



CERTIFICATE NUMBER 23-2408679-PDA

EFFECTIVE DATE 9-June-2023

EXPIRATION DATE 8-June-2028

ABS TECHNICAL OFFICE Yokohama Engineering Services

CERTIFICATE OF

Product Design Assessment

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

SCHNEIDER TOSHIBA INVERTER EUROPE SAS

located at

33 RUE BLANCHET, ,PACY SUR EURE,France-27120

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 Frequency Converter

Model Altivar ATV 630 / ATV 650

Endorsement Other

This Product Design Assessment (PDA) Certificate remains valid until 8/June/2028 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


Motohiro Taniguchi
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)

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Tier: 5 - Unit Certification Required

Product: Frequency Converter

Model: Altivar

ATV 630 / ATV 650

Endorsements:

Intended Service:

For use on ABS Classed Vessels and Offshore Installations in accordance with the listed ABS Rules, National and International Standards.

Description:

ATV 630 and ATV 650 are a range of Variable Speed Drive solution based on Altivar 6xx process and are dedicated for smoothly starting or stopping asynchronous motors. It provides a solid-state motor overload protection including thermal memory, memory retention and speed sensitive circuitry for motor overload-temperature protection.

Two series of variable speed drives:

- ATV630 power ratings cover 0.75kW to 315kW (Frame: Size 1 to Size 7)
- ATV650 power ratings cover 0.75kW to 90kW (Frame: Size A, Size B and Size C)

Rating:

ATV 630 Series 1-7

1. Power supply: 220-240Vac;
Motor power: 0.75kW to 75kW;
Enclosure protection: IP20;
2. Power supply: 380-480Vac;
Motor power: 0.75kW to 315kW;
Enclosure protection: IP20;
3. Power supply: 575-690Vac;
Motor power: 2.2kW to 90kW;
Enclosure protection: IP20;

ATV 650 Series

1. Power supply: 380-480Vac;
Motor power: 0.75kW to 90kW;
Enclosure protection: IP55;

Note: Refer to the Variable Speed Drives Altivar Process ATV600 catalog for additional details.

Service Restriction:

Unit Certification will be required for this product when used in applications having a rated power of 100 kW (135 hp) and over intended for essential services as specified in :

- 1) Marine Vessels Rules 4-8-1/Table 1 & 2, 4-8-3/1.5, 4-8-3/5.11, 4-8-3/8.1, and
- 2) Mobile Offshore Units Rules 4-1-1/ Table 3 & 4) or for services related to additional optional notations requested for the drilling unit as per 6-1-7/9.1.1(b) and 6-1-7/19.7 of the Mobile Offshore Units Rules.

As per Marine Vessels Rules 4-8-3/1.5 and 4-8-3/8.1, when the drive is intended for essential services i.e. to control motors of 100kW or above, it will be subject to a plan review.

Assessment is for Hardware only and no functionality is included in this assessment.

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Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Drive is to be installed in an Enclosure with IP rating to be based on 4-8-3/Table 2 of the Marine Vessels Rules.
3. Drive is to be installed in environmentally controlled space.
4. Wiring schematics & assembly drawings to be submitted for each installation.
5. Type of enclosure is to be selected in accordance with the 4-8-3/1.11 and 4-8-3/Table 2 of the Marine Vessels Rules and 4-3-3/Table 1 of the Mobile Offshore Units Rules as applicable.
6. ATEX certified equipment is not to be installed in hazardous areas on U.S. Flagged Vessels, unless it can be proven to have been tested to the IEC 60079 series standards by an independent laboratory accepted by the U.S. Coast Guard. Reference: USCG MI Notice 01-12 (February 7, 2012)
7. Refer to the Manufacturer's manual for installation details.

Notes/Drawing/Documentation:

See Attachment.

Terms of Validity:

This Product Design Assessment (PDA) Certificate remains valid until 08/Jun/2028 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).

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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.

STANDARDS

ABS Rules:

2023 Marine Vessel Rules 1-1-4/7.7, 1-1-A3 & A4, 4-1-1/7.15, 4-8-3/8, 4-9-9/3 and 13, 4-9-9/Table 1 and Table 2;
2023 High-Speed Craft 1-1-4/11.9, 1-1-A2 & A3, 4-1-1/37, 4-6-4/10, 4-7-9/15,
2023 Mobile Offshore Units 1-1-4/9.7, 1-1-A2 & A3, 4-1-1/7.9, 6-1-1/9, 6-1-1/13, 6-1-7/12, 6-1-7/13.5;
2023 Facilities on Offshore Installations 1-1-4/9.7, 1-1-A2 & A3
2023 Steel Vessels for Service on Rivers and Intracoastal Waterways 1-1-4/7.7, 1-1-A3 & A4, 4-1-1/21, 4-5-4/7.1
2023 Steel Barge Rules 1-1-4/7.9, 1-1-A3 & A4

National:

UL508C Ed 3.0: 2010
UL61800-5-1 Ed 1.0: 2012
CAN/CSA C22.2 No. 0.4-04: 2013
CAN/CSA C22.2 No. 14-2010: 2013
CSA C22.2 No. 274-13: 2013
CSA C22.2 No. 274-17: 2017

International:

IEC 61800-5-1/A1:2016
IEC 61800-5-2:2016
IEC 61800-3:2017
EN 60146-1-1: 2010

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Tier: 5 - Unit Certification Required

Government:

NA

EUMED:

NA

OTHERS:

IACS UR E10 (Rev.7 Oct. 2018 & Rev.8 Feb 2021)

Product Design Assessment (PDA) Certificate Attachment for Component Details

PDA Certificate No: 23-2408679-PDA
Effective Date: 9 June 2023
Expire Date: 8 June 2028
Company: SCHNEIDER TOSHIBA INVERTER EUROPE SAS
Product/Equipment: Frequency Converter
Model: Altivar ATV 630 / ATV 650
Revision No: 2

Documents List

Drawing No. 139536-681332-A F 2016 BV Mechanical Test Report 23 March 2016, Revision: -, Pages: 18
Drawing No. 1_1_01, Visual Inspection Nameplate Test Report 11 Feb 2016, Revision: -, Pages: 26
Drawing No. 1_1_01., Visual Inspection after Vibration Test Report 19 May 2016, Revision: -, Pages: 66
Drawing No. 1_1_03, IP Level Test Report 10 Feb 2016, Revision: -, Pages: 18
Drawing No. 1_4_07, Vibration Test Report 23- 30 Mar 16, Revision: -, Pages: 146
Drawing No. 2_1_02, AC or DC (dielectric) Voltage Test Report 12 Feb 2016, Revision: -, Pages: 24
Drawing No. 2_1_04, Insulation Resistance Test Report 12 Feb 2016, Revision: -, Pages:18
Drawing No. 2_2_01, Impulse Voltage Test Report May-Oct 14 & Jan-Feb15, Revision: -, Pages: 28
Drawing No. 4_2_02B, Damp Heat Static Test Report Feb 16 & May 16, Revision: -, Pages: 13
Drawing No. 4_2_06, Dry Heat Equipment Running Test Report 16 Feb 2016, Revision: -, Pages: 23
Drawing No. 5_1_03, Power Supply Variation Test Report 12 Feb 2016, Revision: -, Pages: 6
Drawing No. 5_1_06, Power Supply Failure Test Report 12 - 19Feb 2016, Revision: -, Pages: 18
Drawing No. 5_2_02, Electronic Discharge Test Report 1 Mar 2016, Revision: -, Pages: 35
Drawing No. 5_2_03, Fast Transient Burst Test Report 15 Feb 2016, Revision: -, Pages: 32
Drawing No. 5_2_04, Surge Test Report 16 Feb 2016, Revision: -, Pages: 42
Drawing No. 5_2_05, Radiated Radio Freq Common Mode Test Report 08-22 Feb 16, Revision: -, Pages: 16
Drawing No. 5_2_06, Conducted Radio Frequency Test Report May 14 & Feb16, Revision: -, Pages: 46
Drawing No. 5_4_01, Conducted Emissions Test Report 19 Feb 2016, Revision: -, Pages: 86
Drawing No. 5_4_03, Radiated Emissions Test Report Mar 14 - Feb15 - Feb 16, Revision: -, Pages: 58
Drawing No. 6JB81/6JB84, Technical Information – ATV Process Tech Infos & Synoptics, Revision: -, Pages: 54
Drawing No. ATV630 ATV650 ATV930 ATV950 VFAS3 Unit test process - ie20, ATV630 ATV650 ATV930 ATV950 Unit test process, Revision: 20, Pages: 172
Drawing No. 20151103-E116875, Certificates & EU Manufacturer Declaration – ATV Process UL Certificate, Revision: -, Pages: 2
Drawing No. ATV630-650 EU Declaration 2016-04 V2, Certificates & EU Manufacturer Declaration - ATV630-650 EU Declaration 2016-04 V2, Revision: -, Pages: 4
Drawing No. Catalogue ATV6xx, Catalogue and Documentation - Catalogue ATV6xx, Revision: -, Pages: 73
Drawing No. Cold Test, Cold Test Report 08 Jan 2016, Revision: -, Pages:28
Drawing No. E116875, UL Description File & TCF CE - Report on Power Conversion Equipment - ATVProcess UL Description File, Revision: -, Pages: 68
Drawing No. EAV6325301, Catalogue and Documentation - Altivar_Process ATV6xx_Getting_Started, Revision: -, Pages: 4
Drawing No. EAV64301.02.1, Catalogue and Documentation - Altivar_Process ATV6xx_Installation_Manual, Revision: -, Pages: 95
Drawing No. EAV64318.01, Catalogue and Documentation - Altivar_Process ATV6xx_Programming_Manual, Revision: -, Pages: 724
Drawing No. INERIS 16ATEX0015X, Certificates & EU Manufacturer Declaration - ATV Process - ATEX Certificate, Revision: -, Pages: 8
Drawing No. Labs Certificates - NSH SEPD STIE TSIJ, abs CSA UL ISO Certificates - NSH SEPD STIE TSIJ, Revision: -, Pages: 42
Drawing No. Presentation File, Catalogue and Documentation - Presentation File, Revision: -, Pages: 25
Drawing No. S1 - 200V ABS Prog 1-1-3 (5) to (10) UL-CSA Test Report Jul - Oct 2014 Pages 80, S1 - 200V ABS Prog 1-1-3 (5) to (10) UL-CSA Test Report Jul - Oct 2014, Revision: -, Pages: 80
Drawing No. S1 - 400V, S1 - 400V ABS Prog 1-1-3 (5) to (10) UL_CSA Test Report Jul - Oct 2014, Revision: -, Pages: 156
Drawing No. S2 - 200V, S2 - 200V ABS Prog 1-1-3 (5) to (10) UL-CSA Test Report Nov2014 - Feb 2015, Revision: -, Pages: 121
Drawing No. S2 - 400V, S2 - 400VABS Prog 1-1-3 (5) to (10) UL-CSA Test Report Nov2014 - Feb 2015, Revision: -, Pages: 210
Drawing No. S3 - 200V, S3 - 200V ABS Prog 1-1-3 (5) to (10) UL-CSA Test Report Apr 2014, Revision: -, Pages: 137
Drawing No. S3 - 400V, S3 - 400V ABS Prog 1-1-3 (5) to (10) UL-CSA Test Report Apr - May 2014, Revision: -, Pages: 203
Drawing No. S4 - 200V, S4 - 200V ABS Prog 1-1-3 (5) to (10) UL-CSA Test Report May 2014, Revision: -, Pages: 105
Drawing No. S4 - 400V, S4 - 400V ABS Prog 1-1-3 (5) to (10) UL-CSA Test Report May 2014, Revision: -, Pages: 182
Drawing No. S5 - 200V, S5 - 200V ABS Prog 1-1-3 (5) to (10) UL-CSA Test Report May 2014, Revision: -, Pages: 69
Drawing No. S5 - 400V, S5 - 400V ABS Prog 1-1-3 (5) to (10) UL-CSA Test Report May 2014, Revision: -, Pages: 171
Drawing No. S6 - 400V, S6 - 400V ABS Prog 1-1-3 (5) to (10) UL-CSA Test Report Oct 2014, Revision: -, Pages: 70

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Product/Equipment: Frequency Converter
Model: Altivar ATV 630 / ATV 650
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Drawing No. SEBS-A.105339/15 V1.0, Certificates & EU Manufacturer Declaration - TUV - ATV 6XX/9XX Process Certificate, Revision: -, Pages: 1
Drawing No. SEBS-A.105339/15, V1.0, Certificates & EU Manufacturer Declaration - TUV ATV 6XX/9XX Process Tracking List, Revision: 2, Pages: 9
Drawing No. SSD China, SSD China MA Cert, Revision: -, Pages: 5
Drawing No. SE India, S.E India MA Cert, Revision: -, Pages: 16
Drawing No. Batam Indonesia, Batam Indonesia MA Cert, Revision: -, Pages: 2
Drawing No. ST03280, UL Description File & TCF CE - Technical Construction File Part A, Revision: -, Pages: 75
Drawing No. ST03299, Manufacturing Tests and Quality Process - ATV630-FQC_Specification, Revision: 24, Pages: 35
Drawing No. ST03423, KALA_synthesis results_rev02, Revision: 2, Pages: 1
Drawing No. 139536-681332-B, BV Mechanical Test Report- 23 March 2016, Revision: -, Pages: 18
Drawing No. 1_1_01, Visual Inspection Nameplate Test Report 11 Feb 2016, Revision: -, Pages: 15
Drawing No. 2_1_02., AC DC Voltage Test Report 12 Feb 2016, Revision: -, Pages: 12
Drawing No. 2_1_04., Insulation Resistance Test Report 12 Feb 2016, Revision: -, Pages: 9
Drawing No. 2_2_01., Impulse Voltage Test Report 9 - 14 Nov 2013, Revision: -, Pages: 4
Drawing No. 4_2_02A, Damp Heat Cyclic Test Report 18 Mar 2016, Revision: -, Pages: 28
Drawing No. 5_2_02., Electronic Discharge Test Report 01 Mar 2016, Revision: -, Pages: 6
Drawing No. 5_2_03., Fast Transient Burst Test Report 15 Feb 2016, Revision: -, Pages: 5
Drawing No. 5_2_04., Surge Test Report 16 Feb 2016, Revision: -, Pages: 4
Drawing No. 5_2_05., Radiated Radio Freq Common Mode Test Report 08-25 Feb 2016, Revision: -, Pages: 33
Drawing No. 5_2_06., Conducted Radio Frequency Test Report 11 Feb 2016, Revision: -, Pages: 13
Drawing No. 5_4_01., Conducted Emissions Test Report 19 Feb 2016, Revision: -, Pages: 14
Drawing No. 5_4_03., Radiated Emissions Test Report 19 Feb 2016, Revision: -, Pages: 21
Drawing No. Size A, Size A ABS Prog 1-1-3 (5) to (10) UL_CSA Test Report Aug - Oct 2014, Revision: -, Pages: 134
Drawing No. Size B, Size B ABS Prog 1-1-3 (5) to (10) UL_CSA Test Report Oct 2014, Revision: -, Pages: 105
Drawing No. Size C, Size C ABS Prog 1-1-3 (5) to (10) UL_CSA Test Report Oct 2014, Revision: -, Pages: 60
Drawing No. 1, ATV Process 690V Test ST3518, Revision: -, Pages: 1
Drawing No. 17149, EMC emissions Test Report Nov 2017, Revision: -, Pages: 12
Drawing No. 17184, EMC LF immunity Test Report Nov 2017, Revision: -, Pages: 4
Drawing No. 17203, EMC Radiated emissions Test Report Nov 2017, Revision: -, Pages: 16
Drawing No. 17226, EMC LF immunity unbalance Test Report Nov 2017, Revision: -, Pages: 6
Drawing No. 17275, inspection after vibrations Test Report Oct 2017, Revision: -, Pages: 6
Drawing No. 17321, EMC HF Emissions conducted Test Report Nov 2017, Revision: -, Pages: 12
Drawing No. 17325, dielectric Test Report Nov 2017, Revision: -, Pages: 6
Drawing No. 17326, dielectric Test Report Nov 2017, Revision: -, Pages: 6
Drawing No. 17327, insulation resistance Test Report Nov 2017, Revision: -, Pages: 4
Drawing No. 17328, insulation resistance Test Report Nov 2017, Revision: -, Pages: 4
Drawing No. 17330, dry heat Test Report Nov 2017, Revision: -, Pages: 6
Drawing No. 17332, IP Test Report Nov 2017, Revision: -, Pages: 2
Drawing No. 17333, IP Test Report Nov 2017, Revision: -, Pages: 2
Drawing No. 1E30434CL, damp heat Sopema Test Report Nov 2017, Revision: -, Pages: 22
Drawing No. 1E30434M1, vibrations Sopema Test Report Nov 2017, Revision: -, Pages: 48
Drawing No. 2, Test plan & result 690V, Revision: -, Pages: 1
Drawing No. 35793, APPLICATION COMMUN EAV35793, Revision: -, Pages: 1
Drawing No. 4, UL report 17227 690V Test Report Nov 2017, Revision: -, Pages: 131
Drawing No. 4510601, SNUBBER S5Y 690V QGH4510601, Revision: 0, Pages: 1
Drawing No. 4511801, POWER S3Y S5Y 690V QGH4511801, Revision: 0, Pages: 7
Drawing No. 5, UL report 17214 690V Test Report Dec 2017, Revision: -, Pages: 95
Drawing No. 6, UL report S7, Revision: -, Pages: 56
Drawing No. 7577001, POWER S7 NHA7577001, Revision: 0, Pages: 15
Drawing No. 7609801, GATE S7 NHA7609801, Revision: 0, Pages: 5
Drawing No. 86313, FAN CONTROL S7 NHA86313, Revision: 0, Pages: 2
Drawing No. FP17894, IP Test Report Jan 2017, Revision: -, Pages: 4
Drawing No. FP17895, Dielectric Test Report Jan 2017, Revision: -, Pages: 5
Drawing No. FP17896, insulation resistance Test Report Jan 2017, Revision: -, Pages: 5
Drawing No. FP17897, ESD Test Report Jan 2017, Revision: -, Pages: 6
Drawing No. FP17898, Voltage & frequency variations Test Report Jan 2017, Revision: -, Pages: 8
Drawing No. P174526, DAMP HEAT Test Report Jan 2018, Revision: -, Pages: 6
Drawing No. PB7-4132K-00, UL tests Test Report Aug 2016, Revision: -, Pages: 17

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Model: Altivar ATV 630 / ATV 650
Revision No: 2

Drawing No. VAAE 36768, EMC immunity TGM Test Report Jan 2017, Revision: -, Pages: 1
Drawing No. VAAE 37029, EMC immunity TGM Test Report Jan 2017, Revision: -, Pages: 1
Drawing No. IACS UR E10 Revision 8, Impact analysis of IACS UR E10 Revision 8, Revision: -, Pages: 18,
Drawing No. RCE-EMIESS23B868STI-1A v0, EMC Test Report, Revision: -, 11 April 2023, Pages: 49, issued by
EMITECH ILE FRANCE Laboratory,
Drawing No. LM 23 00 21, Electromagnetic compatibility tests, Revision: -, 6 April 2023, Pages: 12, issued by LPMES,
Drawing No. LM 23 00 22, Electromagnetic compatibility tests, Revision: -, 6 April 2023, Pages: 12, issued by LPMES,