Pro-face

Digital
Human Machine Interface

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.
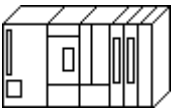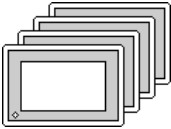
5.10   SHARP

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)	

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

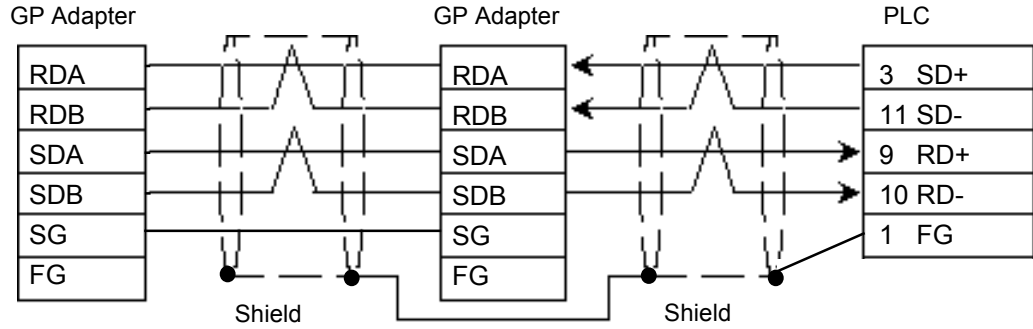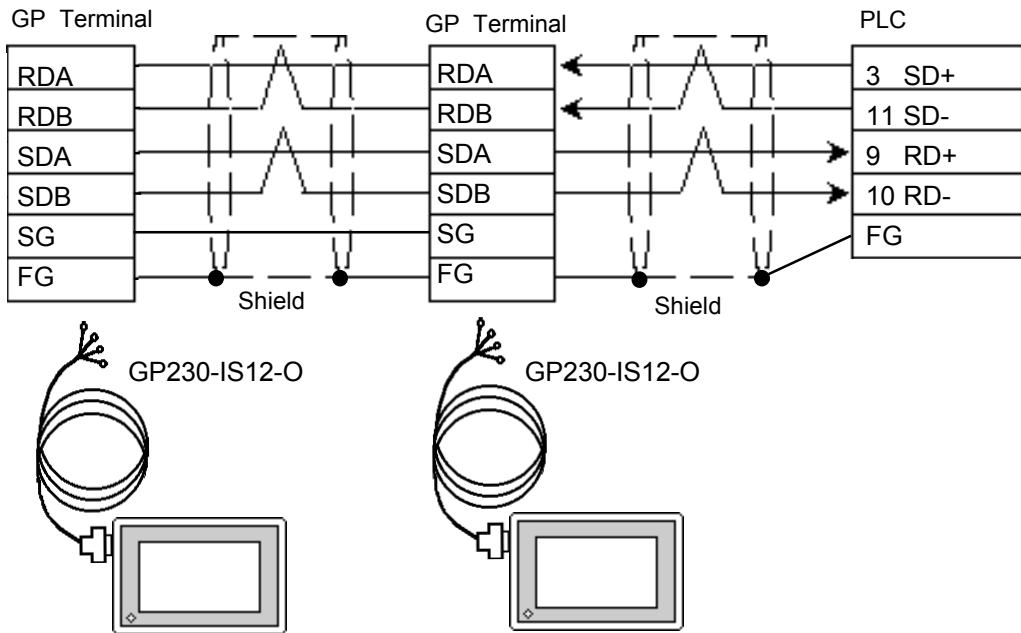| Version Seal	Usage Restrictions
30Hn	Can use without restrictions.
30H	Cannot be read or written from and to File Register from 10 to 2C. Cannot be read or written from and to File Register Address from 100000 to 176777.
No Seal	Cannot use JW30H series.

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

GP Adapter		GP Adapter		PLC
RDA		RDA	←	3 SD+
RDB		RDB	←	11 SD-
SDA		SDA	→	9 RD+
SDB		SDB	→	10 RD-
SG		SG		1 FG
FG		FG		

Shield   Shield

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

GP Terminal		GP Terminal		PLC
RDA		RDA	←	3 SD+
RDB		RDB	←	11 SD-
SDA		SDA	→	9 RD+
SDB		SDB	→	10 RD-
SG		SG		FG
FG		FG		

Shield   Shield

GP230-IS12-O   GP230-IS12-O

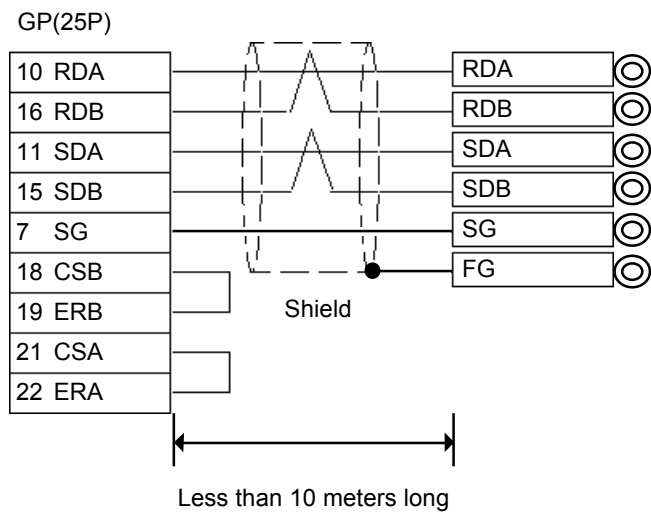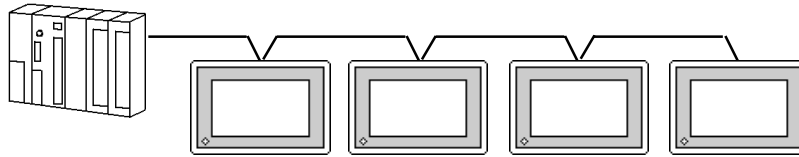**Careful!** *Ground your PLC's FG terminal according to your country's applicable standard. For details, refer to the corresponding PLC manual.*

Important

ï **Pull out a small amount of the Transfer Cableís shield, make a wire out of it and connect it to the PLCís 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.**

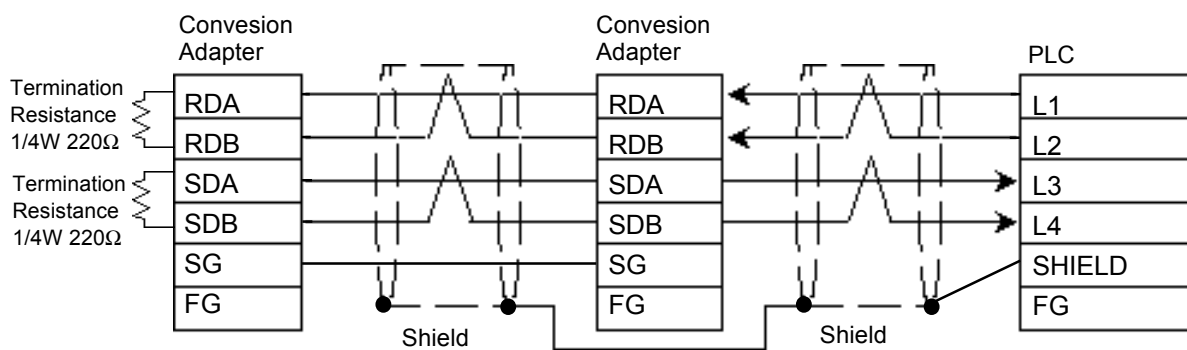ï **As a general rule, connect the PLC to one end of the circuit.**

Note: **When making your own cable, Hitachi's CO-SPEV -SB(A) 3P0.5mm² 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.

GP(25P)

10 RDA	RDA
16 RDB	RDB
11 SDA	SDA
15 SDB	SDB
7 SG	SG
18 CSB	FG
19 ERB	Shield
21 CSA	
22 ERA	

Less than 10 meters long

Cable Diagram 2

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

Convesion Adapter   Convesion Adapter   PLC

Termination Resistance 1/4W 220Ω

| RDA | RDA | L1 |
| RDB | RDB | L2 |

Termination Resistance 1/4W 220Ω

SDA	SDA	L3
SDB	SDB	L4
SG	SG	SHIELD
FG	FG	FG

Shield   Shield

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

Note:

ï **When making your own cable, Hitachi's CO-SPEV -SB(A) 3P0.5mm² 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.
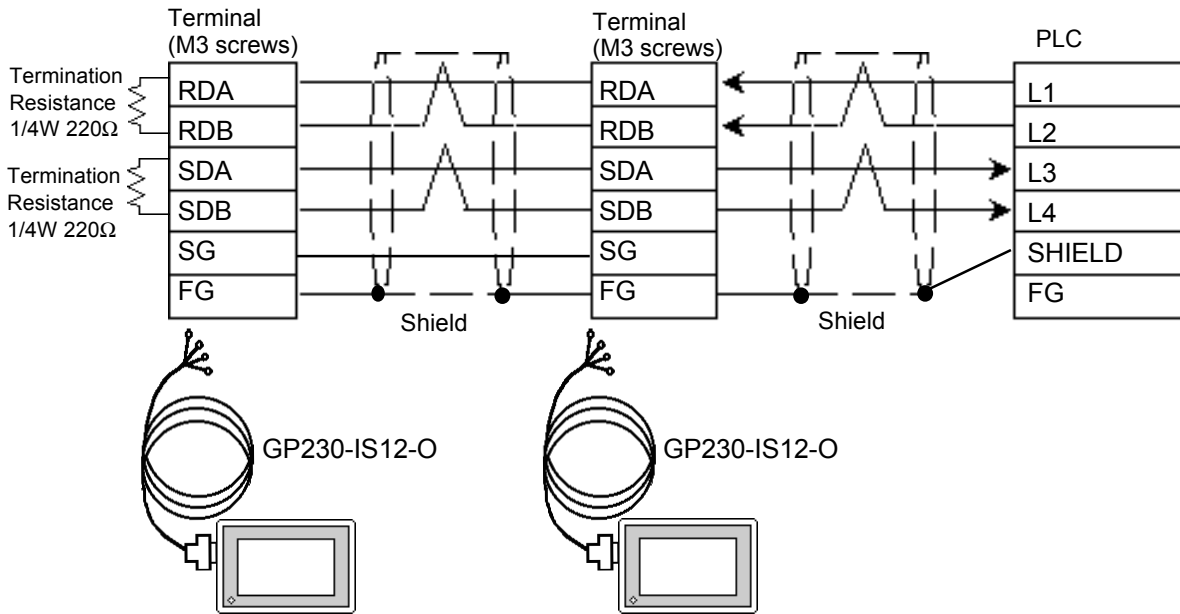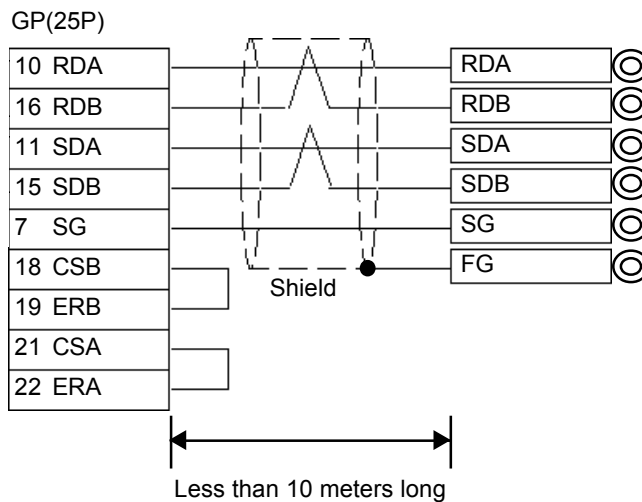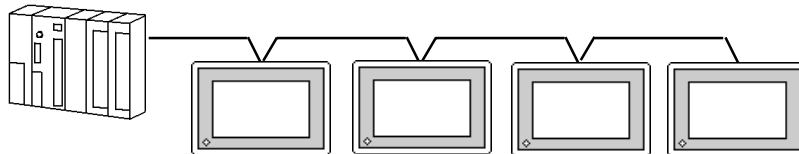
ï **Use a cable length less than 600m.**

GP(25P)

Less than 10 meters long
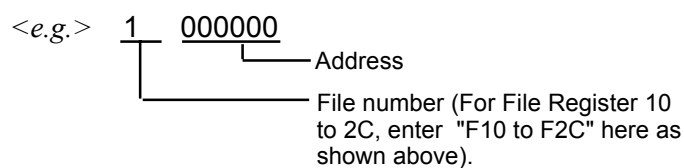
5.10.3 Supported Devices

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	L/H
		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	
File Register 2		2000000 ~ 2177776		
File Register 3	———	3000000 ~ 3037776	*1	
File Register 10-1F		F10000000 ~ F1F177776		
File Register 20-2C		F20000000 ~ F2C177776		

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

<e.g.>   1   000000
              └──── Address
      └──────────── File number (For File Register 10
                     to 2C, enter "F10 to F2C" here as
                     shown above).

÷ 2 *Enter even numbers only for Word Address*

Bit 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.*

STOP **Word Address Relay and Timer/Counter current value (B) are shown in brackets on the PLC's Uesrs 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	---------	
Communicaiton Format	4-wire type	Communicaiton 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 decinal.*

*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.*