

## INVERTER

**New Product RELEASE** No.17-4E

# Release of the FR-E700-NE Inverter with Built-in Ethernet Communication Function

The inverter with a built-in Ethernet communication function is now available in the FR-E700 series.

### Features

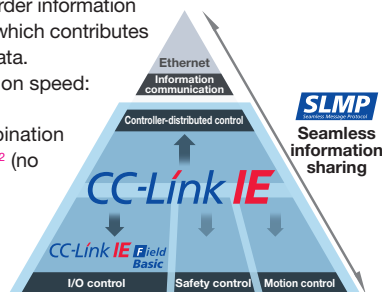
The following functions (protocols) are available via general-purpose Ethernet communication.

- CC-Link IE Field Network Basic
- MELSOFT\*<sup>1</sup> / FA product connection (to be supported soon)
- MODBUS/TCP (to be supported soon)

#### What is CC-Link IE Field Network Basic?

CC-Link IE Field Network Basic is a new application of the lineup for CC-Link IE (Ethernet-based integrated network). CC-Link IE enables seamless data transfer between network layers, from higher-order information systems to lower-order field systems, which contributes to the visualization of the production data.

- Cyclic communication (communication speed: 100 Mbps)
- Integrated Ethernet network in combination with the TCP or UDP IP connection\*<sup>2</sup> (no need for dedicated control wiring)
- Simple and inexpensive system construction by general-purpose Ethernet without installing any plug-in option



\*1: MELSOFT is the common name of Mitsubishi Electric engineering software. The applicable MELSOFT product is FR Configurator2, supporting inverter from startup to maintenance.

\*2: Used for the MELSOFT / FA product connection, etc.



### Support tool with extensive functions (to be supported soon)

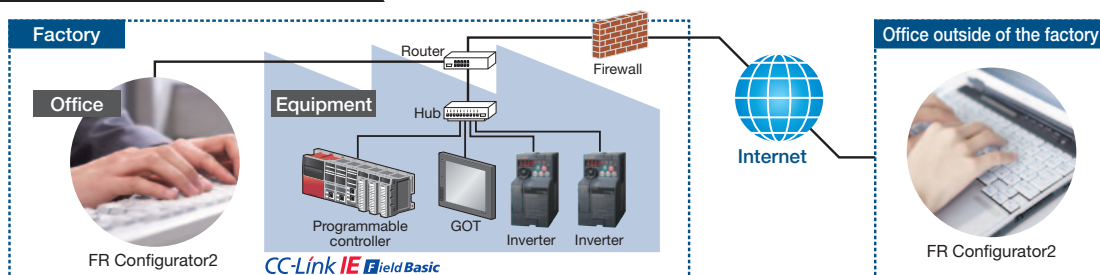
FR Configurator2 and an inverter can be connected by Ethernet even when they are remotely located from each other.\*<sup>3</sup>

FR-Configurator2 can automatically detect all of the connected devices via Ethernet and can also set necessary parameters\*<sup>4</sup> of the inverters very easily.

\*3: In order to protect the inverter and the system against unauthorized access by external systems via network, take security measures including firewall settings in addition to the IP filter function of the inverter.

\*4: Parameters for setting the data such as IP address or subnet mask

### Network connection example



## Transmission specifications

Item	Description
Category	100BASE-TX / 10BASE-T
Data transmission speed	100 Mbps (100BASE-TX) / 10 Mbps (10BASE-T)*1
Interface	RJ-45
Number of interfaces available	1
IP version	IPv4

\*1: Auto-negotiation is supported.

Specifications other than the above are the same as those of the standard control circuit terminal model of the FR-E700 series inverter.

## Communication specifications

### CC-Link IE Field Network Basic

Item	CC-Link IE Field Basic	CC-Link	CC-Link IE Field	
Compatible E700 inverter	FR-E700-NE	FR-E700(-SC)+FR-A7NC*2, FR-E700-NC	None*3	
Communication speed	100 Mbps	10 Mbps	1 Gbps	
Cable	Ethernet category 5 or higher	Dedicated cable	Ethernet category 5e or higher	
Number of connected inverters	64 (open specification)*4	42 (maximum)	64	
Cyclic communication	Supported	Supported	Supported	
Number of links*5	RX	64	64	
	RY	64	64	
	RWr	32 (64 bytes)	32 (64 bytes)	128 (256 bytes)
	RWw	32 (64 bytes)	32 (64 bytes)	128 (256 bytes)
Combination with TCP/IP	Supported	Not supported	Not supported	
Topology	Star	Bus	Line, star, ring, line-star	

\*2: For the FR-E700 inverters, prepare the FR-A7NC E kit, which contains the option board FR-A7NC and the front cover dedicated for the FR-E700 inverter. For the FR-E700-SC inverters, prepare the FR-A7NC and the optional front cover dedicated for the FR-E700-SC inverter.

\*3: The FR-A800 and the FR-F800 series inverters support CC-Link IE Field Network.

\*4: The actual number of connectable inverters differs according to the setting of the master.

\*5: The numbers of inverter's remote I/O devices and the addresses of inverter's remote registers are common between CC-Link and CC-Link IE Field Network Basic.

### MODBUS/TCP (to be supported soon)

Item	Description
Communication protocol	MODBUS/TCP protocol
Conforming standard	OPEN MODBUS/TCP SPECIFICATION
Waiting time setting	Not available
Maximum number of connections	3
Slave function (server)	Number of simultaneously acceptable request messages 1

## Lineup

FR - E 7 2 0 - 0.1K -   -  

Symbol	Voltage	Symbol	Number of power phases	Symbol	Inverter capacity	Symbol	Control circuit terminal specification	Symbol	Specifications
1	100 V class	None	Three-phase input	0.1K to 15K	Inverter capacity (kW)	None	Standard control circuit terminal model (screw type)	None	Standard type
2	200 V class	S	Single-phase input			SC	Safety stop function model	NE	Ethernet communication*6
4	400 V class	W	Single-phase input (double voltage output)			NF	FL remote communication model		
						NC	CC-Link communication model		

Inverter model	Inverter capacity	Inverter capacity												
		0.1K	0.2K	0.4K	0.75K	1.5K	2.2K	3.7K	5.5K	7.5K	11K	15K		
Standard type	Three-phase 200 V FR-E720-□□ (SC)(NF)(NC)	●	●	●	●	●	●	●	●	●	●	●	●	
	Three-phase 400 V FR-E740-□□ (SC)(NF)(NC)	—	—	●	●	●	●	●	●	●	●	●	●	
	Single-phase 200 V FR-E720S-□□ (SC)*7	●	●	●	●	●	●	—	—	—	—	—	—	
Ethernet communication	Single-phase 100 V FR-E710W-□□*7	●	●	●	●	—	—	—	—	—	—	—	—	
	Three-phase 200 V FR-E720-□□-NE	●	●	●	●	●	●	●	●	●	●	●	●	
	Three-phase 400 V FR-E740-□□-NE	—	—	●	●	●	●	●	●	●	●	●	●	
	Single-phase 200 V FR-E720S-□□-NE*7	●	●	●	●	●	●	—	—	—	—	—	—	

\*6: Standard control circuit terminal model only.

\*7: The single-phase 100/200 V input inverter outputs three-phase 200 V.

●: Available models    —: Not available

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