

MARINE DIVISION

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Certificate number: 14370/B1 BV

File number : AP 3635

Product code : 25921

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

TYPE APPROVAL CERTIFICATE

as per Bureau Veritas Classification Rules

This certificate is issued to

ABB Oy Drives

Helsinki - FINLAND

for the type of product

FREQUENCY CONVERTERS

ACS800-01 Single Drives

Regulations and standards :

BV Rules for the Classification of Steel Ships.

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 of the Regulations and standards mentioned above.

This certificate is valid until : 01 Aug 2012

At Paris la Défense, on : 10 Sep 2008

For BUREAU VERITAS,
By order of the Secretary

L. COURREGELONGUE

Approval office



Local office : BV HELSINKI

Surveyor : T. Andersson



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. 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 :

3 - Phase variable speed drive for motor applications.

1. Output data for input voltage 230 V.

Type designation	Mains supply (V)	Frame size	Nominal ratings	
			I con. max (A)	I max (A)
ACS800-01-0001-2 + C132	208 - 240	R2	4.8	6.5
ACS800-01-0002-2 + C132	208 - 240	R2	6.2	8.2
ACS800-01-0003-2 + C132	208 - 240	R2	8.1	10.8
ACS800-01-0004-2 + C132	208 - 240	R2	10.4	13.8
ACS800-01-0005-2 + C132	208 - 240	R2	13.2	17.6
ACS800-01-0006-2 + C132	208 - 240	R3	18	24
ACS800-01-0009-2 + C132	208 - 240	R3	24	32
ACS800-01-0011-2 + C132	208 - 240	R3	32	46
ACS800-01-0016-2 + C132	208 - 240	R4	42	62
ACS800-01-0020-2 + C132	208 - 240	R4	52	72
ACS800-01-0025-2 + C132	208 - 240	R5	68	86
ACS800-01-0030-2 + C132	208 - 240	R5	82	112
ACS800-01-0040-2 + C132	208 - 240	R5	98	138
ACS800-01-0050-2 + C132	208 - 240	R6	134	164
ACS800-01-0060-2 + C132	208 - 240	R6	158	202
ACS800-01-0070-2 + C132	208 - 240	R6	192	282

2. Output data for input voltage 400 V.

Type designation	Mains supply (V)	Frame size	Nominal ratings	
			I con. max (A)	I max (A)
ACS800-01-0003-3 + C132	380 - 415	R2	4.8	6.5
ACS800-01-0004-3 + C132	380 - 415	R2	6.2	8.2
ACS800-01-0005-3 + C132	380 - 415	R2	8.1	10.8
ACS800-01-0006-3 + C132	380 - 415	R2	10.4	13.8
ACS800-01-0009-3 + C132	380 - 415	R2	13.2	17.6
ACS800-01-0011-3 + C132	380 - 415	R3	18	24
ACS800-01-0016-3 + C132	380 - 415	R3	24	32
ACS800-01-0020-3 + C132	380 - 415	R3	32	46
ACS800-01-0025-3 + C132	380 - 415	R4	42	62
ACS800-01-0030-3 + C132	380 - 415	R4	52	72
ACS800-01-0040-3 + C132	380 - 415	R5	68	86
ACS800-01-0050-3 + C132	380 - 415	R5	82	112
ACS800-01-0060-3 + C132	380 - 415	R5	98	138
ACS800-01-0075-3 + C132	380 - 415	R5	137	170
ACS800-01-0070-3 + C132	380 - 415	R6	134	164
ACS800-01-0100-3 + C132	380 - 415	R6	158	202
ACS800-01-0120-3 + C132	380 - 415	R6	192	282
ACS800-01-0135-3 + C132	380 - 415	R6	214	326
ACS800-01-0165-3 + C132	380 - 415	R6	247	326
ACS800-01-0205-3 + C132	380 - 415	R6	276	351

3. Output data for input voltage 500 V.

Type designation	Mains supply (V)	Frame size	Nominal ratings	
			I con. max (A)	I max (A)
ACS800-01-0004-5 + C132	380 - 500	R2	4.7	6.5
ACS800-01-0005-5 + C132	380 - 500	R2	5.9	8.2
ACS800-01-0006-5 + C132	380 - 500	R2	7.7	10.8
ACS800-01-0009-5 + C132	380 - 500	R2	10	13.8
ACS800-01-0011-5 + C132	380 - 500	R2	12.5	17.6
ACS800-01-0016-5 + C132	380 - 500	R3	18.5	24
ACS800-01-0020-5 + C132	380 - 500	R3	24	32
ACS800-01-0025-5 + C132	380 - 500	R3	32	46
ACS800-01-0030-5 + C132	380 - 500	R4	40	62
ACS800-01-0040-5 + C132	380 - 500	R4	46	72
ACS800-01-0050-5 + C132	380 - 500	R5	62	86
ACS800-01-0060-5 + C132	380 - 500	R5	75	112
ACS800-01-0070-5 + C132	380 - 500	R5	92	138
ACS800-01-0105-5 + C132	380 - 500	R5	137	170
ACS800-01-0100-5 + C132	380 - 500	R6	118	164
ACS800-01-0120-5 + C132	380 - 500	R6	149	202
ACS800-01-0140-5 + C132	380 - 500	R6	171	282
ACS800-01-0165-5 + C132	380 - 500	R6	214	326
ACS800-01-0205-5 + C132	380 - 500	R6	247	326
ACS800-01-0255-5 + C132	380 - 500	R6	276	351

4. Output data for input voltage 690 V.

Type designation	Mains supply (V)	Frame size	Nominal ratings	
			I con. max (A)	I max (A)
ACS800-01-0011-7 + C132	525 - 690	R4	12	14
ACS800-01-0016-7 + C132	525 - 690	R4	16.5	19
ACS800-01-0020-7 + C132	525 - 690	R4	21	28
ACS800-01-0025-7 + C132	525 - 690	R4	24	38
ACS800-01-0030-7 + C132	525 - 690	R4	31	44
ACS800-01-0040-7 + C132	525 - 690	R4	34	54
ACS800-01-0050-7 + C132	525 - 690	R5	48	68
ACS800-01-0060-7 + C132	525 - 690	R5	54	84
ACS800-01-0070-7 + C132	525 - 690	R6	75	104
ACS800-01-0100-7 + C132	525 - 690	R6	88	124
ACS800-01-0120-7 + C132	525 - 690	R6	107	172
ACS800-01-0145-7 + C132	525 - 690	R6	127	245
ACS800-01-0175-7 + C132	525 - 690	R6	157	245
ACS800-01-0205-7 + C132	525 - 690	R6	180	245

I con. max - rated current available continuously without overload ability at 45°C.

I max - maximum output current. Available for 10 seconds at start, otherwise as long as allowed by drive temperature.

Input data:

- voltage: U2in = 208 to 240 V ± 10%,
U3in = 380 to 415 V ± 10%,
U5in = 380 to 500 V ± 10%,
U7in = 525 to 690 V ± 10%.

- frequency: 48 - 63 Hz.
- power factor: 0.98

Output data:

- voltage: 0 to U2in/U3in/U5in/U7in.
- frequency control: 0 to ± 300 Hz,
0 to ± 120 Hz (with du/dt filters)

Enclosure protection: IP 21 (standard)
IP 55 (option).

2. DOCUMENTS AND DRAWINGS :

ABB Drives drawings N°s 3AFE 6454 2257, 3AFE 6454 3164.
Technical catalogues 3AFE 68326753REV B EN29.4.2005.

3. TEST REPORTS :

NEMKO test reports N°s 1021188 dated 15.02.2002, 1011062B dated 26.03.2002, 1021498 dated 28.11.2002, 1031981 dated 08.12.2003, 1032037 and 1032038 dated 07.01.2004.

VTT AUTOMATION test reports N°s AUT46-010770 dated 31.12.2001, AUT46-020054 dated 11.02.2002, TUO26-033091 dated 18.09.2003, TUO26-033092 dated 18.09.2003, TUO26-033032 dated 18.09.2003, TUO26-033445 dated 03.12.2003, TUO26-033446 dated 03.12.2003, TUO26-044024 dated 29.03.2004, VTT-S-01192-07 dated 02.02.2007, VTT-06037-07 dated 02.07.2007.

ABB Industry Oy test reports N°s 3AFE 00170923 dated 15.05.2002, 3AFE 64592777 dated 08.03.2002, 3AFE 64592157 dated 25.02.2002, 3AFE 64625390 dated 08.05.2002, 3AFE 64625403 dated 08.05.2002, 3AFE 64625420 dated 08.05.2002 and 3AFE 64625438 dated 10.05.2002, 3AFE 00572862 dated 17.01.2007, 3AFE 68821606 dated 27.01.2007, 3AFE 68998905 dated 31.03.2008.

SGS Fimko investigation reports N°s 7530 dated 05.12.2002, 7099 dated 05.07.2002, 7579 dated 16.12.2002, 7655 dated 07.01.2003 and 7839 dated 31.03.2003.

Intertek Electromagnetic Compatibility (EMC) test reports N° T08-540A-EMC dated 10.04.2008, N° T08-560A-EMC dated 23.04.2008.

4. APPLICATION / LIMITATION :

4.1 - According to BV Rules 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.**

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The ACS800-01 Single Drives are to be manufactured, examined and tested by **ABB Oy Drives** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Arrangements shall be made for a Society's Surveyor to attend the relevant tests and examinations at manufacturer's works or to perform the relevant audits when an alternative survey scheme (BV Mode I) has been agreed. Relevant Bureau Veritas certificate will be issued after satisfactory completion of the procedure.

6. MARKING OF PRODUCT :

- Maker's name or trade mark,
- Serial number of the units,
- Equipment type number or model identification under which it was type-tested,
-  or  conformity marking, as relevant.

7. OTHERS :

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that **ABB Oy Drives, Helsinki - Finland**, will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 14370/B0 BV issued on 13/08/2008 by the Society

*** END OF CERTIFICATE ***