

# Update notice

The notice concerns the ACS880-01 hardware manuals listed below.

**Contents of the notice:** New drive types ACS880-01-442A-3 and ACS880-01-441A-5, changed aR fuses, added minimum switching frequency for sine filters, updated acceptance test procedure, changed safety data. **Notice code (EN):** 3AUA0000121542 Rev J. **Valid:** From 2017-02-09 until revision L of the manual.

Manual code	Revision	Language	
3AUA0000078093	K	English	EN
3AUA0000126407	J	Dansk	DA
3AUA0000103702	J	Deutsch	DE
3AUA0000103703	J	Español	ES
3AUA0000103704	J	Suomi	FI
3AUA0000103705	J	Français	FR
3AUA0000103706	J	Italiano	IT
3AUA0000103707	J	Nederlands	NL
3AUA0000130231	J	Poliski	PL
3AUA0000126408	J	Português	PT
3AUA0000108487	J	Русский	RU
3AUA0000103708	J	Svenska	SV
3AUA0000126409	J	Türkçe	TR

## General safety

### Added:

Before you activate the automatic fault reset or automatic restart functions of the drive control program, make sure that no dangerous situations can occur. These functions reset the drive automatically and continue operation after a fault or supply break. If these functions are activated, the installation must be clearly marked as defined in IEC/EN 61800-5-1, subclause 6.5.3, for example, "THIS MACHINE STARTS AUTOMATICALLY".

## Type code key

### Added:

Option codes (plus codes)	
Construction	
C205	Marine product certification for DNV-GL. Requires option +C132.
C206	Marine product certification for ABS. Requires option +C132.
C207	Marine product certification for Lloyd's register. Requires option +C132.

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C208	Marine product certification for RINA. Requires option +C132.
C209	Marine product certification for BV. Requires option +C132.
C210	Marine product certification for NK. Requires option +C132.
C132	Marine type-approved drive. Requires option +C131 in wall installations for frames R4 to R9. Includes common mode filter for frames R6 to R9.
C228	Marine product certification for CCS. Requires option +C132.
<b>I/O extensions and feedback interfaces</b>	
L521	FSE-31 pulse encoder interface module
L536	FPTC-01 Thermistor protection module for ACS880 drives
L537	FPTC-02 ATEX-certified thermistor protection module, EX II (2) GD for ACS880 drives
<b>Safety functions modules</b>	
Q972	FSO-21 safety functions module

## Typical power cable sizes

Added:

Drive type ACS880-01-	Frame size	IEC <sup>1)</sup>		US <sup>2)</sup>	
		Cu cable type	Al cable type	Cu cable type	Al cable type
		mm <sup>2</sup>	mm <sup>2</sup>	AWG/kcmil	AWG/kcmil
<b><math>U_N = 400\text{ V}</math></b>					
442A-3	R9	2 × (3×150)	2 × (3×240)	2 × 250 MCM	-
<b><math>U_N = 500\text{ V}</math></b>					
441A-5	R9	2 × (3×150)	2 × (3×240)	2 × 250 MCM	-

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Added:

Drive type ACS880-01-	Frame size	ABB miniature circuit breaker		ABB moulded case circuit breaker (Tmax)	
		Type	kA <sup>1)</sup>	Type	kA <sup>1)</sup>
<b><math>U_N = 400\text{ V}</math></b>					
442A-3	R9	-	-	1SDA054420R1	65
<b><math>U_N = 500\text{ V}</math></b>					
441A-5	R9	-	-	1SDA054420R1	65

<sup>1)</sup> Maximum allowed rated conditional short-circuit current (IEC 61800-5-1) of the electrical power network

## Implementing a bypass connection

### Added:

If bypassing is required, employ mechanically or electrically interlocked contactors between the motor and the drive and between the motor and the power line. Make sure with interlocking that the contactors cannot be closed simultaneously. The installation must be clearly marked as defined in IEC/EN 61800-5-1, subclause 6.5.3, for example, “THIS MACHINE STARTS AUTOMATICALLY”.

## Implementing a motor temperature sensor connection

### Changed:



**WARNING!** IEC 60664 requires double or reinforced insulation between live parts and the surface of accessible parts of electrical equipment which are either non-conductive but not connected to the protective earth.

To connect a motor temperature sensor and other similar components to the drive, you have four alternatives:

1. If there is double or reinforced insulation between the sensor and the live parts of the motor, you can connect the sensor directly to the inputs of the drive.
2. If there is basic insulation between the sensor and the live parts of the motor, you can connect the sensor to the inputs of the drive if all circuits connected to the drive's digital and analog inputs (typically extra-low voltage circuits) are protected against contact and insulated with basic insulation from other low-voltage circuits. The insulation must be rated for the same voltage level as the drive main circuit. Note that extra-low voltage circuits (such as 24 V DC) typically do not meet these requirements.
3. You can connect the sensor to an extension module with basic insulation (eg, FAIO-01) or reinforced insulation (eg, FPTC-xx) between the sensor connector and the other connectors of the module. See the table below for the sensor insulation requirement. For sensor connection to the extension module, see its manual.
4. You can connect a sensor to an external thermistor relay the insulation of which is rated for the main circuit voltage of the drive.

## ■ Drive I/O, I/O extension and encoder interface modules

See sections:

- section AI1 and AI2 as Pt100, Pt1000, PTC and KTY84 sensor inputs (XAI, XAO)
- section DI6 (XDI:6) as PTC sensor input
- FPTC-01 thermistor protection module (option +L536) for ACS880 drives user's manual (3AXD50000027750 [English])
- FPTC-02 ATEX-certified thermistor protection module Ex II (2) GD (option +L537+Q971) for ACS880 drives user's manual (3AXD50000027782 [English]).

This table shows what temperature sensor types you can connect to the drive I/O extension modules as well as the insulation requirement for the sensor.

Extension module		Temperature sensor type			Temperature sensor insulation requirement
Type	Insulation/Isolation	PTC	KTY	Pt100 , Pt1000	
FIO-11	Galvanic isolation between sensor connector and other connectors (including drive control unit connector)	-	X	X	Reinforced insulation
FEN-xx	Galvanic isolation between sensor connector and other connectors (including drive control unit connector)	X	X	-	Reinforced insulation
FAIO-01	Basic insulation between sensor connector and drive control unit connector. No insulation between sensor connector and other IO connectors.	X	X	X	Basic insulation. Connectors of extension module other than sensor connector must be left unconnected.
FPTC-xx	Reinforced insulation between sensor connector and other connectors (including drive control unit connector).	X	-	-	No special requirement

## Recommended maintenance intervals after start-up

Changed:

Component	Years from start-up							
	3	6	9	12	15	18	20	21
<b>Cooling</b>								
Main cooling fan (frames R1 to R9)			R			R		
Auxiliary cooling fan for circuit boards (frames R1 to R9)			R			R		
Auxiliary cooling fan IP55 (frames R8 and R9)			R			R		
<b>Aging</b>								
Battery for control panel and ZCU control unit			R			R		

## Ratings

Changed and added:

IEC RATINGS										
Drive type ACS880-01-	Frame size	Input rating	Output ratings							
			Nominal use				Light-overload use		Heavy-duty use	
			$I_1$	$I_{max}$	$I_2$	$P_N$	$S_N$	$I_{Ld}$	$P_{Ld}$	$I_{Hd}$
$U_N = 400\text{ V}$										
430A-3	R9	430	545	430	250	298	400	200	363**	200
442A-3	R9	442	545	442	250	306	420	200	363***	200
$U_N = 500\text{ V}$										
414A-5	R9	414	542	414	200	359	393	200	361**	200
441A-5	R9	441	545	441	250	359	420	200	361***	200

Added:

NEMA RATINGS										
Drive type ACS880-01-	Frame size	Input rating	Output ratings							
			Max. current	App. power	Light-overload use			Heavy-duty use		
			$I_1$	$I_{max}$	$S_n$	$I_{Ld}$	$P_{Ld}$	$I_{Hd}$	$P_{Hd}$	
$U_N = 460\text{ V}$										
441A-5	R9	441	545	359	420	250	350	361****	200	300

**Definitions**

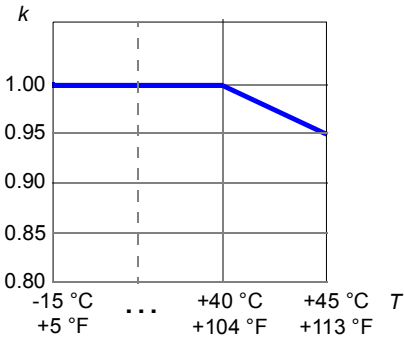
$I_{Hd}$	Continuous rms output current allowing 50% overload for 1 minute every 5 minutes. * Continuous rms output current allowing 30% overload for 1 minute every 5 minutes. ** Continuous rms output current allowing 25% overload for 1 minute every 5 minutes. *** Continuous rms output current allowing 35% overload for 1 minute every 5 minutes in IEC ratings. **** Continuous rms output current allowing 35% overload for 1 minute every 5 minutes in NEMA ratings.
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**Ambient temperature derating**

Added:

**IP55 (UL Type 12) drive types -442A-3 and -441A-5**

In the temperature range +40...45 °C (+104...113 °F), the rated output current is derated by 1% for every added 1 °C (1.8 °F). The maximum temperature is 45 °C (113 °F). The output current can be calculated by multiplying the current given in the rating table by the derating factor ( $k$ ):



**Altitude derating**

Added:

The altitude derating can be reduced if the temperature is below +40 °C, for example, if the temperature is 30 °C, the derating factor is  $1 - 1.5\% \cdot 10 = 0.85$ . You can reduce the output current by 35% instead of 40% at 4000 meter above the sea level.

## Ex motor, sine filter, low noise

Added:

**Note:** If Ex motors are used together with sine filters, *EX motor* in Parameter **95.15 Special HW settings** is disabled and *ABB Sine filter* in Parameter **95.15 Special HW settings** is enabled. Obey the instructions of the motor manufacturer.

Drive type ACS880-01-	Output ratings							
	EX motor (ABB Ex motors)				ABB Sine filter			
	Nominal use		Light-duty use	Heavy-duty use	Nominal use		Light-duty use	Heavy-duty use
	$I_N$	$P_N$	$I_{Ld}$	$I_{Hd}$	$I_N$	$P_N$	$I_{Ld}$	$I_{Hd}$
	A	kW	A	A	A	kW	A	A
$U_N = 400\text{ V}$								
442A-3	396	200	386	334*	352	160	334	296**
$U_N = 500\text{ V}$								
441A-5	396	200	386	334*	332	200	315	289**

Drive type ACS880-01-	Output ratings with selection Low noise optimization of parameter Parameter 97.09 Switching freq mode		
	Nominal use	Light- duty use	Heavy-duty use
	$I_N$	$I_{Ld}$	$I_{Hd}$
	A	A	A
$U_N = 400\text{ V}$			
442A-3	334	326	282*
$U_N = 500\text{ V}$			
441A-5	334	326	282*

$I_{Hd}$	<p>Continuous rms output current allowing 50% overload for 1 minute every 5 minutes.</p> <p>* Continuous rms output current allowing 30% overload for 1 minute every 5 minutes.</p> <p>** Continuous rms output current allowing 25% overload for 1 minute every 5 minutes.</p>
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## High speed mode

Added and changed: At the output frequency 120 Hz no derating.

Drive module type ACS880-01-	Output ratings with selection High speed mode of parameter 95.15 Special HW settings			
	Maximum output frequency			
	$f_{\max}$	Nominal use	Light-duty use	Heavy-duty use
		$I_N$	$I_{Ld}$	$I_{Hd}$
	Hz	A	A	A
$U_N = 230\text{ V}$				
04A6-2	500	4.1	3.9	3.3
06A6-2	500	5.9	5.6	4.1
07A5-2	500	6.7	6.4	5.9
10A6-2	500	9.5	9.0	6.7
16A8-2	500	15.0	14.3	9.5
24A3-2	500	22.0	20.9	15.0
031A-2	500	30.0	28.5	22.0
046A-2	500	41.0	39.0	30.0
061A-2	500	56	53	41
075A-2	500	56	53	47
087A-2	500	67	64	56
115A-2	500	84	80	67
145A-2	500	106	101	84
170A-2	500	135	128	106
206A-2	500	165	157	135
274A-2	500	189	180	165
$U_N = 400\text{ V}$				
02A4-3	500	2.2	2.1	1.7
03A3-3	500	3.0	2.9	2.2
04A0-3	500	3.6	3.4	3.0
05A6-3	500	5.0	4.8	3.6
07A2-3	500	6.5	6.2	5.0
09A4-3	500	8.5	8.1	6.5
12A6-3	500	11.3	10.7	8.5
017A-3	500	15	14.3	11.3
025A-3	500	22	20.9	15.0
032A-3	500	30	29	22
038A-3	500	35	33	30
045A-3	500	41	39	35
061A-3	500	56	53	41
072A-3	500	56	53	47
087A-3	500	67	64	56



Drive module type ACS880-01-	Output ratings with selection High speed mode of parameter 95.15 Special HW settings			
	Maximum output frequency			
	$f_{\max}$	Nominal use	Light-duty use	Heavy-duty use
		$I_N$	$I_{Ld}$	$I_{Hd}$
	Hz	A	A	A
105A-3	500	77	73	67
145A-3	500	106	101	77
169A-3	500	135	128	106
206A-3	500	165	157	135
246A-3	500	170	162	143
293A-3	500	202	192	170*
363A-3	500	236	224	202
430A-3	500	280	266	236**
442A-3	500	288	282	243*
<b><math>U_N = 500</math> V</b>				
02A1-5	500	1.8	1.7	1.4
03A0-5	500	2.6	2.5	1.8
03A4-5	500	2.9	2.8	2.6
04A8-5	500	4.1	3.9	2.9
05A2-5	500	4.4	4.2	4.1
07A6-5	500	6.5	6.2	4.4
11A0-5	500	9.4	8.9	6.5
014A-5	500	12.0	11.4	9.4
021A-5	500	18.0	17.1	12.0
027A-5	500	23.0	21.9	18.0
034A-5	500	29	28	23
040A-5	500	29	28	23
052A-5	500	37	35	29
065A-5	500	39	37	33
077A-5	500	46	44	39
096A-5	500	58	55	46
124A-5	500	74	70	58
156A-5	500	122	116	74
180A-5	500	140	133	122
240A-5	500	168	160	140
260A-5	500	182	173	168*
361A-5	500	206	196	182
414A-5	500	236	224	206**
441A-5	500	288	282	243*

Drive module type ACS880-01-	Output ratings with selection High speed mode of parameter 95.15 Special HW settings			
	Maximum output frequency			
	$f_{\max}$	Nominal use	Light-duty use	Heavy-duty use
		$I_N$	$I_{Ld}$	$I_{Hd}$
	Hz	A	A	A
$U_N = 690$ V				
07A3-7	500	6.6	6.3	5.3
09A8-7	500	8.8	8.4	6.6
14A2-7	500	12.8	12.2	8.8
018A-7	500	16	15	13
022A-7	500	20	19	16
026A-7	500	23	22	20
035A-7	500	32	30	23
042A-7	500	38	36	32
049A-7	500	44	42	38
061A-7	500	44	42	40
084A-7	500	53	50	44
098A-7	500	68	65	53
119A-7	500	83	79	68
142A-7	500	83	79	72
174A-7	500	96	91	83
210A-7	500	101	96	83
271A-7	500	130	124	101

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f	Output frequency
$f_{\max}$	Maximum output frequency with High speed mode
$U_N$	Nominal voltage of the drive
$I_N$	Continuous rms output current. No overload capability at 40 °C (104 °F)
$P_N$	Typical motor power in no-overload use.
$I_{Ld}$	Continuous rms output current allowing 10% overload for 1 minute every 5 minutes
$I_{Hd}$	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 25% overload for 1 minute every 5 minutes

## aR fuses (frames R1 to R9)

Changed and added: For frames R7 to R9 ABB recommends ultra-rapid (aR) fuses.

Ultraprapid (aR) fuses (one fuse per phase)								
Drive type ACS880 -01-	Min. short-circuit current <sup>1)</sup> (A)	Input current (A)	Fuse					
			A	A <sup>2</sup> s	V	Manufacturer	Type	Type IEC 60269
<b><math>U_N = 230\text{ V}</math></b>								
04A6-2	30	4.6	16	48	690	Bussmann	170M1559	000
06A6-2	30	6.6	16	48	690	Bussmann	170M1559	000
07A5-2	30	7.5	16	48	690	Bussmann	170M1559	000
10A6-2	53	10.6	20	78	690	Bussmann	170M1560	000
16A8-2	65	16.8	25	130	690	Bussmann	170M1561	000
24A3-2	120	24.3	40	460	690	Bussmann	170M1563	000
031A-2	160	31.0	63	1450	690	Bussmann	170M1565	000
046A-2	280	46	80	2550	690	Bussmann	170M1566	000
061A-2	300	61	125	8500	690	Bussmann	170M1568	000
075A-2	380	75	200	15000	690	Bussmann	170M3815	1
087A-2	500	87	250	28500	690	Bussmann	170M3816	1
115A-2	700	115	315	46500	690	Bussmann	170M3817	1
145A-2	1000	145	315	46500	690	Bussmann	170M3817	1
170A-2	1280	170	450	105000	690	Bussmann	170M5809	2
206A-2	1450	206	500	155000	690	Bussmann	170M5810	2
274A-2	2050	274	630	220000	690	Bussmann	170M5810	3
<b><math>U_N = 400\text{ V}</math></b>								
02A4-3	65	2.4	25	130	690	Bussmann	170M1561	000
03A3-3	65	3.3	25	130	690	Bussmann	170M1561	000
04A0-3	65	4.0	25	130	690	Bussmann	170M1561	000
05A6-3	65	5.6	25	130	690	Bussmann	170M1561	000
07A2-3	65	8.0	25	130	690	Bussmann	170M1561	000
09A4-3	65	10.0	25	130	690	Bussmann	170M1561	000
12A6-3	65	12.9	25	130	690	Bussmann	170M1561	000
017A-3	120	17	40	460	690	Bussmann	170M1563	000
025A-3	120	25	40	460	690	Bussmann	170M1563	000
032A-3	170	32	63	1450	690	Bussmann	170M1565	000
038A-3	170	38	63	1450	690	Bussmann	170M1565	000
045A-3	280	45	80	2550	690	Bussmann	170M1566	000
061A-3	380	61	100	4650	690	Bussmann	170M1567	000
072A-3	480	72	125	8500	690	Bussmann	170M1568	000
087A-3	480	87	160	16000	690	Bussmann	170M1569	000
105A-3	1280	105	315	46500	690	Bussmann	170M3817	1

Ultrarapid (aR) fuses (one fuse per phase)								
Drive type ACS880 -01-	Min. short-circuit current <sup>1)</sup> (A)	Input current (A)	Fuse					
			A	A <sup>2</sup> s	V	Manufacturer	Type	Type IEC 60269
145A-3	1280	145	315	46500	690	Bussmann	170M3817	1
169A-3	1800	169	450	105000	690	Bussmann	170M5809	2
206A-3	2210	206	500	145000	690	Bussmann	170M5810	2
246A-3	3010	246	630	275000	690	Bussmann	170M5812	2
293A-3	4000	293	800	490000	690	Bussmann	170M6812D	3
363A-3	5550	363	1000	985000	690	Bussmann	170M6814D	3
430A-3	7800	430	1250	2150000	690	Bussmann	170M8554D	3
442A-3	7800	442	1250	2150000	690	Bussmann	170M8554D	3
<b><math>U_N = 500 \text{ V}</math></b>								
02A1-5	65	2.1	25	130	690	Bussmann	170M1561	000
03A0-5	65	3.0	25	130	690	Bussmann	170M1561	000
03A4-5	65	3.4	25	130	690	Bussmann	170M1561	000
04A8-5	65	4.8	25	130	690	Bussmann	170M1561	000
05A2-5	65	5.2	25	130	690	Bussmann	170M1561	000
07A6-5	65	7.6	25	130	690	Bussmann	170M1561	000
11A0-5	65	11.0	25	130	690	Bussmann	170M1561	000
014A-5	120	14	40	460	690	Bussmann	170M1563	000
021A-5	120	21	40	460	690	Bussmann	170M1563	000
027A-5	170	27	63	1450	690	Bussmann	170M1565	000
034A-5	170	34	63	1450	690	Bussmann	170M1565	000
040A-5	280	40	80	2550	690	Bussmann	170M1566	000
052A-5	300	52	100	4650	690	Bussmann	170M1567	000
065A-5	480	65	125	8500	690	Bussmann	170M1568	000
077A-5	480	77	160	16000	690	Bussmann	170M1569	000
096A-5	1000	96	250	28500	690	Bussmann	170M3816	1
124A-5	1280	124	315	46500	690	Bussmann	170M3817	1
156A-5	1610	156	400	74000	690	Bussmann	170M5808	2
180A-5	2210	180	500	155000	690	Bussmann	170M5810	2
240A-5	2620	240	550	190000	690	Bussmann	170M5811	2
260A-5	4000	260	800	490000	690	Bussmann	170M6812D	3
361A-5	5550	361	1000	985000	690	Bussmann	170M6814D	3
414A-5	7800	414	1250	2150000	690	Bussmann	170M8554D	3
441A-5	7800	441	1250	2150000	690	Bussmann	170M8554D	3
<b><math>U_N = 690 \text{ V}</math></b>								
07A3-7	40	7.3	16	48	690	Bussmann	170M1559	000
09A8-7	53	9.8	20	78	690	Bussmann	170M1560	000
14A2-7	94	14.2	32	270	690	Bussmann	170M1562	000

Ultrarapid (aR) fuses (one fuse per phase)								
Drive type ACS880 -01-	Min. short-circuit current <sup>1)</sup> (A)	Input current (A)	Fuse					
			A	A <sup>2</sup> s	V	Manufacturer	Type	Type IEC 60269
018A-7	120	18	40	460	690	Bussmann	170M1563	000
022A-7	160	22	50	770	690	Bussmann	170M1564	000
026A-7	160	26	50	770	690	Bussmann	170M1564	000
035A-7	170	35	63	1450	690	Bussmann	170M1565	000
042A-7	280	42	80	2550	690	Bussmann	170M1566	000
049A-7	280	49	80	2550	690	Bussmann	170M1566	000
061A-7	480	61	125	8500	690	Bussmann	170M1568	000
084A-7	700	84	160	16000	690	Bussmann	170M1569	000
098A-7	1610	98	400	74000	690	Bussmann	170M3816	2
119A-7	1610	119	400	74000	690	Bussmann	170M3816	2
142A-7	2210	142	500	145000	690	Bussmann	170M5810	2
174A-7	2210	174	500	145000	690	Bussmann	170M5810	2
210A-7	3200	210	700	320000	690	Bussmann	170M6811D	3
271A-7	3200	271	700	320000	690	Bussmann	170M6811D	3

<sup>1)</sup> minimum short-circuit current of the installation

## gG fuses (frames R1 to R9)

Added:

gG fuses (one fuse per phase)								
Drive type ACS880- 01...	Min. short-circuit current <sup>1)</sup> (A)	Input current (A)	Fuse					
			A	A <sup>2</sup> s	V	Manufacturer	Type	IEC size
<b><math>U_N = 400</math> V</b>								
442A-3	10200	442	630	2800000	500	ABB	OF3H630	3
<b><math>U_N = 500</math> V</b>								
441A-5	10200	441	630	2800000	500	ABB	OF3H630	3

<sup>1)</sup> minimum short-circuit current of the installation

## Quick guide for selecting between gG and aR fuses

Added:

Drive type ACS880-01...	Cable type		Supply transformer minimum apparent power $S_N$ (kVA)					
	Copper	Aluminium	Maximum cable length with gG fuses			Maximum cable length with aR fuses		
	mm <sup>2</sup>	mm <sup>2</sup>	10 m	50 m	100 m	10 m	100 m	200 m
$U_N = 400\text{ V}$								
442A-3	2×(3×150)	2×(3×240)	499	547	641	174	186	205
$U_N = 500\text{ V}$								
441A-5	2×(3×150)	2×(3×240)	621	666	747	217	229	246

## Fuses (UL)

Added:

Drive type ACS880-01...	Input current A	Fuse (one fuse per phase)				
		A	V	Manufacturer	Type	UL class
$U_N = 460\text{ V}$						
441A-5	441	600	600	Bussmann	JJS-600	T

## Dimensions, weights and free space requirements

Changed and added:

Frame	IP21					UL type 1				
	H1 mm	H2 mm	W mm	D mm	Weight kg	H1 in.	H2 in.	W in.	D in.	Weight lb
R1	409	370	155	226	7.0	16.11	14.57	6.10	8.89	15
R2	409	370	155	249	8.4	16.11	14.57	6.10	9.80	19
R3	475	420	172	261	10.8	18.71	16.54	6.77	10.28	24
R4	576	490	203	274	18.6	22.70	19.30	7.99	10.80	41
R5	730	596	203	274	22.8	28.74	23.46	7.99	10.79	50
R6	726	569	251	357	42.2	28.60	22.40	9.92	14.09	93
R7	880	600	284	365	53.0	34.70	23.60	11.22	14.37	117
R8	963	681	300	386	68.0	37.90	26.82	11.81	15.21	150
R9	955	680	380	413	95.0	37.59	26.77	14.96	16.27	209
Frame	IP55					UL type 12				
	H1 mm	H2 mm	W mm	D mm	Weight kg	H1 * in.	H3 in.	W ** in.	D in.	Weight lb
R1	450	-	162	292	8.1	17.72	-	6.38	11.50	18
R2	450	-	161	315	9.5	17.72	-	6.38	12.40	21

Frame	IP21					UL type 1				
	H1 mm	H2 mm	W mm	D mm	Weight kg	H1 in.	H2 in.	W in.	D in.	Weight lb
R3	525	-	180	327	12.0	20.70	-	7.09	12.87	26
R4	576	-	203	344	19.1	22.70	-	7.99	13.54	42
R5	730	-	203	344	23.4	28.73	-	7.99	13.54	52
R6	726	-	252	421	42.9	28.60	-	9.92	16.46	95
R7	880	-	284	423	54.0	34.66	-	11.18	16.65	119
R8	963	-	300	452	74.0	37.90	-	11.81	17.78	163
R9	955	-	380	477	102.0	37.59	-	14.96	18.78	225

H1 Height with cable entry box.

H2 Height without cable entry box (option +P940)

H3 Height with hood

W Width with cable entry box

D Depth with cable entry box

\* Hood increases height with 155 mm (6.10 in) in frames R4 to R8 and with 230 mm (9.06 in) in frame R9.

\*\* Hood increases width with 23 mm (0.91 in) in frames R4 and R5, 40 mm (1.57 in) in frames R6 and R7 and 50 mm (1.97 in) in frames R8 and R9.

**Note 1:** For more information on dimensions, see chapter *Dimension drawings*.

**Note 2:** For dimensions and weights of option +P940 and +P944, see *ACS880-01 +P940/+P944 drives for cabinet installation supplement* (3AUA0000145446 [English]).

**Note 3:** For dimensions of option +C135, see *Flange mounting kit installation supplement* (3AXD50000019100 [English]). For the additional weight of the flange mounting kit, see the table below.

Frame	Weight of flange mounting kit (option +C135)	
	kg	lb
R1	2.9	6
R2	3.1	7
R3	4.5	10
R4	4.7	10
R5	4.7	10
R6	4.5	10
R7	5	11
R8	6	13
R9	7	15

## Losses, cooling data and noise

Added:

Drive type ACS880-01-	Frame	Air flow		Heat dissipation	Noise
		m <sup>3</sup> /h	ft <sup>3</sup> /min	W	dB(A)
<b>U<sub>N</sub> = 400 V</b>					
442A-3	R9	1150	677	6000	68
<b>U<sub>N</sub> = 500 V</b>					
441A-5	R9	1150	677	6000	68

## Cooling air flow and heat dissipation for flange mounting (option +C135)

Added:

Drive type ACS880-01-	Frame	Air flow (option +C135)		Heat dissipation (option +C135)	
		Heatsink	Front	Heatsink	Front
		m <sup>3</sup> /h	m <sup>3</sup> /h	W	W
<b>U<sub>N</sub> = 400 V</b>					
442A-3	R9	1150	170	5355	645
<b>U<sub>N</sub> = 500 V</b>					
441A-5	R9	1150	170	5355	645

## Electrical power network specification

Changed:

**Rated conditional short-circuit current (IEC 61800-5-1)** 65 kA when protected by fuses given in the fuse tables

**Frequency** 50/60 Hz, variation ± 5%, maximum rate of change 17%/s

## Motor connection data

Changed:

**Frequency** 0...598 Hz



## Control unit (ZCU-12) connection data

Changed and added:

### Safe torque off connection (XSTO)

Current consumption of frames R1 to R7: 30 mA  
(24 V DC, continuous) per STO channel

Current consumption of frames R8 and R9: 12 mA  
(24 V DC, continuous) per STO channel

Maximum output current from OUT1: 100 mA  
(24 V DC, continuous)

## Safety data (SIL, PL)

Changed and added:

Frame size	SIL/SIL CL	SC	PL	SFF (%)	PFH ( $T_1 = 20$ a) (1/h)	PFD <sub>avg</sub> ( $T_1 = 2$ a)	PFD <sub>avg</sub> ( $T_1 = 5$ a)	MTTF <sub>D</sub> (a)	DC (%)	Cat.	HFT	CCF	Life-time (a)
<b><math>U_N = 230</math> V</b>													
R1	3	3	e	>99	2.84E-09	2.37E-05	5.91E-05	10530	≥90	3	1	80	20
R2	3	3	e	>99	2.84E-09	2.37E-05	5.91E-05	10529	≥90	3	1	80	20
R3	3	3	e	>99	2.84E-09	2.37E-05	5.91E-05	10489	≥90	3	1	80	20
R4	3	3	e	>99	2.89E-09	2.41E-05	6.02E-05	10442	≥90	3	1	80	20
R5	3	3	e	>99	2.89E-09	2.41E-05	6.02E-05	10240	≥90	3	1	80	20
R6	3	3	e	>99	2.89E-09	2.41E-05	6.02E-05	10340	≥90	3	1	80	20
R7	3	3	e	>99	2.89E-09	2.41E-05	6.02E-05	10340	≥90	3	1	80	20
R8	3	3	e	>99	2.89E-09	2.41E-05	6.02E-05	10340	≥90	3	1	80	20
<b><math>U_N = 400</math> V, <math>U_N = 500</math> V</b>													
R1	3	3	e	>99	2.84E-09	2.37E-05	5.91E-05	10530	≥90	3	1	80	20
R2	3	3	e	>99	2.84E-09	2.37E-05	5.91E-05	10529	≥90	3	1	80	20
R3	3	3	e	>99	2.84E-09	2.37E-05	5.91E-05	10489	≥90	3	1	80	20
R4	3	3	e	>99	2.89E-09	2.41E-05	6.02E-05	10442	≥90	3	1	80	20
R5	3	3	e	>99	2.89E-09	2.41E-05	6.02E-05	10240	≥90	3	1	80	20
R6	3	3	e	>99	2.89E-09	2.41E-05	6.02E-05	10340	≥90	3	1	80	20
R7	3	3	e	>99	2.89E-09	2.41E-05	6.02E-05	10340	≥90	3	1	80	20
R8	3	3	e	99.1	3.20E-09	2.66E-05	6.65E-05	10333	≥90	3	1	80	20
R9	3	3	e	99.1	3.20E-09	2.66E-05	6.65E-05	10333	≥90	3	1	80	20
<b><math>U_N = 690</math> V</b>													
R5	3	3	e	98.5	3.23E-09	2.67E-05	6.68E-05	5823	≥90	3	1	80	20
R6...R9	3	3	e	99.1	4.46E-10	2.66E-05	6.65E-05	10333	≥90	3	1	80	20

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## ■ Abbreviations

Abbr.	Reference	Description
PFD <sub>avg</sub>	IEC 61508	Average probability of dangerous failure on demand
PFH	IEC 61508	Average frequency of dangerous failures per hour

## Resistor braking / Ratings

Added:

Drive type	Internal brake chopper		Example brake resistor(s)			
	$P_{brcont}$	$R_{min}$	Type	R	$E_R$	$P_{Rcont}$
	kW	ohm		ohm	kJ	kW
$U_N = 400\text{ V}$						
ACS880-01-442A-3	200	2.0	SAFUR200F500	2.7	5400	13.5
$U_N = 500\text{ V}$						
ACS880-01-441A-5	200	2.3	SAFUR200F500	2.7	5400	13.5

## Degree of protection and thermal constant of the resistors

Changed:

Resistor type	Degree of protection	Thermal constant (s)
JBR-03	IP20	
SACE	IP21	200
SAFUR	IP00	555

## du/dt filter types

Changed:

Drive type	du/dt filter type	Drive type	du/dt filter type	Drive type	du/dt filter type
ACS880-01-		ACS880-01-		ACS880-01-	
$U_N = 400\text{ V}$		$U_N = 500\text{ V}$		$U_N = 690\text{ V}$	
02A4-3	NOCH0016-6X	02A1-5	NOCH0016-6X	07A3-7	NOCH0016-6X
03A3-3	NOCH0016-6X	03A0-5	NOCH0016-6X	09A8-7	NOCH0016-6X
04A0-3	NOCH0016-6X	03A4-5	NOCH0016-6X	14A2-7	NOCH0016-6X
05A6-3	NOCH0016-6X	04A8-5	NOCH0016-6X	018A-7	NOCH0030-6X
07A2-3	NOCH0016-6X	05A2-5	NOCH0016-6X	022A-7	NOCH0030-6X
09A4-3	NOCH0016-6X	07A6-5	NOCH0016-6X	026A-7	NOCH0030-6X
12A6-3	NOCH0016-6X	11A0-5	NOCH0016-6X	035A-7	NOCH0070-6X
017A-3	NOCH0030-6X	014A-5	NOCH0030-6X	042A-7	NOCH0070-6X
025A-3	NOCH0030-6X	021A-5	NOCH0030-6X	049A-7	NOCH0070-6X
032A-3	NOCH0070-6X	027A-5	NOCH0070-6X	061A-7	NOCH0120-6X

Drive type ACS880-01-	du/dt filter type	Drive type ACS880-01-	du/dt filter type	Drive type ACS880-01-	du/dt filter type
038A-3	NOCH0070-6X	034A-5	NOCH0070-6X	084A-7	NOCH0120-6X
045A-3	NOCH0070-6X	040A-5	NOCH0070-6X	098A-7	NOCH0120-6X
061A-3	NOCH0070-6X	052A-5	NOCH0070-6X	119A-7	FOCH0260-7X
072A-3	NOCH0120-6X	065A-5	NOCH0120-6X	142A-7	FOCH0260-7X
087A-3	NOCH0120-6X	077A-5	NOCH0120-6X	174A-7	FOCH0260-7X
105A-3	NOCH0120-6X	096A-5	NOCH0120-6X	210A-7	FOCH0260-7X
145A-3	FOCH0260-7X	124A-5	FOCH0260-7X	271A-7	FOCH0260-7X
169A-3	FOCH0260-7X	156A-5	FOCH0260-7X	-	-
206A-3	FOCH0260-7X	180A-5	FOCH0260-7X	-	-
246A-3	FOCH0260-7X	240A-5	FOCH0260-7X	-	-
293A-3	FOCH0260-7X	260A-5	FOCH0260-7X	-	-
363A-3	FOCH0320-5X	302A-5	FOCH0320-5X	-	-
430A-3	FOCH0320-5X	361A-5	FOCH0320-5X	-	-
-	-	414A-5	FOCH0320-5X	-	-

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## Selecting a sine filter for a drive

Changed and added: Check housing of sine filters from the manufacturer.

Drive type ACS880-01-...	Sine filter type	$I_{\text{cont. max}}$	$P_{\text{cont. max}}$	Heat dissipation			Noise dB(A)
				Drive	Filter	Total	
		A	kW	W	W	W	
$U_N = 400 \text{ V}$							
02A4-3	B84143V0004R229*	2.3	1.7	30	60	90	72
03A3-3	B84143V0004R229*	3.1	2.3	40	60	100	72
04A0-3	B84143V0004R229*	3.8	2.9	52	60	112	72
05A6-3	B84143V0006R229*	5.3	4.0	73	100	173	72
07A2-3	B84143V0011R229*	7.2	5.4	94	90	184	72
09A4-3	B84143V0011R229*	9.2	6.9	122	90	212	72
12A6-3	B84143V0016R229*	12.1	9.1	172	80	252	72
017A-3	B84143V0025R229*	16	12.1	232	140	372	75
025A-3	B84143V0025R229*	24	17.7	337	140	477	75
032A-3	B84143V0033R229*	31	23.4	457	160	617	75
038A-3	B84143V0050R229*	37	27.5	562	220	782	78
045A-3	B84143V0050R229*	43	32.4	667	220	887	78
061A-3	B84143V0066R229*	58	43.7	907	250	1157	78
072A-3	B84143V0075R229*	64	48.2	1117	310	1427	79

Drive type ACS880-01-...	Sine filter type	$I_{\text{cont. max}}$	$P_{\text{cont. max}}$	Heat dissipation			Noise dB(A)
				Drive	Filter	Total	
		A	kW	W	W	W	
087A-3	B84143V0095R229*	77	58.0	1120	400	1520	79
105A-3	B84143V0130R230**	91	68.6	1295	600	1895	80
145A-3	B84143V0162S229**	126	94.6	1440	550	1990	80
169A-3	B84143V0162S229**	153	115.0	1940	550	2490	80
206A-3	B84143V0230S229**	187	140.6	2310	900	3210	80
246A-3	B84143V0230S229**	209	157.6	3300	900	4200	80
293A-3	B84143V0390S229**	249	187.8	3900	1570	5470	80
363A-3	B84143V0390S229**	297	223.6	4800	1570	6370	80
430A-3	B84143V0390S229**	352	265.2	6000	1570	7570	80
442A-3	B84143V0390S229**	352	265.2	6000	1570	7570	80
<b><math>U_N = 500 \text{ V}</math></b>							
02A1-5	B84143V0004R229*	1.9	1.4	30	60	90	72
03A0-5	B84143V0004R229*	2.8	2.1	40	60	100	72
03A4-5	B84143V0004R229*	3.1	2.3	52	60	112	72
04A8-5	B84143V0006R229*	4.4	3.3	73	100	173	72
05A2-5	B84143V0006R229*	4.8	3.6	94	100	194	72
07A6-5	B84143V0011R229*	7.0	5.3	122	90	212	72
11A0-5	B84143V0011R229*	10.2	7.7	172	90	262	72
014A-5	B84143V0016R229*	13	9.8	232	80	312	70
021A-5	B84143V0025R229*	20	14.7	337	140	477	75
027A-5	B84143V0033R229*	25	18.8	457	160	617	75
034A-5	B84143V0050R229*	32	23.7	562	220	782	78
040A-5	B84143V0050R229*	35	26.0	667	220	887	78
052A-5	B84143V0066R229*	44	33.2	907	250	1157	78
065A-5	B84143V0066R229*	52	39.2	1117	250	1367	78
077A-5	B84143V0075R229*	61	46.0	1120	310	1430	78
096A-5	B84143V0130S230**	80	60.6	1295	*630	1925	80
124A-5	B84143V0130S230**	104	78.7	1440	630	2070	80
156A-5	B84143V0162S229**	140	105.8	1940	550	2490	80
180A-5	B84143V0162S229**	161	121.3	2310	550	2860	80
240A-5	B84143V0230S229**	205	154.3	3300	900	4200	80
260A-5	B84143V0230S229**	221	166.7	3900	900	4800	80
361A-5	B84143V0390S229**	289	217.9	4800	1570	6370	80

Drive type ACS880-01-...	Sine filter type	$I_{\text{cont. max}}$	$P_{\text{cont. max}}$	Heat dissipation			Noise dB(A)
				Drive	Filter	Total	
		A	kW	W	W	W	
414A-5	B84143V0390S229**	332	250.1	6000	1570	7570	80
441A-5	B84143V0390S229**	332	250.1	6000	1570	7570	80
$U_N = 690 \text{ V}$							
07A3-7	B84143V0010R230*	7.3	5.5	217	90	307	72
09A8-7	B84143V0010R230*	9.3	7.0	284	90	374	72
14A2-7	B84143V0018R230*	13.5	10.2	399	130	529	72
018A-7	B84143V0018R230*	17.1	12.9	490	130	620	72
022A-7	B84143V0026R230*	21	15.7	578	160	738	72
026A-7	B84143V0026R230*	25	18.6	660	160	820	72
035A-7	B84143V0040R230*	33	25.1	864	250	1114	75
042A-7	B84143V0040R230*	40	30.1	998	250	1248	75
049A-7	B84143V0056R230**	48	36.2	1120	290	1410	78
061A-7	B84143V0056R230**	56	42.5	1295	290	1585	78
084A-7	B84143V0092R230**	78	58.6	1440	610	2050	79
098A-7	B84143V0092R230**	92	69.3	1940	610	2550	79
119A-7	B84143V0130S230**	112	84.2	2310	630	2940	80
142A-7	B84143V0130S230**	112	84.7	3300	630	3930	80
174A-7	B84143V0207S230**	138	103.7	3900	930	4830	80
210A-7	B84143V0207S230**	161	121.3	4200	930	5130	80
271A-7	B84143V0207S230**	208	156.4	4800	930	5730	80
* minimum switching frequency 3.0 kHz							
** minimum switching frequency 2.4 kHz							

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## Definitions

$P_{\text{cont. max}}$	Maximum continuous output power of the drive
$I_{\text{cont. max}}$	Maximum continuous output current of the drive
Noise	Noise level of the sine filters

