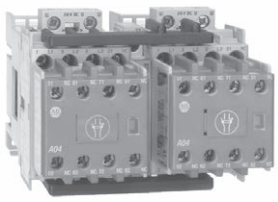


Bulletin 100S-C/104S-C — IEC Safety Contactors

- Mechanically linked N.C. auxiliary contacts
- Front-mounted auxiliary contacts
  - – Gold bifurcated
  - – Permanently fixed
  - – Protective cover to prevent manual operation
  - – Red contact housing foreasy identification
  - – Incorporates IEC 60947-5-1 “Mechanically Linked” symbol
- AC and DC operating coils
- SUVA Third-Party certification

Bulletin 100S-C/104S-C safety contactors provide mechanically linked positively guided contacts, required in feedback circuits of modern safety applications. The mechanically linked N.C. auxiliary contacts will not change state when a power pole welds. In addition, the gold-plated bifurcated auxiliary contacts are ideally suited for low-energy applications or feedback control circuits with multiple series-connected N.C. auxiliary contacts.
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.

Table of Contents

Standards Compliance

EN50205
CSA C22.2 No. 14
UL 508
EN/IEC 60947-4
IEC 60947-4-1 Annex H — Mirror Contacts
IEC 60947-5-1 Annex L — Mechanically Linked Contacts
Meets the material restrictions for European Directive 2002/95/IEC-EU-RoHS

Certifications

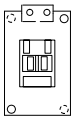
SUVA Third-Party Certified
CE Marked
cULus Listed (File No. E3125; Guide NLDX, NLDX7)

Product Selection

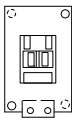
3-Pole AC- and DC-Operated Contactors

I_e [A]		Ratings for Switching AC Motors — AC-2, AC-3, AC-4										Aux. Contacts		Cat. No.∗❄
		3-Phase kW (50 Hz)				Hp (60 Hz)								
						1-Phase		3-Phase						
AC-3	AC-1	230V	400V/ 415V	500V	690V	115V	230V	200V	230V	460V	575V	N.O.	N.C.	
9	32	3	4	4	4	1/2	1-1/2	2	2	5	7-1/2	0	5	100S-C09⊗05BC
												1	4	100S-C09⊗14BC
12	32	4	5.5	5.5	5.5	1/2	2	3	3	7-1/2	10	0	5	100S-C12⊗05BC
												1	4	100S-C12⊗14BC
16	32	5.5	7.5	7.5	7.5	1	3	5	5	10	15	0	5	100S-C16⊗05BC
												1	4	100S-C16⊗14BC
23	32	7.5	11	13	10	2	3	5	7-1/2	15	15	0	5	100S-C23⊗05BC
												1	4	100S-C23⊗14BC
30	65	10	15	15	15	2	5	7-1/2	10	20	25	0	4	100S-C30⊗04BC
												1	4	**100S-C30⊗14BC**
37	65	11	18.5/20	20	18.5	3	5	10	10	25	30	0	4	100S-C37⊗04BC
												1	4	**100S-C37⊗14BC**
43	85	13	22	25	22	3	7-1/2	10	15	30	30	0	4	100S-C43⊗04BC
												1	4	**100S-C43⊗14BC**
60	100	18.5	32	37	32	5	10	15	20	40	50	0	4	‡ 100S-C60⊗04BC
												1	4	‡ **100S-C60⊗14BC**
72	100	22	40	45	40	5	15	20	25	50	60	0	4	‡ 100S-C72⊗04BC
												1	4	‡ **100S-C72⊗14BC**
85	100	25	45	55	45	7-1/2	15	25	30	60	60	0	4	‡ 100S-C85⊗04BC
												1	4	‡ **100S-C85⊗14BC**
97	130	30	55	55	55	10	15	30	30	75	75	0	4	‡ **100S-C97⊗04BC**
												1	4	‡ **100S-C97⊗14BC**

∗ For other contact configurations and full product details, please contact your local Rockwell Automation sales office or Allen-Bradley distributor.
❄ If standard cross-stamped front-mount auxiliary contacts are required, remove the letter "B" before the letter "C" in the cat. no. Example: Cat. No. **100S-C09⊗05BC** becomes Cat. No. **100S-C09⊗05C**.
‡ Bifurcated front-mount auxiliary contacts on Cat. Nos. **100S-C60…C97** conform to mirror contact performance only.
⊗ Coil voltage code and terminal position—see page 2-137



Cat. No. 100S-C09⊗05C Line Side



Cat. No. 100S-C09U⊗05C Load Side

⊗ 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. 100S-C09⊗05BC** becomes **Cat. No.100S-C09D05BC.**

[V]	12	24	32	36	42	48	100	100-110	110	120	127	200	200-220	208	208-240	220-230
AC, 50 Hz	R	K	V	W	X	Y	KP	—	D	P	S	KG	L	—	—	F
AC, 60 Hz	Q	J	—	V	—	X	—	KP	—	D	—	—	KG	H	L	—
AC, 50/60 Hz	–	KJ	—	—	—	KY	KP	—	KD	—	—	KG	KL‡	—	—	KL‡

‡ Not available on 100S/104S-C97 contactors.

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

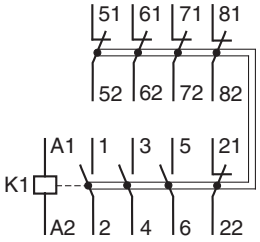
[V]			9	12	24	36	48	48-72	60	64	72	80	110	110-125	115	125	220	220-250	230	250
100S-C09…C43	Standard	DC	ZR	ZQ	ZJ	ZW	ZY	—	ZZ	ZB	ZG	ZE	ZD	—	ZP	ZS	ZA	—	ZF	ZT
	with Integrated Diode		—	—	DJ	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Electronic with Integrated Diode		—	EQ	EJ	—	—	EY	—	—	—	—	—	ED	—	—	—	EA	—	—
100S-C60…C97	with Integrated Diode		DR	DQ	DJ	DW	DY	—	DZ	DB	DG	DE	DD	—	DP	DS	DA	—	DF	DT

Coil Terminal Position

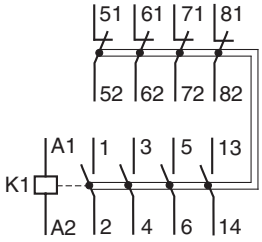
- All contactors are delivered with the coil terminals located on the **line side.**
- For **load side** coil terminations, insert a **"U"** prior to the coil voltage code. Example: **Cat. No. 100S-C09UD05BC.**

Assignment of Contacts

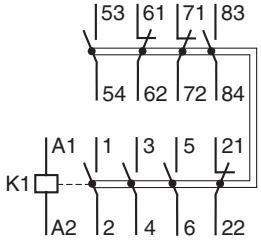
Safety Contactors with 3 Main Contacts and Standard Front-Mount Auxiliary Contacts



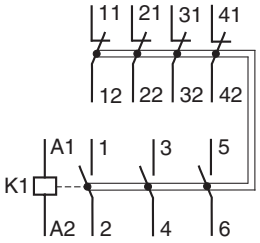
100S-C09⊗05C…C23⊗05C



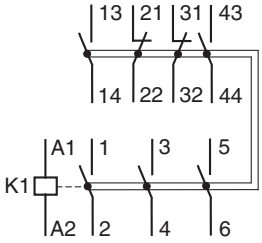
100S-C09⊗14C…C23⊗14C



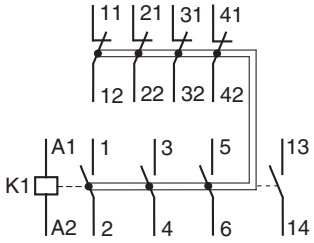
100S-C09⊗23C…C23⊗23C



100S-C30⊗04C…C97⊗04C



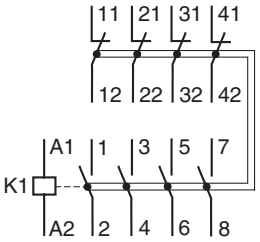
100S-C30⊗22C…C97⊗22C



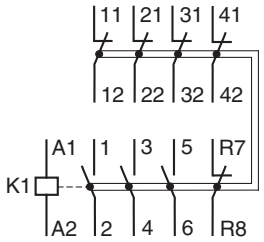
100S-C30⊗14C…C97⊗14C

2

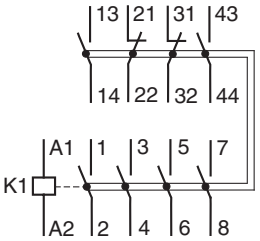
Safety Contactors with 4 Main Contacts and Standard Front-Mount Auxiliary Contacts



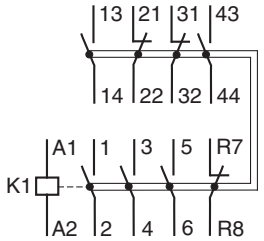
100S-C09⊗404C…C23⊗404C



100S-C09⊗304C…C23⊗304C

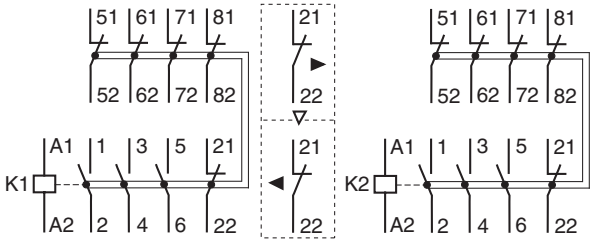


100S-C09⊗422C…C23⊗422C

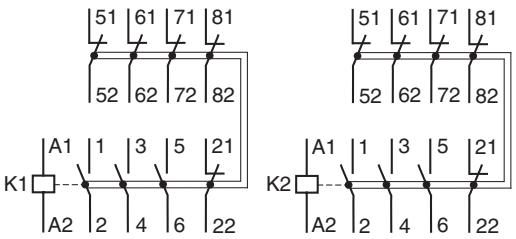


100S-C09⊗322C…C23⊗322C

Safety Reversing Contactors with 3 Main Contacts and Standard Front-Mount Auxiliary Contacts



104S-C09⊗012C…C23⊗012C



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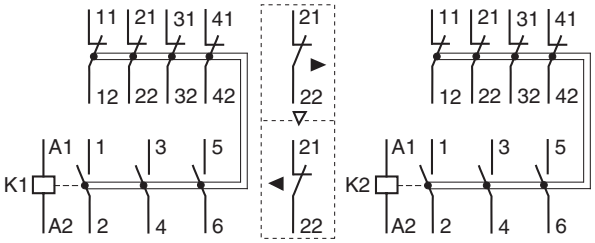
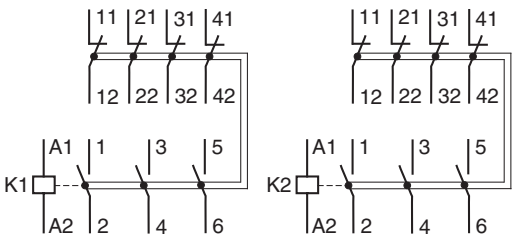
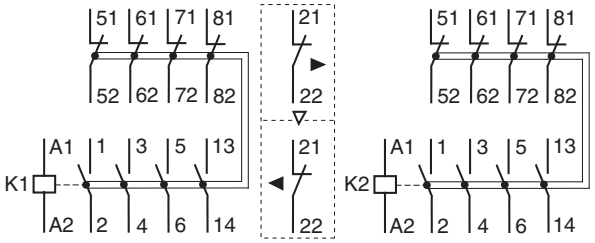


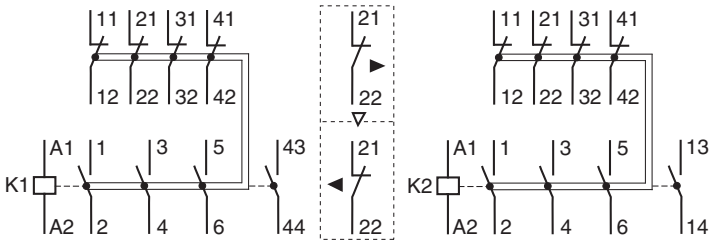
104S-C30⊗010C…C97⊗010C



104S-C30⊗008C…C97⊗008C

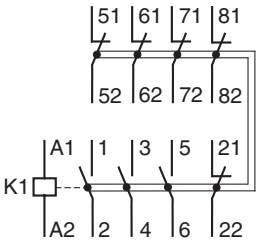


104S-C09⊗210C…C23⊗210C

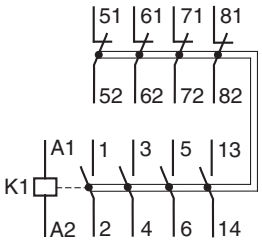


104S-C30⊗210C…C97⊗210C

Safety Contactors with 3 Main Contacts and Bifurcated Front-Mount Auxiliary Contacts



100S-C09⊗05BC…C23⊗05BC



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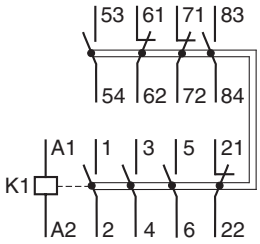

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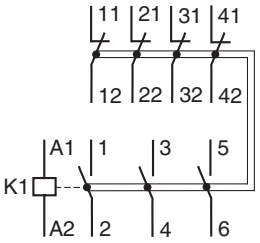
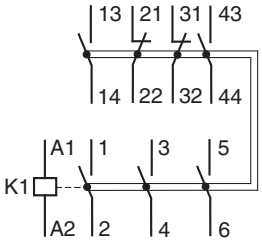
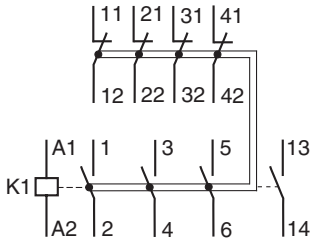


100S-C30⊗04BC…C43⊗04BC



100S-C30⊗22BC…C43⊗22BC



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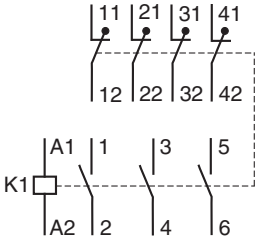

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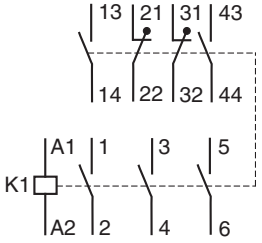
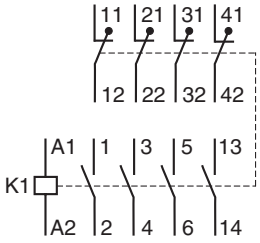
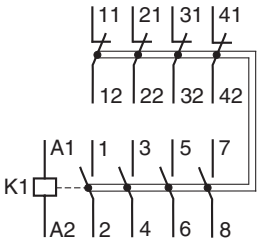


100S-C60⊗22BC…C97⊗22BC



100S-C60⊗14BC…C97⊗14BC

Safety Contactors with 4 Main Contacts and Bifurcated Front-Mount Auxiliary Contacts



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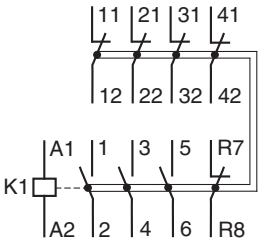

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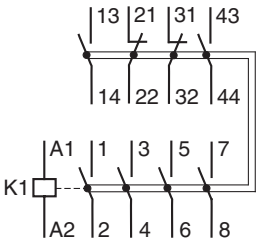

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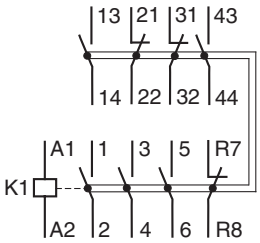


100S-C09⊗322BC…C23⊗322BC

IEC Contactors

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	60
Coil Type :	Conventional		X	X	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]	10	10	20	20	20	32	32	32	32 (40)∗	65	65	75	75	85	100
	690V	[A]	10	10	20	20	20	32	32	32	32 (40)∗	65	65	75	75	85	100
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	230V	[kW]	4	4	8	8	8	13	13	13	13	26	26	30	30	34	40
	240V	[kW]	4	4	8.3	8.3	8.3	13	13	13	13	27	27	31	31	35	42
	400V	[kW]	6.9	6.9	14	14	14	22	22	22	22	45	45	52	52	59	69
	415V	[kW]	7	7	14	14	14	23	23	23	23	47	47	54	54	61	72
	500V	[kW]	8.7	8.7	17	17	17	28	28	28	28	56	56	65	65	74	87
	690V	[kW]	12	12	24	24	24	38	38	38	38	78	78	90	90	102	120
	1000V	[kW]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ambient temperature 60 °C																	
I_e	≤ 500V	[A]	10	10	16	16	16	32	32	32	32	65	65	60	60	80	100
	690V	[A]	10	10	16	16	16	32	32	32	32	65	65	60	60	80	100
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	230V	[kW]	4	4	6.4	6.4	6.4	13	13	13	13	26	26	24	24	25	40
	240V	[kW]	4	4	6.7	6.7	6.7	13	13	13	13	27	27	25	25	26	42
	400V	[kW]	6.9	6.9	11	11	11	22	22	22	22	45	45	42	42	44	69
	415V	[kW]	7	7	12	12	12	23	23	23	23	47	47	43	43	45	72
	500V	[kW]	8.7	8.7	14	14	14	28	28	28	28	56	56	52	52	55	87
	690V	[kW]	12	12	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	8.5	6.3	11.3	11.3	12	15	20	26.5	35	38	38	38	44	62
	240V	[A]	6.3	8.5	6.3	11.3	11.3	12	15	20	26.5	35	38	38	38	44	62
	400V	[A]	4.9	8.5	4.9	8.5	11.5	9	12	16	23	30	37	37	37	43	60
	415V	[A]	4.9	8.5	4.9	8.5	11.5	9	12	16	23	30	37	37	37	43	60
	500V	[A]	3.9	6.8	3.9	6.8	9.2	7	10	14	20	25	30	29	30	38	55
	690V	[A]	2.8	4.9	2.8	4.9	6.7	5	7	9	12	18	21	9	21	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	18.5
	240V	[kW]	1.5	2.2	1.5	3	3	3	4	5.5	7.5	10	11	11	11	13	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	32
	415V	[kW]	2.2	4	2.2	4	5.5	4	5.5	7.5	11	15	20	20	20	22	32
	500V	[kW]	2.2	4	2.2	4	5.5	4	5.5	7.5	13	15	20	18.5	20	25	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	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	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
	230V	[A]	6.9	8	8	10	12	10	12	17	17	28	28	28	28	40	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
	230V	[Hp]	3/4	1	1	1.5	2	1.5	2	3	3	5	5	5	5	7.5	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
	230V	[A]	6	6.8	6	6.8	9.6	6.8	9.6	15.2	22	28	28	28	28	42	54
	460V	[A]	4.8	7.6	4.8	7.6	11	7.6	11	14	21	27	34	34	34	40	52
	575V	[A]	3.9	6.1	3.9	6.1	9	9	11	17	17	27	32	17	32	32	52
	200V	[Hp]	1.5	2	1.5	2	3	2	3	5	5	7.5	10	10	10	10	15
	230V	[Hp]	1.5	2	1.5	2	3	2	3	5	7.5	10	10	10	10	15	20
	460V	[Hp]	3	5	3	5	7.5	5	7.5	10	15	20	25	25	25	30	40
	575V	[Hp]	3	5	3	5	7.5	7.5	10	15	15	25	30	15	30	30	50

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
X	X	X	X	X	X	X	—	X	—	—	—	—	—	—	—
—	—	—	—	—	X	—	X	—	X	X	X	X	X	X	X
AC-1 Active Power Load (50 Hz); Ambient temperature 40 °C															
100	100	130	130	130	250	250	250	250	250	350	350	450	540	800	1000
100	100	130	130	130	250	250	250	250	250	350	350	450	540	800	1000
—	—	—	—	—	250	250	250	250	250	350	350	450	540	—	—
40	40	52	52	52	100	100	100	100	100	139	139	179	199	319	398
42	42	54	54	54	104	104	104	104	104	145	145	187	208	333	416
69	69	90	90	90	173	173	173	173	173	242	242	312	346	554	693
72	72	93	93	93	180	180	180	180	180	252	252	323	359	575	719
87	87	113	113	113	217	217	217	217	217	303	303	390	433	693	866
120	120	155	155	155	299	299	299	299	299	418	418	538	598	956	1195
—	—	—	—	—	433	433	433	433	433	606	606	779	866	—	—
Ambient temperature 60 °C															
100	100	110	110	110	210	210	210	210	210	300	300	380	425	—	—
100	100	110	110	110	210	210	210	210	210	300	300	380	425	—	—
—	—	—	—	—	210	210	210	210	210	300	300	380	425	—	—
40	40	44	44	44	84	84	84	84	84	120	120	151	169	—	—
42	42	46	46	46	87	87	87	87	87	125	125	158	177	—	—
69	69	76	76	76	145	145	145	145	145	208	208	263	294	—	—
72	72	79	79	79	151	151	151	151	151	216	216	273	305	—	—
87	87	95	95	95	182	182	182	182	182	260	260	329	368	—	—
120	120	131	131	131	251	251	251	251	251	359	359	454	508	—	—
—	—	—	—	—	364	364	364	364	364	520	520	658	736	—	—
Switching of 3-phase Motors; (50 Hz) Ambient temperature 60 °C, AC-2, AC-3															
72	85	85	85	96	115	140	140	180	180	210	250	300	420	630	860
72	85	85	85	95	115	140	140	180	180	210	250	300	420	630	860
72	85	85	85	97	115	140	140	180	180	210	250	300	420	630	860
72	85	85	85	97	115 (130)‡	140 (155)‡	140 (155)‡	180 (189)‡	180 (189)‡	210 (227)‡	250 (258)‡	300 (315)‡	420	630	860
67	80	80	80	78	115	115	140	140	180	210	250	300	420	630	753
42	49	22	49	57	115	115	140	140	180	210	250	300	420	492	—
—	—	—	—	—	46	55	55	65	65	80	95	115	160	—	—
22	25	25	25	30	37	45	45	57	57	67	80	97	135	200	250
22	25	25	25	30	38	47	47	60	60	70	83	101	141	200	250
40	45	45	45	55	64	78	78	101	101	118	140	170	238	355	500
40	45	45	45	55	66 (75)‡	82 (90)‡	82 (90)‡	105 (110)‡	105 (110)‡	122 (132)‡	145 (150)‡	176 (185)‡	250	355	500
45	55	55	55	55	80	80	98	98	126	147	177	213	298	450	560
40	45	18.5	45	55	111	111	135	135	176	205	250	293	424	500	—
—	—	—	—	—	63	75	75	90	90	110	132	160	225	—	—
Load Carrying Capacity per UL/CSA															
General Purpose Current (enclosed)															
90	100	125	130	120	160	220	220	220	220	300	300	340	420	630	860
Rated power (enclosed)															
56	80	80	80	100	100	135	135	—	—	—	—	—	—	—	—
68	68	68	68	88	110	136	136	176	176	216	—	—	—	—	—
5	7.5	7.5	7.5	10	10	15	15	—	—	—	—	—	—	—	—
15	15	15	15	20	25	30	30	40	40	50	—	—	—	—	—
62.1	78.2	78.2	78.2	92	120	120	120	150	150	177	221	285	414	552	692
68	80	80	80	80	104	130	130	154	154	192	248	312	420	602	720
65	77	65	77	96	96	124	124	180	180	180	240	302	414	590	702
62	62	22	52	77	99	125	125	144	144	192	242	289	382	562	651
20	25	25	25	30	40	40	40	50	50	60	75	100	150	200	250
25	30	30	30	30	40	50	50	60	60	75	100	125	175	250	300
50	60	50	60	75	75	100	100	150	150	150	200	250	350	500	600
60	60	20	50	75	100	125	125	150	150	200	250	300	400	600	700

‡ 415 V: values in ( ) AC-2 and AC-3 lifespan -25 %

IEC Contactors

Specifications

			100/104-K			100/104-C, 100S/104S-C							
			05	09	12	09	12	16	23	30	37	43	60
	Conventional		X	X	X	X	X	X	X	X	X	X	X
Coil Type :	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]	—	—	—	—	—	—	—	—	—	—	—
AC-4 at approximately 200,000 operations													
	230V	[A]	2.3	3.9	3.9	4.3	6.6	9	9	12	14	16.5	25.5
	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	7½	7½	10	15	20	30
	230V	[Hp]	2.2	3	5	5	7½	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	7½	7½	10	10
	230V	[Hp]	—	—	—	2	3	5	5	7½	10	10	15
	460V	[Hp]	—	—	—	5	7½	10	15	20	20	25	30
	575V	[Hp]	—	—	—	5	7½	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-C, 100S/104S-C			100/104-D, 100S-D										
72	85	97	115	140	140	180	180	210	250	300	420	630	860
X	X	X	X	X	—	X	—	—	—	—	—	—	—
—	—	—	X	—	X	—	X	X	X	X	X	X	X
Switching of 3-phase Motors, (50 Hz); Ambient temperature 60 °C, AC-4													
72	85	96	115	140	140	180	180	210	250	300	420	—	—
72	85	95	115	140	140	180	180	210	250	300	420	—	—
72	85	97	115	140	140	180	180	210	250	300	420	—	—
72	85	97	115 (130)❄	140 (155)❄	140 (155)❄	180 (189)‡	180 (189)‡	210 (227)❄	250 (258)❄	300 (315)❄	420	—	—
67	80	78	115	115	140	140	170	210	250	300	360	—	—
42	49	57	115	115	140	140	170	210	250	300	360	—	—
—	—	—	46	55	55	65	65	80	95	115	160	—	—
22	25	30	37	45	45	57	57	67	80	97	135	—	—
22	25	30	39	47	47	60	60	70	83	101	141	—	—
40	45	55	63	78	78	100	100	118	140	170	238	—	—
40	45	55	66 (75)❄	82 (90)❄	82 (90)❄	105 (110)❄	105 (110)❄	125 (132)❄	145 (150)❄	176 (185)❄	250	—	—
45	55	55	80	80	98	98	119	147	177	213	255	—	—
40	45	55	110	110	135	135	167	205	250	293	356	—	—
—	—	—	63	75	75	90	90	110	132	160	225	—	—
AC-4 at approximately 200,000 operations													
31	38	44	53	60	60	67	67	85	105	140	170	—	—
31	38	44	53	60	60	67	67	85	105	140	170	—	—
31	38	44	53	60	60	67	67	85	105	140	170	—	—
31	38	44	53	60	60	67	67	85	105	140	170	—	—
31	38	44	53	60	60	67	67	85	105	140	170	—	—
—	—	—	25	37	37	43	43	60	72	85	105	—	—
7.5	11	11	15	17	17	20	20	25	32	45	55	—	—
7.5	11	11	15	18.5	18.5	22	22	25	32	45	55	—	—
15	20	22	25	32	32	37	37	45	55	75	90	—	—
17	20	22	25	32	32	37	37	50	55	80	100	—	—
20	25	30	32	40	40	45	45	55	75	100	110	—	—
25	32	37	45	55	55	63	63	80	100	132	160	—	—
—	—	—	30	50	50	55	55	80	100	110	150	—	—
120	120	120	120	120	120	100	100	120	100	70	70	—	—
Wye-Delta (60 Hz)													
40	50	50	60	60	60	75	75	100	125	175	250	—	—
50	60	60	60	75	75	100	100	125	175	200	250	—	—
100	125	125	125	175	175	200	200	250	350	450	600	—	—
100	125	125	150	200	200	250	250	300	450	500	650	—	—
UL/CSA Elevator Duty‡													
48.3	62.1	TBD	78	92	92	120	120	150	150	177	221	—	—
54.0	68.0	TBD	80	104	104	130	130	130	154	192	248	—	—
52.0	65.0	TBD	77	96	96	124	124	156	180	180	240	—	—
52.0	62.0	TBD	77	77	77	99	99	125	144	192	242	—	—
15	20	TBD	25	30	30	40	40	50	50	60	75	—	—
20	25	TBD	30	40	40	50	50	50	60	75	100	—	—
40	50	TBD	60	75	75	100	100	125	150	150	200	—	—
50	60	TBD	75	75	75	100	100	125	150	200	250	—	—
Star-Delta Starting (50 Hz)													
125	147	166	199	242	242	312	312	364	433	520	727	—	—
125	147	165	199	242	242	312	312	364	433	520	727	—	—
125	147	168	199	242	242	312	312	364	433	520	727	—	—
125	147	168	199 (225)❄	242 (268)❄	242 (268)❄	312 (332)❄	312 (332)❄	364 (393)❄	433 (447)❄	520 (546)❄	727	—	—
116	139	135	199	199	242	312	312	364	433	520	727	—	—
73	85	99	199	199	242	312	312	364	433	520	727	—	—
—	—	—	80	95	95	113	113	139	165	200	277	—	—
37	45	50	63	75	75	90	90	110	132	160	220	—	—
40	50	50	66	80	80	100	100	125	150	160	250	—	—
63	80	90	110	132	132	160	160	200	250	300	425	—	—
63	80	90	114 (132)❄	132 (160)❄	132 (160)❄	160	160	220	250	315 (335)❄	425	—	—
80	90	90	132	132	160	200	200	250	315	375	530	—	—
63	80	90	192	200	220	300	300	355	425	530	750	—	—
—	—	—	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.

IEC Contactors

Specifications

			100/104-K			100/104-C, 100S/104S-C							
			05	09	12	09	12	16	23	30	37	43	60
		Conventional	X	X	X	X	X	X	X	X	X	X	X
Coil Type :		Electronic — EI	—	—	—	—	—	—	—	—	—	—	—
Switching of Power Transformers, AC-6a (50 Hz)													
Inrush Current / Rated transformer current		= n											
	≤ 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]	—	—	—	—	—	—	—	—	—	—	—
n = 30	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	97	115	140	140	180	180	210	250	300	420	630	860
X	X	X	X	X	—	X	—	—	—	—	—	—	—
—	—	—	X	—	X	—	X	X	X	X	X	X	X
Switching of Power Transformers, AC-6a (50 Hz)													
40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
—	—	—	46	70	70	85	85	105	125	150	210	—	—
16	16	19.3	24	28	28	34	34	42	50	60	84	—	—
17	17	20.2	26	29	29	35	35	44	52	62	87	—	—
28	28	33.6	42	48	48	59	59	73	87	104	145	—	—
29	29	34.9	43	50	50	61	61	75	90	108	151	—	—
35	35	42	52	61	61	74	74	91	108	130	182	—	—
49	49	58	72	84	84	102	102	125	149	179	251	—	—
—	—	—	80	121	121	147	147	182	217	260	364	—	—
61.3	61.3	72.8	90	105	105	128	128	158	188	225	315	—	—
82	82	97	120	140	140	170	170	210	250	300	420	—	—
60 Hz Peak Inrush/peak rated transformer current													
40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
14.4	14.4	16.8	20.8	24.2	24.2	29.4	29.4	36.4	43.3	52.0	72.7	—	—
14.7	14.7	17.5	21.6	25.2	25.2	30.6	30.6	37.8	45.0	54.0	75.7	—	—
17.0	17.0	20.2	24.9	29.1	29.1	35.3	35.3	43.6	52.0	62.4	87.3	—	—
33.9	33.9	40.3	49.9	58.2	58.2	70.7	70.7	87.3	104	125	175	—	—
42.4	42.4	50.4	62.4	72.7	72.7	88.3	88.3	109	130	156	218	—	—
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													
61.3	61.3	72.8	90	105	105	128	128	158	188	225	315	—	—
21.2	21.2	25.2	31.2	36.4	36.4	44.3	44.3	54.7	65.1	77.9	109	—	—
22.1	22.1	26.2	32.4	37.8	37.8	46.1	46.1	56.9	67.7	81.1	113	—	—
25.5	25.5	30.3	37.4	43.6	43.6	53.2	53.2	65.7	78.2	93.5	131	—	—
51.0	51.0	60.5	74.8	87.3	87.3	106	106	131	156	187	262	—	—
63.7	63.7	75.7	93.5	109	109	133	133	164	195	234	327	—	—
70.1	70.1	83.2	103	120	120	146	146	131	215	257	360	—	—
60 Hz Peak Inrush/peak rated transformer current													
82	82	97	120	140	140	170	170	210	250	300	420	—	—
28.4	28.4	33.6	41.6	48.5	48.5	58.9	58.9	72.7	86.6	104	145	—	—
29.5	29.5	34.9	43.2	50.4	50.4	61.2	61.2	75.7	90.1	108	151	—	—
34.1	34.1	40.3	49.9	58.2	58.2	70.7	70.7	87.3	104	125	175	—	—
68.2	68.2	80.6	99.8	116	116	141	141	175	208	249	349	—	—
85.2	85.2	100.8	125	145	145	177	177	218	260	312	436	—	—
93.7	93.7	110.9	137	160	160	194	194	240	286	343	480	—	—

IEC Contactors

Specifications

			100/104-K			100/104-C, 100S/104S-C									
			05	09	12	09	12	16	23	30	37	40*200	40*400	43	60
	Conventional		X	X	X	X	X	X	X	X	X	X	X	X	X
Coil Type :	Electronic — EI		—	—	—	—	—	—	—	—	—	—	—	—	—
Switching of 3-phase Capacitors, AC-6b (50 Hz)∗															
	230V	[kVar]	—	—	—	8	8	8.5	9	14	14	—	—	24	28
	240V	[kVar]	—	—	—	8	8	8.5	9	14	14	—	—	25	29
	400V	[kVar]	—	—	—	8	8	10	12.5	20	24	—	—	35	48
Single capacitor 40 °C	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]	—	—	—	—	—	—	—	—	—	—	—	—	—
	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
60 °C	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]	—	—	—	—	—	—	—	—	—	—	—	—	—
	230V	[kVar]	—	—	—	5	5	8	9	12.5	14	—	—	20	28
	240V	[kVar]	—	—	—	5	5	8	9	12.5	14	—	—	20	29
	400V	[kVar]	—	—	—	5	5	8	10	15	20	—	—	25	40
Group capacitors 40 °C	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]	—	—	—	—	—	—	—	—	—	—	—	—	—
	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
60 °C	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															
	10 kA	[µF]	750	750	750	1 000	1 000	1 000	1 000	2 700	2 700	—	—	3 200	4 000
Short-circuit current of	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)															
	230V	[A]	20	20	20	32	32	32	32	45	45	—	—	63	—
AC-7a	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)															
	230V	[A]	6	11	11	10.5	14	19	23	30	—	—	—	—	—
AC-7b	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)

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
X	X	X	X	X	X	X	—	X	—	—	—	—	—	—	—
—	—	—	—	—	X	—	X	—	X	X	X	X	X	X	X
Switching of 3-phase Capacitors, AC-6b (50 Hz)															
28	28	—	—	28	45	70	70	70	70	98	98	125	139	—	—
29	29	—	—	29	47	73	73	73	73	102	102	131	145	—	—
48	48	—	—	48	78	121	121	121	121	170	170	218	242	—	—
50	50	—	—	50	81	126	126	126	126	176	176	226	252	—	—
55	60	—	—	60	97	152	152	152	152	212	212	273	303	—	—
55	60	—	—	60	134	209	209	209	209	293	293	376	418	—	—
—	—	—	—	—	194	303	303	303	303	424	424	546	606	—	—
28	28	—	—	28	38	59	59	59	59	84	84	106	119	—	—
29	29	—	—	29	39	61	61	61	61	87	87	111	124	—	—
48	48	—	—	48	65	102	102	102	102	145	145	184	206	—	—
50	50	—	—	50	68	106	106	106	106	151	151	191	214	—	—
50	55	—	—	55	82	127	127	127	127	182	182	230	258	—	—
50	55	—	—	55	113	176	176	176	176	251	251	318	356	—	—
—	—	—	—	—	164	255	255	255	255	364	364	461	515	—	—
28	28	—	—	28	45	70	70	70	70	98	98	125	139	—	—
29	29	—	—	29	47	73	73	73	73	102	102	131	145	—	—
48	48	—	—	48	56	76	76	111	111	170	170	218	242	—	—
50	50	—	—	50	56	76	76	112	112	170	176	226	252	—	—
50	50	—	—	50	56	76	76	113	113	172	212	273	303	—	—
50	50	—	—	50	57	78	78	114	114	174	247	356	418	—	—
—	—	—	—	—	58	79	79	116	116	177	251	361	606	—	—
28	28	—	—	28	38	59	59	59	59	84	84	106	119	—	—
29	29	—	—	29	39	61	61	61	61	87	87	111	124	—	—
48	48	—	—	48	56	76	76	102	102	145	145	184	206	—	—
50	50	—	—	50	56	76	76	106	106	151	151	191	214	—	—
50	50	—	—	50	56	76	76	113	113	172	182	230	258	—	—
50	50	—	—	50	57	78	78	114	114	174	247	318	356	—	—
—	—	—	—	—	58	79	79	116	116	177	251	361	515	—	—
60 Hz Single Capacitor — 40 °C															
28	28	—	—	28	39	61	61	61	61	85	85	109	121	—	—
29	29	—	—	29	45	70	70	70	70	98	98	125	139	—	—
50	50	—	—	50	89	139	139	139	139	195	195	251	279	—	—
50	50	—	—	50	116	182	182	182	182	255	255	327	364	—	—
60 Hz Group Capacitor — 40 °C															
28	28	—	—	28	39	61	61	61	61	85	85	109	121	—	—
29	29	—	—	29	45	70	70	70	70	98	98	125	139	—	—
50	50	—	—	50	56	76	76	112	112	171	195	251	279	—	—
50	50	—	—	50	57	77	77	114	114	173	246	327	364	—	—
Switching of Lamps															
85	90	115	115	115	144	225	225	225	225	315	315	405	450	—	—
81	90	95	95	100	122	189	189	189	189	270	270	342	383	—	—
Individually compensated:															
Max. capacitance at expected															
4 000	4 700	—	—	4 700	—	—	—	—	—	—	—	—	—	—	—
2 000	2 350	—	—	2 350	—	—	—	—	—	—	—	—	—	—	—
800	940	—	—	940	—	—	—	—	—	—	—	—	—	—	—
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)															
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Switching of Motor Load for Home Appliances (50 Hz)															
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

IEC Contactors

Specifications

			100/104-K			100/104-C, 100S/104S-C									
			05	09	12	09	12	16	23	30	37	40*200	40*400	43	60
	Conventional		X	X	X	X	X	X	X	X	X	X	X	X	X
Coil Type :	Electronic — EI		—	—	—	—	—	—	—	—	—	—	—	—	—
Switching of Hermetically Sealed Cooling Compressor Motors - manual reset of overload release (50 Hz)															
	400V	[A]	11	18	18	12	16	22	32	38	45	—	—	63	72
AC-8a	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															
	400V	[A]	—	—	—	5.5	7	9.3	12	13	14	—	—	16	24
AC-8b	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, 60 °C															
	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
1 pole	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
	24V	[A]	6	9	9	25	25	32	32	45	45	45	45	50	70
	48/60V	[A]	6	8	8	25	25	32	32	45	45	45	45	50	70
2 poles in series	110V	[A]	4	6	6	25	25	32	32	45	45	45	45	50	70
	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
	24V	[A]	6	9	9	25	25	32	32	45	45	—	45	63	90
	48/60V	[A]	6	9	9	25	25	32	32	45	45	—	45	63	90
3 poles in series	110V	[A]	6	9	9	25	25	32	32	45	45	—	45	63	90
	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															
	24V	[A]	5	9	9	25	25	32	32	45	45	—	—	63	90
	48/60V	[A]	4	6	6	25	25	32	32	45	45	—	—	50	70
3 poles in series	110V	[A]	2	3	3	20	20	25	25	30	30	—	—	35	70
	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															
	24V	[A]	5	9	9	25	25	32	32	45	45	—	—	63	90
	48/60V	[A]	2	3	3	25	25	32	32	45	45	—	—	50	70
3 poles in series	110V	[A]	0.6	1	1	20	20	25	25	30	30	—	—	35	70
	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-3/400V	AC	[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	[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	6
Mechanical DC control		[Mil. operations]	15	15	15	13	13	13	13	13	13	10	10	13	6
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-Rev.	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)	0.63 (1.39)	0.63 (1.39)	0.51 (1.12)	1.45 (3.20)
	Rev.	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-Rev.	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)	1.12 (2.46)	1.12 (2.46)	1.0 (2.20)	1.47 (3.24)
	Rev.	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					100/104-D, 100S-D										
72	85	90*200	90*400	97	115	140	140	180	180	210	250	300	420	630	860
X	X	X	X	X	X	X	—	X	—	—	—	—	—	—	—
—	—	—	—	—	X	—	X	—	X	X	X	X	X	X	X
Switching of Hermetically Sealed Cooling Compressor Motors - manual reset of overload release (50 Hz)															
85	100	—	—	115	192	210	210	—	—	—	—	—	—	—	—
85	100	—	—	115	192	192	210	—	—	—	—	—	—	—	—
67	80	—	—	90	192	192	210	—	—	—	—	—	—	—	—
- automatic reset of overload release															
30	35	—	—	35	—	—	—	—	—	—	—	—	—	—	—
30	35	—	—	35	—	—	—	—	—	—	—	—	—	—	—
30	35	—	—	35	—	—	—	—	—	—	—	—	—	—	—
Switching of DC Loads															
Non-inductive or slightly inductive loads or resistance furnaces DC-1, 60 °C															
80	80	80	80	80	135	210	210	210	210	300	300	380	425	—	—
40	40	40	40	40	135	210	210	210	210	300	300	380	425	—	—
11	11	11	11	11	135	210	210	210	210	300	300	380	425	—	—
2	2	1.8	1.8	2	3	3.3	3.3	3.3	3.3	4.9	4.9	4.9	5.2	—	—
0.5	0.5	0.5	0.5	0.5	0.6	0.75	0.75	0.75	0.75	1	1	1	1.2	—	—
80	80	80	80	80	135	210	210	210	210	300	300	380	425	—	—
80	80	80	80	80	135	210	210	210	210	300	300	380	425	—	—
80	80	80	80	80	135	210	210	210	210	300	300	380	425	—	—
15	15	15	15	15	135	210	210	210	210	300	300	380	425	—	—
1.5	1.5	1.5	1.5	1.5	3	3.3	3.3	3.3	3.3	4.9	4.9	4.9	5.2	—	—
90	100	—	100	100	135	210	210	210	210	300	300	380	425	—	—
90	100	—	100	100	135	210	210	210	210	300	300	380	425	—	—
90	100	—	100	100	135	210	210	210	210	300	300	380	425	—	—
80	80	—	80	80	135	210	210	210	210	300	300	380	425	—	—
5	5	—	5	5	11	11	11	11	11	14	14	14	15	—	—
Shunt-wound Motors Starting, reverse current braking, reversing, stepping DC-3, 60 °C															
90	100	—	—	100	135	210	210	210	210	300	300	380	425	—	—
70	80	—	—	80	135	210	210	210	210	300	300	380	425	—	—
70	80	—	—	80	135	210	210	210	210	300	300	380	425	—	—
25	30	—	—	30	135	210	210	210	210	300	300	380	425	—	—
0.6	0.6	—	—	0.6	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, stepping DC-5, 60 °C															
90	100	—	—	100	135	210	210	210	210	300	300	380	425	—	—
70	80	—	—	80	135	210	210	210	210	300	300	380	425	—	—
70	80	—	—	80	135	210	210	210	210	300	300	380	425	—	—
25	30	—	—	30	135	210	210	210	210	300	300	380	425	—	—
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															
700	700	700	700	840	1040	1240	1360	1480	1480	2360	2520	2840	4700	6300	7000
Resistance and Power Dissipation															
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
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															
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
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															
6	6	6	6	6	10	10	10	10	10	10	10	10	10	2	2
6	6	6	6	6	10	10	10	10	10	10	10	10	10	2	2
1	1	—	—	1	1	1	1	1	1	1	1	1	1	—	—
Weight															
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)
3.14 (6.92)	3.14 (6.92)	—	—	3.14 (6.92)	—	—	—	—	—	—	—	—	—	—	—
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)
3.22 (7.1)	3.22 (7.1)	—	—	3.22 (7.1)	—	—	—	—	—	—	—	—	—	—	—

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

IEC Contactors

Specifications

Coil Type :	Conventional	100-KR		100/104-K			100/104-C, 100S/104S-C											
		05	09	05	09	12	09	12	16	23	30	37	40	43	60	72	85	97
		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Electr. — El	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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			2.5…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			2.5…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			2.5…50
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…6		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
X	X	X	—	—	—	—	—	—
X	X	X	X	X	X	X	X	X
 §			 §				 §	
—			—				—	—
—			—				—	—
—			—				—	—
—			—				—	—
25			30				52	52
12.5			15				22	22
5			6				2 x 8	2 x 8
8.3			10.5				13	13
22			43				68	68
—			—				—	—
195			380				600	600
100-DL180‡			100-DL420‡				100-DL630	100-DL860
6…300 MCM			(2x) 4…350 MCM				(2X) 2/0…500MCM	(4X) 2/0…500MCM
88…106			375				400	400
100-DTB180‡			100-DTB420✶				—	—
16…35			25…185♣				—	—
16…95			25…185				—	—
16…50			25…240				—	—
16…120			25…240				—	—
20 3…9 3…14			25 6…20 6…20				—	—
14			25				—	—
6…1 / 0 AWG			4 AWG…600 MCM				—	—
6 AWG…250 MCM			4 AWG…600 MCM				—	—
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	60	72	85	90*200	90*400	97
	Conventional	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Coil Type :	Electronic – EI	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	250	250	250	250	250	250
Type "2" (400V)	[A]	16	20	20	25	35	35	40	80	80	63	80	100	160	160	160	160	100	200
Type "2" (690V)	[A]	—	—	—	25	35	35	40	80	80	63	80	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	100	160	160	—	—	TBD
Type "2" (415V)	[A]	—	—	—	20	25	32	50	63	80	—	—	80	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	—	—	—	—	—
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	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	250	—	—	—	—	—
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	125	125	—	—	125	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		30 kA Available Fault Current																	
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	50	50	—	—	50	110	110	110	—	—	TBD
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	—	—	—	—	—	—
UL Inverse-Time Circuit Breaker		65 kA Available Fault Current																	
UL Listed Combination (480V)	[A]	—	—	—	—	—	—	—	—	—	—	—	—	110	110	110	—	—	TBD

§ 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									
115	140/180	140	180	210	250	300	420	630	860
X	X	—	—	—	—	—	—	—	—
X	—	X	X	X	X	X	X	X	X
				50 kA Available Fault Current					
250	315	315	355	500	500	630	630	❄	❄
200	250	250	315	400	400	500	500	❄	❄
200	250	250	315	400	400	500	500	❄	❄
				65 kA Available Fault Current					
200	250	250	250	355	355	450	630	❄	❄
200	250	250	250	355	355	450	560	❄	❄
				5 kA Available Fault Current					
—	—	—	—	—	—	—	—	—	—
				10 kA Available Fault Current					
250	350/450	350	450	500	—	—	—	—	—
				18 kA Available Fault Current					
—	—	—	—	—	700	700	1000	—	—
				30 kA Available Fault Current					
—	—	—	—	—	—	—	—	2000	—
				42 kA Available Fault Current					
—	—	—	—	—	—	—	—	—	2500
				50 kA Available Fault Current					
—	—	—	—	—	—	—	—	—	—
				50 kA Available Fault Current					
—	—	—	—	—	—	—	—	—	—
				100 kA Available Fault Current					
—	—	—	—	—	—	—	—	—	—
				100 kA Available Fault Current					
200	250/300	250	300	400	400	500	600	❄	❄
				5 kA Available Fault Current					
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
				10 kA Available Fault Current					
150	200/250	200	250	300	—	—	—	—	—
				18 kA Available Fault Current					
—	—	—	—	—	400	400	600	—	—
				30 kA Available Fault Current					
125	200	200	200	250	400	400	600	1200	—
				42 kA Available Fault Current					
—	—	—	—	—	—	—	—	—	1200
				50 kA Available Fault Current					
—	—	—	—	—	—	—	—	—	—
				65 kA Available Fault Current					
125	200	200	200	250	400	400	600	❄	❄

❄ To be determined.

IEC Contactors

Specifications

			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	97
	Conventional		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Coil Type	Electronic — EI		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Operating Limits																				
50 Hz, 60 Hz, 50/60 Hz	pick-up	[x *Us*]	0.85…1.1			0.85…1.1						0.85….1.1		0.85….1.1						
	dropout	[x *Us*]	0.2…0.75			0.3…0.6						0.3…0.6		0.3…0.6						
DC (conventional)	pick-up	[x *Us*]	0.8…1.1 0.7…1.25§			0.8…1.1						0.8…1.1		0.8…1.1						
	dropout	[x *Us*]	0.1…0.75			0.1…0.6						0.1…0.6		0.1…0.6						
DC (electronic)	pick-up	[x *Us*]	—			0.7…1.25									—					
	dropout	[x *Us*]	—			0.4									—					
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		
	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]	—			10/17					10/17	16/25			—			—		
	hold-in	[W]	—			1.7					1.7	2.5			—			—		
Operating Times																				
AC	closing delay	[ms]	15…40			15…30			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	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	20…25
	opening delay	[ms]	6…12			7…15			7…15		7…15	7…15		7…15	—			—		
With integ. diode	opening delay	[ms]	8…12			14…20			17…23		17…23	—		17…23	≤ 220V 20…35			≤ 220V 20…35		
With external diode	opening delay	[ms]	35…50			70…95			80…125		80…125	—		80…125	—			—		
DC (electronic)	closing delay	[ms]	—			25…50									—			—		
	opening delay	[ms]	—			25…50									—			—		
Max. Ripple			—			± 15%									—			—		
Min. OFF time		[ms]	—			200									—			—		

§ For 9, 12, 24, and 110V DC coils

			100/104-D, 100S-D										
			95/110	140/180	115	140	180	210	250	300	420	630	860
	Conventional		X	X	—	—	—	—	—	—	—	—	—
Coil Type	Electronic — EI		—	—	X	X	X	X	X	X	X	X	X
Operating Limits													
50 Hz, 60 Hz, 50/60 Hz	pick-up	[x *Us*]	0.85…1.1				0.85…1.1					0.8…1.1	
	dropout	[x *Us*]	0.3…0.6				0.3…0.5					0.1…0.8	
DC control	pick-up	[x *Us*]	0.85…1.1				0.85…1.1					0.85…1.1	
	dropout	[x *Us*]	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 Allen-Bradley distributor for detailed information.

Auxiliary Contacts, Auxiliary Contact Blocks, and Pneumatic Timers

			100-K		100-C, 100S-C				100-D, 100S-D		
									Side-mounted		
			Internal	Front-mounted	Internal	Front-mounted	Front-mounted (Bifurcated)	Side-mounted	Convent'l	Bifurcated	Electronically compatible
Switching of AC Loads											
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	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 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

IEC Contactors

Specifications

General

		100-K	100-C, 100S-C	100-D, 100S-D
		05…12	09…97	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	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	—	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…C97 + 100-FA/-FB/-FC, (except L11, L22), 100- / 100S-C09…C43 + 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

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:** Starting and stopping of running motors	I_e < 17 A I_e > 17 A	6 6	1 1	0.65 0.35	1 1	0.17 0.17	0.65 0.35
AC-4	**Squirrel-cage motors:** Starting, plugging∗, inching❄	I_e < 17 A I_e > 17 A	6 6	1 1	0.65 0.35	6 6	1 1	0.65 0.35
AC-15	**Soleniods:** Contactors, valves and lifting magnets		10	1	0.7	1	1	0.4

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.

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

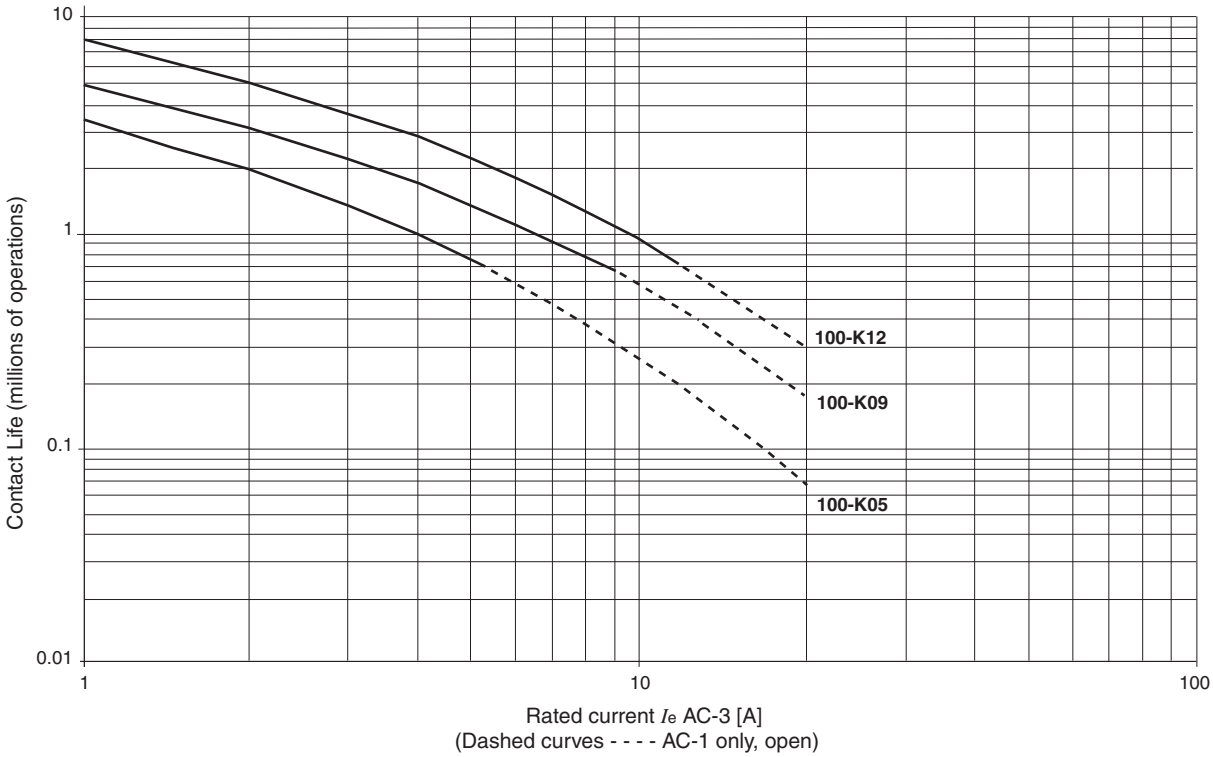
Electrical life; U_e = 400…460V AC

AC-3

Switching of squirrel-cage motors while starting

AC-1

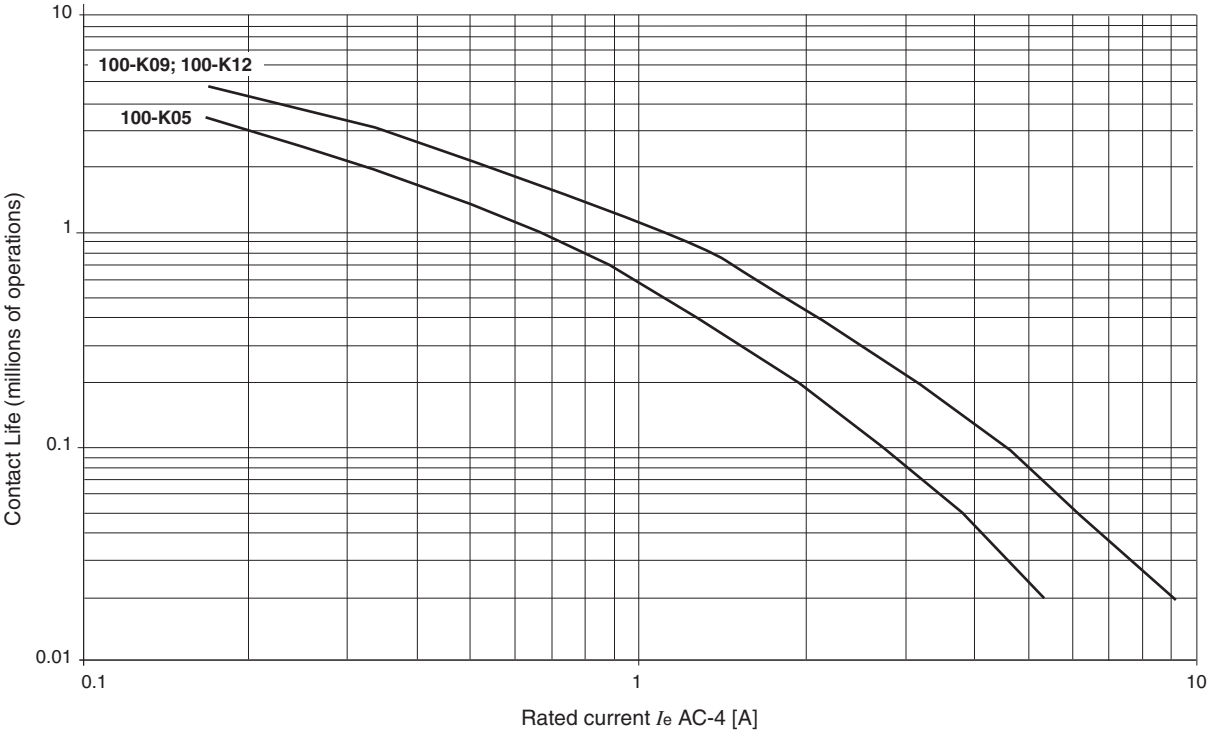
Non- or slightly inductive loads, resistance furnaces



Electrical life; U_e = 400…460V AC

AC-4

Stepping of squirrel-cage motors

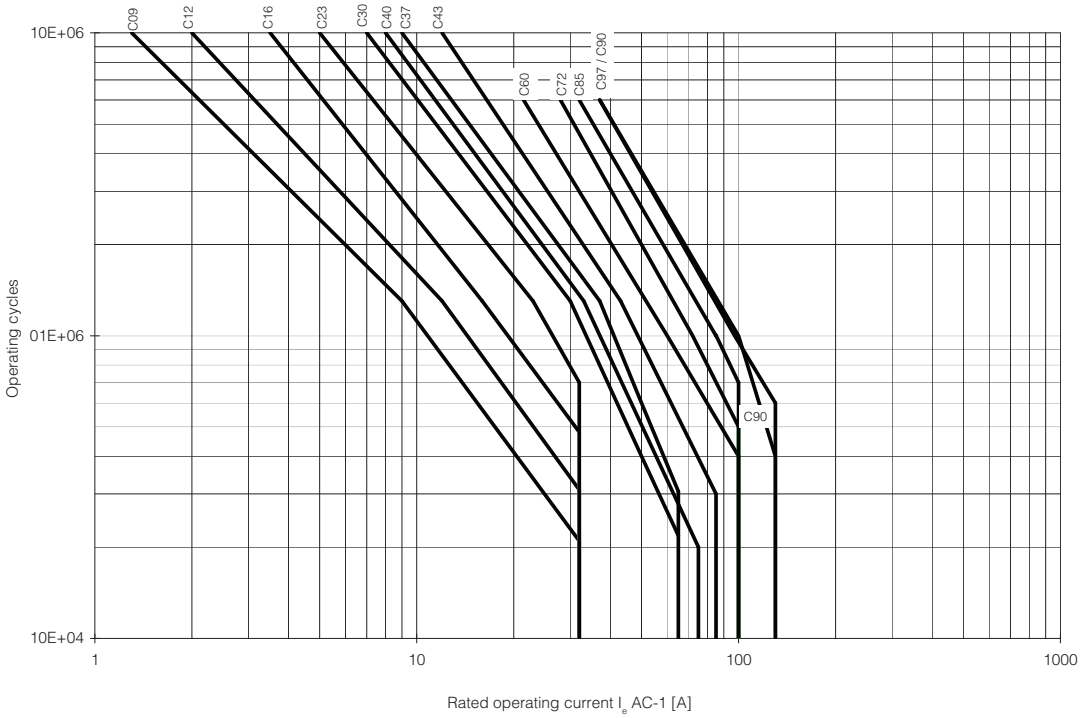


2

Life-Load Curves

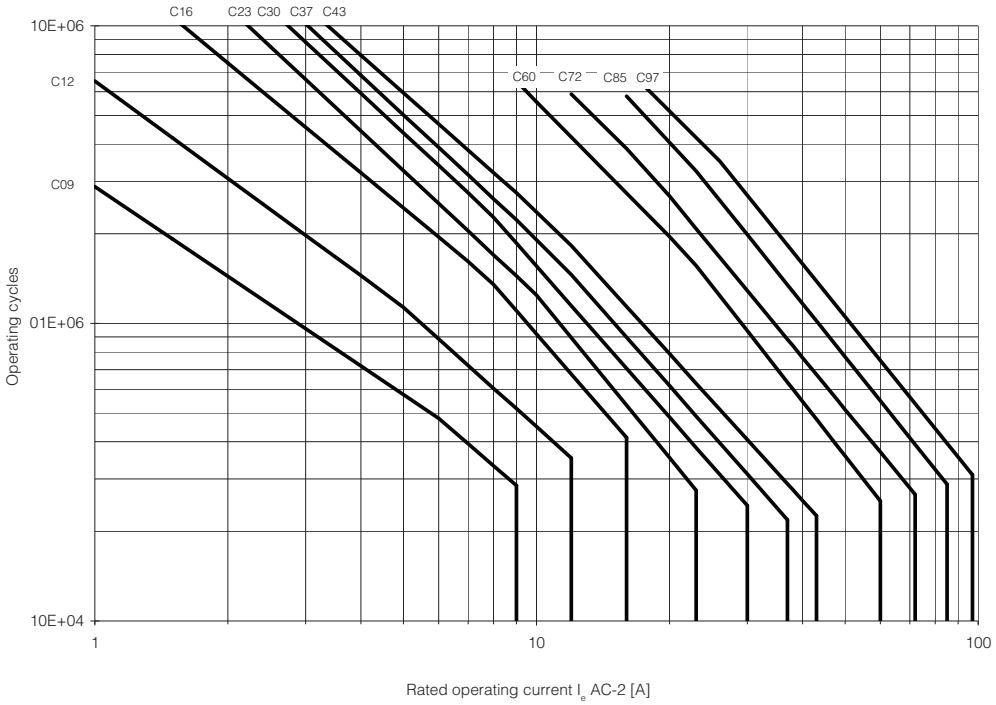
AC-1

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



AC-2

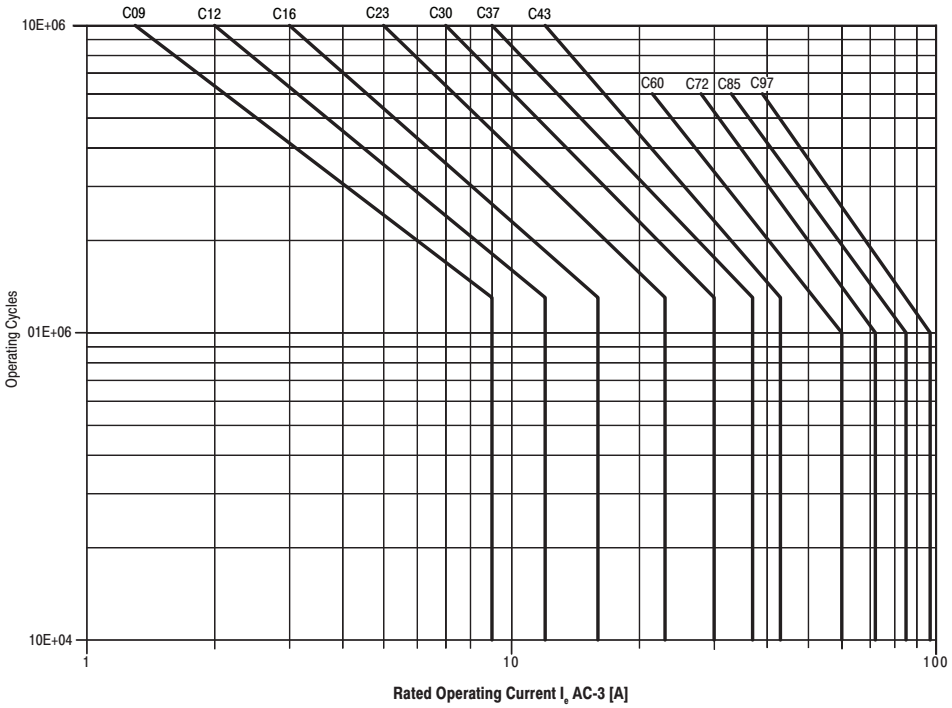
Switching of slip-ring motors; U_e = 230…400…460V



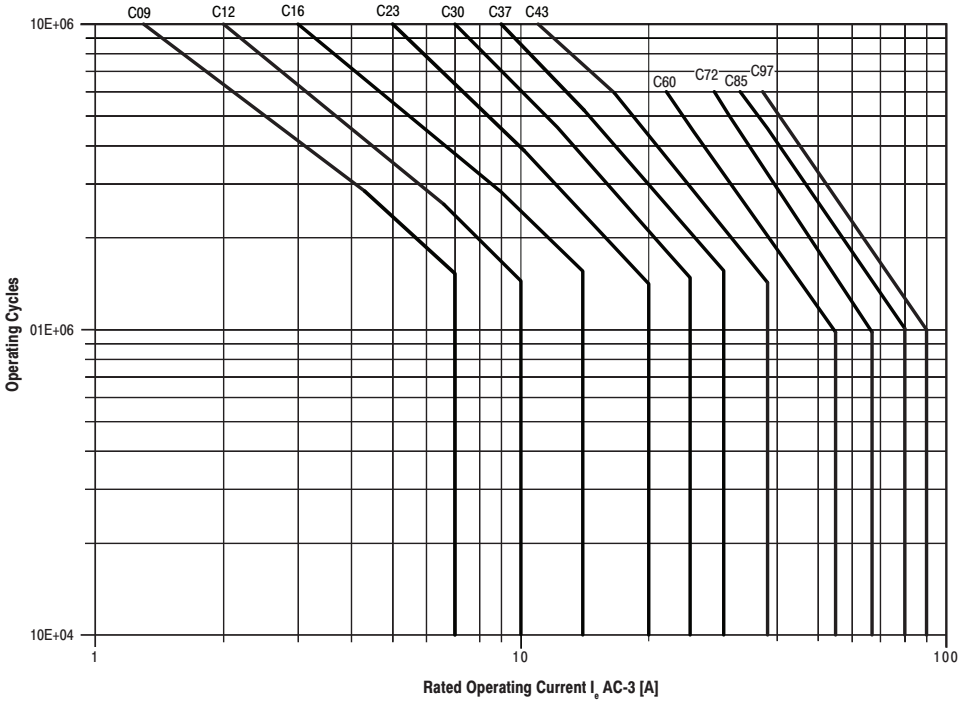
Life-Load Curves

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

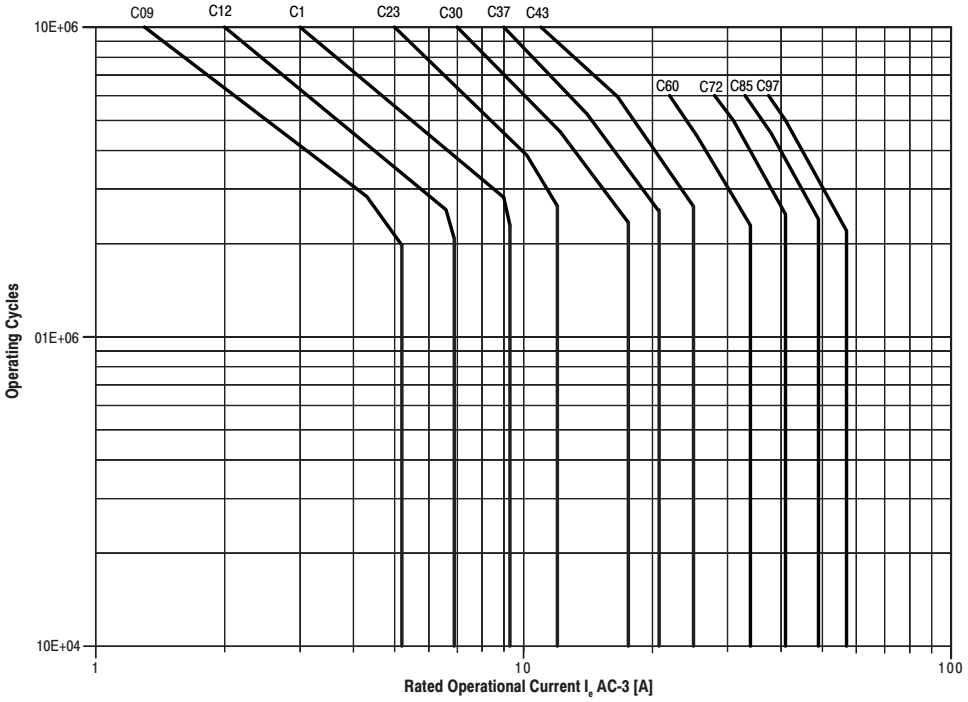


2

Life-Load Curves

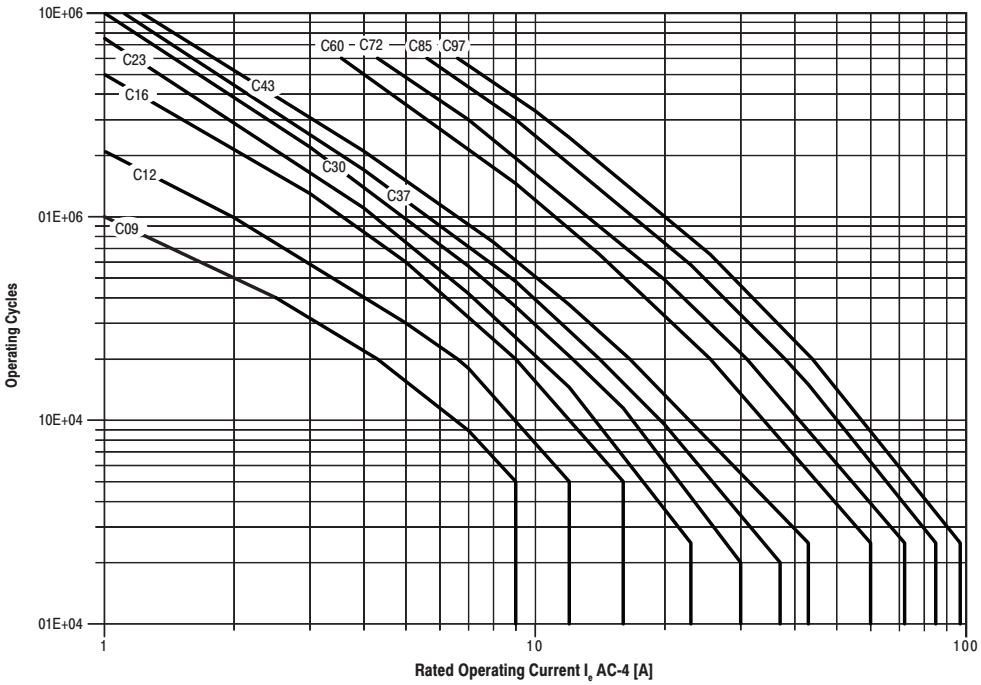
AC-3

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



AC-4

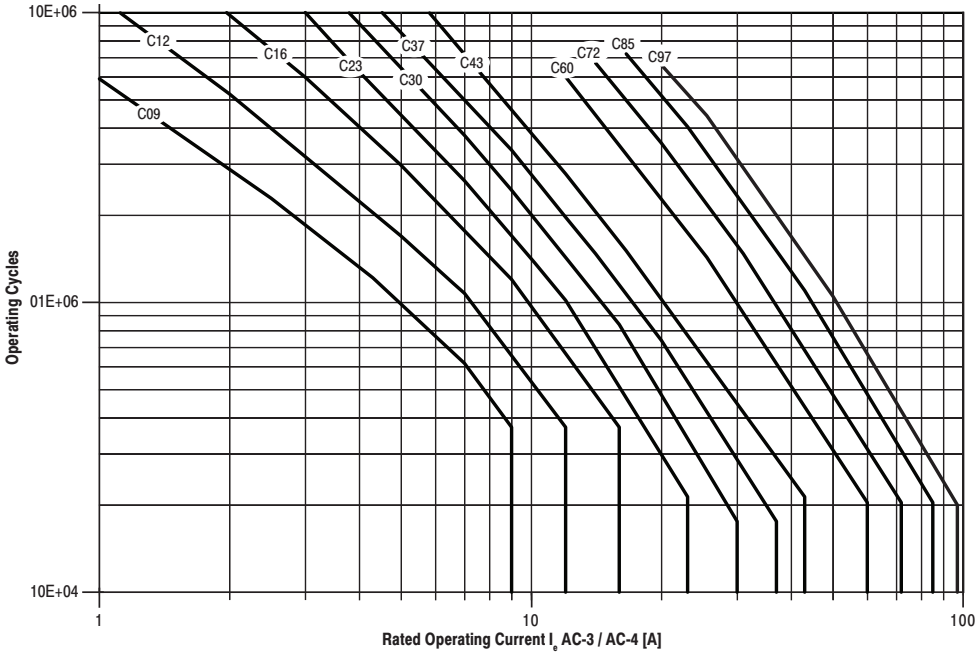
Switching of squirrel-cage motors; U_e = 230…690V



Life-Load Curves

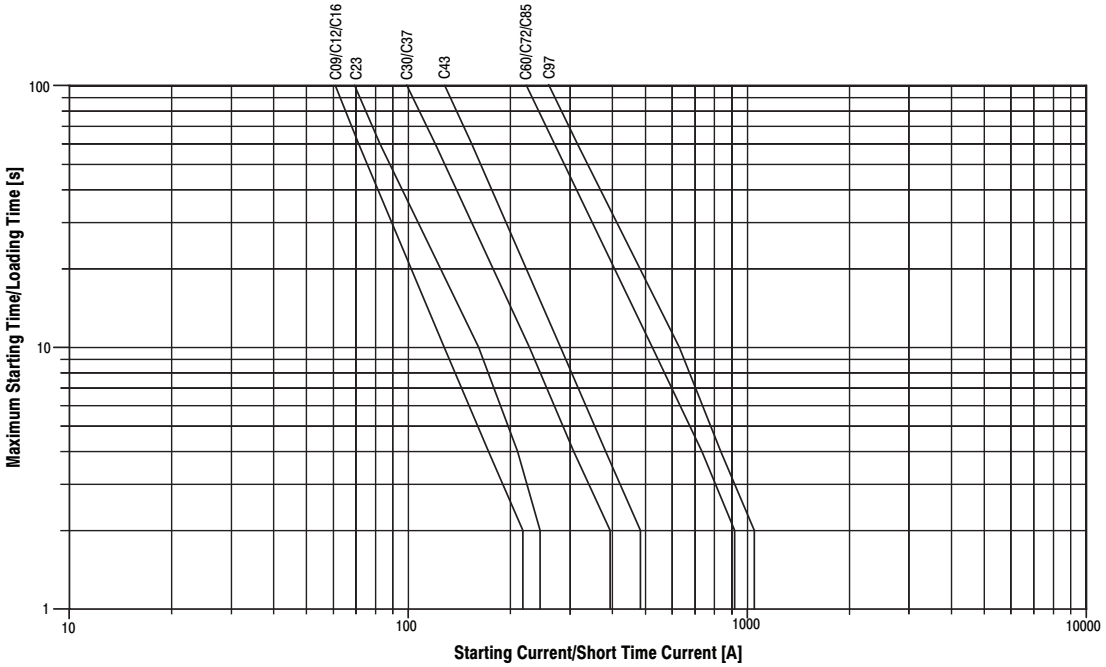
AC-3 & AC-4

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

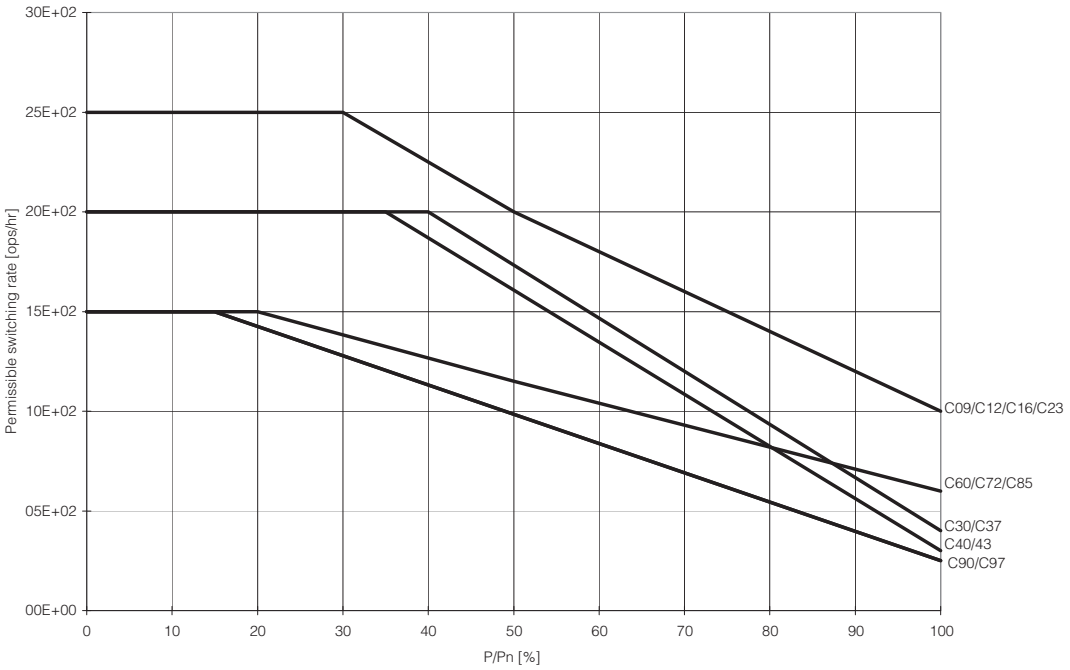


2

Maximum Operating Rates

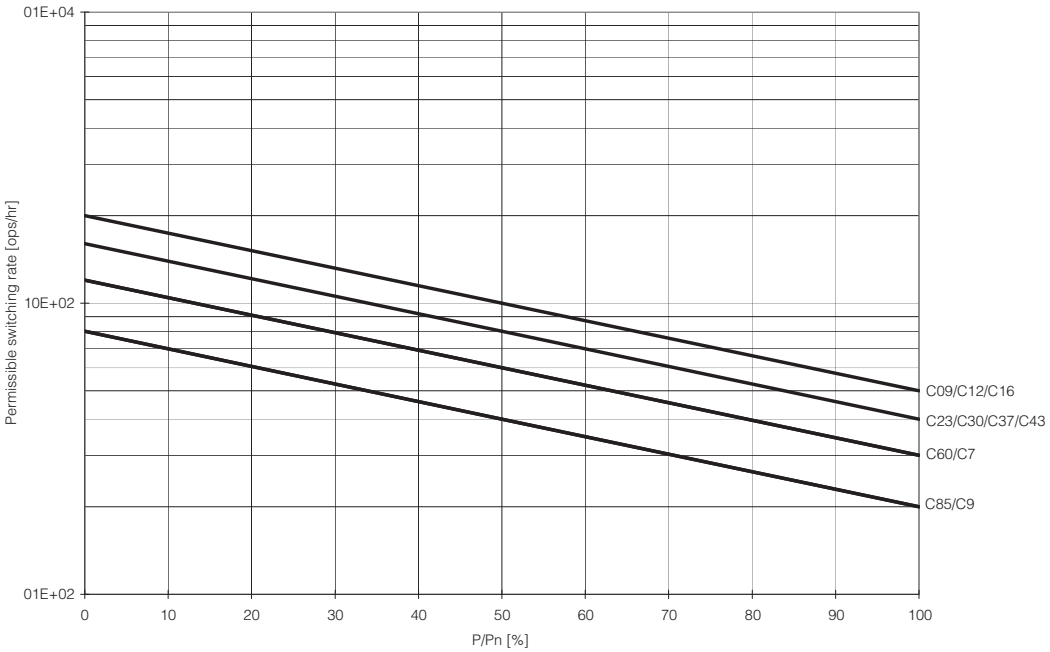
AC-1

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



AC-2

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

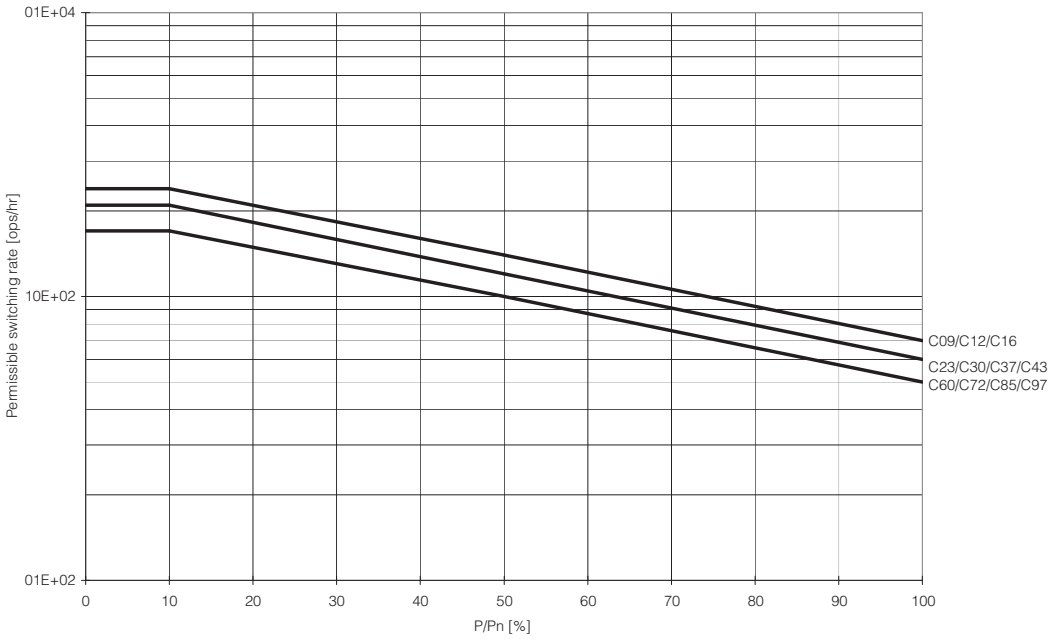


Maximum Operating Rates

AC-3

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

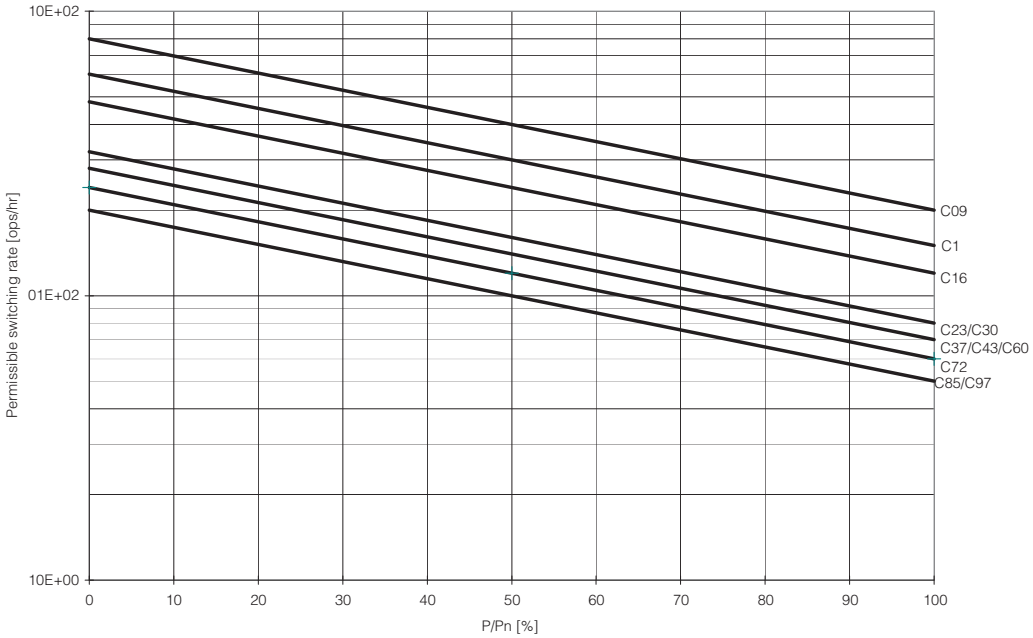
Relative operating time 40%, Starting time t_A = 0.25 s



AC-4

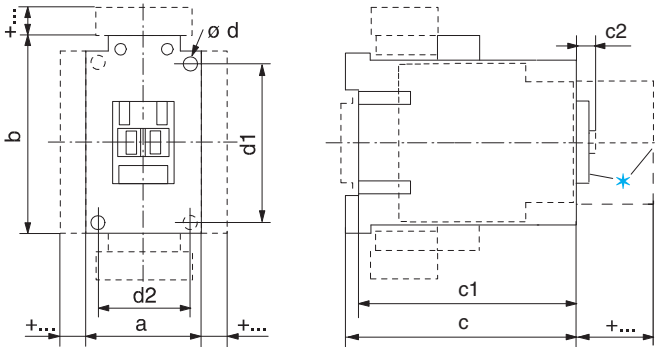
Inching of squirrel-cage motors; U_e = 230…460V

Starting time t_A = 0.25 s

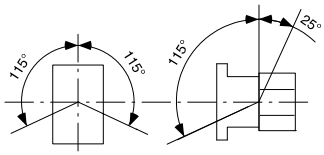


Dimensions are shown in millimeters (inches). Dimensions are not intended for manufacturing purposes.

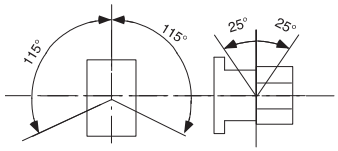
Bulletin 100S-C/104S-C Contactors and Accessories



Mounting Position



AC contactors and DC contactors with electronic coils



DC contactors

AC Contactors and DC Contactors with 12V or 24V Electronic Coils

Cat. No.	a	b	c	c1	c2	Ød	d1	d2
100S-C09...100S-C23	45 (1-25/32)	81 (3-3/16)	119.5 (4-3/4)	114.5 (4-43/64)	6 (15/64)	2-4.5 (2-3/16)	60 (2-23/64)	35 (1-3/8)
100S-C30, 100S-C37	45 (1-25/32)	81 (3-3/16)	136.5 (5-37/64)	131.6 (5-11/32)	6.5 (1/4)	2-4.5 (2-3/16)	60 (2-23/64)	35 (1-3/8)
100S-C43	54 (2-1/8)	81 (3-3/16)	139.5 (5-11/16)	134.6 (5-29/64)	6.5 (1/4)	2-4.5 (2-3/16)	60 (2-23/64)	45 (1-25/32)
100S-C60...100S-C97	72 (2-53/64)	122 (4-51/64)	156 (6-11/32)	150.5 (6-1/8)	8.5 (21/64)	4-5.4 (4-7/32)	100 (3-15/16)	55 (2-11/64)

DC Contactors with Conventional Coils

Cat. No.	a	b	c	c1	c2	Ød	d1	d2
100S-C09Z...100S-C16Z	45 (1-25/32)	81 (3-3/16)	145.5 (5-49/64)	140.5 (5-37/64)	6 (15/64)	2-4.5 (2-3/16)	60 (2-23/64)	35 (1-3/8)
100S-C23Z	45 (1-25/32)	81 (3-3/16)	162.5 (6-7/16)	158 (6-1/4)	6 (15/64)	2-4.5 (2 -3/16)	60 (2-23/64)	35 (1-3/8)
100S-C30Z...100S-C37Z	45 (1-25/32)	81 (3-3/16)	180.5 (7-5/32)	175.5 (6-61/64)	6.5 (1/4)	2-4.5 (2-3/16)	60 (2-23/64)	35 (1-3/8)
100S-C43Z	54 (2-1/8)	81 (3-3/16)	183.5 (7-17/64)	179 (7-3/32)	6.5 (1/4)	2-4.5 (2-3/16)	60 (2-23/64)	45 (1-25/32)
100S-C60D...100S-C97D	72 (2-53/64)	122 (4-51/64)	156 (6-11/32)	150.5 (6-1/8)	8.5 (21/64)	4-5.4 (4-7/32)	100 (3-15/16)	55 (2-11/64)

DC Contactors with 110V or 220V DC Electronic Coils

Cat. No.	a	b	c	c1	c2	Ød	d1	d2
100S-C09E...100S-C23E	45 (1-25/32)	105 (4-1/8)	119.5 (4-3/4)	114.5 (4-43/64)	6 (15/64)	2 - 4.5 (2 -3/16)	60 (2-23/64)	35 (1-3/8)
100S-C30E...100S-C37E	45 (1-25/32)	105 (4-1/8)	136.5 (5-37/64)	131.6 (5-11/32)	6.5 (1/4)	2 - 4.5 (2 -3/16)	60 (2-23/64)	35 (1-3/8)
100S-C43EA...100S-C43ED	54 (2-1/8)	105 (4-1/8)	139.5 (5-11/16)	134.6 (5-29/64)	6.5 (1/4)	2 - 4.5 (2 -3/16)	60 (2-23/64)	45 (1-25/32)

Accessories

Contactors with		mm	(inches)
Auxiliary contact block for side mounting	1- or 2-pole	a + 9	(a + 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)
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 marking tag sheet with clear cover marking tag adapter for System V4 / V5 marking tag adapter for System Bul. 1492W	+ 0 + 0 + 5.5 + 5.5	(+ 0) (+ 0) (+ 7/32) (+ 7/32)