

New models add an Ethernet-compatible controller to the **HL-C2** series of ultra high-speed, high-precision laser displacement sensors.



Devices can be connected easily to the MELSEC series of sequencers from Mitsubishi Electric, which feature Ethernet connectivity, as well as our FP series of programmable controllers, without any programming required.

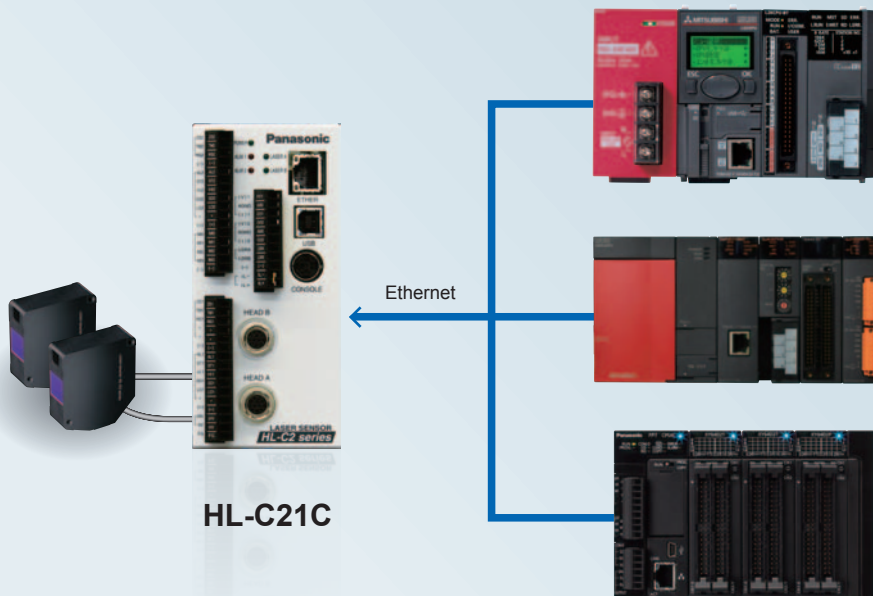
1 Measurement status can be acquired with a programmable controller easily and without any need for programming!

The **HL-C21C** supports the MEWTOCOL (used by our **FP** series) and MC protocols (used by Mitsubishi Electric's MELSEC-Q and MELSEC-L series) as well as the iQSS dedicated protocol (used by Mitsubishi Electric's MELSEC-L series), allowing measured values and other information to be written automatically to the data registers of programmable controllers without any need for programming.

*iQSS is an abbreviation for Mitsubishi Electric's iQ Sensor Solution.



No longer need to create any ladder program, which was necessary in the past in order to acquire measured values over a conventional RS-232C connection.



iQSS dedicated protocol

- The iQSS dedicated protocol is supported over Ethernet.
 - Connections can be established with MELSEC-L series devices.
 - Measured values can be written to data registers.
 - Configuration and monitoring are possible with iQSS-compatible GX Works 2.
- *We plan to make logging and traceability functions available soon.

MC protocol

- The MC protocol is supported over Ethernet.
- Connections can be established with MELSEC-Q and MELSEC-L series devices.
- Measured values can be written to data registers.
- Configuration and monitoring are possible using the MC protocol's ladder control capability.

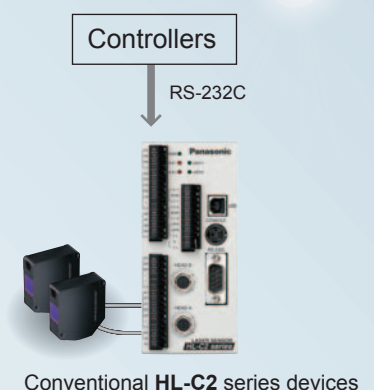
MEWTOCOL

- MEWTOCOL is supported over Ethernet.
- Connections can be established with **FP7** devices.
- Measured values can be written to data registers.
- Configuration and monitoring are possible using MEWTOCOL's ladder control capability.

2 Reducing cost with multiple device connections!

Before Multiple device connections for conventional HL-C2 series devices with RS-232C

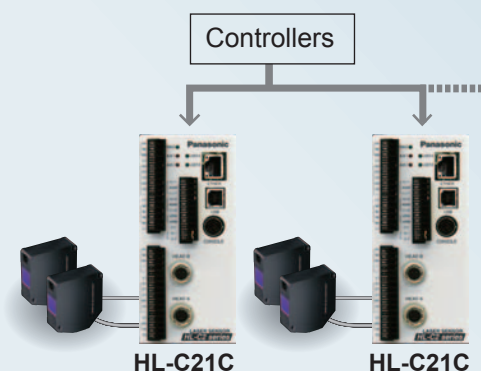
In the past, a control unit or communications unit with RS-232C communications ports was needed in order to connect a conventional **HL-C2** series device to a programmable controller. In particular, connecting multiple devices required enough communications units to accommodate the desired number of connections. Consequently, such use imposed penalties in the form of communications unit costs, space, and connection man-hours for each unit to be connected, as well as programming man-hours.



Conventional HL-C2 series devices

After Multiple HL-C21C connections over Ethernet

Since the **HL-C21C** supports Ethernet connectivity, you do not need to have a communications unit for each device being connected (as in the past) if you're using a programmable controller with an Ethernet communications port. In such applications, you can easily connect multiple **HL-C21C** units, and you can easily use measured values acquired from multiple **HL-C21C** units to implement calculation-based device control. Compared to RS-232C connections, this approach to using multiple devices does not impose penalties in terms of communications unit costs or space, and it can also lower connection man-hours since only wiring to the Ethernet communications port is needed to complete the connection.



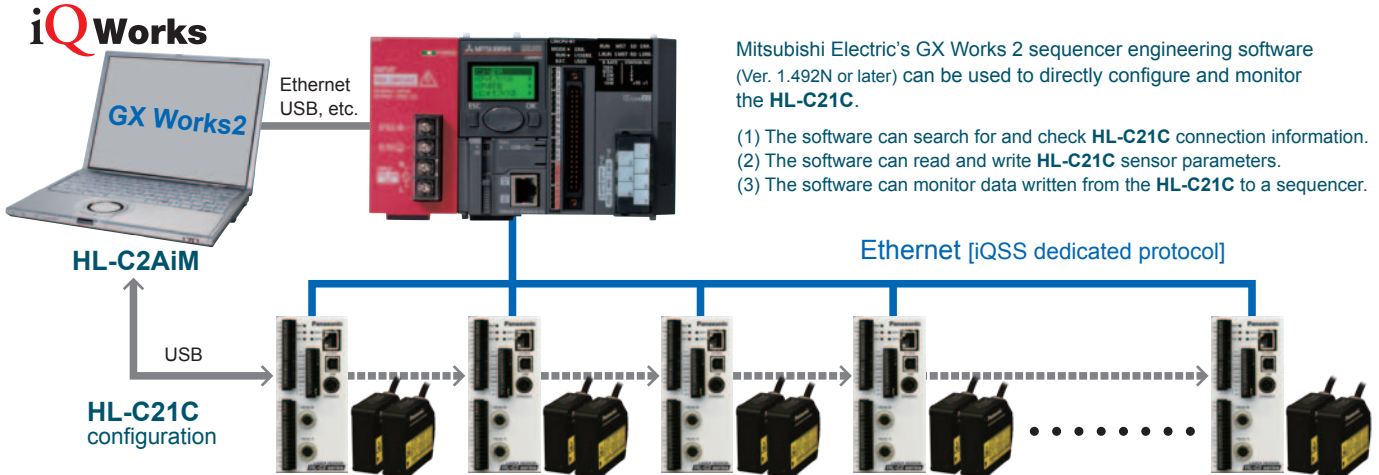
HL-C21C

HL-C21C

Connection with a MELSEC-L Series Mitsubishi Electric Unit with iQSS Support

The HL-C21C supports Mitsubishi Electric's iQ Sensor Solution (iQSS, the general name used for a sensor solution promoted by Mitsubishi Electric).

Configuration of communications connection settings, monitoring of sensors, and reading and writing of sensor parameters can be accomplished easily without programming, allowing development man-hours during deployment to be reduced. Additionally, the system can be up and running faster.



Mitsubishi Electric's GX Works 2 sequencer engineering software (Ver. 1.492N or later) can be used to directly configure and monitor the HL-C21C.

- (1) The software can search for and check HL-C21C connection information.
- (2) The software can read and write HL-C21C sensor parameters.
- (3) The software can monitor data written from the HL-C21C to a sequencer.

HL-C2AiM: HL-C2 dedicated intelligent monitor (available for download free of charge on our website)

Easy setup

HL-C21C connection settings can be set up using automatic detection of connected devices and drag-and-drop simplicity.

Reduces development man-hours.

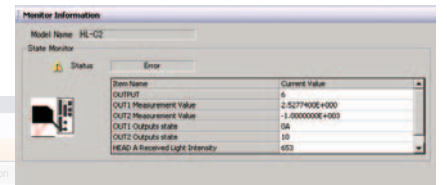
Use Mitsubishi Electric's GX Works 2 sequencer engineering software (Ver. 1.492N or later).

When online, there is no particular need to configure settings. Connected iQSS-compatible devices are detected and an Ethernet schematic diagram generated automatically.

When offline, the setup can be created with drag-and-drop simplicity using GX Works 2 with an Ethernet connection.

Sensor monitoring

The HL-C21C's measurement status can be easily monitored.



Reading and writing of sensor parameters

HL-C21C sensor parameters can be read and written easily.

Parameter Processing of Ethernet Device window showing the Target Module Information (HL-C2, Connection No.: 1) and the Method selection (Parameter read). The Parameter Information table lists various sensor parameters and their settings.

Name	Initial Value	Read Value	Write Value	Setting Range	Unit	Description
HeadA_Read_Received_Light_I...		622		0 to 1023		Head-A Received L...
HeadB_Read_Received_Light_I...		0		0 to 1023		Head-B Received L...
HeadA_Installation_Mode		Diffuse_Ref...		Diffuse_Ref...		Setting of Head-A
HeadA_Emission_Adjustment		Auto		Auto		Setting of Head-A
HeadA_Emission_Adjustment_1		1		1 to 512		Setting value of Ha
HeadA_Emission_Adjustment_512		512		1 to 512		Setting value of Ha
HeadA_Emission_Search		No_command		No_command		Status of Head-A E
HeadA_Alarm_Delay_Times		8		0 to 65535		Setting of Head-A
HeadA_Measurement_Mode		Diffuse_Stan...		Diffuse_Stan...		Setting of Head-A
HeadA_Meas_Surf_Ref		Near		Near		Setting of Head-A

*The HL-C21C's Ethernet communications settings must be configured using Configurator WD (Ver. 1.62 or later of our Ethernet communications configuration tool). (This software is available for download free of charge from our website.)


*The MC protocol is supported for the MELSEC-Q series, and sensors can be monitored.

Configurator WD IP Address Search Tool

The **Control Configurator WD** IP address search tool is a software utility that can search for Panasonic Industrial Devices SUNX products on the same network and display a list of their IP addresses, versions, and other information. Other capabilities include changing IP addresses, updating some models' firmware, and configuring communications, among other things. Select "Software" from the download options on the page introducing the **HL-C2** on our website. Then select **Configurator WD** on the download page and download it.

Order Guide

Controllers

Type		Appearance	Model No.
High-resolution	NPN output		HL-C21C
	PNP output		HL-C21C-P
Low-resolution	NPN output		HL-C21CE
	PNP output		HL-C21CE-P

Specifications [Differences with existing products only]

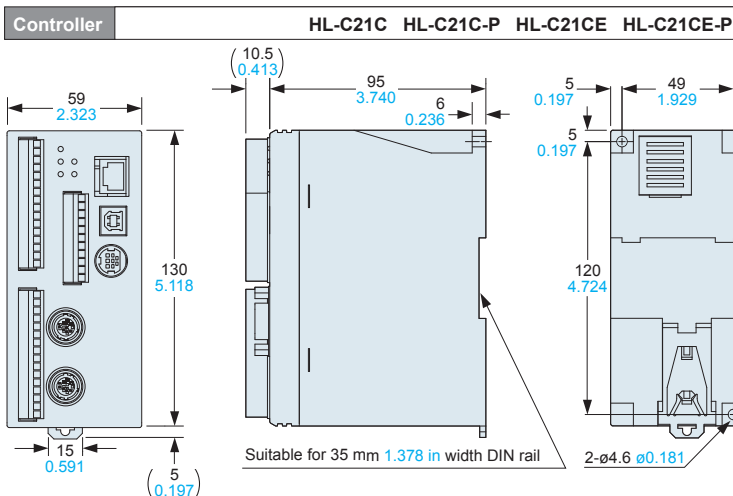
Controllers

Item	Type	NPN output	PNP output
	Model No.	HL-C21C	HL-C21C-P
RS-232C interface		None	
Ethernet interface		IEEE802.3u, 10 Base-T / 100 Base-TX RJ45	
Supported protocols		iQSS dedicated protocol, MC protocol, MEWTOCOL	
Accessories		CD-ROM: 1 pc., USB cable (2 m 6.562 ft long): 1 pc. Short bracket: 1 pc. Ferrite cores (E04SR200935A, by Seiya Electric Mfg. Co., Ltd.): 3 pcs.	

* The **HL-C21C**'s Ethernet communications settings must be configured using **Configurator WD** (Ver. 1.62 or later of our Ethernet communications configuration tool). Please download this software from our website.

Dimensions (Unit: mm in)

The CAD data in the dimensions can be downloaded from our website.



Sensor Head Line up

Available in small beam spot types and linear beam spot types.

Compact • Ultra high-precision

HL-C201F

Available in JIS/IEC standard-compliant types and FDA regulation-compliant types.

Sampling	Linearity	Resolution
100 kHz	±0.02 % F.S.	0.01 μm
Measurement center distance and measuring range		0.0004 mil
10 ± 1 mm	0.394 ± 0.039 in	



Ultra high-precision

HL-C203F

Available in JIS/IEC standard-compliant types and FDA regulation-compliant types.

Sampling	Linearity	Resolution
100 kHz	±0.03 % F.S.	0.025 μm
Measurement center distance and measuring range		0.001 mil
30 ± 5 mm	1.181 ± 0.197 in	



Mid-range • High precision

HL-C211F5

Available in JIS/IEC standard-compliant types and FDA regulation-compliant types.

Sampling	Linearity	Resolution
100 kHz	±0.03 % F.S.	0.1 μm
Measurement center distance and measuring range		0.004 mil
110 ± 15 mm	4.331 ± 0.591 in	

