



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

20-2044022-PDA
18-Jan-2021
17-Jan-2026
London Engineering Department

CERTIFICATE OF Product Design Assessment

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

ABB ELECTRIFICATION SWEDEN AB

located at

**MOTOR STARTING & SAFETY, MOTORGRAND 20, VASTERAS,
Sweden, SE 721 61**

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: **Contactor, Electrical**
Model: **A and AF Series 3-Pole Block Contactors**
Endorsements:
Tier: **2 - PDA Issued**

This Product Design Assessment (PDA) Certificate remains valid until 17/Jan/2026 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


Steve A.A.P Brincat, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

ABB ELECTRIFICATION SWEDEN AB

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Product: Contactor, Electrical
Model: A and AF Series 3-Pole Block Contactors
Endorsements:

Intended Service:

For use on ABS classed Vessels and Offshore Facilities in accordance with the listed ABS Rules and International Standards.

Description:

3-Pole Block contactors with AC Control Supply (A Series): A95, A110, A145, A185, A210, A260, A300, A320,
3-Pole Block contactors with AC/DC Control Supply (AF Series) : AF95, AF110, AF145, AF185, AF210, AF260,
AF300, AF400, AF460, AF580, AF750, AF1250, AF1350, AF1650, AF2050,
3-Pole Block contactors with AC/DC Control Supply (AF Series) with ring tongue terminals A95B...RT, A110B...RT,
AF95B...RT, AF110B...RT, AF145B...RT

Rating:

AC-3: A(F)95 to AF2050 96A-1060A @415V, 65A-970A @690V

AC-1: A(F)95 to AF750 145A-1050A @690V, AF1250 to AF2050 1300A-2050A @1000V

Insulation Voltage U_i 1kV, Impulse Withstand Voltage U_{imp} 8/6kV (main/coil);

Making/Breaking Capacity for AC-3: A(F)95 to AF1250 $10 \times I_e / 8 \times I_e$; AF1650 and AF2050: 10,6kA/8,4kA @
440V, 9,7kA/7,76kA @690V; AC1 AF1350: 2025A/1300A, AF1650: 2475A/1650A, AF2050:

3075A/2050A@1000V, AC1 for A(F)95 to AF1250 @690V as per test reports;

Frequency 50/60Hz, Ambient temp 55deg C for AC3, AC1 40deg C (with derated as per technical data)

Service Restriction:

1. Unit Certification is not required for this product.
2. 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.
3. Equipment is for marine application in non-hazardous areas.

Comments:

The Manufacturer has provided a declaration about the control of, the lack of Asbestos in this product.

Notes/Drawing/Documentation:

Drawing No. 1120418-3_, EMC test report, Environmental test report, Intertek Semko AB, Sweden, Date 02.09.2011, Pages: 15

Drawing No. 1712331STO-001, Environmental test report, Intertek Semko AB, Sweden, Date 14.06.2017, Pages: 44

Drawing No. 1013773, EMC Test report , Intertek Semko AB, Sweden, Date 20.10.2010, Pages: 14

Drawing No. 620-20237-13-R0, EMC Test report- ESD Immunity Test for AF1650, DELTA Development Technology AB, Sweden, Date 20.10.2020, Pages: 18

Drawing No. 620-20237-10-R0, EMC Test report , DELTA Development Technology AB, Sweden, Date 20.10.2020, Pages: 20

Drawing No. REC-E704196, EMC Test report -AF1650 E, DELTA Development Technology AB, Sweden, Date 12.03.2015, Pages: 24

Drawing No. REC-E702531-1, EMC Immunity Test report for AF95 and AF110, DELTA Development Technology AB, Sweden, Date 12.02.2010, Pages: 17

Drawing No. REC-E702531-2, EMC Immunity Test report for AF145 and AF185, DELTA Development Technology AB, Sweden, Date 12.02.2010, Pages: 17

Drawing No. REC-E702531-3, EMC Immunity Test report for AF210 and AF260, AF300, DELTA Development Technology AB, Sweden, Date 12.02.2010, Pages: 17

Drawing No. REC-E702531-4, EMC Immunity Test report for AF400 and AF460, DELTA Development Technology

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AB, Sweden, Date 12.02.2010, Pages: 18
Drawing No. REC-E702531-5, EMC Immunity Test report for AF580 and AF750, DELTA Development Technology AB, Sweden, Date 12.02.2010, Pages: 19
Drawing No. REC-E702531-6, EMC Immunity Test report for AF1350, AF1650, DELTA Development Technology AB, Sweden, Date 12.02.2010, Pages: 17
Drawing No. 316185-1, Environmental test report AF95-AF110, Intertek Semko AB, Sweden, Date 17.12.2003, Pages: 29
Drawing No. 316185-2, Environmental test report AF145-AF185, Intertek Semko AB, Sweden, Date 19.12.2003, Pages: 29
Drawing No. 316185-3, Environmental test report AF210-AF300, Intertek Semko AB, Sweden, Date 19.12.2003, Pages: 29
Drawing No. E704027, EMC Test report, DELTA Development Technology AB, Sweden, Date 25.11.2014, Pages: 46
Drawing No. REC-E704027_1, EMC Test report, DELTA Development Technology AB, Sweden, Date 23.11.2014, Pages: 23
Drawing No. REC-E704027_2, EMC Test report, DELTA Development Technology AB, Sweden, Date 23.11.2014, Pages: 22
Drawing No. REC-E704027_3, EMC Test report, DELTA Development Technology AB, Sweden, Date 24.11.2014, Pages: 22
Drawing No. 1SFC380003-89, Operating instructions, A145-A300 // AF145-AF300, Revision: K, Pages: 1
Drawing No. 1SFC101002M5501, Operating instructions, AF1350-AF2050, Revision: U, Pages: 1
Drawing No. 1SFC380023-en, Operating instructions, AF400-AF750, Revision: N, Pages: 1
Drawing No. 5309660-60, Operating instructions, A95-A110 // AF95-AF110, Revision: L, Pages: 1
Drawing No. 53540921-B, Drawing, A95-A110 // AF95-AF110, Revision: A, Pages: 1
Drawing No. 53540930-1, Drawing, A145-A185 // AF145-AF185, Revision: C, Pages: 1
Drawing No. 53540930-2, Drawing, A210-A300 // AF210-AF300, Revision: A, Pages: 1
Drawing No. 53540940-C, Drawing, AF580-AF750, Revision: A, Pages: 1
Drawing No. 53540940_D, Drawing, AF400-AF460, Revision: A, Pages: 1
Drawing No. 1SFB535001G1095, Drawing AF1350-AF1650, Revision: A, Pages: 1
Drawing No. 20170504-E36588-CoC, UL-certificate, AF1350-AF1650, Revision: A, Pages: 1
Drawing No. 20171127-E36588-CoC, UL-certificate, A95-A110 // AF95-AF110, Revision: A, Pages: 1
Drawing No. 20180314-E36588-CoC, UL-certificate, A145-A185 // AF145-AF185, Revision: A, Pages: 1
Drawing No. 20190306-E36588-CoC, UL-certificate, A210-A300 // AF210-AF300, Revision: A, Pages: 1
Drawing No. 20200616-E36588-CoC, UL-certificate, AF580-AF750, Revision: A, Pages: 1
Drawing No. 20200703-E36588-CoC, UL-certificate, AF400-AF460, Revision: A, Pages: 1
Drawing No. 620-20385, Technical Note, Pages: 1
Drawing No. Type nomenclature, Type nomenclature for A and AF Contactors, Revision: A, Pages: 1
Drawing No. Technical data_, technical data, Revision: A, Pages: 1
Drawing No. 2CMT2020-006130, Technical documentation AF, Revision: A, Pages: 1
Drawing No. 2CMT2020-006131, Technical documentation xla, Revision: A, Pages: 1
Drawing No. E36588-19960603, UL TestRecord_AF95-AF110, Pages: 34
Drawing No. E36588-19990603, UL TestRecord_AF145-AF185, Date :28.04.2015, Pages: 22
Drawing No. E36588-19990604, UL TestRecord_AF210-AF300, Date : 30.04.2015, Pages: 22
Drawing No. E36588-20000623, UL TestRecord_AF400-AF460, Pages: 73
Drawing No. E36588-20001120, UL TestRecord_AF580-AF750, Pages:82
Drawing No. E36588-20020920, UL TestRecord_AF1350-AF1650, Pages: 70
Drawing No. E73397-20120924, UL TestRecord_AF2650, Revision: A, Pages: 70
Drawing No. 2CMT2020-006152, Design Compliance Declaration, Revision: a, Pages: 1

Terms of Validity:

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STANDARDS

ABS Rules:

- Marine Vessel Rules (2020): 1-1-4/7.7, 1-1-A3&A4; 4-8-3/1.3, 4-8-3/1.7, 4-8-3/1.17, 4-9-8 Table 1,
- Facilities on Offshore Installations (2020): 1-1-4/9.7, 1-1-A2&A3;
- Mobile Offshore Units (2020): 1-1-4/9.7, 1-1-A2&A3, 6-1-1/9, 6-1-1/13, 4-1-1/7.9, 4-3-1/11, 4-3-1/17;
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2020): 1-1-4/7.7, 1-1-A3&A4; 4-5-4/13;
- High Speed Crafts (2020): 1-1-4/11.9, 1-1-A2&A3, 4-6-1/11, 4-7-9 Table 9 ;
- Steel Barge Rules (2020): 1-1-4/7.9, 1-1-A3&A4;

National:

UL60947-1, Edition 5, 2013, Revision Date 05/06/2019

UL60947-4-1, Edition 3, 2014, Revision Date 10/17/2017

International:

IACS E10 Rev7:2018

Government:

NA

EUMED:

NA

OTHERS:

NA