

# 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.

# Omron Corporation

## 1 System Structure

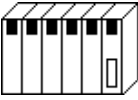



The following describes the system structure for connecting the GP to Omron PLCs.

**Reference** The Cable Diagrams mentioned in the following tables are listed in the section titled "2.2.2 Cable Diagrams".



**If the SYSMAC C/CV/α series PLC is used in RUN mode, "PLC COM. ERROR (02: 01)" may briefly display. The GP subsequently forces the PLC to enter the MONITOR mode (data can be written to the PLC, while it is in RUN mode); data communication will not be affected.**

### ■ SYSMAC C Series (using Link I/F)

| CPU   | Link I/F   | Cable Diagram  | Cables                                | Target Machine  |
|---|--|--|---------------------------------------|---|
|  | Host link unit  |  |                                       |  |
| C200H   | C200H-LK201 <sup>*1</sup>  | RS-232C  | GP410-IS00-O(5m)                      | GP/GLC Series   |
|   | C120-LK201-V1 <sup>*2</sup>  | <Cable Diagram 1>  | CA3-CBL232/5M-01(5m)                  | ST401/ST403   |
|   | C200H-LK202 <sup>*1</sup>  | RS-422   | —————                                 | GP/GLC Series   |
|   | C120-LK202-V1 <sup>*2</sup>  | <Cable Diagram 2>  | —————                                 | ST400/ST403   |
| C200HS  | C200H-LK201 <sup>*1</sup>  | RS-232C  | GP410-IS00-O(5m)                      | GP/GLC Series   |
|   | C120-LK201-V1 <sup>*2</sup>  | <Cable Diagram 1>  | CA3-CBL232/5M-01(5m)                  | ST401/ST403   |
|   | C200H-LK202 <sup>*1</sup>  | RS-422   | —————                                 | GP/GLC Series   |
|   | Link I/F on CPU <sup>*3</sup>  | RS-232C  | GP000-IS03-MS(3m) <sup>*4</sup>       | GP/GLC Series   |
|   |  | <Cable Diagram 3>  | GP2000-CBLSYS/5M-01(5m) <sup>*5</sup> | ST401/ST403   |
|   |  |  | CA3-CBLSYS-01(5m) <sup>*6</sup>       |   |
| C500, C500F,<br>C1000H, C2000,<br>C2000H  | C120-LK201-V1 <sup>*2</sup>  | RS-232C  | GP410-IS00-O(5m)                      | GP/GLC Series   |
|   |  | <Cable Diagram 1>  | CA3-CBL232/5M-01(5m)                  | ST401/ST403   |
|   | C120-LK202-V1 <sup>*2</sup>  | RS-422   | —————                                 | GP/GLC Series   |
|   |  | <Cable Diagram 2>  | —————                                 | ST400/ST403   |
|   | C500-LK201-V1 <sup>*1</sup>  | RS-232C  | GP410-IS00-O(5m)                      | GP/GLC Series   |
|   |  | <Cable Diagram 1>  | CA3-CBL232/5M-01(5m)                  | ST401/ST403   |
|   |  | RS-422   | —————                                 | GP/GLC Series   |
|   |  | <Cable Diagram 2>  | —————                                 | ST400/ST403   |
| C500-LK203 <sup>*1</sup>  | RS-232C  | GP410-IS00-O(5m)   | GP/GLC Series                         |   |
|   | <Cable Diagram 1>  | CA3-CBL232/5M-01(5m)   | ST401/ST403                           |   |
|   | RS-422   | —————  | GP/GLC Series                         |   |
|   | <Cable Diagram 4>  | —————  | ST400/ST403                           |   |

\* 1 Base installation type.

\* 2 CPU installation type.

\* 3 Connect to the RS-232C port.

\* 4 Requires a commercial type 9 <-> 25 pin conversion adaptor for ST unit.

\* 5 Can be used for GP2000 Series and GLC2000 Series only.

\* 6 Can be used for ST Series only.

| CPU                 | Link I/F                       | Cable Diagram                | Cables   | Target Machine                   |
|---------------------|--------------------------------|------------------------------|--|----------------------------------|
| C1000HF             | C500-LK203 <sup>*1</sup>       | RS-232C<br><Cable Diagram 1> | GP410-IS00-O(5m)   | GP/GLC Series                    |
|                     |                                |                              | CA3-CBL232/5M-01(5m)   | ST401/ST403                      |
|                     |                                | RS-422<br><Cable Diagram 4>  | —————  | GP/GLC Series                    |
|                     |                                |                              | —————  | ST400/ST403                      |
| C20H, C28H, C40H    | Link Unit on CPU <sup>*3</sup> | RS-232C<br><Cable Diagram 5> | —————  | GP/GLC Series                    |
|                     |                                |                              | —————  | ST401/ST403                      |
| C120,C120F          | C120-LK201-V1 <sup>*2</sup>    | RS-232C<br><Cable Diagram 1> | GP410-IS00-O(5m)   | GP/GLC Series                    |
|                     |                                |                              | CA3-CBL232/5M-01(5m)   | ST401/ST403                      |
|                     | C120-LK202-V1 <sup>*3</sup>    | RS-422<br><Cable Diagram 2>  | —————  | GP/GLC Series                    |
|                     |                                |                              | —————  | ST400/ST403                      |
| CQM1-CPU42          | RS-232C port on CPU            | RS-232C<br><Cable Diagram 3> | GP000-IS03-MS(3m) <sup>*4</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*5</sup><br>CA3-CBLSYS-01(5m) <sup>*6</sup><br>Omron RS-232C Cable<br>XW2Z-200S(2m) <sup>*4</sup> ,<br>XW2Z-500S(5m) <sup>*4</sup> | GP/GLC Series<br><br>ST401/ST403 |
|                     |                                |                              | SRM1-C02<br>CPM2A  | CPM1-CIF01                       |
| RS-232C port on CPU | GP/GLC Series<br>ST401/ST403   |                              |  |                                  |
| CPM1-CIF11          | RS-422<br><Cable Diagram 9>    | —————                        |  | GP/GLC Series                    |
|                     |                                | —————                        |  | ST400/ST403                      |
| CPM1-20CDR-A        | CPM1-CIF01                     | RS-232C<br><Cable Diagram 3> | GP000-IS03-MS(3m) <sup>*4</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*5</sup><br>CA3-CBLSYS-01(5m) <sup>*6</sup><br>Omron RS-232C Cable<br>XW2Z-200S(2m) <sup>*4</sup> ,<br>XW2Z-500S(5m) <sup>*4</sup> | GP/GLC Series<br><br>ST401/ST403 |
|                     |                                |                              | CPM1-CIF11   | RS-422<br><Cable Diagram 9>      |
|                     | —————                          | ST400/ST403                  |  |                                  |

- \* 1 Base installation type.
- \* 2 CPU installation type.
- \* 3 Connect to the RS-232C port.
- \* 4 Requires a commercial type 9 <-> 25 pin conversion adaptor for ST unit.
- \* 5 Can be used for GP2000 Series and GLC2000 Series only.
- \* 6 Can be used for ST Series only.

| CPU                                       | Link I/F                       | Cable Diagram   | Cables   | Target Machine               |
|---|--------------------------------|---|--|------------------------------|
| COM1H-CPU21<br>COM1H-CPU51<br>COM1H-CPU61 | RS-232C port on CPU            | RS-232C<br><Cable Diagram 3>                                    | GP000-IS03-MS(3m) <sup>*5</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*6</sup><br>CA3-CBLSYS-01(5m) <sup>*7</sup><br>Omron RS-232C Cable<br>XW2Z-200S(2m) <sup>*5</sup> ,<br>XW2Z-500S(5m) <sup>*5</sup> | GP/GLC Series                |
|   |                                |   |  | ST401/ST403                  |
| CPM2C                                     | Peripheral port on CPM2C-CIF01 | RS-232C<br><Cable Diagram 3>                                    | GP000-IS03-MS(3m) <sup>*5</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*6</sup><br>CA3-CBLSYS-01(5m) <sup>*7</sup><br>Omron RS-232C Cable<br>XW2Z-200S(2m) <sup>*5</sup> ,<br>XW2Z-500S(5m) <sup>*5</sup> | GP/GLC Series                |
|   | RS-232C port on CPM2C-CIF01    |   |  | ST401/ST403                  |
| COM1H-CPU51<br>COM1H-CPU61                | COM1H-SCB41 <sup>*2</sup>      | RS-422<br>(1:1 Communication)<br>(Cable Diagram >               |  |                              |
|   |                                | RS-422<br>(1:n Communication) <sup>*1</sup><br>(Cable Diagram > | Omron Co. Link Adaptor<br>B500-AL001 <sup>*3</sup>   | GP <sup>*4</sup> /GLC Series |
|   |                                | RS-422<br>(1:n Communication) <sup>*1</sup><br>(Cable Diagram > | _____  | ST400/ST403                  |
|   |                                | RS-422<br>(1:n Communication) <sup>*1</sup><br>(Cable Diagram > | _____  | GP <sup>*4</sup> /GLC Series |
|   |                                |   |  | ST400/ST403                  |

\*1 When "n" COM1H-CPU51/CCM1H-CPU61 units are connected to one GP unit for communication, the maximum for "n" is 8.

\*2 Use the RS-422A/485 port, which is port 2 of the COM1H-SCB41 series communication board.

\*3 The RS-422 communication port on the PLC is a D-sub. For 1:n connections, use OMRON's link adaptor or terminal block.

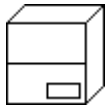


\*4 Within the GP70 series units, this applies only to the GP377 series.

\*5 Requires a commercial type 9 <-> 25 pin conversion adaptor for ST unit.

\*6 Can be used for GP2000 Series and GLC2000 Series only.

\*7 Can be used for ST Series only.

■ SYSMAC C Series (CPU Direct Connection)

| CPU <sup>*1</sup>  | Cable Diagram  | Cables   | Target Machine  |
|--|--|--|---|
|   |  |  |  |
| C200HS, SRM1-C02,<br>CQM1-CPU11,<br>CQM1-CPU42,<br>CPM1-20CDR-A,<br>CQM1H-CPU21 <sup>*2</sup><br>CQM1H-CPU51 <sup>*2</sup><br>CQM1H-CPU61 <sup>*2</sup><br>CPM2C <sup>*2</sup> |  | Omron Co. Isolation Cable<br>CQM1-CIF01 <sup>*3</sup>  | GP/GLC Series<br>ST401/ST403  |
| CQM1H-CPU21<br>CQM1H-CPU51<br>CQM1H-CPU61<br>CPM2C   | RS-232C<br><Cable Diagram 15>  | Omron Co. <sup>*4</sup><br>CS1W-CN225 (2m),<br>CS1W-CN625 (6m)<br>Omron Co. <sup>*5</sup><br>CS1W-CN226 (2m),<br>CS1W-CN626 (6m) | GP/GLC Series<br>ST401/ST403  |

\*1 Connect to a peripheral port.

\*2 An Omron Co. cable (CSIW-CN114) is required.



The CQM1-CPU11 has only one peripheral port, so a programming console cannot be used at the same time with the GP.



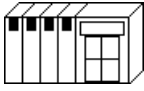


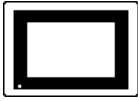
If power to CQM1 is turned OFF while it is connected to the GP, "RUN" (operation) will stop. To change CQM1 to RUN mode when the power is turned back ON, change the CQM1's [Power ON Operation Mode Setting] to [RUN].

\*3 Requires a commercial type 9 <-> 25 pin conversion adaptor for ST unit.

\*4 Connect the cable shown in Cable Diagram 15 between the GP/GLC and the CSIW-CN\*25 cable.

\*5 Connect the cable shown in Cable Diagram 15 between the ST and the CSIW-CN\*26 cable.

■ **SYSMAC-α Series** (using Link I/F)

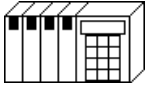



| CPU  | Link I/F   | Cable Diagram  | Cables   | Target Unit  |                              |
|--|--|--|--|--|------------------------------|
|               | Communication Board<br> |  |  |   |                              |
| C200HX-CPU85-Z<br>C200HX-CPU64<br>C200HX-CPU44<br>C200HE-CPU42<br>C200HG-CPU63<br>C200HG-CPU43 | C200HW-COM06   | RS-232C<br><Cable Diagram 3>   | GP000-IS03-MS(3m) <sup>*1</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*2</sup><br>CA3-CBLSYS-01(5m) <sup>*3</sup><br>Omron co. RS-232C Cable<br>XW2Z-200S(2m), <sup>*1</sup><br>XW2Z-500S(5m), <sup>*1</sup> | GP/GLC Series<br>ST401/ST403   |                              |
|  |  | RS-422<br><Cable Diagram 6>  | —————  | GP/GLC Series<br>ST400/ST403   |                              |
|  |  | RS-232C Port on CPU  | RS-232C<br><Cable Diagram 3>   | GP000-IS03-MS(3m) <sup>*1</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*2</sup><br>CA3-CBLSYS-01(5m) <sup>*3</sup><br>Omron co. RS-232C Cable<br>XW2Z-200S(2m), <sup>*1</sup><br>XW2Z-500S(5m), <sup>*1</sup> | GP/GLC Series<br>ST401/ST403 |
|  | C200HE-CPU42-Z   | RS-232C Port on CPU  | RS-232C<br><Cable Diagram 3>   | GP000-IS03-MS(3m) <sup>*1</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*2</sup><br>CA3-CBLSYS-01(5m) <sup>*3</sup><br>Omron co. RS-232C Cable<br>XW2Z-200S(2m), <sup>*1</sup><br>XW2Z-500S(5m), <sup>*1</sup> | GP/GLC Series<br>ST401/ST403 |
|  |  | C200H-LK202-V1   | RS-422<br><Cable Diagram 2>  | —————  | GP/GLC Series<br>ST400/ST403 |
|  | C200HX-CPU64-Z   | C200H-LK202-V1   | RS-422<br><Cable Diagram 2>  | —————  | GP/GLC Series<br>ST400/ST403 |
| C200H-LK201-V1   |  | RS-232C<br><Cable Diagram 1>   | GP410-IS00-0(5m)   | GP/GLC Series  |                              |
|  |  |  | CA3-CBL232/5M-01(5m)   | ST401/ST403  |                              |

\*1 Requires a commercial type 9 <-> 25 pin conversion adaptor for ST unit.

\*2 Can be used for GP2000 Series and GLC2000 Series only.

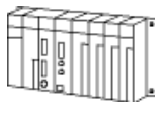


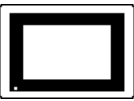
\*3 Can be used for ST Series only.

■ SYSMAC CV Series (using Link I/F)

| CPU   | Link I/F  | Cable Diagram  | Cables               | Target Machine  |
|---|---|--|----------------------|---|
|  | Host Link Unit<br> |  |                      |  |
| CV500, CV1000, CVM1   | CV500-LK201   | RS-232C<br><SIO port 1 connection><br><Cable Diagram 1>                            | GP410-IS00-O(5m)     | GP/GLC Series   |
|   |   |  | CA3-CBL232/5M-01(5m) | ST401/ST403   |
|   |   | RS-232C<br><SIO port 2 connection><br><Cable Diagram 7>                            | —————                | GP/GLC Series   |
|   |   |  | —————                | ST401/ST403   |
|   |   | RS422<br><SIO port 2 connection><br><Cable Diagram 8>                              | —————                | GP/GLC Series   |
|   |   |  | —————                | ST400/ST403   |
|   | Link I/F on CPU <sup>*1</sup>   | RS-232C<br><Cable Diagram 7>   | —————                | GP/GLC Series   |
|   |   |  | —————                | ST401/ST403   |
|   | RS422<br><Cable Diagram 8>  | —————  | GP/GLC Series        |   |
|   |   | —————  | ST400/ST403          |   |

*\*1 Connect to the Host Link Port*

■ SYSMAC CS1 Series (1:1)

| CPU   | Link I/F  | Cable Diagram  | Cables   | Target Machine  |
|---|---|--|--|---|
|                    |  |  |  |  |
| CS1H-CPU67<br>CS1H-CPU66<br>CS1H-CPU65<br>CS1H-CPU64<br>CS1H-CPU63<br>CS1G-CPU45<br>CS1G-CPU44      | RS-232C port for CPU unit   | RS-232C<br><Cable Diagram 3>   | GP000-IS03-MS(3m) <sup>*2</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*3</sup><br>CA3-CBLSYS-01(5m) <sup>*4</sup><br>Omron Co.<br>XW2Z-200S(2m) <sup>*2</sup><br>XW2Z-500S(5m) <sup>*2</sup> | GP/GLC Series<br>ST401/ST403  |
| CS1G-CPU43<br>CS1G-CPU42<br>CS1H-CPU67H<br>CS1H-CPU66H<br>CS1H-CPU65H<br>CS1H-CPU64H<br>CS1H-CPU63H | Peripheral port for CPU unit  | RS-232C <sup>*1</sup><br><Cable Diagram 11>  | Omron Co.<br>CS1W-CN225(2m) <sup>*1</sup><br>CS1W-CN625(6m) <sup>*1</sup><br>Omron Co.<br>CS1W-CN226(2m) <sup>*1</sup><br>CS1W-CN626(6m) <sup>*1</sup>                                 | GP/GLC Series<br>ST401/ST403  |
| CS1W-SCU21<br>CS1G-CPU44H<br>CS1G-CPU43H<br>CS1G-CPU42H   | CS1W-SCU21  | RS-232C<br>(Ports 1,2)<br><Cable Diagram 3>  | GP000-IS03-MS(3m) <sup>*2</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*3</sup><br>CA3-CBLSYS-01(5m) <sup>*4</sup><br>Omron Co.<br>XW2Z-200S(2m) <sup>*2</sup><br>XW2Z-500S(5m) <sup>*2</sup> | GP/GLC Series<br>ST401/ST403  |
|   | CS1W-SCB21  | RS-232C<br>(Ports 1,2)<br><Cable Diagram 3>  | GP000-IS03-MS(3m) <sup>*2</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*3</sup><br>CA3-CBLSYS-01(5m) <sup>*4</sup><br>Omron Co.<br>XW2Z-200S(2m) <sup>*2</sup><br>XW2Z-500S(5m) <sup>*2</sup> | GP/GLC Series<br>ST401/ST403  |
|   | CS1W-SCB41  | RS-232C<br>(Port 1)<br><Cable Diagram 3>   | GP000-IS03-MS(3m) <sup>*2</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*3</sup><br>CA3-CBLSYS-01(5m) <sup>*4</sup><br>Omron Co.<br>XW2Z-200S(2m) <sup>*2</sup><br>XW2Z-500S(5m) <sup>*2</sup> | GP/GLC Series<br>ST401/ST403  |
|   |   | RS-422<br>(Port 2)<br><Cable Diagram 10>   | —————<br>—————   | GP/GLC Series<br>ST400/ST403  |

\*1 When connecting to the peripheral port, a particular cable is needed between GP and the CS1W-CN\*25 cable /CS1W-CN\*26 cable, refer to this section's Cable Diagram 11 for the required cable.

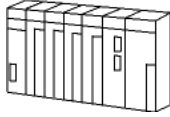



\*2 Requires a commercial type 9 <-> 25 pin conversion adaptor for ST unit.

\*3 Can be used for GP2000 Series and GLC2000 Series only.

\*4 Can be used for ST Series only.



■ SYSMAC CJ Series

| CPU  | Link I/F  | Cable Diagram  | Cables  | Target Machine  |
|--|---|--|---|---|
|     |  |  |   |  |
| CJ1G-CPU44<br>CJ1G-CPU45<br>CJ1G-CPU42H<br>CJ1G-CPU43H<br>CJ1G-CPU44H<br>CJ1G-CPU45H | Peripheral port on CPU unit   | RS-232C<br><Cable Diagram 11>  | Omron Co.<br>CS1W-CN225(2m) <sup>*1</sup><br>CS1W-CN625(6m) <sup>*1</sup>                                   | GP/GLC Series   |
|  |   |  | Omron Co.<br>CS1W-CN226(2m) <sup>*1</sup><br>CS1W-CN626(6m) <sup>*1</sup>                                   | ST401/ST403   |
|  | RS232C port on CPU unit   | RS-232C<br><Cable Diagram 3>   | GP000-IS03-MS(3m) <sup>*2</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*3</sup><br>CA3-CBLSYS-01(5m) <sup>*4</sup> | GP/GLC Series   |
|  |   |  | Omron Co.<br>XW2Z-200S(2m) <sup>*2</sup><br>XW2Z-500S(5m) <sup>*2</sup>                                     | ST401/ST403   |
|  | CJ1W-SCU41  | RS-232C<br>(Port 2)<br><Cable Diagram 3>   | GP000-IS03-MS(3m) <sup>*2</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*3</sup><br>CA3-CBLSYS-01(5m) <sup>*4</sup> | GP/GLC Series   |
|  |   |  | Omron Co.<br>XW2Z-200S(2m) <sup>*2</sup><br>XW2Z-500S(5m) <sup>*2</sup>                                     | ST401/ST403   |
|  | RS-422<br>(Port 1)<br><Cable Diagram 10>  | _____  | GP/GLC Series   |   |
|  |   | _____  | ST400/ST403   |   |

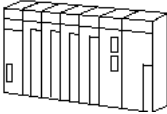

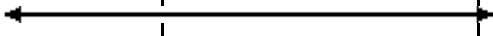

\*1 When connecting to the peripheral port, a particular cable is needed between GP and the CS1W-CN\*25 cable /CS1W-CN\*26 cable, refer to this section's Cable Diagram 11 for the required cable.

\*2 Requires a commercial type 9 <-> 25 pin conversion adaptor for ST unit.

\*3 Can be used for GP2000 Series and GLC2000 Series only.

\*4 Can be used for ST Series only.

■ SYSMAC CJ1M Series

| CPU   | Link I/F  | Cable Diagram  | Cables  | Target Machine  |
|---|---|--|---|---|
|  |  |  |   |  |
| CJ1M-CPU12<br>CJ1M-CPU13<br>CJ1M-CPU22<br>CJ1M-CPU23                              | Peripheral port on CPU unit   | RS-232C<br><Cable Diagram 11>  | Omron Co.<br>CS1W-CN225(2m) <sup>*1</sup><br>CS1W-CN625(6m) <sup>*1</sup>                                   | GP/GLC Series   |
|   |   |  | Omron Co.<br>CS1W-CN226(2m) <sup>*1</sup><br>CS1W-CN626(6m) <sup>*1</sup>                                   | ST401/ST403   |
|   | RS232C port on CPU unit   | RS-232C<br><Cable Diagram 3>   | GP000-IS03-MS(3m) <sup>*2</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*3</sup><br>CA3-CBLSYS-01(5m) <sup>*4</sup> | GP/GLC Series   |
|   |   |  | Omron Co.<br>XW2Z-200S(2m) <sup>*2</sup><br>XW2Z-500S(5m) <sup>*2</sup>                                     | ST401/ST403   |
|   | CJ1W-SCU41  | RS-232C<br><Cable Diagram 3>   | GP000-IS03-MS(3m) <sup>*2</sup><br>GP2000-CBLSYS/5M-01(5m) <sup>*3</sup><br>CA3-CBLSYS-01(5m) <sup>*4</sup> | GP/GLC Series   |
|   |   |  | Omron Co.<br>XW2Z-200S(2m) <sup>*2</sup><br>XW2Z-500S(5m) <sup>*2</sup>                                     | ST401/ST403   |
|   | RS-422<br>(Port 1)<br><Cable Diagram 10>  | —————  | GP/GLC Series   |   |
|   |   | —————  | ST400/ST403   |   |

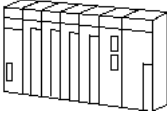



\*1 When connecting to the peripheral port, a particular cable is needed between GP and the CS1W-CN\*25 cable /CS1W-CN\*26 cable, refer to this section's Cable Diagram 11 for the required cable.

\*2 Requires a commercial type 9 <-> 25 pin conversion adaptor for ST unit.

\*3 Can be used for GP2000 Series and GLC2000 Series only.

\*4 Can be used for ST Series only.

■ SYSMAC CP Series

| CPU   | Link I/F  | Cable Diagram  | Cables   | Target Machine  |
|---|---|--|--|---|
|  |  |  |  |  |
| CP1H  | CP1W-CIF01  | RS-232C<br><Cable Diagram 16>  | GP000-IS03-MS(3m) <sup>*1</sup><br>CA3-CBLSYS-01(5m) <sup>*2</sup> | GP/GLC Series   |
|   |   |  | Omron Co.<br>XW2Z-200S-V(2m) <sup>*2</sup>                         | ST401   |

\*1 Requires a commercial type 9 pin (female) <-> 25 pin (female) conversion adaptor for ST unit.

\*2 Requires a commercial type 9 pin (male) <-> 25 pin (male) conversion adaptor for GP/GLC unit.

2 Cable Diagrams

The cable diagram illustrated below and the cable diagrams recommended by Mitsubishi Electric Corporation may differ. Using these cables for your PLC, however, will not cause any problems.

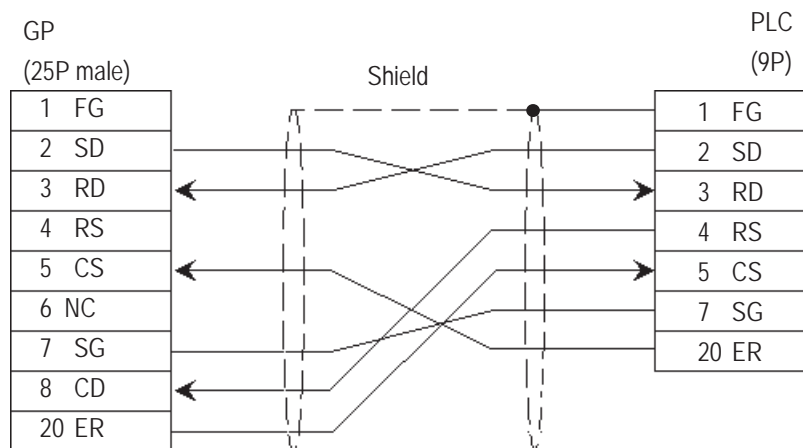


Ground your PLC's FG terminal according to your country's applicable standard. For details, refer to the corresponding PLC manual.

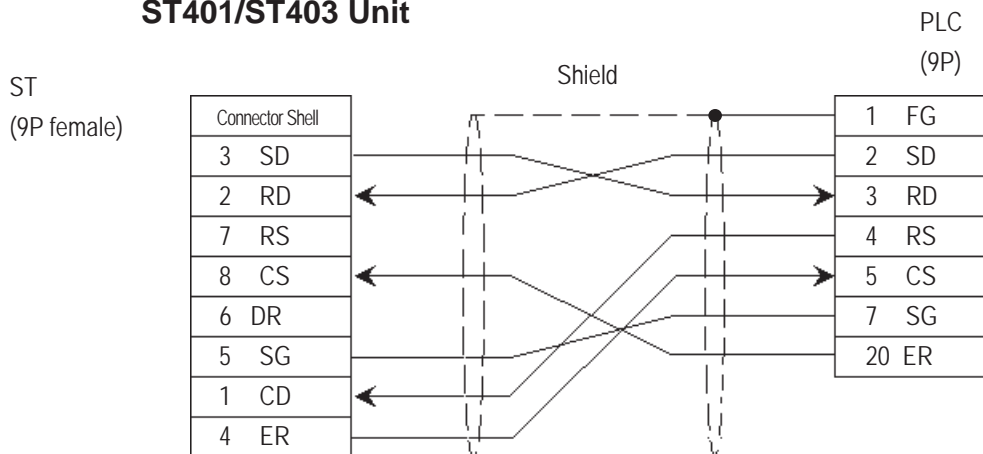
- **Connect the FG line of the Shield cable to either the GP or PLC, depending on your environment. When using a connector hood and grounding the FG line, be sure to use an electrical conductor. The following connection diagrams show examples for connecting a shielded cable to the PLC.**
- **For the RS-232C connection, use a cable length less than 15m.**
- **If a shielded cable is connected to the RS-422 port, it must be no longer than 600 m.**
- **If a communications cable is used, it must be connected to the SG (signal ground).**

Cable Diagram 1

GP/GLC Series Units



ST401/ST403 Unit



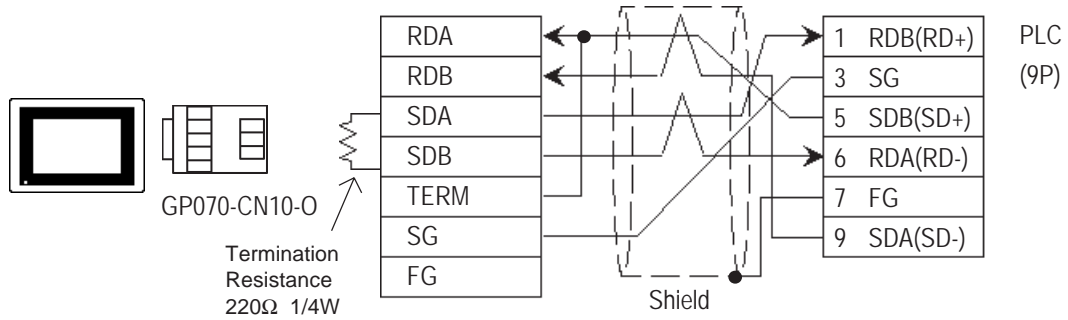
### Cable Diagram 2



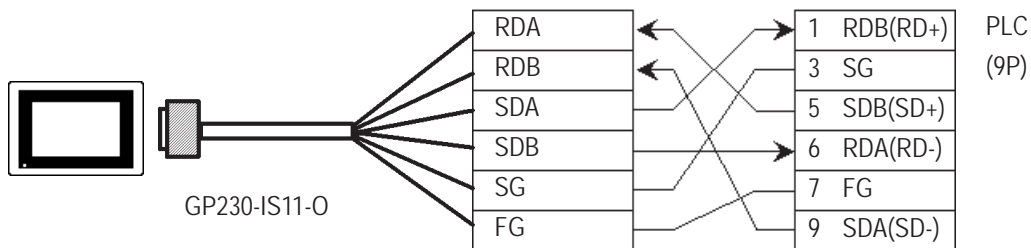
- Turn on the Termination Resistor switch, on the PLC.
- Signals A and B are opposite on the GP and PLC.

#### GP/GLC Series Units

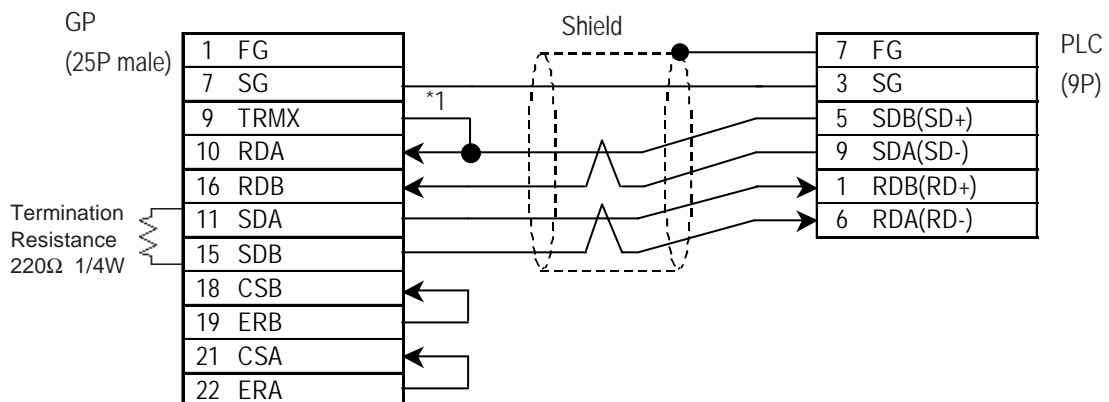
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



- When using Digital's RS-422 Cable, GP230-IS11-0



- When making your own cable connections



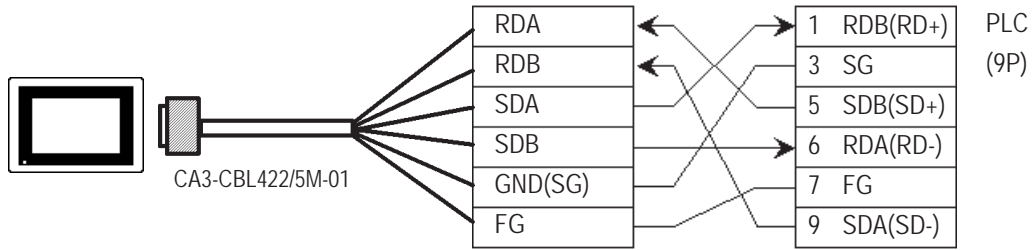
\*1 When connecting the #9 and #10 pins in the GP Serial I/F, a termination resistance of 100Ω is added between RDA and RDB.



**Note:** When making your own connection cable, Digital recommend using Hirakawa Densen's H-9293A(CO-HC-ESV-3P\*7/0.2) for the cable.

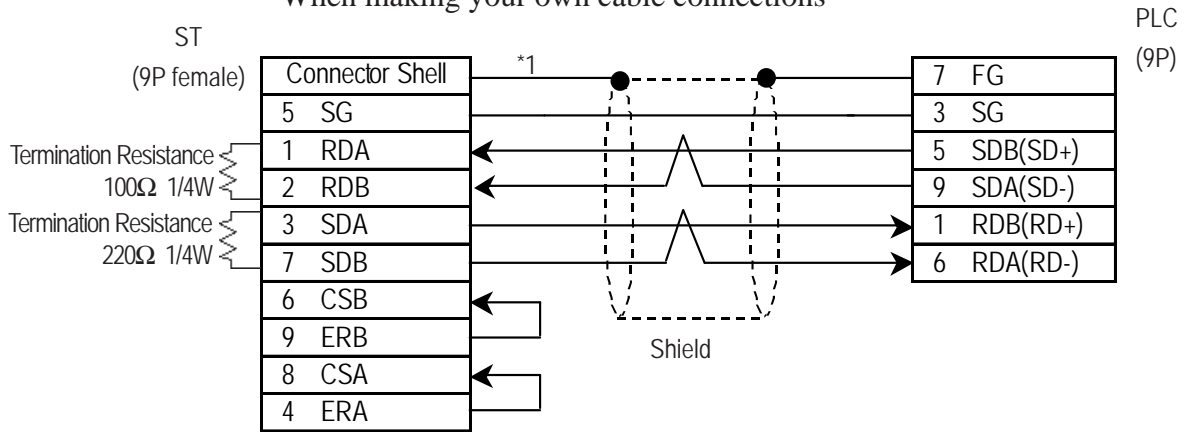
### ST400/ST403 Unit

- When using Digital's RS-422 cable CA3-CBL422/5M-01



**Note:** Be sure to connect the FG line to the FG terminal. For information about FG connections, refer to page 1-5 note \*1, in the "Connecting a Device/PLC to the ST unit."

- When making your own cable connections



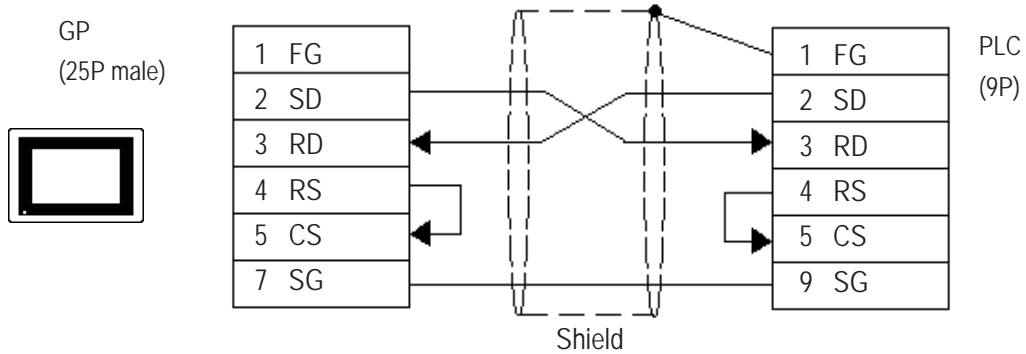
\*1 Be sure to connect the shield to the Connector Shell. For information about FG connections, refer to page 1-2 "RS422 I/F (ST400/ST403)" section's Note, in the "Connecting a Device/PLC to the ST unit."



**Note:** When making your own connection cable, Digital recommend using Hiramawa Hewtech's H-9293A(CO-HC-ESV-3P\*7/0.2) for the cable.

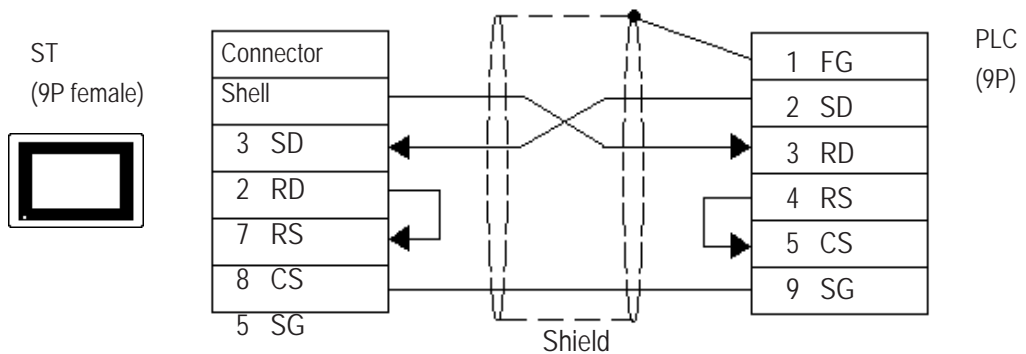
### Cable Diagram 3

#### GP/GLC Series Units



While the above connection diagram will differ slightly from the Omron XW2Z-200S (2m) and XW2Z-500S (5m) RS-232C cables, the system will operate correctly using this design.

#### ST401/ST403 Unit



While the above connection diagram will differ slightly from the Omron XW2Z-200S (2m) and XW2Z-500S (5m) RS-232C cables, the system will operate correctly using this design.

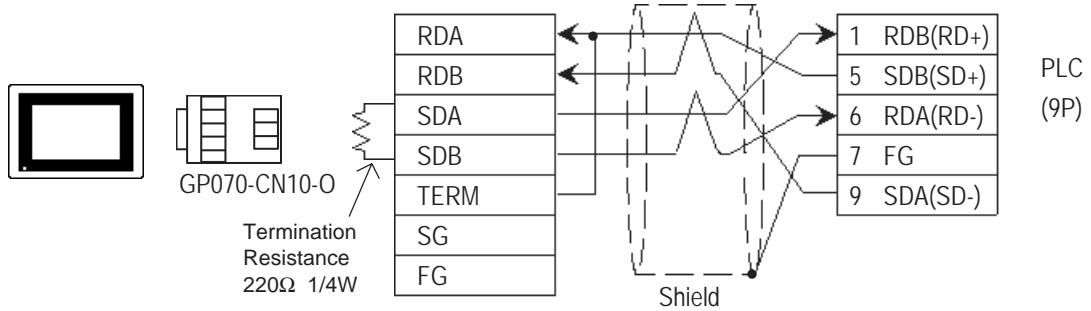
### Cable Diagram 4



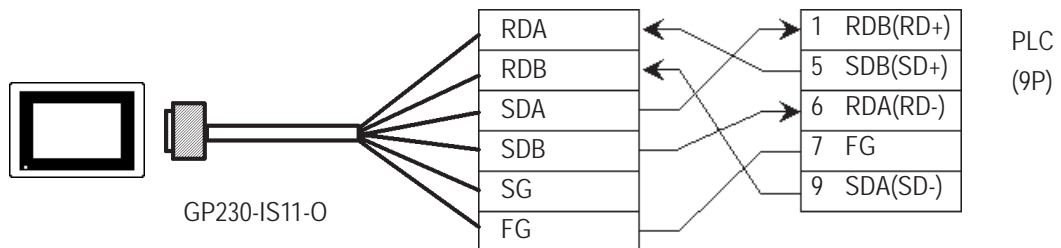
- Turn the PLC's Termination Resistor switch ON.
- Signals A and B are opposite on the GP and PLC.

#### GP/GLC Series Units

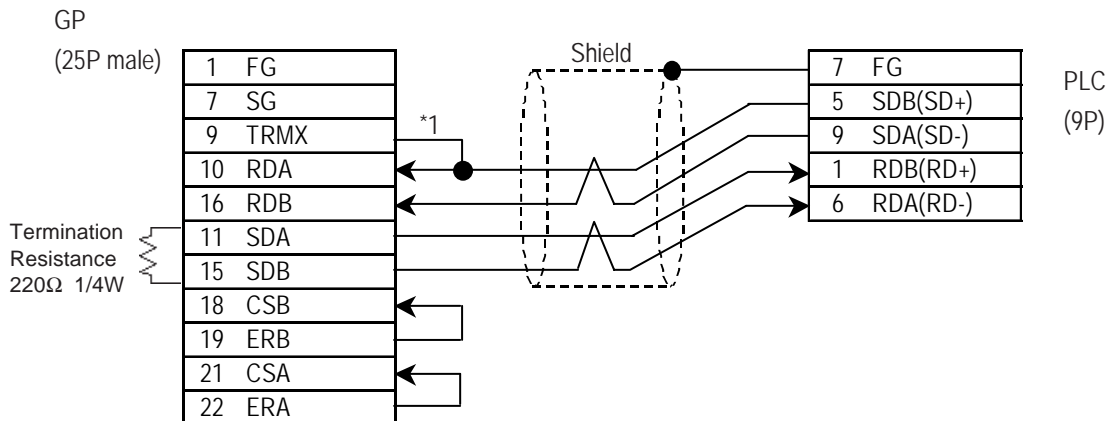
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



- When using Digital's RS-422 Cable, GP230-IS11-0



- When making your own cable connections



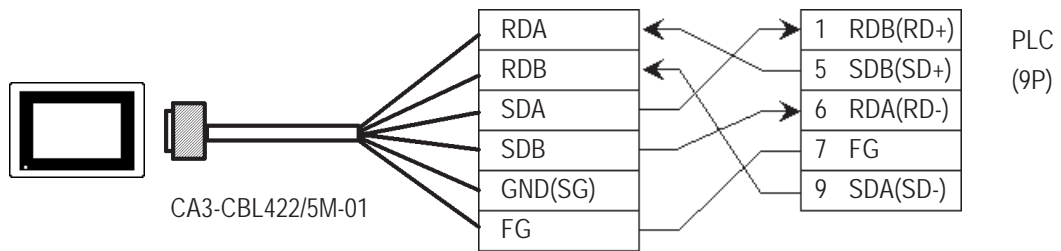
\*1 When connecting the #9 and #10 pins in the GP Serial I/F, a termination resistance of 100Ω is added between RDA and RDB.



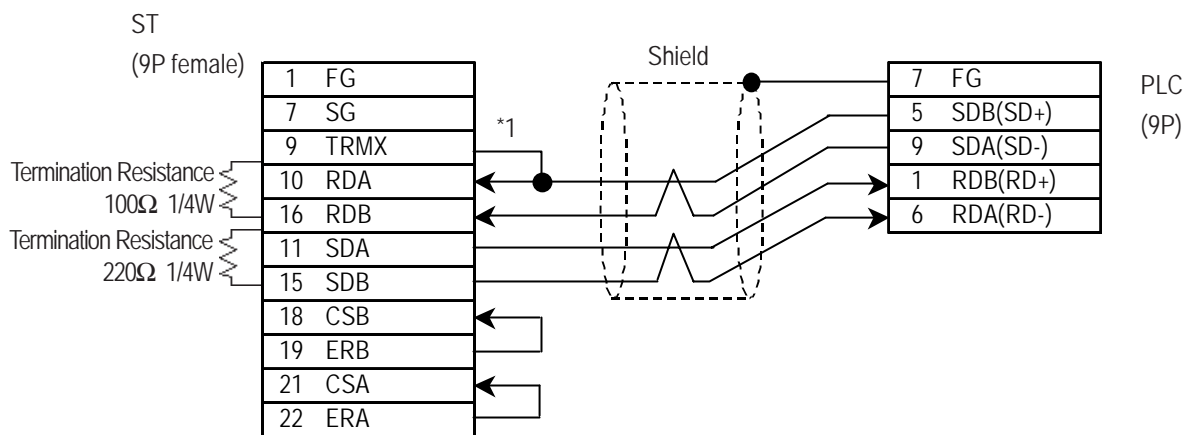
When making your own cable connections, we recommend using Hirakawa Densen's H-9293A (CO-HC-ESV-3P\*7/0.2) cable.

### ST400/ST403 Unit

- When using Digital's RS-422 cable CA3-CBL422/5M-01



- When making your own cable connections



\*1 Be sure to connect the shield to the Connector Shell. For information about FG connections, refer to page 1-2 "RS422 I/F (ST400/ST403)" section's Note, in the "Connecting a Device/PLC to the ST unit."

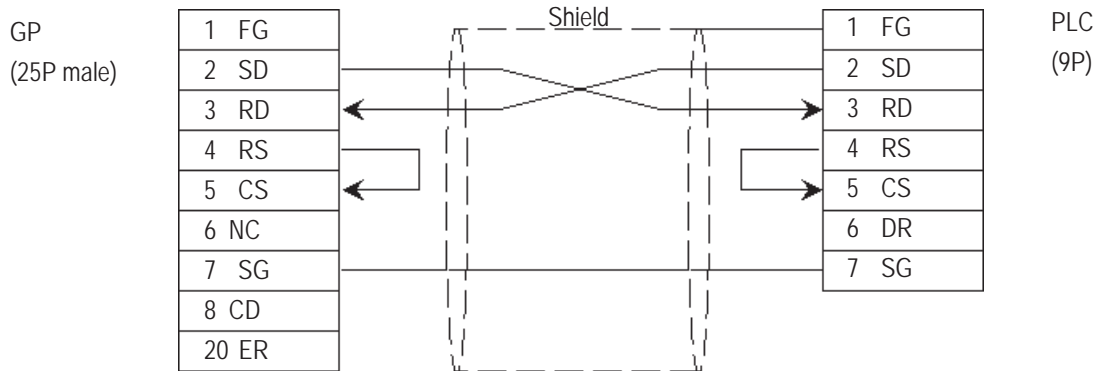


**When making your own cable connections, we recommend using Hirakawa Densen's H-9293A (CO-HC-ESV-3P\*7/0.2) cable.**



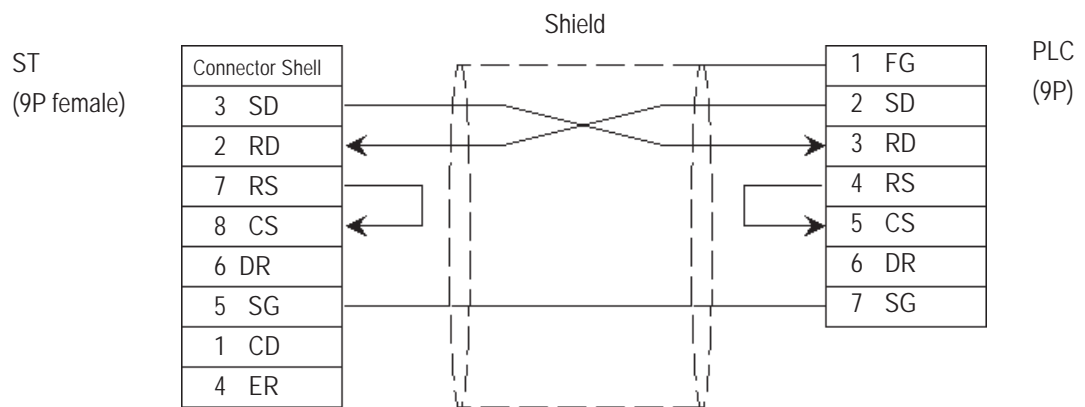
### Cable Diagram 5

#### GP/GLC Series Units



**Note:** Hirakawa Densen's H-9293A (CO-HC-ESV-3P\*7/0.2) cable is recommended as the connection cable.

#### ST401/ST403 Unit



**Note:** Hirakawa Densen's H-9293A (CO-HC-ESV-3P\*7/0.2) cable is recommended as the connection cable.

### Cable Diagram 6

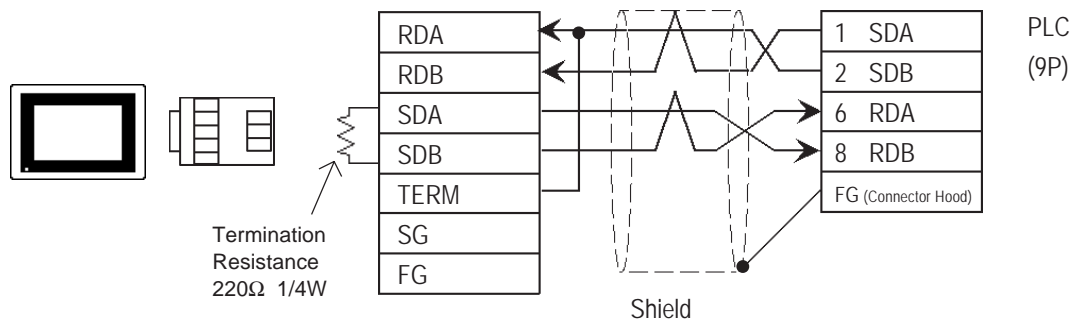


- Turn on the Termination Resistor switch, on the PLC side.
- Signals A and B are opposite on the GP and PLC.
- The connector and the connector hood, listed below, are included with the Communication board.

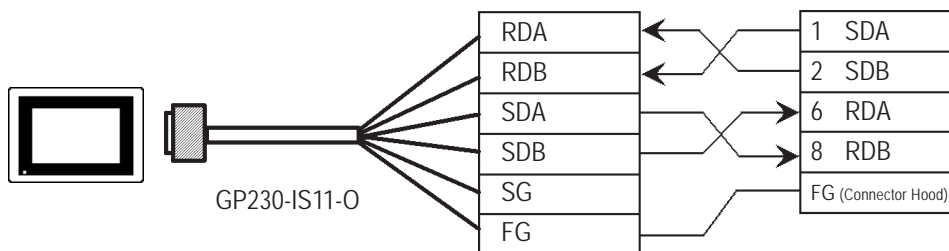
**Connector** XW2A-0901

**Connector Hood** XW2S-0901

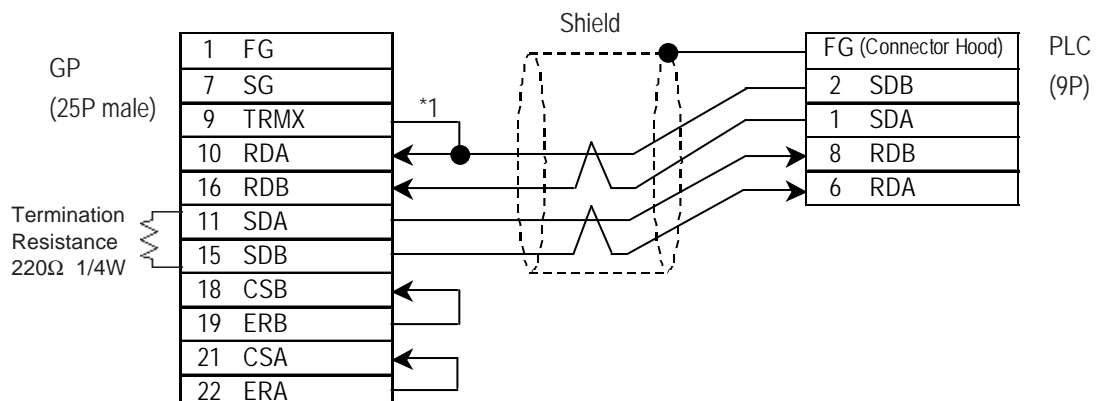
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



- When using Digital's RS-422 connector terminal adapter GP230-IS11-0



- When making your own cable connections



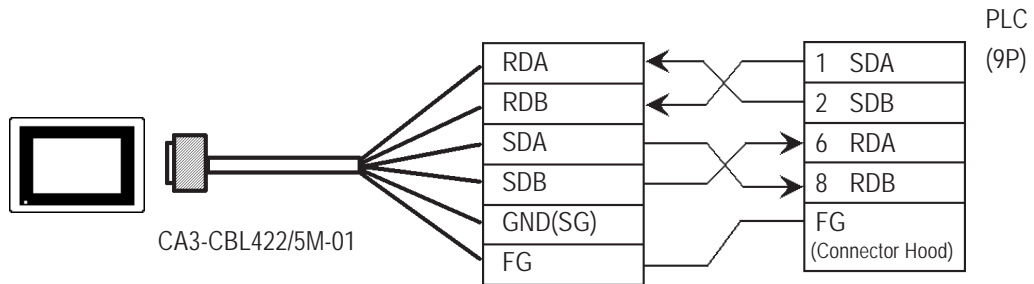
\*1 When connecting the #9 and #10 pins in the GP Serial I/F, a termination resistance of 100Ω is added between RDA and RDB.



**When making your own connection cable, Digital recommend using Hirakawa Densen's H-9293A(CO-HC-ESV-3P\*7/0.2) for the cable.**

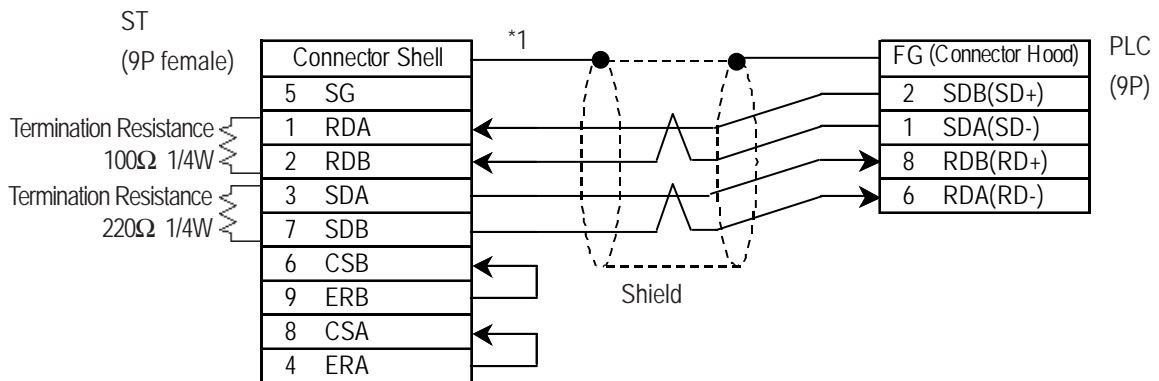
### ST400/ST403 Unit

- When using Digital's RS-422 cable CA3-CBL422/5M-01



**Note:** Be sure to connect the FG line to the FG terminal. For information about FG connections, refer to page 1-5 note \*1, in the "Connecting a Device/PLC to the ST unit."

- When making your own cable connections



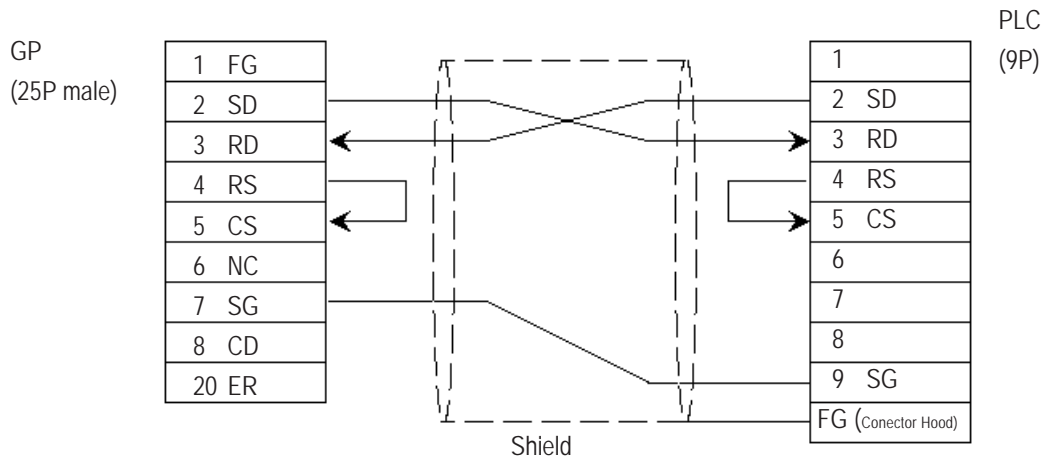
\*1 Be sure to connect the shield to the Connector Shell. For information about FG connections, refer to page 1-2 "RS422 I/F (ST400/ST403)" section's Note, in the "Connecting a Device/PLC to the ST unit."



**Note:** When making your own connection cable, Digital recommend using Hirakawa Densen's H-9293A(CO-HC-ESV-3P\*7/0.2) for the cable.

### Cable Diagram 7

#### GP/GLC Series Units



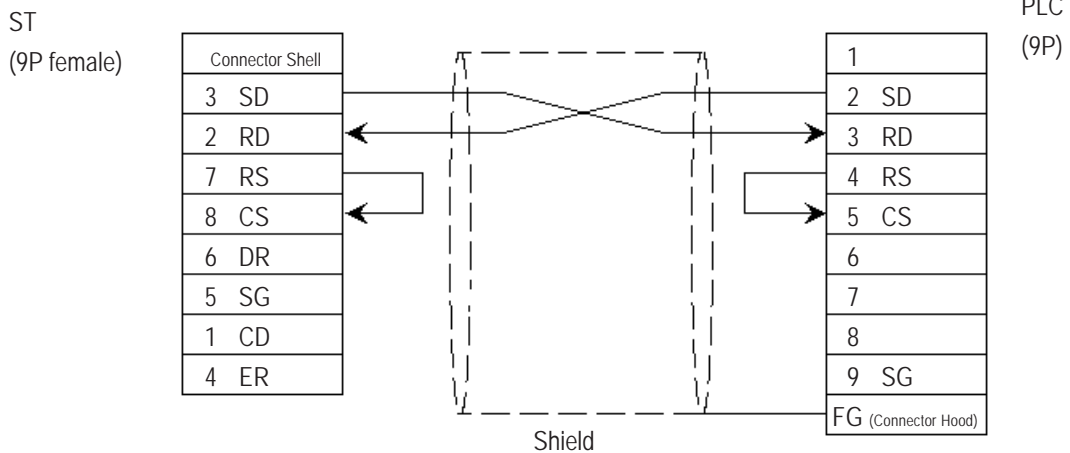
- One each of the connector and connector hood, listed below, are included with the CV500/CV1000 CPU unit. Only these connectors listed below can be used.

Connector XM2A-0901

Connector Hood XM2S-0911

- Hirakawa Densen's H-9293A (CO-HC-ESV-3P\*7/0.2) cable is recommended as the connection cable.

#### ST401/ST403 Unit



- One each of the connector and connector hood, listed below, are included with the CV500/CV1000 CPU unit. Only these connectors listed below can be used.

Connector XM2A-0901

Connector Hood XM2S-0911

- Hirakawa Densen's H-9293A (CO-HC-ESV-3P\*7/0.2) cable is recommended as the connection cable.

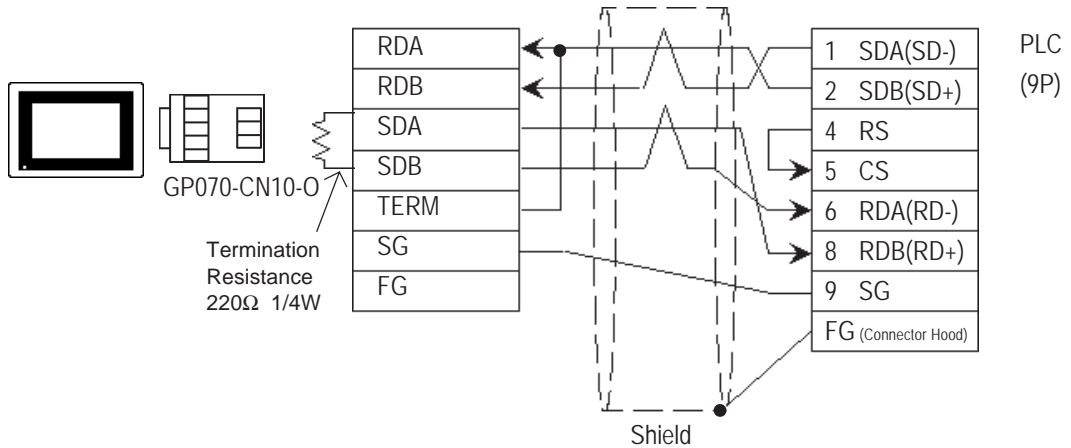
### Cable Diagram 8



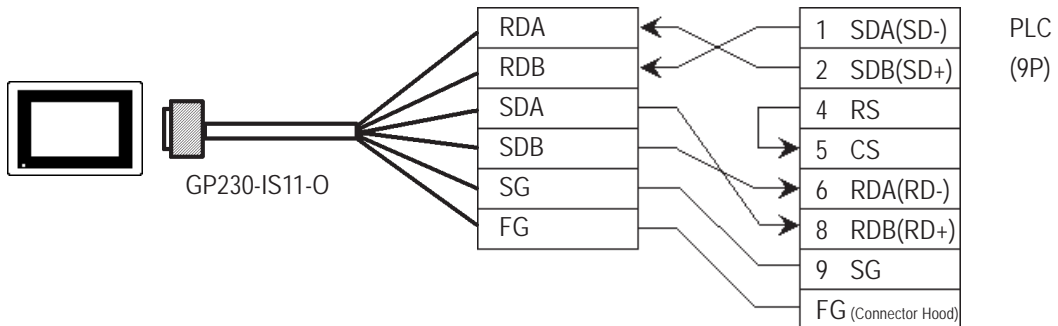
- Setup the PLC's RS-232C/RS-422 toggle switch to RS-422.
- Turn the PLC unit's Termination Resistor switch ON.
- Signals A and B are opposite on the GP and PLC
- The connector and connector hood, listed below, are included with the CV500/CV1000 CPU unit. Only these connectors can be used.

**Connector** XM2A-0901  
**Connector Hood** XM2S-0911  
**GP/GLC Series Units**

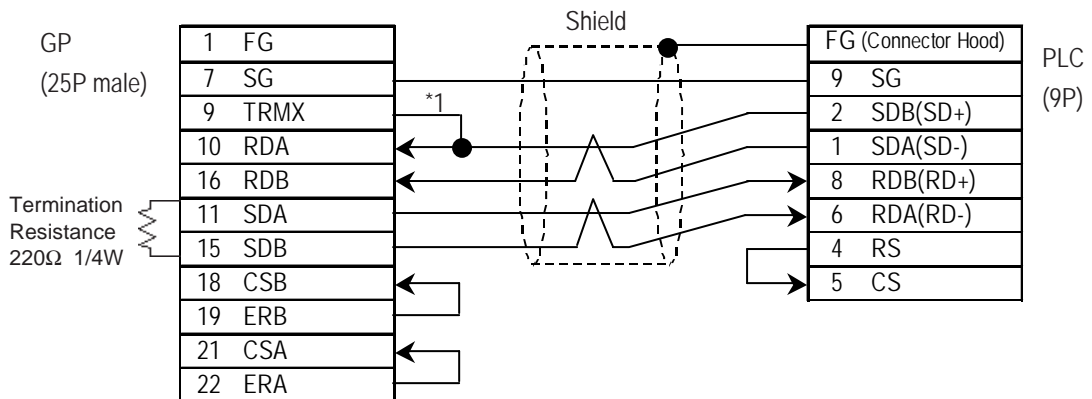
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



- When using Digital's RS-422 Cable, GP230-IS11-0



- When making your own cable connections



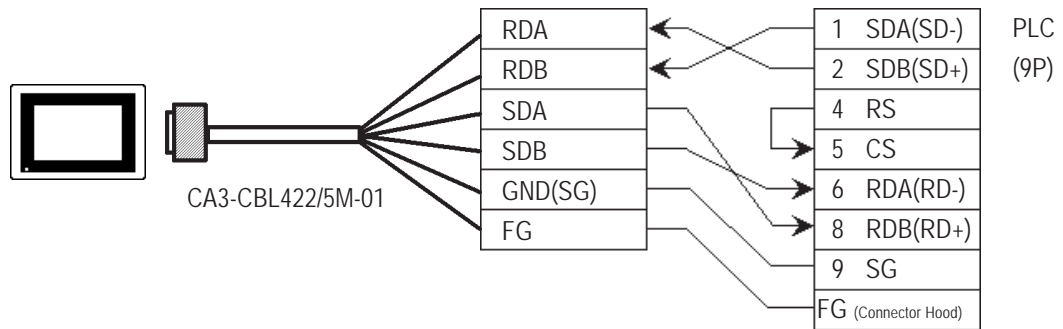
\*1 When connecting the #9 and #10 pins in the GP Serial I/F, a termination resistance of 100Ω is added between RDA and RDB.



**Note:** When making your own connection cable, Digital recommend using Hirakawa Densen's H-9293A(CO-HC-ESV-3P\*7/0.2) for the cable.

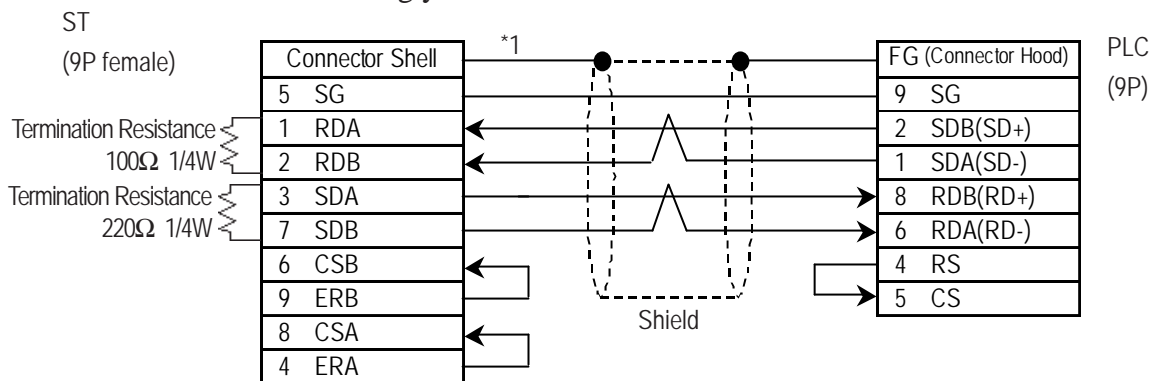
### ST400/ST403 Unit

- When using Digital's RS-422 cable CA3-CBL422/5M-01



**Note:** Be sure to connect the FG line to the FG terminal. For information about FG connections, refer to page 1-5 note \*1, in the "Connecting a Device/PLC to the ST unit."

- When making your own cable connections



\*1 Be sure to connect the shield to the Connector Shell. For information about FG connections, refer to page 1-2 "RS422 I/F (ST400/ST403)" section's Note, in the "Connecting a Device/PLC to the ST unit."



**Note:** When making your own connection cable, Digital recommend using Hirakawa Densen's H-9293A(CO-HC-ESV-3P\*7/0.2) for the cable.

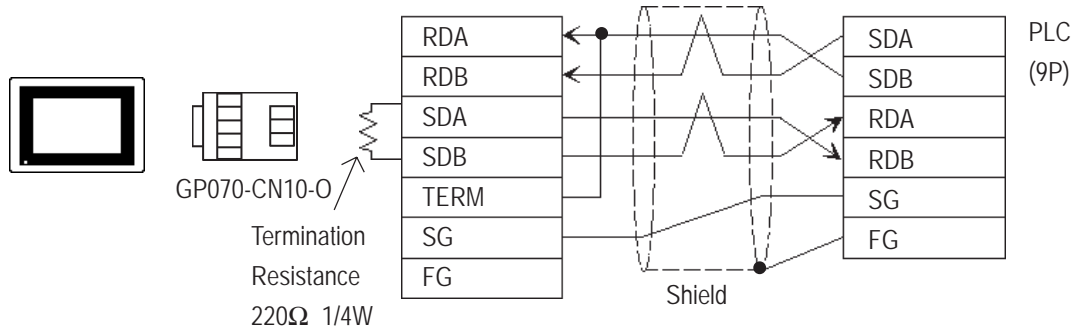
### Cable Diagram 9



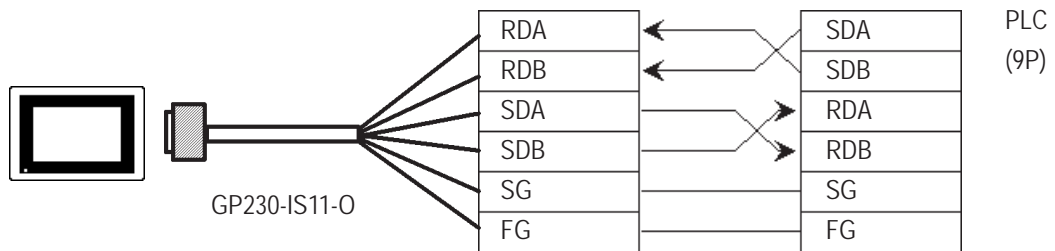
- **Signals A and B are opposite on the GP and PLC.**

#### GP/GLC Series Units

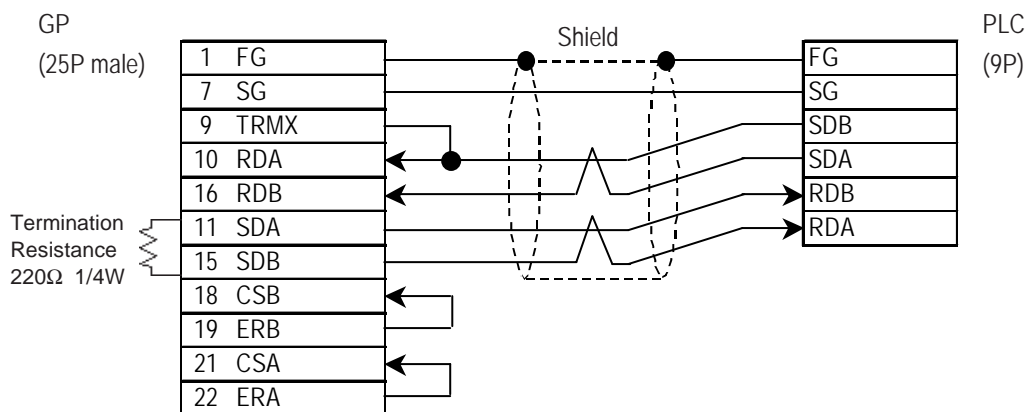
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



- When using Digital's RS-422 connector terminal adapter GP230-IS11-0



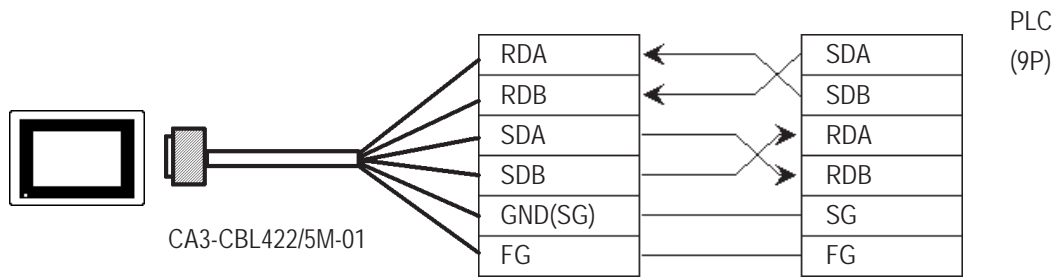
- When making your own cable connections



\*1 When connecting the #9 and #10 pins in the GP Serial I/F, a termination resistance of 100Ω is added between RDA and RDB.

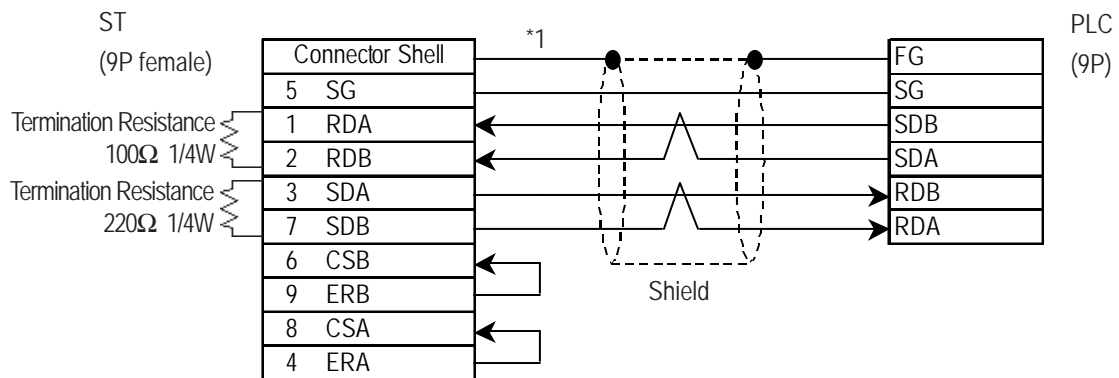
### ST400/ST403 Unit

- When using Digital's RS-422 cable CA3-CBL422/5M-01



**Note:** Be sure to connect the FG line to the FG terminal. For information about FG connections, refer to page 1-5 note \*1, in the "Connecting a Device/PLC to the ST unit."

- When making your own cable connections



\*1 Be sure to connect the shield to the Connector Shell. For information about FG connections, refer to page 1-2 "RS422 I/F (ST400/ST403)" section's Note, in the "Connecting a Device/PLC to the ST unit."



**Note:** When making your own connection cable, Digital recommend using Hirakawa Densen's H-9293A(CO-HC-ESV-3P\*7/0.2) for the cable.



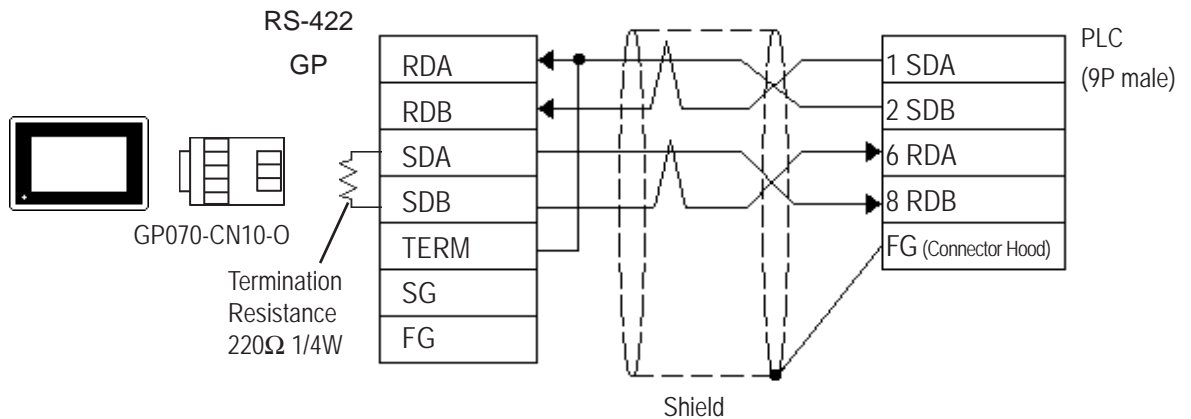
### Cable Diagram 10



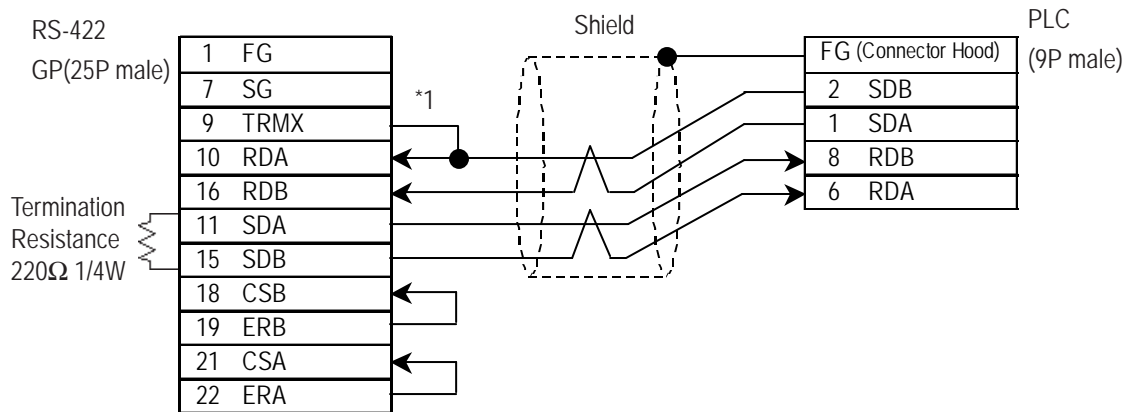
- Setup the PLC's RS-232C/RS-422 toggle switch to RS-422.
- Turn the PLC unit's Termination Resistor switch ON.
- Signals A and B are opposite on the GP and PLC
- The connector and connector hood, listed below, are included with the CV500/CV1000 CPU unit. Only these connectors can be used.

**Connector** XM2A-0901  
**Connector Hood** XM2S-0911  
**GP/GLC Series Units**

- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



- When making your own cable connection



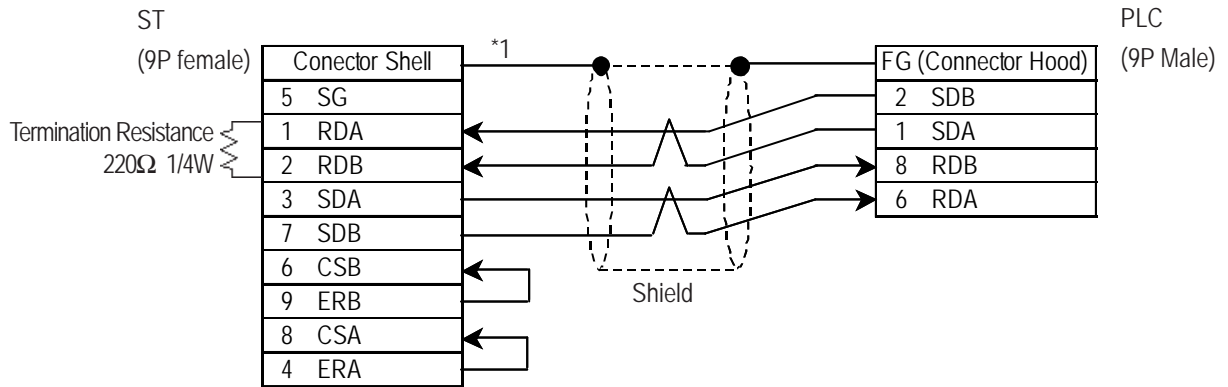
\*1 When connecting the #9 and #10 pins in the GP Serial I/F, a termination resistance of 100Ω is added between RDA and RDB.



**Note:** When making your own connection cable, Digital recommend using Hirakawa Densen's H-9293A(CO-HC-ESV-3P\*7/0.2) for the cable.

### ST400/ST403 Unit

- When making your own cable connections



\*1 Be sure to connect the shield to the Conector Shell. For information about FG connections, refer to page 1-2 "RS422 I/F (ST400/ST403)" section's Note, in the "Connecting a Device/PLC to the ST unit."

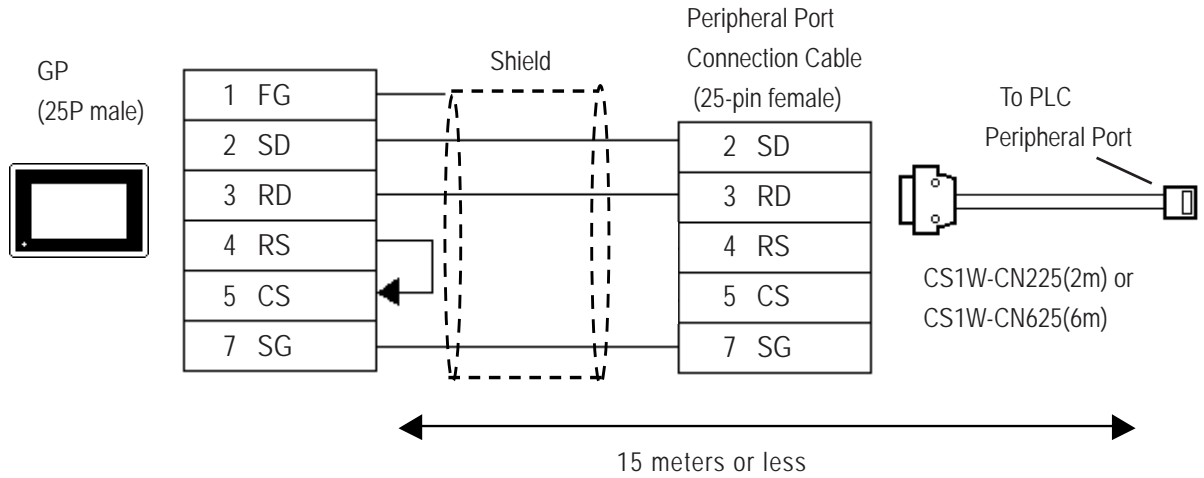


**Note:**

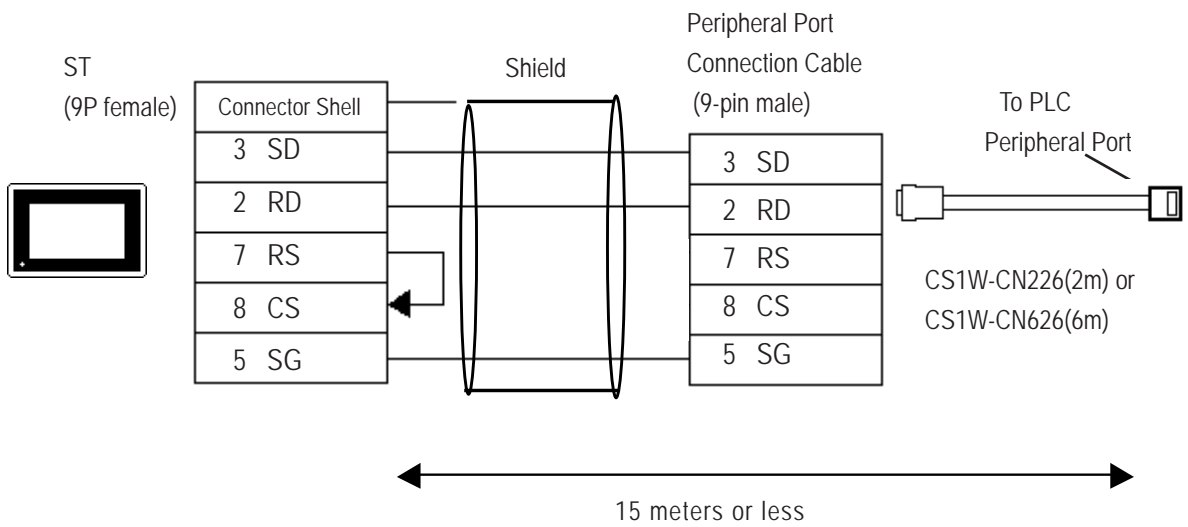
When making your own connection cable, Digital recommend using Hiramawa Densen's H-9293A(CO-HC-ESV-3P\*7/0.2) for the cable.

### Cable Diagram 11

#### GP/GLC Series Units



#### ST401/ST403 Series Units



## Cable Diagram 12 (RS-422, 4-wire type)

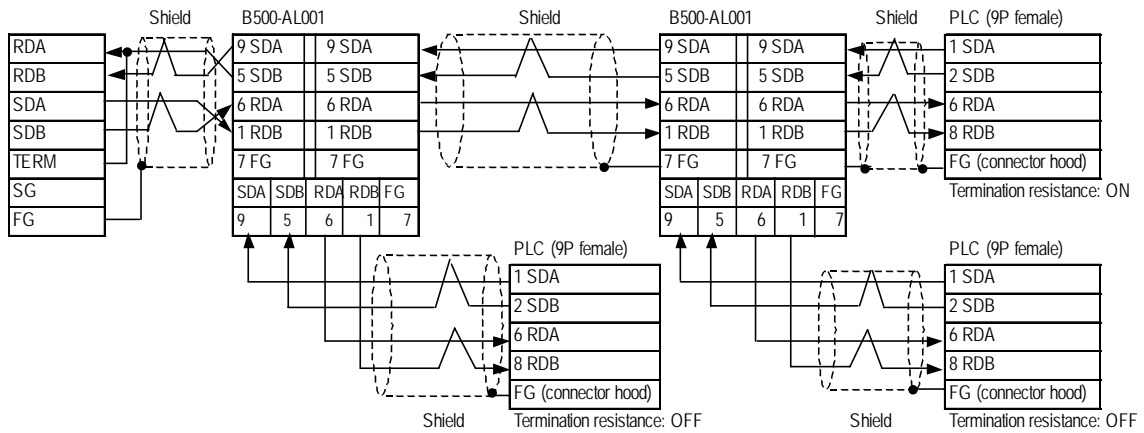


- *Hirakawa Hewtech's CO-HC-ESV-3P\*7/0.2 cable is recommended for this connection.*
- *Ground one end of the communication cable to either the RS-422A/RS-485 connector hood on the serial communication board, or to the GP.*
- *The PLC has no SG connector, but its internal signal line is electrically insulated. Therefore, the SG connector on the GP/GLC requires no connection.*
- *Set the termination resistance selector switch, [TERM] on the terminating SYSMAC-COM1H, to the "ON" position. If two units of PLCs are connected to the GP/GLC, the one having the longer distance for communication becomes the terminating station.*
- *Set the 2-wire/4-wire selector switch, [WIRE] on the PLC to the "4" position.*
- *The maximum cable length for RS-422/RS-485 communication is 500 meters. The total branch line length for T-branching is 10 meters. In the following cable diagram, the communication distance between the GP and No. n unit is covered by the total length of the cable i.e. main cable and branches. In cable diagram 1, No. 0 and No. 1 units are connected by a branch line.*
- *To connect the PLC, use OMRON's B500-AL001 link adaptor or a terminal block.*

## GP/GLC Series Units

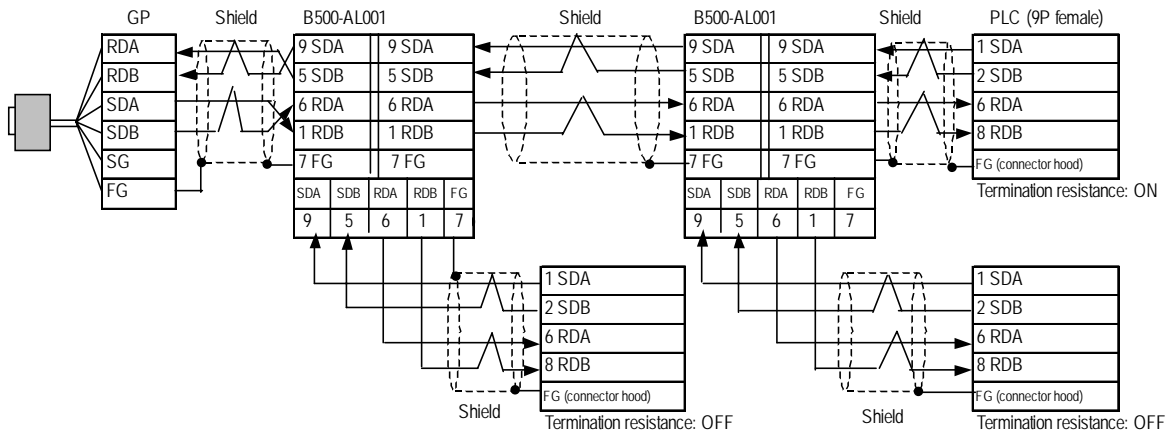
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0

GP070-CN10-0  
GP (25p male)



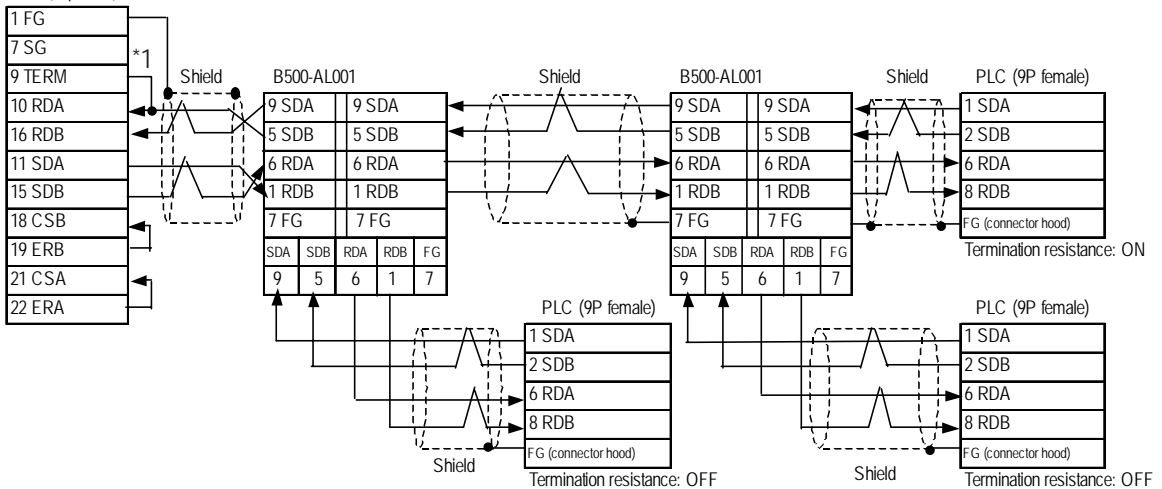
- When using Digital's RS-422 cable GP230-IS11-0

GP230-IS11-0



- When making your own cable connection

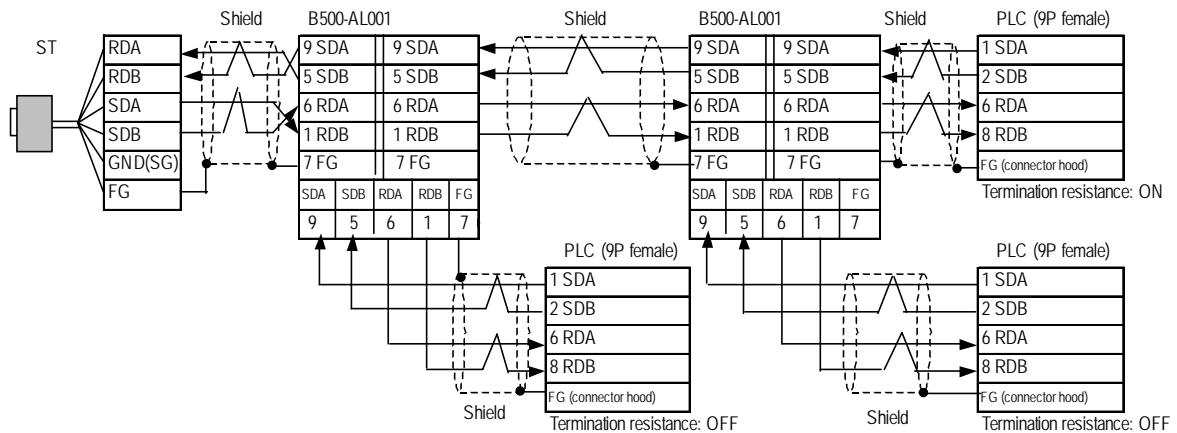
GP (25p male)



\*1 When connecting the #9 and #10 pins in the GP Serial I/F, a termination resistance of 100Ω is added between RDA and RDB.

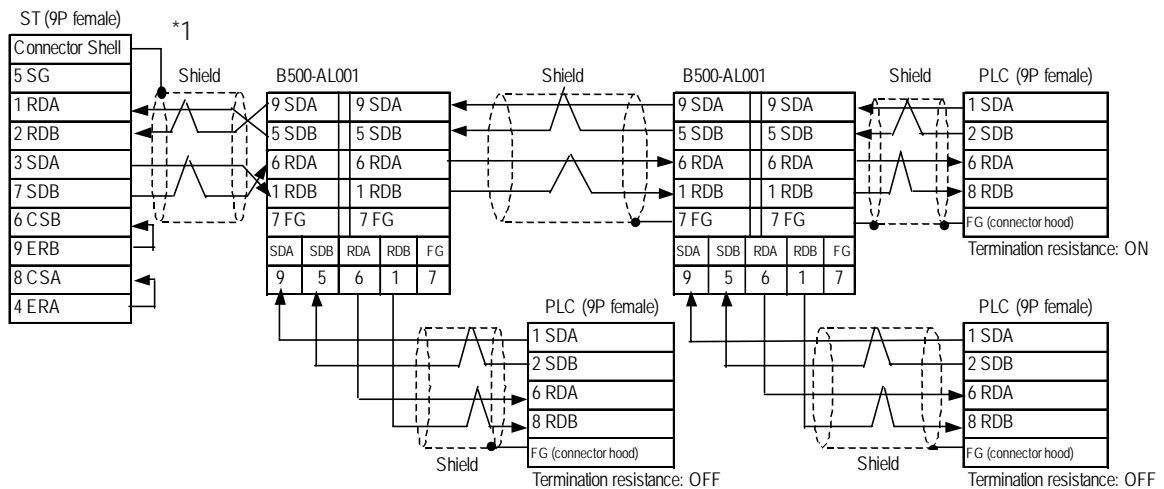
### ST400/ST403 Unit

- When using Digital's RS-422 cable CA3-CBL422/5M-01



**Note:** Be sure to connect the FG line to the FG terminal. For information about FG connections, refer to page 1-5 note \*1, in the "Connecting a Device/PLC to the ST unit."

- When making your own cable connection



\*1 Be sure to connect the shield to the Connector Shell. For information about FG connections, refer to page 1-2 "RS422 I/F (ST400/ST403)" section's Note, in the "Connecting a Device/PLC to the ST unit."



**Note:** When making your own connection cable, Digital recommend using Hiramawa Densen's H-9293A(CO-HC-ESV-3P\*7/0.2) for the cable.

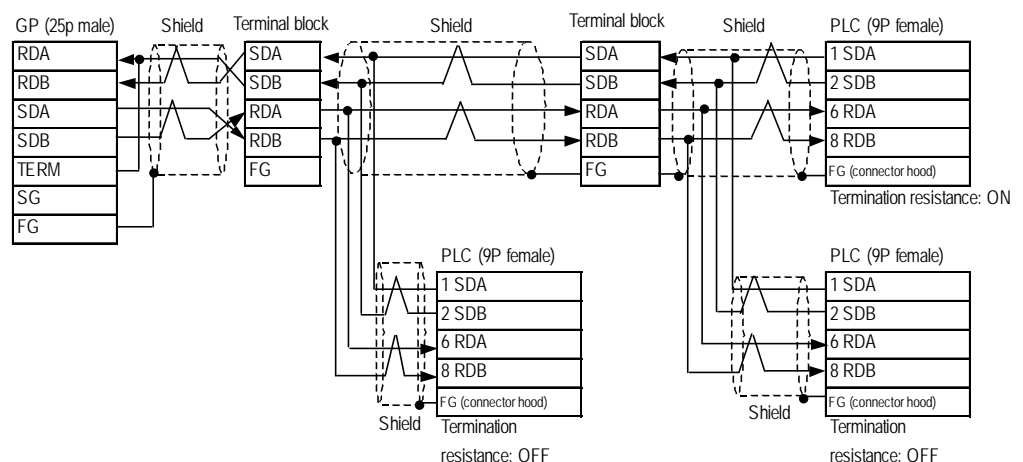
**Cable Diagram 13 (RS-422, 4-wire type)**



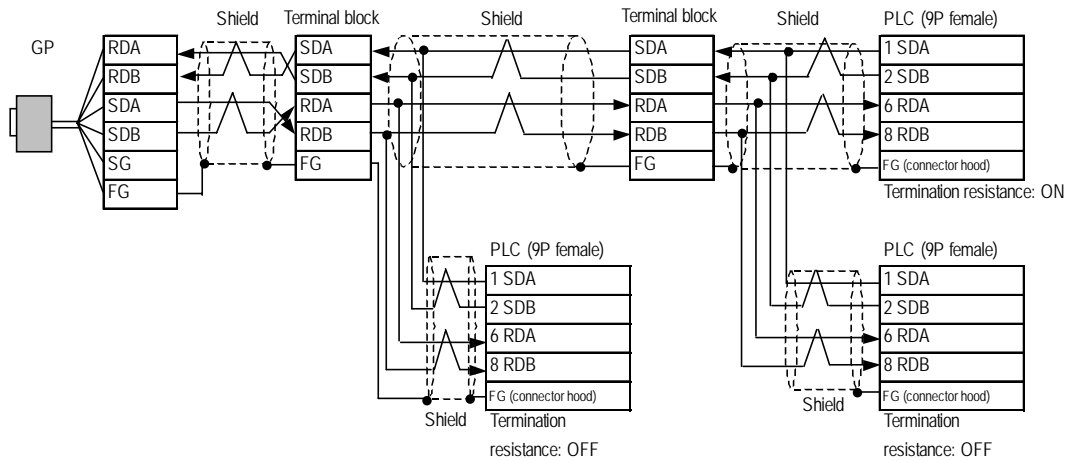
- **Hirakawa Hewtech's CO-HC-ESV-3P\*7/0.2 cable is recommended.**
- **Ground one end of the communication cable to either the RS-422A/RS-485 connector hood on the serial communication board, or to the GP.**
- **The PLC has no SG connector, but its internal signal line is electrically insulated. Therefore, the SG connector on the GP/GLC requires no connection.**
- **Set the termination resistance selector switch, [TERM] on the terminating SYSMAC-COM1H, to the "ON" position. If two units of PLCs are connected to the GP/GLC, the one having the longer distance for communication becomes the terminating station.**
- **Set the 2-wire/4-wire selector switch, [WIRE] on the PLC to the "4" position.**
- **The maximum cable length for RS-422/RS-485 communication is 500 meters. The total branch line length for T-branching is 10 meters. In the following cable diagram, the communication distance between the GP and No. n unit is covered by the total length of the cable i.e. main cable and branches. In cable diagram 1, No. 0 and No. 1 units are connected by a branch line.**
- **To connect the PLC, use OMRON's B500-AL001 link adaptor or a terminal block.**

**GP/GLC Series Units**

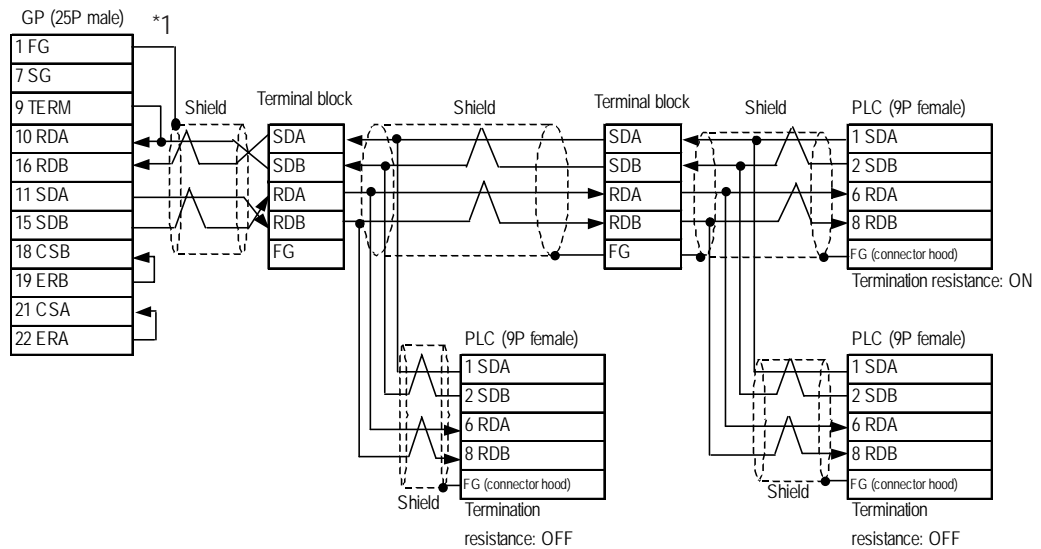
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



• When using Digital's RS-422 cable GP230-IS11-0



• When making your own cable connection



\*1 When connecting the #9 and #10 pins in the GP Serial I/F, a termination resistance of 100Ω is added between RDA and RDB.

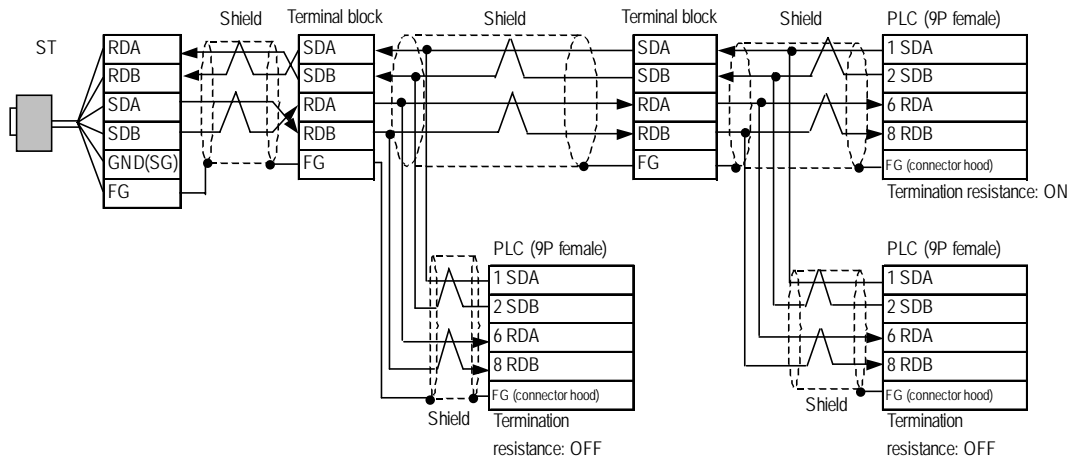


**Note:** When making your own connection cable, Digital recommend using Hirakawa Densen's H-9293A(CO-HC-ESV-3P\*7/0.2) for the cable.

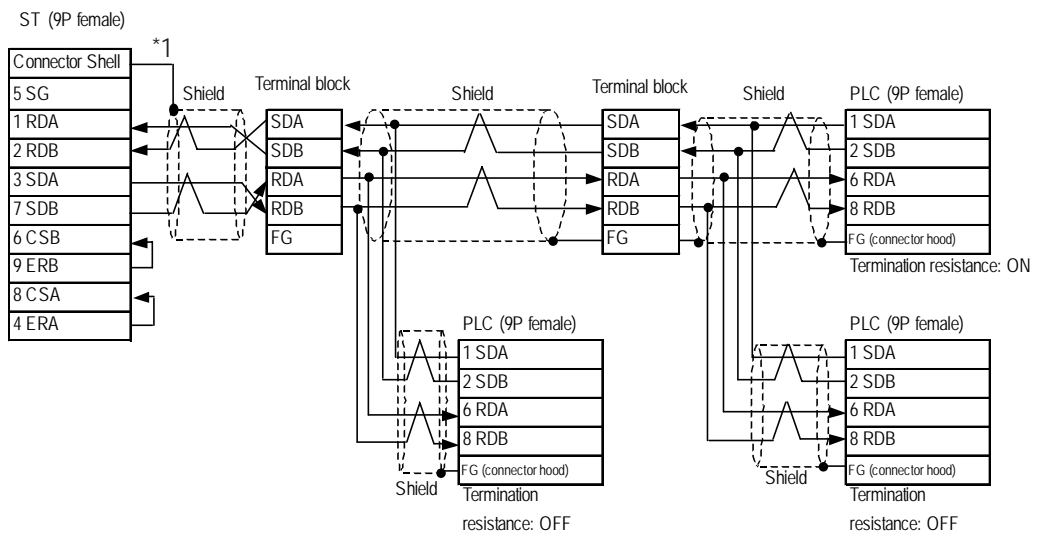


### ST400/ST403 Unit

- When using Digital's RS-422 cable CA3-CBL422/5M-01



- When making your own cable connection



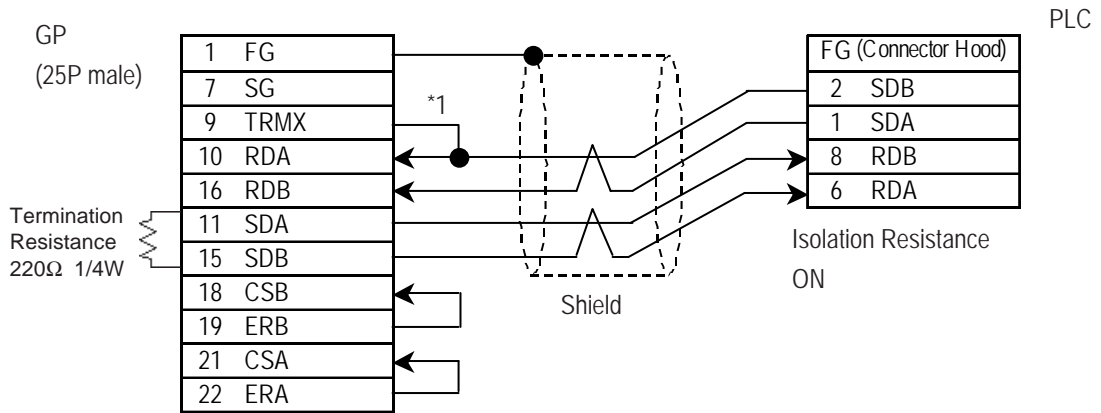
\*1 Be sure to connect the shield to the Connector Shell. For information about FG connections, refer to page 1-2 "RS422 I/F (ST400/ST403)" section's Note, in the "Connecting a Device/PLC to the ST unit."



**Note:** When making your own connection cable, Digital recommend using Hirakawa Densen's H-9293A(CO-HC-ESV-3P\*7/0.2) for the cable.

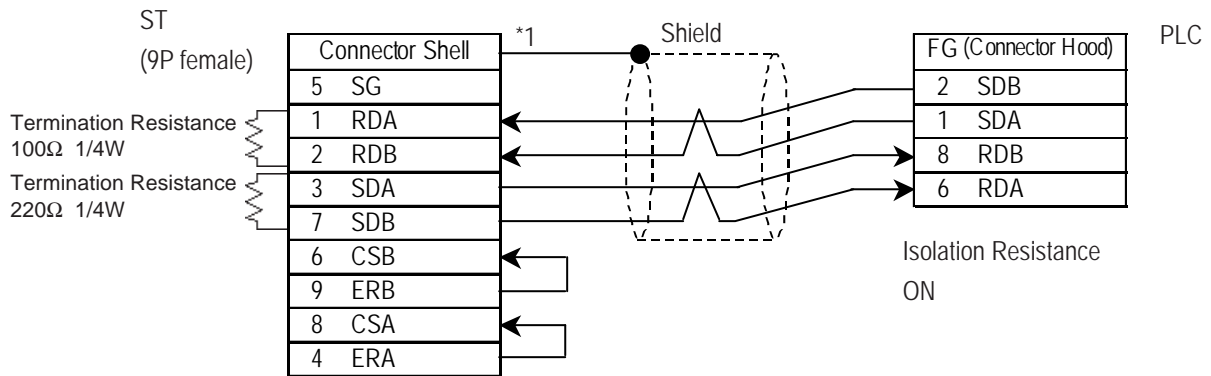
**Cable Diagram 14 1:1 Connection (RS-422, 4-wire type)**

**GP/GLC Series Units**



\*1 When connecting the #9 and #10 pins in the GP Serial I/F, a termination resistance of 100Ω is added between RDA and RDB.

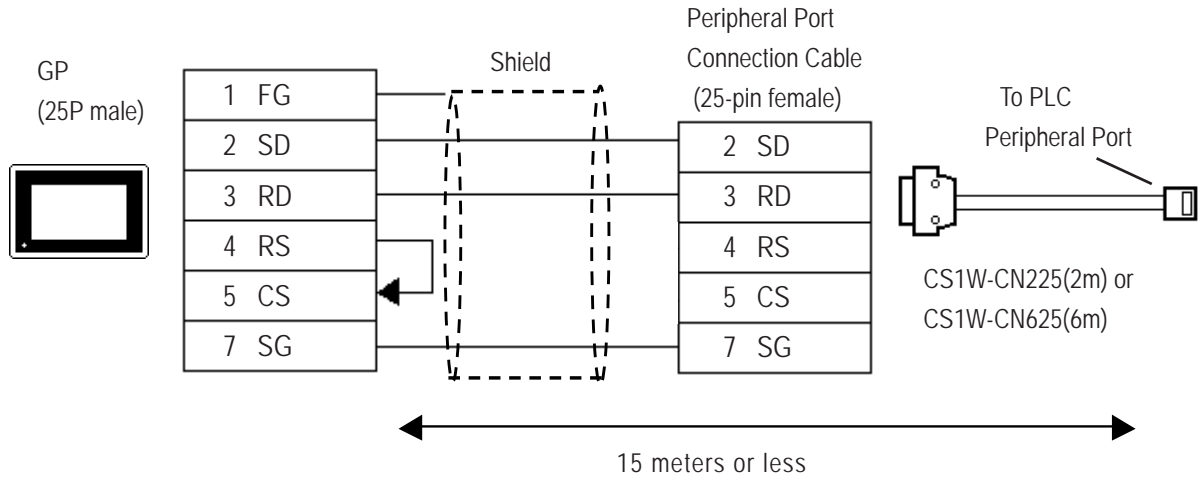
**ST400/ST403 Unit**



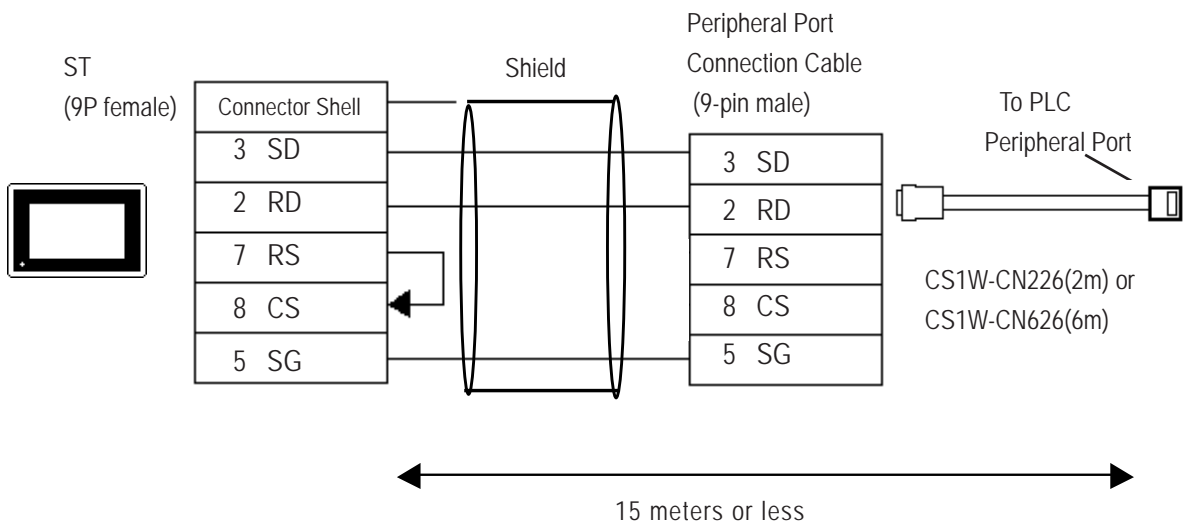
\*1 Be sure to connect the shield to the Connector Shell. For information about FG connections, refer to page 1-2 "RS422 I/F (ST400/ST403)" section's Note, in the "Connecting a Device/PLC to the ST unit."

### Cable Diagram 15

#### GP/GLC Series Units

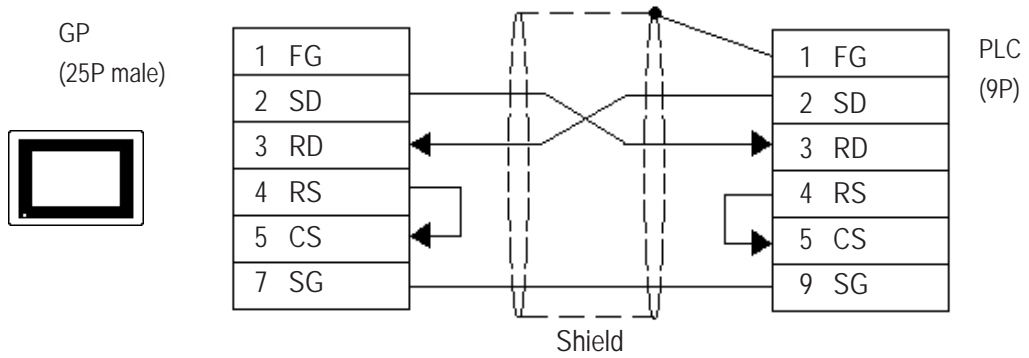


#### ST401/ST403 Series Units

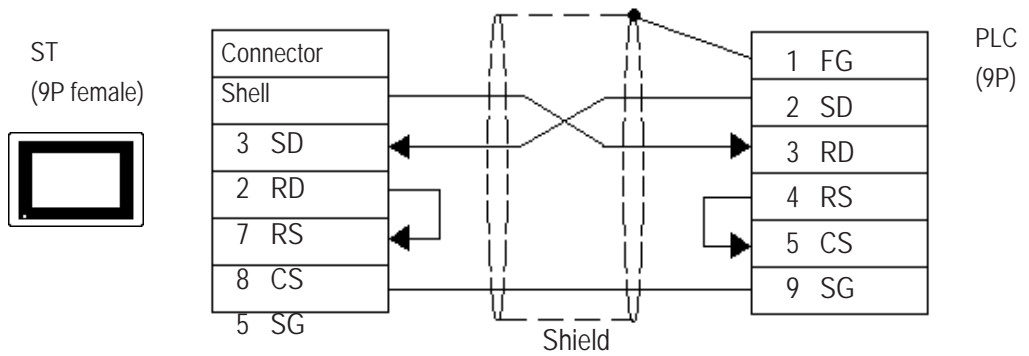


### Cable Diagram 16

#### GP/GLC Series Units



#### ST401 Unit



The following describes the range of devices supported by the GP.

### ■ SYSMAC C Series



Setup System Area here.

| Device                          | Bit Address     | Word Address    | Particulars |  |
|---------------------------------|-----------------|-----------------|-------------|--|
| I/O Relay                       | 00000 ~ 51115   | 000 ~ 511       | *1          |  |
| Internal Hold Relay             |                 |                 |             |  |
| Special Hold Relay              |                 |                 |             |  |
| Analog Setup Value Storage Area | 22000 ~ 22315   | 220 ~ 223       | *2          |  |
| Data Link Relay                 | LR0000 ~ LR6315 | LR00 ~ LR63     | L/H         |  |
| Auxiliary Memory Relay          | AR0000 ~ AR2715 | AR00 ~ AR27     |             |  |
| Latch Relay                     | HR0000 ~ HR9915 | HR00 ~ HR99     |             |  |
| Timer (contact)                 | TIM000 ~ TIM511 | ---             |             |  |
| Counter (contact)               | CNT000 ~ CNT511 | ---             |             |  |
| Timer (current value)           | ---             | TIM000 ~ TIM511 |             |  |
| Counter (current value)         | ---             | CNT000 ~ CNT511 |             |  |
| Data Memory                     | ---             | DM0000 ~ DM9999 |             |  |

\* 1 Depending on the CPU, differ the range of each supported device and the possibility of Data write. Before using, refer to each CPU User Manual.

\* 2 Can only be used by CQM1-CPU42.



- The method of writing bits will differ depending on the GP series.

<GP-\*30 series>

When the bit write operation (other than *Reverse*) is performed, the corresponding word address will set the bits to 0 (except the designated bits).



<Except GP-\*30 series>

When the bit write operation is performed, the GP reads the PLC's corresponding word address and turns a bit ON, then send back to PLC. Do not write to the word address from the ladder program in the middle of this operation.

- When running a GP-\*30 Series ladder program, be aware of the above points.

■ **SYSMAC Series (COM1H-CPU51/COM1H-CPU61)**

 Setup System Area here.

| Device                 | Bit Address     | Word Address     | Particulars   |
|------------------------|-----------------|------------------|---|
| Input Relay            | 00000 - 24315   | 000 - 243        | '1  |
| Internal Hold Relay    |                 |                  | '2  |
| Special Hold Relay     | 24400 - 25507   | 244 - 255        |   |
| Link Relay             | LR0000 - LR6315 | LR00 - LR63      |   |
| Latch Relay            | HR0000 - HR9915 | HR00 - HR99      |   |
| Auxiliary Memory Relay | AR0000 - AR2715 | AR00 - AR27      |   |
| Timer (contact)        | TIM000 - TIM511 | ---              |   |
| Counter (contact)      | CNT000 - CNT511 | ---              |   |
| Timer                  | ---             | TIM000 - TIM511  |   |
| Counter                | ---             | CNT0100 - CNT511 |   |
| Data Memory            | ---             | DM0000 - DM6655  |  *3 *5 |
| Extended Data Memory   | ---             | EM0000 - EM6143  |  *4    |

\*1 Some addresses do not exist in the I/O relay/internal hold relay's address range. For further information, refer to OMRON's Users' manual for SYSMAC-COM1H.

\*2 The bit addresses for the special hold relay are 24400 to 25415 and 25500 to 25507. Bit addresses 25508 to 25515 are not available.

\*3 Designation of first address in system

Each station number is attached to the device name, DM. Select the device name for the station number you want to specify in the [GP SYSTEM SETUP] MODE SETUP and the SET UP OPERATION SURROUNDINGS menu on the offline GP/GLC.

\*4 The extended data memory EM is only supported by the COM1H-CPU61.

\*5 Do not write any data to the error storage area DM6569 to DM6599 and the PC system setup area DM6600 to DM6655 in the data memory DM. For further information, refer to OMRON's related manual.

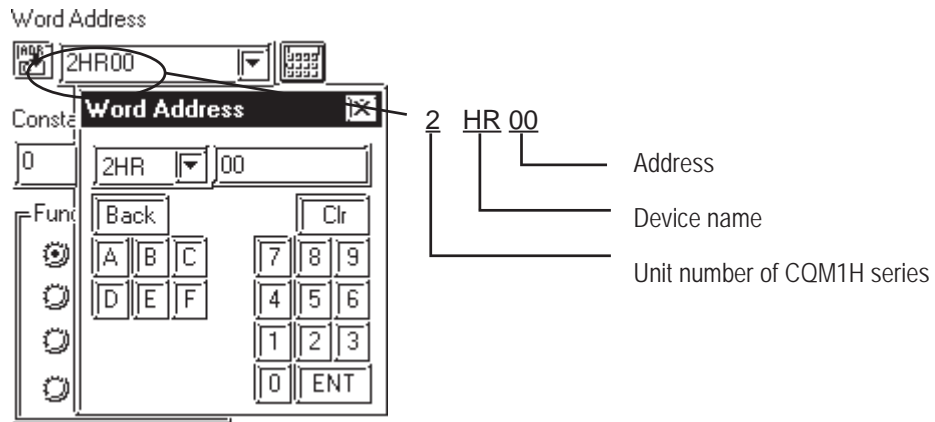


- When bit write is selected, the GP reads a word of data from the PLC's corresponding word address, turns a single bit ON, and then sends the entire word of data back to the PLC.

When the GP reads data from the PLC and writes it to the PLC, the data may not be written correctly if data is written to the same word address using the ladder program.



- When parts and tags are created in GP-PRO/PBIII, the PLC station number is attached to each device. The station numbers range from 0 to 7. This means that eight options are available for each device. See the following illustration:



**■ SYSMAC-α Series**

Setup System Area here.

| Device                  | Bit Address     | Word Address    | Particulars |
|-------------------------|-----------------|-----------------|-------------|
| I/O Relay I             | 00000 ~ 02915   | 000 ~ 029       | L/H         |
| I/O Relay II            | 30000 ~ 30915   | 300 ~ 309       |             |
| Internal Hold Relay I   | 03000 ~ 23515   | 030 ~ 235       |             |
| Internal Hold Relay II  | 31000 ~ 51115   | 310 ~ 511       |             |
| Special Hold Relay I    | 23600 ~ 25507   | 236 ~ 255       |             |
| Special Hold Relay II   | 25600 ~ 29915   | 256 ~ 299       |             |
| Latch Relay             | HR0000 ~ HR9915 | HR00 ~ HR99     |             |
| Auxiliary Memory Relay  | AR0000 ~ AR2715 | AR00 ~ AR27     |             |
| Link Relay              | LR0000 ~ LR6315 | LR00 ~ LR63     |             |
| Timer (contact)         | TIM000 ~ TIM511 | ---             |             |
| Counter (contact)       | CNT000 ~ CNT511 | ---             |             |
| Timer (current value)   | ---             | TIM000 ~ TIM511 |             |
| Counter (current value) | ---             | CNT000 ~ CNT511 |             |
| Data Memory             | ---             | DM0000 ~ DM6655 |             |



- The method of writing bits will differ depending on the GP series.  
<GP-\*30 series>

When the bit write operation (other than *Reverse*) is performed, the corresponding word address will set the bits to 0 (except the designated bits).

<Except GP-\*30 series>

When the bit write operation is performed, the GP reads the PLC's corresponding word address and turns a bit ON, then send back to PLC. Do not write to the word address from the ladder program in the middle of this operation.

- When running a GP-\*30 Series ladder program, be aware of the above points.

◆ **SYSMAC C or  $\alpha$  series communications mode selection**

When using the SYSMAC C or  $\alpha$  series with the GP in OFFLINE mode, either mode 2 or mode 1 can be selected during the entry of the initial settings. Be aware you cannot designate this settings from GP-PRO/PBIII for Windows.

- Mode 2: This is a newly added communications mode. This mode is enabled when less than 64 devices have been designated by a single screen's tags. The communications speed has been improved. Select this mode when using less than 64 devices.
- Mode 1: A communications mode equivalent to the old one. This mode is valid for 64 or more devices have been specified by a single screen's tags. The communications speed has been improved. Select this mode when using 64 or more devices.




- ***If the on-screen data memory area in the GP is initialized or if the on-screen data is transferred from the drawing software, the GP returns to mode 1 (its initial setting). Use the offline settings area to select mode 2.***
- ***In mode 2, the communications speed may not always be improved depending on which tags and system area are used, as well as how the read areas are allocated.***



■ **SYSMAC-CV Series**

 Setup System Area here.

| Device                        | Bit Address     | Word Address    | Particulars |  |
|-------------------------------|-----------------|-----------------|-------------|--|
| I/O Relay I                   | 00000 ~ 19915   | 000 ~ 199       | L/H         |  |
| Internal Hold Relay           |                 |                 |             |  |
| Sysmac BUS/2 Remote I/O Relay | 020000 ~ 099915 | 0200 ~ 0999     |             |  |
| Data Link Relay               | 100000 ~ 119915 | 1000 ~ 1199     |             |  |
| Special Hold Relay            | A00000 ~ A51115 | A000 ~ A511     |             |  |
| Latch Relay                   | 120000 ~ 149915 | 1200 ~ 1499     |             |  |
| Internal Aux. Relay           | 190000 ~ 229915 | 1900 ~ 2299     |             |  |
| SYSBUS Remote I/O Relay       | 230000 ~ 255515 | 2300 ~ 2555     |             |  |
| Timer (contact)               | T0000 ~ T1023   | ---             |             |  |
| Counter (contact)             | C 0000 ~ C 1023 | ---             |             |  |
| Timer (current value)         | ---             | T0000 ~ T1023   |             |  |
| Counter (current value)       | ---             | C 0000 ~ C 1023 |             |  |
| Data Memory                   | ---             | D0000 ~ D9999   |             |  |



- Write operations cannot be performed on the *Timer* and *Counter* bit devices.
- The method of writing bits will differ depending on the GP series.

<GP-\*30 series>

When the bit write operation (other than *Reverse*) is performed, the corresponding word address will set the bits to 0 (except the designated bits).

<Except GP-\*30 series>

When the bit write operation is performed, the GP reads the PLC's corresponding word address and turns a bit ON, then send back to PLC. Do not write to the word address from the ladder program in the middle of this operation.

- When running a GP-\*30 Series ladder program, be aware of the above points.

■ SYSMAC CS1/CJ /CJ1MSeries

In this list, "Exp." means "Expansion".



Setup system area here.

| Device                          | Bit Address           | Word Address  | Particulars   |
|---------------------------------|-----------------------|---|---|
| Channel I/O                     | C10000000 ~ C10614315 | C100000 ~ C106143   |   |
| Internal Auxiliary Relay        | W00000 ~ W51115       | W000 ~ W511   |   |
| Hold Relay                      | H00000 ~ H51115       | H000 ~ H511   |   |
| Special Auxiliary Relay         | A00000 ~ A95915       | A000 ~ A959   | *1  |
| Timer(Contact)                  | T0000 ~ T4095         | ----  | *3  |
| Counter(Contact)                | C0000 ~ C4095         | ----  | *3  |
| Task Flag (Bit)                 | TKB00 ~ TKB31         | ----  | *6  |
| Timer(Current)                  | ----                  | T0000 ~ T4095   |   |
| Counter(Current)                | ----                  | C0000 ~ C4095   |   |
| Data Memory                     | D0000000 ~ D3276715   | <span style="border: 2px solid black;">D00000 ~ D32767</span> | *2  |
| Exp. Data Memory (E0 ~ EC)      | E00000000 ~ EC3276715 | E000000 ~ EC32767   | *4  |
| Exp. Data Memory (Current Bank) | ----                  | EM00000 ~ EM32767   | <span style="border: 1px solid black; padding: 2px;">Bit 15</span> *5   |
| Task Flag                       | ----                  | TK0 ~ TK30  | <span style="border: 1px solid black; padding: 2px;">÷ 2</span> <span style="border: 1px solid black; padding: 2px;">Bit 15</span> *3 |
| Index Register                  | ----                  | IR0 ~ IR15  | <span style="border: 1px solid black; padding: 2px;">Bit 31</span> *3   |
| Data Register                   | ----                  | DR0 ~ DR15  | <span style="border: 1px solid black; padding: 2px;">Bit 15</span> *3   |

L/H

\*1 Addresses A000 to A477 cannot be written to.

\*2 When using the Communication Unit (CS1W-SCU21/CJ1W-SCU41), addresses D30000 to D31599, since they are used for PLC system settings, should not be written to from the GP.

When using the Communication Board (CS1W-SCB21/41), addresses D32000 to D32767 are used for PLC settings, should not be written to from the GP.

\*3 Cannot be written to while running.

\*4 The range of Expansion Data Memory varies depending on the CPU type.


**Reference**

For details about each device, refer to Omron's SYSMAC CS/CJ Series Communication Board CS1W-SCB21-/41 Communication CS1W-SCU21/CJ1W-SCU41 Users Manual.

\*5 Expansion Data Memory (Current Bank) does not exist on SYSMAC CJ/CJ1M Series.

\*6 Cannot be written to.

■ SYSMAC CP Series

 Setup system area here.

| Device                   | Bit Address           | Word Address      | Particulars |
|--------------------------|-----------------------|-------------------|-------------|
| Channel I/O              | CIO000000 - CIO614315 | CIO0000 - CIO6143 |             |
| Internal Auxiliary Relay | W00000 - W51115       | W000 - W511       |             |
| Hold Relay               | H00000 - H51115       | H000 - H511       |             |
| Special Auxiliary Relay  | A00000 - A95915       | A000 - A959       | *1          |
| Time up Flag             | T0000 - T4095         | ----              | *2          |
| Count up Flag            | C0000 - C4095         | ----              | *2          |
| Task Flag (Bit)          | TKB00 - TKB31         | ----              | *2          |
| Timer(Current)           | ----                  | T0000 - T4095     |             |
| Counter(Current)         | ----                  | C0000 - C4095     |             |
| Data Memory              | D0000000 - D3276715   | D00000 - D32767   |             |
| Task Flag (Status)       | ----                  | TK00 - TK30       | *2          |
| Index Register           | ----                  | IR00 - IR15       | *3*4        |
| Data Register            | ----                  | DR00 - DR15       | *3          |

L/H

\*1 Addresses A000 to A477 cannot be written to.

\*2 Cannot be written to.

\*3 Cannot be written to while running.

\*4 32-bit address

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

### ■ SYSMAC C Series

| GP Setup                       |             | Upper Link Unit Setup                                    |                      |
|--------------------------------|-------------|--|----------------------|
| Baud Rate                      | 19200 bps   | Baud Rate  | 19200 bps            |
| Data Length                    | 7 bits      | Data Bit   | 7 bits               |
| Stop Bit                       | 2 bits      | Stop Bit   | 2 bits               |
| Parity Bit                     | Even        | Parity Bit   | Even                 |
| Data Flow Control              | ER Control  | ---  |                      |
| Communication Format (RS-232C) | RS-232C     | Communication Format <sup>*1</sup> (RS-232C)             | RS-232C              |
| Communication Format (RS-422)  | 4-wire type | Communication Format <sup>*1</sup> (RS422)               | RS-422               |
| ---                            |             | Command Level <sup>*1</sup>                              | Level 1,2,3 is valid |
| ---                            |             | Relation <sup>*1</sup>                                   | 1:N                  |
| ---                            |             | DC +5V power supply <sup>*1</sup>                        | No                   |
| ---                            |             | CTS Setup <sup>*1</sup>                                  | Normally On          |
| ---                            |             | Mode Setup <sup>*2</sup>                                 | Host Link            |
| ---                            |             | Communication Conditions Setting Switch <sup>*3</sup>    | OFF                  |
| ---                            |             | Communication Port Function Setting Switch <sup>*4</sup> | SW1:OFF SW2:ON       |
| Unit No.                       | 0           | Station Number   | 0                    |

\*1 This setup is unavailable for the RS-232C port of C200HS, CQM1 and CPH2A.

\*2 This setup is available only for the RS-232C port of C200HS and CQM1.

\*3 This setup is available only for CPM2A.

\*4 This setup is available only for CPM2C.

## ■ SYSMAC C Series (CQM1H-CPU51/CQM1H-CPU61) (1:n Communication)

| GP/GLC Settings      |             | PLC Settings  |  |
|----------------------|-------------|---|--|
| Baud Rate            | 9600 bps    | Baud Rate   | 9600 bps                                       |
| Data Length          | 7 bits      | Data Length   | 7 bits   |
| Stop Bit             | 2 bit       | Stop Bit  | 2 bit  |
| Parity Bit           | Even        | Parity Bit  | Even   |
| Data Flow control    | ER          | _____   | _____  |
| Communication Format | 4 wire type | 2 wire/4 wire [WIRE]                                  | 4 wire   |
| Unit No.             | 0           | Station No. <sup>*1</sup>                             | 0  |
| _____                |             | Communication Conditions Format Setting <sup>*2</sup> | 0  |
|                      |             | Serial Communication Mode Setting <sup>*3</sup>       | Host Link                                      |
|                      |             | Terminator Switch [TERM]                              | Terminal station: ON Intermediate station: OFF |

*\*1 Although Nos. 00 to 31 can be used for PLC station Nos., the maximum number of PLCs that can communicate with the GP on the 1:n communication basis is eight. Therefore, set up PLC station Nos. within the range of 00 to 07.*

*\*2 Communication Conditions Format Settings: DM6550 (Bits 0 to 3)*

| DM6550 (Bit 0 to 3)              | Communication Settings |             |          |        |
|----------------------------------|------------------------|-------------|----------|--------|
| Default: 0<br>(Standard Setting) | Baud Rate              | Data Length | Stop Bit | Parity |
|                                  | 9600bps                | 7 bits      | 2 bits   | Even   |

*\*3 Leave the serial communication mode setting DM6550 (bits 12 to 15) set to the default setting, 0.*

## ■ SYSMAC-α Series (using Communication board)

| GP Setup                       |             | Communication board Setup  |           |
|--------------------------------|-------------|--|-----------|
| Baud Rate                      | 19200 bps   | Baud Rate  | 19200 bps |
| Data Length                    | 7 bits      | Data Bit   | 7 bits    |
| Stop Bit                       | 2 bits      | Stop Bit   | 2 bits    |
| Parity Bit                     | Even        | Parity Bit   | Even      |
| Data Flow Control              | ER Control  | ---  |           |
| Communication Format (RS-232C) | RS-232C     | ---  |           |
| Communication Format (RS-422)  | 4-wire type | RS-422/485 cable (2-wire/4-wire type) switching setting (dip switch 1) | 4         |
| Unit No.                       | 0           | Station Number   | 0         |



**When using the above list's recommended settings, please perform the following.**

**Port A: Store "0001" in DM6555, and store "0304"<HEX> in DM6556.**

**Port B: Store "0001" in DM6550, and store "0304"<HEX> in DM6551.**

### ■ SYSMAC- $\alpha$ Series (when using the CPU's RS-232C port)

| GP Setup             |            | RS-232C port Setup |                 |
|----------------------|------------|--------------------|-----------------|
| Baud Rate            | 19200 bps  | Baud Rate          | 19200 bps       |
| Data Length          | 7 bits     | Data Bit           | 7 bits          |
| Stop Bit             | 2 bits     | Stop Bit           | 2 bits          |
| Parity Bit           | Even       | Parity Bit         | Even            |
| Data Flow Control    | ER Control | ---                |                 |
| Communication Format | RS-232C    | Using Mode         | Host (PLC) Link |
| Unit No.             | 0          | Station Number     | 0               |



When using the above list's recommended settings, please follow the instructions given here.  
**CPU 232C Port: Store "0001" in DM6645, and store "0304" <HEX> in DM6646.**

### ■ SYSMAC CV Series

| GP Setup                       |                 | Upper Link Unit Setup          |                 |
|--------------------------------|-----------------|--------------------------------|-----------------|
| Baud Rate                      | 19200 bps       | Baud Rate                      | 19200 bps       |
| Data Length                    | 7 bits          | Data Bit                       | 7 bits          |
| Stop Bit                       | 2 bits          | Stop Bit                       | 2 bits          |
| Parity Bit                     | Even            | Parity Bit                     | Even            |
| Data Flow Control              | ER Control      | ---                            |                 |
| Communication Format (RS-232C) | RS-232C         | Communication Format (RS-232C) | RS-232C         |
| Communication Format (RS-422)  | 4-wire type     | Communication Format (RS-422)  | RS-422          |
| Unit No.                       | 0 <sup>*1</sup> | Station Number                 | 0 <sup>*1</sup> |

\*1 When GP is connected to the Port 1 on the Upper Link Unit CV500-LK201, the station number must be fixed as "0". (The station number cannot be set on the PLC.)

■ **SYSMAC CS1/CJ/CJ1M Series<CPU unit's RS-232C Port>**

| GP Setup             |         | PLC Setup   |  |
|----------------------|---------|-------------|--|
| Baud Rate            | 19200   | Baud Rate   | 19200  |
| Data Length          | 7       | Data Length | 7  |
| Stop Bit             | 2       | Stop Bit    | 2  |
| Parity Bit           | Even    | Parity Bit  | Even   |
| Data Flow Control    | ER      | _____       | _____  |
| Communication Format | RS-232C | _____       | _____  |
| Unit No.             | 0       | Station No. | 0  |
| _____                | _____   | Dip Switch  | SW1: OFF<br>SW5: OFF<br>SW7: OFF<br>SW8: OFF |
| _____                | _____   | Mode Setup  | Host Link                                    |

■ **SYSMAC CS1/CJ/CJ1M Series<CPU unit's Peripheral Port>**

| GP Setup             |         | PLC Setup   |   |
|----------------------|---------|-------------|---|
| Baud Rate            | 19200   | Baud Rate   | 19200                                       |
| Data Length          | 7       | Data Length | 7   |
| Stop Bit             | 2       | Stop Bit    | 2   |
| Parity Bit           | Even    | Parity Bit  | Even  |
| Data Flow Control    | ER      | _____       | _____                                       |
| Communication Format | RS-232C | _____       | _____                                       |
| Unit No.             | 0       | Station No. | 0   |
| _____                | _____   | Dip Switch  | SW1: OFF<br>SW4: ON<br>SW7: OFF<br>SW8: OFF |
| _____                | _____   | Mode Setup  | Host Link                                   |

■ **SYSMAC CS1/CJ/CJ1M Series**

< **When using the Communication Board /Unit>**

| GP Setup                             |             | PLC Setup                            |                           |
|--------------------------------------|-------------|--------------------------------------|---------------------------|
| Baud Rate                            | 19200       | Baud Rate                            | 19200                     |
| Data Length                          | 7           | Data Length                          | 7                         |
| Stop Bit                             | 2           | Stop Bit                             | 2                         |
| Parity Bit                           | Even        | Parity Bit                           | Even                      |
| Data Flow Control                    | ER          | _____                                | _____                     |
| Communication Format (using RS-232C) | RS-232C     | _____                                | _____                     |
| Communication Format (using RS-422)  | 4-wire type | WIRE (2-wire/4-wire type Switch)     | 4-wire type               |
|                                      |             | TERM (Termination Resistance Switch) | Termination Resistance ON |
| Unit.No                              | 0           | Host Link Station No.                | 0                         |
| _____                                | _____       | Serial Communication mode            | Host Link                 |
| _____                                | _____       | Communication Delay Time             | 0                         |
| _____                                | _____       | CTS Control                          | None                      |

■ SYSMAC CP Series

| GP Setup             |         | PLC Setup                 |           |
|----------------------|---------|---------------------------|-----------|
| Baud Rate            | 19200   | Baud Rate                 | 19200     |
| Data Length          | 7       | Data Length               | 7         |
| Stop Bit             | 2       | Stop Bit                  | 2         |
| Parity Bit           | Even    | Parity Bit                | Even      |
| Data Flow Control    | ER      | ——                        | ——        |
| Communication Format | RS-232C | ——                        | ——        |
| Unit No.             | 0       | Unit No. for host link    | 0         |
| ——                   | ——      | Serial Communication mode | Host Link |



### ■ PLC-Specific Error Codes

Errors specific to PLCs appear at the lower left corner of the GP/GLC screen in the form of “PLC COM. ERROR (02:\*\*:##).” In this form, \*\* denotes an PLC specific error code and ## denotes the PLC station No. generating the error.

<PLC-specific error codes>

| Error Code | Meaning            | Cause  |
|------------|--------------------|--|
| 01         | Unable to run      | This error is resulted when operations such as write operation is instructed by the GP while the PLC is in the RUN mode. |
| 13         | FCS Error          | FSC is incorrect due to miscalculation or influence of noises.   |
| 14         | Format Error       | Specified device does not exist.   |
| 15         | Numeric Data Error | Specified address is out of the range of existing addresses.   |
| 18         | Frame Length Error | The first frame is inconsistent with the format.   |