

Bulletin 100-K Miniature Contactors

Bulletin 100-K/104-K — IEC Miniature Contactors

- Compact size
- Same dimensions for AC and DC
- Full-voltage non-reversing and reversing contactors
- 5, 9, and 12 A contactors rated at 690V
- IP2X finger protection
- Optional integrated surge suppressor
- Compatible with Bulletin 193-K bimetallic overload relay
- Mirror contacts per IEC 60947-4-1 and mechanically linked contacts per IEC 60947-5-1 on main unit



Your order must include: cat. no. (with coil voltage code) of the mini contactor specified and, if required, cat. no. of any accessories.

Allen-Bradley Bulletin 100-K miniature contactors are designed for commercial and light industrial applications where panel space is at a premium. These miniature devices, while 45 mm wide, are shallower and have less panel depth requirements than standard IEC contactors.

The miniature contactors have been designed with flexibility in mind. They are available with AC or DC operating coils, several contact ratings, and optional 2- or 4-pole adder decks in a variety of auxiliary contact configurations.

Standards Compliance

IEC/EN 60947-1,-4-1,-5-1,-5-4
UL 508
CSA 22.2. No. 14
NF F 62-000
Meets the material restrictions for European Directive 2002/95/IEC-EU-RoHS

Certifications

CE Marked
cULus Listed (File No. E41850, Guide NLDX, NLDX7)
CCC

3-Pole AC- and DC-Operated Contactors

Rated Operational Current I _e [A]		Ratings for switching AC motors - AC-2, AC-3, AC-4										Auxiliary Contacts		Pkg. Qty.★	Cat. No.
		3-Phase kW (50 Hz)				Hp (60 Hz)									
		230V	400/415V	500V	690V	1-Phase		3-Phase							
40 °C						115V	230V	200V	230V	460V	575V	N.O.	N.C.		
AC-3	AC-1														
Screw Terminals															
5	20	1.5	2.2	2.2	2.2	1/2	1	1-1/2	1-1/2	3	3	1	0	1	100-K05⊗10
												0	1	1	100-K05⊗01
9	20	3	4	4	4	1/2	1-1/2	2	2	5	5	1	0	1	100-K09⊗10
												0	1	1	100-K09⊗01
12	20	3	5.5	5.5	5.5	3/4	2	3	3	7-1/2	7-1/2	1	0	1	100-K12⊗10
												0	1	1	100-K12⊗01
Spring Clamp Terminals															
5	10	1.5	2.2	2.2	2.2	1/3	3/4	1-1/2	1-1/2	3	3	1	0	1	100-KR05⊗10
												0	1	1	100-KR05⊗01
9	10	2.2	4	4	4	1/3	1	2	2	5	5	1	0	1	100-KR09⊗10
												0	1	1	100-KR09⊗01

★ May be ordered in package quantities of 20. Add letter M to the end of the cat. no. Example: **100-K09ZJ10M**.

4-Pole AC- and DC-Operated Contactors

Rated Operational Current I_e [A]		Ratings for switching AC motors - AC-2, AC-3										Contact Configuration, Main Pole		Pkg. Qty.★	Cat. No.
		3-Phase kW (50 Hz)				Hp (60 Hz)									
40 °C		230V	400/415V	500V	690V	1-Phase		3-Phase							
AC-3	AC-1					115V	230V	200V	230V	460V	575V	N.O.	N.C.		
5	20	1.5	2.2	2.2	2.2	1/2	1	1-1/2	1-1/2	3	3	4	0	1	100-K05⊗400
												3	1	1	100-K05⊗300
												2	2	1	100-K05⊗200
9	20	3	4	4	4	1/2	1-1/2	2	2	5	5	4	0	1	100-K09⊗400
												3	1	1	100-K09⊗300
												2	2	1	100-K09⊗200
12	20	3	5.5	5.5	5.5	3/4	2	3	3	7-1/2	7-1/2	4	0	1	100-K12⊗400
												3	1	1	100-K12⊗300
												2	2	1	100-K12⊗200

★ May be ordered in package quantities of 20. Add letter M to the end of the cat. no. Example: **100-K09ZJ400M**.

⊗ The Cat. No. as listed is incomplete. Select a Coil Voltage Code from ⊗ **Coil Voltage Code for screw type terminal versions** to complete the Cat. No.
Example: 24V DC: Cat. No. **100-K05⊗400** becomes Cat. No. **100-K05ZJ400**.

Reversing AC- and DC-Operated Contactors

Rated Operational Current I_e [A]		Ratings for switching AC motors - AC-2, AC-3, AC-4										Auxiliary Contacts per Contactor ★		Cat. No.
		3-Phase kW (50 Hz)				Hp (60 Hz)								
40 °C		230V	400/415V	500V	690V	1-Phase		3-Phase						
AC-3	AC-1					115V	230V	200V	230V	460V	575V	N.O.	N.C.	
5	20	1.5	2.2	2.2	2.2	—	—	1-1/2	1-1/2	3	3	0	1	104-K05⊗02
9	20	3	4	4	4	—	—	2	2	5	5	0	1	104-K09⊗02
12	20	3	5.5	5.5	5.5	—	—	3	3	7-1/2	7-1/2	0	1	104-K12⊗02

★ Used for electrical interlocking

⊗ The Cat. No. as listed is incomplete. Select a standard Coil Voltage Code from ⊗ **Coil Voltage Code for screw type terminal versions** to complete the Cat. No.
Example: 230V, 50/60 Hz: Cat. No. **104-K05⊗02** becomes Cat. No. **104-K05KF02**.

Bulletin 104-K reversing contactors are factory assembled and include contactors, mechanical interlock (Cat. No. 100-KMCH) and wiring kit (Cat. No. 100-KPR) for power and control circuit (electrical interlock). Wiring schematic see 100-KPR.

⊗ Coil Voltage Code for screw type terminal versions

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: 120V, 60 Hz:
Cat. No. 100-K09⊗10 becomes **Cat. No.100-K09D10**.

AC Voltages [V]	24	110	120	230	240	400	480	600
50 Hz	—	D	—	—	—	—	—	—
60 Hz	—	—	D	—	—	—	B	VC
50/60 Hz	KJ	—	—	KF	KA	KN	—	—

DC Voltages [V]	12	24	110	125	220	250
Standard	ZQ	ZJ	ZD	ZS	ZA	ZT
with Integrated Diode	—	DJ	—	—	—	—

⊗ Coil Voltage Code for spring clamp type terminal versions

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: 120V, 60 Hz:
Cat. No. 100-K09⊗10 becomes **Cat. No.100-K09D10**.

AC Voltages [V]	24	110	120	230
50 Hz	—	D	—	—
60 Hz	—	—	D	—
50/60 Hz	KJ	—	—	KF

DC Voltages [V]	24	110
Standard	ZJ	ZD
with Integrated Diode	DJ	—

Assignment of Contacts

Device Combinations in Accordance with IEC 60947-1 / -4-1

Table valid for : AC / DC = 0.85...1.1 x U_s , $T_{amb.}$ = -25 °C...+60 °C, normal position (horizontal rail mounting) ★

Auxiliary Contact Blocks		Miniature Contactors 100-K (AC and DC Control)					
	Circuit Diagram	Control	100-K05⊗10 100-K09⊗10 100-K12⊗10	100-K05⊗01 100-K09⊗01 100-K12⊗01	100-K05⊗400 100-K09⊗400 100-K12⊗400	100-K05⊗300 100-K09⊗300 100-K12⊗300	100-K05⊗200 100-K09⊗200 100-K12⊗200
			Front Mounting				
100-KFA02E		AC/DC	‡	01 + 02 = 03 §	‡	‡ §	—
100-KFC02		AC/DC	10 + 02 = 12	—	00 + 02 = 02	00 + 02 = 02 §	—
100-KFA11E		AC/DC	‡	01 + 11 = 12	‡	‡	‡
100-KFB11		AC/DC	10 + 11 = 21	—	00 + 11 = 11	00 + 11 = 11	00 + 11 = 11
100-KFC11		AC/DC	10 + 11 = 21	‡	00 + 11 = 11	00 + 11 = 11	00 + 11 = 11
100-KFA20E		AC/DC	‡	01 + 20 = 21	‡	‡	‡
100-KFC20		AC/DC	10 + 20 = 30	‡	00 + 20 = 20	00 + 20 = 20	00 + 20 = 20
100-KFA04E		AC/DC	‡ §	—	‡ §	—	—
100-KFC04		AC/DC	10 + 04 = 14 §	—	00 + 04 = 04 §	—	—
100-KFA13E		AC/DC	‡	01 + 13 = 14 §	‡	‡ §	—
100-KFC13		AC/DC	10 + 13 = 23	‡ §	00 + 13 = 13	00 + 13 = 13 §	—
100-KFA22Z		AC/DC	‡	01 + 22 = 23 §	‡	‡ §	—
100-KFB22		AC/DC	10 + 22 = 32	—	00 + 22 = 22	00 + 22 = 22 §	—
100-KFC22		AC/DC	10 + 22 = 32	‡ §	00 + 22 = 22	00 + 22 = 22 §	—
100-KFA31Z		AC/DC	‡ ♣	—	‡ ♣	—	—
100-KFC31		AC/DC	10 + 31 = 41 ♣	—	00 + 31 = 31 ♣	—	—
100-KFA40E		AC/DC	‡	01 + 40 = 41	‡	‡	‡
100-KFC40		AC/DC	10 + 40 = 50	‡	00 + 40 = 40	00 + 40 = 40	00 + 40 = 40

★ For other operating limits, please contact our technical consultant.

‡ Combination possible but not recommended, due to repeating or not consecutive sequence numbering

§ T_{amb.} max. +40 °C

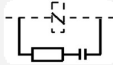
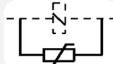
♣ T_{amb.} max. +40 °C and only allowed for coil voltage 24V DC or 230V AC

Bul. 100-K/104-K Accessories

Auxiliary Contact Blocks

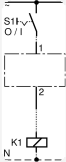
	Description	Connection Diagrams			For Use With	Pkg. Qty.	Screw Type Terminals	Spring Clamp Terminals	
			N.O.	N.C.			Cat. No.	Cat. No.	
	Front-Mounted Auxiliary Contacts - Auxiliary contact blocks 2- and 4-pole versions - Choice of contact configurations - Snap on, no tools required - Electronic-compatible bifurcated contacts for signals down to 15V/2 mA - Mirror Contact performance per IEC 60947-4-1		0	2	100-K05...K12	1	100-KFC02	100-KRFC02	
			1	1	100-K05...K12	1	100-KFC11	100-KRFC11	
			2	0	100-K05...K12	1	100-KFC20	100-KRFC20	
			0	4	100-K05...K12	1	100-KFC04	100-KRFC04	
			1	3	100-K05...K12	1	100-KFC13	100-KRFC13	
			3	1	100-K05...K12	1	100-KFC31	100-KRFC31	
			2	2	100-K05...K12	1	100-KFC22	100-KRFC22	
			4	0	100-K05...K12	1	100-KFC40	100-KRFC40	
				0	2	100/104-K, 700-K	1	100-KFA02E	100-KRFA02E
				1	1	100/104-K, 700-K	1	100-KFA11E	100-KRFA11E
			2	0	100/104-K, 700-K	1	100-KFA20E	100-KRFA20E	
				0	4	100/104-K, 700-K	1	100-KFA04E	100-KRFA04E
				1	3	100/104-K, 700-K	1	100-KFA13E	100-KRFA13E
			2	2	100/104-K, 700-K	1	100-KFA22Z	100-KRFA22Z	
			3	1	100/104-K, 700-K	1	100-KFA31Z	100-KRFA31Z	
			4	0	100/104-K, 700-K	1	100-KFA40E	100-KRFA40E	

Control Modules

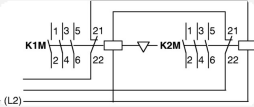
	Description			Connection Diagrams	For Use With	Pkg. Qty.	Cat. No.
	Mechanical Interlock - For interlocking of two adjacent contactors - No added width to contactor assembly - Front mount plug-in type - Optional auxiliary contact blocks and suppressor modules mount onto the interlock				100/104-K/-KR, 700-K/-KR	1	100-KMCH
	Surge Suppressor - Plug-in type - Limits surge voltage on coil drop-off	RC Suppressor	24...48V AC		100/104-K/-KR, 700-K/-KR	1 ★	100-KFSC50
			110...280V AC			1 ★	100-KFSC280
			380...480V AC			1 ★	100-KFSC480
		MOV Suppressor	12...55V AC, 12...77V DC		100/104-K/-KR, 700-K/-KR	1 ★	100-KFSV55
			56...136V AC, 78...180V DC			1 ★	100-KFSV136
			137...277V AC, 181...250V DC			1 ★	100-KFSV277
		Diode Suppressor	12...250V DC		100/104-K/-KR, 700-K/-KR	1 ★	100-KFSD250

* May be ordered in package quantities of 10. Add letter M to the end of the cat. no. Example: **100-KFSC50M**.

Timers

	Description		Connection Diagrams	For Use With	Pkg. Qty.	Cat. No.
	Solid-State Timing Element 110...250V AC or DC - Includes 35 mm Hat Rail adapter	On-Delay, 0.1...3 s		100/104-K, 700-K	10	100-KT3S
		On-Delay, 1...30 s				100-KT30S

Connecting Components

	Description		For Use With	Pkg. Qty.	Cat. No.
	ECO Connecting Module — 12 A - For DOL and reversing starters - Eco-starters mount on single DIN Rail (140M on DIN Rail) - Electrical and mechanical interconnection of 140M and 100-K contactors	Connects: 140M-C circuit breakers with 100-K contactors	140M-C to 100-K	1 *	140M-C-PEK12
	Power Wiring Kit For Reversing and Star/Delta combinations. Star-point bridge not included. Min. interruption time 50 ms		100-K	1	100-KPR
	Feeder Terminal for Compact Bus Bars Max. current 34 A	Supply of compact bus bars	100-K	1	100-KWT
	Three-Phase Compact Bus Bars Max. current 34 A	For 100-K, 5...12 A contactors 45 mm spacing (3 connections)‡	100-K	1	100-KW453
		For 100-K, 5...12 A contactors 45 mm spacing (4 connections)‡	100-K	1	100-KW454

* May be ordered in package quantities of 10. Add letter M to the end of the cat. no. Example: **140M-C-PEK12M**.
‡ Combinations possible. Example: For 6 contactor connections use one cat. no. 100-KW453 and one cat. no. 100-KW454.

Marking Systems

	Description	Pkg. Qty.	Cat. No.
	Label Sheet 105 self-adhesive paper labels each, 6 x 17 mm	10	100-FMS
	Snap-In Marker Card	5	1492-M6X12

Bul. 100-K/104-K, 100-C/104-C, 100-D/104-D, 100S-C/104S-C, 100S-D Specifications

			100-KR		100/104-K			100/104-C, 100S/104S-C										
			05	09	05	09	12	09	12	16	23	30	37	40*200	40*400	43	55	60
Coil Type :	Conventional	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Electronic — EI	—	—	—	—	—	X	X	X	X	X	X	X	X	X	X	X	—
AC-1 Active Power Load (50 Hz); Ambient temperature 40 °C																		
I _e	≤ 500V	[A]	10	10	20	20	20	32	32	32	32 (40)*	65	65	75	75	85	85	100
	690V	[A]	10	10	20	20	20	32	32	32	32 (40)*	65	65	75	75	85	85	100
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	230V	[kW]	4	4	8	8	8	13	13	13	13	26	26	30	30	34	34	40
	240V	[kW]	4	4	8.3	8.3	8.3	13	13	13	13	27	27	31	31	35	35	42
	400V	[kW]	6.9	6.9	14	14	14	22	22	22	22	45	45	52	52	59	59	69
	415V	[kW]	7	7	14	14	14	23	23	23	23	47	47	54	54	61	61	72
500V	[kW]	8.7	8.7	17	17	17	28	28	28	28	56	56	65	65	74	74	87	

	690V	[kW]	12	12	24	24	24	38	38	38	38	78	78	90	90	102	102	120
	1000V	[kW]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ambient temperature 60 °C																		
<i>I</i> _e	≤ 500V	[A]	10	10	16	16	16	32	32	32	32	65	65	60	60	75	75	100
	690V	[A]	10	10	16	16	16	32	32	32	32	65	65	60	60	75	75	100
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	230V	[kW]	4	4	6.4	6.4	6.4	13	13	13	13	26	26	24	24	25	25	40
	240V	[kW]	4	4	6.7	6.7	6.7	13	13	13	13	27	27	25	25	26	26	42
	400V	[kW]	6.9	6.9	11	11	11	22	22	22	22	45	45	42	42	44	44	69
	415V	[kW]	7	7	12	12	12	23	23	23	23	47	47	43	43	45	45	72
	500V	[kW]	8.7	8.7	14	14	14	28	28	28	28	56	56	52	52	55	55	87
	690V	[kW]	12	12	19	19	19	38	38	38	38	78	78	72	72	75	75	120
	1000V	[kW]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Switching of 3-phase Motors; (50 Hz) Ambient temperature 60 °C, AC-2, AC-3																		
	230V	[A]	6.3	8.5	6.3	11.3	11.3	12	15	20	26.5	35	38	38	38	44	56	62
	240V	[A]	6.3	8.5	6.3	11.3	11.3	12	15	20	26.5	35	38	38	38	44	56	62
	400V	[A]	4.9	8.5	4.9	8.5	11.5	9	12	16	23	30	37	37	37	43	55	60
	415V	[A]	4.9	8.5	4.9	8.5	11.5	9	12	16	23	30	37	37	37	43	55	60
	500V	[A]	3.9	6.8	3.9	6.8	9.2	7	10	14	20	25	30	29	30	38	44	55
	690V	[A]	2.8	4.9	2.8	4.9	6.7	5	7	9	12	18	21	9	21	25	25	34
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	230V	[kW]	1.5	2.2	1.5	3	3	3	4	5.5	7.5	10	11	11	11	13	15	18.5
	240V	[kW]	1.5	2.2	1.5	3	3	3	4	5.5	7.5	10	11	11	11	13	15	18.5
	400V	[kW]	2.2	4	2.2	4	5.5	4	5.5	7.5	11	15	18.5	18.5	18.5	22	30	32
	415V	[kW]	2.2	4	2.2	4	5.5	4	5.5	7.5	11	15	20	20	20	22	30	32
	500V	[kW]	2.2	4	2.2	4	5.5	4	5.5	7.5	13	15	20	18.5	20	25	30	37
	690V	[kW]	2.2	4	2.2	4	5.5	4	5.5	7.5	10	15	18.5	7.5	18.5	22	22	32
	1000V	[kW]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Load Carrying Capacity per UL/CSA																		
General Purpose Current (enclosed)																		
		[A]	9	9	12	15	18	25	25	30	30	55	60	60	60	75	75	90
Rated power (enclosed)																		
1-phase	115V	[A]	7.2	7.2	9.8	9.8	13.8	9.8	9.8	16	24	24	34	34	34	34	56	56
	230V	[A]	6.9	8	8	10	12	10	12	17	17	28	28	28	28	40	50	50
	115V	[Hp]	1/3	1/3	0.5	0.5	0.75	0.5	0.5	1	2	2	3	3	3	3	5	5
	230V	[Hp]	3/4	1	1	1.5	2	1.5	2	3	3	5	5	5	5	7.5	10	10
3-phase	200V	[A]	6.9	7.8	6.9	7.8	11	7.8	11	17.5	17.5	25.3	32.2	32.2	32.2	32.2	48.3	48.3
	230V	[A]	6	6.8	6	6.8	9.6	6.8	9.6	15.2	22	28	28	28	28	42	54	54
	460V	[A]	4.8	7.6	4.8	7.6	11	7.6	11	14	21	27	34	34	34	40	52	52
	575V	[A]	3.9	6.1	3.9	6.1	9	9	11	17	17	27	32	17	32	32	41	52
	200V	[Hp]	1.5	2	1.5	2	3	2	3	5	5	7.5	10	10	10	10	15	15
	230V	[Hp]	1.5	2	1.5	2	3	2	3	5	7.5	10	10	10	10	15	20	20
	460V	[Hp]	3	5	3	5	7.5	5	7.5	10	15	20	25	25	25	30	40	40
	575V	[Hp]	3	5	3	5	7.5	7.5	10	15	15	25	30	15	30	30	40	50

★ Values in () with increased cross-section and cable lug

			100/104-C, 100S/104S-C					100/104-D, 100S-D										
			72	85	90*200	90*400	97	115	140	140	180	180	210	250	300	420	630	860
Coil Type :	Conventional	X	X	X	X	X	X	X	—	X	—	—	—	—	—	—	—	—
	Electronic — EI	—	—	—	—	—	X	—	X	—	X	X	X	X	X	X	X	X
AC-1 Active Power Load (50 Hz); Ambient temperature 40 °C																		
I _e	≤ 500V	[A]	100	100	130	130	130	250	250	250	250	250	350	350	450	540	800	1000
	690V	[A]	100	100	130	130	130	250	250	250	250	250	350	350	450	540	800	1000
	1000V	[A]	—	—	—	—	—	250	250	250	250	250	350	350	450	540	—	—
	230V	[kW]	40	40	52	52	52	100	100	100	100	100	139	139	179	199	319	398

	240V	[kW]	42	42	54	54	54	104	104	104	104	104	145	145	187	208	333	416
	400V	[kW]	69	69	90	90	90	173	173	173	173	173	242	242	312	346	554	693
	415V	[kW]	72	72	93	93	93	180	180	180	180	180	252	252	323	359	575	719
	500V	[kW]	87	87	113	113	113	217	217	217	217	217	303	303	390	433	693	866
	690V	[kW]	120	120	155	155	155	299	299	299	299	299	418	418	538	598	956	1195
	1000V	[kW]	—	—	—	—	—	433	433	433	433	433	606	606	779	866	—	—

I_e	≤ 500V	[A]	100	100	110	110	110	210	210	210	210	210	300	300	380	425	—	—
	690V	[A]	100	100	110	110	110	210	210	210	210	210	300	300	380	425	—	—
	1000V	[A]	—	—	—	—	—	210	210	210	210	210	300	300	380	425	—	—
	230V	[kW]	40	40	44	44	44	84	84	84	84	84	120	120	151	169	—	—
	240V	[kW]	42	42	46	46	46	87	87	87	87	87	125	125	158	177	—	—
	400V	[kW]	69	69	76	76	76	145	145	145	145	145	208	208	263	294	—	—
	415V	[kW]	72	72	79	79	79	151	151	151	151	151	216	216	273	305	—	—
	500V	[kW]	87	87	95	95	95	182	182	182	182	182	260	260	329	368	—	—
	690V	[kW]	120	120	131	131	131	251	251	251	251	251	359	359	454	508	—	—
1000V	[kW]	—	—	—	—	—	364	364	364	364	364	520	520	658	736	—	—	

Voltage	230V	[A]	72	85	85	85	96	115	140	140	180	180	210	250	300	420	630	860
	240V	[A]	72	85	85	85	95	115	140	140	180	180	210	250	300	420	630	860
	400V	[A]	72	85	85	85	97	115	140	140	180	180	210	250	300	420	630	860
	415V	[A]	72	85	85	85	97	115 (130)\$	140 (155)\$	140 (155)\$	180 (189)\$	180 (189)\$	210 (227)\$	250 (258)\$	300 (315)\$	420	630	860
	500V	[A]	67	80	80	80	78	115	115	140	140	180	210	250	300	420	630	753
	690V	[A]	42	49	22	49	57	115	115	140	140	180	210	250	300	420	492	—
	1000V	[A]	—	—	—	—	—	46	55	55	65	65	80	95	115	160	—	—
	230V	[kW]	22	25	25	25	30	37	45	45	57	57	67	80	97	135	200	250
	240V	[kW]	22	25	25	25	30	38	47	47	60	60	70	83	101	141	200	250
	400V	[kW]	40	45	45	45	55	64	78	78	101	101	118	140	170	238	355	500
Power	415V	[kW]	40	45	45	45	55	66 (75)\$	82 (90)\$	82 (90)\$	105 (110)\$	105 (110)\$	122 (132)\$	145 (150)\$	176 (185)\$	250	355	500
	500V	[kW]	45	55	55	55	55	80	80	98	98	126	147	177	213	298	450	560
	690V	[kW]	40	45	18.5	45	55	111	111	135	135	176	205	250	293	424	500	—
	1000V	[kW]	—	—	—	—	—	63	75	75	90	90	110	132	160	225	—	—

General Purpose Current (enclosed)																		
		[A]	90	100	125	130	120	220	220	220	220	220	300	300	340	420	630	860

1-phase	115V	[A]	56	80	80	80	100	100	135	135	—	—	—	—	—	—	—	—
	230V	[A]	68	68	68	68	88	110	136	136	176	176	216	—	—	—	—	—
	115V	[Hp]	5	7.5	7.5	7.5	10	10	15	15	—	—	—	—	—	—	—	—
	230V	[Hp]	15	15	15	15	20	25	30	30	40	40	50	—	—	—	—	—
3-phase	200V	[A]	62.1	78.2	78.2	78.2	92	120	120	120	150	150	177	221	285	414	552	692
	230V	[A]	68	80	80	80	80	104	130	130	154	154	192	248	312	420	602	720
	460V	[A]	65	77	65	77	96	96	124	124	180	180	180	240	302	414	590	702
	575V	[A]	62	62	22	52	77	99	125	125	144	144	192	242	289	382	562	651
	200V	[Hp]	20	25	25	25	30	40	40	40	50	50	60	75	100	150	200	250
	230V	[Hp]	25	30	30	30	30	40	50	50	60	60	75	100	125	175	250	300
	460V	[Hp]	50	60	50	60	75	75	100	100	150	150	150	200	250	350	500	600
	575V	[Hp]	60	60	20	50	75	100	125	125	150	150	200	250	300	400	600	700

		100/104-K			100/104-C, 100S/104S-C								
		05	09	12	09	12	16	23	30	37	43	55	60
Coil Type :	Conventional	X	X	X	X	X	X	X	X	X	X	X	X
	Electronic — EI	—	—	—	X	X	X	X	X	X	X	X	—

Switching of 3-phase Motors, (50Hz); Ambient temperature 60 °C, AC-4

[illegible]

AC-4 at approximately 200,000 operations

Max. switching frequency	230V	[A]	2.3	3.9	3.9	4.3	6.6	9	9	12	14	16.5	22	25.5
	240V	[A]	2.3	3.9	3.9	4.3	6.6	9	9	12	14	16.5	22	25.5
	400/415V	[A]	2	3.6	3.6	4.3	6.6	9	9	12	14	16.5	22	25.5
	500V	[A]	1.9	3.2	3.2	4.3	6.6	9	9	12	14	16.5	22	25.5
	690V	[A]	—	—	—	4.3	6.6	9	9	12	14	16.5	22	25.5
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—
	230V*	[kW]	0.37	0.75	0.75	0.75	1.5	2.2	2.2	3	3.7	4	5.5	6.3
	240V*	[kW]	0.37	0.75	0.75	0.75	1.5	2.2	2.2	3	4	4	5.5	7.5
	400V*	[kW]	0.75	1.5	1.5	1.8	3	4	4	5.5	6.3	7.5	11	13
	415V*	[kW]	0.75	1.5	1.5	1.8	3	4	4	5.5	6.3	7.5	11	13
	500V*	[kW]	0.75	1.5	1.5	2.2	3.7	5.5	5.5	7.5	7.5	10	11	15
	690V*	[kW]	—	—	—	3	5.5	7.5	7.5	10	11	15	18.5	22
	1000V*	[kW]	—	—	—	—	—	—	—	—	—	—	—	—
Max. switching frequency		Ops/h	250	250	250	250	250	220	200	200	200	200	200	120

Wye-Delta (60 Hz)

200V	[Hp]	2.2	3	5	5	5	7½	7½	10	15	20	25	30
230V	[Hp]	2.2	3	5	5	7½	10	10	15	20	25	30	40
460V	[Hp]	5	7.5	10	10	15	20	25	30	40	50	60	75
575V	[Hp]	5	7.5	10	10	15	20	25	30	40	50	60	75

UL/CSA Elevator Duty§

Table 1: Performance of the 1000W power supply	200V	[A]	—	—	—	7.8	11.0	11.0	17.5	25.3	25.3	32.2	TBD	32.2
	230V	[A]	—	—	—	6.8	9.6	15.2	15.2	22.0	28.0	28.0	TBD	42.0
	460V	[A]	—	—	—	7.6	11.0	14.0	21.0	27.0	27.0	34.0	TBD	40.0
	575V	[A]	—	—	—	6.1	9.0	11.0	17.0	22.0	27.0	32.0	TBD	41.0
	200V	[Hp]	—	—	—	2	3	3	5	7½	7½	10	TBD	10
	230V	[Hp]	—	—	—	2	3	5	5	7½	10	10	TBD	15
	460V	[Hp]	—	—	—	5	7½	10	15	20	20	25	TBD	30
	575V	[Hp]	—	—	—	5	7½	10	15	20	25	30	TBD	40
	Table 2: Performance of the 1500W power supply													
	200V	[A]	—	—	—	11.8	17.7	17.7	28.1	40.8	40.8	51.0	TBD	51.0

Star-Delta Starting (50 Hz)

Nominal power	≤ 230V	[A]	11.3	20	20	21	26	35	46	61	66	76	96	107
	≤ 240V	[A]	11.3	20	20	21	26	35	46	61	66	76	96	107
	400V	[A]	8.5	15.5	15.5	16	21	28	40	52	64	74	95.3	104
	415V	[A]	8.5	15.5	15.5	16	21	28	40	52	64	74	95.3	104
	500V	[A]	6.8	12.4	12.4	12	17	24	35	43	52	66	76.2	95
	690V	[A]	4.9	8.9	8.9	8.6	12	16	21	31	36	43	55.4	59
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—
	230V*	[kW]	3	5.5	5.5	5.5	7.5	10	13	17	20	22	30	32
	240V*	[kW]	3	5.5	5.5	5.5	7.5	10	13	18.5	20	22	30	32
	400V*	[kW]	4	7.5	10	7.5	10	13	20	25	32	40	45	55
	415V*	[kW]	4	7.5	11	7.5	11	15	22	25	37	40	45	55
	500V*	[kW]	4	7.5	7.5	7.5	11	15	22	25	32	45	45	63
	690V*	[kW]	4	7.5	7.5	7.5	10	13	18.5	25	32	40	45	55

	1000V*	[kW]	—	—	—	—	—	—	—	—	—	—	—	—
--	--------	------	---	---	---	---	---	---	---	---	---	---	---	---

★ Power ratings at 50 Hz: Preferred values according to IEC 60072-1 § Approval pending on Cat. No. 100-D210...D860.

			100/104-C, 100S/104S-C			100/104-D, 100S-D										
			72	85	97	115	140	140	180	180	210	250	300	420	630	860
Coil Type :	Conventional	X	X	X	X	X	—	X	—	—	—	—	—	—	—	—
	Electronic — EI	—	—	—	X	—	X	—	X	X	X	X	X	X	X	X
Switching of 3-phase Motors, (50 Hz) Ambient temperature 60 °C, AC-4																
	230V	[A]	72	85	96	115	140	140	180	180	210	250	300	420	—	—
	240V	[A]	72	85	95	115	140	140	180	180	210	250	300	420	—	—
	400V	[A]	72	85	97	115	140	140	180	180	210	250	300	420	—	—
	415V	[A]	72	85	97	115 (130)‡	140 (155)‡	140 (155)‡	180 (189)\$	180 (189)\$	210 (227)‡	250 (258)‡	300 (315)‡	420	—	—
	500V	[A]	67	80	78	115	115	140	140	170	210	250	300	360	—	—
	690V	[A]	42	49	57	115	115	140	140	170	210	250	300	360	—	—
	1000V	[A]	—	—	—	46	55	55	65	65	80	95	115	160	—	—
	230V	[kW]	22	25	30	37	45	45	57	57	67	80	97	135	—	—
	240V	[kW]	22	25	30	39	47	47	60	60	70	83	101	141	—	—
	400V	[kW]	40	45	55	63	78	78	100	100	118	140	170	238	—	—
	415V	[kW]	40	45	55	66 (75)‡	82 (90)‡	82 (90)‡	105 (110)‡	105 (110)‡	125 (132)‡	145 (150)‡	176 (185)‡	250	—	—
	500V	[kW]	45	55	55	80	80	98	98	119	147	177	213	255	—	—
	690V	[kW]	40	45	55	110	110	135	135	167	205	250	293	356	—	—
	1000V	[kW]	—	—	—	63	75	75	90	90	110	132	160	225	—	—
AC-4 at approximately 200,000 operations																
	230V	[A]	31	38	44	53	60	60	67	67	85	105	140	170	—	—
	240V	[A]	31	38	44	53	60	60	67	67	85	105	140	170	—	—
	400/415V	[A]	31	38	44	53	60	60	67	67	85	105	140	170	—	—
	500V	[A]	31	38	44	53	60	60	67	67	85	105	140	170	—	—
	690V	[A]	31	38	44	53	60	60	67	67	85	105	140	170	—	—
	1000V	[A]	—	—	—	25	37	37	43	43	60	72	85	105	—	—
	230V*	[kW]	7.5	11	11	15	17	17	20	20	25	32	45	55	—	—
	240V*	[kW]	7.5	11	11	15	18.5	18.5	22	22	25	32	45	55	—	—
	400V*	[kW]	15	20	22	25	32	32	37	37	45	55	75	90	—	—
	415V*	[kW]	17	20	22	25	32	32	37	37	50	55	80	100	—	—
	500V*	[kW]	20	25	30	32	40	40	45	45	55	75	100	110	—	—
	690V*	[kW]	25	32	37	45	55	55	63	63	80	100	132	160	—	—
	1000V*	[kW]	—	—	—	30	50	50	55	55	80	100	110	150	—	—
Max. switching frequency		Ops/h	120	120	120	120	120	120	100	100	120	100	70	70	—	—
Wye-Delta (60 Hz)																
	200V	[Hp]	40	50	50	60	60	60	75	75	100	125	175	250	—	—
	230V	[Hp]	50	60	60	60	75	75	100	100	125	175	200	250	—	—
	460V	[Hp]	100	125	125	125	175	175	200	200	250	350	450	600	—	—
	575V	[Hp]	100	125	125	150	200	200	250	250	300	450	500	650	—	—
UL/CSA Elevator Duty‡																
	200V	[A]	48.3	62.1	TBD	78	92	92	120	120	150	150	177	221	—	—
	230V	[A]	54.0	68.0	TBD	80	104	104	130	130	130	154	192	248	—	—
	460V	[A]	52.0	65.0	TBD	77	96	96	124	124	156	180	180	240	—	—
	575V	[A]	52.0	62.0	TBD	77	77	77	99	99	125	144	192	242	—	—
	200V	[Hp]	15	20	TBD	25	30	30	40	40	50	50	60	75	—	—
	230V	[Hp]	20	25	TBD	30	40	40	50	50	50	60	75	100	—	—
	460V	[Hp]	40	50	TBD	60	75	75	100	100	125	150	150	200	—	—
	575V	[Hp]	50	60	TBD	75	75	75	100	100	125	150	200	250	—	—
Star-Delta Starting (50 Hz)																
	≤ 230V	[A]	125	147	166	199	242	242	312	312	364	433	520	727	—	—
	≤ 240V	[A]	125	147	165	199	242	242	312	312	364	433	520	727	—	—

	400V	[A]	125	147	168	199	242	242	312	312	364	433	520	727	—	—
	415V	[A]	125	147	168	199 (225)‡	242 (268)‡	242 (268)‡	312 (332)‡	312 (332)‡	364 (393)‡	433 (447)‡	520 (546)‡	727	—	—
	500V	[A]	116	139	135	199	199	242	312	312	364	433	520	727	—	—
	690V	[A]	73	85	99	199	199	242	312	312	364	433	520	727	—	—
	1000V	[A]	—	—	—	80	95	95	113	113	139	165	200	277	—	—
	230V*	[kW]	37	45	50	63	75	75	90	90	110	132	160	220	—	—
	240V*	[kW]	40	50	50	66	80	80	100	100	125	150	160	250	—	—
	400V*	[kW]	63	80	90	110	132	132	160	160	200	250	300	425	—	—
	415V*	[kW]	63	80	90	114 (132)‡	132 (160)‡	132 (160)‡	160	160	220	250	315 (335)‡	425	—	—
	500V*	[kW]	80	90	90	132	132	160	200	200	250	315	375	530	—	—
	690V*	[kW]	63	80	90	192	200	220	300	300	355	425	530	750	—	—
	1000V*	[kW]	—	—	—	110	132	132	160	160	200	220	280	400	—	—

‡ 415V: Values in () AC-3 and AC-4 lifespan -25%

§ Approval pending on Cat. No. 100-D210...D860.

			100/104-K			100/104-C, 100S/104S-C								
			05	09	12	09	12	16	23	30	37	43	55	60
Coil Type :	Conventional	X	X	X	X	X	X	X	X	X	X	X	X	X
	Electronic — EI	—	—	—	X	X	X	X	X	X	X	X	X	—
Switching of Power Transformers, AC-6a (50 Hz)														
Inrush Current		= n												
Rated transformer current														
n = 30	≤ 230V	[A]	2.9	5.4	5.4	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	≤ 240V	[A]	2.9	5.4	5.4	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	≤ 400V	[A]	2.4	4.1	5.4	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	≤ 415V	[A]	2.4	4.1	5.4	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	≤ 500V	[A]	1.8	3.2	3.2	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	≤ 690V	[A]	—	—	—	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	≤ 1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—
	230V	[kVA]	1.2	2	2	4.3	4.3	4.3	4.3	8	8	9.2	9.2	16
	240V	[kVA]	1.2	2	2	4.5	4.5	4.5	4.5	8.3	8.3	10	10	17
	400V	[kVA]	1.7	2.8	3.4	7.5	7.5	7.5	7.5	14	14	16	16	28
	415V	[kVA]	1.7	2.8	3.4	7.8	7.8	7.8	7.8	14	14	17	17	29
	500V	[kVA]	1.7	2.8	3.4	9.4	9.4	9.4	9.4	17	17	20	20	35
	690V	[kVA]	2	4	5	13	13	13	13	24	24	27	27	49
	1000V	[kVA]	—	—	—	—	—	—	—	—	—	—	—	—
n = 20	≤ 690V	[A]	—	—	—	16.3	16.3	16.3	16.3	30	30	34.5	34.5	61.3
n = 15	≤ 690V	[A]	—	—	—	22	22	22	22	40	40	46	46	82
60 Hz Peak Inrush/peak rated transformer current														
	n = 30	[A]	—	—	—	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	200V	[kVA]	—	—	—	3.8	3.8	3.8	3.8	6.9	6.9	8.0	8	14.1
	208V	[kVA]	—	—	—	3.9	3.9	3.9	3.9	7.2	7.2	8.3	8.3	14.7
	240V	[kVA]	—	—	—	4.5	4.5	4.5	4.5	8.3	8.3	9.6	9.6	17.0
	480V	[kVA]	—	—	—	9.1	9.1	9.1	9.1	16.6	16.6	19.1	19.1	33.9
	600V	[kVA]	—	—	—	11.3	11.3	11.3	11.3	20.8	20.8	23.9	23.9	42.4
	660V	[kVA]	—	—	—	12.5	12.5	12.5	12.5	22.9	22.9	26.3	26.3	46.6
60 Hz Peak Inrush/peak rated transformer current														
	n = 20	[A]	—	—	—	16.3	16.3	16.3	16.3	30	30	34.5	34.5	61.3
	200V	[kVA]	—	—	—	5.6	5.6	5.6	5.6	10.4	10.4	12.0	12	21.2
	208V	[kVA]	—	—	—	5.9	5.9	5.9	5.9	10.8	10.8	12.4	12.4	22.1
	240V	[kVA]	—	—	—	6.8	6.8	6.8	6.8	12.5	12.5	14.3	14.3	25.5
	480V	[kVA]	—	—	—	13.6	13.6	13.6	13.6	24.9	24.9	28.7	28.7	51.0
	600V	[kVA]	—	—	—	16.9	16.9	16.9	16.9	31.2	31.2	35.9	35.9	63.7
	660V	[kVA]	—	—	—	18.6	18.6	18.6	18.6	34.3	34.3	39.4	39.4	70.1
60 Hz Peak Inrush/peak rated transformer current														
	n=15	[A]	—	—	—	22	22	22	22	40	40	46	46	82
	200V	[kVA]	—	—	—	7.5	7.5	7.5	7.5	13.9	13.9	15.9	15.9	28.4
	208V	[kVA]	—	—	—	7.8	7.8	7.8	7.8	14.4	14.4	16.6	16.6	29.5
	240V	[kVA]	—	—	—	9.0	9.0	9.0	9.0	16.6	16.6	19.1	19.1	34.1
	480V	[kVA]	—	—	—	18.1	18.1	18.1	18.1	33.3	33.3	38.2	38.2	68.2
	600V	[kVA]	—	—	—	22.6	22.6	22.6	22.6	41.6	41.6	47.8	47.8	85.2
	660V	[kVA]	—	—	—	24.9	24.9	24.9	24.9	45.7	45.7	52.6	52.6	93.7

			100/104-C, 100S/104S-C			100/104-D, 100S-D										
			72	85	97	115	140	140	180	180	210	250	300	420	630	860
Coil Type :	Conventional	X	X	X	X	X	X	—	X	—	—	—	—	—	—	
	Electronic — EI	—	—	—	X	—	X	—	X	X	X	X	X	X	X	
Switching of Power Transformers, AC-6a (50 Hz)																
Inrush Current																
Rated transformer current																
n = 30	≤ 230V	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	≤ 240V	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	≤ 400V	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	≤ 415V	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	≤ 500V	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	≤ 690V	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	≤ 1000V	[A]	—	—	—	46	70	70	85	85	105	125	150	210	—	—
	230V	[kVA]	16	16	19.3	24	28	28	34	34	42	50	60	84	—	—
	240V	[kVA]	17	17	20.2	26	29	29	35	35	44	52	62	87	—	—
	400V	[kVA]	28	28	33.6	42	48	48	59	59	73	87	104	145	—	—
	415V	[kVA]	29	29	34.9	43	50	50	61	61	75	90	108	151	—	—
	500V	[kVA]	35	35	42	52	61	61	74	74	91	108	130	182	—	—
	690V	[kVA]	49	49	58	72	84	84	102	102	125	149	179	251	—	—
	1000V	[kVA]	—	—	—	80	121	121	147	147	182	217	260	364	—	—
n = 20	≤ 690V	[A]	61.3	61.3	72.8	90	105	105	128	128	158	188	225	315	—	—
n = 15	≤ 690V	[A]	82	82	97	120	140	140	170	170	210	250	300	420	—	—
60 Hz Peak Inrush/peak rated transformer current																
	n = 30	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	200V	[kVA]	14.4	14.4	16.8	20.8	24.2	24.2	29.4	29.4	36.4	43.3	52.0	72.7	—	—
	208V	[kVA]	14.7	14.7	17.5	21.6	25.2	25.2	30.6	30.6	37.8	45.0	54.0	75.7	—	—
	240V	[kVA]	17.0	17.0	20.2	24.9	29.1	29.1	35.3	35.3	43.6	52.0	62.4	87.3	—	—
	480V	[kVA]	33.9	33.9	40.3	49.9	58.2	58.2	70.7	70.7	87.3	104	125	175	—	—
	600V	[kVA]	42.4	42.4	50.4	62.4	72.7	72.7	88.3	88.3	109	130	156	218	—	—
	660V	[kVA]	46.6	46.6	55.4	68.6	80.0	80.0	97.2	97.2	120	143	171	240	—	—
60 Hz Peak Inrush/peak rated transformer current																
	n = 20	[A]	61.3	61.3	72.8	90	105	105	128	128	158	188	225	315	—	—
	200V	[kVA]	21.2	21.2	25.2	31.2	36.4	36.4	44.3	44.3	54.7	65.1	77.9	109	—	—
	208V	[kVA]	22.1	22.1	26.2	32.4	37.8	37.8	46.1	46.1	56.9	67.7	81.1	113	—	—
	240V	[kVA]	25.5	25.5	30.3	37.4	43.6	43.6	53.2	53.2	65.7	78.2	93.5	131	—	—
	480V	[kVA]	51.0	51.0	60.5	74.8	87.3	87.3	106	106	131	156	187	262	—	—
	600V	[kVA]	63.7	63.7	75.7	93.5	109	109	133	133	164	195	234	327	—	—
	660V	[kVA]	70.1	70.1	83.2	103	120	120	146	146	131	215	257	360	—	—
60 Hz Peak Inrush/peak rated transformer current																
	n=15	[A]	82	82	97	120	140	140	170	170	210	250	300	420	—	—
	200V	[kVA]	28.4	28.4	33.6	41.6	48.5	48.5	58.9	58.9	72.7	86.6	104	145	—	—
	208V	[kVA]	29.5	29.5	34.9	43.2	50.4	50.4	61.2	61.2	75.7	90.1	108	151	—	—
	240V	[kVA]	34.1	34.1	40.3	49.9	58.2	58.2	70.7	70.7	87.3	104	125	175	—	—
	480V	[kVA]	68.2	68.2	80.6	99.8	116	116	141	141	175	208	249	349	—	—
	600V	[kVA]	85.2	85.2	100.8	125	145	145	177	177	218	260	312	436	—	—
	660V	[kVA]	93.7	93.7	110.9	137	160	160	194	194	240	286	343	480	—	—

			100/104-K			100/104-C, 100S/104S-C										
			05	09	12	09	12	16	23	30	37	40*200	40*400	43	55	60
Coil Type :	Conventional		X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Electronic — EI		—	—	—	X	X	X	X	X	X	X	X	X	X	—
Switching of 3-phase Capacitors, AC-6b (50 Hz)*																
Single capacitor 40 °C	230V	[kVar]	—	—	—	8	8	8.5	9	14	14	—	—	24	24	28
	240V	[kVar]	—	—	—	8	8	8.5	9	14	14	—	—	25	25	29

	400V	[kVar]	—	—	—	8	8	10	12.5	20	24	—	—	35	35	48
	415V	[kVar]	—	—	—	8	8	10	12.5	20	25	—	—	35	35	50
	500V	[kVar]	—	—	—	8	8	10	12.5	20	25	—	—	35	35	50
	690V	[kVar]	—	—	—	8	8	10	12.5	20	25	—	—	35	35	50
	1000V	[kVar]	—	—	—	—	—	—	—	—	—	—	—	—	—	—
60 °C	230V	[kVar]	—	—	—	8	8	8.5	9	12.5	12.5	—	—	18	18	28
	240V	[kVar]	—	—	—	8	8	8.5	9	12.5	12.5	—	—	18	18	29
	400V	[kVar]	—	—	—	8	8	10	12.5	20	21.5	—	—	30	30	42
	415V	[kVar]	—	—	—	8	8	10	12.5	20	22	—	—	30	30	42
	500V	[kVar]	—	—	—	8	8	10	12.5	20	25	—	—	30	30	42
	690V	[kVar]	—	—	—	8	8	10	12.5	20	25	—	—	30	30	42
	1000V	[kVar]	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Group capacitors 40 °C	230V	[kVar]	—	—	—	5	5	8	9	12.5	14	—	—	20	20	28
	240V	[kVar]	—	—	—	5	5	8	9	12.5	14	—	—	20	20	29
	400V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	25	40
	415V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	25	40
	500V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	25	40
	690V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	25	40
	1000V	[kVar]	—	—	—	—	—	—	—	—	—	—	—	—	—	—
60 °C	230V	[kVar]	—	—	—	5	5	8	9	12.5	12.5	—	—	18	18	28
	240V	[kVar]	—	—	—	5	5	8	9	12.5	12.5	—	—	18	18	29
	400V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	25	40
	415V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	25	40
	500V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	25	40
	690V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	25	40
	1000V	[kVar]	—	—	—	—	—	—	—	—	—	—	—	—	—	—
60 Hz Single Capacitor — 40 °C																
	200V	[kVar]	—	—	—	5	5	8	9	12.5	14	—	—	20	20	28
	230V	[kVar]	—	—	—	5	5	8	9	12.5	14	—	—	20	20	29
	460V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	25	40
	600V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	25	40
60 Hz Group Capacitors — 40 °C																
	200V	[kVar]	—	—	—	5	5	8	9	12.5	12.5	—	—	18	18	28
	230V	[kVar]	—	—	—	5	5	8	9	12.5	12.5	—	—	18	18	29
	460V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	25	40
	600V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	25	40
Switching of Lamps																
Gas discharge lamps AC-5a, 40 °C	open	[A]	18	18	18	22.5	25	28	29	40.5	45	65	65	77	77	81
	enclosed	[A]	14.5	14.5	14.5	22.5	25	28	29	37	41	54	54	57	57	77
Individually compensated:																
Max. capacitance at expected																
Short-circuit current of	10 kA	[μF]	750	750	750	1 000	1 000	1 000	1 000	2 700	2 700	—	—	3 200	3200	4 000
	20 kA	[μF]	400	400	400	500	500	500	500	1 350	1 350	—	—	1 600	1600	2 000
	50 kA	[μF]	—	—	—	200	200	200	200	540	540	—	—	640	640	800
Filament AC-5b	230/240V	[A]	5	9	9	12	16	18	22	30	37	18	25	43	51	60
Switching of Low Inductive Loads in Home Appliances and Similar Applications per IEC 61095 (50 Hz)																
AC-7a	230V	[A]	20	20	20	32	32	32	32	45	45	—	—	63	63	—
	400V	[A]	20	20	20	32	32	32	32	45	45	—	—	63	63	—
	440V	[A]	—	—	—	32	32	32	32	45	45	—	—	63	63	—
Switching of Motor Load for Home Appliances (50 Hz)																
AC-7b	230V	[A]	6	11	11	10.5	14	19	23	30	—	—	—	—	—	—
	400V	[A]	6	11	11	9	12	16	20	30	—	—	—	—	—	—
	440V	[A]	—	—	—	7.5	10	13.5	18	27	—	—	—	—	—	—

	100/104-C, 100S/104S-C	100/104-D, 100S-D
--	------------------------	-------------------

100/104-D, 100S-D

			72	85	90*200	90*400	97	115	140	140	180	180	210	250	300	420	630	860
Coil Type :	Conventional		X	X	X	X	X	X	X	—	X	—	—	—	—	—	—	—
	Electronic — EI		—	—	—	—	—	X	—	X	—	X	X	X	X	X	X	X
Switching of 3-phase Capacitors, AC-6b (50 Hz)																		
Single capacitor 40 °C	230V	[kVar]	28	28	—	—	28	45	70	70	70	70	98	98	125	139	—	—
	240V	[kVar]	29	29	—	—	29	47	73	73	73	73	102	102	131	145	—	—
	400V	[kVar]	48	48	—	—	48	78	121	121	121	121	170	170	218	242	—	—
	415V	[kVar]	50	50	—	—	50	81	126	126	126	126	176	176	226	252	—	—
	500V	[kVar]	55	60	—	—	60	97	152	152	152	152	212	212	273	303	—	—
	690V	[kVar]	55	60	—	—	60	134	209	209	209	209	293	293	376	418	—	—
	1000V	[kVar]	—	—	—	—	—	194	303	303	303	303	424	424	546	606	—	—
60 °C	230V	[kVar]	28	28	—	—	28	38	59	59	59	59	84	84	106	119	—	—
	240V	[kVar]	29	29	—	—	29	39	61	61	61	61	87	87	111	124	—	—
	400V	[kVar]	48	48	—	—	48	65	102	102	102	102	145	145	184	206	—	—
	415V	[kVar]	50	50	—	—	50	68	106	106	106	106	151	151	191	214	—	—
	500V	[kVar]	50	55	—	—	55	82	127	127	127	127	182	182	230	258	—	—
	690V	[kVar]	50	55	—	—	55	113	176	176	176	176	251	251	318	356	—	—
	1000V	[kVar]	—	—	—	—	—	164	255	255	255	255	364	364	461	515	—	—
Group capacitors 40 °C	230V	[kVar]	28	28	—	—	28	45	70	70	70	70	98	98	125	139	—	—
	240V	[kVar]	29	29	—	—	29	47	73	73	73	73	102	102	131	145	—	—
	400V	[kVar]	48	48	—	—	48	56	76	76	111	111	170	170	218	242	—	—
	415V	[kVar]	50	50	—	—	50	56	76	76	112	112	170	176	226	252	—	—
	500V	[kVar]	50	50	—	—	50	56	76	76	113	113	172	212	273	303	—	—
	690V	[kVar]	50	50	—	—	50	57	78	78	114	114	174	247	356	418	—	—
	1000V	[kVar]	—	—	—	—	—	58	79	79	116	116	177	251	361	606	—	—
60 °C	230V	[kVar]	28	28	—	—	28	38	59	59	59	59	84	84	106	119	—	—
	240V	[kVar]	29	29	—	—	29	39	61	61	61	61	87	87	111	124	—	—
	400V	[kVar]	48	48	—	—	48	56	76	76	102	102	145	145	184	206	—	—
	415V	[kVar]	50	50	—	—	50	56	76	76	106	106	151	151	191	214	—	—
	500V	[kVar]	50	50	—	—	50	56	76	76	113	113	172	182	230	258	—	—
	690V	[kVar]	50	50	—	—	50	57	78	78	114	114	174	247	318	356	—	—
	1000V	[kVar]	—	—	—	—	—	58	79	79	116	116	177	251	361	515	—	—
60 Hz Single Capacitor — 40 °C																		
	200V	[kVar]	28	28	—	—	28	39	61	61	61	61	85	85	109	121	—	—
	230V	[kVar]	29	29	—	—	29	45	70	70	70	70	98	98	125	139	—	—
	460V	[kVar]	50	50	—	—	50	89	139	139	139	139	195	195	251	279	—	—
	600V	[kVar]	50	50	—	—	50	116	182	182	182	182	255	255	327	364	—	—
60 Hz Group Capacitors — 40 °C																		
	200V	[kVar]	28	28	—	—	28	39	61	61	61	61	85	85	109	121	—	—
	230V	[kVar]	29	29	—	—	29	45	70	70	70	70	98	98	125	139	—	—
	460V	[kVar]	50	50	—	—	50	56	76	76	112	112	171	195	251	279	—	—
	600V	[kVar]	50	50	—	—	50	57	77	77	114	114	173	246	327	364	—	—
Switching of Lamps																		
Gas discharge lamps AC-5a, 40 °C	open	[A]	85	90	115	115	115	144	225	225	225	225	315	315	405	450	—	—
	enclosed	[A]	81	90	95	95	100	122	189	189	189	189	270	270	342	383	—	—
Individually compensated:																		
Max. capacitance at expected																		
Short-circuit current of	10 kA	[μF]	4 000	4 700	—	—	4 700	—	—	—	—	—	—	—	—	—	—	—
	20 kA	[μF]	2 000	2 350	—	—	2 350	—	—	—	—	—	—	—	—	—	—	—
	50 kA	[μF]	800	940	—	—	940	—	—	—	—	—	—	—	—	—	—	—
Filament AC-5b	230 / 240V	[A]	70	76	60	75	90	120	140	140	170	170	210	250	300	420	—	—
Switching of Low Inductive Loads in Home Appliances and Similar Applications per IEC 61095 (50 Hz)																		
AC-7a	230V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	400V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	440V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Switching of Motor Load for Home Appliances (50 Hz)																		
AC-7b	230V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

	400V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	440V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

			100/104-K			100/104-C, 100S/104S-C										
			05	09	12	09	12	16	23	30	37	40*200	40*400	43	55	60
Coil Type :	Conventional		X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Electronic — EI		—	—	—	X	X	X	X	X	X	X	X	X	X	—

Switching of Hermetically Sealed Cooling Compressor Motors - manual reset of overload release (50 Hz)																
AC-8a	400V	[A]	11	18	18	12	16	22	32	38	45	—	—	63	63	72
	500V	[A]	10	15	15	12	16	22	32	38	45	—	—	63	63	72
	690V	[A]	—	—	—	8	10	14	20	28	35	—	—	42	42	56
- automatic reset of overload release																
AC-8b	400V	[A]	—	—	—	5.5	7	9.3	12	13	14	—	—	16	16	24
	500V	[A]	—	—	—	5.5	7	9.3	12	13	14	—	—	16	16	24
	690V	[A]	—	—	—	5.5	7	9.3	12	13	14	—	—	16	16	24

Switching of DC Loads																
Non-inductive or slightly inductive loads or resistance furnaces DC-1, 60 °C																
1 pole	24V	[A]	6	9	9	25	25	32	32	45	45	45	45	50	50	70
	48/60V	[A]	4/1	6/1.5	6/1.5	20	20	20	20	25	25	25	25	30	30	40
	110V	[A]	0.6	1	1	6	6	6	6	8	8	10	10	9	9	11
	220V	[A]	0.2	0.3	0.3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2
	440V	[A]	0.08	0.1	0.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
2 poles in series	24V	[A]	6	9	9	25	25	32	32	45	45	45	45	50	50	70
	48/60V	[A]	6	8	8	25	25	32	32	45	45	45	45	50	50	70
	110V	[A]	4	6	6	25	25	32	32	45	45	45	45	50	50	70
	220V	[A]	0.8	1.2	1.2	8	8	8	10	10	10	10	10	10	10	15
	440V	[A]	0.2	0.3	0.3	1	1	1	1	1	1	1	1	1	1	1.5
3 poles in series	24V	[A]	6	9	9	25	25	32	32	45	45	—	45	63	63	90
	48/60V	[A]	6	9	9	25	25	32	32	45	45	—	45	63	63	90
	110V	[A]	6	9	9	25	25	32	32	45	45	—	45	63	63	90
	220V	[A]	3	4	4	25	25	32	32	45	45	—	45	50	50	70
	440V	[A]	0.4	0.6	0.6	3	3	3	3	3.5	3.5	—	3.5	4	4	5

Shunt-wound Motors Starting, reverse current braking, reversing, stepping DC-3, 60 °C																
3 poles in series	24V	[A]	5	9	9	25	25	32	32	45	45	—	—	63	63	90
	48/60V	[A]	4	6	6	25	25	32	32	45	45	—	—	50	50	70
	110V	[A]	2	3	3	20	20	25	25	30	30	—	—	35	35	70
	220V	[A]	0.8	1.2	1.2	6	6	6	10	15	15	—	—	20	20	25
	440V	[A]	0.15	0.2	0.2	0.6	0.6	0.6	0.6	0.6	0.6	—	—	0.6	0.6	0.6

Series-wound Motors Starting, reverse current braking, reversing, stepping DC-5, 60 °C																
3 poles in series	24V	[A]	5	9	9	25	25	32	32	45	45	—	—	63	63	90
	48/60V	[A]	2	3	3	25	25	32	32	45	45	—	—	50	50	70
	110V	[A]	0.6	1	1	20	20	25	25	30	30	—	—	35	35	70
	220V	[A]	0.1	0.1	0.1	6	6	6	10	15	15	—	—	20	20	25
	440V	[A]	—	—	—	0.6	0.6	0.6	0.6	0.6	0.6	—	—	0.6	0.6	0.6

Short Time Withstand I_{CW} , 60 °C																
	10 s	[A]	60	96	96	170	170	170	215	300	304	304	304	375	375	700
Resistance and Power Dissipation																
Main current circuit resistance		[mΩ]	2.2	2.2	2.2	2.7	2.7	2.7	2	2	2	2	1.5	1.5	1	0.9
Power dissipation by all circuits at I_g AC-3/400V		[W]	0.3	0.9	0.9	0.66	1.2	2.1	3.2	5.4	8.2	11.3	8.4	8.3	9.1	9.7
Total power dissipation																
At I_g AC-3/400V	AC control	[W]	2.1	2.7	2.7	3.4	3.9	4.8	6.3	8.5	11.3	8.8	9.5	11.6	12.4	16.2
	DC control (conventional)	[W]	—	—	—	—	—	—	—	—	—	—	—	—	—	13.7
	DC control (electronic)	[W]	2.9	3.5	3.5	2.4	2.9	3.8	4.9	7.1	9.9	8	8.7	10.8	11.6	—

3 poles in series	24V	[A]	90	100	—	—	100	135	210	210	210	210	300	300	380	425	—	—
	48/60V	[A]	70	80	—	—	80	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	70	80	—	—	80	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	25	30	—	—	30	135	210	210	210	210	300	300	380	425	—	—
	440V	[A]	0.6	0.6	—	—	0.6	1.2	2.1	2.1	2.1	2.1	2.4	2.4	2.4	3	—	—

Short Time Withstand I_{CW} , 60 °C

	10 s	[A]	700	700	700	700	840	1040	1240	1360	1480	1480	2360	2520	2840	4700	6300	7000
--	------	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------

Resistance and Power Dissipation

Main current circuit resistance	230V	[mΩ]	0.9	0.9	0.8	0.7	0.6	0.4	0.42	0.42	0.42	0.42	0.22	0.22	0.18	0.15	0.19	0.14
---------------------------------	------	------	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------

Power dissipation by all circuits at I_E AC-3/400V	460V	[W]	14	19.5	13.5	11.8	17	14.5	24.6	24.6	40.8	40.8	29.4	41.7	48.6	79.5	78.4	103.2
--	------	-----	----	------	------	------	----	------	------	------	------	------	------	------	------	------	------	-------

Total power dissipation

At I_E AC-3/400V	AC control	[W]	13.8	17.5	36	56.3	26	24.5 (20.5)	34.6	30.6	50.8	46.8	35.4	47.7	54.6	86.5	105.4	133.2
	DC control	[W]	13.8	17.5	32.5	52.8	23	22.5 (20.5)	32.6	30.6	48.8	46.8	35.4	47.7	54.6	86.5	105.4	133.2

Lifespan

Mechanical AC control	600V	[Mil. operations]	6	6	6	6	6	10	10	10	10	10	10	10	10	10	2	2
-----------------------	------	-------------------	---	---	---	---	---	----	----	----	----	----	----	----	----	----	---	---

DC control	600V	[Mil. operations]	6	6	6	6	6	10	10	10	10	10	10	10	10	10	2	2
------------	------	-------------------	---	---	---	---	---	----	----	----	----	----	----	----	----	----	---	---

Electrical AC-3 (400 V)	600V	[Mil. operations]	1	1	—	—	1	1	1	1	1	1	1	1	1	1	—	—
-------------------------	------	-------------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Weight

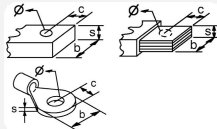
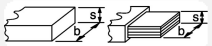
AC	Non-Reversing	kg (lbs.)	1.45 (3.2)	1.45 (3.2)	—	—	1.45 (3.2)	3.3 (7.28) [3.8 (8.38)]★	3.3 (7.28)	3.8 (8.38)	3.3 (7.28)	3.8 (8.38)	7.5 (16.53)	7.5 (16.53)	7.5 (16.53)	7.5 (16.53)	28.6 (63)	28.6 (63)
	Reversing	kg (lbs.)	3.14 (6.92)	3.14 (6.92)	—	—	3.14 (6.92)	—	—	—	—	—	—	—	—	—	—	—

DC (Conventional)	Non-Reversing	kg (lbs.)	1.47 (3.24)	1.47 (3.24)	—	—	1.47 (3.24)	3.3 (7.28) [3.8 (8.38)]★	3.3 (7.28)	3.8 (8.38)	3.3 (7.28)	3.8 (8.38)	7.5 (16.53)	7.5 (16.53)	7.5 (16.53)	7.5 (16.53)	28.6 (63)	28.6 (63)
	Reversing	kg (lbs.)	3.22 (7.1)	3.22 (7.1)	—	—	3.22 (7.1)	—	—	—	—	—	—	—	—	—	—	—

DC (Electronic - EQ, EJ)	Non-Reversing	kg (lbs.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Reversing	kg (lbs.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

DC (Electronic - EY, ED, EA)	Non-Reversing	kg (lbs.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Reversing	kg (lbs.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

★ Values in brackets refer to electronic coil (EI) version.

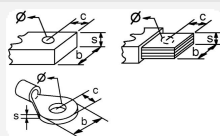
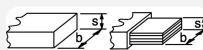
				100-KR		100/104-K			100/104-C, 100S/104S-C															
				05	09	05	09	12	09	12	16	23	30	37	40	43	55	60	72	85	90	97		
Coil Type :		Conventional		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
		Electr. — EI		—	—	—	—	—	X	X	X	X	X	X	X	X	X	X	—	—	—	—	—	
Conductor Cross Sections - Main Contacts Terminal type						*			*			‡			§									
		(1) conductor	[mm2]	0.50...2.5	0.75...2.5		1...4			2.5...10			2.5...16			2.5...35								
		(2) conductors	[mm2]	0.50...2.5	0.75...2.5		1...4			2.5...10			2.5...10			2.5...25			2.5...35					
		(1) conductor	[mm2]	0.75...2.5♣	1...4		1.5...6			2.5...16			2.5...25			2.5...50								
		(2) conductors	[mm2]	0.75...2.5♣	1...2.5+ 1...4		1.5...6			2.5...16			2.5...16			2.5...35								
		b max.	[mm]	—	—		—			—			—			—								
		c max.	[mm]	—	—		—			—			—			—								
		s max.	[mm]	—	—		—			—			—			—								
		Ø min.	[mm]	—	—		—			—			—			—								
Recommended torque		[N•m]		—		1.2		1.5...2.0			2.5...3.5			2.5...3.5			4.5...6							
Cross section per UL/CSA		[AWG]		18...14♣		18...12		16...10			14...4			14...6		14...4	14...1							
Recommended torque		[lb-in]		—		10.6		13.3...17.7			22...31			22...31			40...53							
With terminal lug kit				—		—		—			—			—			—							
Cross section per UL/CSA		[AWG]		—		—		—			—			—			—							
Recommended torque		[lb-in]		—		—		—			—			—			—							
With Frame Terminal Block				—		—		—			—			—			—							
		top opening	[mm2]	—	—		—			—			—			—								
		bottom opening	[mm2]	—	—		—			—			—			—								
		top opening	[mm2]	—	—		—			—			—			—								
		bott. opening	[mm2]	—	—		—			—			—			—								
		b max. s top s bottom	[mm2]	—	—		—			—			—			—								
Recommended torque		[N•m]		—		—		—			—			—			—							
Cross section per UL/CSA top		[AWG]		—		—		—			—			—			—							
bottom		[AWG]		—		—		—			—			—			—							
Recommended torque		[lb-in]		—		—		—			—			—			—							

* Pozidriv No. 2 / Blade No. 3 screw

‡ Pozidriv No. 2 / Blade No. 4 screw

§ Hexagonal socket screw

♣ Fine- or coarse-stranded only

				100/104-D, 100S-D									
				115	140	180	210	250	300	420	630	860	
Coil Type :	Conventional			X	X	X	—	—	—	—	—		
	Electronic — EI			X	X	X	X	X	X	X	X		
Conductor Cross Sections - Main Contacts													
Terminal type													
		(1) conductor	[mm2]	—			—			—			
		(2) conductors	[mm2]	—			—			—			
		(1) conductor	[mm2]	—			—			—			
		(2) conductors	[mm2]	—			—			—			
		b max.	[mm]	25			30			52			
		c max.	[mm]	12.5			15			22			
		s max.	[mm]	5			6			2 x 8			
		Ø min.	[mm]	8.3			10.5			13			
Recommended torque		[Nm]	22			43			68				
Cross section per UL/CSA		[AWG]	—			—			—				
Recommended torque		[lb-in]	195			380			600				
With terminal lug kit				100-DL180S			100-DL420S			100-DL630			
Cross section per UL/CSA		[AWG]	6...300 MCM			(2x) 4...350 MCM			(2X) 2/0...500MCM				
Recommended torque		[lb-in]	88...106			375			400				
With Frame Terminal Block				100-DTB180S			100-DTB420*			—			
		top opening	[mm2]	16...35			25...185Δ			—			
		bottom opening	[mm2]	16...95			25...185			—			
		top opening	[mm2]	16...50			25...240			—			
		bottom opening	[mm2]	16...120			25...240			—			
		b max.	[mm]	20			25			—			
		s top	[mm]	3...9			6...20			—			
		s bottom	[mm]	3...14			6...20			—			
Recommended torque		[Nm]	14			25			—				
Cross section per UL/CSA top		[AWG]	6...1 / 0 AWG			4 AWG...600 MCM			—				
bottom		[AWG]	6 AWG...250 MCM			4 AWG...600 MCM			—				
Recommended torque		[lb-in]	124			220			—				

★ Pozidriv No. 2 / Blade No. 3 screw
 ‡ Pozidriv No. 2 / Blade No. 4 screw
 \$ Hexagonal socket screw
 ♣ Hexagonal screw

Short-Circuit Coordination Data§

		100/104-K			100/104-C, 100S/104S-C																
		05	09	12	09	12	16	23	30	37	40*200	40*400	43	55	60	72	85	90*200	90*400	97	
Coil Type :	Conventional	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	Electronic - EI	—	—	—	X	X	X	X	X	X	X	X	X	X	—	—	—	—	—	—	
Short Circuit Coordination (Max. Fuse or Circuit Breaker Rating)																					
Per IEC 60947-4-1 (contactor and fuses only)																					
DIN Fuses - gG, gL		50 kA Available Fault Current																			
Type "1" (690V)	[A]	35	35	35	50	50	50	80	125	125	160	160	160	160	250	250	250	250	250	250	
Type "2" (400V)	[A]	16	20	20	25	35	35	40	80	80	63	80	100	100	160	160	160	160	100	200	
Type "2" (690V)	[A]	—	—	—	25	35	35	40	80	80	63	80	100	100	160	160	160	160	100	200	
BS88 Fuses		65 kA Available Fault Current																			
Type "1" (415V)	[A]	—	—	—	25	32	40	50	63	80	—	—	80	TBD	100	160	160	—	—	TBD	
Type "2" (415V)	[A]	—	—	—	20	25	32	50	63	80	—	—	80	TBD	100	125	160	—	—	TBD	
Per UL 508 and CSA 22.2 No. 14 (contactor and fuses or circuit breaker only)																					
UL Class K5 and RK5 Fuses		5 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	40	40	40	35	40	70	90	110	125	125	125	150	200	200	—	—	—	—	—	
UL Class K5 and RK5 Fuses		10 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	250	300	300	300	350	
UL Class L Fuses		18 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
UL Class L Fuses		30 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
UL Class L Fuses		42 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
UL Class CC and CSA HRCI-MISC Fuses		50 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	30	30	30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
UL Class J and CSA HRCI-J Fuses		50 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	30	30	30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
UL Class CC and CSA HRCI-MISC Fuses		100 kA Available Fault Current																			
UL verified combination to IEC 60947-4-1 "Type 2"	[A]	—	—	—	20♣	20	30	40	—	—	—	—	—	—	—	—	—	—	—	—	
UL Class J and CSA HRCI-J Fuses		100 kA Available Fault Current																			
UL verified combination to IEC 60947-4-1 "Type 2"	[A]	—	—	—	20♣	20	30	40	50	50	—	—	70	TBD	80	100	150	—	—	TBD	
UL Inverse-Time Circuit Breaker		5 kA Available Fault Current																			
UL Listed Combination (480V)	[A]	—	—	—	30	30	50	50	125	125	—	—	125	150	250	—	—	—	—	—	
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	125	125	—	—	125	150	250	—	—	—	—	—	
UL Inverse-Time Circuit Breaker		10 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	250	250	—	—	250	
UL Inverse-Time Circuit Breaker		18 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
UL Inverse-Time Circuit Breaker		25 kA Available Fault Current																			
UL Listed Combination (600Y/347V)	[A]	—	—	—	30‡	30‡	30‡	30‡	50	50	—	—	50	TBD	110	110	110	—	—	—	
UL Inverse-Time Circuit Breaker		25 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	200	
UL Inverse-Time Circuit Breaker		42 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
UL Inverse-Time Circuit Breaker		50 kA Available Fault Current																			
UL Listed Combination (480V)	[A]	—	—	—	—	—	—	—	50	50	—	—	50	TBD	—	—	—	—	—	—	
UL Inverse-Time Circuit Breaker		65 kA Available Fault Current																			
UL Listed Combination (480Y/277V)	[A]	—	—	—	30‡	30‡	30‡	30‡	—	—	—	—	—	TBD	110	110	110	—	—	—	
UL Inverse-Time Circuit Breaker		65 kA Available Fault Current																			
UL Listed Combination (480V)	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	200	

♣ 15 A max. fuse for Type 2 coordination.

§ See www.ab.com/certifications/ul508a for complete short-circuit current ratings.

‡ Ratings apply when used with Bulletin 140U-D circuit breakers only.

		100/104-D, 100S-D									
		115	140/180	140	180	210	250	300	420	630	860
Coil Type :	Conventional	X	X	—	—	—	—	—	—	—	—
	Electronic - EI	X	—	X	X	X	X	X	X	X	X
Short Circuit Coordination (Max. Fuse or Circuit Breaker Rating)											
Per IEC 60947-4-1 (contactor and fuses only)											
DIN Fuses - gG, gL	[kVar]	50 kA Available Fault Current									
Type "1" (690V)	[A]	250	315	315	355	500	500	630	630	‡	‡
Type "2" (400V)	[A]	200	250	250	315	400	400	500	500	‡	‡
Type "2" (690V)	[A]	200	250	250	315	400	400	500	500	‡	‡
BS88 Fuses		65 kA Available Fault Current									
Type "1" (415V)	[A]	200	250	250	250	355	355	450	630	‡	‡
Type "2" (415V)	[A]	200	250	250	250	355	355	450	560	‡	‡
Per UL 508 and CSA 22.2 No. 14 (contactor and fuses or circuit breaker only)											
UL Class K5 and RK5 Fuses		5 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—
UL Class K5 and RK5 Fuses		10 kA Available Fault Current									
UL Listed Combination (600V)	[A]	250	350/450	350	450	500	—	—	—	—	—
UL Class L Fuses		18 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	700	700	1000	—	—
UL Class L Fuses		30 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	2000	—
UL Class L Fuses		42 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	2500
UL Class CC and CSA HRCI-MISC Fuses		50 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—
UL Class J and CSA HRCI-J Fuses		50 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—
UL Class CC and CSA HRCI-MISC Fuses		100 kA Available Fault Current									
UL verified combination to IEC 60947-4-1 "Type 2"	[A]	—	—	—	—	—	—	—	—	—	—
UL Class J and CSA HRCI-J Fuses		100 kA Available Fault Current									
UL verified combination to IEC 60947-4-1 "Type 2"	[A]	200	250/300	250	300	400	400	500	600	‡	‡
UL Inverse-Time Circuit Breaker		5 kA Available Fault Current									
UL Listed Combination (480V)	[A]	—	—	—	—	—	—	—	—	—	—
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—
UL Inverse-Time Circuit Breaker		10 kA Available Fault Current									
UL Listed Combination (600V)	[A]	150	200/250	200	250	300	—	—	—	—	—
UL Inverse-Time Circuit Breaker		18 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	350	400	500	—	—
UL Inverse-Time Circuit Breaker		25 kA Available Fault Current									
UL Listed Combination (600Y/347V)	[A]	125	200	200	200	250	—	—	—	—	—
UL Inverse-Time Circuit Breaker		30 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	400	400	600	1200	—
UL Inverse-Time Circuit Breaker		42 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	1200
UL Inverse-Time Circuit Breaker		50 kA Available Fault Current									
UL Listed Combination (480V)	[A]	—	—	—	—	—	—	—	—	—	—
UL Inverse-Time Circuit Breaker		65 kA Available Fault Current									
UL Listed Combination (480V)	[A]	125	200	200	200	250	400	400	600	‡	‡
UL Inverse-Time Circuit Breaker		65 kA Available Fault Current									
UL Listed Combination (480Y/277V)	[A]	—	—	—	—	—	—	—	—	—	—
UL Inverse-Time Circuit Breaker		65 kA Available Fault Current									
UL Listed Combination (480V)	[A]	125	200	200	200	250	400	400	600	‡	‡

‡ To be determined.

Coil Data

			100/104-K			100/104-C, 100S/104S-C																	
			05	09	12	09	12	16	23	30	37	40*200	40*400	43	55	60	72	85	90*200	90*400	97		
Coil Type	Conventional		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	Electronic — EI		—	—	—	X	X	X	X	X	X	X	X	X	X	—	—	—	—	—	—		
Operating Limits																							
50 Hz, 60 Hz, 50/60 Hz	pick-up	[x ⚡]	0.85...1.1			0.85...1.1						0.85....1.1				0.85....1.1							
	dropout	[x ⚡]	0.2...0.75			0.3...0.6						0.3...0.6				0.3...0.6							
DC (conventional)	pick-up	[x ⚡]	0.8...1.1 0.7...1.25♣			—						—				0.8...1.1							
	dropout	[x ⚡]	0.1...0.75			—						—				0.1...0.6							
DC (electronic — EQ, EJ, EW)	pick-up	[x ⚡]	—			0.7...1.25										—							
	dropout	[x ⚡]	—			0.3...0.4										—							
DC (electronic — EY)	pick-up	[x ⚡]	—			0.8...1.25										—							
	dropout	[x ⚡]	—			0.3...0.4										—							
DC (electronic — ED)	pick-up	[x ⚡]	—			0.7...1.12										—							
	dropout	[x ⚡]	—			0.3...0.4										—							
DC (electronic — EA)	pick-up	[x ⚡]	—			0.7...1.1										—							
	dropout	[x ⚡]	—			0.3...0.4										—							
Coil Consumption																							
50 Hz, 60 Hz, 50/60 Hz	pick-up	[VA]	35			75			105			135				235			400/240				
	hold-in	[VA/W]	5/1.8			9.5/2.7			12.3/3.1			13.3/3.3				19.6/5			24/9				
DC (conventional)	pick-up	[W]	cold 3.0, warm 2.6			—			—			—				200			325				
	hold-in	[W]	cold 3.0, warm 2.6			—			—			—				4			5				
DC (electronic — EQ, EJ, EW)	pick-up (avg/peak)	[W]	—			10/17						16/25				—			—				
	hold-in	[W]	—			1.7						2.5				—			—				
DC (electronic — EY)	pick-up (avg/peak)	[W]	—			10/17						16/25				—			—				
	hold-in	[W]	—			1.9						2.7				—			—				
DC (electronic — ED)	pick-up (avg/peak)	[W]	—			12/19						16/26				—			—				
	hold-in	[W]	—			2.1						2.8				—			—				
DC (electronic — EA)	pick-up (avg/peak)	[W]	—			14/22						18/29				—			—				
	hold-in	[W]	—			3.0						4.0				—			—				
Operating Times																							
AC	closing delay	[ms]	15...40			15...30			15...30	15...30	15...30				20...40			20...40					
	opening delay	[ms]	15...33			10...60			10...60	10...60	10...60				10...60			20...40					
With RC module	opening delay	[ms]	15...28			10...60			10...60	10...60	10...60				10...60	10...60			20...40				
DC (conventional)	closing delay	[ms]	18...40			—			—	—	—				50...80	20...40			15...25	20...25	20...25		
	opening delay	[ms]	6...12			—			—	—	—				7...15	—			—				
With integ. diode	opening delay	[ms]	8...12			—			—	—	—				17...23	≤ 220V 20...35			≤ 220V 20...35				
With external diode	opening delay	[ms]	35...50			—			—	—	—				—	80...125	—			—			
DC (electronic — EQ, EJ, EW)	closing delay	[ms]	—			25...50										—	—			—			
	opening delay	[ms]	—			27...45										—	—			—			
	Max. Ripple		—			± 15%										—	—			—			
	Min. OFF time		[ms]	—			50										—	—			—		
DC (electronic — EW, EY, ED, EA)	closing delay	[ms]	—			25...50										—	—			—			
	opening delay	[ms]	—			23...33										—	—			—			
	Max. Ripple		—			± 15%										—	—			—			
	Min. OFF time		[ms]	—			50										—	—			—		

♣ For 9, 12, 24, and 110V DC coils

			100/104-D, 100S-D											
			115	140/180	115	140	180	210	250	300	420	630	860	
Coil Type	Conventional		X	X	—	—	—	—	—	—	—	—	—	
	Electronic — EI		—	—	X	X	X	X	X	X	X	X	X	
Operating Limits														
50 Hz, 60 Hz, 50/60 Hz	pick-up	[x <i>U</i> s]	0.85...1.1		0.85...1.1							0.8...1.1		
	dropout	[x <i>U</i> s]	0.3...0.6		0.3...0.5							0.1...0.8		
DC control	pick-up	[x <i>U</i> s]	0.85...1.1		0.85...1.1							0.85...1.1		
	dropout	[x <i>U</i> s]	0.3...0.6		0.3...0.5							0.1...0.8		
Coil Consumption														
50 Hz, 60 Hz, 50/60 Hz	pick-up	[VA/W]	650/310		380/240*						490/270*		1915/1720	
	hold-in	[VA/W]	50/10		13/6						18/7		33/30	
DC control	pick-up	[W]	540		265*						340*		1980*	
	hold-in	[W]	8		6						7		30	
Operating Times														
AC	closing delay	[ms]	20...47		20...45							60...100		
	opening delay	[ms]	6...12		25...110							70...145		
With RC module	opening delay	[ms]	9...18		—							—		
DC	closing delay	[ms]	27...47		25...50							60...100		
	opening delay	[ms]	12...20		35...110							70...145		
Integrated diode	opening delay	[ms]	12...20		—							—		
External diode	opening delay	[ms]	—		—							—		

* Electronic coil drives are designed to minimize power requirements, but this control may exhibit a higher inrush (540 W, < 10 ms) when energizing. This must be taken into account for the proper sizing of supply devices, all-or-nothing relays and cross-sections of coil supply lines. Please contact your local Rockwell Automation sales office or AllenBradley distributor for detailed information.

Auxiliary Contacts, Auxiliary Contact Blocks, and Pneumatic Timers

			100-K		100-C, 100S-C				100-D, 100S-D				
			Internal	Front-mounted	Internal	Front-mounted	Front-mounted (Bifurcated)	Side-mounted	Side-mounted				
									Convent'l	Bifurcated	Electronically compatible		
Switching of AC Loads													X
AC-12 I _{th}	at 40 °C	[A]	10	10	20	10	10	10	16	10	0.1		
	at 60 °C	[A]	6	6	20	6	6	6	12	6	at 250V		
AC-15 at rated voltage of													
	24V	[A]	6	3	10	6	3	6	5.5	3	(1...100 mA) at 3...125V		
	42/48V	[A]	6	3	10	6	3	6	5.5	3			
	120V	[A]	6	3	10	6	3	6	5.5	3			
	230V	[A]	3	2	10	5.5	3	5.5	5.5	3			
	240V	[A]	3	2	10	5	3	5	5	3			
	400V	[A]	1.8	1.2	6	3	2	3	3	2			
	415V	[A]	1.8	1.2	6	3	2	3	2.5	2			
	500V	[A]	1.4	1.0	2.5	1.6	1.2	1.6	1.6	1.2			
	690V	[A]	1.0	0.6	1	1	0.7	1	1	0.7			
Switching of DC Loads													
DC-12 L/R< 1 ms resistive loads at													
	24V DC	[A]	6	—	12	12	6	6	16	16	—		
	48V DC	[A]	4	—	9	9	3.2	3.2	9	9	—		
	110V DC	[A]	0.6	—	3.5	3.5	1	1	3.5	3.5	—		
	220V DC	[A]	0.2	—	0.55	0.55	0.5	0.5	0.55	0.55	—		
	440V DC	[A]	0.08	—	0.2	0.2	0.2	0.2	0.2	0.2	—		
DC-14 L/R< 15 ms inductive loads with economy resistor in series at													
	24V DC	[A]	4	—	9	9	2	2	9	9	—		
	48V DC	[A]	2.5	—	5	5	1.6	1.6	5	5	—		
	110V DC	[A]	0.4	—	2	2	0.3	0.3	2	2	—		

	220V DC	[A]	0.12	—	0.4	0.4	0.12	0.12	0.4	0.4	—	
	440V DC	[A]	0.05	—	0.16	0.16	0.05	0.05	0.16	0.1	—	
DC-13 switching electromagnets at												
	24V DC	[A]	2.8	2.3	5	5	2.5	5	5	5	(1...100 mA) at 3...125V	
	48V DC	[A]	1.2	1	3	3	1.5	2.5	2	2		
	110V DC	[A]	0.55	0.55	1.2	1.2	0.6	0.68	0.7	0.7		
	220V DC	[A]	0.27	0.27	0.6	0.6	0.3	0.32	0.25	0.25		
	440V DC	[A]	0.15	0.15	0.3	0.15	0.15	0.15	0.12	0.12		
Fuse gG												
Short-circuit protection with no welding of contacts per IEC 60947-5-1												
		[A]	10	10	20	10	10	10	16	16	—	
		[A]	10	10	20	10	10	10	16	16	—	
Protective Separation per IEC 60947-1, Annex N			—	—	between load and auxiliary circuit 320V	between load and auxiliary circuit 440V	between load and auxiliary circuit 440V					
Min. switching capacity according to IEC 60947-5-4			15V / 10 mA	15V / 2 mA	17V / 10 mA	17V / 5 mA	5V / 3 mA	17V / 10 mA	17V / 10 mA	5V / 2 mA (1 Mio. ops.)	3V / 1 mA	
Failure rate			—	—	—	—	—	—	—	<10-8 (less than 1 failure to 100 Mio. operations)	—	
Load Carrying Capacity per UL/CSA												
Rated voltage	AC	[V]	max. 600		max. 600				max. 600		max. 250	
Continuous rating	40 °C	[A]	10		10	10	10	10	10 General purpose		0.1	
Switching capacity	AC	[A]	A 600	B 600	A 600				Heavy pilot duty (A 600)		0.1	
Rated voltage	DC	[V]	max. 600		max. 600				max. 600		max. 250	
Switching capacity	DC	[A]	Q 600		P 600	Q 600	Q 600		Standard pilot duty (P 600)	Standard pilot duty (Q 600)	0.1	

General

		100-K	100-C, 100S-C	100-D, 100S-D
		05...12	09...97	115...420
Rated Isolation Voltage U_i				
IEC	[V]	690	690	1000
UL, CSA	[V]	600	600	600
Rated Impulse Voltage Withstand U_{imp}	[kV]	6	6	12
Rated Voltage U_e				
AC 50/60 Hz	[V]	230, 240, 400, 415, 460, 500, 575, 690	115, 200, 230, 240, 400, 415, 460, 500, 575, 690	230, 240, 400, 415, 500, 690, 1000
DC	[V]	24, 48, 110, 220, 440	24, 48, 110, 220, 440	24, 48, 110, 220, 440
Insulation Class of the Coil		Class F per IEC 60085 Class 105 insulation system per UL 508	Class F per IEC 60085	Class B per VDE 0660, Table 22
Rated coil frequency		AC 50/60 Hz, DC	AC 50/60 Hz, DC	AC 50 Hz, 50/60 Hz, DC
Ambient Temperature				
Storage	[°C]	-55...+80	-55...+80	-40...+80
Operation at rated voltage	[°C]	-25...+60	-25...+60	-25...+60
at 70 °C		15% current reduction against 60° C values		
Climatic Withstand		IEC 60068-2-30	IEC 60068-2-1 / -2 / -30	IEC 60068-2-30
Max. Altitude of Installation Site	[m]	2000 NN, per IEC 60947-4	2000 NN, per IEC 60947-1	2000 NN, per IEC 60947-4
Protection Class		IP2X	IP2X	IP00 IEC 60529 / DIN 40 050
Single contactor cover		—	—	IP10 IEC 60529 / DIN 40 050
Contactor with frame terminal block		—	—	IP20 IEC 60529 / DIN 40 050
Auxiliary contact		IP2X	IP2X	IP20 IEC 60529 / DIN 40 050
Protection against Accidental Contact		—	Finger and back-of-hand proof per VDE 0106, part 100	Finger and back-of-hand proof per VDE 0106, part 100
Resistance to Shock		IEC 60068-2	IEC 60068-2-27	IEC 60068-2-27
Single contactor cover		—	—	IP10 IEC 60529 / DIN 40 050
Contactor with frame terminal block		—	—	IP20 IEC 60529 / DIN 40 050
Auxiliary contact		IP2X	IP2X	IP20 IEC 60529 / DIN 40 050
Protection against Accidental Contact		—	Finger and back-of-hand proof per VDE 0106, part 100	Finger and back-of-hand proof per VDE 0106, part 100
Resistance to Shock		IEC 60068-2	IEC 60068-2-27	IEC 60068-2-27
Resistance to Vibration		IEC 60068-2	IEC 60068-2-6	IEC 60068-2-6
Mechanically Linked Contacts IEC 60947-5-1, Annex L		100-K... (on main device)	100- / 100S-C09...C55 + 100-FA/-FB/-FC, (except L11, L22), 100- / 100S-C09...C55 + 100-FAB/-FBB/-FCB	—
Mirror Contacts IEC 60947-4 Annex F		100-K... + 100-KF...	100- / 100S-C09...C97 + 100-FA/-FB/-FC, (except L11, L22), 100- / 100S-C09...C97 + 100-SA/SB, 100- / 100S-C09...C97 + 100-FAB/-FBB/-FCB	100-D... + 2 x 100-DS1-11 100S-D... + 2 x 100S-DS1-11
Standards Compliance		IEC/EN 60947-1/-4-1/-5-1; UL 508; CSA 22.2. No. 14	IEC/EN 60947-1/-4-1/-5-1; UL 508; CSA 22.2. No. 14	IEC/EN 60947-1/-4-1/-5-1; UL 508; CSA 22.2. No. 14
Certifications		CE, cULus CCC	CE, cULus, CCC	CE, cULus, CCC

Bul. 100-K/104-K Life-Load Curves

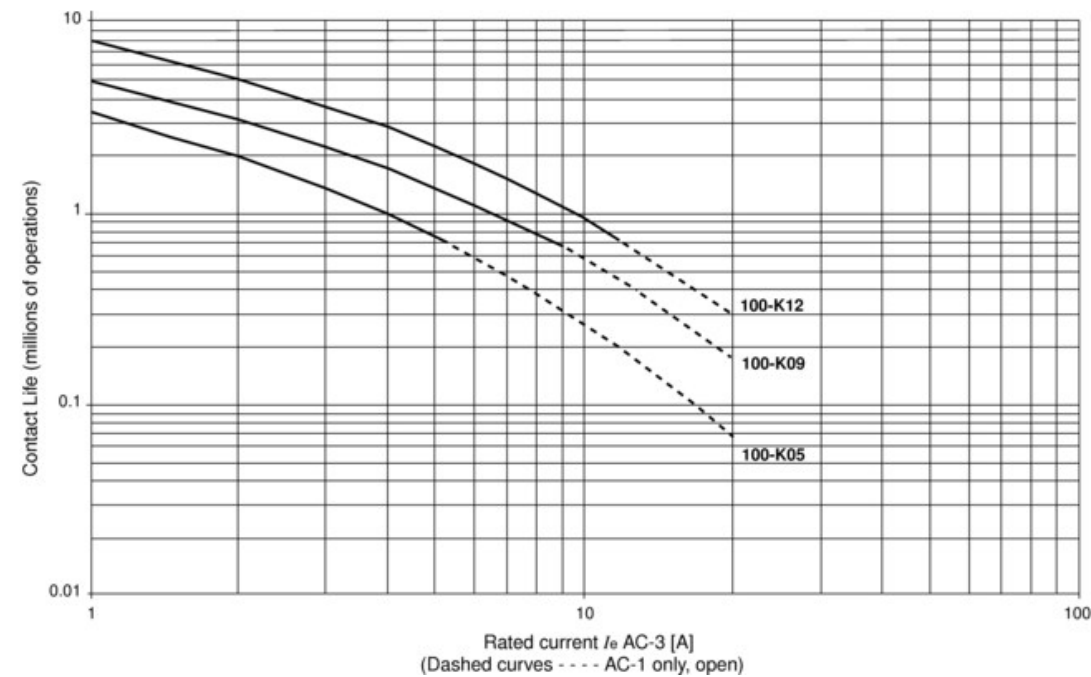
Electrical life; $U_e = 400\ldots460V$ AC

AC-3

Switching of squirrel-cage motors while starting

AC-1

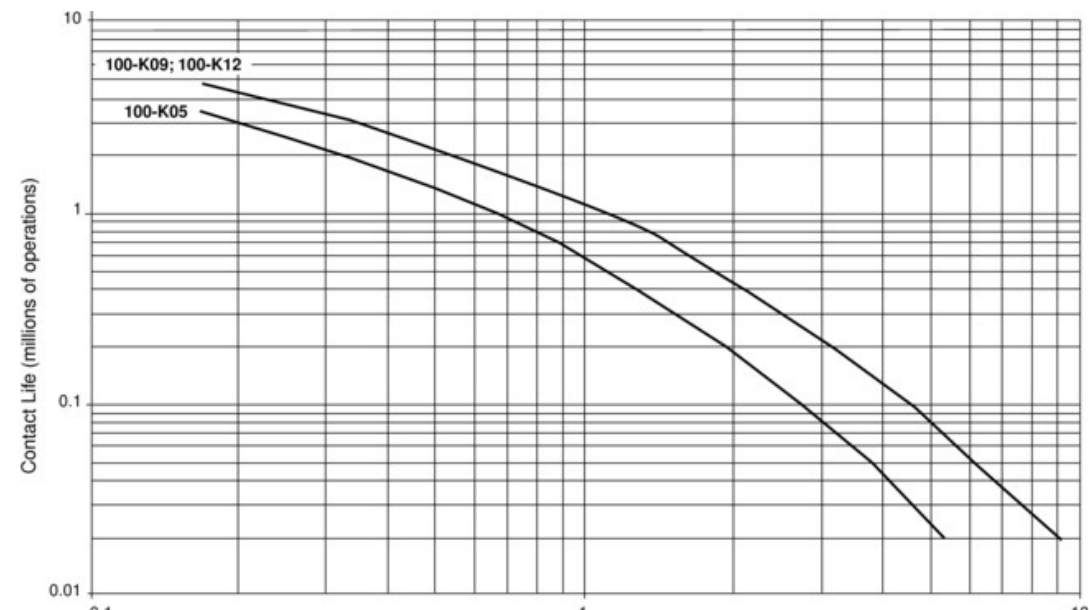
Non- or slightly inductive loads, resistance furnaces



Electrical life; $U_e = 400\ldots460V$ AC

AC-4

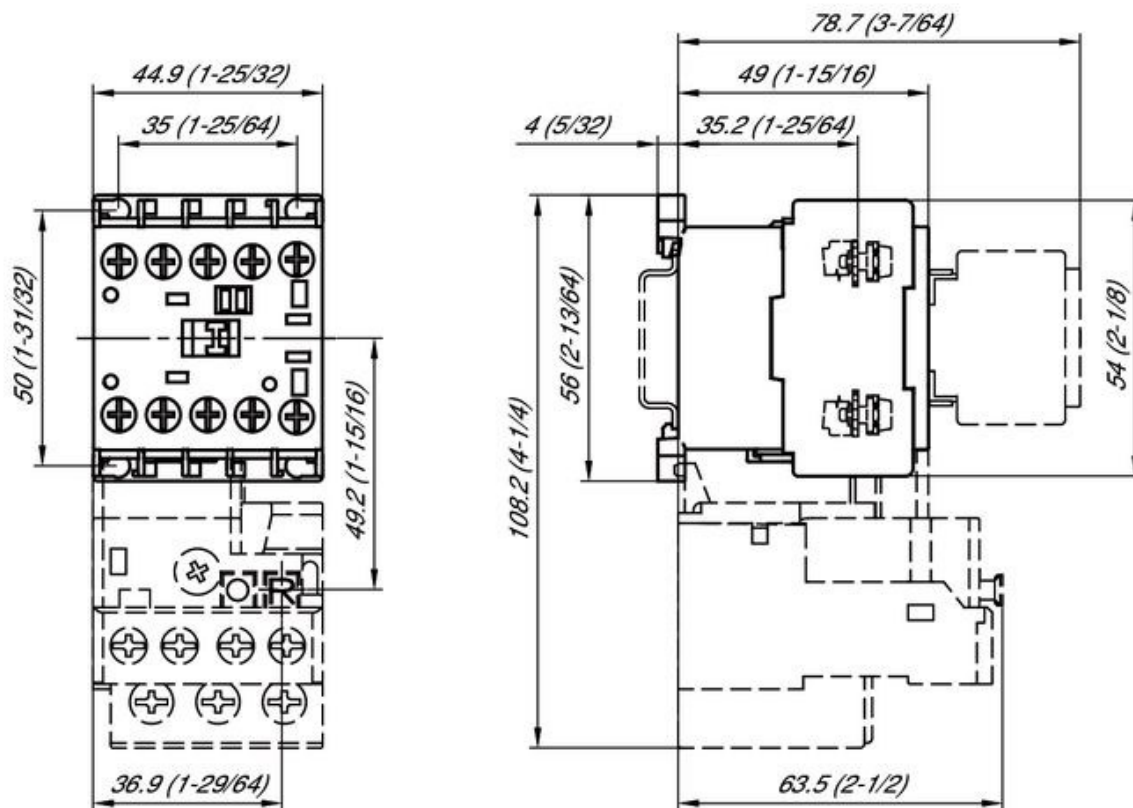
Stepping of squirrel-cage motors



Bul. 100-K/104-K Approximate Dimensions

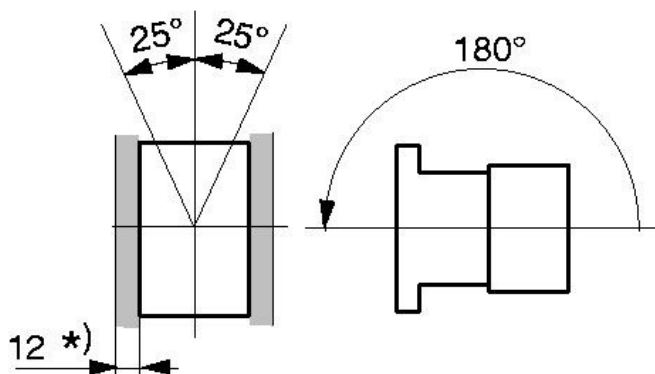
Bulletin 100-K Contactors and Accessories, Bulletin 193-K Overload Relays

Dimensions are shown in millimeters (inches). Dimensions are not intended for manufacturing purposes.



Mounting Position

With Accessories



*) -Minimum distance to grounded parts or walls