

INVERTER

New Product RELEASE

No.19-1E

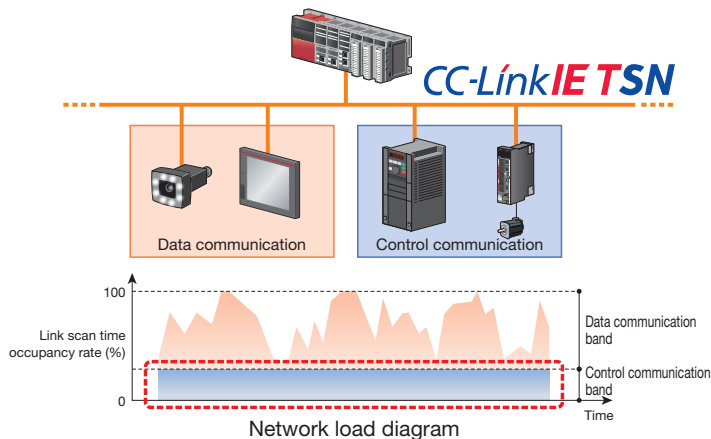
Release of the FR-A800-GN Inverter and FR-A8NCG Plug-in Option for CC-Link IE TSN Communication

An inverter with a CC-Link IE TSN communication function has been added to the FR-A800 series. The plug-in option FR-A8NCG for use with FR-A800 and FR-F800 series standard inverters is also available.

Features

CC-Link IE TSN communication

- With the CC-Link IE TSN (Time Sensitive Networking) communication function, data can be transmitted to IT systems while performing real-time cyclic communication control.



- CC-Link IE TSN is also supported by FR-A800/FR-F800 standard inverters with the plug-in option FR-A8NCG (see the information on how to identify applicable inverters on the back of this document).



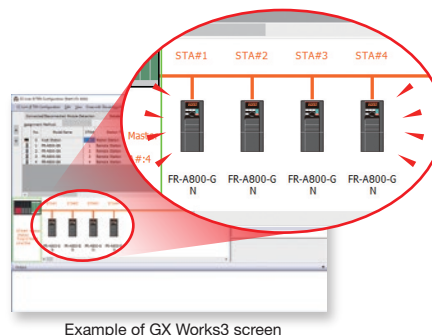
FR-A800-GN (Ex. FR-A820-0.4K-GN)

FR-A8NCG

Merits

Startup time reduction

- Station numbers are easily set with rotary switches. Automatic detection of the network configuration by the engineering software (GX Works3) reduces the startup time. Problems at startup such as line faults can be discovered at a glance with the diagnostic function.



Example of GX Works3 screen

Improved maintainability

- Time synchronization allows for real-time monitoring. This enables trouble analysis to be performed right after an error has occurred.
- FR Configurator2 can be connected via Ethernet, which makes maintenance work easier.

Release schedule

May 2019

Communication specifications

The communication specification varies depending on the specification of the master.

Item	Description
Transmission speed	1 Gbps
Minimum synchronization cycle	125.00 μs
Authentication class	Authentication class B
Synchronization function	Time sharing method
Communication method	Compliant with IEEE 802.1AS and IEEE 1588v2
Maximum number of connected units	121 units (sum of master and slave stations)
Topology	Line, star ^{*1} , ring ^{*2} , or a combination of line and star
Connection cable	Ethernet cable (IEEE 802.3 1000BASE-T compliant cable or ANSI/TIA/EIA-568-B (Category 5e) compliant shielded 4-pair branched cable)

Item	Description	
Connector	Shielded RJ-45	
Node type	Remote station	
Maximum distance between nodes	100 m	
Maximum number of branches	No upper limit within the same Ethernet system	
Maximum cyclic size (of one node)	RX	64 bits
	RY	64 bits
	RW _r	128 words
	RW _w	128 words

^{*1}: To connect only the authentication class B devices in the wye connection, use a CC-Link IE TSN compatible switching hub (TSN hub).
^{*2}: Ring topology will be supported later.

Lineup

Standard model

FR - A 8 2 0 - 0.4K - 1 - [] GN

Symbol	Voltage class	Symbol	Structure, functionality	Symbol ^{*1}	Description	Symbol	Type ^{*2}	Symbol	Circuit board coating (IEC60721-3-3 3C2 /3S2 compatible)	Plated conductor	Symbol	Functionality
2	200 V class	0	Standard model	0.4K to 280K	Inverter ND rated capacity (kW)	1	FM	None	Without	Without	None	Standard model
4	400 V class					2	CA	60	With	Without	GN ^{*5}	CC-Link IE TSN functionality
								06 ^{*3}	With	With		

Three-phase 200V class FR-A820-□ ^{*3}	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
00046	00077	00105	00167	00250	00340	00490	00630	00770	00930	01250	01540	01870	02330	03160	03800	04750	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Three-phase 400V class FR-A840-□ ^{*3}	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
00023	00038	00052	00083	00126	00170	00250	00310	00380	00470	00620	00770	00930	01160	01800	02160	02600	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	110K	132K	160K	185K	220K	250K	280K										
	03250	03610	04320	04810	05470	06100	06830										
	●	●	●	●	●	●	●										

Separated converter type

FR - A 8 4 2 - 315K - 1 - [] GN

Symbol	Voltage class	Symbol	Structure, functionality	Symbol ^{*1}	Description	Symbol	Type ^{*2}	Symbol	Circuit board coating (IEC60721-3-3 3C2 /3S2 compatible)	Plated conductor	Symbol	Functionality
4	400 V class	2	Separated converter type	315K to 500K	Inverter ND rated capacity (kW)	1	FM	None	Without	Without	None	Standard model
						2	CA	60	With	Without	GN ^{*5}	CC-Link IE TSN functionality
								06 ^{*3}	With	With		

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

^{*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 using the 75K or higher inverter and a 75 kW or higher motor, always install a DC reactor (FR-HEL), which is available as an option.
^{*5}: The depth required for installation will be 2.1 mm larger than that of the standard model.

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

Plug-in Option **FR - A 8 N C G - []**

Symbol	Circuit board coating (IEC60721-3-3 3C2/3S2 compatible)
None	Without
60	With

Compatible inverters (FR-A800/FR-F800 series)

The FR-A8NCG can be used with the inverter models which have the following SERIAL number or later.

Check the SERIAL number indicated on the inverter rating plate.

Country of origin indication	SERIAL number	Manufactured year and month
MADE in Japan	□ 9 6 ○○○○○○	June 2019 or later
MADE in China	□ 9 7 ○○○○○○	July 2019 or later

[Rating plate example]



The SERIAL consists of one symbol, two characters indicating the production year and month, and six characters indicating the control number.

The last digit of the production year is indicated as the Year, and the Month is indicated by 1 to 9, X (October), Y (November), or Z (December).

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