Pro-face^{*}

Easy! Smooth! <u>ST40x Series</u> <u>Replacement Guidebook</u>

Preface

This guidebook introduces the procedures to replace the unit in the ST40x series (ST-400/401/402/403) with the ST3000/GP3000 series (ST-3201/3211, GP-3200A). The recommended replacement models are as follows.

| Model in use | Replecement model |
|--------------|-------------------|
| ST-400 | CT 2204 A |
| ST-401 | 51-3201A |
| ST-402 | ST-3211A |
| ST-403 | GP-3200A |

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|--------------------------|--|
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Chapter 1. Specification Comparison

1.1 Specifications of ST-400/401 and ST-3201A

| | | | ST-400/401 | ST-3201A | | | | |
|---|--------------------------|-------------|-------------------------------|--------------------------------------|------------------------------------|--|----------------|--|
| | | | | | | | | |
| Display Type | | • | Monochrome LCD | NEW 9 | Monochrome Amber/Red LCD | | | |
| Dis | olay Color | s | 2 levels / 8 levels | CPI | 8 levels | | | |
| Displa | ay Resolut | ion | QVGA (320 | × 240 pix | (els) | | | |
| Panel C (Uni | ut Dimens t: mm [in.] | sions]) | W118.5 [4.67 | 7] × H92.5 [3.64] | | | × H92.5 [3.64] | |
| External Dimensions W130 [5.12] × H104 [4.09] × W130 [5.12] × | | | | [5.12] × H104 [4.09] × | | | | |
| (Unit: mm [in.]) | | | D41 [1.61] | D40 [1.57] | | | | |
| Toucl | h Panel Ty | pe | Matrix | Resistive Film (Analog) → See 2.2 | | | | |
| | | | 9-pin D-Sub (male) | | | | | |
| | COM1 | 400 | RS-422 | 9-1 | oin D-Sub (male) | | | |
| Serial 40 [°] | | 401 | 9-pin D-Sub (male) RS-232C | RS-232C | | | | |
| COM2 | | M2 | No | NEWO | 9-pin D-Sub (male) RS-485 (422) | | | |
| Momory | Applic | cation | 640KB | œ | 6MB | | | |
| wiemory | SR | AM | 96KB | œ | 320KB | | | |
| USB H | lost Interf | ace | No | Yes \rightarrow See 2.3 | | | | |

1.2 Specifications of ST-402 and ST-3211A

| | | ST-402 | | ST-3211A | | |
|---------------------|-------------------------|---|--|---|--|--|
| | | | | | | |
| Displ | ау Туре | Monochrome LCD | NEW 0 | Monochrome Amber/Red LCD | | |
| Displa | y Colors | 2 levels / 8 levels | CPI | 8 levels | | |
| Display | Resolution | QVGA (320 | × 240 pix | (els) | | |
| Panel Cut (Unit: | Dimensions mm [in.]) | W118.5 [4.67] × H92.5 [3.64] | |] × H92.5 [3.64] | | |
| External | Dimensions | W130 [5.12] × H104 [4.09] × | W130 [5.12] × H104 [4.09] × | | | |
| (Unit: | mm [in.]) | D41 [1.61] | D40 [1.57] | | | |
| Touch F | anel Type | Matrix | $\begin{array}{c} \text{Resistive Film} \\ \text{(Analog)} \rightarrow \text{See 2.2} \end{array}$ | | | |
| Serial | COM1 | 9-pin D-Sub (female) RS-485 (MPI only) | NEWO | 9-pin D-Sub (male) RS-232C | | |
| Interface | COM2 | 9-pin D-Sub (male) RS-422 | NEWO | 9-pin D-Sub (female) RS-485 (MPI only) | | |
| Memory | Application | 640KB | UPI | 6MB | | |
| wentory | SRAM | 96KB | UPI | 320KB | | |
| USB Hos | st Interface | No | Yes \rightarrow See 2.3 | | | |

1.3 Specifications of ST-403 and GP-3200A

| | | ST-403 | GP-3200A | | |
|-------------------------|-------------------------|--------------------------------------|--|--|--|
| | | | | | |
| Displa | у Туре | Monochrome LCD | Monochrome Amber/Red LCD | | |
| Display | Colors | 2 levels / 8 levels | IPI 8 levels | | |
| Display R | esolution | QVGA (320 | × 240 pixels) | | |
| Panel Cut I (Unit: m | Dimensions nm [in.]) | W118.5 [4.67] × H92.5 [3.64] | | | |
| External D | imensions | W130 [5.12] × H104 [4.09] × | W130 [5.12] × H104 [4.09] × | | |
| (Unit: m | nm [in.]) | D41 [1.61] | D41 [1.61] | | |
| Touch Pa | anel Type | Matrix | $\begin{array}{c} \text{Resistive Film} \\ \text{(Analog)} \rightarrow \text{See 2.2} \end{array}$ | | |
| Serial Interface | COM1 | 9-pin D-Sub (male) RS-232C/RS-422 | 9-pin D-Sub (male) RS-232C/ RS-422/485 | | |
| Momory | Application | 640KB | GMB 6MB | | |
| SRAM | | 96KB | 320KB | | |
| Ethernet Interface | | | 10BASE-T/ | | |
| | | 10BASE-T | I00BASE-TX | | |
| | | | → See 2.3 | | |
| USB Host | Interface | No | Yes \rightarrow See 2.3 | | |

Chapter 2. Compatibility of Hardware

2.1 Location of interfaces

Locations of connectors and switches on the ST40x series and the ST3000/GP3000 series are as follows.

2.1.1 Rear of ST-400/401/402/403, ST-3201/3211 and GP-3200A

ST-400/401/402/403



ST-3201/3211, GP-3200A



Interface names

| | ST40x Series | ST3000/GP3000 Series | | | | | |
|---|-------------------------|----------------------------|--|--|--|--|--|
| 1 | Function Switch | - | | | | | |
| 2 | Power Plug Connector | | | | | | |
| 3 | Serial Interface (COM1) | | | | | | |
| 4 | Serial Inte | Serial Interface (COM2) *1 | | | | | |
| 5 | Tool Connector - | | | | | | |
| 6 | Ethernet Interface *2 | | | | | | |
| 7 | - USB Host Interface | | | | | | |

*1: ST-400, 401, 403, and GP-3200 don't have this interface.

*2: Only ST-403 and GP-3200 have this interface.

2.2 Touch panel specifications

The ST3000/GP3000 units are analog resistive. An analog resistive touch panel does not recognize the touch input when you touch two points at the same time. If you applied the two-point touch input on the ST40x unit, we recommend you change to the one-point touch input using the switch delay function.

2.3 Screen data transfer

To transfer screen data to the ST3000/GP3000 unit, use a USB transfer cable for the GP3000 series (model: CA3-USBCB-01). Please note that any commercial USB cable cannot be used. Transfer cables (GPW-CB02, GPW-CB03, GP430-CU02-M) that are used via the tool port cannot be used with the ST3000/GP3000 unit.

2.4 About function switches

The ST3000/GP3000 units are not equipped with the Function Switches. The switches that have been set on the ST40x unit are not converted.

2.5 About the serial interface

The COM1 port on the ST402 unit is for RS-485 (MPI) communication and the COM2 port is for RS-422. On the other hand, the COM1 port on the ST-3211A unit is for RS-232C and the COM2 port is for RS-485 (MPI). The devices connected to the ST-402 unit via the COM2 port, which require the RS-422 communication, cannot be used with the ST-3211A unit.

2.6 About power consumption

The power consumption of the ST3000/GP3000 series and that of the ST40x series are different. Please check the power supply capacity that is supplied to the display unit.

Chapter 3. Replacement Procedure

3.1 Work Flow

► To change the equipment designed for the ST40x series to the ST3000/GP3000 series



► To replace the ST40x series mounted to the equipment to the ST3000/GP3000 series



*1: This step is required if screen data is saved only in the display unit, not in any other device.

3.2 Preparation

| Requirements for | PC in which the following version of GP-PRO/PB3 for Windows is | | | |
|---------------------------|--|--|--|--|
| receiving screen data | installed *2 | | | |
| from the ST40x series *1 | | | | |
| | S1400, 401, 402 C-Package03 | | | |
| | GP-PRO/PB3 for Windows Ver.7.0 or higher | | | |
| | ST403 C-Package03 | | | |
| | GP-PRO/PB3 for Windows Ver.7.20 or higher | | | |
| | · | | | |
| | | | | |
| | Transfer cable (The following three types of cable are available.) | | | |
| | GPW-CB02 (9-pin D-sub to the PC) | | | |
| | GPW-CB03 (USB to the PC) *2 | | | |
| | GP430-CU02-M or GPW-SET | | | |
| | ST-403 also allows you to transfer screen data via Ethernet. | | | |
| Requirements for | PC in which GP-Pro EX is installed | | | |
| converting screen data of | f Transfer cable (model: CA3-USBCB-01) | | | |
| the ST40x series and | The ST3000/GP3000 series allows you to transfer screen data via a | | | |
| transferring to the | CF card or USB flash drive. (Transfer via Ethernet is available with | | | |
| ST3000/GP3000 series | the GP3000 series.) | | | |

*1: This step is required if screen data is saved only in the display unit, not in any other device.

- *2: The software version must be the same or higher than the version that you used when creating screen data for the ST40x series. We recommend you to upgrade to the latest version (Ver.7.29 as of August 2008.)
- *3: GPW-CB03 is compliant with GP-PRO/PB3 for Windows C-Package02 SP2 Ver. 6.23 or later.

To use it, you may need to install the driver.

Go to our support website Otasuke Pro!

- -> Download
- -> Updates/Drivers
- -> GP-PRO/PB3: USB Data Transfer Cable (GPW-CB03)

3.3 Receive screen data from the ST40x series

This section explains, as an example, how to receive screen data from the GP unit using a transfer cable GPW-CB02 or GPW-CB03. If you have backed up screen data, this step is unnecessary; skip to the next section "3.4 Convert screen data with the Project Converter."

1. Connect a transfer cable to the ST40x series.



2. Start up GP-PRO/PB3 C-Package and click the [Transfer] icon on the Project Manager. (Specify a desired project file.)



3. On the [Transfer] window, select the [Setup] menu and click [Transfer Settings...].



4. In the Communication Port field, select [COM], specify the COM port to which the cable is connected, and click [OK].

| Transfer Settings | |
|--|---|
| -Send Information ↓ Upload Information ↓ GP System Screen ↓ Filing Data(CF card) ↓ Data Trans Func CSV Data(CF card) | Communications Port |
| Transfer Method Send All Screens Automatically Send Changed Screens Send User Selected Screens | C Ethemet IPAddress 0.0.0.0 Pot 8000 C Ethemet Auto Acquistion |
| Transfer Mode | C Menory Loader |
| Setup Use Extended I © | I Program : in creen prot <u>Browse</u> Cancel Help |



5. Select the [Transfer] menu and click [Receive...].



6. Specify the location to save the received screen data in and the project file name and save.

In case there is no Upload Information...

"Upload Information" is the necessary information to receive screen data from the display unit. It needs to be included in screen data when transferring screen data to the display unit beforehand. The Upload Information is sent to the display unit by default, however, you may check off the box of Upload Information to prevent screen reception by a third party.





In this case, a message, which indicates there is no Upload Information," appears and you cannot receive the data.

You can check if the Upload Information has been sent or not in the following way. Enter into the GP's Offline mode. If there are 2 asterisk (*) marks in the Main menu as below, the Upload Information has been sent. If not, there is no Upload Information sent.



3.4 Convert screen data with the Project Converter

Convert a project file (*.prw) for the ST40x series with the GP-Pro EX's Project Converter.

1. Click the [Start] button, select the [All Programs] ([Programs] on Windows® 2000 menu \rightarrow [Pro-face] \rightarrow [GP-Pro EX^{*}.^{**}]. (Where ^{*}.^{**} is the version of the software you use.)

| | 6 | Pro-face | Ģ | 🛅 GP-Pro EX 1.10 🔹 🕨 | | Manual (Help) | |
|----------------|----|----------------------|----|----------------------|-----------------|-------------------|---|
| | ۹ | Internet Explorer | | | 1 ¹⁰ | GP-Pro EX | |
| | M | Microsoft Excel | | | 40 | Project Converter | P |
| | W | Microsoft Word | | | | Readme | |
| | C | Microsoft Outlook | | | ្ឋោ | TransferTool | |
| | C | Microsoft PowerPoint | | | 6 | Uninstall | |
| | 3 | Outlook Express | | | | | |
| | ۵. | Windows Movie Maker | | | | | |
| All Programs 👂 | Å | Adobe Reader 8 | | | | | |
| | | Log Off 💿 Shut Dov | vn | | | | |
| | | | | | | | |

2. The Project Converter starts up and the [Project Converter] dialog box opens. Select [Project File (*.PRW)] in the [Data Type].

| 😂 Project Converter 🛛 🚺 | | | | | | |
|-------------------------|---------------------|--------|--|--|--|--|
| Data Type | Project File(*.PRW) | | | | | |
| Convert-From | | Browse | | | | |
| Convert-To | | Browse | | | | |

 Designate a GP-PRO/PB3 for Windows' project file (*.prw) in [Convert-From]. Click the [Browse...] button and select a project file (e.g.: "Product system A.prw"). Click [Open], and the file will be set in [Convert-From].

| 😵 Project C | onverter | X |
|--------------|---------------------|--------|
| Data Type | Project File(*.PRW) | |
| Convert-From | | Browse |
| Convert-To | | Browse |
| | _ | |

| Open | | ? 🔀 |
|------------------------|--|--------------|
| Look jn: 🔎 | database 💌 🗢 🛍 | - 🎬 🎟 - |
| Product sy | stem A | |
| File <u>n</u> ame: | Product system A | <u>O</u> pen |
| Files of <u>type</u> : | Project Files (*.prw) | Cancel |
| | \checkmark | |
| 😂 Project C | onverter | |
| Data Type | Project File(*.PRW) | |
| Convert-From | C:\Program Files\Pro-face\ProPBWin\datab | Browse |
| Convert-To | | Browse |

4. In [Convert-To], designate a GP-Pro EX's project file (*.prx). Click the [Browse...] button and enter a new [File Name] (e.g.: "Product system A.prx"). Click [Save], and a new project file will be set to [Convert-To].

| 😓 Project Converter 🛛 🔀 | | |
|-------------------------|--|--------|
| Data Type | Project File(*.PRW) | |
| Convert-From | C:\Program Files\Pro-face\ProPBWin\datab | Browse |
| Convert-To | | Browse |
| | \ | |

| Save As | ? 🛛 |
|-----------------------|---|
| Save in: 🗀 | Database 💽 🗢 🗈 📸 📰 🗸 |
| | |
| | |
| | |
| | |
| | |
| File <u>n</u> ame: | Product system A Save |
| Save as <u>t</u> ype: | PRX Files (*.prx) |
| | |
| 🗟 Project C | onverter 🔀 |
| Data Type | Project File(*.PRW) |
| Convert-From | C:\Program Files\Pro-face\ProPBWin\datab Browse |
| Convert-To | C:\Program Files\Pro-face\GP-Pro EX\Datab Browse |
| | |
| • When a | convert-to file exists, the window that confirms whether or not |
| overwrite | the file is displayed |

| When a convert-to file exists, the window that confirms whether or not to overwrite the file is displayed. | | |
|---|--------|--|
| Save A | s 🛛 🔳 | |
| C:\Program Files\Pro-face\GP-Pro EX\Database\Product system A.prx already exists. Do you want to replace it? | | |
| | Yes No | |

5. Click [Convert] and start the conversion.

| Project (| onverter 🛛 🛛 |
|--|--|
| Data Type | Project File(*.PRW) |
| Convert-From | C:\Program Files\Pro-face\ProPBWin\datab Browse |
| Convert-To | C:\Program Files\Pro-face\GP-Pro EX\Datab Browse |
| | Option |
| | |
| | Close Help |
| | |
| 🍓 Project (| onverter 🛛 |
| Vieto Project C Data Type | Project File(*.PRW) |
| Gata Type Convert-From | Project File(*.PRW) C:\Program Files\Pro-face\ProPBWin\datab Browse |
| Convert-To | Project File(*.PRW) C:\Program Files\Pro-face\ProPBWin\datab Browse C:\Program Files\Pro-face\GP-Pro EX\Datab Browse |
| Convert-To | Project File(*.PRW) C:\Program Files\Pro-face\ProPBWin\datab Browse C:\Program Files\Pro-face\GP-Pro EX\Datab Browse Option |
| Converted Po Converted Po | Project File(*.PRW) C:\Program Files\Pro-face\ProPBWin\datab Browse C:\Program Files\Pro-face\GP-Pro EX\D atab Browse Option p Keypad(Hex Landscape) p Keypad(Text Landscape) p Keypad(Text Portrait) p Keypad Edit(Dec Landscape) p Keypad Edit(Dec Landscape) p Keypad Edit(Dec Portrait) p Keypad Edit(Dec Portrait) p Keypad Edit(Text Landscape) p Keypad Edit(Text Portrait) p |

| NC | DTE | | |
|----|--|--|--|
| • | Depending on the model you are converting from, the [Convert Destination] dialog | | |
| | box may appear and you can select the type and the model. | | |
| • | If the following dialog box appears, set a CF card output folder. | | |
| | \rightarrow See the next page | | |
| | Convert GP-PRO/PB3 for Windows' "Destination CF Card Folder" | | |
| | Question | | |
| | A CF card output folder is set in the project. Do you want to convert the CF card data In the data in CF card folder, when not performing conversion, the library call of an image screen(CF) is not generated correctly. Yes No Cancel | | |
| | | | |

6. After conversion, the [Save convert information] dialog box appears. If you click [Save], you can save the conversion information in a text file.

| Save convert information. | | ? 🗙 |
|---|--------------|-----|
| Save jn: 🗁 Database 💌 | - 🗈 💣 🎟 | |
| ata | | |
| | | |
| | | |
| | | |
| | | |
| File <u>n</u> ame: | <u>S</u> ave | • |
| Save as <u>type:</u> Text Files (*.txt) | ▼ Canc | el |

7. Click [Close] to close the [Project Converter] dialog box.

• Convert GP-PRO/PB3 for Windows' "Destination CF Card Folder"

If you convert a project file (*.prw) with a destination CF card folder designated in the step 5, the Question dialog box asking whether or not to designate the destination CF card folder for the convert destination appears again.

| Questio | n 🔀 |
|---------|---|
| ? | A CF card output folder is set in the project. Do you want to convert the CF card data In the data in CF card folder, when not performing conversion, the library call of an image screen(CF) is not generated correctly. |
| | Yes No Cancel |

Select a folder (e.g.: "Database") and click [OK].

If you click the [Make New Folder] button, you can create a new folder at any location.

| Browse For Folder | ? 🗙 |
|---|---------|
| Select a destination CF card folder. | |
| Pro-face For EX 1.10 Database Fonts Fonts Keymap Fonts Fonts Fonts Fonts Fonts Fonts F | |
| Make New Folder | Iancel: |

IMPORTANT

In the [Question] dialog box, be sure to select [Yes] and specify the destination folder. If you select [No], images will not be called correctly.

3.5 Differences of software after conversion

Check the differences of screen data after conversion.

For the details of each item, refer to the booklet "Compatibility of Software" or visit out website. <u>http://www.pro-face.com/otasuke/qa/gp3000/replace/soft.htm</u>

| 1 | Touch Panel Type |
|----|---|
| 2 | Compatibility of Bit Switch |
| 3 | Compatibility of Trend Graph |
| 4 | Compatibility of K Tag (Input Order) |
| 5 | Compatibility of K Tag (Difference of Writing) |
| 6 | Compatibility of K Tag (Indirect Setting) |
| 7 | Compatibility of N Tag |
| 8 | About the performance when a window is overlapping on a momentary switch |
| 9 | About the performance when display area of the system window is overlapping |
| 10 | Change of Tag Process |
| 11 | Compatibility of Text |
| 12 | Compatibility of Fill |
| 13 | Compatibility of CF Card Data |
| 14 | Precautions for conversion when filing data is saved in a CF card |
| 15 | Precautions for setting "Color Settings" to [256 Colors without blinking] |
| 16 | Precautions for loading a part with "L Tag (Library Display)" |
| 17 | Compatibility of MRK files and CPW files |
| 18 | Compatibility of VM Unit Settings |
| 19 | Compatibility of Extended SIO Script |
| 20 | Compatibility of Sound Data |
| 21 | Compatibility of Device Monitor |
| 22 | Compatibility of J Tag and R Tag |
| 23 | DOS Screen Data Conversion |
| 24 | Compatibility of Standard Fonts |
| 25 | Compatibility of D-Script Trigger Conditions (D-Script runs immediately after the |
| | screen is changed or the power is turned on) |
| 26 | Compatibility of U Tag (Window Screen is positioned in an unexpected area when |
| | called) |
| 27 | Precausion for Conversion when Screen Level Change is configured |
| 28 | Precausion for Use of Project Converter |
| 29 | Compatibility of LS Area |
| 30 | Compatibility of L Tag |

3.6 Transfer screen data to the ST3000/GP3000

Transfer the converted project file to the ST3000/GP3000 series via USB transfer cable, CF card or USB flash drive. Here, this section explains, as an example, how to transfer screen data by USB transfer cable (model: CA3-USBCB-01).



1. Connect your PC and the ST3000 series with a USB transfer cable. If the driver of the cable has not been installed on your PC, a dialog box will appear. Please follow the instructions.



2. Turn on the display unit's power. The "Initial Start Mode" screen will appear on the display unit.

This screen will appear when you first connect the display unit's power code. After transferring a project file once, this screen will not appear again.

3. On the GP-Pro EX's State Toolbar, click the [Transfer Project] icon to open the Transfer Tool.

| 🔊 Transfer Tool | |
|--|---|
| <u>Fi</u> le <u>I</u> ransfer <u>S</u> etting <u>H</u> elp | |
| Send Project | Project Information Contract Select Project |
| Receive Project | Project File Name [sample.px] [Main Unit Model : AST-****] |
| Compare Project | Comment [] Date [9/24/2008 4:41 PM] |
| Main Unit Information | Creator [GP_User] |
| CF-Card Connection | Send/Receive password |
| Hemory Loader | Transfer Settings Info. |
| | Device [USB] |
| | Transfer Phoject [Auto] |
| | Transfer system [Auto] |
| Build Ver : 1006.0630.0816 | |
| | Close |

4. Check the project file name and other data to be transferred in the Project Information. To transfer a different project file, click the [Select Project] button and select a project file.

5. Make sure that the [Device] is set to [USB] in the "Transfer Settings Info." If not, click the [Transfer Setting] button to open the "Transfer Settings" dialog box. Select [USB] in the Communication Port Settings field and click [OK].

| 🗊 Transfer Settings | |
|--|---|
| Communication Port Settings USB LAN Modem | Transfer Project • Auto All Transfer System Auto Forced |

6. Click [Send Project] to start transfer. When the following dialog box appears, click [Yes]. This dialog box doesn't appear when the same project file is sent again.



7. The following dialog box appears during transfer and you can check the communication status. (The display unit enters the Transferring mode and communication with the device such as a PLC is terminated.)

| eT Send Project | | | |
|--------------------------------------|--|------|--|
| Main Unit Status USB Transferring | USB Connecting Main Unit Personal Thank stated Personal not set. Personal Direck completed | | |
| | | | Display Screen |
| | | | Data Transfer Data transfer is in progress. Please do NOT turn off the machine until complete. |
| | | | |
| | L | Abot | |

8. When transfer is completed, the status displayed in the dialog box will change from [Transferring] to [Complete Transfer]. Click [Close] to close the dialog box. (The display unit will be reset and a screen of the transferred project file will be displayed.)

| 🕸 Send Project | |
|---|--|
| Main Unit Status USB Complete Tran. | USB Connecting Main Unit Password Check started. Password Check completed. Runtime-Version Check started. Runtime-Version Check started. Runtime Transfer started. Firmware Transfer started. Firmware Transfer started. Did not send the Runtime. Runtime transfer completed. I/O Driver transfer started. Did not send the I/O Driver. I/O Driver transfer completed. Driver transfer completed. Did not send the I/O Driver. I/O Driver transfer completed. Driver transfer completed. Driver transfer completed. Driver transfer completed. Driver transfer completed. Driver transfer completed. Front transfer completed. Front transfer started. Did not send the font. Front transfer started. Disconnecting Main Unit Disconnected Main Unit Disconnected Main Unit Complete Transfer |

9. Close the Transfer Tool.

Chapter 4. Communication between ST3000/GP3000 and Device/PLC

| | ST40x Series | ST3000/GP3000 Series |
|------|---|--|
| COM1 | 9-pin D-Sub | 9-pin D-Sub |
| | 5 1 (male) 5 5 5 5 5 5 6 5 5 6 5 6 9 (female) | 5 1 (male) |
| | ST-400 RS-422 Male | ST-3201A RS-232C Male |
| | ST-401 RS-232C Male | ST-3211A RS-232C Male |
| | ST-402 RS-485 (MPI) Fema | ale GP-3200A RS-232C/485 Male |
| | ST-403 RS-232C/422 Male | (422) |
| COM2 | 9-pin D-Sub RS-422 | 9-pin D-Sub |
| | 5 1 (male) ST402 only | 591061065006500(male)(female)ST-3201ARS-485 (422)MaleST-3211ARS-485 (MPI)FemaleGP-3200AN/AMale |

4.1 Shapes of COM ports

4.2.1 Signals on COM1

► ST40x Series

ST-400: RS-422 interface (male)

| Pin Connection | Pin No. | Signal | Signal Name | Direction |
|----------------|---------|--------|------------------|-----------|
| | 1 | RDA | Receive data A | Input |
| | 2 | RDB | Receive data B | Input |
| 5 | 3 | SDA | Send data A | Output |
| | 4 | ERA | Enable receive A | Output |
| | 5 | SG | Ground | - |
| | 6 | CSB | Clear send B | Input |
| | 7 | SDB | Send data B | Output |
| (male) | 8 | CSA | Clear send A | Input |
| | 9 | ERB | Enable receive B | Output |

ST-401: RS-232C interface (male)

| Pin Connection | Pin No. | Signal | Signal Name | Direction |
|----------------|---------|--------|----------------|-----------|
| | 1 | CD | Carrier detect | Input |
| | 2 | RD | Receive data | Input |
| 5 | 3 | SD | Send data | Output |
| 1 (male) | 4 | ER | Enable receive | Output |
| | 5 | SG | Ground | - |
| | 6 | DR | Data set ready | Input |
| | 7 | RS | Request send | Output |
| | 8 | CS | Clear send | Input |
| | 9 | RI | Ring indicate | Input |

ST-402: RS-485 (MPI) interface (female)

| Pin Connection | Pin No. | Signal | Signal Name | Direction |
|----------------|-------------------------|---------|----------------------|------------------------------|
| | anto l anto | NC | No connection | anta T anta a |
| ര | 2 | NC | No connection | 1999-1 <mark>7</mark> -11-14 |
| 1 6 | 3 | LINE(+) | Line (+) | In/Output |
| | | RTS | Request Send | Output |
| _ 0°0 g | | SG | Ground | ana Tana |
| | 6 | 5V | 5V External Output * | Output |
| | · · · · · 7 · · · · · · | NC . | No connection | |
| (female) | | LINE(-) | Line (-) | In/Output |
| | 9 | NC | No connection | 1000 |

* When providing power via the Siemens AG PROFIBUS connector, power cannot be connected to the device/PLC.

| Pin Connection | Pin No. | Signal | Signal Name | Direction |
|----------------|---------|--------|-------------------------------------|-------------------|
| | 1 | CD/RDA | Carrier detect /Receive data A | Input /Input |
| | 2 | RD/RDB | Receive data /Receive data B | Input /Input |
| <u>ه</u>]. | 3 | SD/SDA | Send data/Send data A | Output /Output |
| | 4 | ER/ERA | Enable receive /Enable receive A | Output /Output |
| | 5 | SG/SG | Ground/Ground | - |
| (male) | 6 | DR/CSB | Data set ready/Clear send B | Input /Input |
| | 7 | RS/SDB | Request send /Send data B | Output /Output |
| | 8 | CS/CSA | Clear send/Clear send A | Input /Input |
| | 9 | RI/ERB | Ring indicate /Enable receive B | Input /Output |

ST-403: RS-232C/ RS-422 interface (male)

► ST3000/GP3000 Series

RS232C

| entere Pinetere et | Pin No | | RS232C | | | |
|--------------------|------------------------------|-------------|-----------|--|--|--|
| Arrangement | FIITING. | Signal Name | Direction | Meaning | | |
| | and <mark>1</mark> ana | | Input | Carrier Detect | | |
| | 1111 2 1111 | RD(RXD) | Input | Receive Data | | |
| | 3 | SD(TXD) | Output | Send Data | | |
| | | ER(DTR) | Output | Data Terminal Ready | | |
| 5 0 9 | 5 | SG | an menana | Signal Ground | | |
| 000 | | DR(DSR) | Input | Data Set Ready | | |
| 1 0 0 | · · · · 7 · · · · · · | RS(RTS) | Output | Request to Send | | |
| \odot | | CS(CTS) | Input | Send Possible | | |
| (male) | 9 | CI(RI)/VCC | Input/- | Called status display +5V±5% Output 0.25A * | | |
| | Shell | FG | | Frame Ground (Common with SG) | | |

* The RI/VCC selection for the Pin #9 is switched via software. The VCC output is not protected against overcurrent. To prevent damage or a unit malfunction, use only the rated current.

RS485 (422) * GP-3200A only

| Pin | Din No. | | RS422/RS485 | | | |
|-------------|--------------|--------------------------|-------------|----------------------------------|--|--|
| Arrangement | FIITINO. | Signal Name | Direction | Meaning | | |
| | net 1 oper | RDA | Input | Receive Data A(+) | | |
| | 2 | RDB | Input | Receive Data B(-) | | |
| ര | | SDA | Output | Send Data A(+) | | |
| 5 8 9 | ····· 4 ···· | entre ERA entre e | Output | Data Terminal Ready A(+) | | |
| | 5 | SG | | Signal Ground | | |
| 1 000 6 | | CSB | Input | Send Possible B(-) | | |
| | | SDB | Output | Send Data B(-) | | |
| | | CSA | Input | Send Possible A(+) | | |
| (male) | 9 | ERB Contractor | Output | Data Terminal Ready B(-) | | |
| | Shell | FG | | Frame Ground (Common with SG) | | |

4.2.2 Signals on COM2

► ST40x Series (RS422) * ST-402 only

ST-402: RS-422 interface (male)

| Pin Connection | Pin No. | Signal | Signal Name | Direction |
|----------------|---------|--------|------------------|-----------|
| | 1 | RDA | Receive data A | Input |
| () | 2 | RDB | Receive data B | Input |
| 5 | 3 | SDA | Send data A | Output |
| | 4 | ERA | Enable receive A | Output |
| | 5 | SG | Ground | - |
| | 6 | CSB | Clear send B | Input |
| | 7 | SDB | Send data B | Output |
| (male) | 8 | CSA | Clear send A | Input |
| | 9 | ERB | Enable receive B | Output |

► ST3000/GP3000 Series

ST-3201A: RS485 (422) interface (male)

| Pin Pin | Din No. | | RS422/RS485 * | | | |
|-------------|------------|-------------|---------------|----------------------------------|--|--|
| Arrangement | FILLING. | Signal Name | Direction | Meaning | | |
| | grand ager | RDA | Input | Receive Data A(+) | | |
| | 2 | RDB | Input | Receive Data B(-) | | |
| () | | SDA | Output | Send Data A(+) | | |
| 5 9 | | ERA | Output | Data Terminal Ready A(+) | | |
| | | SG | | Signal Ground | | |
| | | CSB | Input | Send Possible B(-) | | |
| | | SDB | Output | Send Data B(-) | | |
| | | CSA | Input | Send Possible A(+) | | |
| (male) | 9 | ERB | Output | Data Terminal Ready B(-) | | |
| | Shell | FG | | Frame Ground (Common with SG) | | |

* ST-3201A units with revision code "C" or later are compliant with RS485.

ST-3211A: RS485 (MPI) interface (female)

| Pin Arrangement | Pin No. | RS485 (MPI only) | | |
|-------------------------|---------|------------------|------------------|--|
| | | Signal Name | Direction | Meaning |
| 1 5 6 (female) | 1 | NC | - | - |
| | 2 | NC | - | - |
| | 3 | LINE(+) | Input/ Output | LINE(+) |
| | 4 | RS(RTS) | Output | Request to Send |
| | 5 | SG | - | Signal Ground ^{*1} |
| | 6 | 5V | - | 5V external output ^{2*3} |
| | 7 | NC | - | - |
| | 8 | LINE(-) | Input/ Output | LINE(-) |
| | 9 | NC | - | - |
| | Shell | FG | - | Frame Ground ^{*1} (Common with SG) |

- *1 The SG and FG terminals are isolated.
- *2 The 5V output for the Pin #6 is not protected against overcurrent. To prevent damage or unit malfunctions, use only the rated current.
- *3 When providing power via the Siemens AG PROFIBUS connector, power cannot be connected to the device/PLC.

NOTE

The GP-3200A unit is not equipped with the COM2 port.

4.2 Multilink Connection

There are some communication drivers that do not support multi-link connection (n:1) with RS-422 in GP3000/ST3000 Series.

When converting the project file with the communication driver that multi-link connection (n:1) with RS-422 is not supported,

it will be automatically converted to (1:1) connection.

[<u>Which drivers support serial multilink communication?</u>] (<u>http://www.pro-face.com/otasuke/files/manual/gpproex/new/device/com_mlnk.htm</u>)