

MARINE DIVISION

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Certificate number: 20124/A1 BV

File number : ACE 02/010/18

Product code : 2633H

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

TYPE APPROVAL CERTIFICATE

as per Bureau Veritas Classification Rules

This certificate is issued to

ABB SpA - ABB Sace Division

Frosinone - ITALY

for the type of product

CIRCUIT BREAKERS (LOW VOLTAGE)

EMAX X1 version X1 B-N-L

Regulations and standards :

BV Rules for the Classification of Steel Ships.

IEC 60947-1, IEC 60947-2.

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 of the Regulations and standards mentioned above.

This certificate is valid until : 09 Apr 2013

At Paris la Défense, on : 23 Oct 2008

For BUREAU VERITAS,
By order of the Secretary

Approval office

Local office : BV GENOA
Surveyor : G. Pirovano

L. COURREGELONGUE



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. 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 :

Low voltage moulded case circuit breakers

- Rated insulation voltage (Ui): 1000V
- Rated impulse withstand voltage (Uimp): 12 kV
- Frequency: 50/60 Hz

Product Type	Number of Poles	Rated Voltage Ue (V)	Maximum Operating Current In at 40°C (A)	Breaking Capacity		Icw (1s) (kA)	Remarks
				Ics / Icu (kA)	U (V~)		
Emax X1 series							
X1 B	3-4	440-690VAC	630-800-1000-1250-1600 A	42/42 42/42 42/42	220...415 440 500/525 660/690	42	Characteristics as per IEC 60947-2 Utilization: Category B. Electronic Releases: PR331/P, PR332/P, PR333/P
X1 N	3-4	440-690VAC	630-800-1000-1250-1600 A	50/65 50/65 42/55 42/55	220...415 440 500/525 660/690	42	
X1 L	3-4	440-690VAC	630-800-1000-1250 A	150/150 130/130 100/100 45/60	220...415 440 500/525 660/690	15	

2. DOCUMENTS AND DRAWINGS :

- As per Manufacturer's catalogue N° 1SDC200009D0201.

3. TEST REPORTS :

- 3.1 - CB/CCA Testing Laboratory N° 06114/WMT - Test reports N°:
- 706692-1 (04/Apr./2007)
- 3.2 - Intertek test reports N°:
- E133S2007G1_24a (14-31/May/2007)
- E133S2007G1_24b (14-31/May/2007)
- E133S2007G1_24aR (14-31/May/2007)
- E133S2007G1_24bR (14-31/May/2007)
- 3.3 - ABB Sace test reports N°:
- LBRP 8008/00 dated 14/Dec./2007
- LBRP 7876/00 dated 20/Dec./2007
- 3.4 - CESI test report N°:
- A7027435 dated 06/02/2008

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 and IEC 60947-2.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The above circuit breakers are to be manufactured, examined and tested by **ABB SpA - ABB Sace Division**, in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end **ABB SpA - ABB Sace Division** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 - **ABB SpA - ABB Sace Division** has declared to Bureau Veritas that the type of products described in this certificate are manufactured at the following production site:

**ABB SpA - ABB Sace Division
Via Enrico Fermi 14
03100 Frosinone (Italy)**

6. MARKING OF PRODUCT :

According to IEC 60947-2 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 **ABB SpA - ABB Sace Division, Frosinone (Italy)** 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 cancels and replaces the previous one issued by the Society on 09/04/2008, under ref. N° 20124/A0 BV.

*** END OF CERTIFICATE ***