

# Device/PLC Connection Manuals

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## 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.

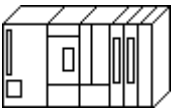


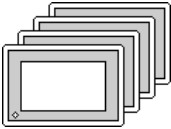
## 5.10 SHARP

### 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.**

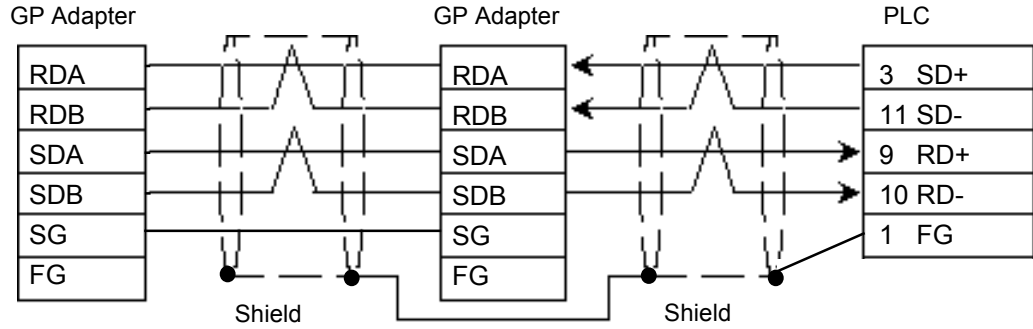
Version Seal	Usage Restrictions
30Hn	Can use without restrictions.
30H	Cannot be read or written from and to File Register from 10 to 2C. Cannot be read or written from and to File Register Address from 100000 to 176777.
No Seal	Cannot use JW30H series.

**5.10.2 Cable Diagrams**

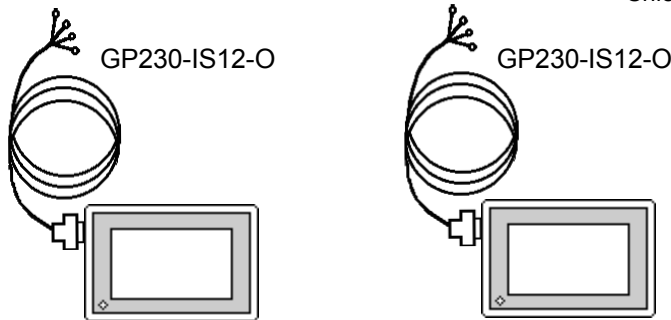
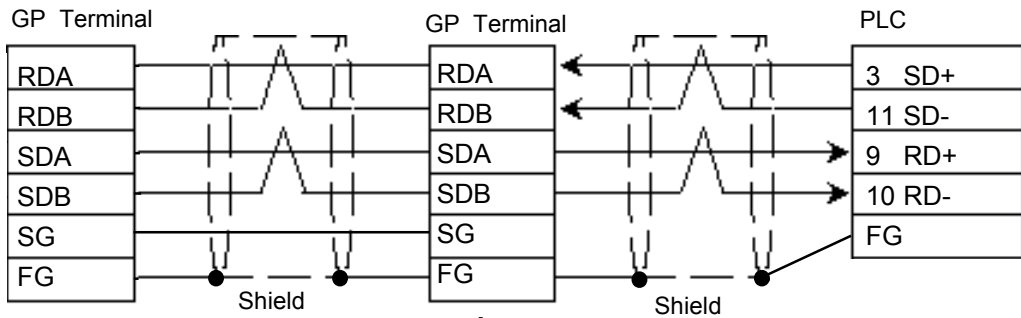
The cable diagrams illustrated below and the cable diagrams recommended by Yaskawa Electric may differ, however, using these cables for your PLC operations will not cause any problems.

**Cable Diagram 1**

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



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



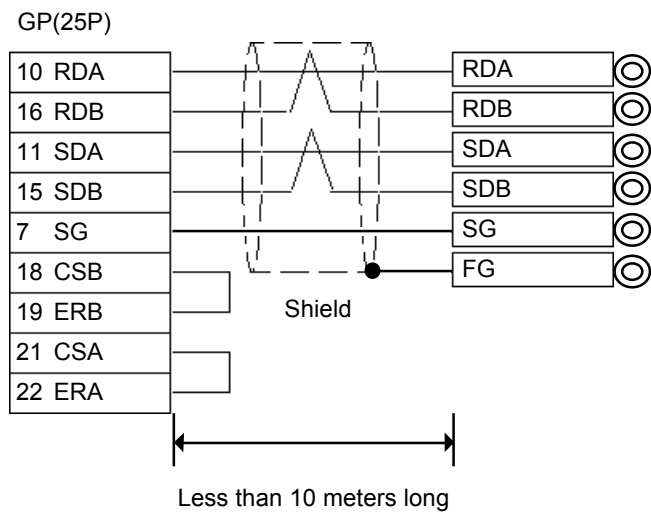
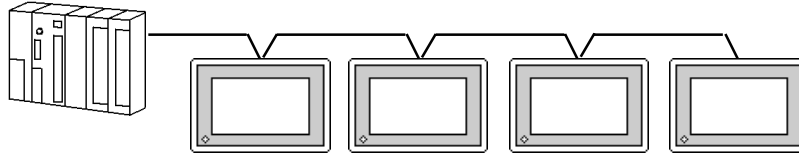
*Ground your PLC's FG terminal according to your country's applicable standard. For details, refer to the corresponding PLC manual.*



- ï **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.**
- ï **The GP230-IS12-O Cable FG terminal is not connected to the GP's FG.**
- ï **Attach a Termination Resistor to both ends of the cable.**
- ï **As a general rule, connect the PLC to one end of the circuit.**

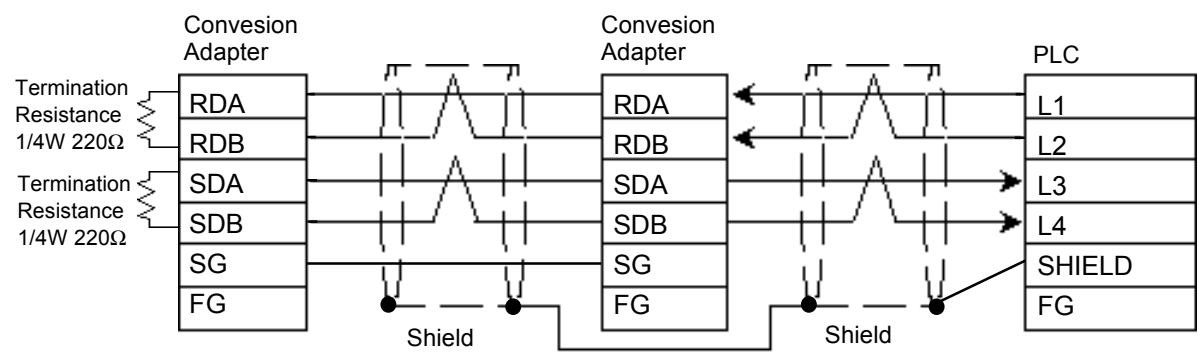


**Note:** When making your own cable, Hitachi's CO-SPEV -SB(A) 3P0.5mm<sup>2</sup> cable is recommended as the connection cable.  
 The cable connection lines are as shown below. The cables between the GP and the terminals should be less than 10m.

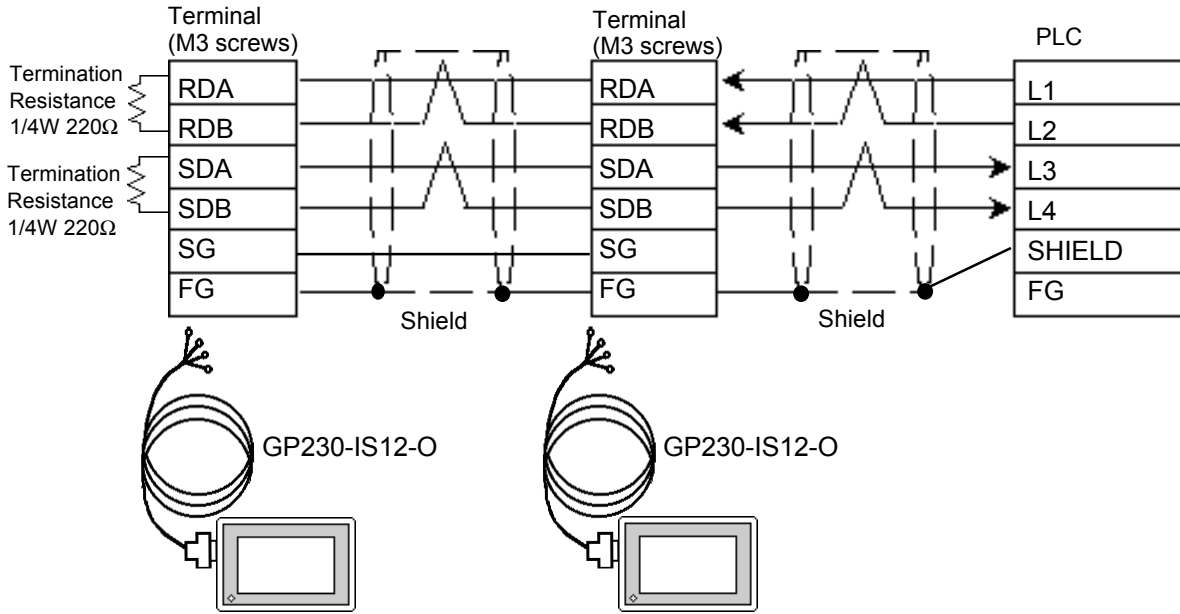


**Cable Diagram 2**

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

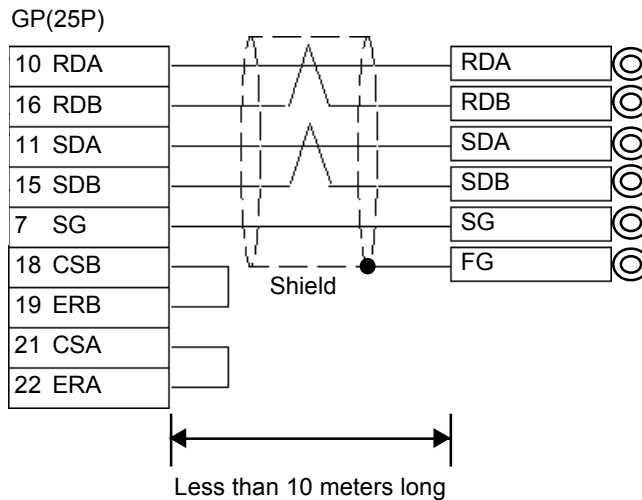
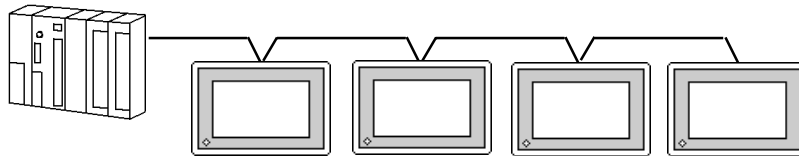


ï When using Digital's Multi-link Cable, GP230-IS12-O



**Note:**

- ï When making your own cable, Hitachi's CO-SPEV -SB(A) 3P0.5mm<sup>2</sup> 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.
- ï Use a cable length less than 600m.



**5.10.3 Supported Devices**

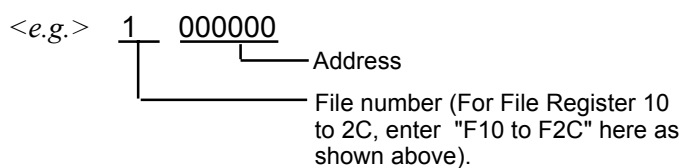
The following lists Digital's recommended PLC and GP communication settings.


**■ 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)	<span style="border: 1px solid black; padding: 2px;">÷ 2</span>	
	20000 ~ 75777	A2000 ~ A7576 (≡2000 ~ ≡7576)		
Timer (contact)	T0000 ~ T1777	—————		
Counter (contact)	C0000 ~ C1777	—————		
Timer/Counter (current value)	—————	B0000 ~ B3776 (b0000 ~ b3776)	<span style="border: 1px solid black; padding: 2px;">÷ 2</span> <span style="border: 1px solid black; padding: 2px;">Bit 15</span>	
Register	—————	09000 ~ 09776	<span style="border: 1px solid black; padding: 2px;">÷ 2</span> <span style="border: 1px solid black; padding: 2px;">Bit 15</span>	
		19000 ~ 19776		
		29000 ~ 29776		
		39000 ~ 39776		
		49000 ~ 49776	L/H	
		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		<span style="border: 1px solid black; padding: 2px;">÷ 2</span> <span style="border: 1px solid black; padding: 2px;">Bit 15</span>  *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.