Panasonic® INSTRUCTION MANUAL

CC-Link Communication Unit SC-HG1-C

MJE-SCHG1C No.0090-53V

Thank you very much for purchasing Panasonic products. Read this Instruction Manual carefully and thoroughly for the correct and optimum use of this product. Kindly keep this manual in a convenient place for quick reference.

- For communication commands and other detailed information about the CC-Link Communication Unit **SC-HG1-C**, refer to the "**SC-HG1-C User's Manual**".
- CC-Link is a registered trademark of Mitsubishi Electric Corporation, and is controlled by the CC-Link Partner Association.

⚠WARNING

- Never use this product as a device for personnel protection.
- For personnel protection, use only products that meet the laws and standards for personnel protection that apply in each region or country, such as OSHA, ANSI and IEC.

1 REGULATIONS AND STANDARDS

- This product conforms to the regulations and standards below.

  <Conformity Directives / Conforming Regulations>
  EU Law : EMC Directive 2014/30/EU
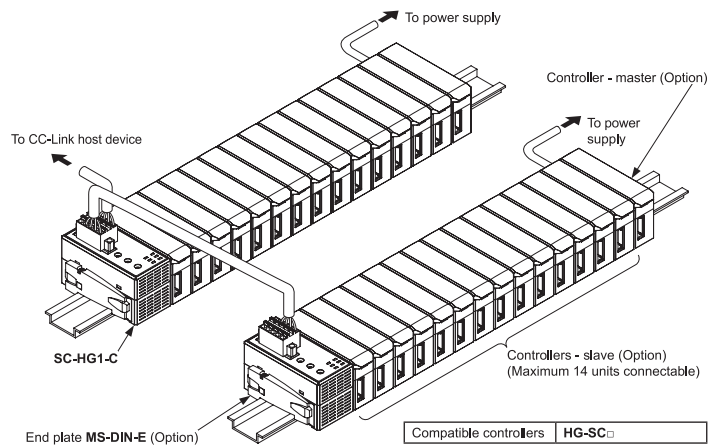 British Legislation : EMC Regulations 2016/1091

  - **Applicable Standards**
  EN 61000-6-4 : 2007 +A1 : 2011,EN 61000-6-2 : 2005
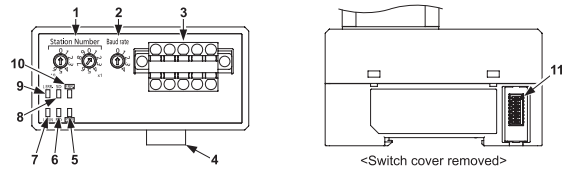
2 CONTENTS OF PACKAGE

- ☐ Main unit: 1 pc.
- ☐ Instruction Manual (English / Japanese, Chinese / Korean): 1 pc. each
- ☐ General Information for Safety, Compliance, and Instructions 1 pc.

3 SYSTEM CONFIGURATION

- This product is a communication unit that is used to monitor sensor ON / OFF output and detection amounts using CC-Link communication between the controller and CC-Link host device.
- This product can be connected to a maximum of 15 controllers (one master controller, 14 slave controllers).
- The CC-Link version can be switched between Version 1.10 and Version 2.0 (2 stations x8 / 4 stations x4) using the mode setting switch.
- The power that drives this product is supplied from a connected controller / master controller.

SC-HG1-C
End plate **MS-DIN-E** (Option)

| Compatible controllers | HG-SC□ |

4 DESCRIPTION OF PARTS

<Switch cover removed>

	Name	Function
1	Station number setting switch	Set the CC-Link station number to a number between 1 to 64 (an error will result if set to 0 or 65 or higher). [Factory setting: 1]
2	Communication speed setting switch	Set the CC-Link communication speed. 0: 156kbps, 1: 625kbps, 2: 2.5Mbps, 3: 5Mbps, 4: 10Mbps [Factory setting:156kbps]
3	Connector for CC-Link	Connect to a host device or other **SC-HG1-C**.
4	Male connector	Connect to a master controller or slave controller.
5	Power indicator (Green)	Lights up when power is supplied.
6	RD indicator (Green)	Lights up during data reception.
7	L RUN indicator (Green)	Lights up while data link is executed.
8	SD indicator (Green)	Lights up during data transmission.
9	L ERR. indicator (Red)	Lights up if the station setting number switch and communication speed setting switch are in invalid positions when the power is turned ON. Blinks when a switch setting is changed while the power is ON.
10	ERR. indicator (Red)	Lights up when CC-Link communication is interrupted. Blinks when a communication error occurs.
11	Mode setting switch	Set the communication method and number of occupied stations. [Factory setting: CC-Link mode 1]

- CC-Link mode 1

SW No.	1	2	3	4	5	6	7	8
ON / OFF	ON	OFF	Not used (Note)					
Remarks	CC-Link Ver. 1.10, Number of occupied stations: 4							

- CC-Link mode 2

SW No.	1	2	3	4	5	6	7	8
ON / OFF	OFF	ON	Not used (Note)					
Remarks	CC-Link Ver. 2.00, Number of occupied stations: 2 Expanded cyclic transmission speed: x8							

- CC-Link mode 3

| SW No.	1	2	3	4	5	6	7	8
ON / OFF	ON	ON	Not used (Note)					
Remarks	CC-Link Ver. 2.00, Number of occupied stations: 4 Expanded cyclic transmission speed: x4							

Note: Use with unused switches set to OFF.

5 COMMUNICATION SETTINGS

- After changing the settings, always turn the power OFF and then ON.
- For the communication conditions and commands, refer to the "**SC-HG1-C User's Manual**".

- Follow the procedure below to configure settings.
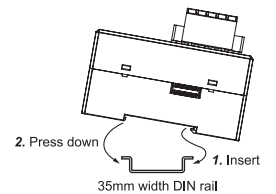
Procedure

1. Set the address with the station number setting switches.

   Station Number

2. Set the communication speed with the communication speed setting switch.

   Baud rate

3. Set the communication method and number of occupied stations with the mode setting switch.
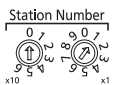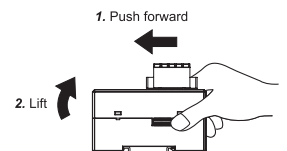

6 MOUNTING AND CONNECTIONS

Mounting procedure

1. Hook the rear of the mounting part onto the 35mm width DIN rail.
2. While pressing the rear of the mounting part down on the 35mm width DIN rail, fit the front of the mounting part onto the DIN rail.

2. Press down
1. Insert
35mm width DIN rail

Removal procedure

1. Grasp the product and push forward.
2. Lift the front to remove.

1. Push forward

2. Lift

Note: If you attempt to lift the front without pushing the product forward, you may bend the hook on the back of the mounting part.

Connection procedure

- This product must be connected to a controller.
- Up to 15 controllers (one master controller and 14 slave controllers) can be connected to the product.

- Always shut OFF the power before connecting the product to or disconnecting the product from a controller. Risk of damage to the product and controller if connected with the power ON.
- Insert the male connector firmly into the female connector. Risk of damage to the product and controller if not connected completely.
- To connect the product to a controller, the units must be mounted on a DIN rail. Attach end plates **MS-DIN-E** (option) or commercially available fittings so as to enclose the connected units at the ends.
- For cautions on using controllers, refer to the manual for the controller.

1. Mount the product on a 35mm width DIN rail.
2. Remove the connector cover from the controller. (Note 1)

Controller - master unit (Option)
Controller - slave unit (Option)
This product
Connector cover
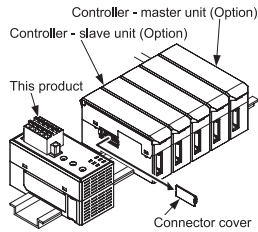
3. Slide the product so that it directly contacts the controller.

Slide
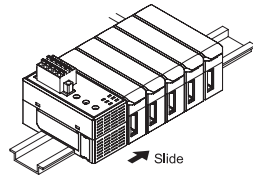
4. Attach end plates (option) with the flat side facing in so as to enclose the connected units at the ends. (Note 2)
5. Tighten the screws to fasten the end plates.

End plate (Option)

End plate (Option)

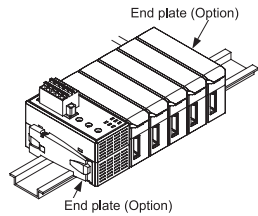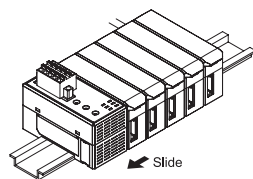Notes: 1) Be sure to keep the connector cover you removed from the controller.
2) Be sure to configure the communication switch settings on the side of the product before attaching the end plates.
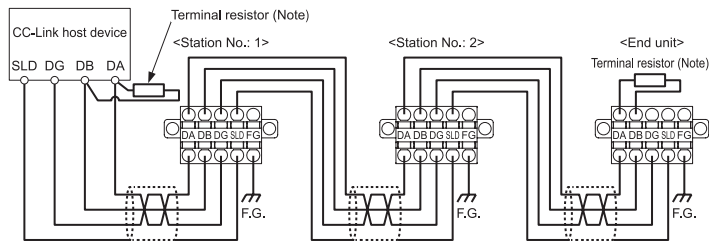
Removal procedure

1. Loosen the screws on the end plates and remove the end plates.
2. Slide and remove the product and controllers.

Slide

7 CONNECTING AN EXTERNAL DEVICE

Connecting the host communication cable

- Make sure that the power supply is OFF while performing wiring work.
- Use only a special-use communication cable that is approved by the CC-Link Partner Association.
- The communication distance must be within the specified range.
- Do not set duplicate station numbers.
- Allow a cable length of at least 200mm between stations.
- For detailed connection specifications, check the Cable Wiring Manual that is published by the CC-Link Partner Association.


CC-Link host device
SLD DG DB DA
Terminal resistor (Note)
<Station No.: 1>
<Station No.: 2>
<End unit>
Terminal resistor (Note)
DA DB DG SLD FG
F.G.

<Terminal names and corresponding lead wire colors>

Terminal name	Color code
DA	Blue
DB	White
DG	Yellow
SLD	Shield

Note: Select terminal resistors that are suitable for the cable, and connect to the stations at both ends of the line connection.

<Terminal block connection procedure>

- Use a special-use CC-Link communication cable (shielded 3-conductor twisted cable).
- When connecting the terminal block, use stranded wires (lead wires) with a ferrule (sleeve) terminal (please obtain separately) attached as shown at right, and insert sufficiently into the connection hole.
- When inserted correctly, the wire is locked and cannot be pulled out. Take care not to pull with excessive force, as the wire may break.
- To connect stranded wire (lead wire) to the terminal block without using a ferrule (sleeve) terminal, insert sufficiently into the connection hole while pressing the release button.
- To disconnect stranded (lead) wire, pull out the wire while pressing the release button.
- When attaching the connector, tighten to a torque of no more than 0.2N·m.

Lead wire
Ferrule (sleeve) terminal (Please obtain separately)
Lead wire insertion hole

Flat-head screwdriver
Release button
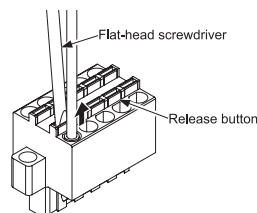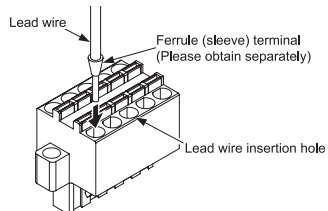
8 SPECIFICATIONS

Designation	CC-Link communication unit				
Model No.	SC-HG1-C				
Compatible controllers	HG-SC□				
Number of units connectable	Maximum of 15 controllers (one master, 14 slaves) per SC-HG1-C unit				
Supply voltage (Note)	24V DC ±10%, Including ripple 0.5V (P-P)				
Current consumption	80mA or less				
Communication method	Switchable CC-Link Ver. 1.10 or 2.00				
Remote station type	Remote device station				
Number of occupied station	CC-Link Ver. 1.10: 4 stations, CC-Link Ver. 2.00: Switchable 2 or 4 stations				
Station No. setting	1 to 64 (0 and 65 or more: Error)				
Communication speed	156kbps	625kbps	2.5Mbps	5Mbps	10Mbps
Maximum overall cable distance	1,200m	900m	400m	160m	100m
Ambient temperature	-10 to +45°C (No condensation or icing), Storage: -20 to +60°C				
Ambient humidity	35 to 85% RH, Storage: 35 to 85% RH				
Material	Unit case: PC				
Weight	Approx. 80g				

Note: Power is supplied from a connected controller / master controller.

9 CAUTIONS

- This product has been developed / manufactured for industrial use only.
- Verify that fluctuations of power input supply voltage do not exceed the rating, including controllers.
- When using devices that are sources of noise (switching regulators, invertor motors, etc.) near the installation area of the product, always ground frame-ground (F.G.) terminals of those devices individually.
- Do not use during the initial transient time (2s) after the power supply is switched ON.
- Make sure that the power is OFF while performing wiring or connection work.
- Risk of damage and burning if the load is incorrectly wired or short-circuiting occurs.
- Do not wire in parallel with a high-voltage line or power line, or run through the same conduit. Risk of malfunctioning due to induction.
- This product is suitable for indoor use only.
- Avoid dust, dirt, and steam.
- Do not use in locations where there are corrosive or other harmful gases.
- Ensure that the product does not come into contact with organic solvents such as thinner.
- Ensure that the product does not come into contact with strong acid or alkaline.
- Ensure that the product does not come into contact with oil or grease.
- This product cannot be used in an environment that contains flammable or explosive gases.
- Performance may not be satisfactory in a strong electromagnetic field.
- Do not drop or otherwise subject to shock. Risk of product damage.
- Never attempt to disassemble, repair, or modify the product.
- When the product becomes unusable or unneeded, dispose of the product appropriately as industrial waste.
- Design the system to allow the addition of external safety circuits and other means of protection against system trouble.
- In the case this product is incorporated into your product which is designed to conform with the EMC Directive for CE Marking and the EMC Regulation for UKCA Marking, install this product in a conducting box as per the User's Manual (issued by Mitsubishi Electric Corporation) of the PLC.