



Marine & Offshore

Certificate number: 36353/B0 BV

File number: ACE2/166/1

Product code: 2634H

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

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

ABB AB, Control Products

Västerås - SWEDEN

for the type of product

CONTACTORS (LOW VOLTAGE)

AFxxx series.

3 and 4 pole

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships for the Classification of Steel Ships.

EC Code: 31.

IEC 60947-1 (2014)

IEC 60947-4-1 (2012)

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: 14 Dec 2023

For Bureau Veritas Marine & Offshore,

At BV GOTHENBURG, on 14 Dec 2018,

Magne MOLLER



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.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=plhrzuwiat>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Types		AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370
Rated operational voltage		690 V			1000V				
Rated frequency		50/60Hz							
Rated current I _{th}		160A	200A	225A	275A	350A	400A	500A	600A
Max. breaking capacity	440V	2000A	3000A	3000A	3300A	3500A	3800A	4600A	5000A
	690V	1000A	1500A	1500A	2200A	2500A	3300A	3800A	4000A
Protection's degree		IP20							
AC-1 Utilization category U _e max. ≤ 690 V, 50/60 Hz	θ ≤ 40 °C	160A	200A	225A	275A	350A	400A	500A	600A
	θ ≤ 60 °C	145A	175A	200A	250A	300A	350A	400A	500A
	θ ≤ 70 °C	130A	160A	175A	200A	240A	290A	325A	400A
AC-1 Utilization category U _e max. ≤ 1000, 50/60 Hz	θ ≤ 40 °C	-	-	225A	250A	275A	350A	375A	400A
	θ ≤ 55 °C	-	-	200A	225A	250A	300A	325A	350A
	θ ≤ 70 °C	-	-	175A	185A	200A	240A	260A	290A
AC-3 Utilization category 3 phases motor	220-230-240 V	116A	140A	146A	190A	205A	265A	305A	370A
	380-400 V	116A	140A	146A	190A	205A	265A	305A	370A
	415V	116A	140A	146A	190A	205A	265A	305A	370A
	440V	116A	140A	146A	190A	205A	265A	305A	370A
	500V	110A	130A	130A	156A	185A	250A	290A	350A
	690V	65A	80A	93A	135A	165A	250A	290A	315A
AC-4	1000V	-	-	60A	85A	100A	113A	131A	141A
	500V	-	-	103A	128A	156A	195A	230A	280A
	690V	-	-	80A	93A	104A	153A	162A	188A
	1000V	-	-	48A	72A	85A	90A	95A	100A

2. DOCUMENTS AND DRAWINGS:

Contacteur technical data - catalogue ISBC100192C0206, dated Jul 2017.

Drawing N°1SFB535001G1044, Rev. B.

Drawing N°1SFB535001G1046, Rev. C, dated 02 Mar 2017.

Drawing N°1SFB535001G1048, Rev. B.

Operating instructions document N°1SFC100008M0201, dated Oct 2017.

Operating instructions document N°1SFC100003M0201, dated Jul 2018.

3. TEST REPORTS:

Intertek:

- Test report N°1314369, dated 18 Dec 2013.
- Test report N°1712331STO-001, dated 29 Sep 2017.
- Test report N°1121438-1/2/3, dated 16 Nov 2011.
- Test report N°1317365-1, dated 04 Feb 2014.
- Test report N°1301264-1, dated 22 Feb 2013.

Delta:

- Tests report N°E703770, dated 07 Jan 2014.

CB Scheme:

- Test report N°1714757STO-001, dated 24 Jan 2018.
- Certificate N°SE-70479M3, dated 24 Jan 2018.
- Test report N°1714758STO-001, dated 20 Dec 2017.
- Certificate N°SE-89315, dated 21 Dec 2017.
- Test report N°1714759STO-001, dated 20 Dec 2017.
- Certificate N°SE-89316, dated 20 Dec 2017.
- Test report N°1411354VAS-001, dated 23 Sep 2014.
- Certificate N°SE-77316M1, SE-77317M1, dated 15 Jun 2015.
- Test report N°1411356VAS-001, dated 23 Sep 2014.
- Certificate N°SE-77322, dated 24 Sep 2014.
- Test report N°1411357VAS-002, dated 16 Jun 2015.
- Certificate N°SE77326M1, SE-77327M1, SE-77328M1, dated 16 Jun 2015.

4. APPLICATION / LIMITATION:

4.1 - BUREAU VERITAS Rules and Regulations for the Classification of Steel Ships.

4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**

4.3 - BUREAU VERITAS Environmental Category, **EC Code: 31**

4.4 - The equipment fulfils the EMC requirements for installation on the Bridge and Deck Zone.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The CONTACTORS (LOW VOLTAGE) are to be supplied by **ABB AB, Control Products** 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 - **ABB AB, Control Products** 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, **ABB AB, Control Products** has declared to Bureau Veritas the following production sites:

ABB AB, Control Products
Motorgränd 20
Västerås
S-721 32 Västerås
SWEDEN

ABB XINHUI LOW VOLTAGE SWITCHGEAR CO., LTD.
Jinguzhou Industrial Development Zone
Xinhui District, Jiangmen City
Guangdong 529100
China
Xinhui
CHINA

6. MARKING OF PRODUCT:

6.1 - Trade name.

6.2 - Date of manufacture and serial number.

6.3 - Equipment type or model identification under which it was type-tested

7. OTHERS:

7.1 - It is **ABB AB, Control Products**'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. 36353/A1 BV issued on 24 Sep 2015 by the Society.

*** END OF CERTIFICATE ***