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.

1 Connecting an ST Unit

1.1 Connecting an ST Unit

■ ST Optional Items

The following optional cables can be used to connect a PLC to your ST unit.

Item	Description
RS232C Cable CA3-CBL232/5M-01 (5m)	I/F cable used for data transfer between each Device/PLC and your ST unit
RS422 Cable CA3-CBL422/5M-01 (5m)	
Mitsubishi PLC FX-Series Connection Cable CA3-CBLFX/1M-01 (1m)	I/F cable used for data transfer between Mitsubishi FX-Series PLCs and your ST unit
Mitsubishi PLC FX-Series Connection Cable CA3-CBLFX/5M-01 (5m)	
Mitsubishi PLC A-Series Connection Cable CA3-CBLA-01 (5m)	I/F cable used for data transfer between Mitsubishi A/QnA-Series PLCs and your ST unit
Mitsubishi PLC Q-Series Connection Cable CA3-CBLQ-01 (5m)	I/F cable used for data transfer between Mitsubishi Q-Series PLCs and your ST unit
Omron PLC SYSMAC Link Connection Cable CA3-CBLFX/5M-01 (5m)	I/F cable used for data transfer between Omron SYSMAC Series PLCs and your ST unit

■ Connection Method

This manual includes connection diagram(s) of the wiring connections to be used between the GP and a PLC. However, the pin number assigned to each connector pin on the ST's interface will differ from that of other GP Series units. Therefore, be sure to use the following Connector Pin Comparison Tables 1, 2 and 3 when creating a cable. Setup procedures are similar to those for GP Series units.

Table 1: RS232C I/F (ST401/ST403[*1])

ST Unit Pin No.	ST Signal Name	GP Series Unit Pin No.
1	CD	8
2	RD	3
3	SD	2
4	ER	20
5	SG	7
6	DR	6
7	RS	4
8	CS	5
9	RI	17 [*2]
Connector Shell	FG	1

**1 When connecting to ST403, please change the communication type to RS232C with software.*

**2 Only GP2000 Series units.*

Table 2: RS422 I/F (ST400/ST403[*1])

ST Unit Pin No.	ST Signal Name	GP Series Unit Pin No.
1	RDA	10
2	RDB	16
3	SDA	11
4	ERA	22
5	SG	7
6	CSB	18
7	SDB	15
8	CSA	21
9	ERB	19
Connector Shell	FG	1

**1 When connecting to ST403, please change the communication type to RS422 with software.*

- **Be sure to connect this unit's pin #5 (SG) to the other unit's SG terminal.**
- **When creating a cable for the ST, please be aware of the following:**

<When using an RS422 Cable>

- **When connecting FG lines, Digital recommends connecting FG wires on both sides of the cable. If, however, power level differences or data transfer problems occur, connect only one side's FG wire.**

Table 3: RS485 I/F (MPI Direct Connection) (ST402 (X-port))

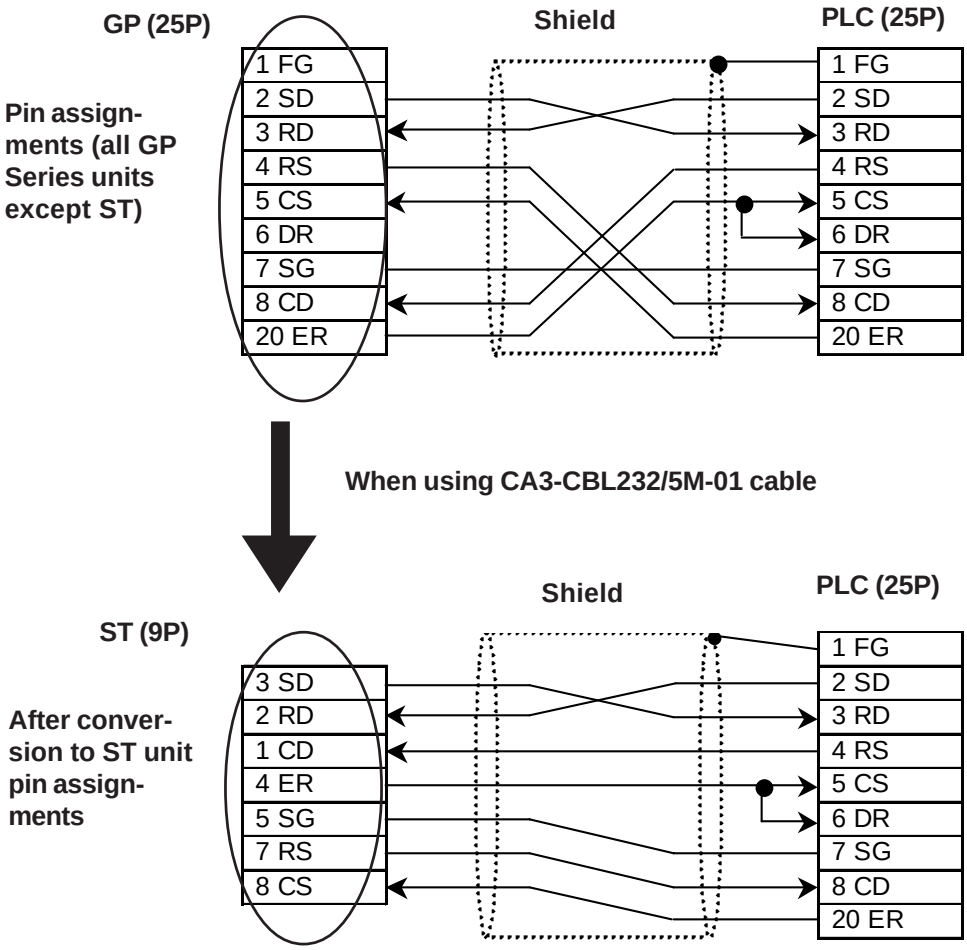
ST Unit Pin No.	ST Signal Name	GP Series Unit Pin No.
1	NC	
2	NC	
3	LINE (+)	10, 11
4	Reserve	
5	GND	7
6	+5V	
7	NC	
8	LINE (-)	15, 16
9	NC	
Connector Shell[*1]	FG	1

***1 Used when Serial I/F Switch is set to [Yes].**

For SIEMENS S7-200/300/400 Series units, be sure to use a SIEMENS Co. Profibus Connector when connecting directly to an MPI Port.

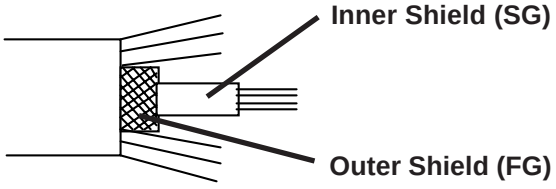
◆ Example - Converting GP/GLC Pin Numbers to ST Pin Numbers

The following example connects an ST unit to a Mitsubishi PLC (1:1 connection - Cable Diagram 1) and describes how to convert the pin assignments for other GP Series units to those on the ST unit.



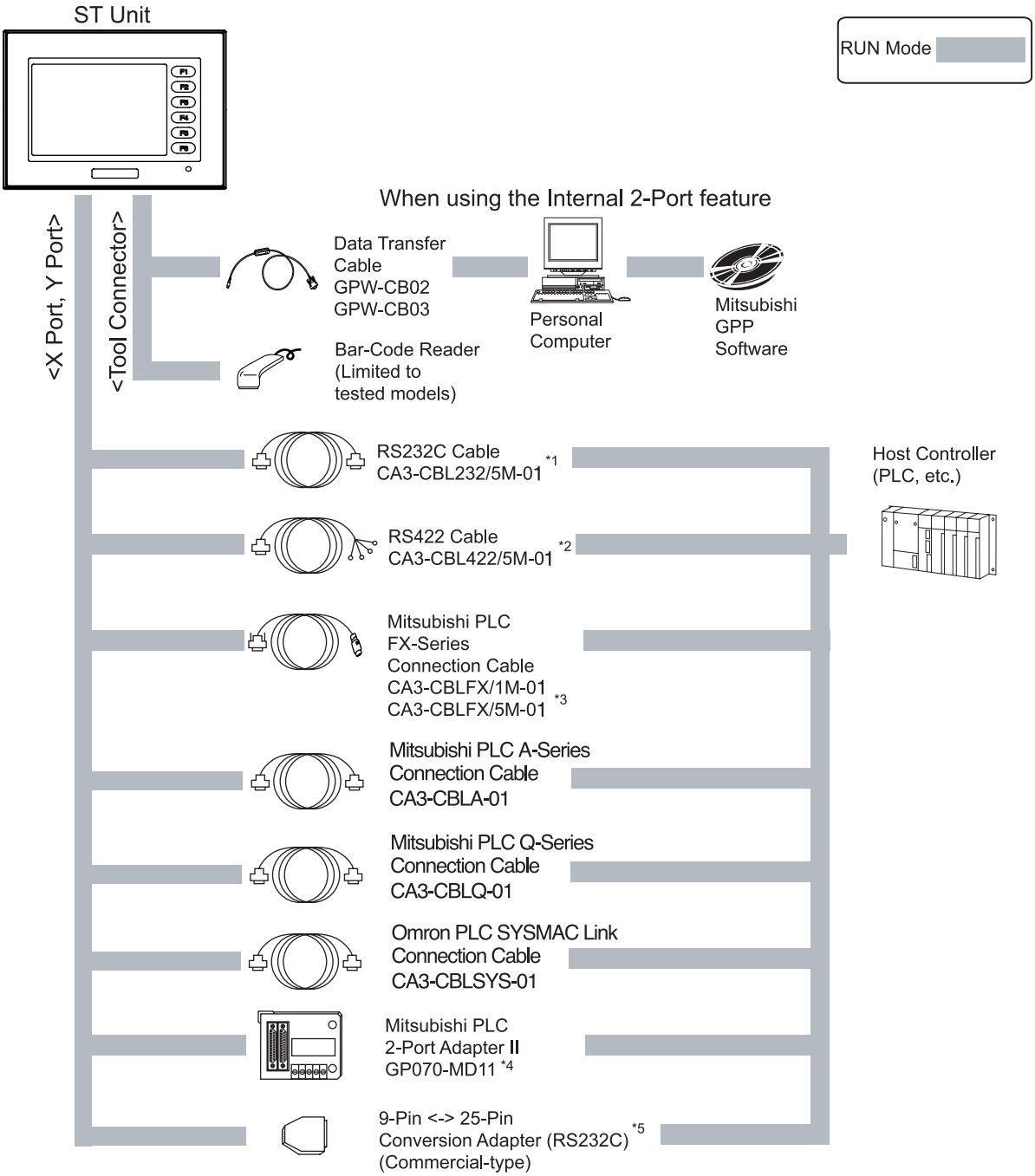
Important

- ***Check that unused wires do not touch other signal wires or the connector case.***
- ***Be sure to connect the cable's outer shield to the FG wire.***



- ***Be sure to connect the inner shield to the Device/PLC's SG, in the same way as Pin #5's SG.***

1.2 ST System Design



**1 Equivalent to the optional cable GP410-IS00-O. PLCs that can be connected to the GP410-IS00-O optional cable can also be connected to this cable.*

**2 Equivalent to the optional cable GP230-IS11-o. Pins #1 (RDA) and #2 (RDB) have termination resistance (1/2W, 100Ω). Therefore, when usingthis cable for multi-link communication, be sure to remove this termination resistance.*

**3 Mitsubishi FX-Series PLC Direct Connection Cable. This cable is equivalent to Pro-face's GP2000-CBLFX/1M-01 and GP2000-CBLFX/5M-01 cables, and is used for a D-sub25 pin connection.*

**4 For connection method details,*

Reference ***1.3 Cable Diagrams, ■ 2-Port Adapter II (GP070-MD11)***

**5 For connection method details,*

Reference ***1.3 Cable Diagrams, ■ 9-Pin <-> 25-Pin Conversion Adapter***

1.3 Cable Diagrams

■ RS232C (CA3-CBL232/5M-01)

D-sub 9-Pin Female

Pin No.	Signal Name
1	CD
2	RD
3	SD
4	ER
6	DR
7	RS
8	CS
5	SG
9	RI

D-sub 25-Pin Male

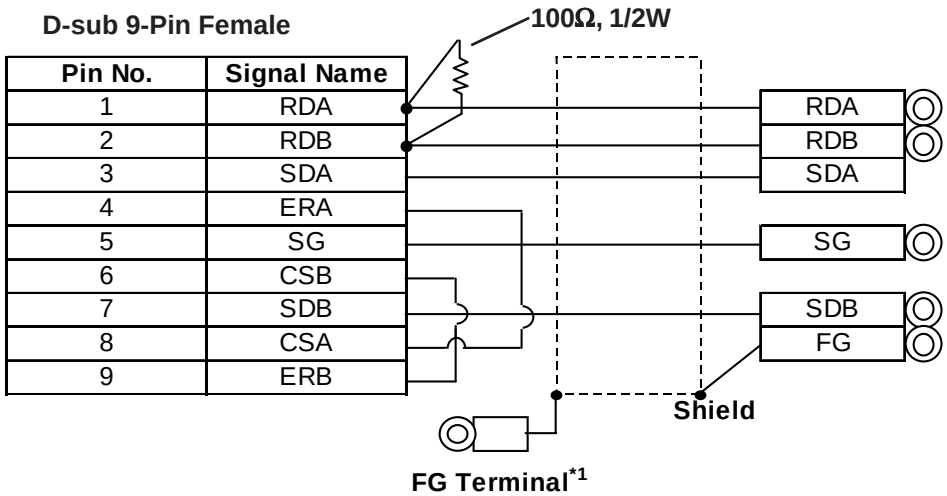
Pin No.	Signal Name
6	DR
2	SD
3	RD
5	CS
4	RS
8	CD
20	ER
7	SG
1	FG

Shield

■ RS422 (CA3-CBL422/5M-01)

D-sub 9-Pin Female

Pin No.	Signal Name
1	RDA
2	RDB
3	SDA
4	ERA
5	SG
6	CSB
7	SDB
8	CSA
9	ERB



**1 Be sure to connect the ST unit's FG terminal to the other unit's FG terminal. To do this, remove the D-sub 9-Pin's fastener screws, insert the FG terminal, and replace the fastener screws. If, however, power level differences or data transfer problems occur, connect only one side's FG wire.*

■ FX Connection (CA3-CBLFX/1M-01, CA3-CBLFX/5M-01)

The cable diagram given below is for the option cables, however be sure to use an option cable when connecting tothe Device/PLC.

D-sub 9-Pin Female

Pin No.	Signal Name
1	RDA
2	RDB
3	SDA
4	ERA
5	SG
6	CSB
7	SDB
8	CSA
9	ERB

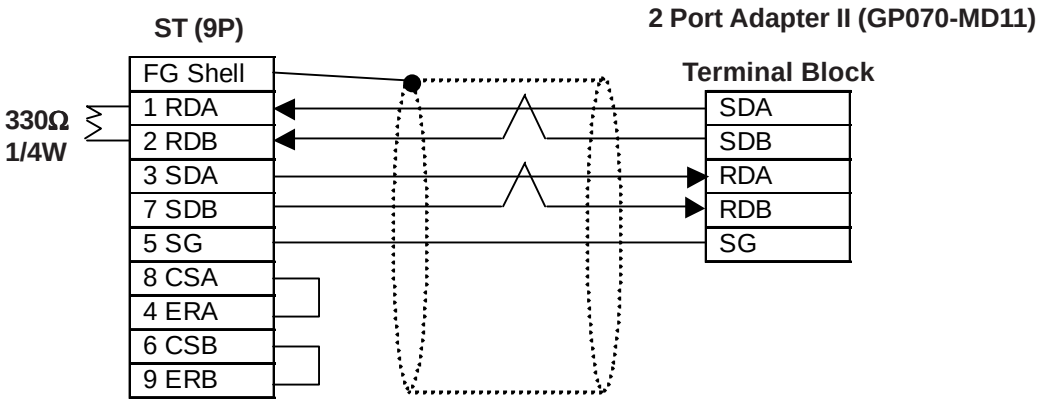
330Ω, 1/4W

MINI-DIN 8-Pin Male

Pin No.	Signal Name
7	TXA
4	TXB
2	RXA
5	Vcc
3	SG
6	SG
1	RXB
8	NC
Shell	FG

Shield

■ 2-Port Adapter II (GP070-MD11)



Note:

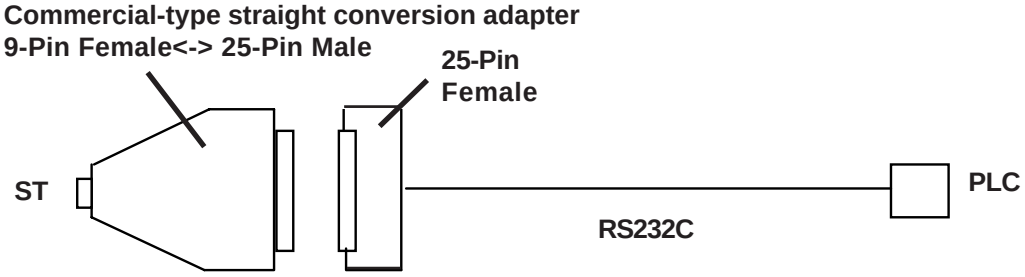
- **When using the 2-Port feature, select the "2-Port Feature | CPU Direct" menu's "Adapter + GPH" feature. For setting details,**

Reference *"2-1-5 2-Port Feature"*

- **For recommended cable and terminal block information, see the 2-Port Adaptor II Installation Guide (GP2000 Series Wiring Diagram).**

■ 9-Pin <-> 25-Pin Conversion Adapter

When using the PLC manufacturer's cable with a RS232 connection, if the ST side of the cable uses a 25-pin connector, be sure to attach a RS232C 9-Pin <-> 25-Pin Conversion Adapter.



D-sub 25-Pin Male <-> D-sub 9-Pin Female Conversion Adapter Pin Assignments