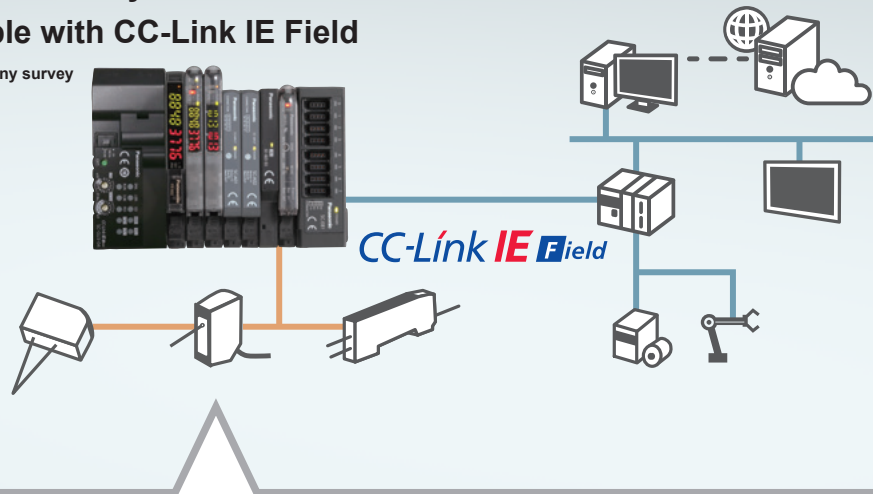


## Connect Fiber Sensors and Displacement

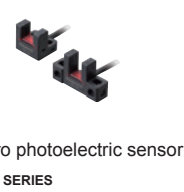
## Sensors to *CC-Link IE Field* for High-Speed Control

Introducing the industry's first\* communication units compatible with CC-Link IE Field

\* As of March 2017, in-company survey

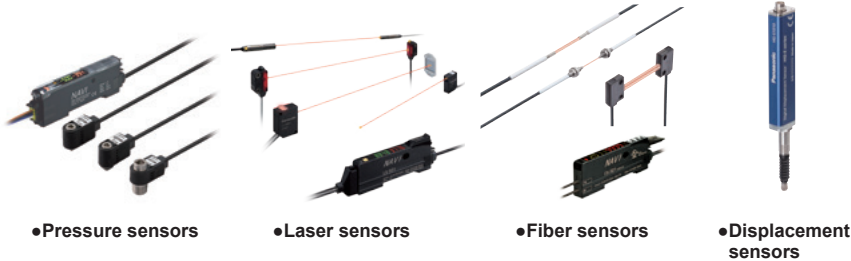


### Real-time communication for various sensors



## Visualize collected sensor data to launch IoT initiatives!

Conditions surrounding the manufacturing industry are rapidly changing as production processes are advancing dramatically based on keywords such as IoT and Industry 4.0. To respond to the IoT trend, "visualization" is the first step to take. Panasonic Industrial Device SUNX offers sensors and communication units that achieve the acquisition and visualization of sensor data.



Panasonic Industrial Device SUNX's sensors can connect to both!

**CC-Link IE Field**  
**CC-Link**



Communication Unit for Open Network SC series

## Connection of various sensors to the network

Each SC-GU3 series unit can be connected with up to 16 sensors\*.

\* Up to 12 units when the system is configured with FX-500 series / LS-501 unit

**NEW**

Communication unit for  
CC-Link IE Field  
**SC-GU3-04**

**CC-Link IE Field**

Communication speed: 1 Gbps



Communication unit for  
CC-Link  
**SC-GU3-01**

**CC-Link**

Communication speed: 10 Mbps (max.)



Transmission of digital (numerical) data from pressure sensors, photoelectric sensors, laser sensors, temperature controllers, and the like to the network

Setting of sensor threshold values and operation / confirmation of current values can be performed on the network. This eliminates the need to directly operating individual sensor units.

Head-separated digital pressure sensor

**DPS-400 SERIES**  
**DPH-100 SERIES**

Units with a pressure range of 1 MPa, ±100 kPa and -101 kPa are available.



Digital fiber sensor  
**FX-500 SERIES**

More than 100 types of fiber heads, including a heat-resistant type, chemical-resistant type and lens-equipped type, are available.



Digital laser sensor  
**LS-500 SERIES**

Four types of sensor heads, such as a thru-beam type, coaxial reflective type and coaxial retroreflective type, are available.



Micro laser distance sensor\*

**HG-C SERIES**

The CMOS laser sensors offer repeatability of 10 μm 0.394 mil to ensure stable detection.



Temperature controller\*

**KT SERIES**

This unit is easy to operate and realizes high-precision temperature control.



\* **SC-A01** analog voltage input unit or **SC-A02** analog current input unit is also required.

Transmission of ON/OFF data of proximity sensors and other sensors to the network

The ON/OFF data of sensors can be centrally managed on the network. Should an abnormality occur, the problem cause can be easily identified and located.

Compact inductive proximity sensor (amplifier-separated)

**GA-311/GH SERIES**

Five types of IP67G sensor head models are available, including an ultra-compact unit with a diameter of 2.8 mm 0.110 in and a sputter-resistant unit.



Rectangular-shaped inductive proximity sensor (amplifier built-in)\*

**GX-F/H SERIES**

These inductive proximity sensors have a large stable detection range to provide an ample detection distance.

The integrally molded construction realizes IP68G protection.



Micro photoelectric sensor\*

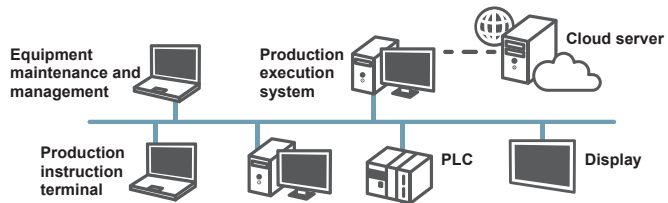
**PM SERIES**

These compact units feature three protective circuits. A large, easy-to-see multi-angle indicator is provided.

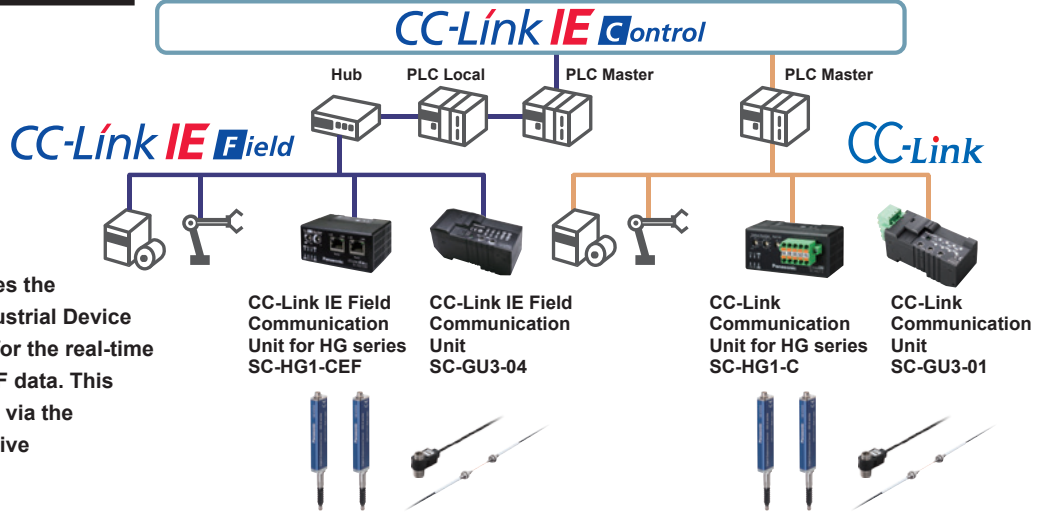


\* **SC-E1** 1-channel connector input extension unit or **SC-E81 / SC-E82** 8-channel connector input extension unit is also required.

**Communication unit for direct connection of sensors to the network!**



Use of the communication unit enables the connection of various Panasonic Industrial Device SUNX sensors to a CC-Link network for the real-time acquisition of digital data and ON/OFF data. This allows you to change sensor settings via the network and also log data for preventive maintenance purposes.



## Connection of displacement sensors to the network

Each SC-HG1 series unit can be connected with up to 15 displacement sensors.

**NEW**

CC-Link IE Field Communication Unit for HG series

**SC-HG1-CEF**

**CC-Link IE Field**

Communication speed: 1 Gbps



CC-Link Communication Unit for HG series

**SC-HG1-C**

**CC-Link**

Communication speed: 10 Mbps (max.)



### Transmission of digital (numerical) data from contact-type digital displacement sensors to the network

The SC-HG1 series achieves programless transmission of high-precision data. Internal settings of multiple units can also be changed in a batch via the network.

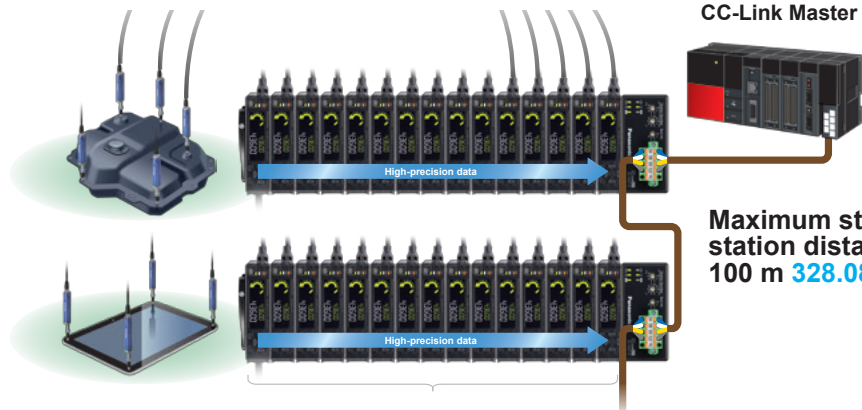


Contact-type digital displacement sensor

**HG-S SERIES**

The robust and slim unit body contributes to long service life.

The series uses the optical absolute system to eliminate the problems of "value skipping" and "missing zero point."

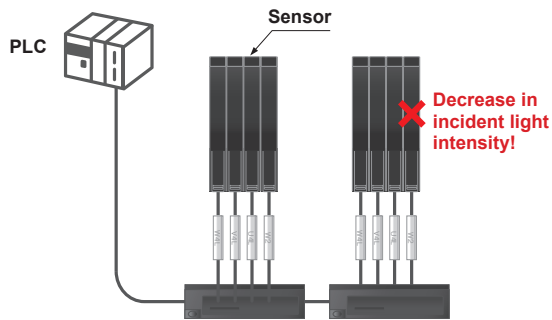


Connection of 1 master unit and up to 14 slave units

# Batch saving of sensor settings at equipment startup!

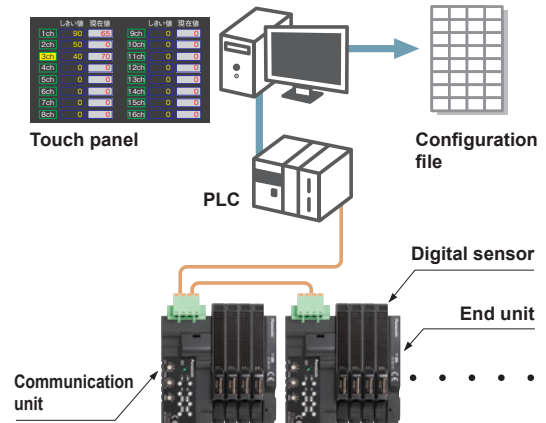
## Without communication unit

When multiple sensor units are used, if one of the sensors generates a malfunction, it is necessary to check the settings of the individual sensors. This requires many man-hours.



## With communication unit

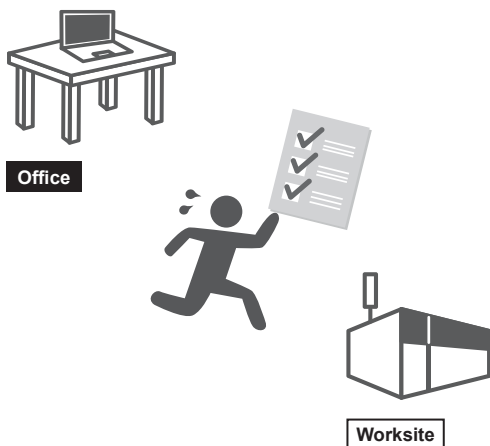
When a sensor malfunction occurs, a list of all sensor statuses is displayed, so the problem can be easily identified. By obtaining the data of the individual sensors and saving it in a settings file, system restoration work becomes easier and input / setting errors can be prevented.



# Remote equipment monitoring / operation

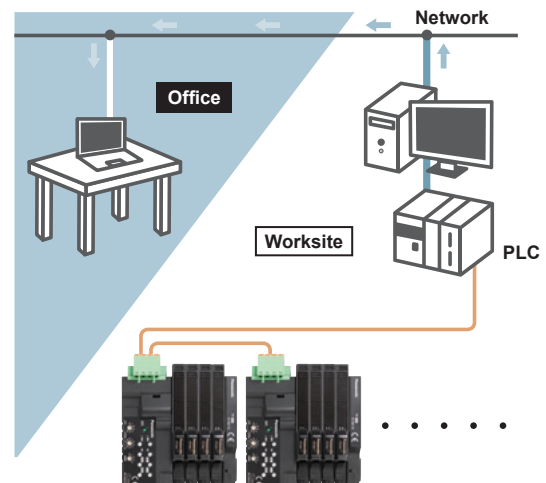
## Without communication unit

When a problem occurs, it is necessary to go back and forth between the office and worksite for the confirmation of the settings and other data.



## With communication unit

The communication unit connected to the existing network enables the conformation of the settings of the sensors installed in the production equipment without leaving the office. The communication unit enables quick acquisition of status information.

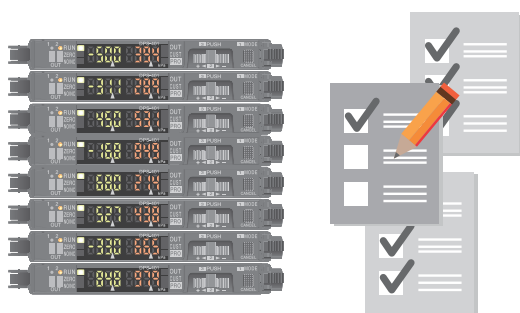


Confirmation from a distant location!

# Logging of the current values of digital sensors for use in preventive maintenance!

## Without communication unit

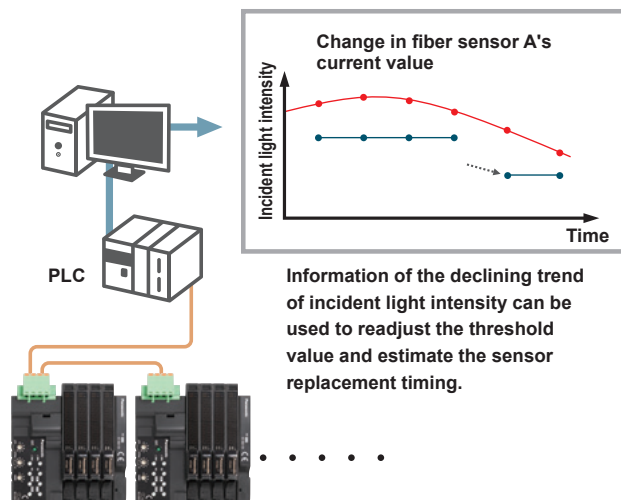
It is difficult to grasp long-term sensor fluctuations only by pre-operation inspection. Manual recording of data also takes time and is cumbersome.



Handwritten daily inspection records

## With communication unit

A graph plotted using obtained numerical data allows easy confirmation of the long-term fluctuation trend, thus enabling the prediction of sensor fluctuations to facilitate preventive maintenance.



# Communication unit contributes to the reduction of wiring and installation work!

## Without communication unit

### Construction procedures

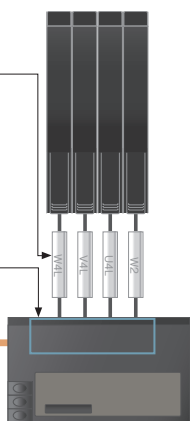
- (1) Affix mark tubes
- (2) Wiring

### Construction procedures

- (1) Remove cable insulation
- (2) Crimp on terminal
- (3) Clamp screw onto terminal block
- (4) In the case of connector terminal block, process the connector for every sensor

Remove insulation

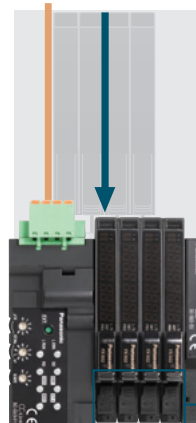
Affix crimping terminal



## With communication unit

### Cascade connection by connector

- ⊙ No need for cable processing
- ⊙ No need to clamp screw onto terminal block
- ⊙ No need for mark tubes
- ⊙ Easy removal without any tools
- ⊙ Reduction in installation space
- ⊙ No wasted material when replacing sensors



# Easy replacement of a sensor without separating the adjacent sensor amplifier

\*SC-GU3 series

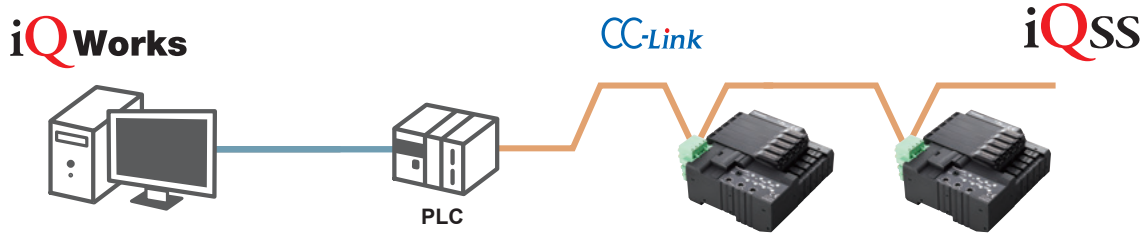
Sensors are detachable simply by pushing down the lever of cascading connector unit and sliding the sensor amplifier sideways.



# Support for Mitsubishi Electric's iQ Sensor Solution

\* Supported only by SC-GU3-01 and SC-HG1-C  
(As of June 2017)

The SC-GU3-01 and SC-HG1-C Communication Units for CC-Link are compatible with Mitsubishi Electric's iQ Sensor Solution (iQSS) and can be used in combination with products that support iQSS, for example Mitsubishi Electric's MELSEC series.

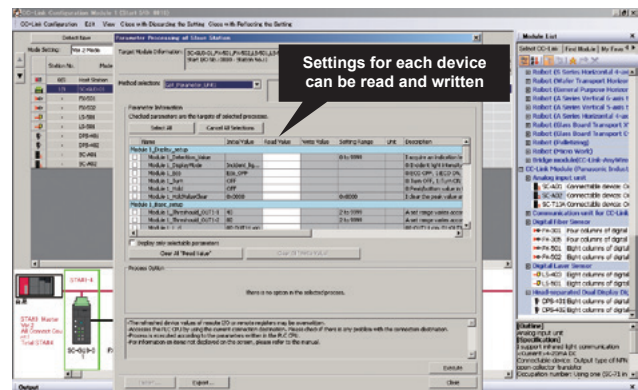
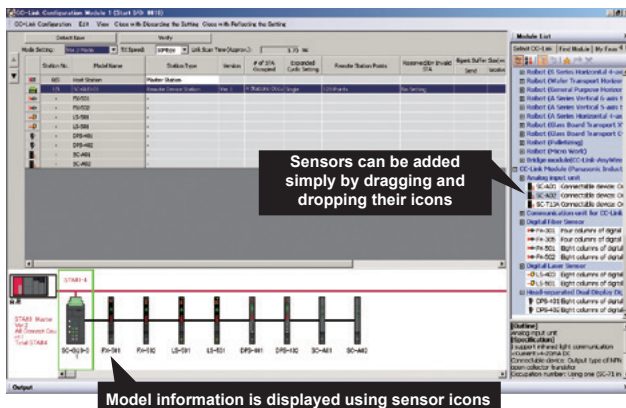


Digital sensors connected to the communication unit can be operated using Mitsubishi Electric's iQ Works (GX Works 2) software. The following functionalities can be realized by loading CSP+ data. The following functionality is supported by using iQ Works to load CSP+ data.

(Note) CSP+: CC-Link family system profile

- 1** CC-Link configuration information can be used to easily check the configuration of devices (sensor types: fiber, pressure, cascading configuration, number of units) connected to the communication unit.
- 2** A list of sensor-specific parameter data (write / read) can be acquired and changed.
- 3** Allocation of the devices connected to the communication unit can be displayed by loading CSP+ data.

\* Requires Mitsubishi Electric's GX Works 2 sequencer engineering software Ver. 1.492 or later.



**Device Reference(CC-Link) - Master Station Start I/O No. 0010 Station No. 0**

Start I/O No.: 0010    Display Option...    Export to CSV File...

Slave Station List     Link Device List     Display De-tailed Information

Remote Input(RI)			Remote Output(RO)			Remote Register(RVr)			Remote Register(RVw)		
Host STA	STA#	Link Device	Target STA	Link Device	Explanation	Host STA	STA#	Link Device	Target STA	Link Device	Explanation
X100	R00	DPS-401_sensor_output	Y100	RV0	Free_unit_setting_SP0	D100	RV0	Unit1_Data	D100	RV0	Unit1_Data
X101	R01	DPS-402_sensor_output	Y101	RV1	Free_unit_setting_SP1	D101	RV1	Unit2_Data	D101	RV1	Unit2_Data
X102	R02	DPS-401_sensor_output	Y102	RV2	Free_unit_setting_SP2	D102	RV2	Unit3_Data	D102	RV2	Unit3_Data
X103	R03	DPS-401_sensor_output	Y103	RV3	Free_unit_setting_SP3	D103	RV3	Unit4_Data	D103	RV3	Unit4_Data
X104	R04	DPS-401_sensor_output	Y104	RV4	Free_unit_setting_SP4	D104	RV4	Unit5_Data	D104	RV4	Unit5_Data
X105	R05	DPS-401_sensor_output	Y105	RV5	Free_unit_setting_SP5	D105	RV5	Unit6_Data	D105	RV5	Unit6_Data
X106	R06	DPS-401_sensor_output	Y106	RV6	Free_unit_setting_SP6	D106	RV6	Unit7_Data	D106	RV6	Unit7_Data
X107	R07	DPS-401_sensor_output	Y107	RV7	Free_unit_setting_SP7	D107	RV7	Unit8_Data	D107	RV7	Unit8_Data
X108	R08	Unit8_output_S8	Y108	RV8	Free_unit_setting_SP8	D108	RV8	Unit9_Data	D108	RV8	Unit9_Data
X109	R09	Unit9_output_S9	Y109	RV9	Free_unit_setting_SP9	D109	RV9	Unit10_Data	D109	RV9	Unit10_Data
X10A	R0A	Unit10_output_S10	Y10A	RV0A	Free_unit_setting_SP10	D10A	RV0A	Unit11_Data	D10A	RV0A	Unit11_Data
X10B	R0B	Unit11_output_S11	Y10B	RV0B	Free_unit_setting_SP11	D10B	RV0B	Unit12_Data	D10B	RV0B	Unit12_Data
X10C	R0C	Unit12_output_S12	Y10C	RV0C	Free_unit_setting_SP12	D10C	RV0C	Unit13_Data	D10C	RV0C	Unit13_Data
X10D	R0D	Unit13_output_S13	Y10D	RV0D	Free_unit_setting_SP13	D10D	RV0D	Unit14_Data	D10D	RV0D	Unit14_Data
X10E	R0E	Unit15_output_S15	Y10E	RV0E	Free_unit_setting_SP14	D10E	RV0E	Unit15_Data	D10E	RV0E	Unit15_Data
X10F	R0F	Unit16_output_S16	Y10F	RV0F	Free_unit_setting_SP15	D10F	RV0F	Unit16_Data	D10F	RV0F	Unit16_Data
X100	R00	Send_completion	Y100	RV0	Send_req	D100	RV0	Unit16_Data	D100	RV0	Unit16_Data
X101	R01	Continuous_act_ans	Y101	RV1	All_set_req	D101	RV1	Unit16_Data	D101	RV1	Unit16_Data
X102	R02	Continuous_act_req	Y102	RV2	Continuous_act_req	D102	RV2	Unit16_Data	D102	RV2	Unit16_Data
X103	R03	SV_invalid_ans	Y103	RV3	SV_invalid_req	D103	RV3	Unit16_Data	D103	RV3	Unit16_Data
X104	R04	MEMORY_On_ans	Y104	RV4	MEMORY_On_req	D104	RV4	Unit16_Data	D104	RV4	Unit16_Data
X105	R05	MEMORY_Off_ans	Y105	RV5	MEMORY_Off_req	D105	RV5	Unit16_Data	D105	RV5	Unit16_Data
X106	R06	Change_end	Y106	RV6	Change_req	D106	RV6	Unit16_Data	D106	RV6	Unit16_Data
X107	R07	Change_flag	Y107	RV7		D107	RV7	Unit16_Data	D107	RV7	Unit16_Data
X108	R08		Y108	RV8		D108	RV8	Unit16_Data	D108	RV8	Unit16_Data
X109	R09		Y109	RV9		D109	RV9	Unit16_Data	D109	RV9	Unit16_Data
X10A	R0A		Y10A	RV0A		D10A	RV0A	Unit16_Data	D10A	RV0A	Unit16_Data
X10B	R0B		Y10B	RV0B		D10B	RV0B	Unit16_Data	D10B	RV0B	Unit16_Data
X10C	R0C		Y10C	RV0C		D10C	RV0C	Unit16_Data	D10C	RV0C	Unit16_Data
X10D	R0D		Y10D	RV0D		D10D	RV0D	Unit16_Data	D10D	RV0D	Unit16_Data
X10E	R0E	ERRPRR_state	Y10E	RV0E		D10E	RV0E	Unit16_Data	D10E	RV0E	Unit16_Data
X10F	R0F	No_EU	Y10F	RV0F		D10F	RV0F	Unit16_Data	D10F	RV0F	Unit16_Data
X100	R00	Command_response	Y100	RV20	Send_command	D100	RV20	Unit16_Data	D100	RV20	Unit16_Data
X101	R01		Y101	RV21	Send_command	D101	RV21	Unit16_Data	D101	RV21	Unit16_Data
X102	R02		Y102	RV22	Send_command	D102	RV22	Unit16_Data	D102	RV22	Unit16_Data
X103	R03		Y103	RV23	Send_command	D103	RV23	Unit16_Data	D103	RV23	Unit16_Data

Japanese    Unlabeled    L26-BT/L26-PBT Host    0/40Step    CAP NUM

RX, RY, Rwr, and Rww device allocations can be displayed in GX Works 2

# SC-PC1 computer software with support for Mitsubishi Electric's EZSocket

\* Supported only by SC-GU3-01  
(Soon to be supported by SC-GU3-04 and SC-HG1-C/CEF)  
(As of June 2017)

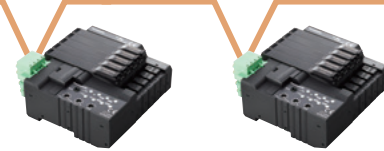


By using the SC-PC1 PC software setting, communication commands can be transmitted via the MELSEC series for the ladderless manipulation of information (including sensor data) for the SC-GU3-01 units connected to CC-Link.

SC-PC1 + EZSocket



CC-Link



\* iQ Works, CC-Link, CC-Link IE Field, iQ Sensor Solution and EZSocket are registered trademarks of Mitsubishi Electric Corporation.

## List of connected devices

Station Number	Exclusive Station count	Device Code	Manufacturer	Remote Input (Ri)	Remote Output (Rv)
1	1	SC-GU2 / GU3	Panasonic Industri...	0800 0000	0000 0000
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

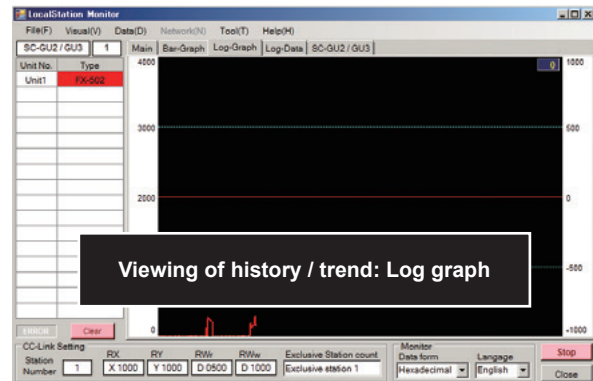
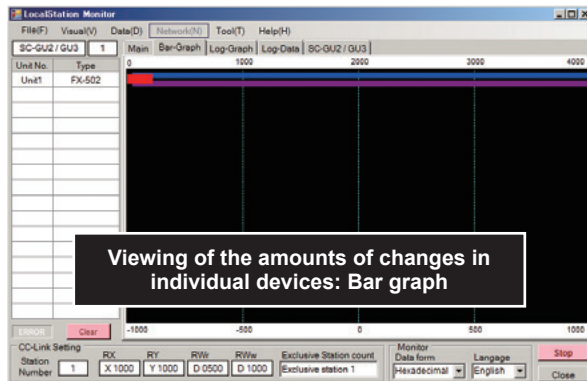
Acquisition of a list of slave units  
(The numbers of stations used by other manufacturers' products are also displayed.)

## List of information about connected sensors

Unit No.	Type	Comment	Threshold1	Threshold2	Detect value	Output-1	Output-2	Information
Unit1	FX-502		0028	001E	0000	OFF	OFF	

Viewing of the basic data of sensors connected to SC-GU3-01, and change of settings

## Graph display



## Sensor settings backup

The SC-PC1 software can load sensor settings information. \* The loaded data can be saved in the CSV format. Furthermore, cross-checking with the settings data of sensors connected to the SC-PC1 is possible. This function is useful when you want to store the sensor settings data before sending out the devices or when you want to check the sensor settings in the event a problem occurs.

Item	Unit1
Device Address	X1000
Sensor type	FX-502
Cut1 Threshold	48
Cut1 Threshold	48
Cut1 Output op.	0
Cut2 Threshold	30
Cut2 Threshold	0
Cut2 Output op.	0
Alarm	0
Pressure hyst.	0
Response time	3
Hysteresis	1
Stability	
Filtering power	2
Ending level	100
Backup	0
Interference pr.	0
Adjust lock	
Custom mode	0
Differential span	3
Manual gain s...	
Emission	1
Cycle	0
Base	0
Record	0
Start	
Algorithm	0
Display shift	

Check

Save

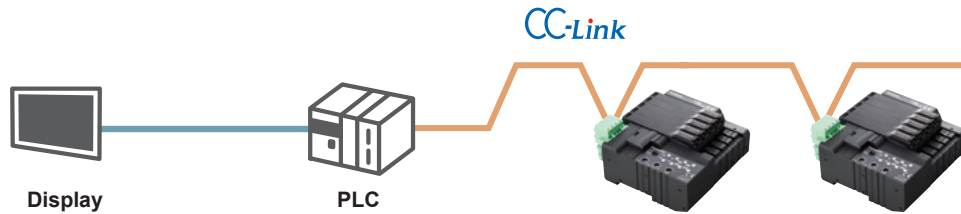
Item	Unit1
Device Address	X1000
Sensor type	FX-502
Cut1 Threshold	48
Cut1 Threshold	48
Cut1 Output op.	0
Cut2 Threshold	30
Cut2 Threshold	0
Cut2 Output op.	0
Alarm	0
Pressure hyst.	0
Response time	3
Hysteresis	1
Stability	
Filtering power	2
Ending level	100
Backup	0
Interference pr.	0
Adjust lock	
Custom mode	0
Differential span	3
Manual gain s...	
Emission	1
Cycle	0
Base	0
Record	0
Start	
Algorithm	0
Display shift	

Different settings are indicated by the change of color.

# Sample program for the display of data for when using PLC and display device\*

\* Program designed for SC-GU3-01  
(Soon to be supported by SC-GU3-04 and SC-HG1-C/CEF)  
(As of June 2017)

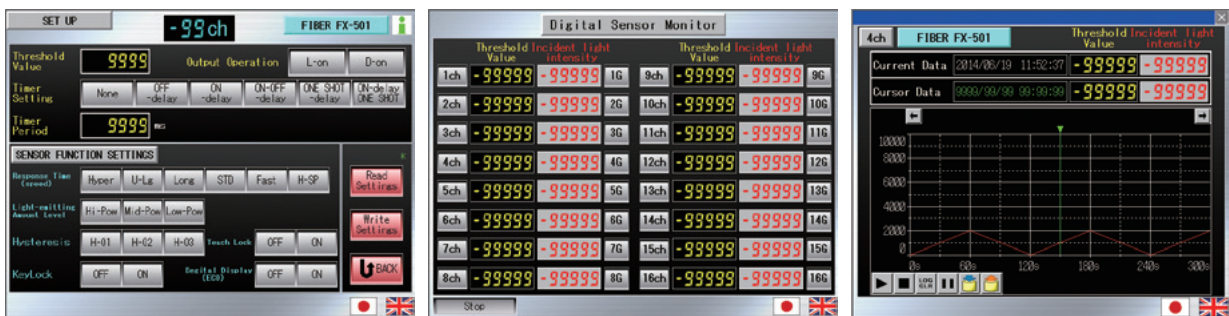
The sample program enables the monitoring of digital sensors, such as incident light intensity and pressure, as well as the writing of data for the change of sensor settings.



## Sample program for the SC-GU3-01 Communication Unit for CC-Link

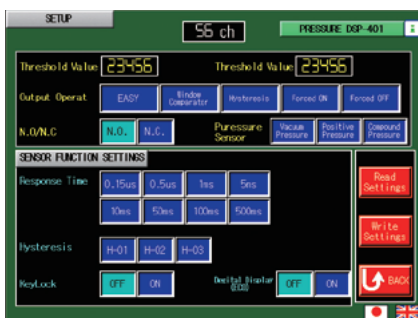
The sample program (display screen, ladder) includes a process for the confirmation of threshold values / displayed values and the basic settings for sensor amplifiers. It facilitates the development of original programs. The display language of the sample program can be switched to Japanese or English.

### ■ Sample program for a digital fiber sensor



- Change threshold values and output operating settings.
- Change timer types and times.
- Setting of response time, light emitting amount level, hysteresis, etc.
- The colors of channels change according to the sensor outputs.
- A list of threshold values is displayed.
- Current values are displayed.
- The change in current value is plotted, so the amount of change can be checked on the timeline.
- Data can be written to a CF card.

### ■ Sample program for a digital pressure sensor



- Change threshold values.
- Configure sensing operation and NO / NC settings.
- Setting of response time, hysteresis, etc.

### ■ Sample program for a digital laser sensor



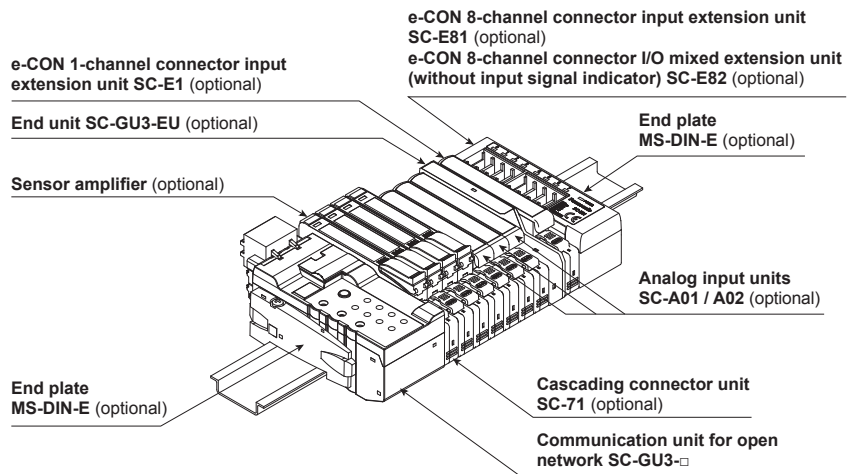
- Change threshold values and output operating settings.
- Change timer types and times.
- Setting of response time, receiving light sensitivity, hysteresis, etc.

Display	PLC	Free downloads
GOT1000 series (Mitsubishi Electric Corporation)	Mitsubishi Electric Corporation	Available for download from the Mitsubishi Electric and Panasonic Industrial Devices SUNX websites
GOT2000 series (Mitsubishi Electric Corporation)	Mitsubishi Electric Corporation	Soon to be available for download from the Panasonic Industrial Devices SUNX website



## SC-GU3-□ Example of system configuration

When optical communication is used in a system connected with product models not compatible with optical communication, connect the incompatible units after the SC-GU3-EU. A maximum of 12 units can be connected if the system is connected with a FX-500 series unit or LS-501. A maximum of 16 sensor amplifiers can be connected.



Designation	Appearance	Model No.	Description
Communication unit for CC-Link IE Field		<b>SC-GU3-04</b>	This is a communication unit, which can convert the output signal of a sensor amplifier into communication data for CC-Link IE Field.
Communication unit for CC-Link		<b>SC-GU3-01</b>	This is a communication unit, which can convert the output signal of a sensor amplifier into communication data for CC-Link.
End unit		<b>SC-GU3-EU</b>	This end unit can change and check the settings of sensor amplifiers that allow optical communication and monitor operation status.
Cascading connector unit		<b>SC-71</b>	This one-touch connector is used to connect the following devices to <b>SC-GU3-0□</b> : The <b>FX-500/410/310/300</b> fiber sensor, the <b>LS-500/400</b> laser sensor, the <b>DPS-400</b> digital pressure sensor, <b>SC-E1</b> , <b>SC-A01</b> and <b>SC-A02</b> , etc.
e-CON 1-channel connector input extension unit		<b>SC-E1</b>	This extension unit can be connected to commercially available devices (Note) including an NPN output type or DC 2-wire type sensor. Includes power and input signal indicators (for one channel). When using in combination with the <b>SC-GU3</b> series, use with the <b>SC-71</b> .
e-CON 8-channel connector input extension unit		<b>SC-E81</b>	This extension unit can be connected to eight NPN output type devices. Includes power and input signal indicators (for eight channels).
e-CON 8-channel connector input extension unit		<b>SC-E82</b>	This extension unit can be connected to eight NPN output type devices. Includes a power indicator. (Does not include an input signal indicator)
Analog voltage input unit		<b>SC-A01</b>	This extension unit can be connected to NPN output type devices or analog voltage output type devices. When using in combination with the <b>SC-GU3</b> series, use with the <b>SC-71</b> .
Analog current input unit		<b>SC-A02</b>	This extension unit can be connected to NPN output type devices or analog voltage output type devices. When using in combination with the <b>SC-GU3</b> series, use with the <b>SC-71</b> .
End plate		<b>MS-DIN-E</b>	After <b>SC-GU3-0□</b> , a sensor amplifier, an analog input unit or an end unit are connected on a DIN rail, make sure to install the end plates in such a way that they hold the unit in place at both ends. <div style="border: 1px solid black; padding: 2px; display: inline-block;">Two pcs. per set</div>
Computer software for CC-Link		<b>SC-PC1</b>	This software makes it possible to use a computer to monitor current sensor values, save setting information to a CSV file, display log data, save log data to a CSV file, etc.
Cable with connector on one end		<b>CN-M20-C2</b>	This cable has a connector for linking to the parallel output signal.

Note: Conditions of connectable DC 2-wire type input device

- Leak current: 1 mA or less (when the power is OFF), Offset voltage: 3 V or less (when the power is ON)
- Product whose load current range includes 5 to 8 mA

# SPECIFICATIONS

Designation	Communication unit for CC-Link IE Field
Item / Model No.	<b>SC-GU3-04</b>
CE marking directive compliance	EMC Directive (Note 1), RoHS Directive
Compatible sensor units	Sensor amplifiers (NPN output type) that can connect to the <b>SC-71</b> cascading connector unit (optional)
Number of units connectable	Maximum of 16 units can be connected to one <b>SC-GU3-04</b> unit (Max. 12 units when <b>FX-500 / LS-500</b> series is connected)
Supply voltage	24 V DC $+10\%$ $-15\%$ Ripple P-P 10 % or less
Current consumption	200 mA or less (excluding connected sensor amplifiers)
Allowable passing current	2A or less (Note 2)
Communication method	CC-Link IE Field
Remote station type	Remote device station
Transmission line types	Line, star (mixing of line and star types is possible), ring
Network No. setting	1 to 239 (decimal) [1 to EF (hex)] (0 and 240 or higher result in an error) (Note 3)
Station No. setting	1 to 120 (decimal) (0 and 121 or higher result in an error)
Communication speed	1 Gbps
Maximum overall cable distance	100 m <b>328.084 ft</b>
Ambient temperature	-10 to +50 °C <b>+14 to +122 °F</b> (8 to 16 units connected: -10 to +45 °C <b>+14 to +113 °F</b> ) (No dew condensation or icing allowed) Storage: -20 to +70 °C <b>-4 to +158 °F</b>
Ambient humidity	35 to 85 % RH, Storage: 35 to 85 % RH
Material	Enclosure: Polycarbonate
Net weight	100 g approx.

Notes: 1) Ground the shield wire of the Ethernet cable at a higher-level device in order to comply with the EMC Directives. This product is not provided with a grounding terminal. For details, refer to the CC-Link IE Field Network Cable Installation Manual published by the CC-Link Partner Association.  
2) Take care that the total consumption current of connected sensor amplifiers and other devices does not exceed the allowable passing current.  
3) For the Network No. setting of this product, set a value converted to hexadecimal.

Designation	Communication unit for CC-Link
Item / Model No.	<b>SC-GU3-01</b>
CE marking directive compliance	EMC Directive, RoHS Directive
Compatible sensor units	Sensor amplifiers (NPN output type) that can connect to the <b>SC-71</b> cascading connector unit (optional)
Number of units connectable	Maximum of 16 units can be connected to one <b>SC-GU3-01</b> unit (Max. 12 units when <b>FX-500 / LS-500</b> series is connected)
Supply voltage	24 V DC $+10\%$ $-15\%$ Ripple P-P 10 % or less
Current consumption	120 mA or less (excluding connected sensor amplifiers)
Allowable passing current	Wire-saving connector 2 A (Note 1), supply connector 6 A (Note 2)
Communication method	CC-Link Ver.1.10
Remote station type	Remote device station
Number of occupied station	Switchable 1 or 4 station
Communication speed	156 kbps    625 kbps    2.5 Mbps    5 Mbps    10 Mbps
Total extension length	1,200 m <b>3,937.008 ft</b> 600 m <b>1,968.504 ft</b> 200 m <b>656.168 ft</b> 150 m <b>492.126 ft</b> 100 m <b>328.084 ft</b>
Communication cable	Specified cable (twist pair cable with shield) (Note 3)
Station No. setting	1 to 64 (0 and 65 or higher result in an error)
Ambient temperature	-10 to +55 °C <b>+14 to +131 °F</b> (No dew condensation or icing allowed), If 4 to 7 units are connected in cascade: -10 to +50 °C <b>+14 to +122 °F</b> , if 8 to 16 units are connected in cascade: -10 to +45 °C <b>+14 to +113 °F</b> Storage: -20 to +70 °C <b>-4 to +158 °F</b>
Ambient humidity	35 to 85 % RH, Storage: 35 to 85 % RH
Material	Enclosure: Polycarbonate
Net weight	80 g approx.

Notes: 1) Take care that the total consumption current of connected sensor amplifiers and other devices does not exceed the allowable passing current.  
2) In case of supplying power to other devices, be sure to set the current less than allowable passing current.  
3) Use the CC-Link-specified cable.

## Models connectable to SC-GU3-□

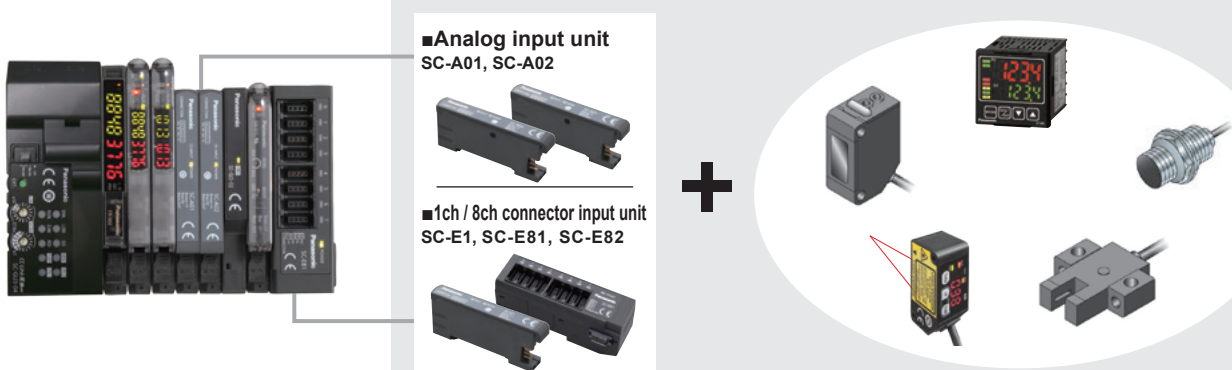
Communication compatibility	Type	Model No.
Models that support optical communications	Digital fiber sensor (Note)	<b>FX-501, FX-502, FX301, FX-305</b>
	Digital laser sensor	<b>LS-403, LS-501</b>
	Digital pressure sensor	<b>DPS-401, DPS-402</b>
	1ch connector input unit (analog communication unit)	<b>SC-A01, SC-A02</b>
No optical communications	Digital fiber sensor (Note)	<b>FX-551, FX-411, FX-412, FX-301 (B/G/H), FX-301-HS</b>
	Manually Set Fiber Sensor	<b>FX-311 (B/G)</b>
	Digital laser sensor	<b>LS-401</b>
	Compact inductive proximity sensor	<b>GA-311</b>
	1ch connector input unit	<b>SC-E1</b>
8ch connector input unit	<b>SC-E81, SC-E82</b>	

Note: **FX-301** fiber sensor products manufactured before June 2004 are not compatible with optical communication. Those produced from June 2004 are compatible with optical communication.  
If "NAVI" is printed only on one side of the product, the unit is not compatible with optical communication. If "NAVI" is printed on both sides of the product, the unit is compatible with optical communication. Please check when using **FX-301** fiber sensors.

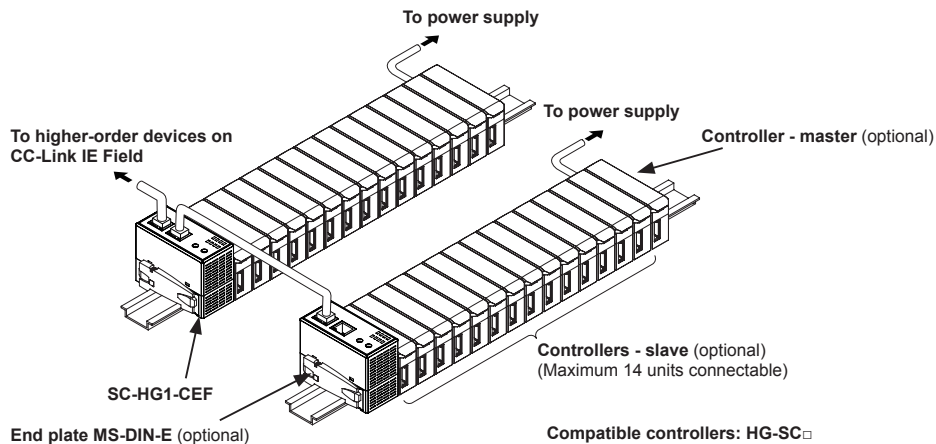
## When connecting ordinary photoelectric / proximity sensors or analog sensors




By using the **SC-E1, SC-E81** or **SC-E82** e-CON-compatible connector input extension unit, ordinary photoelectric / proximity sensors and analog sensors can be connected to the **SC-GU3**.

The **SC-A01** and **SC-A02** allow the connection of analog output devices. (1 to 5 V, 4 to 20 mA)



## SC-HG1-□ Example of system configuration



Designation	Appearance	Model No.	Description
CC-Link IE Field communication unit for digital displacement sensor		<b>SC-HG1-CEF</b>	This communication unit converts the output data from digital displacement sensors to data that can be communicated via CC-Link IE Field.
CC-Link communication unit for digital displacement sensor		<b>SC-HG1-C</b>	This communication unit converts the output data from digital displacement sensors to data that can be communicated via CC-Link.
End plate		<b>MS-DIN-E</b>	After a communication unit and controllers are connected on a DIN rail, make sure to install the end plates in such a way that they hold the unit in place at both ends. <div style="border: 1px solid black; padding: 2px; display: inline-block;">Two pcs. per set</div>

## SPECIFICATIONS

Designation	CC-Link IE Field Communication Unit for HG series	
Item	Model No.	<b>SC-HG1-CEF</b>
CE marking directive compliance	EMC Directive, RoHS Directive	
Compatible controller	<b>HG-SC□</b>	
Number of units connectable	Maximum of 15 units (one master, 14 slaves) per <b>SC-HG1-CEF</b> unit	
Supply voltage	24V DC ±10%, including 0.5V ripple (P-P) (Note 1)	
Current consumption	200 mA or less	
Communication method	CC-Link IE Field	
Remote station type	Remote device station	
Transmission line types	Line, star (mixing of line and star types is possible), ring	
Network No. setting	1 to 239 (decimal) [1 to EF (hex)] (0 and 240 or higher result in an error) (Note 2)	
Station No. setting	1 to 120 (decimal) (0 and 121 or higher result in an error)	
Communication speed	1 Gbps	
Maximum overall cable distance	100 m <a href="#">328.084 ft</a>	
Ambient temperature	-10 to +45 °C <a href="#">+14 to +113 °F</a> (No dew condensation or icing allowed) Storage: -20 to +60 °C <a href="#">-4 to +140 °F</a>	
Ambient humidity	35 to 85 % RH, Storage: 35 to 85 % RH	
Material	Enclosure: Polycarbonate	
Net weight	100 g approx.	

Notes: 1) Take care that the total consumption current of connected sensor amplifiers and other devices does not exceed the allowable passing current.  
2) For the Network No. setting of this product, set a value converted to hexadecimal.

Designation	CC-Link Communication Unit for HG series				
Item	Model No.	<b>SC-HG1-C</b>			
CE marking directive compliance	EMC Directive, RoHS Directive				
Compatible controller	<b>HG-SC□</b>				
Number of units connectable	Maximum of 15 units (one master, 14 slaves) per <b>SC-HG1-C</b> unit				
Supply voltage	24V DC ±10%, including 0.5V ripple (P-P) (Note 1)				
Current consumption	80 mA 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				
Communication speed	156 kbps	625 kbps	2.5 Mbps	5 Mbps	10 Mbps
Total extension length	1,200 m <a href="#">3,937.008 ft</a>	900 m <a href="#">2,952.756 ft</a>	400 m <a href="#">1,312.336 ft</a>	160 m <a href="#">524.934 ft</a>	100 m <a href="#">328.084 ft</a>
Communication cable	Specified cable (twist pair cable with shield) (Note 2)				
Station No. setting	1 to 64 (0 and 65 or higher result in an error)				
Ambient temperature	-10 to +45 °C <a href="#">+14 to +113 °F</a> (No dew condensation or icing allowed) Storage: -20 to +60 °C <a href="#">-4 to +140 °F</a>				
Ambient humidity	35 to 85 % RH, Storage: 35 to 85 % RH				
Material	Enclosure: Polycarbonate				
Net weight	80 g approx.				

Notes: 1) Power is supplied from a connected controller / master controller.  
2) Use the CC-Link-specified cable.

## Other open-network communication units



Communication unit for DeviceNet  
**SC-GU3-02**



Communication unit for EtherCAT  
**SC-GU3-03**



RS-485 Communication Unit for HG series  
**SC-HG1-485**

### Disclaimer

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