

FR-F800 Series General-Purpose Inverters (400 V Class) Ship Classification Standards Approval

Thank you for your continued patronage of Mitsubishi Electric drive control products. The FR-F800 series general-purpose inverters (400 V class) have been certified for marine applications by three ship classification societies.

1. Products Affected

FR-F840-00023(0.75K) to 06830(315K), FR-F842-07700(355K) to 12120(560K), FR-CC2-H355K to H630K

FR-F846-00023(0.75K) to 03610(160K)-C2

* Not including the FR-F846-00023(0.75K) to 03610(160K)-C3.

2. Details of the Classification Approval

The inverters can be used on ships (excluding the bridge and open deck areas).

Approved by	Approval No.	Approved (manufactured) in
Nippon Kaiji Kyokai	14A020	August 2019
ABS (American Bureau of Shipping)	19-YO1938937-PDA (Made in Japan) 19-YO1938937-PDA-DUP (Made in China)	December 2019
DNV GL (DNV GL AS)	TAE00000H2	January 2020

3. Identification of approved products

Products manufactured on or after the dates stated in the table above are certified for marine use.

Check the SERIAL number indicated on the rating plate of the inverter.

Rating plate example

□ 0 4 ○○○○○○
Symbol Year Month Control number

SERIAL

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).

4. Compliance

4.1. FR-F800 series (400 V class)

(1) Model

FR-F840-00023(0.75K) to 06830(315K), FR-F842-07700(355K) to 12120(560K), FR-CC2-H355K to H630K

(2) Conditions

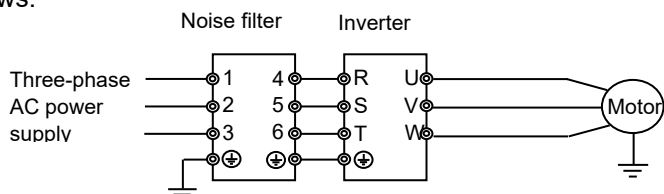
- For the FR-F840-01160(55K) or lower, the AC voltage must be set to three-phase 380 to 480 V and the frequency to 50 Hz/60 Hz.
- The inverters must be installed in an enclosure.
- An applicable noise filter (Soshin Electric Co., Ltd. noise filter or equivalent) must be installed on the input side of the inverter to achieve electromagnetic compatibility (EMC).

Date of issue	March 2020	Title	FR-F800 Series General-Purpose Inverters (400 V Class) Ship Classification Standards Approval	Mitsubishi Electric Corp., Nagoya Works 5-1-14 Yada-minami, Higashi-ku, Nagoya 461-8670 Tel.: +81 (52) 721-2111 Main line
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- The inverter's built-in EMC filter must be enabled.
- The finalized system (including the inverter) must comply with the ship classification standard.

◆ Wiring of the noise filter

Install an applicable noise filter (manufactured by Soshin Electric Co., Ltd.) to the input side of the inverter as follows.



◆ Applicable noise filters (manufactured by Soshin Electric Co., Ltd)*1

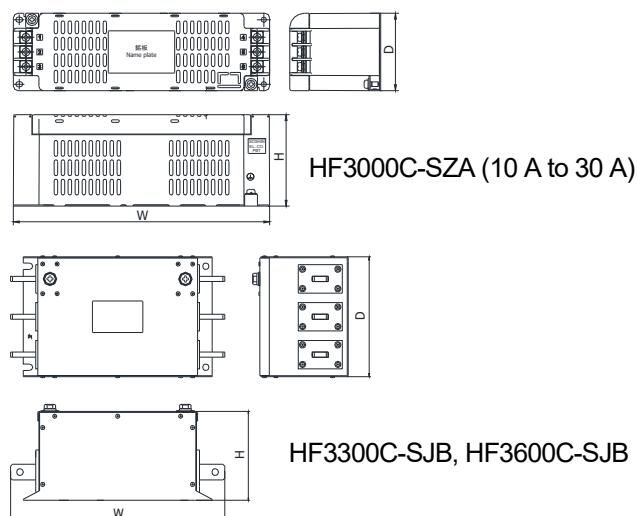
The following table shows the specifications of the noise filters that can be used with the inverters.

Inverter model FR-F840-[]	Noise filter model	
	SLD	LD
00023(0.75K)	HF3010C-SZA	
00038(1.5K)		
00052(2.2K)		
00083(3.7K)		
00126(5.5K)	HF3020C-SZA	
00170(7.5K)		
00250(11K)	HF3030C-SZA	
00310(15K)	HF3040C-SZA	
00380(18.5K)	HF3050C-SZA	
00470(22K)	HF3060C-SZA	
00620(30K)	HF3080C-SZA	
00770(37K)	HF3100C-SZA	
00930(45K)	HF3150C-SZA	HF3100C-SZA
01160(55K)	HF3150C-SZA	
01800(75K)	HF3200C-SZA	

Inverter model FR-F840-[]	Noise filter model	
	SLD	LD
02160(90K)	HF3250C-SZA	
02600(110K)		
03250(132K)	HF3600C-SJB	HF3300C-SJB
03610(160K)	HF3600C-SJB	
04320(185K)	HF3600C-SJB	
04810(220K)		
05470(250K)		
06100(280K)		
06830(315K)	HF31000C-SJB	

Inverter model FR-F842-[]	Noise filter model	
	SLD	LD
07700(355K)	HF31000C-SJB	
08660(400K)		
09620(450K)		
10940(500K)	HF31200C-SJB	
12120(560K)	HF31600C-SJB	

<Appearance example>



<Exterior dimensions>

Noise filter model	W	D	H
HF3010C-SZA	220	66	78
HF3020C-SZA			
HF3030C-SZA			
HF3040C-SZA	270	80	84
HF3050C-SZA			
HF3060C-SZA			
HF3080C-SZA	310	100	210
HF3100C-SZA			
HF3150C-SZA	395	110	230
HF3200C-SZA	400	120	260
HF3250C-SZA			
HF3300C-SJB	340	190	140
HF3600C-SJB			
HF31000C-SJB	390	190	160
HF31200C-SJB	480	200	190
HF31600C-SJB			

*1 Please contact Soshin Electric Co., Ltd. for the specifications, price, and delivery date of the filters.

(3) Precautions

Use the inverters in an environment free from corrosive gas, etc. (Inverters with circuit board coating are also available for improved environmental resistance. Please contact your sales representative.)

4.2. FR-F800 series highly protective structure (IP55) compatible model

(1) Model

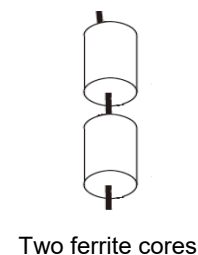
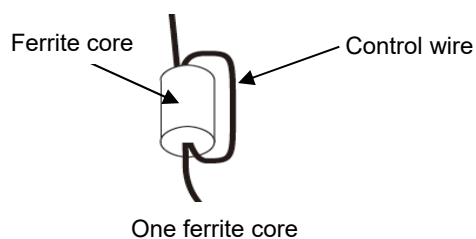
FR-F846-00023(0.75K) to 03610(160K)-C2

* Not including the FR-F846-00023(0.75K) to 03610(160K)-C3.

(2) Conditions

- For the FR-F846-01160(55K)-C2 or lower, the AC voltage must be set to three-phase 380 to 480 V and the frequency to 50 Hz/60 Hz.
- The inverter's built-in EMC filter must be enabled.
- The finalized system (including the inverter) must comply with the ship classification standard.
- The control wire of the control circuit terminals must pass through a ferrite core twice for the inverter to achieve electromagnetic compatibility.

◆ Example of installing ferrite cores



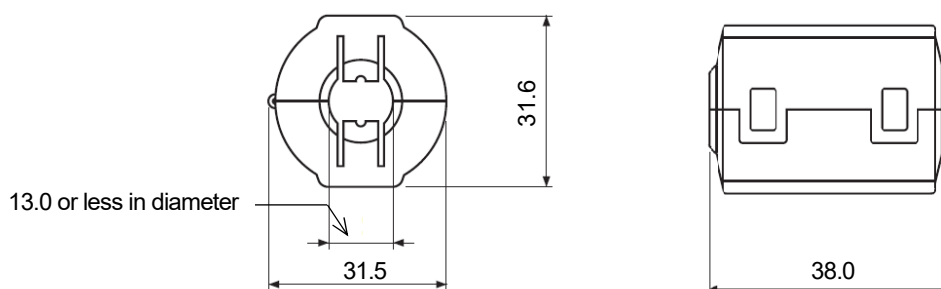
*1 Ensure the control wires are located within the enclosure.

*2 If the control signal cables are tied in multiple bundles, install a ferrite core onto each bundle.

◆ Applicable ferrite core

Manufacturer: NEC TOKIN

Model: ESD-SR-250



- To use the inverter in a temperature above 40°C, the rated output current must be equal to or lower than the value in the following table.

Inverter model FR-F846-[-]-C2	Rated output current	
	Surrounding air temperature of 45°C	Surrounding air temperature of 50°C
00023(0.75K)	2.0 A	1.9 A
00038(1.5K)	3.3 A	3.2 A
00052(2.2K)	4.6 A	4.3 A
00083(3.7K)	7.2 A	6.8 A
00126(5.5K)	10.9 A	9.2 A
00170(7.5K)	13.6 A	11.2 A
00250(11K)	22 A	21 A
00310(15K)	28 A	26 A
00380(18.5K)	33 A	28.0 A
00470(22K)	37 A	30.1 A
00620(30K)	54 A	51 A
00770(37K)	67 A	63 A
00930(45K)	81 A	77 A
01160(55K)	101 A	95 A
01800(75K)	137 A	130 A
02160(90K)	171 A	162 A
02600(110K)	205 A	178 A
03250(132K)	247 A	234 A
03610(160K)	284 A	244 A

(3) Precautions

Use the inverters in an environment free from corrosive gas, etc.