



TYPE APPROVAL CERTIFICATE

Certificate No:
TAE0001AX
Revision No:
2

This is to certify:

That the Frequency Converter

with type designation(s)
Altivar 71

Issued to

Schneider Toshiba Inverter Europe S.A.S.
Pacy Sur Eure, Eure, France

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Frequency Converter for Asynchronous Motors Altivar 71 series.

Range:

**0,37 kW to 45 kW 200 - 240 V AC supply,
0.75 kW to 500 kW 380 - 480 V AC supply,
1.5 kW to 630 kW 500 - 690 V AC supply.**

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2021-11-23**

for **DNV**

This Certificate is valid until **2023-08-11**.

DNV local station: **France CMC**

Approval Engineer: **Nicolay Horn**

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Trond Sjøvåg
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Name and place of manufacturer

Company Name	Address
Schneider (Wuxi) Drives Co., Ltd.	No.20 Hanjiang Road, Wuxi City, Jiangsu Province, Chian, 214028 - P.R.China
PT SCHNEIDER ELECTRIC MFG BATAM (SEMB)	BATAM INDUSTRIAL PARK BLK 4 MUKAKUNING, BATAM RIAU, 29433 INDONESIA
Schneider – Electric IT Buisness India	Jiagani Village, Jiagani Hobili Bangalore INDIA

Product description

Altivar 71. Variable speed controller for asynchronous motor. Constant torque applications.

Technical data for 200 - 240 V supply:

Type designation (On heatsink)	Mains supply (V)	Number of phases	Motor power output (kW) ¹⁾
ATV 71H075M2	200 – 240	1	0,37
ATV 71HU15M2	200 – 240	1	0,75
ATV 71HU22M2	200 – 240	1	1,5
ATV 71HU30M2	200 – 240	1	2,2
ATV 71HU40M2	200 – 240	1	3,0
ATV 71HU55M2	200 – 240	1	4,0
ATV 71HU75M2	200 – 240	1	5,5
ATV 71H037M3	200 – 240	3	0,37
ATV 71H075M3	200 – 240	3	0,75
ATV 71HU15M3	200 – 240	3	1,5
ATV 71HU22M3	200 – 240	3	2,2
ATV 71HU30M3	200 – 240	3	3,0
ATV 71HU40M3	200 – 240	3	4,0
ATV 71HU55M3	200 – 240	3	5,5
ATV 71HU75M3	200 – 240	3	7,5
ATV 71HD11M3X	200 – 240	3	11
ATV 71HD15M3X	200 – 240	3	15
ATV 71HD18M3X	200 – 240	3	18,5
ATV 71HD22M3X	200 – 240	3	22
ATV 71HD30M3X	200 – 240	3	30
ATV 71HD37M3X	200 – 240	3	37
ATV 71HD45M3X	200 – 240	3	45

Technical data for 380 - 480 V supply:

Type designation (On heatsink), IP20	Type designation (On heatsink), IP54	Mains supply (V)	Number of phases	Motor power output (kW) ¹⁾
ATV 71H075N4	ATV 71W075N4	380 – 480	3	0,75
ATV 71HU15N4	ATV 71WU15N4	380 – 480	3	1,5
ATV 71HU22N4	ATV 71WU22N4	380 – 480	3	2,2
ATV 71HU30N4	ATV 71WU30N4	380 – 480	3	3,0
ATV 71HU40N4	ATV 71WU40N4	380 – 480	3	4,0
ATV 71HU55N4	ATV 71WU55N4	380 – 480	3	5,5
ATV 71HU75N4	ATV 71WU75N4	380 – 480	3	7,5
ATV 71HD11N4	ATV 71WD11N4	380 – 480	3	11

Type designation (On heatsink), IP20	Type designation (On heatsink), IP54	Mains supply (V)	Number of phases	Motor power output (kW) ¹⁾
ATV 71HD15N4	ATV 71WD15N4	380 – 480	3	15
ATV 71HD18N4	ATV 71WD18N4	380 – 480	3	18,5
ATV 71HD22N4	ATV 71WD22N4	380 – 480	3	22
ATV 71HD30N4	ATV 71WD30N4	380 – 480	3	30
ATV 71HD37N4	ATV 71WD37N4	380 – 480	3	37
ATV 71HD45N4	ATV 71WD45N4	380 – 480	3	45
ATV 71HD55N4	ATV 71WD55N4	380 – 480	3	55
ATV 71HD75N4	ATV 71WD75N4	380 – 480	3	75
ATV 71HD90N4		380 – 480	3	90
ATV 71HC11N4		380 – 480	3	110
ATV 71HC13N4		380 – 480	3	132
ATV 71HC16N4		380 – 480	3	160
ATV 71HC20N4		380 – 480	3	200
ATV 71HC22N4		380 – 480	3	220
ATV 71HC25N4		380 – 480	3	250
ATV 71HC28N4		380 – 480	3	280
ATV 71HC31N4		380 – 480	3	315
ATV 71HC40N4		380 – 480	3	400
ATV 71HC50N4		380 – 480	3	500

Technical data for 500 - 690 V supply:

Type designation (On heatsink)	Mains supply (V)	Number of phases	Motor power output (kW) ^{1) 2)}
ATV 71HU22Y	500 – 690	3	2,2
ATV 71HU30Y	500 – 690	3	3,0
ATV 71HU40Y	500 – 690	3	4,0
ATV 71HU55Y	500 – 690	3	5,5
ATV 71HU75Y	500 – 690	3	7,5
ATV 71HD11Y	500 – 690	3	11
ATV 71HD15Y	500 – 690	3	15
ATV 71HD18Y	500 – 690	3	18,5
ATV 71HD22Y	500 – 690	3	22
ATV 71HD30Y	500 – 690	3	30
ATV 71HD37Y	500 – 690	3	37
ATV 71HD45Y	500 – 690	3	45
ATV 71HD55Y	500 – 690	3	55
ATV 71HD75Y	500 – 690	3	75
ATV 71HD90Y	500 – 690	3	90
ATV 71HC11Y	500 – 690	3	110
ATV 71HC13Y	500 – 690	3	132
ATV 71HC16Y	500 – 690	3	160
ATV 71HC20Y	500 – 690	3	200
ATV 71HC25Y	500 - 690	3	250
ATV 71HC31Y	500 - 690	3	315
ATV 71HC40Y	500 - 690	3	400
ATV 71HC50Y	500 - 690	3	500
ATV 71HC63Y	500 - 690	3	630

- 1) Motor power at standard torque application (150% T_n for 60 sec.). Values applicable for up to 50 °C ambient.
 2) Values applicable for 690 V motors.

Application/Limitation

Supply voltage range:	200 - 240 / 380 - 480 V/ 500 - 690 V, 50/60 Hz
Voltage variation:	± 10 %
Frequency variation:	± 10 %
Output frequency:	0 - 599 Hz up to 37 kW ranges, 0 - 500 Hz for the other.
Temperature range in operation:	- 10 to +50 °C
Protection degree:	IP20
Temperature class:	A
Vibration class:	A
Humidity class:	A
EMC class:	IEC 61800-3. To be used on EMC class A locations (see below).

The Altivar 71 must be regarded as a component. The actual installation to be designed according to Schneider Users Manual and according to the applicable DNV Rules for the actual application.

Frequency converters rated equal or larger than 100kW serving essential or important functions as defined in DNV rules Pt.4 Ch.8 shall have a product certificate according to DNV Pt.4 Ch.8 Sec.1 Table 3 for each delivery to DNV classed vessels.

For product certification, the following documents should be submitted for approval, Ref. to DNV Pt.4 Ch.8 Sec.1 Table 2:

- Reference to this Type Approval Certificate
- (E180) A drawing showing external location of instruments and devices for operation (panel layout)
- (E240) Functional description for the intended use, configuration and interface (e.g. alarms, monitoring and auxiliary power supplies)
- (Z252) Test program at manufacturer for routine tests and functional tests as per DNV Pt.4 Ch.8 Sec.7, 2.1.1
- Single line diagram (only applicable for multi drive configuration)
- If additional components to the type approved frequency converter are delivered, documentation according to DNV rules Pt.4 Ch.8 Sec.1 table 2 shall be submitted for review.

To be installed in an enclosure with an IP degree in accordance with DNV Rules w.r.t. location.

Converters with conducted and radiated emission according to IEC 61800-3 can be installed in "special distribution zone" and "general power distribution zone" in accordance with IEC 60533 provided precautions are taken to attenuate these effects on the distribution system, so the safe operation is assured.

Use of mechanical adaptation required to reduce the Vibration level.

Type Approval documentation

Technical info:

Part of catalogue, page19 "Variable speed drives Altivar 71.

Schneider booklet "ATV61 / ATV71 690 V manufacturer STIE" item1 (parts) issued 2007-10-23. Schneider booklet "ATV71- ATV61 400 V" items 1 – 3 issued 2007-05-19.

Telemecanique "Variable speed drives Altivar 71"Schneider catalogue, issued March 2006 (applicable parts).

Test reports:

Technical Construction File Part A, rev. 01 dated 2007-08-03. V&V Pacy Labs "Damp Heat for DNV" dated 2014-02-25. LCIE test report no. 600039806-539682 dated 2006-02-17. UL test reports nos. ATV61WD15N4c.doc, ATV61WD22N4c.doc, ATV61WD30N4c.doc, ATV61WD45N4c.doc, ATV61WD90N4c.doc. Schneider booklet "ATV61 / ATV71 690 V manufacturer STIE" items 12 – 22 issued 2007-10-23. Schneider booklet "ATV71- ATV61 400 V" items 3-3 to 3-16 issued 2007-05-19. Schneider Electric test reports nos. Plan 320 – test nos. 19-01 dated 2004-09-14, 45-17 dated 2005-01-31, 03-26 dated 2004-12-09, 34-32 dated 2005-03-03, DNV-01 dated 2005-11-03, DNV-02 dated 2005-11-24, Plan ATV71 – test nos. QTR166 & QTR167 dated 2006-03-06, 2.1.2 dated 2006-10-16, file ATV71 - test no. QTR163 dated 2006-03-06, file ATV71test QTR165 dated 2006-03-23, file no. RQ-RSX-4040-19-00 – test no. 19 dated 2004-04-13 CNPP test report nos. LM 04 00 36 dated 2004-09-13 & LM 04 00 48 dated 2004-09-30, Sopema test reports EDL0788/1 dated 2006-04-04, EKL07881 dated 2006-05-05 & EHL08953 dated 2006-10-18. UL test reports nos. RSXs F8 75kW.doc & RQ320-4185.

Tests carried out

Visual inspection, Performance, Power supply failure, Power supply variations, Voltage/frequency variation, Vibration, Dry heat, Damp heat, Insulation resistance, High voltage.



Job Id: **262.1-004098-10**
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EMC: The following tests are in accordance with the DNV CN 2.4/ IEC 61800-3: Electrical fast transient (Burst), electrical slow transient (Surge), RF-common mode Voltage, radiated RF-electromagnetic fields, electric discharge (ESD), radiated and conducted emission.

Marking of product

Altivar 71 – Type designation – Power – Voltage

Periodical Assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE