



MARINE DIVISION

Certificate number: 21542/B0 BV

File number: ACE 02/008/38

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

SCHNEIDER ELECTRIC INDUSTRIES SAS

Grenoble Cedex 09 - FRANCE

for the type of product

CIRCUIT BREAKERS (LOW VOLTAGE)

Compact NSX Moulded-case circuit breakers and switch-disconnectors.
from 100 to 630A (Low voltage)

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships - IEC 60947-1, IEC 60947-2 - IACS E10.

This certificate is issued to attest that BUREAU VERITAS 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: 20 Aug 2018

For BUREAU VERITAS,

At BV LYON, on 20 Aug 2013,

Jean-Marc Cabuzel



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. 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 Division 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 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 SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Moulded Case Circuit Breaker (MCCB) Specification/Type		NSX 100
Maximum rated current (A) at 40°C	In	100
Maximum Rated operational voltage (V)	Ue	690
Rated insulation voltage (V,ac)	Ui	800
Rated Operational Frequency (Hz)	/	50/60
No. of poles		2, 3 and 4
Rated ultimate Short Circuit breaking capacity (kA) 50/60 Hz, 240V 415V 440V 500V 525V 550V 690V	Icu/Ver.	40/B, 85/F, 90/N, 100/H, 120/S, 150/L, 200/R 25/B, 36/F, 50/N, 70/H, 100/S, 150/L, 200/R 20/B, 35/F, 50/N, 65/H, 90/S, 130/L, 200/R 15/B, 25/F, 36/N, 50/H, 65/S, 70/L, 80/R, 85/HB1, 100/HB2 22/F, 35/N/H, 40/S, 50/L, 65/R, 80/HB1, 100/HB2 10/F/N, 15/H, 20/S, 35/L, 8/F, 10/N/H, 15/S, 20/L, 45/R, 75/HB1, 100/HB2
Rated service Short Circuit breaking capacity (kA) 50/60 Hz	Ics	100% of Icu excepted NSX100, B version at 500V and F versions at 500, 525, 690V for which Ics=50% Icu
Rated Impulse Withstand voltage (kV)	Uimp	8
Utilization Category	/	A
Release type:	- Thermal- Magnetic - Magnetic - Electronic	TM16D to 100D (16 to 100A) TM16G to 63G MA 2.5 to 100 (2.5 to 100A) Micrologic 2 (40, 100A) Micrologic 5/6 A or E (40 to 100A)

Table 1 of 5

Moulded Case Circuit Breaker (MCCB) Specification/Type		NSX 160
Maximum rated current (A) at 40°C	In	160
Maximum Rated operational voltage (V)	Ue	690
Rated insulation voltage (V,ac)	Ui	800
Rated Operational Frequency (Hz)	/	50/60
No. of poles		2, 3 and 4
Rated ultimate Short Circuit breaking capacity (kA) 50/60 Hz, 240V 415V 440V 500V 525V 550V 690V	Icu/Version	40/B, 85/F, 90/N, 100/H, 120/S, 150/L, 200/R 25/B, 36/F, 50/N, 70/H, 100/S, 150/L, 200/R 20/B, 35/F, 50/N, 65/H, 90/S, 130/L, 200/R 15/B, 30/F, 36/N, 50/H, 65/S, 70/L, 80/R, 85/HB1, 100/HB2 22/F, 35/N/H, 40/S, 50/L, 65/R, 80/HB1, 100/HB2 10/F/N, 15/H, 20/S, 35/L, 8/F, 10/N/H, 15/S, 20/L, 45/R, 75/HB1, 100/HB2
Rated service Short Circuit breaking capacity (kA) 50/60 Hz	Ics	100% of Icu
Rated Impulse Withstand voltage (kV)	Uimp	8
Utilization Category	/	A
Release type:	- Thermal- Magnetic - Magnetic - Electronic	TM32D to 160D (32 to 160A) TM25G to 63G MA 25 to 150 (25 to 150A) Micrologic 2 (40 to 160A) Micrologic 5/6 A or E (40 to 160A)

Table 2 of 5

Moulded Case Circuit Breaker (MCCB)		NSX 250
Specification/Type		
Maximum rated current (A) at 40°C	In	250
Maximum Rated operational voltage (V)	Ue	690
Rated insulation voltage (V,ac)	Ui	800
Rated Operational Frequency (Hz)	/	50/60
No. of poles		2, 3 and 4
Rated ultimate Short Circuit breaking capacity (kA) 50/60 Hz, 240V 415V 440V 500V 525V 550V 690V	Icu/Version	40/B, 85/F, 90/N, 100/H, 120/S, 150/L, 200/R 25/B, 36/F, 50/N, 70/H, 100/S, 150/L, 200/R 20/B, 35/F, 50/N, 65/H, 90/S, 130/L, 200/R 15/B, 30/F, 36/N, 50/H, 65/S, 70/L, 80/R, 85/HB1, 100/HB2 22/F, 35/N/H, 40/S, 50/L, 65/R, 80/HB1, 100/HB2 10/F/N, 15/H, 20/S, 35/L, 8/F, 10/N/H, 15/S, 20/L, 45/R, 75/HB1, 100/HB2
Rated service Short Circuit breaking capacity (kA) 50/60 Hz	Ics	100% of Icu
Rated Impulse Withstand voltage (kV)	Uimp	8
Utilization Category	/	A
Release type:	- Thermal-Magnetic - Magnetic - Electronic	TM63D to 250D (63 to 250A) TM 40G to 63G MA 100 to 220 (100 to 220A) Micrologic 2 (40, 250A) Micrologic 5/6 Aor E (40 to 250A)

Table 3 of 5

Moulded Case Circuit Breaker (MCCB)		NSX 400
Specification/Type		
Maximum rated current (A) at 40°C	In	400
Maximum Rated operational voltage (V)	Ue	690
Rated insulation voltage (V,ac)	Ui	800
Rated Operational Frequency (Hz)	/	50/60
No. of poles		3 and 4
Rated ultimate Short Circuit breaking capacity (kA) 50/60 Hz, 240V 415V 440V 500V 525V 550V 690V	Icu/Version	40/F, 85/N, 100/H, 120/S, 150/L, 200/R 36/F, 50/N, 70/H, 100/S, 150/L, 200/R 30/F, 42/N, 65/H, 90/S, 130/L, 200/R 25/F, 30/N, 50/H, 65/S, 70/L, 80/R, 85/HB1, 100/HB2 20/F, 22/N, 35/H, 40/S, 50/L, 65/R, 80/R, 100/HB2 20/F/N, 22/H, 35/S, 40/L 10/F, 10/N, 20/H, 25/S, 35/L, 45/R, 75/HB1, 100/HB2
Rated service Short Circuit breaking capacity (kA) 50/60 Hz, 525V 550V 690V	Ics	100% of Icu excepted NSX400, F/N/H/S/L versions at 525, 550, 690V for which Ics= 10/F, 11/N/H, 12/S/L 10/F/N/L, 11/H, 9/S, 10/F/N/H, 12/S/L
Rated Impulse Withstand voltage (kV)	Uimp	8
Utilization Category	/	A
Release type:	-Electronic	Micrologic 2(250, 400A) Micrologic 1.3-M (320A) Micrologic 5/6 A or E (400A)

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Moulded Case Circuit Breaker (MCCB) Specification/Type		NSX 630
Maximum rated current (A) at 40°C	In	630
Maximum Rated operational voltage (V)	Ue	690
Rated insulation voltage (V,ac)	Ui	800
Rated Operational Frequency (Hz)	/	50/60
No. of poles		3 and 4
Rated ultimate Short Circuit breaking capacity (kA) 50/60 Hz, 240V 415V 440V 500V 525V 550V 690V	Icu/Version	40/F, 85/N, 100/H, 120/S, 150/L, 200/R 36/F, 50/N, 70/H, 100/S, 150/L, 200/R 30/F, 42/N, 65/H, 90/S, 130/L, 200/R 25/F, 30/N, 50/H, 65/S, 70/L, 80/R, 85/HB1, 100/HB2 20/F, 22/N, 35/H, 40/S, 50/L, 65/R, 80/R, 100/HB2 20/F/N, 22/H, 35/S, 40/L 10/F, 10/N, 20/H, 25/S, 35/L, 45/R, 75/HB1, 100/HB2
Rated service Short Circuit breaking capacity (kA) 50/60 Hz, 525V 550V 690V	Ics	100% of Icu excepted NSX630, F/N/H/S/L versions at 525, 550, 690V for which Ics= 10/F, 11/N/H, 12/S/L 10/F/N/L, 11/H, 9/S, 10/F/N/H, 12/S/L
Rated Impulse Withstand voltage (kV)	Uimp	8
Utilization Category	/	A
Release type:	- Electronic	Micrologic 2(250 to 630A) Micrologic 1.3- M (320, 500A) Micrologic 5/6 A or E (400, 630A)

Table 5 of 5

2. DOCUMENTS AND DRAWINGS:

Manufacturer's catalogues N° ART834519-09/2008.

3. TEST REPORTS:

3.1 - ASEFA certificates N°s:

068b-08B(2008-10-21),015-08BT(2008-04-22), 05b-08BT(2008-10-22), 040-08BT(2008-05-22),
021-08BT(2008-05-22), 025-08BT(2008-05-22), 027-08BT(2008-05-22), 030-08BT(2008-05-22),
033-08BT(2008-05-22), 036-08BT(2008-05-22), 08-08BT(2008-10-15), 142-08BT(2008-10-15),
136-08BT(2008-09-26), 139-08BT(2008-09-26), 079a-08BT(2008-09-04), 080a-08BT(2008-09-04),
081a-08BT(2008-09-04), 093a-08BT(2008-09-04), 094a-08BT(2008-09-04), 095a-08BT(2008-09-04),
068c-08BT(2009-03-11), 05c-08BT and 006-09BT(2009-02-27), 19-08BT(2008-12-18),
021a-/025a-/027a-/030a-/033a-/036a-08BT (all dated 2008-12-19), 142a-/008a-08BT(2009-03-11),
08a-/139a-08BT(2009-02-27), 20-08BT(2008-12-18), 07-/008-/09BT(2009-03-11),
079b-/080b-/081b-08BT(2009-03-11), 009-/010-09BT(2009-03-11), 093b-/094b-/095b-08BT(2009-03-11).
201200923_001 (2013-08-02), 201200923_002 (2013-27-02), 201200923_003 (2013-14-01), 201200923_004
(2012-12-17), 201200923_005 (2013-02-07), 201200923_006 (2013-01-31), 201200923_007 (2013-01-21),
201200923_008 (2012-02-12), 201200923_09 (2013-01-14), 201200923_10 (2013-02-25), 201200923_11 (2013-01-15),
201200923_12 (2013-01-07), 201200923_13 (2013-01-17), 201200923_14 (2013-01-08), 201200923_15 (2013-01-07),
201200923_16 (2013-01-11).

3.2 - L2E/Schneider test reports N°s:

F01-2007-0796-00(2008-04-29), F03-2007-0982-01(2008-04-29), F03-2007-0983-01(2008-04-29),
F03-2007-0984-01(2008-04-29), 2007-0796-01A(2008-02-29), 2007-0796-02A(2008-02-29),
F01-2007-0428-00(2008-04-03), 2007-0796-03(2008-02-29), 2007-0796-04(2008-02-29),
F03-2007-0759-02(2008-04-30), F03-2007-0759-03(2008-04-30), F03-2007-0759-04(2008-06-18),
F03-2007-0759-05(2008-04-30), F03-2007-0856-02(2008-04-29), F03-2007-0856-03(2008-04-30),
2007-0796-03A(2008-02-29), 2007-0796-04A(2008-02-29), F01-2007-0425-00(2008-04-24),
F01-2007-0427-00(2008-04-07), F01-2007-0427-01(2008-02-26), F01-2007-0427-02(2008-04-24),
F03-200700075_V1_004(2008-04-22), F03-200700075_V1_005(2008-04-22),
F03-200700075_V1_018(2008-09-05), F03-200700075_V1_019v1(2008-10-08),
F03-200700075_V1_020v1(2008-10-08), 2007-00075-0014(2008-06-13), 2007-00075-0015(2008-06-13),

F03-200700075_V1_021v1(2008-10-08), F03-200700075_V1_022v1(2008-10-08),
 F01-200700075_V1_023v1(2008-08-18), 2007-00075-006(2008-06-13), 2007-00075-007(2008-04-21),
 F01-200700075_003(2008-08-04), F01-200700075_001(2008-08-21), F01-2007-00075_002(2008-06-13),
 F03-200800129_V2/-003(2009-02-09), /-005(2009-01-12), /-006(2009-01-05), /-010 and /-004 (2009-02-09),
 F01-200800129_V2/-015(2009-02-26), /-007(2008-11-18), /-009(2008-10-28), /-011, /-012 and /-013(2009-02-09),
 F01-200800129_V2-002(2008-12-19),
 F03-200800354_003(2009-02-09), F03-200800354_005/_006(2009-01-05), F03-200800354_010(2009-01-25),
 F01-200800354_015(2009-02-26), F03-200800354_007(2008-11-18), /_009(2008-10-28), /_001/_012/01(2009-02-09),
 F01-200800354_02(2009-02-16), /_014(2008-12-08), /_001(2009-02-24),
 F01-200800129_V2-014(2008-12-05), F01-200800129_V2-001(2008-10-20).

3.3 - LCIE test reports N°s:

200710-4128C-R2-E(2007-11-20), 200710-4128C-R4-E(2007-11-20), 200710-4128C-R1-E(2007-11-20),
 200710-4128C-R3-E(2007-11-20), 200802-4311C-A2-R1-E(2008-03-19), 200802-4311C-A2-R3-E(2008-03-19),
 200802-4311C-A2-R2-E(2008-03-19), 200802-4311C-A2-R4-E(2008-03-19).

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 (2006).

4.3 - The manufacturer should be consulted if a circuit-breaker is to be located where the ambient air temperature may fall below $-25\text{ }^{\circ}\text{C}$ for an indoor circuit-breaker, and below $-40\text{ }^{\circ}\text{C}$ for an outdoor circuit-breaker, or where the temperature may exceed $40\text{ }^{\circ}\text{C}$ (or if the 24 h average value exceeds $35\text{ }^{\circ}\text{C}$).

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The circuit breakers are to be supplied by **Schneider Electric Industries SAS** 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.

5.3 - **Schneider Electric Industries SAS** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

SCHNEIDER ELECTRIC INDUSTRIES POLSKA Sp zo.o. ul.
 Mostowa 17 32-332
 Bukowno, POLAND
 (For NSX 100-250A)

SCHNEIDER ELECTRIC INDUSTRIE Italia S.P.A.
 Corso Italia 115
 I-80020 CASAVATORE (Napoli) - ITALY
 (For NSX 400-630A)

SCHNEIDER (BEIJING) MEDIUM & LOW VOLTAGE CO. LTD
 N°.2 Liang Shui He 2nd Street,
 Beijing Economic Technological Development Area,
 BEIJING 100176
 P.R. CHINA
 (For NSX 100-630A)

6. MARKING OF PRODUCT:

According to IEC60947 specifications.

7. OTHERS:

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that **Schneider Electric Industries SAS**, will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 21542/A0 BV issued on 12/06/2009 by the Society.

*** END OF CERTIFICATE ***