



MARINE DIVISION

Certificate number: 24898/A0 BV

File number: ACE02/14/18

Product code: 2634H

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

ABB FRANCE
CHASSIEU CEDEX - FRANCE

for the type of product

CONTACTORS (LOW VOLTAGE)

Contactors AF range - AF09 to AF38

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
IEC 60947-4-1

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: 14 Nov 2017

For BUREAU VERITAS,

At BV LYON, on 14 Nov 2012,

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:

AF09...AF38 contactors for controlling power circuits up to 690 VAC and 440VDC.

Table 1 of 2

Specification/Type		AF...
Maximum rated operational current (at 40°C)	Ie	See table 2
Maximum Rated operational voltage	Ue	690V
Rated insulation voltage	Ui	690V
Rated Operational Frequency	/	50/60 Hz
No. of poles		3 or 4
Enclosure degree of protection	IP	20
Rated Impulse Withstand voltage	Uimp	6 kV
Utilization Category:	/	See table 2
Rated control circuit voltage	Uc	12 - 500 Vdc 24 - 500 Vac

Table 2 of 2

Reference	Nb of pole	Ith	Ue / Ie Utilization category	230V	400V	440V	500V	690V
AF09	3	35A(1) /22A(2)	Ie(AC-3)	9A	9A	9A	9.5A	7A
			Ie(AC-1)	25A(1)/20A(2)				
AF12	3	35A(1) /22A(2)	Ie(AC-3)	12A	12A	12A	12.5A	9A
			Ie(AC-1)	28A(1)/22A(2)				
AF16	3	35A(1) /22A(2)	Ie(AC-3)	18A	18A	18A	15A	10.5A
			Ie(AC-1)	30A(1)/22A(2)				
AF26	3	50A(1) /35A(2)	Ie(AC-3)	26A	26A	26A	23A	17A
			Ie(AC-1)	45A(1)/35A(2)				
AF30	3	50A(1)	Ie(AC-3)	33A	32A	32A	28A	21A
			Ie(AC-1)	50A(1)				
AF38	3	50A(1)	Ie(AC-3)	40A	38A	38A	33A	24A
			Ie(AC-1)	50A(1)				
	4	55A(1)	Ie(AC-1)	55A(1)				

(1): Contactor, with screw terminals

(2): Contactor, with spring terminals

2. DOCUMENTS AND DRAWINGS:

2.1 - Identification folder n°20110279-1 "Product description for contactors size 1 three poles" dated 20/05/2011

2.2 - Identification folder n°20110279-2 "Product description for contactors size 2 three poles" dated 20/05/2011

2.3 - Identification folder n°20110279-3 "Product description for contactors size 1 four poles" dated 20/05/2011

2.4 - Identification folder n°20110279-4 "Product description for contactors size 2 four poles" dated 20/05/2011.

3. TEST REPORTS:

3.1 - Intertek:

3.1.1 - CB Scheme Certificates n°SE-57680A1 dated 09/12/2010, n°SE-57681A1 dated 09/12/2010, n°SE-57682A1 dated 09/12/2010 and n°SE-60585 dated 24/02/2010

3.2 - ABB accredited laboratory:

3.2.1 - Climatic tests report n°20110590-A dated 12/12/2011

3.2.2 - Vibration test report n°20110276-A dated 20/06/2011 witnessed by BV Surveyor.

4. APPLICATION / LIMITATION:

4.1 - BV Rules for the Classification of Steel Ships and IEC 60947-4-1

4.2 - BUREAU VERITAS Environmental Category, **EC Code: 31/41**

4.3 - Approval also valid for ships to be granted with the notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be manufactured, examined and tested by **ABB France** 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 France** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

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

ABB France
3 Rue Jean Perrin CS 90009
69687 CHASSIEU Cedex
FRANCE

6. MARKING OF PRODUCT:

- According to IEC 60947 specifications.

7. OTHERS:

This approval is given on the understanding that the manufacturer, **ABB France (Chassieu - France)** will accept full responsibility for informing shipbuilders or their sub-contractors of the proper methods of fitting and general maintenance of the approved equipment and the conditions of this approval.

*** END OF CERTIFICATE ***