

ACS800

Marine Supplement

ACS800-01+C132 Drives (0.55 to 160 kW)

ACS800-U1+C132 Drives (0.75 to 200 HP)

ACS800-04+C132 Drive Modules (0.55 to 160 kW)

ACS800-U4+C132 Drive Modules (0.75 to 200 HP)



ABB

ACS800 Single Drive Manuals

HARDWARE MANUALS (appropriate manual is included in the delivery)

ACS800-01/U1 Hardware Manual 0.55 to 200 kW (0.75 to 150 HP)
3AFE64382101 (English)

ACS800-01/U1/04/U4 Marine Supplement 0.55 to 160 kW (0.75 to 200 HP)
3AFE68291275 (English)

ACS800-11/U11 Hardware Manual 5.5 to 110 kW (7.5 to 125 HP)
3AFE68367883 (English)

ACS800-31/U31 Hardware Manual 5.5 to 110 kW (7.5 to 125 HP)
3AFE68599954 (English)

ACS800-02/U2 Hardware Manual 90 to 500 kW (125 to 600 HP)
3AFE64567373 (English)

ACS800-04/U4 Hardware Manual 0.55 to 200 kW (0.75 to 200 HP)
3AFE68372984 (English)

ACS800-04/04M/U4 Hardware Manual 45 to 560 kW (60 to 600 HP)
3AFE64671006 (English)

ACS800-04/04M/U4 Cabinet Installation 45 to 560 kW (60 to 600 HP)
3AFE68360323 (English)

ACS800-07/U7 Hardware Manual 45 to 560 kW (50 to 600 HP)
3AFE64702165 (English)

ACS800-07/U7 Dimensional Drawings 45 to 560 kW (50 to 600 HP)
3AFE64775421

ACS800-07 Hardware Manual 500 to 2800 kW
3AFE64731165 (English)

ACS800-17 Hardware Manual 55 to 2500 kW (75 to 2800 HP)
3AFE68397260 (English)

ACS800-37 Hardware Manual 55 to 2700 kW (75 to 3000 HP)
3AFE68557925 (English)

- Safety instructions
- Electrical installation planning
- Mechanical and electrical installation
- Motor control and I/O board (RMIO)
- Maintenance
- Technical data
- Dimensional drawings
- Resistor braking

FIRMWARE MANUALS, SUPPLEMENTS AND GUIDES

(appropriate documents are included in the delivery)

Standard Control Program Firmware Manual
3AFE64527592 (English)

System Control Program Firmware Manual
3AFE64670646 (English)

Control Program Template Firmware Manual
3AFE64616340 (English)

Master/Follower 3AFE64590430 (English)

Pump Control Program Firmware Manual
3AFE68478952 (English)

Extruder Control Program Supplement 3AFE64648543 (English)

Centrifuge Control Program Supplement 3AFE64667246 (English)

Traverse Control Program Supplement 3AFE64618334 (English)

Crane Control Program Firmware Manual 3BSE11179 (English)

Adaptive Programming Application Guide
3AFE64527274 (English)

OPTION MANUALS (delivered with optional equipment)

ACS800-01/U1 Vibration Damper Installation Guide
3AFE68295351 (English)

Fieldbus Adapters, I/O Extension Modules etc.

ACS800-01+C132 Drives
0.55 to 160 kW
ACS800-U1+C132 Drives
0.75 to 200 HP
ACS800-04+C132 Drive Modules
0.55 to 160 kW
ACS800-U4+C132 Drive Modules
0.75 to 200 HP

Marine Supplement

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About this supplement

This is a supplement to *ACS800-01/U1 Hardware Manual* [3AFE64382101 (English)] and *ACS800-04/U4 Hardware Manual* [3AFE68372984 (English)]. The supplement contains additional instructions and information for marine-type-approved ACS800-01+C132, ACS800-U1+C132, ACS800-04+C132 and ACS800-U4+C132 units of frame sizes R2 to R6.

Option code	Description
+C131	Vibration dampers
+C132	Marine type approved unit (coated boards included, +C131 required for ACS800-01 and ACS800-U1 units of frame sizes R4 to R6 in wall installations (units of IP 21 and UL type 1), +C131 not required in cabinet installations)

What this chapter contains

The chapter describes the supplement in short.

Intended audience

The supplement is intended for people who plan the installation, install, commission, use and service the drive. Read the supplement before working on the drive. The reader is expected to know the fundamentals of electricity, wiring, electrical components and electrical schematic symbols.

The supplement is written for readers worldwide. Both SI and imperial units are shown.

Contents

The chapters of this supplement are briefly described below.

[About this supplement](#) describes the supplement.

[Installation and maintenance instructions](#) tells how to install the marine approved drive mechanically.

[Technical data](#) contains the ratings and technical requirements for the marine approved drive.

[Dimensional drawings](#) contains dimensional drawings of ACS800-01/U1 units of frame sizes R4 to R6 (IP 55, UL type 12) with marine support bracket. For dimensional drawings of other units, refer to *ACS800-01/U1 Hardware Manual* [3AFE64382101 (English)] or *ACS800-04/U4 Hardware Manual* [3AFE68372984 (English)].

Installation and maintenance instructions

What this chapter contains

This chapter contains additions to the hardware manual:

- how to install the marine approved drive mechanically.

Cabinet installations

The ACS800-01, ACS800-U1, ACS800-04 and ACS800-U4 can be mounted in a cabinet without vibration dampers.

Wall installations of ACS800-01/U1 frame sizes R2 and R3 (IP 21, UL type 1, IP 55, UL type 12)

Install the units on wall as described in *ACS800-01/U1 Hardware Manual* [3AFE64382101 (English)]. No vibration dampers are needed.

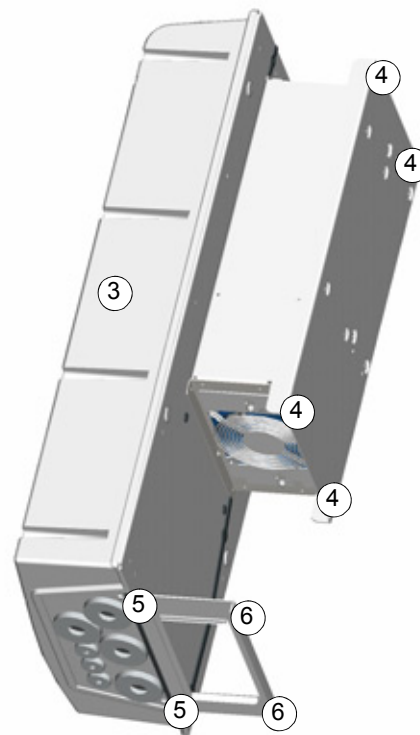
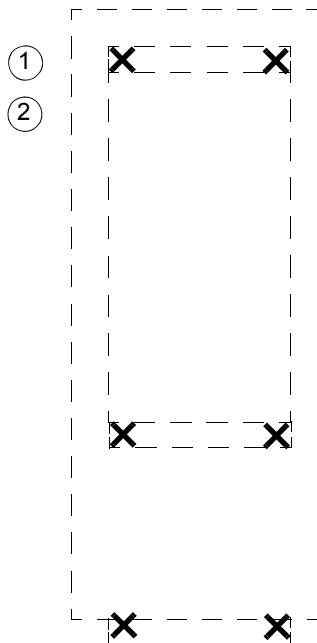
Wall installations of ACS800-01/U1 frame sizes R4 to R6 (IP 21, UL type 1)

Fasten the units of frame sizes R4 to R6 (IP 21, UL type 1, types ACS800-01-0016-2...-0070-2, -0025-3...-0205-3, -0030-5...-0255-5, -0011-7...-0205-7; ACS800-U1-0016-2...-0070-2, -0030-5...-0205-5, -0011-7...-0205-7) to wall with vibration dampers (+C131) as shown in *ACS800-01/U1 Vibration Damper Installation Guide* [3AFE68295351 (English)].

Drives with option code +C131 include four vibration dampers with fastening screws and installation guide packed in a box inside the drive package.

Wall installations of ACS800-01/U1 frame sizes R4 to R6 (IP 55, UL type 12)

1. Mark the locations for the six mounting holes on the wall. The mounting points are shown in chapter [Dimensional drawings](#).
2. Drill the holes and fix the screws or bolts to the marked locations.
3. Remove the front cover by undoing the fixing screws.
4. Position the drive onto the screws on the wall. **Note:** Lift the drive by its chassis (R6: by its lifting holes), not by its cover. Tighten the screws in the wall securely.
5. Fasten the support bracket to the base of the drive.
6. Tighten the screws in the wall securely.
7. Replace the front cover.



Type designation label

The ratings on the type designation label are given at an ambient temperature of 40 °C (104 °F). For the 40 °C (104 °F) ratings, refer to the *ACS800-01/U1 Hardware Manual* [3AFE64382101 (English)] or *ACS800-04/U4 Hardware Manual* [3AFE68372984 (English)].

An example type designation label is shown below.



Technical data

What this chapter contains

This chapter contains technical data, temperature derating instructions and the derated values at an ambient temperature of 45 °C (113 °F) for the ACS800-01+C132 and ACS800-U1+C132, and for ACS800-04+C132 units of frame sizes R2 to R6. For other technical specifications of the drive, refer to *ACS800-01/U1 Hardware Manual* [3AFE64382101 (English)] or *ACS800-04 Hardware Manual* [3AFE68372984 (English)].

+C132 denotes marine type approval.

IEC ratings of the ACS800-01+C132 and ACS800-04+C132

At +40 °C (+104 °F) or below

Apply the IEC ratings given in *ACS800-01/U1 Hardware Manual* [3AFE64382101 (English)] or *ACS800-04/U4 Hardware Manual* [3AFE68372984 (English)].

Temperature derating at ambient temperatures above +40 °C (+104 °F)

The load capacity (current and power) decreases if the ambient temperature exceeds 40 °C (104 °F).

In the temperature range of +40 °C (+104 °F) to +55 °C (+131 °F), the rated output current is decreased 1% for every additional 1 °C (1.8 °F). The output current is calculated by multiplying the current given in the rating table by the derating factor.

Note: At high temperatures the lifespan of the drive decreases. Example: The lifespan is approximately 100 000 hours at an ambient temperature of 40 °C (104 °F), whereas the lifespan at 50 °C (+122 °F) is approximately 50 000 hours.

Example 1: derated values at an ambient temperature of 50 °C (+122 °F)

If the ambient temperature is 50 °C (+122 °F), the derating factor is $100\% - 1 \frac{\%}{^{\circ}\text{C}} \cdot 5^{\circ}\text{C} = 95\%$ or 0.95 when compared to the values given in example 2 and 3. The output current is then $0.95 \cdot I_{2N}$ or $0.95 \cdot I_{2hd}$.

Example 2: derated values for the ACS800-01+C132 at 45 °C (113 °F)

The derated values for the ACS800-01+C132 with 50 Hz and 60 Hz supplies at an ambient temperature of 45 °C (113 °F) are given below. The symbols are described on page 18.

ACS800-01 size	Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Frame size	Air flow m ³ /h	Heat dissipation W
	$I_{cont.max}$ A	I_{max} A	$P_{cont.max}$ kW	I_{2N} A	P_N kW	I_{2hd} A	P_{hd} kW			
Three-phase supply voltage 208 V, 220 V, 230 V or 240 V										
-0001-2	4.8	6.5	0.75	4.5	0.75	3.2	0.55	R2	35	100
-0002-2	6.2	8.2	1.1	5.7	1.1	4.1	0.75	R2	35	100
-0003-2	8.1	10.8	1.5	7.3	1.5	5.4	1.1	R2	35	100
-0004-2	10.4	13.8	2.2	9.7	2.2	7.1	1.5	R2	35	120
-0005-2	13.2	17.6	3	12	3	8.8	1.5	R2	35	140
-0006-2	18	24	4	17	4	13	3	R3	69	160
-0009-2	24	32	5.5	23	5.5	18	4	R3	69	200
-0011-2	32	46	7.5	29	7.5	22	5.5	R3	69	250
-0016-2	42	62	11	40	11	30	7.5	R4	103	340
-0020-2	52	72	11	48	11	35	7.5	R4	103	440
-0025-2	68	86	18.5	66	18.5	47	11	R5	168	530
-0030-2	82	112	22	76	22	57	15	R5	168	610
-0040-2	98	138	30	89	22	66	18.5	R5	168	810
-0050-2	134	164	37	125	37	92	22	R6	405	1190
-0060-2	158	202	45	147	45	109	30	R6	405	1190
-0070-2	192	282	55	175	45	134	37	R6	405	1440
Three-phase supply voltage 380 V, 400 V or 415 V										
-0003-3	4.8	6.5	1.5	4.5	1.5	3.2	1.1	R2	35	100
-0004-3	6.2	8.2	2.2	5.6	2.2	4.1	1.5	R2	35	120
-0005-3	8.1	10.8	3.0	7.3	3.0	5.4	2.2	R2	35	140
-0006-3	10.4	13.8	4.0	9.7	4.0	7.1	3.0	R2	35	160
-0009-3	13.2	17.6	5.5	12.3	5.5	9.0	4.0	R2	35	200
-0011-3	18	24	7.5	17	7.5	13	5.5	R3	69	250
-0016-3	24	32	11	23	7.5	18	7.5	R3	69	340
-0020-3	32	46	15	29	11	22	7.5	R3	69	440
-0025-3	42	62	18.5	39	18.5	31	11	R4	103	530
-0030-3	52	72	22	48	22	35	15	R4	103	610
-0040-3	68	86	30	66	30	47	22	R5	168	810
-0050-3	82	112	37	76	37	57	30	R5	168	990
-0060-3	98	138	45	89	45	66	30	R5	168	1190
-0075-3	137	170	55	134	55	95	45	R5	405	1440
-0070-3	134	164	55	125	55	92	45	R6	405	1440
-0100-3	158	202	75	147	75	109	55	R6	405	1940
-0120-3	192	282	90	175	90	134	55	R6	405	2310
-0135-3	214	326	110	209	110	155	75	R6	405	2810
-0165-3	247	326	132	242	132	204	110	R6	405	3260
-0205-3	276	351	132	271	132	222	110	R6	405	4200

ACS800-01 size	Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Frame size	Air flow m ³ /h	Heat dissipation W
	$I_{cont.max}$ A	I_{max} A	$P_{cont.max}$ kW	I_{2N} A	P_N kW	I_{2hd} A	P_{hd} kW			
Three-phase supply voltage 380 V, 400 V, 415 V, 440 V, 460 V, 480 V or 500 V										
-0004-5	4.7	6.5	2.2	4.3	2.2	3.2	1.5	R2	35	120
-0005-5	5.9	8.2	3.0	5.3	2.2	4.0	1.5	R2	35	140
-0006-5	7.7	10.8	4.0	7.3	4.0	5.3	3.0	R2	35	160
-0009-5	10	13.8	5.5	9.5	5.5	7.1	4.0	R2	35	200
-0011-5	12.5	17.6	7.5	11	5.5	8.9	4.0	R2	35	250
-0016-5	18.5	24	11	17	7.5	12.4	7.5	R3	69	340
-0020-5	24	32	11	22	11	17	7.5	R3	69	440
-0025-5	32	46	18.5	29	18.5	22	11	R3	69	530
-0030-5	40	62	22.0	37	22	30	18.5	R4	103	610
-0040-5	46	72	30	42	22	34	22.0	R4	103	810
-0050-5	62	86	37	58	37	48	30	R5	168	990
-0060-5	75	112	45	71	45	58	37	R5	168	1190
-0070-5	92	138	55	84	55	66	37	R5	168	1440
-0105-5	137	170	90	134	90	95	55	R5	405	2150
-0100-5	118	164	75	109	55	85	55	R6	405	1940
-0120-5	149	202	90	138	90	107	55	R6	405	2310
-0140-5	171	282	110	155	90	134	90	R6	405	2810
-0165-5	214	326	132	209	132	155	110	R6	405	3260
-0205-5	247	326	160	242	160	204	132	R6	405	3800
-0255-5	276	351	160	271	160	222	132	R6	405	4500
Three-phase supply voltage 525 V, 550 V, 575 V, 600 V, 660 V or 690 V										
-0011-7	12	14	7.5	10.9	7.5	8.1	5.5	R4	103	300
-0016-7	16.5	19	11	14.3	11	10.5	7.5	R4	103	340
-0020-7	21	28	15	19	15	14	11	R4	103	440
-0025-7	24	38	18.5	22	18.5	18	15	R4	103	530
-0030-7	31	44	22	29	22	21	18.5	R4	103	610
-0040-7	34	54	30	32	30	26	22	R4	103	690
-0050-7	48	68	37	44	37	32	30	R5	168	840
-0060-7	54	84	45	49	45	40	37	R5	168	1010
-0070-7	75	104	55	69	55	51	45	R6	405	1220
-0100-7	88	124	75	82	75	59	55	R6	405	1650
-0120-7	107	172	90	103	90	82	75	R6	405	1960
-0145-7	127	245	110	118	110	90	90	R6	405	2660
-0175-7	157	245	132	152	132	124	110	R6	405	3470
-0205-7	180	245	160	171	160	140	132	R6	405	4180

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Example 3: derated values for the ACS800-04+C132 at 45 °C (113 °F)

The derated values for the ACS800-04+C132 with 50 Hz and 60 Hz supplies at an ambient temperature of 45 °C (113 °F) are given below. The symbols are described on page 18.

ACS800-04 size	Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Frame size	Air flow m ³ /h	Heat dissipation W
	$I_{cont.max}$ A	I_{max} A	$P_{cont.max}$ kW	I_{2N} A	P_N kW	I_{2hd} A	P_{hd} kW			
Three-phase supply voltage 208 V, 220 V, 230 V or 240 V										
-0001-2	4.8	6.5	0.75	4.5	0.75	3.2	0.55	R2	35	100
-0002-2	6.2	8.2	1.1	5.7	1.1	4.1	0.75	R2	35	100
-0003-2	8.1	10.8	1.5	7.3	1.5	5.4	1.1	R2	35	100
-0004-2	10.4	13.8	2.2	9.7	2.2	7.1	1.5	R2	35	120
-0005-2	13.2	17.6	3	12	3	8.8	1.5	R2	35	140
-0006-2	18	24	4	17	4	13	3	R3	69	160
-0009-2	24	32	5.5	23	5.5	18	4	R3	69	200
-0011-2	32	46	7.5	29	7.5	22	5.5	R3	69	250
-0016-2	42	62	11	40	11	30	7.5	R4	103	340
-0020-2	52	72	11	48	11	35	7.5	R4	103	440
-0025-2	68	86	18.5	66	18.5	47	11	R5	250	530
-0030-2	82	112	22	76	22	57	15	R5	250	610
-0040-2	98	138	30	89	22	66	18.5	R5	250	810
-0050-2	134	164	37	125	37	92	22	R6	405	1190
-0060-2	158	202	45	147	45	109	30	R6	405	1190
-0070-2	192	282	55	175	45	134	37	R6	405	1440
Three-phase supply voltage 380 V, 400 V or 415 V										
-0003-3	4.8	6.5	1.5	4.5	1.5	3.2	1.1	R2	35	100
-0004-3	6.2	8.2	2.2	5.6	2.2	4.1	1.5	R2	35	120
-0005-3	8.1	10.8	3.0	7.3	3.0	5.4	2.2	R2	35	140
-0006-3	10.4	13.8	4.0	9.7	4.0	7.1	3.0	R2	35	160
-0009-3	13.2	17.6	5.5	12.3	5.5	9.0	4.0	R2	35	200
-0011-3	18	24	7.5	17	7.5	13	5.5	R3	69	250
-0016-3	24	32	11	23	7.5	18	7.5	R3	69	340
-0020-3	32	46	15	29	11	22	7.5	R3	69	440
-0023-3	38	46	18.5	37	18.5	27	11	R3	69	520
-0025-3	42	62	18.5	39	18.5	31	11	R4	103	530
-0030-3	52	72	22	48	22	35	15	R4	103	610
-0035-3	56	72	30	54	22	39	18.5	R4	103	660
-0040-3	68	86	30	66	30	47	22	R5	168	810
-0050-3	82	112	37	76	37	57	30	R5	168	990
-0060-3	98	138	45	89	45	66	30	R5	168	1190
-0075-3	137	170	55	134	55	95	45	R5	405	1440
-0070-3	134	164	55	125	55	92	45	R6	405	1440
-0100-3	158	202	75	147	75	109	55	R6	405	1940
-0120-3	192	282	90	175	90	134	55	R6	405	2310
-0135-3	214	326	110	209	110	155	75	R6	405	2810
-0165-3	247	326	132	242	132	204	110	R6	405	3260
-0205-3	276	351	132	271	132	222	110	R6	405	4200

ACS800-04 size	Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Frame size	Air flow m ³ /h	Heat dissipation W
	$I_{cont.max}$ A	I_{max} A	$P_{cont.max}$ kW	I_{2N} A	P_N kW	I_{2hd} A	P_{hd} kW			
Three-phase supply voltage 380 V, 400 V, 415 V, 440 V, 460 V, 480 V or 500 V										
-0004-5	4.7	6.5	2.2	4.3	2.2	3.2	1.5	R2	35	120
-0005-5	5.9	8.2	3.0	5.3	2.2	4.0	1.5	R2	35	140
-0006-5	7.7	10.8	4.0	7.3	4.0	5.3	3.0	R2	35	160
-0009-5	10	13.8	5.5	9.5	5.5	7.1	4.0	R2	35	200
-0011-5	12.5	17.6	7.5	11	5.5	8.9	4.0	R2	35	250
-0016-5	18.5	24	11	17	7.5	12.4	7.5	R3	69	340
-0020-5	24	32	11	22	11	17	7.5	R3	69	440
-0025-5	32	46	18.5	29	18.5	22	11	R3	69	530
-0028-5	36	46	18.5	35	18.5	26	15	R3	69	590
-0030-5	40	62	22.0	37	22	30	18.5	R4	103	610
-0040-5	46	72	30	42	22	34	22.0	R4	103	810
-0045-5	53	72	37	51	30	37	22.0	R4	103	950
-0050-5	62	86	37	58	37	48	30	R5	168	990
-0060-5	75	112	45	71	45	58	37	R5	168	1190
-0070-5	92	138	55	84	55	66	37	R5	168	1440
-0105-5	137	170	90	134	90	95	55	R5	405	2150
-0100-5	118	164	75	109	55	85	55	R6	405	1940
-0120-5	149	202	90	138	90	107	55	R6	405	2310
-0140-5	171	282	110	155	90	134	90	R6	405	2810
-0165-5	214	326	132	209	132	155	110	R6	405	3260
-0205-5	247	326	160	242	160	204	132	R6	405	3800
-0255-5	276	351	160	271	160	222	132	R6	405	4500
Three-phase supply voltage 525 V, 550 V, 575 V, 600 V, 660 V or 690 V										
-0011-7	12	14	7.5	10.9	7.5	8.1	5.5	R4	103	300
-0016-7	16.5	19	11	14.3	11	10.5	7.5	R4	103	340
0020-7	21	28	15	19	15	14	11	R4	103	440
-0025-7	24	38	18.5	22	18.5	18	15	R4	103	530
-0030-7	31	44	22	29	22	21	18.5	R4	103	610
-0040-7	34	54	30	32	30	26	22	R4	103	690
-0050-7	48	68	37	44	37	32	30	R5	168	840
-0060-7	54	84	45	49	45	40	37	R5	168	1010
-0070-7	75	104	55	69	55	51	45	R6	405	1220
-0100-7	88	124	75	82	75	59	55	R6	405	1650
-0120-7	107	172	90	103	90	82	75	R6	405	1960
-0145-7	127	245	110	118	110	90	90	R6	405	2660
-0175-7	157	245	132	152	132	124	110	R6	405	3470
-0205-7	180	245	160	171	160	140	132	R6	405	4180

PDM code: 00096931-J

Symbols

Nominal ratings [derated values at an ambient temperature of 45 °C (113 °F)]

$I_{\text{cont.max}}$ continuous rms output current. No overload capability at 45 °C.

I_{max} maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature.

Typical ratings [derated values at an ambient temperature of 45 °C (113 °F)]:

No-overload use

$P_{\text{cont.max}}$ typical motor power. The power ratings apply to most IEC 34 motors at the nominal voltage, 230 V, 400 V, 500 V or 690 V.

Light-overload use (10% overload capability)

I_{2N} continuous rms current. 10% overload is allowed for one minute every 5 minutes.

P_N typical motor power. The power ratings apply to most IEC 34 motors at the nominal voltage, 230 V, 400 V, 500 V or 690 V.

Heavy-duty use (50% overload capability)

I_{2hd} continuous rms current. 50% overload is allowed for one minute every 5 minutes.

P_{hd} typical motor power. The power ratings apply to most IEC 34 motors at the nominal voltage, 230 V, 400 V, 500 V or 690 V.

NEMA ratings

ACS800-U1+C132

Apply the NEMA ratings given in *ACS800-01/U1 Hardware Manual* [3AFE64382101 (English)].

ACS800-04+C132

Apply the NEMA ratings given in *ACS800-04/U4 Hardware Manual* [3AFE68372984 (English)].

Temperature derating

In the temperature range of +40 °C (+104 °F) to +55 °C (+131 °F), the rated output current is decreased 1% for every additional 1 °C (1.8 °F). The output current is calculated by multiplying the current given in the rating table by the derating factor.

Ambient conditions (ACS800-01+C132, ACS800-U1+C132)

	Operation installed for stationary use	Storage in the protective package	Transportation in the protective package
Air temperature	<p>IP 21 (UL type 1) units: -15 to +55 °C (5 to 131 °F).</p> <p>IP 55 (UL type 12) units: -15 to +50 °C (5 to 122 °F).</p> <p>No frost allowed. See temperature derating, page 13 or 18.</p>	-40 to +70 °C (-40 to +158 °F)	-40 to +70 °C (-40 to +158 °F)

Ambient conditions (ACS800-04+C132)

	Operation installed for stationary use	Storage in the protective package	Transportation in the protective package
Air temperature	<u>IP 20 (UL type open) units:</u> -15 to +55 °C (5 to 131 °F). No frost allowed. See temperature derating, page 13 or 18 .	-40 to +70 °C (-40 to +158 °F)	-40 to +70 °C (-40 to +158 °F)

Applicable standards

- EN 60204-1 (2006) The drive complies with the following standards. The compliance with the European Low Voltage Directive is verified according to standards EN 61800-5 and EN 60204-1. Safety of machinery. Electrical equipment of machines. Part 1: General requirements. *Provisions for compliance:* The final assembler of the machine is responsible for installing
 - emergency-stop device
 - supply disconnecting device
 - ACS800-04/U4 into a cabinet.
- EN 60529: 1991 (IEC 60529) Degrees of protection provided by enclosures (IP code)
- IEC 60664-1 (2007) Insulation coordination for equipment within low-voltage systems. Part 1: Principles, requirements and tests.
- EN 61800-3 (2004) Adjustable speed electrical power drive systems. Part 3: EMC requirements and specific test methods
- EN 61800-5-1 (2003) Adjustable speed electrical power drive systems. Part 5-1: Safety requirements – electrical, thermal and energy
- IEC 60533 Electrical and electronic installations in ships - Electromagnetic compatibility (immunity)
- UL 508C (2002) UL Standard for Safety, Power Conversion Equipment, second edition
- NEMA 250 (2003) Enclosures for Electrical Equipemnt (1000 Volts Maximum)
- CSA C22.2 No. 14-05 (2005) Industrial control equipment

UL and CSA approvals

The ACS800-01+C132 and ACS800-U1+C132 units of UL type 1 are C-UL US listed and CSA marked.

The ACS800-04+C132 and ACS800-U4+C132 units of UL type open are C-UL US listed and CSA marked.

Marine type approvals

ACS800-01+C132 and ACS800-U1+C132 units are type approved by American Bureau of Shipping, Bureau Veritas, Germanischer Lloyd, Lloyd's Register of Shipping, Det Norske Veritas and RINA. **Note:** The type approvals are pending for the following types: ACS800-01-0075-3+C132, ACS800-01-0105-5+C132, ACS800-01-0205-3+C132, ACS800-01-0255-5+C132 and ACS800-U1-0105-5+C132. In addition, the type approvals by Germanischer Lloyd, Det Norske Veritas and RINA are pending for the following types: ACS800-01-0135-3+C132, ACS800-01-0165-3+C132, ACS800-01-0165-5+C132, ACS800-01-0205-5+C132, ACS800-01-0145-7+C132, ACS800-01-0175-7+C132, ACS800-01-0205-7+C132, ACS800-U1-0205-5+C132, ACS800-U1-0145-7+C132, ACS800-U1-0175-7+C132 and ACS800-U1-0205-7+C132.

ACS800-04+C132 units of frame sizes R2 to R6 are type approved by American Bureau of Shipping, Lloyd's Register of Shipping and Det Norske Veritas. **Note:** The type approvals are pending for the following types: ACS800-04-0075-3+C132, ACS800-04-0105-5+C132, ACS800-04-0205-3+C132, ACS800-04-0255-5+C132 and ACS800-U4-0105-5+C132. In addition, the type approvals by Det Norske Veritas are pending for the following types: ACS800-04-0135-3+C132, ACS800-04-0165-3+C132, ACS800-04-0165-5+C132, ACS800-04-0205-5+C132, ACS800-04-0145-7+C132, ACS800-04-0175-7+C132, ACS800-04-0205-7+C132, ACS800-U4-0205-5+C132, ACS800-U4-0145-7+C132, ACS800-U4-0175-7+C132 and ACS800-U4-0205-7+C132.

The certificates are shown below.

American Bureau of Shipping (ABS)

Certificate Number: 04-LD417612/2-PDA



Confirmation of Type Approval

This is to certify that, pursuant to the Rules of American Bureau of Shipping (ABS), on 16/AUG/2007 the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) and a valid Product Design Assessment (PDA) for the below listed product, entitling the product to type approval. The validity of the Manufacturing Assessment is dependent on satisfactory audits as required by the Rules. The Product Design Assessment is valid only for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

For Date of ABS Rules used for evaluation; Please refer to the ABS Rules below.

This Confirmation of Product Type Approval is valid as of the date shown above for the below listed product.

ABS makes no representations regarding type approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that the Client has full responsibility for continued compliance with the evaluation standard, whether the standard is an ABS Rule or a non-ABS Rule. As specified in the ABS Rules, Unit Certification may be required in addition to Product Type Approval. Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product.

ABB Oy, Drives

**Model Name(s): ACS800-01 +C132, ACS800-U1 +C132, and ACS800-04 +C132
Frames R2-R6**

Presented to:

ABB Oy, Drives
P.O. Box 184
Hiomotie 13
Helsinki
FIN-00381
Finland

Intended Service:

Electrical drives for Ships and Offshore Units.

Description:

The ACS800-01 +C132 drives are suitable for controlling the speed and torque of induction motors up to 132 kW at 400V or 160 kW at 500V or 690V. The ACS800-U1 +C132 version is similar, except that a cable gland box suitable for use with U.S. standard cables is placed on the lower part of the unit for power cables. The above are suitable for wall-mounting and are either in IP 21 or IP 55 enclosures. The ACS800-04+C132 frames R2-R6 drive modules are based on ACS800-01 hardware (but without top cover and cable connection box) for installation into a cabinet. The ACS800-04 are suitable for motors up to 132 kW at 400 V or 160 kW at 500 V or 690 V. The modules can be supplied with an optional flange, which separates the air flow to control part and cooling heat sink, and allows the location of the heat sink outside the cabinet enclosure. This optional flange mounting makes it possible to use outside air for cooling the heat sink, and filtered air inside the cabinet for cooling the control part. Protection class IP20 or UL open type.

Ratings:


Nominal 3-phase supply : range 208-690 V. For full ratings, refer to attachment ACS800-01 and ACS800-04 ratings table at 45 degrees ambient temperature to the PDA certificate.

Service Restrictions:

Unit Certification is required for this product when used to drive essential service motors 100 kW and over as per 4-8-3/5.11.1 of the Rules

Certificate Number: 04-LD417612/2-PDA

Comments:	For marine applications vibration dampers are to be used as specified by manufacturer. Vibration dampers are however not required for ACS800-04+C132 module installation into a cabinet.
Notes / Documentation:	This Product Design Assessment (PDA) is valid only for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.
Term of Validity:	This Design Assessment Certificate number 04-LD417612/2-PDA, dated 16/Jul/2007 will expire on 15/Jul/2012 or at an earlier date should there be alterations to the product's design or changes to the referenced ABS Rules and other specifications, which affect the product. Product use on or after 1 January 2008, will be subject to compliance with the ABS Rules or specifications in effect when the vessel, MODU or facility is contracted. The product's acceptability on board ABS-classed vessels or facilities is defined in the service restrictions of this certificate.
ABS Rules:	2007 Steel Vessel Rules 1-1-4/7.7, 4-8-3/7.5, and 4-9-7/Table 9 and Table 10
National Standards:	
International Standards:	IEC60092, IEC61000, IEC60068, IEC60947, IEC60529, IEC60533, IEC61800 (relevant sections)
Government Authority:	
EUMED:	
Others:	



Manager, ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.

Bureau Veritas

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MARINE DIVISION
 17 bis Place des Reflets - La Défense 2
 92400 Courbevoie - France
 Tel. 33 1 42 91 52 91
 Fax. 33 1 42 91 28 94
 www.veristar.com



Certificate number: 14370/A1 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 2008

At Paris la Défense, on : 02 Jul 2007

For BUREAU VERITAS,
 By order of the Secretary

L. COUREGELONGUE

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.

BV mod. Ad.E 530 August 2005

This certificate consists of 4 pages

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
ACS800-01-0070-3 + 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

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
ACS800-01-0100-5 + 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

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: $U_{2in} = 208$ to 240 V \pm 10%,

$U_{3in} = 380$ to 415 V \pm 10%,

$U_{5in} = 380$ to 500 V \pm 10%,

$U_{7in} = 525$ to 690 V \pm 10%.

- frequency: 48 - 63 Hz.

- power factor: 0.98

Output data:

- voltage: 0 to $U_{2in}/U_{3in}/U_{5in}/U_{7in}$.

- frequency control: 0 to \pm 300 Hz,
0 to \pm 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° 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.

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.

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.

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/A0 BV issued on 31/01/2005 by the Society

*** END OF CERTIFICATE ***


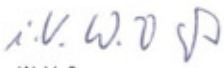

Germanischer Lloyd



Germanischer Lloyd

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the GL Type Approval System.

Certificate No.	21 165 - 04 HH	
Company	ABB Oy Drives Hiomotie 13 FIN-00380 Helsinki	
Product Description	Frequency Converter	
Type	ACS800-01 / -U1 marine drive with option +C132	
Environmental Category	A, EMC 2	
Technical Data / Range of Application	Rated Input Voltage:	U _N = 230V, 400V, 500V, 690V ± 10 %
	Rated Input Frequency:	f _N = 50/60 Hz (48...63 Hz)
	Power Factor:	cos phi = 0,98 (fundamental) / 0,93...0,95 (total)
	Motor control software:	ABB's Direct Torque Control DTC
	Max. applicable motor output:	0,75kW.....110kW
	Degree of Protection:	Standard IP 21, Optional IP 55 Pollution Degree 2 (IP55: Pollution Degree 3), Over voltage Category III
	EMC measures as per manufacturers manual to be observed (IEC 60533). Vibration dampers are to be used as specified by manufacturer.	
Test Standard	Guidelines for the Performance of Type Tests Part 1, Edition 2003	
Documents	Test reports as per ABB document 0030 0318.doc, Routine test report 3AFE 6469 1244	
Remarks	None	
Valid until	2010-04-05	
Page	1 of 1	Type Approval Symbol 
File No.	I.H.02	
Hamburg, 2005-04-05		
Germanischer Lloyd	 W. Voß	 J. Altmann

This certificate is issued on the basis of "Guidelines for the Performance of Type Approvals Part 1, Procedure".

Lloyd's Register of Shipping



Type Approval Certificate Extension

This is to certify that Certificate No. 04/00064(E1) for the undemoted products is extended and renumbered as shown.

This certificate is issued to:

PRODUCER	ABB Oy - BAU Drives
PLACE OF PRODUCTION	P.O. Box 184 Hiomotie 13 FIN-00381 Helsinki Finland
DESCRIPTION	Electronic Frequency Converter.
TYPE	ACS800-01/-04 frames R2-R6 with option +C132.
APPLICATION	Marine and offshore use in environmental categories ENV1 and ENV2 as defined in LR Test Specification No. 1: 2002
SPECIFICATIONS	Manufacturer's Specification.

RATINGS

Nominal Current Rating @ 45°C	Light Overload Current Rating @ 45°C	Heavy Overload Current Rating @ 45°C	Mains Supply Voltage Rating Frequency 48 ~ 63 Hz
4.8 ~ 192 Amps	4.5 ~ 175 Amps	3.2 ~ 134 Amps	208 ~ 240 V±10%
4.8 ~ 247 Amps	4.5 ~ 242 Amps	3.2 ~ 134 Amps	380 ~ 415 V±10%
4.7 ~ 247 Amps	4.3 ~ 242 Amps	3.2 ~ 204 Amps	380 ~ 500 V±10%
12 ~ 180 Amps	10.9 ~ 171 Amps	8.1 ~ 140 Amps	525 ~ 690 V±10%

OTHER CONDITIONS Installation of this equipment for marine applications in LR Classed ships is to be in accordance with the LR Rules and Regulations for Classification of Ships, Part 6, Chapter 2.

Certificate No.	04/00064(E2)
Issue Date	07 January 2008
Expiry Date	6 July 2009
Sheet	1 of 2

M.H.A. Rufaie
London Design Support Services
Lloyd's Register EMEA

Lloyd's Register EMEA
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Det Norske Veritas



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. E-7039

This Certificate consists of 7 pages

This is to certify that the

Frequency Converter

with type designation(s)

ACS 800-01 / ACS 800 U1

Manufactured by

ABB Oy BAU Drives

Helsinki, Finland

is found to comply with

Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application

Frequency converters for use in marine and offshore applications

Place and date

Høvik, 2004-07-23

for DET NORSKE VERITAS AS

Gro Elisabeth Paulsrud
Head of Section



Local Office
DNV Helsinki

This Certificate is valid until

2008-06-30

Nicolay Horn
Surveyor

Notice: 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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

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Form No.: 20.90a Issue: January 98

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RINA

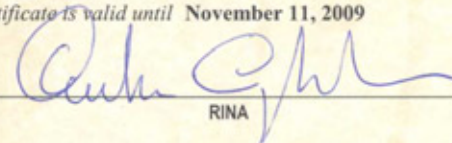
TYPE APPROVAL CERTIFICATE
No. ELE399004CS



This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	FREQUENCY CONVERTERS
<i>Type</i>	ACS 800 -01-xxxx-x
<i>Applicant</i>	ABB OY BAU DRIVES PO BOX 184 FIN-00381 HELSINKI FINLAND
<i>Manufacturer</i>	ABB OY BAU DRIVES
<i>Place of manufacture</i>	PO BOX 184 FIN-00381 HELSINKI FINLAND
<i>Reference standards</i>	RINA Rules Pt. C, Ch. 3, Sec. 6

Issued in **Genova** on **November 11, 2004**. This Certificate is valid until **November 11, 2009**


RINA

Andrea Cogliolo

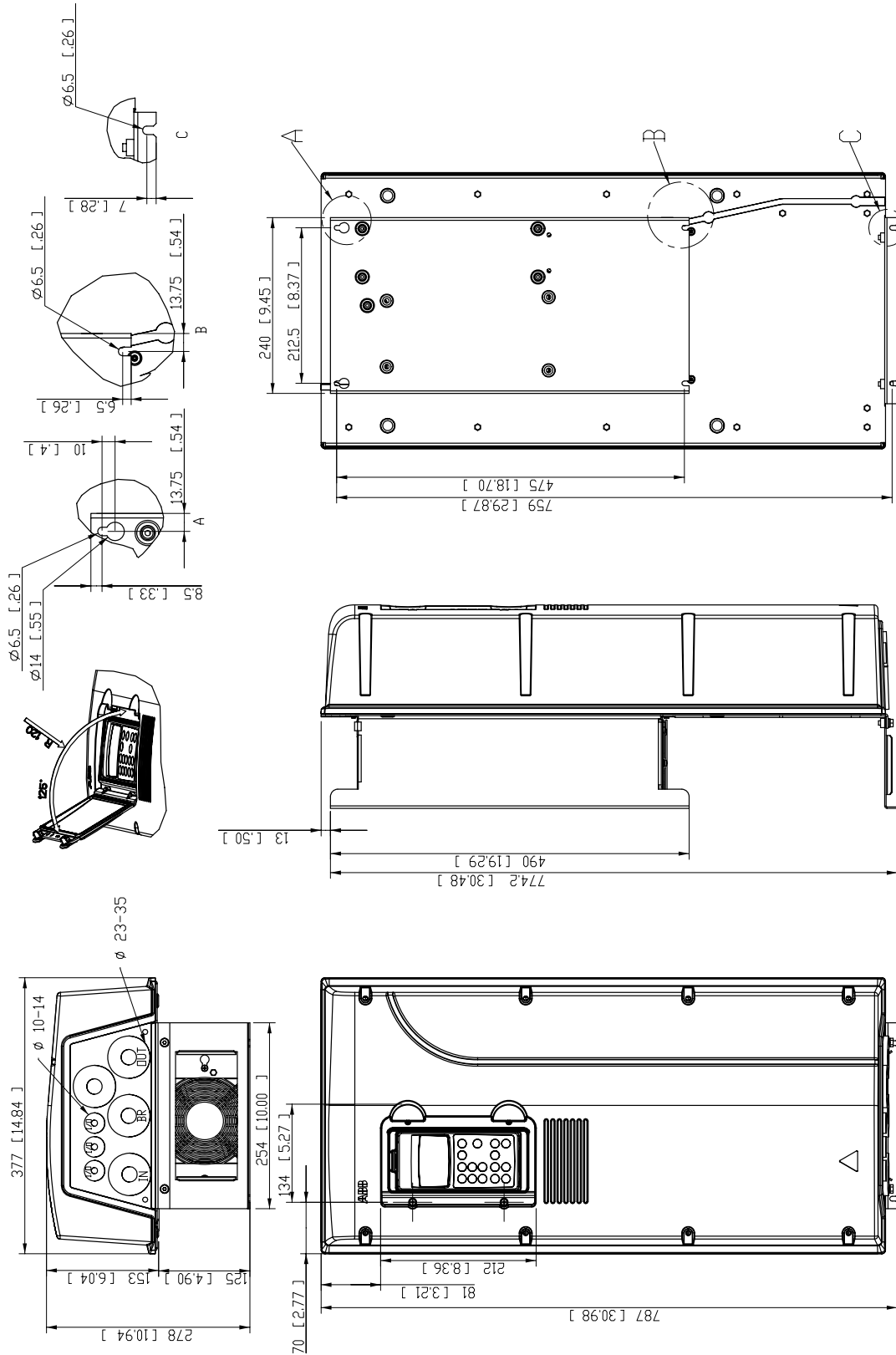
This certificate consists of this page and 1 enclosure



Dimensional drawings

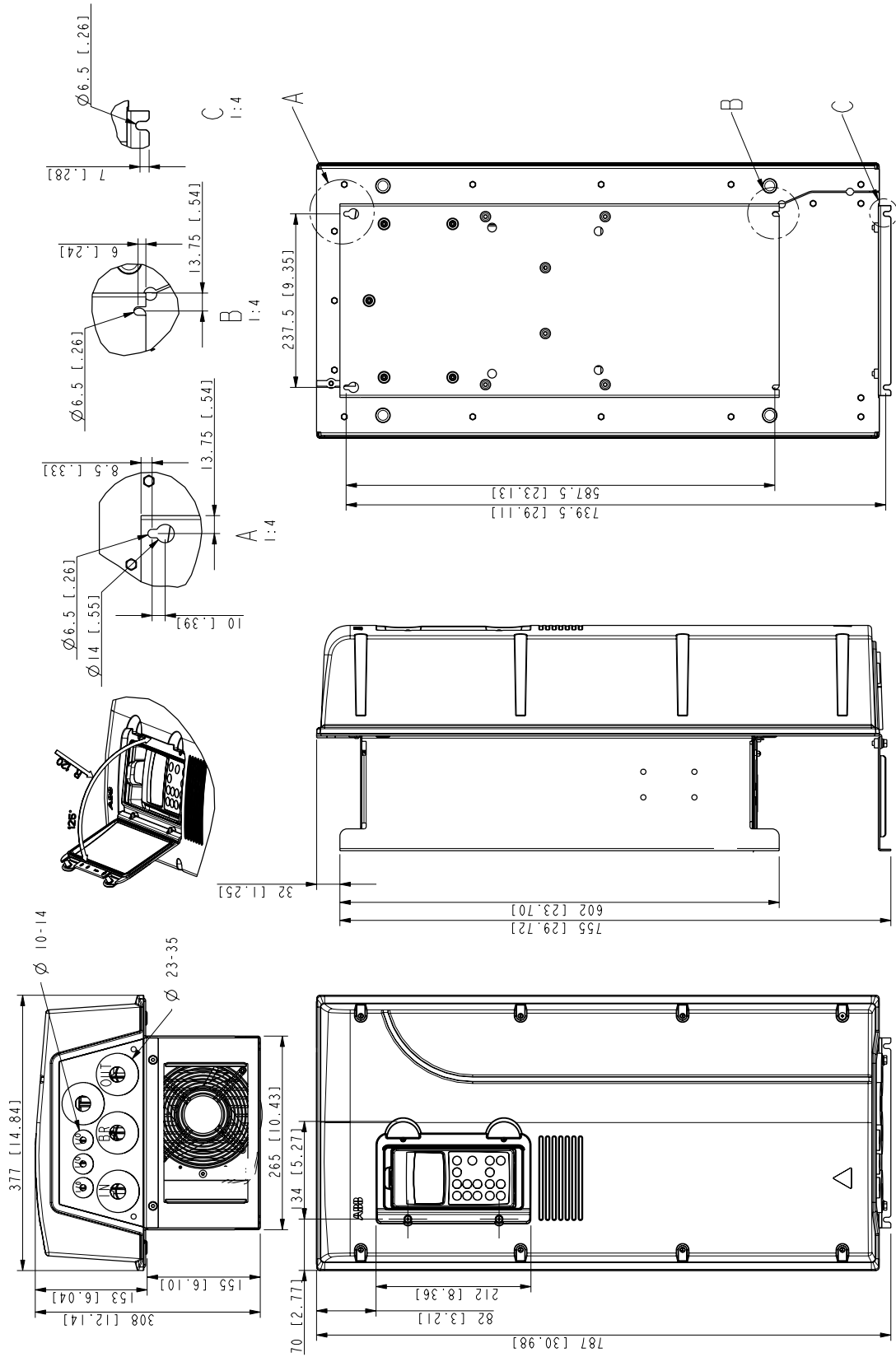
The dimensions of ACS800-01+C132 units of frame sizes R4 to R6 (IP 55, UL type 12) are given in millimetres and [inches] below. For dimensional drawings of other ACS800-01/U1 types, refer to *ACS800-01/U1 Hardware Manual* [3AFE64382101 (English)].

Frame size R4 (IP 55, UL type 12, +C132)



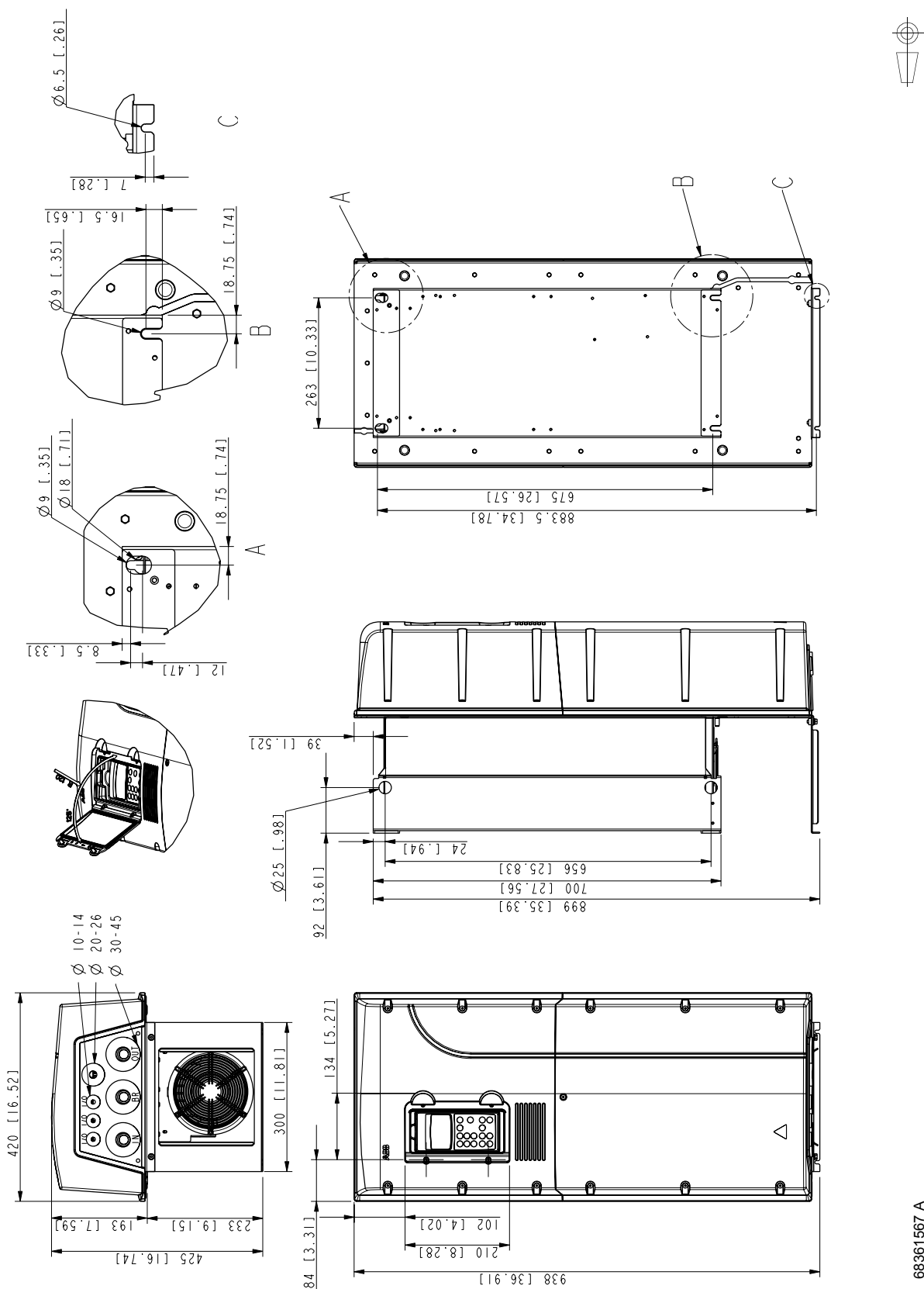
68360285

Frame size R5 (IP 55, UL type 12, +C132)



68361435 A

Frame size R6 (IP 55, UL type 12, +C132)



68361667 A



3AFE68291275 Rev E EN
EFFECTIVE: 23.4.2008

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