



Marine & Offshore

Certificate number: 25920/C0 BV

File number: ACE002/39/36

Product code: 2633H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

MITSUBISHI ELECTRIC CORPORATION Fukuyama Works
Fukuyama - JAPAN

for the type of product

CIRCUIT BREAKERS (LOW VOLTAGE)

Molded Case Circuit Breakers NF125, NF160, NF250
Types SXV, LXV, HXV, SGV, LGV, HGV, RGV, SEV, HEV

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
IEC 60947-2 (2016)

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 02 Aug 2028

For Bureau Veritas Marine & Offshore,

At BV KOBE, on 02 Aug 2023,
Shinichi Takemoto

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarp.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=unok9w9kvt>

BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Type	Current Rating at 45°C (A)	Rated Voltage (V)	Breaking Current (RMS) Icu/Ics (kA)	Making Current Icm (kA)
NF125-SXV	15, 16, 20, 30, 32, 40, 50, 60, 63, 75, 80, 100, 125	AC690 AC500 AC450 AC240	8/8 23/23 36/36 75/75	15.5 50.1 76.8 167
NF125-LXV	15, 16, 20, 30, 32, 40, 50, 60, 63, 75, 80, 100, 125	AC690 AC500 AC450 AC240 DC300	8/8 36/36 50/50 90/90 20/20	15.5 83.3 115 201 20.0
NF125-HXV	15, 16, 20, 30, 32, 40, 50, 60, 63, 75, 80, 100, 125	AC690 AC500 AC450 AC240 DC300	10/8 50/38 65/65 100/100 40/40	19.9 114 148 219 40.0
NF160-SXV	15, 16, 20, 30, 32, 40, 50, 60, 63, 75, 80, 100, 125, 150, 160	AC690 AC500 AC450 AC240 DC300	8/8 30/30 36/36 85/85 20/20	15.5 63.0 76.8 189 20.0
NF160-LXV	125, 150, 160	AC690 AC500 AC450 AC240 DC300	8/8 36/36 50/50 90/90 20/20	15.5 83.3 115 201 20.0
NF160-HXV	125, 150, 160	AC690 AC500 AC450 AC240 DC300	10/8 50/38 65/65 100/100 40/40	19.9 114 148 219 40.0
NF250-SXV	100, 125, 150, 175, 200, 225, 250	AC690 AC500 AC450 AC240 DC300	8/8 30/30 36/36 85/85 20/20	15.5 63.0 76.8 189 20.0
NF250-LXV	100, 125, 150, 175, 200, 225, 250	AC690 AC500 AC450 AC240 DC300	8/8 36/36 50/50 90/90 20/20	15.5 83.3 115 201 20.0
NF250-HXV	100, 125, 150, 175, 200, 225, 250	AC690 AC500 AC450 AC240 DC300	10/8 50/38 65/65 100/100 40/40	19.9 114 148 219 40.0
NF125-SGV	20(16-20), 25(20-25), 32(25-32), 40(32-40), 50(35-50), 63(45-63), 80(56-80), 100(70-100), 125(90-125)	AC690 AC500 AC450 AC240 DC300	8/8 30/30 36/36 85/85 20/20	15.5 63.0 76.8 189 20.0
NF125-LGV	20(16-20), 25(20-25), 32(25-32), 40(32-40), 50(35-50), 63(45-63), 80(56-80), 100(70-100), 125(90-125)	AC690 AC500 AC450 AC240 DC300	8/8 36/36 50/50 90/90 20/20	15.5 83.3 115 201 20.0

NF125-HGV	20(16-20), 25(20-25), 32(25-32), 40(32-40), 50(35-50), 63(45-63), 80(56-80), 100(70-100), 125(90-125)	AC690 AC500 AC450 AC240 DC300	10/8 50/38 65/65 100/100 40/40	19.9 114 148 219 40.0
NF250-SGV	160(125-160) 200(140-200) 250(175-250)	AC690 AC500 AC450 AC240 DC300	8/8 30/30 36/36 85/85 20/20	15.5 63.0 76.8 189 20.0
NF250-LGV	160(125-160) 200(140-200) 250(175-250)	AC690 AC500 AC450 AC240 DC300	8/8 36/36 50/50 90/90 20/20	15.5 83.3 115 201 20.0
NF250-HGV	160(125-160) 200(140-200) 250(175-250)	AC690 AC500 AC450 AC240 DC300	10/8 50/38 65/65 100/100 40/40	19.9 114 148 219 40.0
NF125-RGV	20(16-20), 25(20-25), 32(25-32), 40(32-40), 50(40-50), 63(50-63), 80(63-80), 100(80-100), 125(100-125)	AC450 AC240	125/125 150/150	278 349
NF250-RGV	160(125-160) 200(160-200) 250(200-250)	AC450 AC240	125/125 150/150	278 349
NF125-SEV	32(16-32), 63(32-63) 125(63-125)	AC690 AC500 AC450 AC240	8/8 30/30 36/36 85/85	15.5 63.0 76.8 189
NF125-HEV	32(16-32), 63(32-63) 125(63-125)	AC690 AC500 AC450 AC240	10/8 50/38 65/65 100/100	19.9 114 148 219
NF250-SEV	160(80-160) 250(125-250)	AC690 AC500 AC450 AC240	8/8 30/30 36/36 85/85	15.5 63.0 76.8 189
NF250-HEV	160(80-160) 250(125-250)	AC690 AC500 AC450 AC240	10/8 50/38 65/65 100/100	19.9 114 148 219

Rated Insulation Voltage Ui (V)	690V
Rated Impulse withstand Voltage Uimp (V)	8kV
Utilization Category	A
Over Current Release types NFxxx-SEV & NFxxx-HEV	Electronic
Over Current Release Other types	Thermal - Magnetic
Number of Poles	2 or 3

2. DOCUMENTS AND DRAWINGS:

In accordance with the manufacturer's drawings and documents, at latest and at any subsequent issue endorsed by Bureau Veritas:

- Information for Application KGA110141 dated 02-08-2011
- Operating Characteristics: LN852A691 to 696, LN852A551, 552, 553, 564, 797, 798, 799, 800, 801, 805, 806.
- Outline and dimension drawing included in file ACE002/39/36

3. TEST REPORTS:**MITSUBISHI ELECTRIC CORPORATION Fukuyama Works:**

- Test Reports N° KGA110079, KGA110080, KGA110081, KGA110082, KGA110083, KGA110084, KGA110085, KGA110086, KGA110087, KGA110088, KGA110089, KGA110090, KGA110091, KGA110092, KGA110093, KGA110094, KGA110095, KGA110096, KGA110097, KGA110098, KGA110099, KGA110100, KGA110101 dated 02 Aug 2011.
- Environmental Test Report N° KGA1100142 dated 02 Aug 2011.
- EMC Test Report N° KGA110147 dated 12 Jul 2011.
- EMC Test Report N° KGA110263 dated 06 Dec 2011.
- EMC Test Report N° ETR-21-160, dated 26 Jan 2021.

4. APPLICATION / LIMITATION:

- 4.1 - Approval also valid for ships to be granted with the notations: AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.
- 4.2 - According to BV Rules for the Classification of Steel Ships, IEC 60947-2.
- 4.3 - The equipment fulfils the EMC requirements for installation on the Bridge and Deck Zones.
- 4.4 - BUREAU VERITAS Environmental Category, **EC Code: 31**
- 4.5 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev 8.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The above products are to be supplied by **MITSUBISHI ELECTRIC CORPORATION Fukuyama Works** in compliance with the type described in this certificate.
- 5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.
- 5.3 - **MITSUBISHI ELECTRIC CORPORATION Fukuyama Works** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.
- 5.4 - For information, **MITSUBISHI ELECTRIC CORPORATION Fukuyama Works** has declared to Bureau Veritas the following production sites:

MITSUBISHI ELECTRIC CORPORATION Fukuyama Works
1-8 Midori-machi,
720-8647 Fukuyama
JAPAN

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

Ryoyo Electric Corporation, Fuchu Works
10530-214, Motoyama-cho,
726 Fuchu
JAPAN

6. MARKING OF PRODUCT:

According to IEC 60947 specifications.

7. OTHERS:

7.1 - It is **MITSUBISHI ELECTRIC CORPORATION Fukuyama Works's** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate No. 25920/B0 BV issued on 16 Apr 2018 by the Society.

*** END OF CERTIFICATE ***