



Certificate of Compliance

Certificate: 1441318

Master Contract: 169439

Project: 80065583

Date Issued: 2022-11-16

Issued To: AMKmotion GmbH + Co KG
Gaußstraße 37-39
Kirchheim-Teck, Baden-Württemberg, 73230
Germany

Attention: Stefan Leimer

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Issued by: Franklin ten Haaf
Franklin ten Haaf



PRODUCTS

CLASS - C321116 - INDUSTRIAL CONTROL EQUIPMENT - Adjustable Speed Drives

CLASS - C321198 - INDUSTRIAL CONTROL EQUIPMENT- Adjustable Speed Drives - Certified to U.S. Standards

Power Conversion Equipment Modular Variable Speed Motor Controllers, for ac or dc motors, open types, forced air cooling or water cooled rated pressure 1.5 bar and min flow of 10 L/min, short circuit rated 42kA; Series AMKASYN KE/KW, consisting of the following:



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Compact Supply Module Model Nos. KE, KES, KEN

- . Input Voltage: 400...480 Vac 3-ph
24Vdc
- . Input Frequency: 47-63 Hz
- . Rated Output Voltage: 540.. 650 Vdc, (720 Vdc Max.)

Model no.	Max. Nom. Input Current (FLA)		Output Power kW	SCCR kA	
	400V Ambient 40°C	480V Ambient 40°C			
KE 10-xxx	15	12,5	10	42	
KE 20-xxx	30	25	20	42	
KES 20-xxx	30	25	20	42	
KE 40-xxx	60	50	40	42	
KES 40-xxx	60	50	40	42	
KE 60-xxx	90	75	60	42	
KE 60-S2	90	75	60	42	
KE 60-S4	90	75	60	42	
KES 60-xxx	90	75	60	42	
KE 120-xxx (rev. ≥ 4.xx)	180	150	120	42	
KES 120-xxx	180	150	120	42	
KE 180-xxx	270	225	180	42	
KES 180-xxx	270	225	180	42	
KE 240-xxx	360	300	240	42	
KES 240-xxx	360	300	240	42	
KEN 5-Fx	13, (12)	12, (10)	5	42	Forced air cooling
KEN 10-F	15	13	10	42	Forced air cooling
KE 10-F	15	12,5	10	42	Forced air cooling
KE 20-F	30	25	20	42	Forced air cooling
KEN 5-xx	13, (12)	12, (10)	5	42	
KEN 10	15	13	10	42	
KEN 120	180	150	120	42	



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Compact Inverter Module Model Nos. KW or KWD or KWF or KWZ

- . Input Voltage : 540.. 650 Vdc, (720 Vdc Max.)
24Vdc
- . Output Voltage: 0...350 Vac 3-ph
- . Output Frequency Range: 0-800 Hz
- . Switching Frequency: 8 kHz (4kHz)

Model no.	Max. Nom. Output Current (FLA)	Output		
		Power	SCCR	
	Ambient 40°C	kVA	kA	
KW 2-0N	3.3	2	42	
KW 2	3.3	2	42	
KW 3-0N	5.0	3	42	
KW 3	5.0	3	42	
KW 5-0N	8.3	5	42	
KW 5	8.3	5	42	
KW 8-0N	13.2	8	42	
KW 8	13.2	8	42	
KW 10	16.5	10	42	
KW 20	33	20	42	
KW 40	66	40	42	
KW 60	99	60	42	
KW 100 (rev. ≥ 4.xx)	165	100	42	
KW 100-S3 (rev. ≥ 4.xx)	165	100	42	
KW 150	247	150	42	
KW 200	330	200	42	
KWD 1-0N	2 x 1,6	2x 1	42	
KWD 1	2 x 1,6	2x 1	42	
KWD 2-0N	2 x 3.3	2x 2	42	
KWD 2	2 x 3.3	2x 2	42	
KWD 5-0N	2 x 8.3	2x 5	42	
KWD 5	2 x 8.3	2x 5	42	
KWD 1-F	2 x 1,6	2x 1	42	forced air cooling
KWD 2-F	2 x 3.3	2x 2	42	forced air cooling
KWD 4-F	2 x 6.6	2x 4	42	forced air cooling
KW 2-F	3.3	2	42	forced air cooling
KW 3-F	5.0	3	42	forced air cooling
KW 4-F	6.6	4	42	forced air cooling



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KW 6-F 9.9 6 42 forced air cooling

Computer, Interface, Input/Output Cards

General: All Computer Cards, Input/Output Cards or Interface Cards are all LVLE. Optionally provided

		<u>Model No.</u>
1	<u>Interface Card</u>	KW-ARC
2	<u>Analog out Card</u>	KW-DA1
3	<u>Interface Card</u>	KW-DB1
4	<u>Interface Card</u>	KW-CN1
5	<u>Interface Card</u>	KW-CN2
6	<u>Input/Output Card</u>	KW-EA2
7	<u>Interface Card</u>	KW-FB1
8	<u>Interface Card</u>	KW-IB1
9	<u>Parameter Card</u>	KW-PA1
10	<u>Parameter Card</u>	KW-PA2
11	<u>Interface Card</u>	KW-PB1
12	<u>Interface Card</u>	KW-PB2
13	<u>Output Card</u>	KW-PIW
14	<u>PLC Card</u>	KW-PLC
15	<u>PLC1 Card</u>	KW-PLC1
16	<u>PLC2 Card</u>	KW-PLC2
17	<u>Computer Card</u>	KW-R02
18	<u>Computer Card</u>	KW-R03
19	<u>Computer Card</u>	KW-R03P
20	<u>Computer Card</u>	KW-R04
21	<u>Interface Card</u>	KW-SC1
22	<u>Service Modul</u>	KW-SM1
23	<u>Service Modul</u>	KW-SM2
24	<u>Control Panel</u>	KUB
25	<u>Synchronous multi axis control</u>	AMKAMAC AS-PLxx
26	<u>Interface Card</u>	AS-FCT1
27	<u>Interface Card</u>	AS-FSS1
28	<u>Interface Card</u>	AS-FSM1
29	<u>Interface Card</u>	AS-FSD1
30	<u>Interface Card</u>	AS-FP1
31	<u>Computer Card</u>	AE-R08
32	<u>Computer Card</u>	KW-R05
33	<u>Control System</u>	AS-P06
34	<u>Control System</u>	AS-P12
35	<u>Control System</u>	AS-P15
36	<u>Interface Card</u>	AS-FCT2



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37	<u>Interface Card</u>	AS-FEN1
38	<u>Interface Card</u>	AS-FSD3
39	<u>Interface Card</u>	AS-FSM3
40	<u>Interface Card</u>	AS-FSS3
41	<u>Interface Card</u>	AS-PE1
42	<u>Interface Card</u>	AE-EC2
	<u>Synchronous multi axis control</u>	A3x-tyz-uuv
	<u>Synchronous multi axis control</u>	A4x-tyz-uuv
	<u>Synchronous multi axis control</u>	A5x-tyz-uuv
	<u>Synchronous multi axis control</u>	A6x-tyz-uuv
	<u>Synchronous multi axis control</u>	A7x-tyz-uuv
	<u>Interface Card</u>	A-SCN
	<u>Interface Card</u>	A-SPB
	<u>Interface Card</u>	KW-BT1
	<u>Computer Card</u>	KW-Rxx

Note Synchronous multi axis control
x=S,D; S Schaltschrank (Cabinet) / D display
t=M,G,P; M Master / G Gateway / P Panel
y=0,C; 0 without x85 and x86 connection / C with x85 and x86 connection
z=0,E; 0 without E/A card / with E/A card
uu=size display; size of display in inches
v= T,P; (touch panel) T resistive touch / P projective capacitive touch

Note Computer card (LVLE) xx=05, 06, 07,16,17,24,25,26,27, 34, 35, 36 and 37



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External Components

1 Chokes

<u>Model</u>	<u>Inductance in mH</u>	<u>Current in Amp.</u>	<u>Voltage in Volts</u>
ALN 12 (AMK 204717)	3x3.00	12	3x500
ALN 17 (AMK 200672)	3x2.10	17	3x500
ALN 36 (AMK 27066)	3x1,00	36	3x500
ALN 36 (AMK 29467)	3x1,00	36	3x500
ALN 63 (AMK 27067)	3x0,58	63	3x500
ALN 85 (AMK 27481)	3x0,43	85	3x500
ALN 125 (AMK 28871)	3x0,29	125	3x500
ALN 150 (AMK 29951)	3x0,24	150	3x500
ALN 150-2,5 (AMK 200444)	3x0,15	150	3x500
ALN 150-I (AMK 204258)	3x0,14	150	3x500
ALN 180 (AMK 200412)	3x0,10	180	3x500
ALN 270 (AMK 207191)	3x0,14	270	3x500
ALN 15-SI (AMK 202554, 204393, 207544)	3x2,46	15	3x500
ALN 45-SI (AMK 201775,204327)	3x0,82	45	3x500
ALN 60-SI (AMK 201776, 204691)	3x0,41	60	3x500
ALN 150-SI (AMK 204682)	3x0,27	150	3x500
ALN 30-S (AMK 201245,204394)	3x2,46	30	3x500
ALN 90-S (AMK 201246, 208045)	3x0,82	90	3x500
ALN 90-S0W (AMK 203119)	3x0,82	90	3x500
ALN 180-S (AMK 201247, 204683)	3x0,41	180	3x500
ALN 180-S0W (AMK 203120)	3x0,41	180	3x500
ALN 270-S (AMK 204653)	3x0,27	270	3x500
ALN 360-S (AMK 204654)	3x0,20	360	3x500
ALNV 15-SI (AMK 203106, 204675)	3x0,30	15	3x500
ALNV 45-SI-100 (AMK 204676)	3x0,10	45	3x500
ALNV 45-SI-200 (AMK 205276)	3x0,20	45	3x500
ALNV 60-SI (AMK 204282)	3x0,10	60	3x500
ALNV 150-SI (AMK 204677)	3x0,05	150	3x500
ALNV 30-S (AMK 202556)	3x0,10	30	3x500
ALNV 60-S (AMK 203124)	3x0,10	60	3x500
ALNV 90-S (AMK 202557, 204328)	3x0,10	90	3x500
ALNV 180-S (AMK 202558, 204678)	3x0,10	180	3x500
ALNV 270-S (AMK 204655)	3x0,05	270	3x500
ALNV 360-S (AMK 204656)	3x0,05	360	3x500

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2 External Brake Resistor

<u>Model</u>	<u>Resistance in Ohms</u>	<u>Rated Power in Watts</u>
AR 45	110	45
AR 140	47	140
AR 1000-50-F	50	1000
AR 4000-40-F	40	3200
AR 4000-20-F	20	1500
AR 4000-20-0	20	600
AR 4000-8-F	8	4000
AR 4000-8-0-(..)	8	1500

3 Line Filter

AF 30 (AMK 201432, 202559) optional for KES 20, manufactured by LGF, rated 480Vac, 30A
 AF 90 (AMK 29294) optional for KE 60 and KEN 60
 R/C (E70122) Cat. No. B84143-A90-R115, manufactured by EPCOS AG, rated 480/275Vac, 90A
 AF 180 (AMK 200662) optional for KE 120 and KEN 120,
 Manufactured by LGF, rated 480Vac, 180A

<u>Model</u>	<u>Inductance in mH</u>	<u>Current in Amp.</u>	<u>Voltage in Volts</u>
AF 15-SI (AMK 47370)	24mH	15	3x480
AF 45-SI (AMK 47649)	6,5mH	45	3x480
AF 60-SI (AMK 47650)	6,5mH	60	3x480
AF 90-S (AMK 46947 or 47084)	5.2 or 6.5mH	90	3x480
AF 180-S (AMK 47033 or 51190)	4.8 or 4.5mH	180	3x480
AF 270-S (AMK 47651)	5.1mH	270	3x480

4 Air cooling system

KW-LK 110 Heatsink, made of aluminum, overall dimensions are 350 x 105 x 44 mm
 Mounting angles, made of stainless steel
 Fan, two provided 24V / max. 0.45A

KW-LK 250 Heatsink, made of aluminium, overall dimensions are 360 x 250 x 82,5 mm
 Housing, made of plated or stainless steel, overall dimensions 465 x 251 x 84,2 mm
 Fan, three provided, 24V/ max. 0.75A

KW-LK 400 Heatsink, made of aluminium, overall dimensions are 360 x 400 x 82,5 mm
 Housing, made of plated or stainless steel, overall dimensions 465 x 401 x 84,2 mm
 Fan, four provided, 24V/ max. 1.00A

KW-LK 500 Heatsink, made of aluminium, overall dimensions are 360 x 500 x 82,5 mm
 Housing, made of plated or stainless steel, overall dimensions 465 x 501 x 84,2 mm
 Fan, five provided, 24V/ max. 1.25A



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5 Liquid cooling back plate

KW-CP 340 (AMK 29314)	cooling medium connection point on right-hand side
KW-CP 510 (AMK 29315)	cooling medium connection point on right-hand side
KW-CP 680 (AMK 29316)	cooling medium connection point on right-hand side
KW-CP 340R (AMK 29546)	cooling medium connection point on rear side
KW-CP 510R (AMK 29547)	cooling medium connection point on rear side
KW-CP 680R (AMK 29548)	cooling medium connection point on rear side

Aluminum plates with G1/4" connection for coolant medium. Rated 10 l/m, 1, 5 bar, (test pressure 8 bar) water temperature 30°C max

also available with integrally cast in stainless steel tube: KW-CP xxx –V

KW-CP 340-V (AMK 200606)	cooling medium connection point on right-hand side
KW-CP 510-V (AMK 200608)	cooling medium connection point on right-hand side
KW-CP 680-V (AMK 200610)	cooling medium connection point on right-hand side
KW-CP 340R-V (AMK 200615)	cooling medium connection point on rear side
KW-CP 510R-V (AMK 200617)	cooling medium connection point on rear side
KW-CP 680R-V (AMK 200619)	cooling medium connection point on rear side

6 Options

AE-ZK6 (AMK 47091)	Extended DC link
AE-ZK3 (AMK 47348)	Extended DC link
AF-FE1 (AMK 47090)	Filter extension

Notes:

1. Certified for use in equipment where the acceptability of the assembly is to be determined by the CSA International or another NRTL



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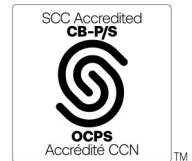
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APPLICABLE REQUIREMENTS

CSA C22.2 No. 274-17	Adjustable Speed Drives
UL61800-5-1, 1 st edition	Adjustable Speed Electrical Power Drive Systems – Part 5-1: Safety Requirements – Electrical, Thermal and Energy

Notes:

Products certified under Class C321116, C321198 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca





Supplement to Certificate of Compliance

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*The products listed, including the latest revision described below,
are eligible to be marked in accordance with the referenced Certificate.*

Product Certification History

Project	Date	Description
80065583	2022-11-16	Update to Report 1441318 for FIR follow-up regarding non-compliance issues noted in FC# 215802, February 25, 2020, addition of alternate power resistor from KRAH, update/addition of components and update of applicable standards based on industrial equipment notices 58A and 61. C22.2 No 274-17 and UL 61800-5-1 first edition. Product classes 321116/98. Price may change if testing is required.
70111800	2017-05-12	Update to Report 1441318 to remove no longer valid warning per FIR from Nov. 22, 2016.
70081570	2016-07-14	Update to Report 1441318 to bring into compliance with Notice 35. Standard CSA C22.2 No. 14 has been replaced by CSA C22.2 No. 274-13 for Canada for adjustable speed drives.
70003266	2014-10-14	Update to report 1441318 to cover new types, change in ratings and alternative components. CSA C22.2 No. 14-13 and UL 508c 3rd ed.
2464862	2011-09-09	Update to report 1441318 to cover update to CSA C22.2 No. 14-10, corrections, new types and alternative materials.
1965518	2007-09-29	Update to report 1441318 to cover new types and alternative materials.
1641344	2005-06-01	Update to report 1441318 to cover additional type numbers and alternative components.
1441318	2003-07-16	Original cCSAus Certification of Power Conversion Equipment ac motors. Series, AMKASYN KE/KW.