

## Type Approval Certificate Extension

This is to certify that Certificate No. 07/00032(E1) for the undernoted products is extended and renumbered as shown.

This certificate is issued to:

<b>PRODUCER</b>	ABB Oy Drives	
<b>PLACE OF PRODUCTION</b>	P.O. Box 184 Hiomotie 13 FIN-00381 Helsinki Finland	ABB Beijing Drive Systems Co., Ltd. No. 1, Block D A-10, Jiuxianqiao Beilu, Chaoyang District, Beijing 100015, P.R. China
<b>DESCRIPTION</b>	Electronic Frequency Converter	
<b>TYPE</b>	ACS800LC with option C121 and/or C132 when applicable	
<b>APPLICATION</b>	Marine and offshore use in environmental categories ENV1 and ENV2 as defined in Lloyd's Register Test Specification No. 1: 2002	
<b>OTHER CONDITIONS</b>	Suitable for use in special power distribution zones only as defined in IEC 60533.	

### RATINGS

Type	Nominal Current Rating	Main Supply Voltage Rating Frequency 48~63 Hz
ACS800-04LC	563~5067 A	380~415 V ±10%
ACS800-04LC	546~4788 A	380~500 V ±10%
ACS800-04LC	583~5540 A	525~690 V ±10%
ACS800-07LC	563~5067 A	380~415 V ±10%
ACS800-07LC	546~4788 A	380~500 V ±10%
ACS800-07LC	583~5540 A	525~690 V ±10%
ACS800-14LC	159~4765 A	380~415 V ±10%
ACS800-14LC	139~4540 A	380~500 V ±10%

<b>Certificate No.</b>	12/70025(E2)
<b>Issue Date</b>	4 September 2012
<b>Expiry Date</b>	2 June 2017
<b>Sheet</b>	1 of 4

  
Poul Erik Hansen

Copenhagen Design Support Office

Lloyd's Register EMEA  
Strandvejen 104A, DK-2900 Hellerup

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## RATINGS (cont.)

Type	Nominal Current Rating	Main Supply Voltage Rating Frequency 48~63 Hz
ACS800-14LC	106~4986 A	525~690 V ±10%
ACS800-17LC	159~4765 A	380~415 V ±10%
ACS800-17LC	139~4540 A	380~500 V ±10%
ACS800-17LC	106~4986 A	525~690 V ±10%
ACS800-37LC	159~4765 A	380~415 V ±10%
ACS800-37LC	139~4540 A	380~500 V ±10%
ACS800-37LC	106~4986 A	525~690 V ±10%
ACS800-104LC	6.1~6081 A	380~415 V ±10%
ACS800-104LC	5.9~5746 A	380~500 V ±10%
ACS800-104LC	16~6648 A	525~690 V ±10%
ACS800-107LC	5.1~5067 A	380~415 V ±10%
ACS800-107LC	4.9~4748 A	380~500 V ±10%
ACS800-107LC	13~5540 A	525~690 V ±10%
ACS800-204LC	341~4309 A	380~415 V ±10%
ACS800-204LC	324~4104 A	380~500 V ±10%
ACS800-204LC	216~4560 A	525~690 V ±10%
ACS800-207LC	341~4309 A	380~415 V ±10%
ACS800-207LC	324~4104 A	380~500 V ±10%
ACS800-207LC	216~4560 A	525~690 V ±10%
ACS800-304LC	572~898 A	380~415 V ±10%
ACS800-304LC	572~898 A	380~500 V ±10%
ACS800-304LC	572~898 A	525~690 V ±10%
ACS800-704LC	1143~5000 A	380~415 V ±10%
ACS800-704LC	1143~5000 A	380~500 V ±10%
ACS800-704LC	1143~5000 A	525~690 V ±10%
ACS800-307LC	572~5000 A	380~415 V ±10%
ACS800-307LC	572~5000 A	380~500 V ±10%
ACS800-307LC	572~5000 A	525~690 V ±10%
ACS800-507LC	1143~5000 A	380~415 V ±10%
ACS800-507LC	1143~5000 A	380~500 V ±10%
ACS800-507LC	1143~5000 A	525~690 V ±10%
ACS800-1107LC	1595~5000 A	380~415 V ±10%
ACS800-1107LC	1595~5000 A	380~500 V ±10%
ACS800-1107LC	1595~5000 A	525~690 V ±10%
ACS800-1207LC	2126~3200 A	380~415 V ±10%
ACS800-1207LC	2126~3200 A	380~500 V ±10%

Certificate No. 12/70025(E2)  
 Issue Date 4 September 2012  
 Expiry Date 2 June 2017  
 Sheet 2 of 4

*Paul Erik Hansen*  
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## RATINGS (cont.)

ACS800-1207LC	2126~3200 A	525~690 V ±10%
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Braking Chopper	Nominal Current Rating	Main Supply Voltage Rating Frequency 48~63 Hz
NBRW-669C	414 A	380~690 V ±10%
ACS800-604LC	390~5856 A	380~415 V ±10%
ACS800-604LC	390~5856 A	380~500 V ±10%
ACS800-604LC	390~5856 A	525~690 V ±10%
ACS800-607LC BRC	414~2482 A	380~690 V ±10%
ACS800-607LC DBU	390~5856 A	380~415 V ±10%
ACS800-607LC DBU	390~5856 A	380~500 V ±10%
ACS800-607LC DBU	390~5856 A	525~690 V ±10%

LCL Filter	Nominal Current Rating	Main Supply Voltage Rating Frequency 48~63 Hz
ALCL-03LC-5	186 A	380~500 V ±10%
ALCL-05LC-5	269 A	380~500 V ±10%
ALCL-12LC-5	341 A	380~500 V ±10%
ALCL-13LC-5	454 A	380~500 V ±10%
ALCL-14LC-5	567 A	380~500 V ±10%
ALCL-15LC-5	756 A	380~500 V ±10%
ALCL-24LC-5	1134 A	380~500 V ±10%
ALCL-25LC-5	1482 A	380~690 V ±10%
ALCL-12LC-7	216 A	525~690 V ±10%
ALCL-13LC-7	300 A	525~690 V ±10%
ALCL-14LC-7	360 A	525~690 V ±10%
ALCL-15LC-7	480 A	525~690 V ±10%
ALCL-24LC-7	720 A	525~690 V ±10%
ALCL-25LC-7	941 A	525~690 V ±10%
ALCL-35LC-7	1397 A	525~690 V ±10%

Liquid Cooling Unit	Cooling Capacity
ACS800-1007LC	Cooling 70 kW / 195 kW

Certificate No. 12/70025(E2)  
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 Sheet 3 of 4

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*"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."*

*The attached Design Appraisal Document No. TA12/70025(E2) and its supplementary Type Approval Terms and Conditions form part of this Certificate.*

All other details remain as the previous Certificate No. 07/00032(E1) to which this extension should be attached.

Certificate No.	12/70025(E2)
Issue Date	4 September 2012
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Sheet	4 of 4

  
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# Marine Design Appraisal Document

Lloyd's Register EMEA  
Copenhagen Design Support Office  
Strandvejen 104A  
DK-2900 Hellerup  
Denmark

Date  
04 September 2012

Please quote this reference number on all future communications  
TA/1101269/1200779/PEH

LLOYD'S REGISTER TYPE APPROVAL SYSTEM, 2002  
Issued to: ABB Oy Drives, Finland  
for: Electronic Frequency Converter - Types: ACS800LC  
TYPE APPROVAL CERTIFICATE No. 12/70025(E2) - ex 07/00032(E1)

The under-noted documents have been reviewed for compliance with the requirements of Lloyd's Register's Type Approval System, 2002 and this Design Appraisal Document is a supplement to the Certificate.

#### APPROVAL DOCUMENTATION

Request form 2571	05.07.2012
Appendix A List of Type Tests ACS800LC	Undated
LR Helsinki E-mail	27.06.2012
LR Helsinki E-mail	09.07.2012

#### DATA SHEETS

Firmware Manual Brake Control Program 3AFE68835631 Rev A	28.05.2007
Hardware Manual Inverter Units 3AFE68715491 Rev B	12.11.2007
Hardware Manual Diode Supply Units as Modules 3AFE68806437 Rev B	23.11.2007
Hardware Manual Diode Supply Units 3AFE68715474 Rev B	21.01.2008
Hardware Manual Brake Modules 3AFE68808481 Rev A	16.04.2008
Hardware Manual Inverter Modules 3AFE68806402 Rev C	22.04.2008
Hardware Manual IGBT Supply Units as Modules 3AFE68928290 Rev A	25.04.2008
Hardware Manual IGBT Supply Units 3AFE68822092 Rev A	25.04.2008
Hardware Manual High Power Brake Units 3AFE68835861 Rev A	19.06.2007
User's Manual Liquid Cooling Unit 3AFE68621101 Rev B	22.10.2007
Hardware Manual – ACS800-07LC Drive 3AFE68620902 Rev C	19.02.2008
Ratings Tables (00562856.xls)	Undated

#### PARTS LIST

Supply Unit 68892996 Rev B	23.04.2008
Drive Unit 68892996 Rev B	23.04.2008
Braking Unit 68892996 Rev B	23.04.2008

#### DRAWINGS

Assembly Drawings Supply Unit 27 sheets, Rev C, B, E	Several Dates
Assembly Drawings Drive Unit 25 sheets, Rev C, D	Several Dates
Assembly Drawings Braking Unit 22 sheets, Rev D, F, G	Several Dates
Circuit Diagrams Supply Unit 40 sheets, Rev A	Several Dates

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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Lloyd's Register EMEA  
Copenhagen Design Support Office  
Strandvejen 104A  
DK-2900 Hellerup  
Denmark

Date  
04 September 2012

Please quote the document number on all future communications  
TA/1101269/1200779/PEH

DRAWINGS (continued)

Circuit Diagrams Drive Unit 19 sheets, Rev D, E, A	Several Dates
Circuit Diagrams Braking Unit 8 sheets, Rev A	Several Dates
Circuit Diagrams Liquid Cooling Unit 3 sheets, Rev A	Several Dates

TEST REPORTS

List of Tests 68893003 Rev B	22.04.2008
Conducted Emissions Test Report 3AFE00255050 Rev A	09.12.2003
EMC Test Report 78613	19.12.2006
Dielectric Strength Test 3AFE00562816 Rev A	27.02.2007
Dielectric Strength Test 3AFE00574677 Rev A	10.04.2007
Temperature Rise Test 3AFE00559992 Rev A	23.04.2007
Temperature Rise Test 3AFE00574232 Rev B - Translated	12.06.2007
Environmental Tests 00557731.pdf	21.12.2006
Temperature Rise Test 3AFE00577064 Rev A	20.08.2007
Special Condition Tests 00581839 Rev B	21.04.2008
Vibration Test ISU 3AFE68866689 Rev A	22.04.2008
Vibration Test Report 3AFE68319439	31.12.2004
Nemko Test Report Number 1031881	09.10.2003
Nemko Test Report Number 1032264	13.06.2004
Nemko Test Report Number 78613	04.12.2006
SGS Investigation Report IP Rating Report Number 7530	05.12.2002
UL Certificate of Participation CTDTP File Number DA222	01.07.2008

Also all documentation as listed in Design Appraisal Document associated with Type Approval Certificate No. 07/00032.

Supplementary Type Approval Terms and Conditions

*Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.*

*Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.*

*Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.*

*Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the LR Type Approval System Procedure.*

  
Poul Erik Hansen  
Senior Surveyor, Electrical Section

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**Part 2  
Electronic Frequency Converter (Part 2)**

Producer/Licence No.	Type	Technical Details				Category/ Additional Tests	Remarks	Cert. No.
		Nominal Current Rating @ 45°C	Light Overload Current Rating @ 45°C	Heavy Overload Current Rating @ 45°C	Main Supply Voltage Rating Frequency 48~63 Hz			
<b>ABB Oy Drives, P.O. Box 184, Hitomotie 13, FIN-00381 Helsinki, Finland.</b>	Electronic Frequency Converter.					ENV1 ENV2 (2002)  Also see "Remarks"	Expires: 2 June 2017  Installation of this equipment for marine applications in LR Classed ships should be in accordance with LR Rules and Regulations for Classification of Ships.  Suitable for use in special power distribution zones only as defined in IEC 60533	12/70025(E2)
	Types: ACS800LC w/ option C121 and/or C132 when applicable							
	<b>Drive Units</b>							
	ACS800-04LC	563~5067 A			380~415 V ±10%			
	ACS800-04LC	546~4788 A			380~500 V ±10%			
	ACS800-04LC	583~5540 A			525~690 V ±10%			
	ACS800-07LC	563~5067 A			380~415 V ±10%			
	ACS800-07LC	546~4788 A			380~500 V ±10%			
	ACS800-07LC	583~5540 A			525~690 V ±10%			
	ACS800-14LC	159~4765 A			380~415 V ±10%			
	ACS800-14LC	139~4540 A			380~500 V ±10%			
	ACS800-14LC	106~4986 A			525~690 V ±10%			
	ACS800-17LC	159~4765 A			380~415 V ±10%			
	ACS800-17LC	139~4540 A			380~500 V ±10%			
	ACS800-17LC	106~4986 A			525~690 V ±10%			
	ACS800-37LC	159~4765 A			380~415 V ±10%			
	ACS800-37LC	139~4540 A			380~500 V ±10%			
	ACS800-37LC	106~4986 A			525~690 V ±10%			
	ACS800-104LC	6.1~6081 A			380~415 V ±10%			
	ACS800-104LC	5.9~5746 A			380~500 V ±10%			
ACS800-104LC	16~6648 A			525~690 V ±10%				
ACS800-107LC	5.1~5067 A			380~415 V ±10%				
ACS800-107LC	4.9~4788 A			380~500 V ±10%				
ACS800-107LC	13~5540 A			525~690 V ±10%				

**Part 2  
Electronic Frequency Converter (Part 2)**

Producer/Licence No.	Type	Technical Details				Category/ Additional Tests	Remarks	Cert. No.
		Nominal Current Rating @ 45°C	Light Overload Current Rating @ 45°C	Heavy Overload Current Rating @ 45°C	Main Supply Voltage Rating Frequency 48~63 Hz			
	ACS800-204LC	341~4309 A			380~415 V ±10%			
	ACS800-204LC	324~4104 A			380~500 V ±10%			
	ACS800-204LC	216~4560 A			525~690 V ±10%			
	ACS800-207LC	341~4309 A			380~415 V ±10%			
	ACS800-207LC	324~4104 A			380~500 V ±10%			
	ACS800-207LC	216~4560 A			525~690 V ±10%			
	ACS800-304LC	572~898 A			380~415 V ±10%			
	ACS800-304LC	572~898 A			380~500 V ±10%			
	ACS800-304LC	572~898 A			525~690 V ±10%			
	ACS800-704LC	1143~5000 A			380~415 V ±10%			
	ACS800-704LC	1143~5000 A			380~500 V ±10%			
	ACS800-704LC	1143~5000 A			525~690 V ±10%			
	ACS800-307LC	572~5000 A			380~415 V ±10%			
	ACS800-307LC	572~5000 A			380~500 V ±10%			
	ACS800-307LC	572~5000 A			525~690 V ±10%			
	ACS800-507LC	1143~5000 A			380~415 V ±10%			
	ACS800-507LC	1143~5000 A			380~500 V ±10%			
	ACS800-507LC	1143~5000 A			525~690 V ±10%			
	ACS800-1107LC	1595~5000 A			380~415 V ±10%			
	ACS800-1107LC	1595~5000 A			380~500 V ±10%			
	ACS800-1107LC	1595~5000 A			525~690 V ±10%			
	ACS800-1207LC	2126~3200 A			380~415 V ±10%			
	ACS800-1207LC	2126~3200 A			380~500 V ±10%			
	ACS800-1207LC	2126~3200 A			525~690 V ±10%			
	<b>Breaking Units</b>							
	NBRW-669C	414 A			380~690 V ±10%			
	ACS800-604LC	390~5856 A			380~415 V ±10%			
	ACS800-604LC	390~5856 A			380~500 V ±10%			
	ACS800-604LC	390~5856 A			525~690 V ±10%			
	ACS800-607LC BRC	414~2482 A			380~690 V ±10%			
	ACS800-607LC DBU	390~5856 A			380~415 V ±10%			
	ACS800-607LC DBU	390~5856 A			380~500 V ±10%			
	ACS800-607LC DBU	390~5856 A			525~690 V ±10%			



**Part 2  
Electronic Frequency Converter (Part 2)**

Producer/Licence No.	Type	Technical Details				Category/ Additional Tests	Remarks	Cert. No.
		Nominal Current Rating @ 45°C	Light Overload Current Rating @ 45°C	Heavy Overload Current Rating @ 45°C	Main Supply Voltage Rating Frequency 48~63 Hz			
	<b>Filters</b>							
	ALCL-03LC-5	186 A			380~500 V ±10%			
	ALCL-05LC-5	269 A			380~500 V ±10%			
	ALCL-12LC-5	341 A			380~500 V ±10%			
	ALCL-13LC-5	454 A			380~500 V ±10%			
	ALCL-14LC-5	567 A			380~500 V ±10%			
	ALCL-15LC-5	756 A			380~500 V ±10%			
	ALCL-24LC-5	1134 A			380~500 V ±10%			
	ALCL-25LC-5	1482 A			380~500 V ±10%			
	ALCL-12LC-7	216 A			380~500 V ±10%			
	ALCL-13LC-7	300 A			380~500 V ±10%			
	ALCL-14LC-7	360A			525~690 V ±10%			
	ALCL-15LC-7	480 A			525~690 V ±10%			
	ALCL-24LC-7	720 A			525~690 V ±10%			
	ALCL-25LC-7	941 A			525~690 V ±10%			
	ALCL-35LC-7	1397 A			525~690 V ±10%			
	<b>Liquid Cooling Unit</b> ACS800-1007LC						Cooling 70 kW / 195 kW	