF | |
| 6 | OFF | |
| 7 | OFF | |
| 8 | OFF | 1 : N |
| 9 | OFF | Slave |

SW2 Dip Switch:

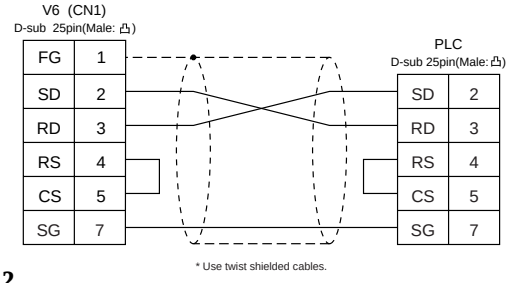
| No | Setting | Contents |
|---|---|---|
| 1 | ON | Same as V6 (normally 19200bps) |
| 2 | ON | |
| 3 | ON | |
| 4 | ON | Parity provided |
| 5 | OFF | Self-diagnosis |
| 6 | OFF | Turn-around delay |
| 7 | OFF | Response delay time 0msec |
| 8 | OFF | |
| 9 | OFF | HEX mode |

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

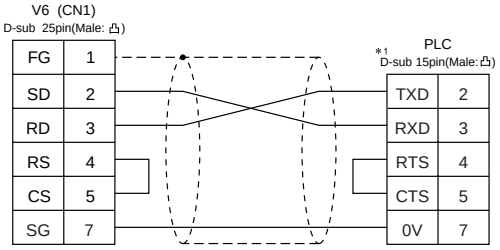
### RS-232C

#### Wiring Diagram 1




* Use twist shielded cables.

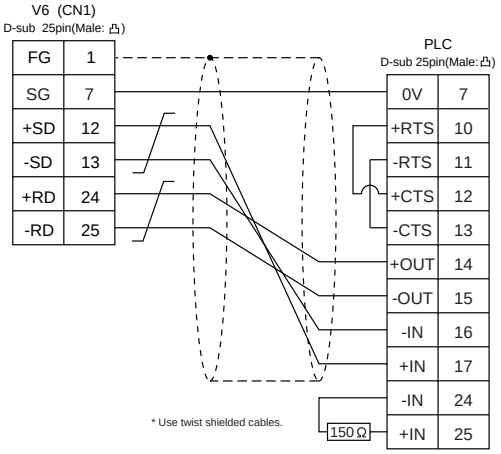
#### Wiring Diagram 2




* Use twist shielded cables.
*1 High density D-sub 15pin

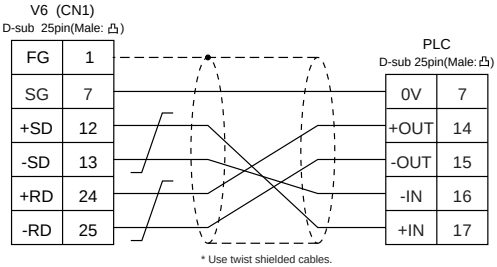
### RS-422

#### Wiring Diagram 3



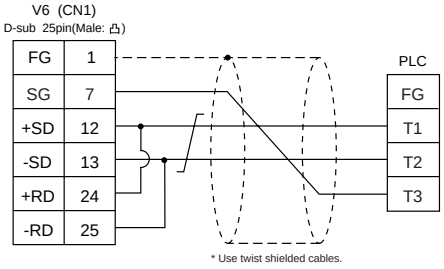

* Use twist shielded cables.

#### Wiring Diagram 4

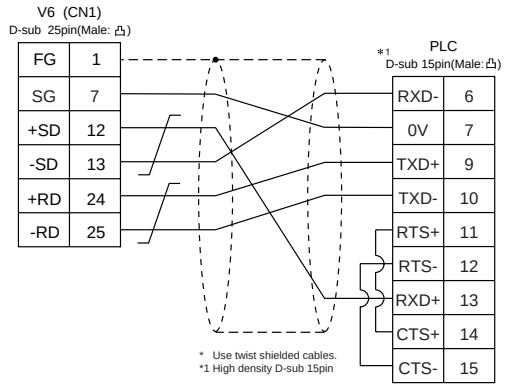



* Use twist shielded cables.

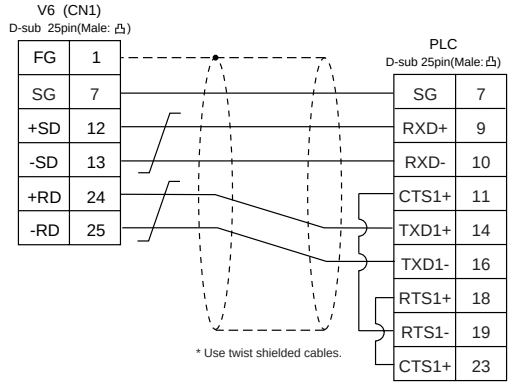
## Wiring Diagram 5



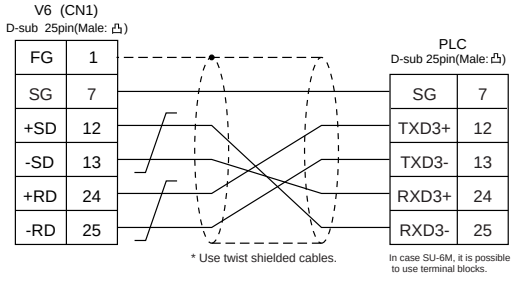

## Wiring Diagram 6




## Wiring Diagram 7




## Wiring Diagram 8



# 24 Allen-Bradley PLC • 1

(PLC-5 series)

## Available PLC

| Seect PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-73,74) |
|---|---|---|---|
| PLC-5 | PLC-5 | 1785-KE | RS-232C [Wiring Diagram 1] |
| | | 1770-KF2 | RS-232C [Wiring Diagram 2]<br>RS-422 [Wiring Diagram 3] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 0 | 0 |
| Parity | | Even | Even |
| Transmission Control Mode | RS-232C | ——— | ——— |
| | RS-422 | Not available with 1785-KE | ——— |
| Transmission Code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |
| Protocol | | Full duplex (fixed) | ——— |
| Error Check | | BCC (fixed) | ——— |
| Response | | NO (fixed) | ——— |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| N (integer) | 0 | |
| B (bit) | 1 | |
| T.ACC (timer/current value) | 2 | |
| T.PRE (timer/set value) | 3 | |
| C.ACC (counter/current value) | 4 | |
| C.PRE (counter/set value) | 5 | |
| I (input) | 6 | |
| O (output) | 7 | |
| S (status) | 8 | |
| T (timer/control) | 9 | |
| C (counter/control) | 10 | |
| R (control) | 11 | |
| R.LEN (control/data length) | 12 | |
| R.POS (control/data position) | 13 | |
| D (BCD) | 14 | |
| A (ASCII) | 15 | |

**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Switch Setting

○ 1785-KE
SW1 (protocol)

| No | Setting | Contents |
|---|---|---|
| 1 | ON | BCC, Even, no |
| 2 | OFF | |
| 3 | OFF | |
| 4 | ON | Duplicate message unacceptable |
| 5 | OFF | Handshaking signal ignored |
| 6 | ON | Diagnosis execution |

SW2 (port)

Specify the port for 1785-KE. (This port should not be duplicated in the network.)

| No | Setting | Contents |
|---|---|---|
| 1 | ON | 1st digit (octal) |
| 2 | ON | |
| 3 | ON / OFF | 2nd digit (octal) |
| 4 | ON / OFF | |
| 5 | ON / OFF | |
| 6 | ON / OFF | 3rd digit (octal) |
| 7 | ON / OFF | |
| 8 | ON / OFF | |

SW3 (network link transmission speed)

Adjust the setting according to the network you are using.

| No | Setting | Contents |
|---|---|---|
| 1 | ON | Data highway (57.6k bps) |
| 2 | ON | |
| 3 | ON | Link transmission speed (19.2k bps) |
| 4 | ON | |
| 5 | ON | |
| 6 | ON | Local/remote selection |

SW4 (spare)

| No | Setting | Contents |
|---|---|---|
| 1 | OFF | Normally OFF (for expansion) |
| 2 | OFF | |
| 3 | OFF | |
| 4 | OFF | |

○ 1770-KF2

SW1 (protocol)

| No | Setting | Contents |
|---|---|---|
| 1 | ON | Protocol |
| 2 | OFF | Protocol |
| 3 | ON | Duplicated message unacceptable |
| 4 | OFF | Handshaking signal ignored |
| 5 | OFF | Protocol |

SW2, SW3, SW4 (port)

Specify the port for 1770-KF2. (This port should not be duplicated in the network.)

SW5 (network link transmission speed)

Adjust the setting according to the network you are using.

| Switch Setting | | Contents |
|---|---|---|
| 1 | 2 | |
| ON | ON | 57.6k bps |

SW6 (asynchronous link transmission speed)
Set the same speed as V6.

| No | Setting | Contents |
|---|---|---|
| 1 | OFF | 9600bps |
| 2 | ON | |
| 3 | ON | |
| 4 | ON | Diagnosis execution |

SW7 (network link selection)

| Switch Setting | | Contents |
|---|---|---|
| 1 | 2 | |
| ON | OFF | Peer transmission link |

SW8 (RS-232C/RS-422 selection)

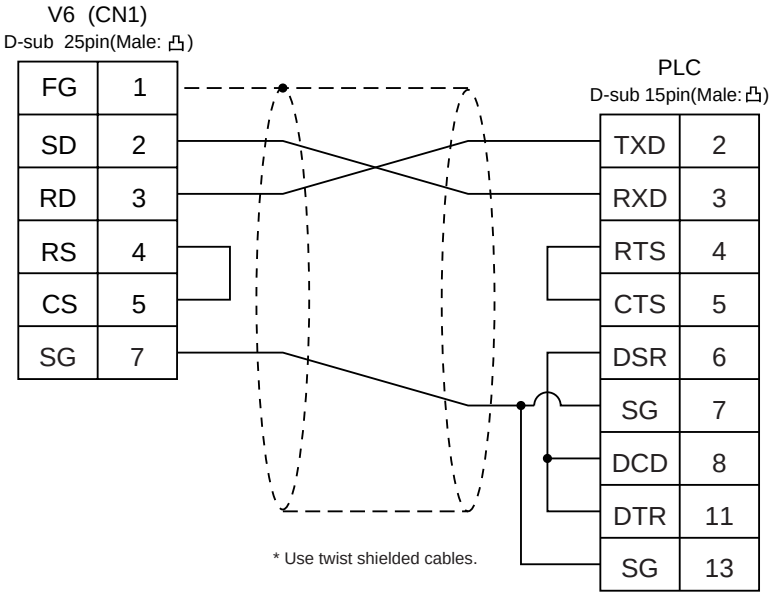
| Switch Setting | | Contents |
|---|---|---|
| 1 | 2 | |
| OFF | ON | RS232C |
| ON | OFF | RS422 |

## Wiring

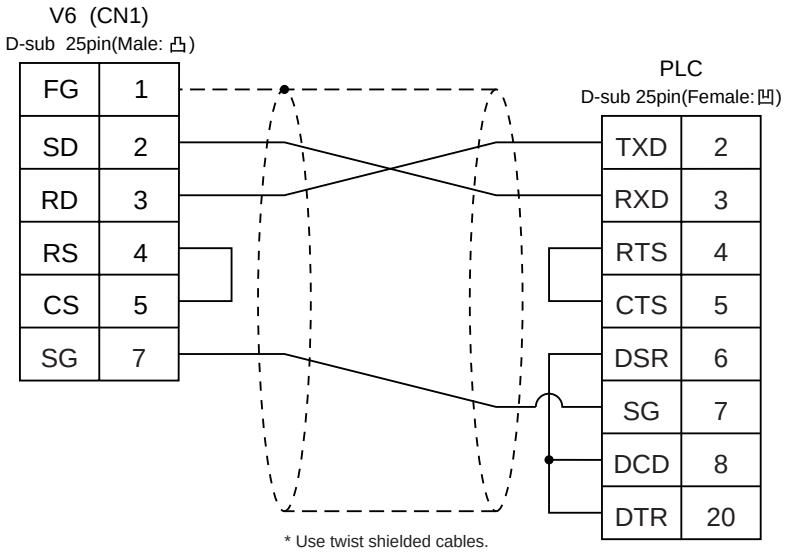
The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

#### Wiring Diagram 1

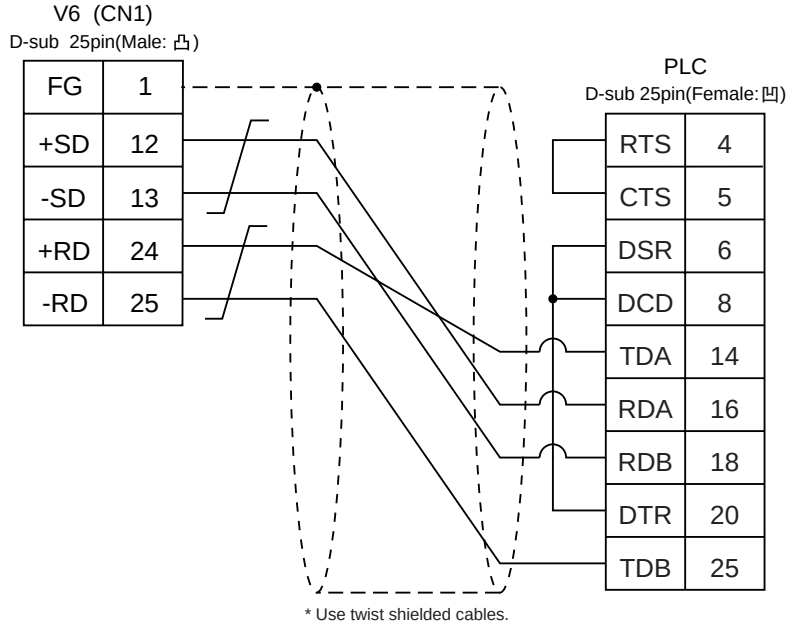


### Wiring Diagram 2




## RS-422

### Wiring Diagram 3



# 25 Allen-Bradley PLC • 2

(SLC500 series, Micro Logix 1000)

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-77, 78) |
|---|---|---|---|
| SLC500 | SLC 5/03 or later models | CPU (Processor module) RS-232C channel | RS-232C [Wiring Diagram 1] |
| | | 1747-KE | RS-232C [Wiring Diagram 2]<br>RS-422 [Wiring Diagram 4] |
| Micro Logix 1000 | Micro Logix 1000 | Port on a CPU unit | *RS-232C program transfer cable made by A-B<br>+RS-232C [Wiring Diagram 3] |

* When using RS-232C program transfer cable made by Allen-Bradley, connect the cable of [Wiring Diagram 3] to the D-sub 9 pins side of the program transfer cable to communicate with V6.

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

♦SLC500 series

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 0 | 0 |
| Parity | | Even | Even |
| Transmission Control Mode | RS-232C | ——— | ——— |
| | RS-422 | not supported on Channel 0 | ——— |
| Transmission Code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |
| Protocol | | Full duplex (fixed) | ——— |
| Error Check | | BCC (fixed) | ——— |
| Response | | NO (fixed) | ——— |

♦Micro Logix 1000

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 9600bps | 9600bps |
| Port | | 0 | 0 |
| Parity | | none (fixed) | none |
| Transmission Code | Data Length | 8 (fixed) | 8 |
| | Stop Bit | 1 (fixed) | 1 |
| Error Check | | CRC (fixed) | ——— |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| N (integer) | 0 | |
| B (bit) | 1 | |
| T.ACC (timer/current value) | 2 | |
| T.PRE (timer/set value) | 3 | |
| C.ACC (counter/current value) | 4 | |
| C.PRE (counter/set value) | 5 | |
| I (input) | 6 | |
| O (output) | 7 | |
| S (status) | 8 | |
| T (timer/control) | 9 | |
| C (counter/control) | 10 | |
| R (control) | 11 | |
| R.LEN (control/data length) | 12 | |
| R.POS (control/data position) | 13 | |
| D (BCD) | 14 | |
| A (ASCII) | 15 | |
| F (Float) | 16 | |
| ST (String) | 17 | |

**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Transmission Parameter Setting

○ CPU Port Channel 0

Set up the parameters for CPU port channel 0, using the software specifically designed for this purpose.

Baud Rate : 19200
Duplicate Detect : ON
ACK Timeout(x20 ms) : 20
Control Line : NO HANDSHAKING
Parity : EVEN
Error Detect : BCC
NAK Retries : 3
ENQ Retries : 3
Embedded Responses : AUTO-DETECT

○ 1747-KE

Set up the parameters for 1747-KE, using the software specifically designed for this purpose.

DF1 Port Setup Menu

| | |
|---|---|
| Baudrate | : 19200 |
| Bits Per Character | : 8 |
| Parity | : Even |
| Stop Bits | : 1 |

DF1 Full-Duplex Setup Parameters

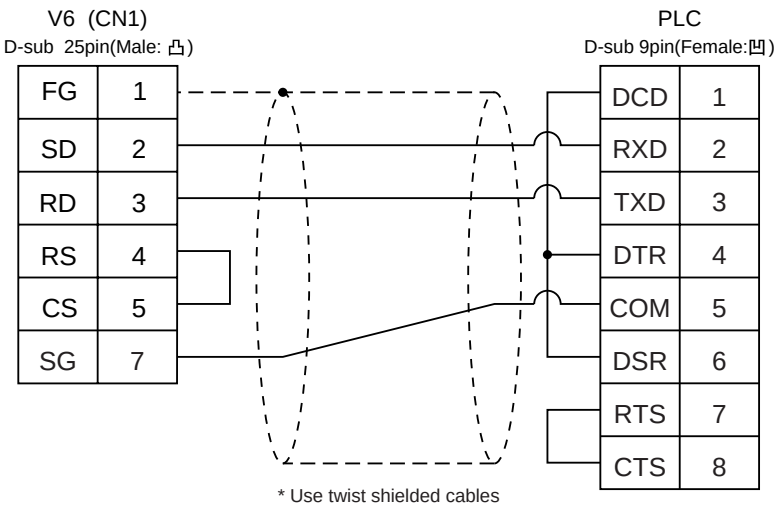
| | |
|---|---|
| Duplicate Packet Detection | : Enabled |
| Checksum | : BCC |
| Constant Carrier Detect | : Disabled |
| Message Timeout | : 400 |
| Hardware Handshaking | : Disabled |
| Embedded Response Detect | : Auto Detect |
| ACK Timeout(×5ms) | : 90 |
| ENQuiry Retries | : 3 |
| NAK Received Retries | : 3 |

## Wiring

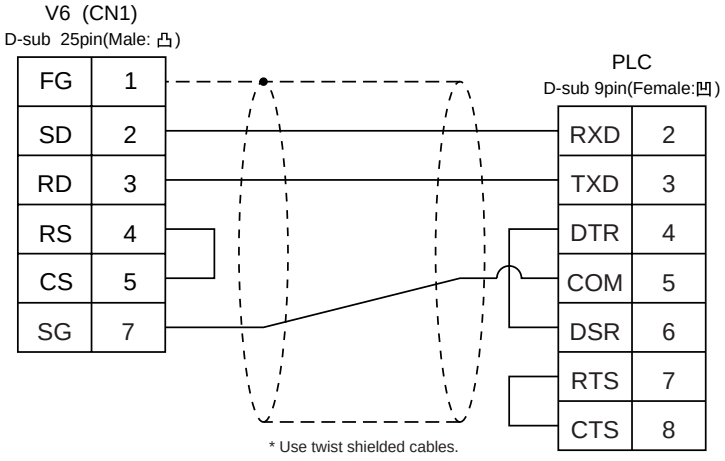
The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

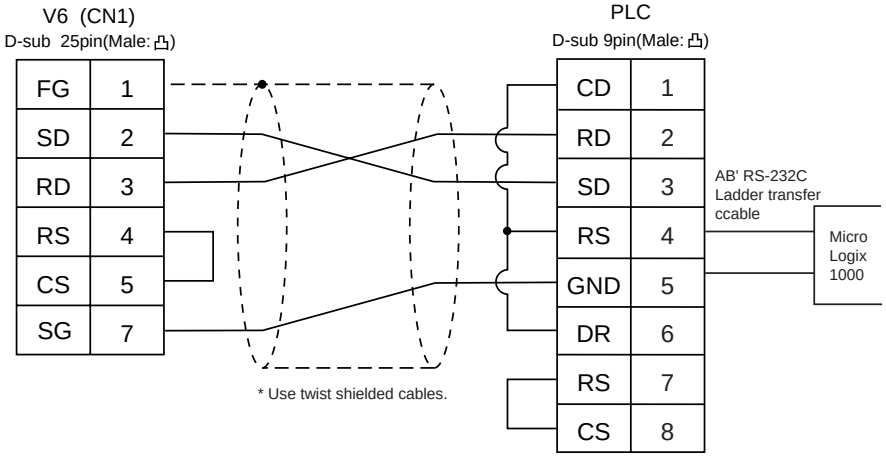
#### Wiring Diagram 1



### Wiring Diagram 2

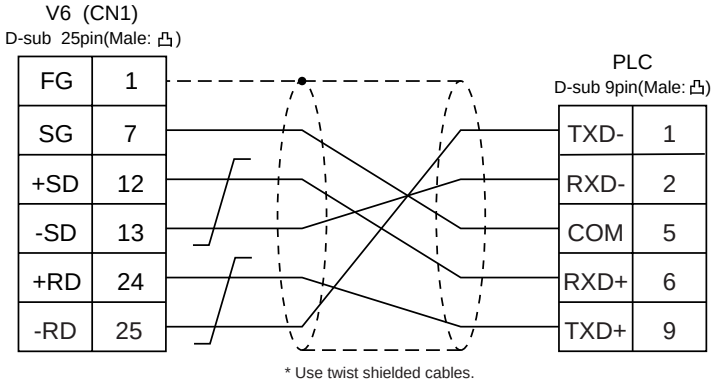



### Wiring Diagram 3




## RS-422

### Wiring Diagram 4



# 26 GE Fanuc PLC • 1

(90 series)

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-80) |
|---|---|---|---|
| 90 Series | Series 90-30 | Programmable co-processor (PCM) | RS-232C [Wiring Diagram 1] |
| | | | RS-485 [Wiring Diagram 2] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 01 ("0" for x10, "1" for x1) | 1 |
| Parity | | Odd | Odd |
| Transmission Code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |
| Function | | Host link system (fixed) | ——— |
| Response Delay Time | | 0 (fixed) | ——— |
| Time-out | | None (fixed) | ——— |
| ASCII/HEX | | HEX (fixed) | ——— |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| R (data register) | 0 | |
| I (input) | 1 | |
| Q (output) | 2 | |

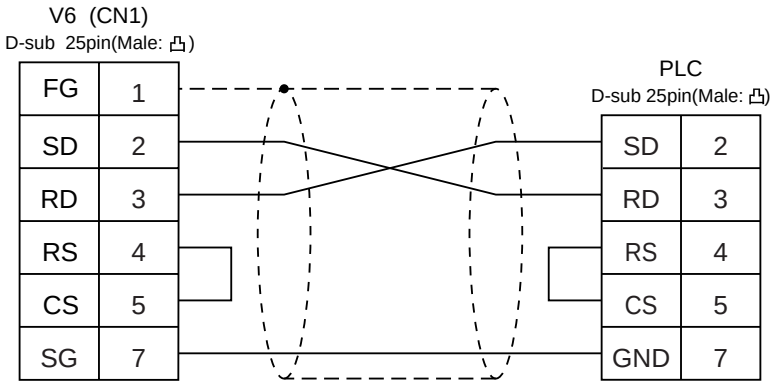
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

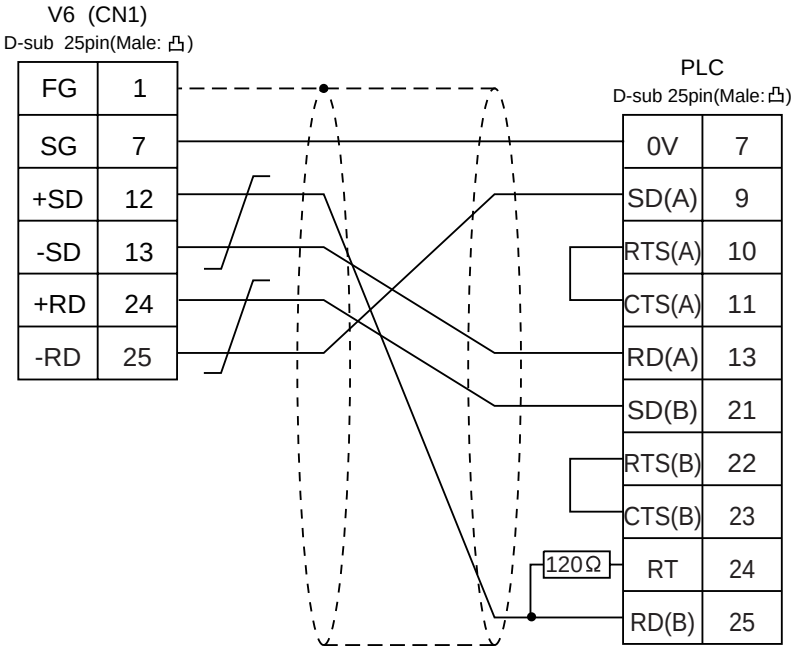
#### Wiring Diagram 1




* Use twist shielded cables.

### RS-485

#### Wiring Diagram 2




* Use twist shielded cables.

# 27 GE Fanuc PLC • 2

(90 series SNP-X)

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-82) |
|---|---|---|
| 90 Series (SNP-X) | Series 90 micro (CPU port)<br>Series 90-30 (CPU port) | RS-485 [Wiring Diagram 1] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Parity | | Odd | Odd |
| Transmission Code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |
| Function | | SNP-X (fixed) | ———————— |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| R (data register) | 0 | |
| I (input) | 1 | |
| Q (output) | 2 | |
| M (internal relay) | 3 | |
| G (global relay) | 4 | |
| AI (analog input) | 5 | |
| AQ (analog output) | 6 | |
| T (temporary memory relay) | 7 | |
| S (system status) | 8 | Read only |
| SA (system status) | 9 | |
| SB (system status) | 10 | |
| SC (system status) | 11 | |

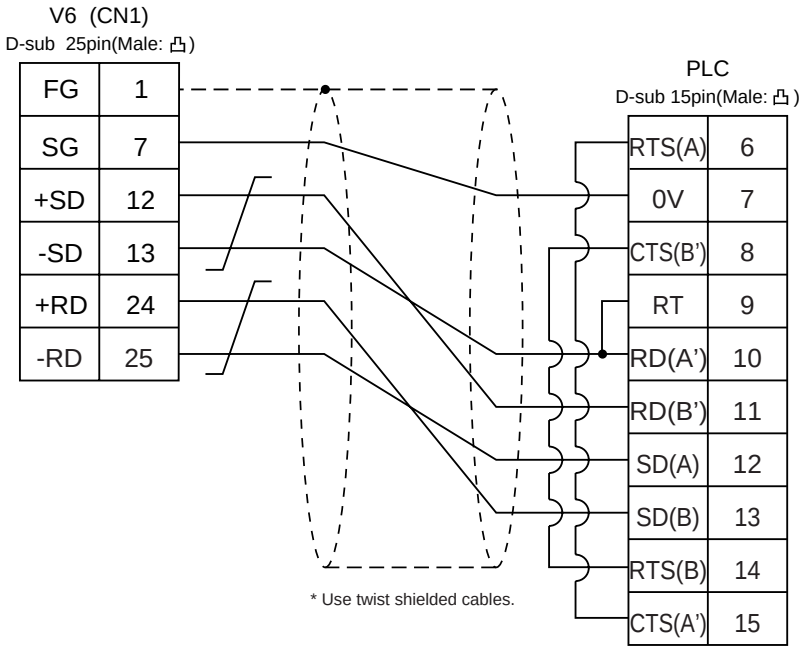
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

**RS-485**

**Wiring Diagram 1**



# 28 TOSHIBA PLC

(T series)

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-84) |
|---|---|---|
| T Series | T series | RS-422 [Wiring Diagram 1] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows.
For further information, refer to the TOSHIBA's PLC manual.

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 01 | 1 |
| Parity | | Odd | Odd |
| Trasmission Code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |

## PLC Transmission Parameter Setting

For specifying parameters in the T series PLC, use a T-series programmer and enter the following data in the system information "7. COMPUTER LINK".

Station No. 1
Baud rate 19200 BPS
Parity Odd
Data bit 8 bit
Stop bit 1 bit

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| X (input register) | 1 | XW as word device |
| Y (output register) | 2 | YW as word device |
| R (auxiliary relay) | 5 | RW as word device |
| L (link relay) | 6 | LW as word device |
| W (link register) | 7 | |
| F (file register) | 8 | |
| TN (timer/current value) | 9 | Read only |
| CN (counter/current value) | 10 | Read only |
| TS (timer/contact) | 11 | Read only |
| CS (counter/contact) | 12 | Read only |

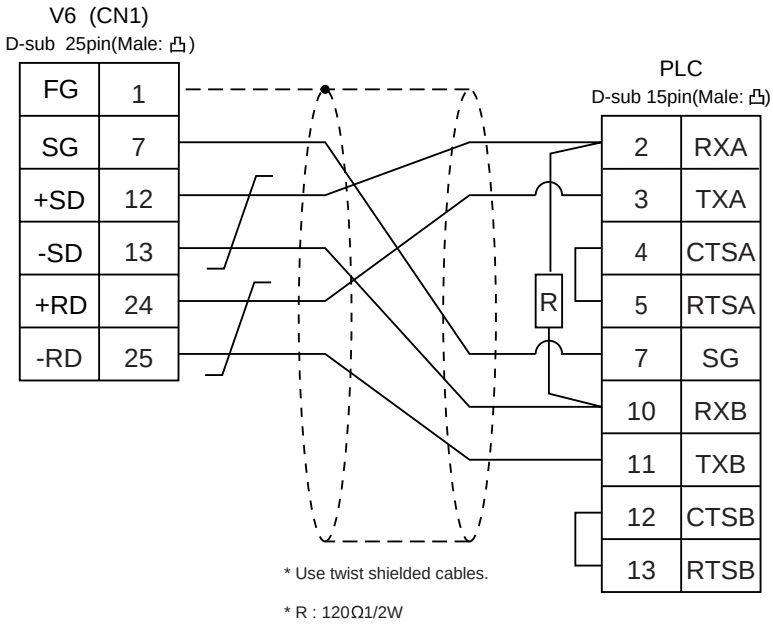
**Set the memory to the extent of the memory range of each PLC model.**
**IUse TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-422

#### Wiring Diagram 1



# 29 TOSHIBA MACHINE PLC

(TC200)

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-86) |
|---|---|---|---|
| TC200 | TC200 | Port on a CPU unit | RS-232C [Wiring Diagram 1] |
| | | TCCMW<br>TCCMO | |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows.

| Item | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|
| Baud Rate | 9600bps | 9600bps |
| Port | 1 | 1 |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (register 1) | 0 | |
| B (register 2) | 1 | |
| X (input relay) | 2 | XW as word device |
| Y (output relay) | 5 | YW as word device |
| R (temporary storage) | 6 | RW as word device |
| G (extension temporary storage 1) | 7 | GW as word device |
| H (extension temporary storage 2) | 8 | HW as word device |
| L (latch relay) | 9 | LW as word device |
| S (shift register) | 10 | SW as word device |
| E (edge relay) | 11 | EW as word device |
| P (timer counter current value) | 12 | |
| V (timer counter set value) | 13 | |
| T (timer) | 14 | TW as word device |
| C (counter) | 15 | CW as word device |
| A (special auxiliary relay) | 16 | AW as word device |

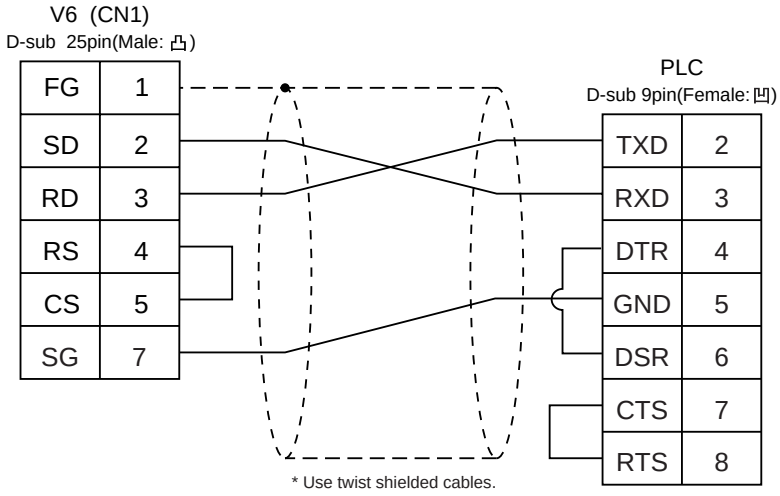
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

#### Wiring Diagram 1



# 30 SIEMENS PLC • 1

(S5-90, S5-95U, S5-100U)

## Available PLC

**A similar program as RK512 is required.**

| Select PLC Type | PLC | Link Unit | Wiring Diagram(refer to P2-88) |
|---|---|---|---|
| S5 (S5 V4) | S5-90U<br>S5-95U<br>S5-100U | CP-521SI<br>(3964R Transmission Protocol) | RS-232C [Wiring Diagram 1] |
| | S5-95U | Second serial interface<br>(3964R Transmission Protocol) | *[6ES5 734-1BD20] cable made by SIEMENS<br>+ RS-232C [Wiring Diagram 2] |

* When using [6ES5 734-1BD20] cable made by SIEMENS, connect the cable of [Wiring Diagram 2] to the D-sub 25 pins side of [6ES5 734-1BD20] to communicate with V6.

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 9600bps | 9600bps |
| Parity | | Even parity | Even |
| Transmission Code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |
| Busy Signal | | NO (fixed) | ———— |
| Hand Shake | | OFF(fixed) | ———— |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| DB (data register) | 0 | Use memories more than DB3. |
| I (input relay) | 1 | IW as word device Read only |
| Q (output relay) | 2 | QW as word device Read only |
| F (internal relay) | 3 | FW as word device Read only |
| T (timer/current value) | 4 | Read only |
| C (counter/current value) | 5 | Read only |
| AS (absolute address) | 6 | |

◊ **The assigned memory is indicated while editing the screen as illustrated:**

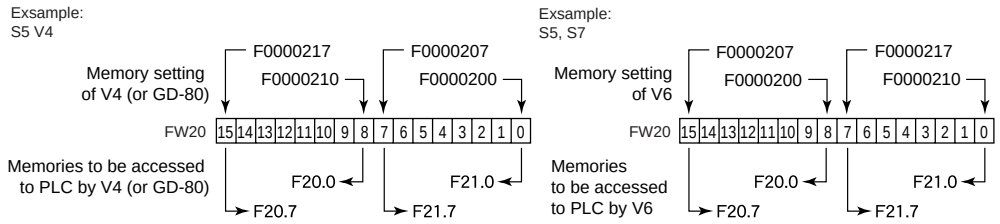
<E.g.> DB003000

Address No.

Block No.

◊ **Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

◊ **Notes on converting the data file of V4 (or GD-80) into the V6 data file**
**When converting the data file of V4 (or GD-80) into the V6 data file, the PLC type is automatically selected as "SIEMENS S5 V4."**
**In V4 (or GD-80), the order of bytes in I (input relay), Q (output relay) and F (internal relay) is reversed.**

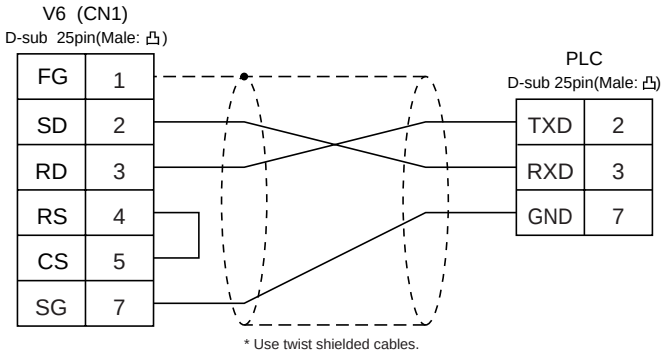



## Wiring

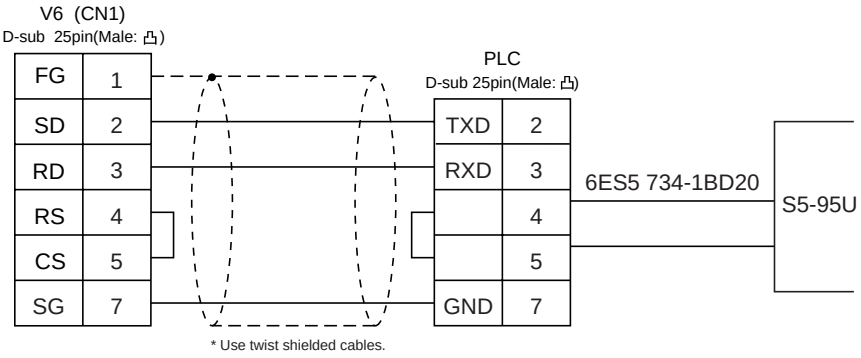
The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

#### Wiring Diagram 1




#### Wiring Diagram 2



# 31 SIEMENS PLC • 2

(S5-115U/135U/155U, S7-300, S7-400)

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-90) |
|---|---|---|---|
| S5 (S5 V4) | S5-115U<br>S5-135U<br>S5-155U | CP-524(3964R/RK512)<br>CP-544(3964R/RK512) | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 3] |
| S7 | S7-300 | CP-341(3964R/RK512) | RS-232C [Wiring Diagram 2]<br>RS-422 [Wiring Diagram 3] |
| | S7-400 | CP-441(3964R/RK512) | |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

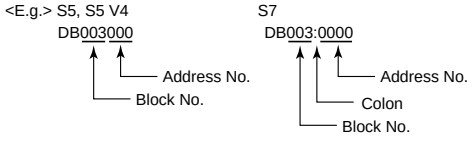
| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 9600bps | 9600bps |
| Parity | | ——— | Even (fixed) |
| Transmission Code | Data Length | ——— | 8 (fixed) |
| | Stop Bit | ——— | 1 (fixed) |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| DB (data register) | 0 | Use memories, more than DB1 for S7, more than DB3 for S5. |
| I (input relay) | 1 | IW as word device Read only |
| Q (output relay) | 2 | QW as word device Read only |
| F (internal relay) | 3 | FW as word device Read only<br>only in S5 series |
| M (internal relay) | 3 | MW as word device Read only<br>only in S7 series |
| T (timer/current value) | 4 | Read only |
| C (counter/current value) | 5 | Read only |
| AS (absolute address) | 6 | Can not be used in S7 series. |

◊ **The assigned memory is indicated while editing the screen as illustrated:**

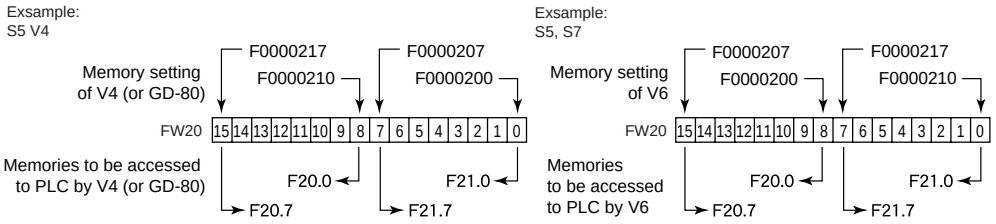
◊ **Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**



◊ **Notes on converting the data file of V4 (or GD-80) into the V6 data file**

**When converting the data file of V4 (or GD-80) into the V6 data file, the PLC type is automatically selected as "SIEMENS S5 V4."**

**In V4 (or GD-80), the order of bytes in I (input relay), Q (output relay) and F (internal relay) is reversed.**

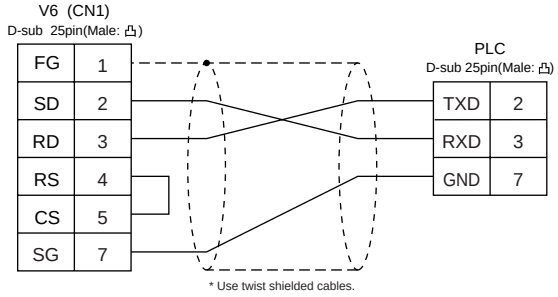



## Wiring

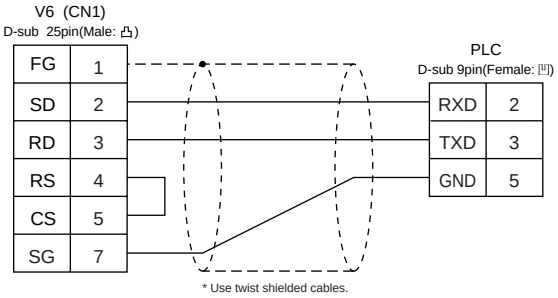
The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

#### Wiring Diagram 1

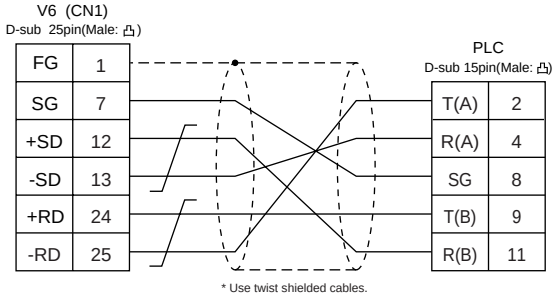



#### Wiring Diagram 2




### RS-422

#### Wiring Diagram 3



# 32 SIEMENS PLC • 3

(S5 PG port)

## Connection

Connect to the S5 series PG port.
The communication parameter setting of V6 is done automatically.

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-92) |
|---|---|---|---|
| S5 PG port | S5 series | Programing port on a CPU unit | *[6ES5 734-1BD20] cable made by SIEMENS + RS-232C [Wiring Diagram 1] |

* When using [6ES5 734-1BD20] cable made by SIEMENS, connect the cable of [Wiring Diagram 1] to the D-sub 25 pins side of [6ES5 734-1BD20] to communicate with V6.

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| DB (data register) | 0 | Use memories more than DB3. |
| I (input relay) | 1 | IW as word device |
| Q (output relay) | 2 | QW as word device |
| F (internal relay) | 3 | FW as word device |
| T (timer/current value) | 4 | |
| C (counter/current value) | 5 | |
| AS (absolute address) | 6 | |

◊ **The assigned memory is indicated while editing the screen as illustrated:**

<E.g.> DB003000
Address No.
Block No.

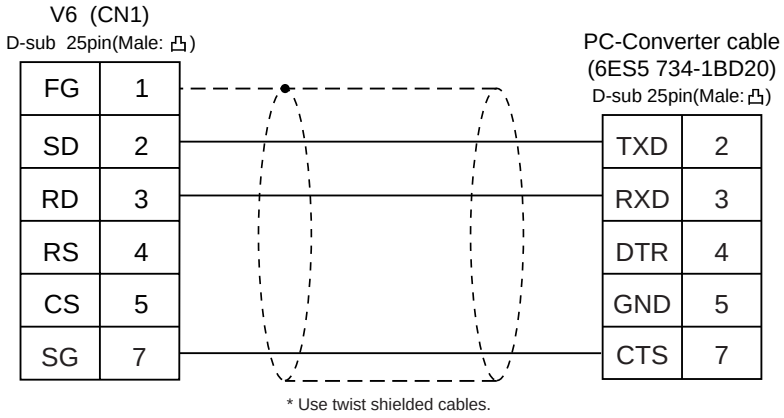
◊ **Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

#### Wiring Diagram 1




* Use twist shielded cables.

# 33 SIEMENS PLC • 4

(S7-200 PPI)

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-94) |
|---|---|---|
| S7-200 PPI | S7-200 series | RS-422 [Wiring Diagram 1] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|
| Baud Rate | 9600bps | 9600bps |
| Port | 2 | 2 |
| Parity | Even (fixed) | ——————— |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| V (data memory) | 0 | VW as word device |
| I (input) | 1 | IW as word device<br>Possible to write only to the area which is not used |
| Q (output) | 2 | |
| M (bit memory) | 3 | |
| T (timer/current value) | 4 | |
| C (counter/current value) | 5 | |
| TB (timer/contact) | 6 | Read only |
| CD (counter/contact) | 7 | Read only |
| HC (high speed counter/contact) | 8 | Possible to use double words |
| AIW (analog input) | 9 | |
| AQW(analog output) | 10 | |
| SM (special memory/special relay) | 11 | SMW as word device |
| S (stage) | 12 | SW as word device |

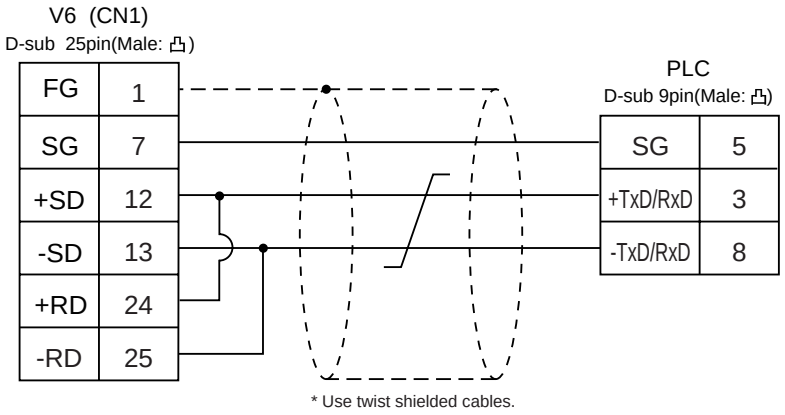
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

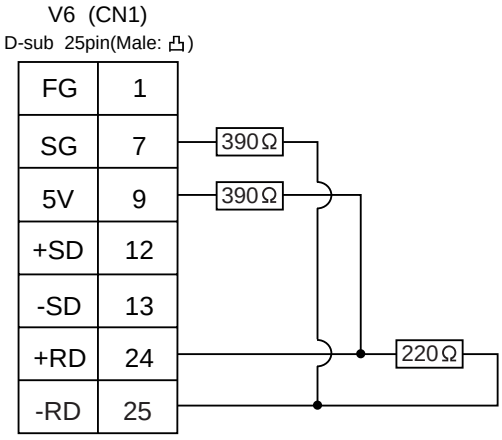
**RS-422**

**Wiring Diagram 1**




## Setting of Terminal Resistance

**Set the dip switch 7,8 of V6 series to OFF.**
**Connect terminal registance to the V6 serial connector (CN1) as follows.**
**If terminal registance is not connected, the communication error may occur.**



# 34 SIEMENS PLC • 5

(TI545, 555)

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-96) |
|---|---|---|
| TI500/505 (TI500/505 V4) | TI545/555 CPU port (built-in) | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 2] |

## Communication Setting

Connect the cable to the CPU port (RS-232C built-in port) for TI545/555.
The recommended communication parameter setting of both PLC and V6 is as follows:

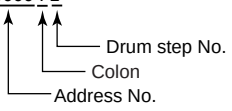
| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Parity | | ——————— | None (fixed) |
| Transmission Code | Data Length | ——————— | 8 (fixed) |
| | Stop Bit | ——————— | 1 (fixed) |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| V (variable memory) | 0 | |
| WX (word input) | 1 | |
| WY (word output) | 2 | |
| X (discrete input) | 3 | |
| Y (discrete output) | 4 | |
| CR (control relay) | 5 | |
| TCP (timer counter/set value) | 6 | |
| TCC (timer counter/current value) | 7 | |
| DCP (drum count/set value) | 8 | *1 |
| DCC (drum count/current value) | 9 | Read only |
| DSP (drum step/set value) | 10 | |
| DSC (drum step/current value) | 11 | |
| K (fixed memory) | 12 | |
| STW (system state) | 13 | |

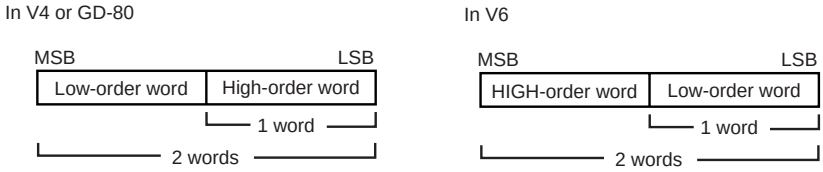
*1 In case of using DCP (drum count/set value), set the drum step No.1 to 16.
The assigned memory is indicated while editing the screen as illustrated:

<E.g.> DCP30000 : 1



**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

◊ **Notes on converting the data file of V4 (or GD-80) into the V6 data file**
**When converting the data file of V4 (or GD-80) into the V6 data file, the PLC type is automatically selected as "TI500/505 V4."**
**In V4 (or GD-80), the order of words is reversed when the double words.**

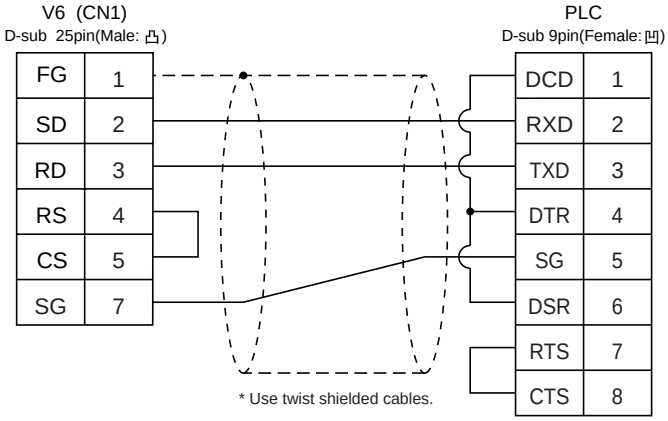



## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

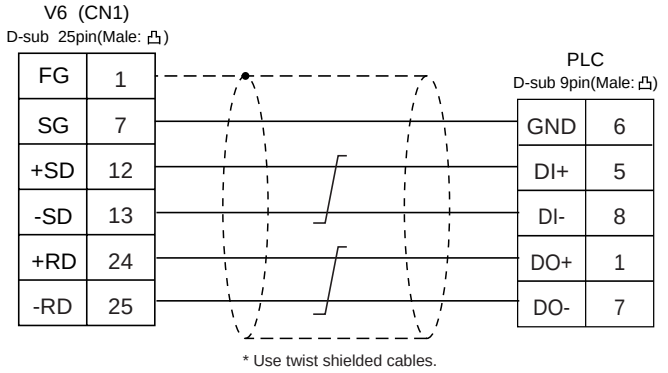
### RS-232C

#### Wiring Diagram 1




### RS-422

#### Wiring Diagram 2



# 35 SIEMENS PLC • 6

(S7-300/400MPI, S7-300MPI ADP)

## Available PLC

| Select PLC Type | CPU | Adapter | Wiring Diagram (refer to P2-98) |
|---|---|---|---|
| S7-300/400MPI | S7-300/400 series | MPI port | RS-422 [Wiring Diagram 2] |
| S7-300MPI (HMI ADP) | S7-300/400 series (MPI port) | SIEMENS HMI Adapter 6ES7 972 0CA11-0XA0 | RS-232C [Wiring Diagram 1] |
| S7-300MPI (PC ADP) | | SIEMENS PC Adapter 6ES7 9720CA23-0XA0 | |
| S7-300MPI (Helmholz SSW7 ADP) | | Helmholz SSW7 Adapter | |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

○ S7-300/400 MPI

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps (fixed) |
| Parity | | ———— | Even (fixed) |
| Transmission Code | Data Length | ———— | 8 (fixed) |
| | Stop Bit | ———— | 1 (fixed) |
| Local No.(station no. of PLC) | | 2 | 2 |

○ S7-300MPI (HMI ADP / PC ADP / Helmholz SSW7 ADP)

| Item | | Setting of PLC | Comm. Parameter of V6 | |
|---|---|---|---|---|
| | | | HMI ADP | PC ADP Helmholz ADP |
| Baud Rate | | 38400bps | 38400bps (fixed) | 38400bps |
| Parity | | ———— | None (fixed) | |
| Transmission Code | Data Length | ———— | 8 (fixed) | |
| | Stop Bit | ———— | 1 (fixed) | |
| Local No.(station no. of PLC) | | 2 | 2 | |

Set the [MPI SETTING] in the [Comm. Perameter] in V-SFTE.

| ITEM | MPI SETTING |
|---|---|
| Highest MPI Address | 15/31/63/126 |
| Source No (station no.of V6) | 0 |

Highest MPI Address : Specify the highest number on the network.

Source No :

Station number of V6. Make sure that this number is unique. Set difference number for [Source No.] and [Local No.], and make sure that [Source No.] ≤ [Node Cnt.]

<E.g.> PLC is “13” and V6 is “20”, select “31”.

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| DB (data register) | 0 | Use memories more than DB1. |
| I (input relay) | 1 | IW as word device |
| Q (output relay) | 2 | QW as word device |
| M (Merker Word) | 3 | MW as word device |
| T (timer/current value) | 4 | |
| C (counter/current value) | 5 | |

◊ **The assigned memory is indicated while editing the screen as illustrated:**

<E.g.> DB0001: 0000

Address No.

Block No.

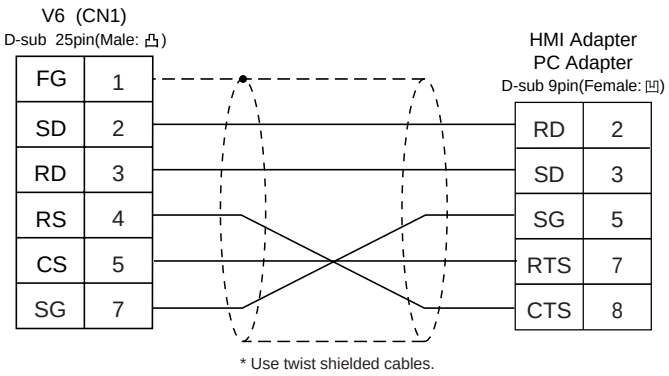
◊ **Set the memory to the extent of the memory range of each PLC model. Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

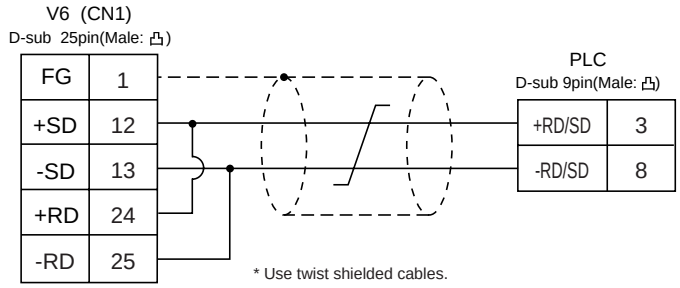
### RS-232C

#### Wiring Diagram 1




### RS-422

#### Wiring Diagram 2



# 36 Shinko PLC

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-100) |
|---|---|---|---|
| SELMART | SELMART-100 or later series | Version O1M2-UCI-6X | RS-232C [Wiring Diagram 1] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Parity | | Even | Even |
| Transmission Code | Data Length | 7 (ASCII) | 7 |
| | Stop Bit | 1 | 1 |
| Sum Check | | Provided (fixed) | ——— |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |

**Only D register is available for this PLC model.**
**No other devices can be used although they are available to be set in the panel editor.**

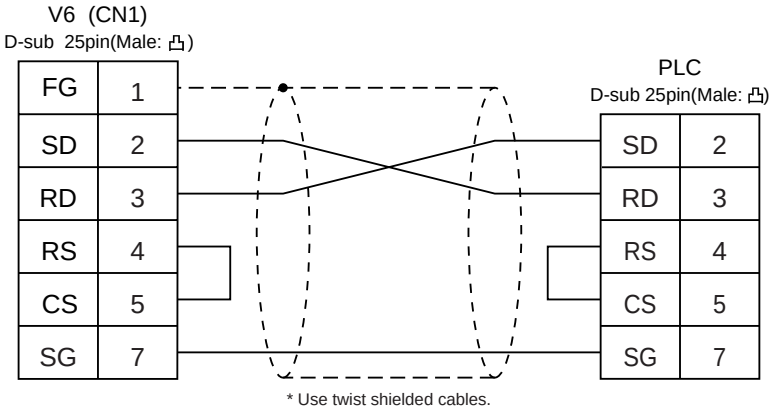
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

#### Wiring Diagram 1



# 37 SAMSUNG PLC

(SPC series)

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-102) |
|---|---|---|
| SPC Series | SPC series | RS-232C [Wiring Diagram 1]<br>RS-422/485 [Wiring Diagram 2] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

| Item | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|
| Baud Rate | 9600bps | 9600bps |
| Parity | None | None |
| Stop Bit | 1 | 1 |
| Terminal Resistor | ON for RS-485 | ——— |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| R (input/output) | 0 | |
| L (link relay) | 1 | |
| M (internal relay) | 2 | |
| K (keep relay) | 3 | |
| F (special relay) | 4 | |
| W (data register) | 5 | |

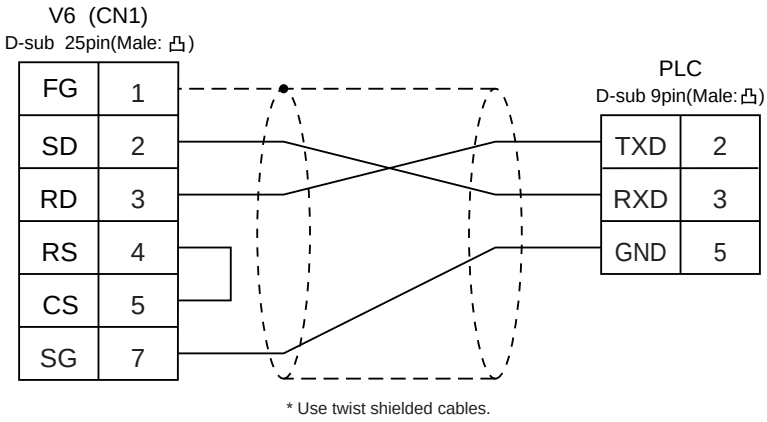
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

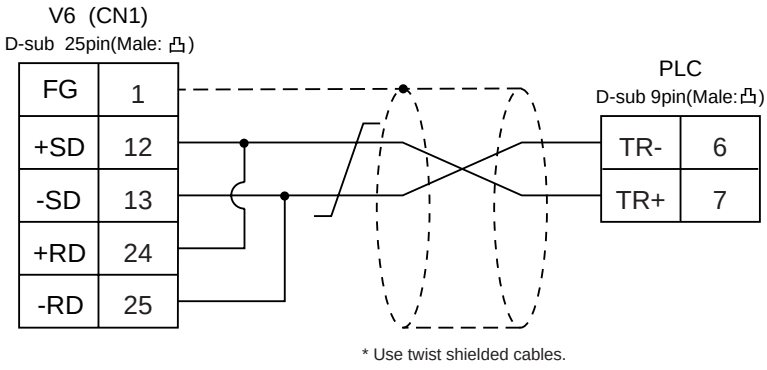
#### Wiring Diagram 1




* Use twist shielded cables.

### RS-422

#### Wiring Diagram 2




* Use twist shielded cables.

# 38 KEYENCE PLC • 1

(KZ series link)

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-104) |
|---|---|---|---|
| KZ Series link | KZ300 KZ350 | KZ-L2 | Port 1 RS-232C [Wiring Diagram 1] Port 2 RS-232C [Wiring Diagram 2] RS-422 [Wiring Diagram 3] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:
For further information, refer to the communication specifications of KEYENCE link unit.

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Port | | 0 | 0 |
| Baud Rate | | 19200bps | 19200bps |
| Parity | | Even | Even |
| Transmission Code | Data Length | 7 (ASCII) | 7 |
| | Stop Bit | 2 | 2 |
| Terminal Resistor | | ON for RS-422 | ——— |

**Set the port with the port setting switch, the terminating resistance with terminator, and the baud rate/data bit/parity/stop bit with SET B dip switches.**

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| DM (data memory) | 0 | |
| CH (input/output relay) | 1 | |

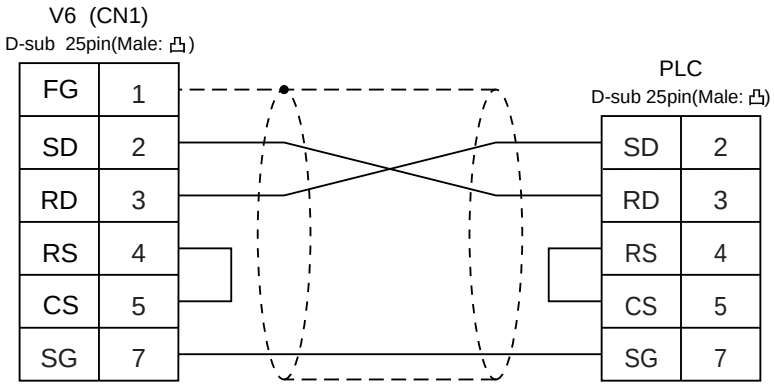
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

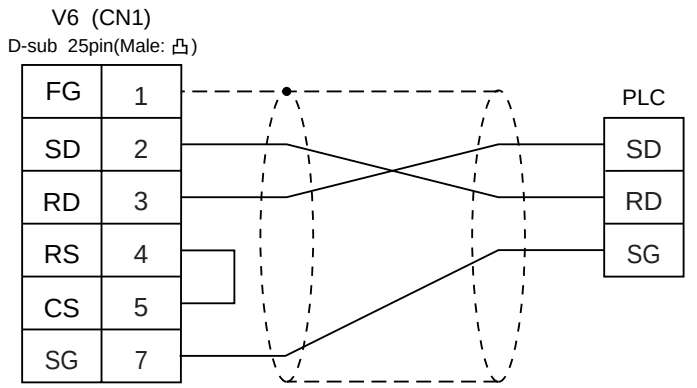
### RS-232C

#### Wiring Diagram 1




* Use twist shielded cables.

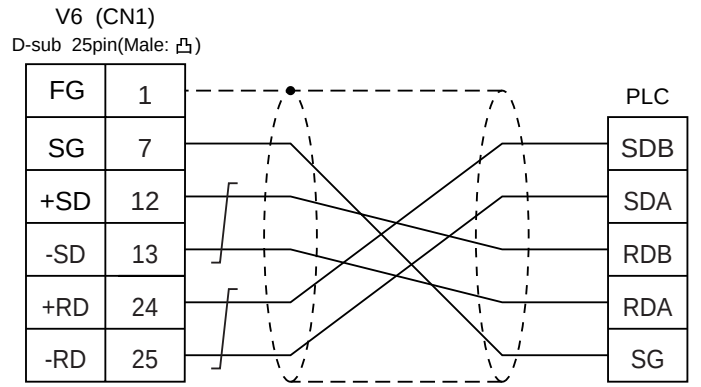
#### Wiring Diagram 2




* Use twist shielded cables.

### RS-422

#### Wiring Diagram 3




* Use twist shielded cables.

# 39 KEYENCE PLC • 2

(KZ-A500)

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-106,107) |
|---|---|---|---|
| KZ-A500 CPU | KZ-A500 | CPU Modular Port | RS-232C [Wiring Diagram 1]<br>RS-422 Cable made by KEYENCE [KZ-C20] + Cable made by Hakko [MB-CPUQ] |
| MITSUBISHI A series link | | KZ-L10 | Port 1<br>RS-232C [Wiring Diagram 2]<br>Port 2<br>RS-232C [Wiring Diagram 3]<br>RS-422 [Wiring Diagram 4] |

## Communication Setting

The recommended communication parameter setting of both PLC and V6 is as follows:

♦CPU modular port of KZ-A500

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Port | | 0 | 0 |
| Baud Rate | | 9600bps | 9600bps *1 |
| Parity | | Odd | Odd |
| Transmission Code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |
| Terminal Resistor | | ON for RS-422 | ——— |

*1 In case of RS-422, the baud rate is fixed at 9600bps.

♦Link Unit KZ-L10

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Port | | 0 | 0 |
| Baud Rate | | 19200bps | 19200bps |
| Parity | | Even | Even |
| Transmission Code | Data Length | 7 | 7 |
| | Stop Bit | 1 | 1 |
| Sum check | | Provided (fixed) | ——— |
| Terminal Resistor | | ON for RS-422 | ——— |

**Set the port with the port setting switch, the terminating resistance with terminator, and the baud rate/data bit/parity/stop bit with SET B dip switches.**

**For further information, refer to the communication specifications of KZ-L10.**

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| W (link register) | 1 | |
| R (file register) | 2 | |
| TN (timer/current value) | 3 | |
| CN (counter/current value) | 4 | |
| M (internal relay) | 6 | |
| L (latch relay) | 7 | |
| B (link relay) | 8 | |
| X (input relay) | 9 | |
| Y (output relay) | 10 | |
| TS (timer/contact) | 11 | |
| TC (timer/coil) | 12 | |
| CS (counter/contact) | 13 | |
| CC (counter/coil) | 14 | |

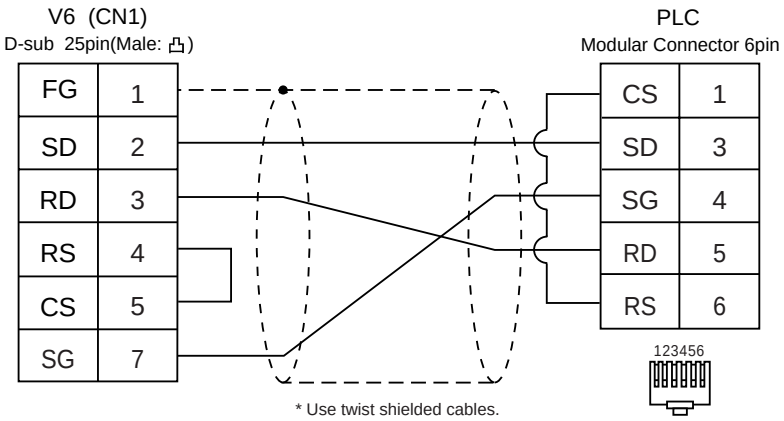
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

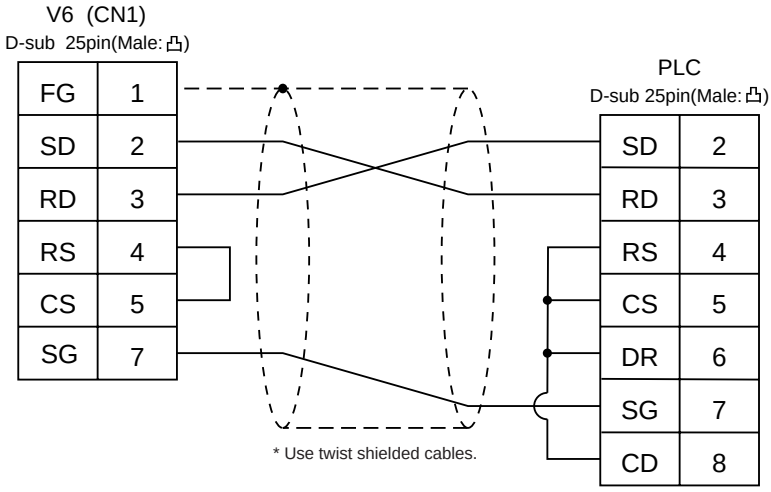
The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

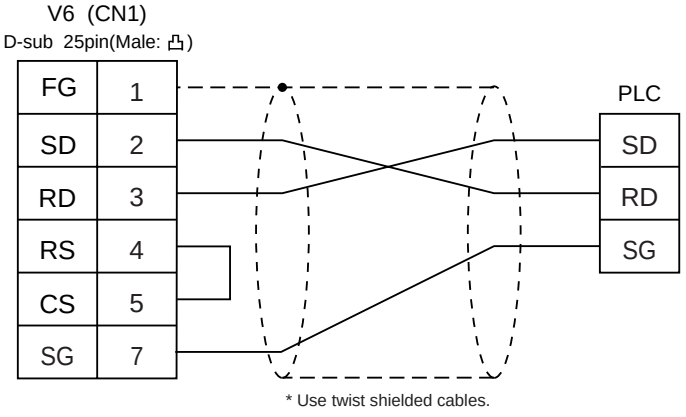
#### Wiring Diagram 1



**Wiring Diagram 2**

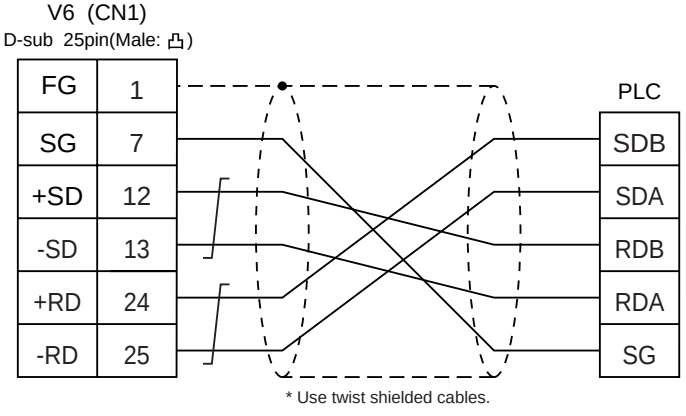



**Wiring Diagram 3**




**RS-422**

**Wiring Diagram 4**



# 40 KEYENCE PLC • 3

(KZ/KV series CPU)

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-109) |
|---|---|---|
| KZ/KV series CPU | KZ-10,16,24,40,80,300,350 (Program port direct connection)<br>KV series (Program port direct connection) | RS-232C [Wiring diagram 1] or Cable made by KEYENCE [OP-26487] + connecter [OP26485]<br>RS-422 Cable made by KEYENCE [KZ-C20] + Cable made by Hakko [MB-CPUQ] |
| KZ 24/300 CPU | KZ-24,300 (Program port direct connection) | RS-232C [Wiring diagram 1] or Cable made by KEYENCE [OP-26487] + connecter [OP26485] |
| KV 10/24 CPU | KZ-V10,24 (Program port direct connection) | |
| KV 700 CPU | KV 700 (Program port direct connection) | |

* When using RS-232C cable made by KEYENCE [OP-26487], attach the D-sub 25 pins connecter [OP-26485] to the modular jack on the V6 side to communicate.

## Communication Setting

○ KZ/KV series CPU

The communication parameter setting of V6 is done automatically.

○ KZ24/300 CPU

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Port | | 0 | 0 |
| Baud Rate | | 38400bps | 38400bps*1 |
| Parity | | Even | ——— |
| Transmission Code | Data Length | 8 | ——— |
| | Stop Bit | 1 | ——— |

*1 The maximum baud rate is 38400bps. If 57600bps or 115000bps is selected, the V6 communicates with a PLC forcibly at 9600bps.

○ KV10/24 CPU

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Port | | 0 | 0 |
| Baud Rate | | 57600bps | 57600bps*1 |
| Parity | | Even | ——— |
| Transmission Code | Data Length | 8 | ——— |
| | Stop Bit | 1 | ——— |

*1 The maximum baud rate is 57600bps. If 115000bps is selected, the V6 communicates with a PLC forcibly at 9600bps.

○ KV 700 Series CPU

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Port | | 0 | 0 |
| Baud Rate | | 9600bps | 9600bps*1 |
| Parity | | Even | ——— |
| Transmission Code | Data Length | 8 | ——— |
| | Stop Bit | 1 | ——— |

*1 The maximum baud rate is 57600bps.

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| DM (data memory) | 0 | |
| CH (input/output relay) | 1 | |
| TC (timer/current value) | 2 | |
| CC (counter/current value) | 3 | |
| TS (timer/set value) | 4 | |
| CS (counter/set value) | 5 | |
| T (timer/contact) | 6 | |
| C (counter/contact) | 7 | |
| TM (temporary data memory) | 8 | |
| CTH (*1) | 9 | only in KV700 |
| CTC (*2) | 10 | only in KV700 |
| CT (*3) | 11 | only in KV700 |
| CR (control relay) | 12 | only in KV700 |
| CM (control memory) | 13 | only in KV700 |

*1 high-speed counter/current value

*2 high-speed counter comparator/set value

*3 High-speed counter comparator/contact

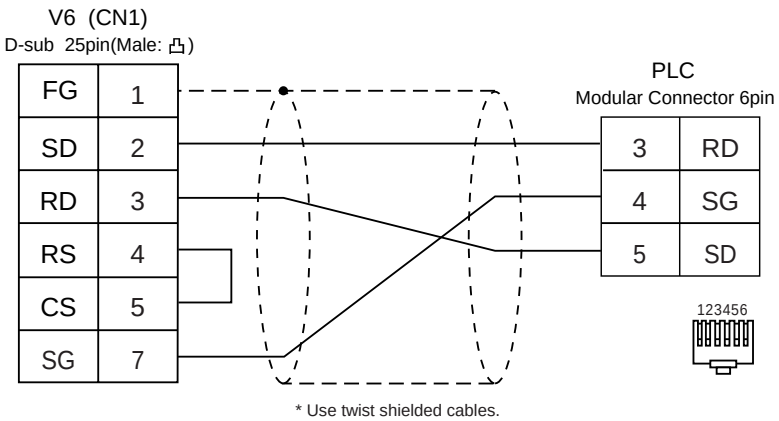
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

#### Wiring Diagram 1



# 41 LG PLC

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-113,114) |
|---|---|---|
| MASTER-K10/60/200 | K10/60/200 | RS-232C [Wiring Diagram 1] |
| MASTER-K500/1000 | K500/1000 | RS-232C [Wiring Diagram 2]<br>RS-422 [Wiring Diagram 6] |
| MASTER-KxxxS | K200S/K300S/K1000S CPU port | RS-232C [Wiring Diagram 3] |
| MASTER-KxxxS CNET | K4F-CUEA | RS-232C [Wiring Diagram 4]<br>RS-422 [Wiring Diagram 7] |
| GLOFA CNET | G4L-CUEA | |
| GLOFA GM series CPU | GM4/GM6/GM7 CPU port | RS-232C [Wiring Diagram 5] |

## Communication Setting

Therecommendedcommunicationparametersettingofbo thPLCandV6isasfollows:

○ MASTER-K10/60/200

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 9600bps (fixed) | ——— |
| Parity | | None (fixed) | ——— |
| Transmission Code | Data Length | 8 (fixed) | ——— |
| | Stop Bit | 1 (fixed) | ——— |

○ MASTER-K500/1000

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps *1 | 19200bps |
| Parity | | None (fixed) | ——— |
| Transmission Code | Data Length | 8 (fixed) | ——— |
| | Stop Bit | 1 (fixed) | ——— |

*1 In case of RS-422, the baud rate is fixed at 9600bps.

○ MASTER-KxxxS

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 38400bps | 38400bps |
| Parity | | None (fixed) | ——— |
| Transmission Code | Data Length | 8 (fixed) | ——— |
| | Stop Bit | 1 (fixed) | ——— |

○ MASTER-KxxxSCNET/GLOFACNET/GMseriesCPU

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 38400bps | 38400bps |
| Parity | | None | None |
| Transmission Code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |

## Available Memory

○ MASTER-K10/60/200

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| M (auxiliary relay) | 1 | |
| P (input/output relay) | 2 | Input : Read only |
| K (keep relay) | 3 | |
| TC (timer/current value) | 4 | |
| CC (counter/current value) | 5 | |
| TS (timer/set value) | 6 | |
| CS (counter/set value) | 7 | |

○ MASTER-K500/1000

| Memory | TYPE | Remarks |
|---|---|---|
| P (input/output) | 0 | Input : read only |
| M (relay) | 1 | |
| L (link relay) | 2 | |
| K (keep relay) | 3 | |
| F (special relay) | 4 | Read only |
| T (timer/current value) | 5 | |
| C (counter/set value) | 6 | |
| D (data register) | 7 | |

○ MASTER-KxxxS

| Memory | TYPE | Remarks |
|---|---|---|
| P (input/output) | 0 | Input : read only |
| M (relay) | 1 | |
| L (link relay) | 2 | |
| K (keep relay) | 3 | |
| F (special relay) | 4 | Read only |
| T (timer/current value) | 5 | |
| C (counter/set value) | 6 | |
| D (data register) | 7 | |
| TC (timer/contact) | 9 | |
| CC (counter/contact) | 10 | |

○ MASTER-KxxxS CNET

| Memory | TYPE | Remarks |
|---|---|---|
| P (input/output) | 0 | Input : read only<br>PW as word device |
| M (relay) | 1 | MW as word device |
| L (link relay) | 2 | LW as word device |
| K (keep relay) | 3 | KW as word device |
| F (special relay) | 4 | Read only<br>FW as word device |
| T (timer/current value) | 5 | |
| C (counter/set value) | 6 | |
| D (data register) | 7 | |
| TC (timer/contact) | 9 | |
| CC (counter/contact) | 10 | |

○ GLOFA CNET / GM series CPU

| Memory | TYPE | Remarks |
|---|---|---|
| M (internal memory) | 0 | MW as word device |
| Q (output) | 1 | QW as word device |
| I (input) | 2 | IW as word device |

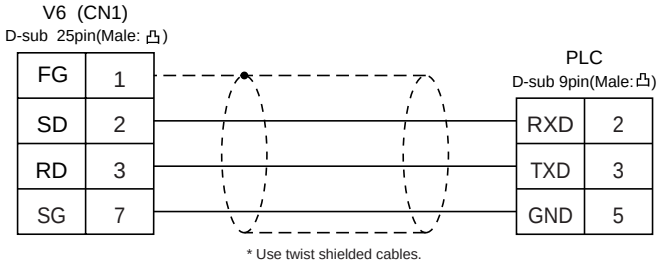
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

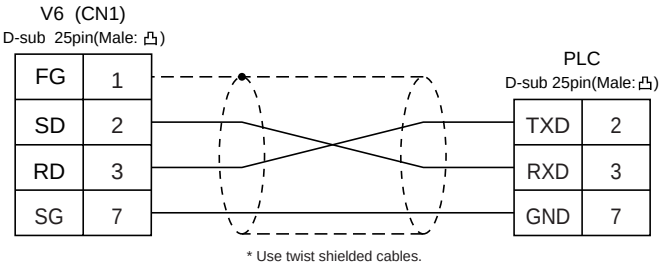
Thefollowingisadiagramtoshowthewiringofthecablewhichconnects V6 to PLC.

### RS-232C

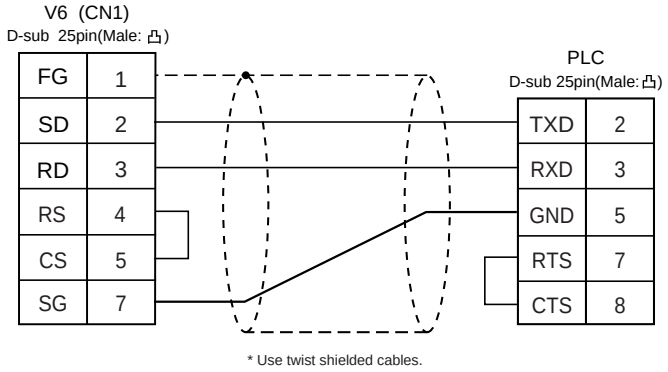
#### Wiring Diagram 1



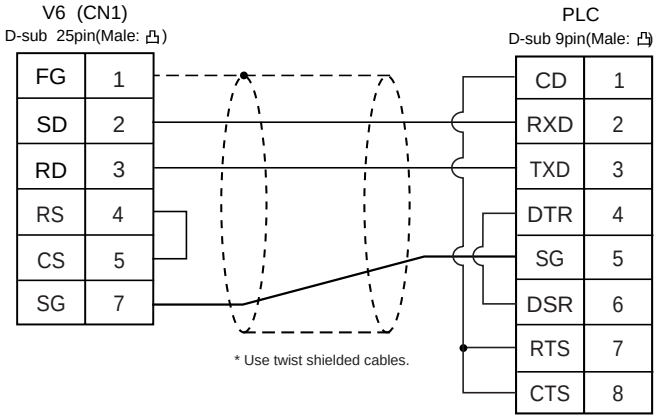

#### Wiring Diagram 2



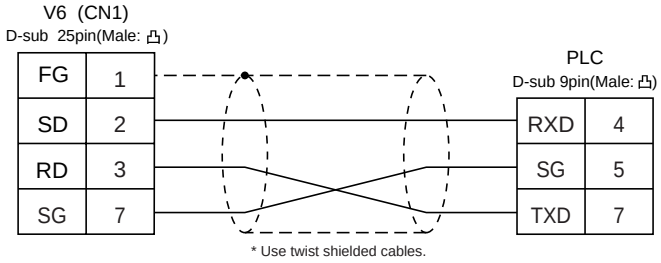

#### Wiring Diagram 3



### Wiring Diagram 4

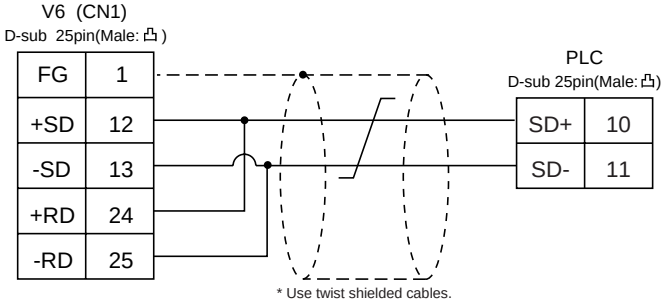



### Wiring Diagram 5

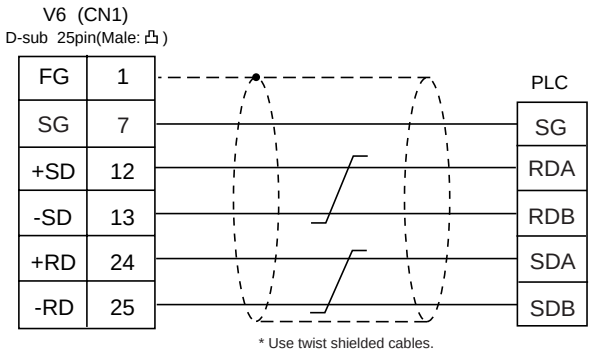



## RS-422

### Wiring Diagram 6




### Wiring Diagram 7



# 42 FANUC PLC

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-116) |
|---|---|---|
| Power Mate | Port of CPU unit (JD14) of Power Mate-Model H/D | RS-422 [Wiring Diagram 2] |
| | Power Mate i Model H/D | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 3] |

## Communication Setting

Therecommendedcommunicationparametersettingofboth PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps (fixed) | ——— |
| Signal | | RS-422 (fixed) | ——— |
| Port | | 0 (fixed) | ——— |
| Parity | | Even (fixed) | ——— |
| Transmission Code | Data Length | 8 (fixed) | ——— |
| | Stop Bit | 1 (fixed) | ——— |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| X (input relay) | 1 | WX as word data |
| Y (output relay) | 2 | WY as word data |
| R (internal relay) | 3 | WR as word data |
| K (keep relay) | 4 | WK as word data |
| T (timer) | 5 | |
| C (counter) | 6 | |

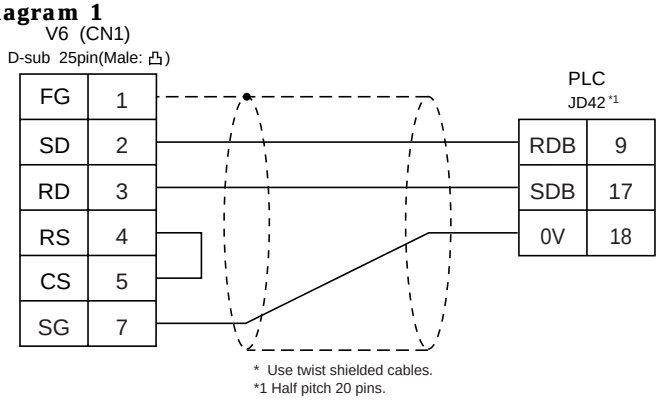
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

Thefollowingisadiagramtoshowthewiringofthecablewhichconnects V6 to PLC.

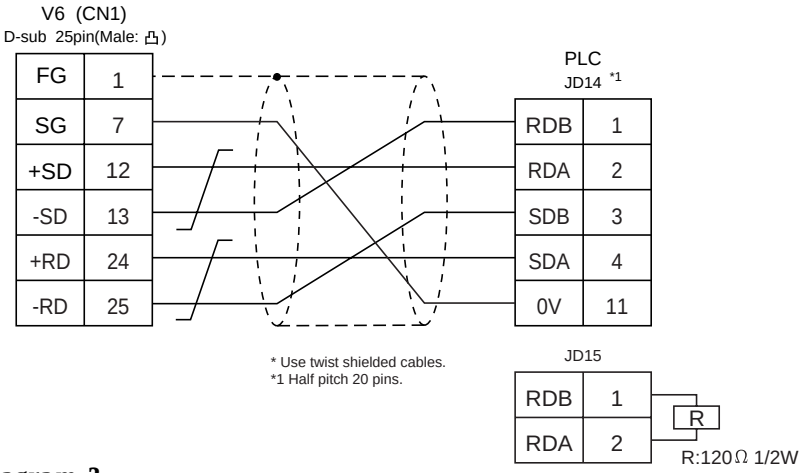
### RS-232C

#### Wiring Diagram 1

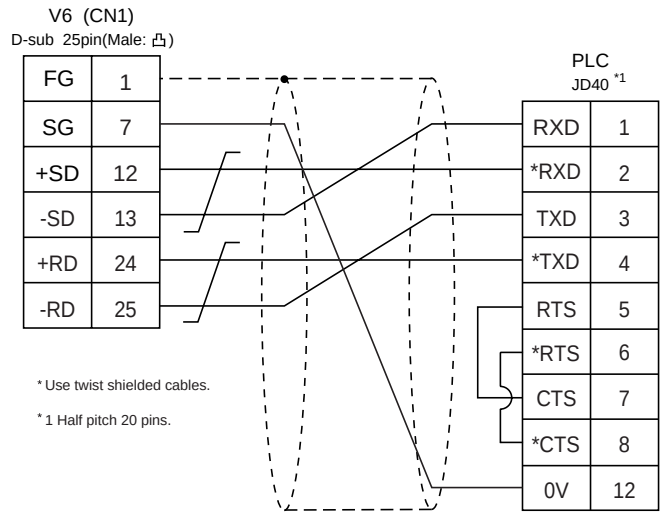



### RS-422

#### Wiring Diagram 2




#### Wiring Diagram 3



# 43 FATEK AUTOMATION PLC

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-118) |
|---|---|---|---|
| FACON FB series | FACON FB series | FB-DTBR | RS-232C [Wiring Diagram 1]<br>[Wiring Diagram 2]<br>RS-422 [Wiring Diagram 3] |

## Communication Setting

Therecommendedcommunicationparametersettingofboth PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 9600bps | 9600bps |
| Signal | | RS232C | RS232C |
| Parity | | Even (fixed) | ——— |
| Transmission code | Data Length | 7 (fixed) | ——— |
| | Stop Bit | 1 (fixed) | ——— |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| HR (data register) | 0 | |
| DR (data register) | 1 | |
| X (input relay) | 2 | |
| Y (output relay) | 3 | |
| M (internal relay) | 4 | |
| S (step relay) | 5 | |
| T (timer contact) | 6 | Read only |
| C (counter contact) | 7 | Read only |
| RT (timer/current value) | 8 | |
| RC (counter/current value) | 9 | |
| DRC (32-bit counter/current value) | 10 | |

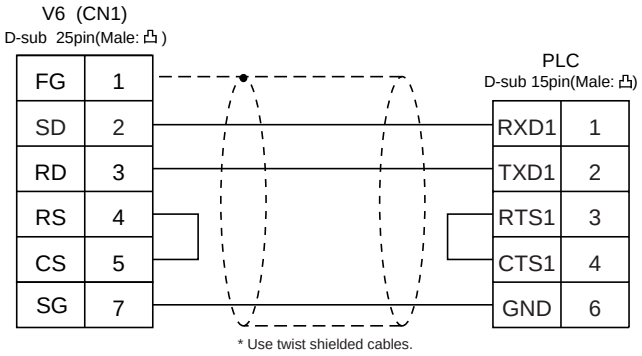
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

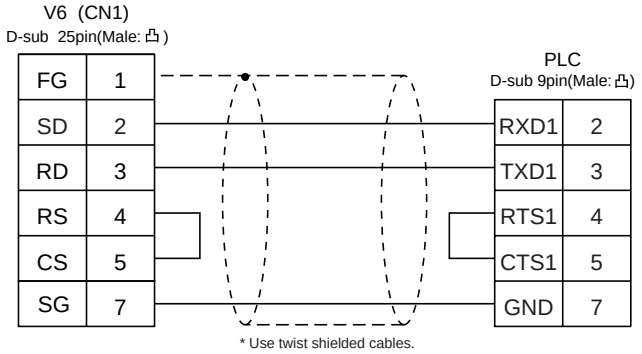
The following is a diagram to show the wiring of the cable which connects V6 to PLC.

### RS-232C

#### Wiring Diagram 1

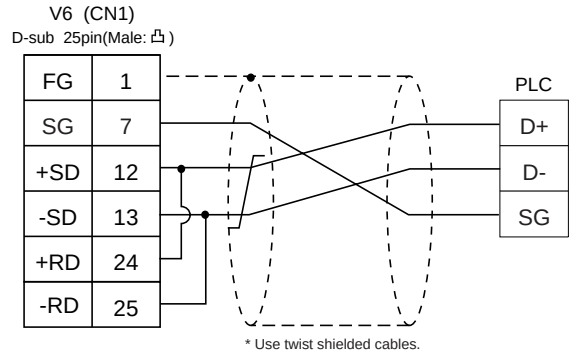



#### Wiring Diagram 2




### RS-422

#### Wiring Diagram 3



# 44 IDEC PLC

## Available PLC

| Selet PLC Type | PLC | Wiring Diagram (refer to P2-120) |
|---|---|---|
| MICRO3 | MICRO3 | RS-232C Cable made by IDEC [FC2A-KC1]<br>or<br>* Cable made by IDEC [FC2A-KC2]<br>+RS-232C [Wiring Diagram 1] |
| MICRO Smart | MICRO Smart | RS-232C * Cable made by IDEC [FC2A-KC4C]<br>+RS-232C [Wiring Diagram 1] |

* WhenusingRS-232CcablemadebyIDEC[FC2A-KC2]or[FC2A-KC4C],connectthecableof [WiringDiagram1]totheD-sub9pinssideof[FC2A-KC2]or[FC2A-KC4C],tocommunicate withV6.

## Communication Setting

TherecommendedcommunicationparametersettingofbothPLCandV6isasfollows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 9600bps | 9600bps |
| Port | | 1 | 1 |
| Parity | | Even | Even |
| Transmission code | Data Length | 7 | 7 |
| | Stop Bit | 1 | 1 |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| I (input) | 1 | |
| Q (output) | 2 | |
| M (internal relay) | 3 | |
| R (shift register) | 4 | |
| TS (timer/set value) | 5 | |
| TN (timer/contact) | 6 | |
| T (timer/contact) | 7 | Read only |
| CS (counter/set value) | 8 | |
| CN (counter/current value) | 9 | |
| C (counter/contact) | 10 | Read only |

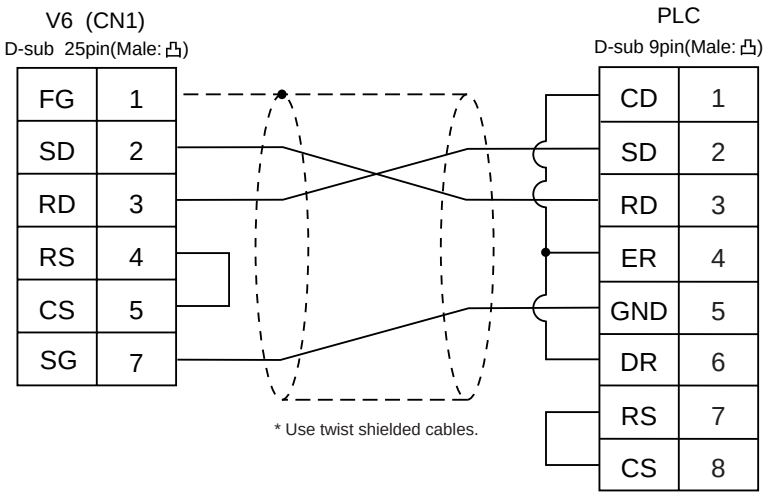
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

Thefollowingisadiagramtoshowthewiringofthecablewhichconnects V6toPLC.

### RS-232C

#### Wiring Diagram 1



# 45 MODICON PLC

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-122) |
|---|---|---|
| Modbus RTU | Modbus RTU | RS-232C [Wiring Diagram 1] |

## Communication Setting

Therecommendedcommunicationparametersettingofboth PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 9600bps | 9600bps |
| Port | | 1 | 1 |
| Parity | | Even | Even |
| Transmission code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |

## Available Memory

| Memory | | TYPE | Remarks |
|---|---|---|---|
| 4 | (holding register) | 0 | |
| 3 | (input register) | 1 | |
| 0 | (output coil) | 4 | |
| 1 | (input relay) | 6 | Read only |

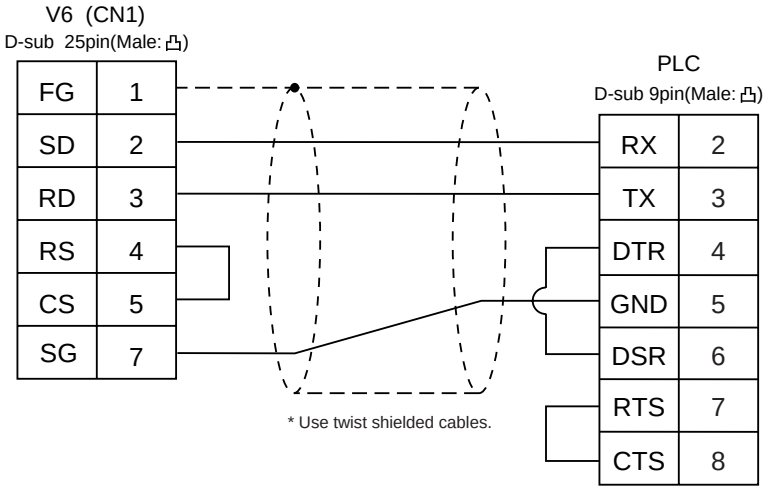
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

ThefollowingisadiagramtoshowthewiringofthecablewhichconnectsV6toPLC.

### RS-232C

#### Wiring Diagram 1



# 46 YAMATAKE PLC

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-124) |
|---|---|---|
| MX series | MX200/MX50 | RS-232C [Wiring Diagram 1] |

## Communication Setting

Therecommendedcommunicationparametersettingofboth PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 9600bps | 9600bps |
| Port | | 1 | 1 |
| Parity | | Even | Even |
| Transmission code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| R (data register) | 0 | |
| M (auxiliary relay) | 1 | |
| L (latch relay) | 2 | |
| X (input relay) | 3 | |
| Y (output relay) | 4 | |
| TP (timer-current value) | 5 | |
| TS (timer/set value) | 6 | |
| CP (counter-current value) | 7 | |
| CS (counter/set value) | 8 | |
| T (timer/contact) | 9 | |
| C (counter/contact) | 10 | |
| P (link register) | 11 | |

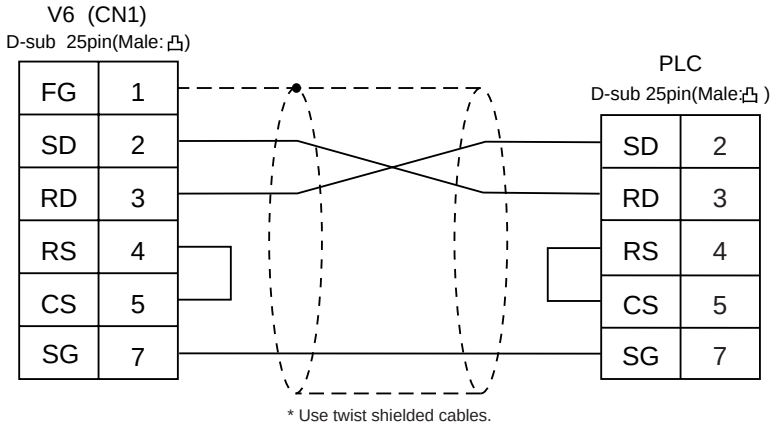
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

Thefollowingisadiagramtoshowthewiringofthecablewhichconnects V6 to PLC.

### RS-232C

#### Wiring Diagram 1



# 47 TAIAN PLC

## Available PLC

| Select PLC Type | PLC | Port | Wiring Diagram (refer to P2-126) |
|---|---|---|---|
| TP02 | TP02 | Communication Port (T/R+, T/R-)<br>MMI Port (9pin) (4-5 Short Computer Link Mode) | RS-422 [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 2] |

## Communication Setting

Therecommendedcommunicationparametersettingofboth PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 1 | 1 |
| Parity | | None | None |
| Transmission code | Data Length | 7 | 7 |
| | Stop Bit | 1 | 1 |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register<br>timer · counter/contact) | 0 | |
| V (timer · counter/contact) | 1 | |
| WS (system register) | 2 | |
| WC (constant register) | 3 | |
| X (input relay) | 4 | |
| Y (output relay) | 5 | |
| C (internal relay) | 6 | |
| SC (special register) | 7 | |

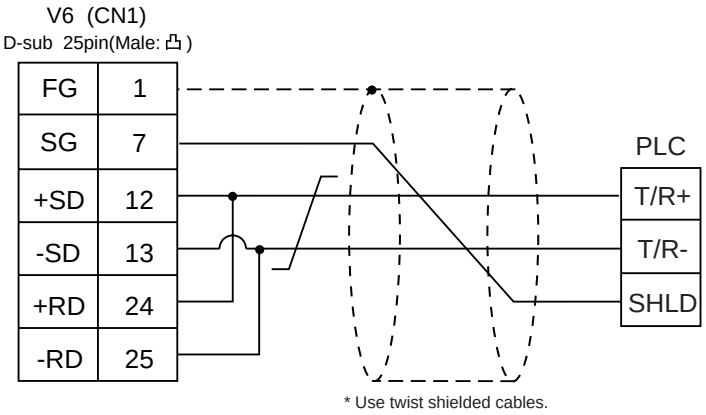
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

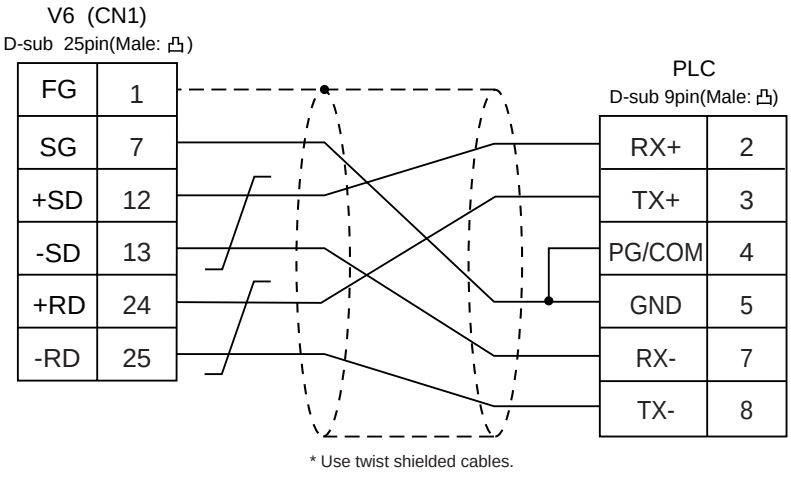
ThefollowingisadiagramtoshowthewiringofthecablewhichconnectsV6toPLC.

### RS-422

#### Wiring Diagram 1




#### Wiring Diagram 2



# 48 SAIA PLC

## Available PLC

| Select PLC Type | PLC | Communication module | Wiring Diagram (refer to P2-128) |
|---|---|---|---|
| PCD | PCD1 | PGU port<br>PCD7.F120<br>PCD4.F110 | RS-232C [Wiring Diagram 1]<br>RS-232C [Wiring Diagram 2]<br>RS-485 [Wiring Diagram 3] |

## Communication Setting

Therecommendedcommunicationparametersettingofboth PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 0 | 0 |
| Transmission code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |

## S-BUS Configuration

S-BUS Mode Parity

PGU Port Number 0 (PGU port), 1 (PCD7.F120, PCD4.F110)

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| R (Register Word) | 0 | |
| Rfp (Float) | 1 | |
| T (Timer-Counter Word) | 2 | |
| C (Timer-Counter Coil) | 3 | |
| I (Input Bit) | 4 | read only |
| O (Output Bit) | 5 | |
| F (Flag Bit) | 6 | |

**Set the memory to the extent of the memory range of each PLC model.**

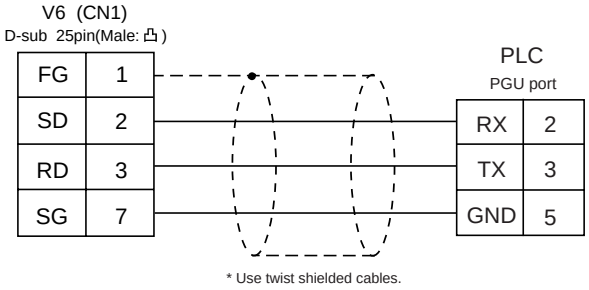
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

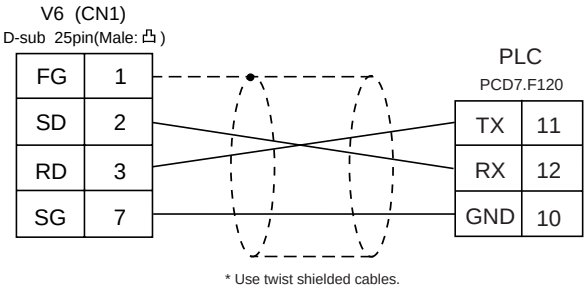
Thefollowingisadiagramtoshowthewiringofthecablewhichconnects V6 to PLC.

### RS-232C

#### Wiring Diagram 1

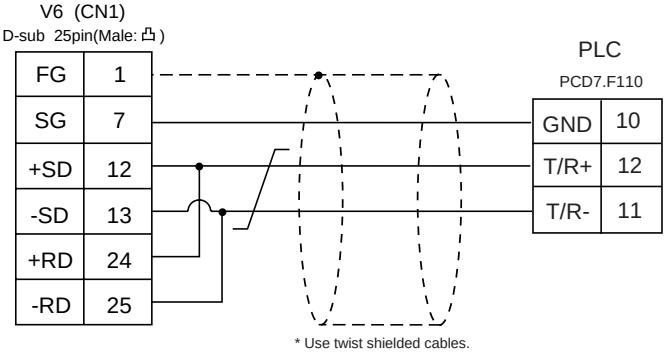



#### Wiring Diagram 2




### RS-485

#### Wiring Diagram 3



# 49 MOELLER PLC

## Available PLC

| Select PLC Type | PLC | Wiring Diagram(refer to P2-129) |
|---|---|---|
| PS4 | PS4-201-MM1(PRG port) | RS-232C [Wiring Diagram 1]<br>+<br>ZB4-303-KB1 Cable made by MOELLER |

## Communication Setting

Therecommendedcommunicationparametersettingofboth PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 9600bps | 9600bps |
| Port | | 1 | 1 |
| Parity | | None | None |
| Transmission code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| M (Marker) | 0 | MW as word device |

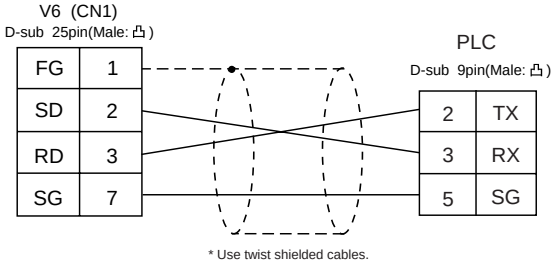
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

Thefollowingisadiagramtoshowthewiringofthecablewhichconnects V6 to PLC.

### RS-232C

#### Wiring Diagram 1




* Use twist shielded cables.

# 50 Telemecanique PLC

## Available PLC

| Select PLC Type | PLC | Wiring Diagram (refer to P2-131) |
|---|---|---|
| TSX Micro | TSX Micro | RS-485 [Wiring Diagram 1] |

## Communication Setting

Therecommendedcommunicationparametersettingofboth PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 9600bps | 9600bps |
| Connection | | ———————— | Multi-Link (fixed) |
| Parity | | Odd | Odd |
| Transmission Code | Data Length | 8 (fixed) | 8 |
| | Stop Bit | 1 | 1 |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| MW (memory Word) | 0 | |
| KW (constant word) | 1 | |
| M (bit memory) | 2 | |

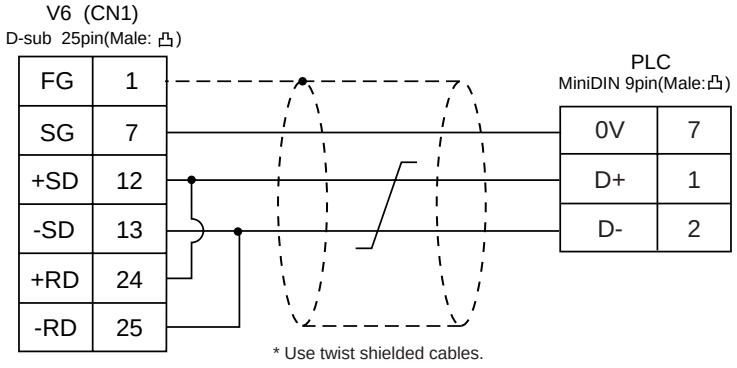
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

Thefollowingisadiagramtoshowthewiringofthecablewhichconnects V6 to PLC.

### RS-485

#### Wiring Diagram 1



# 51 Automationdirect PLC

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-133, 134) |
|---|---|---|---|
| Direct LOGIC | D4-430<br>D4-440 | Port 1 on a CPU unit | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 5] |
| | D4-450 | Port 3 on a CPU unit | RS-485 [Wiring Diagram 6] |
| | | Port 2 on a CPU unit | RS-232C [Wiring Diagram 2] |
| | D2-240 | Port 2 on a CPU unit | |
| | D2-250 | Port 2 on a CPU unit | RS-232C [Wiring Diagram 3] |
| Direct LOGIC<br>(K-Sequence) | D4-430<br>D4-440 | Port 1 on a CPU unit | RS-232C [Wiring Diagram 1]<br>RS-422 [Wiring Diagram 5] |
| | D4-450 | Port 0 on a CPU unit | RS-232C [Wiring Diagram 4] |
| | | Port 3 on a CPU unit | RS-485 [Wiring Diagram 6] |
| | | Port 2 on a CPU unit | RS-232C [Wiring Diagram 2] |
| | D2-240 | Port 1 on a CPU unit<br>Port 2 on a CPU unit | |
| | D2-250 | Port 1 on a CPU unit | |
| | | Port 2 on a CPU unit | RS-232C [Wiring Diagram 3] |

## Communication Setting

TherecommendedcommunicationparametersettingofbothPLCandV6isasfollows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | "0" for x10, "1" for x1 | 1 |
| Parity | | Odd | Odd |
| Transmission Code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |
| Function | | Host link system (fixed) | ——— |
| Response Delay Time | | 0 (fixed) | ——— |
| Time-out | | None (fixed) | ——— |
| ASCII/HEX | | HEX (fixed) | ——— |

## Available Memory

○ DirectLOGIC,DirectLOGIC(K-Sequence)

| Memory | TYPE | Remarks |
|---|---|---|
| V (data register) | 0 | |
| X (input relay) | 1 | |
| Y (output relay) | 2 | |
| C (internal relay) | 3 | |
| S (stage) | 4 | |
| GX (global inputs) | 5 | |
| GY (global outputs) | 6 | |
| T (timer/contact) | 7 | |
| CT (counter/contact) | 8 | |

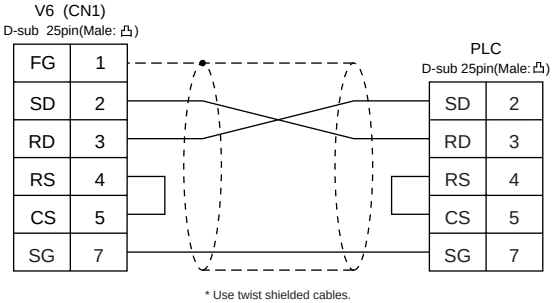
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

Thefollowingisadiagramtoshowthewiringofthecablewhichconnects V6 to PLC.

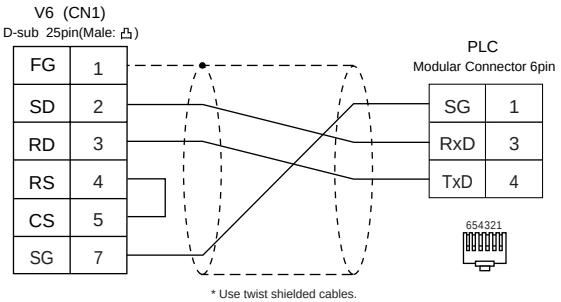
### RS-232C

#### Wiring Diagram 1



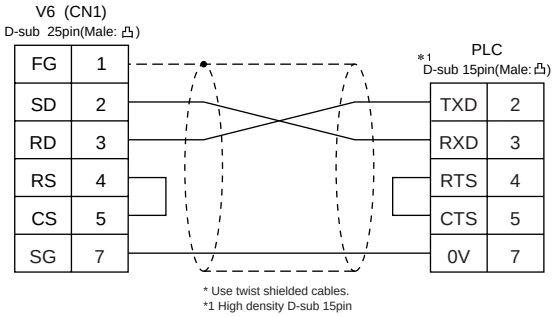

* Use twist shielded cables.

#### Wiring Diagram 2

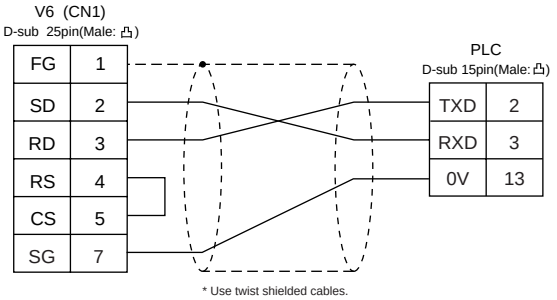



* Use twist shielded cables.

### Wiring Diagram 3

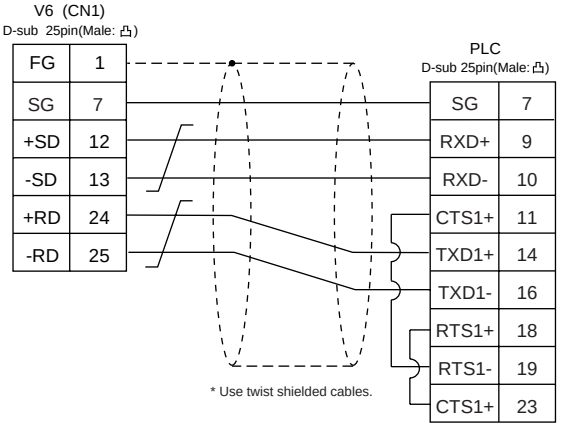



### Wiring Diagram 4

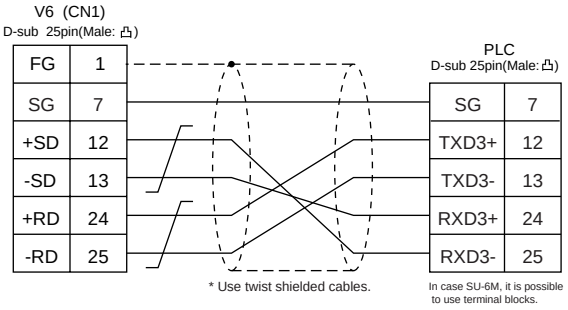



## RS-422

### Wiring Diagram 5




### Wiring Diagram 6



# 52 VIGOR PLC

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-136) |
|---|---|---|---|
| M series | M1-CPU1 | COM PORT | RS-232C [Wiring Diagram 1]<br>RS-485 [Wiring Diagram 2] |

## Communication Setting

Therecommendedcommunicationparametersettingofboth PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 19200bps | 19200bps |
| Port | | 0 | 0 |
| Parity | | Even | Even |
| Transmission Code | Data Length | 7 | 7 |
| | Stop Bit | 1 | 1 |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register/special register) | 0 | |
| X (input relay) | 1 | |
| Y (output relay) | 2 | |
| M (internal relay/special relay) | 3 | |
| S (internal relay/step relay) | 4 | |
| T (timer/current value) | 5 | |
| C (counter/current value) | 6 | |
| 32C (high-speed counter/current value) | 7 | *1 |
| TS (timer/contact) | 8 | |
| CS (counter/contact) | 9 | |
| TC (timer/coil) | 10 | |
| CC (counter/coil) | 11 | |

*1 Incaseoftheitemswhichcandisplaydoubleworddata(e.g.datadisplay,graph,sampling), thedataismanagedasdoubleworddata.
Bothbitdataandworddataaremanagedaslower-half16bitsdata.
Input :16upper-halfbitsareignored.
Output :“0”iswritteninthe16upper-halfbits.

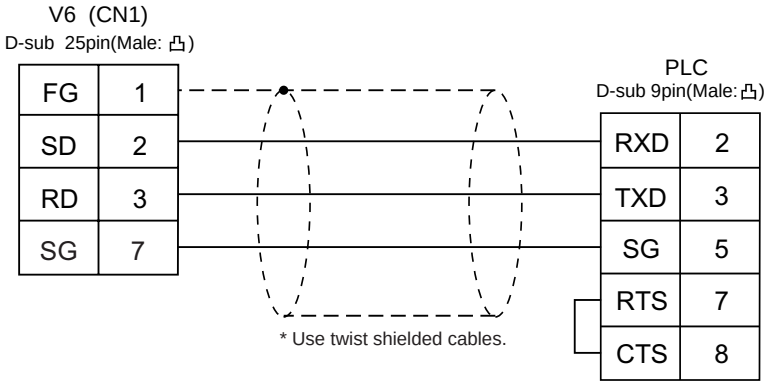
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

ThefollowingisadiagramtoshowthewiringofthecablewhichconnectsV6toPLC.

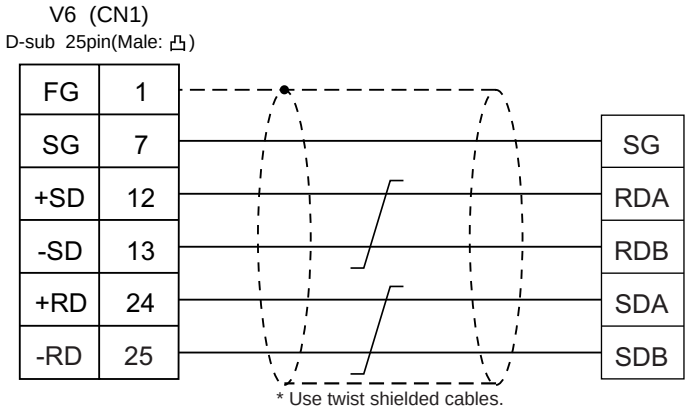
### RS-232C

#### Wiring Diagram 1




### RS-485

#### Wiring Diagram 2



# 53 DELTA PLC

## Available PLC

| Select PLC Type | PLC | Link Unit | Wiring Diagram (refer to P2-138) |
|---|---|---|---|
| DVP series | DVP series | RS-485 Communication port | RS-485 [Wiring Diagram 1] |

## Communication Setting

Therecommendedcommunicationparametersettingofboth PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 9600bps | 9600bps |
| Port | | 1 | 1 |
| Parity | | Even | Even |
| Transmission Code | Data Length | 7 | 7 |
| | Stop Bit | 1 | 1 |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| D (data register) | 0 | |
| X (input relay) | 1 | |
| Y (output relay) | 2 | |
| M (auxiliary relay) | 3 | |
| S | 4 | |
| T (timer) | 5 | |
| C (counter) | 6 | |
| 32C (high-speed counter) | 7 | |

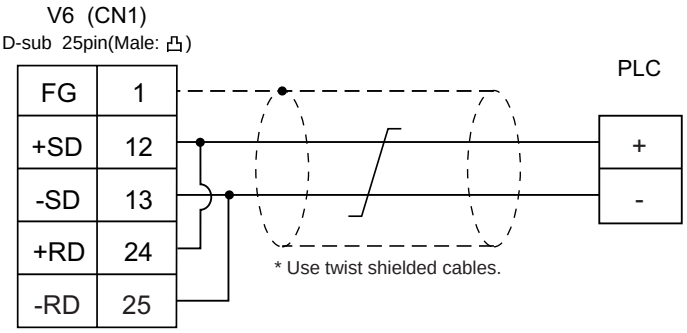
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

ThefollowingisadiagramtoshowthewiringofthecablewhichconnectsV6toPLC.

### RS-485

#### Wiring Diagram 1



# 54 BALDOR PLC

## Available PLC

| Select PLC Type | Controller | Wiring Diagram (refer to P2-140) |
|---|---|---|
| Mint | NextMove (Comms Data Array) | RS-232C [Wiring Diagram 1] |
| | Optimum (Comms Data Array) | |

## Communication Setting

Therecommendedcommunicationparametersettingofboth PLC and V6 is as follows:

| Item | | Setting of PLC | Comm. Parameter of V6 |
|---|---|---|---|
| Baud Rate | | 9600bps | 9600bps |
| Port | | 0 | 0 |
| Parity | | None | None |
| Transmission Code | Data Length | 8 | 8 |
| | Stop Bit | 1 | 1 |

## Available Memory

| Memory | TYPE | Remarks |
|---|---|---|
| I (Integer) | 0 | |
| F (Float) | 1 | |
| B (Integer omitting decimals) | 2 | |

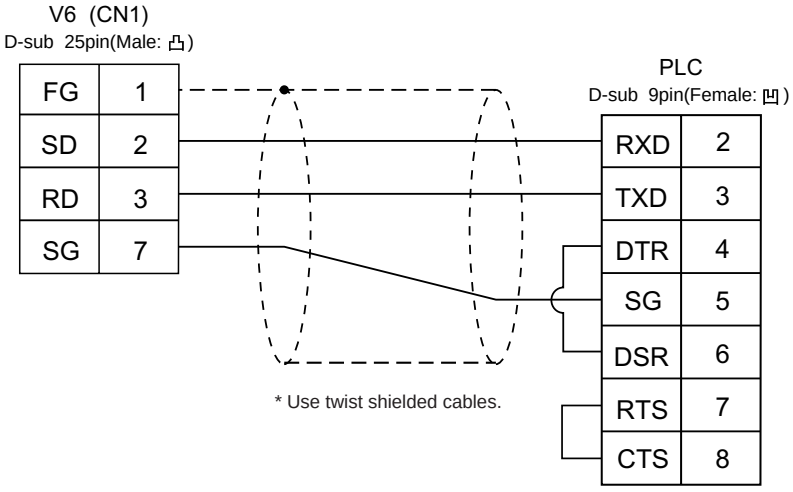
**Set the memory to the extent of the memory range of each PLC model.**
**Use TYPE number to assign indirect memory for macro programs.**

## Wiring

ThefollowingisadiagramtoshowthewiringofthecablewhichconnectsV6toPLC.

### RS-232C

#### Wiring Diagram 1



# Appendix

Ladder Transfer Function

# Ladder Transfer Function

(Transparent Mode)

Upuntilnowitwasnecessarytodebugthedatabyremovingandmounting"connectioncablebetweenPC andPLC"and"connectioncablebetweenV7andPLC."Whenusingtheladdertransferfunction,itis possibletowriteladderprogramsormonitorthePLCmemoryviaV7seriesconnectedtoPCwithout removingandmountingeachcable.

## Applicable PLC

| Select PLC Type | CPU | Ladder comm. prg | I/F DRV |
|---|---|---|---|
| QnH(Q) series CPU | Q02(H), Q06H | MelQHCpQ.lcm | MelQHCpQ.tpb (1.240) |
| QnH(Q) series link | Q00, Q01 | MelQnA.lcm | MelQnA.tpb (1.300) |
| FX series CPU | FX1/2, FX0N | MelFx.lcm | MelFx.tpb (1.300) |
| FX2N series CPU | FX2N/1N , FX2NC | | |
| FX1S series CPU | FX1S | | |

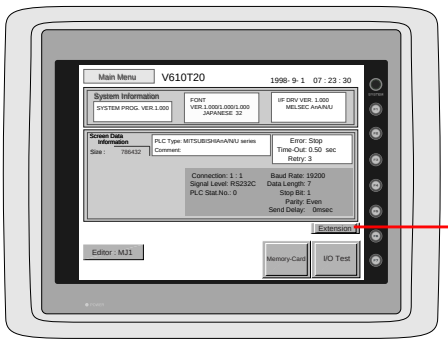
## Applicable Types

- V606i,V608,V610,V612,V609E
  *Thisfunctioncannotbesupportedwith1:ncommunication(multi-drop),multi-linkandmulti-link2 communication.

- Thefollowingtypesareunavailableforthisfunction.
  V606,V608CH

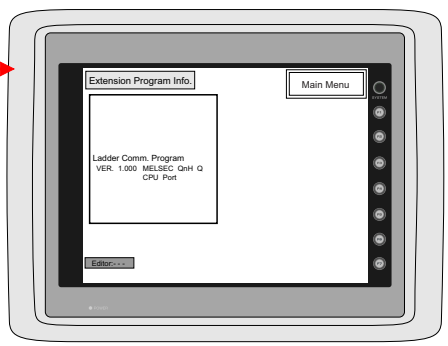
## Version and Main Menu Screen

Availableversionsareasfollows.Theinformationcanbeshownonthe[MainMenu]screen.



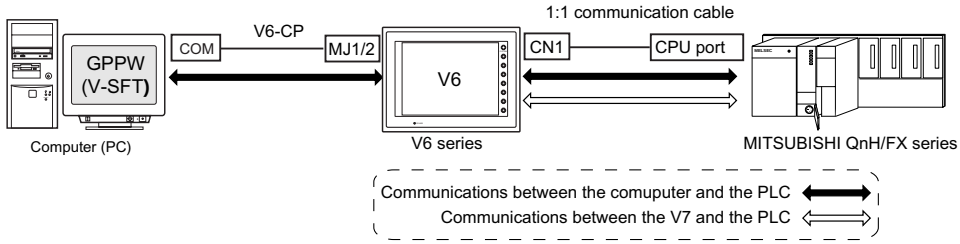

| ITEM | Version |
|---|---|
| SYSTEM PROG. | VER.1.500 or later |
| FONT | VER.1.210/1.130/1.000 or later |

Pressingthe[Extension]switchbringstothe [ExtensionProgramInfo.]screen.

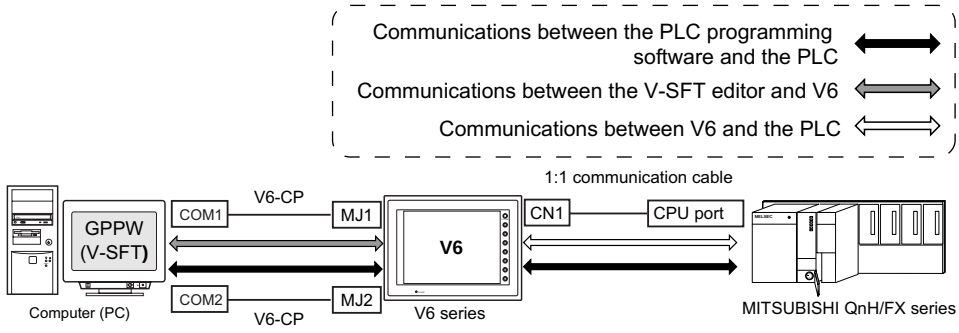


## Connection

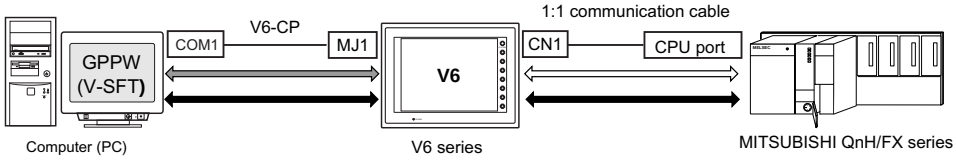
- Useeach1:1communicationcablewhenconnectingtheV6series(CN1)tothePLC(CPUport).
- UseHakkoElectronicsV6-CPcablewhenconnectingthecomputer(PLCprogrammingsoftware) andtheV6series(MJ1/2).




- WhenusingtheV-SFTeditorandthePLCprogrammingsoftware:
  WhenusingtwoV6-CPcables:
  WhenthecomputerhastwoCOMports,useoneportfortheV-SFTeditorandtheotherportfor thePLCprogrammingsoftware.UsetheV6-CPcables.(ItisnotpossibletotransfertheV-SFT editorandthePLCprogrammingsoftwareatthesametime.)

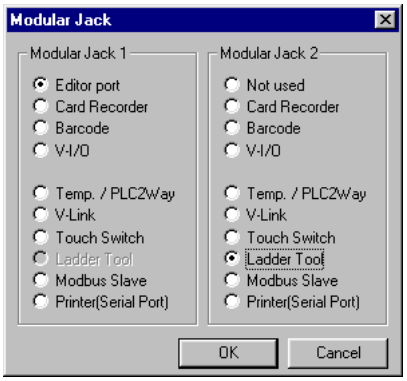



WhenusingoneV6-CPcable:
WhenusingtheV-SFTeditorandthePLCprogrammingsoftware,itisnotpossibletouseone COMportforbothpurposesatthesametime.Stopusingbothsoftwareforcommunications.



## Settings and Communications

1. PLC type setting
   Select [PLC Type] from the [System Setting] menu. Select a plc type available for the ladder transfer function in the [Select PLC Type] dialog.
2. PLC programming software port setting
   Select [Modular Jack] from the [System Setting] menu.
   Select [Ladder Tool] for [Modular Jack 1] or [Modular Jack 2] in the [Modular Jack] dialog.



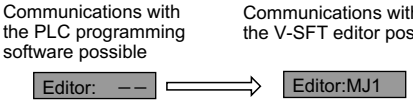

## Communications with V-SFT editor (for screen data transfer)

**On-line editing between the V-SFT editor and the V6 series is not possible. If attempted, communications between the PLC programming software and the PLC will not be performed correctly.**

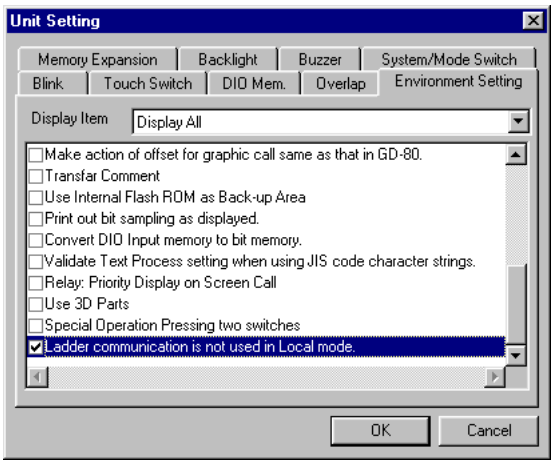
- With [Ladder Tool] selected for [Modular Jack 2], MJ1 will be [Editor Port] when the Main Menu screen is displayed on the V6 series, and communications with the V-SFT editor become possible.
- With [Ladder Tool] selected for [Modular Jack 1], even when the Main Menu screen is displayed on the V6 series, communications with the PLC programming software continues so that communications with the V-SFT editor are not available.
  When communicating with the V-SFT editor, refer to the following two ways.
  *** When V609E is used, selected the way of Automatic switching after upgrading system prg. of V609E.**

  ○ Automatic switching (V-SFT ver. 2.0.9.0 or later, sys.prg.ver.1.570 or later)
  Check [Ladder communication is not used in Local mode.] on the [Environment Setting] tab menu of the [Unit Setting] dialog in the [System Setting.].

  ○ Manual switching
  Hold down the F2 switch for three seconds. [Editor:...] changes to [Editor MJ1] and communications with the V-SFT editor become possible.




When the F2 switch is held down for three seconds, [Editor:MJ1] changes to [Editor:...] and communications with the PLC programming software become possible.



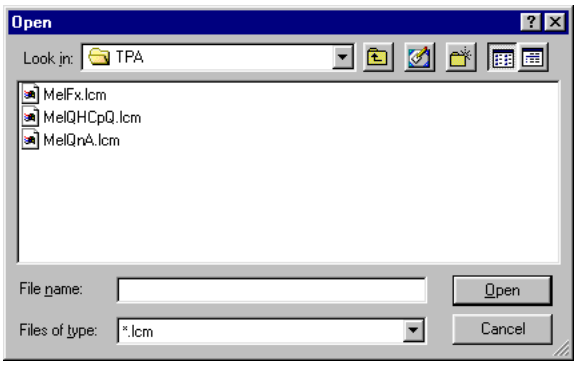
- Communicating statuses with the PLC programming software and the PLC during communications between the V-SFT editor and the V6 series

| V-SFT | PLC programming software |
|---|---|
| Writing to V6 | Communications disconnected (normal communications on completion of writing) |
| Reading from V6 | Normal communications |
| Comparing with V6 | Normal communications |

3. PLC programming software communication setting
For communication specifications between the PLC programming software and the PLC, the communication parameter settings for the V6 series and the PLC can be used. Select [Comm. Parameter] from the [System Setting] menu and check the settings in the [Comm. Parameter] dialog.
<Baud rate setting>
There will be no problem if the setting for [Baud Rate] in the [Comm. Parameter] dialog of the V-SFT editor is not consistent with the baud rate setting on the PLC programming software. The baud rate set on the PLC programming software is automatically selected when communications (monitoring, etc.) are performed. When the V6 series is turned off and back on, the setting for [Baud Rate] in the [Comm. Parameter] dialog becomes valid again.
*** Setting the same baud rate of both PLC and V6 series makes the performance of V6 series faster.**

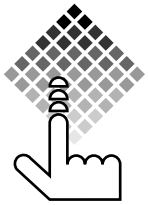
4. Transferring the ladder communication program
When transferring screen data, the ladder communication program is also transferred. To transfer the ladder communication program only, follow the procedure described below.

i) Select [Ladder com. prg.] in the [Transfer] dialog, and click [PC->].
ii) The dialog shown on the right is displayed. Select the ladder com. program for the selected plc type and click [Open]. The program is transferred to the V6 series.




## Notes on Ladder Transfer Function

1. When [LadderTool] is selected for a modular jack, monitor registration on the PLC is prohibited so that the screen display speed becomes slower than usual during communications between the V6 series and the PLC even if the PLC programming software is not started.
2. Also, when the ladder program is transferred in the RUN mode of the V6 series, communications are synchronized; therefore, the performance of both the V6 series and the PLC programming software decreases.



# MONITOUCH
# V6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