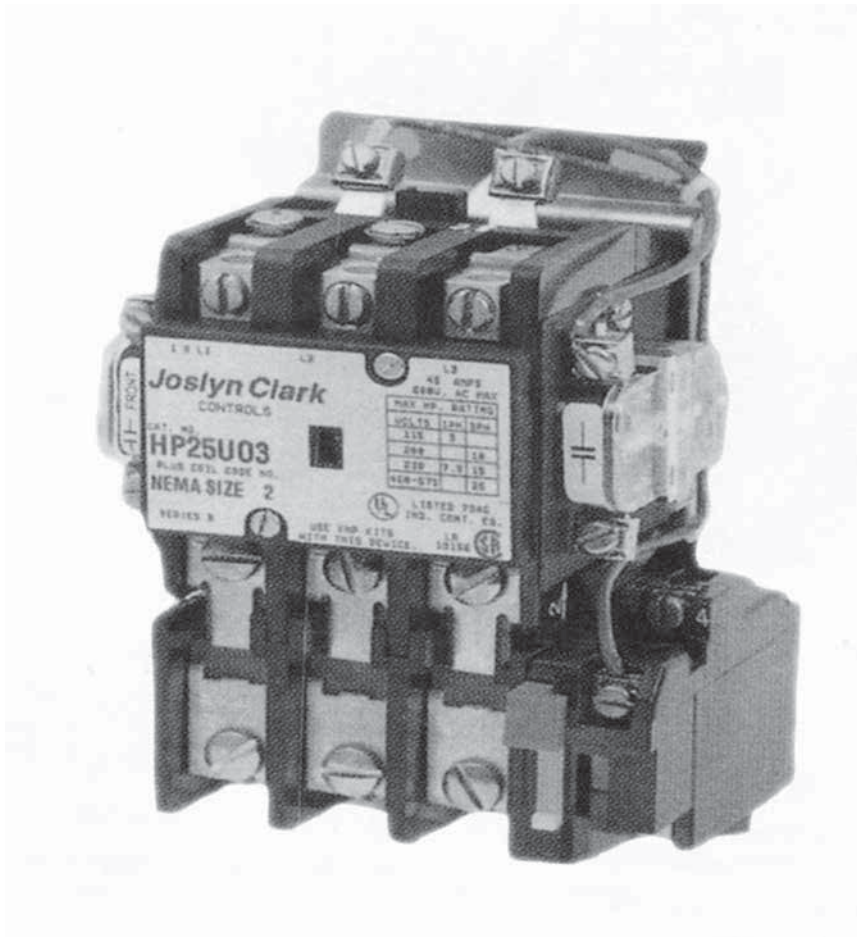


NEMA CONTROL

Contactors & Starters Index



Description	Page Number
General Information - HP	C2 - C3
AC Magnetic Contactors - HP	C4
AC Magnetic Reversing Contactors - HP	C4
AC Magnetic Starters - HP	C5
AC Magnetic Reversing Starters - HP	C5
AC Magnetic Combination Starters - HP	C6
Modifications and Parts.....	C7
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For HP Overload Heaters see SectionB Index.....	B14



NEMA CONTROL - HP

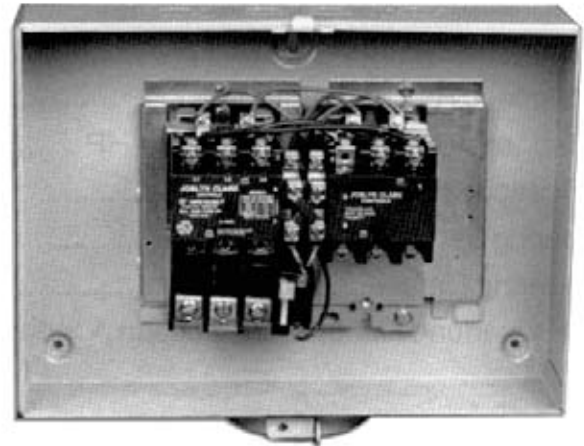
General Information

**The Joslyn Clark NEMA Size Starter
That Saves You Money**

C



NEMA Type 1 Enclosed
Non - Reversing Starter



NEMA Type 1 Enclosed
Reversing Starter

Quality — with economy of cost and space

The Joslyn Clark HP Motor Starter has been developed through many generations of controllers. Closely related to the TM design, the HP starter is rated for its horsepower capability as well as in standard NEMA frame sizes. Like the TM starter, our HP starter was designed in one piece as a starter, a single integrated unit consisting of a power contactor and a thermal overload relay mounted on a rigid common base.

This compact starter takes less than 19 sq. in. of panel space, permitting the use of smaller, less costly enclosures. It provides more wiring space for easy wiring and requires only two mounting screws to save installation time and cost.

NEMA sizes 00, 0, 1 & 2 are the same small physical size, providing greater flexibility.

NEMA Sizes 00, 0, 1, & 2 Quality — with economy of cost and space

LOW ENERGY 8.4 VA COIL

Same energy efficient coil for NEMA sizes 00, 0, 1 & 2. Reduces transformer size and cost. Small transformer size saves panel space. Low VA inrush coil reduces line disturbance, ideal for use with solid state control.

COVER NAME PLATE

Clear and easy to identify size, rating, and catalog number.

TRUE "UP-FRONT" "STRAIGHT THROUGH" WIRING DESIGN

Makes the HP Starter easy to wire and safe to trace. Save through reduced wiring time and panel cost.

AUXILIARY CONTACTS

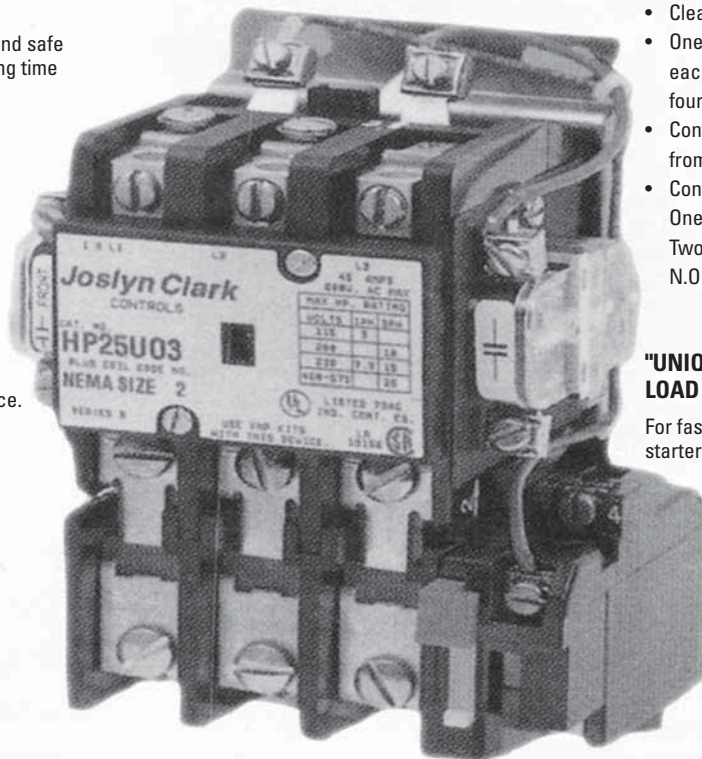
- Easy to install
- Clear side cover
- One Kit may be attached to each side of the starter providing up to four contacts
- Contacts positive driven from main contact carrier
- Contact Kits -
 - One N.O. KHP - M10
 - Two N.O. KHP - M20
 - N.O. & N.C. KHP - M11

SMALL SIZE

Requires only 19 sq. in. of panel space.

"UNIQUE" SPRING LOAD TERMINALS

For fast load connection. Save by reducing starter wiring time.



NEMA CONTROL - HP

AC Contactors



HPC020U2



HPC10AA3



HPRC25A03

Non-Reversing Contactors - Type HPC

2-Pole, Single Phase								
NEMA Size	Maximum Motor Horsepower Rating			Continuous Ampere Rating	Tungs Lamp Load	NEMA Type 1 General Purpose Catalog No. ¹	NEMA Type 12 Industrial - Dust-tight Catalog No. ¹	Open Type Catalog No. ¹
	115V	220V	460V					
00	1/3	1	2	9	5	HPC02A02 *	HPC02T02 *	HPC02U02 *
0	1	2	5	18	10	HPC05A02 *	HPC05T02 *	HPC05U02 *
1	2	3	10	27	15	HPC10A02 *	HPC10T02 *	HPC10U02 *
2	3	7 1/2	25	45	30	HPC25A02 *	HPC25T02 *	HPC25U02 *
3-Pole, Three Phase								
NEMA Size	Maximum Motor Horsepower Rating			Continuous Ampere Rating	Tungs Lamp Load	NEMA Type 1 General Purpose Catalog No. ²	NEMA Type 12 Industrial - Dust-tight Catalog No. ²	Open Type Catalog No. ²
	200V	230V	460/575V					
00	1 1/2	1 1/2	2	9	5	HPC02A03 *	HPC02T03 *	HPC02U03 *
0	3	3	5	18	10	HPC05A03 *	HPC05T03 *	HPC05U03 *
1	7 1/2	7 1/2	10	27	15	HPC10A03 *	HPC10T03 *	HPC10U03 *
2	10	15	25	45	30	HPC25A03 *	HPC25T03 *	HPC25U03 *

Reversing Contactors - Type HPRC

3-Pole, Three Phase							
NEMA Size	Maximum Motor Horsepower Rating			Continuous Ampere Rating	NEMA Type 1 General Purpose Catalog No. ²	NEMA Type 12 Industrial - Dust-tight Catalog No. ²	Open Type Catalog No. ²
	200V	230V	460/575V				
00	1 1/2	1 1/2	2	9	HPRC02A03 *	HPRC02T03 *	HPRC02U03 *
0	3	3	5	18	HPRC05A03 *	HPRC05T03 *	HPRC05U03 *
1	7 1/2	7 1/2	10	27	HPRC10A03 *	HPRC10T03 *	HPRC10U03 *
2	10	10	25	45	HPRC25A03 *	HPRC25T03 *	HPRC25U03 *

Note:

1. Includes contactor complete with one N.O. control-circuit contact.
2. Includes contactor complete with N.O. interlock on each contactor. All contactors are mechanically and electrically interlocked.

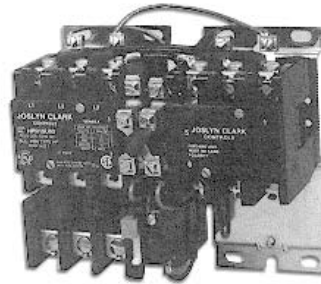
Ordering Information	Coil Table			
	60Hz Voltage	Suffix	60Hz Voltage	Suffix
<ul style="list-style-type: none"> • Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table. • Engineering Data page C10-13. • Modification pages C7-8 	24 Separate Control	-96	200-240	-26
	120 Separate Control	-76	277	-66
			440-480	-46
			550-600	-56



HP10U03



HP02AA3



HPR10U03

C

Non-Reversing Starters - Type HP

2-Pole, Single Phase (Requires 1 Overload Heater)							
NEMA Size	Maximum Motor Horsepower Rating			Continuous Ampere Rating	NEMA Type 1 General Purpose	NEMA Type 12 Industrial - Dust-tight	Open Type
	115V	220V	460/575V		Catalog No. ¹	Catalog No. ¹	Catalog No. ¹
00	1/3	1	----	9	HP02AA2 *	HP02TA2 *	HP02U02 *
0	1	2	----	18	HP05AA2 *	HP05TA2 *	HP05U02 *
1	2	3	----	27	HP10AA2 *	HP10TA2 *	HP10U02 *

3-Pole, Three Phase (Requires 3 Overload Heaters)							
NEMA Size	Maximum Motor Horsepower Rating			Continuous Ampere Rating	NEMA Type 1 General Purpose Catalog No. ¹	NEMA Type 12 Industrial - Dust-tight Catalog No. ¹	Open Type Catalog No. ¹
	200V	230V	460-575V				
00	1 1/2	1 1/2	2	9	HP02AA3 *	HP02TA3 *	HP02U03 *
0	3	3	5	18	HP05AA3 *	HP05TA3 *	HP05U03 *
1	7 1/2	7 1/2	10	27	HP10AA3 *	HP10TA3 *	HP10U03 *
2	10	15	25	45	HP25AA3 *	HP25TA3 *	HP25U03 *

Reversing Starters - Type HPR

3-Pole, Three Phase (Requires 3 Overload Heaters)							
NEMA Size	Maximum Motor Horsepower Rating			Continuous Ampere Rating	NEMA Type 1 General Purpose	NEMA Type 12 Industrial - Dust-tight	Open Type
	200V	230V	460/575V		Catalog No. ²	Catalog No. ²	Catalog No. ²
00	1 1/2	1 1/2	2	9	HPR02AA3 *	HPR02TA3 *	HPR02U03 *
0	3	3	5	18	HPR05AA3 *	HPR05TA3 *	HPR05U03 *
1	7 1/2	7 1/2	10	27	HPR10AA3 *	HPR10TA3 *	HPR10U03 *
2	10	15	25	45	HPR25AA3 *	HPR25TA3 *	HPR25U03 *

Note:

1. Includes starter complete with N.O. interlock and overload relay less heaters.
2. Includes starter complete with N.O. interlock on each contactor and overload relay less heaters. All starters are mechanically and electrically interlocked.
3. NEMA 3R add 60.00 to NEMA 12 List

Ordering Information		Coil Table			
<ul style="list-style-type: none"> • Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table. • Engineering Data page C10-13. • Modification pates C7-8 • Spare Parts C8 	60Hz Voltage	Suffix	60Hz Voltage	Suffix	
	24 Separate Control	-96	200-240	-26	
	120 Separate Control	-76	277	-66	
			440-480	-46	
			550-600	-56	

NEMA CONTROL - HP

Modifications & Parts

Modifications

Description	Factory Installation Addition - Change Catalog No. as outlined on Page C9.				For Field Installation Kit Catalog Number Kits Only For Type 1 Enclosures
	For Bulletin Number	Type HP Size	Enclosure Type		
			1	12	
Cover Controls					
Over Load Reset Hole plug for Internal Reset (10 per pack) Reset Button (one reset per kit)	6013, 6030 6013 & 6030				KTM-26 KHP-EC2 A60-306413
Push Buttons & Selector Switches Start-Stop Push Buttons Hand-Off Auto Selector Switch Forward-Reverse-Stop Selector Switch Forward-Reverse-Stop Push Button	6013, 6030, 6031, & 7707	00,0,1 & 2			KHP-4 KHP-8 KHP-8 KTM-18
Pilot Lights Without Electrical Interlocks, 120V Standard Transformer Type, 240V with Red Lens. 480V 600V	6013, 6030, 6031, & 7707				KTM5-4 KTM5-5 KTM5-6 KTM5-7
Control Circuit					
Auxillary Contacts Extra N.O. Contact Extra N.O. and N.C. Contacts Two extra N.O. Contacts	All	All			KHP-M10 KHP-M11 KHP-M20
Enclosure Kits	6013 & 6030				Same as type TM, see Section B

Notes:

1. 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-LEAD, ON-OFF.
2. Lower Mounting Base for Fuse Clips- required only when converting a non-fusable unit to a fusable unit.

Modifications

Description				For Bulletin Number	Type HP Size	For Field Installation Kit Catalog Number
Control Transformer - Includes Single Fused 120 Volt Secondary						
	VA Capacity	Primary Voltage	Hertz			
Standard ³ Capacity	50	208 240 & 480 600	50 / 60	6013 & 6018	00-2	KTR67-16 KTR67-2 KTR67-12
Extra ³ Capacity	150	208 240 & 480 600				KTR67-20 KTR67-5 KTR67-25
Miscellaneous						
Ambient Compensated Overload Relay				All	00-2	
Fused Control Circuit: Fuse Holder for one fuse Fuse Holder for two fuses				All	00-2	KHP-F1 KHP-F2
Enclosure Adaptor Kits: Starter Mounting Plate Mtg. Plate with O/L Reset - Required with Enclosure Kit Transformer Mtg. Plate ¹						KHP-EC1 KHP-EC3 KTM-28

C

Renewal Parts	Size	Discount Schedule JC80
Replacement Overload	00-2	KHP31-15
Ambient Compensated	00-2	KHPA31-15
Replacement Power Contact Kit for 3 Pole	00-1	KHP31-1
	2	KHP32-1
	Forward Side	KHPR31-S
	00-1 Reverser	KHPR31-C
	Reverse Side	
	00-1 Reverser	KHPR32-S
	Forward Side	
	Size 2 Reverser	
Reverse Side		
Size 2 Reverser	KHPR32-C	
Replacement Coil Kits		Discount Schedule JC80
Voltage	Hertz	
110-120	50 or 60	00, 0, 1 & 2
		KTB174-1
208-240	50 or 60	KTB174-2
440-480	50 or 60	KTB174-5
550-600	50 or 60	KTB174-6
380	50 or 60	KTB174-7
277	50 or 60	KTB174-4
24	50 or 60	KTB174-3

Notes:

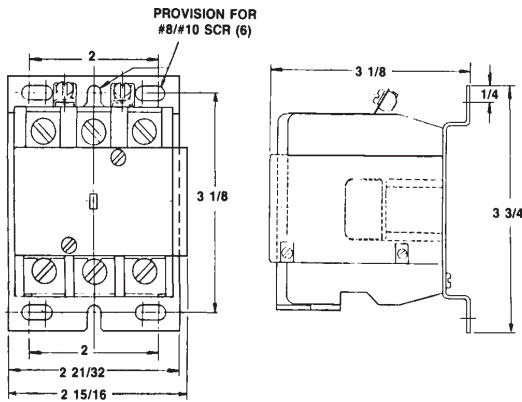
1. Reversing Starters require 1-KHP-EC1 and 1-KHP- EC3 with reset.
2. Include larger cabinets required for Bul. 6013 & 6030.
3. Includes one secondary fuse and 2 Primary Fuse Clips.

NEMA CONTROL - HP

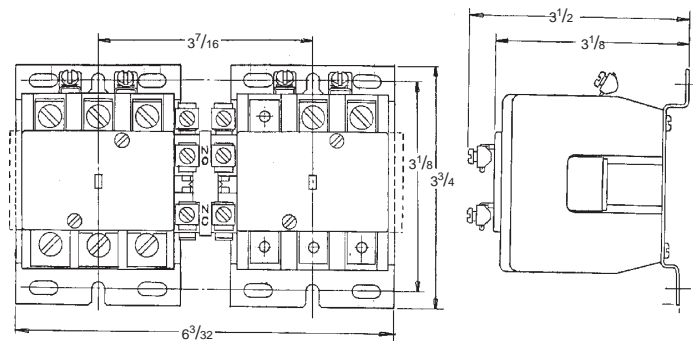
Engineering Data

Type HP NEMA Sizes 00, 0, 1 & 2 Outline Drawings

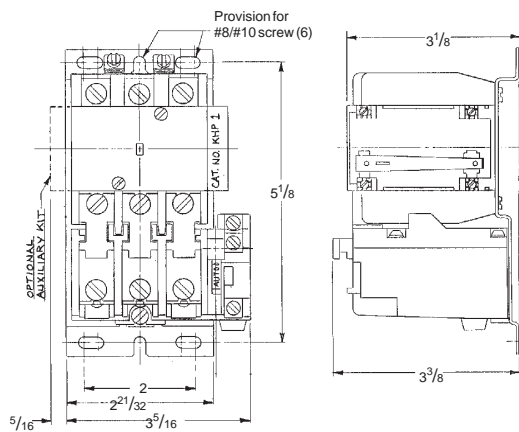
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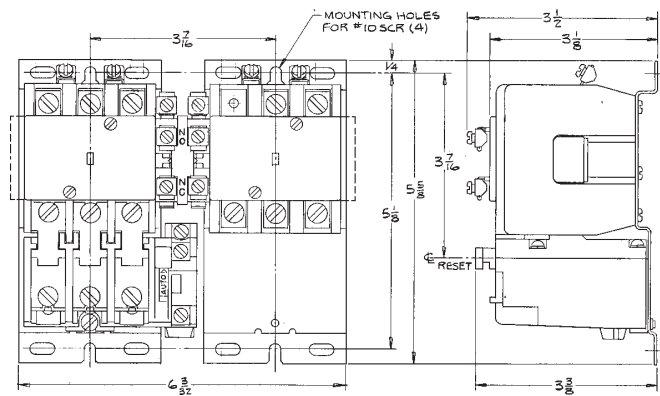
Contactor Type HPC



Reversing Contactor Type HPRC



Starter Type HP



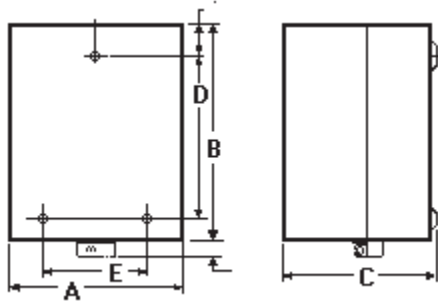
Reversing Starters Type HPR

Power Wiring Accommodations						Control Circuit							
Wire Range		Wire Type	Pressure Terminal Type	Provision for Ring Tongue Lugs ¹		Continuous Amperes	A-C Inductive		Terminal Type	Copper Wire Size Max. ^{2,3}	Screw Size	Coil Burden	
Line	Load			Terminal Width in.	Screw Size		Make	Break				Inrush	Sealed
# 14 - #8	#14 - #4	Copper (Cu)	Pressure Clamp	.450	#10 - 32	5	880VA	40VA	Pressure Saddle	#12AWG	#6 - 32	48VA	8.4VA

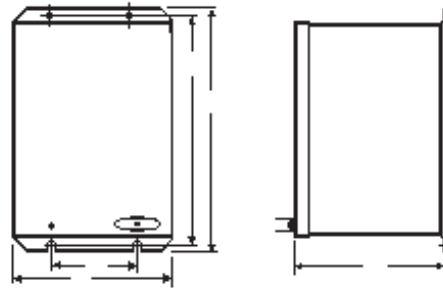
Notes:

1. UL specifies only one (1) wire per lug.
2. One or two stranded copper wires of same size, or differing by two (2) gauge sizes.
3. Coil terminal wire size is #14 AWG maximum.

Approximate Dimensions In Inches
Type HP NEMA Sizes 00, 0, 1 & 2 Outline Drawings



NEMA Type 1 Enclosure



NEMA Type 12 Enclosures

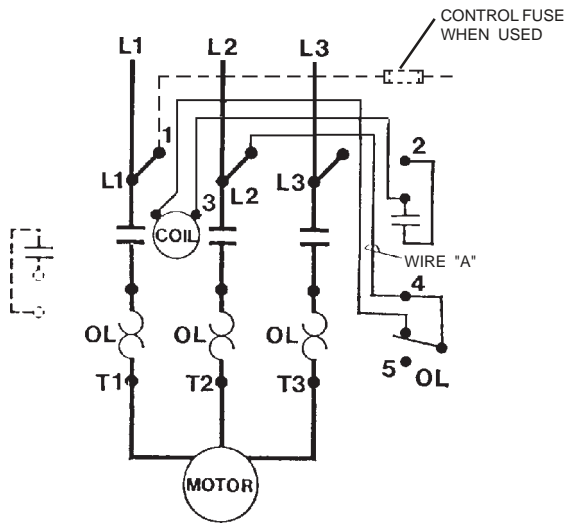
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Starter Type	NEMA Type 1 Enclosure										NEMA Type 4 & 12 Enclosure									
	Without Transformer					With Transformer					Without Transformer					With Transformer				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
HP & HPC	6 ³ / ₄	9 ¹ / ₂	6 ¹ / ₄	7 ³ / ₄	5	12 ⁵ / ₈	9 ¹ / ₂	6 ¹ / ₄	7 ³ / ₄	11	7 ¹ / ₄	11	6 ⁷ / ₈	10 ¹ / ₂	4	13 ¹ / ₈	11	6 ⁷ / ₈	10 ¹ / ₂	6
HPR & HPRC	12 ⁵ / ₈	9 ¹ / ₂	6 ¹ / ₄	7 ³ / ₄	11	12 ⁵ / ₈	13 ⁷ / ₈	6 ¹ / ₄	12 ³ / ₄	11	13 ¹ / ₈	11	6 ⁷ / ₈	10 ¹ / ₂	6	17	13	6 ⁷ / ₈	9	16

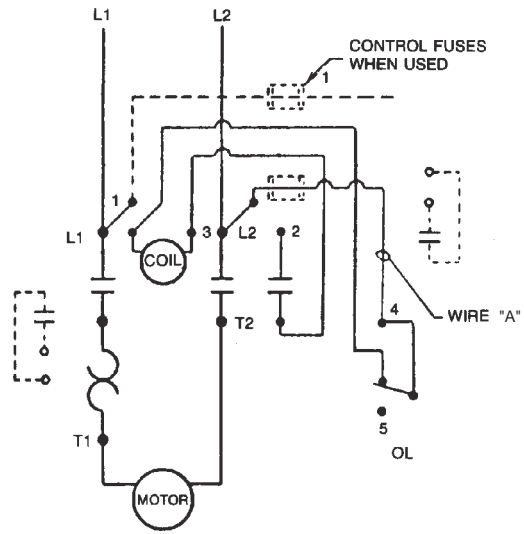
NEMA CONTROL - HP

Engineering Data

Wiring Diagram Type HP - Non-Combination Starter



3 Pole, Three Phase

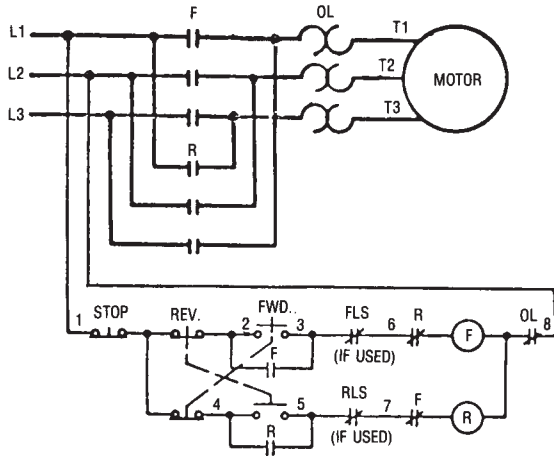


2 Pole, Single Phase

Connection For Pilot Devices

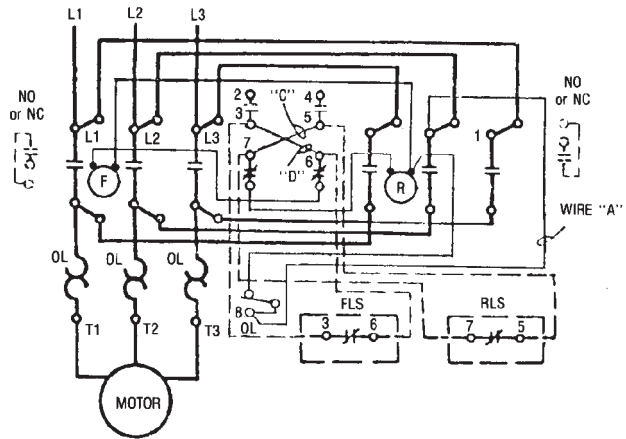
Cover Mounted Pilot Devices		3 Wire Control Remote Pilot Devices		Automatic Reset Automatic reset operation should not be used with two wire control.
<p>Start-Stop Pushbutton</p>	<p>Connect To Coil Terminals Pilot Light</p>	<p>Momentary Contact Pushbutton</p>	<p>Separate Control Remove wire "A" when it is supplied. Connect separate control lines to the "1" terminal on the pilot device and the "4" terminal on the starter.</p>	
<p>Two Wire Contact Device</p> <p>3 Position Selector Switch (Remove Lead from Coil to Term No. 3)</p>	<p>2 Position Selector Switch (Remove Lead from Coil to Term No. 3)</p>	<p>Two or More Momentary Contact Pushbutton Stations</p>		

Wiring Diagram
Type HPR - Non-Combination Starters



Elementary Diagram

Contactors "F" & "R" are Mechanically Interlocked



Wiring Diagram Front View

When Limit Switches are used, remove Jumpers "C" & "D" and connect per dotted lines.

C

Two Wire Control for Maintained Pushbuttons	Three Wire Control for Momentary Control Pushbuttons	
		<p>Automatic Reset Automatic reset operation should not be used with two wire control.</p> <p>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.</p>
<p>Pushbutton with Forward and Reverse Buttons Electrically Interlocked</p>		