Product Selection—100-D/104-D Contactors

- 63…500 kW @ 400V
- 75…600 Hp @ 460V
- 100…700 Hp @ 575V
- Electronic and conventional coils AC & DC
  - Integrated PLC interface
  - Low power pick-up & hold-in
  - Wide voltage ranges
- Complete range of accessories
- Environmentally friendly
- Compact dimensions

100-D Contactor

The Bulletin 100-D/104-D contactor family, along with a wide range of common accessories and Bulletin 193 electronic overload relays, provides the most compact and flexible starter component system available.

Bulletin 100S-D safety contactors were designed to address the needs of modern safety applications requiring feedback and monitoring of the energy isolating switchgear used in hazardous motion loads.

The 100S-D meets these needs through its "mirror contact" design. If a power contact welds, the N.C. auxiliary contacts will not change state. This feature provides reliable indication about the open/closed status of the main power poles. In addition, the gold-plated bifurcated auxiliary contacts are ideally suited for low-energy applications or feedback control circuits with multiple series-connected N.C. auxiliary contacts.

100-D/104-D 3-Pole AC- Operated Contactors

- Conventional and Electronic AC Coils
- 3 Main Contacts
- Non-Reversing or Reversing

Rated Operational Current I_e [A]		Ratings for switching AC motors - AC-2, AC-3										Auxiliary Contacts		Non-Reversing Contactor	Reversing Contactor
60 °C	40 °C	kW (50 Hz)							Hp (60 Hz)						
AC-3 (400V)	AC-1 (690V)	230V	400V	415V	500V	690V	1000V	200V	230V	460V	575V	N.O.	N.C.	Cat No.	Cat No.
115	250	37	63	66	80	110	63	40	40	75	100	0	0	100-D115⊗00	—
												1	1	100-D115⊗11	—
												2	4	—	104-D115⊗24
140	250	45	78	82	80	111	75	40	50	100	125	1	1	100-D140⊗00	—
														100-D140⊗00	—
														—	104-D140⊗24
180	250	55	90	90	110	90	132	110	50	60	125	0	0	100-D180⊗00	—
												1	1	100-D180⊗11	—
												2	4	—	104-D180⊗24
210	350	63	118	125	205	200	110	60	75	150	200	0	0	100-D210⊗00	—
												1	1	100-D210⊗11	—
												2	4	—	104-D210⊗24
250	350	80	140	150	250	250	132	75	100	200	250	0	0	100-D250⊗00	—
												1	1	100-D250⊗11	—
												2	4	—	104-D250⊗24
300	450	90	170	160	290	300	160	100	125	250	300	0	0	100-D300⊗00	—
												1	1	100-D300⊗11	—
												2	4	—	104-D300⊗24
420	540	132	238	250	420	425	220	150	175	350	400	0	0	100-D420⊗00	—
												1	1	100-D420⊗11	—
												2	4	—	104-D420⊗24
630	800	200	355	355	500	500	—	200	250	500	600	0	0	100-D630⊗00	—
												1	1	100-D630⊗11	—
												2	4	—	104-D630⊗24
860	1000	250	500	500	500	600	—	250	300	600	700	0	0	100-D860⊗00	—
												1	1	100-D860⊗11	—
												2	4	—	104-D860⊗24

3-Pole DC-operated Contactors

- Conventional and Electronic DC Coils
- 3 Main Contacts
- Non-Reversing or Reversing

Rated Operational Current I_e [A]		Ratings for switching AC motors - AC-2, AC-3										Auxiliary Contacts		Non-Reversing Contactor	Reversing Contactor
60 °C	40 °C	kW (50 Hz)							Hp (60 Hz)						
AC-3 (400V)	AC-1 (690V)	230V	400V	415V	500V	690V	1000V	200V	230V	460V	575V	N.O.	N.C.	Cat No.	Cat No.
115	250	37	63	66	80	110	63	40	40	75	100	0	0	100-D115⊗00	—
												1	1	100-D115⊗11	—
												2	1/1L	100-D115⊗22L	—
												2	4	—	104-D115⊗24
												2	2/2L	—	104-D115⊗22L
140	250	45	78	82	80	111	75	40	50	100	125	0	0	100-D140⊗00	—
												1	1	100-D140⊗00	—
												2	1/1L	100-D140⊗22L	—
												2	4	—	104-D140⊗24
												2	2/2L	—	104-D140⊗22L
180	250	55	90	90	110	90	132	110	50	60	125	0	0	100-D180⊗00	—
												1	1	100-D180⊗00	—
												2	1/1L	100-D180⊗22L	—
												2	4	—	104-D180⊗24
												2	2/2L	—	104-D180⊗22L
210	350	63	118	125	205	200	110	60	75	150	200	0	0	100-D210⊗00	—
												1	1	100-D210⊗11	—
												2	4	—	104-D210⊗24
250	350	80	140	150	250	250	132	75	100	200	250	0	0	100-D250⊗00	—
												1	1	100-D250⊗11	—
												2	4	—	104-D250⊗24
300	450	90	170	160	290	300	160	100	125	250	300	0	0	100-D300⊗00	—
												1	1	100-D300⊗11	—
												2	4	—	104-D300⊗24
420	540	132	238	250	420	425	220	150	175	350	400	0	0	100-D420⊗00	—
												1	1	100-D420⊗11	—
												2	4	—	104-D420⊗24
630	800	200	355	355	500	500	—	200	250	500	600	0	0	100-D630⊗00	—
												1	1	100-D630⊗11	—
												2	4	—	104-D630⊗24
860	1000	250	500	500	500	600	—	250	300	600	700	0	0	100-D860⊗00	—
												1	1	100-D860⊗11	—
												2	4	—	104-D860⊗24

Coil Voltage Codes—100-D/104-D Contactors

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: 120V, 60 Hz: Cat. No. 100-D115⊗11 becomes Cat. No.100-D115D11.

AC Voltages [V], Conventional Coil		24	48	100	110	120	200	208	220…230	230	240	277	380…400
100-D115...100-D180	50 Hz	K	Y	—	D	—	—	—	A	—	T	—	N
	60 Hz	J	X	—	—	D	—	H	—	—	A	T	—
100-D115	50/60 Hz	—	—	KP	KN	—	KG	—	KL	KF	KA	KT	—

AC Voltages [V], Conventional Coil		415	440	480	500	550	600
100-D115...100-D180	50 Hz	B	G	—	M	C	—
	60 Hz	—	N	B	—	—	C
100-D115	50/60 Hz	—	—	—	—	—	—

AC Voltages [V], Electronic Coil w/ EI. Interface(1)		24	42…64	100	110…130	200	208…277	200…220
100-D115...100-D300	50/60 Hz	EJ(2)	EY	—	ED	—	EA	—
100-D420	50/60 Hz	—	—	—	ED	—	EA	—
100-D630…100-D860	50/60 Hz	—	—	EP	ED	EG	—	EG

AC Voltages [V], Electronic Coil w/ EI. Interface (1)		230…250	277	380…415	380…500	440…480	500
100-D115...100-D300	50/60 Hz	—	—	—	EN	—	—
100-D420	50/60 Hz	—	—	—	EN	—	—
100-D630…100-D860	50/60 Hz	EA	ET	EN	—	EB	EM

(1) Signal voltage of the Cat. No. 100-D. . . electronic interface: nominal U_e: 24V DC/I_e: 15 mA
Pickup voltage: 13.0V DC...30.2V DC
Dropout Voltage: –3.0V DC...+5.0V DC

(2) Not available with 100/104-D300.

DC Voltages [V], Conventional Coil	24	48	110	125	220
100-D115...100-D180 (1)	ZJ	ZY	ZD	ZS	ZA

(1) For conventional DC coils, the pickup winding must be interconnected with the N.C. late-breaking auxiliary contact(s).

DC Voltages [V], Electronic Coil w/ EI Interface (1)	24	48…72	110…130	200…255
100-D115...100-D300	EZJ	EZY	EZD	EZA
100-D420	—	—	EZD	EZA
100-D630…100-D860	—	—	ED	EA

(1) Signal voltage of the Cat. No. 100-D. . . electronic interface: nominal U_e: 24V DC/I_e: 15 mA
Pickup voltage: 13.0V DC...30.2V DC , Dropout Voltage: –3.0V DC...+5.0V DC.

Product Selection—100S-D Safety Contactors

- 63…500 kW @ 400V
- 75…600 Hp @ 460V
- 100…700 Hp @ 575V
- Electronic and conventional coils
  - AC & DC
  - Integrated PLC interface
  - Low power pick-up & hold-in
  - Wide voltage ranges
- Complete range of accessories
- Environmentally friendly
- Compact dimensions

Bulletin 100S-D safety contactors were designed to address the needs of modern safety applications requiring feedback and monitoring of the energy isolating switchgear used in hazardous motion loads. The 100S-D meets these needs through its "mirror contact" design. If a power contact welds, the N.C. auxiliary contacts will not change state. This feature provides reliable indication about the open/closed status of the main power poles. In addition, the gold-plated bifurcated auxiliary contacts are ideally suited for low-energy applications or feedback control circuits with multiple series-connected N.C. auxiliary contacts.

3-Pole AC-Operated Contactors

Rated Operational Current I_e [A]		Ratings for switching AC motors - AC-2, AC-3										Auxiliary Contacts		Cat No.(4)
60 °C	40 °C	kW (50 Hz)(1)							Hp (60 Hz)					
AC-3 (400V)	AC-1 (690V)	230V	400V	415V	500V(2)	690V	1000V	200V	230V	460V	575V	N.O.	N.C.(3)	
115	250	37	63	66/75	80	111	63	40	40	75	100	2	2	100-D115⊗22BC
140	250	45	78	82/90	80/100	110/132	75	40	50	100	125	2	2	100-D140⊗22BC
180	250	55	101	100	90/125	132/160	90	50	60	150	150	2	2	100-D180⊗22BC
210	350	63	118	110	205	200	110	60	75	150	200	2	2	100-D210⊗22BC
250	350	80	140	150	250	250	133	75	100	200	250	2	2	100-D250⊗22BC
300	450	90	170	160	290	300	160	100	125	250	300	2	2	100-D300⊗22BC
420	540	132	238	250	420	425	220	150	175	350	400	2	2	100-D420⊗22BC
630	800	200	355	355	500	500	—	200	250	500	600	2	2	100-D630⊗22BC
860	1000	250	500	500	500	600	—	250	300	600	700	2	2	100-D860⊗22BC

(1) Preferred values according to IEC 60072-1.

(2) Higher kW rating only applies to contactors with electronic coil.

(3) The N.C. contacts meet IEC 60947-4 Annex F requirements for mirror contact performance. The N.C. mirror contacts are wired in series or parallel and must be used as monitoring contacts with feedback to the safety circuit.

(4) If standard cross-stamped auxiliary contacts are required, remove the letter "B" before the letter "C" in the cat. no. Example: Cat. No. 100S-D115⊗22BC becomes Cat. No. 100S-D115⊗22C.

3-Pole DC-Operated Contactors

Rated Operational Current I_e [A]		Ratings for switching AC motors - AC-2, AC-3										Auxiliary Contacts		Conventional Coil Cat. No.	Electronic Coil Cat No.(5)
60 °C	40 °C	kW (50 Hz)(1)						Hp (60 Hz)							
AC-3 (400V)	AC-1 (690V)	230V	400V	415V	500V	690V	1000V	200V	230V	460V	575V	N.O.	N.C.(3)		
115	250	37	63	66/75	80	111	63	40	40	75	100	2	2	100S-D115⊗33LC(4)	100S-D115⊗22BC
140	250	45	78	75	80/100(2)	110/132	75	40	50	100	125	3	2/1L	100S-D140⊗33LC	100S-D140⊗22BC
180	250	55	101	100	90/125	132/160	90	50	60	150	150	3	2/1L	100S-D180⊗33LC	100S-D180⊗22BC
210	350	63	118	110	205	200	110	60	75	150	200	2	2	—	100S-D210⊗22BC
250	350	80	140	150	250	250	133	75	100	200	250	2	2	—	100S-D250⊗22BC
300	450	90	170	160	290	300	160	100	125	250	300	2	2	—	100S-D300⊗22BC
420	540	132	238	250	420	425	220	150	175	350	400	2	2	—	100S-D420⊗22BC
630	800	200	355	355	500	500	—	200	250	500	600	2	2	—	100S-D630⊗22BC
860	1000	250	500	500	500	600	—	250	300	600	700	2	2	—	100S-D860⊗22BC

(1) Preferred values according to IEC 60072-1.

(2) Higher kW rating only applies to contactors with electronic coil.

(3) The N.C. contacts meet IEC 60947-4 Annex F requirements for mirror contact performance. The N.C. mirror contacts are wired in series or parallel and must be used as monitoring contacts with feedback to the safety circuit.

(4) For conventional DC coil only. The pickup winding must be interconnected with the N.C. late-breaking auxiliary contacts.

(5) If standard cross-stamped auxiliary contacts are required, remove the letter "B" before the letter "C" in the cat. no. Example: Cat. No. 100S-D115⊗22BC becomes Cat. No. 100S-D115⊗22C.

Coil Voltage Codes—100S-D Safety Contactors

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: 120V, 60 Hz: Cat. No. 100S-D115⊗22BC becomes Cat. No.100S-D115D22BC.

AC Voltages [V], Conventional Coil		24	48	100	110	120	200	208	220…230	230	240	277
100S-D115…100S-D180	50 Hz	K	Y	—	D	—	—	—	A	—	T	—
	60 Hz	J	X	—	—	D	—	H	—	—	A	T
100S-D115	50/60 Hz	—	—	KP	KN	—	KG	—	KL	KF	KA	KT

AC Voltages [V], Conventional Coil		380…400	415	440	480	500	550	600
100S-D115...100S-D180	50 Hz	N	B	G	—	M	C	—
	60 Hz	—	—	N	B	—	—	C
100S-D115	50/60 Hz	—	—	—	—	—	—	—

AC Voltages [V], Electronic Coil w/ EI Interface(1)		24	42…64	100	110…130	200	208…277	200…220
100S-D115…100S-D300	50/60 Hz	EJ(2)	EY	—	ED	—	EA	—
100S-D420	50/60 Hz	—	—	—	ED	—	EA	—
100S-D630…100S-D860	50/60 Hz	—	—	EP	ED	EG	—	EG

AC Voltages [V], Electronic Coil w/ EI Interface (1)		230…250	277	380…415	380…500	440…480	500
100S-D115...100S-D300	50/60 Hz	—	—	—	EN	—	—
100S-D420	50/60 Hz	—	—	—	EN	—	—
100S-D630…100S-D860	50/60 Hz	EA	ET	EN	—	EB	EM

(1) Signal voltage of the Cat. No. 100S-D… electronic interface: nominal U_e: 24V DC/I_e: 15 mA
Pickup voltage: 13.0V DC...30.2V DC
Dropout Voltage: –3.0V DC...+5.0V DC

(2) Not available with 100S-D300

DC Voltages [V], Conventional Coil	24	48	110	125	220	250
100S-D115…100S-D180	ZJ	ZY	ZD	ZS	ZA	ZT

DC Voltages [V], Electronic Coil w/ EI Interface (1)	24	48…72	110…130	200…255
100S-D115...100S-D300	EZJ	EZY	EZD	EZA
100S-D420	—	—	EZD	EZA
100S-D630…100S-D860	—	—	ED	EA

(1) Signal voltage of the Cat. No. 100S-D… electronic interface: nominal U_e: 24V DC/I_e: 15 mA
Pickup voltage: 13.0V DC...30.2V DC , Dropout Voltage: –3.0V DC...+5.0V DC.

Specifications

			100/104-D,100S-D										
			115	140	140	180	180	210	250	300	420	630	860
Coil Type:	Conventional		X	X	—	X	—	—	—	—	—	—	—
	Electronic — EI		X	—	X	—	X	X	X	X	X	X	X
AC-1 Active Power Load (50 Hz); Ambient temperature 40 °C													
Rated Operational Current, I_e	≤500V	[A]	250	250	250	250	250	350	350	450	540	800	1000
	690V	[A]	250	250	250	250	250	350	350	450	540	800	1000
	1000V	[A]	250	250	250	250	250	350	350	450	540	—	—
	230V	[kW]	100	100	100	100	100	139	139	179	199	319	398
	240V	[kW]	104	104	104	104	104	145	145	187	208	333	416
	400V	[kW]	173	173	173	173	173	242	242	312	346	554	693
	415V	[kW]	180	180	180	180	180	252	252	323	359	575	719
	500V	[kW]	217	217	217	217	217	303	303	390	433	693	866
	690V	[kW]	299	299	299	299	299	418	418	538	598	956	1195
	1000V	[kW]	433	433	433	433	433	606	606	779	866	—	—
AC-1 Active Power Load (50 Hz); Ambient temperature 60 °C													
Rated Operational Current, I_e	≤500V	[A]	210	210	210	210	210	300	300	380	425	—	—
	690V	[A]	210	210	210	210	210	300	300	380	425	—	—
	1000V	[A]	210	210	210	210	210	300	300	380	425	—	—
	230V	[kW]	84	84	84	84	84	120	120	151	169	—	—
	240V	[kW]	87	87	87	87	87	125	125	158	177	—	—
	400V	[kW]	145	145	145	145	145	208	208	263	294	—	—
	415V	[kW]	151	151	151	151	151	216	216	273	305	—	—
	500V	[kW]	182	182	182	182	182	260	260	329	368	—	—
	690V	[kW]	251	251	251	251	251	359	359	454	508	—	—
	1000V	[kW]	364	364	364	364	364	520	520	658	736	—	—
Switching of 3-phase Motors; (50 Hz) Ambient temperature 60 °C, AC-2, AC-3													
Rated Operational Current, I_e	230V	[A]	115	140	140	180	180	210	250	300	420	630	860
	240V	[A]	115	140	140	180	180	210	250	300	420	630	860
	400V	[A]	115	140	140	180	180	210	250	300	420	630	860
	415V	[A]	115(130)(1)	140(155)(1)	140(155)(1)	180(189)(1)	180(189)(1)	210(227)(1)	250(258)(1)	300(315)(1)	420	630	860
	500V	[A]	115	115	140	140	180	210	250	300	420	630	753
	690V	[A]	115	115	140	140	180	210	250	300	420	492	—
	1000V	[A]	46	55	55	65	65	80	95	115	160	—	—
	230V	[kW]	37	45	45	57	57	67	80	97	135	200	250
	240V	[kW]	38	47	47	60	60	70	83	101	141	200	250
	400V	[kW]	64	78	78	101	101	118	140	170	238	355	500
	415V	[kW]	66(75)(1)	82(90)(1)	82(90)(1)	105(110)(1)	105(110)(1)	122(132)(1)	145(150)(1)	176(185)§(1)	250	355	500
	500V	[kW]	80	80	98	98	126	147	177	213	298	450	560
	690V	[kW]	111	111	135	135	176	205	250	293	424	500	—
	1000V	[kW]	63	75	75	90	90	110	132	160	225	—	—

(1) 415 V: values in ( ) AC-2 and AC-3 lifespan -25 %

			100/104-D,100S-D										
			115	140	140	180	180	210	250	300	420	630	860
Coil Type:	Conventional		X	X	—	X	—	—	—	—	—	—	—
	Electronic — EI		X	—	X	—	X	X	X	X	X	X	X
Load Carrying Capacity per UL/CSA													
General Purpose Current (enclosed)		[A]	220	220	220	220	220	300	300	340	420	630	860
Rated power (enclosed) 1-phase	115V	[A]	100	135	135	—	—	—	—	—	—	—	—
	230V	[A]	110	136	136	176	176	216	—	—	—	—	—
	115V	[Hp]	10	15	15	—	—	—	—	—	—	—	—
	230V	[Hp]	25	30	30	40	40	50	—	—	—	—	—
Rated power (enclosed) 3-phase	200V	[A]	120	120	120	150	150	177	221	285	414	552	692
	230V	[A]	104	130	130	154	154	192	248	312	420	602	720
	460V	[A]	96	124	124	180	180	180	240	302	414	590	702
	575V	[A]	99	125	125	144	144	192	242	289	382	562	651
	200V	[Hp]	40	40	40	50	50	60	75	100	150	200	250
	230V	[Hp]	40	50	50	60	60	75	100	125	175	250	300
	460V	[Hp]	75	100	100	150	150	150	200	250	350	500	600
	575V	[Hp]	100	125	125	150	150	200	250	300	400	600	700
Switching of 3-phase Motors, (50 Hz); Ambient temperature 60 °C, AC-4													
	230V	[A]	115	140	140	180	180	210	250	300	420	—	—
	240V	[A]	115	140	140	180	180	210	250	300	420	—	—
	400V	[A]	115	140	140	180	180	210	250	300	420	—	—
	415V	[A]	115(130)(2)	140(155)(2)	140(155)(2)	180(189)(3)	180(189)(3)	210(227)‡	250(258)‡	300(315)‡	420	—	—
	500V	[A]	115	115	140	140	170	210	250	300	360	—	—
	690V	[A]	115	115	140	140	170	210	250	300	360	—	—
	1000V	[A]	46	55	55	65	65	80	95	115	160	—	—
	230V	[kW]	37	45	45	57	57	67	80	97	135	—	—
	240V	[kW]	39	47	47	60	60	70	83	101	141	—	—
	400V	[kW]	63	78	78	100	100	118	140	170	238	—	—
	415V	[kW]	66(75)(2)	82(90)(2)	82(90)(2)	105(110)(2)	105(110)(2)	125(132)(2)	145(150)(2)	176(185)(2)	250	—	—
	500V	[kW]	80	80	98	98	119	147	177	213	255	—	—
	690V	[kW]	110	110	135	135	167	205	250	293	356	—	—
	1000V	[kW]	63	75	75	90	90	110	132	160	225	—	—
AC-4 at approximately 200,000 operations													
	230V	[A]	53	60	60	67	67	85	105	140	170	—	—
	240V	[A]	53	60	60	67	67	85	105	140	170	—	—
	400/415V	[A]	53	60	60	67	67	85	105	140	170	—	—
	500V	[A]	53	60	60	67	67	85	105	140	170	—	—
	690V	[A]	53	60	60	67	67	85	105	140	170	—	—
	1000V	[A]	25	37	37	43	43	60	72	85	105	—	—
	230V (1)	[kW]	15	17	17	20	20	25	32	45	55	—	—
	240V (1)	[kW]	15	18.5	18.5	22	22	25	32	45	55	—	—
	400V (1)	[kW]	25	32	32	37	37	45	55	75	90	—	—
	415V (1)	[kW]	25	32	32	37	37	50	55	80	100	—	—
	500V (1)	[kW]	32	40	40	45	45	55	75	100	110	—	—
	690V (1)	[kW]	45	55	55	63	63	80	100	132	160	—	—
	1000V (1)	[kW]	30	50	50	55	55	80	100	110	150	—	—
Max. switching frequency		Ops/hour	120	120	120	100	100	120	100	70	70	—	—

(1) Power ratings at 50 Hz: Preferred values according to IEC 60072-1

(2) 415V: Values in ( ) AC-3 and AC-4 lifespan -25%

(3) Approval pending on Cat. No. 100-D210. . .D860.

			100/104-D,100S-D										
			115	140	140	180	180	210	250	300	420	630	860
Coil Type:	Conventional		X	X	—	X	—	—	—	—	—	—	—
	Electronic — EI		X	—	X	—	X	X	X	X	X	X	X
Wye-Delta (60 Hz)													
	200V	[Hp]	60	60	60	75	75	100	125	175	250	—	—
	230V	[Hp]	60	75	75	100	100	125	175	200	250	—	—
	460V	[Hp]	125	175	175	200	200	250	350	450	600	—	—
	575V	[Hp]	150	200	200	250	250	300	450	500	650	—	—
UL/CSA Elevator Duty													
	200V	[A]	78	92	92	120	120	150	150	177	221	—	—
	230V	[A]	80	104	104	130	130	130	154	192	248	—	—
	460V	[A]	77	96	96	124	124	156	180	180	240	—	—
	575V	[A]	77	77	77	99	99	125	144	192	242	—	—
	200V	[Hp]	25	30	30	40	40	50	50	60	75	—	—
	230V	[Hp]	30	40	40	50	50	50	60	75	100	—	—
	460V	[Hp]	60	75	75	100	100	125	150	150	200	—	—
	575V	[Hp]	75	75	75	100	100	125	150	200	250	—	—
Star-Delta Starting (50 Hz)													
	≤ 230V	[A]	199	242	242	312	312	364	433	520	727	—	—
	≤ 240V	[A]	199	242	242	312	312	364	433	520	727	—	—
	400V	[A]	199	242	242	312	312	364	433	520	727	—	—
	415V	[A]	199 (225)(2)	242(268)(2)	242 (268)(2)	312 (332)(2)	312 (332)(2)	364 (393)(2)	433 (447)(2)	520 (546)(2)	727	—	—
	500V	[A]	199	199	242	312	312	364	433	520	727	—	—
	690V	[A]	199	199	242	312	312	364	433	520	727	—	—
	1000V	[A]	80	95	95	113	113	139	165	200	277	—	—
	230V (1)	[kW]	63	75	75	90	90	110	132	160	220	—	—
	240V (1)	[kW]	66	80	80	100	100	125	150	160	250	—	—
	400V (1)	[kW]	110	132	132	160	160	200	250	300	425	—	—
	415V (1)	[kW]	114 (132)(2)	132 (160)(2)	132 (160)(2)	160	160	220	250	315 (335)(2)	425	—	—
	500V (1)	[kW]	132	132	160	200	200	250	315	375	530	—	—
	690V (1)	[kW]	192	200	220	300	300	355	425	530	750	—	—
	1000V(1)	[kW]	110	132	132	160	160	200	220	280	400	—	—

(1) Power ratings at 50 Hz: Preferred values according to IEC 60072-1

(2) 415V: Values in () AC-3 and AC-4 lifespan -25%

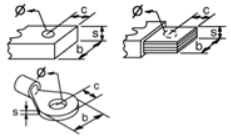
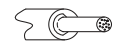
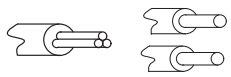
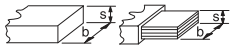
			100/104-D,100S-D										
			115	140	140	180	180	210	250	300	420	630	860
Coil Type:	Conventional		X	X	—	X	—	—	—	—	—	—	—
	Electronic — EI		X	—	X	—	X	X	X	X	X	X	X
Switching of Power Transformers, AC-6a (50 Hz)													
Inrush Current / Rated transformer current		=n											
n= 30	≤ 230V	[A]	60	70	70	85	85	105	125	150	210	—	—
	≤ 240V	[A]	60	70	70	85	85	105	125	150	210	—	—
	≤ 400V	[A]	60	70	70	85	85	105	125	150	210	—	—
	≤ 415V	[A]	60	70	70	85	85	105	125	150	210	—	—
	≤ 500V	[A]	60	70	70	85	85	105	125	150	210	—	—
	≤ 690V	[A]	60	70	70	85	85	105	125	150	210	—	—
	≤ 1000V	[A]	46	70	70	85	85	105	125	150	210	—	—
	230V	[kVA]	24	28	28	34	34	42	50	60	84	—	—
	240V	[kVA]	26	29	29	35	35	44	52	62	87	—	—
	400V	[kVA]	42	48	48	59	59	73	87	104	145	—	—
	415V	[kVA]	43	50	50	61	61	75	90	108	151	—	—
	500V	[kVA]	52	61	61	74	74	91	108	130	182	—	—
	690V	[kVA]	72	84	84	102	102	125	149	179	251	—	—
	1000V	[kVA]	80	121	121	147	147	182	217	260	364	—	—
n=20	≤ 690V	[A]	90	105	105	128	128	158	188	225	315	—	—
n=15	≤ 690V	[A]	120	140	140	170	170	210	250	300	420	—	—
60 Hz Peak Inrush/peak rated transformer current													
	n=30	[A]	60	70	70	85	85	105	125	150	210	—	—
	200V	[kVA]	20.8	24.2	24.2	29.4	29.4	36.4	43.3	52.0	72.7	—	—
	208V	[kVA]	21.6	25.2	25.2	30.6	30.6	37.8	45.0	54.0	75.7	—	—
	240V	[kVA]	24.9	29.1	29.1	35.3	35.3	43.6	52.0	62.4	87.3	—	—
	480V	[kVA]	49.9	58.2	58.2	70.7	70.7	87.3	104	125	175	—	—
	600V	[kVA]	62.4	72.7	72.7	88.3	88.3	109	130	156	218	—	—
	660V	[kVA]	68.6	80.0	80.0	97.2	97.2	120	143	171	240	—	—
60 Hz Peak Inrush/peak rated transformer current													
	n=20	[A]	90	105	105	128	128	158	188	225	315	—	—
	200V	[kVA]	31.2	36.4	36.4	44.3	44.3	54.7	65.1	77.9	109	—	—
	208V	[kVA]	32.4	37.8	37.8	46.1	46.1	56.9	67.7	81.1	113	—	—
	240V	[kVA]	37.4	43.6	43.6	53.2	53.2	65.7	78.2	93.5	131	—	—
	480V	[kVA]	74.8	87.3	87.3	106	106	131	156	187	262	—	—
	600V	[kVA]	93.5	109	109	133	133	164	195	234	327	—	—
	660V	[kVA]	103	120	120	146	146	131	215	257	360	—	—
60 Hz Peak Inrush/peak rated transformer current													
	n=15	[A]	120	140	140	170	170	210	250	300	420	—	—
	200V	[kVA]	41.6	48.5	48.5	58.9	58.9	72.7	86.6	104	145	—	—
	208V	[kVA]	43.2	50.4	50.4	61.2	61.2	75.7	90.1	108	151	—	—
	240V	[kVA]	49.9	58.2	58.2	70.7	70.7	87.3	104	125	175	—	—
	480V	[kVA]	99.8	116	116	141	141	175	208	249	349	—	—
	600V	[kVA]	125	145	145	177	177	218	260	312	436	—	—
	660V	[kVA]	137	160	160	194	194	240	286	343	480	—	—

			100/104-D,100S-D										
			115	140	140	180	180	210	250	300	420	630	860
Coil Type:	Conventional		X	X	—	X	—	—	—	—	—	—	—
	Electronic — EI		X	—	X	—	X	X	X	X	X	X	X
Switching of 3-phase Capacitors, AC-6b (50 Hz)													
Single capacitor 40°C	230V	[kVar]	45	70	70	70	70	98	98	125	139	—	—
	240V	[kVar]	47	73	73	73	73	102	102	131	145	—	—
	400V	[kVar]	78	121	121	121	121	170	170	218	242	—	—
	415V	[kVar]	81	126	126	126	126	176	176	226	252	—	—
	500V	[kVar]	97	152	152	152	152	212	212	273	303	—	—
	690V	[kVar]	134	209	209	209	209	293	293	376	418	—	—
	1000V	[kVar]	194	303	303	303	303	424	424	546	606	—	—
Single capacitor 60 °C	230V	[kVar]	38	59	59	59	59	84	84	106	119	—	—
	240V	[kVar]	39	61	61	61	61	87	87	111	124	—	—
	400V	[kVar]	65	102	102	102	102	145	145	184	206	—	—
	415V	[kVar]	68	106	106	106	106	151	151	191	214	—	—
	500V	[kVar]	82	127	127	127	127	182	182	230	258	—	—
	690V	[kVar]	113	176	176	176	176	251	251	318	356	—	—
	1000V	[kVar]	164	255	255	255	255	364	364	461	515	—	—
Group capacitors 40°C	230V	[kVar]	45	70	70	70	70	98	98	125	139	—	—
	240V	[kVar]	47	73	73	73	73	102	102	131	145	—	—
	400V	[kVar]	56	76	76	111	111	170	170	218	242	—	—
	415V	[kVar]	56	76	76	112	112	170	176	226	252	—	—
	500V	[kVar]	56	76	76	113	113	172	212	273	303	—	—
	690V	[kVar]	57	78	78	114	114	174	247	356	418	—	—
	1000V	[kVar]	58	79	79	116	116	177	251	361	606	—	—
Group capacitors 60 °C	230V	[kVar]	38	59	59	59	59	84	84	106	119	—	—
	240V	[kVar]	39	61	61	61	61	87	87	111	124	—	—
	400V	[kVar]	56	76	76	102	102	145	145	184	206	—	—
	415V	[kVar]	56	76	76	106	106	151	151	191	214	—	—
	500V	[kVar]	56	76	76	113	113	172	182	230	258	—	—
	690V	[kVar]	57	78	78	114	114	174	247	318	356	—	—
	1000V	[kVar]	58	79	79	116	116	177	251	361	515	—	—
60 Hz Single Capacitor — 40 °C	200V	[kVar]	39	61	61	61	61	85	85	109	121	—	—
	230V	[kVar]	45	70	70	70	70	98	98	125	139	—	—
	460V	[kVar]	89	139	139	139	139	195	195	251	279	—	—
	600V	[kVar]	116	182	182	182	182	255	255	327	364	—	—
60 Hz Group Capacitors — 40 °C	200V	[kVar]	39	61	61	61	61	85	85	109	121	—	—
	230V	[kVar]	45	70	70	70	70	98	98	125	139	—	—
	460V	[kVar]	56	76	76	112	112	171	195	251	279	—	—
	600V	[kVar]	57	77	77	114	114	173	246	327	364	—	—
Switching of Lamps													
Gas discharge lamps AC-5a, 40 °C													
open		[A]	144	225	225	225	225	315	315	405	450	—	—
enclosed		[A]	122	189	189	189	189	270	270	342	383	—	—
Individually compensated:													
Max. capacitance at expected													
Filament AC-5b	230/240V	[A]	120	140	140	170	170	210	250	300	420	—	—

			100/104-D,100S-D										
			115	140	140	180	180	210	250	300	420	630	860
Coil Type:	Conventional		X	X	—	X	—	—	—	—	—	—	—
	Electronic — EI		X	—	X	—	X	X	X	X	X	X	X
Switching of Hermetically Sealed Cooling Compressor Motors - manual reset of overload release (50 Hz)													
AC-8a	400V	[A]	192	210	210	—	—	—	—	—	—	—	—
	500V	[A]	192	192	210	—	—	—	—	—	—	—	—
	690V	[A]	192	192	210	—	—	—	—	—	—	—	—
Switching of DC Loads													
Non-inductive or slightly inductive loads or resistance furnaces DC-1, 60 °C													
1 pole	24V	[A]	135	210	210	210	210	300	300	380	425	—	—
	48/60V	[A]	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	3	3.3	3.3	3.3	3.3	4.9	4.9	4.9	5.2	—	—
	440V	[A]	0.6	0.75	0.75	0.75	0.75	1	1	1	1.2	—	—
2 poles in series	24V	[A]	135	210	210	210	210	300	300	380	425	—	—
	48/60V	[A]	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	135	210	210	210	210	300	300	380	425	—	—
	440V	[A]	3	3.3	3.3	3.3	3.3	4.9	4.9	4.9	5.2	—	—
3 poles in series	24V	[A]	135	210	210	210	210	300	300	380	425	—	—
	48/60V	[A]	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	135	210	210	210	210	300	300	380	425	—	—
	440V	[A]	11	11	11	11	11	14	14	14	15	—	—
Shunt-wound Motors, Starting, reverse current braking, reversing, stepping DC-3, 60°C													
3polesinseries	24V	[A]	135	210	210	210	210	300	300	380	425	—	—
	48/60V	[A]	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	135	210	210	210	210	300	300	380	425	—	—
	440V	[A]	3	3.5	3.5	3.5	3.5	4.1	4.1	4.1	5.8	—	—
Series-wound Motors, Starting, reverse current braking, reversing, stepping DC-5, 60 °C													
3 poles in series	24V	[A]	135	210	210	210	210	300	300	380	425	—	—
	48/60V	[A]	135	210	210	210	210	300	300	380	425	—	—
	110V	[A]	135	210	210	210	210	300	300	380	425	—	—
	220V	[A]	135	210	210	210	210	300	300	380	425	—	—
	440V	[A]	1.2	2.1	2.1	2.1	2.1	2.4	2.4	2.4	3	—	—
Short Time Withstand I_{CW}, 60 °C	10 s	[A]	1040	1240	1360	1480	1480	2360	2520	2840	4700	6300	7000
Resistance and Power Dissipation													
Main current circuit resistance		[mΩ]	0.4	0.42	0.42	0.42	0.42	0.22	0.22	0.18	0.15	0.19	0.14
Power dissipation by all circuits at I_e AC-3/400V		[W]	14.5	24.6	24.6	40.8	40.8	29.4	41.7	48.6	79.5	226.2	310.6
Total power dissipation At I_e AC-3/400V	AC control	[W]	24.5(20.5)	34.6	30.6	50.8	46.8	35.4	47.7	54.6	86.5	256.2	340.6
	DC control	[W]	22.5(20.5)	32.6	30.6	48.8	46.8	35.4	47.7	54.6	86.5	256.2	340.6
Lifespan													
Mechanical AC control	[Million ops.]		10	10	10	10	10	10	10	10	10	2	2
Mechanical DC control	[Million ops.]		10	10	10	10	10	10	10	10	10	2	2
Electrical AC-3 (400 V)	[Million ops.]		1	1	1	1	1	1	1	1	1	—	—

			100/104-D,100S-D										
			115	140	140	180	180	210	250	300	420	630	860
Coil Type:	Conventional		X	X	—	X	—	—	—	—	—	—	—
	Electronic — EI		X	—	X	—	X	X	X	X	X	X	X
Weight													
AC	Non-Rev.	[kg (lbs)]	3.3(7.28) [3.8 (8.38)](1)	3.3 (7.28)	3.8 (8.38)	3.3 (7.28)	3.8 (8.38)	7.5 (16.53)	7.5 (16.53)	7.5 (16.53)	7.5 (16.53)	28.6 (63)	28.6 (63)
	Rev.	[kg (lbs)]	3.14 (6.92)	—	—	—	—	—	—	—	—	—	—
DC	Non-Rev.	[kg (lbs)]	3.3(7.28) [3.8 (8.38)](1)	3.3 (7.28)	3.8 (8.38)	3.3 (7.28)	3.8 (8.38)	7.5 (16.53)	7.5 (16.53)	7.5 (16.53)	7.5 (16.53)	28.6 (63)	28.6 (63)
	Rev.	[kg (lbs)]	3.22(7.1)	—	—	—	—	—	—	—	—	—	—

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

			100/104-D,100S-D								
			115	140	180	210	250	300	420	630	860
Coil Type:	Conventional		X	X	X	—	—	—	—	—	—
	Electronic — EI		X	X	X	X	X	X	X	X	X
Conductor Cross Sections - Main Contacts Terminal type			 (1)			 (1)				 (1)	
	b max.	[mm]	25			30				52	
	c max.	[mm]	12.5			15				22	
	s max.	[mm]	5			6				2 x 8	
	∅ min.	[mm]	8.3			10.5				13	
Recommended torque		[N•m]	22			43				68	
Recommended torque		[lb-in]	195			380				600	
With terminal lug kit			100-DL180(1)			100-DL420(1)				100-DL630	100-DL860
Cross section per UL/CSA		[AWG]	6…300 MCM			(2x) 4…350 MCM				(2X) 2/0…500 MCM	(4X) 2/0…500 MCM
Recommended torque		[lb-in]	88…106			375				400	400
With Frame Terminal Block			100-DTB180(1)			100-DTB420(2)				—	—
	top opening	[mm^2]	16…35			25…185				—	—
	bottom opening	[mm^2]	16…95			25…185				—	—
	top opening	[mm^2]	16…50			25…240				—	—
	bottom opening	[mm^2]	16…120			25…240				—	—
	b max.	[mm]	20			25				—	—
	s top	[mm]	3…9			6…20				—	—
	s bottom	[mm]	3…14			6…20				—	—
Recommended torque		[N•m]	14			25				—	—
Cross section per UL/CSA	top	[AWG]	6…1/0 AWG			4 AWG…600 MCM				—	—
	bottom	[AWG]	6 AWG…250 MCM			4 AWG…600 MCM				—	—
Recommended torque		[lb-in]	124			220				—	—

(1) Hexagonal socket screw

(2) Pozidriv No. 2 / Blade No. 3 screw

Short-Circuit Coordination Data

See www.rockwellautomation.com/global/support/global-sccr.page for complete short-circuit current ratings.

		100/104-D,100S-D									
		115	140/180	140	180	210	250	300	420	630	860
Coil Type:	Conventional	X	X	—	—	—	—	—	—	—	—
	Electronic - EI	X	—	X	X	X	X	X	X	X	X
Short Circuit Coordination (Max. Fuse or Circuit Breaker Rating) Per IEC 60947-4-1 (contactor and fuses only)											
DIN Fuses- gG, gL		50 kA Available Fault Current									
Type"1"(690V)	[A]	250	315	315	355	500	500	630	630	TBD	TBD
Type"2"(400V)	[A]	200	250	250	315	400	400	500	500	TBD	TBD
Type"2"(690V)	[A]	200	250	250	315	400	400	500	500	TBD	TBD
BS88Fuses											
Type"1"(415V)	[A]	200	250	250	250	355	355	450	630	TBD	TBD
Type"2"(415V)	[A]	200	250	250	250	355	355	450	560	TBD	TBD
UL Class K5 and RK5 Fuses		10 kA Available Fault Current									
UL Listed Combination (600V)	[A]	250	350/450	350	450	500	—	—	—	—	—
UL Class L Fuses		18 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	700	700	1000	—	—
UL Class L Fuses		30 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	2000	—
UL Class L Fuses		42 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	2500
UL Class J and CSA HRCI-J Fuses		100 kA Available Fault Current									
UL verified combination to IEC60947-4-1 "Type2"	[A]	200	250/300	250	300	400	400	500	600	TBD	TBD
UL Inverse-Time Circuit Breaker		10 kA Available Fault Current									
UL Listed Combination (600V)	[A]	150	200/250	200	250	300	—	—	—	—	—
UL Inverse-Time Circuit Breaker		18 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	350	400	500	—	—
UL Inverse-Time Circuit Breaker		25 kA Available Fault Current									
UL Listed Combination (600Y/347V)	[A]	125	200	200	200	250	—	—	—	—	—
UL Inverse-Time Circuit Breaker		30 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	400	400	600	1200	—
UL Inverse-Time Circuit Breaker		42 kA Available Fault Current									
UL Listed Combination (600V)	[A]	—	—	—	—	—	—	—	—	—	1200
UL Inverse-Time Circuit Breaker		65 kA Available Fault Current									
UL Listed Combination (480V)	[A]	125	200	200	200	250	400	400	600	TBD	TBD
UL Inverse-Time Circuit Breaker		65kAAvailable Fault Current									
UL Listed Combination (480V)	[A]	125	200	200	200	250	400	400	600	TBD	TBD

Coil Data

			100/104-D,100S-D										
			115	140/180	115	140	180	210	250	300	420	630	860
Coil Type:	Conventional		X	X	—	—	—	—	—	—	—	—	—
	Electronic - EI		X	—	X	X	X	X	X	X	X	X	X
Operating Limits													
50 Hz, 60 Hz, 50/60 Hz	pick-up	[x U_s]	0.85…1.1		0.85…1.1							0.8…1.1	
	dropout	[x U_s]	0.3…0.6		0.3…0.5							0.1…0.8	
DC control	pick-up	[x U_s]	0.85…1.1		0.85…1.1							0.85…1.1	
	dropout	[x U_s]	0.3…0.6		0.3…0.5							0.1…0.8	
Coil Consumption													
50 Hz, 60 Hz, 50/60 Hz	pick-up	[VA/W]	650/310		380/240(1)						490/270(1)	1915/1720	
	hold-in	[VA/W]	50/10		13/6						18/7	33/30	
DC control	pick-up	[W]	540		265(1)						340(1)	1980(1)	
	hold-in	[W]	8		6						7	30	
Operating Times													
AC	closing delay	[ms]	20…47		20…45							60…100	
	opening delay	[ms]	6…12		25…110							70…145	
With RC module	closing delay	[ms]	9…18		—							—	
DC	opening delay	[ms]	27…47		25…50							60…100	
	closing delay	[ms]	12…20		35…110							70…145	
With integrated diode	opening delay	[ms]	12…20		—							—	
With external diode	opening delay	[ms]	—		—						—	—	

(1) Electronic coil drives are designed to minimize power requirements, but this control may exhibit a higher inrush (540 W, < 10 ms) when energizing. This must be taken into account for the proper sizing of supply devices, all-or-nothing relays and cross-sections of coil supply lines. Please contact your local Rockwell Automation sales office or Allen-Bradley distributor for detailed information.

Auxiliary Contacts, Auxiliary Contact Blocks, and Pneumatic Timers

			Side-mounted		
			Conventional	Bifurcated	Electronically Compatible
Switching of AC Loads					
AC-12 I_{th}	at 40 °C	[A]	16	10	0.1
	at 60 °C	[A]	12	6	at 250V
AC-15 at rated voltage of	24V	[A]	5.5	3	(1…100 mA) at 3…125V
	42/48V	[A]	5.5	3	
	120V	[A]	5.5	3	
	230V	[A]	5.5	3	
	240V	[A]	5	3	
	400V	[A]	3	2	
	415V	[A]	2.5	2	
	500V	[A]	1.6	1.2	
	690V	[A]	1	0.7	
Switching of DC Loads					
DC-12 L/R < 1 ms resistive loads at	24V DC	[A]	16	16	—
	48V DC	[A]	9	9	—
	110V DC	[A]	3.5	3.5	—
	220V DC	[A]	0.55	0.55	—
	440V DC	[A]	0.2	0.2	—

			Side-mounted		
			Conventional	Bifurcated	Electronically Compatible
DC-14L/R <15 ms inductive loads with economy resistor in series at	24V DC	[A]	9	9	—
	48V DC	[A]	5	5	—
	110V DC	[A]	2	2	—
	220V DC	[A]	0.4	0.4	—
	440V DC	[A]	0.16	0.1	—
DC-13 switching electromagnets at	24V DC	[A]	5	5	(1...100 mA) at 3...125V
	48V DC	[A]	2	2	
	110V DC	[A]	0.7	0.7	
	220V DC	[A]	0.25	0.25	
	440V DC	[A]	0.12	0.12	
Fuse gG					
		[A]	16	16	—
		[A]	16	16	—
Protective Separation per IEC 60947-1, Annex N			between load and auxiliary circuit 440V		
Min. switching capacity according to IEC 60947-5-4			17V/10 mA	5V/2 mA (1million ops.)	3V/1 mA
Load Carrying Capacity per UL/CSA					
Rated voltage	AC	[V]	max.600		max.250
Continuous rating	40 °C	[A]	10 General purpose		0.1
Switching capacity	AC	[A]	Heavy pilot duty (A600)		0.1
Rated voltage	DC	[V]	max.600		max.250
Switching capacity	DC	[A]	Standard pilot duty (P600)	Standard pilot duty (Q600)	0.1

General

Attribute		Value
Rated Isolation Voltage U_i		
IEC	[V]	1000
UL,CSA	[V]	600
Rated Impulse Voltage Withstand U_{imp}	[kV]	12
Rated Voltage U_e		
AC 50/60 Hz	[V]	230, 240, 400, 415, 500, 690, 1000
DC	[V]	24, 48, 110, 220, 440
Insulation Class of the Coil		Class B per VDE 0660, Table 22
Rated coil frequency		AC 50 Hz; 50/60Hz DC
Ambient Temperature		
Storage	[°C]	-40...+80
Operation at rated voltage	[°C]	-25...+60
at 70 °C		15% current reduction against 60 °C values
Climatic Withstand		IEC 60068-2-30
Max. Altitude of Installation Site	[m]	2000NN, per IEC60947-4
Protection Class		IP00 IEC 60529/DIN 40050
Single contactor cover		IP10 IEC 60529/DIN 40050
Contactor with frame terminal block		IP20 IEC 60529/DIN 40050
Auxiliary contact		IP20 IEC60529/DIN 40050
Protection against Accidental Contact		Finger-and back-of-hand proof per VDE 0106, part 100
Resistance to Shock		IEC 60068-2-27
Resistance to Vibration		IEC 60068-2-6
Mirror Contacts IEC60947-4 Annex F		100-D...+2 x 100-DS1-11; 100S-D...+2 x 100S-DS1-11

Standards Compliance and Certifications

100-D IEC Contactors

Standards Compliance	Certifications
IEC 60947-4-1	CE Marked
IEC 60947 Type "2" Coordination	CCC (115…180 A - conventional coil; 115…860 A - electronic coil)
CSA 22.2. No. 14	cULus Listed (File No. E 41850, Guide NLDX, NLDX7)
UL 508	

100S-D Safety Contactors

Standards Compliance	Certifications
IEC 60947-4-1	CE Marked
IEC 60947-4 Annex F	cULus Listed (File No. E 41850, Guide NLDX, NLDX7)
IEC 60947 Type "2" Coordination	SUVA Certified
CSA C22.2 No. 14	CCC (115…180 A - conventional coil; 115…860 A - electronic coil)
UL 508	

Life-Load Curves

Figure 27 - AC-3, AC-1

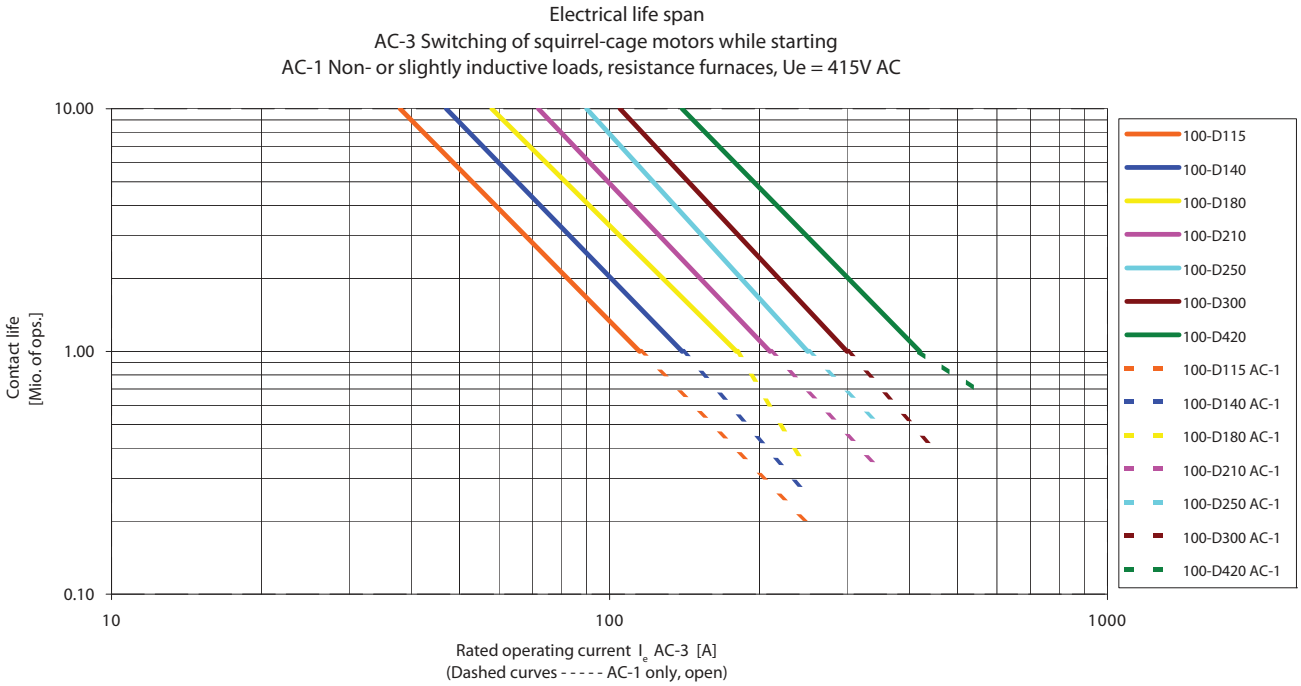


Figure 28 - AC-4

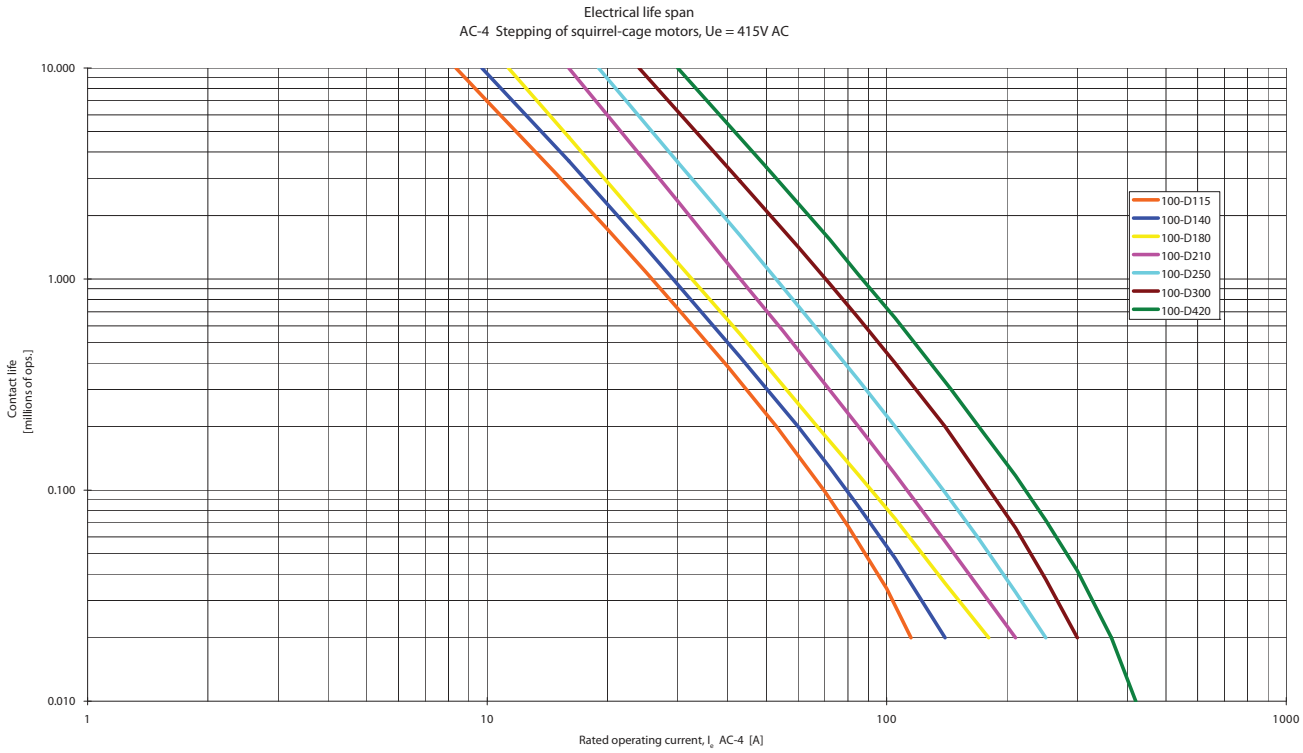
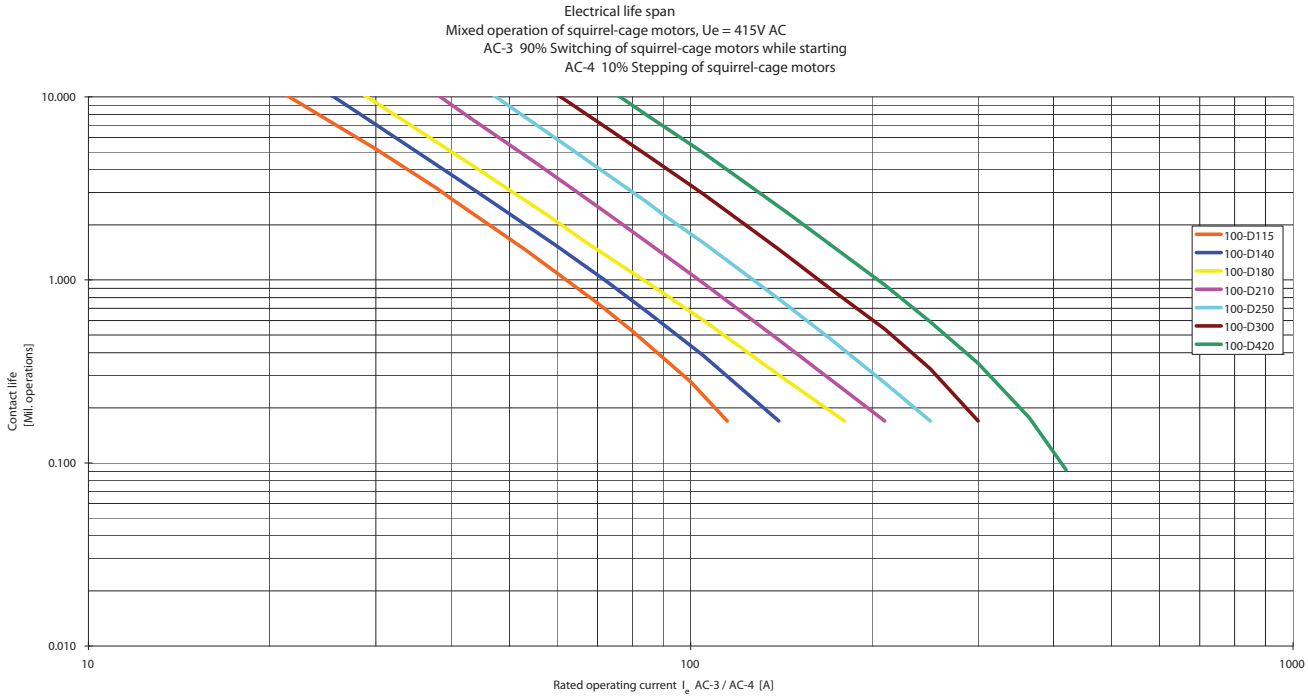


Figure 29 - AC-3 90% and AC-4 10%

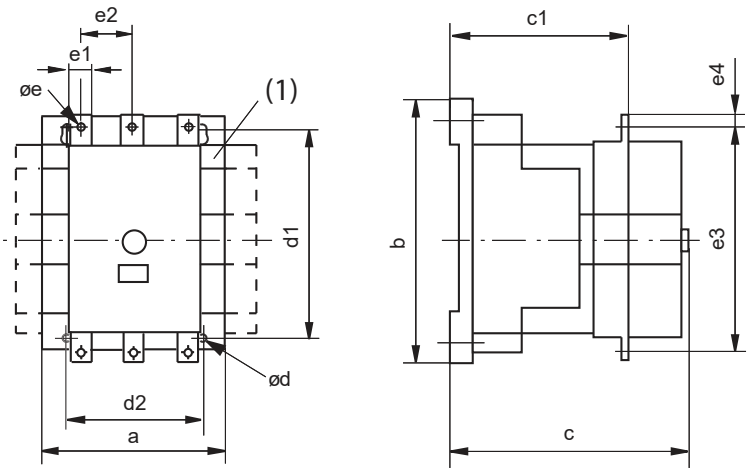


Approximate Dimensions

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

Bulletin 100-D/104-D, 100S-D Approximate Dimensions

Figure 30 - Bulletin 100-D/100S-D Contactors and Accessories



(1) Conventional DC coil contactors will have an additional auxiliary contact block that will add 13.5 mm to the "a" dimension on the right-hand side.

Figure 31 - Mounting Position, 100-D/104-D Contactors

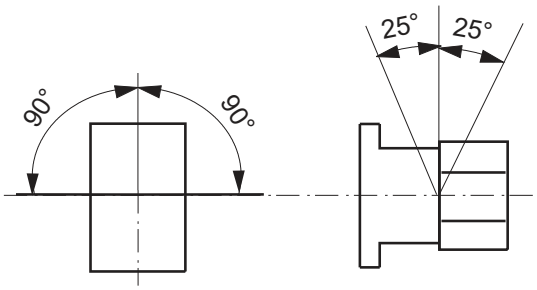
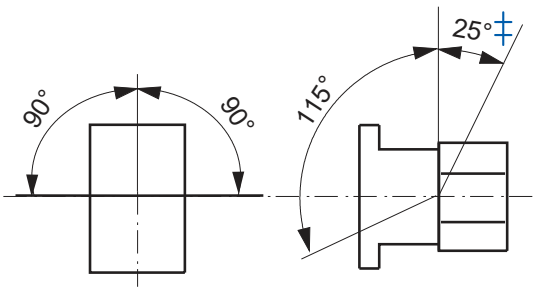


Figure 32 - Mounting Position, 100S-D Contactors



‡ Applies only to conventional single frequency, conventional DC and electronic coils.

AC and DC Contactors

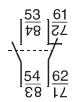
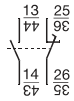
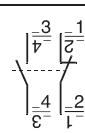
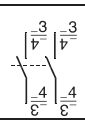
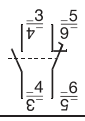
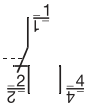
Cat. No.	a	b	c	c1	∅ d	d1	d2	∅ e	e1	e2	e3	e4
100-D115E…100-D180E, 100-D115, 100-D140, 100-D180	120	170	156	110.5	5.2	145	100	8.5	20	39	160	10
100-D210E…100-D420E	155	205	180	110.5	6.5	180	130	10.4	25	48	193	12.5
100-D630E…100-D860E	255	310	265	110.5	10	230	225	M12	40	70	291	22
100S-D115E…100S-D180E, 100S-D115, 100S-D140, 100S-D180	120	170	156	110.5	5.2	145	100	8.5	20	39	160	10
100S-D210E…100S-D420E	155	205	180	110.5	6.5	180	130	10.5	25	48	193	12.5
100S-D630E…100S-D860E	255	310	265	110.5	10	230	225	M12	40	70	291	22

Contactors with Accessories

Contactor with		mm
Auxiliary contact block	100-DS1… 100-DS2…	a a + 13.5 each
Mechanical Interlock	100-DM…	a + a
Frame terminal block	100-DTB110 100-DTB180 100-DTB420	b + 7 each b + 7 each b + 8.5 each
Label holder		c…+ 5

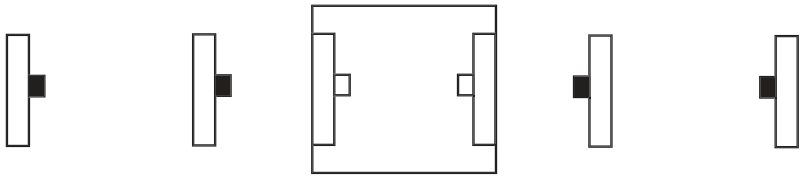
Accessories

Auxiliary Contacts

	Description	N.O.	N.C.	Connection Diagram	For Use With	Standard Auxiliary Contact Cat. No.	Bifurcated Cat. No.
	Auxiliary Contacts • Side-mounted • Without IEC sequence terminal designations • Standard contacts 17V/10 mA Bifurcated contacts for signals down to 5V/2 mA	1	1		100-D left or right inside mounting	100-DS1-11	100-DS1-B11H
		1	1		100-D left or right outside mounting	100-DS2-11	100-DS2-B11H
		1	1L		100-D left or right inside mounting	100-DS1-L11	—
		2	0		100-D left or right inside mounting	100-DS1-20	100-DS1-B20H
		2	0		100-D left or right outside mounting	100-DS2-20	100-DS2-B20H
	Auxiliary Contacts • Electronic-compatible auxiliary contacts • Ideal for use when switching low- power control circuits • With IEC sequence terminal designations • Contact ratings: AC-12, 250V, 0.1 A • AC-15, DC-13, 3...125V, 1...100 mA	1	1		100-D left or right inside mounting	100-DS1-B11	—
	Auxiliary Contacts • Side-mounted • Without IEC sequence terminal designations • Standard contacts 17V/10 mA Bifurcated contacts for signals down to 5V/2 mA	1	1		100-D left or right inside mounting	100-DS0-11	100-DS0-B11H
		2	0		100-D left or right inside mounting	100-DS0-20	100-DS0-B20H
		1	1L		100-D left or right inside mounting	100-DS0-L11	—
	Auxiliary Contacts • Electronic-compatible auxiliary contacts • Ideal for use when switching low- power control circuits • Without IEC sequence terminal designations • Contact ratings: AC-12, 250V, 0.1 A • AC-15, DC-13, 3...125V, 1...100 mA	1	1		100-D left or right inside mounting	100-DS0-B11	—

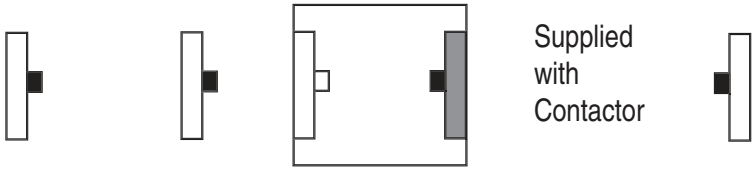
Auxiliary contacts with sequence numbering.

Figure 33 - Cat. Nos. 100-D115… D420 — Electronic and Conventional AC Coils, Electronic DC Coils



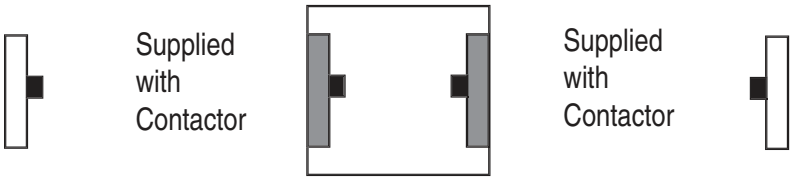
Contact Configuration		Auxiliary Contact Configurations				
		For Use With	Left Side Mounting		Right Side Mounting	
N.O.	N.C.		Outside Cat. No.	Inside Cat. No.	Inside Cat. No.	Outside Cat. No.
8	0	100-D…00	100-DS2-20	100-DS1-20	100-DS1-20	100-DS2-20
Sequence Starts with:			7/8	3/4	1/2	5/6
7	1		100-DS2-20	100-DS1-20	100-DS1-11	100-DS2-20
Sequence Starts with:			7/8	3/4	1/2	5/6
6	2		100-DS2-20	100-DS1-11	100-DS1-11	100-DS2-20
Sequence Starts with:			7/8	3/4	1/2	5/6
5	3		100-DS2-20	100-DS1-11	100-DS1-11	100-DS2-11
Sequence Starts with:			7/8	3/4	1/2	5/6
4	4		100-DS2-11	100-DS1-11	100-DS1-11	100-DS2-11
Sequence Starts with:			7/8	3/4	1/2	5/6

Figure 34 - Cat. Nos. 100-D115… D420 — Electronic and Conventional AC Coils, Electronic DC Coils



Contact Configuration		Auxiliary Contact Configurations				
		For Use With	Left Side Mounting		Right Side Mounting	
N.O.	N.C.		Outside Cat. No.	Inside Cat. No.	Inside Cat. No.	Outside Cat. No.
8	0	100-D…11	—	—	—	—
Sequence Starts with:			—	—	—	—
7	1		100-DS2-20	100-DS1-20	100-DS1-11	100-DS2-20
Sequence Starts with:			7/8	3/4	1/2	5/6
6	2		100-DS2-20	100-DS1-11	100-DS1-11	100-DS2-20
Sequence Starts with:			7/8	3/4	1/2	5/6
5	3		100-DS2-20	100-DS1-11	100-DS1-11	100-DS2-11
Sequence Starts with:			7/8	3/4	1/2	5/6
4	4		100-DS2-11	100-DS1-11	100-DS1-11	100-DS2-11
Sequence Starts with:			7/8	3/4	1/2	5/6

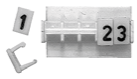
Figure 35 - Cat. Nos. 100-D115… D180 — Conventional DC Coils



Contact Configuration		Auxiliary Contact Configurations				
		For Use With	Left Side Mounting		Right Side Mounting	
N.O.	N.C.		Outside Cat. No.	Inside Cat. No.	Inside Cat. No.	Outside Cat. No.
8	0	100-D…22L	—	—	—	—
Sequence Starts with:			—	—	—	—
7	1		—	—	—	—
Sequence Starts with:			—	—	—	—
6	2		100-DS2-20	100-DS1-11	100-DS1-11(1)	100-DS2-20
Sequence Starts with:			7/8	3/4	1/2	5/6
5	3		100-DS2-20	100-DS1-11	100-DS1-11(1)	100-DS2-11
Sequence Starts with:			7/8	3/4	1/2	5/6
4	4		100-DS2-11	100-DS1-11	100-DS1-11(1)	100-DS2-11
Sequence Starts with:			7/8	3/4	1/2	5/6

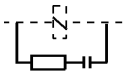
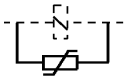
(1) With conventional DC control, the pickup winding must be interconnected with the N.C. late-breaking auxiliary contacts.

Marking Systems (For 100-D115...D860 contactors)

	Description	Pkg. Qty.(1)	Cat. No.
	Label Sheet • 105 self-adhesive paper labels each, 6 x 17 mm	10	100-FMS
	Marking Tag Sheet • 160 perforated paper labels each, 6 x 17 mm, to be used with a transparent cover	10	100-FMP
	Transparent Cover • To be used with marking tag sheets	100	100-FMC
	Marking Tag Adapters • To be used with marking tag: System V4/V5	100	100-FMA1
	Marking Tag Adapters • To be used with marking tag: System 1492 W	100	100-FMA2

(1) Must be ordered in multiples of package quantities.

Suppressor Modules

	Description	Connection Diagram	Suppressor Rating	For Use With	Cat. No.(3)
	Suppressor Module for Bul. 100-D Contactors • For limiting surge voltage when coil circuits are interrupted • Supplied as standard on all conventional DC coil contactors and all electronic coil contactors (as part of the supply module or delivered with separate suppressor module)		RC Module (AC control) For contactors with conventional coil 21...48V, 50 Hz; 24...55V, 60 Hz	100- D115...100- D180	100-DFSC48
			95...110V, 50 Hz; 110...127V, 60 Hz		100-DFSC110
			180...277V, 50 Hz; 208...277V, 60 Hz		100-DFSC240
			380...550V, 50 Hz; 440...600V, 60 Hz		100-DFSC550
			Varistor Module for contactors with conventional coil 55V AC	100- D115...100- D420	100-DFSV55
			56...136V AC		100-DFSV136
			137...277V AC		100-DFSV277
			278...600V AC		100-DFSV575
			Varistor Module for contactors with electronic coil 200...277V AC(1)	100- D115...100- D420	100-DFSV550
			380...500V AC(2)	100- D115...100- D300	100-DFSV500

(1) For overvoltage category IV (IEC 947 for 100-D...-EI) e.g., lightning protection requirements.
(2) For surge pulse > 1kV
(3) Package Quantity = 1

Connecting Components

	Description	Cross- section	For Use With			Terminal Connection	Cat. No.(1)
			100-D115… 180	100-D210… 420	100-D630… 860		
	Reversing: Input Connection Wye-Delta: Main-Delta connection	50 mm^2	X	—	—	Terminal Blocks, 100-DTB… Lugs, 100-DL…	100-D180-VLTB
		120 mm^2	—	X	—		100-D420-VLTB
		350 mm^2	—	—	X	Lugs, 100-DL…	100-D860-VL
	Reversing: Output Connection Wye-Delta: Delta-Wye connection	50 mm^2	X	—	—	Lugs, 100-DL…	100-D180-VT
		120 mm^2	—	X	—		100-D420-VT
		350 mm^2	—	—	X		100-D860-VT
		50 mm^2	X	—	—	Terminal Blocks, 100-DTB…	100-D180-VTTB
	Delta-Wye connection if 100-D115…180 is used as a Wye contactor	80 mm^2	—	X	—	Terminal Blocks, 100-DTB…	100-D420-VYTB
	Wye-Delta: Neutral bridge	—	X		—	—	100-D180-VYU
		—	—	X	—	—	100-D420-VYU
		—	—	—	X	—	100-D860-VYU
	Power Wiring Kits (for contactors using 100-DL lug kits)	For 100-D115…D100-D180			Reversing		100-DPW180
					Two-speed, or changeover		100-D180-VLTB
					Wye-Delta/Star-Delta		100-DPY180
		For 100-D210…100-D420			Reversing		100-DPW420
					Two-speed, or changeover		100-D420-VLTB
					Wye-Delta/Star-Delta		100-DPY420
		For 100-D630…100-D860			Reversing		100-DPW860
					Two-speed, or changeover		100-D860-VL

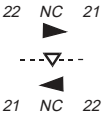
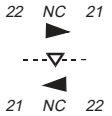
(1) Package Quantity = 1

Connecting Components, Continued

	Description	For Use With		Cat. No.(1)
	Terminal Lugs • Set of two • Protection class IP2X per IEC 60529 and DIN 40 050	100-D115, 100-D140, 100-D180, 100-D115E…D180E, 193-EC_F, 193-EE_F		100-DTB180
		100-D210...100-D420, 193-EC_G, 193-EF2C, 193-EE_G		100-DTB420
	Terminal Lugs (UL/CSA), Copper Frame Set of three	100-D115, 100-D140, 100-D180, 193-EC_F, 193-EE_F		100-DL180
		100-D210…100-D420, 193-EC_G, 193-EE_G		100-DL420
		100-D630, 100-D860, 193-EC_H, 193-EE_H		100-DL630
		100-D630, 100-D860, 193-EC_H, 193-EE_H		100-DL860
	Control Circuit Terminal 2 x 25 mm^2	Connects to Cat. Nos. 100-D115...D180		100-DAT1
		Connects to Cat. Nos. 100-D210...D420		100-DAT2
	Terminal Shields • Set of two • Protection class IP10 per IEC 60529 and DIN 40 050 • For direct-on-line, reversing, two-speed, and wye-delta/star-delta assemblies	100-D115, 100-D140, 100-D180, 100-D115E...100-D180-E		100-DTS180
		100-D210...100-D420		100-DTS420
	Terminal Covers • Protection class IP10 per IEC 60529 and DIN 40 050 • For direct-on-line, reversing, two-speed, and wye-delta/star-delta assemblies	100-D115...100-D180, 193-EC_F, 193-EE_F		100-DTC180
		100-D120...100-D420, 193-EC_G, 193-EE_G		100-DTC420
		100-D630...100-D860, 193-EC_H, 193-EE_H		100-DTC860
	Terminal Covers • Line-side panel relay and reversing cover	100-D630...100-D860, 193-EC_H, 193-EE_H		100-DTCE860
	Terminal Covers • Reversing starter/ relay cover			100-DTCR860
	Terminal Covers • DOL Starter/relay cover			100-SDTCS860
	Mounting Plate • Galvanized steel plate for starter combinations • For direct-on-line, reversing, two-speed, and wye-delta/star-delta, and Dahlander assemblies	100-D115...100-D180	Direct-on-line	100-DMS180
			Reversing, two-speed or changeover	100-DMU180
			Y- or Dahlander	100-DMY180
		100-D120...100-D420, 193-EC_G, 193-EE_G	Direct-on-line	100-DMS420
			Reversing, two-speed or changeover	100-DMU420
			Y- or Dahlander	100-DMY420
		100-D630...100-D860, 193-EC_H, 193-EE_H	Direct-on-line	100-DMS860
			Reversing, two-speed or changeover	100-DMU860
			Y- or Dahlander	100-DMY860
	Mounting Plate • For two-speed or changeover switched	For interlocking between 100-C60...C97 and 100-D115...D180 contactors		100-DMU85

(1) Package Quantity = 2

Interlocks

	Description	Circuit Diagram	For Use With	Cat. No.(1)
	Interlock — Dual Electrical/Mechanical • No additional space requires • Two N.C. auxiliary contacts		100-D115...100-D860	100-DMD02
	Interlock — Mechanical Only • No additional space required		100-D115...100-D860	100-DMD00
	Interlock — Mechanical Only • Provides interlocking between Bul. 100-C and Bul. 100-D contactors		100-C60...100-C97 between 100-D115...100-D180	100-DMC00
	Interlock — Dual Electrical/Mechanical • Provides interlocking between Bul. 100-C and Bul. 100-D contactors • Two N.C. auxiliary contacts		100-C60...100-C97 between 100-D115...100-D180	100-DMC02

(1) Package Quantity = 1

Renewal Parts

	Description	Coil Type	For Use With	Cat. No.
	Arc Chambers for Contactors • For 3-pole 100-D Contactors	Conventional	100-D115	100-DA-115
			100-D180	100-DA-180
		Electronic	100-D115	100-DAE-115
			100-D140	100-DAE-140
			100-D180	100-DAE-180
			100-D210	100-DAE-210
			100-D250	100-DAE-250
			100-D300	100-DAE-300
			100-D420	100-DAE-420
	Main Contacts for Contactors • 3 complete sets for 3-pole 100-D Contactors	Conventional	100-D115	100-DC-115
			100-D140	100-DC-140
			100-D180	100-DC-180
		Electronic	100-D115	100-DCE-115
			100-D140	100-DCE-140
			100-D180	100-DCE-180
			100-D210	100-DCE-210
			100-D250	100-DCE-250
			100-D300	100-DCE-300
			100-D420	100-DCE-420
			100-D630	100-DCE-630
			100-D860	100-DCE-860
	Terminal Hardware • Set of 6	Conventional	100-D115…D180	100-DHF180
		Electronic	100-D115E…D180	100-DHF180
			100-D210…D420	100-DHF420
			100-D630…D860	100-DHF860

Replacement Coils

Conventional AC Coils							Conventional DC Coils				
AC Standard Control Voltages [V]			AC Coil Code	100-D95…D180	100-D210…D420	100-D630…D860	DC Standard Control Voltages [V]	DC Coil Code	100-D95…D180	100-D210…D420	100-D630…D860
50 Hz	60 Hz	50/60 Hz		Cat. No.	Cat. No.	Cat. No.			Cat. No.	Cat. No.	Cat. No.
24V	—	—	K	TG407	—	—	24V	ZJ	TG714	—	—
—	24V	—	J	TG013	—	—	48V	ZY	TG724	—	—
48V	—	—	Y	TG414	—	—	110V	ZD	TG733	—	—
42V	48V	—	X	TG482	—	—	125V	ZS	TG737	—	—
—	—	100V[1]	KP	TG861	—	—	220V	ZA	TG761	—	—
110V	120V	—	D	TG473	—	—					
—	—	110V[1]	KN	TG856	—	—					
—	208V	—	H	TG049	—	—					
—	—	200V[1]	KG	TG862	—	—					
—	—	220V[1]	KL	TG857	—	—					
220…230V	240V	—	A	TG441	—	—					
240V	277V	—	T	TG480	—	—					
—	—	277V[1]	KT	TG060	—	—					
—	—	230V[1]	KF	TG851	—	—					
—	—	240V[1]	KA	TG858	—	—					
380…400V	440V	—	N	TG071	—	—					
415V	480V	—	B	TG475	—	—					
440V	—	—	G	TG478	—	—					
500V	—	—	M	TG479	—	—					
550V	600V	—	C	TG476	—	—					

Electronic AC Coils							Electronic DC Coils				
AC Standard Control Voltages [V]			AC Coil Code	100-D95…D180	100-D210…D420	100-D630…D860	DC Standard Control Voltages [V]	DC Coil Code	100-D95…D180	100-D210…D420	100-D630…D860
50 Hz	60 Hz	50/60 Hz		Cat. No.	Cat. No.	Cat. No.			Cat. No.	Cat. No.	Cat. No.
—	—	24V	EJ[2]	TGE855	—	—	24V	EZJ	TGE708	—	—
—	—	42…64V	EY	TGE864	—	—	48…72V	EZY	TGE779	—	—
—	—	100V	EP	TGE861	THE861	TJE861	110…130V	EZD	TGE780	THE780	—
—	—	110…130V	ED	TGE865	THE865	TJE865		ED	—	—	TJE865
—	—	200V	EG	TGE862	THE862	—	200…255V	EZA	TGE781	THE781	—
—	—	208…277V	EA	TGE866	THE866	—		EA	—	—	TJE879
—	—	200…220V	EG	—	—	TJE878					
—	—	230…250V	EA	—	—	TJE879					
—	—	380…500V	EN	TGE867	THE867	—					
—	—	380…415V	EN	—	—	TJE867					
—	—	440…480V	EB	—	—	TJE868					
—	—	500V	EM	—	—	TJE869					

(1) Applies to 100-D95…-D115 contactors only. Not available with 100-D140…-D180 contactors.

(2) Not available on 100/104?]D300