

Allen-Bradley® Bulletin 100 Contactors



An integrated portfolio of IEC Contactors that save panel-space and energy

Features and Benefits:

- Direct-on-line and reversing contactors
- Built-in surge suppression with electronic coils
- AC and DC coil control
- Complete range of accessories within each contactor family
- Compatible with our Bulletin 193 Overload Relays and Bulletin 140M Motor Protection Circuit Breakers
- Meet IEC, UL, and CSA standards requirements
- RoHS compliant
- Supports IE3 Motor Switching
- Safety contactors

Environmentally friendly, versatile and flexible, our IEC contactors provide modular solutions up to 2650A.



Overview

From 5 amp miniature to 2650 amp large-frames, Rockwell Automation® offers IEC contactors that are flexible, modular and easy to select and apply, with coordinating accessories, SCCR documentation and a PLC-compatible universal electronic AC/DC coil that reduces energy consumption.

When paired with our Bulletin 140G/140MG circuit breakers, customers can obtain **documented short circuit coordinated ratings (SCCR)** with the Rockwell Automation® [online global SCCR selection tool](#). This enables users to select the specific combinations of Allen-Bradley components they are applying—circuit breakers, contactors, overload relays—and obtain a test summary letter documenting the compliance of their specific products with to IEC and UL standards. This documentation is based on coordinated testing conducted in Rockwell Automation accredited test facilities and witnessed by Underwriters Laboratories.



LISTEN.
THINK.
SOLVE.®

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 ranges
 - 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.	Cat No.	Cat No.
116	160	37	55	55	75	75	55	—	30	40	75	100	1	1	100-E116⊗11 ⁽¹⁾	104-E116⊗22 ⁽¹⁾
146	225	45	75	75	90	90	90	75	40	50	100	125	1	1	100-E146⊗11 ⁽¹⁾	104-E146⊗22 ⁽¹⁾
190	275	55	90	90	110	90	132	110	50	60	125	150	1	1	100-E190⊗11	104-E190⊗22
205	350	55	110	110	132	110	160	132	60	75	150	200	1	1	100-E205⊗11	104-E205⊗22
265	400	75	132	132	160	160	200	132	75	100	200	250	1	1	100-E265⊗11	104-E265⊗22
305	500	90	160	160	160	200	250	132	100	125	250	300	1	1	100-E305⊗11	104-E305⊗22
370	600	110	200	200	200	220	315	132	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	560	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](#)

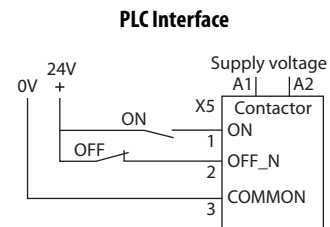
Coil Voltage Codes

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	AC/DC with PLC Input	—	—	ED	EN
100-E400...100-E750		EJ ⁽²⁾	EY	ED	EN
100-E860...100-1060		—	—	ED	—
100-E1260		EJ ⁽¹⁾	EY	ED	EN
100-E2050...100-E2650		—	—	ED	—

(1) 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_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⁾	
116	160	37	55	55	75	75	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 (e.g. **100S-E116⊗12CL**)

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

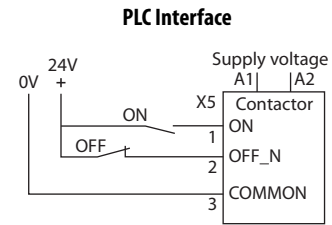
Coil Voltage Codes

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	AC/DC with PLC Input	—	—	ED	EN
100S-E400...100S-E750		EJ ⁽¹⁾	EY	ED	EN

(1) 24V...60V DC only



Specifications

		100-E, 100S-E
		116...2650
Rated Isolation Voltage U_i		
IEC	[V]	1000
UL, CSA	[V]	600
Rated Impulse Voltage Withstand U_{imp}	[kV]	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	
Insulation Class of the Coil	Class F per IEC 60947-4-1	
Rated coil frequency	AC 50/60 Hz, DC	
Ambient Temperature		
Storage	[°C]	-40...+70
Operation at rated voltage	[°C]	-40...+70
Max. Altitude of Installation Site	[m]	3000
Climatic Withstand	100-E116-370: IEC 60068-2-30 Test Db & IEC 60068-2-2 test Bd & IEC 60068-2-1 test Ab (report 1314369) 100-E400-2650: 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	
Protection Class		
Contactors main contacts	IP00	
Contactors coil terminals	P2X (in connected state)	
Auxiliary contacts	P2X (in connected state)	

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	
Approvals	UL	100/100S-E116...100/100S-E750 with all 100-ES* side mounted N.C. auxiliary contacts
	CSA	cULus, File No. E41850 / E196120 (contactors, reversing contactors)
	CCC	√
	EAC	√
	RCM	√
	RINA	√
Certifications	ABS	√
	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	
Coil Type:	Electronic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

AC-1 Active Power Load (50/60 Hz); Ambient temperature 40°C

690V	[A]	160	225	275	350	400	500	600	600	700	800	1050	1350	1650	1260	2050	2650
1000V	[A]	—	225	250	275	350	375	400	600	700	800	1000	1350	1650	1260	2050	2650
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]	—	390	433	476	606	650	693	1039	1212	1386	1732	2338	2858	2182	3551	4590

Ambient temperature 60°C

690V	[A]	145	200	250	300	350	400	500	500	600	700	875	1150	1450	1040	1750	2350
1000V	[A]	—	200	225	250	300	325	350	500	600	700	875	1150	1450	1040	1750	2350
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]	—	346	390	433	520	563	606	866	1039	1212	1516	1992	2511	1801	3031	4070

Ambient temperature 70°C

690V	[A]	130	175	200	240	290	325	400	400	480	580	720	1000	1270	875	1500	2120
1000V	[A]	—	175	185	200	240	260	290	400	480	580	720	1000	1270	875	1500	2120
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]	—	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⁾
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- (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, 1005-E		116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
Coil Type:	Electronic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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

	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	135	165	250	290	315	400	460	580	750	800	970	—	—	—
	690V	[A]	65	93	135	165	250	290	315	350	400	500	650	800	970	—	—	—
	1000V	[A]	—	60	85	100	100	100	100	155	200	250	300	375	400	—	—	—
	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	90	110	200	200	220	250	315	400	530	560	710	—	—	—
	690V	[kW]	55	90	132	160	200	250	315	315	355	500	600	800	1000	—	—	—
	1000V	[kW]	—	75	110	132	132	132	132	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
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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	—	—	—
With 3 poles in series	260V DC	[A]	160	200	—	—	—	—	—	—	—	—	—	—	—	—	—	
	300V DC	[A]	—	—	230	250	—	—	—	—	—	—	—	—	—	—	—	
	340V DC	[A]	—	—	—	—	350	400	520	—	—	—	—	—	—	—	—	
	600V DC	[A]	—	—	—	—	—	—	—	500	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
Coil Type:	Electronic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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

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	313	350	—	—	—	—	—	—	—
1000V	[A]	—	48	72	85	90	95	100	141	155	—	—	—	—	—	—	—
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]	—	63	100	110	125	132	132	200	220	—	—	—	—	—	—	—

AC-4 at approximately 200,000 operations

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]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—
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Wye-Delta (60 Hz)

200V	[Hp]	60	75	75	100	150	150	200	250	300	350	450	600	600	—	—	—
230V	[Hp]	60	75	100	125	150	200	250	250	350	450	500	700	700	—	—	—
460V	[Hp]	150	150	200	250	350	450	500	600	700	800	1000	1250	1500	—	—	—
575V	[Hp]	150	200	250	300	450	500	600	700	800	1000	1250	1750	1750	—	—	—

100/104-E, 100S-E		116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
Coil Type:	Electronic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

UL/CSA Elevator Duty

	200V	[A]	54	54	TBD	TBD	—	—	—	—	—	—	—	—	—	—	—
	230V	[A]	54	54	TBD	TBD	—	—	—	—	—	—	—	—	—	—	—
	460V	[A]	54	54	TBD	TBD	—	—	—	—	—	—	—	—	—	—	—
	575V	[A]	54	54	TBD	TBD	—	—	—	—	—	—	—	—	—	—	—
	200V	[Hp]	15	15	TBD	TBD	—	—	—	—	—	—	—	—	—	—	—
	230V	[Hp]	20	20	TBD	TBD	—	—	—	—	—	—	—	—	—	—	—
	460V	[Hp]	40	40	TBD	TBD	—	—	—	—	—	—	—	—	—	—	—
	575V	[Hp]	50	50	TBD	TBD	—	—	—	—	—	—	—	—	—	—	—

UL/CSA HVAC Applications

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	—	—	—	—	—	—	—	—	—

Star-Delta Starting (50 Hz)

≥ 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	—	—	—	—	—
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

100/104-E, 100S-E		116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
Coil Type:	Electronic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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

Inrush Current
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]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	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	—	—
	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	—	—
	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	—	—
	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	
Coil Type:	Electronic		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Switching of 3-phase Capacitors, AC-6b (50 Hz)																			
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																			
Single capacitor 40 °C	200V	[kVar]	33	41.569	50	66.683	83	100	125.05	114	137	171	205	—	346	—	—	—	—
	230V	[kVar]	38	47.804	57	76.686	95	115	143.81	131	157	196	236	—	398	—	—	—	—
	460V	[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	—

100/104-E, 100S-E		116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650	
Coil Type:	Electronic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Switching of DC Loads																		
Non-inductive or slightly inductive loads or resistance furnaces DC-1 at 60 °C																		
1 pole	24V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1350	1650	1250	2050	—
	48/60V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1350	1650	1250	2050	—
	110V	[A]	—	—	—	—	400	500	520	600	700	800	1050	1250	1350	1650	2050	—
	220V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	440V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2 poles in series	24V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1250	1350	1650	2050	—
	48/60V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1250	1350	1650	2050	—
	110V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1250	1350	1650	2050	—
	220V	[A]	—	—	—	—	400	500	520	600	700	800	1050	—	—	—	—	—
	440V	[A]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3 poles in series	24V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1250	1350	1650	2050	—
	48/60V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1250	1350	1650	2050	—
	110V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1250	1350	1650	2050	—
	220V	[A]	160	200	250	350	400	500	520	600	700	800	1050	1250	1350	1650	2050	—
	440V	[A]	—	—	—	—	—	—	—	600	700	800	1050	1250	1350	1650	2050	—
Shunt-wound Motors—Starting, reverse current breaking, reversing, stepping DC-3, 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	—	—	—	—	—
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
	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	


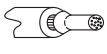

100/104-E, 100S-E		116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650	
Coil Type:	Electronic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Short Circuit Coordination (Max. Fuse or Circuit Breaker Rating) Per IEC 60947-4-1																		
DIN Fuses - gG	Type "2" (400V)	[A]	100 kA Available Fault Current															
			250	250	315	315	400	500	630	630	630	800	800	1000	1250	—	—	—
MCCB	Type "2" (690V)	[A]	80 kA Available Fault Current															
			160	200	315	315	400	425	500	500	630	800	800	1000	1600	—	—	—
MCCB	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)																		
UL Class RK5 Fuses	Type 1 Combination (600V)	[A]	10 kA Available Fault Current															
			250	250	400	400	—	—	—	—	—	—	—	—	—	—	—	—
UL Class L Fuses	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	—	—	—	—	—	—	—
UL Class J and CSA HRCI-J Fuses	Type 1 Combination (600V)	[A]	85 kA Available Fault Current															
			—	—	—	—	—	—	—	—	—	—	—	1600	1600	—	—	—
UL Class J and CSA HRCI-J Fuses	Type 1 Combination (600V)	[A]	100 kA Available Fault Current															
			250	250	400	400	600	600	600	600	600	—	—	—	—	—	—	—
UL Class L Fuses	Type 2 Combination (600V)	[A]	100 kA Available Fault Current															
			200	200	400	400	600	600	600	600	600	—	—	—	—	—	—	—
UL Class L Fuses	Type 1 Combination (600V)	[A]	100 kA Available Fault Current															
			—	—	—	—	—	—	—	800	800	1200	1200	—	—	1600	—	—
UL Class L Fuses	Type 2 Combination (600V)	[A]	100 kA Available Fault Current															
			—	—	—	—	—	—	—	—	—	1200	1200	—	—	—	—	—
UL Inverse-Time Circuit	Type 1 Combination (480V)	[A]	42 kA Available Fault Current															
			—	—	—	—	—	—	—	—	—	1200	1200	—	—	—	—	—
	Type 2 Combination (480V)	[A]	65 kA Available Fault Current															
			250	250	400	400	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	—	—	—	—	—
Type 1 Combination (600V)	[A]	42 kA Available Fault Current																
		—	—	—	—	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	400	—	—	—	—	—	—	—	—	

Coil Data



100-E, 100S-E		116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650	
Coil Type:	Electronic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Operating Limits																		
50/60 Hz	pick-up	[x U _s]	0.85...1.1															
	dropout	[x U _s]	0.55															
DC control	pick-up	[x U _s]	0.80...1.1															
	dropout	[x U _s]	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	—	—							
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	—	—						

Cross Sections, Screw Type Terminals

100-E, 100S-E		116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650	
Coil Type:	Electronic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Main Terminals																		
Conductor Cross Sections — Main Contacts (Terminal type)																		
	(1) conductor	[mm ²]	10...95	16...300	16...400	—	—	—	—	—	—	—	—	—	—	—	—	—
	Clamp Type		100-ECL146	100-ETL205	100-ETL370	—	—	—	—	—	—	—	—	—	—	—	—	—
	Recommended torque	[N•m]	8	34	42	—	—	—	—	—	—	—	—	—	—	—	—	—
	(2) conductors	[mm ²]	10...95	—	16...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	57	—	—	—	—	—	—	—	—	—
	(3) conductors	[mm ²]	—	—	—	—	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 ²]	—	—	—	—	—	120...500	70...750	—	—	—	—	—	—	—	—	—
	Clamp Type		—	—	—	—	—	100-ETL860	100-ETL1060	—	—	—	—	—	—	—	—	—
	Recommended torque	[N•m]	—	—	—	—	—	43	57	—	—	—	—	—	—	—	—	—
	(6) conductors	[mm ²]	—	—	—	—	—	—	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	—	—	—	—	—	—	—	—
Cross section per UL/CSA																		
	(1) conductor	[AWG]	3...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	—	—	—	—	—	—	—	—

100-E, 100S-E		116	146	190	205	265	305	370	400	460	580	750	860	1060	1260	2050	2650
Conductor Cross Sections — Coil 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 contact for 100/104-E, 100S-E		
			Standard 100-ES1/2*	Standard 100-ES3/4*	Low Power 100-ES*-B*
Switching of AC Loads					
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	—	
Switching of DC Loads					
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]	—	—	—
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]	—	—	—
Fuse gG					
Short-circuit protection with no welding of contacts per IEC 60947-5-2		[A]	10	10	0.1
		[A]	10	10	0.1

			Auxiliary contact for 100/104-E, 100S-E		
			Standard 100-ES1/2*	Standard 100-ES3/4*	Low Power 100-ES*-B*
Protective Separation per IEC 60947-1, Annex N					
Min. switching capacity at 24V IEC 60947-5-4	[mA]		50	50	—
Min. switching capacity at 3V IEC 60947-5-4	[mA]		—	—	1
Load Carrying Capacity per UL/CSA					
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	—

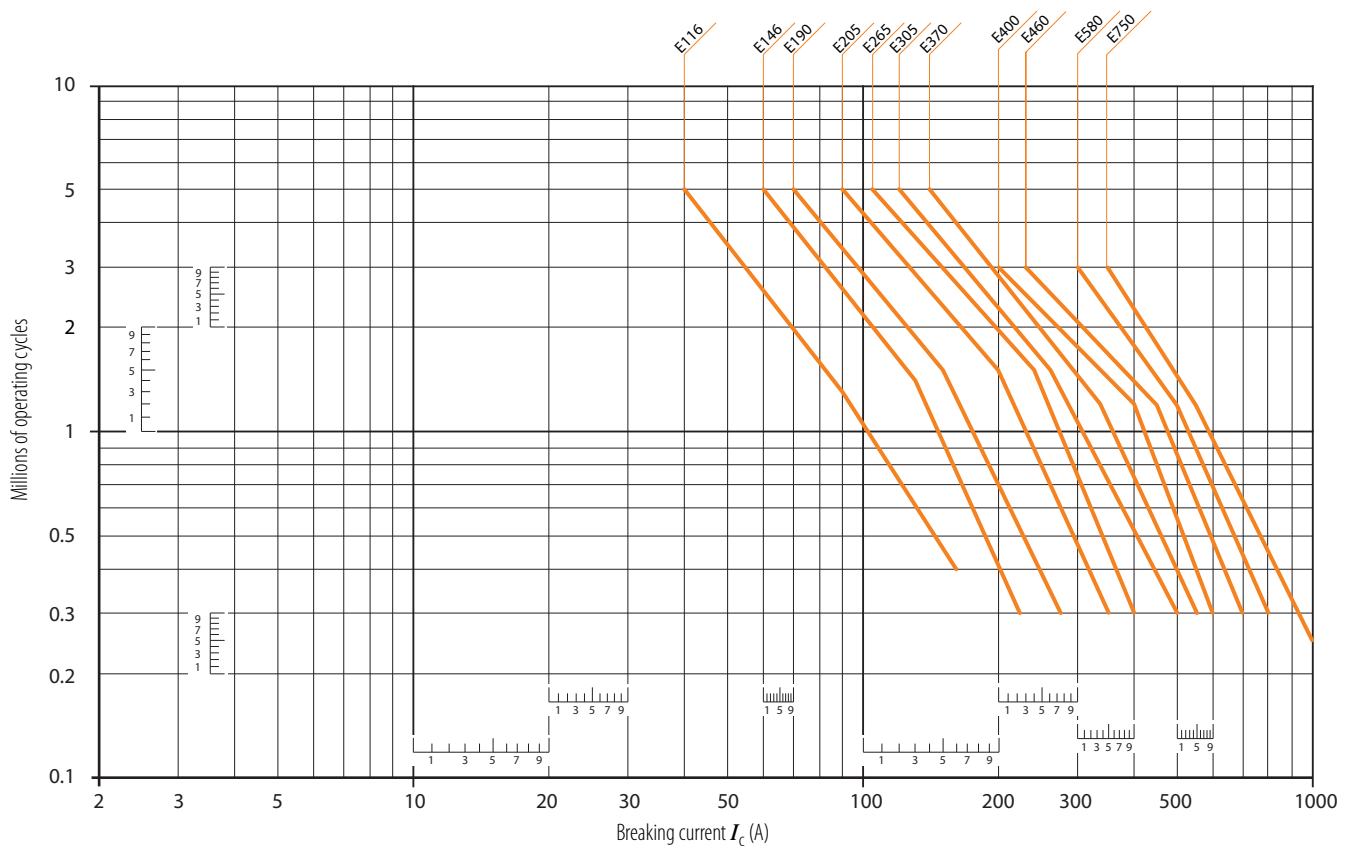
Life-Load Curves

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 76](#)) and maximum electrical switching frequency (see [page 82](#)).

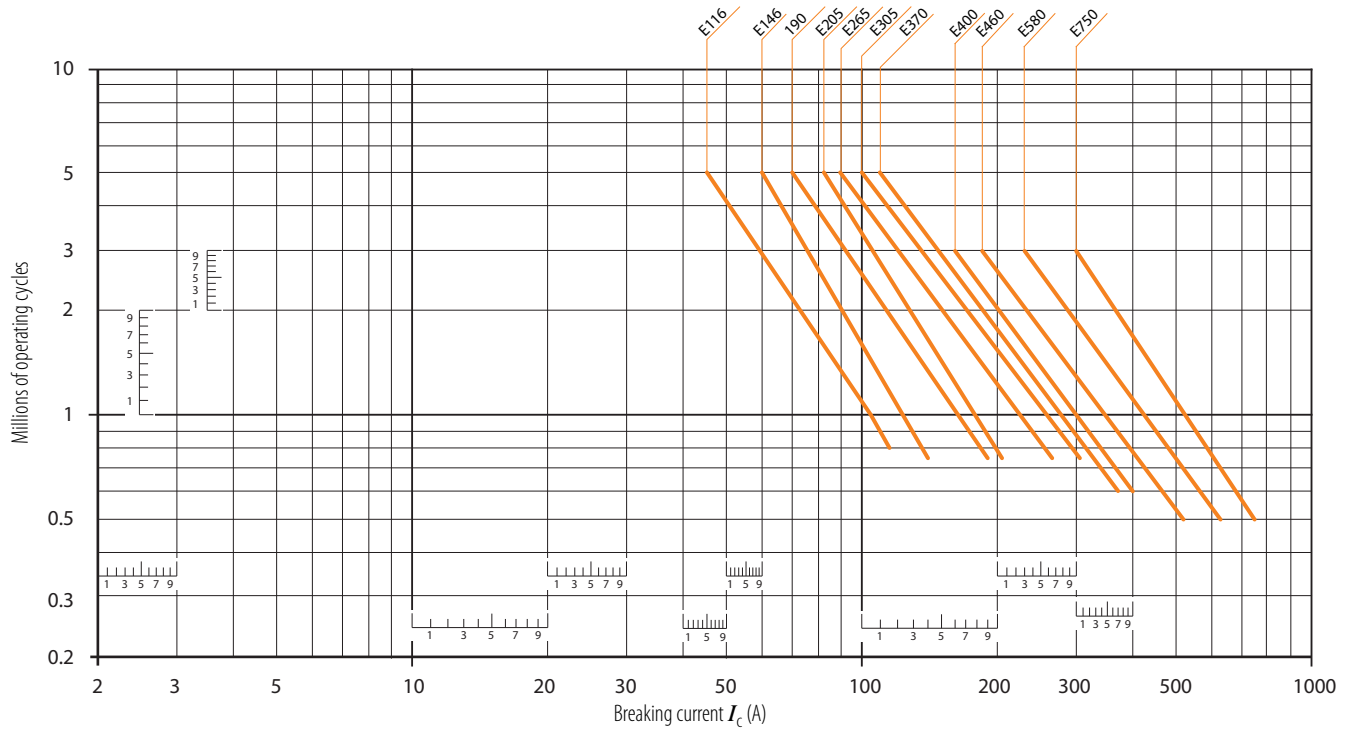


Cat. Nos. 100-E860, -E1060: The electrical durability at the rated current is 50,000 operating cycles.

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 76](#)) and maximum electrical switching frequency (see [page 82](#)).

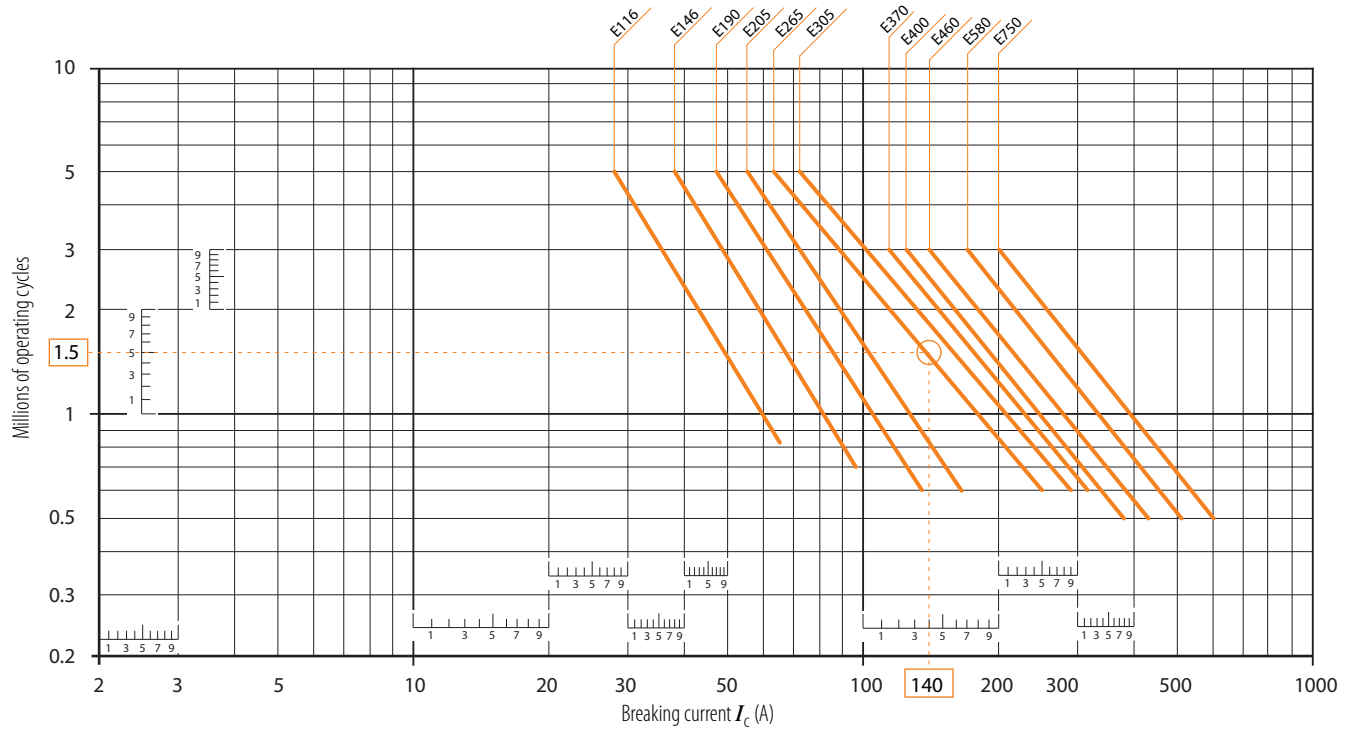


Cat. Nos. 100-E860, -E1060: The electrical durability at the rated current is 50,000 operating cycles.

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 76](#)) and maximum electrical switching frequency (see [page 82](#)).



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 82](#)).

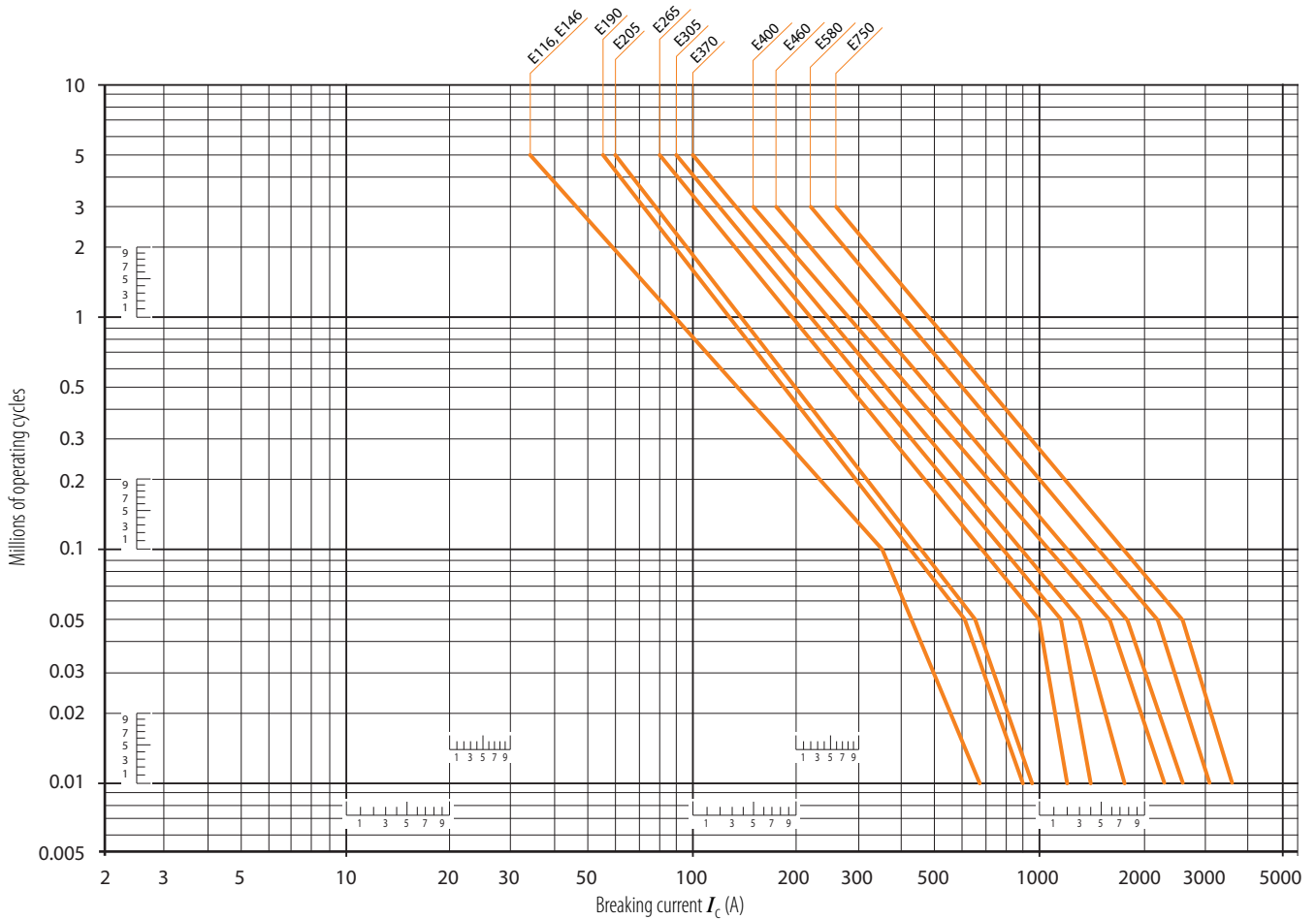
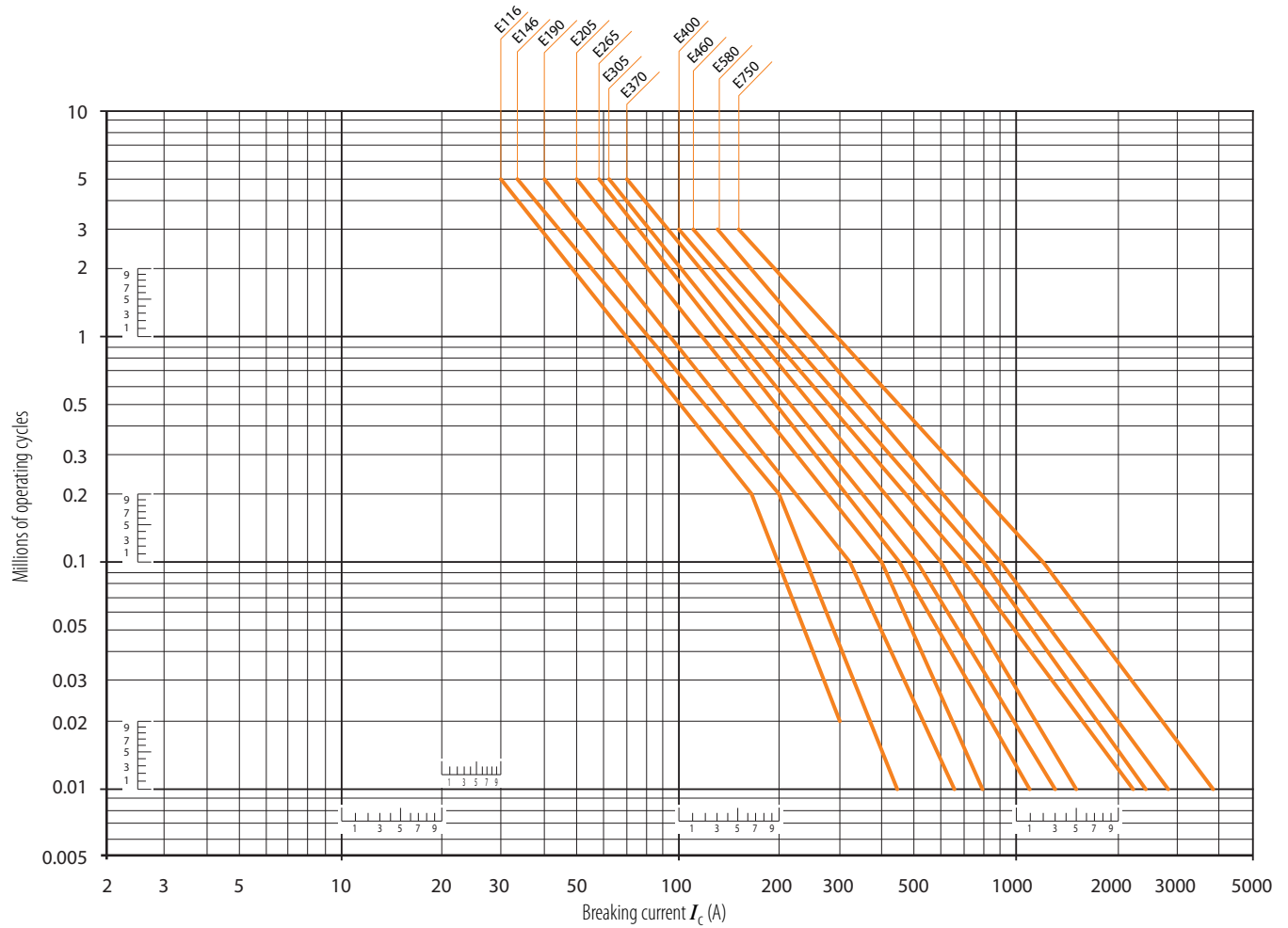


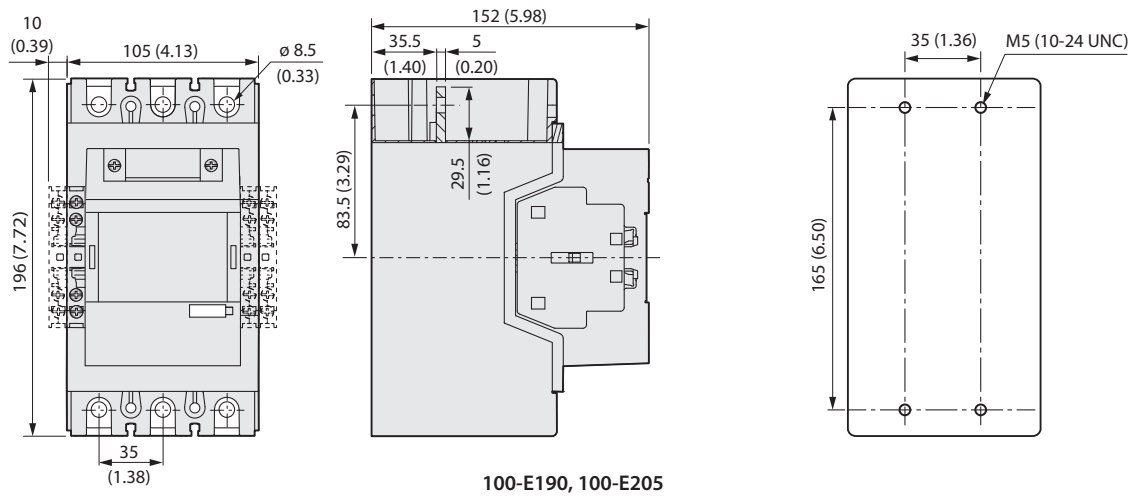
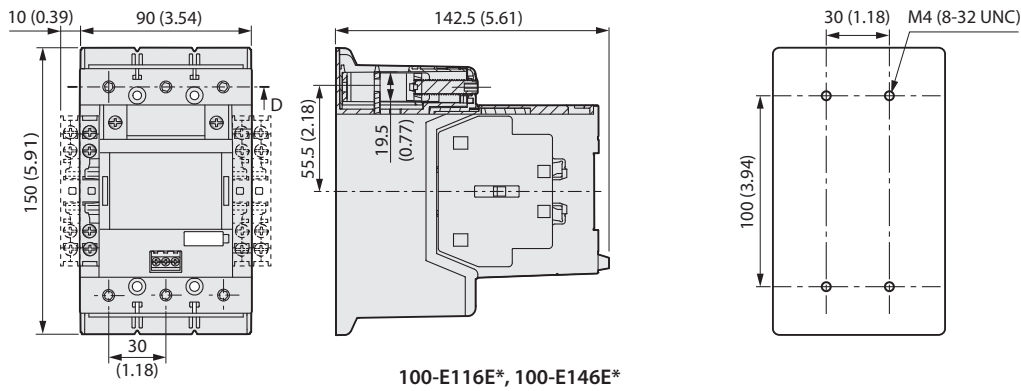
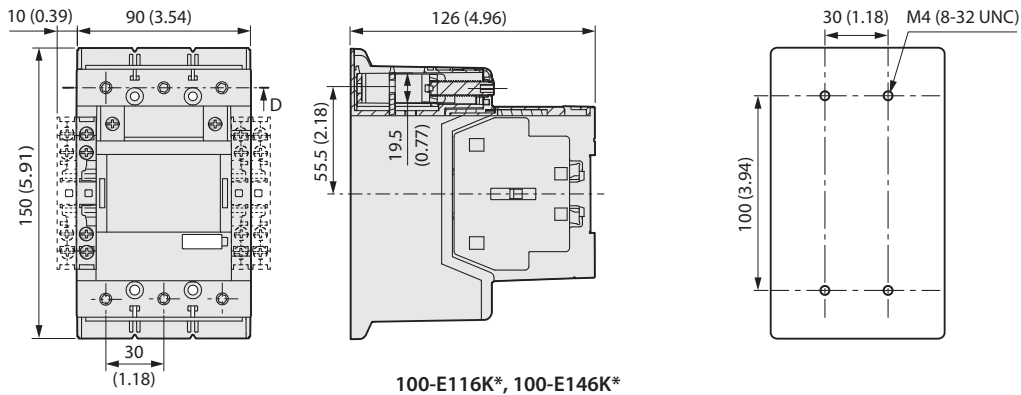
Figure 25 - Electrical durability for AC-2 or AC-4 utilization category - $440V < U_e \leq 690V$

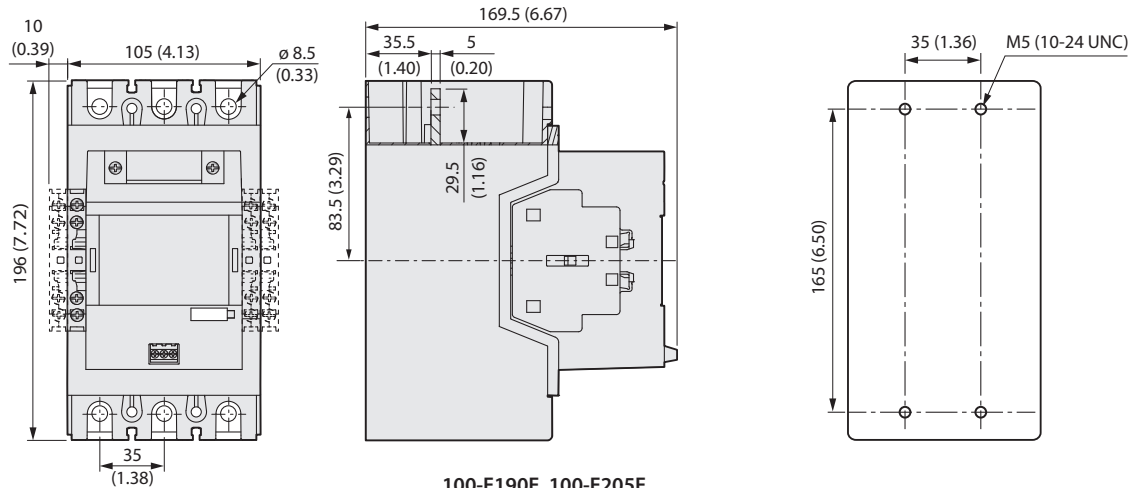
Switching cage motors: starting, reverse operation and step-by-step operation. The breaking current I_c is equal to $2.5 \times I_e$ for AC-2 and $6 \times I_e$ for AC-4, keeping in mind that I_e is the motor rated operational current (I_e = motor full load current). For maximum electrical switching frequency (see [page 82](#)).



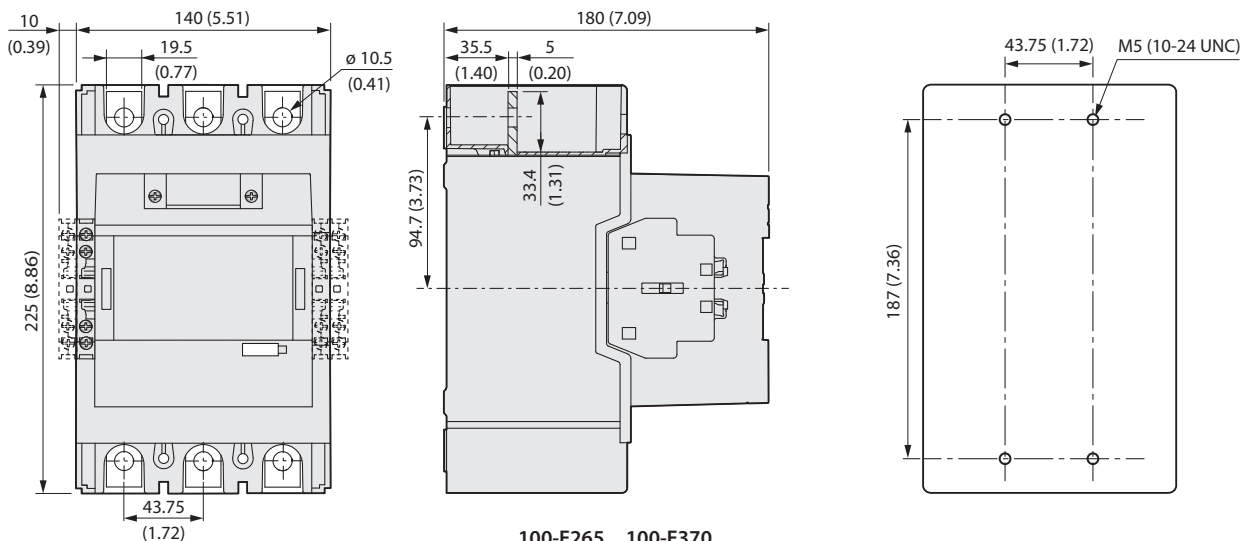
Approximate Dimensions

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

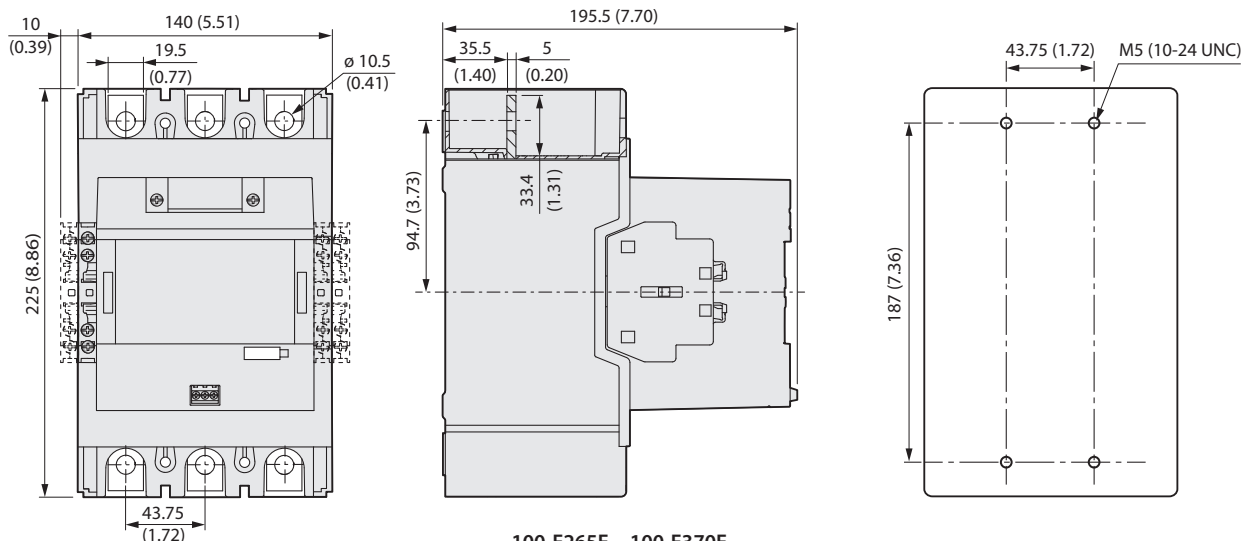




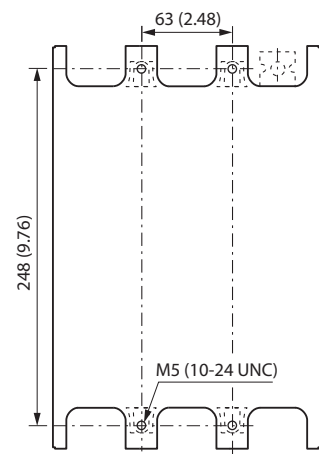
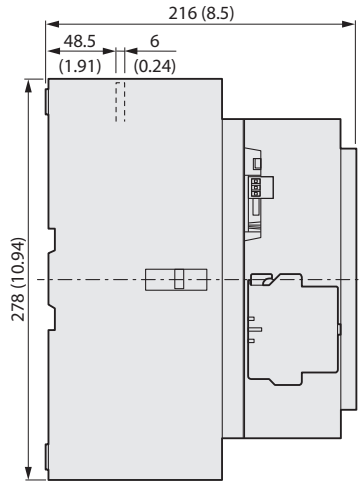
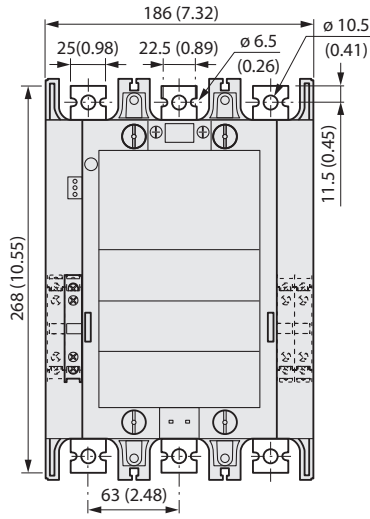
100-E190E, 100-E205E



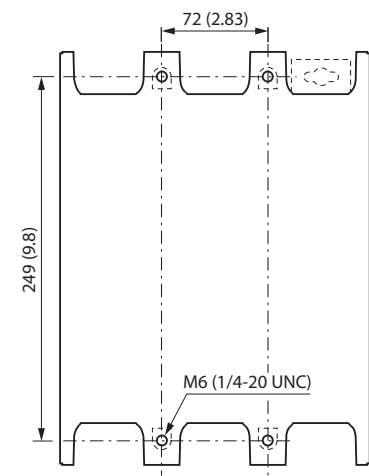
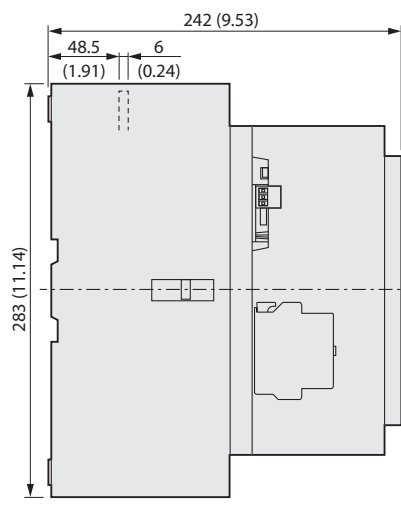
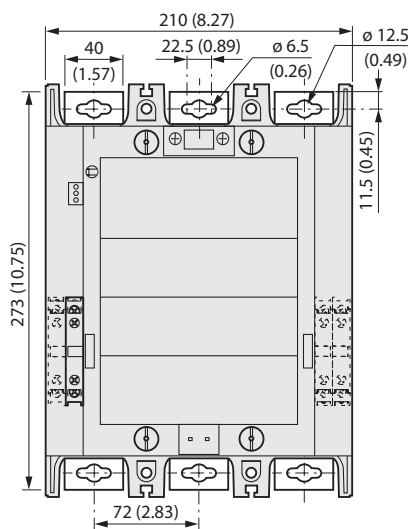
100-E265...100-E370



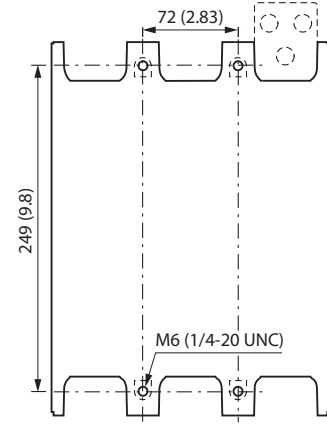
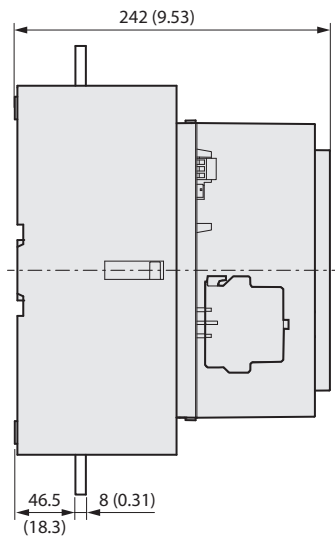
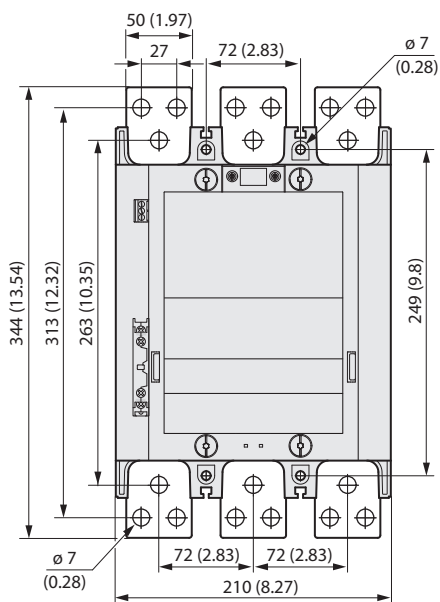
100-E265E...100-E370E



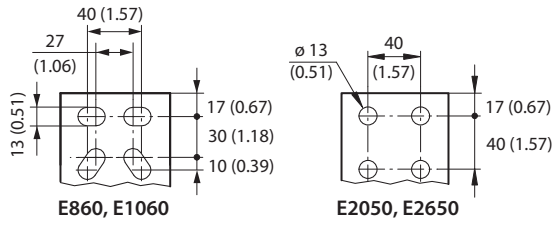
100-E400, 100-E460



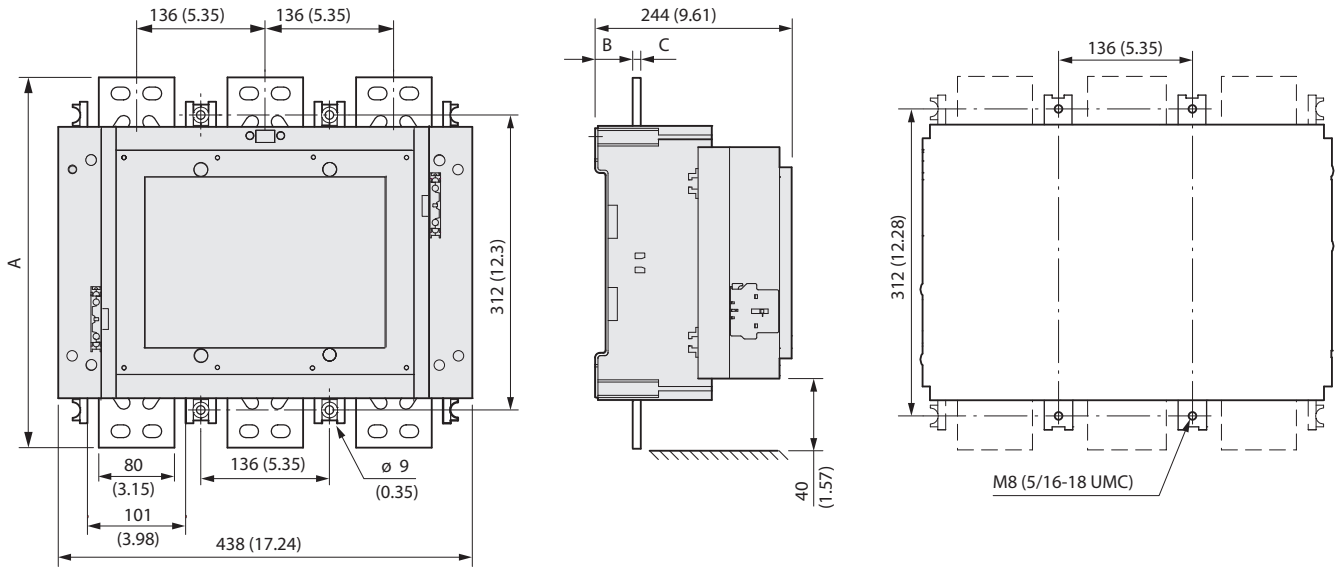
100-E580...100-E750



100-E1260



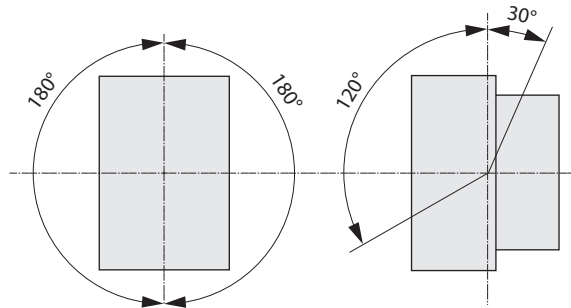
	E860, E1060, E2050	E2650
A	392 (15.43)	422 (16.61)
B	47 (1.85)	53 (2.09)
C	10 (0.39)	25 (0.98)






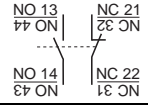
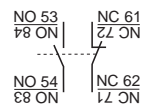
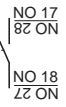
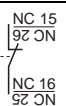

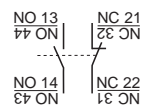
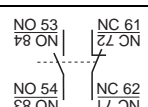
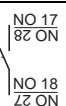
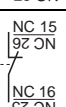
100-E860, 100-E1060, 100-E2050, 100-E2650

Mounting Position



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





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"> • 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⁾ <ul style="list-style-type: none"> • 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 mounting	100-ES1-B10	
		0	1		100-E116...E370, left or right inside mounting	100-ES1-B01	
		Auxiliary Contact Blocks for Side Mounting with Sequence Terminal Designations <ul style="list-style-type: none"> • 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⁾ <ul style="list-style-type: none"> • 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 mounting	100-ES3-B10	
		0	1		100-E400...E2650, left or right inside mounting	100-ES3-B01	


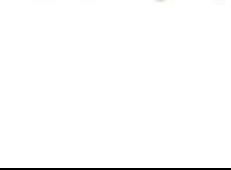

(1) No auxiliary contacts blocks can be mounted on the outside of the 100-ES1-10-B* or 100-ES3-B*.

Description		Connection Diagrams	For Use With	Cat. No.
	Mechanical Interlocks <ul style="list-style-type: none"> • For interlocking of two contactors. • Interlocking of different sizes possible 		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-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


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


	Description	Wire Sizes	For Use With	Cat. No.
	Terminal Lug Kit • Standard on 100-E116*L...100-E146*L contactors	2 x 6 AWG...3/0 AWG	100-E116...100-E146	100-ECL146
	Terminal Lugs	4 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	Contactor with Terminal Lugs	Wires with Compression Lugs	For Use With	Cat. No.
	Terminal Shrouds		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
		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


	Description	For Use With	Cat. No.
	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	Delta Contactor	Wye Contactor
		100-E116...100-E146	100-E116...100-E146
		100-E190...100-E205	100-E116...100-E146
		100-E190...100-E205	100-E190...100-E205
		100-E265...100-E370	100-E190...100-E205
		100-E265...100-E370	100-E265...100-E370
		100-E400...100-E460	100-E400...100-E460
		100-E580...100-E750	100-E400...100-E460
100-E580...100-E750	100-E580...100-E750		
	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.


	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

	Description	For Use With Circuit Breaker	For Use With Contactor	Cat. No.
	For Connection to 140G or 140MG <ul style="list-style-type: none"> • 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


	Description	For Use With Contactor	Cat. No.
	Terminal Enlargements <ul style="list-style-type: none"> • 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

	Description	For Use With Contactor	Cat. No.
	Terminal Extensions <ul style="list-style-type: none"> • 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

	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	THE901
			48...130V AC/DC	THE902
100...250V AC/DC	THE903			
250...500V AC/DC	THE904			
100-E580, 100-E750, 100-E1260	24...60V DC	TJE901		
	48...130V AC/DC	TJE902		
	100...250V AC/DC	TJE903		
	250...500V AC/DC	TJE904		
100-E860, 100-E1060, 100-E2050	100...250V AC/DC	TKE903 ⁽¹⁾		
		TKE904 ⁽²⁾		
100-E2650	100...250V AC/DC	TLE903 ⁽¹⁾		
		TLE904 ⁽²⁾		

(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 ⁽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

	Description	For Use With	Cat. No.
	Terminal and Mounting Hardware Kits	100-E116*L, 100-E146*L	100-EHS146
		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-E2050	100-EHF2050
100-E2650	100-EHF2650		