

# 100-E/104-E, 100S-E/104S-E Contactors

## Product Selection—100-E/104-E Contactors

- 55...560 kW @ 400V
- 75...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
- Complete range of accessories
- Environmentally friendly



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 Contactors

- Electronic Coils
- 3 Main Contacts
- Direct On-Line or Reversing

Rated Operational Current $I_e$ [A]		Ratings for switching AC motors - AC-2, AC-3											Auxiliary Contacts		Direct On-Line Contactor	Reversing Contactor
60 °C	40 °C	kW (50 Hz)							Hp (60 Hz)						Cat No.	Cat No.
AC-3 (400V)	AC-1 (690V)	220-240V	380-400V	415V	440V	500V	690V	1000V	200V	230V	460V	575V	N.O.	N.C.		
116	160	37	55	55	75	75	63	55	30	40	75	100	1	1	100-E116⊗11 <sup>(1)</sup>	104-E116⊗22 <sup>(1)</sup>
146	225	45	75	75	90	90	90	75	40	50	100	125	1	1	100-E146⊗11 <sup>(1)</sup>	104-E146⊗22 <sup>(1)</sup>
190	275	55	90	90	110	110	132	110	50	60	125	150	1	1	100-E190⊗11	104-E190⊗22
205	350	55	110	110	132	132	160	132	60	75	150	200	1	1	100-E205⊗11	104-E205⊗22
265	400	75	132	132	160	160	200	160	75	100	200	250	1	1	100-E265⊗11	104-E265⊗22
305	500	90	160	160	160	200	250	185	100	125	250	300	1	1	100-E305⊗11	104-E305⊗22
370	600	110	200	200	200	250	315	200	125	150	300	350	1	1	100-E370⊗11	104-E370⊗22
400	600	110	200	220	220	250	315	220	125	150	350	400	1	1	100-E400⊗11	104-E400⊗22
460	700	132	250	250	250	315	355	280	150	200	400	500	1	1	100-E460⊗11	104-E460⊗22
580	800	160	315	355	355	400	500	355	200	250	500	600	1	1	100-E580⊗11	104-E580⊗22
750	1050	220	400	425	450	530	600	400	250	300	600	700	1	1	100-E750⊗11	104-E750⊗22
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	—

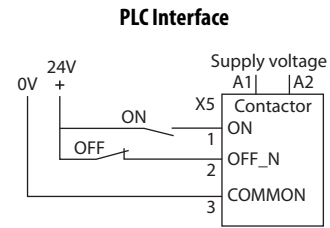
(1) To order with built-in terminal lugs, add the letter "L" to the end of the catalog number (e.g. **100-E116⊗11L**).

⊗ Coil voltage code and PLC interface—see [page 74](#)

### 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: 100-E116KJ11)

Electronic Coils	V	24-60V	48-130V	100-250V	250-500V
100-E116...100-E370	AC/DC	KJ	KY	KD	KN
100-E116...100-E370 <sup>(1)</sup>	AC/DC with PLC Input	—	—	ED	EN
100-E400...100-E750		EJ <sup>(2)</sup>	EY	ED	EN
100-E860...100-1060		—	—	ED	—
100-E1260		EJ <sup>(2)</sup>	EY	ED	EN
100-E2050...100-E2650		—	—	ED	—



(1) When ordering coil with PLC input, the PLC input must be used  
 (2) 24V...60V DC only

## Product Selection—100S-E Safety Contactors

### 3-Pole AC- and DC-operated Safety Contactors

- Electronic Coils
- 3 Main Contacts
- Direct On-Line
- Low-power auxiliary contact for feedback circuit
- Mirror contact performance



Rated Operational Current I <sub>e</sub> [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. <sup>(1)</sup>	
116	160	37	55	55	75	75	55	—	30	40	75	100	1	1	1	100S-E116⊗12C <sup>(2)</sup>
146	225	45	75	75	90	90	90	75	40	50	100	125	1	1	1	100S-E146⊗12C <sup>(2)</sup>
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 (e.g. 100S-E116⊗12CL)

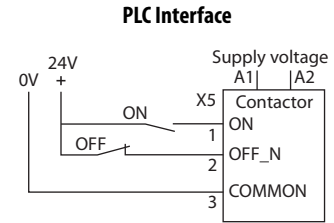
⊗ Coil voltage code and PLC interface—see [page 75](#)

## Coil Voltage Codes

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No.


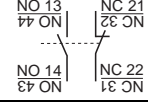
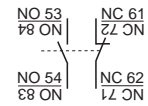
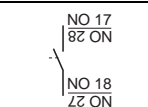
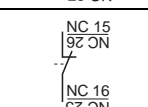

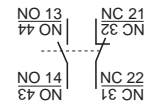
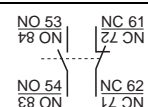
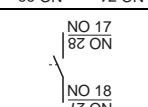
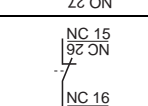
Example: 100S-E116KJ11)

Electronic Coils	V	24-60V	48-130V	100-250V	250-500V
100S-E116...100S-E370	AC/DC	KJ	KY	KD	KN
100S-E116...100S-E370 <sup>(1)</sup>	AC/DC with PLC Input	—	—	ED	EN
100S-E400...100S-E750		EJ <sup>(2)</sup>	EY	ED	EN





(1) When ordering coil with PLC input, the PLC input must be used  
 (2) 24V...60V DC only



## Accessories


	Description			Connection Diagrams	For Use With	Standard Auxiliary Contact	
		N.O.	N.C.			Cat. No.	
	Auxiliary Contact Blocks for Side Mounting with Sequence Terminal Designations <ul style="list-style-type: none"> <li>2-pole</li> <li>Two-way numbering for right or left mounting on the contactor</li> <li>Quick and easy mounting without tools</li> <li>Mirror contact performance to the main contactor poles</li> <li>Low power switching down to 24V 50 mA</li> </ul>	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 <sup>(1)</sup> <ul style="list-style-type: none"> <li>1-pole</li> <li>Two-way numbering for right or left mounting on the contactor</li> <li>Quick and easy mounting without tools</li> <li>Mirror contact performance to the main contactor poles</li> <li>Electronic compatible, 3V 1 mA</li> </ul>	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 <ul style="list-style-type: none"> <li>2-pole</li> <li>Two-way numbering for right or left mounting on the contactor</li> <li>Quick and easy mounting without tools</li> <li>Mirror contact performance to the main contactor poles</li> <li>Low power switching down to 24V 50 mA</li> </ul>	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 <sup>(1)</sup> <ul style="list-style-type: none"> <li>1-pole</li> <li>Two-way numbering for right or left mounting on the contactor</li> <li>Quick and easy mounting without tools</li> <li>Mirror contact performance to the main contactor poles</li> <li>Electronic compatible, 3V 1 mA</li> </ul>		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\*.


	Description	Connection Diagrams	For Use With	Cat. No.
 <p>Mechanical Interlocks</p> <ul style="list-style-type: none"> <li>For interlocking of two contactors.</li> <li>Interlocking of different sizes possible</li> </ul>	<p>Mechanical only, without auxiliary contacts</p>		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 <sup>(1)</sup>	100-EM2-00
			100-E860...100-E1060, 100-E2050...100-E2650 <sup>(2)</sup>	100-EM3-00
			Rod for vertical mounting 100-E400...E750 reversing contactors	100-EVR750

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



	Description	Wire Sizes	For Use With	Cat. No.
 <p>Terminal Lug Kit</p> <ul style="list-style-type: none"> <li>Standard on 100-E116*L...100-E146*L contactors</li> <li>Set of two</li> </ul>		2 x 6 AWG...3/0 AWG	100-E116...100-E146	100-ECL146
 <p>Terminal Lugs</p> <ul style="list-style-type: none"> <li>Set of three</li> </ul>		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-E1260	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


	Description	Wires with Compression Lugs	Contactor with Terminal Lugs	For Use With	Cat. No.	
 <p>Terminal Shrouds</p> <ul style="list-style-type: none"> <li>Not applicable when using 105-PW* or 170-PW* power wiring kits</li> </ul>		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 <sup>(1)</sup>
		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.


	Description	For Use With	Cat. No.
 <p>Reversing Power Wiring Kits</p>		100-E116...100-E146	105-PW146
		100-E190...100-E205	105-PW205 <sup>(1)</sup>
		100-E265...100-E370	105-PW370 <sup>(1)</sup>
		100-E400...100-E460	105-PW460 <sup>(2)</sup>
		100-E580...100-E750	105-PW750 <sup>(2)</sup>


(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.

	Description	For Use With		Cat. No.
		Delta Contactor	Wye Contactor	Cat. No.
 <p>Wye-Delta Power Wiring Kits</p>		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
 <p>Shorting Bars</p>			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


	Description	For Use With		Cat. No.
		Delta Contactor	Wye Contactor	Cat. No.
 <p>For Direct On-Line Starters</p> <p>For Reversing Starters</p>		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

	Description	For Use With Circuit Breaker	For Use With Contactor	Cat. No.
		140G-H, 140MG-H	100-E116...100-E146	100-PCE1
 <p>For Connection to 140G or 140MG</p> <ul style="list-style-type: none"> <li>• Connection between contactors/starters and molded case circuit breakers.</li> <li>• These connection sets are solid copper bars.</li> </ul>	140G-I, 140MG-I	100-E116...100-E146	100-PCE2	
	140G-J, 140MG-J	100-E116...100-E146	100-PCE3	
	140G-K, 140MG-K	100-E190...100-E205	100-PCE4	
	140G-L, 140MG-L	100-E265...100-E370	100-PCE5	
	140G-M, 140MG-M	100-E400...100-E750	100-PCE6	
	140G-N, 140MG-N	100-E400...100-E750	100-PCE7	


	Description	For Use With Contactor		Cat. No.
		Delta Contactor	Wye Contactor	Cat. No.
 <p>Terminal Enlargements</p> <ul style="list-style-type: none"> <li>• Enlargement pieces designed to increase the width of the contactor terminal pads in order to allow larger connections to be mounted.</li> </ul>		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	

	Description	For Use With Contactor		Cat. No.
		Delta Contactor	Wye Contactor	Cat. No.
 <p>Terminal Extensions</p> <ul style="list-style-type: none"> <li>• Extension pieces designed to extend the main terminals of contactors for combined mounting of contactors and connection sets</li> </ul>		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

	Description	For Use With	Voltage	Cat. No.
 <p>Coil Modules</p>		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 <sup>(1)</sup>		
		TKE904 <sup>(2)</sup>		
100-E2650	100...250V AC/DC w/ PLC Interface	TLE903 <sup>(1)</sup>		
		TLE904 <sup>(2)</sup>		

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

	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 <sup>(1)</sup>	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

	Description	For Use With	Cat. No.
	Terminal and Mounting Hardware Kits	100-E116*L, 100-E146*L	100-EHS146 <sup>(1)</sup>
		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

		100-E, 100S-E
<b>Rated Isolation Voltage <math>U_i</math></b>		
IEC	[V]	1000
UL, CSA	[V]	600
Rated Impulse Voltage Withstand $U_{imp}$	[kV]	8
<b>Rated Voltage <math>U_e</math></b>		
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
Insulation Class of the Coil		Class F per IEC 60947-4-1
Rated coil frequency		AC 50/60 Hz, DC
<b>Ambient Temperature</b>		
Storage	[°C]	-40...+70
Operation at rated voltage	[°C]	-40...+70
Max. Altitude of Installation Site	[m]	3000
<b>Climatic Withstand</b>		
100-E116...100-E370		IEC 60068-2-30 Test Db & IEC 60068-2-2 test Bd & IEC 60068-2-1 test Ab (report 1314369)
100-E400...100-E2650		IEC 60068-2-2 test Ba & Bb & IEC 60068-2-1 test Aa&Ab, IEC 60068-2-30
Resistance to Shock		IEC 60068-2-27
Resistance to Vibration		IEC 60068-2-6
<b>Protection Class</b>		
Contactor main contacts		IP00
Contactor coil terminals		P2X (in connected state)
Auxiliary contacts		P2X (in connected state)
<b>Functional Safety Data (100S-E116...100S-E750)<sup>(1)</sup></b>		
100(S)-E116...100(S)-E370		B10: 1.0E+06 operations at 50% max. AC-3 load; failure ratio: 75% failure to open, 25% failure to close
100(S)-E116...100(S)-E370		B10: 5.0E+06 operations, mechanical only; failure ratio: 50% failure to open, 50% failure to close
100(S)-E400...100(S)-E750		B10: 5.0E+05 operations at 50% max. AC-3 load; failure ratio: 75% failure to open, 25% failure to close
100(S)-E400...100(S)-E460		B10: 3.0E+06 operations, mechanical only; failure ratio: 50% failure to open, 50% failure to close
100(S)-E570...100(S)-E750		B10: 9.0E+05 operations, mechanical only; failure ratio: 50% failure to open, 50% failure to close

(1) 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.

## Standards and Approvals

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



Main Circuits

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
<b>AC-1 Active Power Load (50/60 Hz); Ambient temperature 40°C</b>																		
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
<b>Ambient temperature 60°C</b>																		
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
<b>Ambient temperature 70°C</b>																		
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 <sup>2</sup> ]	70	95	150	240 <sup>(1)</sup>	240	300 <sup>(2)</sup>	2x185 <sup>(2)</sup>	2x185	2x240	2x240	800 <sup>(3)</sup>	1000 <sup>(4)</sup>	1500 <sup>(4)</sup>	1000 <sup>(3)</sup>	2000 <sup>(4)</sup>	3000 <sup>(4)</sup>	

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

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
<b>Switching of 3-phase Motors; (50 Hz)</b>																		
<b>Ambient temperature 60°C, AC-2, AC-3</b>																		
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	—	—	—	
<b>Load Carrying Capacity per UL/CSA</b>																		
General Purpose Current (enclosed)		[A]	160	200	250	300	350	400	520	550	650	750	900	1350	1650	1210	2100	2700
Rated 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 Power (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	—

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650	
<b>Switching of 3-phase Motors, (50Hz); Ambient temperature 60°C, AC-4</b>																			
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	—	—	—	—	—	—	—	
<b>AC-4 at approximately 200,000 operations</b>																			
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	150	60	60	—	—	—	—	—	—	—	
<b>Wye-Delta (60 Hz)</b>																			
	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	—	—	—	—	—	—	

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	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	—	—	—	—	—	—	—	—	—
	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	—	—	—	—	—	—	—	—	—
<b>UL/CSA HVAC Applications</b>																		
Definite purpose rating (3-phase)																		
FLA	[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	—	—	—	—	—	—	—	—	—
<b>Star-Delta Starting (50 Hz)</b>																		
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 <sup>(1)</sup>	[kW]	55	75	90	110	132	160	200	200	250	315	400	500	560	—	—	—
	240V <sup>(1)</sup>	[kW]	55	75	110	110	132	160	200	200	250	315	400	500	630	—	—	—
	400V <sup>(1)</sup>	[kW]	110	132	160	200	250	250	355	400	400	560	710	800	1000	—	—	—
	415V <sup>(1)</sup>	[kW]	110	132	160	200	250	315	355	400	400	560	800	900	1100	—	—	—
	500V <sup>(1)</sup>	[kW]	132	160	160	200	315	355	355	500	500	710	800	1000	1300	—	—	—
	690V <sup>(1)</sup>	[kW]	90	132	200	250	400	500	500	560	710	800	1100	1400	1700	—	—	—
	1000V <sup>(1)</sup>	[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

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
<b>Switching of Power Transformers, AC-6a (50 Hz)</b>																		
<b>Inrush Current</b>																		
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	—	—
<b>60 Hz Peak Inrush/peak rated transformer current</b>																		
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	—	—

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
<b>Switching of 3-phase Capacitors, AC-6b (50 Hz)</b>																		
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	—	—	—	—	—
<b>60 Hz Single Capacitor (cULus)</b>																		
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	—	—	—
<b>Switching of Lamps</b>																		
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

100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650		
<b>Switching of DC Loads</b>																				
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	—	—	—	—	—	—	
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	—	—	
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	—	—	—	—	—	—	
	440V	[A]	—	—	—	—	—	—	—	600	700	800	1050	—	—	—	—	—	—	
Series-wound Motors—Starting, reverse current breaking, reversing, stepping DC-5, 60 °C																				
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	—	—	—	—	—	—	
	440V	[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	12000	
	10 s	[A]	928	1168	1520	1640	2120	2440	2960	4400	4400	6400	6400	8000	10000	7200	10000	10000	10000	
	30 s	[A]	536	674	878	947	1224	1409	1709	3100	3100	4500	4500	6000	7500	5200	7500	7500	7500	
	1 min	[A]	379	477	621	670	865	996	1208	2500	2500	3500	3500	4500	5500	4000	5500	5500	5500	
	15 min	[A]	160	225	275	350	400	500	600	840	840	1300	1300	1600	2200	1500	2200	2800	2800	
<b>Resistance and Power Dissipation</b>																				
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	—	—	—	—	—	
<b>Maximum Switching Frequency</b>																				
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	—	—	—					

100/104-E, 100S-E		116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
<b>Weight</b>																	
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—

100/104-E, 100S-E		116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
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**Short Circuit Coordination (Max. Fuse or Circuit Breaker Rating) Per IEC 60947-4-1**

<b>DIN Fuses - gG</b>	Type "2" (400V)	[A]	100 kA Available Fault Current														
			250	250	315	315	400	500	630	630	630	800	800	1000	1250	—	—
<b>MCCB</b>	Type "2" (690V)	[A]	80 kA Available Fault Current														
			160	200	315	315	400	425	500	500	630	800	800	1000	1600	—	—
<b>MCCB</b>	Type "2" (400V)	[A]	70 kA Available Fault Current														
			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)**

<b>UL Class RK5 Fuses</b>	Type 1 Combination (600V)	[A]	10 kA Available Fault Current															
			250	250	400	400	—	—	—	—	—	—	—	—	—	—	—	—
<b>UL Class L Fuses</b>	Type 1 Combination (600V)	[A]	18 kA Available Fault Current															
			—	—	—	—	800	800	800	1000	—	—	—	—	—	—	—	—
	Type 1 Combination (600V)	[A]	30 kA Available Fault Current															
			—	—	—	—	—	—	—	—	1000	—	—	—	—	—	—	—
<b>UL Class J and CSA HRCI-J Fuses</b>	Type 1 Combination (600V)	[A]	85 kA Available Fault Current															
			—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Type 1 Combination (600V)	[A]	100 kA Available Fault Current															
			250	250	400	400	600	600	600	600	600	—	—	—	—	—	—	—
<b>UL Class L Fuses</b>	Type 2 Combination (600V)	[A]	200	200	400	400	600	600	600	600	600	—	—	—	—	—	—	—
	Type 1 Combination (600V)	[A]	100 kA Available Fault Current															
<b>UL Class L Fuses</b>	Type 2 Combination (600V)	[A]	—	—	—	—	—	—	—	800	800	1200	1200	—	—	1600	—	—
	Type 1 Combination (600V)	[A]	100 kA Available Fault Current															
<b>UL Inverse-Time Circuit</b>	Type 1 Combination (480V)	[A]	42 kA Available Fault Current															
			—	—	—	—	—	—	—	—	—	1200	1200	2000	2000	—	—	—
	Type 2 Combination (480V)	[A]	65 kA Available Fault Current															
			250	250	400	400	800	800	800	800	800	800	800	800	—	—	—	—
	Type 1 Combination (480V)	[A]	84 kA Available Fault Current															
			—	—	—	—	—	—	—	800	800	—	—	—	—	—	—	—
	Type 1 Combination (480V)	[A]	89 kA Available Fault Current															
			—	—	—	—	—	—	—	—	—	800	800	—	—	—	—	—
	Type 1 Combination (480V)	[A]	100 kA Available Fault Current															
			250	250	400	400	800	800	800	—	—	—	—	—	—	—	—	—
	Type 2 Combination (600V)	[A]	25 kA Available Fault Current															
			250	250	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Type 2 Combination (600V)	[A]	35 kA Available Fault Current															
			—	—	400	400	800	800	800	800	800	800	800	800	—	—	—	—
Type 1 Combination (600V)	[A]	42 kA Available Fault Current																
		—	—	—	—	800	800	800	800	800	800	800	800	—	—	—	—	
Type 1 Combination (600V)	[A]	50 kA Available Fault Current																
		250	250	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Type 1 Combination (600V)	[A]	65 kA Available Fault Current																
		—	—	400	400	400	400	400	—	—	—	—	—	—	—	—	—	


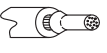
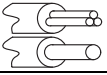


## Coil Data



100/104-E, 100S-E			116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650	
<b>Operating Limits</b>																			
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	—	—	—	—	—	—	—	—	—	—
<b>Operating Times</b>																			
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	—	—	—	—	—	—	—	—	—

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		
<b>Main Terminals</b>																			
<b>Conductor Cross Sections — Main Contacts (Terminal type)</b>																			
	(1) conductor	[mm <sup>2</sup> ]	10...95	16...300	16...400	—	—	—	—	—	—	—	—	—	—	—	—	—	
	Clamp type		100-ECL146	100-ETL205	100-ETL370	—	—	—	—	—	—	—	—	—	—	—	—	—	
	Recommended torque	[N·m]	8	34	42	—	—	—	—	—	—	—	—	—	—	—	—	—	
	(2) conductors	[mm <sup>2</sup> ]	10...95	—	16...500	70...500	70...500	70...500	120...500	70...750	—	—	—	—	—	—	—	—	
	Clamp type		100-ECL146	—	100-ETL370B	100-ETL580	100-ETL750	100-ETL860	100-ETL1060	—	—	—	—	—	—	—	—	—	
	Recommended torque	[N·m]	8	—	42	31	43	43	43	57	—	—	—	—	—	—	—	—	
	(3) conductors	[mm <sup>2</sup> ]	—	—	—	—	70...500	120...500	70...750	70...500	—	—	—	—	—	—	—	—	
	Clamp type		—	—	—	—	100-ETL750	100-ETL860	100-ETL1060	100-ETL750	—	—	—	—	—	—	—	—	
	Recommended torque	[N·m]	—	—	—	—	43	43	57	43	—	—	—	—	—	—	—	—	
	(4) conductors	[mm <sup>2</sup> ]	—	—	—	—	—	120...500	70...750	—	—	—	—	—	—	—	—	—	
	Clamp type		—	—	—	—	—	100-ETL860	100-ETL1060	—	—	—	—	—	—	—	—	—	
	Recommended torque	[N·m]	—	—	—	—	—	43	57	—	—	—	—	—	—	—	—	—	
	(6) conductors	[mm <sup>2</sup> ]	—	—	—	—	—	—	70...750	—	—	—	—	—	—	—	—	—	
	Clamp type		—	—	—	—	—	—	100-ETL1060B	—	—	—	—	—	—	—	—	—	
	Recommended torque	[N·m]	—	—	—	—	—	—	57	—	—	—	—	—	—	—	—	—	
	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	—	—	—	—	—	—	—	—	
<b>Cross section per UL/CSA</b>																			
	(1) conductor	[AWG]	3...3/0	6...300 <sup>(1)</sup>	4...400 <sup>(1)</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	
	Clamp type		100-ECL146	100-ETL205	100-ETL370	—	—	—	—	—	—	—	—	—	—	—	—	—	
	Recommended torque	[lb-in]	80	300	375	—	—	—	—	—	—	—	—	—	—	—	—	—	
	(2) conductors	[AWG]	6...3/0	—	4...500 <sup>(1)</sup>	2/0...500 <sup>(1)</sup>	2/0...500 <sup>(1)</sup>	4/0...500 <sup>(1)</sup>	1/0...750 <sup>(1)</sup>	2/0...500 <sup>(1)</sup>	—	—	—	—	—	—	—	—	
	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 <sup>(1)</sup>	4/0...500 <sup>(1)</sup>	1/0...750 <sup>(1)</sup>	2/0...500 <sup>(1)</sup>	—	—	—	—	—	—	—	—	
	Clamp type		—	—	—	—	100-ETL750	100-ETL860	100-ETL1060	100-ETL750	—	—	—	—	—	—	—	—	
	Recommended torque	[lb-in]	—	—	—	—	375	375	500	375	—	—	—	—	—	—	—	—	
	(4) conductors	[AWG]	—	—	—	—	—	4/0...500 <sup>(1)</sup>	1/0...750 <sup>(1)</sup>	—	—	—	—	—	—	—	—	—	
	Clamp type		—	—	—	—	—	100-ETL860	100-ETL1060	—	—	—	—	—	—	—	—	—	
	Recommended torque	[lb-in]	—	—	—	—	—	375	500	—	—	—	—	—	—	—	—	—	
	(6) conductors	[AWG]	—	—	—	—	—	—	1/0...750 <sup>(1)</sup>	—	—	—	—	—	—	—	—	—	
	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	—	—	—	—	—	—	—	—	

100/104-E, 100S-E		116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
<b>Conductor Cross Sections — Coil Terminals (Terminal type)</b>																	
	(1) conductor	[mm <sup>2</sup> ]															
	(2) conductors	[mm <sup>2</sup> ]															
	(1) conductor	[mm <sup>2</sup> ]															
	(2) conductors	[mm <sup>2</sup> ]															
Recommended torque		[N·m]															
Cross section per UL/CSA		[AWG]															
Recommended torque		[lb-in]															

(1) MCM

			Auxiliary contact for 100/104-E, 100S-E		
			Standard 100-ES1/2*	Standard 100-ES3/4*	Low Power 100-ES*-B*
<b>Switching of AC Loads</b>					
Rated Insulation voltage $U_i$			690V	690V	250V
Rated operational voltage $U_e$			690V	690V	125V
Rated impulse withstand voltage $U_{imp}$			6kV	6kV	1.5kV
AC-12 $I_{th}$	at 40 °C	[A]	16	16	0.1
	at 60 °C	[A]	—	—	—
AC-14 at rated voltage of	24V	[A]	—	—	0.1
	42/48V	[A]	—	—	0.1
	120V	[A]	—	—	0.1
AC-15 at rated voltage of	24V	[A]	6	6	—
	42/48V	[A]	6	6	—
	120V	[A]	6	6	—
	230V	[A]	4	4	—
	240V	[A]	4	4	—
	400V	[A]	3	3	—
	415V	[A]	3	3	—
	500V	[A]	2	2	—
690V	[A]	2	2	—	
<b>Switching of DC Loads</b>					
DC-12 L/R < 1 ms resistive loads at	24V DC	[A]	—	—	0.1
	48V DC	[A]	—	—	0.1
	110V DC	[A]	—	—	0.1
	220V DC	[A]	—	—	—
	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]	3	6	—
	48V DC	[A]	1.5	2.8	—
	110V DC	[A]	0.55	0.55	—
	220V DC	[A]	0.3	0.3	—
	440V DC	[A]	—	—	—
<b>Fuse gG</b>					
Short-circuit protection with no welding of contacts per IEC 60947-5-2		[A]	10	10	0.1
		[A]	10	10	0.1
Protective Separation per IEC 60947-1, Annex N					

			Auxiliary contact for 100/104-E, 100S-E		
			Standard 100-ES1/2*	Standard 100-ES3/4*	Low Power 100-ES*-B*
Min. switching capacity at 24V IEC 60947-5-4	[mA]	50	50	—	
Min. switching capacity at 3V IEC 60947-5-4	[mA]	—	—	1	
<b>Load Carrying Capacity per UL/CSA</b>					
Rated voltage	AC	[V]	600	600	125
Continuous rating	40 °C	[A]	10	10	0.1
Switching capacity	AC		A 600	A 600	—
Rated voltage	DC	[V]	250	250	125
Continuous rating	40 °C	[A]	2.5	2.5	0.1
Switching capacity	DC		P 600	Q 300	—

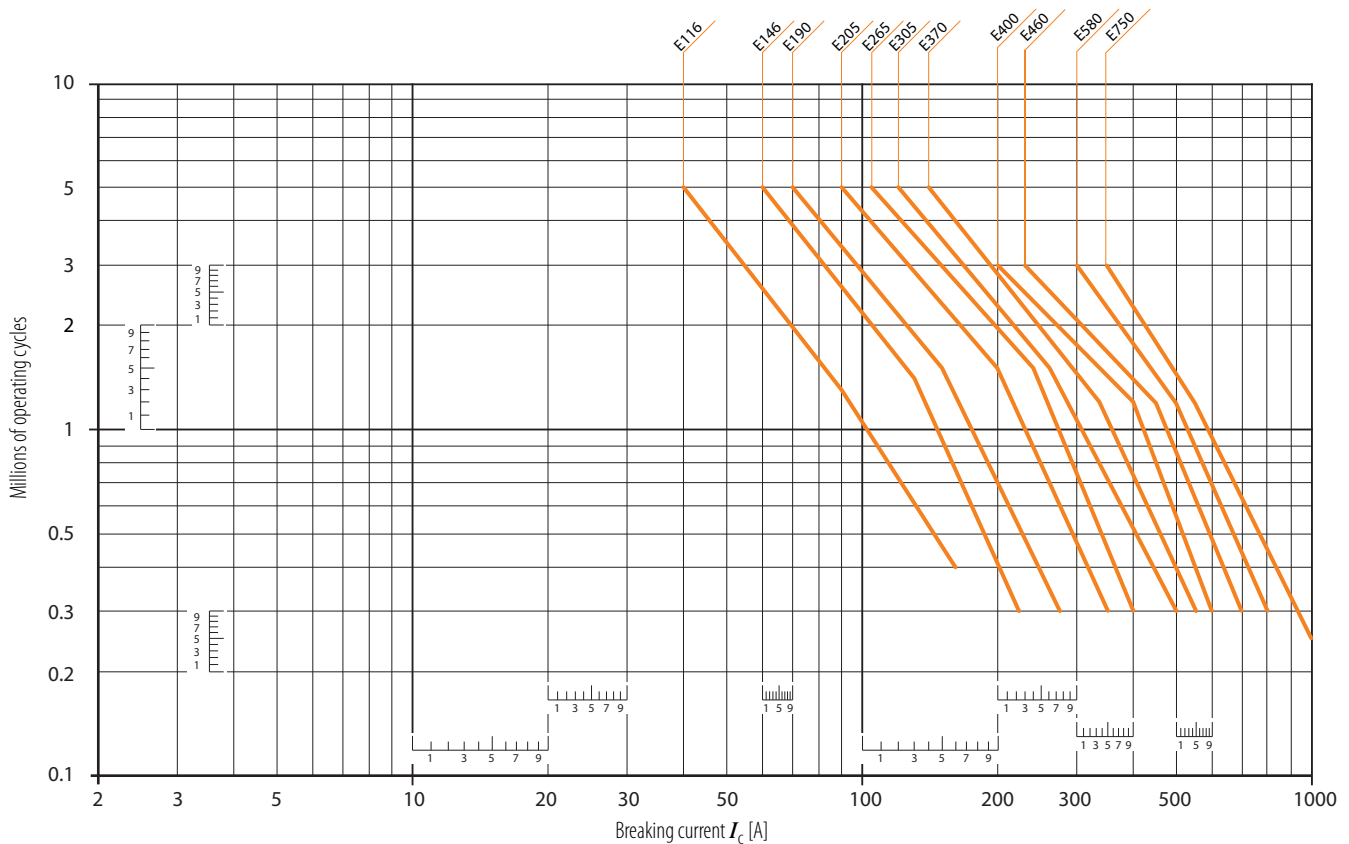
## Life-Load Curves

### 3-pole contactors — Electrical durability

**Figure 21 - 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 81](#)) and maximum electrical switching frequency (see [page 87](#)).

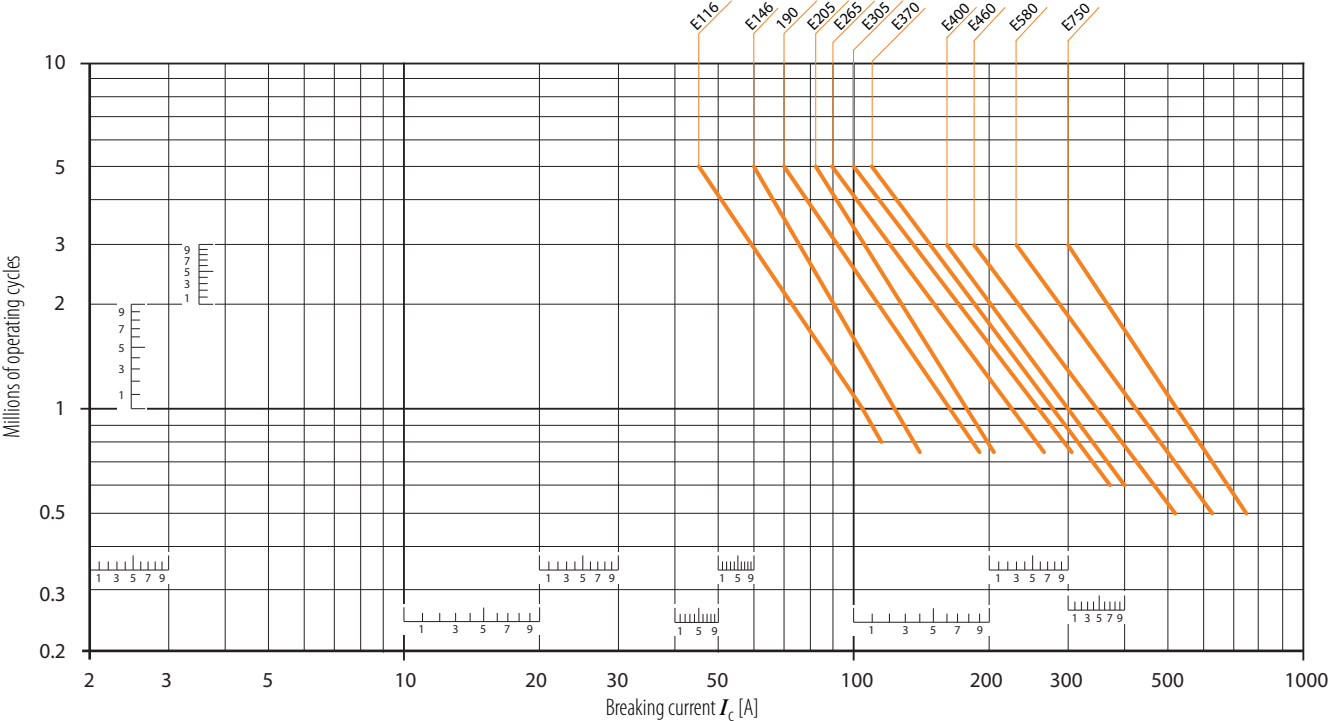


**Cat. Nos. 100-E860, -E1060:** The electrical durability at the rated current is 50,000 operating cycles.

**Figure 22 - 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 81](#)) and maximum electrical switching frequency (see [page 87](#)).

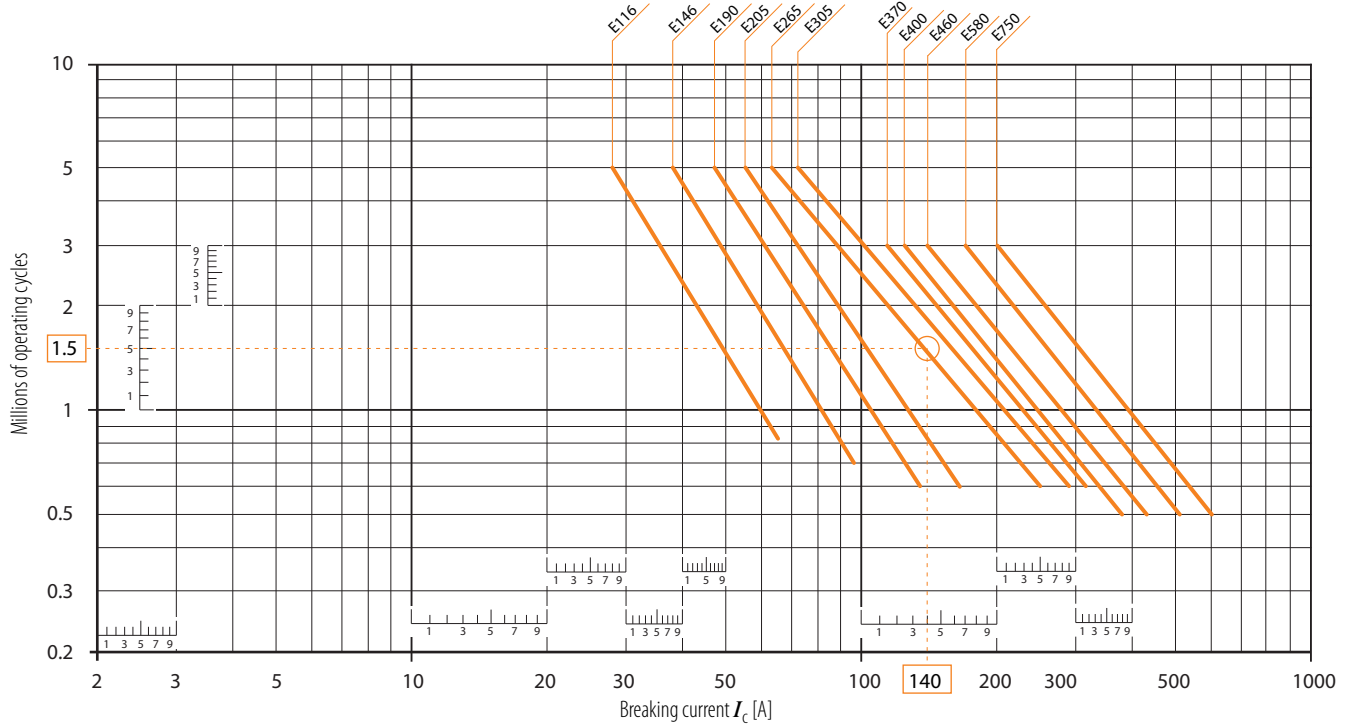


**Cat. Nos. 100-E860, -E1060:** The electrical durability at the rated current is 50,000 operating cycles.

**Figure 23 - Electrical durability for AC-3 utilization category -  $440V < U_e \leq 690V$**

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 81](#)) and maximum electrical switching frequency (see [page 87](#)).

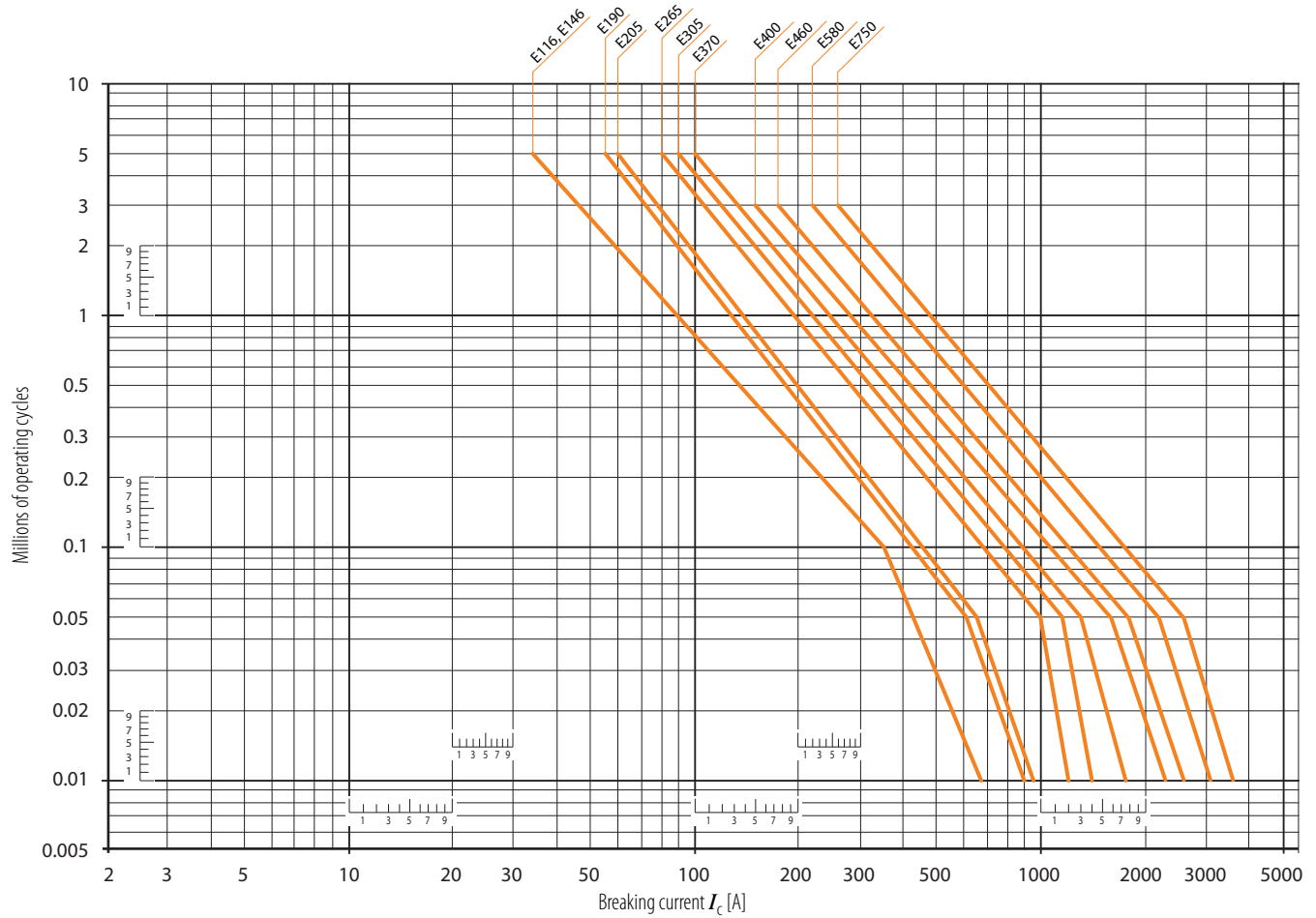


**Cat. Nos. 100-E860, -E1060:** The electrical durability at the rated current is 50,000 operating cycles.

**Figure 24 - Electrical durability for AC-2 or AC-4 utilization category -  $U_e \leq 440V$**

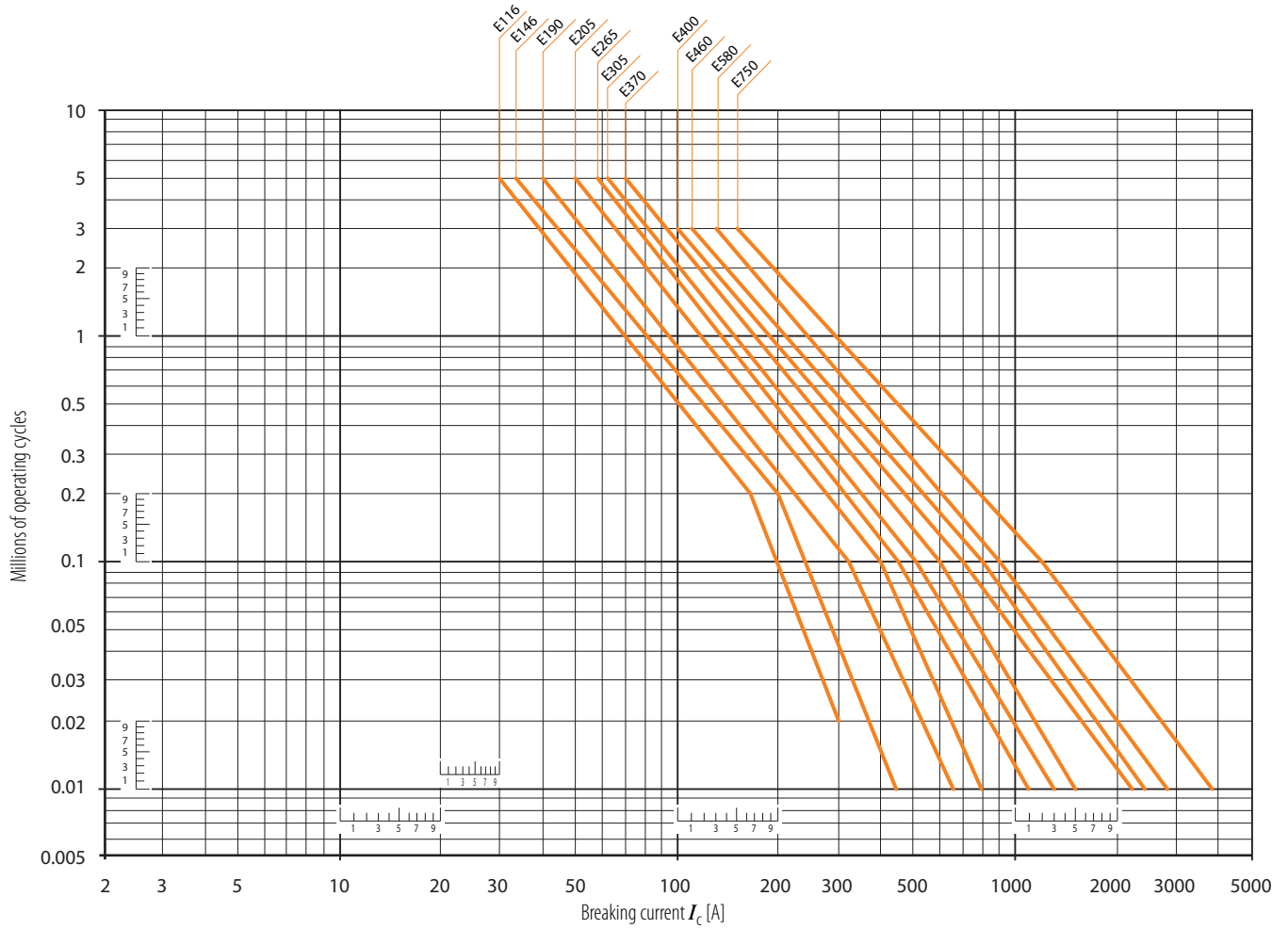
Switching cage motors: starting, reverse operation and step-by-step operation. The breaking current  $I_C$  is equal to  $2.5 \times I_e$  for AC-2 and  $6 \times I_e$  for AC-4,

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 87](#)).



**Figure 25 - Electrical durability for AC-2 or AC-4 utilization category -  $440V < U_e \leq 690V$**

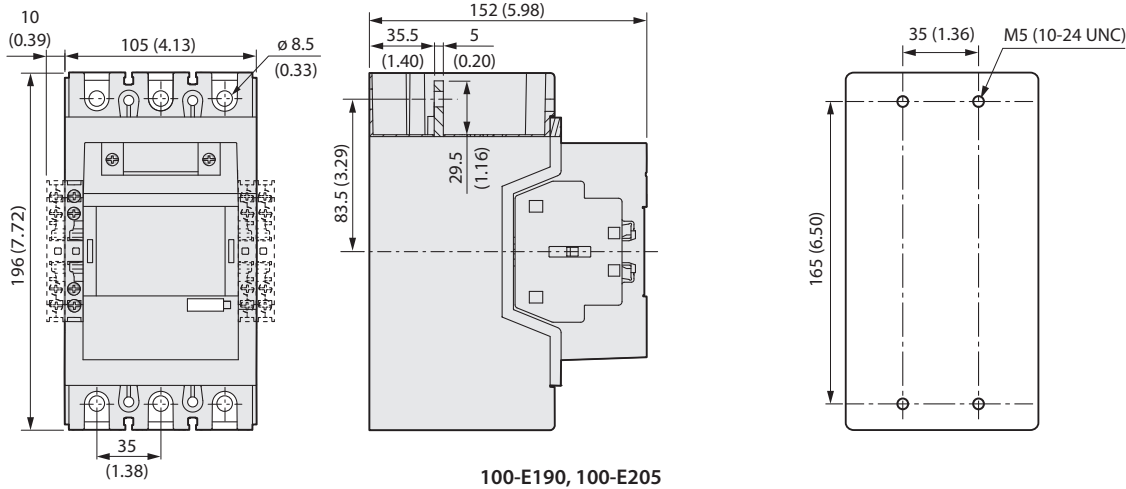
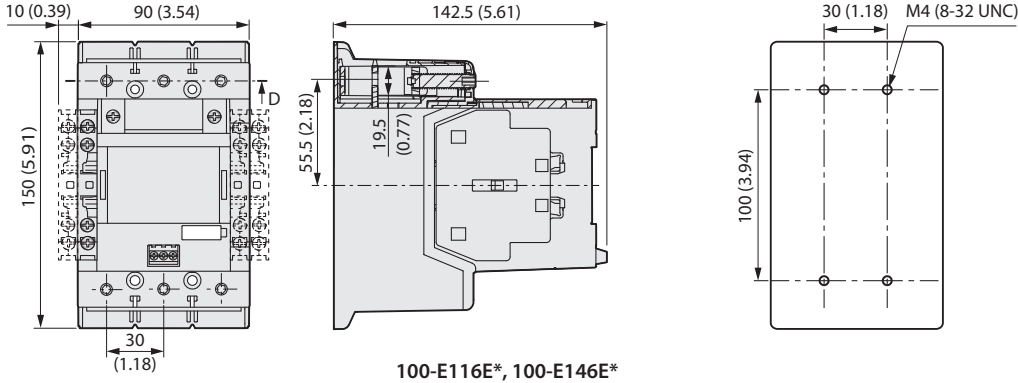
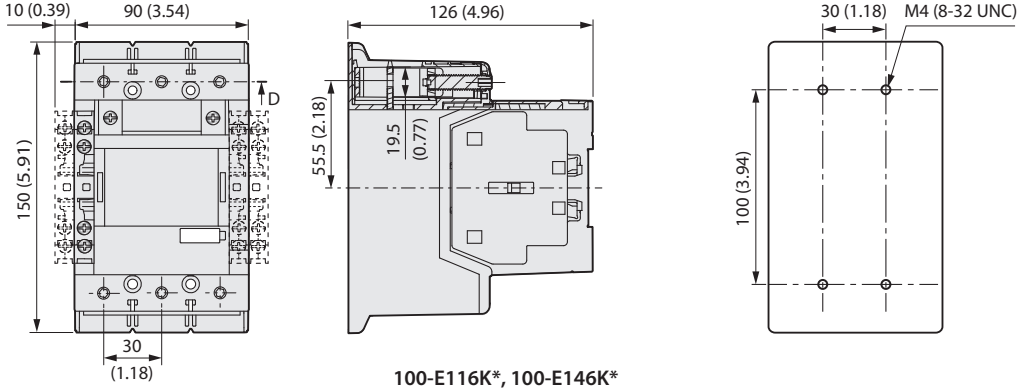
Switching cage motors: starting, reverse operation and step-by-step operation. The breaking current  $I_c$  is equal to  $2.5 \times I_e$  for AC-2 and  $6 \times I_e$  for AC-4, keeping in mind that  $I_e$  is the motor rated operational current ( $I_e$  = motor full load current). For maximum electrical switching frequency (see [page 87](#)).

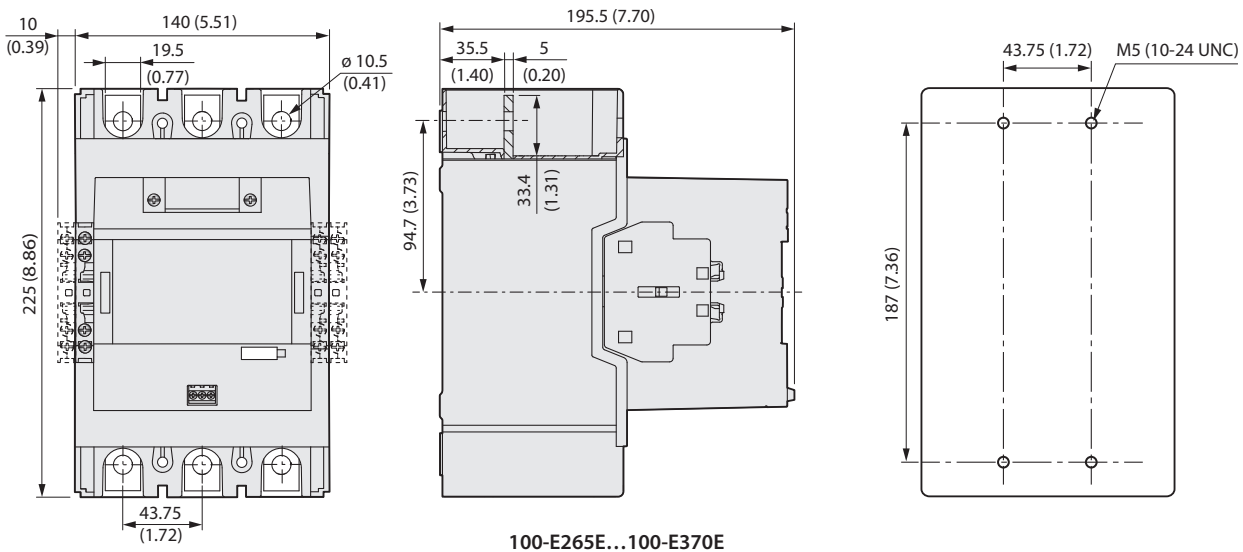
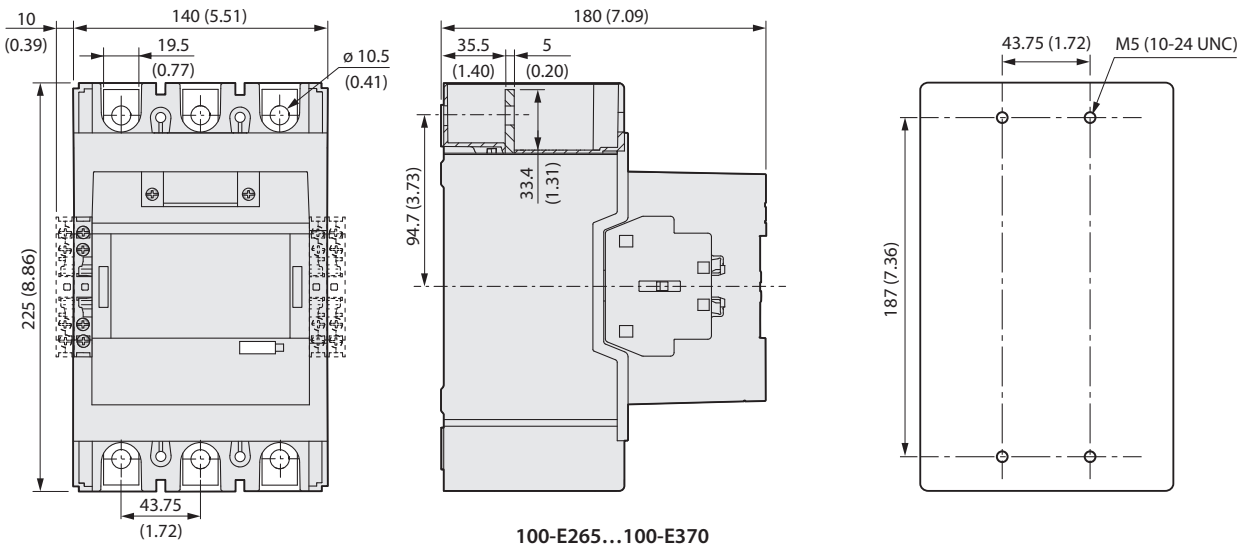
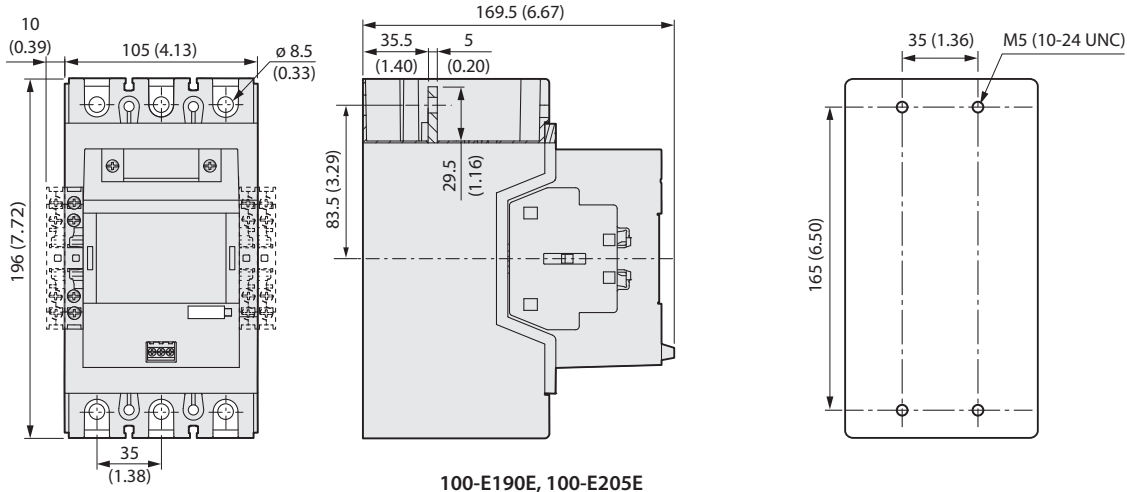


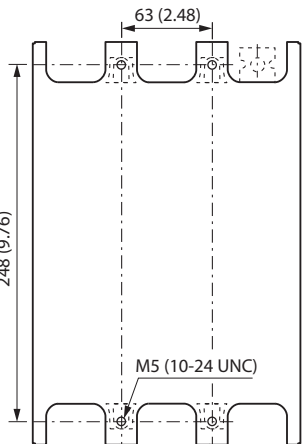
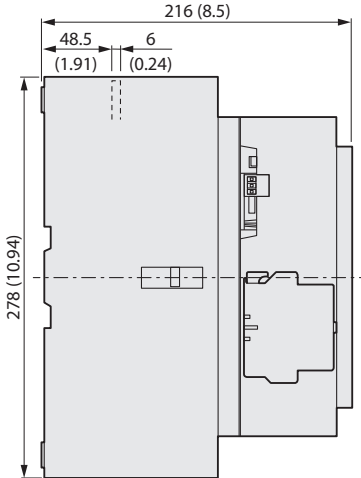
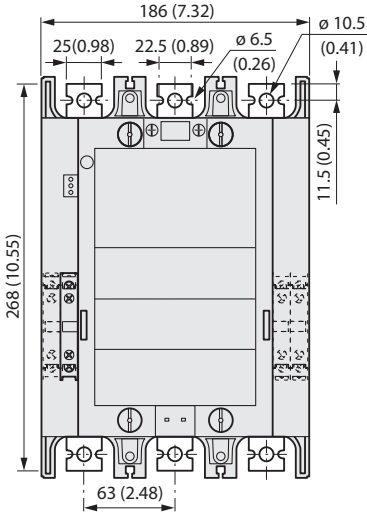


# Approximate Dimensions

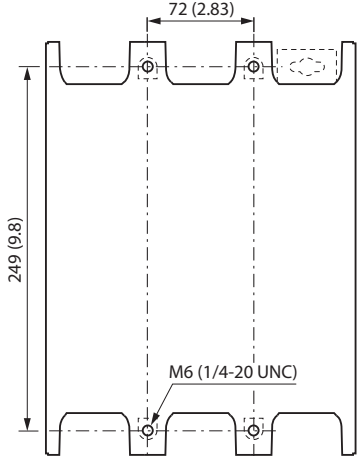
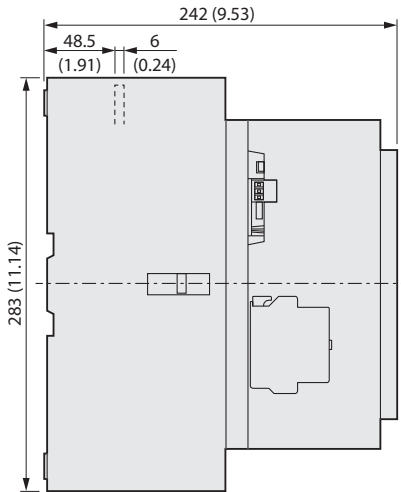
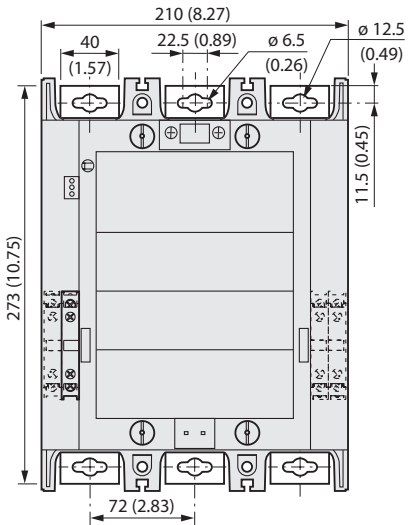
Dimensions are shown in millimeters (inches). Dimensions are not intended for manufacturing purposes.



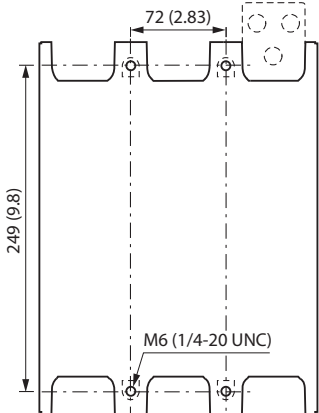
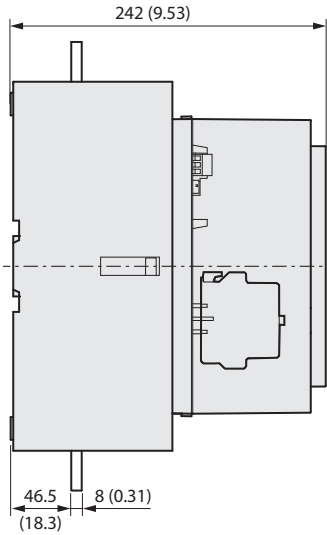
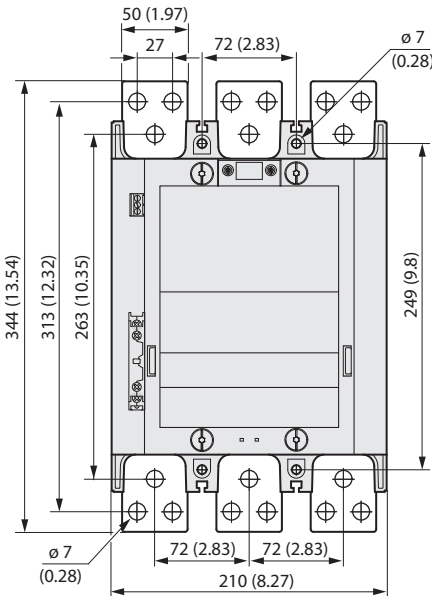




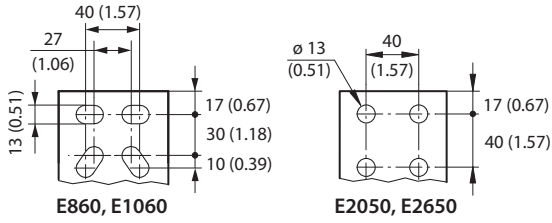
100-E400, 100-E460



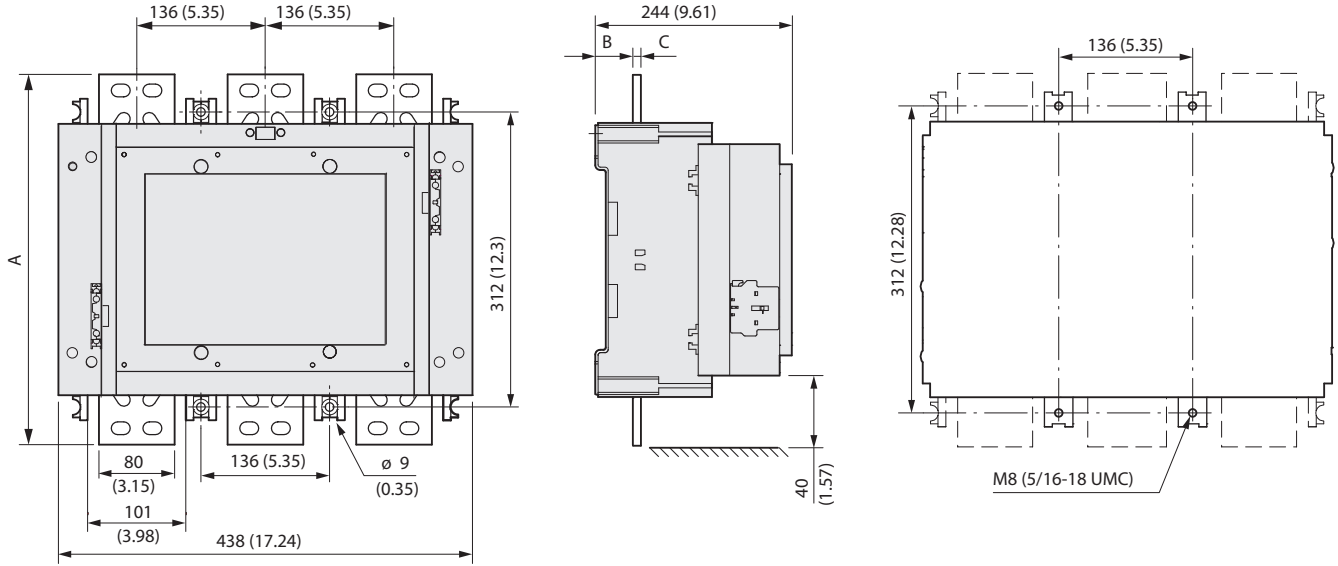
100-E580...100-E750



100-E1260



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



100-E860, 100-E1060, 100-E2050, 100-E2650

## Mounting Position

Figure 26 - 100-E116...100-E2650 — AC/DC and AC/DC with PLC input

