XLC Lighting Contactor
Installation & Maintenance Information

Crouse-Hinds by EATON

IF 1698

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

APPLICATION

The XLC Explosionproof Lighting Contactors are listed Class I, Division 1 & 2, Groups B, C, D; Class I, Zones 1 & 2; IIB + H2; Class II, Division 1, Group E, F, G; Class II, Division 2, Groups F, G; Class III; as defined by the National Electrical Code ® as well as in damp locations.

Additionally, this series is suitable for NEMA 3, 7BCD, 9EFG applications.
The XCL Explosionproof Lighting Contactors should be installed, inspected, maintained and operated by qualified and competent personnel only.

INSTALLATION

⚠WARNING

To avoid risk of electrical shock; electrical power must be OFF before and during product installation and maintenance. Failure to comply can result in damage to equipment, injury or death to personnel.

1. Select a mounting location that will provide suitable strength and rigidity for supporting the XLC Explosionproof Lighting Contactor. Weights and dimensions are listed below for the different enclosures.

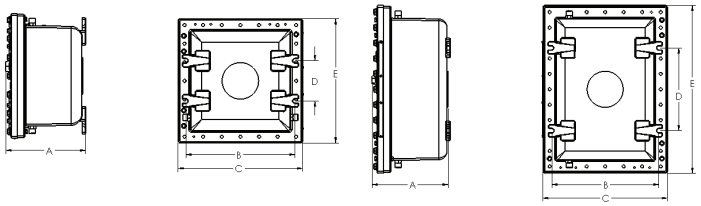


Table 1

Enclosure Type	A		B		C		D		E		WEIGHT	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	lbs	Kg
EJB121208	10.92	277	14.94	379	17.03	433	5.50	140	17.03	433	90	41
EJB181208	10.56	268	14.88	378	17.30	439	11.50	292	23.30	592	120	54

Note: Refer to product nameplate for enclosure type.

2. Securely fasten enclosure to the mounting location, and then attach enclosure into conduit system. Install approved conduit or cable sealing fittings in all conduit entries within 18 inches (46cm) of enclosure per the National Electrical Code ® requirements.

⚠CAUTION

To avoid the risk of explosion; hazardous location information specifying class and group listing of each device is marked on the nameplate of each enclosure. Class and group list for any device penetrating the enclosure must be suitable for the classification of location in which the enclosure is installed. Conduit sealing fittings MUST be installed in each attached conduit run within 18 inches of the enclosure per the National Electrical Code

3. Ensure the operator is in the OFF position and then remove the cover bolts while securing cover. Carefully open the cover fully to prevent damage to the machined joint flame path and cover gasket.

⚠WARNING

To avoid the risk of explosion; do not scratch or damage ground joint flame path surface. Failure to comply could result in damage to equipment or injury to personnel.

⚠CAUTION

To avoid the risk of explosion or electrical shock; hammers or prying tools must not be allowed to damage the flat machined-joint surfaces or cover gasket. Do not handle covers roughly or place them on surfaces that might damage or scratch the flat-machined joint surfaces.joint surfaces.

⚠CAUTION

To avoid the risk of explosion; do not use cover bolts as a means to lift the enclosure. Excessive force on the fully retracted cover bolts may damage the bolt/spring assembly. Use appropriate lifting method for safety.

4. Pull wires into enclosure, making sure they are long enough to make the required electrical connections. Make electrical connections utilizing the following wire diagrams in figure 1 and 2.

Note: C30CN Lighting contactors can be configured either electrically or mechanically held.

Figure 1: C30CN Electrically Held Lighting Contractor

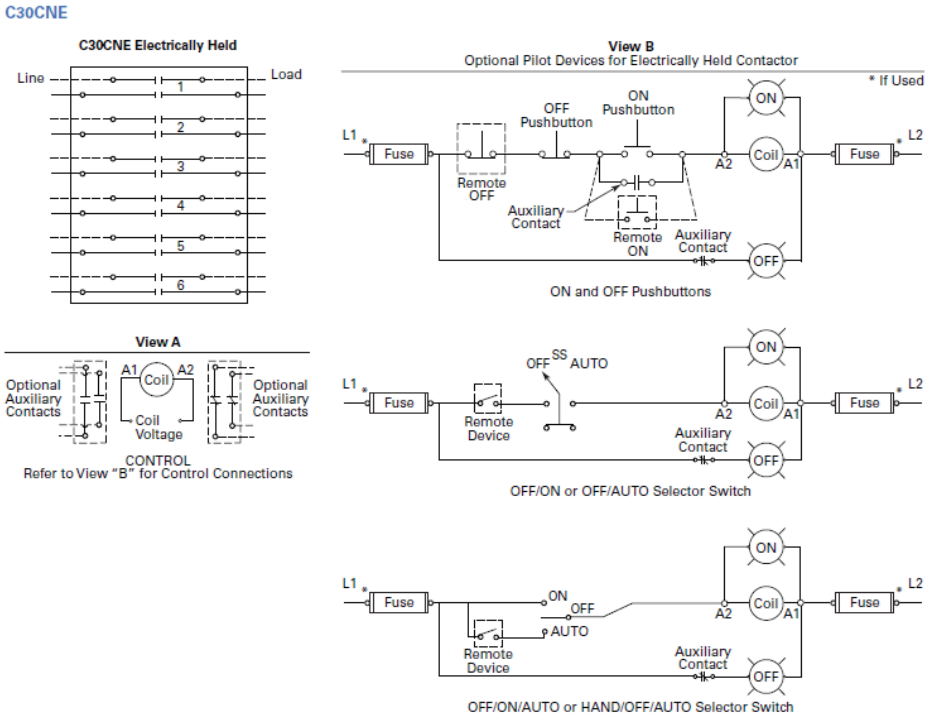
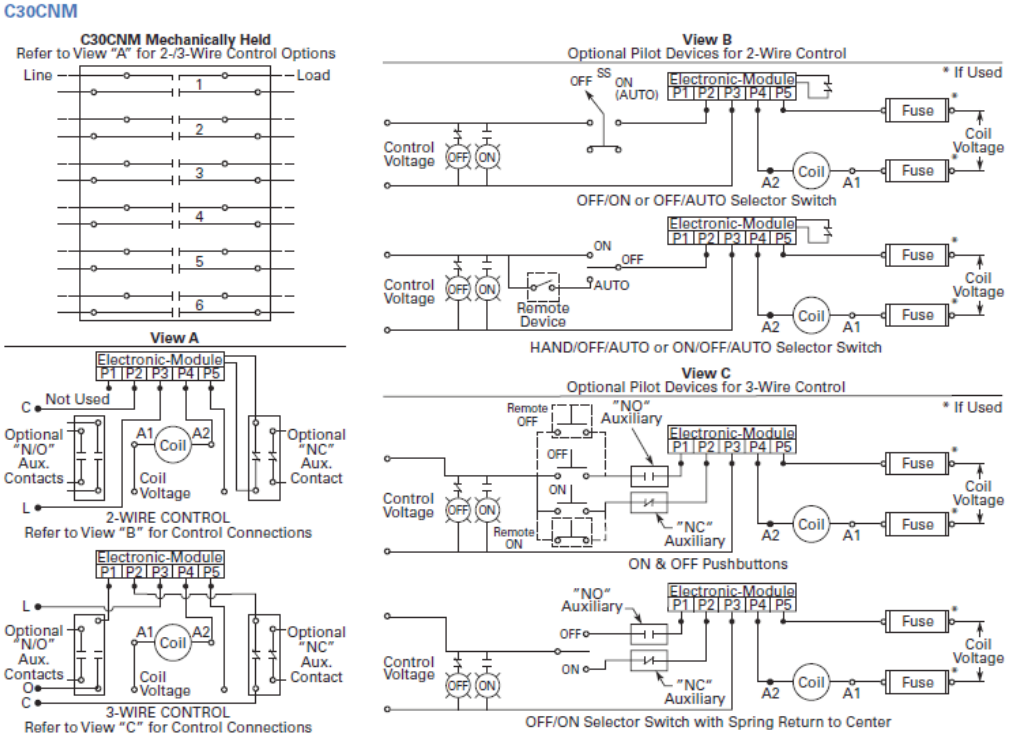


Figure 2: C30CNM Mechanically Held Lighting Contactor



Note: The above diagrams are a typical wire diagram for electrically and mechanically held lighting contactor.

a. Recommended wire gauges:

14-8AWG (2mm2-8.4mm2) (either solid or stranded)

Neutral
(1) 6 AWG -350kcmil (13.3mm2 -177.3mm2)
(12) 14-6 AWG (2mm2-13.3mm2)

Ground
(1) 6 AWG -350kcmil (13.3mm2 -177.3mm2)
(12) 14-6 AWG (2mm2-13.3mm2)

Terminal Block
14- 10 AWG (2mm2-5.3mm2)

5. Test wiring connections by performing continuity check. Also, check for unwanted grounds with an insulation resistance tester.

⚠CAUTION

Clean both machined-joint surfaces of body and cover before closing. Dirt or foreign material must not accumulate on flat machined-joint surfaces. Surfaces must seat fully against each other to provide a proper explosion-proof joint.

6. Ensure the operator is in the OFF position. Close the cover and fully tighten all cover bolts to the appropriate torque value (see Table 2).

Table 2		Torque Value	
Series	Cover Screw	Ft. lb	Kg.m
EJB121208	½-13 X 2.00 [50.80]	40-45	5.53-6.22
EJB181208	½-13 X 2.00 [50.80]	40-45	5.53-6.22

⚠CAUTION

To avoid electrical explosion; all unused conduit openings must be closed properly with an approved plug, drain or breather such as the Crouse-Hinds PLG series plugs or ECD Series Breather/Drains. NO CONDUIT OPENINGS ARE PERMISSIBLE TO BE ADDED IN THE FIELD.

MAINTENANCE

⚠WARNING

To avoid electrical shock and personal injury; always disconnect primary power source before opening enclosure for inspection or service and lock them out.

1. Electrical and mechanical inspections must be done on a regular basis. It is recommended that inspections be performed a minimum of once a year. Make sure to inspect the heater, contactor and all other electrical components.
2. If necessary to open enclosure for inspection or service, always disconnect primary power source and refer to cautionary statement or nameplate before opening cover. Area must be free of flammable gases and vapor before opening cover.
3. Perform visual check for undue heating evidenced by discoloration of wires or other components, damage or worn parts, or leakage evidenced by water or corrosion in the interior.
4. Electrically check to make sure that all connections are clean and tight and that contacts in the components make and break as required.
5. Mechanically check that all parts are properly assembled and operating mechanisms move freely.

Eaton's Crouse-Hinds Business recommends an Electrical Preventative Maintenance Program as described in the National Fire Protection Association Bulletin NFPA 70B.

ADDITIONAL INFORMATION

CUTLER HAMMER
C30CN LIGHTING CONTACTOR SERIES

⚠ WARNING

HAZARDOUS VOLTAGE

Disconnect all power before working on equipment.
Electrical shock will cause severe injury or death.

TENSION DANGEREUSE

Coupez l'alimentation avant travailler sur le produit.
Electrocution peut causer de sévères blessures ou la mort.

DESCRIPTION

The Cutler Hammer C30CN Series is a magnetically operated lighting contactor, and is available in both open and enclosed forms. These contactors are field configurable for up to twelve poles, with a maximum of eight normally closed "NC" poles.

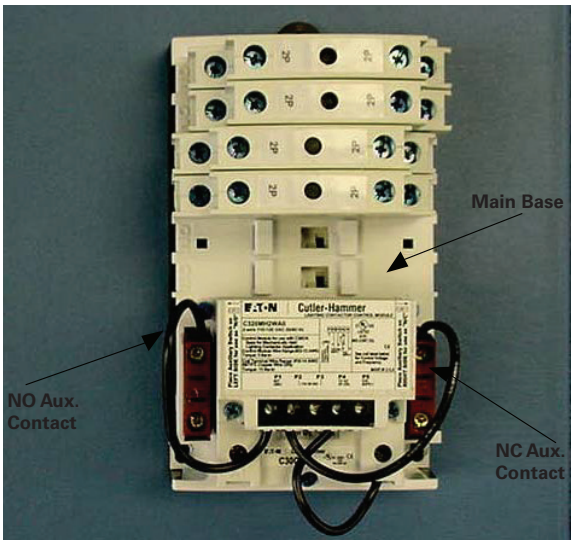


Figure 1: Mechanically Held Contactor

MAIN BASE

DESCRIPTION

The base of the lighting contactor (see Figure 1) has provisions to accept power poles at positions "1" to "6". Provisions are also provided for up to 2 "NO" and 2 "NC" auxiliary contacts.

INSTALLATION

1. Remove all packing material from the base and all the kits.
2. Contactor must be mounted in the vertical position on a sturdy support.
3. Additional over-current protection may be required. Refer to the National Electrical Code or local electrical code as required.
4. Refer to Section 5.3 and Table D on page 3 for the wire size and the required torque for the coil terminals.

POWER POLES: C320PRP1 & C320PRP2

DESCRIPTION

Power poles are available in both single pole (C320PRP1) and double pole (C320PRP2) versions. A maximum of twelve poles may be installed on the base. Positions "1" to "4" on the base can be configured as either normally open "NO" or "NC" while positions "5" and "6" can be configured as "NO" only.

REMOVAL AND CONVERSION OF POWER POLES

1. If installed ensure that all power is disconnected.
2. For multiple possible configurations of the power poles, refer to Table A below.

# of NC Contacts Desired (3)

NO	NC								
	0	1	2	3	4	5	6	7	8
0	00	01	02	03	04	05	06	07	08
1	10	11	12	13	14	15	16	17	18
2	20	21	22	23	24	25	26	27	28
3	30	31	32	33	34	35	36	37	38
4	40	41	42	43	44	45	46	47	48
5	50	51	52	53	54	55	56	57	
6	60	61	62	63	64	65	66		
7	70	71	72	73	74	75			
8	80	81	82	83	84				
9	90	91	92	93					
10	100	101	102						
11	110	111							
12	120								

# of NO Contacts Desired (4) **Standard Catalog # C30CNE43A0**

Table A

3. Remove block by using a screwdriver to pull the clip as shown (see Figure 2). Rotate block 180 degrees to convert from NO to NC or from NC to NO and install per 2.3 below.

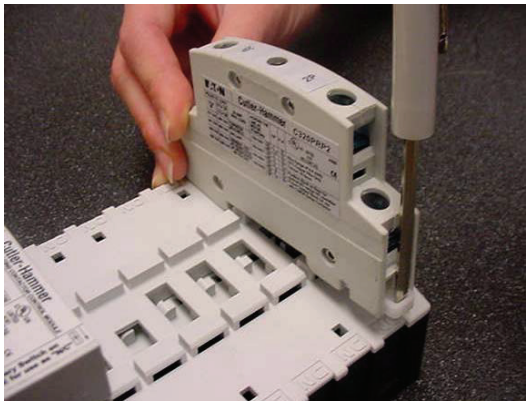


Figure 2

INSTALLATION OF POWER POLES

1. Check moving carrier to assure free movement
2. Install the block by sliding foot into slot; using a screwdriver pull the clip, and position block onto base. Release the clip.
3. Check for the lettering on the base. "NO" should be visible if the power pole is assembled as normally open, and "NC" should be visible if it is assembled as normally closed (see Figure 3).

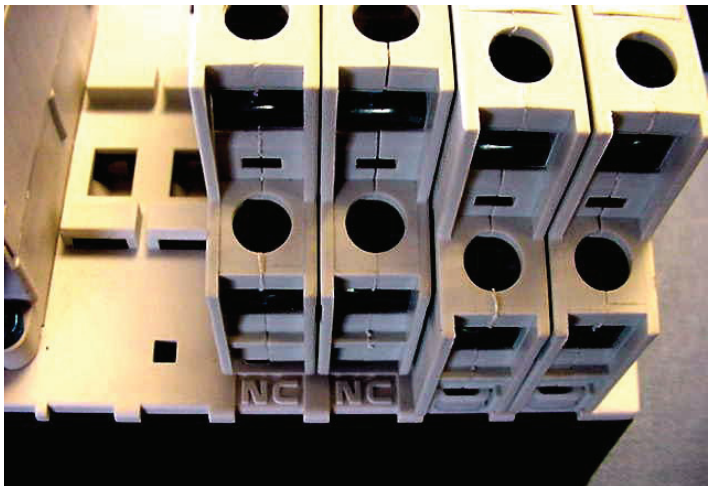


Figure 3

WIRING

Power poles can accept wires from #14 to #8 AWG (either solid or stranded) as single or combination of two wires (refer to Table B below for valid wire combination). Wire material must be copper with a temperature rating of 75 degrees C. Maximum tightening torque is 35 in-lbs.

Size	Type	8 AWG	10 AWG		12 AWG		14 AWG	
		Stranded	Stranded	Solid	Stranded	Solid	Stranded	Solid
8 AWG	Stranded	X	X	X	X	X	X	X
10 AWG	Stranded	X	X	X	X	X	X	X
	Solid	X	X	X	X	X	X	X
12 AWG	Stranded	X	X	X	X	X	X	X
	Solid	X	X	X	X	X	X	X
14 AWG	Stranded	X	X	X	X	X	X	X
	Solid	X	X	X	X	X	X	X

Table B

AUXILIARY CONTACTS: C320AMH1 & C320AMH2

DESCRIPTION

The auxiliary contact blocks are available in both single pole (C320AMH1) and double pole (C320AMH2) versions. Auxiliary contacts can be added on either side of the base (see Figure 1). When added to the LEFT side of base, the auxiliary block functions as "NO", and when added to the RIGHT side of base it functions as "NC". Refer to section 4.3 for wiring.

CONTROL MODULE KITS

The base (electrically held) can be converted to a mechanically held type by adding a control module kit.

IMPORTANT: *The control module kits are for use with the coils up to 277 VAC maximum. Use a control power transformer for higher voltages.*

Conversion from an electrically held to a mechanically held type is possible by adding a "control module kit" to the base.

DESCRIPTION

Control module kits are available both for 2-wire and 3-wire control with a wide range of control voltage inputs. Figure 4 shows the components in 2-wire control module kit. A 3-wire kit includes an additional single-pole auxiliary contact block. Refer to the Ordering Detail section for more information on control module kits and control voltages available.

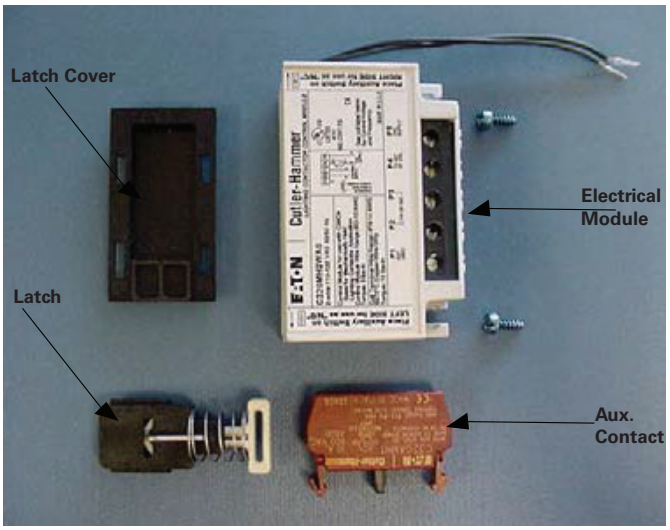


Figure 4

INSTALLATION

1. Disconnect all power and mount the control module on the contactor as shown in Figure 1 (3-wire control type).
2. Mount the latch as shown in Figure 5.

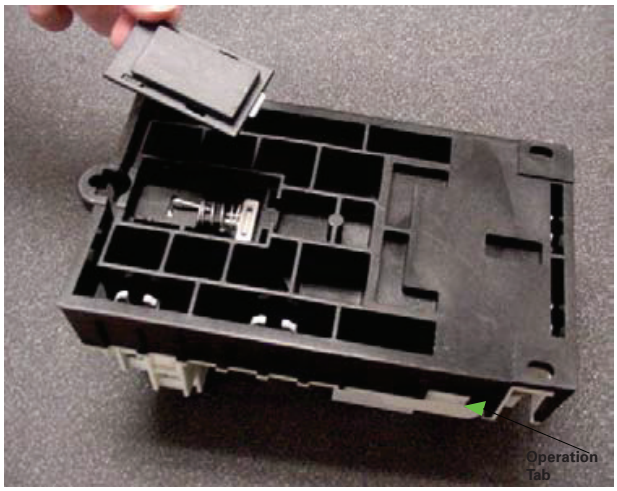


Figure 5

> **⚠ CAUTION**
>
> Once latch cover has been installed, it may not be removed. Ensure latch is properly installed prior to installing the latch cover.

3. Be sure the latch is firmly in place with the wire facing out and the slot positioned with tab inserted.
4. Mount the latch cover as shown in Figure 5.

> **⚠ CAUTION**
>
> Once latch cover has been installed, it may not be removed. Ensure latch is properly installed prior to installing the latch cover.

5. For 2-wire control, the auxiliary contact block is assembled to the right side of the base for "NC".
6. Operate contactor manually, using manual operation tabs (See Figure 5) on side, prior to installing cover to insure correct installation.

IMPORTANT: *Latch and electronic module must be used together to ensure proper operation. Failure to do so will void warranty.*

WIRING

Control module's and auxiliary contact block's terminals can accept a single wire from #22 to #12 AWG (either solid or stranded). Maximum tightening torque required for the control module's terminals is 5 in-lbs. Auxiliary contact block terminals can accept parallel conductor size combinations utilizing torques identified in Table C.

Wire Combination	Torque
#12 with #14	12 in-lbs
#14 with #16	12 in-lbs
#16 with #18	12 in-lbs
#12 with #20	12 in-lbs
#16 with #22	12 in-lbs
#18 with #22	10-12 in-lbs
#18 with #20	10-12 in-lbs
#20 with #22	7-12 in-lbs

Table C

Follow the schematic (Figure 6) to wire the 2 and 3-wire control modules.

Note: For 2-wire control, ensure the two wires coming from the control module are connected across a NC auxiliary contact.

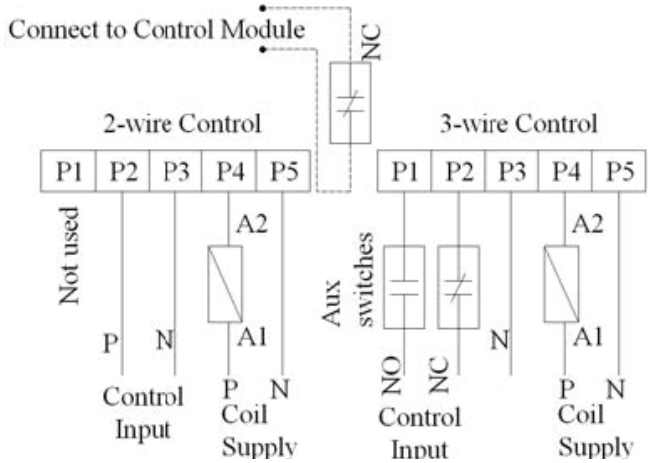


Figure 6

COIL KITS

DESCRIPTION

A wide range of coils is available for both electrically held and mechanically held lighting contactors. Refer to the Ordering Detail section for more information about the coil kit catalog numbers and voltages available.

Note: For mechanically held lighting contactor, only use coil rated up to 277 VAC maximum. Use control power transformer for higher voltages.

INSTALLATION

1. Disconnect all power. Replace and mount the coil on the contactor as shown in Figure 7.
2. For mechanically held contactors, remove all wires from the control module and remove the coil cover along with control module.

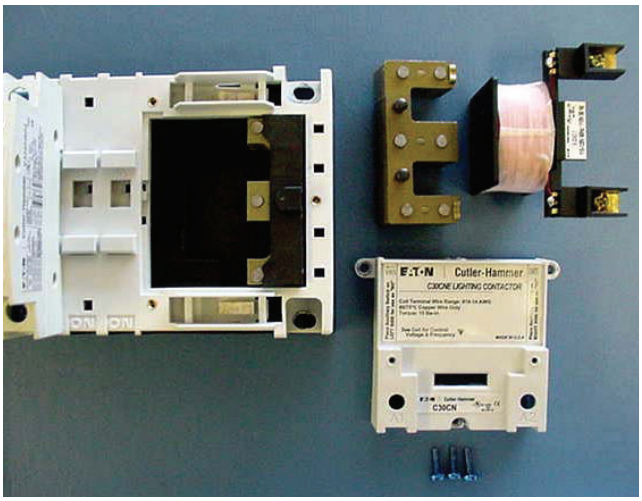


Figure 7

WIRING

Coil terminal can accept wires from #18 AWG to #14 AWG (either solid or stranded) as single or combination of two wires (Refer to Table D below for valid wire combination). Wire material must be copper with a temperature rating of 60 or 75 degrees C. Maximum tightening torque is 15 in-lbs.

Size	Type	14 AWG	16AWG		18 AWG	
		Stranded	Stranded	Solid	Stranded	Solid
14 AWG	Stranded	X	X	X	X	X
	Solid	X	X	X	X	X
16 AWG	Stranded	X	X	X	X	X
	Solid	X	X	X	X	X
18 AWG	Stranded	X	X	X	X	X
	Solid	X	X	X	X	X

Table D

ORDERING DETAILS

Coil Kits	
9-3242-7	24V 60Hz / 20V 50Hz Coil
9-3242-8	28V 60Hz / 24V 50Hz Coil
9-3242-1	115-120V 60Hz / 110V 50Hz Coil
9-3242-5	200-208V 60Hz Coil
9-3242-2	230-240V 60Hz / 220V 50Hz Coil
9-3242-6	265-277V 60Hz / 240V 50Hz Coil
9-3242-9	347V 60Hz Coil
9-3242-3	460-480V 60Hz / 440V 50Hz Coil
9-3242-4	575-600V 60Hz / 550V 50 Hz Coil

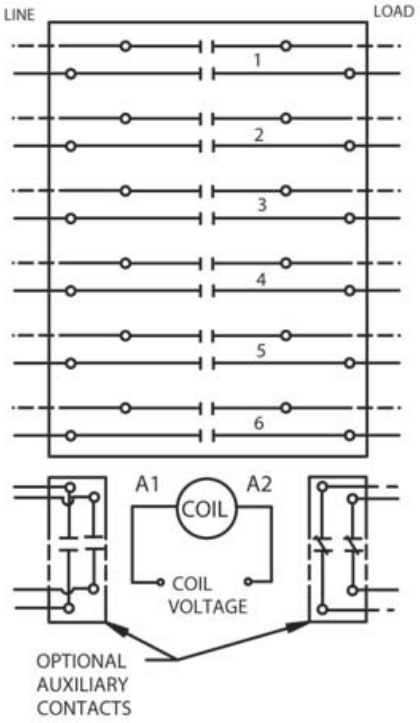
Control Module Kits	
C320MH2WT0	2 wire 24 VAC 60/50 Hz
C320MH2WA0	2 wire 110-120 VAC 60/50 Hz
C320MH2WH0	2 wire 200-277 VAC 60/50 Hz
C320MH2WT1	2 wire 12-24 VDC
C320MH3WT0	3 wire 24 VAC 60/50 Hz
C320MH3WA0	3 wire 110-120 VAC 60/50 Hz
C320MH3WH0	3 wire 200-277 VAC 60/50 Hz
C320MH3WT1	3 wire 12-24 VDC

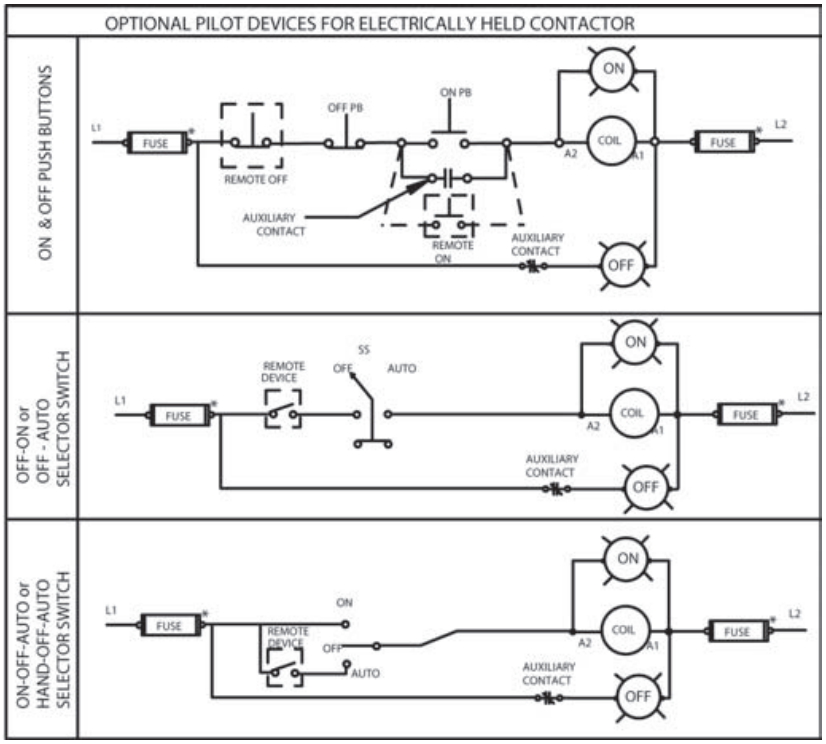
Power Pole Kits	
C320PRP1	Single Power Pole
C320PRP2	Double Power Pole

Auxiliary Contact Kits	
C320AMH1	Auxiliary Contact Block 1 NO when mounted on left side of contactor.
	Auxiliary Contact Block 1 NC when mounted on right side of contactor.
C320AMH2	Auxiliary Contact Block 2 NO when mounted on left side of contactor.
	Auxiliary Contact Block 2 NC when mounted on right side of contactor.

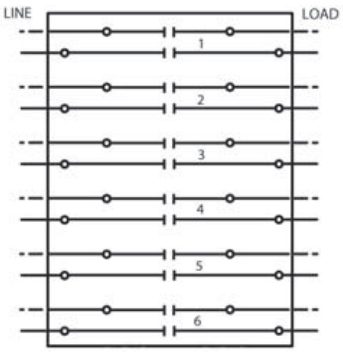
Note: These instructions do not purport to cover all details or variations in equipment nor provide for every possible contingency to be met in connection with installation, operation, or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently or the Purchase's purpose, the matter should be referred to Eaton e-Com Technical Support. Toll free telephone (800) 356-1243.

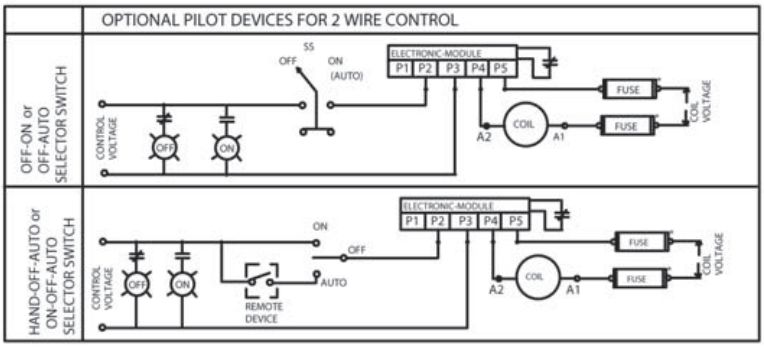
C30CNE Electrically Held Contactor

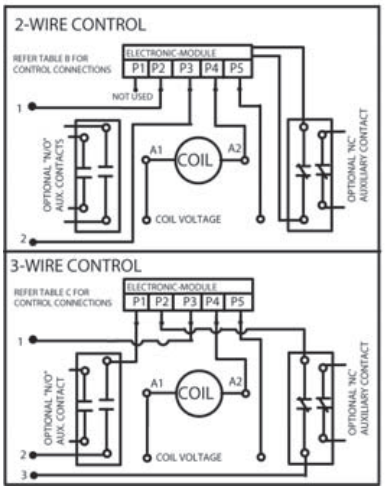


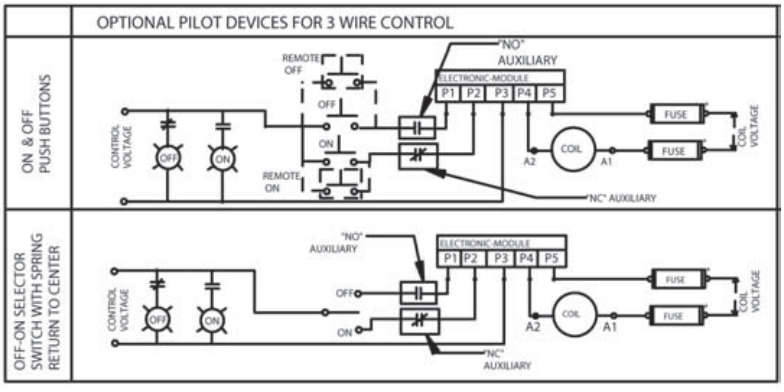


C30CNM Mechanically Held Contactor









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