



Description

Bulletin 100S-D safety contactors are designed to provide safe isolation of hazardous motion loads, utilizing “mirror contact” performance. Mirror contacts provide reliable indication about the open/closed status of the main power poles.

Features

- 45...220 kW @500V
- 60...600 Hp @460V
- 75...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

Specifications

Conformity to Standards

IEC 60947-4

IEC 60947-4 Annex F

IEC 60947 Type “2” Coordination

CSA 22.2 No. 14

UL 508

Approvals

CE marked for all applicable directives

CSA Certified

UL Listed

SUVA Certified

Contactors & Control Relays

Safety Contactors

100S-D

Product Selection

3-pole AC Contactors

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

I_e [A]		Switching of 3-Phase Motors—AC-2, AC-3										Auxiliary Contacts		Catalogue Number
60°C	40°C	kW (50 Hz)						Hp (60 Hz)				N.O.	N.C. ①	
AC-3	AC-1	230V	400V	415V	500V	690V	1000V	200V	230V	460V	575V			
95	160	25	50	50	55	80	45	25	30	60	75	2	2	100S-D95⊗22C
110	160	32	55	55	63	100	55	40	40	75	100	2	2	100S-D110⊗22C
140	250	45	75	75	80/90②	110/132③	75	40	50	100	125	2	2	100S-D140⊗22C
180	250	55	90	100	90/110②	132/160③	90	50	60	150	150	2	2	100S-D180⊗22C
210	350	63	110	110	150	200	110	60	75	150	200	2	2	100S-D210⊗22C
250	350	80	132	150	160	250	133	75	100	200	250	2	2	100S-D250⊗22C
300	450	90	160	160	200	300	163	100	125	250	300	2	2	100S-D300⊗22C
420	500	132	220	250	300	425	225	150	175	350	400	2	2	100S-D420⊗22C
630	800	200	355	355	450	500	425	200	250	500	600	2	2	100S-D630⊗22C
860	1000	250	500	500	560	600	425	250	300	600	700	2	2	100S-D860⊗22C

⊗ AC Coil Voltage Code

The Catalogue Number as listed is incomplete. Select a coil voltage code from the table below to complete the Catalogue Number. Example: 120V 60 Hz: Catalogue Number **104S-C09⊗210C** becomes Catalogue Number **104S-C09D210C**.

Conventional Coil	V	24	48	100	110	120	200	208	220... 230	230	240	277	380... 400	415	440	480	500	550	600
100S-D95... 100S-D180	50 Hz	K	Y	—	D	—	—	—	A	—	T	—	N	B	G	—	M	C	—
	60 Hz	J	X	—	—	D	—	H	—	—	A	T	—	—	N	B	—	—	C
100S-D95... 100S-D110	50/60 Hz	KJ	—	KP	KN	—	KG	—	—	KF	KA	—	—	—	—	—	—	—	—

Electronic Coil w/PLC Interface ②	V	24	42... 64	100	110... 130	200	208... 277	380... 415	440... 480	500	600
100S-D95... 100S-D250	50/60 Hz	EJ	EY	EP	ED	EG	EA	EN	EN	EN	—
100S-D300... 100S-D420	50/60 Hz	—	EY	EP	ED	EG	EA	EN	EN	EN	—
100S-D630... 100S-D860	50/60 Hz	—	—	EP	ED	EG	EA	EN	EB	EM	EC

① The N.C. contacts meet IEC 60947-4 Annex F requirements to 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.

② Signal voltage of the Cat. No. 100S-D... electronic interface: U_e : 24V DC/ I_e : 15 mA

Pick-Up Voltage: 13.0V DC...30.2V DC

Drop-Out Voltage: -3.0V DC...+5.0V DC

③ Higher kW rating only applies to contactors with electronic coil.

Product Selection

3-Pole DC Contactors

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

I_e [A]		Switching of 3-Phase Motors—AC-2, AC-3										Auxiliary Contacts		Catalogue Number
60°C	40°C	kW (50 Hz)						Hp (60 Hz)				N.O.	N.C. ①	
AC-3	AC-1	230V	400V	415V	500V	690V	1000V	200V	230V	460V	575V			
95	160	25	50	50	55	80	45	25	30	60	75	3	2/1L	100S-D95⊗33LC ②
												2	2	100S-D95⊗22C
110	160	32	55	55	63	100	55	40	40	75	100	3	2/1L	100S-D110⊗33LC ②
												2	2	100S-D110⊗22C
140	250	45	75	75	80	110	75	40	50	100	125	3	2/1L	100S-D140⊗33LC ②
					90 ④	132 ④						2	2	100S-D140⊗22C
180	250	55	90	100	90	132	90	50	60	150	150	2	2	100S-D180⊗22C
					110 ④	160 ④								
210	350	63	110	110	150	200	110	60	75	150	200	2	2	100S-D210⊗22C
250	350	80	132	150	160	250	133	75	100	200	250	2	2	100S-D250⊗22C
300	450	90	160	160	200	300	163	100	125	250	300	2	2	100S-D300⊗22C
420	500	132	220	250	300	425	225	150	175	350	400	2	2	100S-D420⊗22C
630	800	200	355	355	450	500	425	200	250	500	600	2	2	100S-D630⊗22C
860	1000	250	500	500	560	600	425	250	300	600	700	2	2	100S-D860⊗22C

⊗ AC Coil Voltage Code

The Catalogue Number as listed is incomplete. Select a coil voltage code from the table below to complete the Catalogue Number. Example: 120V 60 Hz: Catalogue Number **104S-C09⊗210C** becomes Catalogue Number **104S-C09D210C**.

Conventional Coil	V	24	48	110	125	220	250
100S-D95...100S-D140 ②	DC	ZI	ZY	ZD	ZS	ZA	ZT

Electronic Coil w/EI Interface ③	V	24	48...72	110...130	200...255
100S-D95...100S-D300	DC	EZJ	EZY	EZD	EZA
100S-D420	DC	—	EZY	EZD	EZA
100S-D630...860	DC	—	—	ED	EA

- ① The N.C. contacts meet IEC 60947-4 Annex F requirements to 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.
- ② For conventional DC coil only. The pickup winding must be interconnected with the N.C. late-breaking auxiliary contacts.
- ③ Signal voltage of the Cat. No. 100S-D... electronic interface: U_E : 24V DC/ I_E : 15 mA
Pick-Up Voltage: 13.0V DC...30.2V DC
Drop-Out Voltage: -3.0V DC...+5.0V DC
- ④ Higher kW rating only applies to contactors with electronic coil.

Contactors & Control Relays

Safety Contactors

100S-C

General Ratings

	Catalogue Number 100S-C09...100S-C85
Rated Isolation Voltage U_i IEC, AS, BS, SEV, VDE 0660; UL; CSA	690V 600V
Rated Impulse Voltage U_{imp}	8 kV
Rated Voltage U_e Main Contacts AC 50/60Hz DC	115, 200, 208, 230, 240, 380, 400, 415, 460, 500, 575, 690V 24, 48, 110, 115, 220, 230, 300, 440V
Operating Frequency for AC Loads	50...60 Hz

Switching Motor Loads

	Catalogue Number		100S-C09	100S-C12	100S-C16	100S-C23	100S-C30	100S-C37	100S-C43	100S-C60	100S-C72	100S-C85
Standard Ratings												
AC-2, AC-3, AC-4-50Hz DOL & Reversing IEC	230V	[A]	12	15	20	26.5	25	38	44	62	72	85
	240V	[A]	12	15	20	26.5	35	38	44	62	72	85
	400V	[A]	9	12	16	23	30	37	43	60	72	85
	415V	[A]	9	12	16	23	30	37	43	60	72	85
	500V	[A]	7	10	14	20	25	30	38	55	67	80
	690V	[A]	5	7	9	12	18	21	25	34	42	49
	230V	[kW]	3	4	5.5	7.5	10	11	13	18.5	22	25
	240V	[kW]	3	4	5.5	7.5	10	11	13	18.5	22	25
	400V	[kW]	4	5.5	7.5	11	15	18.5	22	32	40	45
	415V	[kW]	4	5.5	7.5	11	15	20	22	32	40	45
	500V	[kW]	4	5.5	7.5	13	15	20	25	37	45	55
	690V	[kW]	4	5.5	7.5	10	15	18.5	22	32	40	45
AC-2, AC-3, AC-4-60Hz DOL & Reversing UL/CSA/IEC	1-Ph 115V	[A]	9.8	9.8	16	24	24	34	34	56	56	80
	230V	[A]	10	12	17	17	28	28	40	50	68	68
	115 V	[HP]	1/2	1/2	1	2	2	3	3	5	5	7-1/2
	230 V	[HP]	1 1/2	2	3	3	5	5	7-1/2	10	15	15
	3-Ph 200V	[A]	7.8	11	17.5	17.5	25.3	32.2	32.2	48.3	62.1	78.2
	230 V	[A]	6.8	9.6	15.2	22	28	28	42	54	68	80
	460 V	[A]	7.6	11	14	21	27	34	40	52	65	77
	575 V	[A]	9	11	17	17	27	32	32	52	62	62
	200 V	[HP]	2	3	5	5	7-1/2	10	10	15	20	25
	230 V	[HP]	2	3	5	7-1/2	10	10	15	20	25	30
	460 V	[HP]	5	7-1/2	10	15	20	25	30	40	50	60
	575 V	[HP]	7-1/2	10	15	15	25	30	30	50	60	60

General Ratings

	Catalogue Number 100S-D95...100S-D860
Rated Isolation Voltage U_i IEC, AS, BS, SEV, VDE 0660; UL; CSA	690V 600V
Rated Impulse Voltage U_{imp}	12kV
Rated Voltage U_e Main Contacts AC 50/60Hz DC	115, 200, 208, 230, 240, 380, 400, 415, 460, 500, 575, 690, 1000V 24, 48, 110, 115, 220, 230, 300, 440V
Operating Frequency for AC Loads	50...60 Hz

Switching Motor Loads

	Catalogue Number	100S-D95	100S-D110	100S-D140	100S-D140	100S-D180	100S-D180	100S-D210	100S-D250	100S-D300	100S-D420	100S-D630	100S-D860
Coil Type	Conventional	X	X	X	—	X	—	—	—	—	—	—	—
	Electronic-EI	X	X	—	X	—	X	X	X	X	X	X	X
Standard Ratings AC-2, AC-3, AC-4-50Hz DOL & Reversing IEC	230V [A]	95	110	140	140	180	180	210	250	300	420	630	860
	240V [A]	95	110	140	140	180	180	210	250	300	420	630	860
	400V [A]	95	110	140	140	180	180	210	250	300	420	630	860
	415V [A]	95	110	140	140	180	180	210	250	300	420	630	860
	500V [A]	95	110	115	140	140	180	210	250	300	420	630	753
	690V [A]	95	110	115	140	140	180	210	250	300	420		
	1000V [A]	33	40	55	55	65	65	80	95	115	160		
	230V [kW]	25	32	45	45	57	57	67	80	97	135	200	250
	240V [kW]	25	32	45	45	60	60	70	83	101	141	200	250
	400V [kW]	45	55	75	75	101	101	118	140	170	238	355	500
	415V [kW]	45	55	80	80	105	105	122	145	174	250	355	500
	500V [kW]	55	63	80	90	98	126	150	177	213	300	450	560
	690V [kW]	80	100	110	132	135	176	205	250	300	425		
	1000V [kW]	45	55	75	75	90	90	110	132	160	225		
	1-Ph 115V [A]	80	100	135	135	—	—	—	—	—	—	—	—
	230V [A]	68	110	136	136	176	176	216	—	—	—	—	—
AC-2, AC-3, AC-4-60Hz DOL & Reversing UL/CSA/IEC	115 V [HP]	7.5	10	15	15	—	—	—	—	—	—	—	—
	230 V [HP]	15	25	30	30	40	40	50	—	—	—	—	—
	3-Ph 200V [A]	78.2	120	120	120	150	150	177	221	285	414	552	692
	230 V [A]	80	104	130	130	154	154	192	248	312	420	602	720
	460 V [A]	77	96	124	124	180	180	180	240	302	414	590	702
	575 V [A]	77	99	125	125	144	144	192	242	289	382	562	651
	200 V [HP]	25	40	40	40	50	50	60	75	100	150	200	250
	230 V [HP]	30	40	50	50	60	60	75	100	125	175	250	300
	460 V [HP]	60	75	100	100	150	150	150	200	250	350	500	600
	575 V [HP]	75	100	125	125	150	150	200	250	300	400	600	700

Contactors & Control Relays

Safety Contactors

100S-C

Coil Data

	Catalogue Number		100S-C09	100S-C12	100S-C16	100S-C23	100S-C30	100S-C37	100S-C43	100S-C60	100S-C72	100S-C85
Voltage Range	Pick-up	[x U _S]	0.85...1.1									
AC: 50 Hz, 60 Hz, 50/60 Hz	Dropout	[x U _S]	0.3...0.6									
DC	Pick-up	[x U _S]	0.8...1.1									
	Dropout	[x U _S]	0.1...0.6									
Coil Consumption	Pick-up	[VA/W]	70/50	70/50	70/50	70/50	80/60	80/60	130/90	200/110	200/110	200/110
AC: 50 Hz, 60 Hz, 50/60 Hz	Hold-in	[VA/W]	8/2.6	8/2.6	8/2.6	9/3	9/3	9/3	10/3.2	16/4.5	16/4.5	16/4.5
DC	Pick-up	[W]	6.5	6.5	6.5	9.2	9.2	9.2	10.1	200	200	200
	Hold-in	[W]	6.5	6.5	6.5	9.2	9.2	9.2	10.1	4.5	4.5	4.5
Operating Time	Pick-up	[ms]	15...30	15...30	15...30	15...30	15...30	15...30	15...30	20...40	20...40	20...40
AC: 50 Hz, 60 Hz, 50/60 Hz	Dropout	[ms]	10...60	10...60	10...60	10...60	10...60	10...60	10...60	10...60	10...60	10...60
with RC Suppressor	Dropout	[ms]	10...60	10...60	10...60	10...60	10...60	10...60	10...60	10...60	10...60	10...60
DC	Pick-up	[ms]	40...70	40...70	40...70	40...70	50...80	50...80	50...80	20...40	20...40	20...40
	Dropout	[ms]	7...15	7...15	7...15	7...15	7...15	7...15	7...15	—	—	—
with Integ. Suppres.	Dropout	[ms]	14...20	14...20	14...20	17...23	17...23	17...23	17...23	20...35	20...35	20...35
with Diode Suppres.	Dropout	[ms]	70...95	70...95	70...95	80...125	80...125	80...125	80...125	80...125	80...125	80...125

Coil Data

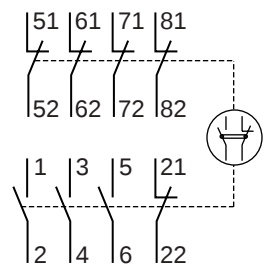
	Catalogue Number	100S-D95	100S-D110	100S-D140	100S-D140	100S-D180	100S-D180	100S-D210	100S-D250	100S-D300	100S-D420	100S-D630	100S-D860
Coil Type	Conventional	X	X	X	—	X	—	—	—	—	—	—	—
	Electronic-EI	X	X	—	X	—	X	X	X	X	X	X	X
Voltage Range	Pick-up	0.85...1.1											0.85...1.1
AC: 50 Hz, 60 Hz, 50/60 Hz	Dropout	0.3...0.5											0.3...0.8
DC	Pick-up	0.85...1.1											0.80...1.1
	Dropout	0.3...0.5											0.3...0.8
Coil Consumption	Pick-up	370/243 ❶										590/355❶	1915/1720 ❶
AC: 50 Hz, 60 Hz, 50/60 Hz	Hold-in	12/6										15/7	33/30
DC	Pick-up	190 ❶										375 ❶	1980 ❶
	Hold-in	6										7	30
Operating Time	Pick-up	75...90										75...90	60...100
AC: 50 Hz, 60 Hz, 50/60 Hz	Dropout	30...60										30...60	70...145
with RC Suppressor	Dropout	—										—	—
DC	Pick-up	75...90										75...90	60...100
	Dropout	30...60										30...60	70...145
with Integ. Suppres.	Dropout	—										—	—
with Diode Suppres.	Dropout	—										—	—

❶ Electronic coil drives are designed to minimize coil consumption. However, this design may cause a large inrush (<1ms) when energizing. This must be taken into account when sizing power supplies, all-or-nothing relays and the cross-sections of the coil wires.

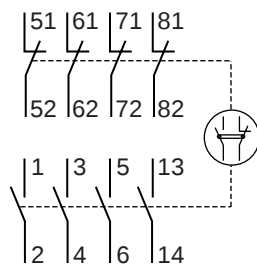
Safety Contactors

Connections

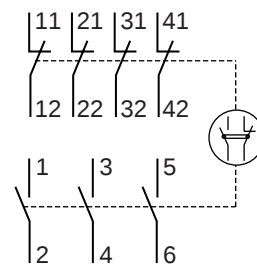
3-Pole Safety Contactors



100S-C09⊗05C...C23⊗05C

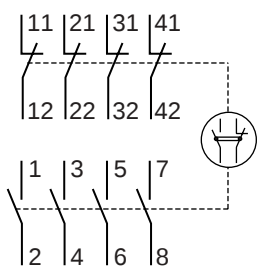


100S-C09⊗14C...C23⊗14C

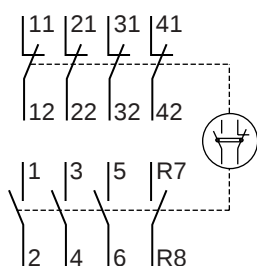


100S-C30⊗04C...C85⊗04C

4-Pole Safety Contactors

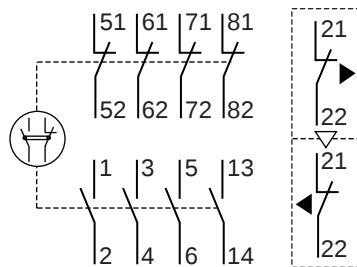


100S-C09⊗404C...C23⊗404C

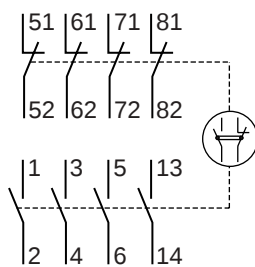


100S-C09⊗304C...C23⊗304C

Reversing Safety Contactors



104S-C09⊗210C...C23⊗210C



104S-C30⊗010C...C85⊗010C