MITSUBISHI ELECTRIC

Technical News

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CC-Link IE TSN Network Base Card Release

■Issued
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■Applicable Model
MELFA FR series, MELFA CR series, MELFA ASSISTA series,
(For CR800/CR860 Series D-Type Controllers)

We would like to express our gratitude for your patronage of MELFA, a Mitsubishi Electric industrial robot. We are pleased to announce that we have added a new line of network base cards for our company industrial robot controllers that support CC-Link IE TSN.

1 Applicable model/product name

·2F-DQ535-TSN (for CC-Link IE TSN communication)
 Applicable Models: MELFA FR Series, MELFA CR Series, MELFA ASSISTA Series,
(For CR800/CR860 Series D-Type Controllers)

2 Customer-ordered "Anybus CompactCom M 40" module

When using 2F-DQ535-TSN (for CC-Link IE TSN communication), the customer must prepare "Anybus CompactCom M 40" made by HMS.
For the "Anybus CompactCom M 40" you have prepared, please refer to the manual and properly install it in the network base card.
For details, refer to the Network Base Card Manual.

Network Specifications	Target product type name	Anybus CompactCom M40 Model Name
CC-Link IE TSN	2F-DQ535-TSN	AB6714-C-106

3 Features of the Network Base Card (2F-DQ535 TSN)

Using this product, a CR800 D type controller can be connected as a CC-Link IE TSN remote station. This enables time-synchronized I/O communication with the master station.
However, the "Mixed Cycle Time" is not supported. In the following "Communication Period Setting," you cannot specify "Normal-Speed" or "Low-Speed."

	No.	Model Name	Subnet Mask	Default Gateway	Reserved/Error Invalid Station	Network Synchronous Communication	Communication RX/RY/RWr/RWw
	0	Host Station					
	1	RJ71GN11-T2			No Setting	Asynchronous	Basic Period
	2	General Remote Station			No Setting	Asynchronous	Normal-Speed

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4 CC-Link IE TSN Features

·Integrated control and information communications to reduce wiring
CC-Link IE TSN has a standard that specifies a time synchronization method and a time division method, and by adding these to Ethernet technology, it becomes possible to mix control communication (ensuring real-time) and information communication (non-real-time communication), which was not possible with conventional Ethernet communication. This allows greater flexibility in system configuration and reduces wiring costs. **However, when the robot controller equipped with the 2F-DQ535-TSN module is connected to the network, the [Communication Period Interval Setting] of all mixed devices must be set to 1000 µs or longer.**
In addition, the time division function of the TSN enables division of cyclic communication that requires real-time performance, ensuring punctuality even when non-real-time communication such as general-purpose IP communication equipment is mixed.
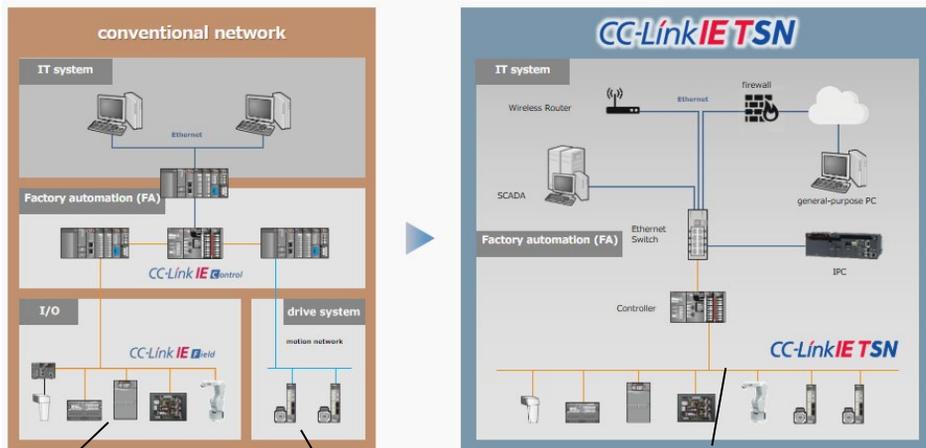

[Communication Period Interval]
(Example) 1000 µs **[Communication Period Interval]**
(Example) 250 µs

[Communication Period Interval]
All devices must be set to **1000 µs or longer**.

·Improve productivity through high-speed, high-precision communications
CC-Link IE TSN adopts a method to simultaneously transmit both output and input communication frames at a fixed time by utilizing the time synchronized in the network. This method, combined with the TSN technology used in Ethernet, reduces the time required to update cyclic data throughout the network. While maintaining the performance of devices that require high-performance communication cycles such as servo amplifiers, it is possible to optimize the communication cycle according to the characteristics of each device, such as connecting devices that do not require high-speed communication cycles such as remote I/O, thereby maximizing drive control performance and shortening tact time.
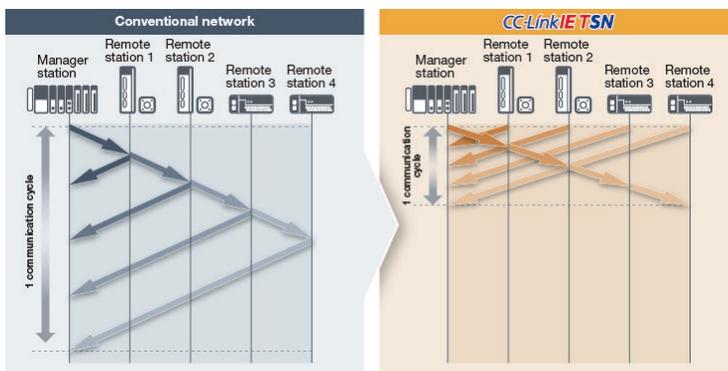
5 Supported Software

The following software versions are supported for the new product. If the version of the robot controller is old, contact your dealer.
You can check the version of the robot controller on the Teaching Box screen or by connecting the RT ToolBox3 online. For detailed instructions, refer to the respective manuals.

| Name		Version
Robot Controller		E4 or later
Teaching box	R32TB	1.0 or later
	R86TB	1.30G or later
PC support software	RT ToolBox3	2.70Y or later

6 User's Guide

To use the product, download the manual from the Mitsubishi Electric FA site.
For details on downloading, refer to the plug-in supplied with the product.

7 Precautions

The 2F-DQ535 TSN can be installed only in SLOT2.
For details, refer to the Network Base Card Manual.
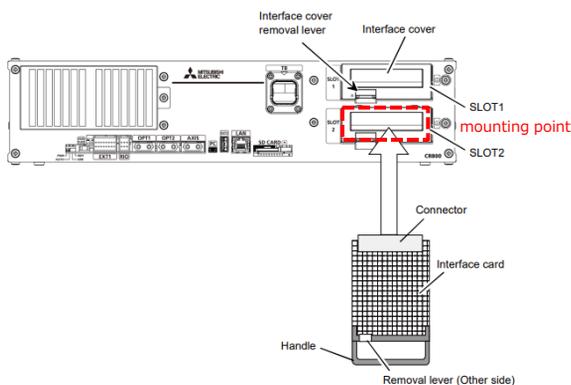
CR800 D Controller Mounted Locations
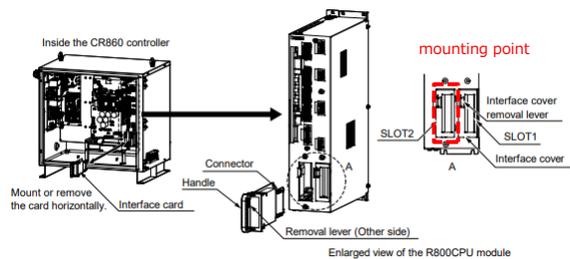
CR860 D Controller Mounted Locations

8 Timing of sale

Orders started in March 2026

9. Trademarks

・Anybus is a registered trademark of HMS Industrial Networks.

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