CERTIFICATE NUMBER 22-2203953-PDA
EFFECTIVE DATE 18-JAN-2022
EXPIRATION DATE 17-JAN-2027
ABS TECHNICAL OFFICE Yokohama Engineering Services

CERTIFICATE OF

Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

MITSUBISHI ELECTRIC CORPORATION
FUKUYAMA WORKS

located at

FUKUYAMA CITY, JAPAN

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product **Molded Case Circuit Breaker**

Model **NF Series**

This Product Design Assessment (PDA) Certificate remains valid until 17-January-2027 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau of Shipping

Motohiro Tamura
Engineer/Consultant

MITSUBISHI ELECTRIC CORP.
FUKUYAMA WORKS, 1-8 MIDORI-MACHI
FUKUYAMA CITY HIROSHIMA PREF.
Japan 720-8647
Telephone: 81-84-926-8156
Fax: 81-84-931-4714
Email: Okagawa.Shinichi@aj.MitsubishiElectric.co.jp
Web: www.mitsubishielectric.co.jp

Tier: 2 - PDA Issued

Product: **Molded Case Circuit Breaker**
Model: **NF Series**
Endorsements:

Intended Service:
Protection against overload and short-circuit in electric circuits

Description:
Low Voltage Circuit Breakers, refer to attached list

Rating:
Detail ratings for each type, see component list attached to PDA Certificate.

Service Restriction:
(a) The Product Unit Certification is not required.
(b) If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined. Details of each particular application including wiring diagram, location/installation of sensors are to be specifically approved by ABS.

Comments:
(a) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
(b) Unless specially directed by Administration, this approval is not to be construed as a substitute for flag Administration's approval.
(c) Color for breaker cover: Black, Ivory.

Notes/Drawing/Documentation:
Drawing No. --, INFORMATION FOR APPLICATION, dated 11 December 2001
Drawing No. --, INFORMATION FOR APPLICATION, dated 28 July 2006
Drawing No. --, Construction Details Drawing, Rev: 0
Drawing No. --, TEST REPORT dated 31 July 2001 issued by MITSUBISHI ELECTRIC CORP.
Drawing No. --, TEST REPORT dated 31 July 2006 issued by MITSUBISHI ELECTRIC CORP.

Terms of Validity:
This Product Design Assessment (PDA) Certificate remains valid until 17/Jan/2027 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

STANDARDS

ABS Rules:
2022 Marine Vessel Rules: 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-8-2/9.3.7 and 4-8-3/5.3.3(a)
2022 High Speed Craft Rules: 1-1-4/11.9, 1-1-A2, 1-1-A3, 4-6-2/9.1.4(b) and 4-6-4/11.1.1

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2022 Mobile Offshore Units Rules: 1-1-4/9.7, 1-1-A2, 1-1-A3 and 4-3-2/9.1.4(b)

National:
NA

International:
IEC 60947-2 Ed. 5.1 b:2019

Government:
NA

EUMED:
NA

OTHERS:
NA

Product Design Assessment (PDA) Certificate Attachment for Component Details

PDA Certificate No: 22-2203953-PDA
Entry Date: 18 January 2022
Expire Date: 17 January 2027
Company: Mitsubishi Electric Corporation
Factory or Works: Fukuyama Works
Product/Equipment: Molded Case Circuit Breaker
Model: NF Series

				AC			DC	
Type	**Size (A)**		**Rated Current(A)**	**Volt. (V)**	**Breaking Current rms-sym Icu(*7)/Ics(*6) (kA)**	**Making Current peak-asym Icm (kA)**	**Volt. (V)**	**Breaking Current Icu(*7)/ Ics(*6) (kA)**
NF30-CS (*3)	30	AC:	3,5,10,15,20,30	440 240	1.5/1.5 2.5/2	2.16 3.46(*5)/2.78	-- --	-- --
NF400-CW(*3)	400	AC:	250,300,350,400	230 450 500	50/25 25/13 15/8	105(*6) 52.5(*5) 30(*5)	--	--
		DC:	250,300,350,400	--	--	--	250	20/10
NF400-CEW (*1) (*4)	400	AC:	200-400	200 450 500	50/25 25/13 15/8	105(*5) 52.5(*5) 30(*5)	--	--
NF400-SW (*3)	400	AC:	250,300, 350,400	230 450 450 500	85/85 42/42 50/38 30/30	187 88.2 105(*5) 63	--	--
		DC:	250,300,350,400	--	--	--	250	40/40
NF400-SEW (*1) (*4)	400	AC:	200-400	230 450 450 500	85/85 42/42 50/38 30/30	187 88.2 105(*5) 63	--	--
NF400-HEW (*1) (*4)	400	AC:	200-400	230 450 500	100/100 65/65 50/50	220 143 105	--	--
NF400-REW (*1) (*4)	400	AC:	200-400	230 450 500	150/75 125/63 70/35	330(*5) 275(*5) 154(*5)	--	--
NF400-UEW (*1) (*4)	400	AC:	200-400	230 450 500	200/200 200/200 170/170	440 440 374	--	--
NF630-CW (*3)	630	AC:	500,600,630	230 450 500	50/25 36/18 18/9	105(*5) 75.6(*5) 36(*5)	--	--
		DC:	500,600,630	--	--	--	250	20/10
NF630-CEW (*1) (*4)	630	AC:	300-630	230 450 500	50/25 36/18 18/9	105(*5) 75.6(*5) 36(*5)	--	--
NF630-SW (*3)	630	AC:	500,600,630	230 450 450 500	85/85 42/42 50/38 30/30	187 88.2 105(*5) 63	--	--
		DC:	500,600,630	--	--	--	250	40/40
NF630-SEW (*1) (*4)	630	AC:	300-630	230 450 450 500	85/85 42/42 50/38 30/30	187 88.2 105(*5) 63	--	--
NF630-HEW (*1) (*4)	630	AC:	300-630	230 450 500	100/100 65(*5)/65 50(*5)/50	220 143 105	--	--
NF630-REW (*1) (*4)	630	AC:	300-630	230 450 500	150/75 125/63 70/35	330(*5) 275(*5) 154(*5)	--	--
NF800-CEW (*1) (*4)	800	AC:	400-800	230 450 500	50/25 36/18 18/9	105(*5) 75.6(*5) 36(*5)	--	--

Product Design Assessment (PDA) Certificate Attachment for Component Details

PDA Certificate No: 22-2203953-PDA
Entry Date: 18 January 2022
Expire Date: 17 January 2027
Company: Mitsubishi Electric Corporation
Factory or Works: Fukuyama Works
Product/Equipment: Molded Case Circuit Breaker
Model: NF Series

				AC			DC	
Type	**Size (A)**		**Rated Current(A)**	**Volt. (V)**	**Breaking Current rms-sym Icu(*7)/Ics(*6) (kA)**	**Making Current peak-asym Icm (kA)**	**Volt. (V)**	**Breaking Current Icu(*7)/ Ics(*6) (kA)**
NF800-SEW (*1) (*4)	800	AC:	400-800	230 450 450 500	85/85 42/42 50/38 30/30	187 88.2 105(*5) 63	--	--
NF800-HEW (*1) (*4)	800	AC:	400-800	230 450 500	100/100 65/65 50/50	220 143 105	--	--
NF800-REW (*1) (*4)	800	AC:	400-800	230 450 500	150/75 125/63 70/35	330(*5) 275(*5) 154(*5)	--	--
NF1000-SEW (*4)	1000	AC:	500-1000	230 450 500	125/63 85/43 65/33	275(*5) 187(*5) 143(*5)	--	--
NF1250-SEW (*4)	1250	AC:	600-1250	230 450 500	125/63 85/43 65/33	275(*5) 187(*5) 143(*5)	--	--
NF1200-UR (*4)	1200	AC:	600,700,800, 1000, 1200 (*2)	230 450	170/85 125/65	390 276	--	--

Remarks

(*1) solid state adjustable (continuous)
(*2) adjustable (semi-fixed)
(*3) long-time delay trip& instantaneous trip
(*4) long-time delay trip, short-time delay trip & instantaneous trip
(*5) making capacity corresponding to Icu
(*6) rated service short-circuit breaking current Ics (See IEC60947-2)
(*7) rated ultimate short-circuit breaking current Icu (See IEC60947-2)