Product Selection—100-E/104-E Contactors

- 4...560 kW @ 400V
- 5...900 Hp @ 460V
- AC-1 ratings up to 2650 A
- Compact dimensions
- Electronic coils
  - AC/DC
  - Wide voltage range
  - Low power pick-up and hold-in
  - Optional PLC interface
- Direct-on-line or reversing
- 3 Main contacts
- Complete range of accessories
- Environmentally friendly


100-E09 Contactor


100-E116 Contactor


100-E860 Contactor

The Bulletin 100-E/104-E contactor family, along with a wide range of accessories, provides the most compact and flexible contactor system available.

3-Pole AC- and DC-operated Direct-on-line Contactors

Rated Operational Current I_e [A]		Ratings for switching AC motors - AC-2, AC-3											Auxiliary Contacts		Cat No.
60 °C	40 °C	kW (50 Hz)							Hp (60 Hz)						
AC-3 (400V)	AC-1 (690V)	220-240V	380-400V	415V	440V	500V	690V	1000V	200V	230V	460V	575V	N.O.	N.C.	
9	25	2.2	4	4	4	5.5	5.5	–	2	2	5	7.5	1	0	100-E09⊗10
													0	1	100-E09⊗01
12	28	3	5.5	5.5	5.5	7.5	7.5	–	3	3	7.5	10	1	0	100-E12⊗10
													0	1	100-E12⊗01
16	30	4	7.5	9	9	9	9	–	5	5	10	15	1	0	100-E16⊗10
													0	1	100-E16⊗01
26	45	6.5	11	11	15	15	15	–	7.5	7.5	15	20	0	0	100-E26⊗00
32	50	9	15	15	18.5	18.5	18.5	–	10	10	20	25	0	0	100-E30⊗00
38	50	11	18.5	18.5	22	22	22	–	10	10	25	30	0	0	100-E38⊗00
40	70	11	18.5	22	22	22	22	–	10	15	30	40	0	0	100-E40⊗00
52	100	15	22	30	30	30	30	–	15	20	40	50	0	0	100-E52⊗00
65	105	18.5	30	37	37	37	37	–	20	25	50	60	0	0	100-E65⊗00
80	125	22	37	45	45	45	45	35	25	30	60	75	0	0	100-E80⊗00
96	130	25	45	55	55	55	55	40	30	30	60	75	0	0	100-E96⊗00
116	160	37	55	55	75	75	63	55	30	40	75	100	1	1	100-E116⊗11 (1)
146	225	45	75	75	90	90	90	75	40	50	100	125	1	1	100-E146⊗11 (1)
190	275	55	90	90	110	110	132	110	50	60	125	150	1	1	100-E190⊗11
205	350	55	110	110	132	132	160	132	60	75	150	200	1	1	100-E205⊗11
265	400	75	132	132	160	160	200	160	75	100	200	250	1	1	100-E265⊗11
305	500	90	160	160	160	200	250	185	100	125	250	300	1	1	100-E305⊗11
370	600	110	200	200	200	250	315	200	125	150	300	350	1	1	100-E370⊗11
400	600	110	200	220	220	250	315	220	125	150	350	400	1	1	100-E400⊗11
460	700	132	250	250	250	315	355	280	150	200	400	500	1	1	100-E460⊗11
580	800	160	315	355	355	400	500	355	200	250	500	600	1	1	100-E580⊗11
750	1050	220	400	425	450	530	600	400	250	300	600	700	1	1	100-E750⊗11
860	1350	250	475	500	560	630	800	555	–	400	800	1000	1	1	100-E860⊗11
1060	1650	315	560	630	710	710	1000	600	–	450	900	1150	1	1	100-E1060⊗11
–	1260	–	–	–	–	–	–	–	–	–	–	–	1	1	100-E1260⊗11
–	2050	–	–	–	–	–	–	–	–	–	–	–	1	1	100-E2050⊗11
–	2650	–	–	–	–	–	–	–	–	–	–	–	1	1	100-E2650⊗11

(1) To order with built-in terminal lugs, add the letter "**L**" to the end of the catalog number (example: 100-E116⊗11L)

⊗ Coil voltage code and terminal position—see page 61

4-Pole AC- and DC-operated Direct-on-line Contactors

Rated Current at 40 °C [A]		Main Poles		Auxiliary Contacts		Cat No.
I_e	UL General Use (enclosed)					
AC-1 (690V)	600V	N.O.	N.C.	N.O.	N.C.	
25	25	4	0	0	0	100-E09⊗400
		2	2	0	0	100-E09⊗200
30	30	4	0	0	0	100-E16⊗400
		2	2	0	0	100-E16⊗200
45	45	4	0	0	0	100-E26⊗400
		2	2	0	0	100-E26⊗200
55	55	4	0	0	0	100-E38⊗400
		2	2	0	0	100-E38⊗200
70	60	4	0	0	0	100-E40⊗400
		2	2	0	0	100-E40⊗200
100	80	4	0	0	0	100-E52⊗400
125	105	4	0	0	0	100-E80⊗400
		2	2	0	0	100-E80⊗200

⊗ Coil voltage code and terminal position—see page 61

3-Pole AC- and DC-operated Reversing Contactors

Rated Operational Current I_e [A]		Ratings for switching AC motors - AC-2, AC-3											Auxiliary Contacts		Cat No.
60 °C	40 °C	kW (50 Hz)							Hp (60 Hz)						
AC-3 (400V)	AC-1 (690V)	220-240V	380-400V	415V	440V	500V	690V	1000V	200V	230V	460V	575V	N.O.	N.C.	
9	25	2.2	4	4	4	5.5	5.5	–	2	2	5	7.5	0	1	104-E09⊗02
													1	1(1)	104-E09⊗22(2)
12	28	3	5.5	5.5	5.5	7.5	7.5	–	3	3	7.5	10	0	1	104-E12⊗02
													1	1(1)	104-E12⊗22(2)
16	30	4	7.5	9	9	9	9	–	5	5	10	15	0	1	104-E16⊗02
													1	1(1)	104-E16⊗22(2)
26	45	6.5	11	11	15	15	15	–	7.5	7.5	15	20	0	1(1)	104-E26⊗02(2)
													1	1	104-E26⊗22
32	50	9	15	15	18.5	18.5	18.5	–	10	10	20	25	0	1(1)	104-E30⊗02(2)
													1	1	104-E30⊗22
38	50	11	18.5	18.5	18.5	22	22	–	10	10	25	30	0	1(1)	104-E38⊗02(2)
													1	1	104-E38⊗22
40	70	11	18.5	22	22	22	22	–	10	15	30	40	1	1	104-E40⊗22
52	100	15	22	30	30	30	30	–	15	20	40	50	1	1	104-E52⊗22
65	105	18.5	30	37	37	37	37	–	20	25	50	60	1	1	104-E65⊗22
80	125	22	37	45	45	45	45	35	25	30	60	75	1	1	104-E80⊗22
96	130	25	45	55	55	55	55	40	30	30	60	75	1	1	104-E96⊗22
116	160	55	55	55	75	75	63	55	30	40	75	100	1	1	104-E116⊗22(3)
146	225	75	75	75	90	90	90	75	40	50	100	125	1	1	104-E146⊗22(3)
190	275	90	90	90	110	110	132	110	50	60	125	150	1	1	104-E190⊗22
205	350	110	110	110	132	132	160	132	60	75	150	200	1	1	104-E205⊗22
265	400	132	132	132	160	160	200	160	75	100	200	250	1	1	104-E265⊗22
305	500	160	160	160	160	200	250	185	100	125	250	300	1	1	104-E305⊗22
370	600	200	200	200	200	250	315	200	125	150	300	350	1	1	104-E370⊗22
400	600	200	200	220	220	250	315	220	125	150	350	400	1	1	104-E400⊗22
460	700	250	250	250	250	315	355	280	150	200	400	500	1	1	104-E460⊗22
580	800	315	315	355	355	400	500	355	200	250	500	600	1	1	104-E580⊗22
750	1050	400	400	425	450	530	600	400	250	300	600	700	1	1	104-E750⊗22

(1) The N.C. auxiliary contact is supplied as part of the mechanical/electrical interlock.
(2) For AC control voltages only.
(3) To order with built-in terminal lugs, add the letter "L" to the end of the catalog number (Example: 104-E116⊗22L)

⊗ Coil voltage code and terminal position—see page 61

Coil Voltage Codes

For 3-Pole Direct-on-line Contactors

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: 100-E116KJ11

Electronic Coils	V(1)	12-20V DC	24V DC	24-60V AC, 20-60V DC	48-130V AC/DC	100-250V AC/DC	250-500V AC/DC
100-E09...100-E370	Standard AC/DC	–	–	KJ	KY	KD	KN
100-E09...100-E38	Low Consumption AC/DC	EQ	–	EJ	–	–	–
100-E09...100-E38	Low Consumption/ Faster Drop-out DC	–	QJ	–	–	–	–
100-E116...100-E370(2)	Standard AC/DC with PLC Input	–	–	–	–	ED	EN
100-E400...100-E750, 100-E1260		–	–	EJ (3)	EY	ED	EN
100-E860...100-1060, 100-E2050...100-E2650		–	–	–	–	ED	–

(1) AC voltages are at 50/60 Hz
(2) When ordering coil with PLC input, the PLC input must be used
(3) 24V...60V DC only

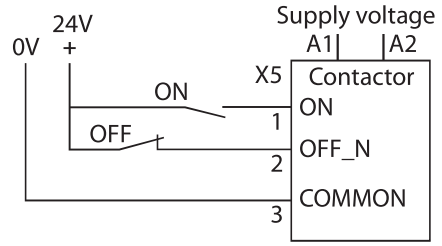
For 3-Pole Reversing Contactors

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: 100-E116KJ11

Electronic Coils	V(1)	12-20V DC	24V DC	24-60V AC, 20-60V DC	48-130V AC/DC	100-250V AC/DC	250-500V AC/DC
104-E09...104-E370	Standard AC/DC	–	–	KJ	KY	KD	KN
104-E09...104-E38	Low Consumption AC/DC	EQ	–	EJ	–	–	–
104-E09...104-E38	Low Consumption/ Faster Drop-out DC	–	QJ	–	–	–	–
104-E116...104-E370(2)	Standard AC/DC with PLC Input	–	–	–	–	ED	EN
100-E400...104-E750, 104-E1260		–	–	EJ (3)	EY	ED	EN
104-E860...104-1060, 104-E2050...104-E2650		–	–	–	–	ED	–

(1) AC voltages are at 50/60 Hz
(2) When ordering coil with PLC input, the PLC input must be used
(3) 24V...60V DC only

PLC Interface



For 4-Pole Contactors

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: 100-E09KD400.

Electronic Coils	V(1)	12-20V DC	24V DC	24-60V AC, 20-60V DC	48-130V AC/DC	100-250V AC/DC	250-500V AC/DC
100-E09...100-E80	Standard AC/DC	–	–	KJ	KY	KD	KN
100-E09...100-E38	Low Consumption AC/DC	EQ	–	EJ	–	–	–
100-E09...100-E116	Low Consumption/Faster Drop-out DC	–	QJ	–	–	–	–

(1) AC voltages are at 50/60 Hz

Product Selection—100S-E Safety Contactors

- Electronic Coils
- 3 Main Contacts
- Direct-on-line
- Low-power auxiliary contacts for feedback circuit
- Mirror contact performance


100S-E09 Contactor


100S-E80 Contactor

3-Pole AC- and DC-operated Safety Contactors

Rated Operational Current I_e [A]		Ratings for switching AC motors - AC-2, AC-3											Auxiliary contacts per contactor			Direct-on-line Contactor
60 °C	40 °C	kW (50 Hz)							Hp (60 Hz)							
AC-3 (400V)	AC-1 (690V)	220-240V	380-400V	415V	440V	500V	690V	1000V	200V	230V	460V	575V	N.O.	N.C.	N.C.(1)	Cat No.
9	25	2.2	4	4	4	5.5	5.5	–	2	2	5	7.5	0	0	5	100S-E09⊗05C
													2	0	3	100S-E09⊗23C
													1	0	4	100S-E09⊗14C
													3	0	2	100S-E09⊗32C
12	28	3	5.5	5.5	5.5	7.5	7.5	–	3	3	7.5	10	0	0	5	100S-E12⊗05C
													2	0	3	100S-E12⊗23C
													1	0	4	100S-E12⊗14C
													3	0	2	100S-E12⊗32C
16	30	4	7.5	9	9	9	9	–	5	5	10	15	0	0	5	100S-E16⊗05C
													2	0	3	100S-E16⊗23C
													1	0	4	100S-E16⊗14C
													3	0	2	100S-E16⊗32C
26	45	6.5	11	11	15	15	15	–	7.5	7.5	15	20	0	0	4	100S-E26⊗04C
													1	0	3	100S-E26⊗13C
													2	0	2	100S-E26⊗22C
													3	0	1	100S-E26⊗31C
32	50	9	15	15	18.5	18.5	18.5	–	10	10	20	25	0	0	4	100S-E30⊗04C
													1	0	3	100S-E30⊗13C
													2	0	2	100S-E30⊗22C
													3	0	1	100S-E30⊗31C
38	50	11	18.5	18.5	22	22	22	–	10	10	25	30	0	0	4	100S-E38⊗04C
													1	0	3	100S-E38⊗13C
													2	0	2	100S-E38⊗22C
													3	0	1	100S-E38⊗31C
40	70	11	18.5	22	22	22	22	–	10	15	30	40	0	0	4	100S-E40⊗04C
													1	0	3	100S-E40⊗13C
													2	0	2	100S-E40⊗22C
													3	0	1	100S-E40⊗31C
52	100	15	22	30	30	30	30	–	15	20	40	50	0	0	4	100S-E52⊗04C
													1	0	3	100S-E52⊗13C
													2	0	2	100S-E52⊗22C
													3	0	1	100S-E52⊗31C

(1) The N.C. contact meets IEC 60947-4-1 Annex F requirements for mirror contact performance.

3-Pole AC- and DC-operated Safety Contactors (Continued)

Rated Operational Current I_e [A]		Ratings for switching AC motors - AC-2, AC-3											Auxiliary contacts per contactor			Direct-on-line Contactor
60 °C	40 °C	kW (50 Hz)							Hp (60 Hz)							
AC-3 (400V)	AC-1 (690V)	220-240V	380-400V	415V	440V	500V	690V	1000V	200V	230V	460V	575V	N.O.	N.C.	N.C.(1)	Cat No.
52	100	15	22	30	30	30	30	–	15	20	40	50	0	0	4	100S-E52⊗04C
													1	0	3	100S-E52⊗13C
													2	0	2	100S-E52⊗22C
													3	0	1	100S-E52⊗31C
65	105	18.5	30	37	37	37	37	–	20	25	50	60	0	0	4	100S-E65⊗04C
													1	0	3	100S-E65⊗13C
													2	0	2	100S-E65⊗22C
													3	0	1	100S-E65⊗31C
80	125	22	37	45	45	45	45	35	25	30	60	75	0	0	4	100S-E80⊗04C
													1	0	3	100S-E80⊗13C
													2	0	2	100S-E80⊗22C
													3	0	1	100S-E80⊗31C
96	130	25	45	55	55	55	55	40	30	30	60	75	0	0	4	100S-E96⊗04C
													1	0	3	100S-E96⊗13C
													2	0	2	100S-E96⊗22C
													3	0	1	100S-E96⊗31C
116	160	37	55	55	75	75	55	55	30	40	75	100	1	1	1	100S-E116⊗12C (2)
146	225	45	75	75	90	90	90	75	40	50	100	125	1	1	1	100S-E146⊗12C (2)
190	275	55	90	90	110	90	132	110	50	60	125	150	1	1	1	100S-E190⊗12C
205	350	55	110	110	132	110	160	132	60	75	150	200	1	1	1	100S-E205⊗12C
265	400	75	132	132	160	160	200	132	75	100	200	250	1	1	1	100S-E265⊗12C
305	500	90	160	160	160	200	250	132	100	125	250	300	1	1	1	100S-E305⊗12C
370	600	110	200	200	200	220	315	132	125	150	300	350	1	1	1	100S-E370⊗12C
400	600	110	200	220	220	250	315	220	125	150	350	400	1	1	1	100S-E400⊗12C
460	700	132	250	250	250	315	355	280	150	200	400	500	1	1	1	100S-E460⊗12C
580	800	160	315	355	355	400	500	355	200	250	500	600	1	1	1	100S-E580⊗12C
750	1050	220	400	425	450	530	600	400	250	300	600	700	1	1	1	100S-E750⊗12C

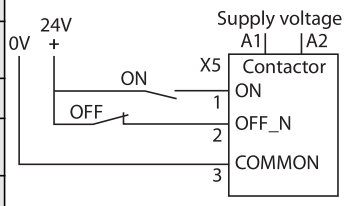
(1) The N.C. contact meets IEC 60947-4-1 Annex F requirements for mirror contact performance.
(2) To order with built-in terminal lugs, add the letter "**L**" to the end of the catalog number (example: **100S-E116⊗12CL**)

Coil Voltage Codes

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: 100S-E09EJ14C

Electronic Coils	V[1]	12-20V DC	24V DC	24-60V AC, 20-60V DC	48-130V AC/DC	100-250V AC/DC	250-500V AC/DC
100S-E09...100S-E370	Standard AC/DC	–	–	KJ	KY	KD	KN
100S-E09...100S-E38	Low Consumption AC/DC	EQ	–	EJ	–	–	–
100S-E09...100S-E38	Low Consumption/ Faster Drop-out DC	–	QJ	–	–	–	–
100S-E116...100S-E370[2]	Standard AC/DC with 24V DC PLC Interface	–	–	–	–	ED	EN
100S-E400...100S-E750, 100S-E1260		–	–	EJ[3]	EY	ED	EN
100S-E860...100S-E1060, 100S-E2050...100S-E2650		–	–	–	–	ED	–

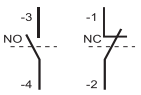
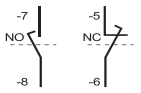
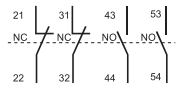
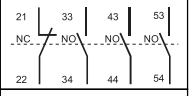
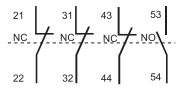
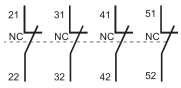
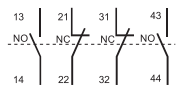
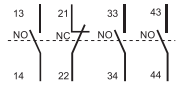
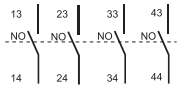
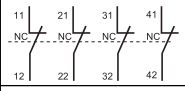
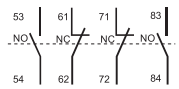
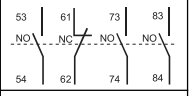
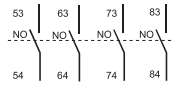
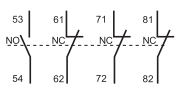
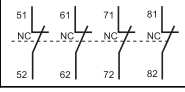
PLC Interface



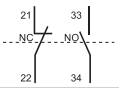
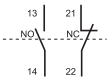
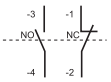
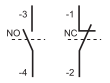
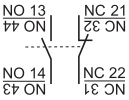
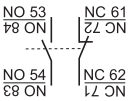
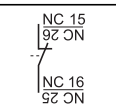
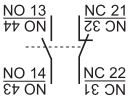
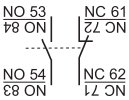
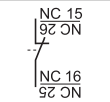
(1) AC voltages are at 50/60 Hz
(2) When ordering coil with PLC input, the PLC input must be used
(3) 24V...60V DC only

Accessories

Auxiliary Contact Blocks with Standard Auxiliary Contacts

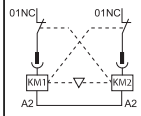
	Description	N.O.	N.C.	Connection Diagrams	For Use With	Cat. No.
	Auxiliary Contact Blocks for Front Mounting • 1-pole • Quick and easy mounting without tools • Screw connection terminals • Switching down to 12V, 3mA • Mirror contact performance to the main contactor poles • L= Late break N.C./early make N.O.	1	0		100-E09...100-E96	100-EFA10
		0	1			100-EFA01
		1L	0		100-E09...100-E96	100-EFAL10
		0	1L			100-EFAL01
	Auxiliary Contact Blocks for Front Mounting • 4-pole • Quick and easy mounting without tools • Screw connection terminals • Switching down to 12V 3mA • Mirror contact performance to the main contactor poles	2	2		100-E09⊗10...100-E16⊗10	100-EFC22
		3	1			100-EFC31
		1	3			100-EFC13
		0	4			100-EFC04
		2	2		100-E26⊗00...100-E96⊗00 100-E09⊗400...100-E80⊗400 100-E09⊗200...100-E80⊗200	100-EFB22
		3	1			100-EFB31
		4	0			100-EFB40
		0	4			100-EFB04
	Auxiliary Contact Blocks for Front Mounting • 4-pole • Quick and easy mounting without tools • Screw connection terminals • Switching down to 12V 3mA • Mirror contact performance to the main contactor poles	2	2		100-E09...100-E96	100-EFA22
		3	1			100-EFA31
		4	0			100-EFA40
		1	3			100-EFA13
		0	4			100-EFA04

Auxiliary Contact Blocks with Standard Auxiliary Contacts (Continued)

	Description	N.O.	N.C.	Connection Diagrams	For Use With	Cat. No.
	Auxiliary Contact Blocks for Front Mounting with A1/A2 Coil Terminal Blocks • 2-pole • Quick and easy mounting without tools • Screw connection terminals • Switching down to 12V, 3mA • Mirror contact performance to the main contactor poles	1	1		100-E09⊗10...100-E16⊗10	100-EFC11T
		1	1		100-E26⊗00...100-E65⊗00 100-E09⊗400...100-E52⊗400 100-E09⊗200...100-E40⊗200	100-EFB11T
	Auxiliary Contact Blocks for Side Mounting • 2-pole • Two-way numbering for right or left mounting on the contactor • With or without sequence terminal designations • Quick and easy mounting without tools • Screw connecting terminals • Switching down to 12V, 3mA • Mirror contact performance to the main contactor poles	1	1		100-E26...100-E96	100-ESB11
		1	1		100-E09...100-E96	100-ESA11
	Auxiliary Contact Blocks for Front Mounting for Severe Industrial Applications • 1-pole • Available in two IP degrees of ingress protection – B, B2 with built-in microswitch, IP40 degree of protection – (IP20 terminals) – B3, B4 with built-in microswitch, IP67 degree of protection – (IP20 terminals), 250V, 2 A max. • Available in two voltage and current ratings – B, B3: 125V, 0.1 A max., 3V, 1 mA min. – B2, B4: 250V, 2 A max., 17V, 1 mA min.	1	0		100-E09...100-E96	100-ESA10B
		0	1			100-ESA01B
		1	0			100-ESA10B2
		0	1			100-ESA01B2
		1	0			100-ESA10B3
		0	1			100-ESA01B3
		1	0			100-ESA10B4
		0	1			100-ESA01B4
	Auxiliary Contact Blocks for Side Mounting with Sequence Terminal Designations • 2-pole • Two-way numbering for right or left mounting on the contactor • Quick and easy mounting without tools • Mirror contact performance to the main contactor poles • Low power switching down to 24V 50 mA	1	1		100-E116...E370, left or right inside mounting	100-ES1-11
		1	1		100-E116...E370, left or right outside mounting	100-ES2-11
	Low-power Auxiliary Contact Blocks for Side Mounting with Sequence Terminal Designations (1) • 1-pole • Two-way numbering for right or left mounting on the contactor • Quick and easy mounting without tools • Mirror contact performance to the main contactor poles • Electronic compatible, 3V 1 mA	1	0		100-E116...E370, left or right inside or outside mounting	100-ES1-B10
		0	1		100-E116...E370, left or right inside or outside mounting	100-ES1-B01
	Auxiliary Contact Blocks for Side Mounting with Sequence Terminal Designations • 2-pole • Two-way numbering for right or left mounting on the contactor • Quick and easy mounting without tools • Mirror contact performance to the main contactor poles • Low power switching down to 24V 50 mA	1	1		100-E400...E2650, left or right inside mounting	100-ES3-11
		1	1		100-E400...E2650, left or right outside mounting	100-ES4-11
	Low-power Auxiliary Contact Blocks for Side Mounting with Sequence Terminal Designations (1) • 1-pole • Two-way numbering for right or left mounting on the contactor • Quick and easy mounting without tools • Mirror contact performance to the main contactor poles • Electronic compatible, 3V 1 mA	1	0		100-E400...E2650, left or right inside or outside mounting	100-ES3-B10
		0	1		100-E400...E2650, left or right inside or outside mounting	100-ES3-B01

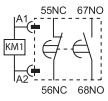
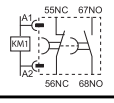
(1) No auxiliary contacts blocks can be mounted on the outside of the 100-ES1-B* or 100-ES3-B* devices.

Mechanical Interlocks

	Description		Connection Diagrams	For Use With	Cat. No.
	Mechanical Interlock • For interlocking of two contactors • Two fixing clips included	Mechanical only, without auxiliary contacts		100-E09...100-E38 (3 pole), 100-E09⊗400...100-E38⊗400	100-EMCA00A
				100-E40...100-E96 (3 pole), 100-E40⊗400...100-E80⊗400	100-EMCA00B
	Mechanical Interlock • For interlocking of two contactors. • Interlocking of different sizes possible	Mechanical only, without auxiliary contacts		100-E116...100-E146	100-EM1-00
				100-E190...100-E205	
				100-E265...100-E370	
				100-E116...100-E146 to 100-E190...100-E205	100-EM4-00
				100-E190...100-E205 to 100-E265...100-E370	100-EM5-00
				100-E400...100-E750, 100-E1260 (1)	100-EM2-00
				100-E860...100-E1060, 100-E2050...100-E2650 (2)	100-EM3-00
				Rod for vertical mounting 100-E400...E750 reversing contactors	100-EVR750
	Mechanical and Electrical Interlock • For interlocking of two contactors • Two fixing clips, a mechanical interlock and an electrical interlock block with A2-A2 connection included • Front-face connection of the electrical interlock block connects the 2 built-in N.C. interlocking contacts with the two coils • The electrical diagram is used with the A2-A2 connection	Mechanical/electrical interlock		100-E09...100-E38 (3 pole), 100-E09⊗400...100-E38⊗400	100-EMCA02

(1) Mounting plate ordered separately
(2) Mounting plate included

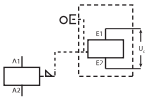
Electronic Timers

	Description		N.O.	N.C.	Connection Diagrams	For Use With	Cat. No.
	Electronic Timing Module—ON-Delay • Delay of the contactor solenoid • The contactor is energized at the end of the delay time	ON-Delay 0.1...1 s 1...10 s 10...100 s	1	1		100-E09...100-E96	100-ETA
	Electronic Timing Module—OFF-Delay • Delay of the contactor solenoid • After interruption of the control signal, the contactor is de-energized a the end of the delay time	OFF-Delay 0.1...1 s 1...10 s 10...100 s	1	1		100-E09...100-E96	100-ETB

DC Interface Module

	Description	For Use With	Pkg. Qty.	Cat. No.
	DC Interface • Receives 24V DC signals from PLCs or other low output power sources and switches AC control power to operate the coils of the contactor • Coil voltage: 24...250V AC 50/60 Hz • Rated control circuit voltage U_C: 24VDC	100-E09...100-E96	1	100-EJE
			10	100-EJEM

Mechanical Latch

	Description	Rated Voltage [V]		Connection Diagram	For Use With	Cat. No.
		V AC, 50/60 Hz	V DC			
	Mechanical Latch • Ensures contactor or contactor relay is switched on even if there is a voltage failure • Opening controlled either electrically by AC or DC impulse or manually by button • Front mounting	24...60	24...60		100-E09...100-E65	100-EFL11EJ
		48...130	48...130			100-EFL11EY
		100...250	100...250			100-EFL11ED
		250...500	250...500			100-EFL11EN
		24...60	24...60		100-E80, 100-E96	100-EFL12EJ
		48...130	48...130			100-EFL12EY
		100...250	100...250			100-EFL12ED
		250...500	250...500			100-EFL12EN

Additional Coil Terminal Block

	Description	For Use With	Pkg. Qty.	Cat. No.
	Additional Coil Terminal Block • Allows bottom access to the coil terminals in addition to top access	100-E09...100-E96	10	100-ECT

Protective Covers

	Description	For Use With	Pkg. Qty.	Cat. No.
	Protective Cover • Provides protection against unintended manual operation • Sealable and Transparent	100-E09...100-E96	10	100-ESCCA
		100-EF (4-pole only)	10	100-ESCFA

Functional Markers

	Description	For Use With	Pkg. Qty.	Cat. No.
	Functional Markers • 256 markers (16 per card) printable on HTP500 thermal transfer printer and AMS 500 marking table • 7 x 20 mm (0.276 x 0.787 in)	100-E09...100-E96	16	100-EFMS

Terminal Block

	Description	For Use With	Pkg. Qty.	Cat. No.
	Additional Terminal Blocks • Designed to increase wire size capacity of 3-pole contactors • 3-pole terminal blocks with IP20 terminals	100-E26...100-E38	2	100-ECT38

Terminal Shrouds

	Description	No. of Poles	For Use With	Cat. No.
	Terminal Shrouds • IP20 terminal protection against accidental direct contact after wiring (EN 50274) • 3-pole and 4-pole	3-pole	100-E40...100-E65	100-ESC65
		3-pole	100-E80, 100-E96	100-ESC96
		4-pole	100-E40, 100-E52	100-ESC52
		4-pole	100-E80	100-ESC80

Paralleling Terminals

	Description	For Use With	Cat. No.
	Paralleling Terminals • To connect poles in parallel and thus increase the AC-1 load passing through the flow path made up of the parallel-connected poles	100-E09, 100-E12, 100-E16	100-ECP16
		100-E26, 100-E30, 100-E38	100-ECP38

Terminal Lugs

	Description	Wire Sizes	For Use With	Cat. No.
	Terminal Lug Kit • Standard on 100-E116*L...100-E146*L contactors • Set of two	2 x 6 AWG...3/0 AWG	100-E116...100-E146	100-ECL146
	Terminal Lugs • Set of three	6 AWG...300 MCM	100-E190...100-E205	100-ETL205
		4 AWG...400 MCM	100-E265...100-E370	100-ETL370
		(2x) 4 AWG...500 MCM	100-E265...100-E370	100-ETL370B
		(2x) 2/0 AWG...500 MCM	100-E400...100-E460	100-ETL580
		(3x) 2/0 AWG...500 MCM	100-E580...E750	100-ETL750
		(4x) 4/0 AWG...500 MCM	100-E860	100-ETL860
		(4x) 1/0 AWG...750 MCM	100-E1060	100-ETL1060
		(6x) 1/0 AWG...750 MCM	100-E1060	100-ETL1060B

Terminal Shrouds and Shields

	Description	Wires with Compression Lugs	Contactor with Terminal Lugs	For Use With	Cat. No.
	Terminal Shrouds • Not applicable when using 105-PW* or 170-PW* power wiring kits • Pkg. Qty:2	X	–	100-E116...100-E146	100-ETS146L
		–	X	100-E190...100-E205	100-ETS205L
		X	–	100-E190...100-E205	100-ETS205C
		–	X	100-E265...100-E370	100-ETS370L(1)
		X	–	100-E265...100-E370	100-ETS370C
		–	X	100-E400...100-E460	100-ETS460L
		X	–	100-E400...100-E460	100-ETS460C
		–	X	100-E580...100-E750	100-ETS750L
		X	–	100-E580...100-E750, 100-E1260	100-ETS750C
	IP20 terminal shield between contactor and 193-E overload relay on an assembled direct-on-line starter			100-E116...100-E146	100-ETC146
				100-E190...100-E205	100-ETC205
	IP20 terminal shield between contactor and 193-E overload relay on an assembled reversing starter			100-E116...100-E146	100-ETCR146
				100-E190...100-E205	100-ETCR205

(1) Not applicable when using the 100-ETL370B lug kit.

Power Wiring Kits

	Description	For Use With		Cat. No.
	Reversing Power Wiring Kits • Used to connect the main poles of two 3-pole contactors mounted side by side • 1 line-side paralleling and 1 load-side reversing connection • Insulated, solid copper bars	100-E09...100-E16		105-PW16
		100-E26...100-E38		105-PW38
		100-E40...100-E65		105-PW65
		100-E80, 100-E96		105-PW96
	Reversing Power Wiring Kits	100-E116...100-E146		105-PW146
		100-E190...100-E205		105-PW205 (1)
		100-E265...100-E370		105-PW370 (1)
		100-E400...100-E460		105-PW460 (2)
		100-E580...100-E750		105-PW750 (2)
	Wye-Delta Power Wiring Kits • Used to connect the main poles of the Line, Delta and Star contactors of a star-delta starter. • Connection sets are made up of: – Line contactor / delta contactor, line-side phase-to-phase connection – Delta contactor / star contactor, load-side connection in parallel – Star contactor: star point line-side – Insulated, solid copper bars	**Delta Contactor (1M/2M)**	**Wye Contactor (1S)**	**Cat. No.**
		100-E09...100-E16	100-E09...100-E16	170-PW16
		100-E26...100-E38	100-E26...100-E38	170-PW38
		100-E40...100-E65	100-E40...100-E65	170-PW65
		100-E80, 100-E96	100-E80, 100-E96	170-PW96
	Wye-Delta Power Wiring Kits	**Delta Contactor (1M/2M)**	**Wye Contactor (1S)**	**Cat. No.**
		100-E116...100-E146	100-E116...100-E146	170-PW146
		100-E190...100-E205	100-E116...100-E146	170-PW190
		100-E190...100-E205	100-E190...100-E205	170-PW205
		100-E265...100-E370	100-E190...100-E205	170-PW265
		100-E265...100-E370	100-E265...100-E370	170-PW370
		100-E400...100-E460	100-E400...100-E460	170-PW460
		100-E580...100-E750	100-E400...100-E460	170-PW580
		100-E580...100-E750	100-E580...100-E750	170-PW750
	Shorting Bars		100-E116...100-E146	170-PWY146
			100-E190...100-E205	170-PWY205
			100-E265...100-E370	170-PWY370
			100-E400...100-E460	170-PWY460
			100-E580...100-E750	170-PWY750

(1) Kits includes one set of terminal extensions. If 100-ETL* terminal lugs are to be used on line and load side of reversing contactor, and second set of 100-ETX terminal extensions is required.
(2) If 100-ETL* terminal lugs are to be used on line and load side of reversing contactor, two sets of 100-ETX terminal extensions are also required.

Mounting Plates

	Description	For Use With	Cat. No.
	For direct-on-line starters	100-E116...100-E146	100-EMS146
		100-E190...100-E205	100-EMS205
	For reversing contactors	100-E116...100-E146	100-EMR146
		100-E190...100-E205	100-EMR205
		100-E265...100-E370	100-EMR370
		100-E400...100-E460	100-EMR460
		100-E580...100-E750	100-EMR750
	For reversing starters	100-E116...100-E146	100-EMRS146
		100-E190...100-E205	100-EMRS205

Connectors

	Description	For Use With Circuit Breaker	For Use With Contactor	Cat. No.
	For connection to 140G or 140MG • Connection between contactors/starters and molded case circuit breakers. • These connection sets are solid copper bars.	140G-H, 140MG-H	100-E116...100-E146	100-PCE1
		140G-I, 140MG-I	100-E116...100-E146	100-PCE2
		140G-J, 140MG-J	100-E116...100-E146	100-PCE3
		140G-J, 140MG-J	100-E190...100-E205	100-PCE4
		140G-K, 140MG-K	100-E265...100-E370	100-PCE5
		140G-M, 140MG-M	100-E400...100-E750	100-PCE6
		140G-K, 140MG-K	100-E400...100-E750	100-PCE7

Terminal Accessories

	Description	For Use With Contactor	Cat. No.
	Terminal Enlargements • Enlargement pieces designed to increase the width of the contactor terminal pads in order to allow larger connections to be mounted.	100-E116...100-E146	100-ETE146
		100-E190...100-E205	100-ETE205
		100-E265...100-E370	100-ETE370
		100-E400...100-E460	100-ETE460
		100-E580...100-E750	100-ETE750
		100-E1260	100-ETE1260
	Terminal Extensions • Extension pieces designed to extend the main terminals of contactors for combined mounting of contactors and connection sets	100-E116...100-E146	100-ETX146
		100-E190...100-E205	100-ETX205
		100-E265...100-E370	100-ETX370
		100-E400...100-E460	100-ETX460
		100-E580...100-E750	100-ETX750

Renewal Parts

Coil Modules

	Description	For Use With	Voltage	Cat. No.
	Coil Modules	100-E116	24...60V AC/DC	TG913
			48...130V AC/DC	TG914
			100...250V AC/DC	TG915
			250...500V AC/DC	TG916
			100...250V AC/DC w/ PLC Interface	TGE913
			250...500V AC/DC w/ PLC Interface	TGE914
		100-E146	24...60V AC/DC	TG901
			48...130V AC/DC	TG902
			100...250V AC/DC	TG903
			250...500V AC/DC	TG904
			100...250V AC/DC w/ PLC Interface	TGE903
			250...500V AC/DC w/ PLC Interface	TGE904
		100-E190, 100-E205	24...60V AC/DC	TG905
			48...130V AC/DC	TG906
			100...250V AC/DC	TG907
			250...500V AC/DC	TG908
		100-E190	100...250V AC/DC w/ PLC Interface	TGE915
			250...500V AC/DC w/ PLC Interface	TGE916
		100-E205	100...250V AC/DC w/ PLC Interface	TGE907
			250...500V AC/DC w/ PLC Interface	TGE908
		100-E265, 100-E305, 100-E370	24...60V AC/DC	TG909
			48...130V AC/DC	TG910
			100...250V AC/DC	TG911
			250...500V AC/DC	TG912
		100-E265	100...250V AC/DC w/ PLC Interface	TGE917
			250...500V AC/DC w/ PLC Interface	TGE918
		100-E305	100...250V AC/DC w/ PLC Interface	TGE919
			250...500V AC/DC w/ PLC Interface	TGE920
		100-E370	100...250V AC/DC w/ PLC Interface	TGE911
			250...500V AC/DC w/ PLC Interface	TGE912
		100-E400, 100-E460	24...60V DC w/ PLC Interface	THE901
			48...130V AC/DC w/ PLC Interface	THE902
			100...250V AC/DC w/ PLC Interface	THE903
			250...500V AC/DC w/ PLC Interface	THE904
		100-E580, 100-E750, 100-E1260	24...60V DC w/ PLC Interface	TJE901
			48...130V AC/DC w/ PLC Interface	TJE902
			100...250V AC/DC w/ PLC Interface	TJE903
			250...500V AC/DC w/ PLC Interface	TJE904
		100-E860, 100-E1060, 100-E2050	100...250V AC/DC w/ PLC Interface	TKE903 (1)
				TKE904 (2)
		100-E2650	100...250V AC/DC w/ PLC Interface	TLE903 (1)
				TLE904 (2)

(1) One set of two coils
(2) Printed circuit board

Contact Kits

	Description	For Use With	Cat. No.
	Contact Kits	100-E116	100-EA116
		100-E146	100-EA146
		100-E190	100-EA190
		100-E205	100-EA205
		100-E2650	100-EA265
		100-E305	100-EA305
		100-E370	100-EA370
		100-E400	100-EA400
		100-E460	100-EA460
		100-E580	100-EA580
		100-E750	100-EA750
		100-E1260	100-EA1260
		100-E860	100-EA860
		100-E1060	100-EA1060
		100-E2050	100-EA2050
		100-E2650 (1)	100-EA2650
	Arc Chutes	100-E400, 100-E460	100-EC460
		100-E580, 100-E750, 100-E1260	100-EC750
		100-E860, 1060, 100-E2050	100-EC1060
		100-E2650	100-EC2650

(1) Movable contacts only

Terminal and Mounting Hardware Kits

	Description	For Use With	Cat. No.
	Terminal and Mounting Hardware Kits	100-E116*L, 100-E146*L	100-EHS146(1)
		100-E116, 100-E146	100-EHF146
		100-E190, 100-E205	100-EHF205
		100-E265, 100-E305, 100-E370	100-EHF370
		100-E400, 100-E460	100-EHF460
		100-E580, 100-E750, 100-E1260	100-EHF750
		100-E860, 100-E1060, 100-E2050	100-EHF2050
		100-E2650	100-EHF2650

(1) Mounting hardware only.

Specifications

Table 32 - General Specifications

			100-E, 100S-E, 104-E, 104S-E09...65	100-E, 100S-E, 104S-E80...96, 104-E80...2650
Rated Isolation Voltage U_i	IEC	[V]	690	1000
	UL, CSA	[V]	600	600
Rated Impulse Voltage Withstand U_{imp}		[kV]	6	8
Rated Voltage U_e	AC 50/60 Hz	[V]	115, 200, 230, 240, 400, 415, 460 500, 575, 690, 1000	
	DC	[V]	24, 48, 110, 220, 440	
Electromagnetic compatibility			IEC 60947-1 - Environment A and B(1)	
Insulation Class of the Coil			Class F per IEC 60947-4-1	
Rated coil frequency			AC 50/60 Hz, DC	
Ambient Temperature	Storage	[°C (°F)]	-60...+80 (-76...+176)	-40...+70 (-40...+158)
	Operation at rated voltage	[°C (°F)]	-40...+70 (-40...+158)	-40...+70 (-40...+158)
Max. Altitude of Installation Site		[m]	3000	
Climatic Withstand			Category B according to IEC 60947-1, Annex Q	
Resistance to Shock			IEC 60068-2-27	
Resistance to Vibration			IEC 60068-2-6	
Protection Class	Contactor main contacts		IP2X(2)	IP00
	Contactor coil terminals		IP2X (in connected state)	
	Auxiliary contacts		IP2X (in connected state)	
Functional Safety Data (100S-E116...-E750): Usable for ISO 13849-1 and IEC 62061. Data is based on the B10 value given and: - Mission time/Proof test interval of 20 years.	100S-E116...100S-E370		B10: 1.0E+06 operations at 50% max. AC-3 load; failure ratio: 75% failure to open, 25% failure to close	
	100S-E116...100S-E205		B10: 5.0E+06 operations, mechanical only; failure ratio: 50% failure to open, 50% failure to close	
	100S-E265...100S-E370		B10: 2.5E+06 operations, mechanical only; failure ratio: 50% failure to open, 50% failure to close	
	100S-E400...100S-E750		B10: 5.0E+05 operations at 50% max. AC-3 load; failure ratio: 75% failure to open, 25% failure to close	
	100S-E400...100S-E460		B10: 3.0E+06 operations, mechanical only; failure ratio: 50% failure to open, 50% failure to close	
	100S-E570...100S-E750		B10: 7.0E+05 operations, mechanical only; failure ratio: 50% failure to open, 50% failure to close	

(1) 100-E09...E38 only.
(2) 100-E40...E96 meet IP2X when used with 100-ESC... terminal shrouds.

Table 33 - Standards Compliance and Certifications

Standards Compliance	Certifications
• IEC/EN 60947-1, Low-voltage switchgear and controlgear	• cULus, File No. E41850 / E196120 (contactors, reversing contactors)
• IEC/EN 60947-4-1, Low-voltage switchgear and controlgear, Contactors and motor-starters	• UL
• IEC/EN 60947-5-1, Low-voltage switchgear and controlgear, Control circuit devices and switching elements	• CSA
	• CCC
• UL 60947-4-1, Industrial Control Equipment (USA)	• EAC
• CSA C22.2 No. 60947-4-1 Industrial Control Equipment (Canada).	• RCM
• Mechanically Linked Contacts: IEC 60947-5-1, Annex L (100/100S-E09...100/100S-E96 with all 100-E* front- and side-mounted N.C. auxiliary contacts)	• RINA
	• KC
• Mirror Contacts: IEC 60947-4-1, Annex F (100/100S-E116...100/100S-E750 with all 100-ES* side-mounted N.C. auxiliary contacts)	• CE
	• SUVA
	• SEMI-F47 (Conditions of use on request)

9...96 A Contactor Specifications

Table 34 - Main Circuits

100/104-E, 100S/104S-E			9	12	16	26	32	38	40	52	65	80	96
AC-1 Active Power Load (50/60Hz); Ambient temperature 40 °C (104 °F)													
Rated Operational Current, I_e	690V	[A]	25	28	30	45	50	50	70	100	105	125	130
	1000V	[A]	–	–	–	–	–	–	–	–	–	35	40
Rated Operational Power, P_e	230	[kW]	10	11	12	18	20	20	28	40	42	50	52
	240	[kW]	10	12	12	19	21	21	29	42	44	52	54
	400	[kW]	17	19	21	31	35	35	48	69	73	87	90
	415	[kW]	18	20	22	32	36	36	50	72	75	90	93
	500	[kW]	22	24	26	39	43	43	61	87	91	108	113
	690	[kW]	30	33	36	54	60	60	84	120	125	149	155
	1000	[kW]	–	–	–	–	–	–	–	–	–	61	69
Ambient temperature 60 °C (140 °F)													
Rated Operational Current, I_e	690V	[A]	25	28	30	40	42	42	60	80	90	100	105
	1000V	[A]	–	–	–	–	–	–	–	–	–	35	40
Rated Operational Power, P_e	230	[kW]	10	11	12	16	17	17	24	32	36	40	42
	240	[kW]	10	12	12	17	17	17	25	33	37	42	44
	400	[kW]	17	19	21	28	29	29	42	55	62	69	73
	415	[kW]	18	20	22	29	30	30	43	58	65	72	75
	500	[kW]	22	24	26	35	36	36	52	69	78	87	91
	690	[kW]	30	33	36	48	50	50	72	96	108	120	125
	1000	[kW]	–	–	–	–	–	–	–	–	–	61	69
Ambient temperature 70 °C (158 °F)													
Rated Operational Current, I_e	690V	[A]	22	24	26	32	37	37	50	70	80	85	90
	1000V	[A]	–	–	–	–	–	–	–	–	–	35	40
Rated Operational Power, P_e	230	[kW]	9	10	10	13	15	15	20	28	32	34	36
	240	[kW]	9	10	11	13	15	15	21	29	33	35	37
	400	[kW]	15	17	18	22	26	26	35	48	55	59	62
	415	[kW]	16	17	19	23	27	27	36	50	58	61	65
	500	[kW]	19	21	23	28	32	32	43	61	69	74	78
	690	[kW]	26	29	31	38	44	44	60	84	96	102	108
	1000	[kW]	–	–	–	–	–	–	–	–	–	61	69
With Conductor sizes		[mm^2]	4	6	6	10	10	10	25	35	35	50	50

Table 35 - Main Circuits

100/104-E, 100S/104S-E			9	12	16	26	32	38	40	52	65	80	96
Switching of 3-phase Motors; (50Hz) Ambient temperature 60 °C (140 °F) AC-2, AC-3													
Rated Operational Current, I_e	220-240V	[A]	9	12	18	26	33	40	40	53	65	80	96
	380-400V	[A]	9	12	18	26	32	38	40	53	65	80	96
	415V	[A]	9	12	18	26	32	38	40	53	65	80	96
	440V	[A]	9	12	18	26	32	38	40	53	65	80	96
	500V	[A]	9.5	12.5	15	23	28	33	40	45	55	65	80
	690V	[A]	7	9	10.5	17	21	24	25	35	39	49	57
	1000V	[A]	–	–	–	–	–	–	–	–	–	25	30
Rated Operational Power, P_e	220-240V	[kW]	2.2	3	4	6.5	9	11	11	15	18.5	22	25
	380-400V	[kW]	4.0	5.5	7.5	11	15	18.5	18.5	22	30	37	45
	415V	[kW]	4.0	5.5	9	11	15	18.5	22	30	37	45	55
	440V	[kW]	4.0	5.5	9	15	18.5	22.0	22	30	37	45	55
	500V	[kW]	5.5	7.5	9	15	18.5	22.0	22	30	37	45	55
	690V	[kW]	5.5	7.5	9	15	18.5	22.0	22	30	37	45	55
	1000V	[kW]	–	–	–	–	–	–	–	–	–	35	40
Load Carrying Capacity per UL/CSA													
General Purpose Current (enclosed)	600V	[A]	13.8	16.0	20	24	24.0	24.0	34	34	56	80	80
Rated Operational Current and Power (enclosed), 1-Phase	120V	[A]	13.8	16.0	20	24	24.0	24.0	34	34	56	80	80
	240V	[A]	10.0	12.0	17	17	28.0	28.0	40	50	68	68	88
	120V	[Hp]	0.75	1	1.5	2	2	2	3	3	5	7.5	7.5
	240V	[Hp]	1.5	2	3	3	5	5	7.5	10	15	15	20
Rated Operational Current and Power (enclosed), 3-Phase	200-208	[A]	7.8	11	17.5	25.3	32.2	32.2	32.2	48.3	62.1	78.2	92
	220-240	[A]	6.8	9.6	15.2	22.0	28	28	42	54	68	80	80
	440-480	[A]	7.6	11	14	21.0	27	34	40	52	65	77	77
	550-600	[A]	9	11	17	22.0	27	32	41	52	62	77	77
	200-208	[Hp]	2	3	5	7.5	10	10	10	15	20	25	30
	220-240	[Hp]	2	3	5	7.5	10	10	15	20	25	30	30
	440-480	[Hp]	5	7.5	10	15.0	20	25	30	40	50	60	60
	550-600	[Hp]	7.5	10	15	20.0	25	30	40	50	60	75	75
Rated Operational Current and Power (enclosed), with 3 poles in series	125V DC	[A]	9.5	13.2	17	25.0	25	25	40	58	76	76	110
	250V DC	[A]	8.5	8.5	12.2	12.2	20	29	38	55	72	89	106
	125V DC	[Hp]	1	1.5	2	3	3	3	5	7.5	10	10	15
	250V DC	[Hp]	2	3	3	5	7.5	7.5	10	15	20	25	30

Table 36 - Main Circuits

100/104-E, 100S/104S-E			9	12	16	26	32	38	40	52	65	80	96
Wye-Delta (60 Hz)													
Rated Operational Power, P_e	200V	[Hp]	3	5	7.5	10	15	15	15	25	30	40	50
	230V	[Hp]	3	5	7.5	10	15	15	25	30	40	50	50
	460V	[Hp]	7.5	10	15	25	30	40	50	60	75	100	100
	575V	[Hp]	10	15	25	30	40	50	60	75	100	125	125
Star-Delta Starting (50 Hz)													
Rated Operational Current, I_e	≥230V	[A]	9	12	18	26	33	40	40	53	65	80	96
	≥ 240V	[A]	9	12	18	26	32	38	40	53	65	80	96
	400V	[A]	9	12	18	26	32	38	40	53	65	80	96
	415V	[A]	9	12	18	26	32	38	40	53	65	80	96
	500V	[A]	9.5	12.5	15	23	28	33	40	45	55	65	80
	690V	[A]	7	9	10.5	17	21	24	25	35	39	49	57
	1000V	[A]	–	–	–	–	–	–	–	–	–	25	30
Rated Operational Power, P_e	230V	[kW]	4	5.5	7.5	11	15	18.5	18.5	22	30	37	45
	240V	[kW]	4	5.5	7.5	11	15	18.5	18.5	22	30	37	45
	400V	[kW]	7.5	7.5	15	22	30	30	37	45	55	75	90
	415V	[kW]	7.5	7.5	15	22	30	37	37	45	55	75	90
	500V	[kW]	7.5	11	15	22	30	37	45	45	55	75	90
	690V	[kW]	7.5	11	15	22	30	37	37	55	55	75	90
	1000V	[kW]	–	–	–	–	–	–	–	–	–	–	–

Table 37 - Main Circuits

100/104-E, 100S/104S-E			9	12	16	26	32	38	40	52	65	80	96
UL/CSA Elevator Duty													
Rated Operational Current and Power, 500,000 electrical operations, 1-Phase	115V AC	[A]	5.8	7.20	–	20	24	24	34	34	34	56	56
	230V AC	[A]	2.20	3.20	–	9.6	10	15.2	15.2	22	28	28	28
	115V AC	[Hp]	0.25	0.33	–	1.5	2	2	3	3	3	5	5
	230V AC	[Hp]	0.50	0.75	–	3	3	5	5	7.5	10	10	10
Rated Operational Current and Power, 500,000 electrical operations 3-Phase	200V AC	[A]	4.60	7.50	–	16.7	24.2	24.2	30.8	30.8	46.2	46.2	46.2
	230V AC	[A]	4.20	6.80	–	15.2	22	22	28	28	42	42	42
	460V AC	[A]	4.80	7.60	–	21.0	27	27	34	40	52	52	52
	575V AC	[A]	3.90	6.10	–	17	22	22	32	41	41	52	52
	200V AC	[Hp]	1	2	–	5	7.5	7.5	10	10	15	15	15
	230V AC	[Hp]	1	2	–	5	8	10	10	15	20	20	20
	460V AC	[Hp]	3	5	–	15	20	20	25	30	40	40	40
	575V AC	[Hp]	3	5	–	15	20	20	30	40	40	50	50
UL/CSA HVAC Applications Definite purpose rating (3-phase)													
FLA	600V	[A]	20	25	30	45	50	50	60	80	90	105	115
LRA	200-208V AC	[A]	120	150	180	270	300	300	360	480	540	630	690
	220-240V AC	[A]	120	150	180	270	300	300	360	480	540	630	690
	440-480V AC	[A]	120	150	180	270	300	300	360	480	540	630	690
	550-600V AC	[A]	80	100	120	180	200	200	240	320	360	420	460

Table 38 - Main Circuits

100/104-E, 100S/104S-E				9	12	16	26	32	38	40	52	65	80	96
Switching of Power Transformers, AC-6a (50 Hz)														
Inrush Current / Rated transformer current = n														
n=30		230V	[A]	11.7	13.3	16.7	26.7	33.3	40.0	41.7	51.7	58.3	63.3	70.0
		240V	[A]	11.7	13.3	16.7	26.7	33.3	40.0	41.7	51.7	58.3	63.3	70.0
		400V	[A]	11.7	13.3	16.7	26.7	33.3	40.0	41.7	51.7	58.3	63.3	70.0
		415V	[A]	11.7	13.3	16.7	26.7	33.3	40.0	41.7	51.7	58.3	63.3	70.0
		500V	[A]	11.7	13.3	16.7	26.7	33.3	40.0	41.7	51.7	58.3	63.3	70.0
		690V	[A]	11.7	13.3	16.7	26.7	33.3	40.0	41.7	51.7	58.3	63.3	70.0
Apparent Power		230V	[kVA]	5	5	7	11	13	16	17	21	23	25	28
		240V	[kVA]	5	6	7	11	14	17	17	21	24	26	29
		400V	[kVA]	8	9	12	18	23	28	29	36	40	44	48
		415V	[kVA]	8	10	12	19	24	29	30	37	42	45	50
		500V	[kVA]	10	12	14	23	29	35	36	45	50	55	61
		690V	[kVA]	14	16	20	32	40	48	50	62	70	76	84
n=20		690V	[A]	17.5	20	25	40	50	60	62.5	77.5	87.5	95	105
n=15		690V	[A]	23.3	26.7	33.3	53.3	66.7	80.0	83.3	103	117	127	140
60 Hz Peak Inrush/peak rated transformer current														
n=30		600V	[A]	11.7	13.3	16.7	26.7	33.3	40.0	41.7	51.7	58.3	63.3	70.0
Apparent Power		200V	[kVA]	4	5	6	9	12	14	14	18	20	22	24
		208V	[kVA]	4	5	6	10	12	14	15	19	21	23	25
		240V	[kVA]	5	6	7	11	14	17	17	21	24	26	29
		480V	[kVA]	10	11	14	22	28	33	35	43	48	53	58
		600V	[kVA]	12	14	17	28	35	42	43	54	61	66	73
n=20		600V	[A]	17.5	20.0	25.0	40.0	50.0	60.0	62.5	77.5	87.5	95.0	105
Apparent Power		200V	[kVA]	6	7	9	14	17	21	22	27	30	33	36
		208V	[kVA]	6	7	9	14	18	22	22	28	31	34	38
		240V	[kVA]	7	8	10	17	21	25	26	32	36	39	44
		480V	[kVA]	15	17	21	33	42	50	52	64	73	79	87
		600V	[kVA]	18	21	26	42	52	62	65	80	91	99	109
n=15		600V	[A]	23.3	26.7	33.3	53.3	66.7	80.0	83.3	103	117	127	140
Apparent Power		200V	[kVA]	8	9	12	18	23	28	29	36	40	44	48
		208V	[kVA]	8	10	12	19	24	29	30	37	42	46	50
		240V	[kVA]	10	11	14	22	28	33	35	43	48	53	58
		480V	[kVA]	19	22	28	44	55	66	69	86	97	105	116
		600V	[kVA]	24	28	35	55	69	83	87	107	121	131	145
Switching of Lighting Loads (UL/CSA)														
Tungsten lamps	1-phase per pole	347V	[A]	20	25	30	45	50	50	65	80	90	105	115
	3-phase (break all lines)	600V	[A]	20	25	30	45	50	50	65	80	90	105	115
Electrical discharge lamps (ballast)	1-phase per pole	347V	[A]	20	25	30	45	50	50	65	80	90	105	115
	3-phase (break all lines)	600V	[A]	20	25	30	45	50	50	65	80	90	105	115

Table 39 - Main Circuits

100/104-E, 100S/104S-E			9	12	16	26		30	38		40	52	65	80	96
			3- or 4-Pole			3-Pole	4-Pole	3-Pole	3-Pole	4-Pole	3-Pole	3-Pole	3-Pole	3-Pole	3-Pole
Switching of DC Loads—Non-inductive or slightly inductive loads or resistance furnaces DC-1 at 60 °C															
1 pole	≤ 72V	[A]	25	27	30	45	45	50	50	55	70	100	105	125	130
	110V	[A]	10	15	20	–	–	–	–	–	–	–	–	–	–
	220V	[A]	–	–	–	–	–	–	–	–	–	–	–	–	–
2 poles in series	≤ 72V	[A]	25	27	30	45	45	50	50	55	70	100	105	125	130
	110V	[A]	25	27	30	45	45	50	50	55	70	100	105	125	130
	220V	[A]	10	15	20	–	–	–	–	–	–	–	–	–	–
3 poles in series	≤ 72V	[A]	25	27	30	45	45	50	50	55	70	100	105	125	130
	110V	[A]	25	27	30	45	45	50	50	55	70	100	105	125	130
	220V	[A]	25	27	30	45	45	50	50	55	70	100	105	125	130
4 poles in series	≤ 72V	[A]	25	–	30	–	45	–	–	55	–	–	–	–	–
	110V	[A]	25	–	30	–	45	–	–	55	–	–	–	–	–
	220V	[A]	25	–	30	–	45	–	–	55	–	–	–	–	–
	440V	[A]	10	–	20	–	–	–	–	–	–	–	–	–	–
Shunt-wound Motors—Starting, reverse current breaking, reversing, stepping: DC-3 at 60 °C															
1 pole	≤ 72V	[A]	25	27	30	45	–	50	50	–	70	100	105	125	130
	110V	[A]	6	7	8	–	–	–	–	–	–	–	–	–	–
	220V	[A]	–	–	–	–	–	–	–	–	–	–	–	–	–
2 poles in series	≤ 72V	[A]	25	27	30	45	–	50	50	–	70	100	105	125	130
	110V	[A]	25	27	30	45	–	50	50	–	70	100	105	125	130
	220V	[A]	6	7	8	–	–	–	–	–	–	–	–	–	–
3 poles in series	≤ 72V	[A]	25	27	30	45	–	50	50	–	70	100	105	125	130
	110V	[A]	25	27	30	45	–	50	50	–	70	100	105	125	130
	220V	[A]	25	27	30	45	–	50	50	–	70	100	105	125	130
4 poles in series	≤ 72V	[A]	25	–	30	–	–	–	–	–	–	–	–	–	–
	110V	[A]	25	–	30	–	–	–	–	–	–	–	–	–	–
	220V	[A]	25	–	30	–	–	–	–	–	–	–	–	–	–
	440V	[A]	6	–	8	–	–	–	–	–	–	–	–	–	–
Series-wound Motors—Starting, reverse current breaking, reversing, stepping: DC-5 at 60 °C															
1 pole	≤ 72V	[A]	9	12	16	20	–	25	25	–	70	100	105	125	130
	110V	[A]	4	4	4	–	–	–	–	–	–	–	–	–	–
	220V	[A]	–	–	–	–	–	–	–	–	–	–	–	–	–
2 poles in series	≤ 72V	[A]	25	27	30	45	–	50	50	–	70	100	105	125	130
	110V	[A]	10	15	20	45	–	50	50	–	70	100	105	125	130
	220V	[A]	4	4	4	–	–	–	–	–	–	–	–	–	–
3 poles in series	≤ 72V	[A]	25	27	30	45	–	50	50	–	70	100	105	125	130
	110V	[A]	25	27	30	45	–	50	50	–	70	100	105	125	130
	220V	[A]	9	12	16	20	–	25	25	–	70	100	105	125	130
4 poles in series	≤ 72V	[A]	25	–	30	–	–	–	–	–	–	–	–	–	–
	110V	[A]	25	–	30	–	–	–	–	–	–	–	–	–	–
	220V	[A]	10	–	20	–	–	–	–	–	–	–	–	–	–
	440V	[A]	4	–	4	–	–	–	–	–	–	–	–	–	–
Short Time Withstand I_{CW} 40 °C															
3- Pole	1 s	[A]	300	300	300	700	700	700	1000	1000	1000	1200	1200		
	10 s	[A]	150	150	150	350	350	350	600	600	600	780	780		
	30 s	[A]	80	80	80	225	225	225	350	350	350	450	450		
	1 min	[A]	60	60	60	150	150	150	250	250	250	300	300		
	15 min	[A]	35	35	35	50	50	50	110	110	110	140	140		

Table 39 - Main Circuits (Continued)

100/104-E, 100S/104S-E			9	12	16	26		30	38		40	52	65	80	96
			3- or 4-Pole			3-Pole	4-Pole	3-Pole	3-Pole	4-Pole	3-Pole	3-Pole	3-Pole	3-Pole	3-Pole
Resistance and Power Dissipation															
Main current circuit resistance		[mΩ]	0.41	0.46	0.36	0.30	0.29	0.30	0.21	0.20	0.21	0.16	0.16		
Power dissipation per pole at I_e AC-1, 400V		[W]	0.8	1	1.2	1.8	2.4	2.4	3	6.3	7	7.6	8.2		
Power dissipation per pole at I_e AC-3, 400V		[W]	0.1	0.2	0.35	0.6	0.9	1.3	1	1.7	2.7	3	4.5		
Total Power dissipation at: I_e AC-3, 400V; AC/DC control (120-250V)		[W]	2.3	2.6	3.05	3.8	4.7	5.9	5	7.1	10.1	11	15.5		
Maximum Switching Frequency	AC-1	ops/hr	600 cycles/h												
	AC-3	ops/hr	1200 cycles/h												
	AC-2, AC-4	ops/hr	300 cycles/h			150 cycles/h									
Weight: AC/DC (Electronic)		[kg (lbs.)]	0.43 (0.95)	0.43 (0.95)	0.43 (0.95)	0.48 (1.06)	0.48 (1.06)	0.48 (1.06)	0.99 (2.18)	0.99 (2.18)	0.98 (2.16)	1.23 (2.7)	1.25 (2.76)		

Table 40 - Short-circuit Current Ratings

100/104-E, 100S/104S-E			9	12	16	26	32	38	40	52	65	80	96
Short Circuit Coordination (Max. Fuse or Circuit Breaker Rating) Per IEC 60947-4-1													
DIN FUSES- gG			100 kA Available Fault Current										
	Type "2" (400V)	[A]	32	32	35	62	80	80	100	125	125	160	160
			60 kA Available Fault Current										
	Type "2" (690V)	[A]	6	10	16	32	32	40	40	63	80	80	100
MCCB			70 kA Available Fault Current										
	Type "2" (400V)	[A]	28	28	28	56	56	240	520	800	800	880	880
Short Circuit Current Rating (Max. Fuse or Circuit Breaker Rating) Per UL 60947 and CSA 22.2 No. 14 (contactor and fuses or circuit breaker only)													
UL Class RK5 Fuses			5 kA Available Fault Current										
	Type 1 Combination (600V)	[A]	30	30	60	60	100	100	150	150	–	–	–
UL Class RK5 Fuses			10 kA Available Fault Current										
	Type 1 Combination (600V)	[A]	–	–	–	–	–	–	–	–	150	200	200
UL Class J and CSA HRCI-J Fuses			100 kA Available Fault Current										
	Type 1 Combination (600V)	[A]	30	30	60	60	100	100	150	150	150	200	200
UL Inverse-Time Circuit Breaker			5 kA Available Fault Current										
	Type 1 Combination (480V)	[A]	60	60	60	100	125	125	250	250	–	–	–
			10 kA Available Fault Current										
	Type 1 Combination (480V)	[A]	60	60	60	–	–	–	–	–	250	250	250
			65 kA Available Fault Current										
	Type 1 Combination (480V)	[A]	–	–	–	100	–	–	250	250	250	250	250
			100 kA Available Fault Current										
	Type 1 Combination (480V)	[A]	–	–	–	–	125	125	–	–	–	100	100
			5 kA Available Fault Current										
	Type 1 Combination (600V)	[A]	60	60	–	–	125	125	250	250	–	–	–
			10 kA Available Fault Current										
	Type 1 Combination (600V)	[A]	–	–	60	–	–	–	250	250	250	250	250
			25 kA Available Fault Current										
	Type 1 Combination (600V)	[A]	–	–	–	100	–	–	–	–	–	–	–
			35 kA Available Fault Current										
	Type 1 Combination (600V)	[A]	–	–	–	–	125	125	–	–	250	–	–
			50 kA Available Fault Current										
	Type 1 Combination (600V)	[A]	–	–	–	–	–	–	–	–	–	250	250

Table 41 - Coil Data

100/104-E, 100S/104S-E			9	12	16	26	32	38	40	52	65	80	96
Operating Limits													
50/60Hz	pick-up	[x Us]	0.85...1.1										
	dropout	[x Us]	≤ 0.60										
DC Control	pick-up	[x Us]	0.80...1.1										
	dropout	[x Us]	≤ 0.60										
Standard Coil													
24-60V AC, 20-60V DC (KJ)	pick-up	[VA]/[W]	50/50						25/25			40/40	
	hold-in	[VA]/[W]	2.2/2						4/2			4/2	
48...130V AC/DC (KY)	pick-up	[VA]/[W]	50/50						25/25			40/40	
	hold-in	[VA]/[W]	2.2/2						4/2			4/2	
100...250V AC/DC (KD)	pick-up	[VA]/[W]	50/50						25/25			40/40	
	hold-in	[VA]/[W]	2.2/2						4/2			4/2	
250...500V AC/DC (KN)	pick-up	[VA]/[W]	50/50						25/25			40/40	
	hold-in	[VA]/[W]	2.2/2						4/2			4/2	
Operating Times	closing delay	[ms]	40...95						42...100				
	opening delay	[ms]	11...95						17...100				
Energy-efficient Coil													
12-20V DC (EQ)	pick-up	[W]	12...16						–	–	–	–	–
	hold-in	[W]	1.7						–	–	–	–	–
24-60V AC, 20-60V DC (EJ)	pick-up	[VA]/[W]	16/12...16						–	–	–	–	–
	hold-in	[VA]/[W]	1.7/1.7						–	–	–	–	–
Operating Times	closing delay	[ms]	40...95						–	–	–	–	–
	opening delay	[ms]	11...95						–	–	–	–	–
High Energy Efficient Coil													
24V DC (QJ)	pick-up	[W]	6						–	–	–	–	–
	hold-in	[W]	1.7						–	–	–	–	–
Operating Times	closing delay	[ms]	27...53						–	–	–	–	–
	opening delay	[ms]	17...29						–	–	–	–	–

116...2650 A Contactors

Table 42 - Main Circuits

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
AC-1 Active Power Load (50/60 Hz); Ambient temperature 40 °C (104 °F)																		
Rated Operational Current, I_e	690V	[A]	160	225	275	350	400	500	600	600	700	800	1050	1350	1650	1260	2050	2650
	1000V	[A]	160	225	250	275	350	375	400	600	700	800	1050	1350	1650	1260	2050	2650
Rated Operational Power, P_e	230V	[kW]	64	90	110	139	159	199	239	239	279	319	418	538	657	502	817	1056
	240V	[kW]	67	94	114	145	166	208	249	249	291	333	436	561	686	524	852	1102
	400V	[kW]	111	156	191	242	277	346	416	416	485	554	727	935	1143	873	1420	1836
	415V	[kW]	115	162	198	252	288	359	431	431	503	575	755	970	1186	906	1474	1905
	500V	[kW]	139	195	238	303	346	433	520	520	606	693	909	1169	1429	1091	1775	2295
	690V	[kW]	191	269	329	418	478	598	717	717	837	956	1255	1613	1972	1506	2450	3167
	1000V	[kW]	277	390	433	476	606	650	693	1039	1212	1386	1819	2338	2858	2182	3551	4590
Ambient temperature 60 °C (140 °F)																		
Rated Operational Current, I_e	690V	[A]	145	200	250	300	350	400	500	500	600	700	875	1150	1450	1040	1750	2350
	1000V	[A]	145	200	225	250	300	325	350	500	600	700	875	1150	1450	1040	1750	2350
Rated Operational Power, P_e	230V	[kW]	58	80	100	120	139	159	199	199	239	279	349	458	578	414	697	936
	240V	[kW]	60	83	104	125	145	166	208	208	249	291	364	478	603	432	727	977
	400V	[kW]	100	139	173	208	242	277	346	346	416	485	606	797	1005	721	1212	1628
	415V	[kW]	104	144	180	216	252	288	359	359	431	503	629	827	1042	748	1258	1689
	500V	[kW]	126	173	217	260	303	346	433	433	520	606	758	996	1256	901	1516	2035
	690V	[kW]	173	239	299	359	418	478	598	598	717	837	1046	1374	1733	1243	2091	2809
	1000V	[kW]	251	346	390	433	520	563	606	866	1039	1212	1516	1992	2511	1801	3031	4070
Ambient temperature 70 °C (158 °F)																		
Rated Operational Current, I_e	690V	[A]	130	175	200	240	290	325	400	400	480	580	720	1000	1270	875	1500	2120
	1000V	[A]	130	175	185	200	240	260	290	400	480	580	720	1000	1270	875	1500	2120
Rated Operational Power, P_e	230V	[kW]	52	70	80	96	116	129	159	159	191	231	287	398	506	349	598	845
	240V	[kW]	54	73	83	100	121	135	166	166	200	241	299	416	528	364	624	881
	400V	[kW]	90	121	139	166	201	225	277	277	333	402	499	693	880	606	1039	1469
	415V	[kW]	93	126	144	173	208	234	288	288	345	417	518	719	913	629	1078	1524
	500V	[kW]	113	152	173	208	251	281	346	346	416	502	624	866	1100	758	1299	1836
	690V	[kW]	155	209	239	287	347	388	478	478	574	693	860	1195	1518	1046	1793	2534
	1000V	[kW]	225	303	320	346	416	450	502	693	831	1005	1247	1732	2200	1516	2598	3672
With conductor sizes		[mm^2]	70	95	150	240 (1)	240	300 (2)	2x185 (2)	2x185	2x240	2x240	800 (3)	1000 (4)	1500 (4)	1000 (3)	2000 (4)	3000 (4)

(1) For currents above 275 A, use terminal extensions.
(2) For currents above 450 A, use terminal extensions.
(3) Maximum connection bar width 50 mm.
(4) Maximum connection bar width 100 mm.

Table 43 - Main Circuits

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
Switching of 3-phase Motors; (50 Hz) Ambient temperature 60 °C (140 °F) AC-2, AC-3																		
Rated Operational Current, I_e	220-240V	[A]	116	146	190	205	265	305	370	400	460	580	750	860	1060	–	–	–
	380-400V	[A]	116	146	190	205	265	305	370	400	460	580	750	860	1060	–	–	–
	415V	[A]	116	146	190	205	265	305	370	400	460	580	750	860	1060	–	–	–
	440V	[A]	116	146	190	205	265	305	370	400	460	580	750	860	1060	–	–	–
	500V	[A]	110	130	156	185	250	290	350	400	460	580	750	860	970	–	–	–
	690V	[A]	66	93	135	165	250	290	315	350	400	500	650	800	970	–	–	–
	1000V	[A]	46	60	85	100	113	131	141	155	200	250	300	375	400	–	–	–
Rated Operational Power, P_e	220-240V	[kW]	37	45	55	55	75	90	110	110	132	160	220	250	315	–	–	–
	380-400V	[kW]	55	75	90	110	132	160	200	200	250	315	400	475	560	–	–	–
	415V	[kW]	55	75	90	110	132	160	200	220	250	355	425	500	630	–	–	–
	440V	[kW]	75	90	110	132	160	160	200	220	250	355	450	560	710	–	–	–
	500V	[kW]	75	90	110	132	160	200	250	250	315	400	530	630	710	–	–	–
	690V	[kW]	63	90	132	160	200	250	315	315	355	500	600	800	1000	–	–	–
	1000V	[kW]	55	75	110	132	160	185	200	220	280	355	400	555	600	–	–	–
Load Carrying Capacity per UL/CSA																		
General-purpose Current (enclosed)		[A]	160	200	250	300	350	400	520	550	650	750	900	1350	1650	1210	2100	2700
Rated Operational Current and Power (enclosed), 3-Phase	200V	[A]	92	120	150	177	221	285	359	359	414	552	692	954	1030	–	–	–
	230V	[A]	104	130	154	192	248	312	360	360	480	604	722	954	1030	–	–	–
	460V	[A]	96	124	156	180	240	302	361	414	477	590	722	954	1030	–	–	–
	575V	[A]	99	125	144	192	242	289	336	382	472	578	672	944	1050	–	–	–
	200V	[Hp]	30	40	50	60	75	100	125	125	150	200	250	–	–	–	–	–
	230V	[Hp]	40	50	60	75	100	125	150	150	200	250	300	400	450	–	–	–
	460V	[Hp]	75	100	125	150	200	250	300	350	400	500	600	800	900	–	–	–
	575V	[Hp]	100	125	150	200	250	300	350	400	500	600	700	1000	1150	–	–	–
Rated Current (enclosed), with 3 poles in series	260V DC	[A]	160	200	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	300V DC	[A]	–	–	230	250	–	–	–	–	–	–	–	–	–	–	–	–
	340V DC	[A]	–	–	–	–	350	400	520	–	–	–	–	–	–	–	–	–
	600V DC	[A]	–	–	–	–	–	–	–	550	650	750	900	1050	1350	1210	1900	–

Table 44 - Main Circuits

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
Switching of 3-phase Motors, (50Hz); Ambient temperature 60°C, AC-4																		
Rated Operational Current, I_e	230V	[A]	84	103	128	156	195	230	280	307	377	–	–	–	–	–	–	–
	240V	[A]	84	103	128	156	195	230	280	307	377	–	–	–	–	–	–	–
	400V	[A]	84	103	128	156	195	230	280	307	377	–	–	–	–	–	–	–
	415V	[A]	84	103	128	156	195	230	280	307	377	–	–	–	–	–	–	–
	500V	[A]	84	103	128	156	195	230	280	307	377	–	–	–	–	–	–	–
	690V	[A]	66	80	93	104	153	162	188	334	350	–	–	–	–	–	–	–
	1000V	[A]	40	48	72	85	90	95	100	141	155	–	–	–	–	–	–	–
Rated Operational Power, P_e	230V	[kW]	25	32	40	50	55	75	90	90	110	–	–	–	–	–	–	–
	240V	[kW]	25	32	40	50	63	75	90	100	125	–	–	–	–	–	–	–
	400V	[kW]	45	55	63	80	110	132	160	160	200	–	–	–	–	–	–	–
	415V	[kW]	45	55	63	90	110	132	160	160	220	–	–	–	–	–	–	–
	500V	[kW]	55	63	90	110	132	160	200	220	250	–	–	–	–	–	–	–
	690V	[kW]	63	75	90	100	150	160	185	315	335	–	–	–	–	–	–	–
	1000V	[kW]	55	63	100	110	125	132	132	200	220	–	–	–	–	–	–	–
AC-4 at approximately 200,000 operations																		
Rated Operational Current, I_e	230V	[A]	38	38	49	55	73	89	100	118	135	–	–	–	–	–	–	–
	240V	[A]	38	38	49	55	73	89	100	118	135	–	–	–	–	–	–	–
	400/415V	[A]	38	38	49	55	73	89	100	118	135	–	–	–	–	–	–	–
	500V	[A]	33	33	37	44	53	59	68	78	89	–	–	–	–	–	–	–
	690V	[A]	33	33	37	44	53	59	68	78	89	–	–	–	–	–	–	–
	1000V	[A]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Rated Operational Power, P_e	230V	[kW]	11	11	13	15	22	25	30	37	40	–	–	–	–	–	–	–
	240V	[kW]	11	11	15	15	22	25	32	37	45	–	–	–	–	–	–	–
	400V	[kW]	20	20	25	30	40	50	55	63	75	–	–	–	–	–	–	–
	415V	[kW]	20	20	25	30	40	50	55	63	75	–	–	–	–	–	–	–
	500V	[kW]	22	22	25	30	37	40	45	55	63	–	–	–	–	–	–	–
	690V	[kW]	30	30	32	40	50	55	63	75	80	–	–	–	–	–	–	–
	1000V	[kW]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Max. switching frequency		Ops/h	150	150	150	150	150	150	150	60	60	–	–	–	–	–	–	–
Wye-Delta (60 Hz)																		
Rated Operational Power, P_e	200V	[Hp]	50	60	75	100	125	150	200	200	250	–	–	–	–	–	–	–
	230V	[Hp]	60	75	100	125	150	200	250	250	350	450	500	–	–	–	–	–
	460V	[Hp]	125	150	200	250	350	450	500	500	600	800	–	–	–	–	–	–
	575V	[Hp]	150	200	250	300	450	500	600	600	700	1000	–	–	–	–	–	–

Table 45 - Main Circuits

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
UL/CSA Elevator Duty																		
Rated Operational Current, I_e	200V	[A]	54	54	77	99	125	149	156	–	–	–	–	–	–	–	–	–
	230V	[A]	54	54	77	99	125	149	156	–	–	–	–	–	–	–	–	–
	460V	[A]	54	54	77	99	125	149	156	–	–	–	–	–	–	–	–	–
	575V	[A]	54	54	77	99	125	149	156	–	–	–	–	–	–	–	–	–
Rated Operational Power, P_e	200V	[Hp]	15	15	20	30	40	40	50	–	–	–	–	–	–	–	–	–
	230V	[Hp]	20	20	25	30	40	50	60	–	–	–	–	–	–	–	–	–
	460V	[Hp]	40	40	60	75	100	100	125	–	–	–	–	–	–	–	–	–
	575V	[Hp]	50	50	75	100	125	150	150	–	–	–	–	–	–	–	–	–
UL/CSA HVAC Applications Definite purpose rating (3-phase)																		
FLA	600V	[A]	116	160	200	250	300	350	520	–	–	–	–	–	–	–	–	–
LRA	230V	[A]	700	960	1200	1500	1800	2100	3120	–	–	–	–	–	–	–	–	–
	460V	[A]	580	800	1000	1250	1500	1750	2600	–	–	–	–	–	–	–	–	–
	575V	[A]	470	640	800	1000	1200	1400	2080	–	–	–	–	–	–	–	–	–
AC resistance heating	600V	[A]	160	200	250	300	400	450	520	–	–	–	–	–	–	–	–	–
Star-Delta Starting (50 Hz)																		
Rated Operational Current, I_e	≤230V	[A]	200	252	329	355	458	528	640	692	796	1004	1299	1489	1835	–	–	–
	≤ 240V	[A]	200	252	329	355	458	528	640	692	796	1004	1299	1489	1835	–	–	–
	400V	[A]	200	252	329	355	458	528	640	692	796	1004	1299	1489	1835	–	–	–
	415V	[A]	200	252	329	355	458	528	640	692	796	1004	1299	1489	1835	–	–	–
	500V	[A]	190	225	233	285	433	502	545	692	796	1004	1299	1385	1680	–	–	–
	690V	[A]	112	161	233	285	433	502	545	606	692	866	1125	1385	1680	–	–	–
	1000V	[A]	–	103	147	173	173	173	173	268	346	433	519	–	–	–	–	–
Rated Operational Power, P_e	230V (1)	[kW]	55	75	90	110	132	160	200	200	250	315	400	500	560	–	–	–
	240V (1)	[kW]	55	75	110	110	132	160	200	200	250	315	400	500	630	–	–	–
	400V (1)	[kW]	110	132	160	200	250	250	355	400	400	560	710	800	1000	–	–	–
	415V (1)	[kW]	110	132	160	200	250	315	355	400	400	560	800	900	1100	–	–	–
	500V (1)	[kW]	132	160	160	200	315	355	355	500	500	710	800	1000	1300	–	–	–
	690V (1)	[kW]	90	132	200	250	400	500	500	560	710	800	1100	1400	1700	–	–	–
	1000V (1)	[kW]	–	132	200	250	250	250	250	355	500	630	710	–	–	–	–	–

(1) Power ratings at 50 Hz: Preferred values according to IEC 60947-4-1

Table 46 - Main Circuits

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
Switching of Power Transformers, AC-6a (50 Hz)																		
$\frac{\text{Inrush Current}}{\text{Rated transformer current}} = n$																		
n = 30	≥ 230V	[A]	70	79	111	115	143	143	165	200	252	263	286	430	524	362	–	–
	≥ 240V	[A]	70	79	111	115	143	143	165	200	252	263	286	430	524	362	–	–
	≥ 400V	[A]	70	79	111	115	143	143	165	200	252	263	286	430	524	362	–	–
	≥ 415V	[A]	70	79	111	115	143	143	165	200	252	263	286	430	524	362	–	–
	≥ 500V	[A]	70	79	111	115	143	143	165	200	252	263	286	–	–	362	–	–
	≥ 690V	[A]	70	79	111	115	143	143	165	200	252	263	286	–	–	362	–	–
	≥ 1000V	[A]	–	–	–	–	–	–	–	–	–	–	–	–	–		–	–
Apparent Power	230V	[kVA]	28	31	44	46	57	57	66	80	100	105	114	171	209	144	–	–
	240V	[kVA]	29	33	46	48	59	59	69	83	105	109	119	179	218	150	–	–
	400V	[kVA]	48	55	77	80	99	99	114	139	175	182	198	298	363	251	–	–
	415V	[kVA]	50	56	79	82	102	102	117	142	179	187	203	305	372	257	–	–
	500V	[kVA]	61	68	96	100	124	124	143	173	218	228	248	–	–	314	–	–
	690V	[kVA]	84	94	133	137	171	171	197	239	301	314	342	–	–	433	–	–
	1000V	[kVA]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
n = 20	≥ 690V	[A]	105	119	167	173	215	215	248	300	378	395	429	–	–	543	–	–
n = 15	≥ 690V	[A]	140	158	222	230	286	286	330	400	504	526	572	–	–	724	–	–
60 Hz Peak Inrush/peak rated transformer current																		
n = 30	≥ 660V	[A]	70	79	111	115	143	143	165	200	252	263	286	430	524	362	–	–
Apparent Power	200V	[kVA]	24	27	38	40	50	50	57	69	87	91	99	149	182	125	–	–
	208V	[kVA]	25	28	40	41	52	52	59	72	91	95	103	155	189	130	–	–
	240V	[kVA]	29	33	46	48	59	59	69	83	105	109	119	179	218	150	–	–
	480V	[kVA]	58	66	92	96	119	119	137	166	210	219	238	357	436	301	–	–
	600V	[kVA]	73	82	115	120	149	149	171	208	262	273	297	447	545	376	–	–
	660V	[kVA]	80	90	127	131	163	163	189	229	288	301	327	492	599	414	–	–
n = 20	≥ 660V	[A]	105	119	167	173	215	215	248	300	378	395	429	645	786	543	–	–
Apparent Power	200V	[kVA]	36	41	58	60	74	74	86	104	131	137	149	223	272	188	–	–
	208V	[kVA]	38	43	60	62	77	77	89	108	136	142	155	232	283	196	–	–
	240V	[kVA]	44	49	69	72	89	89	103	125	157	164	178	268	327	226	–	–
	480V	[kVA]	87	99	139	144	179	179	206	249	314	328	357	536	653	451	–	–
	600V	[kVA]	109	124	174	180	223	223	258	312	393	410	446	670	817	564	–	–
	660V	[kVA]	120	136	191	198	246	246	284	343	432	452	490	737	899	621	–	–
n = 15	≥ 660V	[A]	140	158	222	230	286	286	330	400	504	526	572	860	1048	724	–	–
Apparent Power	200V	[kVA]	48	55	77	80	99	99	114	139	175	182	198	298	363	251	–	–
	208V	[kVA]	50	57	80	83	103	103	119	144	182	190	206	310	378	261	–	–
	240V	[kVA]	58	66	92	96	119	119	137	166	210	219	238	357	436	301	–	–
	480V	[kVA]	116	131	185	191	238	238	274	333	419	437	476	715	871	602	–	–
	600V	[kVA]	145	164	231	239	297	297	343	416	524	547	594	894	1089	752	–	–
	660V	[kVA]	160	181	254	263	327	327	377	457	576	601	654	983	1198	828	–	–

Table 47 - Main Circuits

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
Switching of 3-phase Capacitors, AC-6b (50 Hz)																		
Single capacitor 40 °C	230V	[kVAR]	40	50	60	75	85	100	110	120	140	170	220	250	300	–	–	–
	240V	[kVAR]	40	50	60	75	85	100	110	120	140	170	220	250	300	–	–	–
	400V	[kVAR]	75	90	110	130	145	165	200	210	240	285	400	450	500	–	–	–
	415V	[kVAR]	75	90	110	130	145	165	200	210	240	285	400	450	500	–	–	–
	500V	[kVAR]	83	110	140	160	180	210	240	260	325	350	490	550	600	–	–	–
	690V	[kVAR]	80	110	135	170	200	240	280	300	325	440	600	650	800	–	–	–
	1000V	[kVAR]	-	100	140	150	155	160	170	250	300	350	450	–	–	–	–	–
Single capacitor 55 °C	230V	[kVAR]	40	50	60	75	85	100	110	120	140	170	220	250	300	–	–	–
	240V	[kVAR]	40	50	60	75	85	100	110	120	140	170	220	250	300	–	–	–
	400V	[kVAR]	75	90	110	130	145	165	200	210	240	285	400	450	500	–	–	–
	415V	[kVAR]	75	90	110	130	145	165	200	210	240	285	400	450	500	–	–	–
	500V	[kVAR]	83	110	140	160	180	210	240	260	325	350	490	550	600	–	–	–
	690V	[kVAR]	80	110	135	170	200	240	280	300	325	440	600	650	800	–	–	–
	1000V	[kVAR]	–	100	140	150	155	160	170	250	300	350	450	–	–	–	–	–
Single capacitor 70 °C	230V	[kVAR]	35	42	45	57	70	85	100	105	120	160	190	230	280	–	–	–
	240V	[kVAR]	35	42	45	57	70	85	100	105	120	160	190	230	280	–	–	–
	400V	[kVAR]	65	74	83	105	135	155	180	195	225	275	370	430	480	–	–	–
	415V	[kVAR]	65	74	83	105	135	155	180	195	225	275	370	430	480	–	–	–
	500V	[kVAR]	78	96	102	130	165	196	220	241	300	340	435	530	570	–	–	–
	690V	[kVAR]	75	110	135	160	200	240	260	300	325	440	600	630	750	–	–	–
	1000V	[kVAR]	–	95	120	130	140	150	160	220	270	300	400	–	–	–	–	–
60 Hz Single Capacitor (cULus)																		
Single capacitor 40 °C	208V	[kVAR]	33	41	50	67	83	100	125	119	142	178	214	–	346	–	–	–
	240V	[kVAR]	38	48	57	77	95	115	144	137	164	205	247	–	398	–	–	–
	480V	[kVAR]	75	100	125	150	200	250	300	274	329	411	494	–	832	–	–	–
	600V	[kVAR]	100	125	150	200	250	300	350	343	410	514	618	–	1040	–	–	–
Switching of Lamps																		
Gas discharge lamps AC-5a	open	[A]	116	146	190	205	265	305	370	400	460	580	750	877	1072	812	1332	1722
UL Ballast Ratings		[A]	160	200	250	300	400	450	520	–	–	–	–	–	–	–	–	–
Filament AC-5b	230/ 240V	[A]	116	146	190	205	265	305	370	400	460	580	750	877	1072	812	1332	1722

Table 48 - Main Circuits

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
Switching of DC Loads—Non-inductive or slightly inductive loads or resistance furnaces DC-1 at 60 °C																		
1 pole	≤ 72V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1350	1650	1250	2050	–
	90V	[A]	160	200	250	350	400	500	520	–	–	–	–	–	–	–	–	–
	100V	[A]	–	–	250	350	400	500	520	–	–	–	–	–	–	–	–	–
	110V	[A]	–	–	–	–	400	500	520	600	700	800	1050	1350	1650	1250	2050	–
2 poles in series	≤ 72V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1350	1650	1250	2050	–
	110V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1350	1650	1250	2050	–
	175V	[A]	160	200	250	350	400	500	520	600	700	800	1050	–	–	–	–	–
	200V	[A]	–	–	250	350	400	500	520	600	700	800	1050	–	–	–	–	–
	220V	[A]	–	–	–	–	400	500	520	600	700	800	1050	–	–	–	–	–
3 poles in series	≤ 72V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1350	1650	1250	2050	–
	110V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1350	1650	1250	2050	–
	175V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1350	1650	1250	2050	–
	220V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1350	1650	1250	2050	–
	260V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1350	1650	1250	2050	–
	300V	[A]	–	–	250	350	400	500	520	600	700	800	1050	1350	1650	1250	2050	–
	340V	[A]	–	–	–	–	400	500	520	600	700	800	1050	1350	1650	1250	2050	–
	600V	[A]	–	–	–	–	–	–	–	600	700	800	1050	1350	1650	1250	2050	–
	850V	[A]	–	–	–	–	–	–	–	–	–	800	1050	1350	1650	1250	2050	–
Shunt-wound Motors—Starting, reverse current breaking, reversing, stepping DC-3, 60 °C (L/R ≤2 ms)																		
3 poles in series	24V	[A]	145	160	250	275	350	400	450	600	700	800	1050	–	–	–	–	–
	48/60V	[A]	145	160	250	275	350	400	450	600	700	800	1050	–	–	–	–	–
	110V	[A]	145	160	250	275	350	400	450	600	700	800	1050	–	–	–	–	–
	220V	[A]	145	160	250	275	350	400	450	600	700	800	1050	–	–	–	–	–
	600V	[A]	–	–	–	–	–	–	–	600	700	800	1050	–	–	–	–	–
Series-wound Motors—Starting, reverse current breaking, reversing, stepping DC-5, 60 °C (L/R ≤7.5 ms)																		
3 poles in series	24V	[A]	145	160	250	275	350	400	450	600	700	800	1050	–	–	–	–	–
	48/60V	[A]	145	160	250	275	350	400	450	600	700	800	1050	–	–	–	–	–
	110V	[A]	145	160	250	275	350	400	450	600	700	800	1050	–	–	–	–	–
	220V	[A]	145	160	250	275	350	400	450	600	700	800	1050	–	–	–	–	–
	600V	[A]	–	–	–	–	–	–	–	600	700	800	1050	–	–	–	–	–
Short Time Withstand I_{CW} 40 °C	1 s	[A]	1300	1460	1900	2050	2650	3050	3700	4600	4600	7000	7000	10000	12000	8000	12000	12000
	10 s	[A]	928	1168	1520	1640	2120	2440	2960	4400	4400	6400	6400	8000	10000	7200	10000	10000
	30 s	[A]	536	674	878	947	1224	1409	1709	3100	3100	4500	4500	6000	7500	5200	7500	7500
	1 min	[A]	379	477	621	670	865	996	1208	2500	2500	3500	3500	4500	5500	4000	5500	5500
	15 min	[A]	160	225	275	350	400	500	600	840	840	1300	1300	1600	2200	1500	2200	2800
Resistance and Power Dissipation																		
Main current circuit resistance		[mΩ]	0.469	0.454	0.198	0.204	0.200	0.200	0.200	0.083	0.086	0.050	0.045	0.044	0.029	0.050	0.030	0.028
Power dissipation per pole at I_e AC-1, 400V		[W]	12	23	15	25	32	50	72	30	42	32	50	80	80	80	125	200
Power dissipation per pole at I_e AC-3/ 400V		[W]	6	10	7	8	14	19	27	16	21	17	28	50	50	–	–	–
Total power dissipation at:																		
I_e AC-3, 400V; AC/DC control (120-250V)		[W]	21	33	23.5	26.5	46.5	61.5	85.5	53	68	56	89	171	171	–	–	–
Maximum Switching Frequency	AC-1	ops /hr	300							300				60		300	60	15
	AC-3	ops /hr	300							300				60		–	–	–
	AC-2, AC-4	ops /hr	150							60				60		–	–	–
Weight																		
AC/DC (Electronic) with bar connections		kg (lbs.)	1.50 (3.3)	1.50 (3.3)	3 (6.6)	3 (6.6)	4.64 (10.2)	4.64 (10.2)	4.64 (10.2)	12 (26.4)	12 (26.4)	15 (33)	15 (33)	34 (74.8)	35 (77)	16 (35.2)	35 (77)	45 (99)
with built-in cable clamps		kg (lbs.)	1.75 (3.85)	1.75 (3.85)	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Table 49 - Short-circuit Current Ratings

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
Short Circuit Coordination (Max. Fuse or Circuit Breaker Rating) Per IEC 60947-4-1																		
DIN Fuses - gG			100 kA Available Fault Current															
	Type "2" (400V)	[A]	250	250	315	315	400	500	630	630	630	800	800	1000	1250	–	–	–
			80 kA Available Fault Current															
	Type "2" (690V)	[A]	160	200	315	315	400	425	500	500	630	800	800	1000	1600	–	–	–
MCCB			70 kA Available Fault Current															
	Type "2" (400V)	[A]	160	160	320	320	400	630	630	630	630	800	1000	1600	1600	–	–	–
Short Circuit Current Rating (Max. Fuse or Circuit Breaker Rating) Per UL 60947 and CSA 22.2 No. 14 (contactor and fuses or circuit breaker only)																		
UL Class RK5 Fuses			10 kA Available Fault Current															
	Type 1 Combination (600V)	[A]	250	250	400	400	–	–	–	–	–	–	–	–	–	–	–	–
UL Class L Fuses			18 kA Available Fault Current															
	Type 1 Combination (600V)	[A]	–	–	–	–	800	800	800	1000	–	–	–	–	–	–	–	–
			30 kA Available Fault Current															
	Type 1 Combination (600V)	[A]	–	–	–	–	–	–	–	–	1000	–	–	–	–	–	–	–
			85 kA Available Fault Current															
	Type 1 Combination (600V)	[A]	–	–	–	–	–	–	–	–	–	–	–	1600	2000	–	–	–
UL Class J and CSA HRCI-J Fuses			100 kA Available Fault Current															
	Type 1 Combination (600V)	[A]	250	250	400	400	600	600	600	600	600	–	–	–	–	–	–	–
	Type 2 Combination (600V)	[A]	200	200	400	400	600	600	600	600	600	–	–	–	–	–	–	–
UL Class L Fuses			100 kA Available Fault Current															
	Type 1 Combination (600V)	[A]	–	–	–	–	–	–	–	800	800	1200	1200	–	–	1600	–	–
	Type 2 Combination (600V)	[A]	–	–	–	–	–	–	–	–	–	1200	1200	–	–	–	–	–
UL Inverse-Time Circuit Breaker			42 kA Available Fault Current															
	Type 1 Combination (480V)	[A]	–	–	–	–	–	–	–	–	–	1200	1200	2000	2000	–	–	–
			65 kA Available Fault Current															
	Type 2 Combination (480V)	[A]	250	250	400	400	800	800	800	800	800	800	800	–	–	–	–	–
			84 kA Available Fault Current															
	Type 1 Combination (480V)	[A]	–	–	–	–	–	–	–	800	800	–	–	–	–	–	–	–
			89 kA Available Fault Current															
	Type 1 Combination (480V)	[A]	–	–	–	–	–	–	–	–	–	800	800	–	–	–	–	–
			100 kA Available Fault Current															
	Type 1 Combination (480V)	[A]	250	250	400	400	800	800	800	–	–	–	–	–	–	–	–	–
			25 kA Available Fault Current															
	Type 2 Combination (600V)	[A]	250	250	–	–	–	–	–	–	–	–	–	–	–	–	–	–
			35 kA Available Fault Current															
	Type 2 Combination (600V)	[A]	–	–	400	400	800	800	800	800	800	800	800	–	–	–	–	–
			42 kA Available Fault Current															
	Type 1 Combination (600V)	[A]	–	–	–	–	800	800	800	800	800	800	800	–	–	–	–	–
			50 kA Available Fault Current															
	Type 1 Combination (600V)	[A]	250	250	–	–	–	–	–	–	–	–	–	–	–	–	–	–
			65 kA Available Fault Current															
	Type 1 Combination (600V)	[A]	–	–	400	400	400	400	400	–	–	–	–	–	–	–	–	–

Table 50 - Coil Data

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
Operating Limits																		
50/60 Hz	pick-up	[x *Us*]	0.85...1.1															
	dropout	[x *Us*]	0.55															
DC control	pick-up	[x *Us*]	0.80...1.1															
	dropout	[x *Us*]	0.55															
24...60V AC	pick-up	[VA]	225		165		475			–		–		–		–	–	
	hold-in	[VA]	5.5		6		8.5			–		–		–		–	–	
48...130V AC	pick-up	[VA]	170		175		340			1215		1100		–		1100	–	
	hold-in	[VA]	4		4		17			12		12		–		12	–	
100...250V AC	pick-up	[VA]	130		220		385			955		880		2450		880	2450	
	hold-in	[VA]	6		7		17.5			12		12		48		12	48	
250...500V AC	pick-up	[VA]	205		185		420			950		985		–		985	–	
	hold-in	[VA]	16		16		21			12		12		–		12	–	
24...60V DC	pick-up	[W]	210		205		400			900		785		–		785	–	–
	hold-in	[W]	2.5		2.5		3.5			5		5.5		–		5.5	–	–
48...130V DC	pick-up	[W]	130		130		360			1150		1020		–		1020	–	–
	hold-in	[W]	2.5		2.5		2.5			5		5		–		5	–	–
100...250V DC	pick-up	[W]	135		190		410			895		880		2290		880	2290	
	hold-in	[W]	3		2.5		4.5			5		5		20.5		5	20.5	
250...500V DC	pick-up	[W]	205		190		600			885		910		–		910	–	–
	hold-in	[W]	4		4		4.7			7.5		7.5		–		7.5	–	–
PLC Interface			10 mA @ 24V DC															
Operating Times																		
AC or DC	closing delay	[ms]	20...55		25...60		30...60			50...120		50...120		50...80		50...120	50...80	
	opening delay	[ms]	40...70		45...80		45...80			33...70		33...70		35...55		33...70	35...55	
With PLC Interface	closing delay	[ms]	20...31		25...45		25...45			40...60		40...90		40...65		40...90	40...65	
	opening delay	[ms]	24...34		25...45		25...45			10...30		10...30		10...30		10...30	10...30	

Conductors

Table 51 - Cross Sections, Screw Type Terminals

100/104-E, 100S/104S-E			9	12	16	26	32	38	40	52	65	80	96
Conductor Cross Sections—Main Contacts Terminal Type						(1)				(2)			(3)
	1 conductor	[mm²]	0.75…6	0.75…6	0.75…6	1.5…10	1.5…10	1.5…10	4…35	4…35	4…35	6…50	6…50
	2 conductors	[mm²]	0.75…6	0.75…6	0.75…6	1.5…10	1.5…10	1.5…10	4…35	4…35	4…35	6…50	6…50
	1 conductor	[mm²]	1…6	1…6	1…6	2.5…10	2.5…10	2.5…10	6…35	6…35	6…35	6…70	6…70
	2 conductors	[mm²]	1…6	1…6	1…6	2.5…10	2.5…10	2.5…10	6…35	6…35	6…35	6…50	6…50
Recommended torque		[N•m]	1.5	1.5	1.5	2.5	2.5	2.5	4	4	4	6	6
Cross Section per UL/CSA		[AWG]	16…10	16…10	16…10	14…8	14…8	14…8	10…2	10…2	10…2	6…1	6…1
Recommended torque		[lb•in]	13	13	13	22	22	22	35	35	35	53	53
Conductor Cross Sections- Coil and Auxiliary Contact Terminal Type								(1)					
	1 conductor	[mm²]	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5
	2 conductors	[mm²]	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5	0.75…2.5
	1 conductor	[mm²]	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5
	2 conductors	[mm²]	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5	1…2.5
Recommended torque		[N•m]	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Cross Section per UL/CSA		[AWG]	18…14	18…14	18…14	18…14	18…14	18…14	18…14	18…14	18…14	18…14	18…14
Recommended torque		[lb-in]	11	11	11	11	11	11	11	11	11	11	11

(1) Pozidriv No. 2 / Blade No. 3 screw
(2) Pozidriv No. 2 / Blade No. 4 screw
(3) Hexagonal socket screw

Table 52 - Cross Sections, Screw Type Terminals

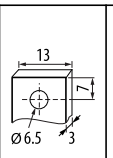
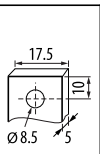
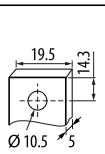
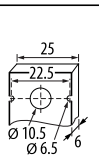
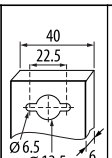
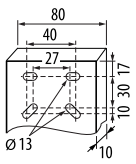
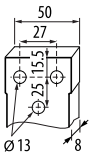
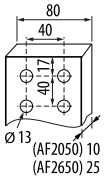
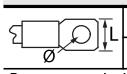
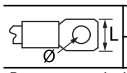
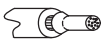
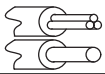
100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
Main Terminals																		
Conductor Cross Sections — Main Contacts (Terminal type)																
	(1) conductor	[mm²]	10…95		10…150		16…185			–		–		–		–		–
	Clamp Type		100-ECL146		100-ETL205		100-ETL370			–		–		–		–		–
Recommended torque		[N•m]	8		34		42			–		–		–		–		–
	(2) conductors	[mm²]	10…95		–		16…500			70…240		70…240		120…240	70…300	–		–
	Clamp Type		100-ECL146		–		100-ETL370B			100-ETL580		100-ETL750		100-ETL860	100-ETL1060	–		–
Recommended torque		[N•m]	8		–		42			31		43		43	57	–		–
	(3) conductors	[mm²]	–		–		–			–		70…500		120…500	70…750	70…240		–
	Clamp Type		–		–		–			–		100-ETL750		100-ETL860	100-ETL1060	100-ETL750		–
Recommended torque		[N•m]	–		–		–			–		43		43	57	43		–
	(4) conductors	[mm²]	–		–		–			–		–		120…500	70…750	–		–
	Clamp Type		–		–		–			–		–		100-ETL860	100-ETL1060	–		–
Recommended torque		[N•m]	–		–		–			–		–		43	57	–		–
	(6) conductors	[mm²]	–		–		–			–		–		–	70…750	–		–
	Clamp Type		–		–		–			–		–		–	100-ETL1060B	–		–
Recommended torque		[N•m]	–		–		–			–		–		–	57	–		–

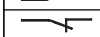
Table 52 - Cross Sections, Screw Type Terminals (Continued)

100/104-E, 100S-E			116 146	190 205	265 305 370	400 460	580 750	860	1060	1260	2050 2650
	L max.	[mm]	22	24	32	47	50	100		50	100
	Ø min.	[mm]	6	8	10	10	12	12		12	12
Recommended torque		[N•m]	9	18	28	35	45	45		45	45
Cross section per UL/CSA											
	(1) conductor	[AWG]	6...3/0	6...300 (1)	4...400 (1)	–	–	–	–	–	–
	Clamp Type		100-ECL146	100-ETL205	100-ETL370	–	–	–	–	–	–
Recommended torque		[lb-in]	80	300	375	–	–	–	–	–	–
	(2) conductors	[AWG]	6...3/0	–	4...500 (1)	2/0...500 (1)	2/0...500 (1)	4/0...500 (1)	1/0...750 (1)	2/0...500 (1)	–
	Clamp Type		100-ECL146	–	100-ETL370B	100-ETL580	100-ETL750	100-ETL860	100-ETL1060	100-ETL750	–
Recommended torque		[lb-in]	80	–	375	275	375	375	500	375	–
	(3) conductors	[AWG]	–	–	–	–	2/0...500 (1)	4/0...500 (1)	1/0...750 (1)	2/0...500 (1)	–
	Clamp Type		–	–	–	–	100-ETL750	100-ETL860	100-ETL1060	100-ETL750	–
Recommended torque		[lb-in]	–	–	–	–	375	375	500	375	–
	(4) conductors	[AWG]	–	–	–	–	–	4/0...500 (1)	1/0...750 (1)	–	–
	Clamp Type		–	–	–	–	–	100-ETL860	100-ETL1060	–	–
Recommended torque		[lb-in]	–	–	–	–	–	375	500	–	–
	(6) conductors	[AWG]	–	–	–	–	–	–	1/0...750 (1)	–	–
	Clamp Type		–	–	–	–	–	–	100-ETL1060B	–	–
Recommended torque		[lb-in]	–	–	–	–	–	–	500	–	–
	L max.	[in]	0.866	0.945	1.26	1.85	1.97	3.94		1.97	3.94
	Ø min.	[in]	0.236	0.315	0.394	0.394	0.472	0.472		0.472	0.472
Recommended torque		[lb-in]	80	160	248	310	398	398		398	398
Conductor Cross Sections – Coil and Auxiliary Contact Terminals (Terminal Type)											
	(1) conductor	[mm^2]	0.75...2.5								
	(2) conductors	[mm^2]	0.75...2.5								
	(1) conductor	[mm^2]	1...4								
	(2) conductors	[mm^2]	1...4								
Recommended torque		[N•m]	1...1.2								
Cross section per UL/CSA		[AWG]	18...14								
Recommended torque		[lb-in]	8.9...10.6								

(1) MCM

Auxiliary Contacts

Table 53 - Auxiliary Contacts

			Auxiliary contact for 100/104-E, 100S-E					
			Standard 100-EF/ESA*	Severe Appl. 100-ES*B/B3	Severe Appl. 100-ES*B/B3	Standard 100-ES1/2*	Standard 100-ES3/4*	Low Power 100-ES*-B*
Switching of AC Loads								
Rated Insulation voltage U_i			690V	250V	250V	690V	690V	250V
Rated operational voltage U_e			690V	125V	250V	690V	690V	125V
Rated impulse withstand voltage U_{imp}			6kV	–	–	6kV	6kV	1.5kV
AC-12 I_{th}	at 40 °C	[A]	16	0.1	2	16	16	0.1
	at 60 °C	[A]	–	–	–	–	–	–
AC-14 at rated voltage of	24V	[A]	–	0.1	–	–	–	0.1
	42/48V	[A]	–	0.1	–	–	–	0.1
	120V	[A]	–	0.1	–	–	–	0.1
AC-15 at rated voltage of	24V	[A]	6	–	2	6	6	–
	42/48V	[A]	6	–	2	6	6	–
	120V	[A]	6	–	2	6	6	–
	230V	[A]	4	–	2	4	4	–
	240V	[A]	4	–	2	4	4	–
	400V	[A]	3	–	–	3	3	–
	415V	[A]	3	–	–	3	3	–
	500V	[A]	2	–	–	2	2	–
	690V	[A]	2	–	–	2	2	–
Switching of DC Loads								
DC-12 L/R< 1 ms resistive loads at	24V DC	[A]	–	0.1	2	–	–	0.1
	48V DC	[A]	–	0.1	1	–	–	0.1
	110V DC	[A]	–	0.1	0.2	–	–	0.1
	220V DC	[A]	–	–	0.1	–	–	–
	440V DC	[A]	–	–	–	–	–	–
DC-14 L/R< 15 ms inductive loads with economy resistor in series at	24V DC	[A]	–	–	–	–	–	–
	48V DC	[A]	–	–	–	–	–	–
	110V DC	[A]	–	–	–	–	–	–
	220V DC	[A]	–	–	–	–	–	–
	440V DC	[A]	–	–	–	–	–	–
DC-13 switching electromagnets at	24V DC	[A]	6	–	–	3	6	–
	48V DC	[A]	2.8	–	–	1.5	2.8	–
	110V DC	[A]	0.55	–	–	0.55	0.55	–
	220V DC	[A]	0.27	–	–	0.3	0.3	–
	440V DC	[A]	0.13	–	–	–	–	–
Fuse gG								
Short-circuit protection with no welding of contacts per IEC 60947-5-2		[A]	10	0.1	10	10	10	0.1
		[A]	10	0.1	10	10	10	0.1
Protective Separation per IEC 60947-1, Annex N								
Min. switching capacity at 24V IEC 60947-5-4		[mA]	3	–	–	50	50	–
Min. switching capacity at 3V IEC 60947-5-4		[mA]	–	–	1	–	–	1
Load Carrying Capacity per UL/CSA								
Rated voltage	AC	[V]	600	125	250	600	600	125
Continuous rating	40 °C	[A]	10	0.1	2	10	10	0.1
Switching capacity	AC		A 600	–	–	A 600	A 600	–
Rated voltage	DC	[V]	600	110	220	250	250	125
Continuous rating	40 °C	[A]	2.5	0.1	0.1	2.5	2.5	0.1
Switching capacity	DC		Q 600	–	–	P 600	Q 300	–

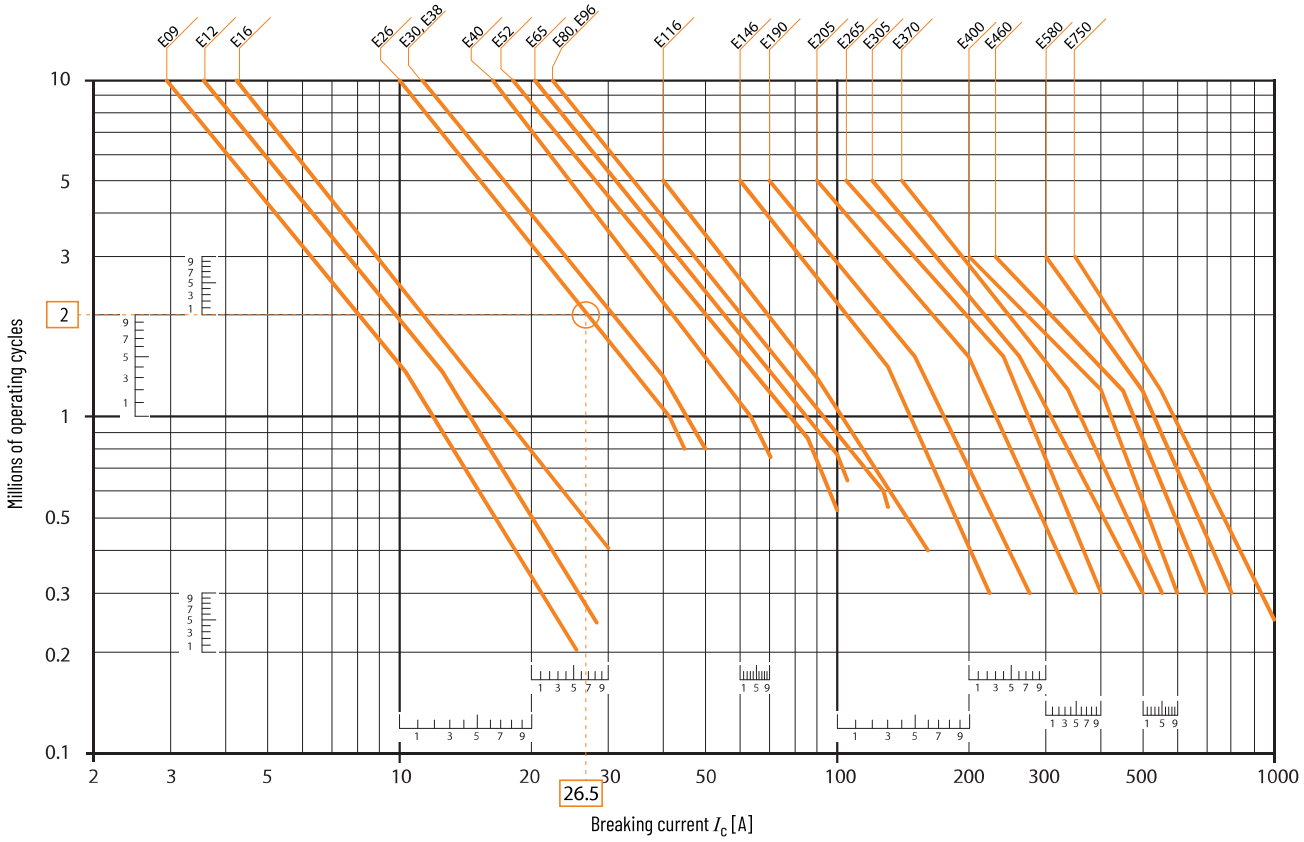
Life-Load Curves

3-pole Contactors — Electrical Durability

Figure 27 - Electrical durability for AC-1 utilization category - $U_e \leq 690V$

Switching non-inductive or slightly inductive loads. The breaking current I_c for AC-1 is equal to the rated operational current of the load.

Ambient temperature (see page 82) and maximum electrical switching frequency (see page 88).

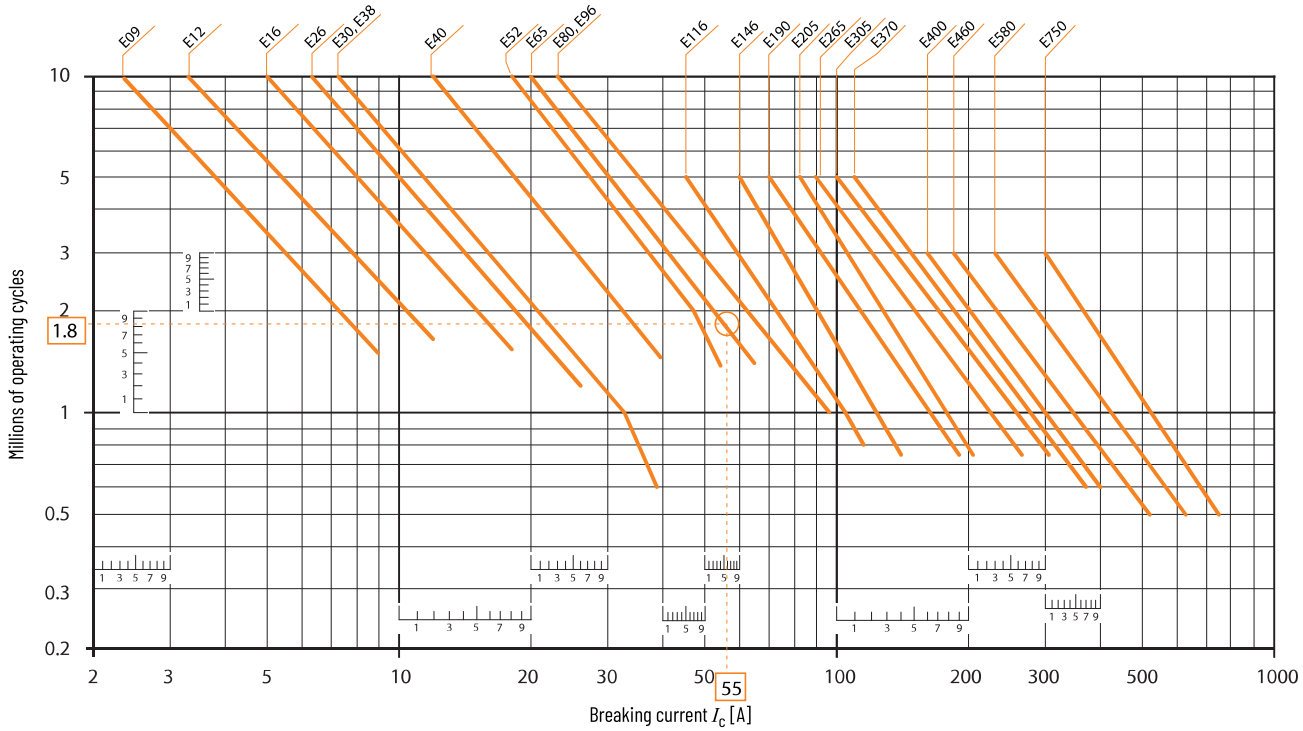


Cat. Nos. 100-E860, -E1060: The electrical durability at the rated current is 50,000 operating cycles.

Figure 28 - Electrical durability for AC-3 utilization category - $U_e \leq 440V$

Switching cage motors: starting and switching off running motors. The breaking current I_c for AC-3 is equal to the rated operational current I_e (I_e = motor full load current).

For ambient temperature (see page 82) and maximum electrical switching frequency (see page 88).

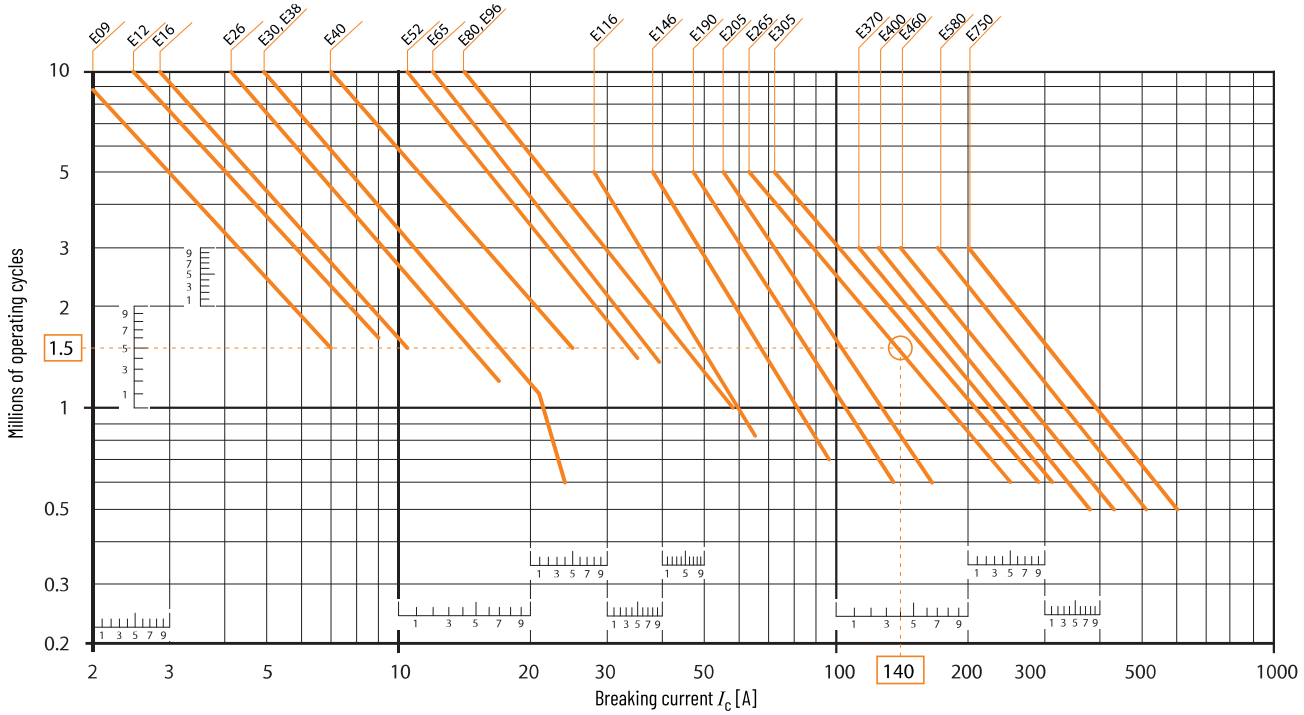


Cat. Nos. 100-E860, -E1060: The electrical durability at the rated current is 50,000 operating cycles.

Figure 29 - Electrical durability for AC-3 utilization category - 440V < U_e ≤ 690V

Switching cage motors: starting and switching off running motors. The breaking current Ic for AC-3 is equal to the rated operational current I_e (I_e = motor full load current).

For ambient temperature (see page 82) and maximum electrical switching frequency (see page 88).



Cat. Nos. 100-E860, -E1060: The electrical durability at the rated current is 50,000 operating cycles.

Figure 30 - Electrical durability for AC-2 or AC-4 utilization category - U_e ≤ 440V

Switching cage motors: starting, reverse operation and step-by-step operation. The breaking current I_c is equal to 2.5 x I_e for AC-2 and 6 x I_e for AC-4, keeping in mind that I_e is the motor rated operational current (I_e = motor full-load current). For maximum electrical switching frequency (see page 88).

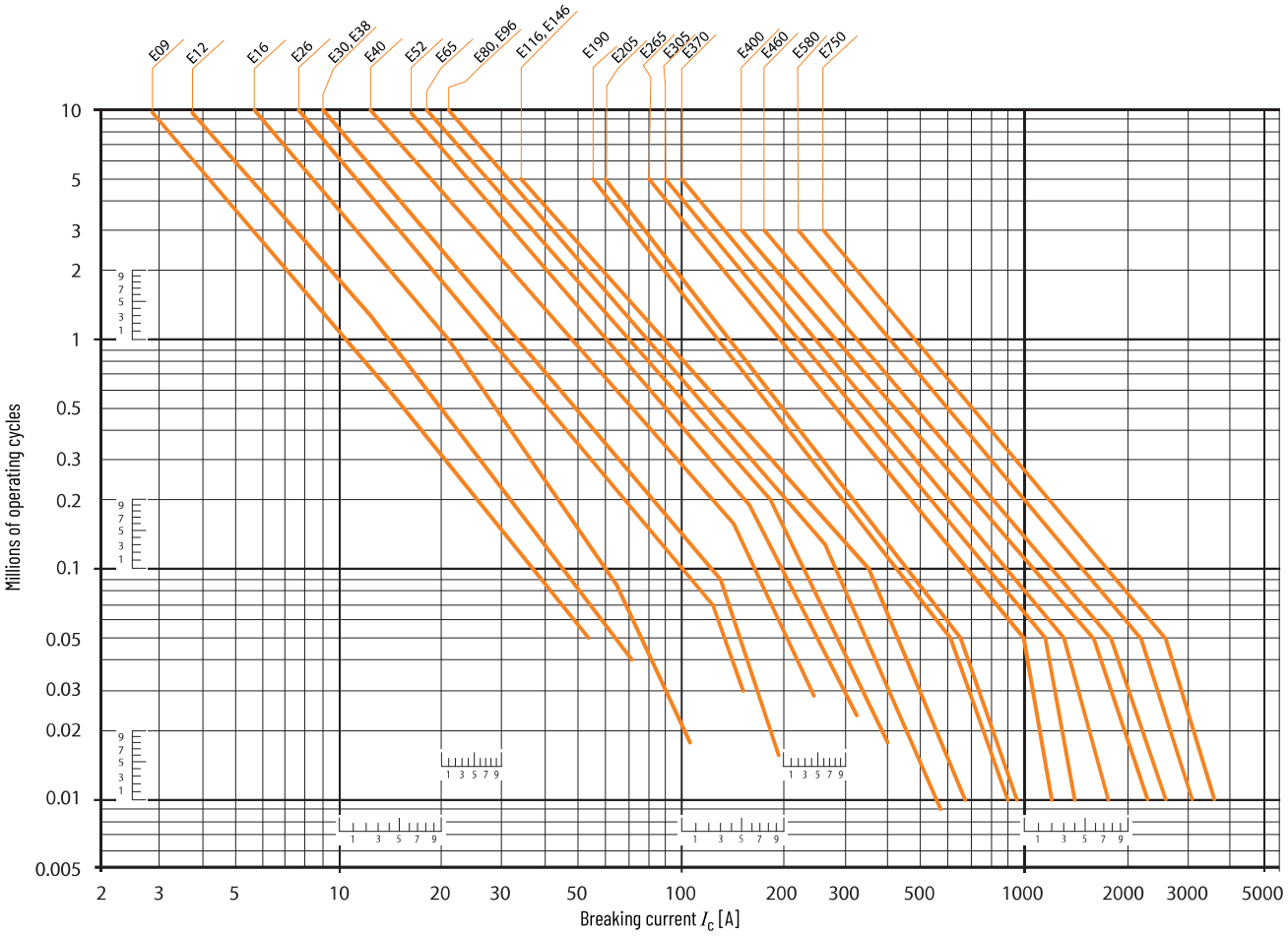
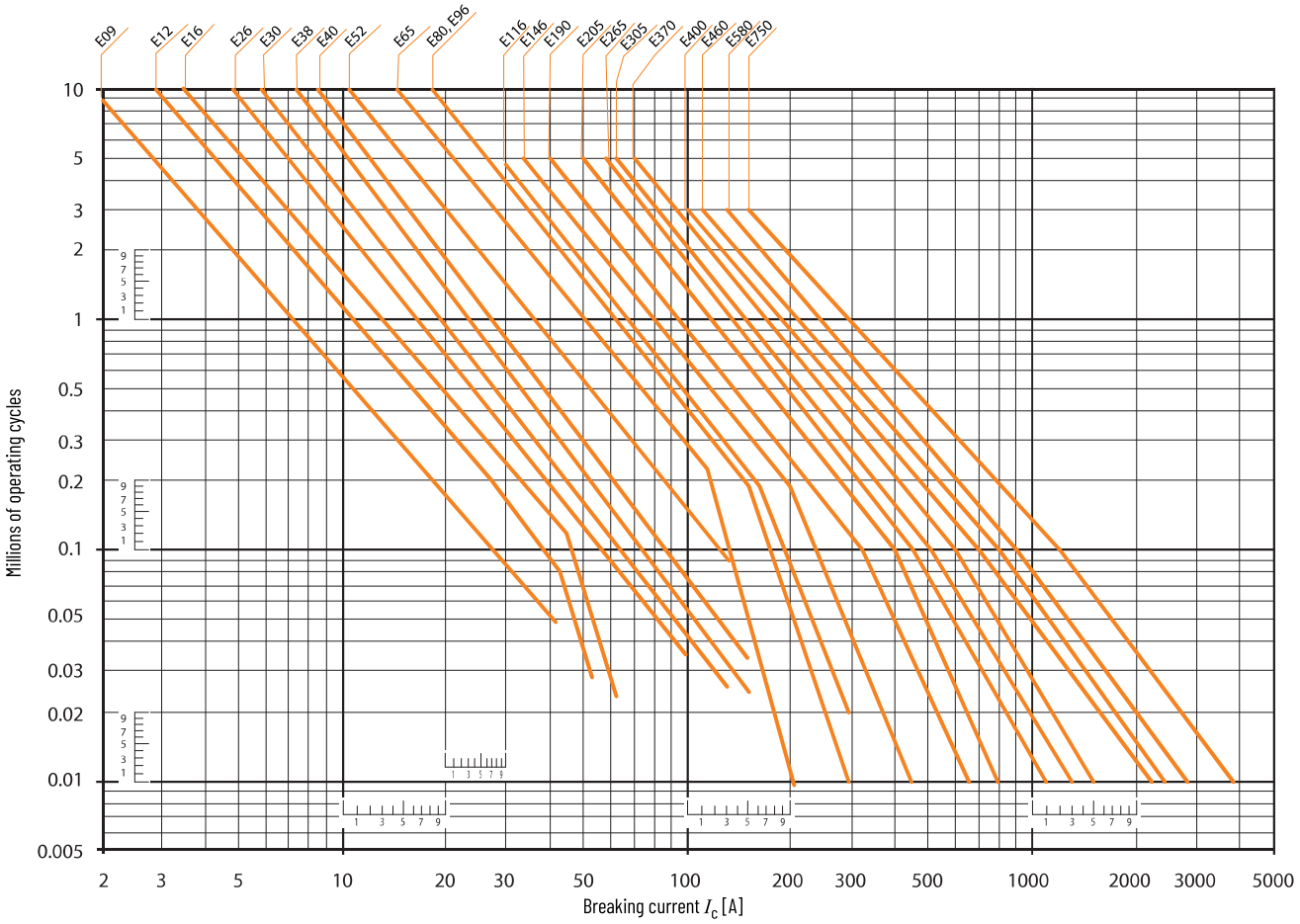


Figure 31 - Electrical durability for AC-2 or AC-4 utilization category - 440V < U_e ≤ 690V

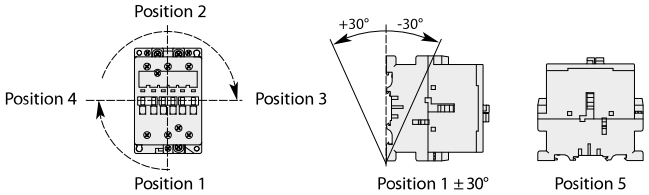
Switching cage motors: starting, reverse operation and step-by-step operation. The breaking current I_c is equal to 2.5 x I_e for AC-2 and 6 x I_e for AC-4, keeping in mind that I_e is the motor rated operational current (I_e = motor full load current). For maximum electrical switching frequency (see page 88).



Approximate Dimensions

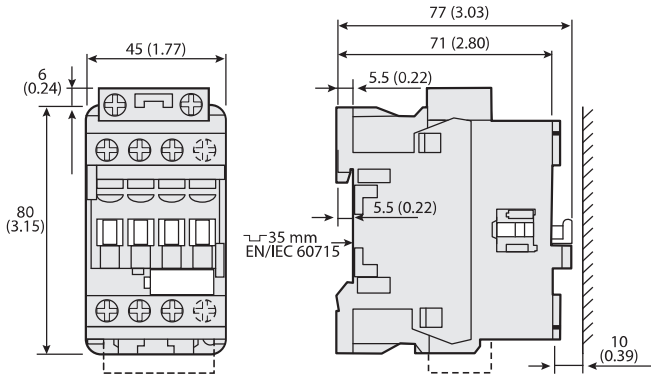
Dimensions are shown in millimeters (inches). Dimensions are not intended for manufacturing purposes.

Figure 32 - Mounting Position for 100-E09...100-E96 Devices— AC/DC and AC/DC with PLC input



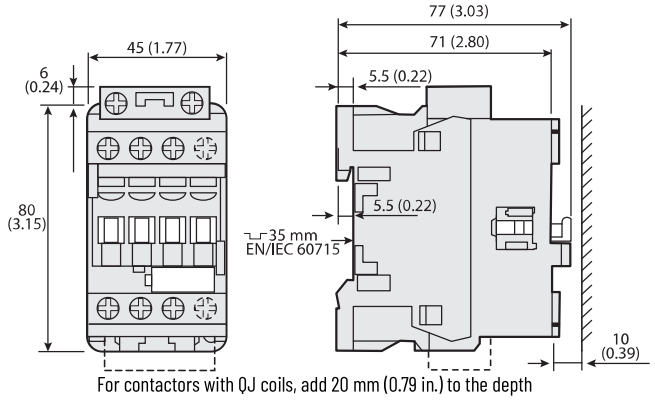
9...16 A Contactors

Figure 33 - 100-E09...100-E16 Contactors with Standard Coils



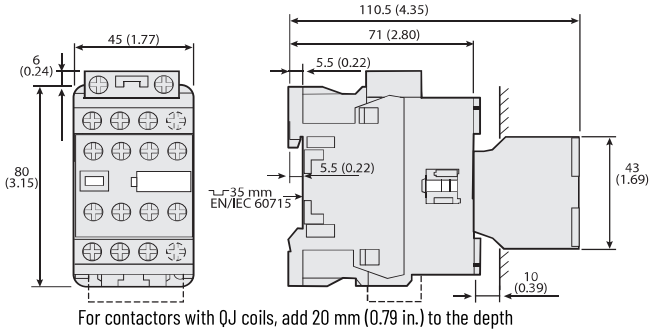
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 34 - 100-E09...100-E16 Contactors with Low-consumption Coils



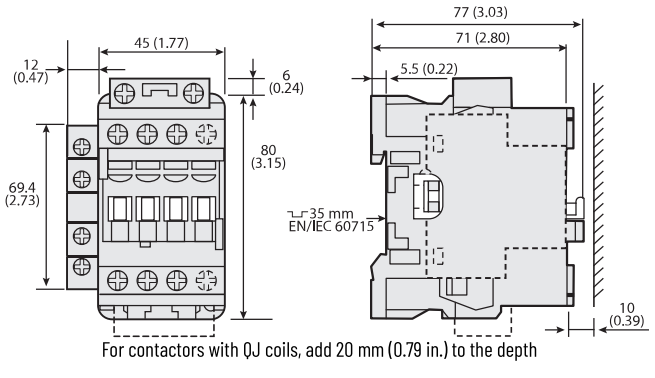
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 35 - 100-E09...100-E16 Contactors with Standard Coils and Front-mounted Auxiliary Contact



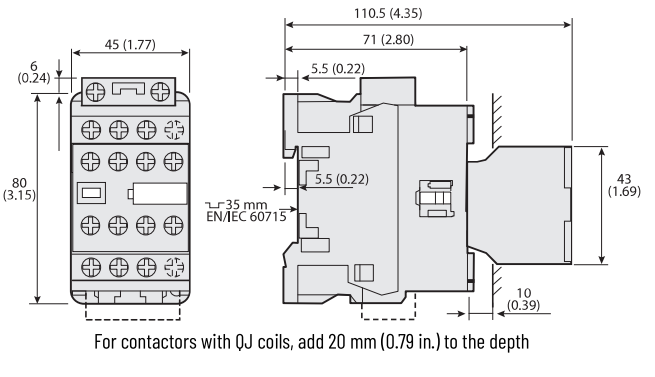
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 36 - 100-E09...100-E16 Contactors with Standard Coils and Side-mounted Auxiliary Contact



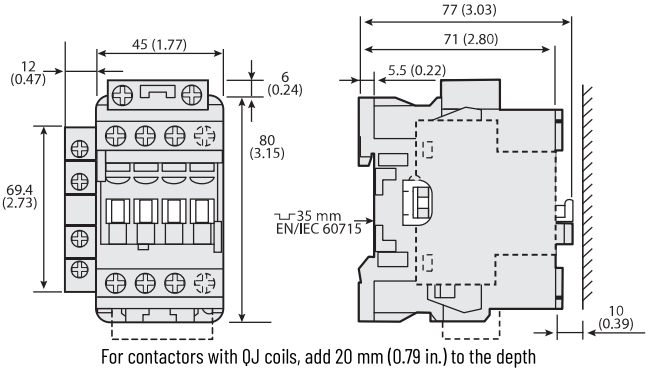
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 37 - 100-E09...100-E16 Contactors with Low-consumption Coils and Front-mounted Auxiliary Contact



For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 38 - 100-E09...100-E16 Contactors with Low-consumption Coils and Side-mounted Auxiliary Contact



For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 39 - 104-E09...104-E16 Reversing Contactors with Cat. No. 100-EMCA02 Mechanical and Electrical Interlock

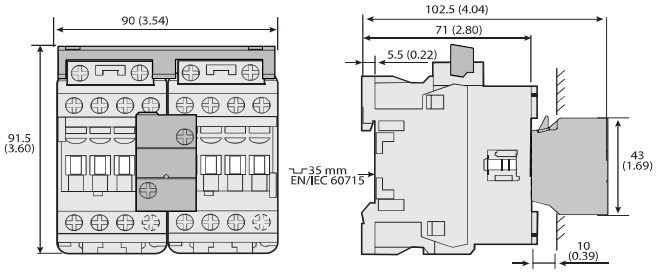
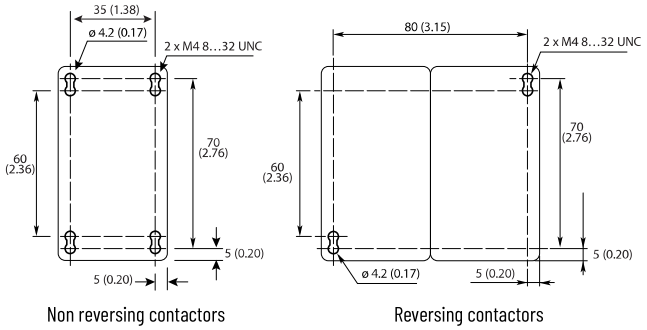


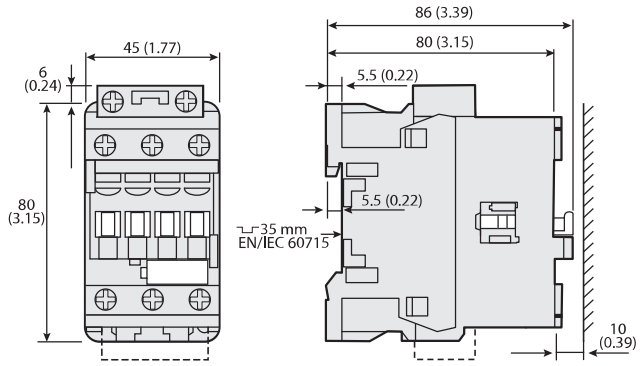
Figure 40 - Drilling Template for 9...16 A Contactors



Non reversing contactors Reversing contactors

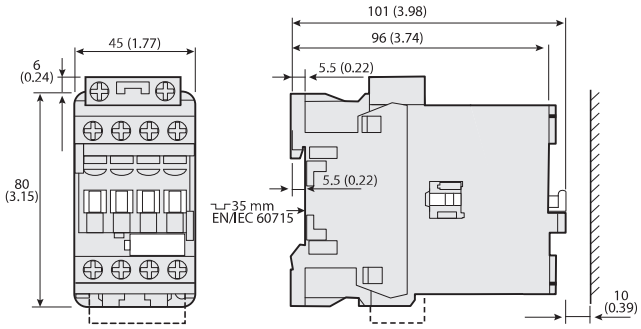
26...38 A Contactors

Figure 41 - 100-E26...100-E38 3-Pole Contactors with Standard Coils



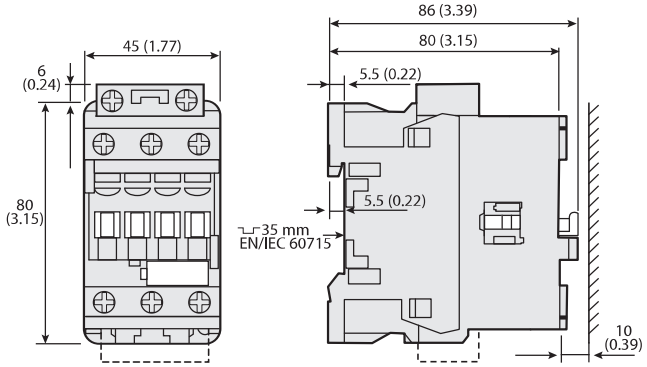
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 42 - 100-E26...100-E38 4-Pole Contactors with Standard Coils



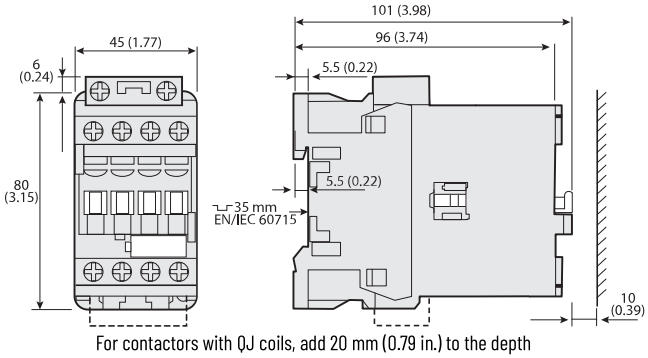
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 43 - 100-E26...100-E38 3-Pole Contactors with Low-consumption Coils



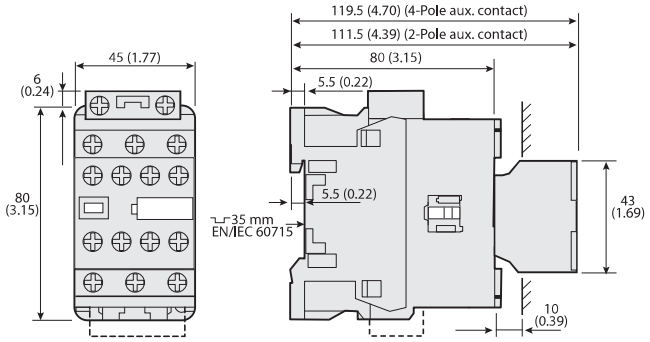
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 44 - 100-E26...100-E38 4-Pole Contactors with Low-consumption Coils



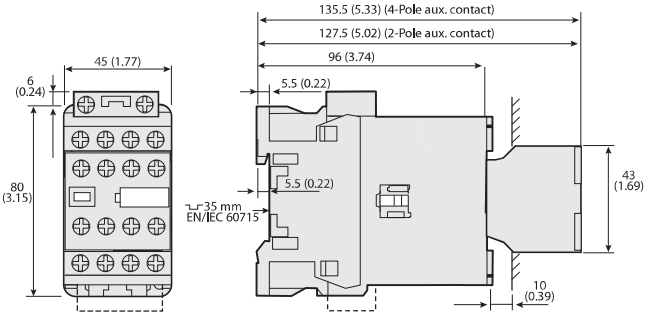
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 45 - 100-E26...100-E38 3-Pole Contactors with Standard Coils and Front-mounted Auxiliary Contact



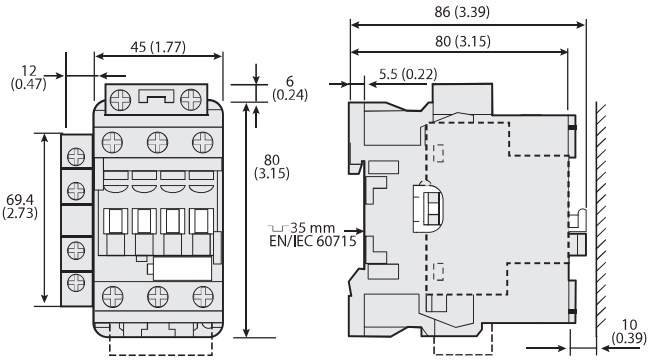
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 46 - 100-E26...100-E38 4-Pole Contactors with Standard Coils and Front-mounted Auxiliary Contact



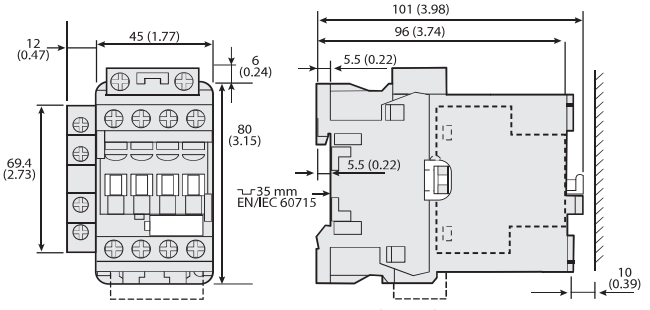
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 47 - 100-E26...100-E38 3-Pole Contactors with Standard Coils and Side-mounted Auxiliary Contact



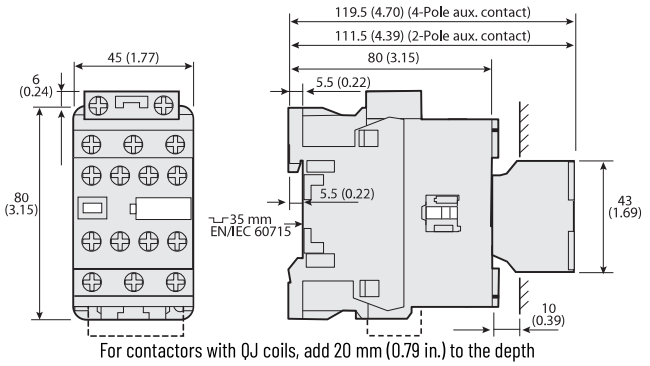
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 48 - 100-E26...100-E38 4-Pole Contactors with Standard Coils and Side-mounted Auxiliary Contact



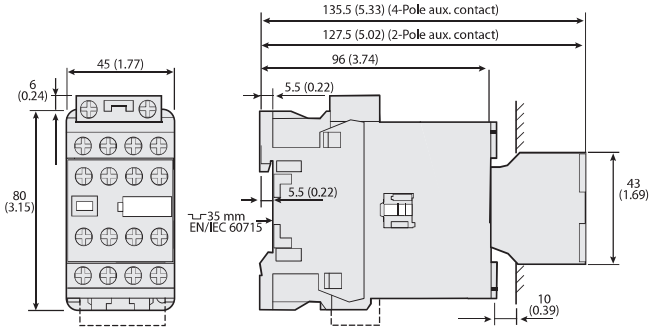
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 49 - 100-E26...100-E38 3-Pole Contactors with Low-consumption Coils and Front-mounted Auxiliary Contact



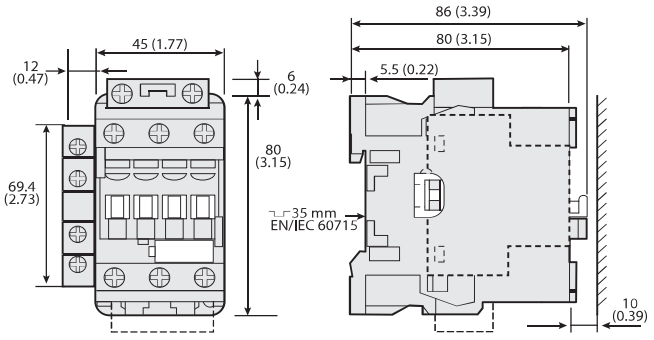
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 50 - 100-E26...100-E38 4-Pole Contactors with Low-consumption Coils and Front-mounted Auxiliary Contact



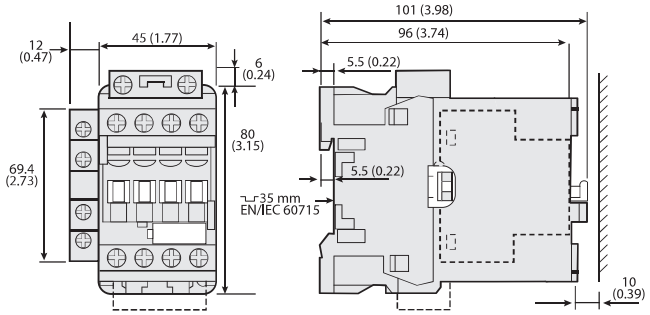
For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 51 - 100-E26...100-E38 3-Pole Contactors with Low-consumption Coils and Side-mounted Auxiliary Contact



For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 52 - 100-E26...100-E38 4-Pole Contactors with Low-consumption Coils and Side-mounted Auxiliary Contact



For contactors with QJ coils, add 20 mm (0.79 in.) to the depth

Figure 53 - 104-E26...104-E38 Reversing Contactors with Cat. No. 100-EMCA02 Mechanical and Electrical Interlock

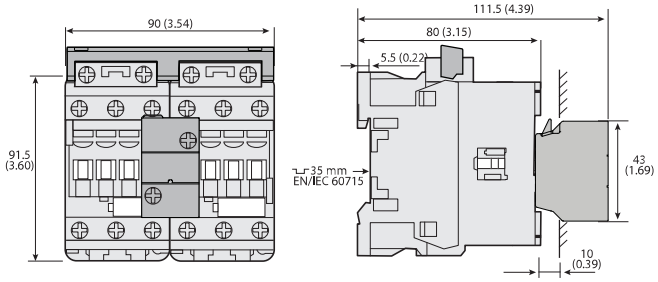
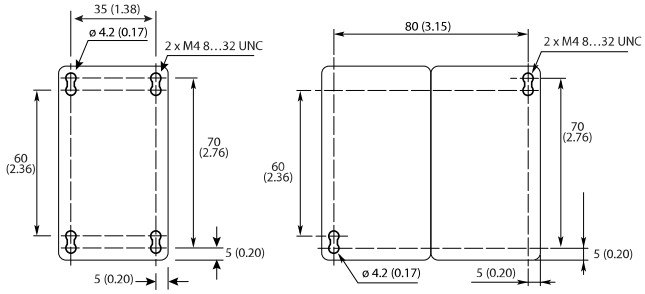


Figure 54 - Drilling Template for 26...38 A Contactors



Non reversing contactors Reversing contactors

40...65 A Contactors

Figure 55 - 100-E40...100-E65 3-Pole Contactors

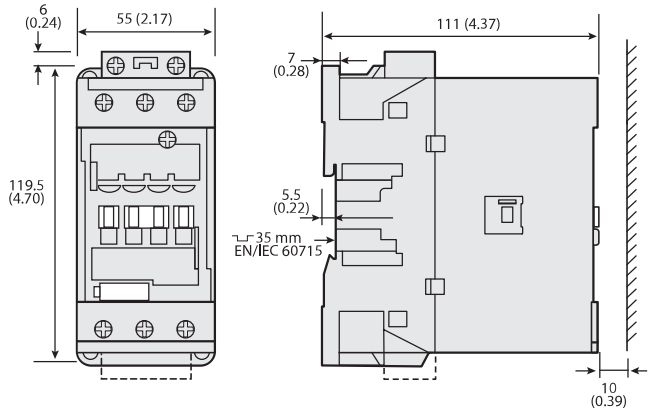


Figure 56 - 100-E40...100-E65 3-Pole Contactors with Front-mounted Auxiliary Contact

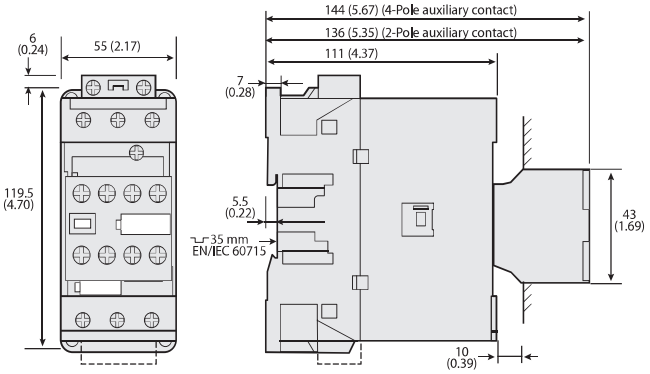


Figure 57 - 100-E40...100-E65 3-Pole Contactors with Side-mounted Auxiliary Contact

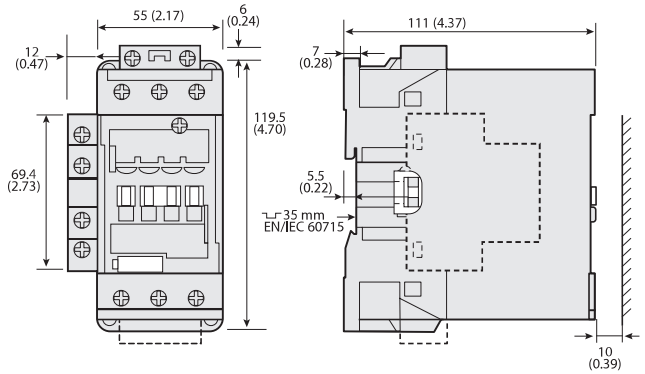


Figure 58 - 104-E40...104-E65 Reversing 3-Pole Contactors

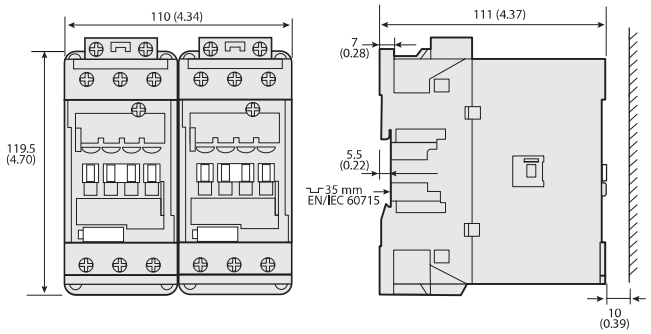


Figure 59 - Drilling Template for 40...65 A 3-Pole Contactors

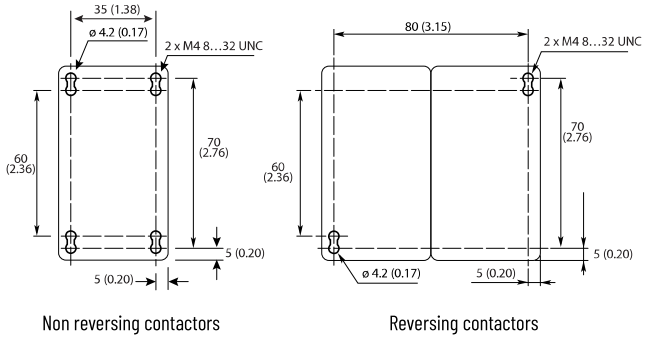


Figure 60 - 100-E40...100-E52 4-Pole Contactors

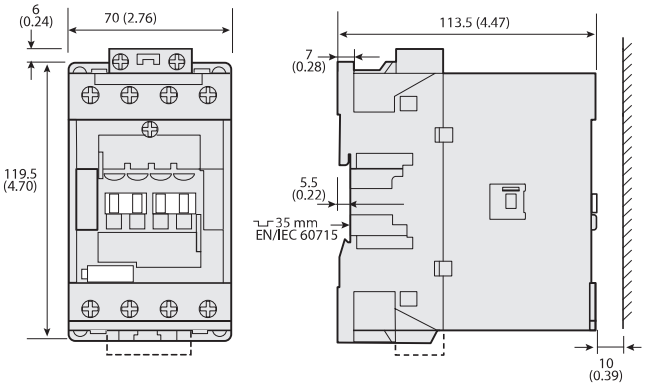


Figure 61 - 100-E40...100-E52 4-Pole Contactors with Front-mounted Auxiliary Contact

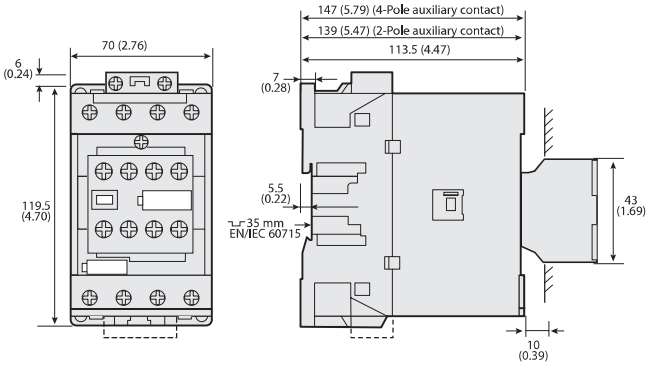


Figure 62 - 100-E40...100-E52 4-Pole Contactors with Side-mounted Auxiliary Contact

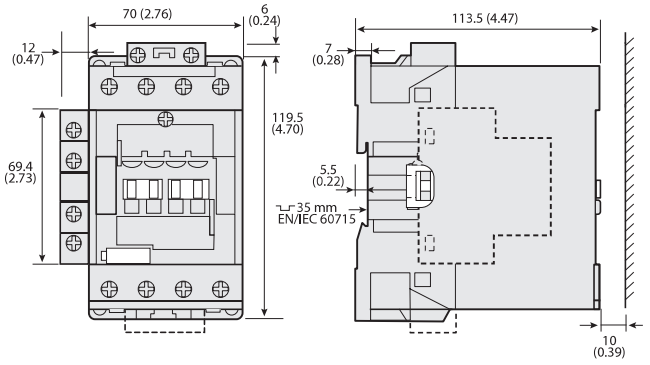
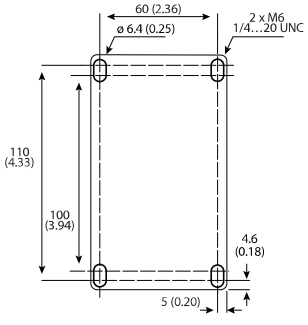


Figure 63 - Drilling Template for 40...52 A 4-Pole Contactors



80...96 A Contactors

Figure 64 - 100-E80...100-E96 3-Pole Contactors

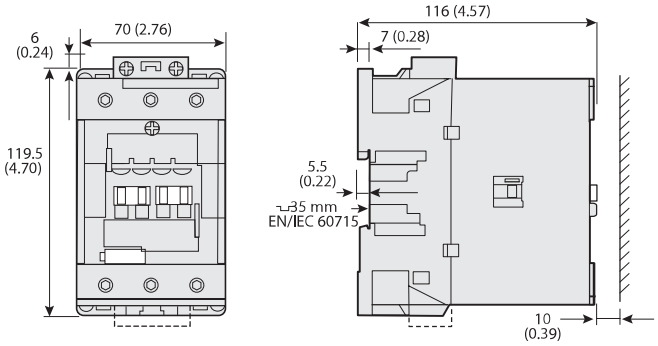


Figure 65 - 100-E80...100-E96 3-Pole Contactors with Front-mounted Auxiliary Contact

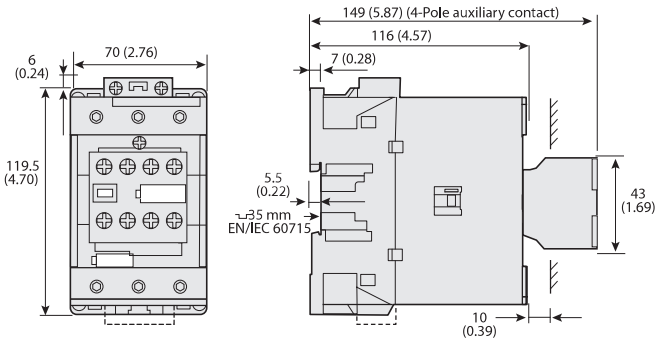


Figure 66 - 100-E80...100-E96 3-Pole Contactors with Side-mounted Auxiliary Contact

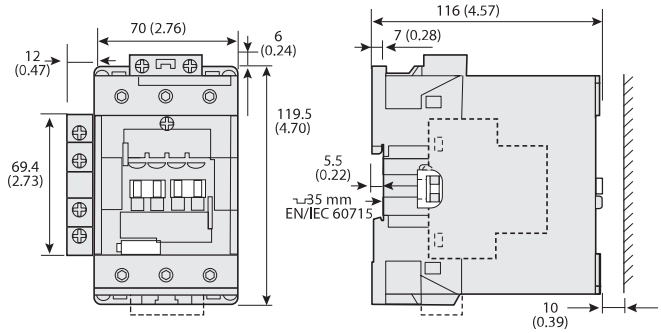


Figure 67 - 104-E80...104-E96 Reversing 3-Pole Contactors

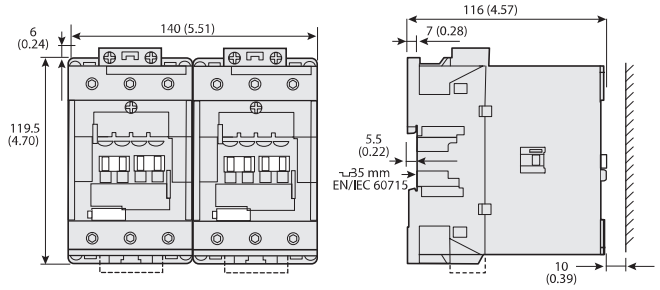


Figure 68 - Drilling Template for 80...96 A 3-Pole Contactors

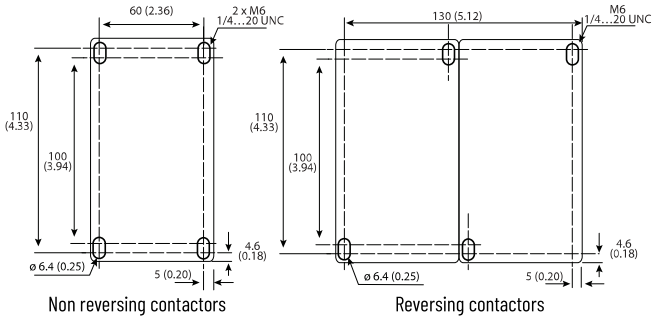


Figure 69 - 100-E80 4-Pole Contactors

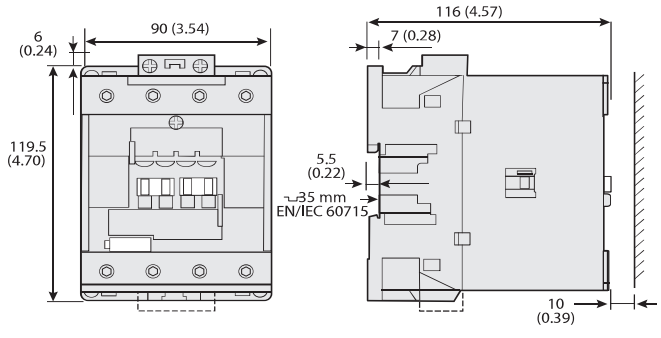


Figure 70 - 100-E80 4-Pole Contactors with Front-mounted Auxiliary Contact

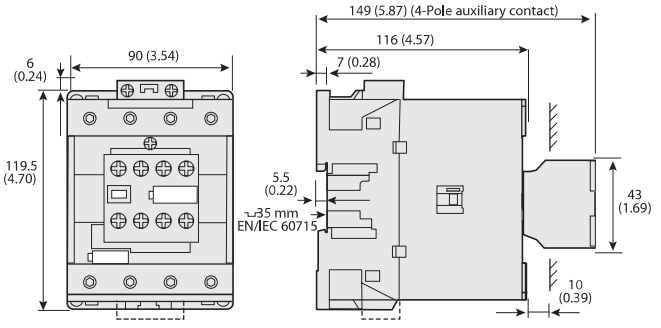


Figure 71 - 100-E80 4-Pole Contactors with Side-mounted Auxiliary Contact

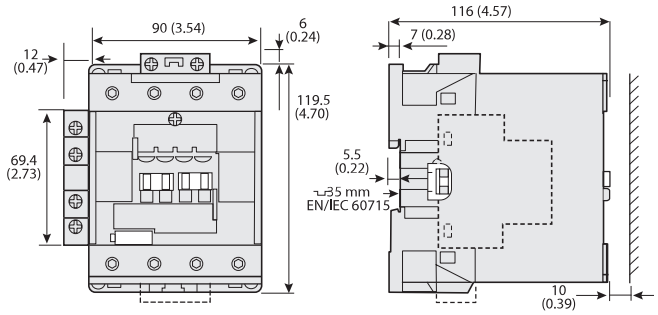
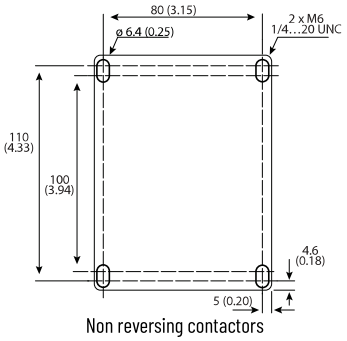


Figure 72 - Drilling Template for 80 A 4-Pole Contactors



116...2650 A Contactors

Figure 73 - Mounting Position for 100-E116...100-E2650 Devices—AC/DC and AC/DC with PLC input

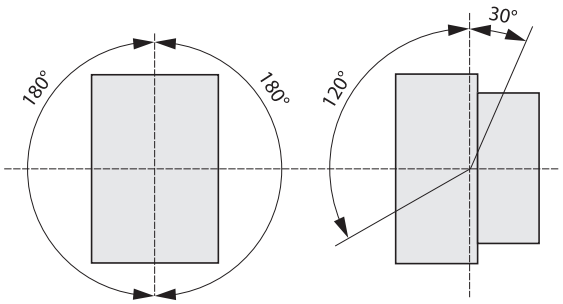


Figure 74 - 100-E116K..., 100-E146K... Contactors

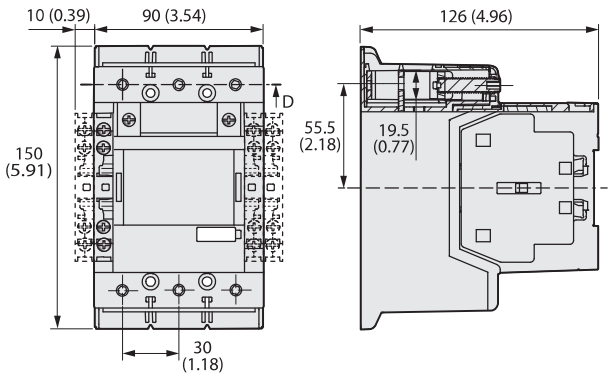


Figure 75 - 100-E116E..., 100-E146E... Contactors with PLC Input

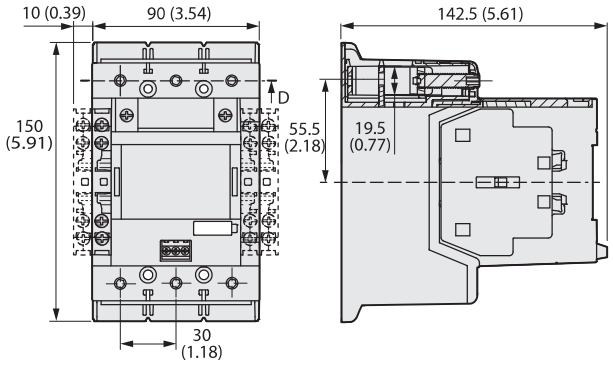


Figure 76 - 104-E116E..., 104-E146E... Reversing Contactors with Cat. No. 100-EM... Mechanical Interlock

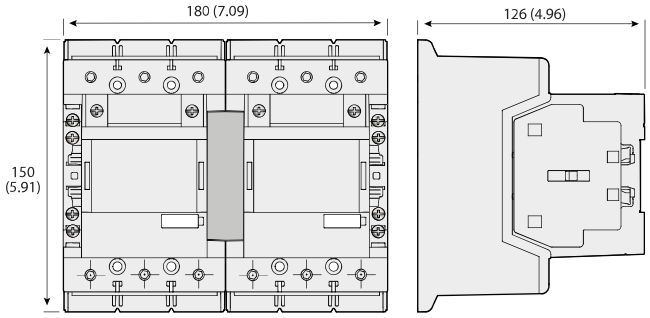


Figure 77 - Drilling Template for 116...146 A 3-Pole Contactors

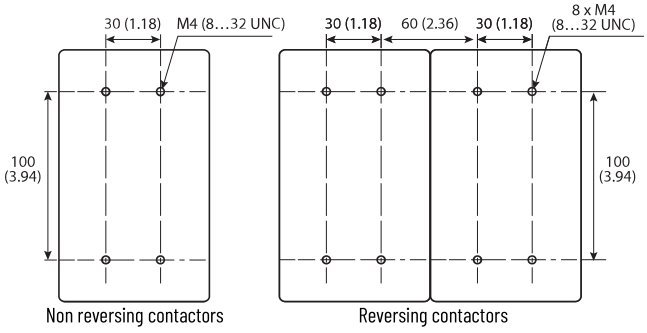


Figure 78 - 100-E190, 100-E205 Contactors

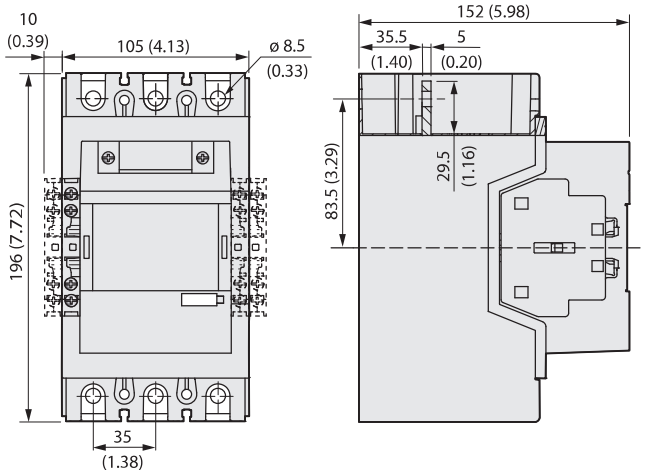


Figure 79 - 100-E190E, 100-E205E Contactors with PLC Input

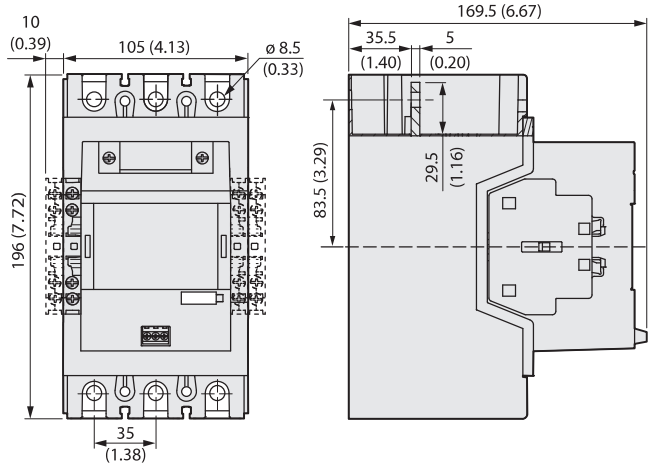


Figure 80 - 104-E190, 104-E205 Reversing Contactors with Cat. No. 100-EM... Mechanical Interlock

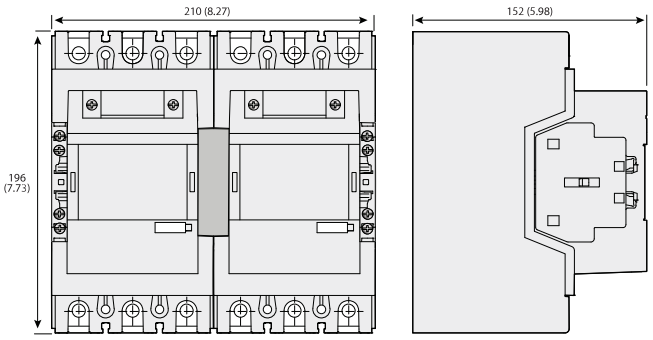


Figure 81 - Drilling Template for 190...205 A 3-Pole Contactors

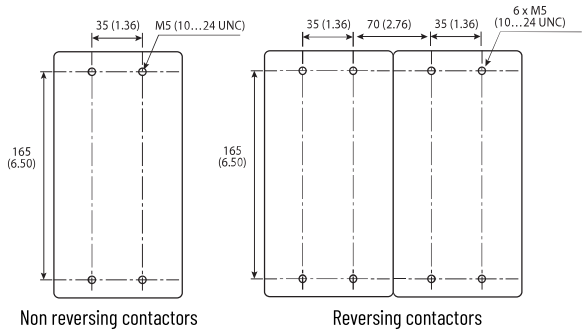


Figure 82 - 100-E265...100-E370 Contactors

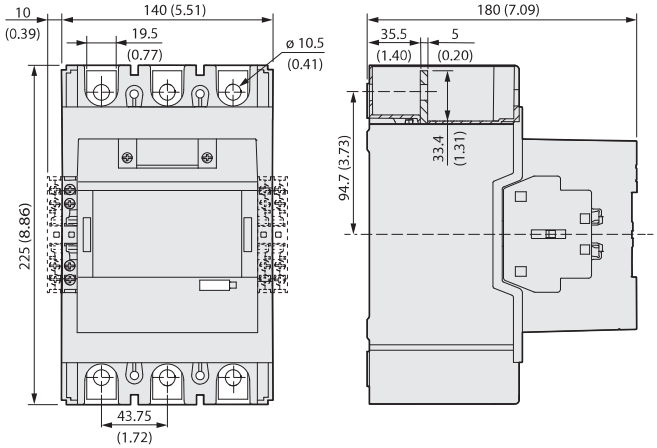


Figure 83 - 100-E265E...100-E370E Contactors with PLC Input

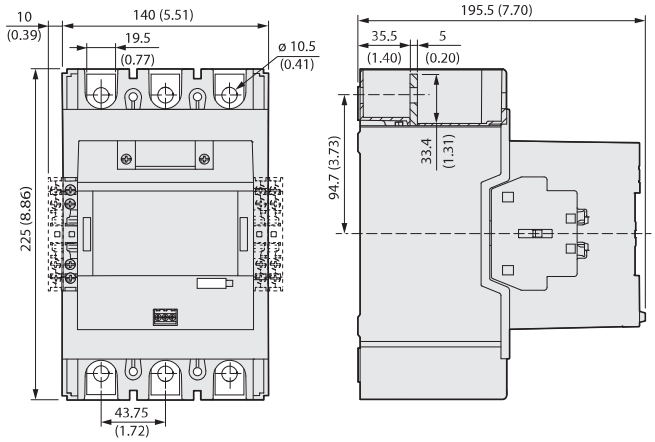


Figure 84 - 104-E265...104-E370 Reversing Contactors with Cat. No. 100-EM... Mechanical Interlock

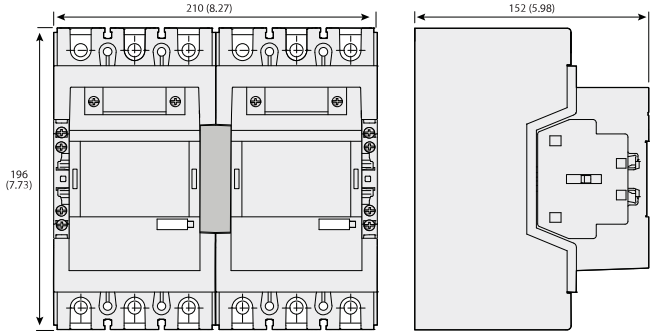


Figure 85 - Drilling Template for 265...370 A 3-Pole Contactors

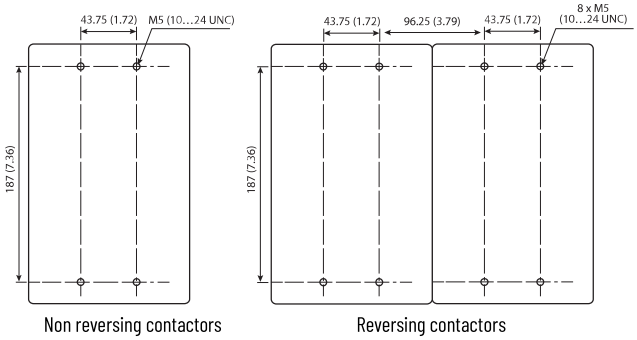


Figure 86 - 100-E400, 100-E460 Contactors with PLC Input

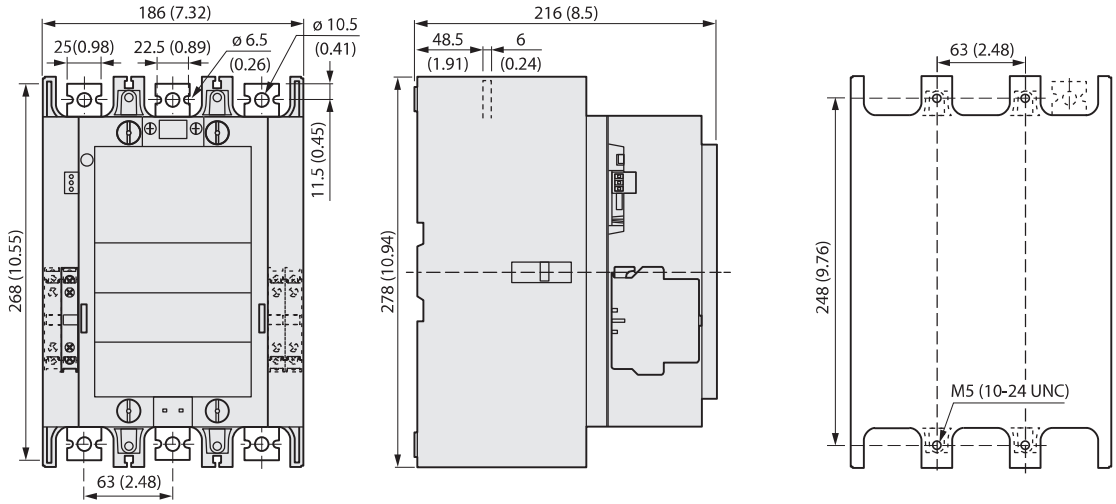


Figure 87 - 100-E580...100-E750 Contactors with PLC Input

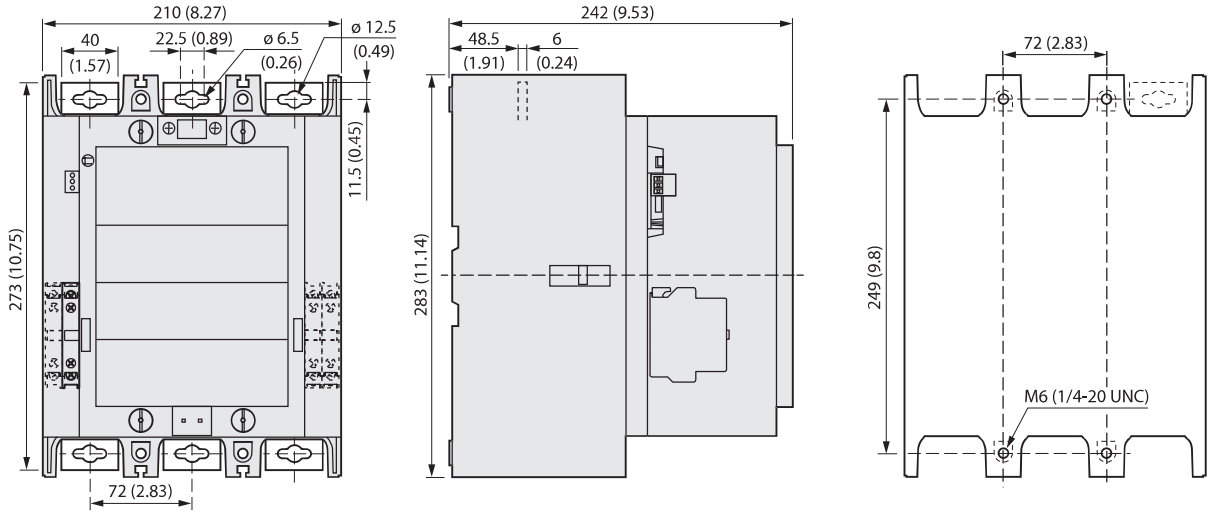


Figure 88 - 100-E1260 Contactors with PLC Input

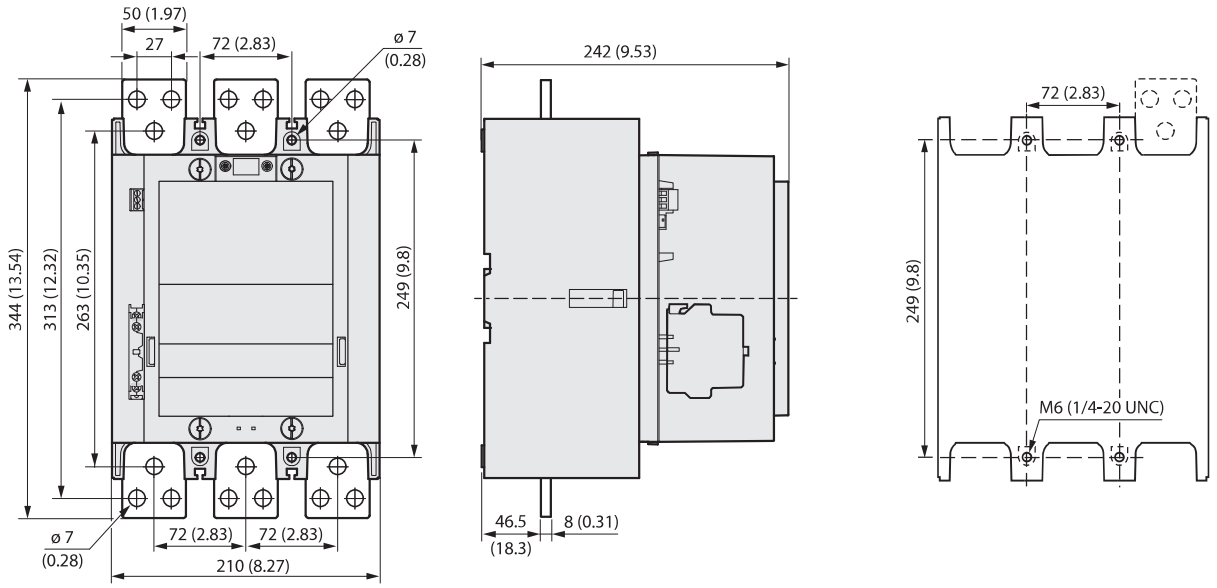
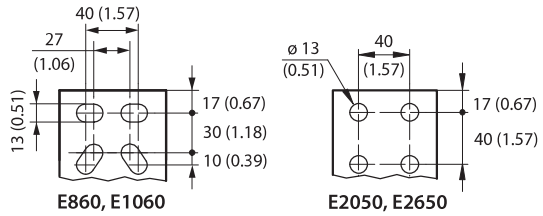
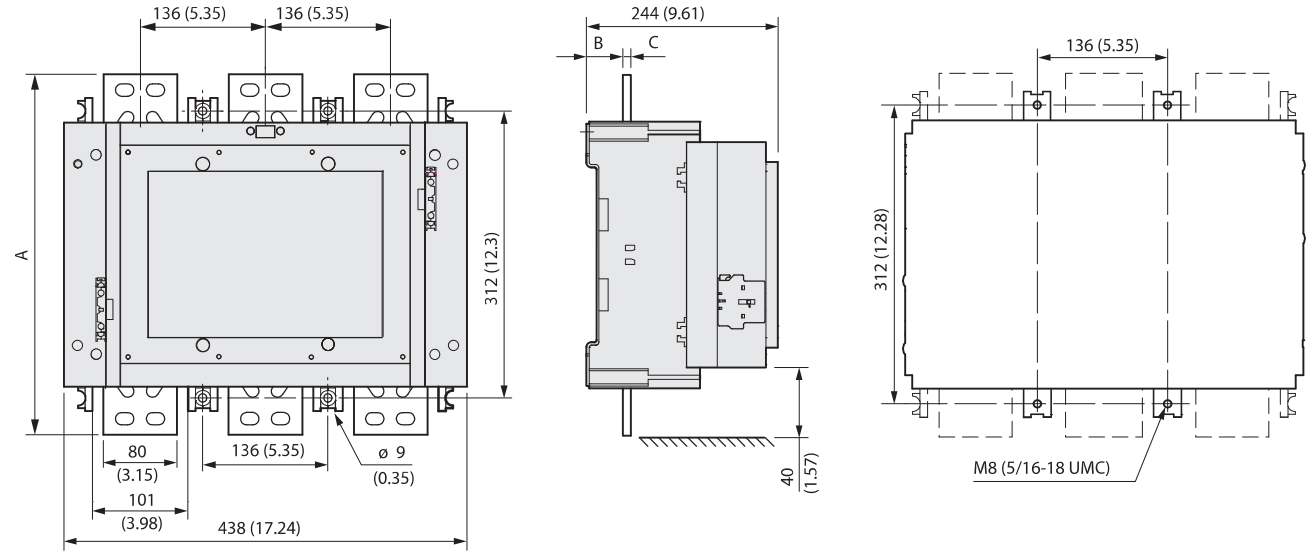


Figure 89 - 100-E860, 100-E1060, 100-E2050, 100-E2650 Contactors with PLC Input



	E860, E1060, E2050	E2650
A	392 (15.43	422 (16.61
B	47 (1.85)	53(2.09)
C	10 (0.39)	25 (0.98)



Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Rockwell Automation Global SCCR Tool, rok.auto/sccr	Provides coordinated high-fault branch circuit solutions for motor starters, soft starters, and component drives.
North American Standards, Configurations, and Ratings: Introduction to Motor Circuit Design, publication IC-AT001	Provides an overview of North American motor circuit design, based on methods outlined in the NEC.
Industrial Components Preventive Maintenance, Enclosures, and Contact Ratings Specifications, publication IC-TD002	Provides a quick reference tool for Allen-Bradley industrial automation controls and assemblies.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-State Control, publication SGI-1.1	Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies incorporating solid-state components.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications.	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at rok.auto/literature.

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
Knowledgebase	Access Knowledgebase articles.	rok.auto/knowledgebase
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.	rok.auto/pcdc

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Rockwell Automation maintains current product environmental compliance information on its website at rok.auto/pec.

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