

Bulletin 100S-C/104S-C Safety Contactors

Bulletin 700S-CF Safety Control Relays

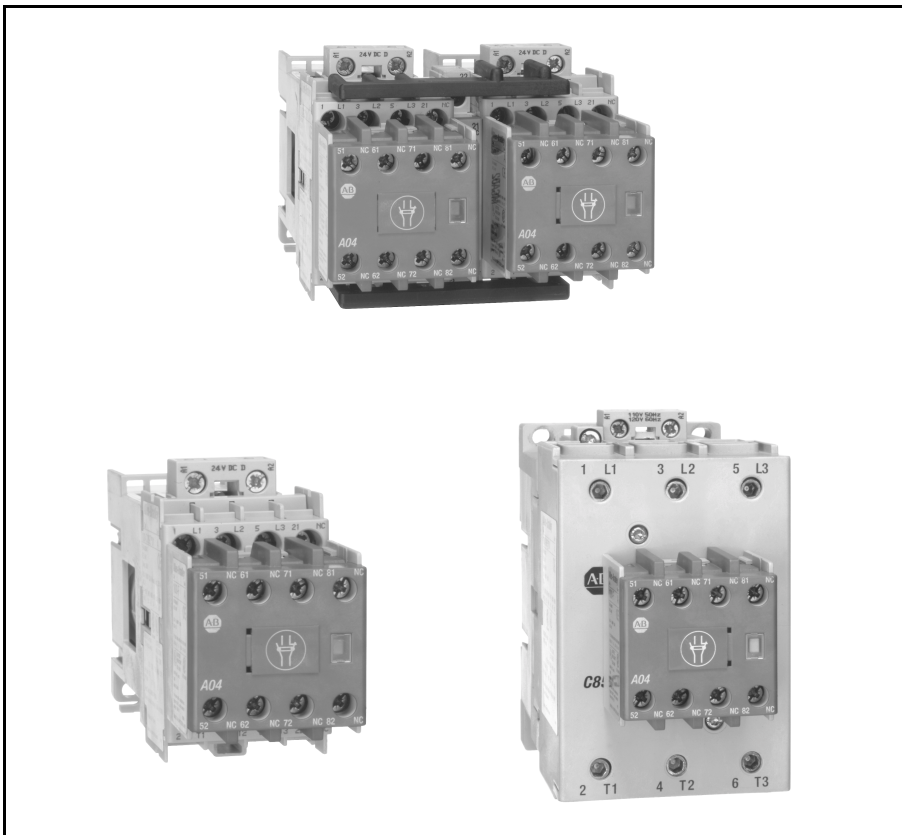
Selection Guide

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Bulletin 100S-C/104S-C

- **Positively Guided/
 Mechanically Linked
 Auxiliary Contacts**
- **Front-Mounted Auxiliary
 Contacts:**
 - **Permanently Fixed**
 - **Protective Cover to
 Prevent Manual
 Operation**
 - **Red Contact Housing
 for Easy Identification**
 - **Incorporates IEC
 947-5-1 “Mechanically
 Linked” Symbol**
- **AC and DC Operating
 Coils**
- **SUVA Third-Party
 Certification**



Description

Bulletin 100S-C/104S-C safety contactors provide mechanically linked, positively guided contacts, which are required in feedback circuits for modern safety applications. The positively guided N.C. auxiliary contacts will not change state when a power contact welds. For additional information and selection of overload relays, mounting systems, and other MCS components, please see Publication 0100C-1.0.1. Consult your local sales office or price list for pricing information.

Conformity to Standards

- IEC 947-4
- IEC 947 Type “2” Coordination
- IEC 947-4-1 Annex H (Pending) — Special Requirements for Auxiliary Contacts Mechanically Linked with Power Contacts (Mirror Contacts)
- IEC 947-5-1 Annex L — Special Requirements for Mechanically Linked Contact Elements
- EN50205
- UL 508
- CSA 22.2 No. 14

Approvals

- SUVA Third-Party Certified
- CE
- CSA Certified (Cert. No. LR13908)
- UL Listed (File No. E3125, Guide No. NLDX)

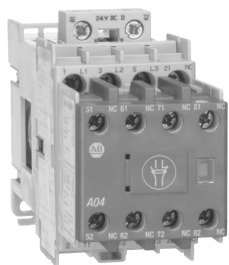
Your order must include:

- Cat. No. of contactor selected with coil voltage code.
- If required, Cat. No. of any accessories.
- If required, Cat. No. of replacement coils.

3-Pole AC-Operated Contactors



- AC Operating Mechanism
- 3 Main Contacts



Ie		Ratings for Switching AC Motors - AC-2, AC-3, AC-4										Aux. Contacts		Cat. No. ①
[A]		kW (50 Hz)				HP (60 Hz)								
AC-3	AC-1	230V	380V 415V 400V	500V	690V	1Ø		3Ø				N.O.	N.C.	
						115V	230V	200V	230V	460V	575V			
9	32	3	4	4	4	1/3	1	2	2	5	7-1/2	0	5	100S-C09②05C
												1	4	100S-C09②14C
12	32	4	5.5	5.5	5.5	1/2	2	3	3	7-1/2	10	0	5	100S-C12②05C
												1	4	100S-C12②14C
16	32	5.5	7.5	7.5	7.5	1	3	5	5	10	10	0	5	100S-C16②05C
												1	4	100S-C16②14C
23	32	7.5	11	11	11	2	3	5	7-1/2	15	15	0	5	100S-C23②05C
												1	4	100S-C23②14C
30	50	10	15	15	15	2	5	7-1/2	10	20	20	0	4	100S-C30②04C
												1	4	100S-C30②14C
37	50	11	18.5	18.5	18.5	3	5	10	10	25	25	0	4	100S-C37②04C
												1	4	100S-C37②14C
43	85	13	22	22	22	3	7-1/2	10	15	30	30	0	4	100S-C43②04C
												1	4	100S-C43②14C
60	100	18.5	30	30	30	5	10	15	20	40	40	0	4	100S-C60②04C
												1	4	100S-C60②14C
72	100	22	37	37	37	5	15	20	25	50	50	0	4	100S-C72②04C
												1	4	100S-C72②14C
85	100	25	45	45	45	7-1/2	15	25	30	60	60	0	4	100S-C85②04C
												1	4	100S-C85②14C

① For other contact configurations, please contact your local Rockwell Automation/Allen-Bradley sales office.

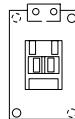
⊗ **Voltage Suffix Code and Terminal Position**

The Cat. No. as listed is incomplete. Select a voltage suffix code from the table below to complete the Cat. No. Example: 120V, 60Hz:
 Cat. No. 100S-C09②05C becomes **Cat. No. 100S-C09D05C**.

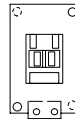
V Hz	12	24	32	36	42	48	100	100- 110	110	120	127	200	200- 220	208	208- 240	220- 230	230	230- 240	240	277	347	380	380- 400	400	400- 415	440	480	500	550	600
50Hz	R	K	V	W	X	Y	KP	-	D	P	S	KG	L	-	-	F	-	VA	T	-	-	-	N	-	G	B	-	M	C	-
60Hz	Q	J	-	V	-	X	-	KP	-	D	-	-	KG	H	L	-	-	-	A	T	I	E	-	-	-	N	B	-	-	C
50/60	-	KJ	-	-	-	KY	KP	-	KD	-	-	KG	-	-	-	-	-	KF	-	KA	-	-	-	KN	-	KB	-	-	-	

Coil Terminal Position

- All contactors are delivered with the coil terminals located on the **line side**.
- For **load side** coil terminations, insert a "U" prior to the coil voltage code. Ordering example: **Cat. No. 100S-C09UD05C**.



Cat. No.
 100S-C09②05C
 Line Side

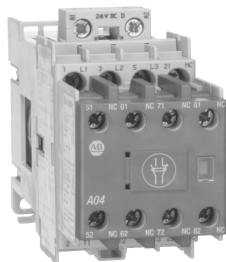


Cat. No.
 100S-C09U②05C
 Load Side

4-Pole AC-Operated Contactors



- AC Operating Mechanism
- 4 Main Contacts



I _e		Ratings for Switching AC Motors										Contact Configuration				Cat. No. ❶
		AC-2, AC-3, AC-4										Main Pole		Auxiliary Contacts		
[A]		kW (50 Hz)				HP (60 Hz)						Main Pole		Auxiliary Contacts		
AC-3	AC-1	230V	380V 415V 400V	500V	690V	1 ∅		3 ∅								
						115V	230V	200V	230V	460V	575V	N.O.	N.C.	N.O.	N.C.	
9	32	3	4	4	4	1/3	1	2	2	5	7-1/2	4	0	0	4	100S-C09@404C
												3	1	0	4	100S-C09@304C
12	32	4	5.5	5.5	5.5	1/2	2	3	3	7-1/2	10	4	0	0	4	100S-C12@404C
												3	1	0	4	100S-C12@304C
16	32	5.5	7.5	7.5	7.5	1	3	5	5	10	10	4	0	0	4	100S-C16@404C
												3	1	0	4	100S-C16@304C
23	32	7.5	11	11	11	2	3	5	7-1/2	15	15	4	0	0	4	100S-C23@404C
												3	1	0	4	100S-C23@304C

❶ For other contact configurations, please contact your local Rockwell Automation/Allen-Bradley sales office.

⊗ **Voltage Suffix Code**

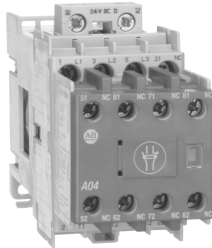
The Cat. No. as listed is incomplete. Select a voltage suffix code from the table below to complete the Cat. No. Example: 120V, 60 Hz: **Cat. No. 100S-C09@404C** becomes **Cat. No. 100S-C09D404C**.

V Hz	12	24	32	36	42	48	100	100- 110	110	120	127	200	200- 220	208- 240	220- 230	230	230- 240	240	277	347	380	380- 400	400	400- 415	440	480	500	550	600
50 Hz	R	K	V	W	X	Y	KP	-	D	P	S	KG	L	-	F	-	VA	T	-	-	-	N	-	G	B	-	M	C	-
60 Hz	Q	J	-	V	-	X	-	KP	-	D	-	-	KG	H	L	-	-	A	T	I	E	-	-	-	N	B	-	-	C
50/60 Hz	-	KJ	-	-	-	KY	KP	-	KD	-	-	KG	-	-	-	KF	-	KA	-	-	-	-	KN	-	KB	-	-	-	-

3-Pole DC-Operated Contactors



- DC Operating Mechanism
- 3 Main Contacts



Ie		Ratings for Switching AC Motors - AC-2, AC-3, AC-4										Auxiliary Contacts		Cat. No. ①
[A]		kW (50 Hz)				HP (60 Hz)								
AC-3	AC-1	230V	380V 415V 400V	500V	690V	1Ø		3Ø				N.O.	N.C.	
						115V	230V	200V	230V	460V	575V			
9	32	3	4	4	4	1/3	1	2	2	5	7-1/2	0	5	100S-C09Ø05C
												1	4	100S-C09Ø14C
12	32	4	5.5	5.5	5.5	1/2	2	3	3	7-1/2	10	0	5	100S-C12Ø05C
												1	4	100S-C12Ø14C
16	32	5.5	7.5	7.5	7.5	1	3	5	5	10	10	0	5	100S-C16Ø05C
												1	4	100S-C16Ø14C
23	32	7.5	11	11	11	2	3	5	7-1/2	15	15	0	5	100S-C23Ø05C
												1	4	100S-C23Ø14C
30	50	10	15	15	15	2	5	7-1/2	10	20	20	0	4	100S-C30Ø04C
												1	4	100S-C30Ø14C
37	50	11	18.5	18.5	18.5	3	5	10	10	25	25	0	4	100S-C37Ø04C
												1	4	100S-C37Ø14C
43	85	13	22	22	22	3	7-1/2	10	15	30	30	0	4	100S-C43Ø04C
												1	4	100S-C43Ø14C
60	100	18.5	30	30	30	5	10	15	20	40	40	0	4	100S-C60Ø04C
												1	4	100S-C60Ø14C
72	100	22	37	37	37	5	15	20	25	50	50	0	4	100S-C72Ø04C
												1	4	100S-C72Ø14C
85	100	25	45	45	45	7-1/2	15	25	30	60	60	0	4	100S-C85Ø04C
												1	4	100S-C85Ø14C

① For other contact configurations, please contact your local Rockwell Automation/Allen-Bradley sales office.

⊗ Voltage Suffix Code and Terminal Position

The Cat. No. as listed is incomplete. Select a voltage suffix code from the table below to complete the Cat. No. Example: 24V DC: **Cat. No. 100S-C09Ø05C** becomes **Cat. No. 100S-C09ZJ05C**.

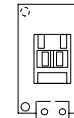
DC Voltages	9	12	24	36	48	60	64	72	80	110	115	125	220	230	250
	Standard	ZR	ZQ	ZJ	ZW	ZY	ZZ	ZB	ZG	ZE	ZD	ZP	ZS	ZA	ZF
100S-C09...C43 with Integrated Diode	—	—	DJ	—	—	—	—	—	—	—	—	—	—	—	—
100S-C60...C85 with Integrated Diode	DR	DQ	DJ	DW	DY	DZ	DB	DG	DE	DD	DP	DS	DA	DF	DT

Coil Terminal Position

- All contactors are delivered with the coil terminals located on the **line side**.
- For **load side** coil terminations, insert a "U" prior to the coil voltage code. Ordering example: **Cat. No. 100S-C09UZJ05C**.



Cat. No.
**100S-
 C09ZØ05C** Line
 Side

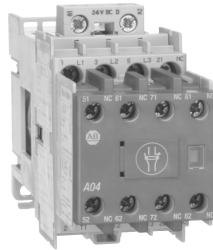


Cat. No.
100S-C09ZUØ05C
 Load Side

4-Pole DC-Operated Contactors



- DC Operating Mechanism
- 4 Main Contacts



Ie		Ratings for Switching AC Motors										Contact Configuration				Cat. No. ①
		AC-2, AC-3, AC-4										Main Pole		Auxiliary Contact		
[A]		kW (50 Hz)				HP (60 Hz)						Main Pole		Auxiliary Contact		
AC-3	AC-1	230V	380V 415V 400V	500V	690V	1 Ø		3 Ø								
						115V	230V	200V	230V	460V	575V	N.O.	N.C.	N.O.	N.C.	
9	32	3	4	4	4	1/3	1	2	2	5	7-1/2	4	0	0	4	100S-C09⊗404C
												3	1	0	4	100S-C09⊗304C
12	32	4	5.5	5.5	5.5	1/2	2	3	3	7-1/2	10	4	0	0	4	100S-C12⊗404C
												3	1	0	4	100S-C12⊗304C
16	32	5.5	7.5	7.5	7.5	1	3	5	5	10	10	4	0	0	4	100S-C16⊗404C
												3	1	0	4	100S-C16⊗304C
23	32	7.5	11	11	11	2	3	5	7-1/2	15	15	4	0	0	4	100S-C23⊗404C
												3	1	0	4	100S-C23⊗304C

① For other contact configurations, please contact your local Rockwell Automation/Allen-Bradley sales office.

⊗ **Voltage Suffix Code**

The Cat. No. as listed is incomplete. Select a voltage suffix code from the table below to complete the Cat. No. Example: 24V DC: **Cat. No. 100S-C09⊗404C** becomes **Cat. No. 100S-C09ZJ404C**.

DC Voltages		9	12	24	36	48	60	64	72	80	110	115	125	220	230	250
100S-C09...C23	Standard	ZR	ZQ	ZJ	ZW	ZY	ZZ	ZB	ZG	ZE	ZD	ZP	ZS	ZA	ZF	ZT
	with Integrated Diode	—	—	DJ	—	—	—	—	—	—	—	—	—	—	—	—

Reversing AC-Operated Contactors



- AC Operating Mechanism, 3 Main Contacts
- Includes Mechanical/Electrical Interlock
- Includes Reversing Power Wiring



I _e		Ratings for Switching AC Motors										Auxiliary Contacts Installed per Contactor		Cat. No. ①
		AC-2, AC-3, AC-4												
[A]		kW (50 Hz)				HP (60 Hz)						N.O.	N.C. ①	
AC-3	AC-1	230V	380V 415V 400V	500V	690V	1Ø		3Ø						
						115V	230V	200V	230V	460V	575V			
9	32	3	4	4	4	1/3	1	2	2	5	7-1/2	0	6	104S-C09②012C
												1	5	104S-C09②210C
12	32	4	5.5	5.5	5.5	1/2	2	3	3	7-1/2	10	0	6	104S-C12②012C
												1	5	104S-C12②210C
16	32	5.5	7.5	7.5	7.5	1	3	5	5	10	10	0	6	104S-C16②012C
												1	5	104S-C16②210C
23	32	7.5	11	11	11	2	3	5	7-1/2	15	15	0	6	104S-C23②012C
												1	5	104S-C23②210C
30	50	10	15	15	15	2	5	7-1/2	10	20	20	0	5	104S-C30②010C
												1	5	104S-C30②210C
37	50	11	18.5	18.5	18.5	3	5	10	10	25	25	0	5	104S-C37②010C
												1	5	104S-C37②210C
43	85	13	22	22	22	3	7.5	10	15	30	30	0	5	104S-C43②010C
												1	5	104S-C43②210C
60	100	18.5	30	30	30	5	10	15	20	40	40	0	5	104S-C60②010C
												1	5	104S-C60②210C
72	100	22	37	37	37	5	15	20	25	50	50	0	5	104S-C72②010C
												1	5	104S-C72②210C
85	100	25	45	45	45	7-1/2	15	25	30	60	60	0	5	104S-C85②010C
												1	5	104S-C85②210C

① For other contact configurations, please contact your local Rockwell Automation/Allen-Bradley sales office.

⊗ Voltage Suffix Code

The Cat. No. as listed is incomplete. Select a voltage suffix code from the table below to complete the Cat. No. Example: 120V 60 Hz: **Cat. No. 104S-C09②210C** becomes **Cat. No. 104S-C09D210C**.

Standard Coil Voltages	12	24	32	36	42	48	100	100-110	110	120	127	200	200-220	208	208-240	220-230	230	230-240	240	277	347	380	380-400	400	400-415	440	480	500	550	600
50 Hz	R	K	V	W	X	Y	KP	-	D	P	S	KG	L	-	-	F	-	VA	T	-	-	-	N	-	G	B	-	M	C	-
60 Hz	Q	J	-	V	-	X	-	KP	-	D	-	KG	H	L	-	-	-	A	T	I	E	-	-	-	N	B	-	-	C	-
50/60 Hz	-	KJ	-	-	-	KY	KP	-	KD	-	-	KG	-	-	-	-	KF	-	KA	-	-	-	-	KN	-	KB	-	-	-	-

Accessories — Page 12

Reversing DC-Operated Contactors



- DC Operating Mechanism, 3 Main Contacts, Line Side Coil Terminations
- Includes Mechanical/Electrical Interlock
- Includes Reversing Power Wiring



I _e		Ratings for Switching AC Motors										Auxiliary Contacts Installed per Contactor		Cat. No. ①
		AC-2, AC-3, AC-4												
[A]		kW (50 Hz)				HP (60 Hz)						N.O.	N.C.	
AC-3	AC-1	230V	380V 415V 400V	500V	690V	1∅		3∅						
						115V	230V	200V	230V	460V	575V			
9	32	3	4	4	4	1/3	1	2	2	5	7-1/2	0	6	104S-C09⊗012C
												1	5	104S-C09⊗210C
12	32	4	5.5	5.5	5.5	1/2	2	3	3	7-1/2	10	0	6	104S-C12⊗012C
												1	5	104S-C12⊗210C
16	32	5.5	7.5	7.5	7.5	1	3	5	5	10	10	0	6	104S-C16⊗012C
												1	5	104S-C16⊗210C
23	32	7.5	11	11	11	2	3	5	7-1/2	15	15	0	6	104S-C23⊗012C
												1	5	104S-C23⊗210C
30	50	10	15	15	15	2	5	7-1/2	10	20	20	0	5	104S-C30⊗010C
												1	5	104S-C30⊗210C
37	50	11	18.5	18.5	18.5	3	5	10	10	25	25	0	5	104S-C37⊗010C
												1	5	104S-C37⊗210C
43	85	13	22	22	22	3	7.5	10	15	30	30	0	5	104S-C43⊗010C
												1	5	104S-C43⊗210C
60	100	18.5	30	30	30	5	10	15	20	40	40	0	5	104S-C60⊗010C
												1	5	104S-C60⊗210C
72	100	22	37	37	37	5	15	20	25	50	50	0	5	104S-C72⊗010C
												1	5	104S-C72⊗210C
85	100	25	45	45	45	7-1/2	15	25	30	60	60	0	5	104S-C85⊗010C
												1	5	104S-C85⊗210C

① For other contact configurations, please contact your local Rockwell Automation/Allen-Bradley sales office.

⊗ **Voltage Suffix Code**

The Cat. No. as listed is incomplete. Select a voltage suffix code from the table below to complete the Cat. No. Example: 120V 60 Hz: **Cat. No. 104S-C09⊗210C** becomes **Cat. No. 104S-C09ZJ210C**.

DC Voltages		9	12	24	36	48	60	64	72	80	110	115	125	220	230	250
104S-C09...C43	Standard	ZR	ZQ	ZJ	ZW	ZY	ZZ	ZB	ZG	ZE	ZD	ZP	ZS	ZA	ZF	ZT
	with Integrated Diode	—	—	DJ	—	—	—	—	—	—	—	—	—	—	—	—
104S-C60...C85	Standard	DR	DQ	DJ	DW	DY	DZ	DB	DG	DE	DD	DP	DS	DA	DF	DT
	with Integrated Diode	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Accessories — Page 12

Specifications — Page 14

Approximate Dimensions — Page 19

Bulletin 700S-CF



- **Positively Guided/
Mechanically Linked
Auxiliary Contacts**
- **Front-Mounted Auxiliary
Contacts:**
 - **Permanently Fixed**
 - **Protective Cover to
Prevent Manual
Operation**
 - **Red Contact Housing
for Easy Identification**
 - **Incorporates IEC
947-5-1 “Mechanically
Linked” Symbol**
- **AC and DC Operating
Coils**
- **SUVA Third-Party
Certification**

Description

Bulletin 700S-CF Safety Control Relays provide mechanically linked, positively guided contacts, which are required in feedback circuits for modern safety applications. The positively guided N.C. auxiliary contacts will not change state if a N.O. contact welds. Consult your local sales office or price list for pricing information.

Conformity to Standards

IEC 947-5-1

IEC 947-5-1 Annex L — Special
Requirements for Mechanically Linked
Contact Elements

EN 50011, EN 50005, EN 50022

UL 508

VDE 0660

CSA C22.2 Part 14

Approvals

SUVA Third-Party Certified

CE Certified

CSA Certified

UL Listed, File E14840, Guide NKCR

Your order must include:

- Cat. No. of the relays required, complete with coil suffix.
- Cat. No. of adder decks, timers and accessories required.
- If required, the part number of replacement coils.

Bulletin 700S-CF
Safety Control Relays
 Product Selection
 Type CF Control Relays — 8-Pole AC Voltage



AC-1		AC-11 and AC-15							Connection Diagrams		Contacts		Cat. No.
I_e [A]		I_e [A]							Main Contacts	Auxiliary Contacts			
40°C	60°C	24/48V	120V	240V	400V	500V	600V	690V			N.O.	N.C.	
25	20	16	14	10	5	2.5	1.8	1			4	4	700S-CF440©C
											5	3	700S-CF530©C
											6	2	700S-CF620©C

⊗ **Voltage Suffix Code**



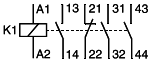
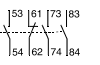
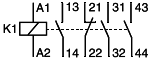
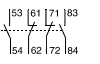
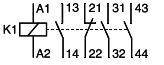
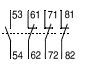
The Cat. No. as listed is incomplete. Select a Voltage Suffix Code from the table below to complete the Cat. No. Example: **Cat. No. 700-CF440**©C becomes **Cat. No. 700-CF440DC**.

Voltage	12	24	32	36	42	48	100	100-110	110	120	127	200	200-220	208	240	220-230	230	230-240	240	277	347	380	380-400	400	400-415	440	480	500	550	600
50 Hz	R	K	V	W	X	Y	KP	-	D	P	S	KG	-	-	-	F	-	VA	T	-	-	-	N	-	G	B	-	M	C	-
60 Hz	Q	J	-	V	-	X	-	KP	-	D	-	-	KG	H	L	-	-	-	A	T	I	E	-	-	-	N	B	-	-	C
50/60 Hz	-	KJ	-	-	-	KY	KP	-	KD	-	-	KG	-	-	-	-	KF	-	KA	-	-	-	-	KN	-	KB	-	-	-	-

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Type CF Control Relays — 8-Pole DC Voltage



AC-1		AC-11 and AC-15							Connection Diagrams		Contacts		Cat. No.
I_e [A]		I_e [A]							Main Contacts	Auxiliary Contacts			
40°C	60°C	24/48V	120V	240V	400V	500V	600V	690V			N.O.	N.C.	
25	20	16	14	10	5	2.5	1.8	1			4	4	700S-CF440Z⊗C
											5	3	700S-CF530Z⊗C
											6	2	700S-CF620Z⊗C

⊗ Voltage Suffix Code




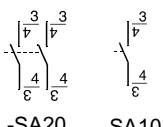

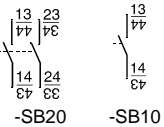
The Cat. No. as listed is incomplete. Select a Voltage Suffix Code from the table below to complete the Cat. No. Example: **Cat. No. 700-CF440Z⊗C** becomes **Cat. No. 700-CF440ZJC** for 24V DC.

Voltage	9	12	24	36	48	60	64	72	80	110	115	125	220	230	250
Standard	R	Q	J	W	Y	Z	B	G	E	D	P	S	A	F	T
With diode suppressor ❶	—	—	DJ	—	—	—	—	—	—	—	—	—	—	—	—

❶ When ordering DJ coil with built-in surge suppression, remove Z from the Cat. No. Example: **Cat. No. 700S-CF440Z⊗C** becomes **Cat. No. 700S-CF440DJC**

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Auxiliary Contacts


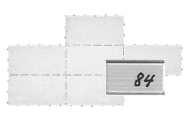
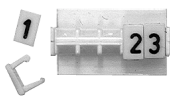
	Description	 N.O.	 N.C.	Connection Diagrams	For Use With Cat. No.	Cat. No.
	Auxiliary Contact Blocks for Side Mounting <u>without</u> Sequence Terminal Designations ❶ <ul style="list-style-type: none"> • 1- and 2-pole • Two-way numbering for right or left mounting on the contactor • Quick and easy mounting without tools • Electronic-compatible contacts down to 17V, 5mA • Mutual positive guidance to the main contactor poles (except for L types) 	1	0	 -SA20 -SA10	100S-C all 700S-CF all	100-SA10
		2	0		100S-C AC only 700S-CF AC only	100-SA20
	Auxiliary Contact Blocks for Side Mounting with Sequence Terminal Designations ❶ <ul style="list-style-type: none"> • 1- and 2-pole • Two-way numbering for right or left mounting on the contactor • Quick and easy mounting without tools • Electronic compatible contacts down to 17V, 5 mA • Mutual positive guidance to the main contactor poles (except for L types) L = Late break/Early make	1	0	 -SB20 -SB10	100S-C09...C23 700S-CF all❷	100-SB10
		2	0		100S-C09...C23 AC only 700S-CF AC only❷	100-SB20

❶ AC Coils: Max. 2 N.O. auxiliary contacts may be mounted on the side. DC coils: Max. 1 N.O. auxiliary contact may be mounted on the side. No additional N.C. auxiliary contacts may be added to safety contactors and control relays listed in this publication. For additional contact configurations, consult your local Allen-Bradley sales office.


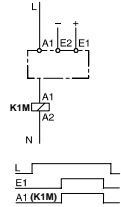

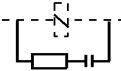
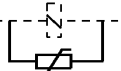

❷ Double Numbering —Left-side mounting only is recommended for **Cat. No. 700S-CF...** due to double numbering.

Marking Systems

- Uniform labeling materials for contactors, motor starting equipment, timing relays and circuit breakers

	Description	Pkg. Qty.	Cat. No.
	Label Sheet <ul style="list-style-type: none"> • sheet with 105 self-adhesive paper labels, 6 x 17 mm 	10	100-FMS
	Marking Tag Sheet <ul style="list-style-type: none"> • sheet with 160 perforated paper labels, 6 x 17 mm • To be used with a transparent cover 	10	100-FMP
	Transparent Cover <ul style="list-style-type: none"> • To be used with marking tag sheets 	100	100-FMC
	Marking Tag Adapters <ul style="list-style-type: none"> • 100 each • To be used with marking tag: 	System V4 / V5	100-FMA1
		System Bul. 1492W	100-FMA2

Control Modules

	Description		Connection Diagrams	For Use With Cat. No.	Cat. No.	
	DC Interface (electronic) Interface between the DC control signal (PLC) and the contactor AC operating mechanism. <ul style="list-style-type: none"> Control voltage 18...30V DC (24V DC nominal) For coil voltages of 110... 240V AC Suitable for all 100S-C contactor sizes, 9...85 A Requires no additional surge suppression for the coils Power consumption <ul style="list-style-type: none"> 0.1 W at 18V DC 0.25 W at 24V DC 0.5 W at 30V DC 			100S-C with AC coils 700S-CF with AC coils	100-JE	
		Surge Suppressors For limitation of coil switching transients. <ul style="list-style-type: none"> Plug-in, coil mounted Suitable for all 100S-C contactor sizes, 9...85 A RC, Varistor and Diode Versions 	RC Module AC Operating Mechanism	24...48V, 50/60 Hz 110...280V, 50/60 Hz 380...480V, 50/60 Hz		100S-C with AC coils 700S-CF with AC coils
Varistor Module AC/DC Operating Mechanism			12...55V AC/12...77V DC 56...136V AC/ 78...180V DC 137...277V AC/ 181...350V DC 278...575V AC		100S-C all 700S-CF all	100-FSV55 100-FSV136 100-FSV277 100-FSV575
			Diode Module DC Operating Mechanism	12...250V DC		100S-C with DC coils 700S-CF with DC coils

Safety Contactors and Control Relays

Contactors Specifications

General Ratings

	Cat. No. 100S-C09...100S-C85
Rated Insulation 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

	Cat. No.	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	230V [A]	11.5	14.5	20	26.5	34	37	42	62	72	85
DOL & Reversing	240V [A]	11	14	19	25.5	32.5	36	41	60	70	82
IEC	380V [A]	9	12	16	23	30	37	43	62	72	85
	400V [A]	9	12	16	23	30	37	43	62	72	85
	415V [A]	9	12	15	22	29	36	41	58	69	82
	500V [A]	7	10	13	18	24	30	34	50	56	68
	690V [A]	5	7	9.3	12	17	20	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
	380V [kW]	4	5.5	7.5	11	15	18.5	22	30	37	45
	400V [kW]	4	5.5	7.5	11	15	18.5	22	30	37	45
	415V [kW]	4	5.5	7.5	11	15	18.5	22	30	37	45
500V [kW]	4	5.5	7.5	11	15	18.5	22	30	37	45	
690V [kW]	4	5.5	7.5	11	15	18.5	22	30	37	45	
AC-2, AC-3, AC-4 - 60Hz	1-Ph 115V [A]	7.2	9.8	16	24	24	34	34	56	56	80
DOL & Reversing	230V [A]	8	12	17	17	28	28	40	50	68	68
UL/CSA/IEC	115 V [HP]	1/3	0.5	1	2	2	3	3	5	5	7-1/2
	230 V [HP]	1	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	24	27	34	40	52	65	77
	575 V [A]	9	11	17	20	22	27	32	52	62	72
	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	10	15	20	25	30	40	50	60
	Max. Operating Rate	AC2 (ops/hr)	500	500	500	400	400	400	400	300	250
AC3 (ops/hr)		700	700	700	600	600	600	600	500	500	500
AC4 (ops/hr)		200	150	120	80	80	70	70	70	60	50

Coil Data





Cat. No.	100S-C09	100S-C12	100S-C16	100S-C23	100S-C30	100S-C37	100S-C43	100S-C60	100S-C72	100S-C85
Voltage Range										
AC: 50 Hz, 60Hz, Pickup [x U _S]	0.85...1.1									
50/60 Hz Dropout [x U _S]	0.3...0.6									
DC Pickup [x U _S]	0.8...1.1									
DC Dropout [x U _S]	0.1...0.6									
Coil Consumption										
AC: 50 Hz, 60 Hz, Pickup [VA/W]	70/50	70/50	70/50	70/50	70/50	80/60	130/90	200/110	200/110	200/110
50/60 Hz Hold-in [VA/W]	8/2.6	8/2.7	8/2.8	9/3	9/3	9/3	10/3.2	16/4.5	16/4.5	16/4.5
DC Pickup [W]	6.75	6.75	6.75	9.2	9.2	9.2	10.1	200	200	200
DC Hold-in [W]	6.75	6.75	6.75	9.2	9.2	9.2	10.1	4.5	4.5	4.5
Operating Times										
AC: 50 Hz, 60 Hz, Pickup [ms]	15...30	15...30	15...30	15...30	15...30	15...30	15...30	18.5...30	18.5...30	18.5...30
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
w/ 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 Pickup [ms]	40...70	40...70	40...70	40...70	50...80	50...80	50...80	20...40	20...40	20...40
DC Dropout [ms]	7...15	7...15	7...15	7...15	7...15	7...15	7...15	—	—	—
w/ Integ. Suppres. Dropout [ms]	14...20	14...20	14...20	17...23	17...23	17...23	17...23	20...35	20...35	20...35
w/ Diode Suppres. Dropout [ms]	70...95	70...95	70...95	80...125	80...125	80...125	80...125	80...125	80...125	80...125

● DC-13 ratings of 100-F auxiliary contacts are the same as the ratings of the auxiliary contact in Cat. No. 100S-C09...100S-C23 contactors.

Safety Contactors and Control Relays

Contactors Accessory Specifications





Auxiliary Contacts

	Auxiliary Contacts in Contactor Cat. No. 100S-C09...100S-C23	Auxiliary Contacts in Accessories Cat. No. 100-S, 100-F ^① , 100-MC
Current Switching		
AC-1 I_{th} at 40°C [A]	25	10
at 60°C [A]	20	6
AC-15 at Rated Operating Voltage [V]	24, 48, 120, 240, 400, 500, 600, 690	24, 48, 120, 240, 400, 500, 600, 690
[A]	16, 16, 14, 10, 2.5, 1.8, 1	6, 6, 6, 3, 2, 1.5, 1.2, 0.7
DC-13 at Rated Operating Voltage [V]	24, 48, 125, 220, 440	24, 48, 125, 220, 440
[A]	5, 2, 0.7, 0.25, 0.12	3, 1.5, 0.6, 0.3, 0.2
Short-Circuit Protection		
gG Fuse		
Type 2 Coordination [A]	10	10
Rated Impulse Voltage U_{imp} [kV]	8	6
Insulation Voltage (between control and load circuit) per DIN, VDE 0106, Part 101 (NAMUR recommendation) [V]	400	Between auxiliary circuits: 250 V, Between load and direct-connected aux. circuits: 690 V
Contact reliability per DIN19240 without contamination, normal industrial atmosphere	17V, 5 mA, >10 ⁸ operations per error	17V, 5 mA, >10 ⁸ operations per error
Positively Guided Contacts	Yes, N.O. and N.C. mutually unrestricted	Yes, N.O. and N.C. mutually unrestricted, including N.C. in relation to N.O. main contacts.
Terminals		
		
Terminal Type	2 x A4	2 x A4
Wire Size per IEC 947-1		
 Flexible with Wire-End Ferrule	1 Conductor [mm ²]	0.5...2.5
	2 Conductor [mm ²]	0.75...2.5
 Solid/Stranded Conductor	1 Conductor [mm ²]	0.5...2.5
	2 Conductor [mm ²]	0.75...2.5
Recommended Tightening Torque (min...max) [Nm]	1...2.5	1...1.5
Wire Size per UL/CSA [AWG]	16...10	18...14
Recommended Tightening Torque (min...max) [lb-in]	8.9...22	8.9...13.3

① DC-13 ratings of 100-F auxiliary contacts are the same as the ratings of the auxiliary contact in Cat. No. 100S-C09...100S-C23 contactors.

General

	Cat. No. 700S-CF	Aux. Contact (Front-mounted)
Contact Ratings — NEMA	A600, P600	A600, Q600
Minimum Contact Rating	17-19.9V 20-24V	30 mA 20 mA
Contact Ratings — IEC	24V	16A
AC-15 (solenoids, contactors) at rated voltage	48V	16A
IEC 947, EN 60947	120V	14A
	240V	10A
	400V	5A
	480V/500V	2.5A
	600V	1.8A
	690V	1A
	40°C I_{th}	25A
AC-1 (Non-inductive, or slightly inductive loads, resistance furnaces)	230V	10 kW
	400V	17 kW
	690V	30 kW
	60°C I_{th}	20A
IEC 947, EN 60947	230V	8 kW
	400V	14 kW
	690V	24 kW
Switching DC Loads		
$I_{LR} < 1ms$, Resistive Loads	24V	12A
	48V	9A
	110V	3.5A
	220V	0.55A
	440V	0.2A
	24V	9A
$I_{LR} < 15ms$, Inductive Loads with economy resistor in series	48V	5A
	110V	2A
	220V	0.4A
	440V	0.16A
DC-13 IEC 947, EN 60947, Solenoids and contactors	24V	5A
	48V	2A
	125V	0.7A
	220V	0.25A
	440V	0.12A
	Yes	Yes ❶

	Cat. No. 700S-CF	Aux. Contact (Front-mounted)
Mechanical Life	[Mil]	15
Electrical Life	AC-15 (240V, 3A)	[Mil]
	AC Op. Mechanism	[g]
Weight		390
Terminal Cross-Sections		
Terminal Type		
Terminal Size per IEC 947-1	2 x A4	2 x A4
 Flexible with Wire End Ferrule	1 Conductor [mm2]	1...4
	2 Conductor [mm2]	1...4
 Solid	1 Conductor [mm2]	1.5...6
	2 Conductor [mm2]	1.5...6
Max. Wire Size per UL/CSA	[AWG]	16...10
Tightening Torque	[lb-in]	8.9...13.3
Tightening Torque	[Nm]	1...1.5

	Aux.Contact (Side-mounted)
Contact Ratings — IEC	240V
AC-15 (solenoids, contactors) at rated voltage	400V
IEC 947, EN 60947	480V/500V
AC-1 (Non-inductive, or slightly inductive loads, resistance furnaces)	40°C I_{th}
IEC 947, EN 60947	60°C I_{th}
DC-13 IEC 947, EN 60947, Solenoids and contactors	24V
	48V
	110V
	220V
	440V
Max. Wire Size per UL/CSA	[AWG]
Tightening Torque	[lb-in]
Tightening Torque	[Nm]

Mechanically Linked Contacts ❷	Location of welded N.O. contacts	State of N.C. Contacts if N.O. contact welds			
	Main	Front aux.	Left side aux.	Right side aux.	
	Main	Open	Open ❶	Open	Open
	Front aux.	Open	Open ❶	Open	Open
	Left side aux.	Open	Open ❶	Open	Open
Right side aux.	Open	Open ❶	Open	Open	

❶ If the accessory is a pneumatic timer or latch, there is no positive guidance; the accessory contacts are independent
 ❷ Defined in IEC 947-5-1 annex L. Positive guidance is a relationship between contacts of opposite types (i.e., N.O. and N.C.).

Safety Contactors and Control Relays

Control Relay Specifications, Continued

Control Circuit

			Cat. No. 700S-CF
Operating Voltage			
AC 50/60 Hz	Pickup	[x U _s]	0.85...1.1
	Dropout	[x U _s]	0.3...0.6
DC ^❶	Pickup	[x U _s]	0.8...1.1
	Dropout	[x U _s]	0.1...0.6
Coil Consumption			
AC 50/60 Hz	Inrush	[VA/W]	70/50
	Seal	[VA/W]	8/2.6
DC	Inrush/Seal	[W]	6.75
Operating Times			
AC- 50/60 Hz	Pickup Time	[ms]	15...30
	Dropout Time	[ms]	10...60
DC	Pickup Time	[ms]	40...70
	Dropout Time	[ms]	7...15

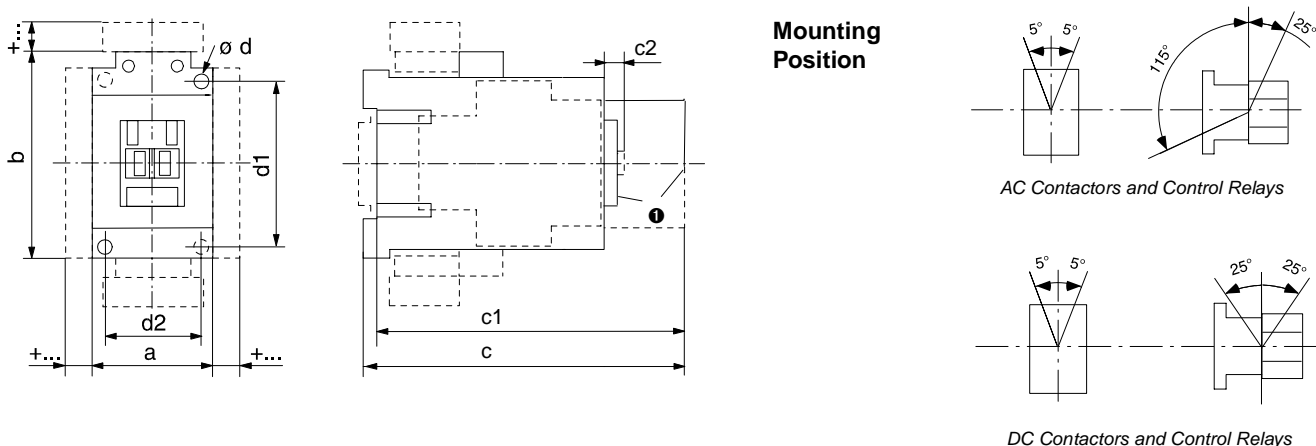
- ❶ For 9V DC, code ZR, use operating voltage 0.65...1.3 x U_s.
For 24V DC, code ZJ or DJ, use operating voltage 0.7...1.25 x U_s.

General

		Cat. No. 700S-CF
Rated Insulation Voltage U_i		
IEC		690V
UL; CSA		600V
Rated Impulse Strength U_{imp}		
		8 kV
High Test Voltage		
1 minute (per IEC 947-4)		2500V
Rated Voltage U_e		
AC		115, 230, 400, 500, 690V
DC		24, 48, 110, 220, 440V
Short-Circuit Protection IEC 158-1 Fuse		
Rated Frequency		
		50/60 Hz, DC
Ambient Temperature		
Storage		-55...+80 °C (-67...176 °F)
Operation at nominal current		-25...+60 °C (-13...140 °F)
Conditioned 15% current reduction after AC-1 at > 60°C		-25...+70 °C (-13...158 °F)
Corrosion Resistance		
		humid-alternating climate, cyclic, per IEC 68-2-30 and DIN 50 016, 56 cycles
Altitude		
		2000m above mean sea level, per IEC 947-4
Type of Protection		
IP 2LX (IEC 529 and DIN 40050)		in connected state
Finger Protection		
		safe from touch by fingers and back of hand per VDE 0106, Part 100

Contactors, Control Relays, and Accessories

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



AC Contactors and Control Relays

Cat. No.	a	b	c	c1	c2	Ød	d1	d2
100S-C09...100S-C23, 700S-CF	45 (1-25/32)	81 (3-3/16)	119.5 (4-3/4)	114.5 (4-43/64)	6 (1/4)	2 - 4.5 (2 - 3/16)	60 (2-23/64)	35 (1-25/64)
100S-C30, 100S-C37	45 (1-25/32)	81 (3-3/16)	136.5 (5-37/64)	131.6 (5-11/32)	6.5 (17/64)	2 - 4.5 (2 - 3/16)	60 (2-23/64)	35 (1-25/64)
100S-C43	54 (2-1/8)	81 (3-3/16)	139.5 (5-11/16)	134.6 (5-29/64)	6.5 (17/64)	2 - 4.5 (2 - 3/16)	60 (2-23/64)	45 (1-25/32)
100S-C60...100S-C85	72 (2-53/64)	122 (4-51/64)	156 (6-11/32)	150.5 (6-1/8)	8.5 (21/64)	4 - 5.4 (4 - 7/32)	100 (3-15/16)	55 (2-11/64)

DC Contactors and Control Relays

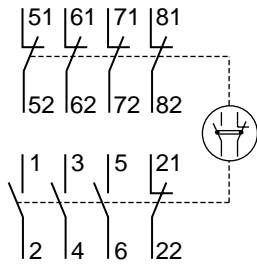
Cat. No.	a	b	c	c1	c2	Ød	d1	d2
100S-C09Z...100S-C16Z, 700S-CF	45 (1-25/32)	81 (3-3/16)	145.5 (5-49/64)	140.5 (5-37/64)	6 (1/4)	2 - 4.5 (2 - 3/16)	60 (2-23/64)	35 (1-25/64)
100S-C23Z	45 (1-25/32)	81 (3-3/16)	162.5 (6-7/16)	158 (6-1/4)	6 (1/4)	2 - 4.5 (2 - 3/16)	60 (2-23/64)	35 (1-25/64)
100S-C30...100S-C37	45 (1-25/32)	81 (3-3/16)	180.5 (7-5/32)	175.5 (6-61/64)	6.5 (17/64)	2 - 4.5 (2 - 3/16)	60 (2-23/64)	35 (1-25/64)
100S-C43Z	54 (2-1/8)	81 (3-3/16)	183.5 (7-17/64)	179 (7-3/32)	6.5 (17/64)	2 - 4.5 (2 - 3/16)	60 (2-23/64)	45 (1-25/32)
100S-C60D...100S-C85D	72 (2-53/64)	122 (4-51/64)	156 (6-11/32)	150.5 (6-1/8)	8.5 (21/64)	4 - 5.4 (4 - 7/32)	100 (3-15/16)	55 (2-11/64)

Accessories

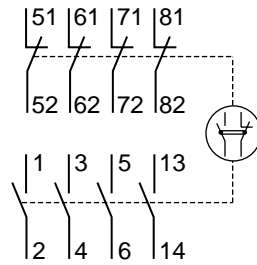
Contactors with		mm	(inches)
Auxiliary contact block for side mounting	1- or 2-pole	a + 9	(a + 23/64)
Electronic Timing Module	on coil terminal side	b + 24	(b + 15/16)
Mechanical Interlock	on side of contactor	a + 9	(a + 23/64)
Interface Module	on coil terminal side	b + 9	(b + 23/64)
Surge Suppressor	on coil terminal side	b + 3	(b + 1/8)
● Labeling with	label sheet	+ 0	(+ 0)
	marking tag sheet with clear cover	+ 0	(+ 0)
	marking tag adapter for System V4 / V5	+ 5.5	(+ 7/32)
	marking tag adapter for System Bul. 1492W	+ 5.5	(+ 7/32)

Terminal Markings

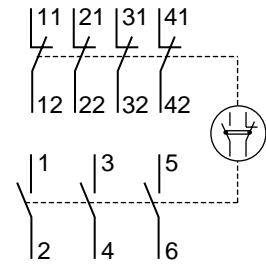
3-Pole Safety Contactors



100S-C09@05C...C23@05C

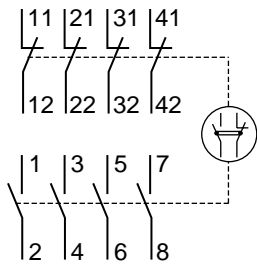


100S-C09@14C...C23@14C

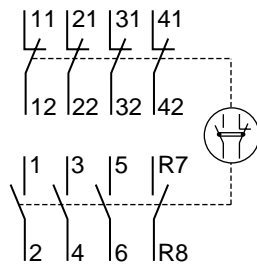


100S-C30@04C...C85@04C

4-Pole Safety Contactors

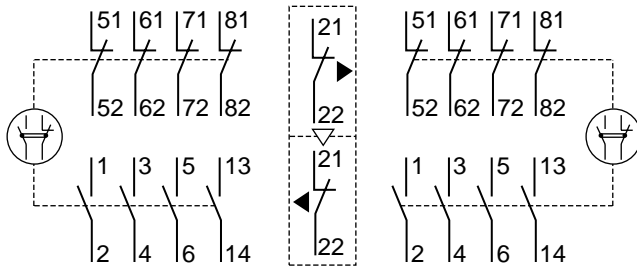


100S-C09@404C...C23@404C

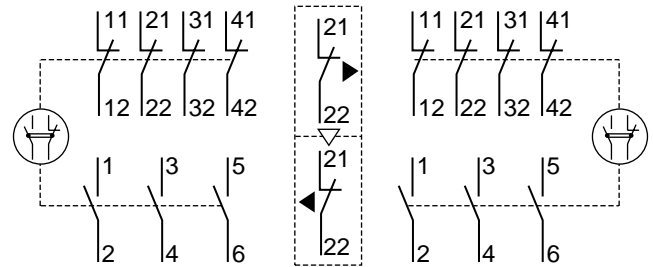


100S-C09@304C...C23@304C

Reversing Safety Contactors



104S-C09@210C...C23@210C



104S-C30@010C...C85@010C

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