



Bulletin 100-K Miniature Contactors

Assignment of Contacts

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

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

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

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





















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

§ T_{amb.} max. +40 °C




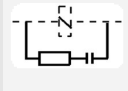
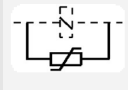

♣ T_{amb.} max. +40 °C and only allowed for coil voltage 24V DC or 230V AC

Bul. 100-K/104-K Accessories

Auxiliary Contact Blocks


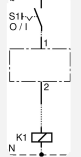
	Description	Connection Diagrams	 		For Use With	Pkg. Qty.	Screw Type Terminals	Spring Clamp Terminals
			Cat. No.	Cat. No.				
 <p>Front-Mounted Auxiliary Contacts</p> <ul style="list-style-type: none"> Auxiliary contact blocks 2- and 4-pole versions Choice of contact configurations Snap on, no tools required Electronic-compatible bifurcated contacts for signals down to 15V/2 mA Mirror Contact performance per IEC 60947-4-1 		0	2	100-K05...K12	1	100-KFC02	100-KRFC02	
		1	1	100-K05...K12	1	100-KFC11	100-KRFC11	
		2	0	100-K05...K12	1	100-KFC20	100-KRFC20	
		0	4	100-K05...K12	1	100-KFC04	100-KRFC04	
		1	3	100-K05...K12	1	100-KFC13	100-KRFC13	
		3	1	100-K05...K12	1	100-KFC31	100-KRFC31	
		2	2	100-K05...K12	1	100-KFC22	100-KRFC22	
		4	0	100-K05...K12	1	100-KFC40	100-KRFC40	
			0	2	100/104-K, 700-K	1	100-KFA02E	100-KRFA02E
			1	1	100/104-K, 700-K	1	100-KFA11E	100-KRFA11E
		2	0	100/104-K, 700-K	1	100-KFA20E	100-KRFA20E	
		0	4	100/104-K, 700-K	1	100-KFA04E	100-KRFA04E	
		1	3	100/104-K, 700-K	1	100-KFA13E	100-KRFA13E	
		2	2	100/104-K, 700-K	1	100-KFA22Z	100-KRFA22Z	
		3	1	100/104-K, 700-K	1	100-KFA31Z	100-KRFA31Z	
		4	0	100/104-K, 700-K	1	100-KFA40E	100-KRFA40E	

Control Modules


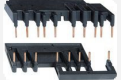
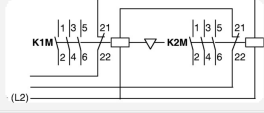


Description	Connection Diagrams	For Use With	Pkg. Qty.	Cat. No.	
 <p>Mechanical Interlock</p> <ul style="list-style-type: none"> For interlocking of two adjacent contactors No added width to contactor assembly Front mount plug-in type Optional auxiliary contact blocks and suppressor modules mount onto the interlock 		100/104-K/-KR, 700-K/-KR	1	100-KMCH	
 <p>Surge Suppressor</p> <ul style="list-style-type: none"> Plug-in type Limits surge voltage on coil drop-off 	<p>RC Suppressor</p> <p>24...48V AC</p> <p>110...280V AC</p> <p>380...480V AC</p>		1 *	100-KFSC50	
			1 *	100-KFSC280	
			1 *	100-KFSC480	
	<p>MOV Suppressor</p> <p>12...55V AC, 12...77V DC</p> <p>56...136V AC, 78...180V DC</p> <p>137...277V AC, 181...250V DC</p>		1 *	100-KFSV55	
			1 *	100-KFSV136	
			1 *	100-KFSV277	
	<p>Diode Suppressor</p> <p>12...250V DC</p>		100/104-K/-KR, 700-K/-KR	1 *	100-KFSD250

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

Timers

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



Connecting Components

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

* May be ordered in package quantities of 10. Add letter M to the end of the cat. no. Example: 140M-C-PEK12M.

‡ Combinations possible. Example: For 6 contactor connections use one cat. no. 100-KW453 and one cat. no. 100-KW454.

Marking Systems

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

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

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

	690V	[kW]	12	12	24	24	24	38	38	38	38	78	78	90	90	102	102	120
	1000V	[kW]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Ambient temperature 60 °C

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

**Switching of 3-phase Motors; (50 Hz)
Ambient temperature 60 °C, AC-2, AC-3**

	230V	[A]	6.3	8.5	6.3	11.3	11.3	12	15	20	26.5	35	38	38	38	44	56	62
	240V	[A]	6.3	8.5	6.3	11.3	11.3	12	15	20	26.5	35	38	38	38	44	56	62
	400V	[A]	4.9	8.5	4.9	8.5	11.5	9	12	16	23	30	37	37	37	43	55	60
	415V	[A]	4.9	8.5	4.9	8.5	11.5	9	12	16	23	30	37	37	37	43	55	60
	500V	[A]	3.9	6.8	3.9	6.8	9.2	7	10	14	20	25	30	29	30	38	44	55
	690V	[A]	2.8	4.9	2.8	4.9	6.7	5	7	9	12	18	21	9	21	25	25	34
	1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	230V	[kW]	1.5	2.2	1.5	3	3	3	4	5.5	7.5	10	11	11	11	13	15	18.5
	240V	[kW]	1.5	2.2	1.5	3	3	3	4	5.5	7.5	10	11	11	11	13	15	18.5
	400V	[kW]	2.2	4	2.2	4	5.5	4	5.5	7.5	11	15	18.5	18.5	18.5	22	30	32
	415V	[kW]	2.2	4	2.2	4	5.5	4	5.5	7.5	11	15	20	20	20	22	30	32
	500V	[kW]	2.2	4	2.2	4	5.5	4	5.5	7.5	13	15	20	18.5	20	25	30	37
	690V	[kW]	2.2	4	2.2	4	5.5	4	5.5	7.5	10	15	18.5	7.5	18.5	22	22	32
	1000V	[kW]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Load Carrying Capacity per UL/CSA

General Purpose Current (enclosed)

	[A]	9	9	12	15	18	25	25	30	30	55	60	60	60	75	75	90
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Rated power (enclosed)

1-phase	115V	[A]	7.2	7.2	9.8	9.8	13.8	9.8	9.8	16	24	24	34	34	34	34	56	56
	230V	[A]	6.9	8	8	10	12	10	12	17	17	28	28	28	28	40	50	50
	115V	[Hp]	1/3	1/3	0.5	0.5	0.75	0.5	0.5	1	2	2	3	3	3	3	5	5
	230V	[Hp]	3/4	1	1	1.5	2	1.5	2	3	3	5	5	5	5	7.5	10	10
3-phase	200V	[A]	6.9	7.8	6.9	7.8	11	7.8	11	17.5	17.5	25.3	32.2	32.2	32.2	32.2	48.3	48.3
	230V	[A]	6	6.8	6	6.8	9.6	6.8	9.6	15.2	22	28	28	28	28	42	54	54
	460V	[A]	4.8	7.6	4.8	7.6	11	7.6	11	14	21	27	34	34	34	40	52	52
	575V	[A]	3.9	6.1	3.9	6.1	9	9	11	17	17	27	32	17	32	32	41	52
	200V	[Hp]	1.5	2	1.5	2	3	2	3	5	5	7.5	10	10	10	10	15	15
	230V	[Hp]	1.5	2	1.5	2	3	2	3	5	7.5	10	10	10	10	15	20	20
	460V	[Hp]	3	5	3	5	7.5	5	7.5	10	15	20	25	25	25	30	40	40
575V	[Hp]	3	5	3	5	7.5	7.5	10	15	15	25	30	15	30	30	40	50	

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

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

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

Ambient temperature 60 °C

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

Switching of 3-phase Motors; (50 Hz)

Ambient temperature 60 °C, AC-2, AC-3

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

Load Carrying Capacity per UL/CSA

General Purpose Current (enclosed)

	[A]	90	100	125	130	120	220	220	220	220	220	220	300	300	340	420	630	860
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Rated power (enclosed)

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

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

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

230V	[A]	6.3	11.3	11.3	12	15	20	26.5	35	38	44	56	62
240V	[A]	6.3	11.3	11.3	12	15	20	26.5	35	38	44	56	62
400V	[A]	4.9	8.5	11.5	9	12	16	23	30	37	43	55	60
415V	[A]	4.9	8.5	11.5	9	12	16	23	30	37	43	55	60
500V	[A]	3.9	6.8	9.2	7	10	14	20	25	30	38	44	55
690V	[A]	2.8	4.9	6.7	5	7	9	12	18	21	25	25	34
1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—
230V	[kW]	1.5	3	3	3	4	5.5	7.5	10	11	13	15	18.5
240V	[kW]	1.5	3	3	3	4	5.5	7.5	10	11	13	15	18.5
400V	[kW]	2.2	4	5.5	4	5.5	7.5	11	15	18.5	22	30	32
415V	[kW]	2.2	4	5.5	4	5.5	7.5	11	15	20	22	30	32
500V	[kW]	2.2	4	5.5	4	5.5	7.5	13	15	20	25	30	37
690V	[kW]	2.2	4	5.5	4	5.5	7.5	10	15	18.5	22	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	22	25.5
240V	[A]	2.3	3.9	3.9	4.3	6.6	9	9	12	14	16.5	22	25.5
400/415V	[A]	2	3.6	3.6	4.3	6.6	9	9	12	14	16.5	22	25.5
500V	[A]	1.9	3.2	3.2	4.3	6.6	9	9	12	14	16.5	22	25.5
690V	[A]	—	—	—	4.3	6.6	9	9	12	14	16.5	22	25.5
1000V	[A]	—	—	—	—	—	—	—	—	—	—	—	—
230V*	[kW]	0.37	0.75	0.75	0.75	1.5	2.2	2.2	3	3.7	4	5.5	6.3
240V*	[kW]	0.37	0.75	0.75	0.75	1.5	2.2	2.2	3	4	4	5.5	7.5
400V*	[kW]	0.75	1.5	1.5	1.8	3	4	4	5.5	6.3	7.5	11	13
415V*	[kW]	0.75	1.5	1.5	1.8	3	4	4	5.5	6.3	7.5	11	13
500V*	[kW]	0.75	1.5	1.5	2.2	3.7	5.5	5.5	7.5	7.5	10	11	15
690V*	[kW]	—	—	—	3	5.5	7.5	7.5	10	11	15	18.5	22
1000V*	[kW]	—	—	—	—	—	—	—	—	—	—	—	—

Max. switching frequency Ops/h 250 250 250 250 250 220 200 200 200 200 200 120

Wye-Delta (60 Hz)

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

UL/CSA Elevator Duty§

200V	[A]	—	—	—	7.8	11.0	11.0	17.5	25.3	25.3	32.2	TBD	32.2
230V	[A]	—	—	—	6.8	9.6	15.2	15.2	22.0	28.0	28.0	TBD	42.0
460V	[A]	—	—	—	7.6	11.0	14.0	21.0	27.0	27.0	34.0	TBD	40.0
575V	[A]	—	—	—	6.1	9.0	11.0	17.0	22.0	27.0	32.0	TBD	41.0
200V	[Hp]	—	—	—	2	3	3	5	7½	7½	10	TBD	10
230V	[Hp]	—	—	—	2	3	5	5	7½	10	10	TBD	15
460V	[Hp]	—	—	—	5	7½	10	15	20	20	25	TBD	30
575V	[Hp]	—	—	—	5	7½	10	15	20	25	30	TBD	40

Star-Delta Starting (50 Hz)

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

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

		100/104-C, 100S/104S-C			100/104-D, 100S-D										
		72	85	97	115	140	140	180	180	210	250	300	420	630	860
Coil Type :	Conventional	X	X	X	X	X	-	X	-	-	-	-	-	-	-
	Electronic – EI	-	-	-	X	-	X	-	X	X	X	X	X	X	X

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

	230V	[A]	72	85	96	115	140	140	180	180	210	250	300	420	-	-
	240V	[A]	72	85	95	115	140	140	180	180	210	250	300	420	-	-
	400V	[A]	72	85	97	115	140	140	180	180	210	250	300	420	-	-
	415V	[A]	72	85	97	115 (130)‡	140 (155)‡	140 (155)‡	180 (189)§	180 (189)§	210 (227)‡	250 (258)‡	300 (315)‡	420	-	-
	500V	[A]	67	80	78	115	115	140	140	170	210	250	300	360	-	-
	690V	[A]	42	49	57	115	115	140	140	170	210	250	300	360	-	-
	1000V	[A]	-	-	-	46	55	55	65	65	80	95	115	160	-	-
	230V	[kW]	22	25	30	37	45	45	57	57	67	80	97	135	-	-
	240V	[kW]	22	25	30	39	47	47	60	60	70	83	101	141	-	-
	400V	[kW]	40	45	55	63	78	78	100	100	118	140	170	238	-	-
	415V	[kW]	40	45	55	66 (75)‡	82 (90)‡	82 (90)‡	105 (110)‡	105 (110)‡	125 (132)‡	145 (150)‡	176 (185)‡	250	-	-
	500V	[kW]	45	55	55	80	80	98	98	119	147	177	213	255	-	-
690V	[kW]	40	45	55	110	110	135	135	167	205	250	293	356	-	-	
1000V	[kW]	-	-	-	63	75	75	90	90	110	132	160	225	-	-	

AC-4 at approximately 200,000 operations

	230V	[A]	31	38	44	53	60	60	67	67	85	105	140	170	-	-
	240V	[A]	31	38	44	53	60	60	67	67	85	105	140	170	-	-
	400/415V	[A]	31	38	44	53	60	60	67	67	85	105	140	170	-	-
	500V	[A]	31	38	44	53	60	60	67	67	85	105	140	170	-	-
	690V	[A]	31	38	44	53	60	60	67	67	85	105	140	170	-	-
	1000V	[A]	-	-	-	25	37	37	43	43	60	72	85	105	-	-
	230V*	[kW]	7.5	11	11	15	17	17	20	20	25	32	45	55	-	-
	240V*	[kW]	7.5	11	11	15	18.5	18.5	22	22	25	32	45	55	-	-
	400V*	[kW]	15	20	22	25	32	32	37	37	45	55	75	90	-	-
	415V*	[kW]	17	20	22	25	32	32	37	37	50	55	80	100	-	-
	500V*	[kW]	20	25	30	32	40	40	45	45	55	75	100	110	-	-
	690V*	[kW]	25	32	37	45	55	55	63	63	80	100	132	160	-	-
1000V*	[kW]	-	-	-	30	50	50	55	55	80	100	110	150	-	-	
Max. switching frequency	Ops/h	120	120	120	120	120	120	100	100	120	100	70	70	-	-	

Wye-Delta (60 Hz)

	200V	[Hp]	40	50	50	60	60	60	75	75	100	125	175	250	-	-
	230V	[Hp]	50	60	60	60	75	75	100	100	125	175	200	250	-	-
	460V	[Hp]	100	125	125	125	175	175	200	200	250	350	450	600	-	-
	575V	[Hp]	100	125	125	150	200	200	250	250	300	450	500	650	-	-

UL/CSA Elevator Duty‡

	200V	[A]	48.3	62.1	TBD	78	92	92	120	120	150	150	177	221	-	-
	230V	[A]	54.0	68.0	TBD	80	104	104	130	130	130	154	192	248	-	-
	460V	[A]	52.0	65.0	TBD	77	96	96	124	124	156	180	180	240	-	-
	575V	[A]	52.0	62.0	TBD	77	77	77	99	99	125	144	192	242	-	-
	200V	[Hp]	15	20	TBD	25	30	30	40	40	50	50	60	75	-	-
	230V	[Hp]	20	25	TBD	30	40	40	50	50	50	60	75	100	-	-
	460V	[Hp]	40	50	TBD	60	75	75	100	100	125	150	150	200	-	-
	575V	[Hp]	50	60	TBD	75	75	75	100	100	125	150	200	250	-	-

Star-Delta Starting (50 Hz)

	≤ 230V	[A]	125	147	166	199	242	242	312	312	364	433	520	727	-	-
	≤ 240V	[A]	125	147	165	199	242	242	312	312	364	433	520	727	-	-

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

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

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

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

**Switching of Power Transformers,
AC-6a (50 Hz)**

Inrush Current		= n												
Rated transformer current														
n = 30	≤ 230V	[A]	2.9	5.4	5.4	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	≤ 240V	[A]	2.9	5.4	5.4	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	≤ 400V	[A]	2.4	4.1	5.4	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	≤ 415V	[A]	2.4	4.1	5.4	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	≤ 500V	[A]	1.8	3.2	3.2	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	≤ 690V	[A]	–	–	–	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	≤ 1000V	[A]	–	–	–	–	–	–	–	–	–	–	–	–
	230V	[kVA]	1.2	2	2	4.3	4.3	4.3	4.3	8	8	9.2	9.2	16
	240V	[kVA]	1.2	2	2	4.5	4.5	4.5	4.5	8.3	8.3	10	10	17
	400V	[kVA]	1.7	2.8	3.4	7.5	7.5	7.5	7.5	14	14	16	16	28
	415V	[kVA]	1.7	2.8	3.4	7.8	7.8	7.8	7.8	14	14	17	17	29
	500V	[kVA]	1.7	2.8	3.4	9.4	9.4	9.4	9.4	17	17	20	20	35
	690V	[kVA]	2	4	5	13	13	13	13	24	24	27	27	49
1000V	[kVA]	–	–	–	–	–	–	–	–	–	–	–	–	
n = 20	≤ 690V	[A]	–	–	–	16.3	16.3	16.3	16.3	30	30	34.5	34.5	61.3
n = 15	≤ 690V	[A]	–	–	–	22	22	22	22	40	40	46	46	82

60 Hz Peak Inrush/peak rated transformer current

	n = 30	[A]	–	–	–	10.9	10.9	10.9	10.9	20	20	23	23	40.8
	200V	[kVA]	–	–	–	3.8	3.8	3.8	3.8	6.9	6.9	8.0	8	14.1
	208V	[kVA]	–	–	–	3.9	3.9	3.9	3.9	7.2	7.2	8.3	8.3	14.7
	240V	[kVA]	–	–	–	4.5	4.5	4.5	4.5	8.3	8.3	9.6	9.6	17.0
	480V	[kVA]	–	–	–	9.1	9.1	9.1	9.1	16.6	16.6	19.1	19.1	33.9
	600V	[kVA]	–	–	–	11.3	11.3	11.3	11.3	20.8	20.8	23.9	23.9	42.4
	660V	[kVA]	–	–	–	12.5	12.5	12.5	12.5	22.9	22.9	26.3	26.3	46.6

60 Hz Peak Inrush/peak rated transformer current

	n = 20	[A]	–	–	–	16.3	16.3	16.3	16.3	30	30	34.5	34.5	61.3
	200V	[kVA]	–	–	–	5.6	5.6	5.6	5.6	10.4	10.4	12.0	12	21.2
	208V	[kVA]	–	–	–	5.9	5.9	5.9	5.9	10.8	10.8	12.4	12.4	22.1
	240V	[kVA]	–	–	–	6.8	6.8	6.8	6.8	12.5	12.5	14.3	14.3	25.5
	480V	[kVA]	–	–	–	13.6	13.6	13.6	13.6	24.9	24.9	28.7	28.7	51.0
	600V	[kVA]	–	–	–	16.9	16.9	16.9	16.9	31.2	31.2	35.9	35.9	63.7
	660V	[kVA]	–	–	–	18.6	18.6	18.6	18.6	34.3	34.3	39.4	39.4	70.1

60 Hz Peak Inrush/peak rated transformer current

	n=15	[A]	–	–	–	22	22	22	22	40	40	46	46	82
	200V	[kVA]	–	–	–	7.5	7.5	7.5	7.5	13.9	13.9	15.9	15.9	28.4
	208V	[kVA]	–	–	–	7.8	7.8	7.8	7.8	14.4	14.4	16.6	16.6	29.5
	240V	[kVA]	–	–	–	9.0	9.0	9.0	9.0	16.6	16.6	19.1	19.1	34.1
	480V	[kVA]	–	–	–	18.1	18.1	18.1	18.1	33.3	33.3	38.2	38.2	68.2
	600V	[kVA]	–	–	–	22.6	22.6	22.6	22.6	41.6	41.6	47.8	47.8	85.2
	660V	[kVA]	–	–	–	24.9	24.9	24.9	24.9	45.7	45.7	52.6	52.6	93.7

		100/104-C, 100S/104S-C			100/104-D, 100S-D										
		72	85	97	115	140	140	180	180	210	250	300	420	630	860
Coil Type :	Conventional	X	X	X	X	X	—	X	—	—	—	—	—	—	—
	Electronic – EI	—	—	—	X	—	X	—	X	X	X	X	X	X	X

Switching of Power Transformers, AC-6a (50 Hz)

Inrush Current

Rated transformer current

n = 30	≤ 230V	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	≤ 240V	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	≤ 400V	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	≤ 415V	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	≤ 500V	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	≤ 690V	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	≤ 1000V	[A]	—	—	—	46	70	70	85	85	105	125	150	210	—	—
	230V	[kVA]	16	16	19.3	24	28	28	34	34	42	50	60	84	—	—
	240V	[kVA]	17	17	20.2	26	29	29	35	35	44	52	62	87	—	—
	400V	[kVA]	28	28	33.6	42	48	48	59	59	73	87	104	145	—	—
	415V	[kVA]	29	29	34.9	43	50	50	61	61	75	90	108	151	—	—
	500V	[kVA]	35	35	42	52	61	61	74	74	91	108	130	182	—	—
	690V	[kVA]	49	49	58	72	84	84	102	102	125	149	179	251	—	—
1000V	[kVA]	—	—	—	80	121	121	147	147	182	217	260	364	—	—	
n = 20	≤ 690V	[A]	61.3	61.3	72.8	90	105	105	128	128	158	188	225	315	—	—
n = 15	≤ 690V	[A]	82	82	97	120	140	140	170	170	210	250	300	420	—	—

60 Hz Peak Inrush/peak rated transformer current

n = 30	[A]	40.8	40.8	48.5	60	70	70	85	85	105	125	150	210	—	—
	200V [kVA]	14.4	14.4	16.8	20.8	24.2	24.2	29.4	29.4	36.4	43.3	52.0	72.7	—	—
	208V [kVA]	14.7	14.7	17.5	21.6	25.2	25.2	30.6	30.6	37.8	45.0	54.0	75.7	—	—
	240V [kVA]	17.0	17.0	20.2	24.9	29.1	29.1	35.3	35.3	43.6	52.0	62.4	87.3	—	—
	480V [kVA]	33.9	33.9	40.3	49.9	58.2	58.2	70.7	70.7	87.3	104	125	175	—	—
	600V [kVA]	42.4	42.4	50.4	62.4	72.7	72.7	88.3	88.3	109	130	156	218	—	—
	660V [kVA]	46.6	46.6	55.4	68.6	80.0	80.0	97.2	97.2	120	143	171	240	—	—

60 Hz Peak Inrush/peak rated transformer current

n = 20	[A]	61.3	61.3	72.8	90	105	105	128	128	158	188	225	315	—	—
	200V [kVA]	21.2	21.2	25.2	31.2	36.4	36.4	44.3	44.3	54.7	65.1	77.9	109	—	—
	208V [kVA]	22.1	22.1	26.2	32.4	37.8	37.8	46.1	46.1	56.9	67.7	81.1	113	—	—
	240V [kVA]	25.5	25.5	30.3	37.4	43.6	43.6	53.2	53.2	65.7	78.2	93.5	131	—	—
	480V [kVA]	51.0	51.0	60.5	74.8	87.3	87.3	106	106	131	156	187	262	—	—
	600V [kVA]	63.7	63.7	75.7	93.5	109	109	133	133	164	195	234	327	—	—
	660V [kVA]	70.1	70.1	83.2	103	120	120	146	146	181	215	257	360	—	—

60 Hz Peak Inrush/peak rated transformer current

n=15	[A]	82	82	97	120	140	140	170	170	210	250	300	420	—	—
	200V [kVA]	28.4	28.4	33.6	41.6	48.5	48.5	58.9	58.9	72.7	86.6	104	145	—	—
	208V [kVA]	29.5	29.5	34.9	43.2	50.4	50.4	61.2	61.2	75.7	90.1	108	151	—	—
	240V [kVA]	34.1	34.1	40.3	49.9	58.2	58.2	70.7	70.7	87.3	104	125	175	—	—
	480V [kVA]	68.2	68.2	80.6	99.8	116	116	141	141	175	208	249	349	—	—
	600V [kVA]	85.2	85.2	100.8	125	145	145	177	177	218	260	312	436	—	—
	660V [kVA]	93.7	93.7	110.9	137	160	160	194	194	240	286	343	480	—	—

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

Switching of 3-phase Capacitors, AC-6b (50 Hz)*

Single capacitor 40 °C	230V	[kVar]	—	—	—	8	8	8.5	9	14	14	—	—	24	24	28
	240V	[kVar]	—	—	—	8	8	8.5	9	14	14	—	—	25	25	29

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

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

	400V	[A]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	440V	[A]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Switching of Hermetically Sealed Cooling Compressor Motors - manual reset of overload release (50 Hz)

AC-8a	400V	[A]	11	18	18	12	16	22	32	38	45	–	–	63	63	72
	500V	[A]	10	15	15	12	16	22	32	38	45	–	–	63	63	72
	690V	[A]	–	–	–	8	10	14	20	28	35	–	–	42	42	56

- automatic reset of overload release

AC-8b	400V	[A]	–	–	–	5.5	7	9.3	12	13	14	–	–	16	16	24
	500V	[A]	–	–	–	5.5	7	9.3	12	13	14	–	–	16	16	24
	690V	[A]	–	–	–	5.5	7	9.3	12	13	14	–	–	16	16	24

Switching of DC Loads

Non-inductive or slightly inductive loads or resistance furnaces DC-1, 60 °C

1 pole	24V	[A]	6	9	9	25	25	32	32	45	45	45	45	50	50	70
	48/60V	[A]	4/1	6/1.5	6/1.5	20	20	20	20	25	25	25	25	30	30	40
	110V	[A]	0.6	1	1	6	6	6	6	8	8	10	10	9	9	11
	220V	[A]	0.2	0.3	0.3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2
	440V	[A]	0.08	0.1	0.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
2 poles in series	24V	[A]	6	9	9	25	25	32	32	45	45	45	45	50	50	70
	48/60V	[A]	6	8	8	25	25	32	32	45	45	45	45	50	50	70
	110V	[A]	4	6	6	25	25	32	32	45	45	45	45	50	50	70
	220V	[A]	0.8	1.2	1.2	8	8	8	10	10	10	10	10	10	10	15
	440V	[A]	0.2	0.3	0.3	1	1	1	1	1	1	1	1	1	1	1.5
3 poles in series	24V	[A]	6	9	9	25	25	32	32	45	45	–	45	63	63	90
	48/60V	[A]	6	9	9	25	25	32	32	45	45	–	45	63	63	90
	110V	[A]	6	9	9	25	25	32	32	45	45	–	45	63	63	90
	220V	[A]	3	4	4	25	25	32	32	45	45	–	45	50	50	70
	440V	[A]	0.4	0.6	0.6	3	3	3	3	3.5	3.5	–	3.5	4	4	5

Shunt-wound Motors

Starting, reverse current braking, reversing, stepping DC-3, 60 °C

3 poles in series	24V	[A]	5	9	9	25	25	32	32	45	45	–	–	63	63	90
	48/60V	[A]	4	6	6	25	25	32	32	45	45	–	–	50	50	70
	110V	[A]	2	3	3	20	20	25	25	30	30	–	–	35	35	70
	220V	[A]	0.8	1.2	1.2	6	6	6	10	15	15	–	–	20	20	25
	440V	[A]	0.15	0.2	0.2	0.6	0.6	0.6	0.6	0.6	0.6	–	–	0.6	0.6	0.6

Series-wound Motors

Starting, reverse current braking, reversing, stepping DC-5, 60 °C

3 poles in series	24V	[A]	5	9	9	25	25	32	32	45	45	–	–	63	63	90
	48/60V	[A]	2	3	3	25	25	32	32	45	45	–	–	50	50	70
	110V	[A]	0.6	1	1	20	20	25	25	30	30	–	–	35	35	70
	220V	[A]	0.1	0.1	0.1	6	6	6	10	15	15	–	–	20	20	25
	440V	[A]	–	–	–	0.6	0.6	0.6	0.6	0.6	0.6	–	–	0.6	0.6	0.6

Short Time Withstand I_{CW} , 60 °C

	10 s	[A]	60	96	96	170	170	170	215	300	304	304	304	375	375	700
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Resistance and Power Dissipation

Main current circuit resistance		[mΩ]	2.2	2.2	2.2	2.7	2.7	2.7	2	2	2	2	1.5	1.5	1	0.9
Power dissipation by all circuits at I_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	9.1	9.7
Total power dissipation																
At I_e AC-3/400V	AC control	[W]	2.1	2.7	2.7	3.4	3.9	4.8	6.3	8.5	11.3	8.8	9.5	11.6	12.4	16.2
	DC control (conventional)	[W]	–	–	–	–	–	–	–	–	–	–	–	–	–	13.7
	DC control (electronic)	[W]	2.9	3.5	3.5	2.4	2.9	3.8	4.9	7.1	9.9	8	8.7	10.8	11.6	–

Lifespan																
Mechanical AC control	[Mil. operations]	15	15	15	13	13	13	13	13	13	10	10	12	12	6	
Mechanical DC control	[Mil. operations]	15	15	15	13	13	13	13	13	13	10	10	13	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	0.8	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)	0.51 (1.12)	1.45 (3.20)
	Rev.	kg (lbs.)	0.4 (0.88)	0.4 (0.88)	0.4 (0.88)	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)	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)	—	—	—	—	—	—	—	—	—	1.47 (3.24)
	Rev.	kg (lbs.)	0.48 (1.06)	0.48 (1.06)	0.48 (1.06)	1.27 (2.81)	—	—	—	—	—	—	—	—	—	3.22 (7.1)
DC (Electronic -EQ, EJ)	Non-Reversing	kg (lbs.)	—	—	—	—	0.40 (0.88)	0.40 (0.88)	0.40 (0.88)	0.40 (0.88)	0.49 (1.08)	0.49 (1.08)	0.57 (1.25)	0.57 (1.25)	0.57 (1.25)	0.57 (1.25)
	Reversing	kg (lbs.)	—	—	—	—	0.87 (1.91)	0.87 (1.91)	0.87 (1.91)	0.87 (1.91)	1.08 (2.39)	1.08 (2.39)	—	—	1.27 (2.79)	1.27 (2.79)
DC (Electronic - EW, EY, ED, EA)	Non-Reversing	kg (lbs.)	—	—	—	—	0.43 (0.95)	0.43 (0.95)	0.43 (0.95)	0.43 (0.95)	0.52 (1.14)	0.52 (1.14)	0.60 (1.32)	0.60 (1.32)	0.60 (1.32)	0.60 (1.32)
	Reversing	kg (lbs.)	—	—	—	—	0.93 (2.05)	0.93 (2.05)	0.93 (2.05)	0.93 (2.05)	1.14 (2.51)	1.14 (2.51)	—	—	1.33 (2.93)	1.33 (2.93)

		100/104-C, 100S/104S-C					100/104-D, 100S-D										
		72	85	90*200	90*400	97	115	140	140	180	180	210	250	300	420	630	860
Coil Type :	Conventional	X	X	X	X	X	X	X	—	X	—	—	—	—	—	—	—
	Electronic — EI	—	—	—	—	—	X	—	X	—	X	X	X	X	X	X	X

Switching of Hermetically Sealed Cooling Compressor Motors - manual reset of overload release (50 Hz)

AC-8a		[A]																	
			400V	85	100	—	—	115	192	210	210	—	—	—	—	—	—	—	—
			500V	85	100	—	—	115	192	192	210	—	—	—	—	—	—	—	—
690V	[A]	67	80	—	—	90	192	192	210	—	—	—	—	—	—	—	—		

- automatic reset of overload release

AC-8b		[A]																	
			400V	30	35	—	—	35	—	—	—	—	—	—	—	—	—	—	—
			500V	30	35	—	—	35	—	—	—	—	—	—	—	—	—	—	—
690V	[A]	30	35	—	—	35	—	—	—	—	—	—	—	—	—	—	—		

Switching of DC Loads

Non-inductive or slightly inductive loads or resistance furnaces DC-1, 60 °C

1 pole		[A]																
			24V	80	80	80	80	80	135	210	210	210	210	300	300	380	425	—
48/60V	[A]	40	40	40	40	40	135	210	210	210	210	300	300	380	425	—	—	
110V	[A]	11	11	11	11	11	135	210	210	210	210	300	300	380	425	—	—	
220V	[A]	2	2	1.8	1.8	2	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	0.5	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	80	135	210	210	210	210	300	300	380	425	—	—
	48/60V	[A]	80	80	80	80	80	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	80	80	80	80	80	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	15	15	15	15	15	135	210	210	210	210	300	300	380	425	—	—
	440V	[A]	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	—	—
3 poles in series	24V	[A]	90	100	—	100	100	135	210	210	210	210	300	300	380	425	—	—
	48/60V	[A]	90	100	—	100	100	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	90	100	—	100	100	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	80	80	—	80	80	135	210	210	210	210	300	300	380	425	—	—
	440V	[A]	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

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

3 poles in series	24V	[A]	90	100	—	—	100	135	210	210	210	210	300	300	380	425	—	—
	48/60V	[A]	70	80	—	—	80	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	70	80	—	—	80	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	25	30	—	—	30	135	210	210	210	210	300	300	380	425	—	—
	440V	[A]	0.6	0.6	—	—	0.6	1.2	2.1	2.1	2.1	2.1	2.4	2.4	2.4	3	—	—
Short Time Withstand I_{CW}, 60 °C																		
	10 s	[A]	700	700	700	700	840	1040	1240	1360	1480	1480	2360	2520	2840	4700	6300	7000
Resistance and Power Dissipation																		
Main current circuit resistance	230V	[mΩ]	0.9	0.9	0.8	0.7	0.6	0.4	0.42	0.42	0.42	0.42	0.22	0.22	0.18	0.15	0.19	0.14
Power dissipation by all circuits at I_e AC-3/400V	460V	[W]	14	19.5	13.5	11.8	17	14.5	24.6	24.6	40.8	40.8	29.4	41.7	48.6	79.5	226.2	310.6
Total power dissipation																		
At I_e AC-3/400V	AC control	[W]	13.8	17.5	36	56.3	26	24.5 (20.5)	34.6	30.6	50.8	46.8	35.4	47.7	54.6	86.5	105.4	133.2
	DC control	[W]	13.8	17.5	32.5	52.8	23	22.5 (20.5)	32.6	30.6	48.8	46.8	35.4	47.7	54.6	86.5	105.4	133.2
Lifespan																		
Mechanical AC control	600V	[Mil. operations]	6	6	6	6	6	10	10	10	10	10	10	10	10	10	2	2
DC control	600V	[Mil. operations]	6	6	6	6	6	10	10	10	10	10	10	10	10	10	2	2
Electrical AC-3 (400 V)	600V	[Mil. operations]	1	1	—	—	1	1	1	1	1	1	1	1	1	1	—	—
Weight																		
AC	Non-Reversing	kg (lbs.)	1.45 (3.2)	1.45 (3.2)	—	—	1.45 (3.2)	3.3 (7.28) [3.8 (8.38)]*	3.3 (7.28)	3.8 (8.38)	3.3 (7.28)	3.8 (8.38)	7.5 (16.53)	7.5 (16.53)	7.5 (16.53)	7.5 (16.53)	28.6 (63)	28.6 (63)
	Reversing	kg (lbs.)	3.14 (6.92)	3.14 (6.92)	—	—	—	3.14 (6.92)	—	—	—	—	—	—	—	—	—	—
DC (Conventional)	Non-Reversing	kg (lbs.)	1.47 (3.24)	1.47 (3.24)	—	—	1.47 (3.24)	3.3 (7.28) [3.8 (8.38)]*	3.3 (7.28)	3.8 (8.38)	3.3 (7.28)	3.8 (8.38)	7.5 (16.53)	7.5 (16.53)	7.5 (16.53)	7.5 (16.53)	28.6 (63)	28.6 (63)
	Reversing	kg (lbs.)	3.22 (7.1)	3.22 (7.1)	—	—	—	3.22 (7.1)	—	—	—	—	—	—	—	—	—	—
DC (Electronic - EQ, EJ)	Non-Reversing	kg (lbs.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Reversing	kg (lbs.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
DC (Electronic - EY, ED, EA)	Non-Reversing	kg (lbs.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Reversing	kg (lbs.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

* Pozidriv No. 2 / Blade No. 3 screw

‡ Pozidriv No. 2 / Blade No. 4 screw

§ Hexagonal socket screw

♣ Fine- or coarse-stranded only

		100/104-D, 100S-D								
		115	140	180	210	250	300	420	630	860
Coil Type :	Conventional	X	X	X	—	—	—	—	—	—
	Electronic – EI	X	X	X	X	X	X	X	X	X
Conductor Cross Sections - Main Contacts Terminal type										
	(1) conductor	[mm2]	—	—	—	—	—	—	—	—
	(2) conductors	[mm2]	—	—	—	—	—	—	—	—
	(1) conductor	[mm2]	—	—	—	—	—	—	—	—
	(2) conductors	[mm2]	—	—	—	—	—	—	—	—
	b max.	[mm]	25	30	52	52				
	c max.	[mm]	12.5	15	22	22				
	s max.	[mm]	5	6	2 x 8	2 x 8				
	∅ min.	[mm]	8.3	10.5	13	13				
Recommended torque	[Nm]		22	43	68	68				
Cross section per UL/CSA	[AWG]		—	—	—	—				
Recommended torque	[lb-in]		195	380	600	600				
With terminal lug kit			100-DL180S		100-DL420S		100-DL630		100-DL860	
Cross section per UL/CSA	[AWG]		6...300 MCM		(2x) 4...350 MCM		(2X) 2/0...500MCM		(4X) 2/0...500MCM	
Recommended torque	[lb-in]		88...106		375		400		400	
With Frame Terminal Block			100-DTB180S		100-DTB420*		—		—	
	top opening	[mm2]	16...35		25...185Δ		—		—	
	bottom opening	[mm2]	16...95		25...185		—		—	
	top opening	[mm2]	16...50		25...240		—		—	
	bottom opening	[mm2]	16...120		25...240		—		—	
	b max.	[mm]	20		25		—		—	
	s top	[mm]	3...9		6...20		—		—	
	s bottom	[mm]	3...14		6...20		—		—	
Recommended torque	[Nm]		14		25		—		—	
Cross section per UL/CSA top	[AWG]		6...1 / 0 AWG		4 AWG...600 MCM		—		—	
bottom	[AWG]		6 AWG...250 MCM		4 AWG...600 MCM		—		—	
Recommended torque	[lb-in]		124		220		—		—	

* Pozidriv No. 2 / Blade No. 3 screw
‡ Pozidriv No. 2 / Blade No. 4 screw
§ Hexagonal socket screw
♣ Hexagonal screw

Short-Circuit Coordination Data§

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

UL Listed Combination (600V)	[A]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250	300	300	300	350
UL Class L Fuses		18 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UL Class L Fuses		30 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UL Class L Fuses		42 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UL Class CC and CSA HRCI-MISC Fuses		50 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	30	30	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UL Class J and CSA HRCI-J Fuses		50 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	30	30	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UL Class CC and CSA HRCI-MISC Fuses		100 kA Available Fault Current																			
UL verified combination to IEC 60947-4-1 "Type 2"	[A]	-	-	-	20♣	20	30	40	-	-	-	-	-	-	-	-	-	-	-	-	-
UL Class J and CSA HRCI-J Fuses		100 kA Available Fault Current																			
UL verified combination to IEC 60947-4-1 "Type 2"	[A]	-	-	-	20♣	20	30	40	50	50	-	-	70	TBD	80	100	150	-	-	-	175
UL Inverse-Time Circuit Breaker		5 kA Available Fault Current																			
UL Listed Combination (480V)	[A]	-	-	-	30	30	50	50	125	125	-	-	125	150	250	-	-	-	-	-	-
UL Listed Combination (600V)	[A]	-	-	-	-	-	-	-	125	125	-	-	125	150	250	-	-	-	-	-	-
UL Inverse-Time Circuit Breaker		10 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250	250	-	-	-	250
UL Inverse-Time Circuit Breaker		18 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UL Inverse-Time Circuit Breaker		25 kA Available Fault Current																			
UL Listed Combination (600Y/347V)	[A]	-	-	-	30‡	30‡	30‡	30‡	50Δ	50Δ	-	-	50Δ	-	110	110	110	-	-	-	-
UL Inverse-Time Circuit Breaker		25 kA Available Fault Current																			
UL Listed Combination (600V)	[A]	-	-	-	-	-	-	-	100*	100*	-	-	100*	125	200*	225*	225*	-	-	-	225*
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]	-	-	-	-	-	-	-	50Δ	50Δ	-	-	50Δ	-	-	-	-	-	-	-	-
UL Inverse-Time Circuit Breaker		65 kA Available Fault Current																			
UL Listed Combination (480Y/277V)	[A]	-	-	-	30‡	30‡	30‡	30‡	-	-	-	-	-	-	-	-	-	-	-	-	-
UL Inverse-Time Circuit Breaker		65 kA Available Fault Current																			
UL Listed Combination (480V)	[A]	-	-	-	-	-	-	-	100*	100*	-	-	100*	125	200*	225*	225*	-	-	-	225*

♣ 15 A max. fuse for Type 2 coordination.

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

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

* Minimum enclosure size 20 x 12 x 8 inches with two latches.

Δ Minimum enclosure size 12-3/8 x 7-5/8 s 7-1/4 inches

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

‡ To be determined.

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

♣ For 9, 12, 24, and 110V DC coils



§ At 110V DC, coil code ED has an operating voltage range of 0.7...1.25 x U_s

			100/104-D, 100S-D										
			115	140/180	115	140	180	210	250	300	420	630	860
Coil Type	Conventional		X	X	—	—	—	—	—	—	—	—	—
	Electronic – EI		—	—	X	X	X	X	X	X	X	X	X
Operating Limits													
50 Hz, 60 Hz, 50/60 Hz	pick-up	[x 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 AllenBradley distributor for detailed information.

Auxiliary Contacts, Auxiliary Contact Blocks, and Pneumatic Timers

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

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

General

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

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

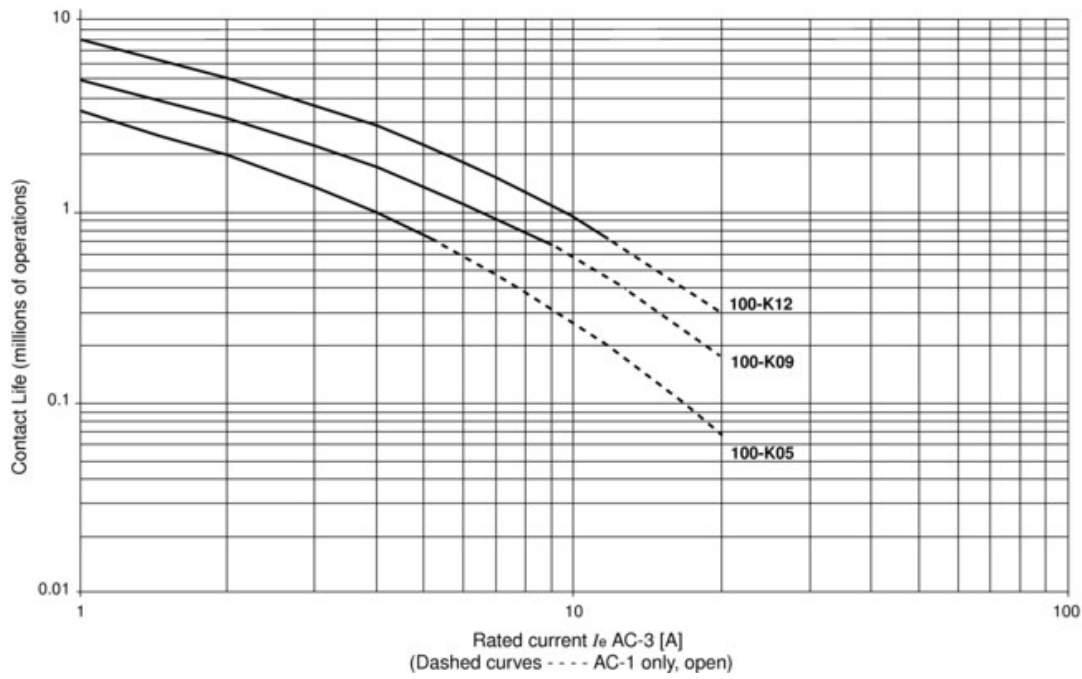
Electrical life; $U_e = 400...460V$ AC

AC-3

Switching of squirrel-cage motors while starting

AC-1

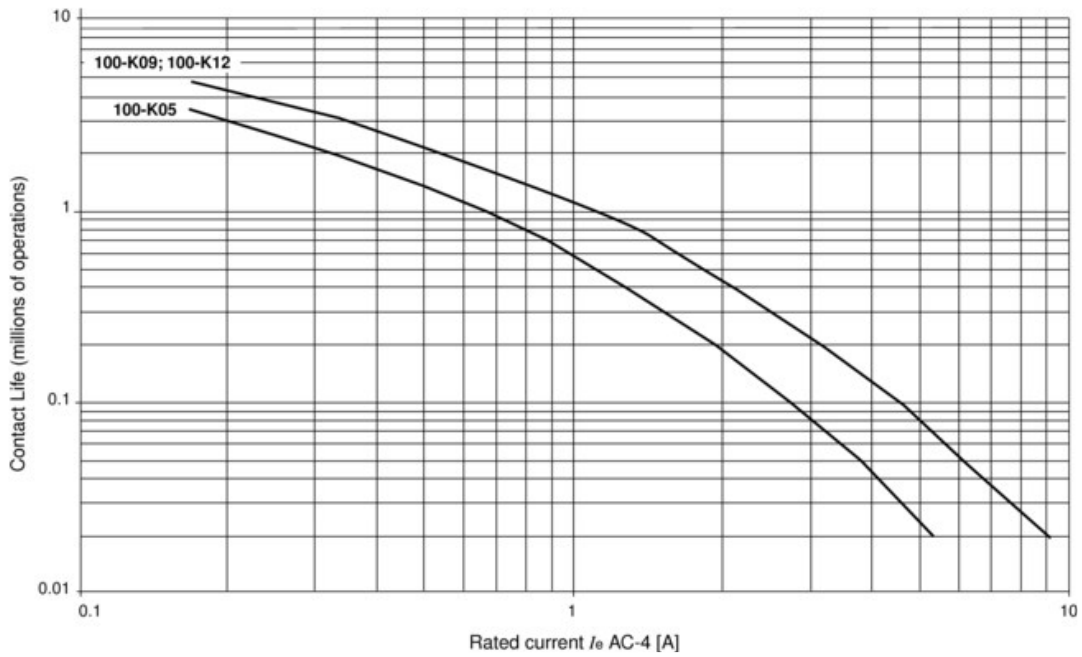
Non- or slightly inductive loads, resistance furnaces



Electrical life; $U_e = 400...460V$ AC

AC-4

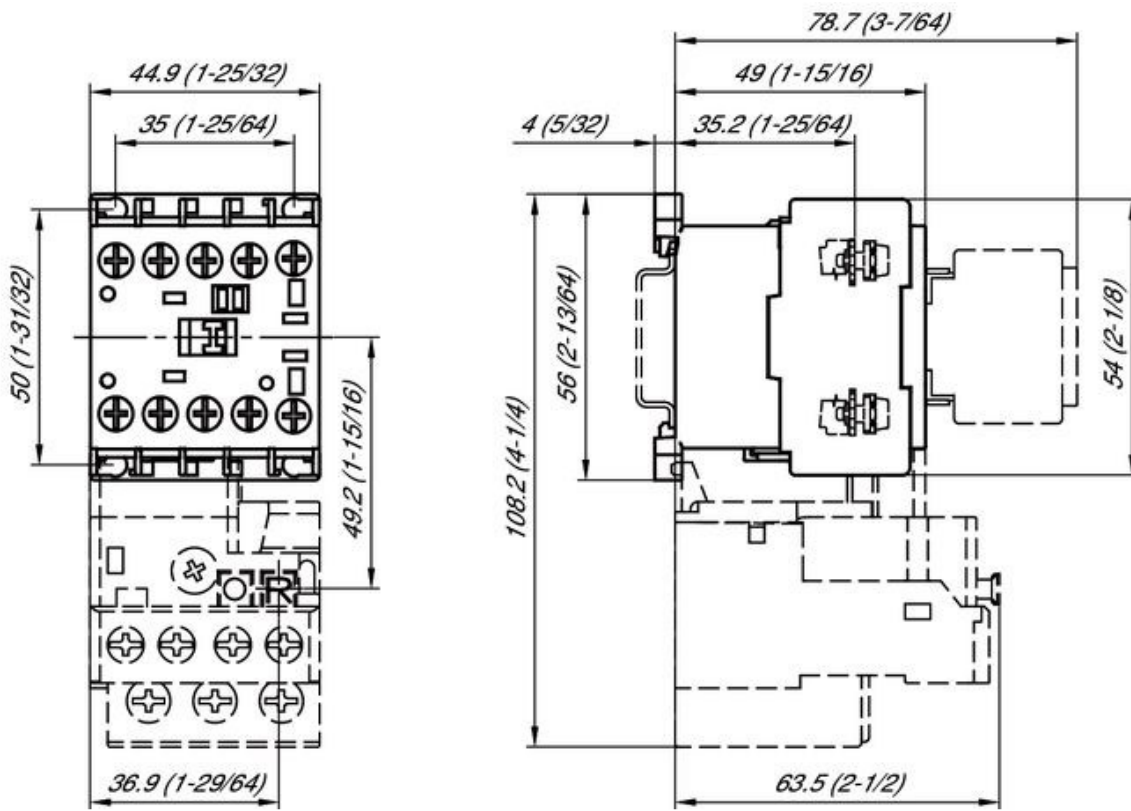
Stepping of squirrel-cage motors



Bul. 100-K/104-K Approximate Dimensions

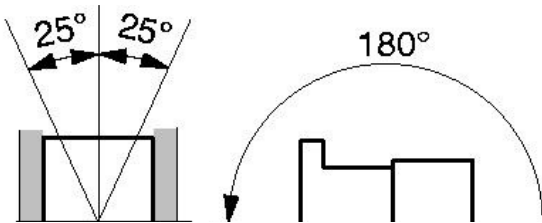
Bulletin 100-K Contactors and Accessories, Bulletin 193-K Overload Relays

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

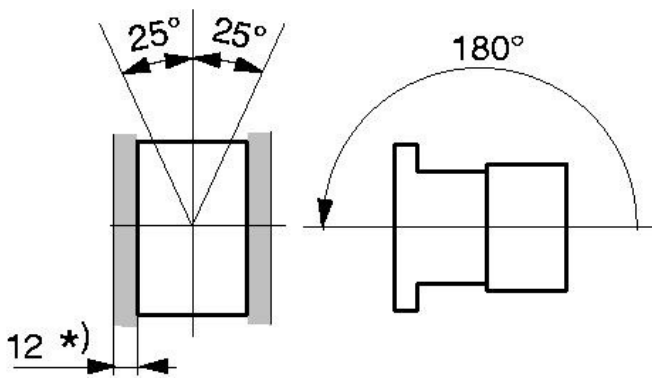


Mounting Position

With Accessories



With Accessories



* - Minimum distance to grounded parts or walls