



GP-4G01 Setup Guide

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1 Connection Configuration

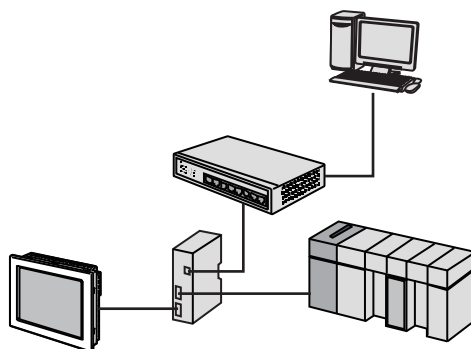
When your display unit and external device use serial connections, without modifying any existing programs you can collect data from the external device by adding the GP-4G01. Once collected, you can accumulate or display the data on your computer.

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- NOTE**
- The GP-4G01 does not have a COM2 port. Replace references to "COM2 Port" with "HMI Port" in any descriptions in manuals or messages.
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GP-4G01 has two operation modes.

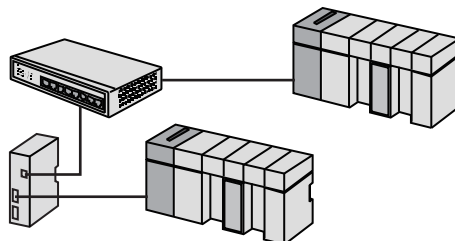
- When Gateway mode is ON
Connect GP-4G01 to act as a relay between the display unit and external device.

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- NOTE**
- Add the GP-4G01 between the display unit and first external device.
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- When Gateway mode is OFF
Use the GP-4G01 as a display unit. The only serial port you can use is COM1 in this configuration.

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- NOTE**
- To check your data on the GP-4G01, you need to use GP-Viewer EX or other related software.
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2 Supported drivers

GP-4G01 Gateway mode supports the following drivers.

For information about the GP-4G01 communication settings and the cable for connecting the GP-4G01 and external device, refer to the "Device/PLC Connection Manual".

Manufacturer	Driver
FANUC Corporation	Power Mate Series
Fuji Electric Co., Ltd	MICREX-SX Series SIO
Hitachi Ltd.	S10 Series SIO
KEYENCE Corporation	KV Series CPU Direct
	KV-700/1000/3000/5000 CPU Direct
Mitsubishi Electric Corporation	A Series CPU Direct
	A Series Computer Link
	Q series CPU Direct
	Q/QnA Serial Communication
	QnA Series CPU Direct
	FX Series CPU Direct
	FX Series Computer Link
Modbus-IDA	General MODBUS SIO Master
OMRON Corporation	C/CV Series HOST Link
	CS/CJ Series HOST Link
Panasonic Industrial Devices SUNX Co., Ltd.	FP Series Computer Link SIO
Siemens AG	SIMATIC S5 3964(R)
	SIMATIC S7 3964(R)/RK512
Toshiba Machine Co., Ltd.	TC Series (TCmini/TC200)
Yokogawa Electric Corporation	Personal Computer link SIO
Yaskawa Electric Corporation	MEMOBUS SIO

NOTE

- When Gateway mode is ON, you cannot use the following functions:
 - System Data Area
 - Pass-Through Function
 - Serial Multilink
 - Ethernet Multilink Slave Display
- When Gateway mode is OFF, you can use drivers supported by GP4000 series.

3 Communication Settings

To use GP-4G01 in Gateway mode, the communication settings for the GP-4G01, GP-Pro EX, and existing system must be the same.

You can check the existing settings from the display unit's offline mode or from the screen editing software's communication settings. For details, see the manual for your display unit.

GP-4G01 Communication Settings

- SIO Type

On the front of the unit, set the RS-232C/RS-422 change switch to match the existing system's SIO Type.

- IP Address

Use WebConfig to set the display unit's IP address. Access GP-4G01 from a Web browser.

GP-Pro EX Communication Settings

Configure communication settings to match the existing system. Set the Device-Specific Settings to match the external device. For details on Device-Specific Settings, see the "Device/PLC Connection Manual".

- When Gateway mode is ON

Select the [Use Gateway Mode] check box and define the communication settings.

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer Series Port

Text Data Mode [Change](#)

Communication Settings

SIO Type RS232C RS422/485(2wire) RS422/485(4wire)

Speed

Data Length 7 8

Parity NONE EVEN ODD

Stop Bit 1 2

Flow Control NONE ER(DTR/CTS) XON/XOFF

Timeout (sec)

Retry

Wait To Send (ms)

RI / VCC RI VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

Use Gateway Mode

Maximum Packet Size

Communication Priority

Device-Specific Settings

Allowable Number of Devices/PLCs 1 [Add Device](#)

No.	Device Name	Settings
1	PLC1	

[Add Indirect Device](#)

IMPORTANT

- Match the [SIO Type] between the GP-4G01 display unit's RS-232C/RS-422 switch and existing settings.
 - For settings other than the [Use Gateway Mode] and [SIO Type], match with existing system's display unit settings.
 - To adjust communication volume and priority, set up the [Maximum Packet Size] and [Communication Priority].
Cf. GP-Pro EX Reference Manual "Using GP-4G01 - Settings Guide"
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- When Gateway mode is OFF

Clear the [Use Gateway Mode] check box and define the communication settings. The settings vary depending on your external device. Refer to the "Device/PLC Connection Manual" for more information.

4 Settings

The following explains the [Communication Settings]. For information that is not described in this document, refer to the "Device/PLC Connection Manual" for your corresponding external device.

4.1 Settings in GP-Pro EX

Communication Settings

To display the settings screen, from the [Project] menu select [System Settings] and click [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer Series Port

Text Data Mode [Change](#)

Communication Settings

SIO Type RS232C RS422/485(2wire) RS422/485(4wire)

Speed

Data Length 7 8

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Flow Control NONE ER(DTR/CTS) XON/XOFF

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RI / VCC RI VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

Use Gateway Mode

Maximum Packet Size

Communication Priority

Device-Specific Settings

Allowable Number of Devices/PLCs [Add Device](#)

No.	Device Name	Settings
1	PLC1	

[Add Indirect Device](#)

Setting	Description
SIO Type	Select the type of serial connection. Match the SIO type used by the existing system. Additionally, match the settings for the RS-232C/RS-422 switch on the GP-4G01 display unit.
Speed	Set the transmission speed between the external device and display unit. Match this setting with existing display units.
Data Length	Select the data length. Match this setting with existing display units.
Parity	Select the parity check method. Match this setting with existing display units.
Stop Bit	Select the stop bit length. Match this setting with existing display units.
Flow Control	Select the communication control system to monitor and prevent overflow of transmission data. Match this setting with existing display units.
Time out	Enter the amount of time (1...127 seconds) the display unit waits for a response from the external device. Match this setting with existing display units.

Setting	Description
Retry Count	When there is no response from the external device, enter the number of times (0...255) the display unit sends commands again. Match this setting with existing display units.
Send Wait	Enter the amount of time (0...255 milliseconds) the display unit waits after it receives a packet until the display unit sends a command. Match this setting with existing display units.
RI/VCC	When [SIO Type] is set to [RS-232C], you can toggle pin 9 between RI and VCC.
Use Gateway Mode	Select this check box when you want to use GP-4G01 as a gateway.
Maximum Packet Size	Adjusts the communication volume. Cf. GP-Pro EX Reference Manual "Using GP-4G01 - Settings Guide"
Communication Priority	Adjusts the communication priority. Cf. GP-Pro EX Reference Manual "Using GP-4G01 - Settings Guide"

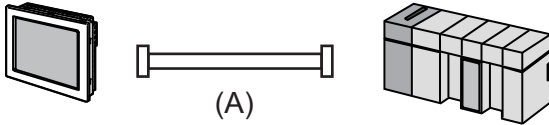
5 Cable Diagrams

Create the cable for connecting GP-4G01 to the display unit and external device.

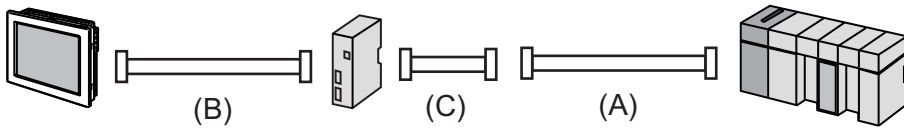
5.1 Wiring

In the existing system, add the GP-4G01 between the display unit and external device. Add cables as necessary to the existing system.

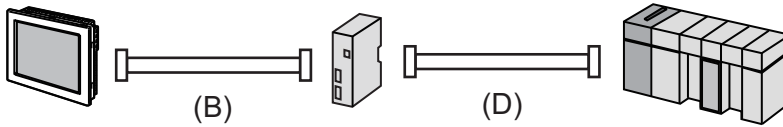
Examples for Existing Systems



- GP-4G01 wiring with existing system



- GP-4G01 wiring with new cables



Signal	Cable
A	Existing system's cable
B	HMI port cable (user-created cable)
C	Pro-face 9-pin to 25-pin conversion cable
D	COM1 port cable

NOTE

- When using Gateway mode with GP-4G01, the network before and the network after the GP-4G01 are separated. As a result, when termination resistance is required for the cable, you need to insert the same resistance in a total of 4 locations: termination between the display unit and GP-4G01, and termination between GP-4G01 and the external device.
Refer to the GP-4G01 Installation Guide for instructions on how to add termination resistance to ports on the GP-4G01.
- If communication does not work properly, to find the cause turn OFF the power on the GP-4G01 and run some tests. Turn ON GP-4G01 and run some other tests.
 1. When OFF
Does not communicate with display unit: Check the cable wiring.
Communicates with display unit: Check the communication settings.
 2. When ON
Communicates with GP-4G01 but not display unit: Check if a Gateway supported driver is selected and if the [Use Gateway Mode] check box is selected.

5.2 Cable connection with external device (COM1 port)

When using an existing cable, add another cable corresponding to the SIO type.

- RS-232C: Pro-face RS-232C 9-pin to 25-pin conversion cable (CA3-CBLCBT232-01)
- RS-422: Pro-face RS-422 9-pin to 25-pin conversion cable (PFXZCBCBCVR41)

NOTE

- When you want to use the following cables in an existing system, you cannot use a 9-pin to 25-pin conversion cable. Create a new cable.
GP2000-CBLA/5M-01, GP2000-CBLFX/5M-01, or GP2000-CBLFX/1M-01
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To create a new cable, refer to the cable diagrams in the "Device/PLC Connection Manual".

For RS-232C communication, in the Device/PLC Connection manual refer to "GP4000 (COM1)" as "GP-4G01 (COM1)". Similarly, for RS-422 communication, in the Device/PLC Connection manual refer to "GP4000 (COM2)" as "GP-4G01 (COM1)".

5.3 Cable connection with display unit (HMI port)

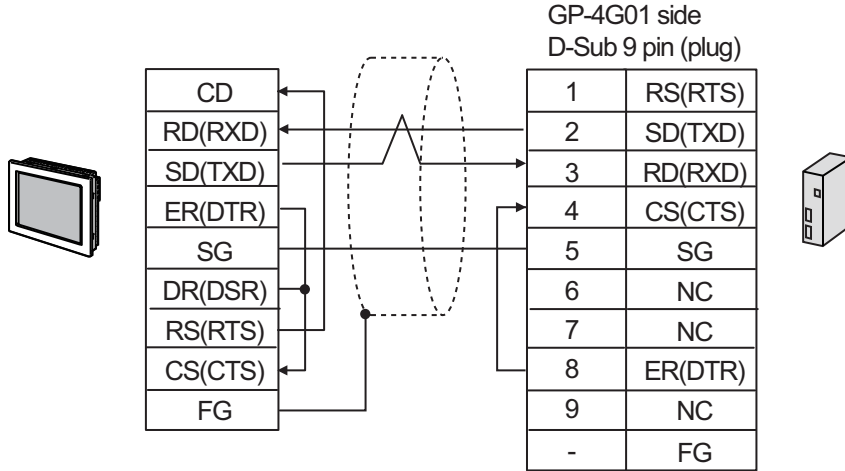
Cable diagram for cable connecting the display unit and GP-4G01 is shown below. You can use the HMI port only when Gateway mode is enabled. Match the cable you are creating with the existing system's communication format.

NOTE

- This manual shows cable diagrams for GP50/GP70/GP77R/GP2000 Series, except for the hand-held GP models.
 - For the latest information, list of tested connections, and cable diagrams refer to our Web site: <http://www.pro-face.com/trans/en/manual/1058.html>
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RS-232C

No Flow Control



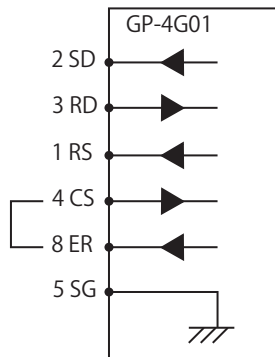
Pro-face display unit (except Hand-held GP) pin numbers

Connector and signal	GP2000 Series	GP50 Series GP70/77R Series
Cable Connector	D-Sub 25 pin (plug)	D-Sub 25 pin (plug)
CD	8	8
RD (RXD)	3	3
SD (TXD)	2	2
ER (DTR)	20	20
SG	7	7
DR (DSR)	6	- *1
RS (RTS)	4	4
CS (CTS)	5	5
FG	1	1

*1 DR (DSR) connection is unnecessary.

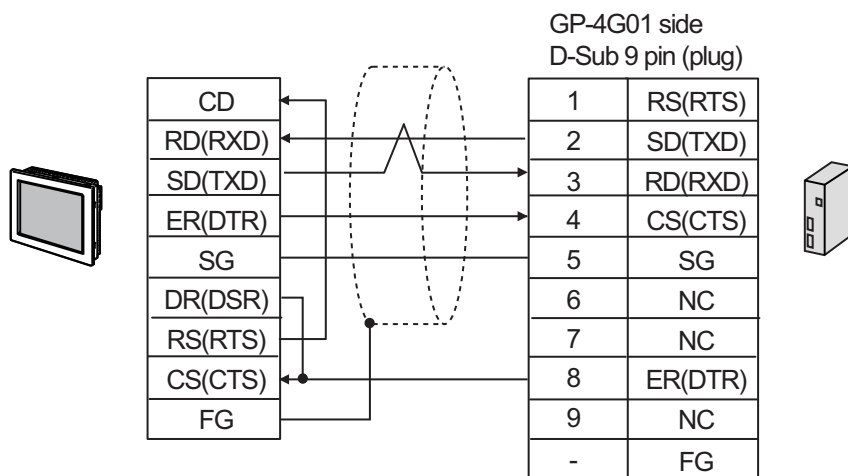
NOTE

- When HMI port is changed to RS-232C, signals are as follows. When flow control is not handled, short the CS and ER signals as shown in the diagram.



RS-232C

ER Control



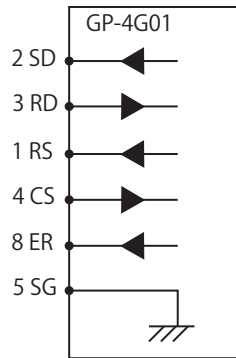
Pro-face display unit (except Hand-held GP) pin numbers

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Cable Connector	D-Sub 25 pin (plug)	D-Sub 25 pin (plug)
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RS (RTS)	4	4
CS (CTS)	5	5
FG	1	1

*1 DR (DSR) connection is unnecessary.

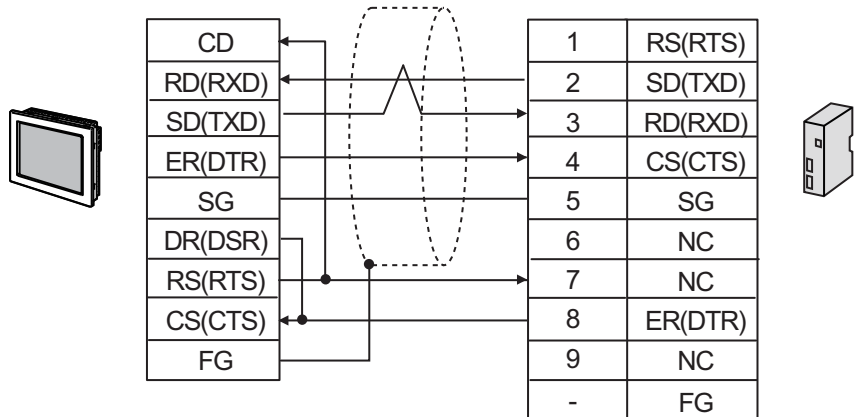
NOTE

- When HMI port is changed to RS-232C, signals are as follows.



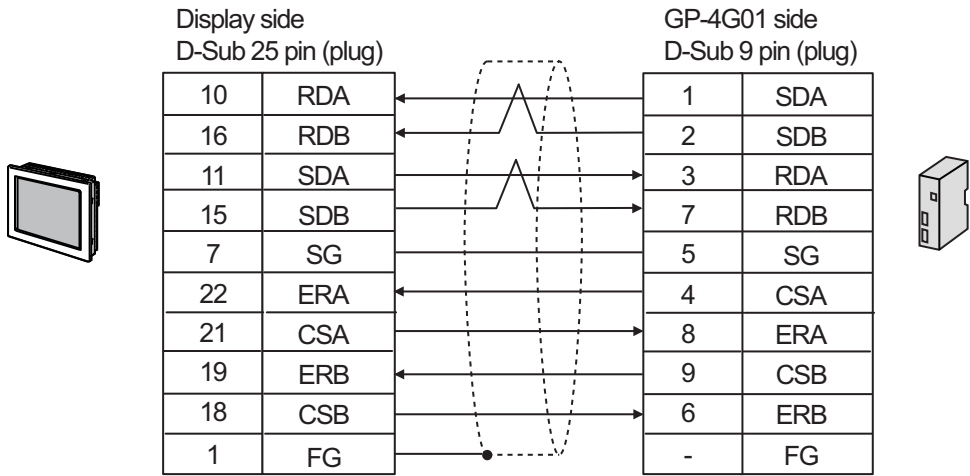
- When using a COM1 port cable to connect the RS (RTS) pin on the GP-4G01 COM1 port to an external device, you need to use the HMI port cable and connect pin 7 on the GP-4G01 HMI port with the display unit's RS (RTS) signal.

Example:

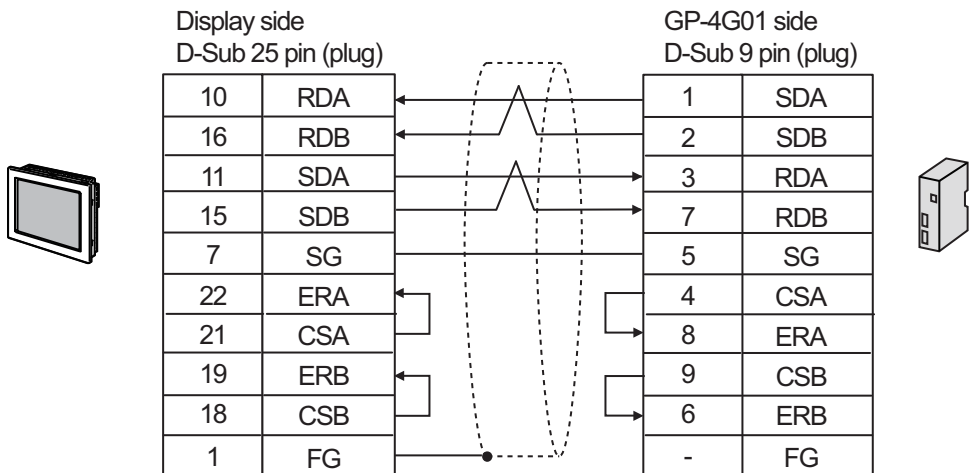


RS-422/485 (4-wire)

When using control line (includes when using CPU Direct driver)

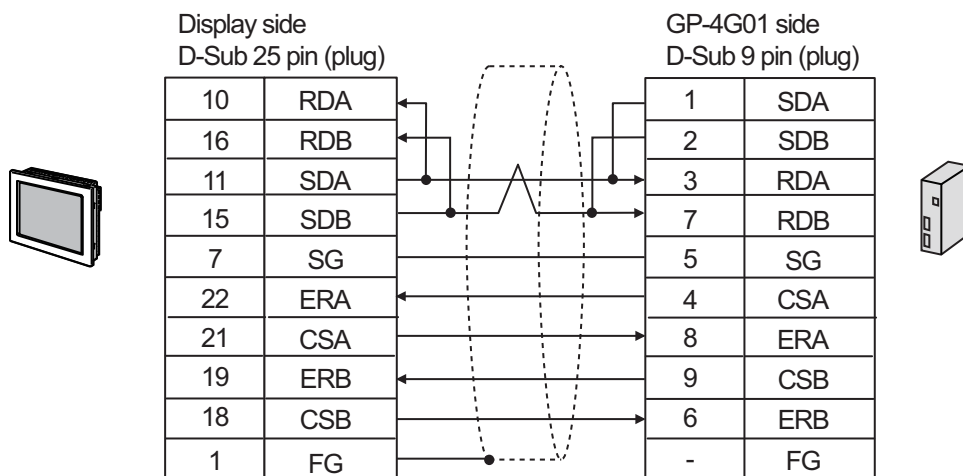


When not using control line



RS-422/485 (2-wire)

When using control line (includes when using CPU Direct driver)



When not using control line

