

DC CONTROL

5DP Contactors

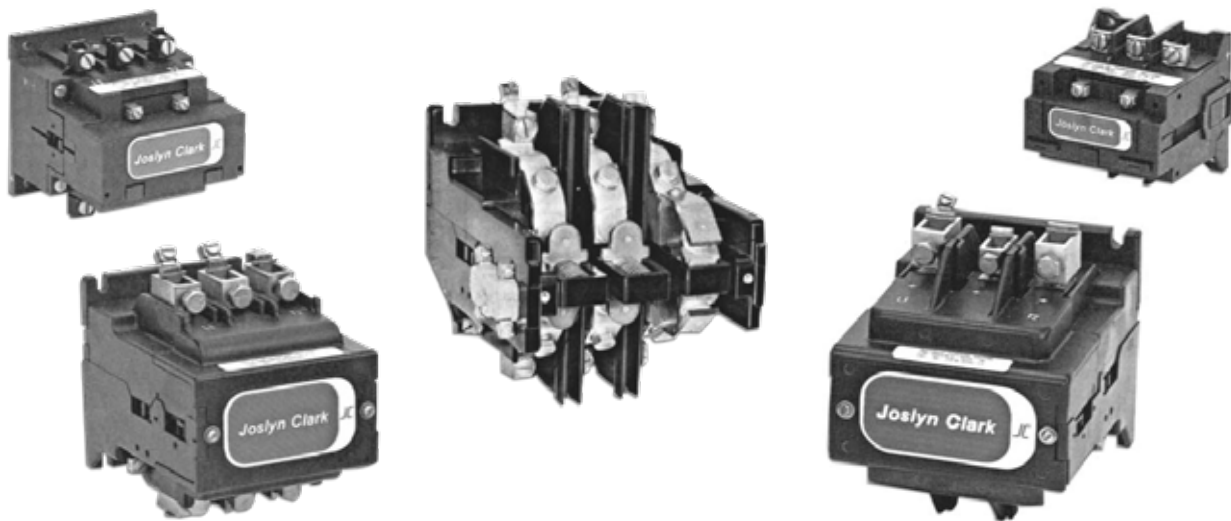


5DP Definite Purpose Contactors are designed for DC adjustable speed drive circuits using silicon controlled rectifier switching and other controls where a combination of normally open and normally closed power contacts are required. In all applications, reduced panel space for contactor mounting is made possible through a compact design and the built-in N.C. dynamic brake power contact feature.

In silicon controlled rectifier switching circuits, the SCR is normally phased back prior to contactor opening. Therefore, the N.O. contacts are not required to interrupt any appreciable current. Under abnormal conditions such as failure of the SCR or the control circuit, the contactor may be required to interrupt up to 200% current. The N.O. contacts are equipped with permanent magnet blowouts to meet this requirement.

The dynamic brake N.C. contact is required to insert the dynamic brake resistor and therefore must make up to 200% of rated current each time the contactor is de energized.

Logging is accomplished at low voltage and current. Therefore, the dynamic brake contact is rated at 1/3 of rated voltage and dynamic brake current. The permanent magnet blowouts provide this interrupting ability.



- 1. Normally Closed Double Break Power Contacts** - made of silver cadmium oxide furnish "anti-weld" protection under overload conditions. Generous size contacts are long lasting, and maintenance-free. All N.C. power contacts supplied with permanent magnet blowouts to lengthen contact life.
- 2. Normally Open Double Break Power Contacts** - incorporate the same design features as the normally closed power poles. Permanent magnet blowouts are also furnished on d.c. load applications.
- 3. Permanent Magnet Blowouts** - mounted to surround the power contacts, function to quickly quench the arc when breaking loads, thereby increasing contact life and assuring positive load circuit interruption. All normally closed poles are furnished with permanent magnet blowouts. Normally open poles can be supplied with or without blowouts as indicated in the circuit symbols shown on page J6.
- 4. Stainless Steel Springs** - maintain exact contact pressure and assure fast contact break (N.O.) and make (N.C.).
- 5. Molded Housing** - constructed of hot-molded, high impact, high arc resistant insulating material. This design totally encloses the contacts and operating magnet in separate compartments and functions to eliminate internal phase-to-phase short circuits.
- 6. Molded Coil** - is layer wound, designed for continuous duty service. Coil construction resists moisture; thermal and mechanical stress. Coil connections are made to pressure type terminals.
- 7. Free-Floating Armature-Magnet Frame** - provide quiet, low vibration, low friction operation. Precision ground pole faces achieve an absolute air gap which prevents "hanging-up". Magnet frame is sized for fast, powerful operation and self-seating extends operational life.
- 8. Auxiliary Contacts** - for 10/40 amp. contactors are available with either the front mounted snap action type with quick connect terminals or the side mounted type with pressure terminals. Contacts for larger sizes in standard or special make-before-break contact combinations feature either standard double break silver-to-silver contacts or low power gold alloy contacts.
- 9. Pressure Type Terminals** - accessible, up-front location permits modern straight-thru wiring. Terminals accept stripped, un-lugged wires.

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SCR Drive Contactors - N.O. or N.C. Power Poles

Drive Contactors Preferred Style 500 VDC Max				
Type & Rating	Poles		Fig. No.	Open Type Catalog No.
	N.O.	N.C.		
7001	0	1	7A	7001-5150- **
	0	2	9	7001-5230- **
	1	0	1	7001-6050- **
40 amp.	2	0	3	7001-7030- **
	2	1	10	7001-7140- **
5DP7	0	1	7A	5DP7-5150- **
	0	2	9	5DP7-5230- **
	1	0	1	5DP7-6050- **
75 amp.	2	0	3	5DP7-7030- **
	2	1	10	5DP7-7140- **
5DP3A	0	1	8	5DP3A4001- **
	0	2	9	5DP3A3071- **
	1	0	1	5DP3A4011- **
110 amp.	2	0	3	5DP3A5021- **
	2	1	15	5DP3A5091- **
5DP4	0	1	8	5DP4-4001- **
	0	2	9	5DP4-3071- **
	1	0	1	5DP4-4011- **
180 amp.	2	0	3	5DP4-5021- **
	2	1	15	5DP4-5091- **
5DP9	0	1	8	5DP9-4001- **
	0	2	9	5DP9-3071- **
	1	0	1	5DP9-4011- **
260 amp.	2	0	3	5DP9-5021- **
	2	1	15	5DP9-5091- **
5DP5	0	1	8	5DP5-4001- **
	0	2	9	5DP5-3071- **
	1	0	1	5DP5-4011- **
360 amp.	2	0	3	5DP5-5021- **
	2	1	15	5DP5-5091- **
5DP8	0	1	8	5DP8-4001- **
	0	2	9	5DP8-3071- **
	1	0	1	5DP8-4011- **
535 amp.	2	0	3	5DP8-5021- **
	2	1	15	5DP8-5091- **

* Coil Table #1 Replace * with appropriate coil voltage digit			
60 Hz/Voltage	(*)	DC/Voltage	(*)
120	1	180	8
240	2	240	9

** Coil Table #2 Replace ** with appropriate coil voltage suffix			
60 Hz/Voltage	(*)	DC/Voltage	(*)
120	11	12	72
208/240	21	24	82
-	-	48	32
-	-	120	12
480	41	240	22
600	51	-	-

Drive Contactors Preferred Style 500 VDC Max				
Type & Rating	Poles		Fig. No.	Open Type Catalog No.
	N.O.	N.C.		
7000	0	1	7A	7000-5150- **
	2	0	3	7000-7030- **
	2	1	10	7000-7140- **
10/40 amp.	0	1	8	5DP1-01()00 *
	0	2	9	5DP1-02()00 *
	1	0	1	5DP1-10()00 *
5DP1	1	1	5	5DP1-11()00 *
	2	0	2	5DP1-20()00 *
	2	1	6	5DP1-21()00 *
30 amp.	2	0	3	5DP1-5021- **
	2	1	7	5DP1-5051- **
	0	1	8	5DP2-01()00 *
5DP2	0	2	9	5DP2-02()00 *
	1	0	1	5DP2-10()00 *
	1	1	5	5DP2-11()00 *
56 amp.	2	0	2	5DP2-20()00 *
	2	1	6	5DP2-21()00 *
	2	0	3	5DP2-5021- **
5DP2	2	1	7	5DP2-5051- **
	0	1	8	5DP3-01()00 *
	0	2	9	5DP3-02()00 *
5DP3	1	0	1	5DP3-10()00 *
	1	1	5	5DP3-11()00 *
	2	0	2	5DP3-20()00 *
110 amp.	2	1	6	5DP3-21()00 *
	2	0	3	5DP3-5021- **
	2	1	7	5DP3-5051- **
5DP3	0	1	8	5DP4-01()00 *
	0	2	9	5DP4-02()00 *
	1	0	1	5DP4-10()00 *
5DP4	1	1	5	5DP4-11()00 *
	2	0	2	5DP4-20()00 *
	2	1	6	5DP4-21()00 *
180 amp.	2	1	7	5DP4-5051- **
	0	1	8	5DP9-01()00 *
	0	2	9	5DP9-02()00 *
5DP9	1	0	1	5DP9-10()00 *
	1	1	5	5DP9-11()00 *
	2	0	2	5DP9-20()00 *
260 amp.	2	1	6	5DP9-21()00 *
	2	1	7	5DP9-5051- **
	0	1	8	5DP5-01()00 *
5DP5	0	2	9	5DP5-02()00 *
	1	0	1	5DP5-10()00 *
	1	1	5	5DP5-11()00 *
360 amp.	2	0	2	5DP5-20()00 *
	2	1	6	5DP5-21()00 *
	2	1	7	5DP5-5051- **
5DP5	0	1	8	5DP8-01()00 *
	0	2	9	5DP8-02()00 *
	1	1	5	5DP8-11()00 *
5DP8	2	0	2	5DP8-20()00 *
	2	1	6	5DP8-21()00 *
	2	1	7	5DP8-5051- **

The N.C. contact is short time rated for Dynamic Braking applications. Refer to table on page J7 for N.C. contact ratings.

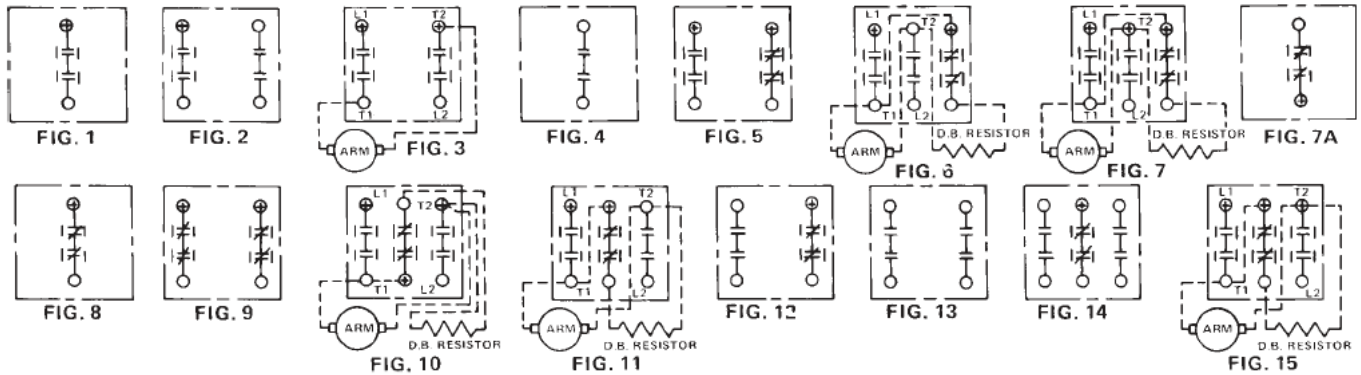
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5DP Contactors

Auxiliary Contact Blocks	
Field Installation Kit	Kit No.
For 10/40 amp. Old Style & 40-535 Amp.	
N.O.	5M63
N.C.	5M64
N.O. & N.C.	5M65
Tandem mounting auxiliary. **	5M60DA

1. Consult factory for low-level signal switching options.

Terminal Polarity and Wiring Figures:



Symbols: $\text{---|} \oplus$ N.O. Contact $\text{---|} \text{---|}$ Contact with Blowout $\text{---|} \text{---|} \text{---|}$ N.C. Contact \oplus Positive Polarity

Contacts without blowouts do not have any interrupting rating. Contactors with 2 N.O. contacts and blowouts will interrupt 200% current under abnormal conditions.

Notes:

- ** NOT for 10/40A or 40A
- Contains mounting hardware only. Order auxiliary separately.
- If DC coil required then contact blocks restricted to 2 & max. aux. contacts 4. 1 contact listed also used to economise coil when DC operated.

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5DP Contactors

Contact Ratings Table - 5DP					
Type & Rating	Poles	N.O. Contacts		N.O. Contacts (Intermittent)	
		Duty		Dynamic Brake Make Only - 500V Max.	Jogging Break Only 160V Max.
		240V	500V		
7000 10/40 amp.	2	-	10	20	7
	2	40	-	80 (240V)	27 (80V)
7001 40 amp.	2	40	40	70	23
5DP1 30 amp.	1	30	30	54	20
	2	30	30	-	-
5DP2 56 amp.	1	56	56	105	35
	2	56	56	-	-
5DP7 75 amp.	2	75	75	150	50
5DP3 5DP3A 110 amp.	1	110	-	315	105
	2	110	110	-	-
5DP4 180 amp.	1	180	-	315	105
	2	180	180	-	-
5DP9 260 amp.	1	-	-	387	135
	2	260	260	-	-
5DP5 360 amp.	1	360	360	720	240
	2	360	360	-	-
5DP8 535 amp.	1	-	-	1070	356
	2	535	535	-	-
5DP6 700 amp.	1	700	700	1400	466
	2	700	700	-	-

Contact Kits ¹ - 5DP			
Contactor Type	Rating	N.O. Contact Kit No.	N.C. Contact Kit No.
7000	10/40A	5M19	5M20
7001	40A	-	-
5DP1	30A	5M55	5M57
5DP2	56A	5M52	5M58
5DP7	75A	5999-2521	5M48
5DP3A	110A	5M80A	5M58
5DP3	110A	5M53	5M49
5DP4	180A	5M54	5M49
5DP9	260A	5M56	5M49
5DP5	360A	5M-045	5999-2461
5DP8	535A	5999-2371	5999-2471

Auxiliary Contact Rating		
AC Volts	10/40 Thru 100A	
	Amperes	
	Continuous	Inrush
120	6	60
280	3	30
480	1.5	15
600	1.2	12

Coil Table - 5DP		
Rating	Voltage	Coil Kit No.
7000 (10/40A) 7001 (40A)	120V AC	5ML025
	208/240V AC	5ML029
	480V AC	5ML027
	600V AC	5ML028
	12V DC	5999A2817
	24V DC	5999A2818
	48V DC	5999A2813
	120V DC	5999A2811
	240V DC	5999A2812
	120V AC	5ML021
208/240V AC	5ML022	
480V AC	5ML023	
600V AC	5ML024	
5DP1 (30A)	12V DC	5999A2937
5DP2 (56A)	24V DC	5999A2938
5DP3A (110A)	48V DC	5999A2933
	120V DC	5999A2931
	240V DC	5999A2932
	120V AC	5999-1801
	208/240V AC	5999-1802
	480V AC	5999-1803
	600V AC	5999-1804
5DP7 (75A)	12V DC	5999A2827
	24V DC	5999A2828
	48V DC	5999A2823
	120V DC	5999A2821
	240V DC	5999A2822
	120V AC	5ML041
	208/240V AC	5ML042
	480V AC	5ML043
5DP3 (110A)	600V AC	5ML044
5DP4 (180A)	12V DC	5999-2947
5DP9 (260A)	24V DC	5999-2948
	48V DC	5999-2943
	120V DC	5999-2941
	240V DC	5999-2942
	120V AC	5ML051
	208/240V AC	5ML052
	480V AC	5ML053
	600V AC	5ML054
5DP5 (360A)	12V DC	5999-2857
5DP8 (535A)	24V DC	5999-2858
	48V DC	5999-2953
	120V DC	5999-2951
	240V DC	5999-2954

Notes:

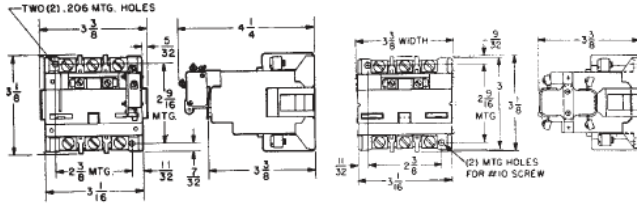
- Contact Kits for 1-pole include stationary contacts, movable contacts and contact spring except as noted for 700 amp. size.
- Assembled kit for 1-pole including yoke with movable contacts and springs; stationary contacts.
- For all pole combinations except 2-pole N.C.
- These coils are for exact replacement at operating voltage and frequency listed.
- Power pack assembly kit includes rectifier, economizing resistor and terminal block.
- Values measured at rectifier power pack input.
- It is necessary to phase back the SCR's so that contactor normally does not interrupt appreciable current. Contactors with blowouts and 2 N.O. contacts will interrupt 200% current under abnormal conditions.

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Dimensions

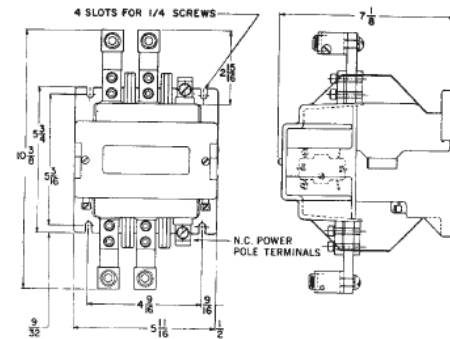
Dimensions - Approximate (Contactor base mounted vertically)

For side mounted auxiliary contact blocks add 1/2" per side to width dimension for all contactor sizes.

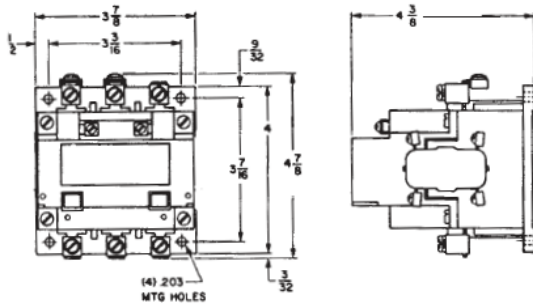


10/40 amp. contactor - 7000
40 amp. contactor - 7001
with front mounted auxiliary

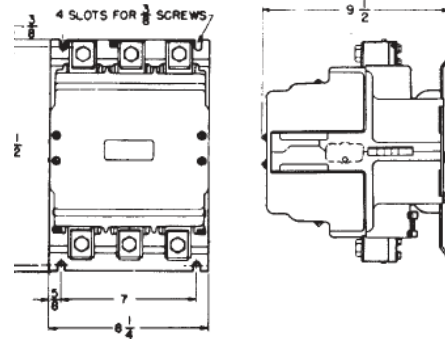
10/40 amp. contactor - 7000
40 amp. contactor - 7001
with side mounted auxiliary



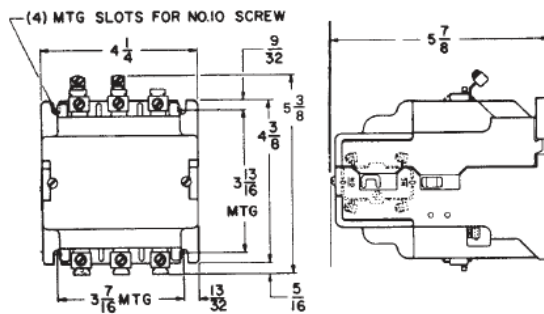
260 amp. contactor - 5DP9



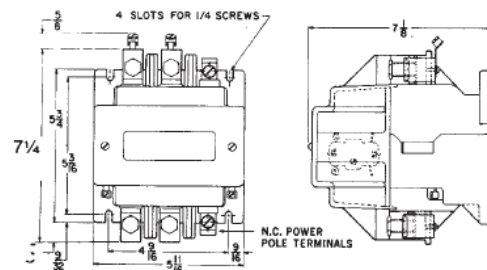
75 amp. contactor - 5DP7



360 & 535 amp. contactor - 5DP5 & 5DP8



110 amp. contactor - 5DP3A
30 & 56 amp. contactor - 5DP1 & 5DP2



110 amp. contactor - 5DP3
180 amp. contactor - 5DP4