DESCRIPTION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE NRD CONTACTOR

Frames 3 and 4 with 2, 3, 4 or 5 Poles
(A-C Contactor with D-C Magnet and Coils)

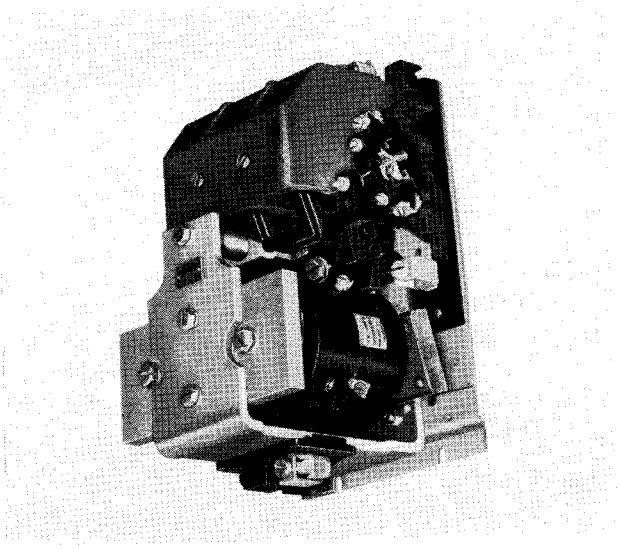

FIG. 1. Type NRD D-C Operated A-C Contactor with One Normally-Open Electrical Interlock.

TYPE NRD CONTACTORS ARE SIMILAR TO TYPE NR A-C CONTACTORS EXCEPT THAT THEY HAVE D-C OPERATING MAGNETS. THE RATINGS OF THE CONTACTORS ARE AS SHOWN IN TABLE 1.

DESCRIPTION

THE CONTACTOR is of unit construction with all parts assembled on a common base plate, with mounting dimensions the same as the Type NR A-C contactor. The armature hinges on a knife-edge bearing which has extremely long life and requires little maintenance. A kickout spring assures positive opening of the contactor. Magnetic lock out is prevented by a metallic non-magnetic stop pad of liberal thickness. The double-break contacts are faced with silver alloy for long life and optimum conducting and rupturing performance. The arc box employs the de-ion grid principle of arc interruption.

The contactor is insulated for a maximum of 600 volts. The operating coils are rated for continuous duty and will operate the contactor at 80% to 110% of their rated voltage.

Electrical Interlocks. As many as four type L-60 electrical interlocks may be obtained for mounting on the contactor.

Order by style number as follows:
S-1490 455 for 1st and 2nd electrical interlock
S-1490 456 for 3rd and 4th electrical interlock

Both interlocks provide normally open or normally closed operation. Mounting hardware and instructions are included.

Mechanical Interlocks. A type M-29 mechanical interlock is obtainable for side-by-side mounting of a pair of contactors to prevent the accidental

Table 1. Rating

SIZE NO.	NO. OF POLES	8 HOUR* AMPERE RATINGS A-C AND D-C		MAXIMUM HORSEPOWER RATINGS					
				Volts—Single Phase			Volts—Polyphase		
		Open	Enclosed	115	230	440-600	110	208-220	440-600
3	2	100	90	7½	15	25	...	...	...
3	3	100	90	7½	15	25	15	30	50
3	4	100	90	...	..	..	15	30	50
3	5	100	90	...	..	..	15	30	50
4	2	150	135	...	..	..	...	...	...
4	3	150	135	...	..	..	25	50	100
4	4	150	135	...	..	..	25	50	100
4	5	150	135	...	..	..	25	50	100

* Interruption rating is 10 times 8 hour rating for A-C and for D-C provided that on D-C interruption a pole is used on either side of the line or two poles in series on one line.

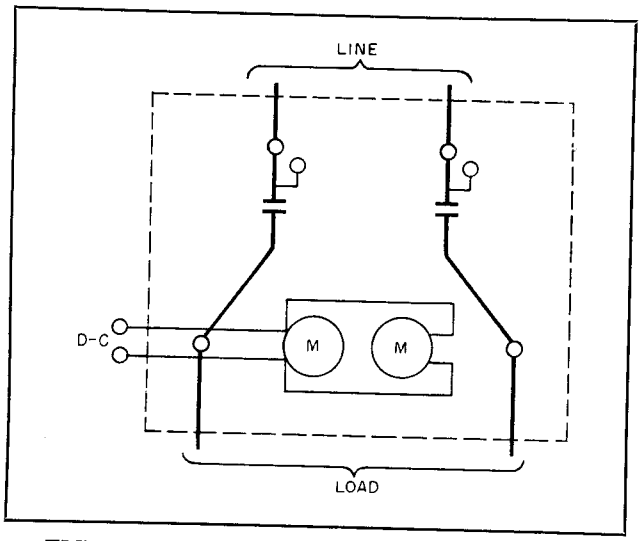

FIG. 2. Wiring Diagram for Two-Pole Contactor (Front View)

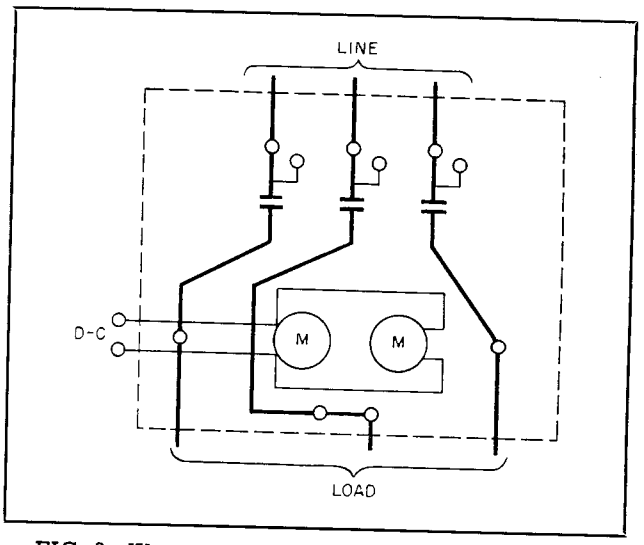

FIG. 3. Wiring Diagram for Three-Pole Contactor (Front View)

closing of either contactor if the other is already closed.

Other Accessories. A total of three overload relays may be added to the contactor. Two of these relays are to be mounted on auxiliary plates which extend out from the base on either side of the contactor. Adding overload relays in this manner increases the overall width of the contactor by 5½ inches. A third overload relay may be added by using an auxiliary bracket mounted on the bottom magnet bracket.

INSTALLATION AND MAINTENANCE

The arc box is essential to the proper operation of this contactor and must be in place and securely fastened. Grids should be kept in place and free from any foreign material. The knife edge bearing requires no maintenance. No oils or lubricants should be used on any part of the contactor. Be sure that the cross bar bolts are tight. Do not file or dress the connectors or other current carrying parts less the protective plating be removed. Surface discoloration is not harmful.

Operating Coils. The two operating coils are easily removed for replacement. To remove a coil, disconnect the wiring and remove the bolt securing its core to the magnet yoke. Slide the coil and core from the contactor and separate them from each other. Check the replacement coil to be sure its markings correspond to the voltage rating desired. Reassemble the coil and core, taking care that the resilient retaining washer is in place and the coil is oriented with the straight edge of its end washer

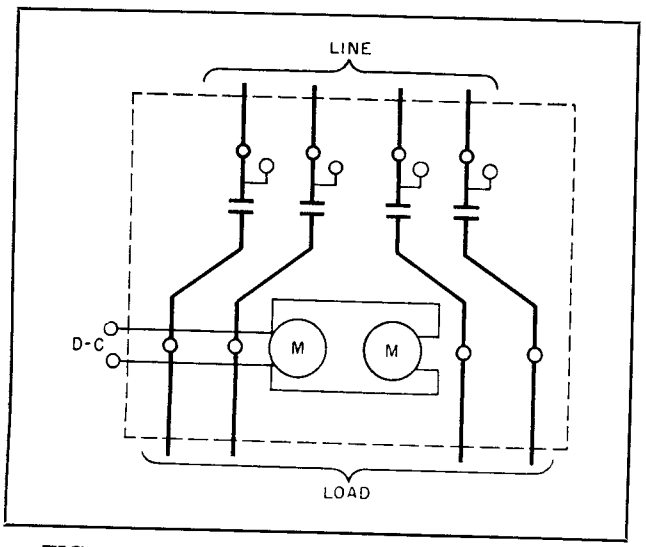

FIG. 4. Wiring Diagram for Four-Pole Contactor (Front View)

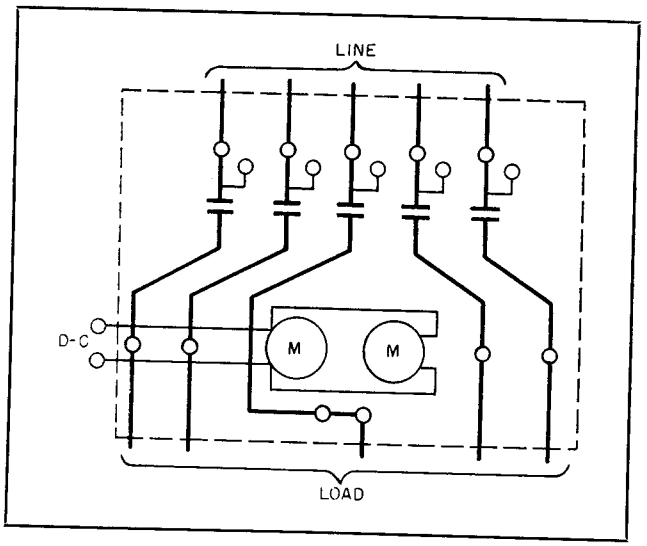

FIG. 5. Wiring Diagram for Five-Pole Contactor (Front View)

against the corresponding part of the other coil to keep both from turning. It may be necessary to move an overload relay to provide space for removing the coil.

Table 2. Coils

RATING D-C VOLTS	STYLE NO.	REQ.
115	1754 340	2
230	1754 340	2*
550	1754 341	2

*For 230 volts use two 115 volt coils in series.

Contacts. Oil or other lubricants should not be used on the contacts. Do not dress the contacts unless unusually severe pitting occurs. The contact surfaces are of silver and discoloration is not harmful. Replace the contacts when the silver faces become reduced to about $\frac{1}{32}$ inch in thickness.

RENEWAL PARTS

NAME OF PART	STYLE NUMBER	
	Size 3	Size 4
Coil (S# marked on coil)	....	....
Arc Box (2 pole)	1490 469	1490 469
Arc Box (3 pole)	1490 468	1490 468
Arc Box (4 pole)	1600 430	1600 430
Arc Box (5 pole)	1600 429	1600 429
Moving Contact	1490 414	1490 426†
Stationary Contact	1490 415	1490 425†
Contact Spring	1490 419	1490 424

† Stamped with numeral "4"

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