

DC Control

5DP Contactors

7 RELAYS

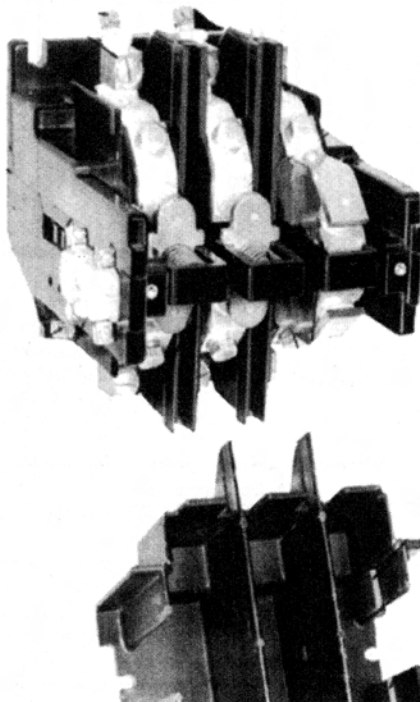
5DP Definite Purpose Contactors are designed for DC adjustable speed drive circuits using silicon controlled rectifier switching and other controls where a combination of normally open and normally closed power contacts are required. In all applications, reduced panel for contactor mounting is made possible 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 deenergized.

Jogging is accomplished at low voltage and current. Therefore, the dynamic brake contact is rated at $\frac{1}{3}$ 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 wearing, and maintenance-free. All N.C. power contacts supplied with permanent magnet blowouts to lengthen contact life. See Permanent Magnet Blowouts paragraph.
- 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. See Permanent Magnet Blowout paragraph for combinations available.
- 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.
- 4. Stainless Steel Springs** - maintain exact contact pressure and assure fast contact break (N.O.) and make (N.C.).
- 5. Molded Carrier** - for movable contacts and armature is molded from high impact, high arc resistant insulating material.
- 6. 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.
- 7. 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.
- 8. 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 principle extends operational life.
- 9. Auxiliary Interlocks (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. Interlocks 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.
- 10. Pressure Type Terminals** - accessible, up-front location permits modern straight-thru wiring. Terminals take stripped, unplugged wires.

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

Current Rating	Poles		Fig. No.	Open Type Catalog No.
	N.O.	N.C.		
40 amp.	0	1	7A	27001-5150-*
	0	2	9	27001-5230-*
	1	0	1	27001-6050-*
	2	0	3	27001-7030-*
	2	1	15	27001-7140-*
75 amp.	0	1	7A	5DP7-5150-*
	0	2	9	5DP7-0230-*
	1	0	1	5DP7-7030-*
	2	0	3	5DP7-1050-*
	2	1	15	5DP7-7140-*
170 amp.	0	1	8	5DP3A-01100
	0	2	9	5DP3A-02100
	1	0	1	5DP3A-10100
	2	0	3	5DP3A-5150-*
	2	1	15	5DP3A-0230-*
180 amp.	0	1	8	5DP4-01100
	0	2	9	5DP4-02100
	1	0	1	5DP4-10100
	2	0	3	5DP4-5021-*
	2	1	15	5DP4-5091-*
260 amp.	0	1	8	5DP9-01100
	0	2	9	5DP9-02100
	1	0	1	5DP9-10100
	2	0	3	5DP9-5021-*
	2	1	15	5DP9-5091-*

* See Coil Table

Current Rating	Poles		Fig. No.	Open Type Catalog No.
	N.O.	N.C.		
360 amp.	0	1	8	5DP5-01100
	0	2	9	5DP5-02100
	1	0	1	5DP5-10100
	2	0	3	5DP5-5021-11
	2	1	15	5DP5-5051-11
535 amp.	0	1	8	5DP8-01100
	0	2	9	5DP8-02100
	1	0	1	5DP8-10100
	2	0	3	5DP8-5021-11
	2	1	15	5DP8-5051-11
700 amp.	0	1	8	5DP6-01100
	0	2	9	5DP6-02100
	1	0	1	5DP6-10100
	2	0	3	5DP6-5021-11
	2	1	15	5DP6-5051-11
700 amp.	0	1	8	5DP6-4001-22
	0	2	9	5DP6-3071-22
	1	0	1	5DP6-4011-22
	2	0	3	5DP6-5021-22
	2	1	15	5DP6-5051-22

Note:

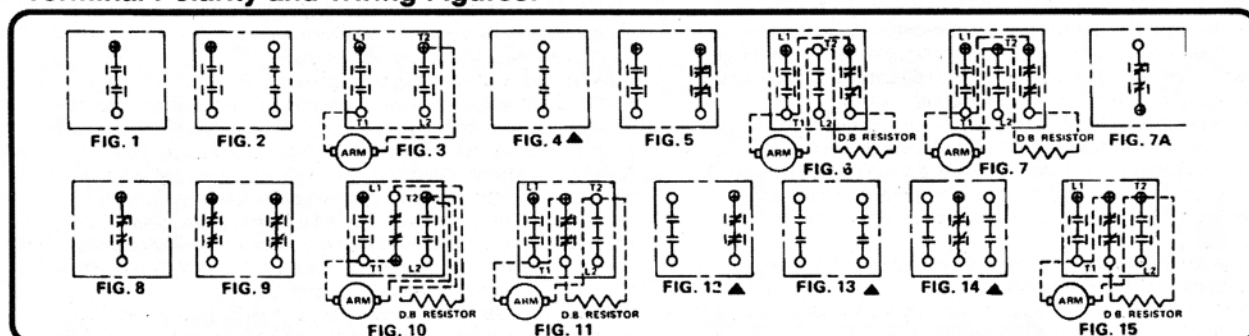
- PROVISION FOR SIDE-MOUNTED AUXILIARIES STANDARD. When top mounted provisions are desired, modify the 5th catalog number digit as follows: If digit is "5" replace with the number "0", if "6" use "1", if "7" use "2".

Reversing Kits

Description	Kit No.
Mechanical interlock 10/40 amp. & 40 amp.	5M115
Mechanical interlock 30-260 amps. contactors except 75 amp.	5999-4737
Mechanical interlock 75 amp. contactors	5999-4717
Mechanical interlock 360 & 535 amp.	5999-4757
Mechanical interlock for two 3-pole 700 amp. contactors	5999-4767
Mechanical interlock for two 700 amp. contactors (1-Pole & 2-Pole)	5M96

Description	Kit No.
Reversing baseplate for 10/40 & 40 amp. contactors	5999-8568
Reversing baseplate for 30, 56 & 75 amp.	5999-8569
Reversing baseplate for 110, 180 & 260 amp. contactors	5999-8570
Reversing baseplate for 360 & 535 amp. contactors	5999-8571
Reversing baseplate for two 3-Pole 700 amp. contactors	5999-8572
Reversing baseplate for one 2-Pole 700 amp. & one 3-Pole 700 amp. contactors	5999-8573

Terminal Polarity and Wiring Figures:



Symbols: $\vdash$ N.O. Contact $\vdash|$ Contact with Blowout $\nmid$ N.C. Contact $\odot$ Positive Polarity

Contacts without blowouts do not have the interrupting rating. Contactors with blowouts will interrupt 200% current under abnormal conditions.

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5DP Accessories

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Contact Kits¹ - 5DP

Size	N.O. Contacts Kit No.	N.C. Contacts Kit No.
10/40 & 40	5M19	5M20
30	5M55	5M57
56	5M52	5M58
75	5999-2521	5M48
110	5M53	5M49
180	5M54	5M49
260	5M56	5M49
360	5999-0045	5999-2461
535	5999-2371	5999-2461
700	² 5999-2381	5999-2481

Power Pack Kits⁵ - AC Coils

Size	Volts 60Hz	Kit No.
700 amp.	120	5999-8061
	240	5999-8062
	480	5999-8063

Coil Kits - 5DP

Size	Volts 60Hz	V.A. -60Hz (Approx)		Coil No.	Kit No. ³
10/40 & 40 amp.	120	120	28	344L1	5ML25
	208	120	28	344L2	5ML26
	240	120	28	344L5	5ML29
	480	120	28	344L3	5ML27
	600	120	28	344L4	5ML28
30 & 56 amp.	120	234	36	319L1	5ML21
	240	264	41	319L2	5ML22
	480	245	37	319L3	5ML23
	600	246	36.6	319L4	5ML24
	120	290	48	343L1	5999-1801
75 amp.	208	290	48	343L5	5999-1805
	240	290	48	343L2	5999-1802
	480	290	48	343L3	5999-1803
	600	290	48	343L4	5999-1804
	120	672	62.4	320L1	5ML41
110, 180 & 260 amp.	240	672	69.6	320L2	5ML42
	480	672	67.2	310L3	5ML43
	600	683	72	320L4	5ML44
	120	1725	151	335L1	5ML51
	240	1750	138	335L2	5ML52
360 & 535 amp.	480	1776	144	335L3	5ML53
	600	1782	145	335L4	5ML54
	120	566	187	347L1	5999-1601
	240	530	156	347L4	5999-1604
	480	528	177	347L2	5999-1602
^{4, 6} 700 amp.	120V DC			347L1	5999-1601
	240V DC (1-pole N.O.)			347L2	5999-1602
	240V DC (for 1-pole N.C.;			347L2	5999-1602
	2-pole N.C.; 2-pole N.O.			347L2	5999-1602
	2-pole N.O. & 1-pole N.C)			347L3	5999-1603

Contact Ratings - 5DP

DC Contact Rating - Amperes ⁷ R.M.S											
Size	Poles	N.O. Contacts		N.C. Contacts (intermittent duty)		Size	Poles	N.O. Contacts		N.C. Contacts (intermittent duty)	
		240V	500V	Dynamic Brake Make Only - 500V Max.	Jogging Break Only 160V Max.			240V	500V	Dynamic Brake Make Only - 500V Max.	Jogging Break Only 160V Max.
10/40 amp.	2	----	10	20	7	180 amp.	1	180	----	315	105
	2	40	----	80(240V)	27(80V)		2	180	180	-----	----
40 amp.	2	40	40	70	23	260 amp.	1	----	----	387	135
30 amp.	1	30	30	54	20		2	260	260	-----	----
	2	30	30	-----	----	360 amp.	1	360	360	720	240
56 amp.	1	56	56	105	35		2	360	360	-----	----
	2	56	56	-----	----	535 amp.	1	----	----	1070	356
75 amp.	2	75	75	150	50		2	535	535	-----	----
110 amp.	1	110	----	315	105	700 amp.	1	700	700	1400	466
	2	110	110	-----	----		2	700	700	-----	----

Note:

1. Contact Kits for 1-pole include stationary contacts, movable contacts and contact spring except as noted for 700 amp. size.
2. Assembled kit for 1-pole including yoke with movable contacts and springs; stationary contacts.
3. For all pole combinations except 2-pole N.C.
4. These coils are for exact replacement at operating voltage and frequency listed.

5. Power pack assembly kit includes rectifier, economizing resistor and terminal block
6. Values measured at rectifier power pack input.
7. It is necessary to phase back the SCR's so that contactor normally does not interrupt appreciable current. Contactors with blowouts will interrupt 200% current under abnormal conditions.

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SCR Drive Contactors - Superseded; For Replacement

Auxiliary Interlocks

Description	Field Installation Kit Kit No.
Front mounted auxiliaries, 10/40 amp.	
N.O. - N.C. righthand front mtg.	5999-3504
N.O. - N.C. lefthand front mtg.	5999-3604
N.O. - N.C. for multiple front mtg. ¹	5999-3704
For 10/40 amp.	
N.O. standard	5M63
N.C. standard	5M64
N.O. & N.C. standard	5M65
N.O. low power (except 10/40, 40 & 75 amp.)	5M63L
N.C. low power	5M64L
N.O. & N.C. low power	5M65L
N.O. standard & N.C. low power	5M66
N.O. low power & N.C. standard	5M65LO
N.C. standard late break	5M64E
N.O. standard & N.C. standard late break	5M68
N.C. lower power late break	5M64LE
N.O. standard & N.C. low power late break	5M67 ⁴
N.O. low power & N.C. low power late break	5M69 ⁴
Tandem mounting auxiliary ²	5M60DA
For 700 amp.	
Bi-Pole (N.O. & N.C.) ³	5999-3163
N.O. low power ³	5999-3361
N.C. low power ³	5999-3362
N.O. standard & N.C. standard early close	5M46
Bracket for mounting more than one extra auxiliary interlock	5999-3969

Note:

- Kit includes one N.O. - N.C auxiliary plus mounting hardware for installing 3rd or 4th auxiliary in addition to left - or right - hand auxiliary.
- Contains mounting hardware only. Order auxiliary separately.
- Without mounting bracket. Bracket required for mounting more than one extra auxiliary interlock.
- Not for use on 10/40 & 75 amp. contactors.

Ordering Information

Use catalog number. Replace the (*) with the suffix from the coil table.

Coil Table

60 Hz/Voltage	Suffix	DC/Voltage	Suffix
120	11	24	82
208/240	21	48	32
208	90	120	12
240	21	240	22
480	41		
600	51		

Size	Poles		Fig. No.	Open Type Catalog No.
	N.O.	N.C.		
10/40 amp.	—	1	7A	7000-5150-*
	2	—	3	7000-7030-*
	2	1	10	7000-7140-*
30 amp.	—	1	8	5DP1-01100
	—	2	9	5DP1-02100
	1	—	1	5DP1-10100
	1	1	5	5DP1-11100
	2	—	2	5DP1-20100
	2	1	6	5DP1-21100
	2	—	3	*5DP1-5021-*
56 amp.	—	1	8	*5DP1-5051-*
	—	2	9	5DP2-01100
	1	—	1	5DP2-02100
	1	1	5	5DP2-10100
	2	—	2	5DP2-11100
	2	1	6	5DP2-20100
	2	—	3	5DP2-21100
110 amp.	—	1	8	*5DP2-5021-*
	—	2	9	*5DP2-5051-*
	1	—	1	5DP3-01100
	1	1	5	5DP3-02100
	2	—	2	5DP3-10100
	2	1	6	5DP3-11100
	2	—	3	5DP3-20100
180 amp.	—	1	8	5DP3-21100
	—	2	9	*5DP3-5021-*
	1	—	1	*5DP3-5051-*
	1	1	5	5DP4-01100
	2	—	2	5DP4-11100
	2	1	6	5DP4-20100
	2	—	3	5DP4-21100
260 amp.	—	1	8	*5DP4-5051-*
	—	2	9	5DP9-01100
	1	—	1	5DP9-11100
	1	1	5	5DP9-20100
	2	—	2	5DP9-21100
	2	1	6	*5DP9-5051-*
	2	—	3	5DP5-01100
360 amp.	—	2	9	5DP5-11100
	1	—	1	5DP5-20100
	1	1	5	5DP5-21100
	2	—	2	*5DP5-5051-*
	2	1	6	5DP8-20100
	2	—	3	5DP8-21100
	2	1	7	*5DP8-5051-*
535 amp.	—	1	8	5DP6-01100
	—	2	9	5DP6-11100
	1	—	1	5DP6-20100
	1	1	5	5DP6-21100
	2	—	2	5DP6-0011-22
	2	—	3	5DP6-3041-22
	2	1	12	5DP6-2041-22
700 amp.	—	1	8	5DP6-2021-22
	—	2	9	5DP6-0021-22
	1	—	1	5DP6-6061-22
	1	1	11	5DP6-4051-22
	2	—	2	
	2	1	13	
	2	1	14	

Note:

- These units are used for special requirements when increased DC interruption is required.

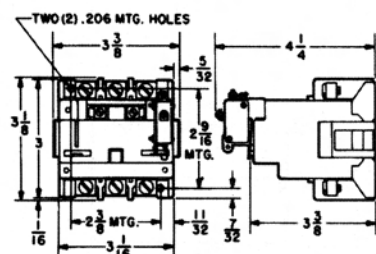
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Dimensions

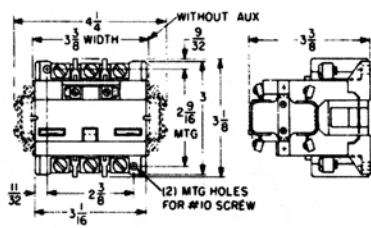
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DIMENSIONS — Approximate

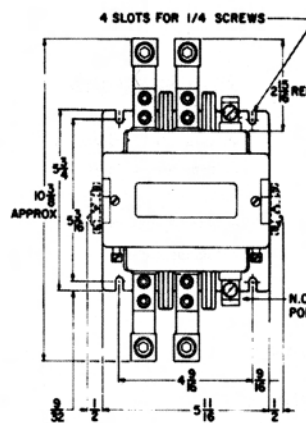
(Contactor base mounted vertically)



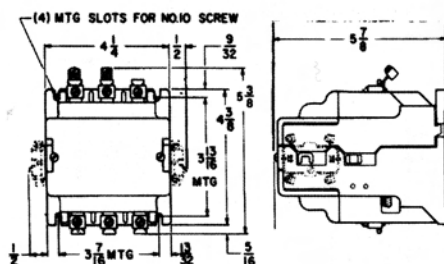
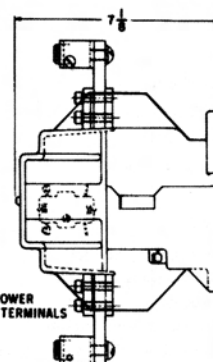
40 amp. contactor
with front mounted auxiliary



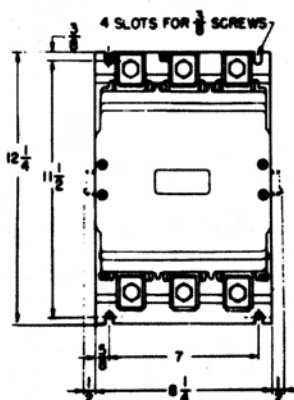
40 amp. contactor
with side mounted auxiliary



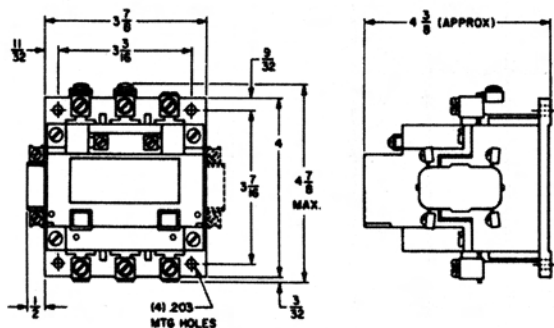
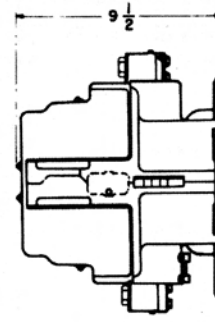
260 amp. contactor



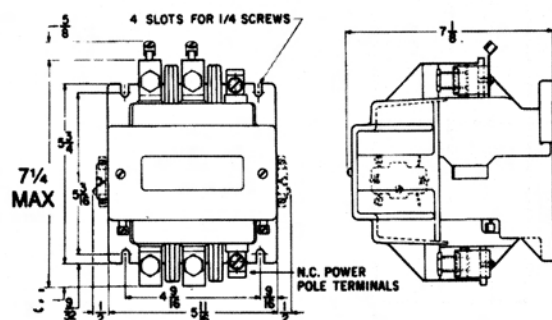
110 amp. contactor



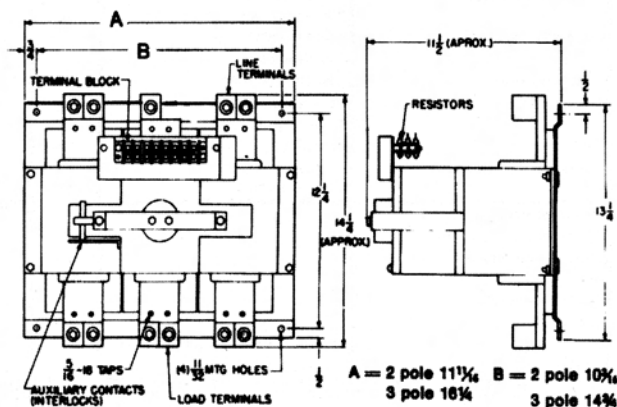
360 and 535 amp. contactor



75 amp. contactor



180 amp. contactor



700 amp. contactor