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Device/PLC Connection Manuals



About the Device/PLC Connection Manuals

Prior to reading these manuals and setting up your device, be sure to read the "Important: Prior to reading the Device/PLC Connection manual" information. Also, be sure to download the "Preface for Trademark Rights, List of Units Supported, How to Read Manuals and Documentation Conventions" PDF file. Furthermore, be sure to keep all manual-related data in a safe, easy-to-find location.

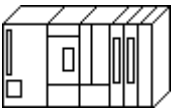



5.10 SHARP

5.10.1 System Structure

The following describes the system structure for connecting the GP to Sharp PLCs.

Reference The Cable Diagrams mentioned in the following tables are listed in the section titled "5.10.2 Cable Diagrams".

■ New Satellite JW

| CPU | Link I/F | Cable Diagram | GP |
|---|---|--|---|
|  |  |  |  |
| JW-33CUH3 | Link I/F on CPU unit | RS-422 (4 wires) (Connected to PG/COM 1 port or PG/COM 2 port) (Cable Diagram 1) | GP Series |
| | JW-21CM | RS-422 (4 wires) (Cable Diagram 2) | |



When using JW-21CM, be aware that some link units have usage restrictions depending on the ROM version.

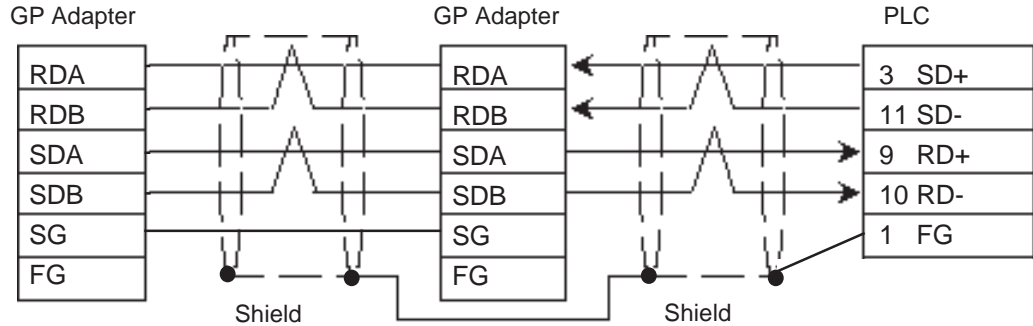
| Version Seal | Usage Restrictions |
|--------------|--|
| 30Hn | Can use without restrictions. |
| 30H | Cannot be read or written from and to File Register from 10 to 2C. Cannot be read or written from and to File Register Address from 100000 to 176777. |
| No Seal | Cannot use JW30H series. |

5.10.2 Cable Diagrams

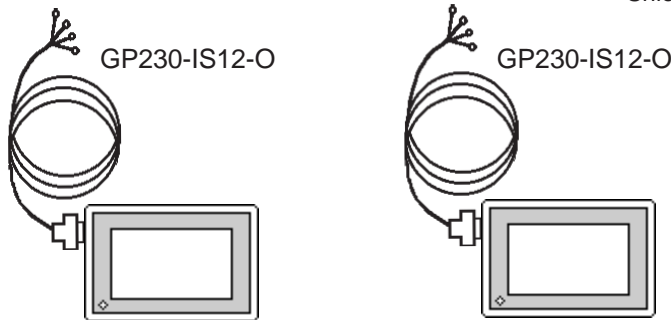
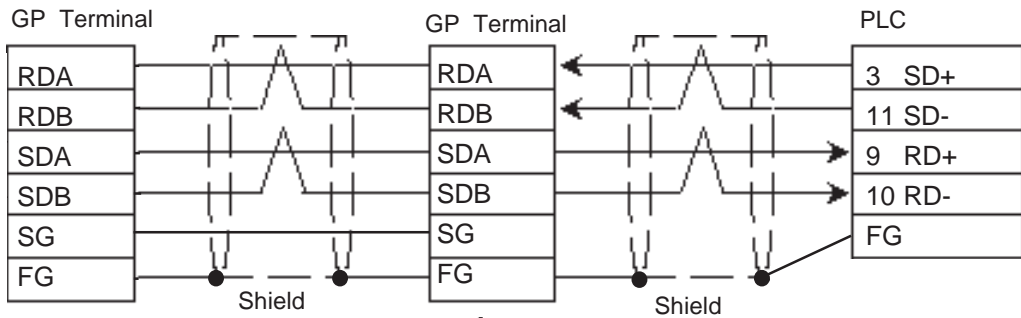
The cable diagrams illustrated below and the cable diagrams recommended by Yaskawa Electric may differ, however, using these cables for your PLC operations will not cause any problems.

Cable Diagram 1

- When using Digital's RS-422 connector terminal adapter, GP070-CN10-O



- When using Digital's Multi-link Cable, GP230-IS12-O



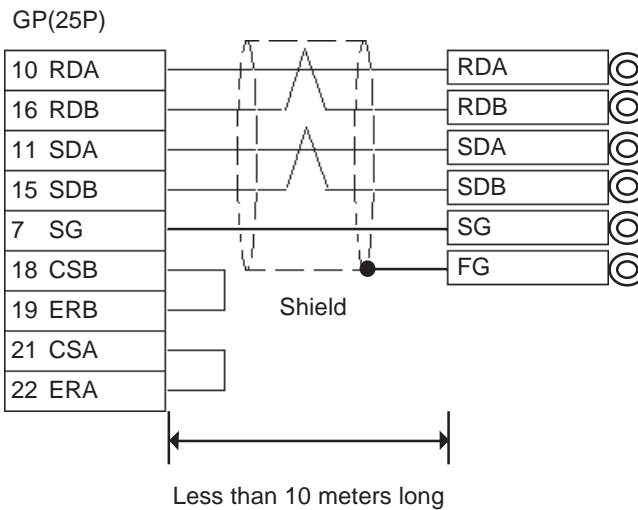
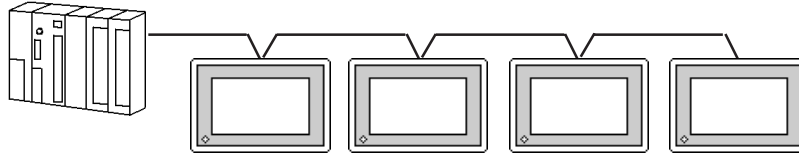
Ground your PLC's FG terminal according to your country's applicable standard. For details, refer to the corresponding PLC manual.



- **Pull out a small amount of the Transfer Cable's shield, make a wire out of it and connect it to the PLC's FG terminal.**
- **The GP230-IS12-O Cable FG terminal is not connected to the GP's FG.**
- **Attach a Termination Resistor to both ends of the cable.**
- **As a general rule, connect the PLC to one end of the circuit.**

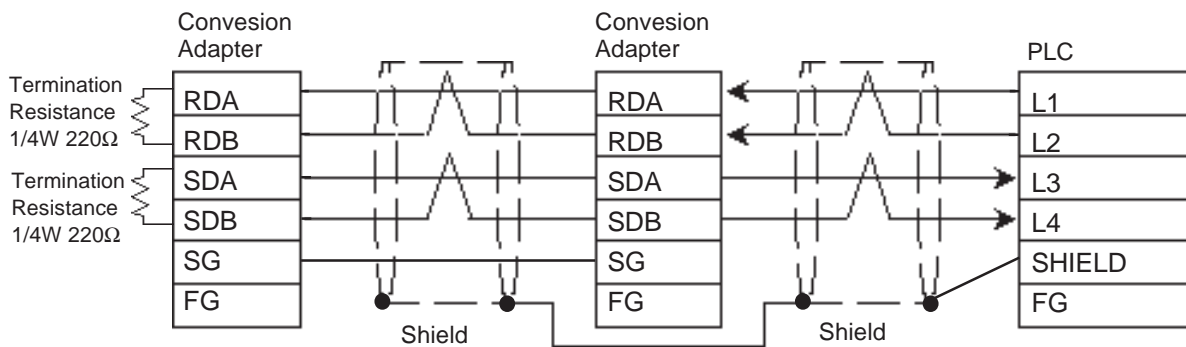


Note: When making your own cable, Hitachi's CO-SPEV -SB(A) 3P0.5mm² cable is recommended as the connection cable.
 The cable connection lines are as shown below. The cables between the GP and the terminals should be less than 10m.

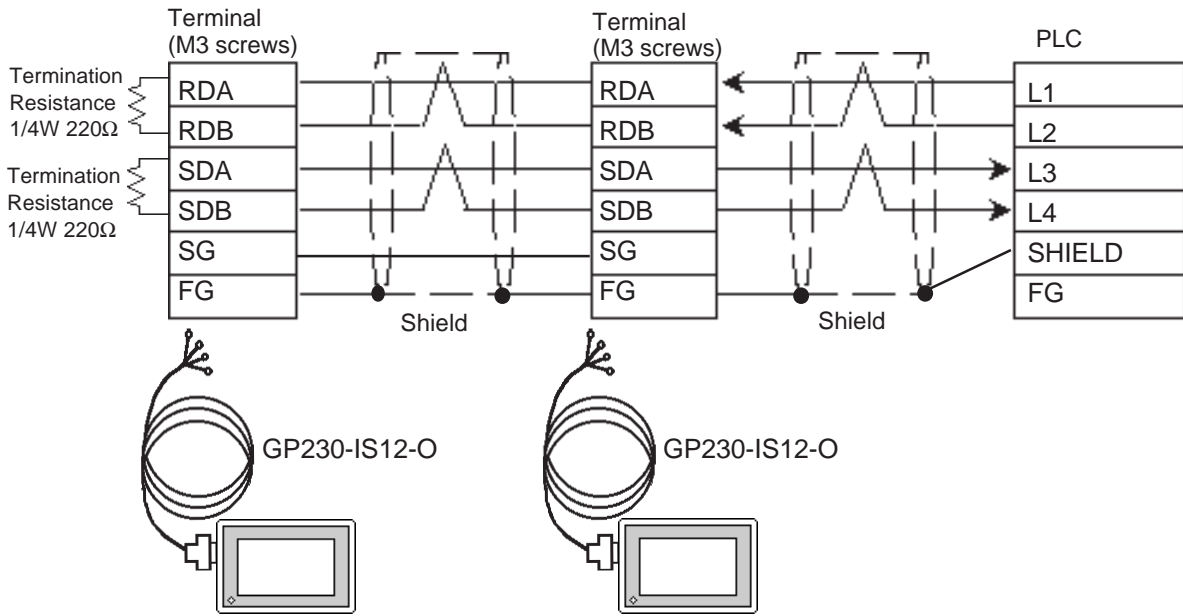


Cable Diagram 2

- When using Digital's RS-422 connector terminal adapter, GP070-CN10-O

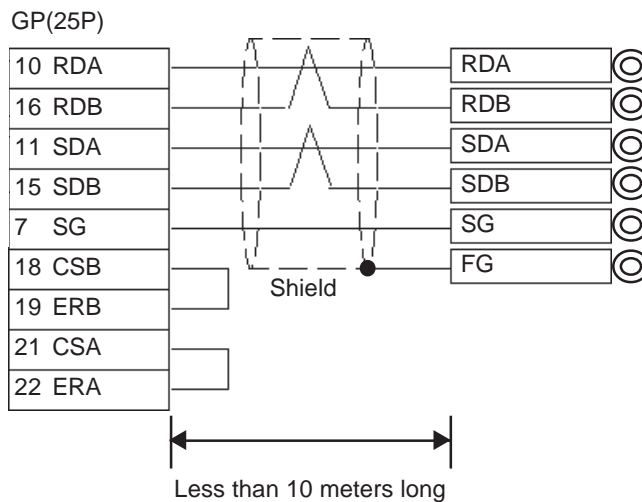
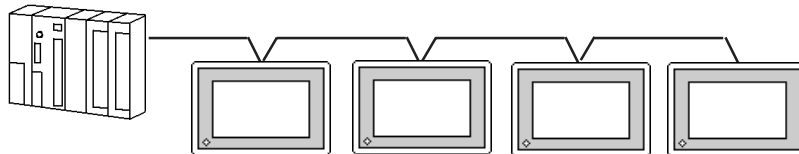


- When using Digital's Multi-link Cable, GP230-IS12-O



Note:

- When making your own cable, Hitachi's CO-SPEV -SB(A) 3P0.5mm² cable is recommended as the connection cable. The cable connection lines are as shown below. The cables between the GP and the terminals should be less than 10m.
- Use a cable length less than 600m.



5.10.3 Supported Devices

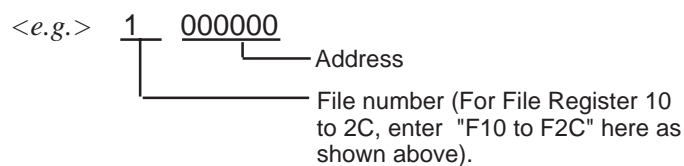
The following lists Digital's recommended PLC and GP communication settings.


■ New Satellite JW (JW-33CUH3)


 Setup System Area or Communication Information's Storing Address here.

| Device | Bit Address | Word Address | Particulars |
|-------------------------------|---------------|----------------------------------|--|
| Relay | 00000 ~ 15777 | A0000 ~ A1576 (≡0000 ~ ≡1576) | ÷ 2 |
| | 20000 ~ 75777 | A2000 ~ A7576 (≡2000 ~ ≡7576) | |
| Timer (contact) | T0000 ~ T1777 | ————— | |
| Counter (contact) | C0000 ~ C1777 | ————— | |
| Timer/Counter (current value) | ————— | B0000 ~ B3776 (b0000 ~ b3776) | ÷ 2 Bit 15 |
| Register | ————— | 09000 ~ 09776 | ÷ 2 Bit 15 |
| | | 19000 ~ 19776 | |
| | | 29000 ~ 29776 | |
| | | 39000 ~ 39776 | |
| | | 49000 ~ 49776 | |
| | | 59000 ~ 59776 | |
| | | 69000 ~ 69776 | |
| | | 79000 ~ 79776 | |
| | | 89000 ~ 89776 | |
| | | 99000 ~ 99776 | |
| | | E0000 ~ E0776 | |
| | | E1000 ~ E1776 | |
| | | E2000 ~ E2776 | |
| | | E3000 ~ E3776 | |
| | | E4000 ~ E4776 | |
| | | E5000 ~ E5776 | |
| | | E6000 ~ E6776 | |
| E7000 ~ E7776 | | | |
| File Register 1 | ————— | 1000000 ~ 1037776 | ÷ 2 Bit 15 *1 |
| File Register 2 | | 2000000 ~ 2177776 | |
| File Register 3 | | 3000000 ~ 3037776 | |
| File Register 10-1F | | F1000000 ~ F1F17776 | |
| File Register 20-2C | | F2000000 ~ F2C17776 | |

* 1 File Registers consist of a File number and an Address.



 **2** Enter even numbers only for Word Address

 **15** You can select a bit. input a bit position after Word Address. The value of a bit position must be between 0 to 15.



Word Address Relay and Timer/Counter current value (B) are shown in brackets on the PLC's Users manual, however, you must enter " A**** ", " B**** " when you are entering the value in the GP-PRO/PB III software.

5.10.4 Environment Setup

The following shows Digital's recommended PLC settings and GP settings.

■ New Satellite JW Series (Using JW-21CM)

| GP Setup | | Link Unit Setup *3 | |
|----------------------|----------------|------------------------------|----------------|
| Baud Rate | 19200 bps | Baud Rate | 19200bps |
| Data Length | 7 bits (fixed) | Data bit | 7 bits (fixed) |
| Stop Bit | 2 bit (fixed) | Stop Bit | 2 bit (fixed) |
| Parity Bit | Even | Parity Bit | Even |
| Data Flow Control | ER Control | ----- | |
| Communication Format | 4-wire type | Communication Mode | 4-wire type |
| ----- | | Function Setting Switch (SO) | Computer Link |
| Unit No. *1 | 1 (1 to 31) | Station Address *2 | 1(1 to 37) |

■ New Satellite JW Series (Using Link I/F on CPU unit)

| GP Setup | | Link Unit Setup *3 | |
|----------------------|----------------|--------------------|----------------|
| Baud Rate *4 | 19200 bps | Baud Rate | 19200 bps |
| Data Length | 7 bits (fixed) | Data bit | 7 bits (fixed) |
| Stop Bit | 2 bit (fixed) | Stop Bit | 2 bit (fixed) |
| Parity Bit | Even | Parity Bit | Even |
| Data Flow Control | ER Control | ----- | |
| Communication Format | 4-wire type | Communication Mode | 4-wire type |
| Unit No. *1 | 1(1 to 31) | Station Address *2 | 1(1 to 37) |

< PLC Settings >

Please set up the PLC system memory (#***) as shown below. For these settings, only PRO-Control or the Ladder Programming software can be used. The PLC system memory cannot be accessed by GP.

| PLC System Memory No. | Details | |
|-----------------------|-----------------------------|------------------------|
| #234 | Baud Rate, Parity, Stop bit | Communication 1 |
| #235 | Station No. 001 ~ 037oct | (PG/COM1 port)settings |
| #236 | Baud Rate, Parity, Stop bit | Communication 2 |
| #237 | Station No. 001 ~ 037oct | (PG/COM2 port)settings |

*1 This value must be in decimal.

*2 This value must be in octal.

*3 For PLC settings, use the link unit's switch. For details, please refer to Sharp's JW-21CM users manual.

*4 When Using Link I/F on CPU unit, the baud rate 115.2k bps can also be used.