



# NIPPON KAIJI KYOKAI

## TYPE APPROVAL CERTIFICATE FOR AUTOMATIC DEVICES AND EQUIPMENT

Certificate No. TA22605M

**This is to certify** that the undernoted product(s) has/have been approved in accordance with the requirements specified in Chapter 1, Part 7 of “Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use” and the relevant Society's Rules.

This certificate is issued to

Manufacturer /

Place of Manufacturing

**Mitsubishi Electric Corporation, Nagoya Works  
1-14, Yada-minami 5-chome, Higashi-ku, Nagoya  
461-8670, Japan**

**Mitsubishi Electric Dalian Industrial Products Co., Ltd.  
Dongbei 3-5, Dalian Economic & Technical Development  
Zone, Dalian, Liaoning Province, 116600 China**

**MITSUBISHI ELECTRIC INDIA PRIVATE LIMITED  
EL31/15, J BLOCK, M.I.D.C, BHOSARI, PUNE,  
MAHARASHTRA 411026 INDIA**

Product description:

**Inverter**

Model:

**FR-A800, F800 Series**

Approval No.:

**14A020**

Valid until:

**19 August 2024**

This certificate is subject to the conditions specified in the attached sheet(s).

Issued at Tokyo on 18 October 2022.



S. Oishi  
General Manager  
Machinery Department

Note: The manufacturer, if desired, is requested to apply to the Society for renewal prior to the expiration date.

# NIPPON KAIJI KYOKAI

Attached sheet -1/6 to the Certificate No. TA22605M

## Specification & documents:

### 1. Particulars:

Power supply: 3-phase AC 50/60 Hz, 380-500V AC (The input voltage is to be limited to 480V AC or less for the model whose capacity is 55K or less.)

### 2. Nomenclature

#### (1) FR-A840: Standard model

|       |   |     |       |   |     |     |     |      |     |
|-------|---|-----|-------|---|-----|-----|-----|------|-----|
| F     | R | -   | A     | 8 | 4   | 0   | -   | 0.4K | -#  |
| ----- |   | (a) | ----- |   | (b) | (c) | (d) | (e)  | (f) |

| Part | Variation                            | Explanation   |
|------|--------------------------------------|---|
| (a)  | FR-A8                                | Fixed.  |
| (b)  | 4                                    | 4: 400V class model   |
| (c)  | 0                                    | 0: Standard Model, whose capacity from 0.4K to 280K   |
| (d)  | -                                    | Fixed.  |
| (e)  | 0.4K to 280K<br>or<br>00023 to 06830 | ___ K: Designation by applicable motor capacity (kW) in ND (Normal Duty) setting.<br>_____: Designation by maximum output current(A). |
| (f)  | -#                                   | Alphanumerical suffix that may be added.  |

#### (2) FR-A842: Separated converter type

|       |   |     |       |   |     |     |     |      |     |
|-------|---|-----|-------|---|-----|-----|-----|------|-----|
| F     | R | -   | A     | 8 | 4   | 2   | -   | 315K | -#  |
| ----- |   | (a) | ----- |   | (b) | (c) | (d) | (e)  | (f) |

| Part | Variation                            | Explanation   |
|------|--------------------------------------|---|
| (a)  | FR-A8                                | Fixed.  |
| (b)  | 4                                    | 4: 400V class model   |
| (c)  | 2                                    | 2: Separated converter model, whose capacity from 315K to 500K  |
| (d)  | -                                    | Fixed.  |
| (e)  | 315K to 500K<br>or<br>07700 to 12120 | ___ K: Designation by applicable motor capacity (kW) in ND (Normal Duty) setting.<br>_____: Designation by maximum output current(A). |
| (f)  | -#                                   | Alphanumerical suffix that may be added.  |

- To be continued -

NIPPON KAIJI KYOKAI

Attached sheet -2/6 to the Certificate No. TA22605M

(3) FR-F840: Standard model

|   |   |   |   |   |   |   |   |       |    |
|---|---|---|---|---|---|---|---|-------|----|
| F | R | - | F | 8 | 4 | 0 | - | 0.75K | -# |
|---|---|---|---|---|---|---|---|-------|----|

------(a)----- (b) (c) (d) (e) (f)

| Part | Variation                             | Explanation   |
|------|---------------------------------------|---|
| (a)  | FR-F8                                 | Fixed.  |
| (b)  | 4                                     | 4: 400V class model   |
| (c)  | 0                                     | 0: Standard model, whose capacity from 0.75K to 315K  |
| (d)  | -                                     | Fixed.  |
| (e)  | 0.75K to 315K<br>or<br>00023 to 06830 | ___ K: Designation by applicable motor capacity (kW) in ND (Normal Duty) setting.<br>_____: Designation by maximum output current(A). |
| (f)  | -#                                    | Alphanumerical suffix that may be added.  |

(4) FR-F842: Separated converter type

|   |   |   |   |   |   |   |   |      |    |
|---|---|---|---|---|---|---|---|------|----|
| F | R | - | F | 8 | 4 | 2 | - | 355K | -# |
|---|---|---|---|---|---|---|---|------|----|

------(a)----- (b) (c) (d) (e) (f)

| Part | Variation                            | Explanation   |
|------|--------------------------------------|---|
| (a)  | FR-F8                                | Fixed.  |
| (b)  | 4                                    | 4: 400V class model   |
| (c)  | 2                                    | 2: Separated converter model, whose capacity from 355K to 560K  |
| (d)  | -                                    | Fixed.  |
| (e)  | 355K to 560K<br>or<br>07700 to 12120 | ___ K: Designation by applicable motor capacity (kW) in ND (Normal Duty) setting.<br>_____: Designation by maximum output current(A). |
| (f)  | -#                                   | Alphanumerical suffix that may be added.  |

- To be continued -

(5) FR-CC2: Converter unit

\* To be used together with any of the FR-A842/F842 inverters whose capacity is from 315K to 560k.

|       |   |     |       |   |     |     |     |     |      |    |
|-------|---|-----|-------|---|-----|-----|-----|-----|------|----|
| F     | R | -   | C     | C | 2   | -   | H   | -   | 315K | -# |
| ----- |   | (a) | ----- |   | (b) | (c) | (d) | (e) |      |    |

| Part | Variation    | Explanation                              |
|------|--------------|--|
| (a)  | FR-CC2-      | Fixed.                                   |
| (b)  | H            | H: 400V class model                      |
| (c)  | -            | Fixed.                                   |
| (d)  | 315K to 630K | Applicable motor capacity.               |
| (e)  | -#           | Alphanumerical suffix that may be added. |

(6) FR-A846: IP55 compatible model

|       |   |     |       |   |     |     |     |      |     |     |     |     |
|-------|---|-----|-------|---|-----|-----|-----|------|-----|-----|-----|-----|
| F     | R | -   | A     | 8 | 4   | 6   | -   | 0.4K | -   | #   | 2   | #   |
| ----- |   | (a) | ----- |   | (b) | (c) | (d) | (e)  | (f) | (g) | (h) | (i) |

| Part | Variation                            | Explanation   |
|------|--------------------------------------|---|
| (a)  | FR-A8                                | Fixed.  |
| (b)  | 4                                    | 4: 400V class model   |
| (c)  | 6                                    | 6: IP55 compatible model, whose capacity from 0.4K to 132K  |
| (d)  | -                                    | Fixed.  |
| (e)  | 0.4K to 132K<br>or<br>00023 to 03610 | ___ K: Model designation by applicable motor capacity (kW) in ND (Normal Duty) setting.<br>_____: Model designation by maximum output current(A). |
| (f)  | -                                    | Fixed   |
| (g)  | #                                    | Alphanumerical suffix   |
| (h)  | 2                                    | 2: built-in C2 class EMC filter   |
| (i)  | #                                    | Alphanumerical suffix that may be added.  |

- To be continued -

(7) FR-F846: IP55 compatible model

|       |   |   |     |     |   |     |     |       |     |     |     |     |
|-------|---|---|-----|-----|---|-----|-----|-------|-----|-----|-----|-----|
| F     | R | - | F   | 8   | 4 | 6   | -   | 0.75K | -   | #   | 2   | #   |
| ----- |   |   | (a) | (b) |   | (c) | (d) | (e)   | (f) | (g) | (h) | (i) |

| Part | Variation                             | Explanation   |
|------|---------------------------------------|---|
| (a)  | FR-F8                                 | Fixed.  |
| (b)  | 4                                     | 4: 400V class model   |
| (c)  | 6                                     | 6: IP55 compatible model, whose capacity from 0.75K to 160K   |
| (d)  | -                                     | Fixed.  |
| (e)  | 0.75K to 160K<br>or<br>00023 to 03610 | ___ K: Designation by applicable motor capacity (kW) in ND (Normal Duty) setting.<br>_____: Designation by maximum output current(A). |
| (f)  | -                                     | Fixed.  |
| (g)  | #                                     | Alphanumerical suffix   |
| (h)  | 2                                     | 2: built-in C2 class EMC filter   |
| (i)  | #                                     | Alphanumerical suffix that may be added.  |

3. Documentation and Test Reports:

- Product catalog (L(NA)06074-C(1402)MEE)
- Instruction manual (0.4K to 280K) (IB-0600493-B(1312)MEE)
- Instruction manual (315K to 500K) (IB(NA)-0600534ENG-A(1402)MEE)
- Instruction manual (CC2) (IB(NA)-0600543ENG-A(1402)MEE)
- Inverter FR-A800 Series Type Test Report: NSH-13067-36 (2014.07.04)
- IPS Corporation EMC Test Report: EMC14088 (2014.06.04)
- Application for Change of Type approval of FR-A800: NSH-14062-26 (18 Feb, 2015)
- Inverter FR-A800 Series Type Test Report: NSH-14061-01 (2015.05.19)
- JQA Test Report: KL80150008 (May 11, 2015)
- JQA Test Report: KL80150009 (May 11, 2015)
- KEC Test Report: A-071-14-B (13 April 2015)
- Inverter FR-A800 Series Type Test Report: NSH-14062-42 (2015.08.12)
- Application for Amendment, Type approval of Inverter FR-A800 Series: NSH-18053-05 (17 May, 2019)
- Labotech Test Report: LIC 12-21-140 (10 November 2021)
- Inverter FR-A800 Series Type Test Report: NSH-22001-02 (2022.07.20)

- To be continued -

Attached sheet -5/6 to the Certificate No. TA22605M

**Test items & approval conditions:**

## 1. Test items:

(Applied testing items are marked with X.)

| ENVIRONMENTAL TESTS (IACS UR E10 Rev.8 Corr.1 basis) |                         | Mark |
|--|-------------------------|------|
| External examination                                 |                         | X    |
| Operation test and performance test                  |                         | X    |
| Electric power supply failure test                   |                         | X    |
| Power supply fluctuation test                        | Electric                | X    |
|  | Pneumatic and Hydraulic | --   |
| Insulation resistance test                           |                         | X    |
| High voltage test                                    |                         | X    |
| Pressure test (Pneumatic and Hydraulic)              |                         | --   |
| Dry heat test (Temperature 55°C × 16 hours)          |                         | X    |
| Damp heat test                                       |                         | X    |
| Vibration test (Acceleration ±0.7g × 1.5 hours)      |                         | X    |
| Inclination test                                     |                         | --   |
| Cold test (Temperature -10°C × 16 hours)             |                         | X    |
| Salt mist test                                       |                         | --   |
| Electrostatic discharge immunity test                |                         | X    |
| Radiated radio frequency immunity test               |                         | X    |
| Conducted low frequency immunity test                |                         | X    |
| Conducted high frequency immunity test               |                         | X    |
| Burst / Fast transient immunity test                 |                         | X    |
| Surge immunity test                                  |                         | X    |
| Radiated emission test                               |                         | X    |
| Conducted emission test                              |                         | X    |
| Flame retardant test                                 |                         | --   |

- To be continued -

Attached sheet -6/6 to the Certificate No. TA22605M

2. Approval condition:

- (1) Except the IP55 Compatible Models, the product is to be placed in a metal cabinet.
- (2) The product is not allowed to be installed in the bridge and on open decks.
- (3) The product can be installed in "special distribution zone" and "general power distribution zone", in accordance with IEC 60533 provided measures are taken, so safe operation is assured.  
Planned EMC measures shall be submitted for approval prior installation onboard.
- (4) The product is not allowed to be installed together with other equipment in the same cabinet without measures taken to keep the product's surrounding temperature below the temperature specified by the product specifications. The derating of output current specified by the manufacturer may be considered.

- The End -