Bulletin 100-C/104-C IEC Contactors

- Compact sizes from 4…45 kW/5…60 Hp (9…85 A)
- AC and DC coil control
- Common accessories for all contactor sizes
- Front and side mounting of auxiliary contacts
- Electronic and pneumatic timing modules
- Space-saving coil-mounted control modules
- Reversible coil terminations (line or load side)
- All devices can be attached to 35 mm DIN mounting Rail
- Environmentally friendly materials

The Bulletin 100-C/104-C contactor family, along with a wide range of common accessories and Bulletin 193 solid-state overload relays, provides the most compact and flexible starter component system available.

Your order must include: cat. no. of the contactor specified with coil voltage code and, if required, cat. no. of any accessories and/or replacement coils.

Standards Compliance and Certifications

Standards Compliance

EN/IEC 60947-4-1, 60947-5-1
IEC 60947 Type “2” Coordination
CSA C22.2 No. 14
UL 508

Certifications

CE Marked
cULus Listed (File No. E3125; Guide NLDX, NLDX7).

Product Selection

3-Pole AC- and DC-Operated Contactors

I_e [A]		Ratings for Switching AC Motors — AC-2, AC-3, AC-4										Aux. Contacts		Cat. No.
		3∅ kW (50 Hz)				Hp (60 Hz)								
AC-3	AC-1	230V	400V/415V	500V	690V	1∅ 115V	1∅ 230V	3∅ 200V	3∅ 230V	3∅ 460V	3∅ 575V	N.O.	N.C.	
9	32	3	4	4	4	1/2	1-1/2	2	2	5	7-1/2	1	0	100-C09⊗10
												0	1	100-C09⊗01
12	32	4	5.5	5.5	5.5	1/2	2	3	3	7-1/2	10	1	0	100-C12⊗10
												0	1	100-C12⊗01
16	32	5.5	7.5	7.5	7.5	1	3	5	5	10	15	1	0	100-C16⊗10
												0	1	100-C16⊗01
23	32	7.5	11	13	10	2	3	5	7-1/2	15	15	1	0	100-C23⊗10
												0	1	100-C23⊗01
30	65	10	15	15	15	2	5	7-1/2	10	20	25	0	0	100-C30⊗00
												1	0	100-C30⊗10
												0	1	100-C30⊗01
37	65	11	18.5/20	20	18.5	3	5	10	10	25	30	0	0	100-C37⊗00
												1	0	100-C37⊗10
												0	1	100-C37⊗01
43	85	13	22	25	22	3	7-1/2	10	15	30	30	0	0	100-C43⊗00
												1	0	100-C43⊗10
												0	1	100-C43⊗01
60	100	18.5	32	37	32	5	10	15	20	40	50	0	0	100-C60⊗00
												1	0	100-C60⊗10
												0	1	100-C60⊗01
72	100	22	40	45	40	5	15	20	25	50	60	0	0	100-C72⊗00

													1	0	100-C72⊗10
													0	1	100-C72⊗01
85	100	25	45		55	45	7-1/2	15	25	30	60	60	0	0	100-C85⊗00
													1	0	100-C85⊗10
													0	1	100-C85⊗01

⊗Coil voltage code and terminal position—see ⊗ Coil Voltage Code and Terminal Position

4-Pole AC- and DC-Operated Contactors

I_e [A]		Ratings for Switching AC Motors — AC-2, AC-3										Contact Configuration, Main Pole		Cat. No.
		3∅ kW (50 Hz)✶				Hp (60 Hz)								
AC-3	AC-1	230 V	400V/415 V	500 V	690 V	1∅ 115 V	1∅ 230 V	3∅ ✶ 200 V	3∅ ✶ 230 V	3∅ ✶ 460 V	3∅ ✶ 575 V	N.O.	N.C.	
9	32	3	4	4	4	1/2	1-1/2	2	2	5	7-1/2	4	0	100-C09⊗400
												3	1	100-C09⊗300
												2	2	100-C09⊗200
12	32	4	5.5	5.5	5.5	1/2	2	3	3	7-1/2	10	4	0	100-C12⊗400
												3	1	100-C12⊗300
												2	2	100-C12⊗200
16	32	5.5	7.5	7.5	7.5	1	3	5	5	10	15	4	0	100-C16⊗400
												3	1	100-C16⊗300
												2	2	100-C16⊗200
23	32	7.5	11	13	10	2	3	5	7-1/2	15	15	4	0	100-C23⊗400
												3	1	100-C23⊗300
												2	2	100-C23⊗200
37	75	11	18.5/20	20	18.5	3	5	10	10	25	30	4	0	100-C40⊗400

												2	2	100-C40⊗200
85	130	25	45	55	45	7-1/2	15	25	30	60	50	4	0	100-C90⊗400
												2	2	100-C90⊗200

✶ Three-phase ratings apply only to contactors with at least three N.O. power poles.

⊗Coil voltage code and terminal position—see ⊗ Coil Voltage Code and Terminal Position

Reversing AC- and DC-Operated Contactors

I_e [A]	Ratings for Switching AC Motors — AC-2, AC-3, AC-4											Auxiliary Contacts Installed per Contactor		Cat. No.
		3∅ kW (50 Hz)				Hp (60 Hz)								
AC-3	AC-1	230V	400V/415V	500V	690V	1∅ 115V	1∅ 230V	3∅ 200V	3∅ 230V	3∅ 460V	3∅ 575V	N.O.	N.C.✶	
9	32	3	4	4	4	1/2	1-1/2	2	2	5	7-1/2	1	1	104-C09⊗22
12	32	4	5.5	5.5	5.5	1/2	2	3	3	7-1/2	10	1	1	104-C12⊗22
16	32	5.5	7.5	7.5	7.5	1	3	5	5	10	15	1	1	104-C16⊗22
23	32	7.5	11	13	10	2	3	5	7-1/2	15	15	1	1	104-C23⊗22
30	65	10	15	15	15	2	5	7-1/2	10	20	25	0	1	104-C30⊗02
												1	1	104-C30⊗22
37	65	11	18.5/20	20	18.5	3	5	10	10	25	30	0	1	104-C37⊗02
												1	1	104-C37⊗22
43	85	13	22	25	22	3	7.5	10	15	30	30	0	1	104-C43⊗02
												1	1	104-C43⊗22
60	100	18.5	32	37	32	5	10	15	20	40	50	0	1	104-

														C60⊗02
												1	1	104-C60⊗22
72	100	22	40	45	40	5	15	20	25	50	60	0	1	104-C72⊗02
												1	1	104-C72⊗22
85	100	25	45	55	45	7-1/2	15	25	30	60	60	0	1	104-C85⊗02
												1	1	104-C85⊗22

✶ The N.C. auxiliary contact is supplied as part of the mechanical/electrical interlock.

⊗ Coil Voltage Code and Terminal Position

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: 120V, 60Hz:
Cat. No. 100-C09⊗10 becomes **Cat. No.100-C09D10**.

[V] Hz	12	24	32	36	42	48	100	100-110	110	120	127	200	200-220	208	208-240
50 Hz	R	K	V	W	X	Y	KP	—	D	P	S	KG	L	—	—
60 Hz	Q	J	—	V	—	X	—	KP	—	D	—	—	KG	H	L
50/60 Hz	—	KJ	—	—	—	KY	KP	—	KD	—	—	KG	KL	—	—

[V] Hz	220-230	230	230-240	240	277	347	380	380-400	400	400-415	440	480	500	550	600
50 Hz	F	—	VA	T	—	—	—	N	—	G	B	—	M	C	—
60 Hz	—	—	—	A	T	I	E	—	—	—	N	B	—	—	C
50/60 Hz	KL	KF	—	KA	—	—	—	—	KN	—	KB	—	—	—	—

DC Voltages [V]		9	12	24	36	48	60	64	72	80	110	115	125	220	230	250
100-C09…C43	Standard	ZR	ZQ	ZJ	ZW	ZY	ZZ	ZB	ZG	ZE	ZD	ZP	ZS	ZA	ZF	ZT
	with Integrated Diode	—	—	DJ	—	—	—	—	—	—	—	—	—	—	—	—
	Electronic with Integrated Diode	—	—	EJ	—	—	—	—	—	—	—	—	—	—	—	—
100-C60…C85	with Integrated Diode	DR	DQ	DJ	DW	DY	DZ	DB	DG	DE	DD	DP	DS	DA	DF	DT

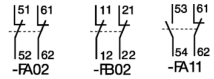
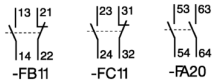
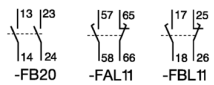
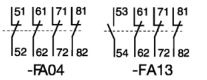
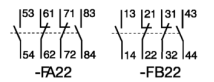
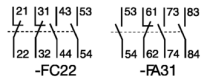
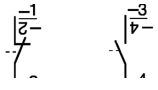
Coil Terminal Position

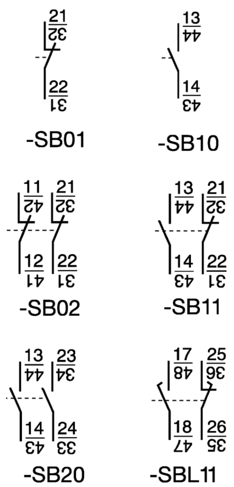
- All contactors are delivered with the coil terminals located on the **line side**.
- For **load side** coil terminations, insert a **“U”** prior to the coil voltage code.

Ordering example: **Cat. No. 100-C09UD10**

Bulletin 100-C/104-C Accessories

Auxiliary Contacts (For 100-C09…C85 contactors)

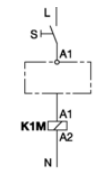
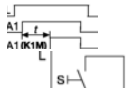
	Description	N.O.	N.C.	Connection Diagrams	For Use With	Standard Auxiliary Contact Cat. No.	Bifurcated Auxiliary Contact Cat. No.
	**Auxiliary Contact Blocks for Front Mounting✶**	0	2		100-C all	100-FA02	100-FAB02
	• 2- and 4-pole				C30⊗00…C85⊗00	100-FB02	100-FBB02
	• Quick and easy mounting without tools	1	1		100-C all	100-FA11	100-FAB11
					C30⊗00…C85⊗00	100-FB11	100-FBB11
					C09⊗10…C23⊗10	100-FC11	100-FCB11
	• Electronic-compatible contacts down to 17V, 5 mA	2	0		100-C all	100-FA20	100-FAB20
					C30⊗00…C85⊗00	100-FB20	100-FBB20
							
	• Mechanically linked performance between N.O. and N.C. poles and to the main contactor poles (except for L types)	1L	1L		C30⊗00…C85⊗00	100-FAL11	—
					C30⊗00…C85⊗00	100-FBL11	—
		0	4		100-C all	100-FA04	100-FAB04
		1	3		100-C all	100-FA13	100-FAB13
		2	2		100-C all	100-FA22	100-FAB22
					C30⊗00…C85⊗00	100-FB22	100-FBB22
	• Models with equal function with several terminal numbering choices				C09⊗10…C23⊗10	100-FC22	100-FCB22
		3	1		100-C all	100-FA31	100-FAB31
					C09⊗10…C23⊗10	100-FC31	100-FCB31
	• 1L = Late break N.C./early make N.O.	4	0		100-C all	100-FA40	100-FAB40
		1+1L	1+1L		100-C all	100-FAL22	—
	• Bifurcated version for switching down to 8V, 5 mA also available						
	**Auxiliary Contact**	0	1		100-C all	100-SA01	—

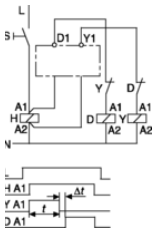
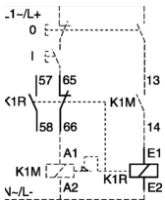
	**Blocks for Side Mounting without Sequence Terminal Designations** ✶ • 1- and 2-pole • Two-way numbering for right or left mounting on the contactor • Quick and easy mounting without tools • Electronic-compatible contacts down to 17V, 10 mA • Mirror contact performance to the main contactor poles • 1L = Late break N.C./early make N.O.	1	0		100-C all	100-SA10	—
		0	2		100-C all	100-SA02	—
		1	1		100-C all	100-SA11	—
		2	0		100-C all	100-SA20	—
		1L	1L		100-C all	100-SAL11	—
 	**Auxiliary Contact Blocks for Side Mounting with Sequence Terminal Designations** ✶ • 1- and 2-pole • Two-way numbering for right or left mounting on the contactor • Quick and easy mounting	0	1		100-C	100-SB01	—
		1	0		100-C❄	100-SB10	—
		0	2		100-C❄	100-SB02	—
		1	1		100-C❄	100-SB11	—
		2	0		100-C❄	100-SB20	—
		1L	1L		100-C❄	100-SBL11	—

without tools
- Electronic-compatible contacts down to 17V, 10 mA
- Mirror contact performance to the main contactor poles
- 1L = Late break N.C./early make N.O.

✶ Max. number of auxiliary contacts that may be mounted:
AC coil contactors — max. 4 N.O. contacts on the front of the contactor, 2 N.O. contacts on the side, 4 N.C. front or side, 6 total.
DC coil contactors — max. 4 N.O. contacts on the front of the contactor or max 2 N.O. contacts on the side, 4 N.C. front or side, 4 total.
❄ Double numbering — Left-side mounting only is recommended for **Cat. No. 100-C09…100-C23** due to double numbering.

Control Modules (For 100-C09…C85 contactors)

	Description		Connection Diagrams	For Use With	Cat. No.
	**Pneumatic Timing Modules** Pneumatic timing element contacts switch after the delay time. The contacts on the main control relay continue to operate without delay.	**On-Delay** 0.3…30 s Range 1.8…180 s Range		100-C with AC coils, 700-CF all	100-FPTA30 100-FPTA180
		Off-Delay 0.3…30 s Range 1.8…180 s Range		100-C all, 700-CF all	100-FPTB30 100-FPTB180
	**Electronic Timing Modules — On-Delay** Delay of the contactor or control relay solenoid. The contactor or control relay is energized at the end of the delay time.	1…30 s Range 1…30 s Range 10…180 s Range 0.1…3 s Range 1…30 s Range 10…180 s Range		100-C with 24…48V DC coils, 700-CF with DC coils	100-ETAZJ30 100-ETA30 100-ETA180 100-ETAZJ3 100-ETAZJ30 100-ETAZJ180
	**Electronic Timing**	0.3…3 s		100-C09…C37	100-ETBKJ3

	Modules — Off-Delay Delay of the contactor or control relay solenoid. After interruption of the control signal, the contactor or control relay is deenergized at the end of the delay time.	Range 1…30 s Range 10…180 s Range 0.3…3 s Range 1…30 s Range 10…180 s		with 24V 50/60 Hz coils, 700-CF with AC coils 100-C with 110…240V 50/60 Hz coils, 700-CF with AC coils	100-ETBKJ30 100-ETBKJ180 100-ETB3 100-ETB30 100-ETB180
	**Electronic Timing Modules** Delay of the contactor solenoid. Contactor K 3 (Y) is de-energized (off) and K 2 (D) is energized (on) after the end of the set Y end time. (Switching delay at 50 ms.) Continuous adjustment range High repeat accuracy	**Transition Time Y Contactor** 1…30 s Range		100-C with 110…240V AC, 50/60 Hz coils	100-ETY30
	**Mechanical Interlocks** For interlocking of two contactors. Common interlock for all Bul. 100-C contactor sizes Interlocking of different sizes possible Mechanical and electrical interlocking possible in one module by means of integrated auxiliary contacts 9 mm dovetail connector included	Mechanical only without auxiliary contacts Mechanical/ electrical with 2 N.C. auxiliary contacts		100-C (except 100-C40, -C90) 100-C (except 100-C40, -C90)	100-MCA00 100-MCA02
	**Mechanical Latch** Following contactor latching, the contactor coil is immediately de-energized (off) by the N.C. auxiliary contact (65-66). Electrical or manual release 1 N.O. + 1 N.C. auxiliary contacts Suitable for all Bul. 100-C contactor sizes,	Maximum command duration 0.03…10 s		100-C with AC coils (except 100-C90)	100-FL11⊗

9…85 A

Package Quantity = 1

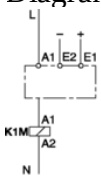
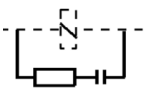
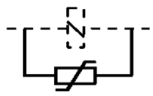
⊗ Coil Voltage Code

The cat. no. as listed is incomplete. Select a voltage suffix code from the table below to complete the cat. no. Example: 120V, 60 Hz:
Cat. No. 100-FL11⊗ becomes **Cat. No. 100-FL11D**.

Voltage✶ [V]	24	48	100	110	120	230-240	240	277	380-400	400-415	440	480
50 Hz	K	Y	KP	D	—	VA	T	—	N	G	B	—
60 Hz	J	—	—	—	D	—	A	T	—	—	N	B

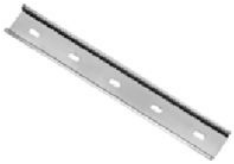
✶ For special voltages, consult your local Rockwell Automation sales office or Allen-Bradley distributor.

Control Modules (For 100-C09…C85 contactors), Continued

	Description		Voltage Range	Connection Diagrams	For Use With	Cat. No.
	**DC Interface (Electronic)** Interface between the DC control signal (PLC) and the AC operating mechanism of the contactor.		Input: 12V DC Output: 110…240V AC		100-C with AC coils 110…240V AC	100-JE12
	Requires no additional surge suppression on the relay coils		Input: 18…30V DC Output: 110…240V AC			100-JE
			Input: 48V DC Output: 110…240V AC			100-JE48
	**Surge Suppressors** For limitation of coil switching transients. Plug-in, coil mounted. Suitable for all 100-C contactor sizes, 9…85 A. RC, varistor, and diode versions.	**RC Module** AC operating mechanism	24…48V AC, 50/60 Hz		100-C with AC coils	✶ 100-FSC48
			110…280V AC, 50/60 Hz			✶ 100-FSC280
			380…480V AC, 50/60 Hz			✶ 100-FSC480
		Varistor Module AC/DC operating mechanism	12…55V AC/ 12…77V DC		100-C	✶ 100-FSV55
			56…136V AC/		100-C	✶ 100-FSV136

		78…180V DC		
		137…277V AC/ 181…350V DC	100-C	✶ 100-FSV277
		278…575V AC	100-C	✶ 100-FSV575
	Diode Module DC operating mechanism	12…250V DC	100-C with DC coils	✶ 100-FSD250

Assembly Components (For 100-C09…C85 contactors)

	Description	For Use With	Cat. No.
	**Dovetail Connectors** For use in contactor and starter assemblies. Single Connector — 0 mm Spacing	100-C	100-S0
Cat. No. 100-S0	**Dovetail Connectors** For use in contactor and starter assemblies. Dual Connector — 9 mm Spacing		100-S9
	**Protective Covers** Provides protection against unintended manual operation	100-C all	100-SCCA
Cat. No. 100-SCCA	For contactors and front mounted auxiliary contacts, pneumatic timers and latches		
		100-FA, -FB, -FC, -FP, -FL;	100-SCFA
Cat. No. 100-SCFA			
	**Reversing Power Wiring Kits** For reversing connection with a solid-state or thermal overload relay	100-C09…C23	105-PW23
		100-C30…C37	105-PW37
		100-C43	105-PW43
Cat. No. 105-PW23		100-C60…85	105-PW85
	**DIN (#3) Symmetrical Rail** 35 x 7.5 x 1 m	140M-D 140M-F	199-DR1

✶ Must be ordered in multiples of package quantities.

Wye-Delta/Star-Delta Starter Kits

Wye-Delta power wiring kits were designed to aid in the field assembly of open-transition wye-delta starters that use Bulletin 100-C contactors. These kits include line, load, and start-point

(shorting) connections. Assembling a wye-delta starter requires the use of the following additional components:

- Contactors
- Overload Relay
- Cat. No. 100-MCA02 Mechanical/Electrical Interlock
- Cat. No. 100-ETY30 Electronic Y-Δ Timer
- Cat. No. 100-S9 Base Coupler for 1M to 2M contactor (optional)

Cat. No. 170-PW23

3-Phase Rating											Pkg. Qty.	Cat. No.
kW (50 Hz)				Hp (60 Hz)				Use with Cat. No. 100-				
230 V	380/415V	500V	690V	200V	230V	460V	575V	Delta 1M	Delta 2M	Wye 1S		
5.5	8	8	8	5	5	10	10	C09	C09	C09	1	170-PW23
7.5	11	11	11	5	7.5	15	15	C12	C12	C09	1	170-PW23
10	14	15	14	7.5	10	20	20	C16	C16	C12	1	170-PW23
14	21	21	19	7.5	10	25	25	C23	C23	C12	1	170-PW23
18	28	28	28	10	15	30	30	C30	C30	C16	1	170-PW37
19	35	35	32	15	20	40	40	C37	C37	C23	1	170-PW37
23	40	40	41	20	25	50	50	C43	C43	C30	1	170-PW43
33	58	60	56	30	40	75	75	C60	C60	C37	1	170-PW72
39	69	67	70	40	50	100	100	C72	C72	C43	1	170-PW72
47	82	82	81	50	60	125	125	C85	C85	C60	1	170-PW85

Package Quantity = 1

Marking Systems (For 100-C09…C85 contactors)

	Description	Pkg. Qty.✶	Cat. No.
	**Label Sheet** 105 self-adhesive paper labels each, 6 x 17 mm	10	100-FMS
	**Marking Tag Sheet** 160 perforated paper labels each, 6 x 17 mm, to be used with a transparent cover	10	100-FMP
	Transparent Cover To be used with marking tag sheets	100	100-FMC
	**Marking Tag Adapters** To be used with marking tag	100	100-FMA1
	Marking Tag Adapters	100	100-

✶ Must be ordered in multiples of package quantities.

Terminal Kits (For 100-C09…C85 contactors)

	Description	Max. Current Ratings and Wire Sizes		Pkg. Qty.✶	Cat. No.
	**Stab Connector Kit** Dual stab (0.250 in.) for 100-C coil terminals For 100-C09…C85 contactors			20	199-SC2
	**Stab Connector Kit** Dual stab (0.250 in.) for 100-C power terminals For 100-C09…C23 contactors			100	199-SC10
	**3-Pole Terminal Lug Kit** For Cat. No. 100-C09…C23 (Line side)	IEC @ 40 °C IEC @ 40 °C UL/CSA (Encl.)	45 A (4…16 mm^2❄ , fine stranded w/ ferrule) 45 A (4…25 mm^2, coarse stranded/solid) 40 A (#10…4 AWG, stranded/solid)	1	100-CTN23
	3-Pole Terminal Lug Kit For Cat. No. 100-C09…C23 (Load side)	IEC @ 40 °C IEC @ 40 °C UL/CSA (Encl.)	45 A (4…16 mm^2❄ , fine stranded w/ ferrule) 45 A (4…25 mm^2, coarse stranded/solid) 40 A (#10…4 AWG, stranded/solid)	1	100-CTL23
	3-Pole Terminal Lug Kit For Cat. No. 100-C30…C37 (Line side)	IEC @ 40 °C IEC @ 40 °C UL/CSA (Encl.)	60 A (4…16 mm^2❄ , fine stranded w/ ferrule) 60 A (4…25 mm^2, coarse stranded/solid) 55 A (#10…4 AWG, stranded/solid)	1	100-CT37
	**1-Pole Terminal Lug Kit** For Cat. No. 100-C43	IEC @ 40 °C IEC @ 40 °C UL/CSA (Encl.)	90 A (6…35 mm^2, fine stranded w/ ferrule) 90 A (6…50 mm^2, coarse stranded/solid) 75 A (#8…2 AWG, stranded/solid)	3	100-CT43
	1-Pole Terminal Lug Kit For Cat. No. 100-C60…C85	IEC @ 40 °C IEC @ 40 °C UL/CSA (Encl.)	130 A (10…70 mm^2, fine stranded w/ ferrule) 130 A (10…95 mm^2, coarse stranded/solid) 130 A (#8…2/0 AWG, stranded/solid)	3	100-CT85
	**3-Pole Paralleling Kit** For Cat. No. 100-C09…C23	IEC @ 40 °C IEC @ 40 °C	100 A (35…70 mm^2, fine stranded w/ ferrule) 100 A (35…95 mm^2,	2	100-CP23

	UL/CSA (Encl.)	coarse stranded/solid) 100 A (#0…2/0 AWG, stranded/solid)		
3-Pole Paralleling Kit For Cat. No. 100-C30…C37	IEC @ 40 °C IEC @ 40 °C UL/CSA (Encl.)	150 A (35…70 mm^2, fine stranded w/ ferrule) 150 A (35…95 mm^2, coarse stranded/solid) 150 A (#0…2/0 AWG, stranded/solid)	2	100-CP37

✶ Must be ordered in multiples of the package quantity.
❄ 16 mm^2 max. according to IEC 60947; actual max. 25 mm^2.

			100/104-K			100/104-C, 100S/104S-C									
			05	09	12	09	12	16	23	30	37	40*200	40*400	43	60
Coil Type :	Conventional		X	X	X	X	X	X	X	X	X	X	X	X	X
	Electronic — EI		—	—	—	—	—	—	—	—	—	—	—	—	—
AC-1 Active Power Load (50 Hz);															
Ambient temperature 40 °C															
I_e	≤ 500V	[A]	20	20	20	32	32	32	32 (40)✶	65	65	75	75	85	100
	690V	[A]	20	20	20	32	32	32	32 (40)✶	65	65	75	75	85	100
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—
	230V	[kW]	8	8	8	13	13	13	13	26	26	30	30	34	40
	240V	[kW]	8.3	8.3	8.3	13	13	13	13	27	27	31	31	35	42
	400V	[kW]	14	14	14	22	22	22	22	45	45	52	52	59	69
	415V	[kW]	14	14	14	23	23	23	23	47	47	54	54	61	72
	500V	[kW]	17	17	17	28	28	28	28	56	56	65	65	74	87
	690V	[kW]	24	24	24	38	38	38	38	78	78	90	90	102	120
	1000V	[kW]	—	—	—	—	—	—	—	—	—	—	—	—	—
Ambient temperature 60 °C															
I_e	≤ 500V	[A]	16	16	16	32	32	32	32	65	65	60	60	80	100
	690V	[A]	16	16	16	32	32	32	32	65	65	60	60	80	100
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—
	230V	[kW]	6.4	6.4	6.4	13	13	13	13	26	26	24	24	25	40
	240V	[kW]	6.7	6.7	6.7	13	13	13	13	27	27	25	25	26	42
	400V	[kW]	11	11	11	22	22	22	22	45	45	42	42	44	69
	415V	[kW]	12	12	12	23	23	23	23	47	47	43	43	45	72
	500V	[kW]	14	14	14	28	28	28	28	56	56	52	52	55	87
	690V	[kW]	19	19	19	38	38	38	38	78	78	72	72	75	120
	1000V	[kW]	—	—	—	—	—	—	—	—	—	—	—	—	—
Switching of 3-phase Motors; (50 Hz)															
Ambient temperature 60 °C, AC-2, AC-3															
	230V	[A]	6.3	11.3	11.3	12	15	20	26.5	35	38	38	38	44	62
	240V	[A]	6.3	11.3	11.3	12	15	20	26.5	35	38	38	38	44	62
	400V	[A]	4.9	8.5	11.5	9	12	16	23	30	37	37	37	43	60
	415V	[A]	4.9	8.5	11.5	9	12	16	23	30	37	37	37	43	60
	500V	[A]	3.9	6.8	9.2	7	10	14	20	25	30	29	30	38	55
	690V	[A]	2.8	4.9	6.7	5	7	9	12	18	21	9	21	25	34
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—
	230V	[kW]	1.5	3	3	4	5.5	7.5		10	11	11	11	13	18.5
	240V	[kW]	1.5	3	3	4	5.5	7.5		10	11	11	11	13	18.5
	400V	[kW]	2.2	4	5.5	4	5.5	7.5	11	15	18.5	18.5	18.5	22	32
	415V	[kW]	2.2	4	5.5	4	5.5	7.5	11	15	20	20	20	22	32
	500V	[kW]	2.2	4	5.5	4	5.5	7.5	13	15	20	18.5	20	25	37
	690V	[kW]	2.2	4	5.5	4	5.5	7.5	10	15	18.5	7.5	18.5	22	32
	1000V	[kW]	—	—	—	—	—	—	—	—	—	—	—	—	—
Load Carrying Capacity per UL/CSA															
General Purpose Current (enclosed)															
		[A]	12	15	18	25	25	30	30	55	60	60	60	75	90
Rated power (enclosed)															
1-phase	115V	[A]	9.8	9.8	13.8	9.8	9.8	16	24	24	34	34	34	34	56

	230V	[A]	8	10	12	10	12	17	17		28	28	28		28		40	50
	115V	[Hp]	0.5	0.5	0.75	0.5	0.5	1	2		2	3	3		3		3	5
	230V	[Hp]	1	1.5	2	1.5	2	3	3		5	5	5		5		7.5	10
3-phase	200V	[A]	6.9	7.8	11	7.8	11	17.5	17.5		25.3	32.2	32.2		32.2		32.2	48.3
	230V	[A]	6	6.8	9.6	6.8	9.6	15.2	22		28	28	28		28		42	54
	460V	[A]	4.8	7.6	11	7.6	11	14	21		27	34	34		34		40	52
	575V	[A]	3.9	6.1	9	9	11	17	17		27	32	17		32		32	52
	200V	[Hp]	1.5	2	3	2	3	5	5		7.5	10	10		10		10	15
	230V	[Hp]	1.5	2	3	2	3	5	7.5		10	10	10		10		15	20
	460V	[Hp]	3	5	7.5	5	7.5	10	15		20	25	25		25		30	40
	575V	[Hp]	3	5	7.5	7.5	10	15	15		25	30	15		30		30	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	95	110	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	Electronic — EI		**AC-1 Active Power Load (50 Hz); Ambient temperature 40 °C**															
I_e	≤ 500V	[A]	100	100	130	130	160	160	250	250	250	250	350	350	450	540	800	1000
	690V	[A]	100	100	130	130	160	160	250	250	250	250	350	350	450	540	800	1000
	1000V	[A]	—	—	—	—	160	160	250	250	250	250	350	350	450	540	—	—
	230V	[kW]	40	40	52	52	64	64	100	100	100	100	139	139	179	199	319	398
	240V	[kW]	42	42	54	54	67	67	104	104	104	104	145	145	187	208	333	416
	400V	[kW]	69	69	90	90	111	111	173	173	173	173	242	242	312	346	554	693
	415V	[kW]	72	72	93	93	115	115	180	180	180	180	252	252	323	359	575	719
	500V	[kW]	87	87	113	113	139	139	217	217	217	217	303	303	390	433	693	866
	690V	[kW]	120	120	155	155	191	191	299	299	299	299	418	418	538	598	956	1195
	1000V	[kW]	—	—	—	—	277	277	433	433	433	433	606	606	779	866	—	—
Ambient	Electronic		**Ambient temperature 60 °C**															

temperature 60 °C	— EI																		
I_e	≤ 500V	[A]	100	100	110	110	135	135	210	210	210	210	300	300	380	425	—	—	
	690V	[A]	100	100	110	110	135	135	210	210	210	210	300	300	380	425	—	—	
	1000 V	[A]	—	—	—	—	135	135	210	210	210	210	300	300	380	425	—	—	
	230V	[kW]	40	40	44	44	54	54	84	84	84	84	120	120	151	169	—	—	
	240V	[kW]	42	42	46	46	56	56	87	87	87	87	125	125	158	177	—	—	
	400V	[kW]	69	69	76	76	94	94	145	145	145	145	208	208	263	294	—	—	
	415V	[kW]	72	72	79	79	97	97	151	151	151	151	216	216	273	305	—	—	
	500V	[kW]	87	87	95	95	117	117	182	182	182	182	260	260	329	368	—	—	
	690V	[kW]	120	120	131	131	161	161	251	251	251	251	359	359	454	508	—	—	
	1000 V	[kW]	—	—	—	—	234	234	364	364	364	364	520	520	658	736	—	—	
Switching of 3-phase Motors; (50 Hz) Ambient temperature 60 °C, AC-2, AC-3	Electronic — EI		**Switching of 3-phase Motors; (50 Hz) Ambient temperature 60 °C, AC-2, AC-3**																
	230V	[A]	72	85	85	85	95	110	140	140	180	180	210	250	300	420	630	860	
	240V	[A]	72	85	85	85	95	110	140	140	180	180	210	250	300	420	630	860	
	400V	[A]	72	85	85	85	95	110	140	140	180	180	210	250	300	420	630	860	
	415V	[A]	72	85	85	85	95	110 (130)‡	140 (155)‡	140 (155)‡	180 (189)‡	180 (189)‡	210 (227)‡	250 (258)‡	300 (315)‡	420	630	860	
	500V	[A]	67	80	80	80	95	110	115	140	140	180	210	250	300	420	630	753	
	690V	[A]	42	49	22	49	95	110	115	140	140	180	210	250	300	420	492	—	
	1000 V	[A]	—	—	—	—	33	40	55	55	65	65	80	95	115	160	—	—	
	230V	[kW]	22	25	25	25	30	34	45	45	57	57	67	80	97	135	200	250	
	240V	[kW]	22	25	25	25	31	36	47	47	60	60	70	83	101	141	200	250	
	400V	[kW]	40	45	45	45	53	61	78	78	101	101	118	140	170	238	355	500	
	415V	[kW]	40	45	45	45	55	63 (75)‡	82 (90)‡	82 (90)‡	105 (110)‡	105 (110)‡	122 (132)‡	145 (150)‡	176 (185)‡	250	355	500	
	500V	[kW]	45	55	55	55	66	76	80	98	98	126	147	177	213	298	450	560	
	690V	[kW]	40	45	18.5	45	92	106	111	135	135	176	205	250	293	424	500	—	

	1000 V	[kW]	—	—	—	—	45	55	75	75	90	90	110	132	160	225	—	—		
Load Carrying Capacity per UL/CSA	Electronic — EI	**Load Carrying Capacity per UL/CSA**																		
General Purpose Current (enclosed)		General Purpose Current (enclosed)																		
		[A]	90	100	125	130	160	160	220	220	220	220	300	300	340	420	630	860		
Rated power (enclosed)		Rated power (enclosed)																		
1-phase	115V	[A]	56	80	80	80	80	100	135	135	—	—	—	—	—	—	—	—		
	230V	[A]	68	68	68	68	68	110	136	136	176	176	216	—	—	—	—	—		
	115V	[Hp]	5	7.5	7.5	7.5	7.5	10	15	15	—	—	—	—	—	—	—	—		
	230V	[Hp]	15	15	15	15	15	25	30	30	40	40	50	—	—	—	—	—		
3-phase	200V	[A]	62.1	78.2	78.2	78.2	78.2	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	77	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	25	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	60	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		

✶ Values in ( ) with ‡ 415 V: values in ( ) AC-3 and AC-4 lifespan -25 %
increased cross-section and cable lug

			100/104-K			100/104-C, 100S/104S-C						
			05	09	12	09	12	16	23	30	37	43	60
Coil Type :	Conventional		X	X	X	X	X	X	X	X	X	X	X
	Electronic — EI		—	—	—	—	—	—	—	—	—	—	—
Switching of 3-phase Motors, (50Hz); Ambient temperature 60 °C, AC-4													
	230V	[A]	6.3	11.3	11.3	12	15	20	26.5	35	38	44	62
	240V	[A]	6.3	11.3	11.3	12	15	20	26.5	35	38	44	62
	400V	[A]	4.9	8.5	11.5	9	12	16	23	30	37	43	60
	415V	[A]	4.9	8.5	11.5	9	12	16	23	30	37	43	60

	500V	[A]	3.9	6.8	9.2	7	10	14	20	25	30	38	55
	690V	[A]	2.8	4.9	6.7	5	7	9	12	18	21	25	34
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—
	230V	[kW]	1.5	3	3	3	4	5.5	7.5	10	11	13	18.5
	240V	[kW]	1.5	3	3	3	4	5.5	7.5	10	11	13	18.5
	400V	[kW]	2.2	4	5.5	4	5.5	7.5	11	15	18.5	22	32
	415V	[kW]	2.2	4	5.5	4	5.5	7.5	11	15	20	22	32
	500V	[kW]	2.2	4	5.5	4	5.5	7.5	13	15	20	25	37
	690V	[kW]	2.2	4	5.5	4	5.5	7.5	10	15	18.5	22	32
	1000V	[kW]	—	—	—	—	—	—	—	—	—	—	—
Electronic — EI													
AC-4 at approximately	230V	[A]	2.3	3.9	3.9	4.3	6.6	9	9	12	14	16.5	25.5
200,000 operations	240V	[A]	2.3	3.9	3.9	4.3	6.6	9	9	12	14	16.5	25.5
	400/415V	[A]	2	3.6	3.6	4.3	6.6	9	9	12	14	16.5	25.5
	500V	[A]	1.9	3.2	3.2	4.3	6.6	9	9	12	14	16.5	25.5
	690V	[A]	—	—	—	4.3	6.6	9	9	12	14	16.5	25.5
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—
	230V✶	[kW]	0.37	0.75	0.75	0.75	1.5	2.2	2.2	3	3.7	4	6.3
	240V✶	[kW]	0.37	0.75	0.75	0.75	1.5	2.2	2.2	3	4	4	7.5
	400V✶	[kW]	0.75	1.5	1.5	1.8	3	4	4	5.5	6.3	7.5	13
	415V✶	[kW]	0.75	1.5	1.5	1.8	3	4	4	5.5	6.3	7.5	13
	500V✶	[kW]	0.75	1.5	1.5	2.2	3.7	5.5	5.5	7.5	7.5	10	15
	690V✶	[kW]	—	—	—	3	5.5	7.5	7.5	10	11	15	22
	1000V✶	[kW]	—	—	—	—	—	—	—	—	—	—	—
Max. switching frequency		Ops/h	250	250	250	250	250	220	200	200	200	200	120
Wye-Delta (60 Hz)													
	200V	[Hp]	2.2	3	5	5	5	7?	7?	10	15	20	30
	230V	[Hp]	2.2	3	5	5	7?	10	10	15	20	25	40
	460V	[Hp]	5	7.5	10	10	15	20	25	30	40	50	75
	575V	[Hp]	5	7.5	10	10	15	20	25	30	40	50	75
UL/CSA Elevator Duty❄													
	200V	[A]	—	—	—	7.8	11.0	11.0	17.5	25.3	25.3	32.2	32.2
	230V	[A]	—	—	—	6.8	9.6	15.2	15.2	22.0	28.0	28.0	42.0
	460V	[A]	—	—	—	7.6	11.0	14.0	21.0	27.0	27.0	34.0	40.0
	575V	[A]	—	—	—	6.1	9.0	11.0	17.0	22.0	27.0	32.0	41.0
	200V	[Hp]	—	—	—	2	3	3	5	7?	7?	10	10
	230V	[Hp]	—	—	—	2	3	5	5	7?	10	10	15
	460V	[Hp]	—	—	—	5	7?	10	15	20	20	25	30
	575V	[Hp]	—	—	—	5	7?	10	15	20	25	30	40
Star-Delta Starting (50 Hz)													
	≤ 230V	[A]	11.3	20	20	21	26	35	46	61	66	76	107
	≤ 240V	[A]	11.3	20	20	21	26	35	46	61	66	76	107
	400V	[A]	8.5	15.5	15.5	16	21	28	40	52	64	74	104
	415V	[A]	8.5	15.5	15.5	16	21	28	40	52	64	74	104
	500V	[A]	6.8	12.4	12.4	12	17	24	35	43	52	66	95
	690V	[A]	4.9	8.9	8.9	8.6	12	16	21	31	36	43	59
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—
	230V✶	[kW]	3	5.5	5.5	5.5	7.5	10	13	17	20	22	32
	240V✶	[kW]	3	5.5	5.5	5.5	7.5	10	13	18.5	20	22	32
	400V✶	[kW]	4	7.5	10	7.5	10	13	20	25	32	40	55
	415V✶	[kW]	4	7.5	11	7.5	11	15	22	25	37	40	55
	500V✶	[kW]	4	7.5	7.5	7.5	11	15	22	25	32	45	63

		690V✶	[kW]	4	7.5	7.5	7.5	10	13	18.5	25	32	40	55					
		1000V✶	[kW]	—	—	—	—	—	—	—	—	—	—	—					

✶ Power ratings at 50 Hz: Preferred values according to IEC 60072-1

❄ Approval pending on Cat. No. 100-D210…D860.

			100/104-100/104-D, 100S-DC, 100S/104S-C														
			72	85	95	110	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, (50Hz) Ambient temperature 60°C, AC-4	Electronic — EI		**Switching of 3-phase Motors, (50Hz); Ambient temperature 60 °C, AC-4**														
	230V	[A]	72	85	95	110	140	140	180	180	210	250	300	420	—	—	
	240V	[A]	72	85	95	110	140	140	180	180	210	250	300	420	—	—	
	400V	[A]	72	85	95	110	140	140	180	180	210	250	300	420	—	—	
	415V	[A]	72	85	95	110 (130) ❄	140 (155) ❄	140 (155) ❄	180 (189) ‡	180 (189) ‡	210 (227) ❄	250 (258) ❄	300 (315) ❄	420	—	—	
	500V	[A]	67	80	85	105	115	140	140	170	210	250	300	360	—	—	
	690V	[A]	42	49	85	105	115	140	140	170	210	250	300	360	—	—	
	1000V	[A]	—	—	33	40	55	55	65	65	80	95	115	160	—	—	
	230V	[kW]	22	25	30	34	45	45	57	57	67	80	97	135	—	—	
	240V	[kW]	22	25	31	36	47	47	60	60	70	83	101	141	—	—	
	400V	[kW]	40	45	53	61	78	78	100	100	118	140	170	238	—	—	
	415V	[kW]	40	45	55	63 (75)❄	82 (90)❄	82 (90)❄	105 (110) ❄	105 (110) ❄	125 (132) ❄	145 (150) ❄	176 (185) ❄	250	—	—	
	500V	[kW]	45	55	59	73	80	98	98	119	147	177	213	255	—	—	
	690V	[kW]	40	45	81	102	110	135	135	167	205	250	293	356	—	—	
	1000V	[kW]	—	—	45	55	75	75	90	90	110	132	160	225	—	—	
AC-4 at approximately 200,000	Electronic — EI		Electronic — EI														
	230V	[A]	31	38	43	50	60	60	67	67	85	105	140	170	—	—	

operations	240V	[A]	31	38	43	50	60	60	67	67	85	105	140	170	—	—
	400/415V	[A]	31	38	43	50	60	60	67	67	85	105	140	170	—	—
	500V	[A]	31	38	43	50	60	60	67	67	85	105	140	170	—	—
	690V	[A]	31	38	43	50	60	60	67	67	85	105	140	170	—	—
	1000V	[A]	—	—	19	23	37	37	43	43	60	72	85	105	—	—
	230V ✶	[kW]	7.5	11	13	15	17	17	20	20	25	32	45	55	—	—
	240V ✶	[kW]	7.5	11	13	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	25	32	40	40	45	45	55	75	100	110	—	—
	690V ✶	[kW]	25	32	40	45	55	55	63	63	80	100	132	160	—	—
	1000V ✶	[kW]	—	—	22	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)	Electronic — EI		Electronic — EI													
	200V	[Hp]	40	50	40	60	60	60	75	75	100	125	175	250	—	—
	230V	[Hp]	50	60	50	60	75	75	100	100	125	175	200	250	—	—
	460V	[Hp]	100	125	100	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❄	Electronic — EI		**UL/CSA Elevator Duty❄**													
	200V	[A]	48.3	62.1	62.1	78	92	92	120	120	150	150	177	221	—	—
	230V	[A]	54.0	68.0	68.0	80	104	104	130	130	130	154	192	248	—	—
	460V	[A]	52.0	65.0	65.0	77	96	96	124	124	156	180	180	240	—	—
	575V	[A]	52.0	62.0	62.0	77	77	77	99	99	125	144	192	242	—	—
	200V	[Hp]	15	20	20	25	30	30	40	40	50	50	60	75	—	—
	230V	[Hp]	20	25	25	30	40	40	50	50	50	60	75	100	—	—
	460V	[Hp]	40	50	50	60	75	75	100	100	125	150	150	200	—	—

575V	[Hp]	50	60	60	75	75	75	100	100	125	150	200	250	—	—
Electronic — EI	**Star-Delta Starting (50 Hz)**														
≤ 230V	[A]	125	147	165	191	242	242	312	312	364	433	520	727	—	—
≤ 240V	[A]	125	147	165	191	242	242	312	312	364	433	520	727	—	—
400V	[A]	125	147	165	191	242	242	312	312	364	433	520	727	—	—
415V	[A]	125	147	165	191 (225) ❄	242 (268) ❄	242 (268) ❄	312 (332) ‡	312 (332) ‡	364 (393) ❄	433 (447) ❄	520 (546) ❄	727	—	—
500V	[A]	116	139	165	191	199	242	312	312	364	433	520	727	—	—
690V	[A]	73	85	165	191	199	242	312	312	364	433	520	727	—	—
1000V	[A]	—	—	57	69	95	95	113	113	139	165	200	277	—	—
230V ✶	[kW]	37	45	45	55	75	75	90	90	110	132	160	220	—	—
240V ✶	[kW]	40	50	50	63	80	80	100	100	125	150	160	250	—	—
400V ✶	[kW]	63	80	80	100	132	132	160	160	200	250	300	425	—	—
415V ✶	[kW]	63	80	80 (90) ❄	100 (132) ❄	132 (160) ❄	132 (160) ❄	160	160	220	250	315 (335) ❄	425	—	—
500V ✶	[kW]	80	90	100	132	132	160	200	200	250	315	375	530	—	—
690V ✶	[kW]	63	80	132	160	200	220	300	300	355	425	530	750	—	—
1000V ✶	[kW]	—	—	75	90	132	132	160	160	200	220	280	400	—	—

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

			100/104-K	100/104-C, 100S/104S-C									
			05	09	12	09	12	16	23	30	37	43	60
Coil Type :	Conventional		X	X	X	X	X	X	X	X	X	X	X
	Electronic — EI		—	—	—	—	—	—	—	—	—	—	—
Switching of Power Transformers, AC-6a (50 Hz)													
Inrush Current / Rated transformer current		= n											
n = 30	≤ 230V	[A]	2.9	5.4	5.4	10.9	10.9	10.9	10.9	20	20	23	40.8
	≤ 240V	[A]	2.9	5.4	5.4	10.9	10.9	10.9	10.9	20	20	23	40.8
	≤ 400V	[A]	2.4	4.1	5.4	10.9	10.9	10.9	10.9	20	20	23	40.

													8
	≤ 415V	[A]	2.4	4.1	5.4	10.9	10.9	10.9	10.9	20	20	23	40.8
	≤ 500V	[A]	1.8	3.2	3.2	10.9	10.9	10.9	10.9	20	20	23	40.8
	≤ 690V	[A]	—	—	—	10.9	10.9	10.9	10.9	20	20	23	40.8
	≤ 1000V	[A]	—	—	—	—	—	—	—	—	—	—	—
	230V	[kVA]	1.2	2	2	4.3	4.3	4.3	4.3	8	8	9.2	16
	240V	[kVA]	1.2	2	2	4.5	4.5	4.5	4.5	8.3	8.3	10	17
	400V	[kVA]	1.7	2.8	3.4	7.5	7.5	7.5	7.5	14	14	16	28
	415V	[kVA]	1.7	2.8	3.4	7.8	7.8	7.8	7.8	14	14	17	29
	500V	[kVA]	1.7	2.8	3.4	9.4	9.4	9.4	9.4	17	17	20	35
	690V	[kVA]	2	4	5	13	13	13	13	24	24	27	49
	1000V	[kVA]	—	—	—	—	—	—	—	—	—	—	—
n = 20	≤ 690V	[A]	—	—	—	16.3	16.3	16.3	16.3	30	30	34.5	61.3
n = 15	≤ 690V	[A]	—	—	—	22	22	22	22	40	40	46	82

60 Hz Peak Inrush/peak rated transformer current

	n = 30	[A]	—	—	—	10.9	10.9	10.9	10.9	20	20	23	40.8
	200V	[kVA]	—	—	—	3.8	3.8	3.8	3.8	6.9	6.9	8.0	14.1
	208V	[kVA]	—	—	—	3.9	3.9	3.9	3.9	7.2	7.2	8.3	14.7
	240V	[kVA]	—	—	—	4.5	4.5	4.5	4.5	8.3	8.3	9.6	17.0
	480V	[kVA]	—	—	—	9.1	9.1	9.1	9.1	16.6	16.6	19.1	33.9
	600V	[kVA]	—	—	—	11.3	11.3	11.3	11.3	20.8	20.8	23.9	42.4
	660V	[kVA]	—	—	—	12.5	12.5	12.5	12.5	22.9	22.9	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	61.3
	200V	[kVA]	—	—	—	5.6	5.6	5.6	5.6	10.4	10.4	12.0	21.2
	208V	[kVA]	—	—	—	5.9	5.9	5.9	5.9	10.8	10.8	12.4	22.1
	240V	[kVA]	—	—	—	6.8	6.8	6.8	6.8	12.5	12.5	14.3	25.5
	480V	[kVA]	—	—	—	13.6	13.6	13.6	13.6	24.9	24.9	28.7	51.0
	600V	[kVA]	—	—	—	16.9	16.9	16.9	16.9	31.2	31.2	35.9	63.7
	660V	[kVA]	—	—	—	18.6	18.6	18.6	18.6	34.3	34.3	39.4	70.1

60 Hz Peak Inrush/peak rated transformer current

	n=15	[A]	—	—	—	22	22	22	22	40	40	46	82
	200V	[kVA]	—	—	—	7.5	7.5	7.5	7.5	13.9	13.9	15.9	28.4
	208V	[kVA]	—	—	—	7.8	7.8	7.8	7.8	14.4	14.4	16.6	29.

																			5
240V	[kVA]	—	—	—	9.0	9.0	9.0	9.0	16.6	16.6	19.1	34.1							
480V	[kVA]	—	—	—	18.1	18.1	18.1	18.1	33.3	33.3	38.2	68.2							
600V	[kVA]	—	—	—	22.6	22.6	22.6	22.6	41.6	41.6	47.8	85.2							
660V	[kVA]	—	—	—	24.9	24.9	24.9	24.9	45.7	45.7	52.6	93.7							

			100/104-C, 100S/104S-C		100/104-D, 100S-D											
			72	85	95	110	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 Power Transformers, AC-6a (50 Hz)	Electronic EI		**Switching of Power Transformers, AC-6a (50 Hz)**													
Inrush Current	230V	= n	Inrush Current													
Rated transformer current	230V		Rated transformer current													
n = 30	≤ 230V	[A]	40.8	40.8	53	60	70	70	85	85	105	125	150	210	—	—
	≤ 240V	[A]	40.8	40.8	53	60	70	70	85	85	105	125	150	210	—	—
	≤ 400V	[A]	40.8	40.8	53	60	70	70	85	85	105	125	150	210	—	—
	≤ 415V	[A]	40.8	40.8	53	60	70	70	85	85	105	125	150	210	—	—
	≤ 500V	[A]	40.8	40.8	53	60	70	70	85	85	105	125	150	210	—	—
	≤ 690V	[A]	40.8	40.8	53	60	70	70	85	85	105	125	150	210	—	—
	≤ 1000V	[A]	—	—	53	60	70	70	85	85	105	125	150	210	—	—
	230V	[kVA]	16	16	21	24	28	28	34	34	42	50	60	84	—	—
	240V	[kVA]	17	17	22	25	29	29	35	35	44	52	62	87	—	—
	400V	[kVA]	28	28	37	42	48	48	59	59	73	87	104	145	—	—
	415V	[kVA]	29	29	38	43	50	50	61	61	75	90	108	151	—	—
	500V	[kVA]	35	35	46	52	61	61	74	74	91	108	130	182	—	—
	690V	[kVA]	49	49	64	72	84	84	102	102	125	149	179	251	—	—
	1000V	[kVA]	—	—	92	104	121	121	147	147	182	217	260	364	—	—
n = 20	≤ 690V	[A]	61.3	61.3	80	90	105	105	128	128	158	188	225	315	—	—
n = 15	≤ 690V	[A]	82	82	107	120	140	140	170	170	210	250	300	420	—	—
60 Hz Peak	Electronic	—	60 Hz Peak Inrush/peak rated transformer current													

Inrush/peak rated transformer current	EI															
	n = 30	[A]	40.8	40.8	53	60	70	70	85	85	105	125	150	210	—	—
	200V	[kVA]	14.4	14.4	18.4	20.8	24.2	24.2	29.4	29.4	36.4	43.3	52.0	72.7	—	—
	208V	[kVA]	14.7	14.7	19.1	21.6	25.2	25.2	30.6	30.6	37.8	45.0	54.0	75.7	—	—
	240V	[kVA]	17.0	17.0	22.0	24.9	29.1	29.1	35.3	35.3	43.6	52.0	62.4	87.3	—	—
	480V	[kVA]	33.9	33.9	44.1	49.9	58.2	58.2	70.7	70.7	87.3	104	125	175	—	—
	600V	[kVA]	42.4	42.4	55.1	62.4	72.7	72.7	88.3	88.3	109	130	156	218	—	—
	660V	[kVA]	46.6	46.6	60.6	68.6	80.0	80.0	97.2	97.2	120	143	171	240	—	—
60 Hz Peak	Electronic — 60 Hz Peak Inrush/peak rated transformer current															
Inrush/peak rated transformer current	EI															
	n = 20	[A]	61.3	61.3	80	90	105	105	128	128	158	188	225	315	—	—
	200V	[kVA]	21.2	21.2	27.7	31.2	36.4	36.4	44.3	44.3	54.7	65.1	77.9	109	—	—
	208V	[kVA]	22.1	22.1	28.8	32.4	37.8	37.8	46.1	46.1	56.9	67.7	81.1	113	—	—
	240V	[kVA]	25.5	25.5	33.3	37.4	43.6	43.6	53.2	53.2	65.7	78.2	93.5	131	—	—
	480V	[kVA]	51.0	51.0	66.5	74.8	87.3	87.3	106	106	131	156	187	262	—	—
	600V	[kVA]	63.7	63.7	83.1	93.5	109	109	133	133	164	195	234	327	—	—
	660V	[kVA]	70.1	70.1	91.5	103	120	120	146	146	131	215	257	360	—	—
60 Hz Peak	Electronic — 60 Hz Peak Inrush/peak rated transformer current															
Inrush/peak rated transformer current	EI															
	n=15	[A]	82	82	107	120	140	140	170	170	210	250	300	420	—	—
	200V	[kVA]	28.4	28.4	37.1	41.6	48.5	48.5	58.9	58.9	72.7	86.6	104	145	—	—
	208V	[kVA]	29.5	29.5	38.5	43.2	50.4	50.4	61.2	61.2	75.7	90.1	108	151	—	—
	240V	[kVA]	34.1	34.1	44.5	49.9	58.2	58.2	70.7	70.7	87.3	104	125	175	—	—
	480V	[kVA]	68.2	68.2	89.0	99.8	116	116	141	141	175	208	249	349	—	—
	600V	[kVA]	85.2	85.2	111	125	145	145	177	177	218	260	312	436	—	—
	660V	[kVA]	93.7	93.7	122	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	60
Coil Type :	Conventional		X	X	X	X	X	X	X	X	X	X	X	X	X
	Electronic — EI		—	—	—	—	—	—	—	—	—	—	—	—	—
Switching of 3-phase Capacitors, AC-6b (50 Hz)✶															
Single capacitor	230V	[kVar]	—	—	—	8	8	8.5	9	14	14	—	—	24	28
40 °C	240V	[kVar]	—	—	—	8	8	8.5	9	14	14	—	—	25	29
	400V	[kVar]	—	—	—	8	8	10	12.5	20	24	—	—	35	48
	415V	[kVar]	—	—	—	8	8	10	12.5	20	25	—	—	35	50
	500V	[kVar]	—	—	—	8	8	10	12.5	20	25	—	—	35	50
	690V	[kVar]	—	—	—	8	8	10	12.5	20	25	—	—	35	50
	1000V	[kVar]	—	—	—	—	—	—	—	—	—	—	—	—	—
60 °C	230V	[kVar]	—	—	—	8	8	8.5	9	12.5	12.5	—	—	18	28
	240V	[kVar]	—	—	—	8	8	8.5	9	12.5	12.5	—	—	18	29
	400V	[kVar]	—	—	—	8	8	10	12.5	20	21.5	—	—	30	42
	415V	[kVar]	—	—	—	8	8	10	12.5	20	22	—	—	30	42
	500V	[kVar]	—	—	—	8	8	10	12.5	20	25	—	—	30	42
	690V	[kVar]	—	—	—	8	8	10	12.5	20	25	—	—	30	42

	1000V	[kVar]	—	—	—	—	—	—	—	—	—	—	—	—	—
Group	230V	[kVar]	—	—	—	5	5	8	9	12.5	14	—	—	20	28
capacitors 40	240V	[kVar]	—	—	—	5	5	8	9	12.5	14	—	—	20	29
°C	400V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	40
	415V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	40
	500V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	40
	690V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	40
	1000V	[kVar]	—	—	—	—	—	—	—	—	—	—	—	—	—
60 °C	230V	[kVar]	—	—	—	5	5	8	9	12.5	12.5	—	—	18	28
	240V	[kVar]	—	—	—	5	5	8	9	12.5	12.5	—	—	18	29
	400V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	40
	415V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	40
	500V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	40
	690V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	40
	1000V	[kVar]	—	—	—	—	—	—	—	—	—	—	—	—	—
60 Hz Single Capacitor — 40 °C															
	200V	[kVar]	—	—	—	5	5	8	9	12.5	14	—	—	20	28
	230V	[kVar]	—	—	—	5	5	8	9	12.5	14	—	—	20	29
	460V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	40
	600V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	40
60 Hz Group Capacitors — 40 °C															
	200V	[kVar]	—	—	—	5	5	8	9	12.5	12.5	—	—	18	28
	230V	[kVar]	—	—	—	5	5	8	9	12.5	12.5	—	—	18	29
	460V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	40
	600V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	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	81
	enclosed	[A]	14.5	14.5	14.5	22.5	25	28	29	37	41	54	54	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	4 000
	20 kA	[μF]	400	400	400	500	500	500	500	1 350	1 350	—	—	1 600	2 000
	50 kA	[μF]	—	—	—	200	200	200	200	540	540	—	—	640	800
Filament AC-5b	230/240V	[A]	5	9	9	12	16	18	22	30	37	18	25	43	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	—
	400V	[A]	20	20	20	32	32	32	32	45	45	—	—	63	—
	440V	[A]	—	—	—	32	32	32	32	45	45	—	—	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	—	—	—	—	—

✶ Inductance of leads between capacitors in parallel: min. 6 μH (100-C09…C30 contactors: min 30 μH)

			100S/104S-C															
			72	85	90*200	90*400	95	110	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
Switching of 3-phase Capacitors, AC-6b (50 Hz)	Electronic — EI	**Switching of 3-phase Capacitors, AC-6b (50 Hz)**																
Single capacitor	230V	[kVar]	28	28	—	—	45	45	70	70	70	70	98	98	125	139	—	—
40°C	240V	[kVar]	29	29	—	—	47	47	73	73	73	73	102	102	131	145	—	—
	400V	[kVar]	48	48	—	—	78	78	121	121	121	121	170	170	218	242	—	—
	415V	[kVar]	50	50	—	—	81	81	126	126	126	126	176	176	226	252	—	—
	500V	[kVar]	55	60	—	—	97	97	152	152	152	152	212	212	273	303	—	—
	690V	[kVar]	55	60	—	—	134	134	209	209	209	209	293	293	376	418	—	—
	1000V	[kVar]	—	—	—	—	194	194	303	303	303	303	424	424	546	606	—	—
60 °C	230V	[kVar]	28	28	—	—	38	38	59	59	59	59	84	84	106	119	—	—
	240V	[kVar]	29	29	—	—	39	39	61	61	61	61	87	87	111	124	—	—
	400V	[kVar]	48	48	—	—	65	65	102	102	102	102	145	145	184	206	—	—
	415V	[kVar]	50	50	—	—	68	68	106	106	106	106	151	151	191	214	—	—
	500V	[kVar]	50	55	—	—	82	82	127	127	127	127	182	182	230	258	—	—
	690V	[kVar]	50	55	—	—	113	113	176	176	176	176	251	251	318	356	—	—
	1000V	[kVar]	—	—	—	—	164	164	255	255	255	255	364	364	461	515	—	—
Group capacitors	230V	[kVar]	28	28	—	—	42	45	70	70	70	70	98	98	125	139	—	—
40°C	240V	[kVar]	29	29	—	—	43	47	73	73	73	73	102	102	131	145	—	—
	400V	[kVar]	48	48	—	—	44	56	76	76	111	111	170	170	218	242	—	—
	415V	[kVar]	50	50	—	—	44	56	76	76	112	112	170	176	226	252	—	—
	500V	[kVar]	50	50	—	—	44	56	76	76	113	113	172	212	273	303	—	—
	690V	[kVar]	50	50	—	—	45	57	78	78	114	114	174	247	356	418	—	—
	1000V	[kVar]	—	—	—	—	46	58	79	79	116	116	177	251	361	606	—	—

60°C	230V	[kVar]	28	28	—	—	38	38	59	59	59	59	84	84	106	119	—	—
	240V	[kVar]	29	29	—	—	39	39	61	61	61	61	87	87	111	124	—	—
	400V	[kVar]	48	48	—	—	44	56	76	76	102	102	145	145	184	206	—	—
	415V	[kVar]	50	50	—	—	44	56	76	76	106	106	151	151	191	214	—	—
	500V	[kVar]	50	50	—	—	44	56	76	76	113	113	172	182	230	258	—	—
	690V	[kVar]	50	50	—	—	45	57	78	78	114	114	174	247	318	356	—	—
	1000V	[kVar]	—	—	—	—	46	58	79	79	116	116	177	251	361	515	—	—
60 Hz Single Capacitor — 40 °C	Electronic — EI	60 Hz Single Capacitor — 40 °C																	
	200V	[kVar]	28	28	—	—	39	39	61	61	61	61	85	85	109	121	—	—
	230V	[kVar]	29	29	—	—	45	45	70	70	70	70	98	98	125	139	—	—
	460V	[kVar]	50	50	—	—	89	89	139	139	139	139	195	195	251	279	—	—
	600V	[kVar]	50	50	—	—	116	116	182	182	182	182	255	255	327	364	—	—
60 Hz Group Capacitors — 40 °C	Electronic — EI	60 Hz Group Capacitors — 40 °C																	
	200V	[kVar]	28	28	—	—	39	39	61	61	61	61	85	85	109	121	—	—
	230V	[kVar]	29	29	—	—	42	45	70	70	70	70	98	98	125	139	—	—
	460V	[kVar]	50	50	—	—	44	56	76	76	112	112	171	195	251	279	—	—
	600V	[kVar]	50	50	—	—	45	57	77	77	114	114	173	246	327	364	—	—
Switching of Lamps	Electronic — EI	**Switching of Lamps**																	
Gas discharge lamps AC-5a, 40 °C	open	[A]	85	90	115	115	144	144	225	225	225	225	315	315	405	450	—	—
	enclosed	[A]	81	90	95	95	122	122	189	189	189	189	270	270	342	383	—	—
Individually compensated:	460V	[A]	Individually compensated:																
Max. capacitance at expected	575V	[A]	Max. capacitance at expected																
Short-circuit current of	10 kA	[µF]	4000	4700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	20 kA	[µF]	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

			000	350														
	50 kA	[μF]	800	940	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Filament AC-5b	230/240 V	[A]	70	76	60	75	107	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)	Electronic — EI		**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)	Electronic — EI		**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	60
Coil Type :	Conventional		X	X	X	X	X	X	X	X	X	X	X	X	X
	Electronic — EI		—	—	—	—	—	—	—	—	—	—	—	—	—
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	72
	500V	[A]	10	15	15	12	16	22	32	38	45	—	—	63	72
	690V	[A]	—	—	—	8	10	14	20	28	35	—	—	42	56
- automatic reset of overload release															
AC-8b	400V	[A]	—	—	—	5.5	7	9.3	12	13	14	—	—	16	24
	500V	[A]	—	—	—	5.5	7	9.3	12	13	14	—	—	16	24
	690V	[A]	—	—	—	5.5	7	9.3	12	13	14	—	—	16	24
Switching of DC Loads															
Non-inductive or slightly inductive loads or resistance furnaces DC-1 at 60 °C															
1 pole	24V	[A]	6	9	9	25	25	32	32	45	45	45	45	50	70
	48/60V	[A]	4/1	6/1.5	6/1.5	20	20	20	20	25	25	25	25	30	40
	110V	[A]	0.6	1	1	6	6	6	6	8	8	10	10	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	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
2	24V	[A]	6	9	9	25	25	32	32	45	45	45	45	50	70

poles	48/60V	[A]	6	8	8	25	25	32	32	45	45	45	45	50	70
in	110V	[A]	4	6	6	25	25	32	32	45	45	45	45	50	70
series	220V	[A]	0.8	1.2	1.2	8	8	8	10	10	10	10	10	10	15
	440V	[A]	0.2	0.3	0.3	1	1	1	1	1	1	1	1	1	1.5
3	24V	[A]	6	9	9	25	25	32	32	45	45	—	45	63	90
poles	48/60V	[A]	6	9	9	25	25	32	32	45	45	—	45	63	90
in	110V	[A]	6	9	9	25	25	32	32	45	45	—	45	63	90
series	220V	[A]	3	4	4	25	25	32	32	45	45	—	45	50	70
	440V	[A]	0.4	0.6	0.6	3	3	3	3	3.5	3.5	—	3.5	4	5
Shunt-wound Motors															
Starting, reverse current braking, reversing, stepping DC-3, 60 °C															
3	24V	[A]	5	9	9	25	25	32	32	45	45	—	—	63	90
poles	48/60V	[A]	4	6	6	25	25	32	32	45	45	—	—	50	70
in	110V	[A]	2	3	3	20	20	25	25	30	30	—	—	35	70
series	220V	[A]	0.8	1.2	1.2	6	6	6	10	15	15	—	—	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
Series-wound Motors															
Starting, reverse current braking, reversing, stepping DC-5, 60 °C															
3	24V	[A]	5	9	9	25	25	32	32	45	45	—	—	63	90
poles	48/60V	[A]	2	3	3	25	25	32	32	45	45	—	—	50	70
in	110V	[A]	0.6	1	1	20	20	25	25	30	30	—	—	35	70
series	220V	[A]	0.1	0.1	0.1	6	6	6	10	15	15	—	—	20	25
	440V	[A]	—	—	—	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	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	0.9
Power dissipation by all circuits at I_e 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	9.7
Total power dissipation															
At I_e AC-3/400 V	AC control	[W]	2.1	2.7	2.7	3.3	3.8	4.7	6.2	8.4	11.2	26.1	37.4	11.5	11
	DC control	[W]	2.9	3.5	3.5	6.7	7.2	8.1	12.4	14.6	17.4	32.6	43.9	18.4	11
Lifespan															
Mechanical AC control		[Mil. operations]	15	15	15	13	13	13	13	13	13	10	10	12	10
Mechanical DC control		[Mil. operations]	15	15	15	13	13	13	13	13	13	10	10	13	10
Electrical AC-3 (400 V)		[Mil. operations]	0.7	0.7	0.7	1.3	1.3	1.3	1.3	1.3	1.3	—	—	1	1
Weight															
AC	Non-Reversing	kg (lbs.)	0.16 (0.35)	0.16 (0.35)	0.16 (0.35)	0.39 (0.86)	0.39 (0.86)	0.39 (0.86)	0.39 (0.86)	0.48 (1.06)	0.49 (1.08)	—	—	0.51 (1.12)	1.45 (3.20)

	Reversing	kg (lbs.)	—	—	—	0.85 (1.89)	0.85 (1.89)	0.85 (1.89)	0.85 (1.89)	1.08 (2.39)	1.08 (2.39)	—	—	1.15 (2.54)	3.14 (6.92)
DC	Non-Reversing	kg (lbs.)	0.2 (0.44)	0.2 (0.44)	0.2 (0.44)	0.6 (1.32)	0.6 (1.32)	0.6 (1.32)	0.73 (1.61)	0.85 (1.87)	0.85 (1.87)	—	—	1.0 (2.20)	1.47 (3.24)
	Reversing	kg (lbs.)	—	—	—	1.27 (2.81)	1.27 (2.81)	1.27 (2.81)	1.53 (3.39)	1.81 (4.0)	1.81 (4.0)	—	—	2.13 (4.7)	3.22 (7.1)

			100/104-C, 100S/104S-C				100-D, 100S-D											
			72	85	90*200	90*400	95	110	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
Switching of Hermetically Sealed Cooling Compressor Motors - manual reset of overload release (50 Hz)	Electronic EI	—	**Switching of Hermetically Sealed Cooling Compressor Motors - manual reset of overload release (50 Hz)**															
AC-8a	400V	[A]	85	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	500V	[A]	85	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	690V	[A]	67	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—
- automatic reset of overload release	Electronic EI	—	- automatic reset of overload release															
AC-8b	400V	[A]	30	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	500V	[A]	30	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	690V	[A]	30	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Switching of DC Loads			**Switching of DC Loads**															
Non-inductive or slightly inductive loads	Electronic EI	—																

or resistance furnaces DC-1 at 60 °C																		
1 pole	24V	[A]	80	80	80	80	135	135	210	210	210	210	300	300	380	425	—	—
	48/60 V	[A]	40	40	40	40	135	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	11	11	11	11	135	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	2	2	1.8	1.8	3	3	3.3	3.3	3.3	3.3	4.9	4.9	4.9	5.2	—	—
	440V	[A]	0.5	0.5	0.5	0.5	0.6	0.6	0.75	0.75	0.75	0.75	1	1	1	1.2	—	—
2 poles in series	24V	[A]	80	80	80	80	135	135	210	210	210	210	300	300	380	425	—	—
	48/60 V	[A]	80	80	80	80	135	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	80	80	80	80	135	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	15	15	15	15	135	135	210	210	210	210	300	300	380	425	—	—
	440V	[A]	1.5	1.5	1.5	1.5	3	3	3.3	3.3	3.3	3.3	4.9	4.9	4.9	5.2	—	—
3 poles in series	24V	[A]	90	100	—	100	135	135	210	210	210	210	300	300	380	425	—	—
	48/60 V	[A]	90	100	—	100	135	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	90	100	—	100	135	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	80	80	—	80	135	135	210	210	210	210	300	300	380	425	—	—
	440V	[A]	5	5	—	5	11	11	11	11	11	11	14	14	14	15	—	—
Shunt-wound Motors Starting, reverse current braking, reversing, stepping DC-3, 60 °C	Electronic EI	—	Shunt-wound Motors Starting, reverse current braking, reversing, stepping DC-3, 60 °C															
3 poles in series	24V	[A]	90	100	—	—	135	135	210	210	210	210	300	300	380	425	—	—
	48/60 V	[A]	70	80	—	—	135	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	70	80	—	—	135	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	25	30	—	—	135	135	210	210	210	210	300	300	380	425	—	—
	440V	[A]	0.6	0.6	—	—	3	3	3.5	3.5	3.5	3.5	4.1	4.1	4.1	5.8	—	—
Series-wound Motors Starting, reverse current braking, reversing,	Electronic EI	—	Series-wound Motors Starting, reverse current braking, reversing, stepping DC-5, 60 °C															

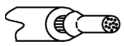
stepping DC-5, 60 °C																		
3 poles in series	24V	[A]	90	100	—	—	135	135	210	210	210	210	300	300	380	425	—	—
	48/60 V	[A]	70	80	—	—	135	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	70	80	—	—	135	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	25	30	—	—	135	135	210	210	210	210	300	300	380	425	—	—
	440V	[A]	0.6	0.6	—	—	1.2	1.2	2.1	2.1	2.1	2.1	2.4	2.4	2.4	3	—	—
Short Time Withstand I_{CW}, 60 °C	Electronic EI	—	**Short Time Withstand** I_{CW}, 60 °C															
	10 s	[A]	700	700	700	700	1040	1040	1240	1360	1480	1480	2360	2520	2840	4700	—	—
Resistance and Power Dissipation	Electronic EI	—	**Resistance and Power Dissipation**															
Main current circuit resistance	230V	[mΩ]	0.9	0.9	0.8	0.7	0.4	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	10.8	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	Electronic EI	—	Total power dissipation															
At I_e AC-3/400V	AC control	[W]	13.8	17.5	36	56.3	20.8 (16.8)	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	18.8 (16.8)	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	Electronic EI	—	**Lifespan**															
Mechanical AC control	600V	[Mil. operations]	10	10	10	10	10	10	10	10	10	10	10	10	10	10	2	2
DC control	600V	[Mil. operations]	10	10	10	10	10	10	10	10	10	10	10	10	10	10	2	2
Electrica	600V	[Mil.	1	1	—	—	1	1	1	1	1	1	1	1	1	1	—	—

l AC-3 (400 V)		operations]																		
Weight	Electronic — EI		**Weight**																	
AC	Non-Reversing	kg (lbs.)	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)	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
DC	Non-Reversing	kg (lbs.)	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)	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—

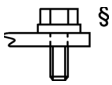
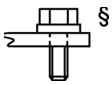
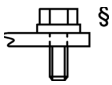
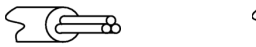
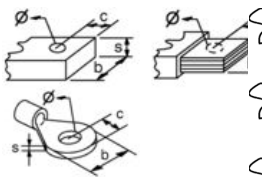
✶ Values in brackets refer to electronic coil (EI) version.

			100/104-K			100/104-C, 100S/104S-C										
			05	09	12	09	12	16	23	30	37	40	43	60	72	85
Coil Type :	Conventional		X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Electronic — EI		—	—	—	—	—	—	—	—	—	—	—	—	—	—
Conductor Cross Sections - Main Contacts					✶				✶			❄				‡
Terminal type																
	(1)	[mm²]	0.75…2.5			1…4				2.5…10		2.5…16		2.5…35		
	conductor	[mm²]	0.75…2.5			1…4				2.5…10		2.5…10		2.5…25		
	(2) conductors															
	(1)	[mm²]	1…4			1.5…6				2.5…16		2.5…25		2.5…50		
	conductor	[mm²]	1…2.5+ 1…4			1.5…6				2.5…16		2.5…16		2.5…35		
	(2) conductors															
	b max.	[mm]	—			—				—		—		—		
	c max.	[mm]	—			—				—		—		—		
	s max.	[mm]	—			—				—		—		—		
	∅ min.	[mm]	—			—				—		—		—		
Recommended torque	[N•m]		1.2			1.5…2.5				2.5…3.5		2.5…3.5		3.5…6		
Cross section per UL/CSA	[AWG]		18…12			16…10				14…4		14…6		14…4		14…1
Recommended torque	[lb-in]		10.6			13.3…22				22…31		22…31		31…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.	[mm]	—	—	—	—	—	—
	s top	[mm]						
	s bottom	[mm]						
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

			100-D, 100S-D											
			95	110	95	110	140	180	210	250	300	420	630	860
Coil Type :	Conventional		X	X	—	—	X	X	—	—	—	—	—	—
	Electronic — EI		—	—	X	X	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]	20		25				30				52	52
	c max.	[mm]	10		12.5				15				22	22
	s max.	[mm]	5		5				6				2 x 8	2 x 8
	∅ min.	[mm]	6.1		8.3				10.5				13	13
Recommended torque		[Nm]	9		22				43				68	68
Cross section per UL/CSA		[AWG]	—		—				—				—	—

Recommended torque		[lb-in]	80	195		380	600	600
With terminal lug kit			100-DL110‡	100-DLE110‡	100-DL180‡	100-DL420‡	100-DL630	100-DL860
Cross section per UL/CSA		[AWG]	8…2/0	8…2/0	6…300 MCM	(2x) 4…350 MCM	(2X) 2/0… 500MCM	(4X) 2/0… 500MCM
Recommended torque		[lb-in]	90	90	250	250	400	400
With Frame Terminal Block			100-DTB110‡	100-DTB180‡		100-DTB420✶	—	—
	top opening	[mm²]	16…35	16…35		25…240♣	—	—
	bottom opening	[mm²]	16…70	16…95		25…240		
	top opening	[mm²]	16…50	16…50		25…300	—	—
	bott. opening	[mm²]	16…95	16…120		25…300		
	b max.	[mm]	16	20		25	—	—
	s top	[mm]	3…9	3…9		4…20		
	s bottom	[mm]	3…12	3…14		4…20		
Recommended torque		[Nm]	12	14		25	—	—
Cross section per UL/CSA top		[AWG]	6…1 / 0 AWG	6…1 / 0 AWG		4 AWG…600 MCM	—	—
bottom		[AWG]	6…3 / 0 AWG	6 AWG…250 MCM		4 AWG…600 MCM	—	—
Recommended torque		[lb-in]	106	124		220	—	—

✶ Pozidriv No. 2 / Blade No. 3 screw
❄ Pozidriv No. 2 / Blade No. 4 screw
‡ Hexagonal socket screw
§ Hexagonal screw
♣ 25…95 mm² with sleeve per DIN 46228

Coil Data

		100/104-K			100/104-C, 100S/104S-C															
		05	09	12	09	12	16	23	30	37	40*2	40*4	43	60	72	85	90*2	90*4
					0	1	2	6			00	00		0	2	5	00	00
Coil Type	Conventional	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

	Electronic EI	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Operating Limits															
50 Hz, 60 Hz, 50/60 Hz	pick-up	[x *U*s]	0.85…1.1		0.85…1.1			0.85….1.1		0.85….1.1					
	dropout	[x *U*s]	0.2…0.75		0.3…0.6			0.3…0.6		0.3…0.6					
DC (conventional)	pick-up	[x *U*s]	0.85…1.1 0.7…1.25§		0.8…1.1			0.8…1.1		0.8…1.1					
	dropout	[x *U*s]	0.1…0.75		0.1…0.6			0.1…0.6		0.1…0.6					
DC (electronic)	pick-up	[x *U*s]	—		0.7…1.25							—			
	dropout	[x *U*s]	—		0.1…0.5							—			
Coil Consumption															
50 Hz, 60 Hz, 50/60 Hz	pick-up	[VA/W]	35/32		70/50		70/50	80/60	130/90	130/90		200/110		400/240	
Hz	hold-in	[VA/W]	5/1.8		8/2.6		9/3	9/3	12/3.6	10/3.2		16/4.5		24/9	
DC (conventional)	pick-up	[W]	cold 3.0, warm 2.6		6.5		9.2	9.2	10.1	10.1		200		325	
	hold-in	[W]	cold 3.0, warm 2.6		6.5		9.2	9.2	10.1	10.1		4.5		5.5	
DC (electronic)	pick-up (avg/peak)	[W]	—		10/22			10/22	12/28			—		—	
	hold-in	[W]	—		1.5				2.5			—		—	
Operating Times															
AC	closing delay	[ms]	15…40		15…30		15…30	15…30	15…30	15…30		20…40		20…30	
	opening delay	[ms]	15…33		10…60		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		40…70		40…70	50…80	50…80	50…80		20…40		15…25	20…25
	opening delay	[ms]	6…12		7…15		7…15	7…15	7…15	7…15		—		20…25	
With integ. diode	opening delay	[ms]	8…12		14…20		17…23	17…23	—	17…23		≤ 220V 20…35		—	
With external diode	opening delay	[ms]	35…50		70…95		80…125	80…125	—	80…125		≤ 220V 80…125		—	
DC (electronic)	closing delay	[ms]	—		20…40							—		—	
	opening delay	[ms]	—		20…40							—		—	
Max. Ripple			—		± 15%							—		—	—

§ For 9, 12, 24, and 110V DC coils

			100/104-D, 100S-D															
			95/110	140/180	95	110	140	180	210	250	300	420		630		860		
Coil Type	Conventional		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 *U*s]	0.85…1.1		0.85…1.1									0.8…1.1				
	dropout	[x *U*s]	0.3…0.6		0.3…0.5									0.3…0.8				
DC control	pick-up	[x *U*s]	0.85…1.1		0.85…1.1									0.85…1.1				
	dropout	[x *U*s]	0.3…0.6		0.3…0.5									0.3…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				
With integrated diode	opening delay	[ms]	12…20		—									—				
With 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 Allen-Bradley distributor for detailed information.

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	60	72	85	90*200	90*400
Coil Type :	Conventional	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Electronic –	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

El

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" [A] (690V)	35	35	35	50	50	50	80	125	125	160	160	160	250	250	250	250✶	250✶
Type "2" [A] (400V)	16	20	20	25	35	35	40	80	80	63	80	100	160	160	160	160✶	100✶
Type "2" [A] (690V)	—	—	—	25	35	35	40	80	80	63	80	100	160	160	160	160✶	100✶
BS88 Fuses	65 kA Available Fault Current																
Type "1" [A] (415V)	—	—	—	25	32	40	50	63	80	—	—	80	100	160	160	—	—
Type "2" [A] (415V)	—	—	—	20	25	32	50	63	80	—	—	80	100	125	160	—	—

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[A] Combination (600V)	40	40	40	35	40	70	90	110	125	125	125	150	200	—	—	—	—
UL Class K5 and RK5 Fuses	10 kA Available Fault Current																
UL Listed[A] Combination (600V)	—	—	—	—	—	—	—	—	—	—	—	—	—	250	300	300	300
UL Class L Fuses	18 kA Available Fault Current																
UL Listed[A] Combination (600V)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
UL Class L Fuses	30 kA Available Fault Current																
UL Listed[A] Combination (600V)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
UL Class L Fuses	42 kA Available Fault Current																
UL Listed[A] Combination (600V)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
UL Class CC and CSA HRCI-MISC Fuses	100 kA Available Fault Current																
UL [A] verified combination to IEC 60947-4-1 "Type 2"	—	—	—	20§	20§	20§	30§	40§	—	—	—	—	—	—	—	—	—
UL Class J and CSA HRCI-J Fuses	100 kA Available Fault Current																
UL [A] verified	—	—	—	20§	20§	20§	30§	40§	50	50	—	—	70	80	100	150	—	—

combination
to IEC
60947-4-1
"Type 2"

UL Inverse-Time Circuit Breaker 5 kA Available Fault Current

UL Listed[A] Combination (480V) — — — 30 3 5 5 12 12 — — 12 25 — — — —
0 0 0 5 5 5 0

UL Listed[A] Combination (600V) — — — — — — — 12 12 — — 12 25 — — — —
5 5 5 0

UL Inverse-Time Circuit Breaker 10 kA Available Fault Current

UL Listed[A] Combination (600V) — — — — — — — — — — — — — 25 25 — —
0 0

UL Inverse-Time Circuit Breaker 18 kA Available Fault Current

UL Listed[A] Combination (600V) — — — — — — — — — — — — — — — — — —

UL Inverse-Time Circuit Breaker 30 kA Available Fault Current

UL Listed[A] Combination (600V) — — — — — — — — — — — — — — — — — —

UL Inverse-Time Circuit Breaker 42 kA Available Fault Current

UL Listed[A] Combination (600V) — — — — — — — — — — — — — — — — — —

✶ 50 kA available fault current.
§ 15 A max. fuse for Type 2 coordination.
‡ See www.ab.com/certifications/ul508a for complete short-circuit current ratings.

100/104-D, 100S-D
95/110 140/18095 110140180210250300420 630 860

Coil Type : Conventional X X — — — — — — — — — —
Electronic – El — — 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 [kVar] 50 kA Available Fault Current
Type "1" (690V) [A] 250 315 250250315355500500630630 ❄ ❄
Type "2" (400V) [A] 200 250 200200250315400400500500 ❄ ❄
Type "2" (690V) [A] 200 250 200200250315400400500500 ❄ ❄

BS88 Fuses 65 kA Available Fault Current
Type "1" (415V) [A] 160 250 200200250250355355450630 ❄ ❄

Type "2" (415V)	[A]	160	250	200	200	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]	225/250	350/450	225	250	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		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	200	200	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]	125/150	200/250	125	150	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		30 kA Available Fault Current											
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—	1200	—
UL Inverse-Time Circuit Breaker		42 kA Available Fault Current											
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	—	—	1200

❄ To be determined.

Auxiliary Contacts and Auxiliary Contact Blocks

	100-K	100-C, 100S-C	100-D, 100S-D

		Internal	Front-mounted	Internal	Front-mounted	Front-mounted (Bifurcated)	Side-mounted	Side-mounted Conventl	Side-mounted 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)	
42/48 V	[A]	6	3	10	6	3	6	5.5	3	at 3…125V	
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	0.45	0.45	3.5	3.5	—	
220V DC	[A]	0.2	—	0.55	0.55	0.18	0.18	0.55	0.55	—	
440V DC	[A]	0.08	—	0.2	0.2	0.1	0.1	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	[A]	0.4	—	2	2	0.3	0.3	2	2	—	

	DC	]								
	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)
	48V DC	[A]	1.2	1	3	3	1.5	3	2	2	at 3…125V
	110V DC	[A]	0.55	0.55	1.2	1.2	0.6	1.2	0.7	0.7	
	220V DC	[A]	0.27	0.27	0.6	0.6	0.3	0.6	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/2 mA	17V/10 mA	17V/5 mA	8V/5 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	DC	[A]	Q 600		P 600	P 300/Q	Q 600		Standard pilot	Standard pilot	0.1

capacity		600	duty (P 600)	duty (Q 600)

General

		100-K 05…12	100-C, 100S-C 09…85	100-D, 100S-D 95…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	8	12
Rated Voltage U_e				
AC 50/60 Hz	[V]	230, 240, 400, 415, 500, 690	115, 230, 400, 500, 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	IEC 60068-2	IEC 60068-2
Max. Altitude of Installation Site	[m]	2000 NN, per IEC 60947-4	2000 NN, per IEC 60947-4	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		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-C09…C23, 100S-C09…C85, 100-C + 100-FA/FB/FC (except L11, L22), 100-C09…C43 + 100-	—

Mirror Contacts IEC 60947-4 Annex F	100-K… + 100-KF…	FAB/FBB/FCB 100-C09…C23, 100S-C09…C85, 100-C + 100-FA/FB/FC + 100-SA/SB, 100-C60…C85 + 100-FAB/FBB/FCB, 100S-C + 100-SA/SB	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 in prep.	CE, cULus, CCC	CE, cULus, CCC

Bulletin 100-C/104-C Life-Load Curves

Electrical Life in Utilization Category

Bulletin 100-C/104-C IEC contactors are designed for superior performance in a wide variety of applications. When selecting IEC products, the user must give consideration to the specific load, utilization category and required electrical life of the application. The life-load curves shown here are based on Rockwell Automation tests according to the requirements defined in IEC 60947-4-1. Since contact life in application is dependent on environmental conditions and duty cycle, actual application contact life may vary from that indicated by the curves shown here.

To find the contactor's estimated electrical life, follow these guidelines:

1. Identify the appropriate utilization category from the table below.

2. Choose the graph for the utilization category selected.

3. Locate the intersection of the life-load curve for the appropriate contactor with the application's operational current (I_e) found on the horizontal axis.

4. Read the estimated contact life along the vertical axis.

Contact Life for Mixed Utilization Categories AC-3 and AC-4:

In many applications, the utilization category cannot be defined as either purely AC-3 or AC-4. In those applications, the electrical life of the contactor can be estimated from the following equation:

Lmixed = Lac3/[1 + Pac4*(Lac3/Lac4 – 1)], where:

Lmixed Approximate contact life in operations for a mixed AC-3/AC-4 utilization category application.

Lac3 Approximate contact life in operations for a pure AC-3 utilization category (from the AC-3 life-load curves).

Lac4 Approximate contact life in operations for a pure AC-4 utilization category (from the AC-4 life-load curves).

Pac4 Percentage of AC-4 operations.

Test Conditions			Making			Breaking		
			I/I_e	U/U_e	cosϕ	I_c/I_e	U_r/U_e	cosϕ
AC-1	**Resistance Furnaces:** Non inductive or slightly inductive loads		1	1	0.95	1	1	0.95
AC-2	**Slip-ring motors:** Starting and reversing		2.5	1	0.65	2.5	1	0.65
AC-3	**Squirrel - cage motors:**	I_e < 17 A	6	1	0.65	1	0.17	0.65
	Starting and stopping of running motors	I_e > 17 A	6	1	0.35	1	0.17	0.35
AC-4	**Squirrel - cage motors:**	I_e < 17 A	6	1	0.65	6	1	0.65
	Starting, plugging✶ , inching❄	I_e > 17 A	6	1	0.35	6	1	0.35
AC-15	**Soleniods:**		10	1	0.7	1	1	0.4

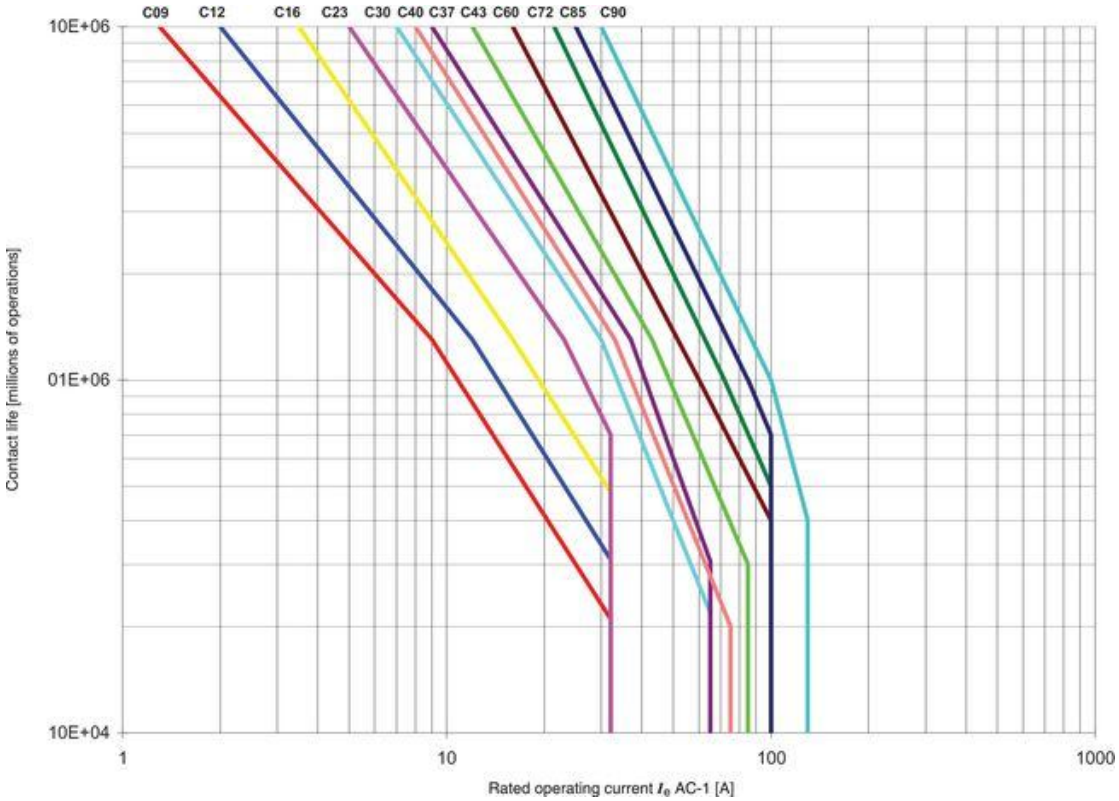
Contactors, valves and lifting magnets

I_e Rated operational current I Making Current
U_e Rated voltage Ic Breaking Current
U_r Recovery voltage U Off-load voltage
✶ Plugging is understood as stopping or reversing the motor rapidly by reversing motor primary connections while the motor is running.
❄ Inching (jogging) is understood as energizing a motor once or repeatedly for short periods to obtain small movements of the driven mechanism.

Life-Load Curves

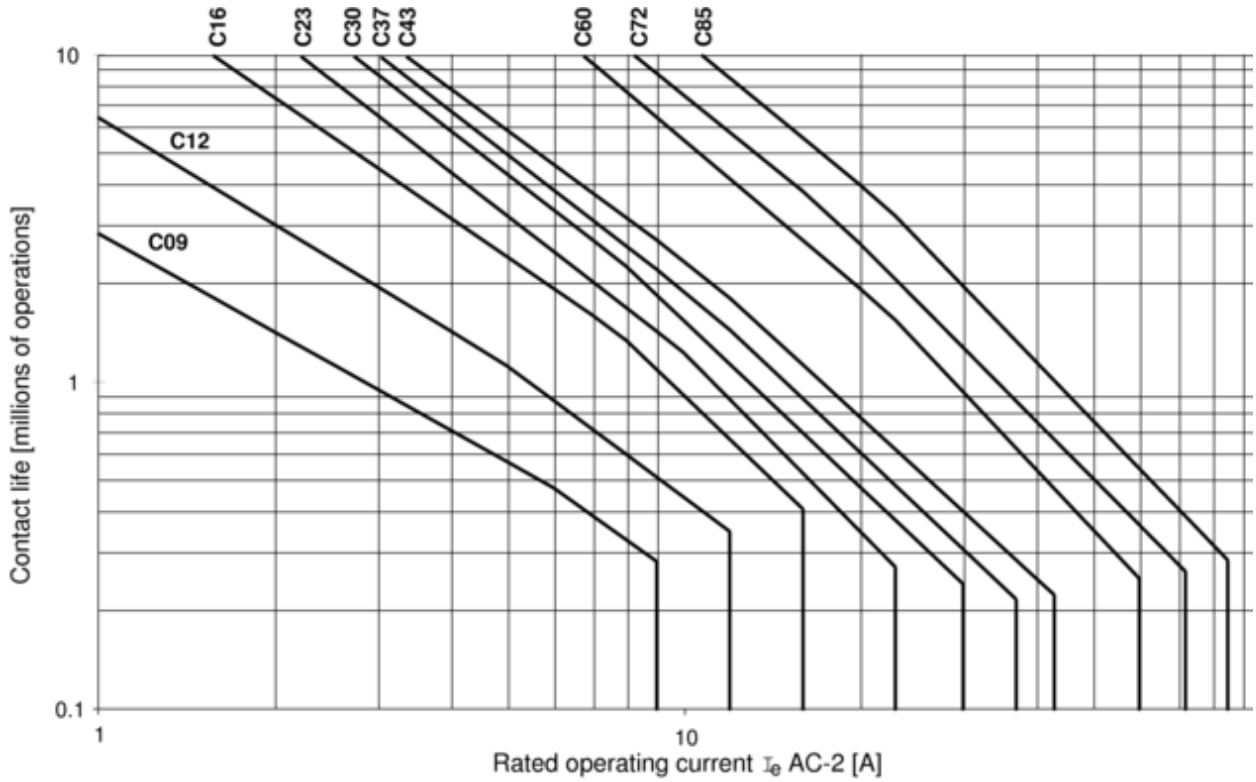
AC-1

40 °C Non- or slightly inductive loads, resistance furnaces; U_e = 230…690V



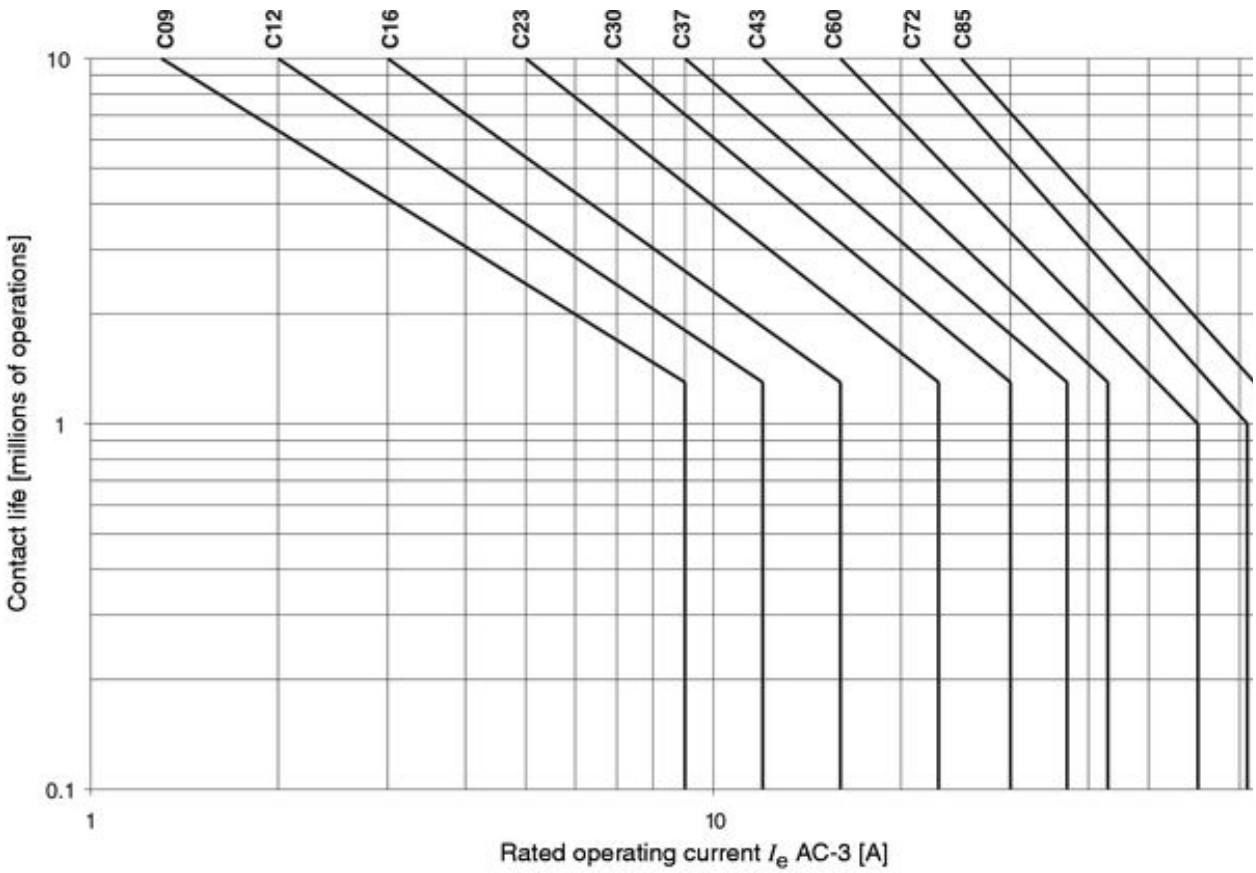
AC-2

Switching of slip-ring motors; U_e = 230…400…460V

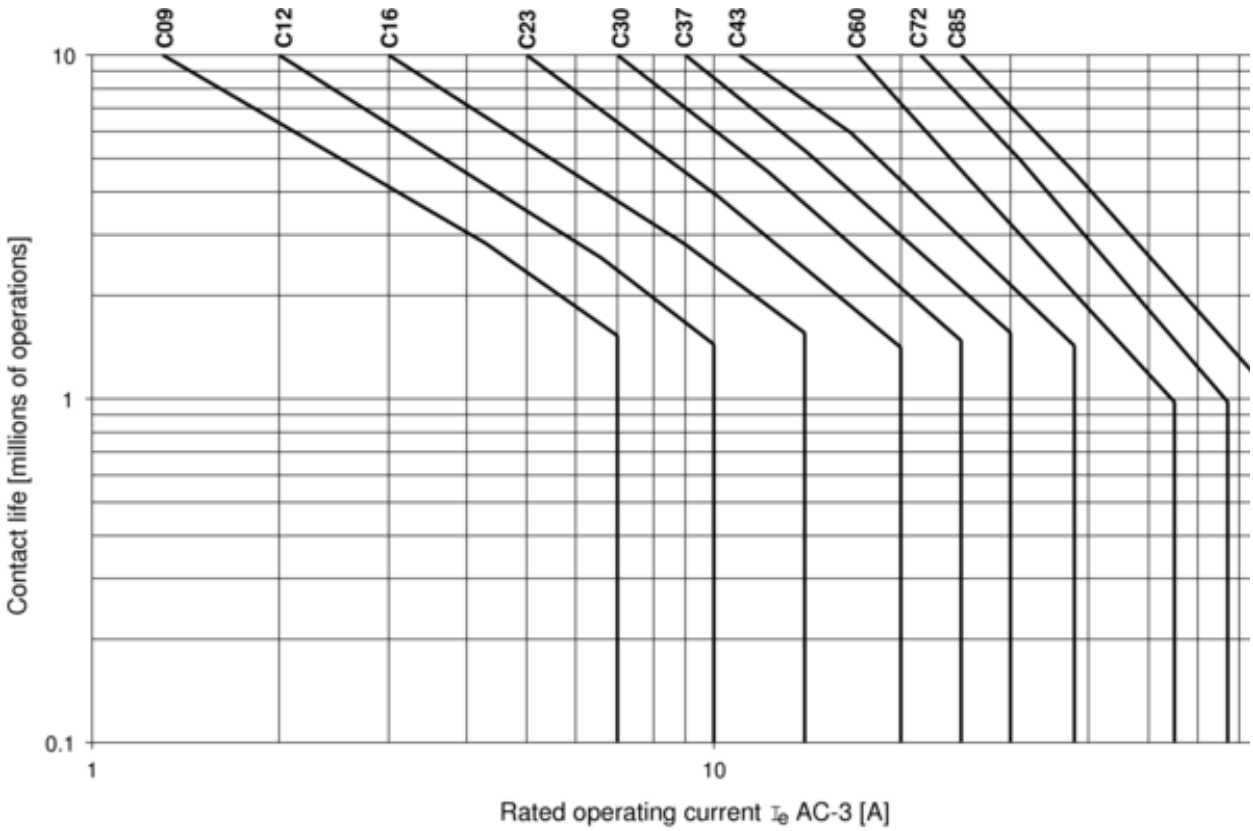


AC-3

Switching of squirrel-cage motors while starting; U_e = 230…400…460V

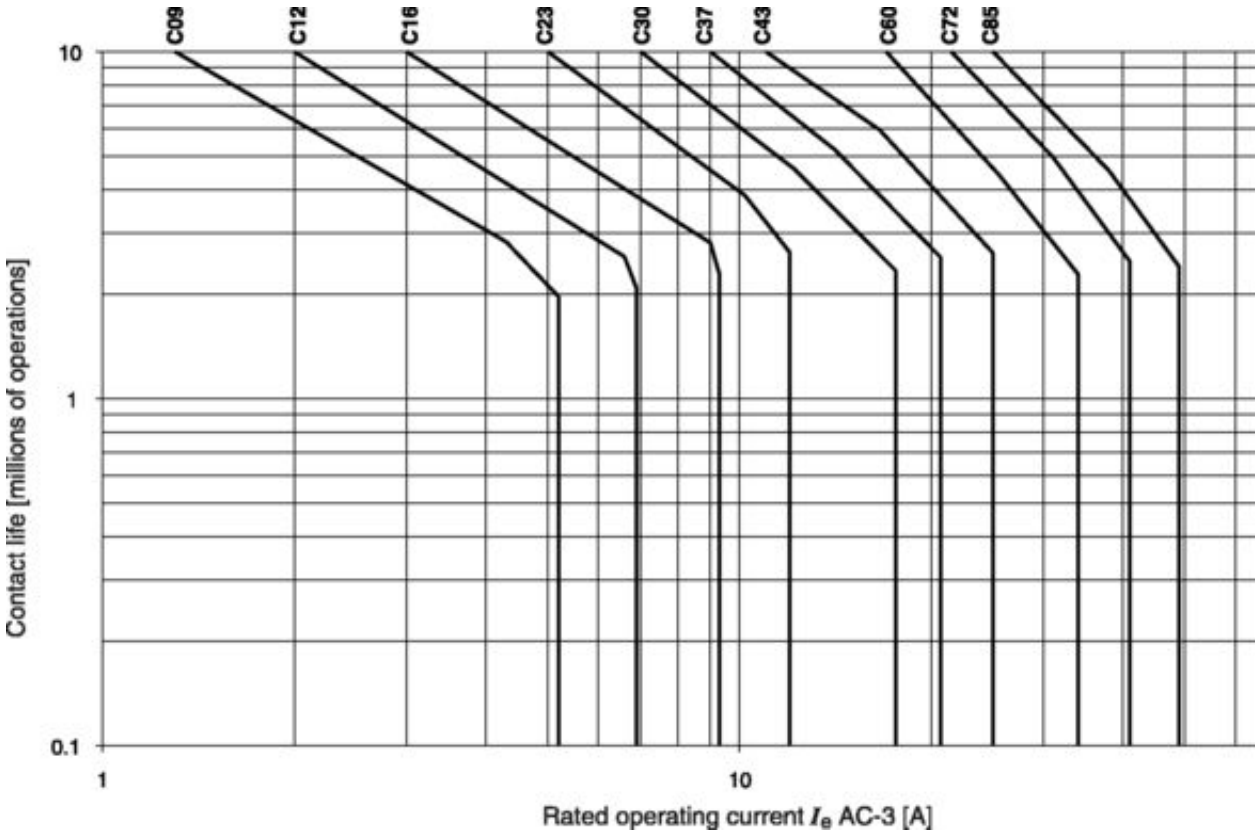


Switching of squirrel-cage motors while starting; U_e = 500…575V



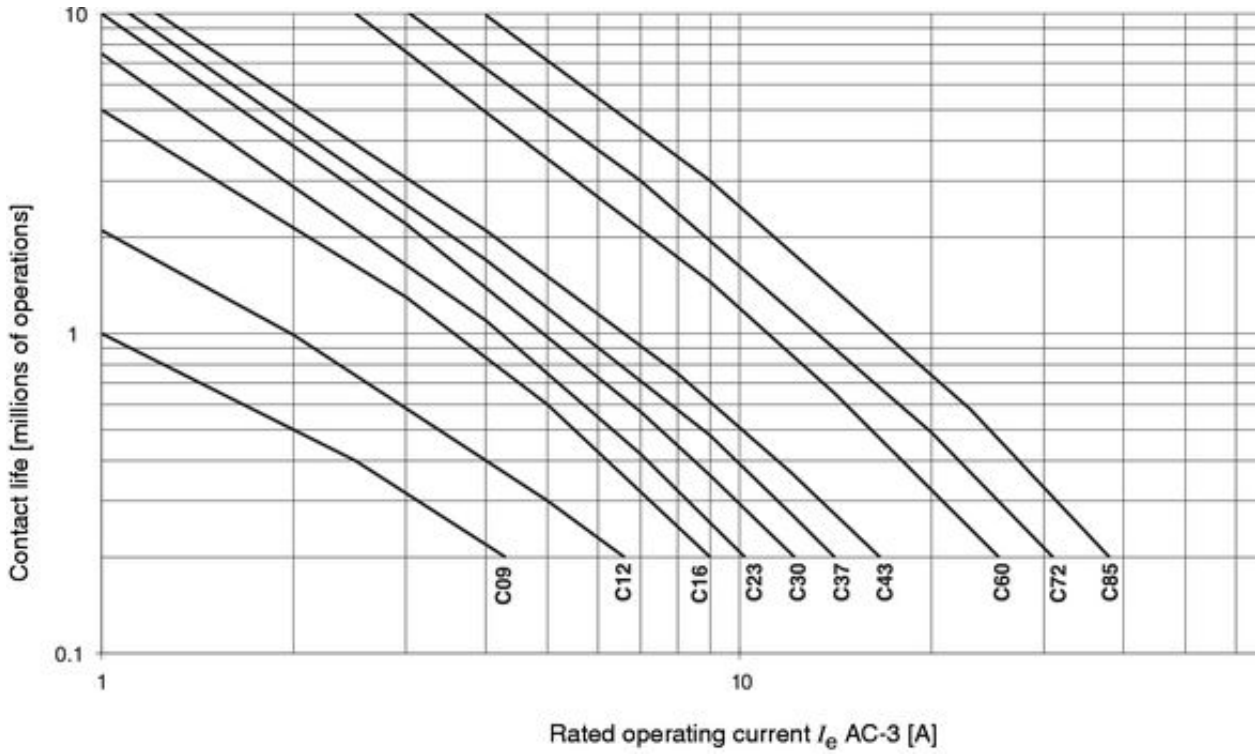
AC-3

Switching of squirrel-cage motors while starting; U_e = 690V



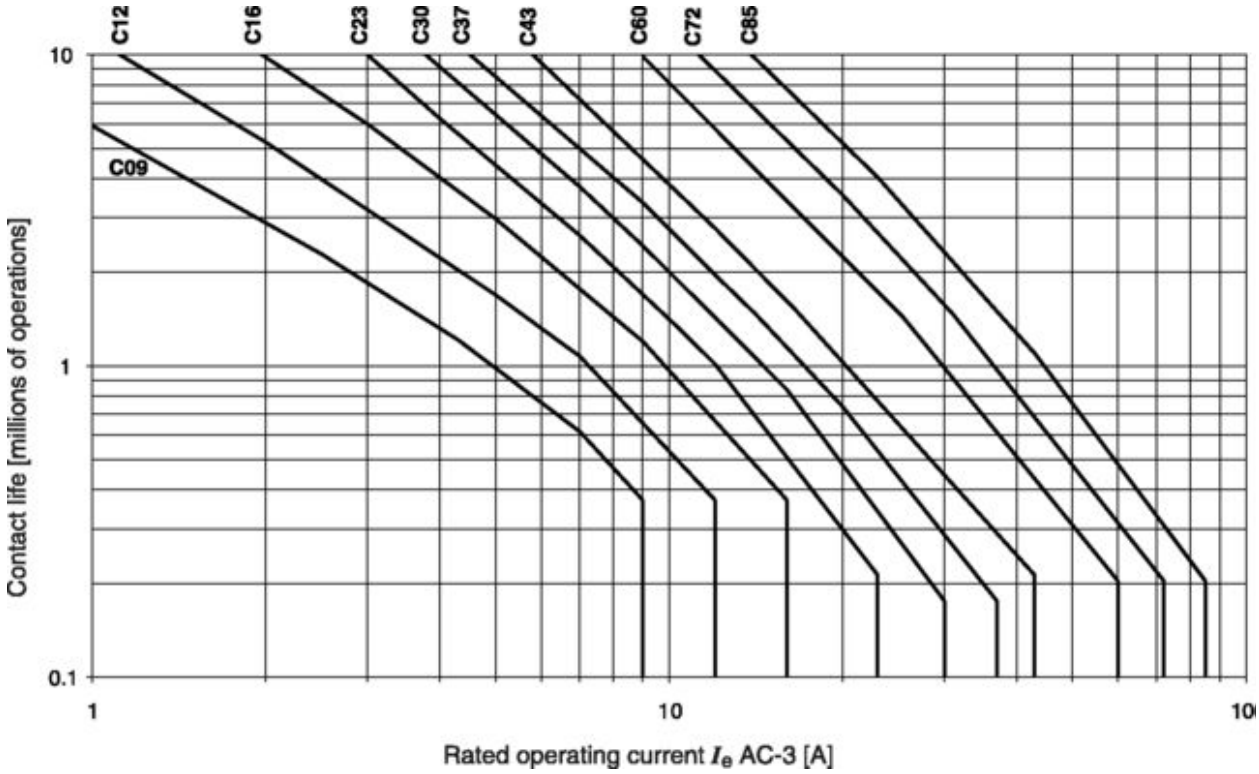
AC-4

Switching of squirrel-cage motors; U_e = 230…690V



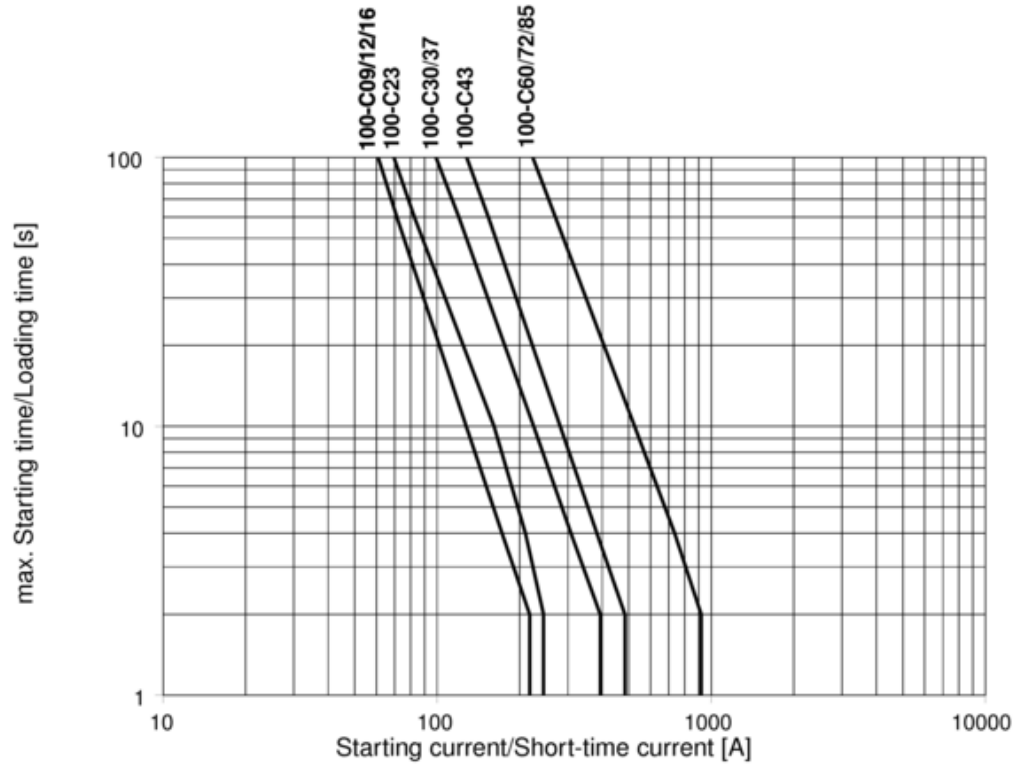
AC-3 & AC-4

10% AC-4 Mixed operation of squirrel-cage motors; U_e = 230…400…460V



Heavy Duty Starting and Regular Short-time Operation

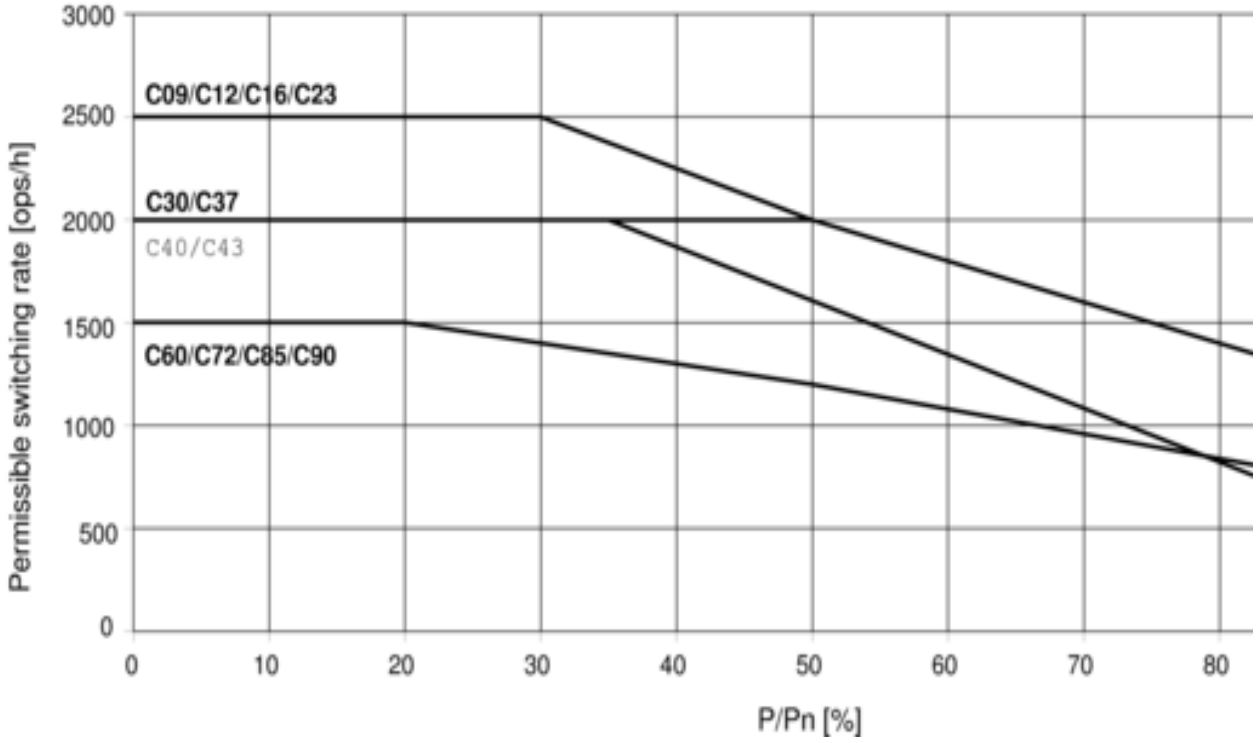
Bulletin 100-C Contactors



Maximum Operating Rates

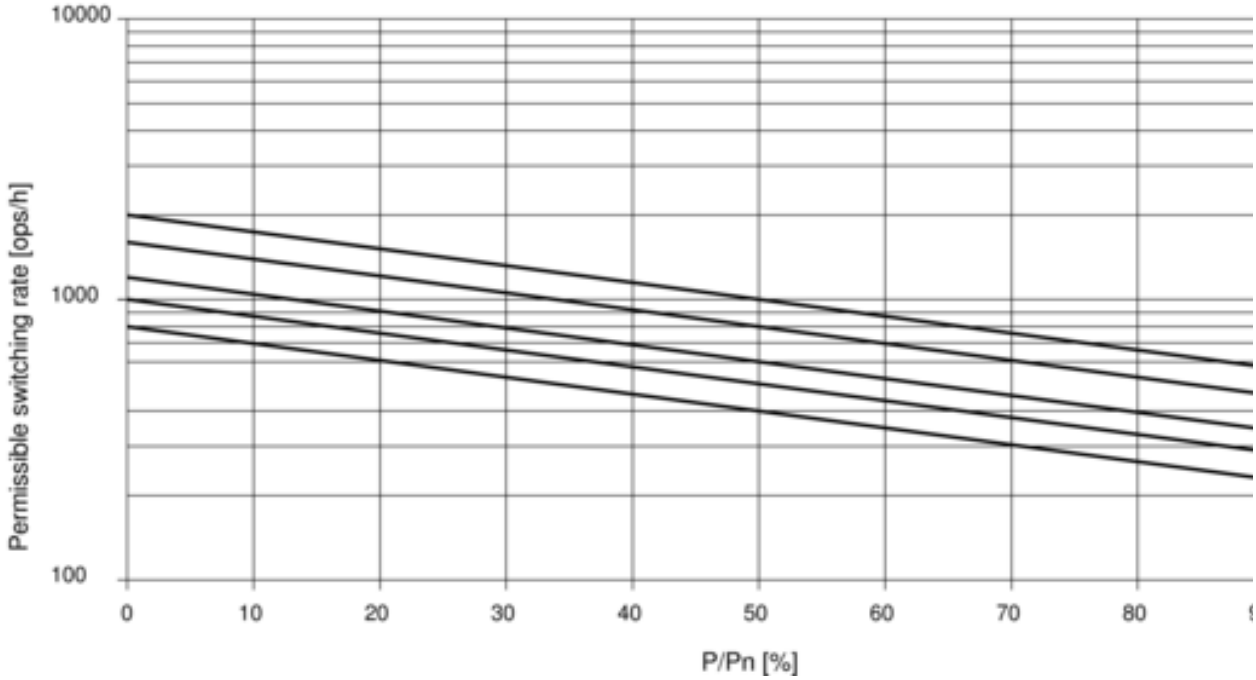
AC-1

40 °C Non- or slilghtly inductive loads, resistance furnaces; U_e = 230…690V



AC-2

Stepping of slip-ring motors; U_e = 230…460V

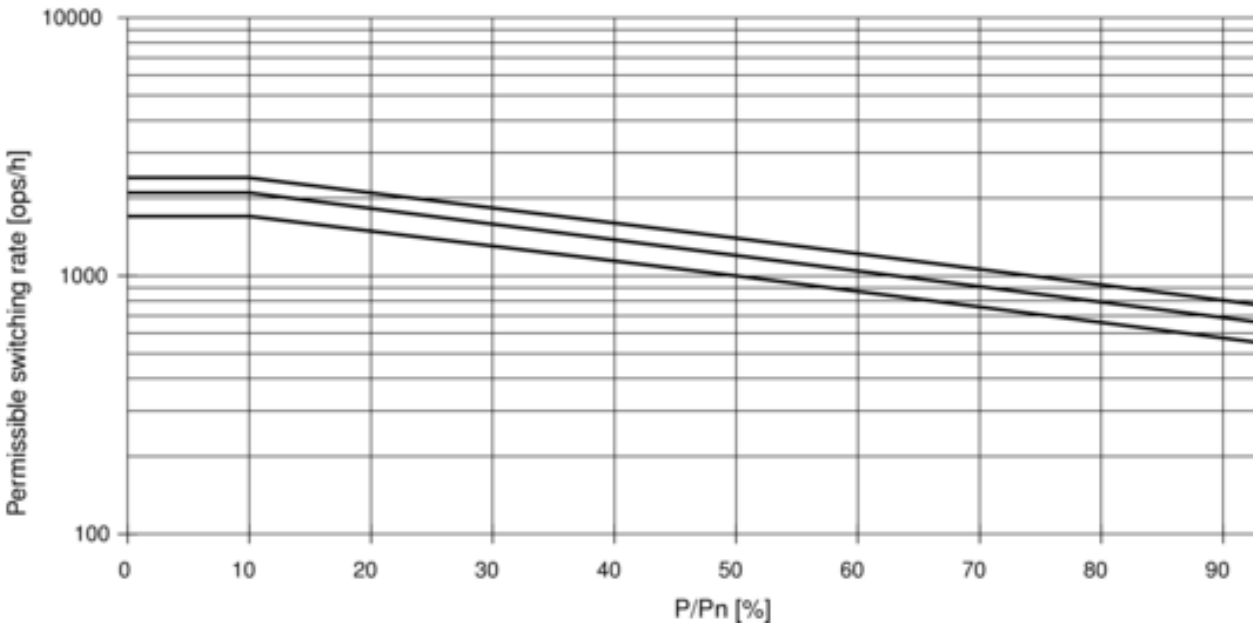


Maximum Operating Rates

AC-3

Switching of squirrel-cage motors while starting; U_e = 230…460V

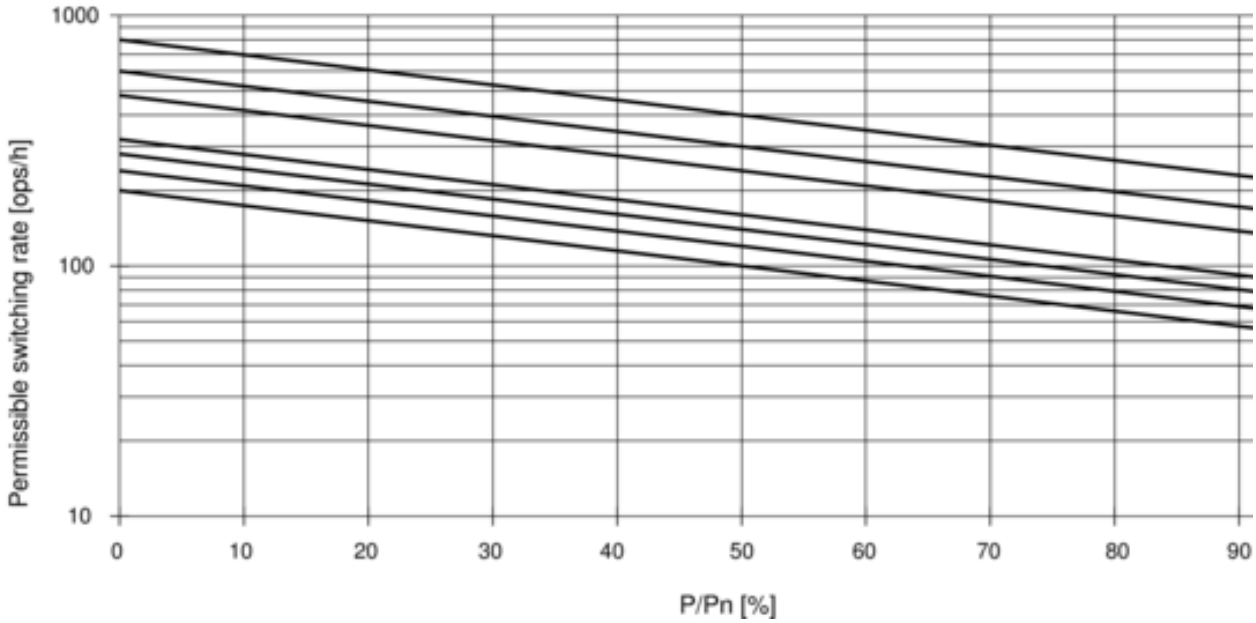
Relative operating time 40%, Starting time t_A = 0.25 s



AC-4

Stepping of squirrel-cage motors; U_e = 230…460V

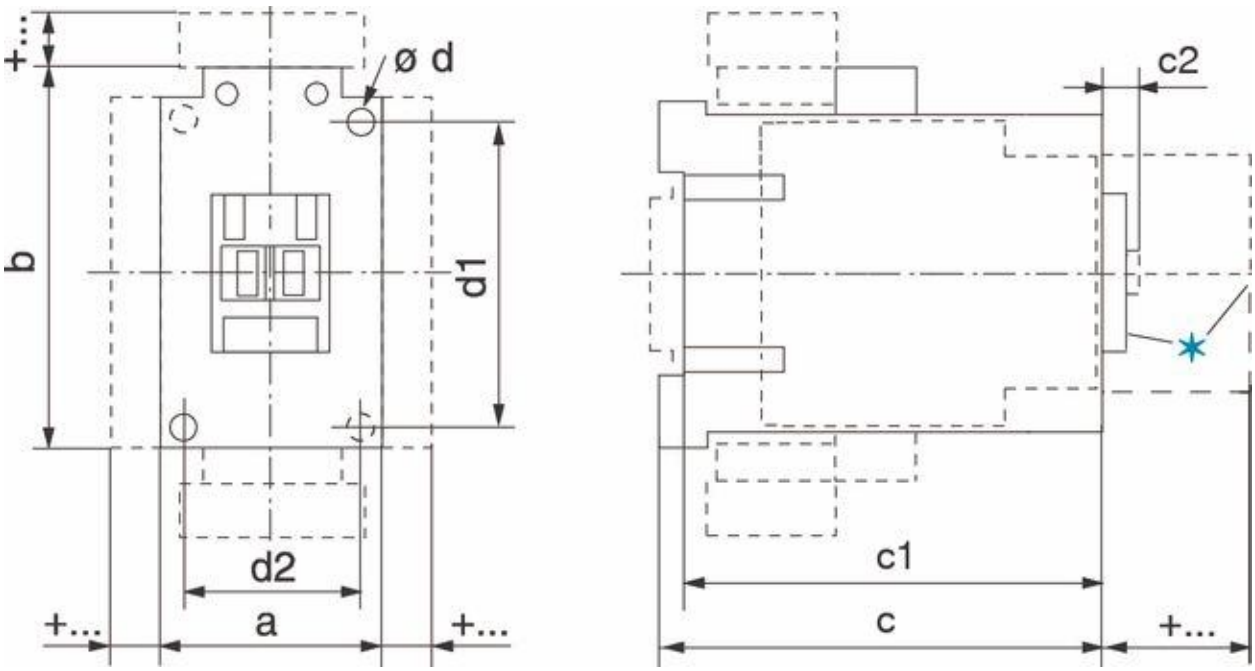
Starting time t_A = 0.25 s



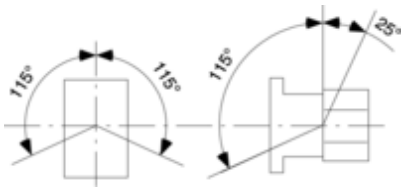
Bulletin 100-C/104-C Approximate Dimensions

Bulletin 100-C Contactors and Accessories

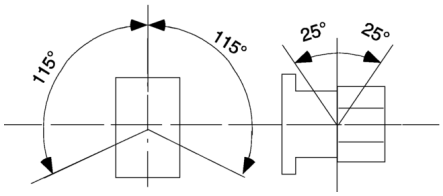
Dimensions are shown in millimeters (inches). Dimensions are not intended for manufacturing purposes.



Mounting Position



AC contactors and DC contactors with electronic coils



DC contactors

AC Contactors and DC Contactors with Electronic Coils

Cat. No.	a	b	c	c1	c2	∅d	d1	d2
100-C09…100-C23	45 (1-25/32)	81 (3-3/16)	80.5 (3-11/64)	75.5 (2-31/32)	6 (15/64)	2 - 4.5 (2 - 3/16)	60 (2-23/64)	35 (1-3/8)
100-C30, 100-C37	45 (1-25/32)	81 (3-3/16)	97.5 (4)	92.5 (3-41/64)	6.5 (1/4)	2 - 4.5 (2 - 3/16)	60 (2-23/64)	35 (1-3/8)
100-C40	59 (2-21/64)	81 (3-3/16)	100.5 (3-61/64)	95.5 (3-49/64)	6.5 (1/4)	2 - 4.5 (2 - 3/16)	60 (2-23/64)	45 (1-25/32)
100-C43	54 (2-1/8)	81 (3-3/16)	100.5 (3-61/64)	95.5 (3-49/64)	6.5 (1/4)	2 - 4.5 (2 - 3/16)	60 (2-23/64)	45 (1-25/32)
100-C60…100-C85	72 (2-53/64)	122 (4-51/64)	117 (4-39/64)	111.5 (4-25/64)	8.5 (21/64)	4 - 5.4 (4 - 7/32)	100 (3-15/16)	55 (2-11/64)
100-C90	95 (3-47/64)	122 (4-51/64)	117 (4-39/64)	111.5 (4-25/64)	8.5 (21/64)	4 - 5.4 (4 - 7/32)	100 (3-15/16)	55 (2-11/64)

DC Contactors

Cat. No.	a	b	c	c1	c2	∅d	d1	d2
100-C09Z…100-C16Z	45 (1-25/32)	81 (3-3/16)	106.5 (4-3/16)	101.5 (4)	6 (15/64)	2 - 4.5 (2 -3/16)	60 (2-23/64)	35 (1-3/8)
100-C23Z	45 (1-25/32)	81 (3-3/16)	123.5 (4-55/64)	119 (4-43/64)	6 (15/64)	2 - 4.5 (2 -3/16)	60 (2-23/64)	35 (1-3/8)
100-C30…100-C37	45 (1-25/32)	81 (3-3/16)	141.5 (5-37/64)	136.5 (5-3/8)	6.5 (1/4)	2 - 4.5 (2 -3/16)	60 (2-23/64)	35 (1-3/8)
100-C40Z	59 (2-21/64)	81 (3-3/16)	144.5 (5-11/16)	139.5 (5-1/2)	6.5 (1/4)	2 - 4.5 (2 -3/16)	60 (2-23/64)	45 (1-25/32)
100-C43Z	54 (2-1/8)	81 (3-3/16)	144.5 (5-11/16)	139.5 (5-1/2)	6.5 (1/4)	2 - 4.5 (2 -3/16)	60 (2-23/64)	45 (1-25/32)

100-C60D…100-C85D	72 (2-53/64)	122 (4-51/64)	117 (4-39/64)	111.5 (4-25/64)	8.5 (21/64)	4 - 5.4 (4 -7/32)	100 (3-15/16)	55 (2-11/64)
100-C90D	95 (3-47/64)	122 (4-51/64)	117 (4-39/64)	111.5 (4-25/64)	8.5 (21/64)	4 - 5.4 (4 - 7/32)	100 (3-15/16)	55 (2-11/64)

Accessories

Contactors with		mm	(inches)
Auxiliary contact block for front mounting	2- or 4-pole	c/c1 + 39	(c/c1 + 1-37/64)
Auxiliary contact block for side mounting	1- or 2-pole	a + 9	(a + 23/64)
Pneumatic Timing Module		c/c1 + 58	(c/c1 + 2-23/64)
Electronic Timing Module	on coil terminal side	b + 24	(b + 15/16)
Mechanical Interlock	on side of contactor	a + 9	(a + 23/64)
Mechanical Latch		c/c1 + 61	(c/c1 + 2-31/64)
Interface Module	on coil terminal side	b + 9	(b + 23/64)
Surge Suppressor	on coil terminal side	b + 3	(b + 1/8)
Labeling with ✶	label sheet	+ 0	(+ 0)
	marking tag sheet with clear cover	+ 0	(+ 0)
	marking tag adapter for System V4 / V5	+ 5.5	(+ 7/32)
	marking tag adapter for System Bul. 1492W	+ 5.5	(+ 7/32)
Terminal Lug Kit	100-C09…C23	b + 53	(b + 2-3/32)
	100-C30…37	b + 44	(b + 1-47/64)
	100-C43	b + 52	(b+ 2-3/64)
	100-C60…C85	b + 99	(b + 3-7/8)
Paralleling Links	100-C09…C23	b + 78	(b + 3-1/16)
		c + 9/5	(c + 3/8)
	100-C30…C37	b + 85	(b + 3-11/32)