

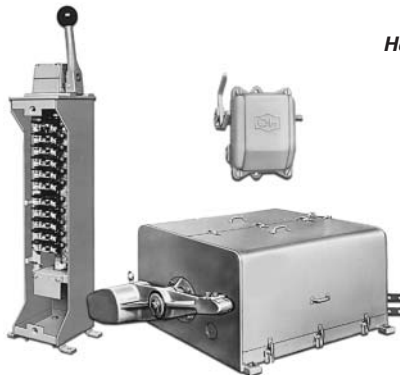
Crane Control

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Heavy-Duty Brakes

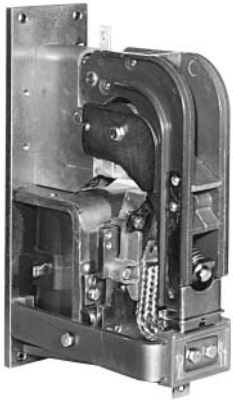


Master and Limit Switch Family



Contactors and Relays

DC Contactors — Types KD & KS



*Type KS — NC Pole
150 Ampere*



*Type KD — NO Pole
100 Ampere*

Product Description

Bulletin 7400 Type KD (Normally Open Pole) and Type KS (Normally Closed Pole) contactors are designed for front-mounting directly on steel panels and require no special hardware or insulators. Electrical clearances are integrally designed into the devices by the use of hot-molded reinforced polyester insulators.

These dc mill type contactors are designed for heavy industry service and are suitable for use on moving machinery. The contactors listed in this section are for surface mounting on steel panels and front-of-panel wiring.

These contactors utilize dc coils. If control power is 120 Vac, the rectifier module listed on **Page 44** should be used in conjunction with a 95V coil contactor.

Auxiliary contacts and mechanical interlocks for use with these contactors are listed **Pages 61** and **62**.

The contactors feature forged steel armature levers and magnet frames for superior physical strength. Self-lubricating bearings eliminate the need for lubricating the contactor. New hot-molded arc chute assemblies contain no asbestos and have better arc extinction characteristics for longer contact life. The short stroke armature results in a mechanical life of more than 20 million operations.

The arc chutes and magnetic blowout structures are designed to quickly absorb and dissipate the heat caused by arcing. In addition to increasing contact life, the molded arc chute offers advantages of improved mechanical life and cooling characteristics plus superior arc-tracking resistance.

Long Life

Extended operating life for Type K contactors results from roll action of contacts, and the transfer of arc to front and rear arc runners. Arc shield and blowout structure guides and dissipates the hot arc and provides high interrupting capacity.

Type K 50 ampere contactors are designed with a unitized head assembly front mounted with only two screws. These assemblies are available with blowout coils rated 3, 7.5, 15, 25 and 50 amperes or without blowout, and are easily changed in the field.

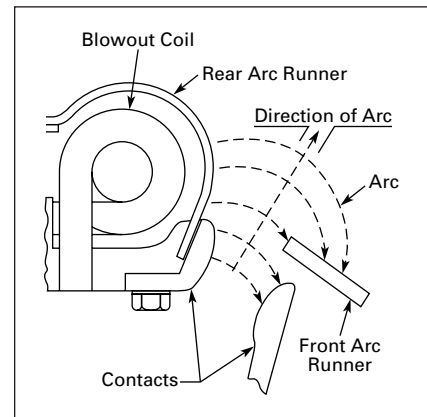


Figure 26. Blowout Coil Effect on Arc

Coils, head assemblies, contacts, arc shields and flexible connectors are identical for all 50 ampere contactors providing lower inventory of parts. They are also the same height as dc members of the PM Relay family — ideal for wireway panel mounting.

Type KS — Normally Closed Pole Contactors

Type KS contactors have similar design and construction features to Type KD normally open pole contactors with many parts duplicated. The Type KS contactor operates with a snappy positive action requiring no retarding coil, series resistor or tapped coil.

Knife-Edge Pivot Design

Type K contactors feature an exclusive shrouded knife-edge pivot which excludes dirt. On 100 ampere and larger sizes, a three-edge design provides reliable adjustment and rattleproof operation. Arm weight is supported by a vertical knife in the center, while horizontal knives at both sides ensure alignment.

Convenient Accessories

Mechanical interlocks and control circuit contacts are furnished in convenient kit form along with necessary hardware. No special drilling is required on panels or contactors.

A line of front wired, mill-type accessory devices including control, timing and overload relays are available and are compatible with Type K contactors.

Features

Thirty years of continual improvements bring long life, low maintenance, interchangeable parts and the ability to “take-it” in harsh industrial environments.

- Front connected for direct to steel mounting. Also suitable for insulated panel mounting with poke-through wiring where rear access is desirable.
- Solid steel backplate provides maximum strength and rigidity.
- Hot molded, reinforced polyester insulators have generous electrical clearances.
- Shrouded knife-edge pivot design excludes dirt.
- Encapsulated coil protects against electrical and mechanical abuse. Has saddle-type pressure terminals.
- Non-brittle, hot-molded arc shields are of tough polyester.
- Power terminals conveniently located with incoming power terminal at top of contactor; outgoing terminal at bottom.
- Designed for front mounting directly on steel panels and require no special hardware or insulators. Electrical clearances are integrally designed into the devices by the use of hot-molded, reinforced polyester insulators.

Standards and Certifications

- NEMA ICS3-441, 442, 443.
- NEMA ICS2-331.23.
- NEMA ICS2-110.05.02.
- NEMA ICS2-125.21.02.

Technical Data and Specifications

- Current Range: 5 to 900 amperes.
- Voltage: 600 Vdc.
- Operation: Magnetic.
- Mounting:
 - Steel panel with options for insulated panels
- Duty:
 - Continuous (for intermittent ratings consult factory)

Table 102. Auxiliary Contact Rating — 15 Amps Continuous

Volts dc	Interrupt Amperes	
	Resistive	Inductive
120	5.5	2.2
240	2.0	1.1
550	.66	.4

Accessories

Table 103. Coil Resistor Kit — for Size 2

Supply Volts	Catalog Number	Part Number ③	*
600 ①	KKD-354	A073-409354-0004	
550 ①	KKD-233	A073-409354-0003	
480 ①	KKD-231	A073-409354-0001	
350 ①	KKD-232	A073-409354-0002	
150 ②	KKD-235	A073-409354-0005	

① Use in series with 240 V coils. Mountable on contactor base. For other size contactors, refer to local representative.

② Use in series with 120 V coils.

③ Order by Part Number rather than Catalog Number.

Table 104. Control Circuit Contact Kits

Control Contact Arrangement	Catalog Number	Part Number	*
1NO	KKD-7	A074-177676-0004	
1NC	KKD-8	A074-177676-0005	
1NO-1NC	KKD-1	A074-177676-0001	
2NO	KKD-2	A074-177676-0002	
2NC	KKD-3	A074-177676-0003	

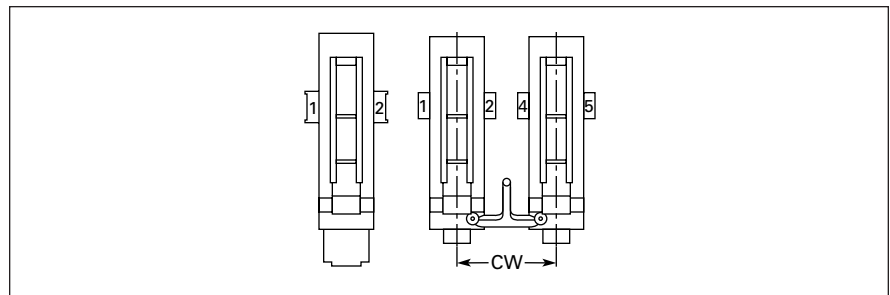


Figure 27. Control Circuit Contacts

Table 105. Control Circuit Contacts — Number & Locations

Contactor Ampere Rating	Power Poles	Per Contactor		When CW Equals Inches (mm)	Usable Locations
		Maximum Number of Blocks	Maximum Number NC Contacts		
50	1NO	2	2	3 (76)	1, 5
50				4 (102)	1, 2 or 4, 5
50				5.5 (140)	1, 2 and 4, 5
100, 150	1NO	2	2	3.5 (89)	1, 5
100, 150				5 (127)	1, 2 or 4, 5
300				6 (152)	1, 2 or 4, 5
50	2NO	2	2	5 (127)	1, 2 or 4, 5
50				9 (229)	1, 2 and 4, 5
100	1NC	1	2	Does Not Apply	1, 4
150				1, 4	
300				1, 4	

Discount Symbol **18CD4**

* Consult Sales Office for Pricing

DC Contactors — Types KD & KS

Table 106. Mechanical Interlock Kits ^①

NEMA Size	Contactor Amp Rating	Power Poles	Spacing Between Contactor Center Lines Inches (mm) ^②	Catalog Number	Part Number	*
2	Up to 50 Amps	1 VS 1	4.00 (101.6)	KKD-214	A074-253077	
		1 VS 2				
		2 VS 2	5.00 (127.0)	KKD-215	A074-253078	
		2 VS 2	9.00 (228.6)	KKD-217	A074-407281	
3, 4, 5	100 VS 100 100 VS 150 150 VS 150	1 VS 1	3.50 (88.9)	KKD-113	A074-244364	
	100 VS 100 100 VS 150 150 VS 150	1 VS 1	5.00 (127.0)	KKD-114	A074-253001	
	300 VS 300	1 VS 1	6.00 (152.4)	KKD-313	A074-250825	

^① Mechanical interlocks not available for use with normally closed pole contactors.

^② Dimension CW in Figure 27.

Table 107. AC-DC Rectifier Kits ^③ — 50/60 Hertz

Contactor		ac Volts	Contactor dc Coil Required	Catalog Number	*
NEMA Size	Power Poles				
2 thru 5	1NO, 1NC or 2NO	120	95V	C81EB	

^③ For operating contactors from ac supply voltage. One kit per contactor. Mountable on contactor base. Suitable for use with control transformer sources to 3 kVA. For larger sources, a separate isolating transformer is required, 15 VA or larger for each contactor.

Table 108. Mounting Hardware Kits — for Control Circuit Contacts

NEMA Size	8 Hour Ampere Rating	Power Poles	Catalog Number	Part Number ^④	*
2	50	1NO	KKD-14	A074-266421	
2	50	1NC	KKD-14	A074-266421	
2	50	2NO	KKD-14	A074-266421	
3 & 4	100 & 150	1NO	KKD-10	A074-272165-0001	
3 & 4	100 & 150	1NC	KKD-11	A074-272165-0002	
5	300	1NO	KKD-12	A074-272165-0003	
5	300	1NC	KKD-13	A074-272165-0004	

^④ Order by Part Number rather than Catalog Number.

Discount Symbol 18CD-4

* Consult Sales Office for Pricing

Renewal Parts

Table 109. Bulletin 7400-K, 7307-KC, 7311-KFL

Description	Catalog Number	Discount Schedule	Part Number	*
1NO-1NC Pole	KKD-1	18CD-4	A074-177676-0001	
2NO Poles	KKD-2	18CD-4	A074-177676-0002	
2NC Poles	KKD-3	18CD-4	A074-177676-0003	
1NO Pole	KKD-7	18CD-4	A074-177676-0004	
1NC Pole	KKD-8	18CD-4	A074-177676-0005	
Mounting Hardware for 100 A – 150 A KD	KKD-10	18CD-4	A074-272165-0001	
Mounting Hardware for 100 A – 150 A KD	KKD-11	18CD-4	A074-272165-0002	
Mounting Hardware for 300 A KD	KKD-12	18CD-4	A074-272165-0003	
Mounting Hardware for 300 A KS	KKD-13	18CD-4	A074-272165-0004	
Mounting Hardware and Operating Equipment	KKD-14	18CD-4	A074-266421	
Movable and Stationary Contacts for 50 A KD, KS	KKD-50	15CD-2	A074-281986	
Assembly Arc Shield for 50 A KD, KS	KKD-51	15CD-2	A074-281987	
50 A KD Contact Spring	KKD-52	15CD-2	A074-281988	
50 A KS Contact Spring	KKD-53	15CD-2	A074-281989	
50 A KD, KS Connector	KKD-54	15CD-2	A074-281990	
Movable and Stationary Contacts 100 A KD, KS	KKD-100	15CD-2	A074-253067-0001	
Assembly Arc Shield for 100 A, KD, KS	KKD-101	15CD-2	A074-253067-0002	
100 A KD Contact Spring	KKD-102	15CD-2	A074-253067-0003	
100 A KS Contact Spring	KKD-103	15CD-2	A074-253067-0004	
100 A KD, KS Connector	KKD-104	15CD-2	A074-253067-0005	
Mechanical Interlock 3-1/2" Spacing 100 A – 150 A KD	KKD-113	18CD-4	A074-244364	
Mechanical Interlock 5" Spacing 100 A – 150 A KD	KKD-114	18CD-4	A074-253001	
Movable and Stationary Contacts 150 A KD-KS	KKD-150	15CD-2	A074-253068-0001	
Arc Shield 150 A KD-KS	KKD-151	15CD-2	A074-253068-0002	
Contact Spring 150 A KD	KKD-152	15CD-2	A074-253068-0003	
Contact Spring 150 A KS	KKD-153	15CD-2	A074-253068-0004	
Connector 150 A KD-KS	KKD-154	15CD-2	A074-253068-0005	
Center Mounting Hardware 7307KC	KKD-200	15CD-2	A073-409357	
Mechanical Interlock 4" Spacing 50 A KD	KKD-214	18CD-4	A074-253077	
Mechanical Interlock 5" Spacing 50 A KD	KKD-215	18CD-4	A074-253078	
Mechanical Interlock 5-1/2" Spacing 50 A KD	KKD-216	18CD-4	A074-407280	
Mechanical Interlock 9" Spacing 50 A KD	KKD-217	18CD-4	A074-407281	
Coil Resistor Kit 480 V 50 A-KD and KS, 7307KC	KKD-231	18CD-4	A074-409354-0001	
Coil Resistor Kit 350 V 50 A-KD and KS, 7307KC	KKD-232	18CD-4	A074-409354-0002	
Coil Resistor Kit 550 V 50 A-KD and KS, 7307KC	KKD-233	18CD-4	A074-409354-0003	
Coil Resistor Kit 600 V 50 A-KD and KS, 7307KC	KKD-234	18CD-4	A073-409354-0004	
Coil Resistor Kit 150 V 50 A-KD and KS, 7307KC	KKD-235	18CD-4	A073-409354-0005	
Movable and Stationary Contact Kit 300 A KD and KS	KKD-300	15CD-2	A074-253069-0001	
Assembly Arc Shield 300 A KD and KS	KKD-301	15CD-2	A074-253069-0002	
Movable Contact Spring 300 A KD	KKD-302	15CD-2	A074-253069-0003	
Movable Contact Spring 300 A KS	KKD-303	15CD-2	A074-253069-0004	
Flexible Connector 300 A KD and KS	KKD-304	15CD-2	A074-253069-0005	
Mechanical Interlock 6" Spacing 300 A KD	KKD-313	18CD-4	A074-250825	
Head Assembly without Blowout 50 A KD-KS	KKD-510	15CD-2	A074-281991	
Head Assembly with 3 A Blowout 50 A KD-KS	KKD-511	15CD-2	A074-281992	
Head Assembly with 7-1/2 A	KKD-512	15CD-2	A074-281993	
Head Assembly with 15 A Blowout 50 A KD-KS	KKD-513	15CD-2	A074-281994	
Head Assembly with 25 A Blowout 50 A KD-KS	KKD-514	15CD-2	A074-281995	
Head Assembly with 50 A Blowout 50 A KD-KS	KKD-515	15CD-2	A074-281996	

Discount Symbol **18CD-4**

* Consult Sales Office for Pricing

Dimensions

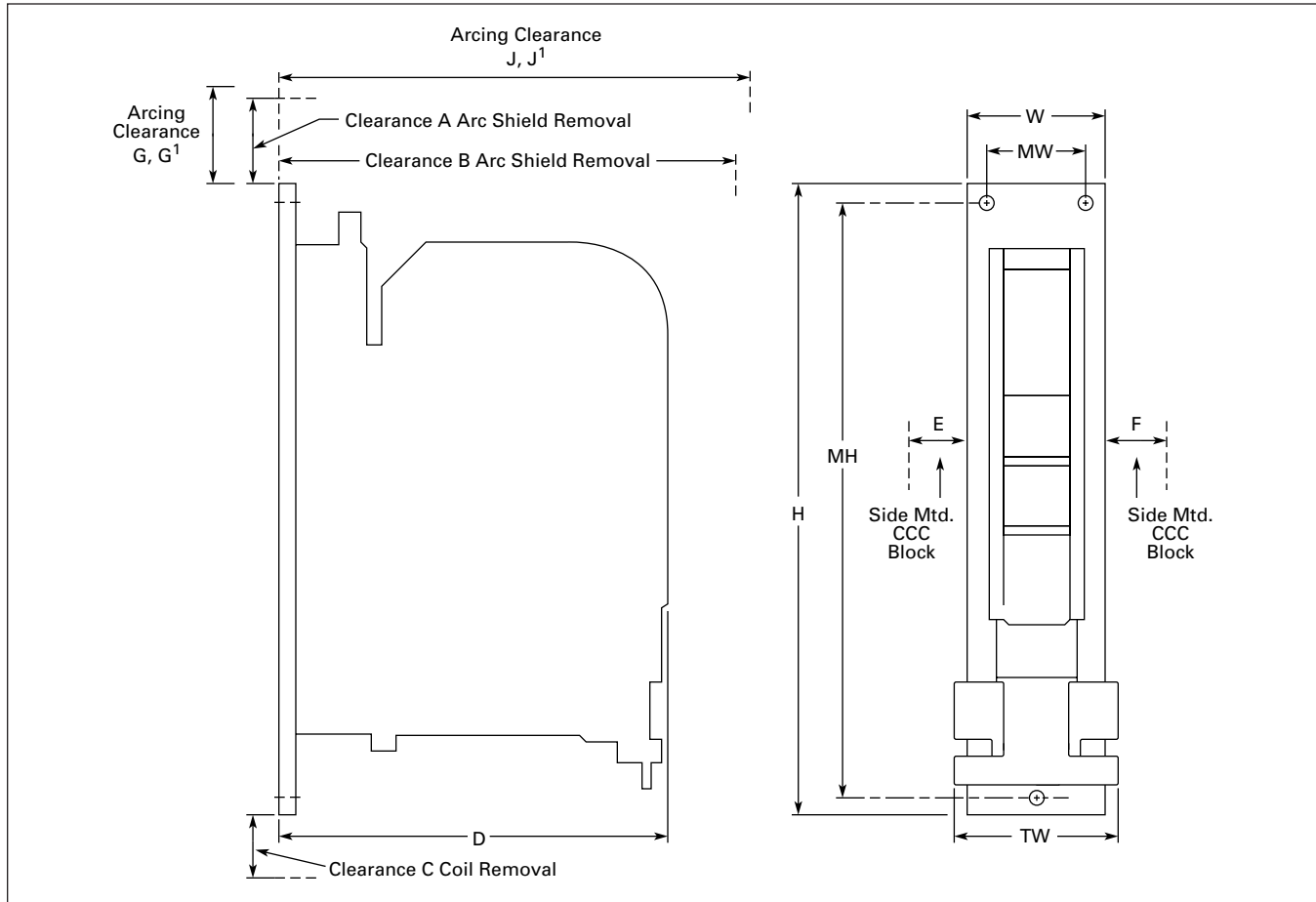


Figure 28. Approximate Dimensions and Weights

Table 110. Approximate Dimensions and Weights

Size Amps	Poles	Dimensions in Inches (mm)						Clearance Dimensions in Inches (mm)					Mtg. Hole Dia.	Ship. Wt. Lbs. (kg)
		H	W	D	MH	MW	TW	A	B	C	E	F		
50	1NO	6.12 (155.5)	2.50 (63.5)	6.25 (158.8)	5.50 (139.7)	2.00 (50.8)	2.50 (63.5)	.25 (6.35)	7.00 (177.8)	1.00 (25.4)	.93 (23.6)	.93 (23.6)	.20 (5.1)	6 (2.7)
50	2NO	6.12 (155.5)	4.25 (108.0)	6.25 (158.8)	5.50 (139.7)	2.00 (50.8)	4.25 (108.0)	.25 (6.35)	7.00 (177.8)	1.00 (25.4)	.93 (23.6)	.93 (23.6)	.20 (5.1)	10 (4.5)
100, 150	1NO	13.25 (336.6)	2.75 (69.9)	8.00 (203.2)	12.50 (317.5)	2.00 (50.8)	3.00 (76.2)	3.00 (76.20)	12.25 (311.2)	2.00 (50.8)	1.25 (31.8)	1.37 (34.8)	.34 (8.6)	11 (5.0)
300	1NO	16.75 (425.5)	4.00 (101.6)	11.25 (285.8)	15.75 (400.1)	3.00 (76.2)	4.00 (101.6)	4.50 (114.30)	16.75 (425.5)	3.50 (88.9)	1.00 (25.4)	1.37 (34.8)	.43 (10.9)	26 (12)
50	1NC	8.50 (215.9)	2.50 (63.5)	6.25 (158.8)	8.00 (203.2)	2.00 (50.8)	2.50 (63.5)	.25 (6.35)	7.00 (177.8)	.37 (9.4)	1.00 (25.4)	—	.20 (5.1)	10 (4.5)
100, 150	1NC	13.25 (336.6)	3.50 (88.9)	9.00 (228.6)	12.50 (317.5)	2.50 (63.5)	4.50 (114.3)	3.00 (76.20)	13.37 (339.6)	3.12 (79.3)	.87 (22.1)	—	.34 (8.6)	13 (5.9)
300	1NC	16.75 (425.5)	4.00 (101.6)	11.50 (292.1)	15.75 (400.1)	3.00 (76.2)	7.75 (196.9)	4.50 (114.30)	17.37 (441.2)	3.25 (82.6)	1.25 (31.8)	—	.43 (10.9)	34 (15)

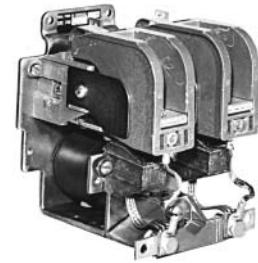
Table 111. Arcing Clearance in Inches (mm)

Size Amps	Poles	600 V		250 V	
		G	J	G ¹	J ¹
50	1NO	1.50 (38.1)	7.50 (190.5)	1.25 (31.8)	7.25 (184.2)
50	2NO	1.50 (38.1)	7.50 (190.5)	1.25 (31.8)	7.25 (184.2)
100	1NO	1.75 (44.5)	11.00 (279.4)	1.50 (38.1)	10.75 (273.0)
150	1NO	2.50 (63.5)	11.50 (292.1)	2.00 (50.8)	11.00 (279.4)
300	1NO	3.50 (88.9)	15.50 (393.7)	3.00 (76.2)	15.25 (387.4)
50	1NC	1.50 (38.1)	7.50 (190.5)	1.25 (31.8)	7.25 (184.2)
100	1NC	1.75 (44.5)	12.00 (304.8)	1.50 (38.1)	11.75 (298.5)
150	1NC	2.50 (63.5)	12.50 (317.5)	2.00 (50.8)	12.00 (304.8)
300	1NC	3.50 (88.9)	15.75 (400.0)	3.00 (76.2)	15.50 (393.7)

Product Selection

When Ordering Specify

- Catalog Number of contactor, plus dash (-) and Suffix Number from Coil Voltage table, **Table 113**.
Example: A074-266407-0240.
- Catalog Number for auxiliary contact(s), if required, or any other required kit, see **Pages 61 and 62**.



**Type KD — NO Pole
2-Pole 50 A**

Table 112. Type KD & KS DC Contactors — 600 V

NEMA Size	8 Hour Open Rating (Amperes)	Power Poles	Blowout Rating (Amperes)	Catalog Number	Open Type	
					Part Number ①	*
2	50	1NO	None	74U12A	A074-266407	
		1NO	3	74U12B	A074-266406	
		1NO	7.5	74U12C	A074-266405	
		1NO	15	74U12D	A074-266404	
		1NO	25	74U12E	A074-266403	
		1NO	50	74U12	A074-266402	
		2NO	None	74U22A	A074-266413	
		2NO	3	74U22B	A074-266412	
		2NO	7.5	74U22C	A074-266411	
		2NO	15	74U22D	A074-266410	
		2NO	25	74U22E	A074-266409	
		2NO	50	74U122	A074-266408	
3	100	1NC	25	74U121E	A074-266416	
		1NC	50	74U121	A074-266415	
3	100	1NO	100	74U13	A074-253051	
		1NC	100	74U131	A074-253055	
4	150	1NO	150	74U14	A074-253053	
		1NC	150	74U141	A074-253057	
5	300	1NO	300	74U15	A074-253059	
		1NC	300	74U151	A074-253061	

① Order contactors by Part Number rather than Catalog Number. Add Suffix for coil voltage.

Table 113. Coil Voltage Suffix

Volts	Contactors Size	Suffix	*
240	2, 3, 4, 5	-0240	
120	2, 3, 4, 5	-0120	
95 or other voltage	2	-0095	②
	3, 4	-0095	②
	5	-0095	②
550	2	-0240	③
480	2	-0240	③
350	2	-0240	③

② Each contactor.
③ Separate resistor is required in series with the 240 V coil. Resistor is supplied separately (not factory mounted). Order separate item from **Table 103** on **Page 61**. For other size contactors refer to your local representative or factory.

Accessories **Pages 61, 62**
Renewal Parts **Page 63**
Discount Symbol **18CD-4**

* Consult Sales Office for Pricing