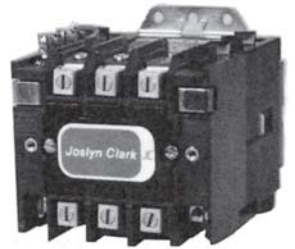


Description	Page Number
General Information - TM	B2
AC Magnetic Contactors - TM	B5
AC Magnetic Reversing Contactors - TM	B6
AC Magnetic Starters - TM	B7
AC Magnetic Reversing Starters - TM	B8
AC Magnetic Two Speed Starters - TM	B9
General Information Combination Units - TM	B10
AC Magnetic Combination Starters - TM	B13
AC Magnetic Combination Reversing Starters - TM	B18
AC Magnetic Two Speed Combination Starters - TM	B20
AC Magnetic Reduced Voltage A/T Starters - TM	B26
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Series 5000 AC NEMA Rated Contactors	B65



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Auxiliary Contacts - Auxiliary contact blocks may be added with the starter in place, without tools. The same block is used on sizes 00 thru size 4 as either N.O. or N.C.. A total of 4 auxiliary contacts can be added. The addition of side mounting kits allows a total of 8 auxiliary contacts through size 4.

Operating Coils - All coils are encapsulated. Size 00 thru 4 are plug-in type and each is factory tested twice, for long reliable service. Coil changes are not required for any combination of add-on accessories.

Power Wiring - Up-front terminals and straight through design make power wiring easy. As few as 3 connection points per pole reduces the possibility of loose connections and contributes to the reliability of the starter.

Power Pole - Full rated power poles, N.O. or N.C. through NEMA size 4, may be field added, without coil change. A tie pole with 2 N.O. contacts is available for two-speed single winding (consequent pole) motor applications.

Contact Inspection - Loosen 2 captive screws and remove the contact carrier, through size 4.

Adapter Plate - Allows use of Type TM starters in place of other makes thru size 2, without drilling new mounting holes. The adapter plate holes align with those of most other starters thru size 2 - proof of the TM compact design.

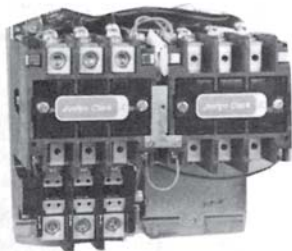
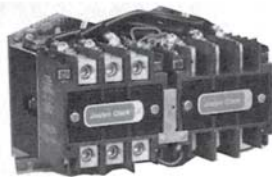
Overload Relay - Available with ambient compensation (green reset rod) or non-ambient compensation (red reset rod). An easily accessible +15, adjustment knob can be locked at the 100% setting. High accuracy of repetitive trip is assured by factory testing every unit twice.

Heaters - Heater numbers are stamped on the surface for easy identification. The same heaters are used for TM & HP series overload relays for both ambient and non-ambient compensated overload relays.

Reliability - The basic contactor design, using polysulphone and teflon guides, melamine and rosite moldings along with stainless steel springs, provides exceptional electrical and mechanical life. The operating state is clearly visible from the front, indicated by the position of the contact carrier. The contactor is easily operated from the front for circuit checking.

Versatility - •Uniform mounting dimensions •Add-on auxiliary contacts •Plug-in coils Accessories, such as power pole, mechanical interlock provides maximum versatility and flexibility of inventory panel layout and installation. Self-rising saddle-clamps are included on all control terminals for quick wiring.

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Compact Size - Integral overload relay design, with straight through power cable design, provides compact overall size. Straight through wiring reduces overall panel area for a NEMA wired device. Uniform mounting dimensions, along with mechanical interlock design, makes reversing devices and other mechanically interlock devices the same height and depth as nonreversing. This allows intermixing in rows and saves panel space.

Uniform Mounting Dimensions - Only 2 mounting plate sizes for 00 through 4 starters. One mounting plate for sizes 00-2, the second for sizes 3 & 4. This provides great flexibility for intermixing starter sizes in rows and reduces panel layout time.

Pilot Device Kits - Operator devices may be added in the field. Push button and pilot light kits for non-combination enclosures are suitable for use in NEMA Type 1, 4 & 12. This simplifies selection and increases flexibility.

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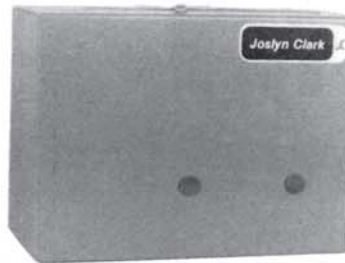
Non-Reversing

- Bulletin 6013 NEMA Starters.
- Bulletin 7707 NEMA Contactors.
- NEMA Size 00-6.
- NEMA Type 1, 4 & 12 Enclosures.
- NEMA Size 00-2.
- NEMA Type 3R Enclosure.
- Bulletin 6013 Starters are available single phase through size 2P, 3 phase through size 6.
- Bulletin 7707 Contactors are available 2 & 3 pole through size 6 and 4 pole thru size 4.



Reversing

- Bulletin 6030 NEMA Starters.
- Bulletin 6031 NEMA Contactors.
- NEMA Size 00-6.
- NEMA Type 1, 4, 12 Enclosures
- Bulletin 6030 reversing starters and Bulletin 6031 reversing contactors include mechanical and electrical interlocks.



Multi-Speed

- Bulletin 6050 NEMA Starters.
- NEMA Size 0-5.
- NEMA Type 1, 4 & 12 Enclosures.
- Bulletin 6050 multi-speed starters are designed for two-speed, single winding (consequent pole) and two-speed, two winding (separate winding) motor applications.
- Mechanical and electrical interlocks are included.
- Starters for three and four speed motor applications can also be supplied.





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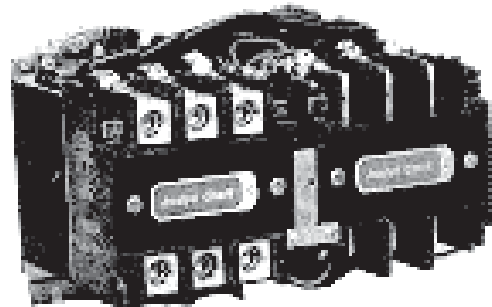
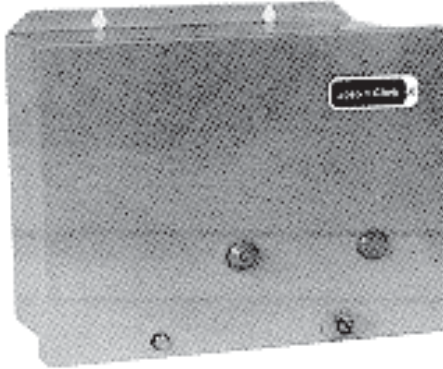
AC Contactors - Bulletin 7707 TM

1-Pole, Single Phase													
NEMA Size	Maximum Motor Horsepower Rating			Starter Amps. Continuous	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure		Open Type		
	115V	200V	230V		Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹	
00	1/3	----	1	9	T77A01A - *	\$ 228.	Use Size 0	\$	Use Size 0	\$	T77U01A - *	\$ 204.	
0	1	----	2	18	T77A010 - *	300.	T77W010 - *	720.	T77T010 - *	444.	T77U010 - *	276.	
1	2	----	3	27	T77A011 - *	360.	T77W011 - *	792.	T77T011 - *	504.	T77U011 - *	336.	
2 Pole, Single Phase													
00	1/3	----	1	9	T77A02A - *	264.	Use Size 0		Use Size 0		T77U02A - *	240.	
0	1	----	2	18	T77A020 - *	336.	T77W020 - *	748.	T77T020 - *	480.	T77U020 - *	312.	
1	2	----	3	27	T77A021 - *	396.	T77W021 - *	828.	T77T021 - *	540.	T77U021 - *	372.	
2	3	----	7 1/2	45	T77A022 - *	816.	T77W022 - *	1680.	T77T022 - *	1080.	T77U022 - *	696.	
3	7 1/2	----	15	90	T77A023 - *	1344.	T77W023 - *	2568.	T77T023 - *	1656.	T77U023 - *	1104.	
3 Pole, Three Phase													
NEMA Size	200V	230V	460-575V	Continuous									
00	1 1/2	1 1/2	2	9	T77A03A - *	300.	Use Size 0		Use Size 0		T77U03A - *	276.	
0	3	3	5	18	T77A030 - *	372.	T77W030 - *	792.	T77T030 - *	516.	T77U030 - *	348.	
1	7 1/2	7 1/2	10	27	T77A031 - *	432.	T77W031 - *	864.	T77T031 - *	576.	T77U031 - *	408.	
2	10	15	25	45	T77A032 - *	864.	T77W032 - *	1728.	T77T032 - *	1128.	T77U032 - *	744.	
3	25	30	50	90	T77A033 - *	1440.	T77W033 - *	2664.	T77T033 - *	1752.	T77U033 - *	1200.	
4	40	50	100	135	T77A034 - *	3384.	T77W034 - *	5472.	T77T034 - *	4416.	T77U034 - ² *	2880.	
5	75	100	200	270	U77A035 - ² *	7200.	U77W035 - ² *	9840.	U77T035 - ² *	9840.	U77U035 - *	6276.	
6	150	200	400	540	See Vacuum Contactors in Section A								
4 Pole, Three Phase													
0	3	3	5	18	T77A040 - *	468.	T77W040 - *	900.	T77T040 - *	612.	T77U040 - *	444.	
1	7 1/2	7 1/2	10	27	T77A041 - *	528.	T77W041 - *	960.	T77T041 - *	672.	T77U041 - *	504.	
2	10	15	25	45	T77A042 - *	1080.	T77W042 - *	2280.	T77T042 - *	1344.	T77U042 - *	960.	
3	25	30	50	90	T77A043 - *	1776.	T77W043 - *	3336.	T77T043 - *	2088.	T77U043 - *	1536.	
4	40	50	100	135	T77A044 - *	4500.	T77W044 - *	7464.	T77T044 - *	5904.	T77U044 - *	4008.	
5	75	100	200	270	Consult Factory or See Vacuum Contactors in Section A								
6	150	200	400	540	Consult Factory or See Vacuum Contactors in Section A								

Note: 1. Price includes contactor complete with one N.O. control-circuit contact.
 2. This unit replaces T77 (size 5) and is not interchangeable.

Ordering Information	Coil Volt/Hertz	Suffix
● Use complete catalog number. Replace the (*) with the suffix from coil table.	24/60 or 24/50	-96
● Engineering Data - see Page B50	110-120/60 or 110/50	-76
● Modifications - see Page B36	220-240/60 or 220/50	-26
● Renewal Parts - see Page B42	440-480/60 or 440/50	-46
● Dimensions - see Page B43	550-600/60 or 550/50	-56
	200-208/60	-86

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AC Reversing Contactors - Bulletin 6031 TM

3 Pole, Three Phase

NEMA Size	Maximum Motor Horsepower Rating ²			NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure		Open Type	
	200V	230V	460-575V	Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
00	1 1/2	1 1/2	2	T31A03A-*	\$ 768.	T31W03A-*	\$ 1320.	Use Size 0	\$	T31U03A-*	\$ 720.
0	3	3	5	T31A030-*	912.	T31W030-*	1464.	T31T030-*	1128.	T31U030-*	864.
1	7 1/2	7 1/2	10	T31A031-*	1056.	T31W031-*	1824.	T31T031-*	1272.	T31U031-*	984.
2	10	15	25	T31A032-*	2064.	T31W032-*	3312.	T31T032-*	2424.	T31U032-*	1872.
3	25	30	50	T31A033-*	3454.	T31W033-*	5292.	T31T033-*	4236.	T31U033-*	3108.
4	40	50	100	T31A034-*	8376.	T31W034-*	11640.	T31T034-*	9600.	T31U034-*	7752.
5 ²	75	100	200	U31A035- ³ *	17592.	U31W035- ³ *	20232.	U31T035- ³ *	20232.	U31U035- ³ *	13980.
6	150	200	400	See Vacuum Contactors in Section A							

Plug-Stop or Jogging Duty NEMA ICS 2-321-3

NEMA Size	Horsepower Ratings - Three Phase, 60Hz			
	200V	230V	380V	460/575V
0	1 1/2	1 1/2	1 1/2	2
1	3	3	5	5
2	7 1/2	7 1/2	15	15
3	15	15	30	30
4	25	30	50	60
5	60	75	125	150
6	125	1050	250	300

Notes:

- Price includes contactor complete with one N.O. contact on each contactor. All contactors are mechanically and electrically interlocked.
- For plug-stop or jogging duty, where operations exceed 5 times a minute, contactor size should be chosen in accordance with NEMA Standard ICS 2-321-3, as listed in table.
- This unit replaces T77 (size 5) and is not interchangeable.

Ordering Information

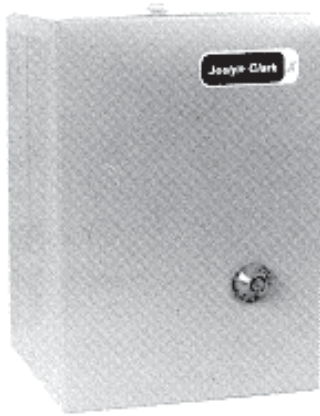
- Use complete catalog number. Replace the (*) with the suffix from coil table.

- Engineering Data - see Page B50
- Modifications - see Page B36
- Renewal Parts - see Page B42
- Dimensions - see Page B43

Coil Volt/Hertz

Suffix

24/60 or 24/50	-96
110-120/60 or 110/50	-76
220-240/60 or 220/50	-26
440-480/60 or 440/50	-46
550-600/60 or 550/50	-56
200-208/60	-86



B

AC Non-Reversing Starters - Bulletin 6013 TM

2 Pole, Single Phase (requires 1 overload heater)												
NEMA Size	Maximum Motor Horsepower Rating				NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure		Open Type	
	115V	200V	230V	Contin-uous	Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
00	1/3	----	1	9	T13AA2A - *	\$ 348.	Use size 0	\$	Use Size 0	\$	T13U02A - *	\$ 324.
0	1	----	2	18	T13AA20 - *	390.	T13WA20 - *	910.	T13TA20 - *	534.	T13U020 - *	366.
1	2	----	3	27	T13AA21 - *	450.	T13WA21 - *	882.	T13TA21 - *	594.	T13U021 - *	426.
1P	3	----	5	----	T13AA2P - *	582.	T13WA2P - *	1014.	T13TA2P - *	726.	T13U02P - *	558.
2	3	----	7 1/2	45	-----	----	-----	----	-----	----	T13U022 - *	774.

3 Pole, Three Phase (requires 3 overload heaters)													
NEMA Size	200V		230V	460-575V	Contin-uous								
						Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
00	1 1/2	1 1/2	2	9	T13AA3A - *	348.	Use size 0		Use Size 0		T13U03A - *	324.	
0	3	3	5	18	T13AA30 - *	432.	T13WA30 - *	852.	T13TA30 - *	576.	T13U030 - *	408.	
1	7 1/2	7 1/2	10	27	T13AA31 - *	492.	T13WA31 - *	924.	T13TA31 - *	636.	T13U031 - *	468.	
2	10	15	25	45	T13AA32 - *	972.	T13WA32 - *	1836.	T13TA32 - *	1236.	T13U032 - *	852.	
3	25	30	50	90	T13AA33 - *	1620.	T13WA33 - *	2844.	T13TA33 - *	1932.	T13U033 - *	1380.	
4	40	50	100	135	T13AA34 - *	3660.	T13WA34 - *	5748.	T13TA34 - *	4692.	T13U034 - *	3156.	
5 ²	75	100	200	270	U13AA35 ² *	8634.	U13WA35 ² *	11274.	U13TA35 ² *	11274.	U13U035 ² *	7710.	
6	150	200	400	540									

See Vacuum Contactors in Section A

Note:

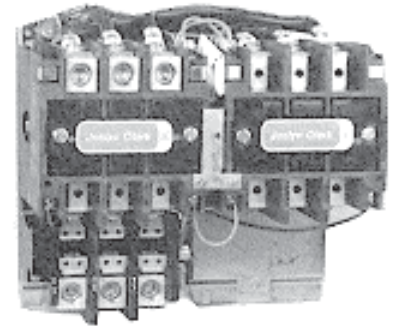
1. Price includes starter complete with one N.O. contact on each contactor and 3 phase overload relay less heaters.
2. This unit replaces T77 (size 5) and is not interchangeable.
3. For Ambient Compensated overload see B37.

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Ordering Information	Coil Volt/Hertz	Suffix
● Use complete catalog number. Replace the (*) with the suffix from coil table. Order heaters at \$18 each.	24/60 or 24/50	-96
● Engineering Data - see Page B50	110-120/60 or 110/50	-76
● Modifications - see Page B36	220-240/60 or 220/50	-26
● Renewal Parts - see Page B42	440-480/60 or 440/50	-46
● Heater Tables - see Page B33	550-600/60 or 550/50	-56
● Dimensions - see Page B44	200-208/60	-86



B



AC Reversing Starters - Bulletin 6030 TM

3 Pole, Three Phase (requires 3 overload heaters)											
NEMA Size	Maximum Motor Horsepower Rating ²			NEMA 1 General Purpose Enclosure		NEMA 4 Watertight Enclosure		NEMA 12 Industrial - Dust-tight Enclosure		Open Type Enclosure	
	200V	230V	460-575V	Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
00	1 1/2	1 1/2	2	T30AA3A - *	\$ 828.	T30WA3A - *	\$ 1380.	Use Size 0	\$	T30U03A - *	\$ 780.
0	3	3	5	T30AA30 - *	972.	T30WA30 - *	1524.	T30TA30 - *	1188.	T30U030 - *	924.
1	7 1/2	7 1/2	10	T30AA31 - *	1116.	T30WA31 - *	1884.	T30TA31 - *	1332.	T30U031 - *	1044.
2	10	15	25	T30AA32 - *	2172.	T30WA32 - *	3420.	T30TA32 - *	2532.	T30U032 - *	1980.
3	25	30	50	T30AA33 - *	3624.	T30WA33 - *	5472.	T30TA33 - *	4416.	T30U033 - *	3288.
4	40	50	100	T30AA34 - *	8652.	T30WA34 - *	11916.	T30TA34 - *	9876.	T30U034 - *	8028.
5	75	100	200	U30AA35 ³ *	19038.	U30WA35 ³ *	21678.	U30TA35 ³ *	21678.	U30U035 ³ *	15426.
6	150	200	400	See Vacuum Contactors in Section A							

Note:

- Includes starter complete with one N.O. contact on each contactor and 3 phase overload relay less heaters. All starters are mechanically and electrically interlocked.
- For plug-stop or jogging duty or where operations exceed 5 per minute, starter sizes should be chosen in accordance with NEMA Standard ICS 2-321-3, as listed in table.
- This unit replaces T77 (size 5) and is not interchangeable.
- For Ambient Compensated overload see B37.

Plug-Stop or Jogging Duty NEMA ICS 2-321-3

NEMA Size	Horsepower Ratings - Three Phase			
	200V 60 Hz	230V 60 Hz	380V 50 Hz	460/575V 60 Hz
0	1 1/2	1 1/2	1 1/2	2
1	3	3	5	5
2	7 1/2	10	15	15
3	15	20	30	30
4	25	30	50	60
5	60	75	125	150
6	125	150	250	300

Ordering Information

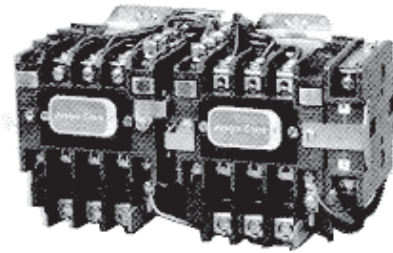
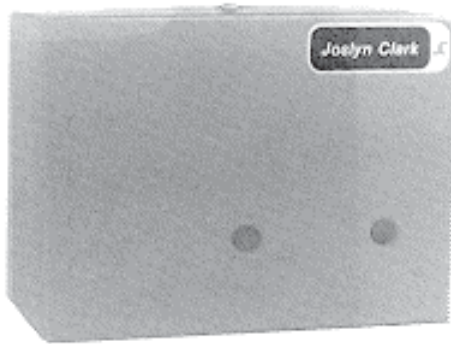
- Use complete catalog number. Replace the (*) with the suffix from coil table. Order heaters at \$18 each.

- Engineering Data - see Page B50
- Modifications - see Page B36
- Renewal Parts - see Page B42
- Heater Tables - see Page B33
- Dimensions - see Page B45

Coil Volt/Hertz

Suffix

24/60 or 24/50	-96
110-120/60 or 110/50	-76
220-240/60 or 220/50	-26
440-480/60 or 440/50	-46
550-600/60 or 550/50	-56
200-208/60	-86



B

AC Two Speed Non Combination Starters - Bulletin 6050

2 Speed, Single Winding (consequent pole)											
NEMA Size	Maximum Motor Horsepower Rating			NEMA 1 General Purpose Enclosure		NEMA 4 Watertight Enclosure		NEMA 12 Industrial - Dust-tight Enclosure		Open Type	
	Constant or Variable Torque (Constant Horsepower)			Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
	200V	230V	460-575V								
0	3 (2)	3 (2)	5 (3)	T50AA0C2- *	\$ 1848.	T50WA0C2- *	\$3000.	T50TA0C2- *	\$ 2220.	T50U0C2- *	\$ 1800.
1	7 1/2 (5)	7 1/2 (5)	10 (7 1/2)	T50AA1C2- *	1992.	T50WA1C2- *	3120.	T50TA1C2- *	2364.	T50U01C2- *	1920.
2	10 (7 1/2)	15 (10)	25 (20)	T50AA2C2- *	3624.	T50WA2C2- *	5016.	T50TA2C2- *	4152.	T50U02C2- *	3408.
3	25 (20)	30 (20)	50 (40)	T50AA3C2- *	5472.	T50WA3C2- *	7536.	T50TA3C2- *	6672.	T50U03C2- *	5136.
4	40 (30)	50 (40)	100 (75)	T50AA4C2- *	14616.	T50WA4C2- *	18840.	T50TA4C2- *	16992.	T50U04C2- *	13296.
5	75 (60)	100 (75)	200 (150)	Consult Factory							
2 Speed, Double Winding (separate winding)											
0	3 (2)	3 (2)	5 (3)	T50AA0S2- *	1320.	T50WA0S2- *	2472.	T50TA0S2- *	1692.	T50U00S2- *	1272.
1	7 1/2 (50)	7 1/2 (5)	10 (7 1/2)	T50AA1S2- *	1488.	T50WA1S2- *	2616.	T50TA1S2- *	1860.	T50U01S2- *	1416.
2	10 (7 1/2)	15 (10)	25 (20)	T50AA2S2- *	2664.	T50WA2S2- *	4080.	T50TA2S2- *	3192.	T50U02S2- *	2472.
3	25 (20)	30 (20)	50 (40)	T50AA3S2- *	4176.	T50WA3S2- *	6240.	T50TA3S2- *	5376.	T50U03S2- *	3840.
4	40 (30)	50 (40)	100 (75)	T50AA4S2- *	10248.	T50WA4S2- *	14472.	T50TA4S2- *	12624.	T50U04S2- *	9624.
5	75 (60)	100 (75)	200 (150)	Consult Factory							

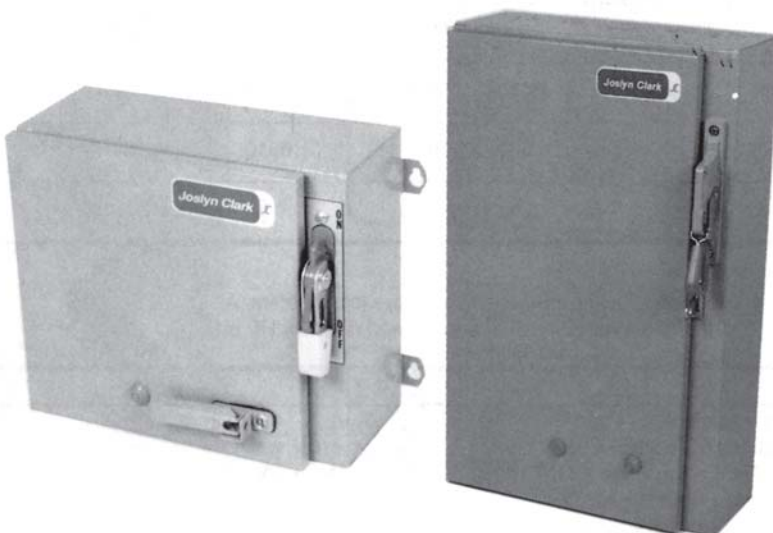
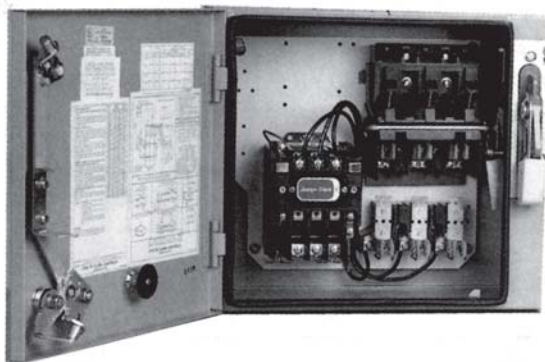
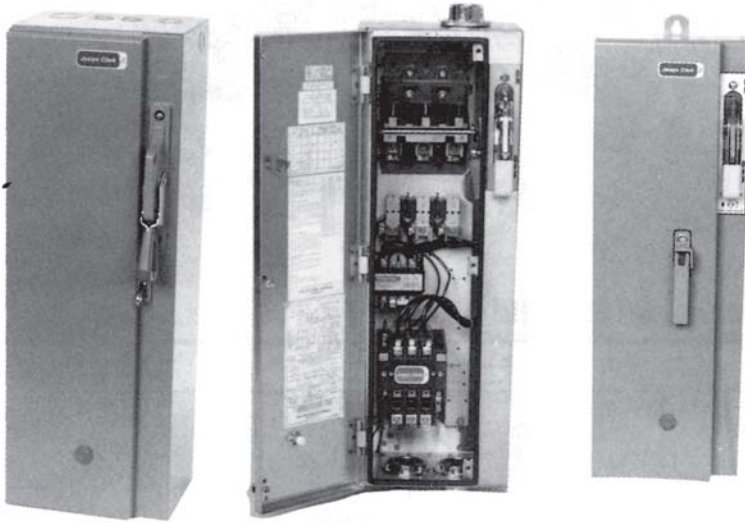
Note:

1. Includes starter complete with one N.O. contact on each contactor and two 3 phase overload relays less heaters. All starters are mechanically and electrically interlocked. Six (6) heaters are required, 3 for each speed rated for HP ratings.

Ordering Information	Coil Volt/Hertz	Suffix
● Use complete catalog number. Replace the (*) with the suffix from coil table. Order heaters at \$18 each.	● Engineering Data - see Page B50	24/60 or 24/50 -96
	● Modifications - see Page B36	110-120/60 or 110/50 -76
	● Renewal Parts - see Page B42	220-240/60 or 220/50 -26
	● Heater Tables - see Page B33	440-480/60 or 440/50 -46
	● Dimensions - see Page B46	550-600/60 or 550/50 -56
		200-208/60 -86

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Combination Starters & Contactors



Non-Reversing

- Bulletin 6018 with disconnect switch, fusible and non-fusible.
- Bulletin 6020 with Circuit Breaker 250V thermal magnetic trip breaker or 600V adjustable magnetic trip MCP. breaker.
- NEMA Size 0-6.
- NEMA 1, 4 & 12 enclosures.
- Choose standard, compact or extra-wide enclosure style of enclosure for Sizes 0, 1 & 2.
- All three styles are available in NEMA 1, 4 & 12 enclosure.
- Sizes 3 & 4 are available in standard and extra-wide enclosure styles.
- Size 6 is supplied in the standard enclosure style and includes Vacuum contactor.
- Each starter includes disconnect device and TM non-reversing starter.
- Extensive field modification kits and factory installed modifications are available.

Reversing

- Bulletin 6038 with disconnect switch, fusible and non-fusible.
- Bulletin 6040 with circuit breaker.
- 250V thermal magnetic trip breaker or 600V adjustable trip MCP. breaker.
- NEMA Size 0-5.
- NEMA 1, 4 & 12 Enclosures.
- Each includes disconnect device and TM reversing starter.
- Extensive field modification kits and factory installed modifications are available.

Multi-Speed

- Bulletin 6058 with disconnect switch, fusible and non-fusible.
- Bulletin 6060 with Circuit Breaker.
- 600V MCP. breaker.
- NEMA Size 0-6.
- NEMA 1, 4 & 12 enclosures.
- Each includes disconnect device and TM multi-speed starter.
- They are cataloged for two-speed, single winding (consequent pole) and two speed, two winding (separate winding) motor application.
- Starters for three and four speed motor applications can also be supplied.
- Extensive field modification kits and factory installed modifications are available.

Combination Starters & Contactors

Disconnect Device

- Disconnect switches are heavy duty, visible blade type with positive drive action and meet industrial with stand requirements.
- Above 100 amp., a non-automatic circuit breaker with fuse clips is provided.
- Mounting plates include drilling for field conversion of fuse size and spacing.
- Circuit breaker type starters use motor circuit protectors with a single, seven-point trip adjustment and manual trip feature. An optional current limiter attachment provides 200,000 amp. rms symmetrical interrupting capacity.

Door Swing

The concealed hinge design allows 150° door swing for interior accessibility.

Uniform Enclosure

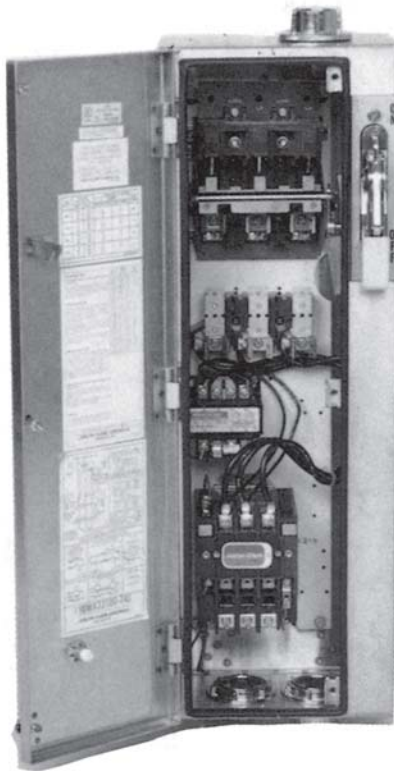
- One enclosure covers Size 0, 1 & 2, for each enclosure style.
- Sizes 3 & 4 are covered by a single enclosure.
- NEMA 1, 4 & 12 enclosure designs are each the same basic size, for each enclosure style. All this for flexibility, ease of layout and ease of installation.

Grounding

- A UL recommended type, green head screw is provided for grounding the enclosure.
- A green ground wire is installed in the non-fused leg of control transformers.

Door Gasketing

- Standard on NEMA 4 & 12 and optional on NEMA 1. Gasketing is neoprene, extruded, closed cell type for increased life, sealing qualities and safety for the installer.



Disconnect Operator

- Flange mounted operating handle provides positive control of the disconnect.
- Interlocking prevents opening the door with the disconnect "ON" or turning the disconnect "ON" with the door open.
- Interlock defeaters are provided for maintenance.
- The position of disconnect is clearly visible to determine if controller is "ON" or "OFF".
- A red handle flag is visible in the "ON" state.

Padlocking

- Operating handles can be padlocked in "OFF", with up to 3/8" shackle locks.
- Doors can be locked closed with one 3/8" shackle lock, thus providing security to equipment and safety to personnel.

White Mounting Plate

- Baked ANSI safety white enamel is used for the mounting plate. This provides increased visibility for safety.

Add-On Accessories

- Most TM starter add-on accessories can be installed in combination starters.
- Mounting plates are pre-drilled for field installation of additional control devices.

Quality Enclosure Construction

- Painted surfaces are baked enamel for long life.
- All unpainted hardware is plated for corrosion resistance.
- Hinge pins are stainless steel.
- NEMA 4 enclosures are #304 stainless steel for appearance and corrosion resistance.

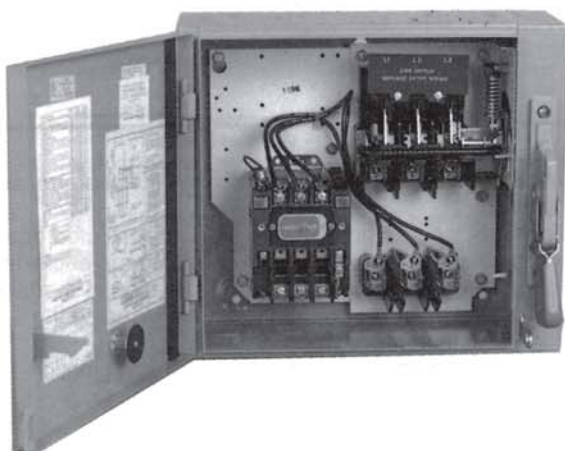
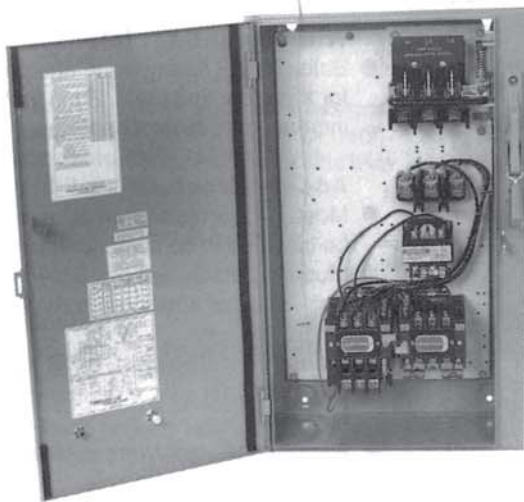
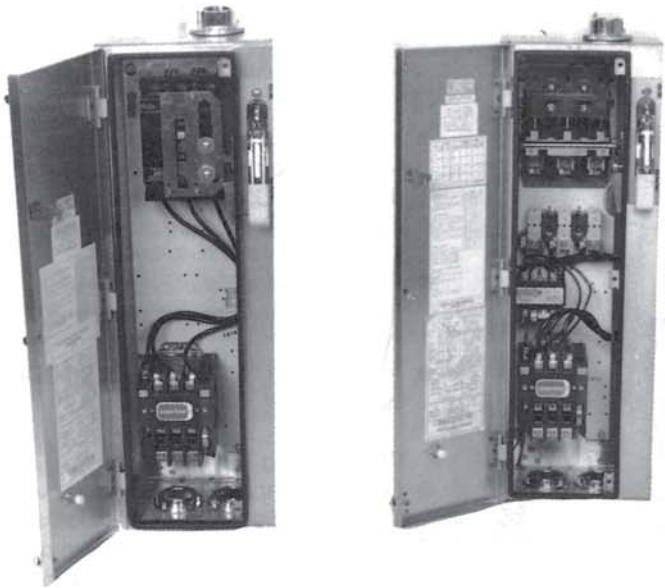
Safety & Reliability

- Flange mounted disconnect handle.
- Disconnect state clearly visible.
- Defined enclosure grounding method.
- Padlocking for both door and disconnect handle.
- Door swing for maximum interior accessories.
- All contribute to safety for the installer and for operating personnel.
- Quality enclosure construction.
- Careful selection of disconnect devices and the basic TM starter all contribute to long, reliable performance.

Space Savings

- Uniform enclosure sizes allow mixing NEMA starter sizes in a row.
- Mount enclosures side-by-side, without restricted door swing.
- Add most modifications without changing the enclosure.
- Select an enclosure style for max. utilization of available space.
- Minimize additional control enclosures by using the space in an extra-wide starter enclosure.
- Space saving economy is built into TM combination starters.

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Choice of Enclosure Style

- Choose from three enclosure styles, standard, compact or extra-wide for non-reversing starters through NEMA Size 2.
- The compact style fits in low height areas and the extra-wide has approximately 200 square inches of added panel space for mounting of auxiliary equipment.
- Size 3 & 4 non-reversing starters are available in standard and extra-wide.
- Choice of enclosure style provides maximum flexibility.

Versatility

- Choose an enclosure style to meet the application.
- Check the enclosure sizes to simplify your starter layouts.
- Check the interchangeability of mounting plates.
- Choose add-on accessories for the basic TM starter.
- Select from a wide range of factory modifications and field modification kits.
- All of this to improve application flexibility with minimum inventory requirements. This is the versatility of TM combination starters.

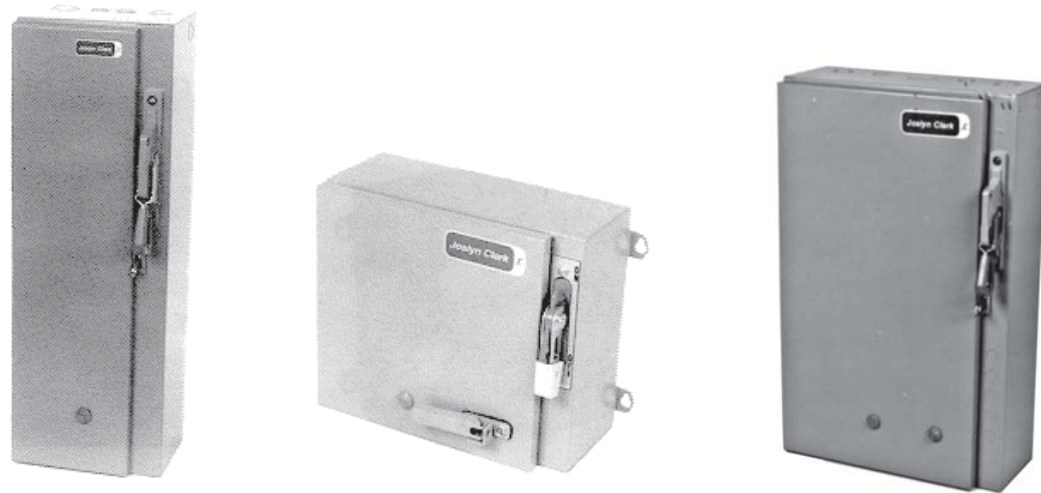
Pilot Devices

- A complete selection of field modification kits or factory installed operator devices are available.
- Most are arranged for mounting on the enclosure flange, eliminating the need for a flexible wire harness to the door.

Control Transformer

- Available factory installed or as a field modification kit.
- All starters can accommodate a 100VA extra capacity transformer in every enclosure style and type.
- Secondary fusing standard.

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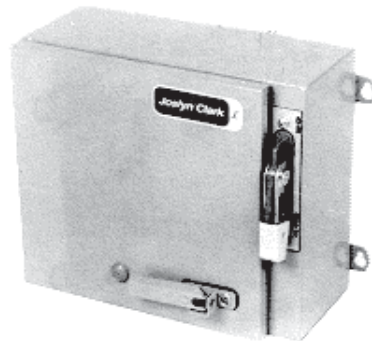
AC Combination Starters with Non-Fusible Disconnect Switch, 600V - Bulletin 6018

Standard - Vertical											
NEMA Size	Maximum Motor Horsepower Rating			Cont. Amps Rating	Switch Rating Amps.	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure	
	200V	230V	460-575V			Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
0	3	3	5	18	30	T18AA30610-*	\$ 1092.	T18WA30610-*	\$2244.	T18TA30610-*	\$ 1380.
1	7 1/2	7 1/2	10	27	30	T18AA31610-*	1152.	T18WA31610-*	2304.	T18TA31610-*	1440.
2	10	15	25	45	60	T18AA32610-*	1824.	T18WA32610-*	3600.	T18TA32610-*	2232.
3	25	30	50	90	100	T18AA33610-*	3036.	T18WA33610-*	6132.	T18TA33610-*	3564.
4	40	50	100	135	150	-use extra wide-		-use extra wide-		-use extra wide-	
5	75	100	200	270	400	Consult Factory					
6	150	200	400	540	600						
Compact - Horizontal											
0	3	3	5	18	30	C18AA30610-*	1092.	C18WA30610-*	2244.	C18TA30610-*	1380.
1	7 1/2	7 1/2	10	27	30	C18AA31610-*	1152.	C18WA31610-*	2304.	C18TA31610-*	1440.
2	10	15	25	45	60	C18AA32610-*	1824.	C18WA32610-*	3600.	C18TA32610-*	2232.
Extra Wide											
0	3	3	5	18	30	E18AA30610-*	1236.	E18WA30610-*	2736.	E18TA30610-*	1596.
1	7 1/2	7 1/2	10	27	30	E18AA31610-*	1296.	E18WA31610-*	2796.	E18TA31610-*	1656.
2	10	15	25	45	60	E18AA32610-*	1968.	E18WA32610-*	4092.	E18TA32610-*	2448.
3	25	30	50	90	100	E18AA33610-*	3276.	E18WA33610-*	7092.	E18TA33610-*	3954.
4	40	50	100	135	150	E18AA34610-*	5856.	E18WA34610-*	9816.	E18TA34610-*	7320.

Note:

1. Includes starter complete with N.O. contact and 3 phase overload relay less heaters.

Ordering Information	Coil Volt/Hertz	Suffix
● Use complete catalog number. Replace the (*) with the suffix from the coil table. Order Heaters at \$18 each.	24/60 or 24/50	-96
● Renewal Parts - see Page B42	110-120/60 or 110/50	-76
● Engineering Data - see Page B50	220-240/60 or 220/50	-26
● Modifications - see Page B36	440-480/60 or 440/50	-46
● Heater Tables - see Page B33	550-600/60 or 550/50	-56
● Dimensions - see Page B47	200-208/60	-86



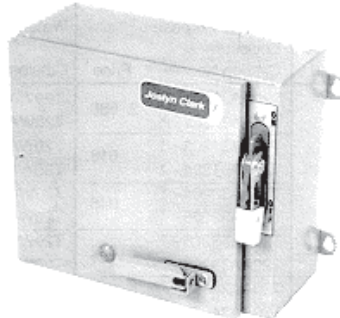
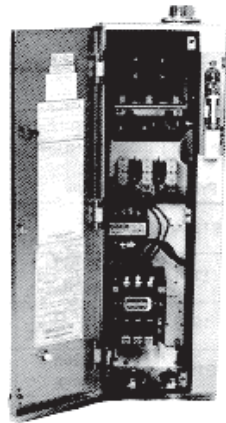
AC Combination Starters with Fusible Disconnect Switch, 200-230V - Bulletin 6018

Standard - Vertical											
NEMA Size	Maximum Motor Horsepower Rating		Starter Cont. Amp. Rating	Disconnect Amp. Rating		NEMA Type 1 General Purpose	NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure		
	200V	230V		Switch	Fuse ² Clips		Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
0	3	3	18	30	30	T18AA30203-*	\$ 1128.	T18WA30203-*	\$2280.	T18TA30203-*	\$ 1416
1	5	7 1/2	27	30	30	T18AA31203-*	1188.	T18WA31203-*	2340.	T18TA31203-*	1476
1	7 1/2	----	27	60	60	T18AA31206-*	1212.	T18WA31206-*	2364.	T18TA31206-*	1500
2	10	15	45	60	60	T18AA32206-*	1872	T18WA32206-*	3648.	T18TA32206-*	2280
3	25	30	90	100	100	T18AA33201-*	3156.	T18WA33201-*	6252.	T18TA33201-*	3684
4	40	50	135	150	200	-use extra wide-		-use extra wide-		-use extra wide-	
5	75	100	270	400	400	Consult Factory					
6	150	200	540	600	600						
Compact - Horizontal											
0	3	3	18	30	30	C18AA30203-*	1128.	C18WA30203-*	2280.	C18TA30203-*	1416.
1	5	7 1/2	27	30	30	C18AA31203-*	1188.	C18WA31203-*	2340.	C18TA31203-*	1476.
1	7 1/2	----	27	60	60	C18AA31206-*	1212.	C18WA31206-*	2364.	C18TA31206-*	1500.
2	10	15	45	60	60	C18AA32206-*	1872.	C18WA32206-*	3648.	C18TA32206-*	2280.
Extra Wide											
0	3	3	18	30	30	E18AA30203-*	1272.	E18WA30203-*	2772.	E18TA30203-*	1632.
1	5	7 1/2	27	30	30	E18AA31203-*	1332.	E18WA31203-*	2832.	E18TA31203-*	1692.
1	7 1/2	----	27	60	60	E18AA31206-*	1356.	E18WA31206-*	2856.	E18TA31206-*	1716.
2	10	15	45	60	60	E18AA32206-*	2016.	E18WA32206-*	4140.	E18TA32206-*	2496.
3	25	30	90	100	100	E18AA33201-*	3288.	E18WA33201-*	7212.	E18TA33201-*	4074.
4	40	50	135	150	200	E18AA34202-*	6060.	E18WA34202-*	10020.	E18TA34202-*	7524.

Note:

- 1. Includes starter complete with N.O. contact and 3 phase overload relays less heaters.
- 2. Class R fuse clips available on request.

Ordering Information	Coil Volt/Hertz	Suffix
● Use complete catalog number. Replace the (*) with the suffix from the coil table. Order Heaters at \$18 each.	24/60 or 24/50	-96
● Renewal parts - see Page B42	110-120/60 or 110/50	-76
● Engineering Data - see Page B50	220-240/60 or 220/50	-26
● Modifications - see Page B36	440-480/60 or 440/50	-46
● Heater Tables - see Page B33	550-600/60 or 550/50	-56
● Dimensions - see Page B47	200-208/60	-86



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AC Combination Starters with Fusible Disconnect Switch, 460-575V - Bulletin 6018

Standard - Vertical											
NEMA Size	Maximum Motor Horsepower Rating		Starter Cont. Ampere Rating	Disconnect Ampere Rating		NEMA Type 1 General Purpose	NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure		
	460V	575V		Switch	Fuse ² Clips		Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
0	5	5	18	30	30	T18AA30603-*	\$ 1152.	T18WA30603-*	\$ 2304.	T18TA30603-*	\$ 1440.
1	10	10	27	30	30	T18AA31603-*	1212.	T18WA31603-*	2364.	T18TA31603-*	1500.
2	15	15	45	60	30	T18AA32603-*	1884.	T18WA32603-*	3660.	T18TA32603-*	2292.
2	25	25	45	60	60	T18AA32606-*	1908.	T18WA32606-*	3684.	T18TA32606-*	2316.
3	50	50	90	100	100	T18AA33601-*	3216.	T18WA33601-*	6312.	T18TA33601-*	3918.
4	100	100	135	150	200	-use extra wide-		-use extra wide-		-use extra wide-	
5	200	200	270	400	600						
Consult Factory											
Compact - Horizontal											
0	5	5	18	30	30	C18AA30603-*	1152.	C18WA30603-*	2304.	C18TA30603-*	1440.
1	10	10	27	30	30	C18AA31603-*	1212.	C18WA31603-*	2364.	C18TA31603-*	1500.
2	15	15	45	60	30	C18AA32603-*	1884.	C18WA32603-*	3660.	C18TA32603-*	2292.
2	25	25	45	60	60	C18AA32606-*	1908.	C18WA32606-*	3684.	C18TA32606-*	2316.
Extra Wide											
0	5	5	18	30	30	E18AA30603-*	1296.	E18WA30603-*	2796.	E18TA30603-*	1656.
1	10	10	27	30	30	E18AA31603-*	1356.	E18WA31603-*	2856.	E18TA31603-*	1716.
2	15	15	45	60	30	E18AA32603-*	2028.	E18WA32603-*	4152.	E18TA32603-*	2508.
2	25	25	45	60	60	E18AA32606-*	2052.	E18WA32606-*	4176.	E18TA32606-*	2532.
3	50	50	90	100	100	E18AA33601-*	3456.	E18WA33601-*	7272.	E18TA33601-*	4134.
4	100	100	135	150	200	E18AA34602-*	6108.	E18WA34602-*	10068.	E18TA34602-*	7572.

Note:

1. Includes starter complete with N.O. contact and 3 phase overload relays less heaters.
2. Class R fuse clips available on request.

Ordering Information

- Use complete catalog number. Replace the (*) with the suffix from the coil table. Order Heaters at \$18 each.

- Renewal Parts - see Page B42
- Engineering Data - see Page B50
- Modifications - see Page B36
- Heater Tables - see Page B33
- Dimensions - see Page B47

Coil Volt/Hertz

Suffix

24/60 or 24/50	-96
110-120/60 or 110/50	-76
220-240/60 or 220/50	-26
440-480/60 or 440/50	-46
550-600/60 or 550/50	-56
200-208/60	-86



AC Combination Starters with Circuit Breaker, 200-230V - Thermal Magnetic Trip

B

Standard - Vertical, Bulletin 6020											
NEMA Size	Maximum Motor Horsepower Rating		Starter Cont. Ampere Rating	Circuit Breaker Ampere Rating	Thermal Magnetic Trip	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure	
	200V	230V				Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
0	2	2	18	15	TEB	T20AA30201 - *	\$ 1176.	T20WA30201 - *	\$ 2328.	T20TA30201 - *	\$ 1464.
	3	3				T20AA30202 - *		T20WA30202 - *		T20TA30202 - *	
1	5	5	27	40		T20AA31203 - *	1236.	T20WA31203 - *	2388.	T20TA31203 - *	1524.
	7 1/2	7 1/2				T20AA31204 - *		T20WA31204 - *		T20TA31204 - *	
2	10	10	45	50		T20AA32204 - *	1896.	T20WA32204 - *	3672.	T20TA32204 - *	2304.
	15	15				T20AA32205 - *		T20WA32205 - *		T20TA32205 - *	
3	25	25	90	100		T20AA33206 - *	3264.	T20WA33206 - *	6360.	T20TA33206 - *	3792.
	30	30				T20AA33208 - *		T20WA33208 - *		T20TA33208 - *	
4	40	40	135	150		T20AA34208 - *	7164	T20WA34208 - *	11118.	T20TA34208 - *	8628.
	-----	50				T20AA34677 - *		T20WA34677 - *		T20TA34677 - *	
5	50	-----	270	200	TJK4	Consult Factory					
	60	60									225
	75	100		300							

Compact - Horizontal											
NEMA Size	Maximum Motor Horsepower Rating		Starter Cont. Ampere Rating	Circuit Breaker Ampere Rating	Thermal Magnetic Trip	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure	
	200V	230V				Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
0	2	2	18	15	TEB	C20AA30201 - *	1176.	C20WA30201 - *	2328.	C20TA30201 - *	1464.
	3	3				C20AA30202 - *		C20WA30202 - *		C20TA30202 - *	
1	5	5	27	40		C20AA31203 - *	1236.	C20WA31203 - *	2388.	C20TA31203 - *	1524.
	7 1/2	7 1/2				C20AA31204 - *		C20WA31204 - *		C20TA31204 - *	
2	10	10	45	50		C20AA32204 - *	1896.	C20WA32204 - *	3672.	C20TA32204 - *	2304.
	15	15				C20AA32205 - *		C20WA32205 - *		C20TA32205 - *	

Extra Wide											
NEMA Size	Maximum Motor Horsepower Rating		Starter Cont. Ampere Rating	Circuit Breaker Ampere Rating	Thermal Magnetic Trip	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure	
	200V	230V				Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
0	2	2	18	15	TEB	E20AA30201 - *	1320.	E20WA30201 - *	2820.	E20TA30201 - *	1680.
	3	3				E20AA30202 - *		E20WA30202 - *		E20TA30202 - *	
1	5	5	27	40		E20AA31203 - *	1380.	E20WA31203 - *	2880.	E20TA31203 - *	1740.
	7 1/2	7 1/2				E20AA31204 - *		E20WA31204 - *		E20TA31204 - *	
2	10	10	45	50		E20AA32204 - *	2040.	E20WA32204 - *	4164.	E20TA32204 - *	2520.
	15	15				E20AA32205 - *		E20WA32205 - *		E20TA32205 - *	
3	25	25	90	100		E20AA33206 - *	3504.	E20WA33206 - *	7320.	E20TA33206 - *	4182.
	30	30				E20AA33208 - *		E20WA33208 - *		E20TA33208 - *	
4	40	40	135	150		E20AA34208 - *	7464.	E20WA34208 - *	12444.	E20TA34208 - *	9228.
	-----	50				E20AA34677 - *		E20WA34677 - *		E20TA34677 - *	

Note:

1. Includes starter complete with N.O. contact and 3 phase overload relays less heaters.

Ordering Information	Coil Volt/Hertz	Suffix
● Use complete catalog number. Replace the (*) with the suffix from the coil table. Order heaters at \$18 each.		
● Renewal Parts - see Page B42	24/60 or 24/50	-96
● Engineering Data - see Page B50	110-120/60 or 110/50	-76
● Modifications - see Page B36	220-240/60 or 220/50	-26
● Heater Tables - see Page B33	440-480/60 or 440/50	-46
● Dimensions - see Page B47	550-600/60 or 550/50	-56
	200-208/60	-86

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AC Combination Starters with Circuit Breaker, 600V - Adjustable Magnetic Trip

Standard - Vertical, Bulletin 6020													
NEMA Size	Maximum Motor Horsepower Rating			Starter Cont. Ampere Rating	Circuit Breaker Ampere Rating	Magnetic Trip Motor Circuit Protector	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure		
	200V	230V	460/575V				Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹	
0	1/2	1/2	1 1/2	18	3	TEC	T20AA30671 - *	\$1524.	T20WA30671 - *	\$2676.	T20TA30671 - *	\$1812.	
	1 1/2	1 1/2	3	18	7		T20AA30672 - *		T20WA30672 - *		T20TA30672 - *		
	3	3	5	18	15		T20AA30673 - *		T20WA30673 - *		T20TA30673 - *		
1	1/2	1/2	1 1/2	27	3		T20AA31671 - *	1584.	T20WA31671 - *	2736.	T20TA31671 - *	1872.	
	1 1/2	1 1/2	3	27	7		T20AA31672 - *		T20WA31672 - *		T20TA31672 - *		
	3	3	5	27	15		T20AA31673 - *		T20WA31673 - *		T20TA31673 - *		
	7 1/2	7 1/2	10	27	30		T20AA31674 - *		T20WA31674 - *		T20TA31674 - *		
2	7 1/2	7 1/2	10	45	30		T20AA32674 - *	2244.	T20WA32674 - *	4020.	T20TA32674 - *	2652.	
	10	15	25	45	50		T20AA32675 - *		T20WA32675 - *		T20TA32675 - *		
3	25	30	50	90	100		T20AA33676 - *	3264.	T20WA33676 - *	6360.	T20TA33676 - *	3792.	
4	40	50	100	135	150		T20AA34677 - *	7164.	T20WA34677 - *	11124.	T20TA34677 - *	8628.	
5	75	100	200	270	400		TJC4	Consult Factory					
Compact - Horizontal													
0	1/2	1/2	1 1/2	18	3	TEC	C20AA30671 - *	1524.	C20WA30671 - *	2676.	C20TA30671 - *	1812.	
	1 1/2	1 1/2	3	18	7		C20AA30672 - *		C20WA30672 - *		C20TA30672 - *		
	3	3	5	18	15		C20AA30673 - *		C20WA30673 - *		C20TA30673 - *		
1	1/2	1/2	1 1/2	27	3		C20AA31671 - *	1584.	C20WA31671 - *	2736.	C20TA31671 - *	1872.	
	1 1/2	1 1/2	3	27	7		C20AA31672 - *		C20WA31672 - *		C20TA31672 - *		
	3	3	5	27	15		C20AA31673 - *		C20WA31673 - *		C20TA31673 - *		
	7 1/2	7 1/2	10	27	30		C20AA31674 - *		C20WA31674 - *		C20TA31674 - *		
2	7 1/2	7 1/2	10	45	30		C20AA32674 - *	2244.	C20WA32674 - *	4020.	C20TA32674 - *	2652.	
	10	15	25	45	50		C20AA32675 - *		C20WA32675 - *		C20TA32675 - *		
Extra Wide													
0	1/2	1/2	1 1/2	18	3		TEC	E20AA30671 - *	1668.	E20WA30671 - *	3168.	E20TA30671 - *	2028.
	1 1/2	1 1/2	3	18	7			E20AA30672 - *		E20WA30672 - *		E20TA30672 - *	
	3	3	5	18	15	E20AA30673 - *		E20WA30673 - *		E20TA30673 - *			
1	1/2	1/2	1 1/2	27	3	E20AA31671 - *		1728.	E20WA31671 - *	3228.	E20TA31671 - *	2088.	
	1 1/2	1 1/2	3	27	7	E20AA31672 - *			E20WA31672 - *		E20TA31672 - *		
	3	3	5	27	15	E20AA31673 - *			E20WA31673 - *		E20TA31673 - *		
	7 1/2	7 1/2	10	27	30	E20AA31674 - *			E20WA31674 - *		E20TA31674 - *		
2	7 1/2	7 1/2	10	45	30	E20AA32674 - *		2388.	E20WA32674 - *	4512.	E20TA32674 - *	2868.	
	10	15	25	45	50	E20AA32675 - *			E20WA32675 - *		E20TA32675 - *		
3	25	30	50	90	100	E20AA33676 - *		3504.	E20WA33676 - *	7320.	E20TA33676 - *	4182.	
4	40	50	100	135	150	E20AA34677 - *		7464.	E20WA34677 - *	12444.	E20TA34677 - *	9228.	

Note:

1. Includes starter complete with N.O. contact and 3 phase overload relays less heaters.

Ordering Information

● Use complete catalog number. Replace the (*) with the suffix from the coil table. Order heaters at \$18 each.

- Renewal Parts - see Page B42
- Engineering Data - see Page B50
- Modifications - see Page B36
- Heater Tables - see Page B33
- Dimensions - see Page B47

Coil Volt/Hertz

Suffix

24/60 or 24/50	-96
110-120/60 or 110/50	-76
220-240/60 or 220/50	-26
440-480/60 or 440/50	-46
550-600/60 or 550/50	-56
200-208/60	-86



AC Combination Reversing Starters with Disconnect Switch - Bulletin 6038

Fusible 200 & 230 Volt

NEMA Size	Maximum Motor Horsepower Rating Dual Element Fuses		Starter Cont. Amps Rating	Disconnect Ampere Rating		NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure	
	200V	230V		Switch	Fuse Clips ²	Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
0	3	3	18	30	30	T38AA30203-*	\$ 1824.	T38WA30203-*	\$ 3288	T38TA30203-*	\$ 2232.
1	5	7 1/2	27	30	30	T38AA31203-*	1944.	T38WA31203-*	3408	T38TA31203-*	2352.
1	7 1/2	----	27	30	60	T38AA31206-*	1968.	T38WA31206-*	3432	T38TA31206-*	2376.
2	10	15	45	60	60	T38AA32206-*	3240.	T38WA32206-*	3972	T38TA32206-*	3768.
3	25	30	90	100	100	T38AA33201-*	5352.	T38WA33201-*	9264	T38TA33201-*	6048.
4	40	50	135	150	200	T38AA34202-*	11292.	T38WA34202-*	16236	T38TA34202-*	13200.
5	75	100	270	400	400	Consult Factory					

Fusible 460 & 575 Volt

NEMA Size	Maximum Motor Horsepower Rating		Starter Cont. Amps Rating	Disconnect Switch Rating	Fuse Clips ²	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure	
	460V	575V				Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
0	5	5	18	30	30	T38AA30603-*	1848.	T38WA30603-*	3312.	T38TA30603-*	2256.
1	10	10	27	30	30	T38AA31603-*	1968.	T38WA31603-*	3432.	T38TA31603-*	2376.
2	15	15	45	60	30	T38AA32603-*	3252.	T38WA32603-*	5484.	T38TA32603-*	3780.
2	25	25	45	60	60	T38AA32606-*	3276.	T38WA32606-*	5508.	T38TA32606-*	3804.
3	50	50	90	100	100	T38AA33601-*	5424.	T38WA33601-*	9336	T38TA33601-*	6120.
4	100	100	135	150	200	T38AA34602-*	11340.	T38WA34602-*	16284.	T38TA34602-*	13248.
5	200	200	270	400	400	Consult Factory					

Non-Fusible

NEMA Size	Maximum Motor Horsepower Rating			Starter Cont. Amps Rating	Disconnect Switch Rating	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure	
	200V	230V	460/575V			Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
0	3	3	5	18	30	T38AA30610-*	\$ 1788.	T38WA30610-*	\$3252.	T38TA30610-*	\$2196.
1	7 1/2	7 1/2	10	27	30	T38AA31610-*	1908.	T38WA31610-*	3372.	T38TA31610-*	2316.
2	10	15	25	45	60	T38AA32610-*	3192.	T38WA32610-*	5424.	T38TA32610-*	3720.
3	25	30	50	90	100	T38AA33610-*	5292.	T38WA33610-*	9204.	T38TA33610-*	5988.
4	40	50	100	135	150	T38AA34610-*	11908.	T38WA34610-*	15732.	T38TA34610-*	12996.
5	75	100	200	270	400	Consult Factory					

Notes:

- Includes starter complete with N.O. contact, disconnect switch less fuses, and 3 phase overload relay less heaters.
- Class R fuse clips are available on request.

Ordering Information

- Use complete catalog number. Replace the (*) with the suffix from the coil table. Order heaters at \$18 each.

- Renewal Parts - see Page B42
- Engineering Data - see Page B50
- For Plugging and Jogging Service - Page B8
- Modifications - see Page B36
- Heater Tables - see Page B33
- Dimensions - see Page B48

Coil Volt/Hertz

Suffix

- 24/60 or 24/50 -96
- 110-120/60 or 110/50 -76
- 220-240/60 or 220/50 -26
- 440-480/60 or 440/50 -46
- 550-600/60 or 550/50 -56
- 200-208/60 -86



AC Combination Reversing Starters with Thermal-Magnetic Trip, 240V - Bulletin 6040

NEMA Size	Maximum Motor Horsepower Rating		Starter Cont. Ampere Rating	Circuit Breaker Ampere Rating	Thermal Magnetic Trip	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure	
	200V	230V				Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
0	2	2	18	15	TEB	T40AA30201 - *	\$ 1872.	T40WA30201 - *	\$ 3336.	T40TA30201 - *	\$ 2280.
	3	3				T40AA30202 - *		T40WA30202 - *		T40TA30202 - *	
1	5	5	27	40		T40AA31203 - *	2016.	T40WA31203 - *	3480.	T40TA31203 - *	2424.
	7 1/2	7 1/2				T40AA31204 - *		T40WA31204 - *		T40TA31204 - *	
2	10	10	45	50		T40AA32204 - *	3384.	T40WA32204 - *	5616.	T40TA32204 - *	3912.
	----	15				T40AA32205 - *		T40WA32205 - *		T40TA32205 - *	
3	25	25	90	100		T40AA33206 - *	5472.	T40WA33206 - *	9394.	T40TA33206 - *	6168.
	25	30				T40AA33208 - *		T40WA33208 - *		T40TA33208 - *	
4	40	40	135	150		T40AA34208 - *	12396.	T40WA34208 - *	17340.	T40TA34208 - *	14304.
	----	50				T40AA34677 - *		T40WA34677 - *		T40TA34677 - *	
5	50	----	270	200	TJC4	Consult Factory					
	60	60									
	75	100	270	300							

B

AC Combination Reversing Starters with Motor Circuit Protector, 600V - Bulletin 6040

NEMA Size	Maximum Motor Horsepower Rating			Starter Cont. Amps Rating	Circuit Breaker Ampere Rating	Magnetic Trip Motor Circuit Protector	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure	
	200V	230V	460/575V				Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
0	1/2	1/2	1	18	3	TEC	T40AA30671 - *	\$ 2148.	T40WA30671 - *	\$ 3612.	T40TA30671 - *	\$ 2556.
	1 1/2	1 1/2	3				T40AA30672 - *		T40WA30672 - *		T40TA30672 - *	
	3	3	5				T40AA30673 - *		T40WA30673 - *		T40TA30673 - *	
1	1/2	1/2	1 1/2	27	3		T40AA31671 - *	2292.	T40WA31671 - *	3756.	T40TA31671 - *	2700.
	1 1/2	1 1/2	3				T40AA31672 - *		T40WA31672 - *		T40TA31672 - *	
	3	3	5				T40AA31673 - *		T40WA31673 - *		T40TA31673 - *	
	7 1/2	7 1/2	10				T40AA31674 - *		T40WA31674 - *		T40TA31674 - *	
2	7 1/2	7 1/2	10	45	30		T40AA32674 - *	3660.	T40WA32674 - *	5892.	T40TA32674 - *	4188.
	10	15	25				T40AA62675 - *		T40WA62675 - *		T40TA62675 - *	
3	25	30	50	90	100		T40AA33676 - *	5472.	T40WA33676 - *	9384.	T40TA33676 - *	6168.
4	40	50	100	135	150	T40AA34677 - *	12396.	T40WA34677 - *	17340.	T40TA34677 - *	14304.	
5	75	100	200	270	400	TJC4	Consult Factory					

Note:

1. Includes starter with N.O. contact, circuit breaker and 3 phase overload relays less heaters.

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Ordering Information	Coil Volt/Hertz	Suffix
● Use complete catalog number. Replace the (*) with the suffix from the coil table. Order heaters at \$18 each.	24/60 or 24/50	-96
● Modifications - see Page B36	110-120/60 or 110/50	-76
● Engineering Data - see Page B50	220-240/60 or 220/50	-26
● Renewal Parts - see Page B42	440-480/60 or 440/50	-46
● Full-load Current Table - see Page B34	550-600/60 or 550/50	-56
● Heater Tables - see Page B33	200-208/60	-86
● Dimensions - see Page B48		



Non-Fusible AC 2 Speed Starter with Disconnect Switch, 200, 230, 460 and 575V

2 Speed, Single Winding (consequent pole), Bulletin 6058

NEMA Size	Maximum Motor Horsepower Rating			Starter Continue Ampere Rating	Disconnect Switch Ampere Rating	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure	
	Constant or Variable Torque (Constant Horsepower)	200V	230V			460-575V	Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.
0	3 (2)	3 (2)	5 (3)	18	30	T58AA0C2610-*	\$2976.	- use size 1 - *	—	- use size 1 - *	—
1	7 1/2 (5)	7 1/2 (5)	10 (7 1/2)	27	30	T58AA1C2610-*	3120.	T58WA1C2610-*	\$ 4968.	T58TA1C2610-*	\$ 3516.
2	10 (7 1/2)	15 (10)	25 (20)	45	60	T58AA2C2610-*	5064.	T58WA2C2610-*	7368.	T58TA2C2610-*	5688.
3	25 (20)	30 (25)	50 (40)	90	100	T58AA3C2610-*	7296.	T58WA3C2610-*	11232.	T58TA3C2610-*	8664.
4	40 (30)	50 (40)	100 (75)	135	150	T58AA4C2610-*	17136.	T58WA4C2610-*	23328.	T58TA4C2610-*	21048.
5	75 (60)	100 (75)	200 (150)	270	400	Consult Factory					

2 Speed, Double Winding (separate winding)

0	3 (2)	3 (2)	5 (3)	18	30	T58AA0S2610-*	2448.	- use size 1 - *	—	- use size 1 - *	—
1	7 1/2 (5)	7 1/2 (5)	10 (7 1/2)	27	30	T58AA1S2610-*	2616.	T58WA1S2610-*	4464.	T58TA1S2610-*	3012.
2	10 (7 1/2)	15 (10)	25 (20)	45	60	T58AA2S2610-*	4104.	T58WA2S2610-*	6432.	T58TA2S2610-*	4728.
3	25 (20)	30 (25)	50 (40)	90	100	T58AA3S2610-*	6000.	T58WA3S2610-*	9936.	T58TA3S2610-*	7368.
4	40 (30)	50 (40)	100 (75)	135	150	T58AA4S2610-*	12768.	T58WA4S2610-*	18960.	T58TA4S2610-*	16680.
5	75 (60)	100 (75)	200 (150)	270	400	Consult Factory					

Note:

- Includes starter complete with one N.O. contact on each contactor and two 3 phase overload relays less heaters. All starters are mechanically and electrically interlocked. Six (6) heaters are required, 3 heaters for each speed.

Ordering Information

Coil Volt/Hertz

Suffix

- Use complete catalog number. Replace the (*) with the suffix from coil table. Order heaters at \$18 each.

- Engineering Data - see Page B50
- Modification - see Page B36
- Renewal Parts - see Page B42
- Heater Tables - see Page B33
- Dimensions - see Page B49

24/60 or 24/50	-96
110-120/60 or 110/50	-76
220-240/60 or 220/50	-26
440-480/60 or 440/50	-46
550-600/60 or 550/50	-56
200-208/60	-86



Fusible AC 2 Speed Starter with Disconnect Switch, 200-230V - Bulletin 6058

B

2 Speed, Single Winding (consequent pole)										
NEMA Size	Maximum Motor Horsepower Rating		Starter Continue Ampere Rating	Disconnect Switch Ampere Rating	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure	
	Constant or Variable Torque (Constant Horsepower)	200V			230V	Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.
0	3 (2)	3 (2)	18	30	T58AA0C2203- *	\$3168.	- use size 1 - *	—	- use size 1 - *	—
1	7 1/2 (5)	7 1/2 (5)	27	30	T58AA1C2203- *	3312.	T58WA1C2203- *	\$ 5160.	T58TA1C2203- *	\$ 3708.
2	10 (7 1/2)	15 (10)	45	60	T58AA2C2206- *	5160.	T58WA2C2206- *	7464.	T58TA2C2206- *	5784.
3	25 (20)	30 (25)	90	100	T58AA3C2201- *	7920.	T58WA3C2201- *	11856.	T58TA3C2201- *	9288.
4	40 (30)	50 (40)	135	150	T58AA4C2202- *	18960.	T58WA4C2202- *	25152	T58TA4C2202- *	22506.
5	75 (60)	100 (75)	270	400	Consult Factory					
2 Speed, Double Winding (separate winding)										
0	3 (2)	3 (2)	18	30	T58AA0S2203- *	2640.	- use size 1 - *	—	- use size 1 - *	—
1	7 1/2 (5)	7 1/2 (5)	27	30	T58AA1S2203- *	2808.	T58WA1S2203- *	4656.	T58TA1S2203- *	3204.
2	10 (7 1/2)	15 (10)	45	60	T58AA2S2206- *	4200.	T58WA2S2206- *	6528.	T58TA2S2206- *	4824.
3	25 (20)	30 (25)	90	100	T58AA3S2201- *	6624.	T58WA3S2201- *	10560.	T58TA3S2201- *	7992.
4	40 (30)	50 (40)	135	150	T58AA4S2202- *	14592.	T58WA4S2202- *	20784.	T58TA4S2202- *	18408.
5	75 (60)	100 (75)	270	400	Consult Factory					

Note:

- Includes starter complete with one N.O. contact on each contactor and two 3 phase overload relays less heaters. All starters are mechanically and electrically interlocked. Six (6) heaters are required, 3 heaters for each speed.

Ordering Information		Coil Volt/Hertz	Suffix
<ul style="list-style-type: none"> ● Use complete catalog number. Replace the (*) with the suffix from coil table. Order heaters at \$18 each. 	● Engineering Data - see Page B50	24/60 or 24/50	-96
	● Modification - see Page B36	110-120/60 or 110/50	-76
	● Renewal Parts - see Page B42	220-240/60 or 220/50	-26
	● Heater Tables - see Page B33	440-480/60 or 440/50	-46
	● Dimensions - see Page B49	550-600/60 or 550/50	-56
			200-208/60



Fusible AC 2 Speed Starter with Disconnect Switch, 600V - Bulletin 6058

2 Speed, Single Winding (consequent pole)

NEMA Size	Maximum Motor Horsepower Rating		Starter Continue Ampere Rating	Disconnect Switch Ampere Rating	NEMA 1 General Purpose Enclosure		NEMA 4 Watertight Enclosure		NEMA 12 Industrial - Dust-tight Enclosure	
	Constant or Variable Torque (Constant Horsepower)				Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
	460V	575V								
0	5 (3)	5 (3)	18	30	T58AA0C2603- *	\$3168.	- use size 1 - *	—	- use size 1 - *	—
1	10 (7 1/2)	10 (7 1/2)	27	30	T58AA1C2603- *	3312.	T58WA1C2603- *	\$ 5160.	T58TA1C2603- *	\$ 3708.
2	15 (10)	15 (10)	45	60	T58AA2C2603- *	5160.	T58WA2C2603- *	7464.	T58TA2C2606- *	5784.
2	25 (20)	25 (20)	45	60	T58AA2C2606- *	5160.	T58WA2C2606- *	7464.	T58TA2C2601- *	5784.
3	50 (40)	50 (40)	90	100	T58AA3C2601- *	7440.	T58WA3C2601- *	11376.	T58TA3C2602- *	9288.
4	100 (75)	100 (75)	135	200	T58AA4C2602- *	17664.	T58WA4C2602- *	23856.	T58TA4C2604- *	22776.
5	200 (150)	200 (150)	270	400	Consult Factory					

2 Speed, Double Winding (separate winding)

0	5 (3)	5 (3)	18	30	T58AA0S2603- *	2640.	- use size 1 - *	—	- use size 1 - *	—
1	7 1/2 (5)	7 1/2 (5)	27	30	T58AA1S2603- *	2808.	T58WA1S2603- *	4660.	T58TA1S2603- *	3204.
2	10 (7 1/2)	15 (10)	45	30	T58AA2S2606- *	4200.	T58WA2S2603- *	6530.	T58TA2S2603- *	4820.
2	25 (20)	25 (20)	45	60	T58AA3S2601- *	4452.	T58WA2S2606- *	6530.	T58TA2S2606- *	4820.
3	50 (40)	50 (40)	90	100	T58AA3S2602- *	6624.	T58WA3S2601- *	10080.	T58TA3S2601- *	7510.
4	100 (75)	100 (75)	135	200	T58AA4S2604- *	14592.	T58WA4S2602- *	19490.	T58TA4S2602- *	17140.
5	200 (150)	200 (150)	270	400	Consult Factory					

Note:

- Includes starter complete with one N.O. contact on each contactor and two 3 phase overload relays less heaters. All starters are mechanically and electrically interlocked. Six (6) heaters are required, 3 heaters for each speed.

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Ordering Information

- Use complete catalog number. Replace the (*) with the suffix from coil table. Order heaters at \$18 each.

- Engineering Data - see Page B49
- Modification - see Page B35
- Renewal Parts - see Page B41
- Heater Tables - see Page B32
- Dimensions - see Page B42

Coil Volt/Hertz

- 24/60 or 24/50
- 110-120/60 or 110/50
- 220-240/60 or 220/50
- 440-480/60 or 440/50
- 550-600/60 or 550/50
- 200-208/60

Suffix

- 96
- 76
- 26
- 46
- 56
- 86



AC 2 Speed Starters with Magnetic Trip Circuit Breaker, 200, 230, 460 and 575V

2 Speed, Single Winding (consequent pole), Bulletin 6060											
NEMA Size	Maximum Motor Horsepower Rating			Starter Continuous Ampere	Circuit Breaker Ampere Ratings	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure	
	Constant or Variable Torque (Constant Horsepower)					Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price
	200V	230V	460V/575V								
0	1/2 (1/4)	1/2 (1/3)	1 1/2 (1)	18	3	T60AA0C2671 - *	3540.	- use size 1 -	—	- use size 1 -	— ¹
	1 1/2 (3/4)	1 1/2 (1)	3 (2)	18	7	T60AA0C2672 - *	3540.	- use size 1 -	—	- use size 1 -	—
	3 (2)	3 (2)	5 (3)	18	15	T60AA0C2673 - *	3540.	- use size 1 -	—	- use size 1 -	—
1	1/2 (1/4)	1/2 (1/3)	1 1/2 (1)	27	3	T60AA1C2671 - *	3684.	T60WA1C2671 - *	5652.	T60TA1C2671 - *	4080.
	1 1/2 (3/4)	1 1/2 (1)	3 (2)	27	7	T60AA1C2672 - *	3684.	T60WA1C2672 - *	5652.	T60TA1C2672 - *	4080.
	3 (2)	3 (2)	5 (5)	27	15	T60AA1C2673 - *	3684.	T60WA1C2673 - *	5652.	T60TA1C2673 - *	4080.
	7 1/2 (5)	7 1/2 (5)	10 (7 1/2)	27	30	T60AA1C2674 - *	3684.	T60WA1C2674 - *	5652.	T60TA1C2674 - *	4080.
2	7 1/2 (5)	7 1/2 (5)	10 (7 1/2)	45	30	T60AA2C2674 - *	5688.	T60WA2C2674 - *	7992.	T60TA2C2674 - *	6312.
	10 (7 1/2)	15 (10)	25 (20)	45	50	T60AA2C2675 - *	5688.	T60WA2C2675 - *	7992.	T60TA2C2675 - *	6312.
3	25 (20)	30 (25)	50 (40)	90	100	T60AA3C2676 - *	7716.	T60WA3C2676 - *	11652.	T60TA3C2676 - *	9084.
4	40 (30)	50 (40)	100 (75)	135	150	T60AA4C2677 - *	18720.	T60WA4C2677 - *	24816.	T60TA4C2677 - *	22536.
5	75 (60)	100 (75)	200 (150)	270	400	Consult Factory					

Note:

Includes starter complete with N.O. contact, on each contactor, and two 3 phase overload relays less heaters. All starters are mechanically and electrically interlocked. Six (6) heaters are required, 3 heaters for each speed.

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Ordering Information		Coil Volt/Hertz	Suffix
<ul style="list-style-type: none"> ● Use complete catalog number. Replace the (*) with the suffix from coil table. Order heaters at \$18 each. 	● Engineering Data - see Page B49	24/60 or 24/50	-96
	● Modification - see Page B35	110-120/60 or 110/50	-76
	● Renewal Parts - see Page B41	220-240/60 or 220/50	-26
	● Heater Tables - see Page B32	440-480/60 or 440/50	-46
	● Dimensions - see Page B42	550-600/60 or 550/50	-56
		200-208/60	-86



B

AC 2 Speed Starters with Magnetic Trip Circuit Breaker, 200, 230, 460 and 575V

2 Speed, Double Winding (Separate Winding), Bulletin 6060

NEMA Size	Maximum Motor Horsepower Rating			Starter Continuous Ampere Rating	Circuit Breaker Ampere Ratings	NEMA Type 1 General Purpose Enclosure		NEMA Type 4 Watertight Enclosure		NEMA Type 12 Industrial - Dust-tight Enclosure	
	Constant or Variable Torque (Constant Horsepower)					Catalog No.	Price ¹	Catalog No.	Price ¹	Catalog No.	Price ¹
	200V	230V	460V/575V								
0	1/2 (1/4)	1/2 (1/3)	1 1/2 (1)	18	3	T60AA0S2671 - *	3012.	- use size 1 -	—	- use size 1 -	—
	1 1/2 (3/4)	1 1/2 (1)	3 (2)	18	7	T60AA0S2672 - *	3012.	- use size 1 -	—	- use size 1 -	—
	3 (2)	3 (2)	5 (3)	18	15	T60AA0S2673 - *	3012.	- use size 1 -	—	- use size 1 -	—
1	1/2 (1/4)	1/2 (1/3)	1 1/2 (1)	27	3	T60AA1S2671 - *	3180.	T60WA1S2671 - *	5028.	T60TA1S2671 - *	3576.
	1 1/2 (3/4)	1 1/2 (1)	3 (2)	27	7	T60AA1S2672 - *	3180.	T60WA1S2672 - *	5028.	T60TA1S2672 - *	3576.
	3 (2)	3 (2)	5 (5)	27	15	T60AA1S2673 - *	3180.	T60WA1S2673 - *	5028.	T60TA1S2673 - *	3576.
	7 1/2 (5)	7 1/2 (5)	10 (7 1/2)	27	30	T60AA1S2674 - *	3180.	T60WA1S2674 - *	5028.	T60TA1S2674 - *	3576.
2	7 1/2 (5)	7 1/2 (5)	10 (7 1/2)	45	30	T60AA2S2674 - *	4728.	T60WA2S2674 - *	7056.	T60TA2S2674 - *	5352.
	10 (7 1/2)	15 (10)	25 (20)	45	50	T60AA2S2675 - *	4728.	T60WA2S2675 - *	7056.	T60TA2S2675 - *	5352.
3	25 (20)	30 (25)	50 (40)	90	100	T60AA3S2676 - *	6420.	T60WA3S2676 - *	10356.	T60TA3S2676 - *	7788.
4	40 (30)	50 (40)	100 (75)	135	150	T60AA4S2677 - *	14352.	T60WA4S2677 - *	20478.	T60TA4S2677 - *	18168.
5	75 (60)	100 (75)	200 (150)	270	400	Consult Factory					

Note:

- Includes starter complete with N.O. contact, on each contactor, and two 3 phase overload relays less heaters. All starters are mechanically electrically interlocked. Six (6) heaters are required, 3 heaters for each speed.

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Ordering Information

● Use complete catalog number. Replace the (*) with the suffix from coil table. Order heaters at \$18 each.

- Engineering Data - see Page 50
- Modification - see Page 36
- Renewal Parts - see Page 42
- Heater Tables - see Page 33
- Dimensions - see Page 49

Coil Volt/Hertz

- 24/60 or 24/50
- 110-120/60 or 110/50
- 220-240/60 or 220/50
- 440-480/60 or 440/50
- 550-600/60 or 550/50
- 200-208/60

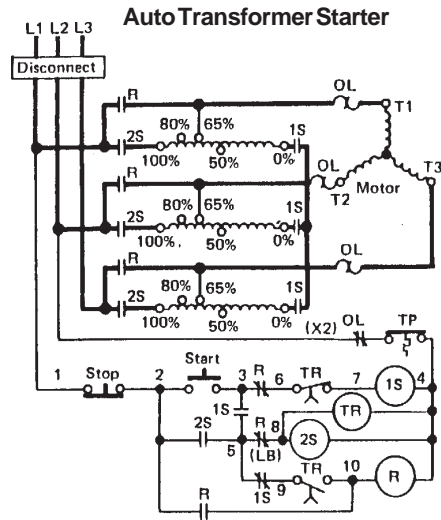
Suffix

- 96
- 76
- 26
- 46
- 56
- 86

B

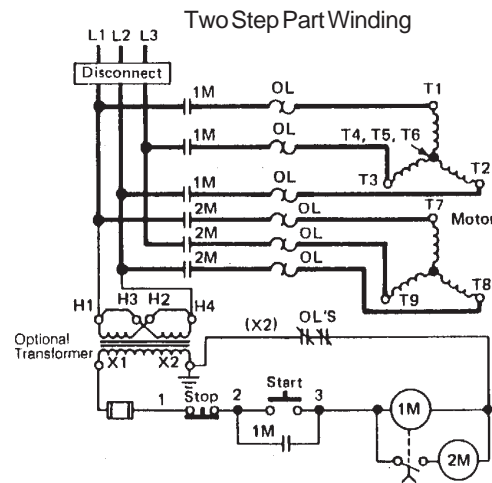
Autotransformer Closed Transition

- Reduced Voltage Starting of Squirrel Cage Motors
- Highest Starting Torque per Ampere of Line Current
- Available in Type 4 & 12 Enclosure
- All Disconnect Types Available
- Complete Line Factory Installed Modifications



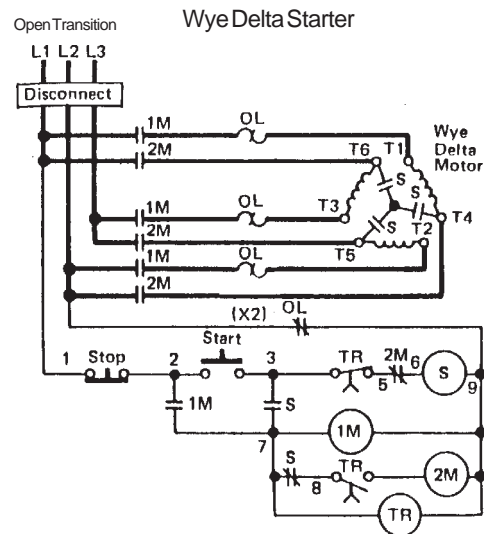
Part Winding Starters

- Two Step Starting of Squirrel Cage Motors
- Lowest Cost Method of Starting
- NEMA Type 1, 4, & 12 Enclosures
- Factory Installed Modifications



Wye-Delta Starters

- Available Open or Closed Transition
- Inrush Current 1/3 Normal Line Starting
- NEMA 1 Enclosure Standard



Autotransformer Closed Transition - Bulletin 6082

NEMA Size	Max. Motor Horsepower Rating ¹		NEMA Type 1 General Purpose ²	
	230V	460V	Catalog No.	Price
3	25	-----	T82AA3FB - *	9714.
	30	-----	T82AA3GB - *	9714.
	-----	30	T82AA3GE - *	10788.
	-----	50	T82AA3JE - *	10788.
4	50	-----	T82AA4JB - *	15516.
	-----	100	T82AA4ME - *	15804.
5	75	-----	U2AA5LB - *	24690.
	100	-----	U82AA5MB - *	26560.
	-----	150	U82AA5PE - *	26690.
	-----	200	U82AA5QE - *	28890.
6	125	-----	Refer to Section A	
	150	-----		
	200	-----		
	-----	250		
	-----	300		
	-----	400		

Wye-Delta Starters ³, NEMA 1 Enclosures - Bulletin 6095

Wye Delta Size	Maximum Motor Horsepower Rating			NEMA 1 General Purpose Enclosure			
	200	230	460/575	Open Transition Catalog No.	Price	Closed Transition Catalog No.	Price
1	10	-----	-----	T95AA30T1A	4122.	T95AA3CT1A	6294.
	-----	10	-----	T95AA30T1B			
	-----	-----	15	T95AA30T1C			
2	20	-----	-----	T95AA30T2A	4700.	T95AA3CT2A	7050.
	-----	25	-----	T95AA30T2B			
	-----	-----	40	T95AA30T2C			
3	40	-----	-----	T95AA30T3A	7100.	T95AA3CT3A	9830.
	-----	50	-----	T95AA30T3B			
	-----	-----	75	T95AA30T3C			
4	60	-----	-----	T95AA30T4A	14880.	T95AA3CT4A	18800.
	-----	75	-----	T95AA30T4B			
	-----	-----	150	T95AA30T4C			
5	150	-----	-----	V95AA30T5A	26610.	V95AA3CT5A	32610.
	-----	150	-----	V95AA30T5B			
	-----	-----	300	V95AA30T5C			
6	300	-----	-----	Consult Factory			
	-----	350	-----				
	-----	-----	700				

Note:

- Maximum horsepower ratings are in accordance with NEMA Standards ICS2-321C:20. Auto transformers are 3-Coil type, with voltage taps at 50%, 65% and 80% rated in accordance with NEMA Standards ICS2-214.21 for medium-duty starting service.
- Size 5 Starters are supplied in floor mounted enclosures without bottom cover plate for mounting against a wall. If not mounted against a wall, a rear cover plate must be ordered.
- Wye-Delta Starters Overload Relay Heater Selected by dividing FLC by 1.73 and select Heaters from index.

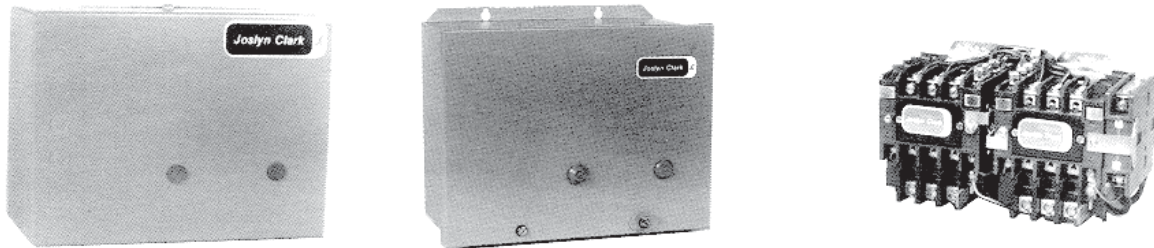
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Ordering Information

Coil Table

- Use complete catalog number. Replace the (*) with the suffix from the Coil Table. Heaters are purchased separately at \$18
- each.
- Modifications see Page B36
- Engineering Data Page B50
- Renewal Parts Page B42

Volt/60Hz	Line Voltage	Control Transformer
220-240	-26	-T26
440-480	-46	-T46



Part Winding Starters, Two Step - Bulletin 6090

Size	Max. Motor Horsepower Rating 2 or 3-Phase			Poles	Type 1 General Purpose		Type 4 Watertight		Type 12 Industrial		Open Type U		
	200V	230V	460/575V		Catalog No.	Price	Catalog No.	Price	Catalog No.	Price	Catalog No.	Price	
1PW	10	10	15	3	T90AA31 - *	\$ 2628.	T90WA31 - *	\$ 4068.	T90TA31 - *	\$ 3828.	T90U031 - *	\$ 2556.	
2PW	20	25	40		T90AA32 - *	3744.	T90WA32 - *	5364.	T90TA32 - *	5244.	T90U032 - *	3552.	
3PW	40	50	75		T90AA33 - *	5280.	T90WA33 - *	7620.	T90TA33 - *	7080.	T90U033 - *	4944.	
4PW	75	75	150		T90AA34 - *	11292.	T90WA34 - *	14976.	T90TA34 - *	13692.	T90U034 - *	10668.	
5PW	150	150	350		Consult Factory								
6PW	---	300	600		Consult Factory								

Note:

Includes starter complete with two contactors, timing device and two overload relays less heaters. (6 are required)
 These starters are usually used with wye (star) connected motors. They may also be used for delta connected motors when the motors are so designed that neither delta winding need be open during starting.

Overload Realy Heater Data

Heater elements should be selected for running current in each winding. A total of 6 heater elements are required per controller.

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Ordering Information	Coil Volt/Hertz	Suffix
● Use complete catalog number. Replace the (*) with the suffix from the coil table.	24/60 or 24/50	-96
● Order heater elements at \$18 each.	110-120/60 or 110/50	-76
● Modifications see Page B36	220-240/60 or 220/50	-26
● Renewal Parts see Page B50	440-480/60 or 440/50	-46
● Engineering Data see Page B42	550-600/60 or 550/50	-56
	200-208/60	-86

B

Fused Disconnect Switch, NEMA 3R - Bulletin 6318

200 & 230 Volts									
NEMA Size	Maximum Motor Horsepower Rating				Starter Continuous Ampere Rating	Disconnect Ampere Rating		NEMA Type 3R Weatherproof Enclosure Catalog No.	Price ¹
	Dual Element Fuses		Non-Time Delay Fuses			Switch	Fuse Clips		
	200V	230V	200V	230V					
1	5	7 1/2	3	3	27	30	30	K18RB31203-*	\$ 1530.
	7 1/2	-----	-----	7 1/2				60	
2	10	15	-----	-----	45	60	60	K18RB32206-*	2070.
	-----	-----	10	15				100	
3	25	30	-----	-----	90	100	100	K18RB33201-*	3342.
	-----	-----	25	30				200	
4	40	50	-----	-----	135	150	200	K18RB34202-*	6258.
	-----	-----	40	50				400	
5	75	100	50	60	270	400	400	VK18RB350694-*	13722.

460 & 575 Volts									
	Dual Element Fuses		Non-Time Delay Fuses						
	460V	575V	460V	575V					
	1	10	10	7 1/2					
-----		-----	10	10	60	K18RB31606-*	1578.		
2	15	15	-----	-----	45	60	30	K18RB32603-*	2082.
	25	25	15	20				60	
3	50	50	30	40	90	100	100	K18RB33601-*	3414.
	-----	-----	50	50				200	
4	100	100	60	75	135	150	200	K18RB34602-*	6306.
	-----	-----	100	100				400	
5	200	200	125	150	270	400	400	VK18RB350694-*	13722.

Note:

1. Includes Pump Control Panel in NEMA 3R weather-resistant enclosure, complete with integral circuit breaker or fusible disconnect switch less fuses, start push button. Hand-Off-Auto selector switch and 3 phase ambient compensated overload relay less heaters. Heaters are purchased separately at \$9 each. For non ambient compensated overload relay delete "J" from coil suffix.

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Ordering Information	Coil Volt/Hertz	Suffix	Coil Volt/Hertz	Suffix
● Use complete catalog number Replace the (*) with the suffix from the coil table.	24/60 or 24/50	-96J	380/50	-35J
Order Heaters at \$18 each.	110-120/60 or 110/50	-76J	110/25	-12J
● Modifications see Page B36	220-240/60 or 220/50	-26J	220/25	-22J
● Engineering Data see Page B50	440-480/60 or 440/50	-46J	440/25	-42J
● Renewal Parts see Page B42	550-600/60 or 550/50	-56J		
	200-208/60	-86J		

Circuit Breaker, 200, 230, 460 and 575V - Bulletin 6320

240 Volts Thermal Magnetic Trip								
NEMA Size	Maximum Motor Horsepower Rating			Starter Continuous Ampere Rating	Circuit Breaker		NEMA Type 3R Weatherproof Enclosure Catalog No.	Price ¹
	200V	230V	460/575V		Ampere Rating	Type		
1	5 ²	5 ²	-----	27	40	TEB	K20RB31203 - *	\$ 1580.
	7 1/2	7 1/2	-----		50		K20RB31204 - *	1580.
2	10	10	-----	45	50		K20RB32204 - *	2094.
	-----	15	-----		70		K20RB32205 - *	2094.
3	25	25	-----	90	100	TED	K20RB33206 - *	3462.
	25	30	-----		150		K20RB33208 - *	3462.
4	40	40	-----	135	150	TEC	K20RB34028 - *	7362.
	-----	50	-----				K20RB34677 - *	7362.
600 Volts Adjustable Magnetic Trip M.C.P.								
1	1/2	1/2	1 1/2	27	3	TEC	K20RB31671 - *	\$ 1962.
	1 1/2	1 1/2	3		7		K20RB31672 - *	1962.
	3	3	5		15		K20RB31673 - *	1962.
	7 1/2	7 1/2	10		30		K20RB31674 - *	1962.
2	7 1/2	7 1/2	10	45	30		K20RB32674 - *	2442.
	15	15	25		50		K20RB32675 - *	2442.
3	25	30	50	90	100	K20RB33676 - *	3462.	
4	40	50	100	135	150	K20RB34677 - *	7362.	
5	75	100	200	270	400	TJC	K20RB35679 - *	16782.
6	150	200	400	540	600		K20RB36680 - *	36366.

Note:

- Includes Pump Control Panel in NEMA 3R weather-resistant enclosure, complete with integral circuit breaker or fusible disconnect switch less fuses, start push button. Hand-Off-Auto selector switch and 3 phase ambient compensated overload relay less heaters. Heaters are purchased separately at \$9 each.
- Specify HP if less than 5 HP

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Ordering Information	Coil Volt/Hertz	Suffix
● Use complete catalog number Replace the (*) with the suffix from the coil table. Order Heaters at \$18 each.	24/60 or 24/50	-96J
● Modifications see Page B36	110-120/60 or 110/50	-76J
● Engineering Data see Page B50	220-240/60 or 220/50	-26J
● Replacement Parts see Page B42	440-480/60 or 440/50	-46J
	550-600/60 or 550/50	-56J
	200-208/60	-86J

Factory Modifications For K18 & K20 Pump Panels

B

Description	Add For NEMA Size					Catalog Number Suffix
	1	2	3	4	5	
Control Transformers						
Standard Capacity Primary Volts/Hertz: 220-240/60. or 220/50 440-480/60. or 440/50 550-600/60. or 550/50 220-208/60 380/50	162	228	336	408	462	— T26J — T46J — T56J — T86J — T35J
220/25 440/25	246	342	504	612	612	— T22J — T42J
100 Watts Extra 220-240/60. or 220/50 440-480/60. or 440/50 550-600/60. or 550/50 200-208/60 380/50	288	372	468	528	588	— C26J — C46J — C56J — C86J — C35J
220/25 440/25	432	558	702	792	882	— C22J

Description	Additional Price	Specify As Cat# Suffix
Control Circuit		
Pilot Light, Standard Transformer Type, RedLens	\$ 180	B
Fused Control Circuit (includes 2 Fuses)	264	C
Power Circuit		
Line Terminal Board, For Size 4 only. 4/0 Aluminum Wire	252	D
Grounded Service Conductor Service Entrance Lug For: NEMA Size 1-3 NEMA Size 4	48 60	E
Relays		
Time Delay Relay (Pneumatic) 0.2 Seconds to 3 Minutes Backspin (Includes Starter Interlock)	\$1068	F
Sequential Start timer	936	G
Lockout Control Relay	360	H
Substitute Non-Ambient Compensated Overload Relay	24 (Deduct)	Remove J From Suffix

ORDERING EXAMPLE

K18RB34604 with 440/480 60 Hz. Std. Transformer, Pilot Light (Options "B"), Grounded Service Entrance Lug for size 4 (Option "E"), Backspin, Timer (Option "F") and Lockout Relay (Option "H").

Catalog # is K18RB34604 - T46J-B-E-F-H
List Price is \$6942 + 816 + 180 + 60 + 1068 + 360
Total Price \$9426.

Coil Suffix Table

Volts	Hertz	Suffix
110-120	60	-76
200-208	60	-86
220-240	60	-26
380	50	-35
440-480	60	-46
550-600	60	-56

Field Modifications Kits For Pump Panels

Description	NEMA Size	Catalog Number	Price
Control Circuit			
Control Transformers -50/60 hz.			
50VA Capacity: 208V (Primary) 240V & 480V 600V	1-2	KTR67-16 KTR67-2 KTR67-12	\$216.
150V Capacity: 208V (Primary) 240V & 480V 600V	1-2	KTR67-20 KTR67-5 KTR67-22	264.
250VA Capacity: 208V (Primary) 240V & 480V 600V	3-4	KTR67-23 KTR67-7 KTR67-25	342.
Pilot Lights With Red Lens			
120V 240V 480V 600V	1-4	A63-435538A-1 A63-435538A-2 A63-435538A-3 A63-435538A-4	132.
Fuse Block, 2 Pole, 30A, 250V, Class H, With Two 1/2 A Dual Element Fuses	1-4	A63-435539A	72.

Notes:

1. To complete Cat. No. of relay, add coil suffix from Suffix Table

Description	NEMA Size	Catalog Number	Price
Power Circuit			
Line Terminal Board For Size 4 Only, 4/0 Aluminum Wire	4	A63-435540A	\$ 72.
Grounded Service Conductor Service Entrance Lug	1-3 4	A63-435541A A63-435542A	24. 36.
Load Terminals For Aluminum Wire	1-2 3 4	A63-435202A A63-435203A-1 A63-435203A-2	48. 46. 86.
Enclosure			
Mounting Feet	1-2 3-4	A63-435370A-2 A63-435370A-1	240. 300.
Relays			
Time Delay Relay (Pneumatic), 0.2 Seconds To 3 Minutes: Backspin	1-4	713UPDE ¹ Plus KTM-10	780. 60.
Sequential Start	1-4	713UP ¹	600.
Lockout Control Relay	1-4	5SR ¹	168.
Discount Schedule JC80			
Ambient Compensated Overload Relay	1 2 3 4	KTMA31-15 KTMA32-15 KTMA33-15 KTMA34-15	132. 180. 228. 348.

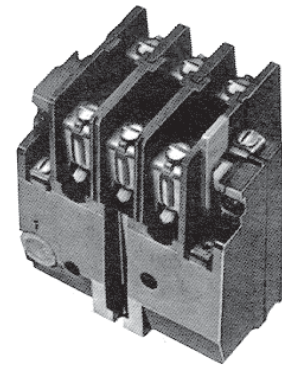
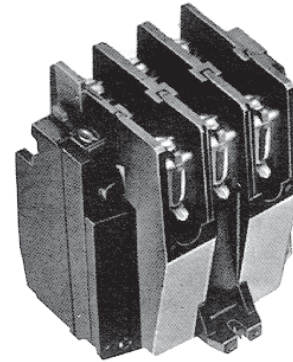
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Free Standing Panel Mount

Price & Catalog Numbers Bulletin 7324

Overload Relay Size	Normally Closed Contacts		Normally Open & Normally Closed Contacts	
	Catalog No.	Price ¹	Catalog No.	Price ¹
Standard Bimetallic Overload Relays				
1 -30AMP	KTM31-12	\$108.	KTM31-13	\$ 156.
2 -50AMP	KTM32-12	156.	KTM32-13	204.
Ambient Compensated Bimetallic Overload Relays				
1 -30AMP	KTMA31-12	132.	KTMA31-13	180.
2 -50AMP	KTMA32-12	180.	KTMA32-13	228.

1. Includes 3-Phase Overload Relay complete, less heaters. Heaters may be purchased at \$18.00 each. See page B32.



B

Single Phase Application

A three phase overload relay is used for single phase applications. Only one heater is required and is to be installed in the center phase cavity of the relay.

Heater Selection

Select heaters based on motor nameplate full-load current. Tables are for continuous rated motors. Full-load current for a given horsepower motor will vary from one manufacturer to another and will depend on RPM of motor.

Type Of Protection

Heaters selected directly from the table provide a maximum of 125% protection at 40°C degree ambient, is suitable for motors with a 1.15 service factor with a 40°C degree rise or less and with motor and controller at the same temperature.

For motors with a 1.0 service factor or with a temperature rise greater than 40°C degree without service factor rating, use one size smaller heaters than in table. The ultimate trip of the heater is approximately 125% of the minimum current shown in the tables in a 40°C degree ambient.

Ambient Correction

Not necessary when overload relay is ambient compensated as identified by green reset rod. For control at an ambient constantly less than the motor ambient, correct by decreasing the nameplate motor full-load current by 1% per °C difference in ambient in ambient for heater selection.

For control at an ambient constantly greater than the motor ambient, correct by increasing the nameplate motor full-load current by 1% per °C difference in ambient.

Branch Circuit Protection

Branch circuit protection should be provided per National Electric Code (USA) or the Canadian Standards Association rules.

Automatic Reset

Automatic reset operation should not be used with two-wire control.

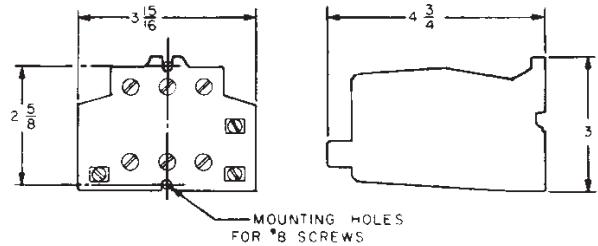
Overload Adjustment

These overload relays are manufactured with an exclusive calibration process to assure the ultimate in tripping accuracy and repeatability. The overload allows a true + 15% adjustment as a result of the process and is well suited for use with unity service factor motors requiring a shorter locked rotor tripping time. The + 15% adjustment is easily made by means of a small dial on the bottom of the relay. A quick field modification also permits removal of the adjustment feature.

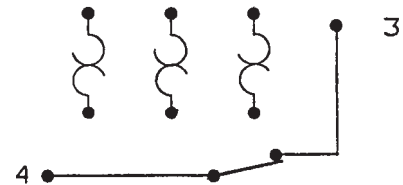
Free Standing Panel Mounted Sizes 1 & 2-Type TM

Bimetallic Standard and Ambient Compensated

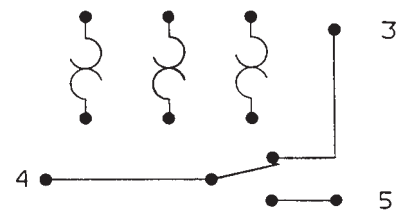
Heater Catalog Number	Motor Ampere Rating		\$18.00 List Each		Overload Relay Size
	Single Phase One Heater		Three Phase 3 Heaters		
	Min.	Max.	Min.	Max.	
2411	.58	.62	.46	.51	1 2
2412	.63	.68	.52	.56	
2413	.69	.78	.57	.62	
2414	.79	.88	.63	.70	
2415	.89	.98	.71	.77	
2416	.98	1.07	.78	.85	
2417	1.08	1.21	.86	.96	
2418	1.22	1.29	.97	1.02	
2419	1.30	1.41	1.03	1.12	
2420	1.42	1.49	1.13	1.18	
2421	1.50	1.68	1.19	1.33	
2422	1.69	1.91	1.34	1.51	
2423	1.92	2.15	1.52	1.70	
2424	2.16	2.49	1.71	1.97	
2425	2.50	2.71	1.98	2.15	
2426	2.72	2.99	2.16	2.37	
2427	3.00	3.37	2.38	2.67	
2429	3.38	3.67	2.68	2.89	
2430	3.68	4.09	2.90	3.24	
2431	4.10	4.53	3.25	3.51	
2432	4.54	4.92	3.52	3.90	
2433	4.93	5.30	3.91	4.25	
2434	5.31	6.14	4.26	4.87	
2435	6.15	6.89	4.88	5.48	
2436	6.90	7.64	5.49	6.05	
2437	7.65	8.19	6.06	6.50	
2438	8.20	9.29	6.51	7.38	
2439	9.30	10.1	7.39	8.07	
2441	10.2	10.7	8.08	8.55	
2442	10.8	11.7	8.56	9.34	
2443	11.8	12.6	9.35	10.0	
2444	12.7	14.0	10.1	11.1	
2445	14.1	16.2	11.2	12.8	
2446	16.3	18.0	12.9	14.3	
2447	18.1	20.7	14.4	16.4	
2448	20.8	23.3	16.5	18.5	
2450	23.4	25.4	18.6	20.0	
2451	25.4	27.9	20.1	22.1	
2452	28.0	32.9	22.2	26.1	
2453	33.0	35.9	26.2	28.4	
2454	36.0	40.6	28.5	30.0	
2453	33.0	35.9	-	-	
2454	36.0	40.6	28.5	32.2	
2455	40.7	45.5	32.3	36.1	
2456	45.6	52.3	36.2	41.4	
2457	52.4	58.0	41.5	47.9	
2459	-	-	48.0	50.0	



Bulletin 7324 Type TM Bimetallic Overload Relay 30 & 50 Ampere, Panel Mounting



O/L With N.C. Contact



O/L With N.C. And N.O. Contacts

Overload Relay Contact Ratings-Type TM

NEMA Size	Contact	Volts, AC	Continuous Amperes	A-C Inductive (0.35pf) Make	A-C Inductive (0.35pf) Break
00-6	N.C.	120V or less 120-600 V	2.5	15A	1.5A
	N.O.	120V or less 120-600V		3A	.3A
				360 VA	36 VA

Overload Heater Data

NEMA Controls - TM

Type of Protection

Heaters selected directly from the table provide a maximum of 125% protection at 40°C degree ambient, is suitable for motors with a 1.15 service factor with a 40°C degree rise or less and with motor and controller at the same temperature. For motors with a 1.0 service factor or with a temperature rise greater than 40°C degree without service factor rating, use one size smaller heaters than in table. The ultimate trip of the heater is approximately 125% of the minimum current shown in the tables in a 40°C degree ambient.

Ambient Correction

Not necessary when overload relay is ambient compensated as identified by green reset rod. For control at an ambient constantly less than the motor ambient, correct by decreasing the nameplate motor full-load current by 1% per °C degree difference in ambient. For control at an ambient constantly greater than the motor ambient, correct by increasing the nameplate motor full-load current by 1% per °C degree difference in ambient.

Automatic Reset

Automatic reset operation should not be used with two-wire control.

Heater Selection

Select heaters based on motor nameplate full-load current. Tables are for continuous rated motors. Full-load current for a given horsepower motor will vary from one manufacturer to another and will depend on RPM of motor.

Single Phase - Size 00, 0, 1, 1P, 2 \$18.00 List each				
Motor Ampere Rating - Type TM, HP				
Open Starter Bimetallic Relay		Heater Catalog Number	Enclosed Starter Non-Ambient and Open or Enclosed Starters Ambient Compensated Relay	
Min.	Max.		Min.	Max.
.55	.59	2411	.53	.57
.60	.65	2412	.58	.63
.66	.69	2413	.64	.67
.70	.77	2414	.68	.75
.78	.84	2415	.76	.82
.85	.96	2416	.83	.93
.97	1.06	2417	.94	1.03
1.07	1.14	2418	1.04	1.11
1.15	1.29	2419	1.12	1.25
1.30	1.37	2420	1.26	1.33
1.38	1.47	2421	1.34	1.43
1.48	1.68	2422	1.44	1.63
1.69	1.93	2423	1.64	1.87
1.94	2.17	2424	1.88	2.11
2.18	2.38	2425	2.12	2.31
2.39	2.63	2426	2.32	2.55
2.64	2.96	2427	2.56	2.87
2.97	3.20	2429	2.88	3.11
3.21	3.57	2430	3.12	3.47
3.58	3.90	2431	3.48	3.79
3.91	4.27	2432	3.80	4.15
4.28	4.52	2433	4.16	4.39
4.53	5.10	2434	4.40	4.95
5.11	5.50	2435	4.96	5.34
5.51	5.92	2436	5.35	5.75
5.93	6.58	2437	5.76	6.39
6.59	7.24	2438	6.40	7.03
7.25	8.23	2439	7.04	7.99
8.24	9.05	2441	8.00	8.79
9.06	10.00	2442	8.80	9.75
10.10	10.60	2443	9.76	10.3
10.70	12.30	2444	10.4	11.9
12.40	13.40	2445	12.0	13.0
13.50	14.70	2446	13.1	14.3
14.80	16.80	2447	14.4	16.3
16.90	19.30	2448	16.4	18.7
19.40	21.10	2450	18.8	20.5
21.20	24.20	2451	20.6	23.5
24.30	25.90	2452	23.6	25.0
26.00	28.50	2453	25.0	27.1
28.60	33.80	2454	27.2	31.9
33.90	37.90	2455	23.0	35.9
38.00	40.00	2456	36.0	38.9
		2457	39.0	40.0

Three Phase - Size 00, 0, 1, 1P, 2 \$18.00 List each				
Motor Ampere Rating - Type TM, HP				
Open Starter Bimetallic Relay	Heater Catalog Number	Enclosed Starter Non-Ambient and Open or Enclosed Starters Ambient Compensated Relay		
		Min. Max.		
.44	.48	2411	.42	.46
.49	.54	2412	.47	.51
.55	.59	2413	.52	.56
.60	.67	2414	.57	.64
.68	.73	2415	.65	.70
.74	.81	2416	.71	.77
.82	.91	2417	.78	.87
.92	.98	2418	.88	.93
.99	1.07	2419	.94	1.02
1.08	1.16	2420	1.03	1.10
1.17	1.27	2421	1.11	1.21
1.28	1.44	2422	1.22	1.37
1.45	1.63	2423	1.38	1.55
1.64	1.88	2424	1.56	1.79
1.89	2.05	2425	1.80	1.95
2.06	2.26	2426	1.96	2.15
2.27	2.55	2427	2.16	2.43
2.56	2.76	2429	2.44	2.63
2.77	3.10	2430	2.64	2.95
3.11	3.35	2431	2.96	3.19
3.36	3.75	2432	3.20	3.55
3.76	4.06	2433	3.56	3.87
4.07	4.64	2434	3.88	4.43
4.65	5.23	2435	4.44	4.99
5.24	5.79	2436	5.00	5.51
5.80	6.20	2437	5.52	5.91
6.21	6.96	2438	5.92	6.71
6.97	7.71	2439	6.72	7.35
7.72	8.15	2441	7.36	7.75
8.16	8.79	2442	7.76	8.47
8.80	9.65	2443	8.48	9.19
9.66	10.6	2444	9.20	10.1
10.7	12.2	2445	10.2	11.6
12.3	13.7	2446	11.7	13.0
13.8	15.7	2447	13.1	14.9
15.8	17.6	2448	15.0	16.8
17.7	19.1	2450	16.9	18.2
19.2	20.9	2451	18.3	19.9
21.0	24.3	2452	20.0	23.1
24.4	26.0	2453	23.2	24.7
26.1	29.3	2454	24.8	27.9
29.4	31.4	2455	28.0	29.9
31.5	34.8	2456	30.0	33.1
34.9	40.1	2457	33.2	38.3
40.2	43.6	2459	38.4	41.5
43.7	45.0	2460	41.6	45.0

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Three Phase Starter Overload Relay Heater
Table - Type TM - Sizes 3 & 4

Motor Ampere Rating		\$18.00 List Each		
Open Starter Bimetallic Relay	Heater Catalog Number		Enclosed Starter Non-Ambient and Open or Enclosed Starters Ambient Compensated Relay	
	Min.	Max.	Min.	Max.
7.5	8.2	2514	7.4	7.9
8.3	10.1	2515	8.0	9.9
10.2	10.8	2516	10.0	10.5
10.9	12.1	2517	10.6	11.9
12.2	13.7	2518	12.0	13.5
13.8	17.0	2519	13.6	16.7
17.1	19.2	2520	16.8	18.8
19.3	20.8	2521	18.9	20.3
20.8	23.2	2522	20.4	22.7
23.3	25.2	2523	22.8	24.7
25.3	29.1	2524	24.8	28.5
29.2	32.3	2525	28.6	31.6
32.4	36.0	2526	31.7	35.2
36.1	39.9	2527	35.3	39.1
40.0	43.4	2528	39.2	42.3
43.5	47.6	2529	42.4	46.4
47.7	52.4	2530	46.5	50.8
52.5	59.2	2531	50.9	57.3
59.3	66.0	2532	57.4	63.7
66.1	73.3	2533	63.8	70.7
73.4	80.4	2534	70.8	77.3
80.5	87.9	2535	77.4	83.1
88.0	95.0	2536	83.2	90.9
95.1	102.7	2537	91.0	97.6
102.8	111.9	2538	97.7	106.0
112.0	122.9	2539	106.1	115.4
123.0	133.9	2540	115.5	123.9
134.0	135.0	2541	124.0	135.0

The full load currents listed below are "average values" for motors of several manufacturers. These "average values" are as listed in the National Electrical Code 1996 and must only be used as a guide for selecting suitable branch circuit components.

The rated full load current shown on the motor nameplate is likely to vary from the values listed below .
The NAMEPLATE full load current should always be used in determining the rating of devices.

When using a design "E" Motor Special considerations apply refer to NEC 1996 tables 430 -151 A & B & 430-152, page 70-453/454.



FULL-LOAD MOTOR-RUNNING CURRENTS IN AMPERES
CORRESPONDING TO VARIOUS A.C. HORSEPOWER RATINGS

Phase	115 Volts		230 Volts ^{1,2}		380 Volts		460 Volts		575 Volts		2.3 KV	4.16 KV
	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Three Phase	Three H.P.
1/10	--	--	--	--	--	--	--	--	--	--	--	--
1/8	--	--	--	--	--	--	--	--	--	--	--	--
1/6	4.4	--	2.2	--	1.40	--	--	--	--	--	--	--
1/4	5.8	--	2.9	--	1.85	--	--	--	--	--	--	--
1/3	7.2	--	3.6	--	2.32	--	--	--	--	--	--	--
1/2	9.8	4.4	4.9	2.2	3.19	1.28	2.5	1.1	2.0	0.9	--	--
3/4	13.8	6.4	6.9	3.2	4.47	1.78	3.5	1.6	2.8	1.3	--	--
1	16.0	8.4	8.0	4.2	5.12	2.30	4.0	2.1	3.2	1.7	--	--
1.5	20.0	12.0	10.0	6.0	6.38	3.32	5.0	3.0	4.0	2.4	--	--
2	24.0	13.6	12.0	6.8	7.66	4.34	6.0	3.4	4.8	2.7	--	--
3	34.0	--	17.0	9.6	10.87	6.14	8.5	4.8	6.8	3.9	--	--
5	56.0	--	28.0	15.2	17.90	9.71	14.0	7.6	11.2	6.1	--	--
7.5	80.0	--	40.0	22.0	26.80	14.00	21.0	11.0	16.0	9.0	--	--
10	100.0	--	50.0	28.0	33.20	17.90	26.0	14.0	20.0	11.0	--	--
15	--	--	--	42.0	--	26.80	34.0	21.0	27.0	17.0	--	--
20	--	--	--	54.0	--	34.50	44.0	27.0	35.0	22.0	--	--
25	--	--	--	68.0	--	43.50	55.0	34.0	44.0	27.0	--	--
30	--	--	--	80.0	--	51.20	68.0	40.0	54.0	32.0	--	--
40	--	--	--	104.0	--	66.50	88.0	52.0	70.0	41.0	--	--
50	--	--	--	130.0	--	83.10	108.0	65.0	86.0	52.0	--	--
60	--	--	--	154.0	--	103.0	--	77.0	--	62.0	16.	9.
75	--	--	--	192.0	--	128.0	--	96.0	--	77.0	20.	11.
100	--	--	--	248.0	--	165.0	--	124.0	--	99.0	26.	14.3
125	--	--	--	312.0	--	208.0	--	156.0	--	125.0	31.	17.
150	--	--	--	360.0	--	240.0	--	180.0	--	144.0	37.	20.
200	--	--	--	480.0	--	320.0	--	240.0	--	192.0	49.	27.
250	--	--	--	--	--	403.0	--	302.0	--	242.0	60.	33.
300	--	--	--	--	--	482.0	--	361.0	--	289.0	72.	40.
350	--	--	--	--	--	560.0	--	414.0	--	336.0	83.	46.
400	--	--	--	--	--	636.0	--	477.0	--	382.0	95.	52.
500	--	--	--	--	--	786.0	--	590.0	--	472.0	118.	65.

NOTES:

1. To obtain F.L.C. for 200 and 208 Volt motors multiply 230 volts values by 1.15 and 1.10 respectively.
2. To obtain F.L.C. for 265 and 277 Volt motors multiply 230 Volt values by .87 and .83 respectively.

Modifications

Cover Controls

	For Bulletin Number	Type Size	Enclosure Type Add to NEMA Type			Change Letter To:	Typical Catalog Number
			1	4	12		
Overload Reset Change from External to Internal	All Except 6031/7707	00-6	N/C	N/C	N/C	O	T18AA31603-46
Push Buttons & Selector Switches With External Reset: Hand-Off-Auto Selector Switch Start-Stop Push Button	6013, 6018, 6020, 7707	00-6	\$ 96.	\$264.	\$264.	B C	
With Internal Reset: Hand-Off-Auto Selector Switch Start-Stop Push Button						E F	
With External or Internal Reset: 2 or 3-Position Selector Switch-SPDT Forward-Reverse-Stop Push Buttons	All 6030-31, 6038-40,	00-6	96. 480.	264. 480.	264. 480.	B C	
High-Low-Stop or Fast-Slow-Stop Push Buttons	6050-58, 6060		480.	480.	480.	C	
Pilot Lights Without Electrical Interlock: Standard Transformer Type, Red Lens Push-to-Test Transformer Type, Red Lens	All	00-6	180.	180.	180.	11	
With Electrical Interlock: Standard Transformer Type, Red Lens Push-to-Test Transformer Type, Red Lens			180.	180.	180.	12	
Standard Lens Color - Green Blue White Yellow Amber Clear			324. 504.	324. 504.	324. 504.	13 14	
			—	N/C	N/C	11+15	
			—	N/C	N/C	11+16	
Control Circuit							
Contacts Each- Extra N.O. (Contact Max 3 N/O or N/C)	All	00-4	132.	132.	132.	21	
Contacts Each- Extra NC. (Contact Max 3 N/O or N/C)			132.	132.	132.	23	
Mtd. on & operated by disconnect operator: Single Pole, Double Throw Double Pole, Double Throw	6018-20, 6038-40, 6058-60	00-4	180. 264.	180. 264.	180. 264.	24 25	
Unwired Terminal Block, Use with Stranded Cu Wire, #22- #10 AWG: 3 Wires Maximum 6 Wires Maximum	6018-20, 6038-40, 6058-60	00-6	120.	120.	120.	27	
Fused Control Circuit-2 Fuses Included			162.	162.	162.	28	
Separate Control Circuit	All		264.	264.	264.	29	
			N/C	N/C	N/C	30	

Auxiliary Relays	Type	Type Size	Enclosure Type:			Change Letter To:	Typical Catalog Number
			1	4	12		
Control Relay-4 Pole Maximum Timing Relay (Pneumatic)	All	00-6	\$612. 1008.	\$930. 1320.	\$652. 1008.	31 32	T18AA31603-46
Compelling Relay			792.	792.	792.	33	
Auto. Acceleration Relay for each higher speed	1848.	1848.	1848.	34			
Auto. Decelerating Relay for each higher speed	1848.	1848.	1848.	36			
Brake Relay	1176.	1176.	1176.	37			

Enclosure	For Bulletin Number	Encl. Type	Add to NEMA Size						Change Cat. No. Character Indicated To:	Typical Catalog Number	
			0	1	2	3	4	5&6			
Door Gasketing Standard & Compact Extra-Wide	6018-20 6018-20	All	120. 216.	120. 216.	192. 312.	264. 264.	456. 456.	792. 792.	38 39	T18AA31603-46 39	
All Enclosures	6038-40 6058-60		216.	216.	312.	264.	456.	396.	40		
Engraved Identification Plate	All	1,4,12	80.	80.	80.	80.	80.	80.			
Overload Relay											
Ambient Compensated Overload (Per Relay):	All Except 6031&7707	All	24.	24.	24.	24.	24.	24.	41	T18AA31603-46 39	
(SPDT) N.O. & N.C. Contacts (Per Relay) Alarm Contact	All Except 6031&7707	All 1,4,12	48.	48.	48.	48.	48.	48.	43		
Omit Overload Relay (Per Relay) () Deduct This \$ Amount	All Except 6031&7707	All 1,4,12	(96.)	(96.)	(144.)	(180.)	(276.)	(1444.)	44		
Power Circuit											
TECL Current Limiter Attachment for TEC Motor Circuit Protectors, 100,00 AIC Max.	6020-40, 6060	1,4,12	360.	360.	360.	960.	1950.	N/A	45	T18AA31603-46 39	
Class J Fuse Clips, In place of Class H	6018-38		N/C	N/C	N/C	N/C	N/C	N/C	9		
Class R Fuse Clips, In place of Class H	6058		N/C	N/C	N/C	N/C	N/C	N/C			
Control transformer¹											
Description											
Standard Capacity Primary Volts/Hertz: 220-240/60, or 220/50 440-480/60, or 440/50 550-600/60, or 550/50	All	1,4,12	324.	324.	456.	672.	816.	924.	-T26 -T46 -T56	T18AA31603-T46	
200-208/60 380/50			372.	372.	612.	876.	1116.	1284.	-T86 -T35		
220/25 ² 440/25 ²			492.	492.	684.	1008.	1224.	1224.	-T22 -T42		
100 Watts Extra Primary Volts/Hertz: 220-240/60, or 220/50 440/480/60, or 440/50 550-600/60, or 550/50 200-208/60 280/50			576.	576.	744.	936.	1056.	1176.	-C26 -C46 -C56 -C86 -C35		
220/25 ² 440/25 ²			864.	864.	1116.	1404.	1584.	1764.	-C22 -C42		
Fused Primary (Includes 2 Fuses)			112.	112.	112.	112.	112.	112.	47		
Ungrounded Secondary with 2 Dual Element Fuses			N/C	N/C	N/C	N/C	N/C	N/C	48		
Special Voltage on Transformer (Not Std.) Dual Voltage Secondary			Add 10% to Price of Transformer								49

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Notes:

- UL Listed for field modification. Other modifications listed factory installed.
- 1. Single or Dual (200-240 & 440-480) Voltage primary with 110-120V secondary. Standard primary voltages are 110-120, 200-205, 220-240, 277, 380, 440-480 and 550-600. Prices included 1 panel-mounted, dual-element secondary fuse, with other side of secondary connected to cabinet ground.
- 2. Price includes extra-wide enclosure when used with any Bulletin 6018-20 starter.

Factory Installed Modifications For Reduced Voltage Starters

Special Enclosure		NEMA Size			Cat. Suffix #
		3	4	5	
Add to NEMA 1 Enclosed Starter for: (Note back & bottom cover plates are required for sizes 5 & 6.)	NEMA 4 Enclosure	\$3720.	\$6840.	\$6840.	61
	NEMA 12 Enclosure	2280.	2880.	3240.	62
Disconnect Devices					
Add to NEMA 1 Enclosed Starter for: Non-Fusible Disconnect Switch Combination	NEMA 1 Enclosure	1824.	2520.	4512.	63
	NEMA 4 Enclosure	6856.	11328.	13320.	64
	NEMA 12 Enclosure	2136.	5736.	8232.	65
Add to NEMA 1 Enclosed Starter for: Fusible Disconnect Switch Combination	100A Clips	1968.	—	—	66
	NEMA 1 200A Clips	2448.	3048	—	67
	Encl. 400A Clips	3384.	4344.	4944.	68
	600A Clips	—	5676.	6636.	69
	100A Clips	6600.	—	—	70
	NEMA 4 200A Clips	7080.	11856.	—	71
	Encl. 400A Clips	8016.	13152.	13752.	72
	600A Clips	—	14484.	15444.	73
	100A Clips	4416.	—	—	74
	NEMA 12 200A Clips	4896.	6244.	—	75
	Encl. 400A Clips	5832.	7560.	8664.	77
	600A Clips	—	8892.	10356.	78
Add to NEMA 1 Enclosed Starter for : Molded Case Circuit Breaker or MCP Combination	NEMA 1 Enclosure	2244.	4104.	7980.	79
	NEMA 4 Enclosure	6876.	12912.	16788.	80
	NEMA 12 Enclosure	4692.	7324.	11700.	81
Auxiliary Devices					
Control Relay (4 pole max.)	NEMA 1 & 12 Encl.	612.	612.	612.	82
	NEMA 4 Enclosure	936.	936.	936.	83
Pneumatic Timing Relay (3 min. max.)	NEMA 1 & 12 Encl.	1008.	1008.	1008.	84
	NEMA 4 Encl.	1320.	1320.	1320.	85
3 Phase Voltage Monitor Relay (Phase loss, Phase reversal, & Undervoltage)	NEMA 1,4, & 12 Encl.	1152.	1152.	1152.	87
Ammeter & 1-Current Transformer		1680.	2376.	2376.	88
Ammeter, Switch & 3-Current Transformer		4440.	4440.	4440.	89
Voltmeter		2376.	2376.	2376.	90
Voltmeter & Switch	NEMA 1,4 & 12 Encl.	3600.	3600.	3600.	91
Elapsed Time Meter		696.	696.	696.	92
Wattmeter		4864.	4864.	4864.	93
Watt-hour meter		5040.	5040.	5040.	94
Convenience Receptacle Mounted on Side		240.	240.	240.	95
Cylinder Lock on Door		600.	600.	600.	96
Space Heater with N.C. Auxiliary	NEMA 1,4 & 12 Encl.	924.	1488.	2208.	97

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Modification Kits

Cover Control										
Description		For Bulletin Number	Mounting Location	For Enclosure Type	For NEMA Size	Kit Number	Series A	Price		
Push Buttons (Momentary)	Start-Stop	6013 & 7707	Case	1, 4 & 12	00-2	KTM-4		\$ 60.		
			Cover		00-2 3 & 4	KTM-3 ³ KTM4-38		60. 96.		
		6018-20	Flange		1 ¹	0-2 3 & 4	KTM-5 KTM-45	KTM5-1	60. 96.	
	Forward-Reverse-Stop	6030-31	Cover	1, 4 & 12	00-2 3 & 4	KTM-18 ³ KTM4-51	KTM5-2	300. 360.		
			6038-40	Flange	1 ¹	0-2 3 & 4	KTM-54 KTM4-47	KTM5-2	300. 360.	
		Hand-Off-Auto	6013 & 7707	Cover	1, 4 & 12	00-2 3 & 4	KTM-7 ³ KTM4-40		60. 96.	
Selector Switches (Maintained) ²	Hand-Off-Auto	6030-31-50	Case	1	00-2	KTM-8		60.		
		6018-20-38, 6040-58-60	Flange	1 ¹	0-2 3 & 4	KTM-9 KTM4-43	KTM5-3	60. 96.		
Pilot Lights (Include Red Lens)	120V 240V 480V 600V	6013-30, 6031-50, 7707	Cover	1, 4 & 12	00-2		KTM5-4 KTM5-5 KTM5-6 KTM5-7	132.		
								132.		
								132.		
								132.		
	120V 240V 480V 600V	6018-20, 6038-40, 6058-60	Flange	1 ¹	0-2		KTM5-4 KTM5-5 KTM5-6	180.		
								180.		
								180.		
								180.		
120V 240V 480V	6013-30, 6031-50, 7707	Cover	1, 4 & 12	3 & 4		KTM5-4 KTM5-5 KTM5-6 KTM5-7	180.			
							180.			
							180.			
							180.			
120V 240V 480V	6018-20, 6038-40, 6058-60	Flange	1 ¹	3 & 4		KTM5-4 KTM5-5 KTM5-6	180.			
							180.			
							180.			
							180.			
Reset Buttons (One Reset Per Kit)	External Reset for NEMA Type 1, 4 & 12 Enclosed Standard Starters	6013-30, 6050 (2 Req)	Cover	1, 4 & 12	00-2	KTM32-7		18.		
		6018-20-38-40, 6058-60 (2 Req)						0-2	KTM32-19	24.
		6013-30, 6050 (2 Req)						3 & 4	KTM34-8 KTM34-19	24.
		6018-20-38-40, 6058-60 (2 Req)								24.
External Reset for #ETM032-1 & ETM031-1 NEMA Type 3R Enclosure	6013		3R	00-2	KTM34-20		48.			
External Reset - For use with Joslyn Clark panel mounted overload kits in NEMA 1, 4 & 12 Enclosures. Dimensions from outside surface of enclosure cover to device mounting surface must fall in the range:										
Starter Size 00, 0 & 1	5 7/8" -- 7 1/8"	All	Cover	1, 4 & 12	00-2	KTM32-8		36.		
Starter Size 1P & 2	6" -- 7 1/4"									
Panel Mtd. Overload	5 9/16" -- 6 13/16"									
Reset Plug - Pack of 10					00-4	KTM-26		48.		

Notes:

- For Bulletins 6018, 6020, 6038, 6040, 6058, & 6060, NEMA 4 & 12 enclosed, use 30 mm. units.
- Kits may be changed in the field from 3-position to 2-position operation. In addition to HAND-OFF-AUTO, four labels are included, marked: FORWARD-OFF-REVERSE; HIGH-OFF-LOW; TEST-LAG-HEAD; ON-OFF.
- Not suitable for enclosed starters with transformer.

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Enclosure Kits ¹

For Use With Bulletin No. of Open Type Devices	NEMA Size	NEMA Type 1 (General Purpose)		NEMA Type 4 Stainless Steel (Watertight - Dusttight)		NEMA Type 12 Industrial Dusttight	
		Kit Number	Price	Kit Number	Price	Kit Number	Price
6013 & 7707	00-2	ETM012-1 ²	\$ 120.	ETM042-1 ²	\$ 540.	ETM122-1 ²	\$ 168.
		ETM012-2	192.	ETM042-2	930.	ETM122-2	384.
6030, 6031, & 6050	3 & 4	ETM014-1	240.	ETM044-1	1110.	ETM124-1	552.
	00-2	ETM012-2 ²	192.	ETM042-2 ²	930.	ETM122-2 ²	384.
	3 & 4	ETM012-3	312.	-----	----	-----	----
		ETM014-2	336.	ETM044-2	1830.	ETM124-2	1128.
		NEMA Type 3R (Rainproof-Sleet Resistance)					
6013-7707	00-1	ETM031-1 ^{2 & 3}	168.				
6013-7707	2	ETM032-1 ^{2 & 3}	168.				

Transformer Mounting Plate

Bulletin No. of Open Type Devices	NEMA Size	Use with Enclosure Kit No.	Kit Numbers		Price	Bulletin No. of Open Type Devices	NEMA Size	Use with Enclosure Kit No.	Kit Numbers		Price
			Kit Numbers	Price					Kit Numbers	Price	
6013 & 7707	00-2	ETM012-2	KTM-28	\$ 24.		7707-PM	20A	ETM012-3	KTM-80	\$ 24.	
	3 & 4	ETM014-1	KTM4-54	30.	6030-31 & 6050	00-2	3 & 4		ETM014-2	KTM-29	24.
		ETM044-1						ETM044-2	KTM4-55	60.	
		ETM124-1						ETM124-2			

Control Circuit Kits

	Bulletin No.	NEMA Size	Kit Number	Price
Auxiliary contacts for cavity mounting in starter and contactors. One Normally Open, Convertible	All	00-4	KTM-10	\$ 60.
		TM 5	KTM35-10	60.
		U5	KUM35-10	48.
One Normally Closed, Convertible	All	00-4	KTM-11	60.
		TM 5	KTM35-11	60.
		U5	KUM35-11	48.
For side mounting on starters and contactors Two Normally Open, Non-Convertible	All	00-2	KTM-20	120.
		3-4	KTM-19	120.

Transformer Kits: Complete J Fused primary a midget single fused 120V secondary ⁴

	VA Capacity	Primary Voltage	Hertz	Bulletin No.	NEMA Size	Kit Number	Price	
Note: Can be used in NEMA 1, 4 & 12 enclosures that have available space. See enclosure kits to determine those with available space.	Standard Capacity - 50	208	50/60	All (See Note at Left)	00-2 ⁵	KTR67-16	\$ 216.	
		240 & 480				KTR67-2	216.	
		600				KTR67-12	216.	
	100VA Extra Capacity - 150	208				KTR67-20	264.	
		240 & 480				KTR67-5	264.	
		600				KTR67-22	264.	
	Standard Capacity - 250	208				3 & 4	KTR67-23	342.
		240 & 480					KTR67-7	342.
		600					KTR67-25	342.

Accessories

	Bulletin No.	NEMA Size	Kit Number	Price
Fuse Block, 2 Pole, 30 Amp., 250V, Class H, with two 1/2 Amp. Dual Element Fuses.	6018-20-38, 6040-58-60	0-2	KTM2-1	72.
Universal Starter Adaptor Kit. NEMA Size 1 Type TM starter with an assortment of heaters, auxiliary contacts, and coils and A60-300999 adaptor plate. For rush and emergency repairs; can replace most NEMA Size 00-1 starters	All	00-1	KTM-USA	1584.

Notes:

1. For use with the listed open type devices. Each kit includes external "Reset" button(s) and "Reset" plug(s), either of which may be installed in the predrilled enclosure cover. All enclosures have sufficient space to allow mounting a transformer or other equipment of similar size, unless otherwise noted.

2. Does not have space for transformer.

3. External "Reset" not included. For external "Reset", add Kit Number KTM32-20.

4. Will not fit standard enclosures.

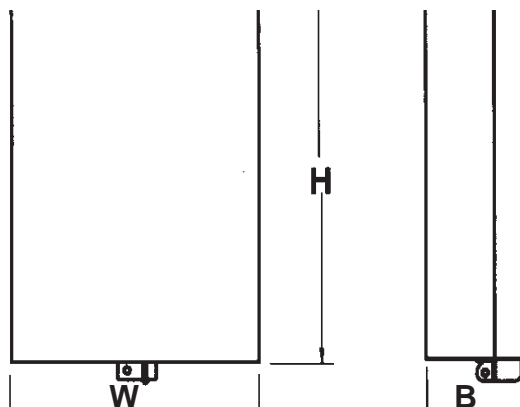
5. Not applicable to NEMA 1 - Bulletin 6018, 6038 & 6058

Power Circuit

Fuse Clips - Kit includes 6 clips and mounting screws, without base for lower clips.			Bulletin No.	NEMA Size	Kit No.	Kit No.	Price
	Fuse Class	Switch Amp. Size			<i>If unit was purchased after 1/1/98</i>	<i>If unit was purchased before 1/1/98</i>	
30 amp. 250 volt (incl. 3 adaptor plates)	H	30 & 60	6018-38-58	0-2	KTMF-332*	KTMF-332	\$ 48.
30 amp. 600 volt & 60 amp. 250 volt	H & J				KTMF-336*	KTMF-336	48.
60 amp. 600 volt	H & J			KTMF-366*	KTMF-366	72.	
100 amp. 250 volt & 600 volt	H	60 & 100		2&3	KTMF-312*	KTMF-312	120.
Fuse Clip Lower Mounting Base - required only when converting a non-fusible starter to fusible or when changing from 60 to 100 amp. 30 & 60 amp. 250 & 600V			6018-38-58	00-2	KTMF-036*	KTMF-036	60.
100 amp. 250 & 600 volt				2&3	KTMF-061*	KTMF-061	96.

* Add series letter from catalog # on the label on the door of Enclosure Series "A", "B" or "C"

	N.O. Type	Bulletin No.	NEMA Size	Kit No.	Price	
Power Pole - Auxiliary pole for side-mounting on starter or contactor.		All	0 & 1	KTM41-1	132.	
			1P & 2	KTM42-1	240.	
			3	KTM43-1	300.	
			4	KTM44-1	900.	
			0 & 1	KTM41-2	132.	
			1P & 2	KTM42-2	240.	
			3	KTM43-2	300.	
			4	KTM44-2	900.	
Tie Pole - Auxiliary 4th & 5th power pole, both N.O. with 3-terminal connection for side-mounting on starter or contactors.		6050-58-60	0 & 1	KTM51-1	264.	
Power Take Off - For multiple sets of overload relays.		All	2	KTM52-1	480.	
			3	KTM53-1	600.	
Power Pole Insulator - Required when a power pole or tie pole is added to a device in a 6 3/4" wide enclosure.		6013 & 7707	4	KTM54-1	1800.	
			00-2	KTM32-6	72.	
			00-2	KTM-27	12.	
Accessories						
Cavity Cover (when auxiliary contact is not used)			All	00-4	A77-300545	N/C
Adapter Plate - Used to enable replacement of competitive starters with type TM.			6013	00-2	A60-300999	18.
Adjusting Knob Wedges - Package of 25. Used in overload adjustment knob to fix trip setting at 100%.			All	00-2	KTM-25	12.
Heater Rack - Designed for stocking heaters for all TM starters. Rack has 25 compartments and will hold 900 of the #2400 series heaters or 600 of the #2500 series heaters or a combination there of.			----	----	KTM-99	390.



Enclosure Dimensions

Figure Number	Overall Dimensions - inches			Enclosure Kit Number
	Height	Width	Depth	
1	10 1/8	6 3/4	6 7/16	ETM012-1
	10 1/8	12 5/8	6 15/32	ETM012-2
	14 1/2	12 5/8	6 1/8	ETM012-3
	22	12	9	ETM014-1
	24 3/8	18 1/2	9	ETM014-2
2	11	7 1/4	6 15/32	ETM042-1
	11	13 1/8	6 15/16	ETM042-2
	22 5/8	12 1/4	9 3/16	ETM044-1
	26 3/8	18 3/4	9 3/16	ETM044-2
	11	7 1/4	6 15/32	ETM122-1
	11	13 1/8	6 15/16	ETM122-2
	22 5/8	12 1/4	9 3/16	ETM124-1
	26 3/8	18 3/4	9 3/16	ETM124-2
	11	7 1/4	6 15/16	ETM031-1
	11	7 1/4	6 15/16	ETM032-1

NEMA 12 Enclosure Dimensions Modified for Outdoor Use

Joslyn Clark NEMA 12 enclosures may be field modified for outdoor use as follows:

NEMA 3

1. Watertight conduit hubs shall be used at all conduit entrances.

NEMA 3R

1. Watertight conduit hubs shall be used at all conduit entrances when the conduit enters at a level higher than the lowest live part.
2. Drain holes of 1/8 inch diameter shall be added to the bottom of the enclosure.

Starter Size	Catalog	Price
0 & 1	KTM042-11	\$ 120.
2	KTM042-12	330.
3	KTM044-13	354.
4	KTM044-14	676.

Hubs for NEMA Type 4 Enclosures

B

Description of Kit	For NEMA Size	Kit Number	Price	
Power Contact Kit, For 3 Pole Type TM Starter Or Contactor (Movable And Stationary Contacts & Springs)	00,0,&1	KTM31-1	\$ 212.	
	1P,2	KTM32-1	345.	
	3	KTM33-1	909.	
	4	KTM34-1	1139.	
	5	KTM35-1	1863.	
Power Contact Kit, For 2 Pole TM5 Starter Or Contactor (Movable And Stationary Contacts & Springs)	5	KTM25-1	1530.	
Power Contact Kit, 1 Pole, For Type TM6 Starter or Contactor (Movable And Stationary Contacts & Springs) (3 Required for 3 Pole Devices)	6	KTM16-1	2298.	
Power Contact Kit, For Type TM Normally Open Auxillary Side-mounted Power Pole on 1 & 2 Pole Starters And Contactors (1 Kit Required Per Pole-Movable And Stationary Contacts & Springs)	0&1	KTM31-2	87.	
	1P &2	KTM32-2	122.	
	3	KTM43-1	345.	
	4	KTM44-1	1035.	
Power Contact Kit, For Normally Closed Type TM Auxillary Side-mounted Power Pole (Movable And Stationary Contacts & Springs)	0,1,1P &2	KTM32-17	104.	
	3	KTM43-2	345.	
	4	KTM44-2	1035.	
Power Contact Kit, For Type TM Auxillary Side-mounted Tie Pole (Movable And Stationary Contacts & Springs)	2 REQD.	0&1	KTM32-17	\$ 97.
	1 REQD.	2	KTM32-18	221.
	2 REQD.	3	KTM53-1	690.
	2 REQD.	4	KTM54-1	2070.
Arc Shield Cover Kit (1 Required Per Power Pole) TM6	6	A77-434905A	863.	
Replacement Overload Relay, Standard Bimetallic, Less Heaters, For Single Phase Type TM Starter. Non Ambient Compensated	00,0,1&1P	KTM31-14	62.	
Replacement Overload Relay, Non Ambient Compensated, Less Heaters, For 2 or 3 Phase Type TM Starter	00,0,1 &1P	KTM31-15	124.	
	2	KTM32-15	179.	
	3	KTM33-15	235.	
	4	KTM34-15	373.	
	5&611	KTM35-13	152.	
Replacement Overload Relay, Ambient Compensated, Less Heaters, For 2 or 3 Phase Type TM Starter	00,0 &1	KTMA31-15	152.	
	1P &2	KTMA32-15	207.	
	3	KTMA33-15	262.	
	4	KTMA34-15	400.	
	5 &611	KTMA35-13	179.	
Replacement Current Transformer Assembly, For Use with KTM35-13 & KTMA35-13 Kits	5	A60-306547	1564.	
Power Contact Kit, 3 Pole Type "U" Size 5 Starter or Contactor (Movable & Stationary Contacts & Springs)	5	KUM35-1	2330.	
For Replacement Parts For Size 6 Vacuum Contactors, refer to Section A	6	_____	_____	

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Coil Part Numbers For Volts/Hertz									
NEMA Size	Poles	110-120	200-208	220-240	277	380	440-480	550-600	Price
00-2	2-4	TB159-1	TB159-10	TB159-2	TB159-13	TB159-11	TB159-3	TB159-4	\$ 124.
3	2-4	TB162-7	TB162-14	TB162-8	TB162-13	TB162-15	TB162-9	TB162-10	207.
4	2-4	TB162-1	TB162-16	TB162-2	TB162-18	TB162-17	TB162-3	TB162-4	248.
5 T Series	2-3	TB161-1	TB161-5	TB161-2	TB161-12	TB161-10	TB161-3	TB161-4	483.
6' T Series	2-3	TB163-1	TB163-5	TB163-2	TB163-7	TB163-6	TB163-3	TB163-4	476.
5 U Series	2-3	335L1	_____	335L2	_____	_____	335L3	335L4	225.
6 V Series	Refer to Section A								

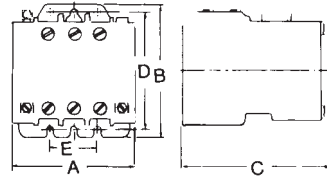
NEMA Open Type, Type 1, 4 & 12

Open Type		Dimensions - inches				
NEMA Size	Poles	Wide	High	Deep	Mounting	
		A	B	C	D	E
00	3	3 7/8	4 1/4	4 5/8	3 3/4	1 1/2
0-1	1-3	3 7/8	4 1/4	4 5/8	3 3/4	1 1/2
0-1	4	4 7/8	4 1/4	4 13/16	3 3/4	1 1/2
2	2-3	3 7/8	4 1/4	4 15/16	3 3/4	1 1/2
2	4	4 7/8	4 1/4	4 15/16	3 3/4	1 1/2
3-4	2-3	5 7/16	8 1/8	7 1/16	6 7/8	3 1/2
3-4	4	6 15/16	8 1/8	7 1/16	6 7/8	3 1/2
5	2-3	8 3/4	12 1/4	9 1/2	11 1/2	7
6		See Section A				
Type 1						
00	3	6 3/4	9 1/2	6 1/4	7 3/4	5
0-2	1-4	6 3/4	9 1/2	6 1/4	7 3/4	5
3-4	2-4	12	22	9	19	9
5	2-3	22	49	11 3/8	47 1/2	18
6		See Section A				
Type 1 (with transformer)						
00	3	12 5/8	9 1/2	6 1/4	7 3/4	11
0-2	1-4	12 5/8	10 1/8	6 1/4	9 1/2	11
3-4	2-4	12	22	9	19	9
5	2-3	22	49	11 3/8	47 1/2	18
6		See Section A				
Type 4						
00	3	7 1/4	11	6 7/8	10 1/2	4 ¹
0-1	1-4	7 1/4	11	6 7/8	10 1/2	4 ¹
2	2-4	7 1/4	11	6 7/8	10 1/2	4 ¹
3	2-4	12 1/4	24 5/8	9 3/16	23 1/2	7 ¹
4	2-4	12 1/4	24 5/8	9 3/16	23 1/2	7 ¹
5	2-3	17	49	11 3/8	47 1/2	18
6		See Section A				
Type 4 (with transformer)						
00	3	13 1/8	11	6 7/8	10 1/2	6
0-1	1-4	13 1/8	11	6 7/8	10 1/2	6
2	2-4	13 1/8	11	6 7/8	10 1/2	6
3	2-4	12 1/4	24 5/8	9 3/16	23 1/2	7 ¹
4	2-4	12 1/4	24 5/8	9 3/16	23 1/2	7 ¹
5	2-3	17	49	11 3/8	47 1/2	18
6		See Section A				
Type 12						
00	3	7 1/4	11	6 15/16	10 1/2	4 ¹
0-2	1-4	7 1/4	11	6 15/16	10 1/2	4 ¹
3-4	2-4	12 1/4	24 5/8	9 3/16	23 1/2	7 ¹
5	2-3	22	49	11 3/8	47 1/2	18
6		See Section A				
Type 12 (with transformer)						
00	3	13 1/8	11	6 15/16	10 1/2	6
0-2	1-4	13 1/8	11	6 15/16	10 1/2	6
3-4	2-4	12 1/4	24 5/8	9 3/16	23 1/2	7 ¹
5	2-3	22	49	11 3/8	47 1/2	18
6		See Section A				

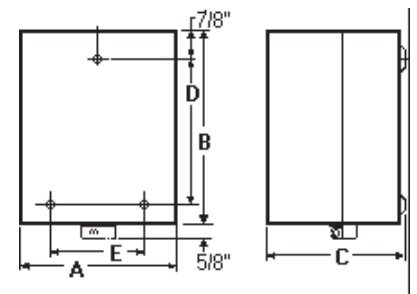
¹One top mtg. keyhole on center line.

Magnetic Contactors

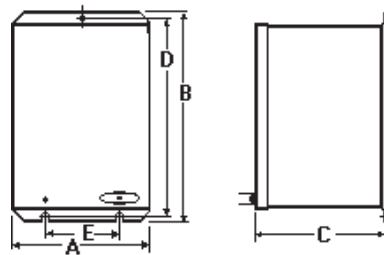
Open Type



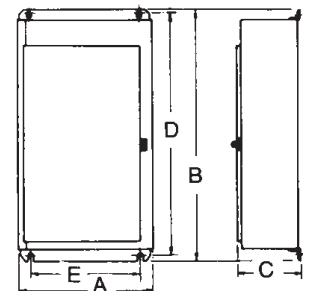
NEMA Type 1



NEMA Type 4



NEMA Type 12



Conduit Hub Size and Location

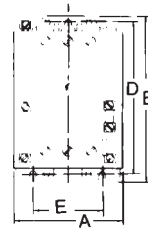
Encl. Size	Top & Bottom	Bottom Only	H	J	K
			00-1	3/4	3/4
2	1 1/2	3/4	3	1 5/8	1 5/8
3	2	3/4	3	2	2
4	2 1/2	3/4	3	2	2
5	3	3/4	5	3	3

B

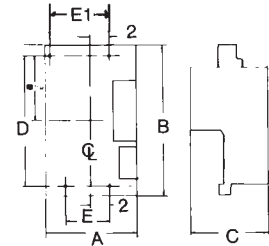
Open Type		Dimensions-inches				
NEMA Size	Poles	Wide	High	Deep	Mounting	
		A	B	C	D	E
00	2-3	3 7/8	6	5 3/16	5 1/2	2 1/2
0-1	1-3	3 7/8	6	5 3/16	5 1/2	2 1/2
0-1	4	4 7/8	6	5 3/16	5 1/2	2 1/2
1P	2	3 7/8	6	5 3/16	5 1/2	2 1/2
2	2-3	3 7/8	6	5 3/16	5 1/2	2 1/2
2	4	4 7/16	6	5 3/16	5 1/2	2 1/2
3-4	3	5 15/16	11	7 1/16	9 3/4	3 1/2
3-4	4	6 7/8	11	7 1/16	9 3/4	3 1/2
5	3	10 1/8	15 7/8	9 5/8	13 1/2	6 3/8
6		See Section A				
Type 1						
00	2-3	6 3/4	9 1/2	6 1/4	7 3/4	5
0-2	2-4	6 3/4	9 1/2	6 1/4	7 3/4	5
1P	2	6 3/4	9 1/2	6 3/4	7	5
3-4	3-4	12	22	9	19	9
5	3	72	49	11 3/8	47 1/2	18
6		See Section A				
Type 1 (with transformer)						
00	2-3	12 5/8	9 1/2	6 1/4	7 3/4	11
0-2	2-4	12 5/8	10 1/8	6 1/4	9 1/2	11
1P	2	12 5/8	10 1/8	6 1/4	9 1/2	11
3-4	3-4	12	22	9	19	9
5	3	22	49	11 3/8	47 1/2	18
6		See Section A				
Type 4						
00	2-3	7 1/4	11	6 7/8	10 1/2	4 1/2
0-1	2-4	7 1/4	11	6 7/8	10 1/2	4 1/2
1P	2	7 1/4	11	6 7/8	10 1/2	4 1/2
2	3-4	7 1/4	11	6 7/8	10 1/2	4 1/2
3	3-4	12 1/4	24 5/8	9 3/16	23 1/2	7 1/2
4	3-4	12 1/4	24 5/8	9 3/16	23 1/2	7
5	3	17	49	11 3/8	47 1/2	18
6		See Section A				
Type 4 (with transformer)						
00	2-3	13 1/8	11	6 5/16	10 1/2	6
0-2	2-4	13 1/8	11	6 5/16	10 1/2	6
1P	2	13 1/8	11	6 5/16	10 1/2	6
2	3-4	13 1/8	11	6 5/16	10 1/2	6 1/2
3	3-4	12 1/4	24 5/8	9 3/16	23 1/2	7 1/2
4	3-4	12 1/4	24 5/8	9 3/16	23 1/2	7
5	3	17	49	11 3/8	47 1/2	18
6		See Section A				
Type 12						
00	2-3	7 1/4	11	6 15/16	10 1/2	4 1/2
0-2	2-4	7 1/4	11	6 15/16	10 1/2	4 1/2
1P	2	7 1/4	11	6 15/16	10 1/2	4 1/2
3-4	3-4	12 1/4	24 5/8	9 3/16	23 1/2	7
5	3	22	49	11 3/8	47 1/2	18
6		See Section A				
Type 12 (with transformer)						
00	2-3	13 1/8	11	6 15/16	10 1/2	6
0-2	2-4	13 1/8	11	6 15/16	10 1/2	6
1P	2	13 1/8	11	6 15/16	10 1/2	6 1/2
3-4	3-4	12 1/4	24 5/8	9 3/16	23 1/2	7
5	3	22	49	11 3/8	47 1/2	18
6		See Section A				

AC Magnetic Starters

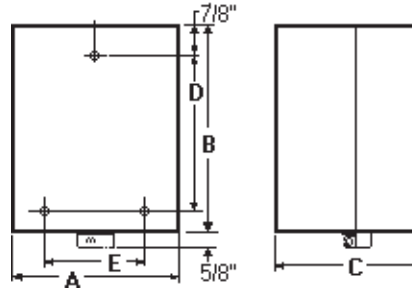
Open Type



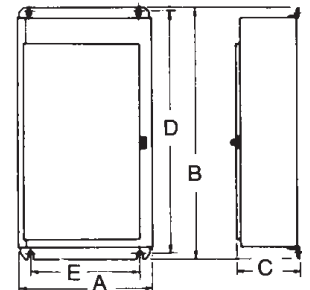
Size 5



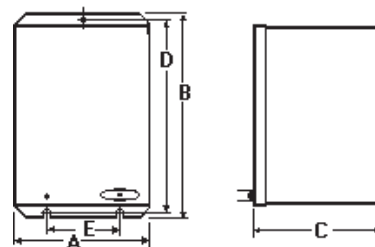
NEMA Type 1 — Sizes 00 to 4



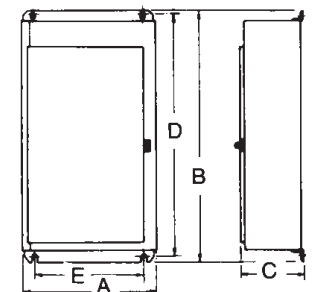
NEMA Type 1 — Size 5



NEMA Type 4



NEMA Type 12



Conduit Hub Size and Location					
Encl. Size	Top & Bottom	Bottom Only	H	J	K
00-1	3/4	3/4	3	1 5/8	1 5/8
2	1 1/2	3/4	3	1 5/8	1 5/8
3	2	3/4	3	2	2
4	2 1/2	3/4	3	2	2
5	3	3/4	5	3	3

Note:

1. One top mtg. keyhole on center line.

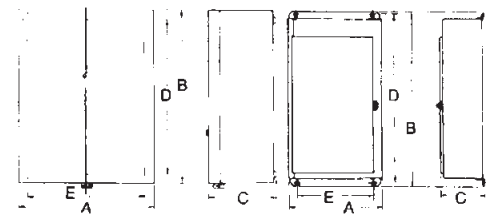
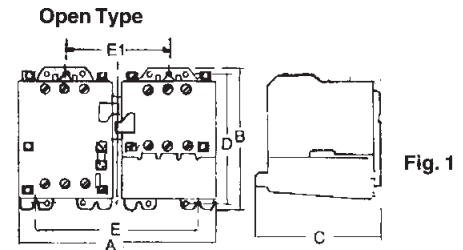
NEMA Open Type, Type 1, 4 & 12

Open Type			Dimensions - inches			Mounting			
NEMA Size	Poles	Fig.	Wide A	High B	Deep C	D	E	E1	
00	3	1	8 ³ / ₁₆	4 ¹ / ₄	4 ³ / ₄	3 ³ / ₄	6 ¹³ / ₁₆	4 ⁵ / ₁₆	
0-1	3		8 ³ / ₁₆	4 ¹ / ₄	4 ³ / ₄	3 ³ / ₄	6 ¹³ / ₁₆	4 ⁵ / ₁₆	
0-1	4		9 ³ / ₁₆	4 ¹ / ₄	4 ³ / ₄	3 ³ / ₄	6 ¹³ / ₁₆	4 ⁵ / ₁₆	
2	3		8 ³ / ₁₆	4 ¹ / ₄	4 ³ / ₄	3 ³ / ₄	6 ¹³ / ₁₆	4 ⁵ / ₁₆	
2	4		9 ³ / ₁₆	4 ¹ / ₄	4 ³ / ₄	3 ³ / ₄	6 ¹³ / ₁₆	4 ⁵ / ₁₆	
3-4	3		11 ⁵ / ₁₆	8 ¹ / ₈	7 ¹ / ₁₆	6 ⁷ / ₈	9 ³ / ₈	5 ⁷ / ₈	
3-4	4		14 ¹⁵ / ₁₆	8 ¹ / ₈	7 ¹ / ₁₆	6 ⁷ / ₈	9 ³ / ₈	5 ⁷ / ₈	
5	3		19 ³ / ₄	16 ¹ / ₄	10 ¹ / ₈	15 ¹ / ₂	17 ¹ / ₁₆		
5	3			Starter Refer Factory					
6	3			See Section A					
Type 1 Contactors and Starters									
00	3		5	12 ⁵ / ₈	9 ¹ / ₂	6 ¹ / ₄	7 ³ / ₄	11	*
0-2	3-4	5	12 ⁵ / ₈	9 ¹ / ₂	6 ¹ / ₄	7 ³ / ₄	11	*	
3-4	3-4	5	18 ¹ / ₂	25 ³ / ₄	9	23	16	16	
5	3	6	22	49	9 ³ / ₈	47 ¹ / ₂	18		
6			See Section A						
Type 1 (with transformer) Contactors and Starters									
00	3	5	12 ⁵ / ₈	13 ⁷ / ₈	6 ¹ / ₄	12 ³ / ₄	11	*	
0-2	3-4	5	12 ⁵ / ₈	13 ⁷ / ₈	6 ¹ / ₄	12 ³ / ₄	11	*	
3-4	3-4	5	18 ¹ / ₂	25 ³ / ₄	9	23 ¹ / ₂	16	16	
5	3	6	22	49	9 ³ / ₈	47 ¹ / ₂	18		
6			See Section A						
Type 4 Contactors and Starters									
00	3	7	13 ¹ / ₈	11	6 ⁷ / ₈	10 ¹ / ₂	6	6	
0-2	3-4		13 ¹ / ₈	11	6 ⁷ / ₈	10 ¹ / ₂	6	6	
3	3-4		18 ³ / ₄	28 ³ / ₈	9 ³ / ₁₆	27 ¹ / ₄	13	13	
4	3-4		18 ³ / ₄	28 ³ / ₈	9 ³ / ₁₆	27 ¹ / ₄	13	13	
5	3		25	37 ¹ / ₂	10 ¹ / ₂	36	11		
6			See Section A						
Type 4 (with transformer) Contactors and Starters									
00	3	8	17	13	6 ⁷ / ₈	9	16	16	
0-2	3-4	8	17	13	6 ⁷ / ₈	9	16	16	
3	3-4	7	18 ³ / ₄	28 ³ / ₈	9 ³ / ₁₆	27 ¹ / ₄	13	13	
4	3-4	7	18 ³ / ₄	28 ³ / ₈	9 ³ / ₁₆	27 ¹ / ₄	13	13	
5	3	7	25	37 ¹ / ₂	10 ¹ / ₂	36	11		
6		See Section A							
Type 12 Contactors and Starters									
00	3	7	13 ¹ / ₈	11	6 ¹⁵ / ₁₆	10 ¹ / ₂	6	6	
0-2	3-4		13 ¹ / ₈	11	6 ¹⁵ / ₁₆	10 ¹ / ₂	6	6	
3-4	3-4		18 ³ / ₄	23 ³ / ₈	9 ³ / ₁₆	27 ¹ / ₂	13	13	
5	3		22	49	11 ³ / ₈	47 ¹ / ₂	18		
6			See Section A						
Type 12 (with transformer) Contactors and Starters									
00	3	8	17	13	6 ⁷ / ₈	9	6	6	
0-2	3-4	8	17	13	6 ⁷ / ₈	9	6	6	
3-4	3-4	7	18 ³ / ₄	28 ³ / ₄	9 ³ / ₁₆	27 ¹ / ₄	13	13	
5	3	7	22	49	11 ³ / ₈	47 ¹ / ₂	18		
6		See Section A							

Note:

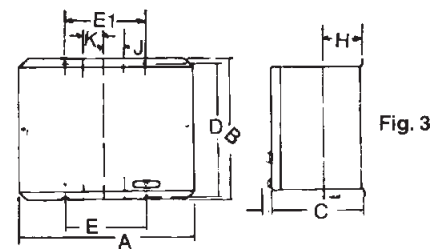
1. One top mtg. keyhole on center line.

Reversing Starters & Contactors



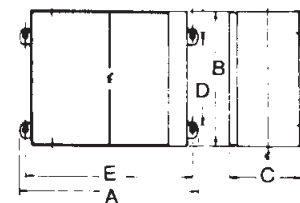
NEMA Type 1

Fig. 2



NEMA Type 4

Fig. 3



Steel Enclosure

NEMA Type 12 — No Hub Provisions

Conduit Hub Size and Location					
Encl. Size	Top & Bottom	Bottom Only	H	J	K
00-1	³ / ₄	³ / ₄	3	1 ⁵ / ₈	1 ⁵ / ₈
2	1 ¹ / ₂	³ / ₄	3	1 ⁵ / ₈	1 ⁵ / ₈
3	2	³ / ₄	3	2	2
4	2 ¹ / ₂	³ / ₄	3	2	2
5	3	³ / ₄	5	3	3

AC Non-Reversing 2 Speed Starters

NEMA Size	Fig.	Dimensions-Inches			Mounting			
		Wide A	High B	Deep C	D	E1	E	F
Open type - 2 Speed, Single Winding								
00-2	1	9 3/16	6	5 5/16	5 1/2	4 5/16	6 3/16	1/4
3-4		13 5/16	11	7 1/16	9 3/4	5 7/8	9 3/8	5/16
Open type - 2 Speed, Double Winding								
00-2	1	8 3/16	6	5 5/16	5 1/2	4 5/16	6 15/16	1/4
3-4		11 5/16	11	7 1/16	9 3/4	5 7/8	9 3/8	5/16
Type 1 - 2 Speed, Single Winding								
00-2	2	12 5/8	9 1/2	6 3/4	7 3/4	4 5/16	6 13/16	1/4
3-4		18 1/2	25 3/4	9	23	5 7/8	9 9/8	5/16
Type 1 - 2 Speed, Single Winding (with transformer)								
00-2	2	12 5/8	13 7/8	6 1/4	12 3/4	1	11	7/8
3-4		18 1/2	25 3/4	9	23	16	16	1 3/8
Type 1 - 2 Speed, Double Winding								
00-2	2	12 5/8	9 1/2	6 1/4	12 3/4	1	11	7/8
3-4		18 1/2	25 3/4	9	23	16	16	1 3/8
Type 1 - 2 Speed, Double Winding (with Transformer)								
00-2	2	12 5/8	13 7/8	6 1/4	12 3/4	1	11	7/8
3-4		18 1/2	25 3/4	9	23	16	16	1 3/8
Type 4 - 2 Speed, Single Winding 3								
00-1	3	13 1/8	11	6 5/16	10 1/2	6	6	1/4
2		13 1/8	11	6 5/16	10 1/2	6	6	1/4
3		18 3/4	28 3/8	9 3/16	27 1/4	13	13	9/16
4		18 3/4	28 3/8	9 3/16	27 1/4	13	13	9/16
Type 4 - 2 Speed, Single Winding (with transformer) 3								
00-1	3	15	13	6 7/8	9	16	16	2
2		15	13	6 7/8	9	16	16	2
3		18 3/4	28 3/8	9 3/8	27 1/4	13	13	9/16
4		18 3/4	28 3/8	9 3/16	27 1/4	13	13	9/16
Type 12 - 2 Speed, Single Winding								
00-2	4	13 1/8	11	6 15/16	10 1/2	6	6	1/4
3-4		18 3/4	28 3/8	9 3/16	27 1/4	13	13	9/16
Type 12 - 2 Speed, Single Winding (with transformer)								
00-2	4	15	13	6 7/8	9	16	16	1/4
3-4		18 3/4	28 3/8	9 3/16	27 1/4	13	13	9/16
Type 12 - 2 Speed, Double Winding								
00-2	4	13 1/8	11	6 15/16	10 1/2	6	6	1/4
3-4		18 3/4	28 3/8	9 3/16	27 1/4	13	13	9/16
Type 12 - 2 Speed, Double Winding (with transformer)								
00-2	4	13 1/8	11	6 5/16	10 1/2	6	6	1/4
3-4		18 3/4	28 3/8	9 3/16	27 1/4	13	13	9/16

Notes:

1. Indicates mounting hole is on the center line of enclosure.
2. For NEMA size 5 refer to factory.
3. NEMA Type 4 includes conduit hubs.

Open Type

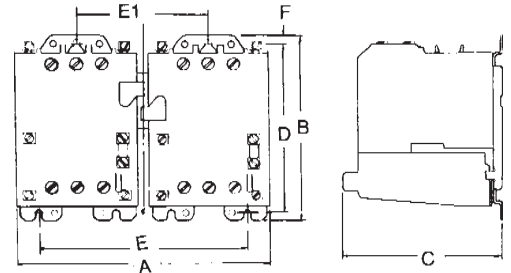


Fig. 1

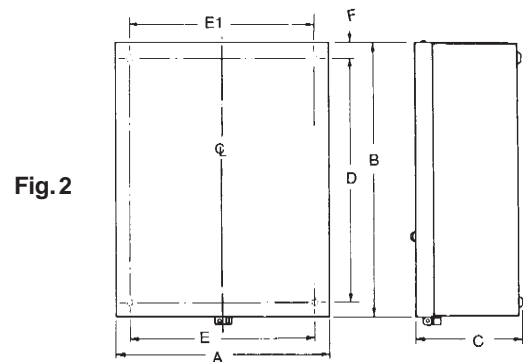
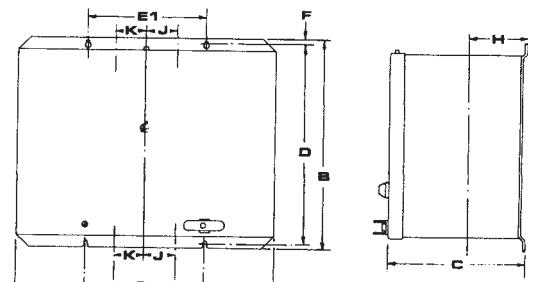
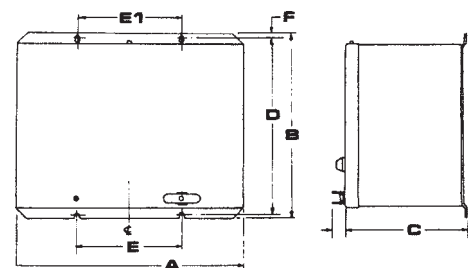


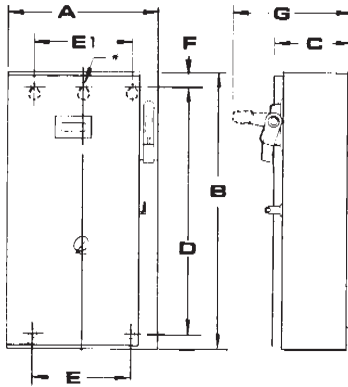
Fig. 2



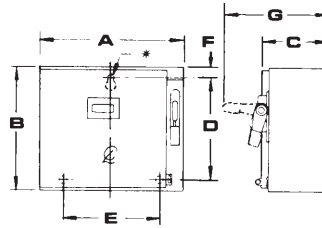
NEMA Type 4



NEMA Type 12-No Hub Provisions

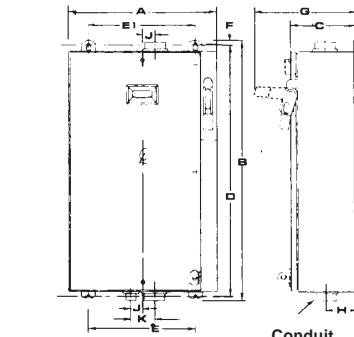


Standard or Extra-Wide Style
NEMA 1

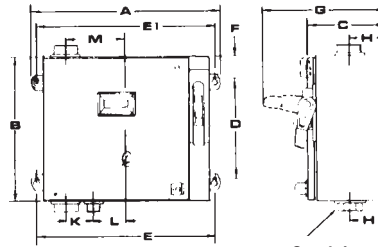


Compact Style
NEMA 1

Combination Starters



Standard or Extra-Wide Style
NEMA 4 & 12
Conduit Hub



Compact Style
NEMA 4 & 12
Conduit Hub

NEMA 4 Hub Application Table

NEMA Size	Dimensions-Inches	
	Top Hub	Bottom Hub
0 & 1	3/4	3/4
2	1 1/4	3/4 & 1 1/4
3	2	3/4 & 2
4	2 1/2	3/4 & 2 1/2

NEMA 1 Enclosures

NEMA Size	Cabinet Style	Dimensions- Inches								Mounting Hole Diameter
		Wide A	High B	Deep C	Mounting					
					D	E1	E	F	G	
0-2	Standard	8 7/8	26 1/2	7 3/4	24	1	4 1/2	1 9/32	11	11/32
	Compact 3 Extra-Wide	Consult Factory			24	11 1/2	11 1/2	1	11	11/32
3	Standard	14	35 3/8	8 7/8	33	9 1/2	9 1/2	1 1/4	13	11/32
3	3 Extra-Wide	22	35 3/8	8 7/8	33	16	16	1 1/4	13	11/32
4	Standard	22	39 3/8	8 7/8	37	16	16	1 1/4	13	11/32
5	Standard	22	49	9 7/8	47 1/2	18	18	1 5/8	14 1/4	7/16

NEMA 4 & 12 Enclosures

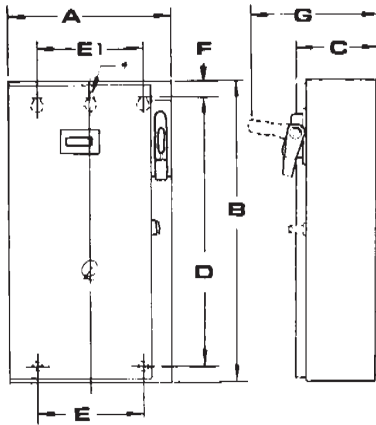
NEMA Size	Cabinet Style	Dimensions- Inches													Mounting Hole Diameter
		Wide A	High B	Deep C	Mounting										
					D	E1	E	F	G	H	J	K	L	M	
0-2	Standard	8 7/8	28 9/16	7 3/4	27 13/16	1	4 1/2	1/2	11	3 5/32	1 1/2	3	—	—	11/32
	Compact 3 Extra-Wide	Consult Factory			27 13/16	11 1/2	11 1/2	1/2	11	3 5/32	1 1/2	3	—	—	11/32
3	Standard	14	37 1/2	8 7/8	36 3/4	9 1/2	9 1/2	3/8	13	2 3/4	1 1/2	4	—	—	11/32
3	3 Extra-Wide	22	37 1/2	8 7/8	36 3/4	16	16	3/8	13	2 3/4	1 1/2	4	—	—	11/32
4	Standard	22	41 1/2	8 7/8	40 3/4	16	16	3/8	13	2 3/4	1 1/2	4	—	—	11/32
5		Contact factory													

Notes:

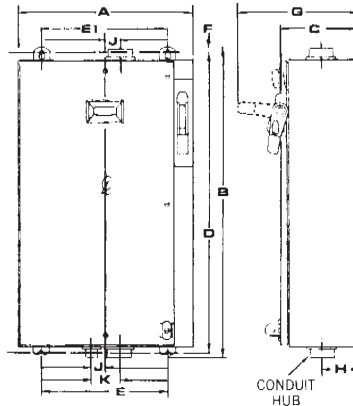
Consult Factory

1. Indicates mounting hole is on the center line of the enclosure.
2. Hub included on NEMA Type 4 enclosure only.
3. Use Extra Wide Dimension for Duplex and Irrigation Pump Panels.

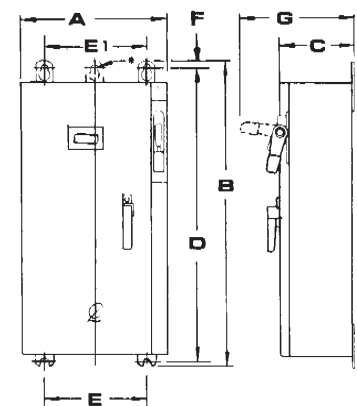
Combination Reversing Starters



NEMA 1



NEMA 4



NEMA 12

NEMA 4 Hub Application Table

NEMA Size	Dimensions-Inches	
	Top Hub	Bottom Hub
0 & 1	3/4	3/4
2	1 1/4	3/4 & 1 1/4
3	2	3/4 & 2
4	2 1/2	3/4 & 2 1/2

NEMA 1 Enclosures

NEMA Size	Cabinet Style	Dimensions- Inches									Mounting Hole Diameter
		Wide A	High B	Deep C	Mounting						
					D	E1	E	F	G		
0-2	Standard	15 7/8	26 1/2	7 3/4	24	11 1/2	11 1/2	1	11	11/32	
3	Standard	22	35 3/8	8 7/8	33	16	16	1 1/4	13	11/32	
4	Standard	22	39 3/8	8 7/8	37	16	16	1 1/4	13	11/32	
5		Contact factory									

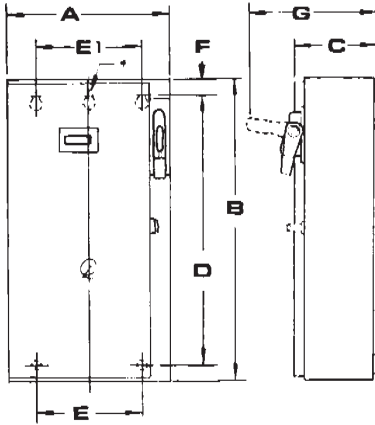
NEMA 4 Enclosures

NEMA Size	Cabinet Style	Dimensions- Inches												Mounting Hole Diameter	
		Wide A	High B	Deep C	Mounting										
					D	E1	E	F	G	H	J	K	L		M
0-2	Standard	15 7/8	28 9/16	7 3/4	27 13/16	11 1/2	11 1/2	3/8	11	3 5/32	1 1/2	3	—	—	11/32
3	Standard	22	37 1/2	8 7/8	36 3/4	16	16	3/8	13	2 3/4	1 1/2	4	—	—	11/32
4	Standard	22	41 1/2	8 7/8	40 3/4	16	16	3/8	13	2 3/4	1 1/2	4	—	—	11/32
5		Contact factory													

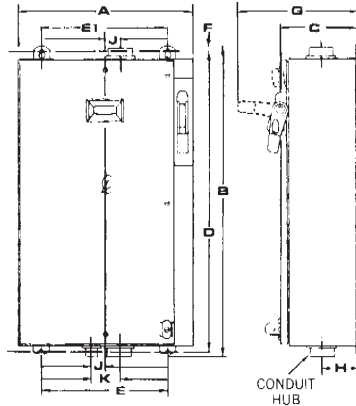
NEMA 12 Enclosures

NEMA Size	Cabinet Style	Dimensions- Inches									Mounting Hole Diameter
		Wide A	High B	Deep C	Mounting						
					D	E1	E	F	G		
0-2	Standard	15 7/8	28 9/16	7 3/4	27 13/16	11 1/2	3/8	3/8	11	11/32	
3	Standard	22	37 1/2	8 7/8	36 3/4	16	16	3/8	13	11/32	
4	Standard	22	41 1/2	8 7/8	40 3/4	16	16	3/8	13	11/32	
5		Contact factory									

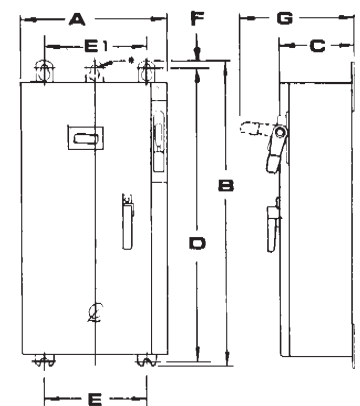
Combination 2 Speed



NEMA 1



NEMA 4



NEMA 12

B

NEMA 4 Hub Application Table

NEMA Size	Dimensions-Inches	
	Top Hub	Bottom Hub
0 & 1	3/4	3/4
2	1 1/4	3/4 & 1 1/4
3	2	3/4 & 2
4	2 1/2	3/4 & 2 1/2

NEMA 1 Enclosures

NEMA Size	Cabinet Style	Dimensions- Inches								Mounting Hole Diameter
		Wide A	High B	Deep C	Mounting					
					D	E1	E	F	G	
0-2	Standard	15 7/8	26 1/2	7 3/4	24	11 1/2	11 1/2	1	11	11/32
3	Standard	22	35 3/8	8 7/8	33	16	16	1 1/4	13	11/32
4	Standard	22	39 3/8	8 7/8	37	16	16	1 1/4	13	11/32
5		Contact factory								

NEMA 4 Enclosures

NEMA Size	Cabinet Style	Dimensions- Inches													Mounting Hole Diameter
		Wide A	High B	Deep C	Mounting										
					D	E1	E	F	G	H	J	K	L	M	
0-2	Standard	15 7/8	28 9/16	7 3/4	27 13/16	11 1/2	11 1/2	3/8	11	3 5/32	1 1/2	3	—	—	11/32
3	Standard	22	37 1/2	8 7/8	36 3/4	16	16	7/8	13	2 3/4	1 1/2	4	—	—	11/32
4	Standard	22	41 1/2	8 7/8	40 3/4	16	16	3/8	13	2 3/4	1 1/2	4	—	—	11/32
5		Contact factory													

NEMA 12 Enclosures

NEMA Size	Cabinet Style	Dimensions- Inches								Mounting Hole Diameter					
		Wide A	High B	Deep C	Mounting										
					D	E1	E	F	G						
0-2	Standard	15 7/8	28 9/16	7 3/4	27 13/16	11 1/2	3/8	11	3 5/32	1 1/2	3	—	—	11/32	
3	Standard	22	37 1/2	8 7/8	36 3/4	16	16	7/8	13	2 3/4	1 1/2	4	—	—	11/32
4	Standard	22	41 1/2	8 7/8	40 3/4	16	16	3/8	13	2 3/4	1 1/2	4	—	—	11/32
5		Contact factory													

Ratings - Controllers - Type TM

Continuous ampere and maximum horsepower ratings are in accordance with the following NEMA Standards:

Starters ICS 2-32 1B, ICS 2-321F

Contactors ICS 2-211.23, ICS 2-211.24

Power Wiring Accommodation - Type TM1

NEMA Size 2	Wire Range			Wire Type	Pressure Terminal Type	Provision For Ring Tongue Lugs 3	
	Line	Load				Terminal Width, In.	Screw Size
		Contact	Overload				
00	#14-#6	#14-#6	#14-#4	Copper (Cu)	Saddle	.625	#10-32
0	#14-#6	#14-#6	#14-#4	Copper (Cu)	Saddle	.625	#10-32
1	#14-#6	#14-#6	#14-#4	Copper (Cu)	Saddle	.625	#10-32
2	#14-#4	#14-#4	#14-#4	Copper (Cu)	Box	.62	#10-32
3	#8-#2/0	#8-#2/0	#8-#2/0	Copper (Cu)	Box	1.04	5/16-18
4	#6-250MCM	#6-250MCM	#6-250MCM	Copper (Cu)	Box	1.04	3/4-18
5	#4-500MCM	#4-500MCM	#4-500MCM	Aluminum	Box	1.25	3/8-Hole
6	(2)#4-500MCM	(2)#4-500MCM	(2)#4-500MCM	or Copper (Cu)		1.25	3/8-Hole

¹ For aluminum (Al) load wiring accommodations on Size 00-4, refer to local sales office.

² Devices are equipped with one (1) lug p[er phase, except size 6.

³ UL specifies only one (1) wire per lug.

Control Circuit Contact & Coil Terminals - Type TM

NEMA Size	Terminal Type	Copper Wire Size Min. - Max.	Screw Size 4,5
00-6	Pressure Saddle	#18-#12AWG	#8-32

4 One or two stranded copper wires of same size, or differing by (2) gauge sizes.

5 Coil terminal wire on TM 00-2 is #14 AWG maximum.

Control Circuit Contact Rating - Type TM

10 Ampere Continuous Rating - Maximum 600 Volts, AC or DC

NEMA Size	Contacts	Volts, AC	Amperes Continuous	A-C Inductive (0.35pf)		Volts, DC	D-C Inductive Make or Break
				Make	Break		
00-4	KTM-10 KTM-11	120V or less 120-600V	10	30A 3600VA	3A 360VA	125V	1.1
00-2	KTM-20					250V	.55A
3-4	KTM-19					600V	.2A
5-6	KTM35-10 KTM35-11		10	60A 7200VA	6A 720VA	(301-600V)	(120VA)

Overload Relay Contact Ratings - Type TM

NEMA Size	Contact	Volts, AC	Continuous Amperes	A-C Inductive (0.35pf)	
				Make	Break
00-6	N.C.	120V or less 120-600V	2.5	15A 1800VA	1.5A 180VA
	N.O	120V or less 120-600V		3A 360VA	.3A 36VA

Coil Burden - Type TM

NEMA Size	Poles	60Hz. Volt - Amperes		50Hz. Volt - Amperes		25Hz. Volt - Amperes	
		Inrush	Sealed	Inrush	Sealed	Inrush	Sealed
00-2	2-4	210	18	210	20	135	19
3	2-4	724	30	724	32	--	--
4	2-4	880	39	880	42	--	--
5	2-3	1790	295	--	--	--	--
6 ¹	2-3	3160	435	3300	490	--	--

1 Size 6 has two operating coils connected in series. Values given for two coils so connected.

Control Transformer Sizes For Type TM A-C Contactors Or Starters

NEMA Size	No. of Poles	Transformer Sizes- Volt-Amperes, 60 Hertz	
		Standard Capacity	100W Extra Capacity
00.0.			
1 & 2	2-4	50	150
3 & 4	2-4	250	500
5	2-3	350	500
6 ²	2-3	50	150

2 For starter with control relay; starter coil is full voltage.

B

Ratings Of Low-Voltage Contactors For Transformer Primaries 3

Contactor Size	Transformer Rating 4 -KVA, 50/60 Hz.					8-Hour Rating of Contactor Amperes	
	Single Phase		Three Phase				
	115V	230V	460 or 575V		230V	575V	Open
0	0.9	1.4	1.9	1.7	2.5	20	18
1	1.4	1.9	3	4.1	5.3	30	27
2	1.9	4.6	5.7	7.6	12	50	45
3	4.6	8.6	14	15	23	100	90
4	5.7	11	22	23	46	150	135
5	14	28	40	46	91	300	270
6	28	57	86	91	180	600	540

3 This table does not apply to transformers in resistance welding service.

4 This table applies to contactors used with transformers having an inrush of not more than (20) times their full-load current, irrespective of the nature of the secondary load.

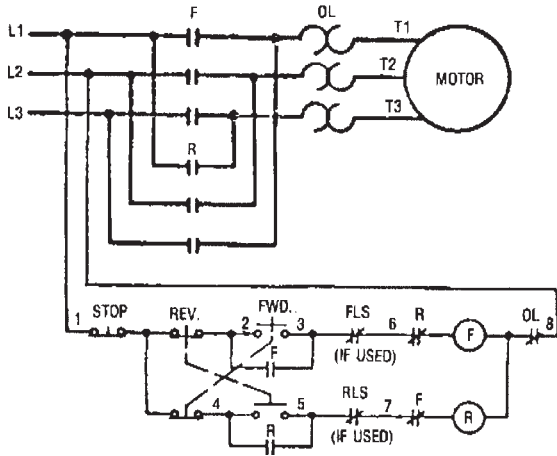
Kilowatt Ratings Of Low-Voltage Transformers For Resistive-Heating Loads Other Than Infrared-Lamp Loads 5 Per NEMA ICS 2.210-1

Contactor Size	1 ϕ , 2-Pole Contactors (Open or Closed) Heating Load, KW				3 ϕ , 3-Pole Contactors (Open or Closed) Heating Load, KW			8-Hour Rating of Contactor Amperes	
	115V	230V	460V	575V	230V	460V	575V		
1	3	6	12	15	10	20	25	30	27
2	5	10	20	25	17	34	43	50	45
3	10	20	40	50	34	68	86	100	90
4	15	30	60	75	52	105	130	150	135
5	30	60	120	150	105	210	260	300	270
6	60	120	240	300	210	415	515	600	540
7	90	180	360	450	315	625	775	900	810

5 This Table applies to contactors used to switch the load at the utilization voltage of the heat-producing elements with a duty which requires continuous operation of not more than five (5) openings per minute.

For Starters 6030-TM;
Contactors 6031-TM

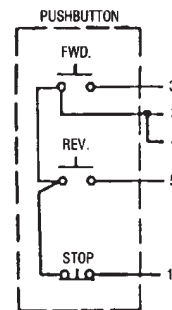
Elementary Diagram



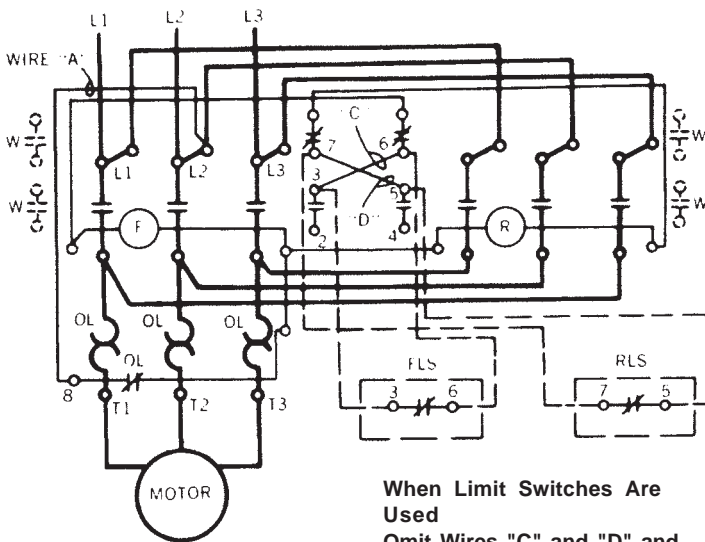
Seperate Control

Remove wire "A" when it is supplied
Connect seperate control lines to the
"1" terminal on the pilot device and
the "8" terminal on the starter. Coil
terminal wire to be No. 14 AWG
maximum.

Pushbutton Control



Wiring Diagram Front View

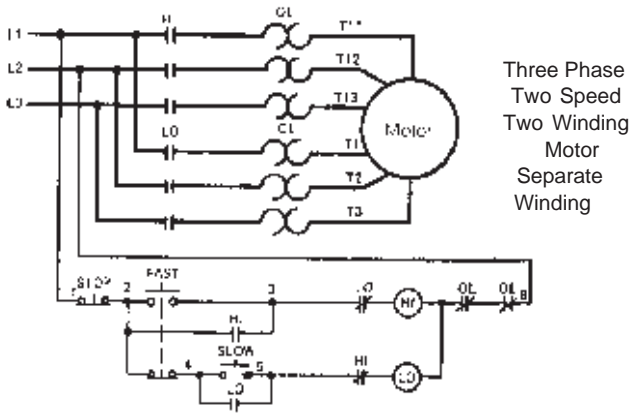


When Limit Switches Are
Used
Omit Wires "C" and "D" and
Connect Per Dotted Lines

Contactors "F" & "R" Are
Mechanically Interlocked

For Starters 6050-TM

Elementary Diagram



Pushbutton

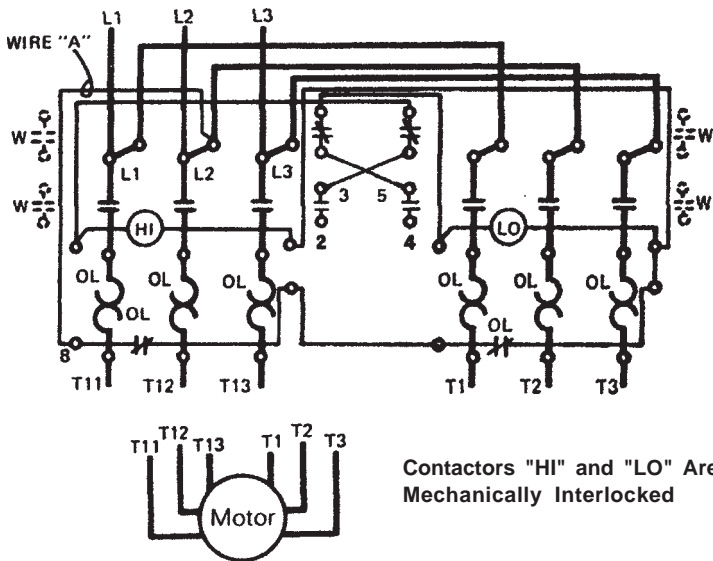


Separate Control

Remove wire "A" when it is supplied
Connect separate control lines to the
"1" terminal on the pilot device and
the "8" terminal on the starter. Coil
terminal wire to be No. 14 AWG
maximum.

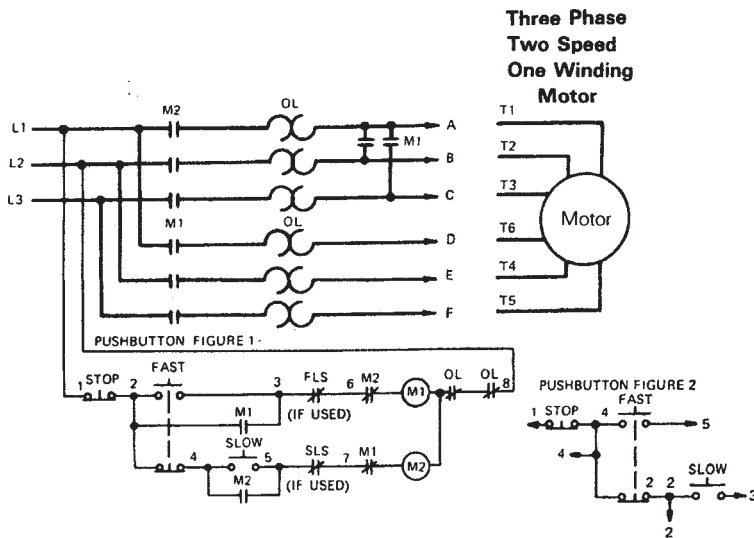
Pushbutton Control

Wiring Diagram Front View

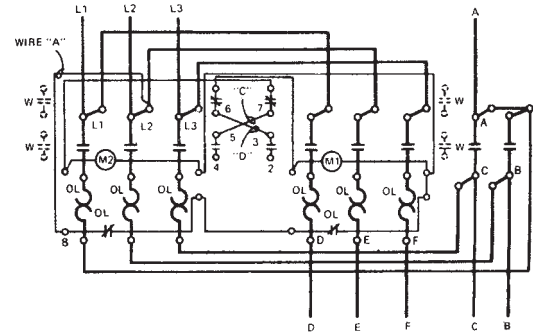


For Starters 6050-TM

Elementary Diagram



Wiring Diagram Front View



Momentary Contact Pushbuttons
Figure 1 Figure 2

Figure 1

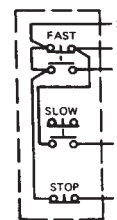
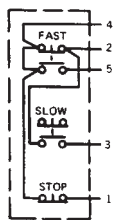


Figure 2



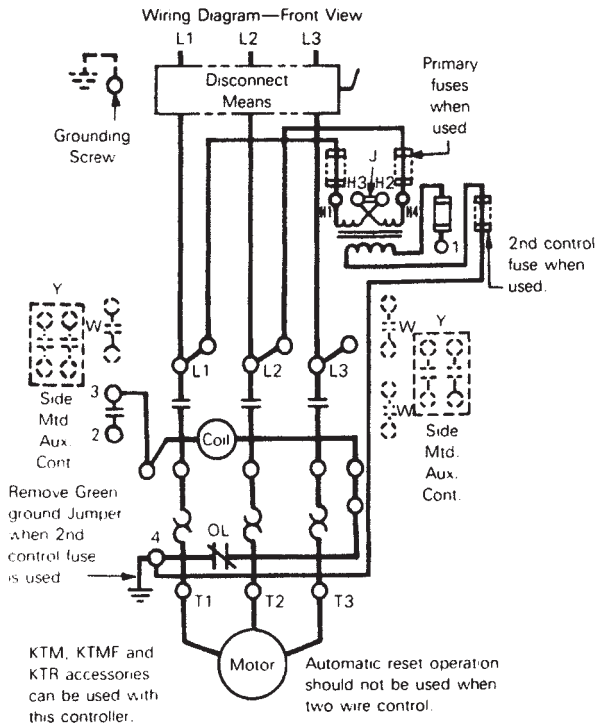
Connections Of Motor And Pushbutton Terminals To Starter Terminals

Motor	Pushbutton	A	B	C	D	E	F	M1	M2
Figure 1	Figure 2	T6	T4	T5	T1	T2	T3	Low	High
Figure 2	Figure 1	T1	T2	T3	T6	T4	T5	High	Low
Figure 3	Figure 1	T1	T2	T3	T6	T4	T5	High	Low

Three Phase Two Speed One Winding Motor Connection Data

Figure 1 Constant Horsepower						Figure 2 Constant Torque						Figure 3 Variable Torque					
L1	L2	L3	Open	Together	Speed	L1	L2	L3	Open	Together	Speed	L1	L2	L3	Open	Together	Speed
T1	T2	T3	—	T4,T5,T6	Low	T1	T2	T3	T4,T5,T6	—	Low	T1	T2	T3	T4,T5,T6	—	Low
T6	T4	T5	T1,T2,T3	—	High	T6	T4	T5	—	T1,T2,T3	High	T6	T4	T5	—	T1,T2,T3	High

For Starters 6018-TM, 6020-TM Combination

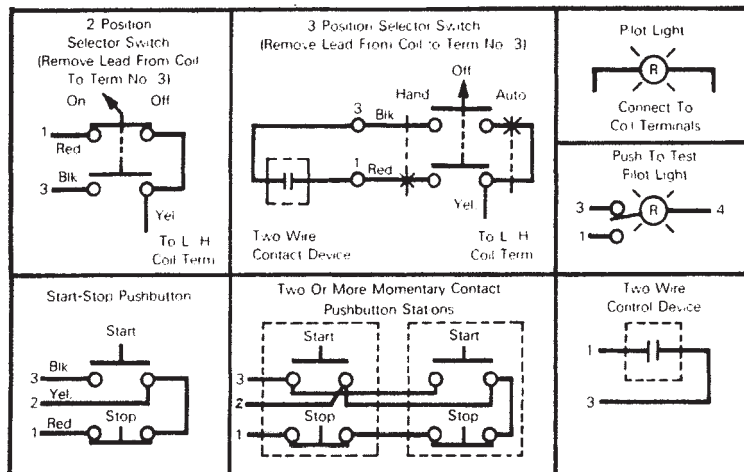


Dual voltage transformer is shipped as shown connected for higher voltage. Reconnect jumpers "J" per table for lower voltage.

Voltage	Connect	L1	L2
230	H1 to H3	H1	H4
	H2 to H4		
460	H2 to H3	H1	H4
All Single Primary Transformers		H1	H2

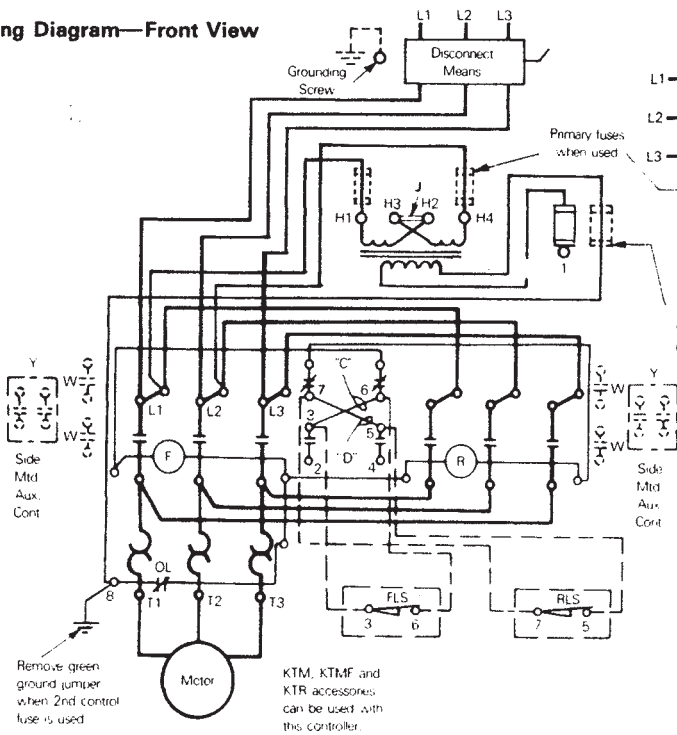
Connections For Flange Mounted Or Remote Pilot Devices

Wire Colors Shown Are For Flange Mounted Units Only

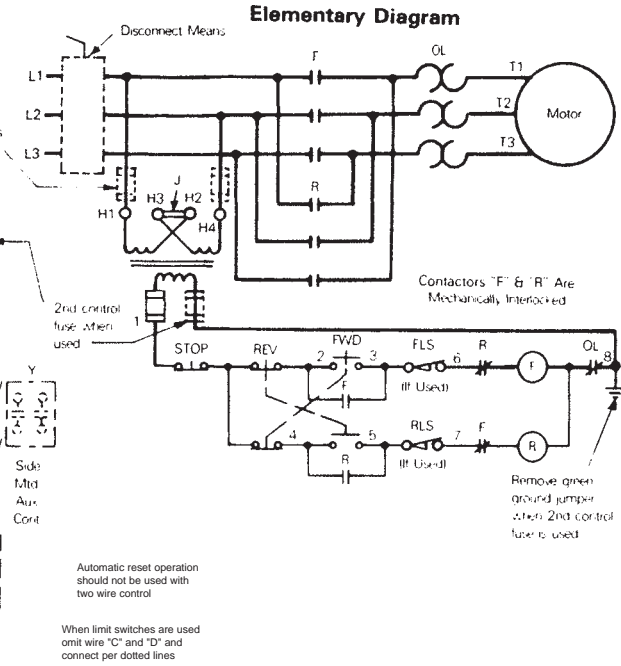


For Starters 6038-TM, 6040-TM Combination

Wiring Diagram—Front View



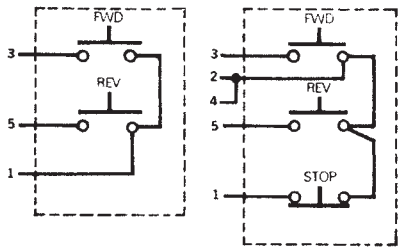
Elementary Diagram



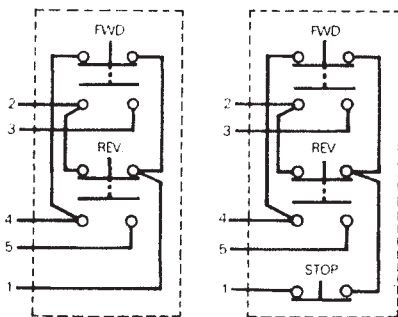
B

Connections For Flange Mounted Or Remote Pilot Devices

Pushbuttons Not Electrically Interlocked



Pushbuttons Electrically Interlocked



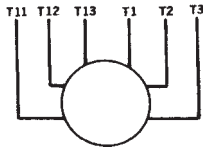
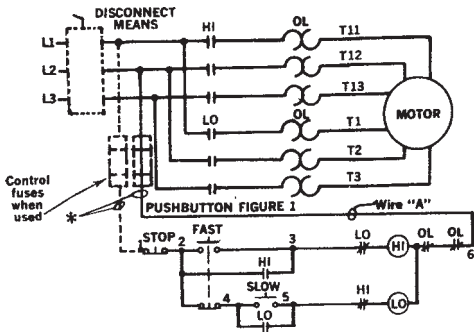
Dual voltage transformer is shipped as shown connected for higher voltage. Reconnect jumpers "J" per table for lower voltage.

Voltage	Connect	L1	L2
230	H1 to H3 H2 to H4	H1	H4
460	H2 to H3	H1	H4
All Single Primary Transformers		H1	H2

Standard A-C Wiring Diagrams Two-Speed, Two Winding (Separate Winding)

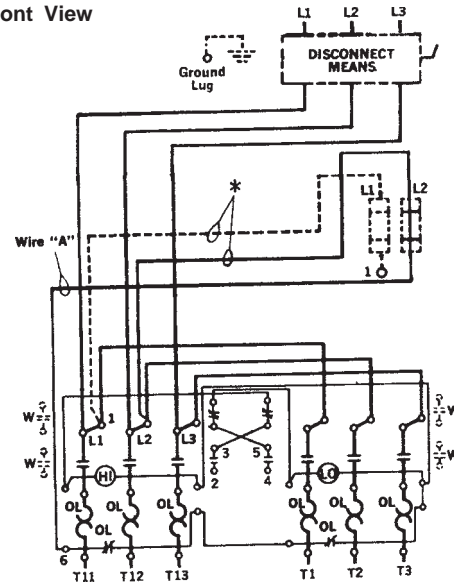
For Starters 6058-TM, 6060-TM Combination

Elementary Diagram:



Contactors
"HI" and "LO" are
Mechanically
Interlocked

Wiring Diagram - Front View



Two Speed
Two Winding
Motor

Common Control

When control circuit obtains power from the line side of the starter as shown, and control conductors extend beyond the enclosure, they must have overcurrent protection rated not in excess of 500% of the control circuit conductor ampacity. Such protection should be installed in the field if starter does not have control fuses.

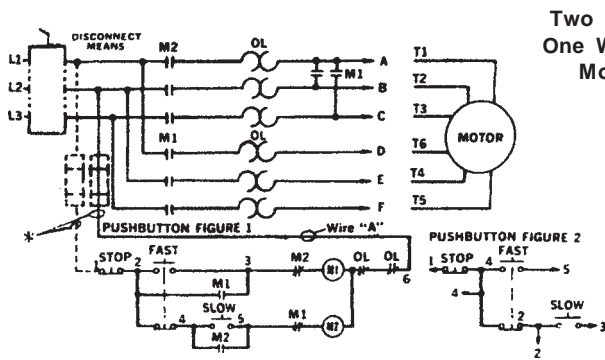
Separate Control

Remove wire "A" when it is supplied. Connect separate control lines as follows:
With internally mounted fuses, connect to fuse block.
Without internal fuses, an external fuse must be mounted immediately adjacent to the controller. Connect to "1" terminal on pilot devices and "6" terminal on starter.

Wiring Diagrams Two-Speed, One Winding (Consequent Pole)

For Starters 6058-TM, 6060-TM Combination

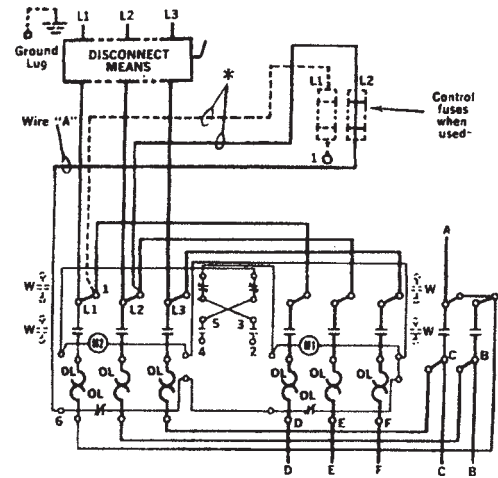
Elementary Diagram



Two Speed
One Winding
Motor

Contactors "M1" and "M2"
are
Mechanically interlocked

Wiring Diagram - Front View



Connections Of Motor And Pushbutton Terminals

Motor	Pushbutton	A	B	C	D	E	F	M1	M2
Figure 1	Figure 2	T6	T4	T5	T1	T2	T3	Low	Hi
Figure 2	Figure 1	T1	T2	T3	T6	T5	Hi	Low	
Figure 3	Figure 1	T1	T2	T3	T6	T4	T5	Hi	Low

Three Phase Two Speed One Winding Motor Connection Data

Figure 1 Constant Horsepower						Figure 2 Constant Torque						Figure 3 Variable Torque					
L1	L2	L3	Open	Together	Speed	L1	L2	L3	Open	Together	Speed	L1	L2	L3	Open	Together	Speed
T1	T2	T3	—	T4,T5,T6	Low	T1	T2	T3	T4,T5,T6	—	Low	T1	T2	T3	T4,T5,T6	—	Low
T6	T4	T5	T1,T2,T3	—	High	T6	T4	T5	—	T1,T2,T3	High	T6	T4	T5	—	T1,T2,T3	High

Connections For Case Mounted Transformer (When Provided) Wiring Diagram (Remove Wire "A") Or Remote Pilot Devices Momentary Contact Pushbuttons

Figure 1

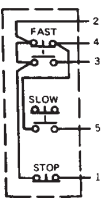
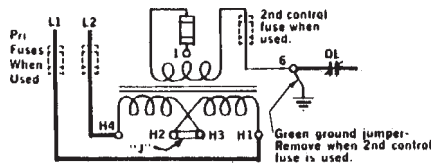
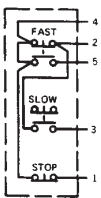


Figure 2



Voltage	Connect	L1	L2
230	H1 to H3 H2 to H4	H1	H4
460	H2 to H3	H1	H4
All Single Primary Transformers		H1	H2

Accessory And Replacement Kits

KTM and KTR accessories can be used with this controller. Other replacement coil by Part No. on coils. For other renewal parts information, refer to S.B. 6000 TM. Auxiliary contacts "W" rated for standard duty 600 volts maximum.

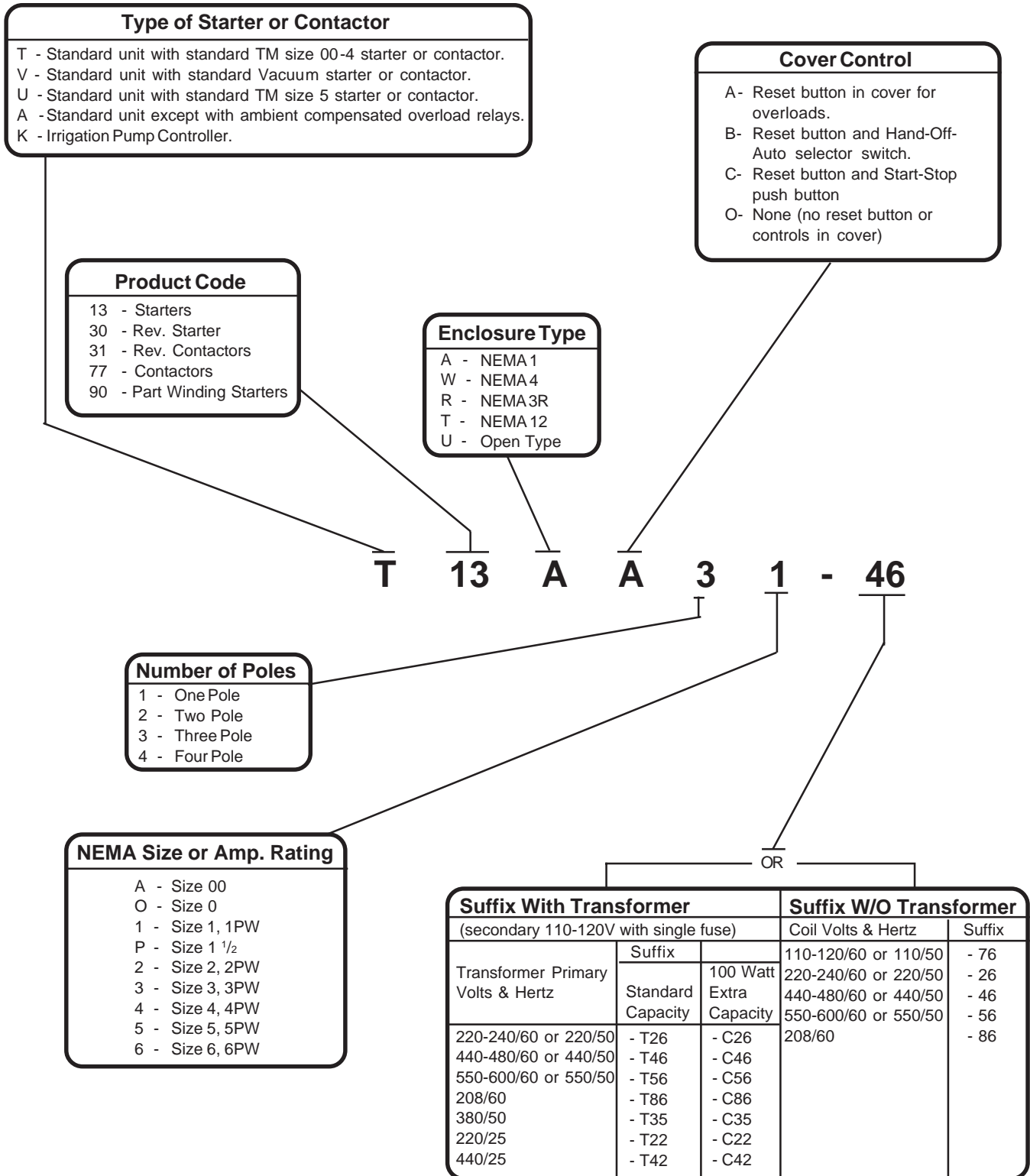
Contact Cat. No.

1 N.O.	KTM-10
1 N.C.	KTM-11

Dual voltage transformer is shipped as shown connected for higher voltage. Reconnect jumpers "J" per table for lower voltage.

Contactors & Non Combination Starters

B



Combination Starters

Type of Starter or Contactor	
T	Std. unit with standard Type TM starter or contactor.
V	Std. unit with std.Type Vacuum starter or contactor.
U	Std. unit with std. TM size 5 starter or contactor.
A	Standard unit except with ambient compensated overload relays.
C	Compact
E	Extra-Wide
D	Duplex Pump Controller. (Include Dual Dis. Switch)
SD	Duplex Pump Controller. (Include Single Dis. Switch)
K	Irrigation Pump Controller.

Product Code	
18	-Fused Starter
20	-C/B Starter
38	-FusedRev. Starter
40	-C/B Rev. Starter

Suffix With Transformer			Suffix W/O Transformer	
(secondary 110-120V with single fuse)			Coil Volts & Hertz	Suffix
Transformer Primary Volts & Hertz	Suffix		110-120/60 or 110/50	- 76
	Standard Capacity	100 Watt Extra Capacity	220-240/60 or 220/50	- 26
220-240/60 or 220/50	- T26	- C26	440-480/60 or 440/50	- 46
440-480/60 or 440/50	- T46	- C46	550-600/60 or 550/50	- 56
550-600/60 or 550/50	- T56	- C56	208/60	- 86
208/60	- T86	- C86		
380/50	- T35	- C35		
220/25	- T22	- C22		
440/25	- T42	- C42		

Number of Poles	
3	- Three Pole

T 18 T A 3 1 6 03 - T46

Enclosure Type	
A	- NEMA 1
W	- NEMA 4
R	- NEMA3R
T	- NEMA 12

Size of Starter	
0	- Size 0
1	- Size 1
2	- Size 2
3	- Size 3
4	- Size 4
5	- Size 5
6	- Size 6

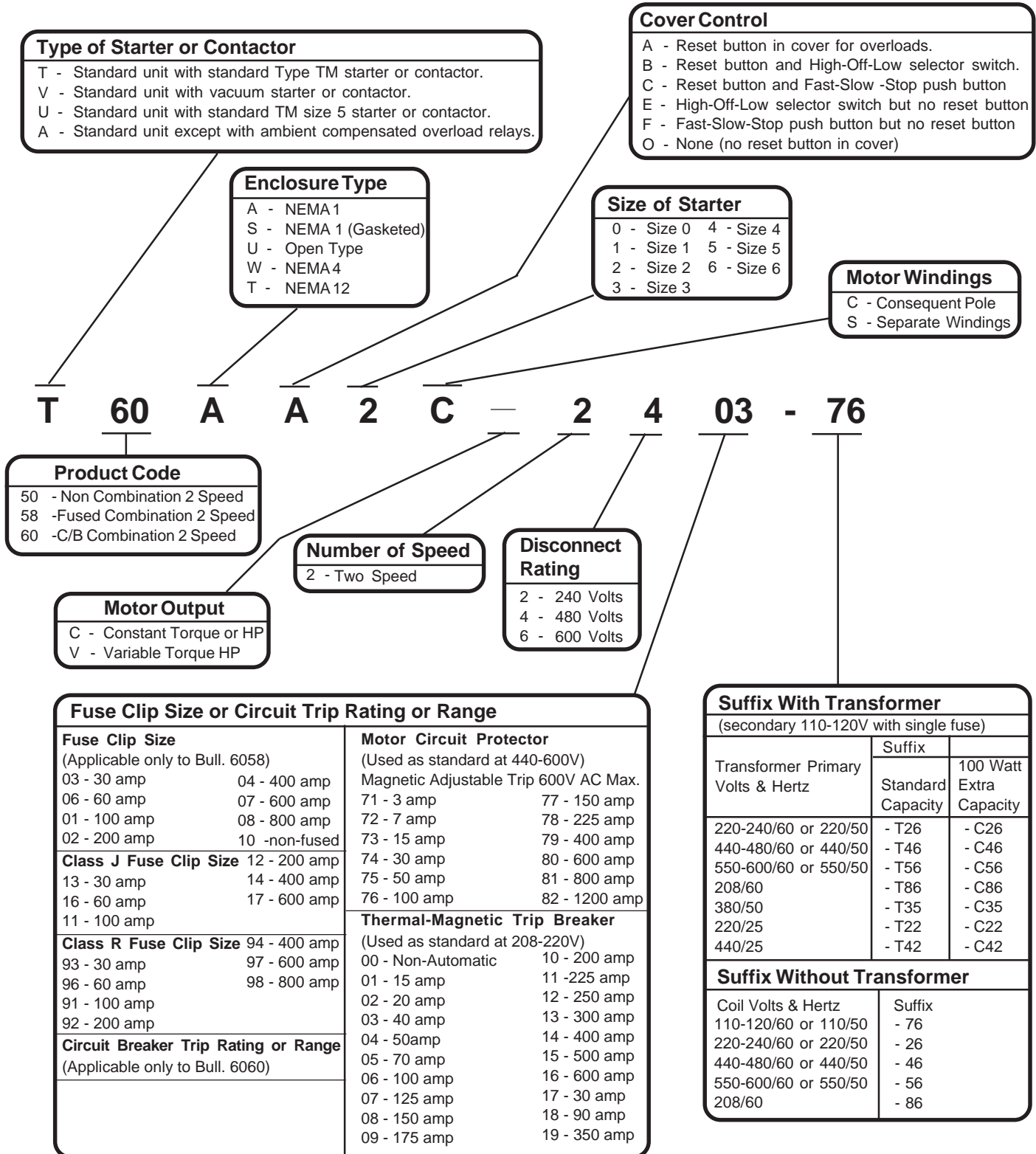
Disconnect Rating	
2	- 240 Volts
4	- 480 Volts
6	- 600 Volts

Cover Control	
A	- Reset button in cover for overloads
B	- Reset button and Hand-Off-Auto selector switch
C	- Reset button and Start-Stop push button
E	- Hand-off Auto Selector Switch but no reset button
F	- Start-Stop push button but no reset button
O	- None (no reset button or controls in cover)

Fuse Clip Size or Circuit Trip Rating or Range		
Fuse Clip Size (Applicable only to Bull. 6018-38 & 6318)	Motor Circuit Protector (Used as standard at 440-600V) Adjustable Trip 600V AC Max.	
03 - 30 amp	04 - 400 amp	71 - 3 amp
06 - 60 amp	07 - 600 amp	72 - 7 amp
01 - 100 amp	08 - 800 amp	73 - 15 amp
02 - 200 amp	10 - non-fused	74 - 30 amp
		75 - 50 amp
Class J Fuse Clip Size		76 - 100 amp
13 - 30 amp	12 - 200 amp	77 - 150 amp
16 - 60 amp	14 - 400 amp	78 - 225 amp
11 - 100 amp	17 - 600 amp	79 - 400 amp
		80 - 600 amp
Class R Fuse Clip Size		81 - 800 amp
93 - 30 amp	94 - 400 amp	82 - 1200 amp
96 - 60 amp	97 - 600 amp	
91 - 100 amp	98 - 800 amp	Thermal-Magnetic Trip Breaker (Used as standard at 208-220V)
92 - 200 amp		00 - Non-Auto
Circuit Breaker Trip Rating or Range (Applicable only to Bull. 6020-40 & 6320)		01 - 15 amp
		02 - 20 amp
		03 - 40 amp
		04 - 50 amp
		05 - 70 amp
		06 - 100 amp
		07 - 125 amp
		08 - 150 amp
		09 - 175 amp
		10 - 200 amp
		11 - 225 amp
		12 - 250 amp
		13 - 300 amp
		14 - 400 amp
		15 - 500 amp
		16 - 600 amp
		17 - 30 amp
		18 - 90 amp
		19 - 350 amp

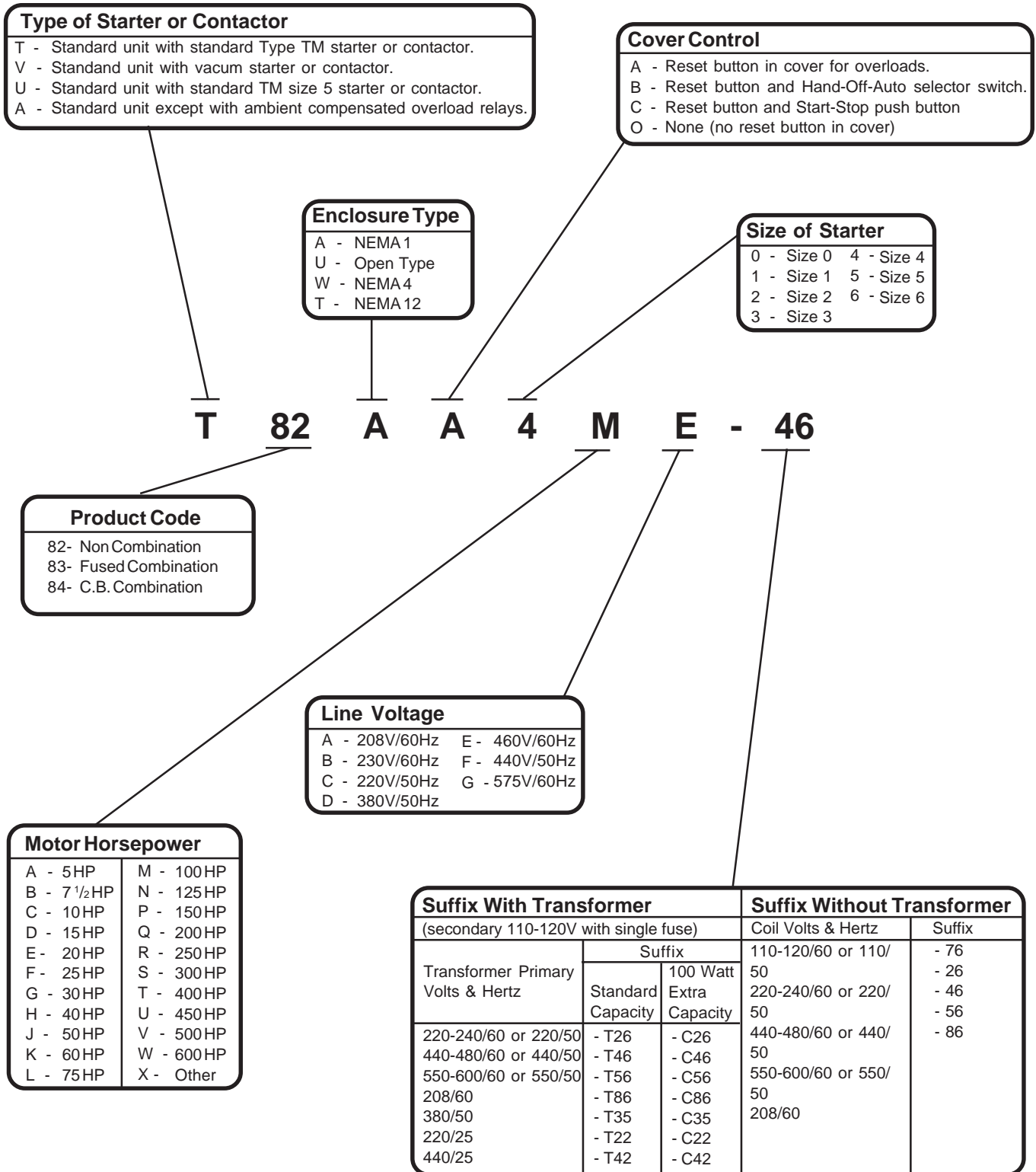
2 Speed Starters

B



4
9
2

Reduced Voltage Auto Transformer Starters



B

B

Application

The 5000 Space Savers in NEMA Sizes 00 thru 5 offer versatile and compact AC contactors for industrial motor, heating and other power circuit switching. Simplified design coupled with built-in reliability assures the user long, trouble-free operation in machine tools, process controls, air-conditioning, custom panels and other demanding applications.

Description

All 5000 magnetically operated contactors incorporate a modern, modular design compatible with other control component modules. Terminal location make them ideal for straight-through wiring and for wire-channel layouts. Accessible, up-front pressure-type terminals are standard.

The hot molded, high arc resistant two or three piece housings not only totally enclose contacts and operating coils for environmental protection; but also separate them as added protection against internal phase-to-phase short circuits.

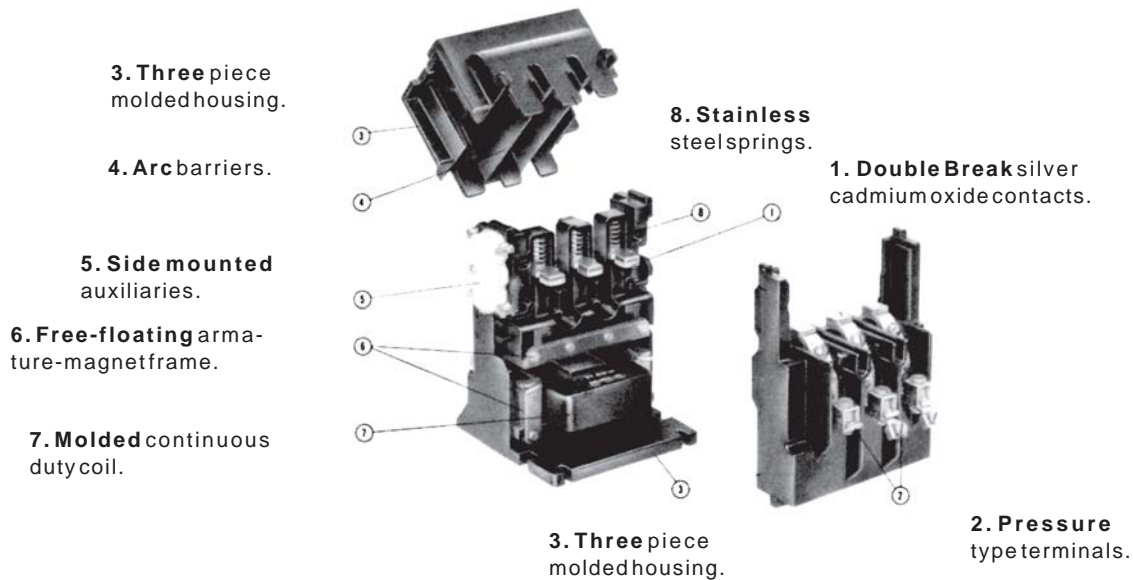
Generous size, long wearing double break contacts are furnished on all sizes. Contacts are made of silver cadmium oxide for "anti-weld" protection under high inrushes. Contacts do not require adjustment or periodic dressing (filing).

Coil Data

Standard coils for continuous duty service are equipped with pressure type terminals. Molded coil construction resists moisture; thermal and mechanical stress.

Typical User Benefits:

- **Modern Modular Design** - makes contactors compatible with other control panel components. Ideal for wire-channel layouts.
- **Compact Size** - 5000 Contactors conserve control panel area without sacrificing accessibility or reliability. The 100 amp. Size 3 contactors occupy less than 19.0 sq. in. of panel space.
- **Only 15 Basic Parts** - This simple design affords longer operating life and greater reliability than more complex units.
- **Fast Installation** - Accessible up-front pressure type terminals on both power and control circuits, take unplugged stripped wire. Design permits straight-through wiring.
- **Quick, Easy Inspection** - Simply withdraw the front housing piece, after removing two screws, all main contacts are in full view. No need to disturb wiring or remove contactor from panel for complete inspection of all parts.





3 Pole Contactors-Three Phase

NEMA Size	8-Hour Rating in Amperes		Open Type	Price
	Open	Enclosed	Catalog No.	
00	10	9	5009A3001-*	\$276.
0	20	18	5000A3001-*	348.
1	30	27	5001A3001-*	408.
2	50	45	5002A3001-*	744.
3	100	90	5003A3001-*	1200.
4	150	135	5004-3001-*	2880.
5	300	270	5005-3001-*	6276.

Contactor comes standard with 1N.O. auxiliary.

Auxiliary Contact Rating

AC Volts	Sizes 00 - 5 Amperes	
	Continuous	Inrush
120	6	60
280	3	30
480	1.5	15
600	1.2	12

Auxiliary Contacts (Interlocks)

NEMA Size	Max. No. of N.O. or N.C. or N.O.-N.C. Auxiliary units
00, 0 & 1	2
2, 3, 4, 5	4

Ratings¹-Ampere and Horsepower, Single Speed Motors

NEMA Size	Amperes		Three Phase - Horsepower Rating						Single Phase - Horsepower Rating					
			Starting			Plug-Stop or Jogging Duty			Starting		Plug-Stop or Jogging Duty			
	Open	Enclosed	115V	230V	480/575V	115V	230V	480/575V	115V	230V	115V	230V		
00	10	9	³ / ₄	1	¹ / ₂	2	----	----	----	¹ / ₃	1	¹ / ₂	----	----
0	20	18	2	3	5	1	1	¹ / ₂	2	1	2	¹ / ₂	1	
1	30	27	3	7	¹ / ₂	10	2	3	5	2	3	1	2	
2	50	45	7	15	25	----	10	15	----	----	7	2	5	
3	100	90	----	30	50	----	20	30	----	----	----	----	----	
4	150	135	----	50	100	----	30	60	----	----	----	----	----	
5	300	270	----	100	200	----	75	150	----	----	----	----	----	

Notes:

- These ratings are based on locked rotor current not exceeding six times motor full load current for the max. horsepower rating.

Ordering Information

- Use complete catalog number. Replace the (*) with the suffix from the coil table.
- Modification Page

Coil Table

NEMA Size	DC Voltage	Suffix	NEMA Size	60Hz/Voltage	Suffix
00-5 incl.	24	82	00-5 incl.	120	11
00-5 incl.	48	32	3,4,5	208/240	21
00-5 incl.	120	12	00,0,1,2	208	90
00-5 incl.	240	22	00,0,1,2	240	21
** For all DC Coils up to NEMA Size 3 add \$192			00-5 incl.	480	41
Size 4 & 5 add \$480			00-5 incl.	600	51

Accessory Kits & Special Features

For Field Installation Auxiliary Interlocks For NEMA Sizes 00-5 Contactors		Discount Sch. JC 20	
	KitNo.	Price	
N.O. Std.	5M63	\$ 50.	
N.C. Std.	5M64	50.	
N.O. & N.C. Std.	5M65	88.	
N.O. Low Power	5M63L	176.	
N.C. Low Power	5M64L	176.	
N.O. & N.C. Low Power	5M65L	302.	
N.O. Std. & N.C. Low Power	5M66	227.	
N.O. Low Power & N.C. Std.	5M65L0	227.	
N.C. Std. Early Close	5M64E	50.	
N.O. Low Power & N.C. Std. Late Break	5M68E ²	88.	
N.C. Low Power - Late Break	5M64LE	176.	
N.O. Std. & N.C. Low Power Late Break	5M67 ²	227.	
N.O. Low Power & N.C. Low Power	5M69 ²	302.	
Tandem Mounting Kit ¹	5M60DA	32.	

Reversing & Multi-Speed Accessory Kit		Starter or Contactor Size		Discount Sch. JC 20	
		Kit No.	Price		
Mechanical Interlock	00, 0 & 1 ³	5M115	\$ 76.		
	0 & 1 ⁴	5M110	76.		
	2, 3, & 4	5999-4737	76.		
	2 ³	5999-4717	76.		
	5	5999-4757	315.		
5to4	5999-4748	315.			

Reversing Contactor BasePlate: Series 5000		Starter or Contactor Size		Discount Sch. JC 20	
		Kit No.	Price		
	0 & 1	23081.692-1	50.		
	2 & 3A	23082.79	69.		
	4	23083.30	88.		
	5	23085.312-1	189.		

Notes:

1. Contains mounting hardware only. Order auxiliary separately. Not for 7000 or 7001 Series Contactors.
2. Not for use on 5000 contactor size 00, 0, 1 & 2 or 5DP contactors 10/40, 40 & 75 amp. sizes.
3. For use with style A contactors only. Style A contactors are identified by the letter A following the fourth digit in the catalog number.
4. Not for use on style A contactors.
5. Kit contains: stationary contacts, movable contacts & contact springs.

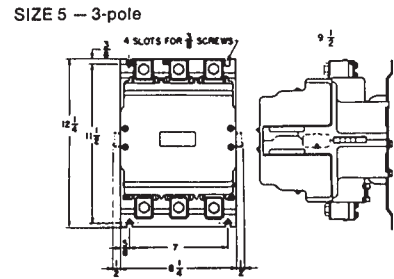
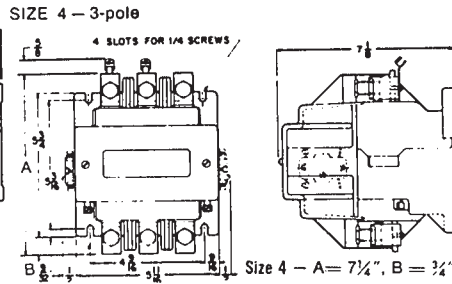
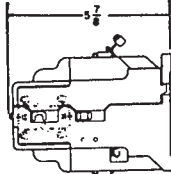
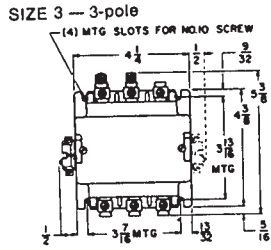
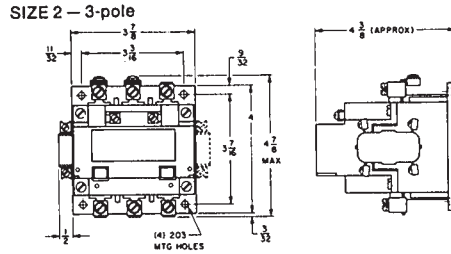
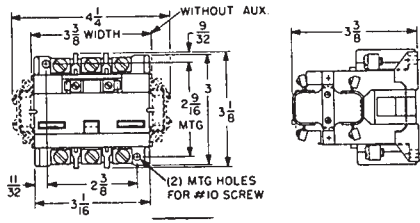
Contact Kits - 1 Pole ⁵

Basic Cat.No.	NEMA Size	Discount Sch. JC 80 Kit No.	Price
5009-	00	5M59	\$ 62.
5009AorB	00	5M87	62.
5000AorB	0	5M87	62.
5000-	0	5M50	83.
5001AorB	1	5M19	83.
5001-	1	5M51	104.
5002AorB	2	5999-2521	131.
5002-	2	5M52	173.
5003AorB	3	5M80	207.
5003-	3	5M53	207.
5004-	4	5M54	386.
5005-	5	5999-0045	803.

AC Coil Data and Coil Kits

Basic Cat.No.	NEMA Size	Volts 60Hz	V.A. 60Hz		Discount Sch. JC 80	
			Inrush	Sealed	Kit No.	Price
5009A	00	120	120	28	5ML25	53.
5000A	0	208			5ML26	53.
5001A	1	240			5ML29	53.
		480			5ML27	53.
		600			5ML28	53.
5002A	2	120	290	48	5999-1801	76.
		208			5999-1805	76.
		240			5999-1802	76.
		480			5999-1803	76.
		600			5999-1804	76.
5002 5003A	2	120	264	41	5ML21	110.
		240			5ML22	110.
		480			5ML23	110.
		600			5ML24	110.
5003 5004	3	120	672	72	5ML41	156.
		240			5ML42	156.
		480			5ML43	156.
		600			5ML44	156.
		5005	5	120	1776	144
240					5ML52	322.
480					5ML53	322.
600					5ML54	322.

OPEN TYPE CONTACTORS — DIMENSIONS — Approx.
 Contactor base must be mounted vertically.
 SIZE 00, 0 & 1 — 3-pole



DIMENSIONS — Approximate
 Reversing Contactor base plate must be vertically mounted with long dimension horizontal.

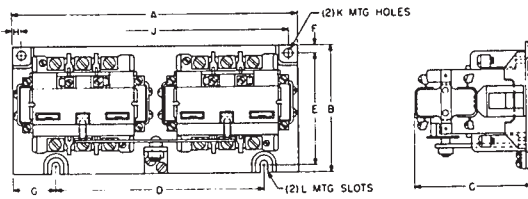


Fig. 1 Sizes 0 and 1 — Open type

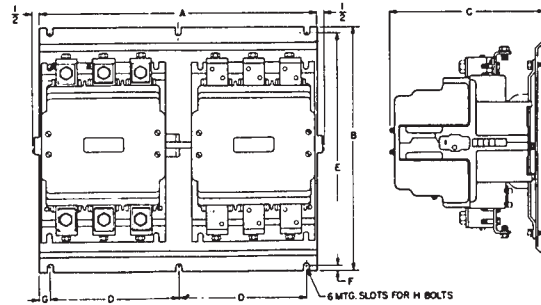


Fig. 3 Size 5 — Open type

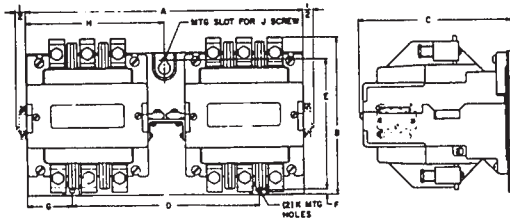


Fig. 2 Sizes 2, 3 and 4 — Open type

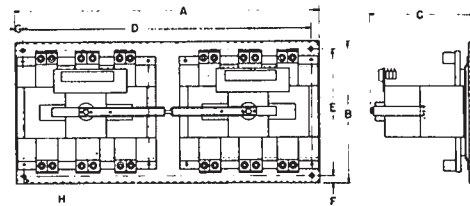


Fig. 4 Size 6 — Open type

OPEN TYPE REVERSING CONTACTORS

Series 5200

NEMA Size	Dim. Fig.	DIMENSIONS — In Inches										
		A	B	C	D	E	F	G	H	J	K	L
0 & 1	1	8 1/8	3 3/8	3 3/8	6 3/8	3 3/8	1/4	1 1/8	7/32	8 1/4	.281	.266
2	2	10 3/8	5 3/8	4 1/2	7 1/8	4 3/8	1/4	1 1/2	5 3/2	1/4	.281	—
3	2	10 3/8	5 3/8	6 1/8	7 1/8	4 3/8	1/4	1 19/32	5 3/2	1/4	.281	—
4	2	13 3/8	7 1/2	7 3/8	9	6 3/8	1/4	2 3/2	6 1/2	1/4	1/4	—
5	3	18 3/8	16 1/4	10 3/4	8 1/2	15 1/2	3/8	2 1/2	3/8	—	—	—
6	4	35 3/8	16 1/2	12 1/4	33 3/8	14 3/4	7/8	7/8	3/8	—	—	—

B