

PROFIBUS Communication Converter **Quick Instruction Manual**

COM-JG [For FB100/FB400/FB900] **Manual**

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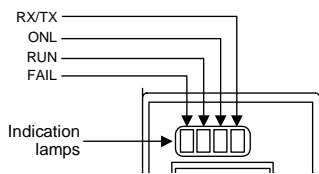
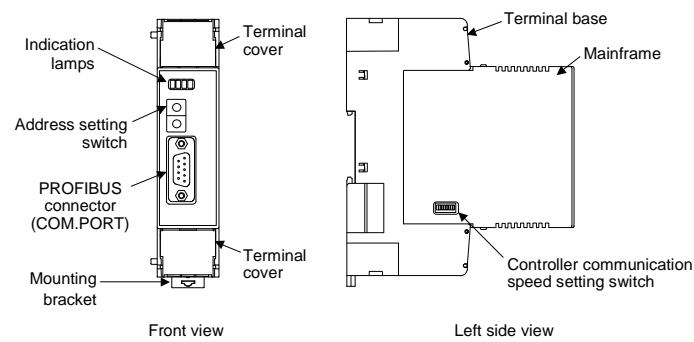
IMR01Y13-E3

This manual describes the basic operation method of the COM-JG. For the installation, the communication data, the detail handling procedures and various function settings, please read if necessary the following separate manuals.

- COM-JG [For FB100/FB400/FB900] Installation Manual (IMR01Y03-E□): Enclosed with COM-JG
- COM-JG [For FB100/FB400/FB900] Communication Data List (IMR01Y18-E□): Enclosed with COM-JG
- COM-JG [For FB100/FB400/FB900] Instruction Manual (IMR01Y08-E□): Separate (Download free or purchase hard copy)

These manuals can be downloaded from our website:
URL: http://www.rkcinst.com/english/manual_load.htm

1. PARTS DESCRIPTION



• Indication lamps

FAIL	[Red]	When instrument abnormally:	Turns on
RUN	[Green]	• When normally: • Operation error: • During controller communication initialization:	Turns on Flashes slowly Flashes rapidly
ONL	[Green]	During PROFIBUS connection establishment:	Turns on
RX/TX	[Green]	During PROFIBUS data send and receive:	Flashes

• PROFIBUS connector

COM. PORT	Connector for PLC (Master) connection
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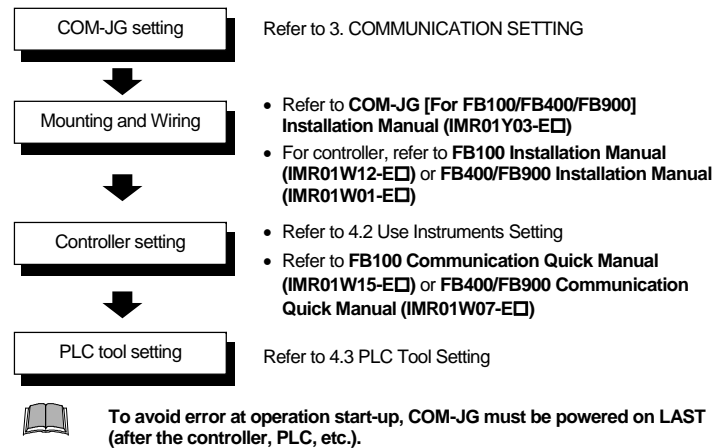
• Switches

Address setting switch	Set the address for PROFIBUS
Controller communication speed setting switch	Set the communication speed for controller communication

• Others

Terminal cover	Terminal covers above and below the COM-JG
Mounting bracket	• Used for the DIN rail mounting • When panel mounted, two mounting brackets are required for the upper and lower sides (one required for the upper side: separately sold).
Terminal base	Part of the terminal and base of COM-JG (There is the termination resistor transfer switch in the inside of terminal base)
Mainframe	Part of the mainframe of COM-JG

2. HANDLING PROCEDURES



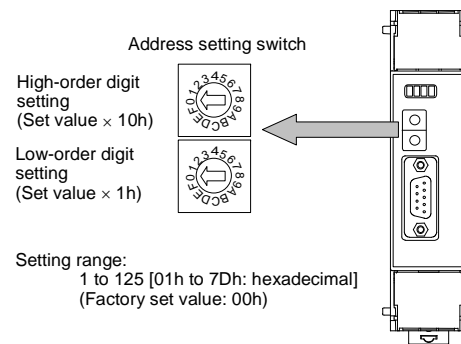
3. COMMUNICATION SETTING

CAUTION

Do not separate the mainframe from the terminal base with the power turned on. If so, instrument failure may result.

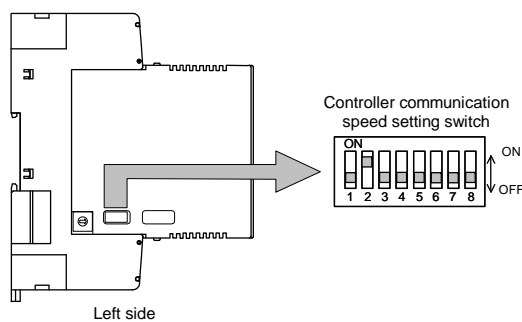
3.1 PROFIBUS Address Setting

Set an address of PROFIBUS. Using a small blade screwdriver.



3.2 Controller Communication Speed Setting

Set a communication speed of controller communication.



1	2	Controller communication speed
OFF	OFF	38400 bps
ON	OFF	9600 bps
OFF	ON	19200 bps
ON	ON	38400 bps

Factory set value: 19200 bps

5	Controller address setting mode
OFF	Continuous setting (Consecutive addresses starting from 1 are set to the controllers)
ON	Free setting (Addresses are freely set to the controllers in the range of 1 to 31)

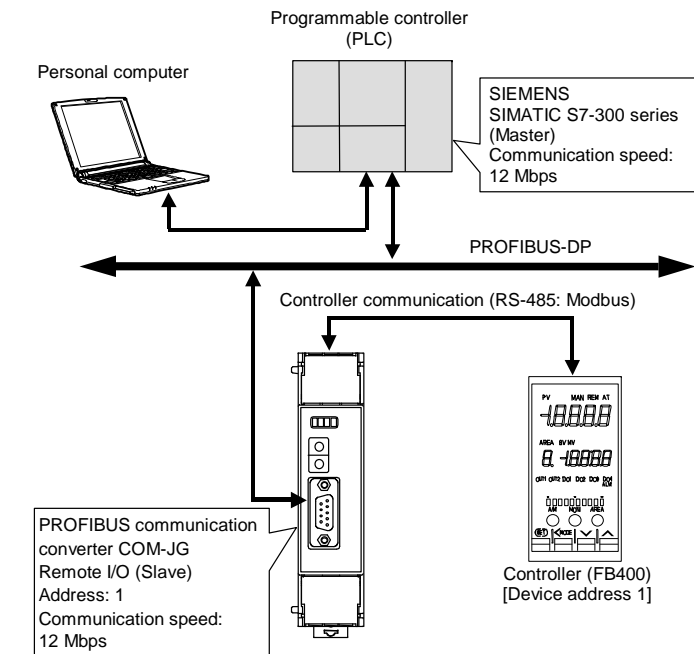
Factory set value: Continuous setting

3	4	6	7	8	
OFF	OFF	OFF	OFF	OFF	Fixed

4. USAGE EXAMPLE

In this usage example, described the following system configuration.

4.1 System Configuration



■ Use instruments

- PROFIBUS communication converter: COM-JG.....1
- Temperature controller: FB400.....1
- SIMATIC S7-300 series (SIEMENS AG)
 - Power supply module: PS-300 (PS307 2A)
 - CPU module: S7-300 (CPU315-2DP)
- PROFIBUS special cable
- COM-JG and controller connection cable
- Personal computer
 - Programming Software STEP7 (SIEMENS AG)

For the personal computer to be connected to the PLC, refer to Instruction Manual of PLC and STEP7.

4.2 Use Instruments Setting

Set the PLC, COM-JG and controller as the following.

■ COM-JG setting

- Protocol: Modbus
- PROFIBUS address: 1
- Controller communication speed: 19200 bps (Factory set value)
- Controller address setting mode: Continuous setting (Factory set value)

For setting method, refer to 3. COMMUNICATION SETTING.

■ Controller (FB400) setting

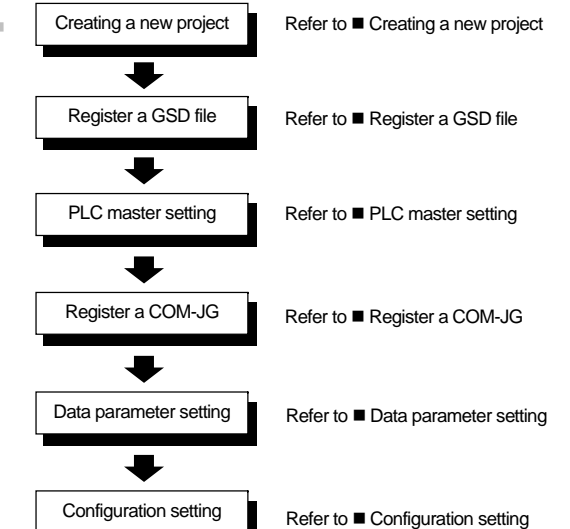
- Device address: 1
- Communication speed: 19200 bps (Factory set value)
- Data bit configuration: Data 8-bit, Without parity bit, Stop 1-bit

For setting method, refer to FB400/FB900 Communication Quick Manual (IMR01W07-E□).

When it uses more than one controller, a device address set the address which continued from 1.

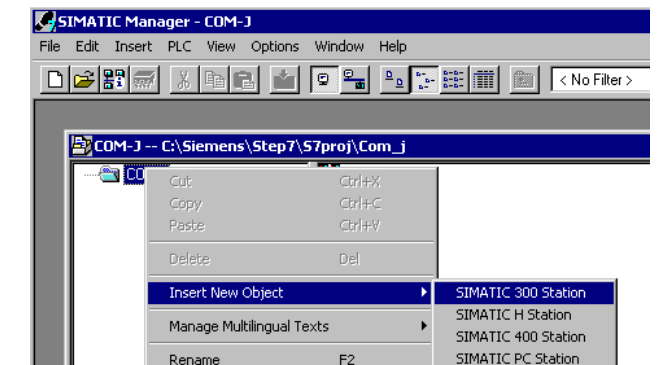
4.3 PLC Tool Setting

The procedure of using the Programming Software STEP7 is as follows.

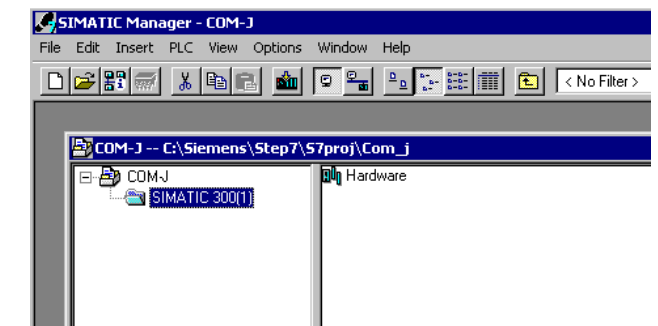


■ Creating a new project

1. Start programming software STEP7.
2. Select the menu command **File** → **New...**, and creating a new project. The project name is "COM-J."
3. Clicking "OK" displays the new project on the SIMATIC Manager.
4. The PLC is registered to the created object. Here, "SIMATIC 300 Station" is selected.



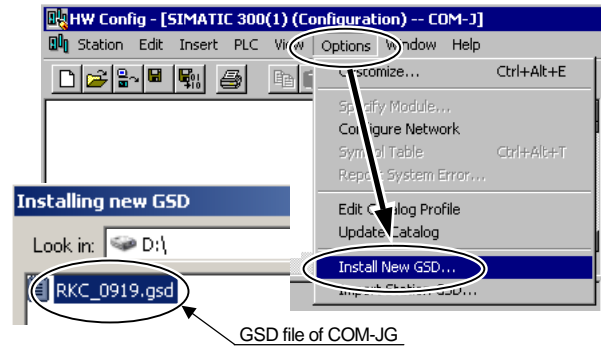
5. If the PLC is registered, the display becomes as follows.



Register a GSD file

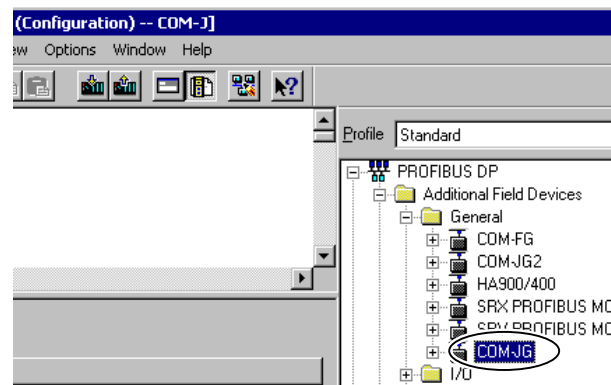
- Click the "SIMATIC 300" folder on the screen registered with the PLC and then double-click "Hardware" on the right side of the window.
(For display, refer to the image of 5. at Creating a new project on the previous page.)

- Go to the "Options" on the menu bar and click on "Install New GSD..." to register GSD file for COM-JG downloaded from RKC official website.



GSD file of COM-JG

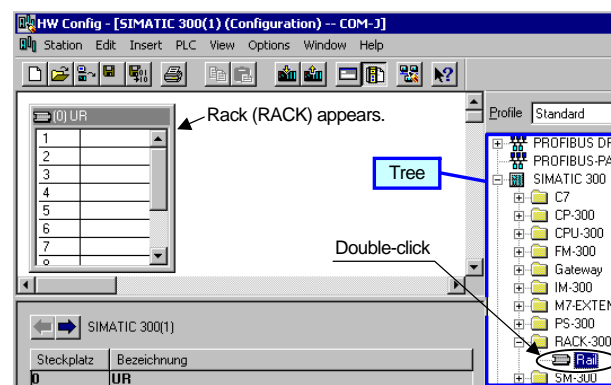
- After the GSD file is registered, "COM-JG" is displayed on the HW configuration screen.



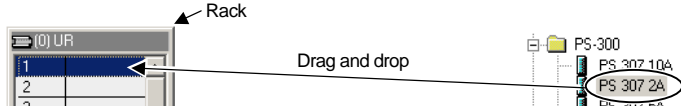
PLC master setting

Example:

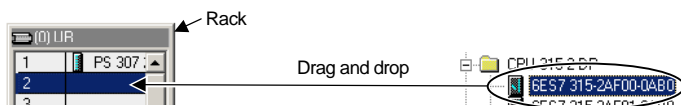
- Double-click Rail under "RACK-300" in the folder tree to display rack (RACK).



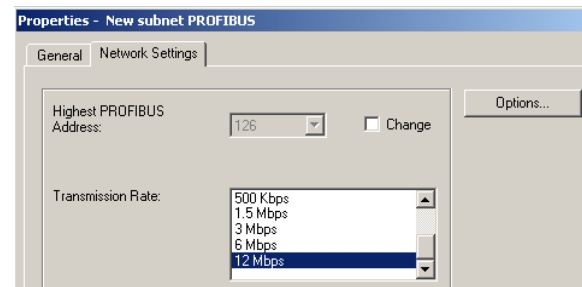
- Drag and drop "PS 307 2A" under power supply module "PS-300" from the folder tree into the rack.



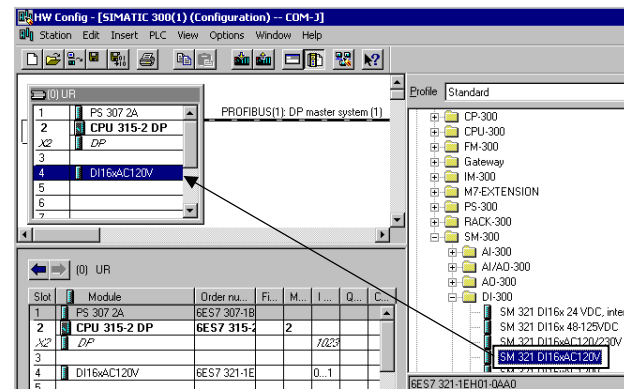
- Drag and drop "6ES7-315-2AF00-0AB0" under CPU module "CPU 315-2 DP" into the rack.



- As the properties are displayed, click "New" to set the network.
In this example, the "Highest PROFIBUS Address" is set to 126 and the "Transmission Rate," to 12 Mbps.

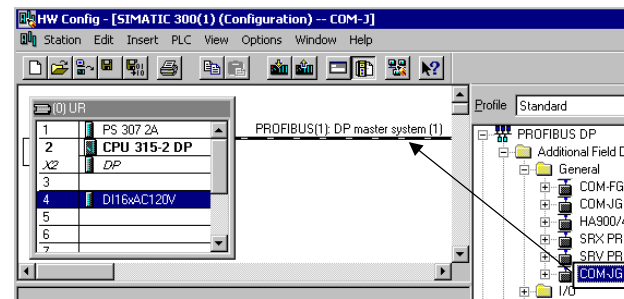


- Drag and drop "SM 321 DI16xAC120V" under DI module "DI-300" into the rack.

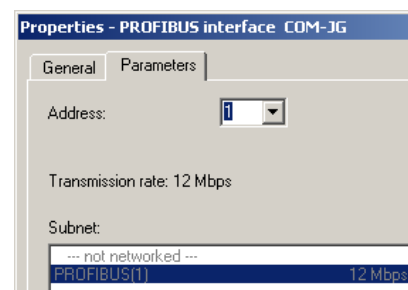


Register a COM-JG

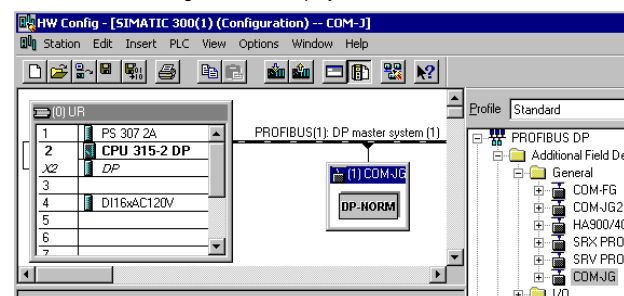
- Drag and drop "COM-JG" onto "PROFIBUS (1): DP master system (1)" from the tree.



- As the properties are displayed, set the PROFIBUS address.
In this example, "1" is set.

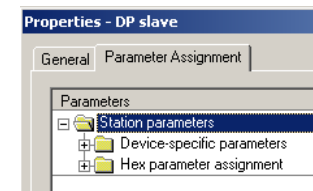


- If the COM-JG is registered, the display becomes as follows.

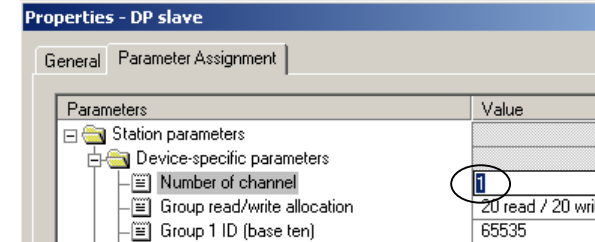


Data parameter setting

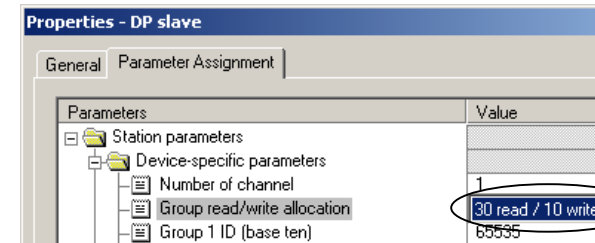
- Double-click "COM-JG" registered to set each controller communicating item.



- Set the number of connecting controllers to "Number of Channel."
In this example, set is "1."

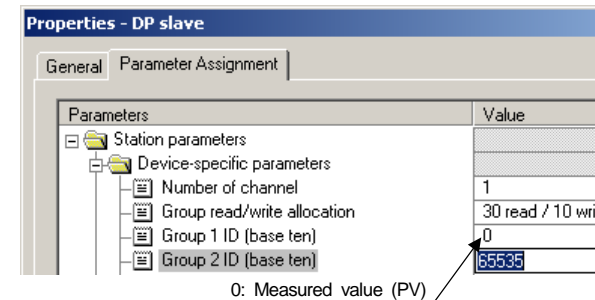


- Set the number of read/write items to "Group read/write allocation."
In this example, the number of read items set to 30, and the number of write items, to 10.

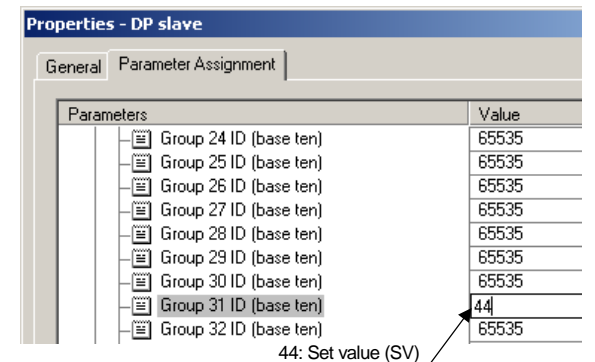


- The number of items which can be set by the COM-JG is 40 maximum including both read and write items.

- Set read items in order from "Group 1 ID (base ten)."
The set value sets the Modbus register address of the controller connected in a decimal number.
In this example, "0: Measured value (PV)" is set.



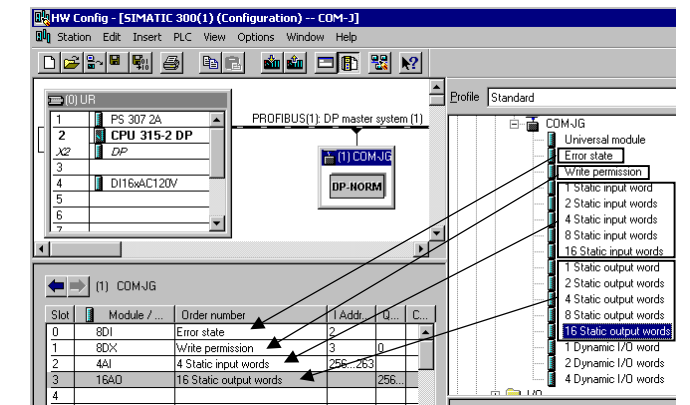
- Set write items in order from "Group 31 ID (base ten)."
The set value sets the Modbus register address of the controller connected in a decimal number.
In this example, "44: Set value (SV)" is set.



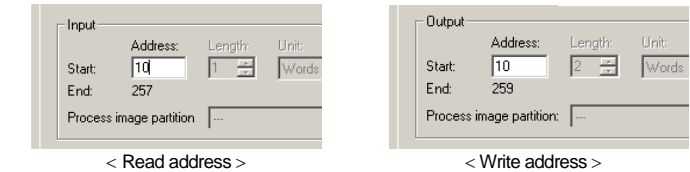
- After the allocation of data parameters is finished, click "OK."

Configuration setting

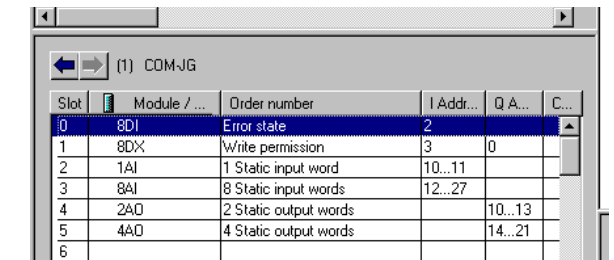
- Select "COM-JG" and then set the error state register.
Select "Error state" from the tree and then drag and drop it to the COM-JG rack.
- Set a write permission register.
Select "Write permission" from the tree and then drag and drop it to the COM-JG rack.
- Set a static data read request.
Select "Static input word" from the tree and then drag and drop it to the COM-JG rack.
1/2/4/8/16 words are available.
- Set a static data write request.
Select "Static output word" from the tree and then drag and drop it to the COM-JG rack.
1/2/4/8/16 words are available.



- Set the PLC register address for static data read and write requests.



- Setting completion of configuration.



- Save a project, and execute a compilation.
- Download a project to the PLC, and be ends.

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