



Marine & Offshore

Certificate number: 40415/B0 BV

File number: AP4587

Product code: 2592I

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

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## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**ABB Oy Drives**

Helsinki - FINLAND

*for the type of product*

**FREQUENCY CONVERTERS (Power 50kW and over)**

ACS880-04-XxxX-Y + ZzzZ series.

**Requirements:**

Bureau Veritas Rules for the Classification of Steel Ships.

EC Code: 31.

IEC 61800-5-1 (2007).

*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: 10 Feb 2025**

**For Bureau Veritas Marine & Offshore,**

At BV TURKU (ABO), on 10 Feb 2020,

Roger Robertsson



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.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 5 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION :

The **ACS880-04-XxxX-Y + ZzzZ** series are drives to control asynchronous AC induction motors, for Marine and Offshore applications.

#### 1.1 - Approval's range:

ACS880                      04                      XxxX                      Y                      ZzzZ  
 Product series      Types and construction      Ratings      Voltages      Options

#### 1.1.1 - Ratings:

Drive type ACS880-04-	Input current	Output ratings						
		Nominal use			Light-duty use		Heavy-duty use	
		$I_{IN}$	$I_{max}$	$I_N$	$P_N$	$I_{Ld}$	$P_{Ld}$	$I_{Hd}$
A	A	A	kW	A	kW	A	kW	
<i>UN</i> = 400 V								
505A-3	505	560	505	250	485	250	361	200
585A-3	585	730	585	315	575	315	429	250
650A-3	650	730	650	355	634	355	477	250
725A-3	725	1020	725	400	715	400	566	315
820A-3	820	1020	820	450	810	450	625	355
880A-3	880	1100	880	500	865	500	725 *	400
<i>UN</i> = 500 V								
460A-5	460	560	460	315	450	315	330	200
503A-5	503	560	503	355	483	315	361	250
583A-5	583	730	583	400	573	400	414	250
635A-5	635	730	635	450	623	450	477	315
715A-5	715	850	715	500	705	500	566	400
820A-5	820	1020	820	560	807	560	625	450
880A-5	880	1100	880	630	857	560	697**	500

Drive type ACS880-04-	Input current	Output ratings						
		Nominal use			Light-duty use		Heavy-duty use	
		$I_{IN}$	$I_{max}$	$I_N$	$P_N$	$I_{Ld}$	$P_{Ld}$	$I_{Hd}$
A	A	A	kW	A	kW	A	kW	
<i>UN</i> = 690 V								
330A-7	330	480	330	315	320	315	255	250
370A-7	370	520	370	355	360	355	325	315
430A-7	430	520	430	400	420	400	360*	355
425A-7	425	520	425	400	415	400	360	355
470A-7	470	655	470	450	455	450	415	400
522A-7	522	655	522	500	505	500	455	450
590A-7	590	800	590	560	571	560	505	500
650A-7	650	820	650	630	630	630	571***	560
721A-7	721	820	721	710	705	630	571***	560

Drive type ACS880-04-	Input current	Max. current	Output ratings					
			Light-duty use			Heavy-duty use		
	<i>I</i> N	<i>I</i> max	<i>I</i> Ld	<i>P</i> Ld	<i>I</i> Hd	<i>P</i> Hd		
A	A	A	kW	hp	A	kW	hp	
<i>UN</i> = 460 V								
503A-5	503	560	483	315	400	361	250	300
583A-5	583	730	573	400	450	414	250	350
635A-5	635	730	623	450	500	477	315	400
715A-5	715	850	705	500	600	566	400	450
820A-5	820	1020	807	560	700	625	450	500
880A-5	880	1100	857	560	700	697**	500	500
<i>UN</i> = 600 V								
330A-7	330	480	320	320	300	255	250	250
370A-7	370	520	360	360	350	325	300	300
430A-7	430	520	420	415	450	360*	350	350
470A-7	470	655	455	455	450	415	450	450
522A-7	522	655	505	505	500	455	450	450
590A-7	590	800	571	571	600	505	500	500
650A-7	650	820	630	630	700	571***	560	600
721A-7	721	820	705	630	700	571***	560	600

**Note:**

<i>UN</i>	Nominal voltage of the drive
<i>I</i> N	Nominal input current (rms) at 40 °C (104 °F)
<i>I</i> max	Maximum output current. Available for 10 seconds at start, otherwise as long as allowed by drive temperature. 140% ! 200% of <i>I</i> Hd, depending on power rating.
<i>I</i> N	Continuous rms output current. No overload capability at 40 °C (104 °F)
<i>P</i> N	Typical motor power in no-overload use.
<i>I</i> Ld	Continuous rms output current allowing 10% overload for 1 minute every 5 minutes
<i>P</i> Ld	Typical motor power for light-overload use.
<i>I</i> Hd	Continuous rms output current allowing 50% overload for 1 minute every 5 minutes
*	Continuous rms output current allowing 40% overload for 1 minute every 5 minutes
**	Continuous rms output current allowing 45% overload for 1 minute every 5 minutes
***	Continuous rms output current allowing 44% overload for 1 minute every 5 minutes
<i>P</i> Hd	Typical motor power for heavy-duty use.

**Main connection**

Voltage and power range

3-phase, UN2 = 208 to 240 V, +10/-15%  
 3-phase, UN3 = 380 to 415 V, +10/-15%  
 3-phase, UN5 = 380 to 500 V, +10/-15%  
 3-phase, UN7 = 525 to 690 V, +10/-15%  
 3-phase, UN3 = 380 to 415 V, ± 10%  
 3-phase, UN5 = 380 to 500 V, ± 10%  
 3-phase, UN7 = 525 to 690 V, ± 10%

Frequency

50/60Hz ± 5%

Power factor

0.98

**Motor connection**

Voltage

3-phase output voltage 0 to UN2 /UN3 /UN5 /UN7

Frequency

0 to ± 500 Hz

Enclosure protection:

IP20

**2. DOCUMENTS AND DRAWINGS :**

Product's catalog No. 3AUA0000115038, Rev. K, dated 28 Oct 2019.

Product's data sheet No. 3AXD50000010521, Rev. D, dated 07 Nov 2018.

Hardware manual No. 3AUA0000128301, Rev. G, dated 17 Feb 2017.

**3. TEST REPORTS :****ABB:**

- Test report No. 3AXD10000413217, dated 16.Mar.2015.
- Test report No. 3AXD10000406983, dated 12.Feb.2015.
- Test report No. 3AXD10000089327, dated 23.Oct.2012.
- Test report No. 3AXD10000106522, dated 19.Mar.2013.
- Test report No. 3AXD10000241834, dated 31.May.2013.
- Test report No. 3AXD10000242533, dated 12.Mar.2014.
- Test report No. 3AXD10000248380, dated 26.Jun.2013.
- Test report No. 3AXD10000249676, dated 02.Jul.2013.
- Test report No. 3AXD10000281074, dated 04.Nov.2011.
- Test report No. 3AXD10000287077, dated 21.Nov.2013.
- Test report No. 3AXD10000309964, dated 01.Mar.2014.
- Test report No. 3AXD10000331826, dated 18.Sep.2014.
- Test report No. 3AXD10000315766, dated 09.Jun.2013.
- Test report No. 3AXD10000351619, dated 04.Sep.2014.
- Test report No. 3AXD10000352832, dated 12.Sep.2014.
- Test report No. 3AXD10000352833, dated 12.Sep.2014.
- Test report No. 3AXD10000415632, dated 27.Mar.2015.

**SGS:**

- Tests report No. 233660, dated 31.Mar.2014.
- Tests report No. 254363, dated 31.Mar.2014.
- Tests report No. 275993-1, dated 27.Mar.2014.
- Tests report No. 275996, dated 24.Mar.2014.
- Tests report No. 276592-1, dated 19.May.2014.
- Tests report No. 276592-2, dated 19.May.2014.
- Tests report No. 272110-1, dated 16.May.2013.
- Tests report No. 273473-1, dated 11.Oct.2013.

**Nemko:**

- Tests report No. 224724, dated 20.Oct.2012.
- Tests report No. 243333-1, dated 16.Aug.2013.
- Tests report No. 252375, dated 20.Jan.2014.

**Innventia:**

- Tests report No. 273767A, dated 26.Jun.2013.

**VTT Expert Services Ltd.:**

- Tests report No. VTT-S-01320-13, dated 19.Feb.2013.
- Tests report No. VTT-S-03275-13, dated 13.May.2013.
- Tests report No. VTT-S-06084-12, dated 16.Oct.2012.

**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 in General Power Distribution Zones.
- 4.5 - The **ACS880-04-XxxX-Y + ZzzZ series** uses a derating factor: in the temperature range +45...55 °C, the rated output current is derated by 1% for every added 1°C.

**5. PRODUCTION SURVEY REQUIREMENTS :**

- 5.1 - The above products are to be supplied by **ABB Oy Drives** in compliance with the type and the requirements described in this certificate.
- 5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.
- 5.3 - BV product certificate is required.
- 5.4 - For information, **ABB Oy Drives** has declared to Bureau Veritas the following production site:

**ABB Oy Drives**  
**Hiomotie 13**  
**00380 Helsinki**  
**FINLAND**

**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
- 6.4 - \ or @ conformity marking, as relevant

**7. OTHERS :**

- 7.1 - It is **ABB Oy Drives**'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 N° 40415/A0 BV issued on 08 Apr 2015 by the Society.

\*\*\* END OF CERTIFICATE \*\*\*