MITSUBISHI ELECTRIC
Changes for the Better

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INVERTER

New Product RELEASE No.17-14E

Release of the FR-A800-E-CRN Inverter with Ethernet Communication Function for Crane applications

An inverter with an Ethernet communication function has been added to the FR-A800-CRN series.

Features

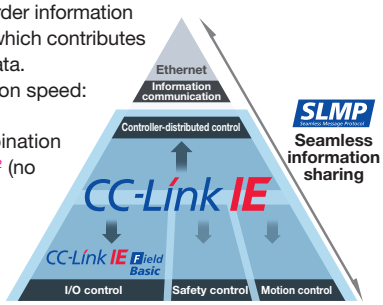
The following functions (protocols) are available via general-purpose Ethernet communication.

- CC-Link IE Field Network Basic
- MELSOFT / FA product connection
- SLMP*1
- MODBUS/TCP

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.

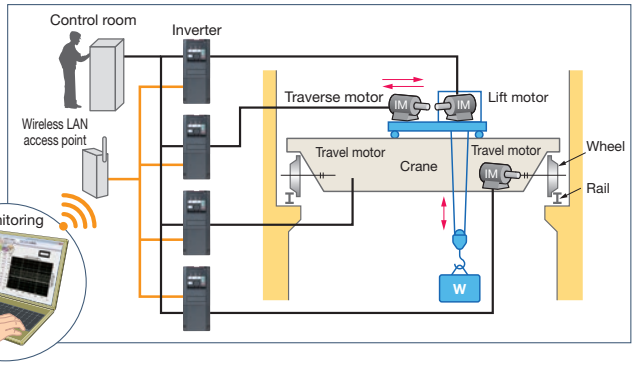
- Cyclic communication (communication speed: 100 Mbps)
- Integrated Ethernet network in combination with the TCP or UDP IP connection*2 (no need for dedicated control wiring)
- Simple and inexpensive system construction by general-purpose Ethernet without installing any plug-in option



*1: SLMP is a common protocol for seamless communication between applications. Users do not have to be concerned with network layers or boundaries.
*2: MELSOFT / FA product connection, SLMP, etc.

Support tool with extensive functions

The FR-A800-E-CRN inverter can be connected to FR Configurator2 (to be upgraded soon) using a commercially-available industrial wireless LAN*3 access point.*4
Adjustments of inverter parameters, inverter monitoring, and inverter maintenance such as life span checks can be performed wirelessly.



*3: A wireless LAN suitable for the industrial use in severe environments or in environments requiring high reliability (redundancy).
*4: Under certain environments or installation conditions, Ethernet communication through wireless LAN is not as stable as communication through wired LAN. Before starting operation, always check the communication status. For applications requiring data transmission or update periodically or within a certain time period, a wired connection is recommended.

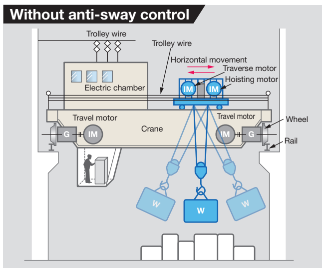
Release schedule December 2017

A new crane applicable function and enhanced vibration resistant model are now available.

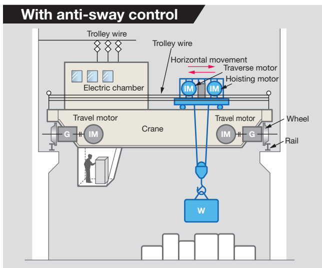
Anti-sway control

By using the Mitsubishi's original anti-sway control technology, the swinging of an object moved by a crane is suppressed at the time of stopping, even without operator's input adjustment.
This control cuts down the tact time and facilitates efficient operation.

Without anti-sway control



With anti-sway control



Enhanced vibration resistant model

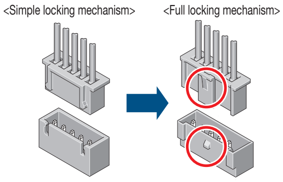
Vibration resistance of the inverter is enhanced since a vibration may occur in some operating conditions, for example, during traveling of the crane.

(1) Enhanced adhesion of the circuit board components

Components on the circuit board are fixed with adhesive for enhanced vibration resistance.

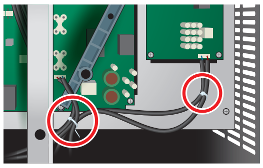
(2) Enhanced measure of connector coming-off prevention

Instead of the simple locking mechanism, the full locking mechanism is adopted for cable connectors.



(3) Adoption of cable ties

Cables are bound and fixed to avoid contact with conductive components inside the inverter in case of strong vibrations.



Lineup

●: Released model

Standard model

F R - A 8 2 0 - 0.4K - E1 - 61 CRN

Symbol	Voltage class
2	200 V class
4	400 V class

Symbol	Structure/function
0	Standard model

Capacity*1	Description
0.4K to 280K	Inverter ND rated capacity (kW)

Symbol	Type*2	Communication type
1	FM	RS-485
2	CA	
E1	FM	Ethernet
E2	CA	

Symbol	Circuit board coating (IEC60721-3-3 3C2/3S2 compatible)	Plated conductor	Enhanced vibration resistance
60	With	Without	Without
06*3		With	
61		Without	With
16*3		With	

Symbol	Dedicated function
CRN	Functions for crane applications

Three-phase 200 V class FR-A820-□*4	00046	00077	00105	00167	00250	00340	00490	00630	00770	00930	01250	01540	01870	02330	03160	03800	04750
	0.4K	0.75K	1.5K	2.2K	3.7K	5.5K	7.5K	11K	15K	18.5K	22K	30K	37K	45K	55K	75K	90K
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Three-phase 400 V class FR-A840-□*4	00023	00038	00052	00083	00126	00170	00250	00310	00380	00470	00620	00770	00930	01160	01800	02160	02600
	0.4K	0.75K	1.5K	2.2K	3.7K	5.5K	7.5K	11K	15K	18.5K	22K	30K	37K	45K	55K	75K	90K
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	03250	03610	04320	04810	05470	06100	06830										
	110K	132K	160K	185K	220K	250K	280K										
	●	●	●	●	●	●	●										

Separated converter type

F R - A 8 4 2 - 315K - E1 - 61 CRN

Symbol	Voltage class
4	400 V class

Symbol	Structure/function
2	Separated converter type

Capacity*1	Description
315K to 500K	Inverter ND rated capacity (kW)

Symbol	Type*2	Communication type
1	FM	RS-485
2	CA	
E1	FM	Ethernet
E2	CA	

Symbol	Circuit board coating (IEC60721-3-3 3C2/3S2 compatible)	Plated conductor	Enhanced vibration resistance
60	With	Without	Without
06		With	
61		Without	With
16		With	

Symbol	Dedicated function
CRN	Functions for crane applications

Three-phase 400V class FR-A842-□	07700	08660	09620	10940	12120
	315K	355K	400K	450K	500K
	●	●	●	●	●

*1: Models can be alternatively indicated with the inverter rated current (SLD rating).
*2: Specification differs by the type as follows.
*3: Available for the 5.5K or higher.
*4: For the 75K or higher inverter, or whenever a 75 kW or higher motor is used, always connect a DC reactor (FR-HEL), which is available as an option.

Type	Monitor output	Initial setting			
		Built-in EMC filter	Control logic	Rated frequency	Pr.19 Base frequency voltage
FM (terminal FM equipped model)	Terminal FM: pulse train output Terminal AM: analog voltage output (0 to ±10VDC)	OFF	Sink logic	60 Hz	9999 (same as the power supply voltage)
CA (terminal CA equipped model)	Terminal CA: analog current output (0 to 20mADC) Terminal AM: analog voltage output (0 to ±10VDC)	ON	Source logic	50 Hz	8888 (95% of the power supply voltage)

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