

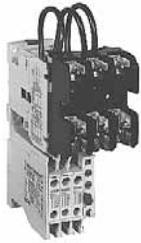
Accessories

**3-Pole Top Mounted Fuse Block Kit**

IEC Sizes A – K, NEMA Sizes 00 – 2

Field mount to Freedom Series starters and contactors. Designed to save space and reduce installation costs. They provide short circuit protection for branch circuits.

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**Mounted Fuse Block Kit**

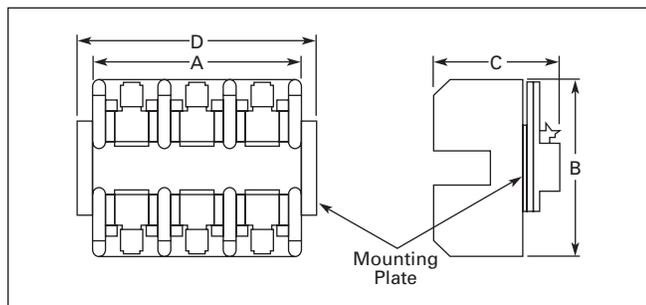
**Table 33-114. Fuse Block Kits**

Fuse Type	Catalog Number	Price U.S. \$
Class H — 30A 250V	<b>C350KH21</b>	
Class R — 30A 250V	<b>C350KR21</b>	
Class G — 15A 300V	<b>C350KG37</b>	
Class G — 20A 300V	<b>C350KG38</b>	
Class G — 30A 300V	<b>C350KG31</b>	
Class G — 60A 300V	<b>C350KG32</b>	
Class T — 30A 300V	<b>C350KT31</b>	
Class T — 60A 300V	<b>C350KT32</b>	
Class J — 30A 600V	<b>C350KJ61</b>	
Class J — 60A 600V	<b>C350KJ62</b>	
Type M — 30A 600V ①	<b>C350KM61</b>	
Class CC — 30A 600V	<b>C350KC63</b>	
Class T — 30A 600V	<b>C350KT61</b>	
Class T — 60A 600V	<b>C350KT62</b>	

① Type M fuse block not approved for branch circuit protection.

**Table 33-115. Approximate Dimensions**

Class	Fuse Block		Dimensions in Inches (mm)			
	Amperes	Volts	Wide A	High B	Deep C	D
G	15, 20, 30	300	2.40 (61.0)	3.00 (76.2)	2.04 (51.8)	—
	60	300	2.62 (66.5)	4.25 (108.0)	2.08 (52.8)	—
H	30	250	3.00 (76.2)	3.10 (78.7)	2.23 (56.6)	3.62 (91.9)
J	30, 60	600	4.81 (122.2)	4.12 (104.6)	2.82 (71.6)	—
M, CC	30	600	2.40 (61.0)	3.00 (76.2)	2.04 (51.8)	—
R	30	250	3.00 (76.2)	3.10 (78.7)	2.23 (56.6)	3.62 (91.9)
T	30, 60	300	3.44 (87.4)	3.00 (76.2)	2.33 (59.2)	—
	30	600	3.75 (95.3)	3.31 (84.1)	2.26 (57.4)	—
	60	600	4.87 (123.7)	3.00 (76.2)	2.58 (65.5)	—



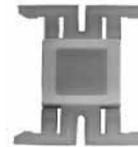
**Figure 33-27. Approximate Dimensions in Inches (mm)**

**Mechanical Interlock and Reversing Kits**

Mechanical interlocks and reversing kits are designed for field assembly of reversing contactors or starters from Freedom Series components. The Reversing Kits include a Mechanical Interlock, stabilizer bar and a pre-cut, trimmed and formed wire set. Auxiliary contacts, if required, must be ordered separately. See Page 33-96.



**Cat. No.  
C321KM60B**



**Part No.  
23-7165**



**Wire Set**

**Table 33-116. Mechanical Interlock Only ②③**

Application			Catalog Number	Price U.S. \$
NEMA Size	IEC Size	Contactor Mounting		
00 – 2	A – K	Horizontal	<b>C321KM60B</b>	
3	L – N	Horizontal	<b>C321KM30</b>	
3 to 4	N to P	Horizontal	<b>C321KM43</b>	
4	P – S	Horizontal	<b>C321KM40</b>	
4 to 5	—	Horizontal	<b>C321KM45</b>	
4 to 6	S to T/U	Horizontal	<b>C321KM80</b>	
5	—	Horizontal	<b>C321KM50</b>	
5 to 6	—	Horizontal	<b>C321KM56</b>	
6	T and U	Horizontal	<b>C321KM70</b>	
6 to 7	T/U to V – X	Horizontal	<b>C321KM90</b>	
7	V, W and X	Horizontal	<b>C321KM34</b>	
4 or 5 to 5	P – S to 5	Vertical	<b>C321KM55</b>	
5 to 6	—	Vertical	<b>C321KM65</b>	
6	T and U	Vertical	<b>C321KM66</b>	
6 to 7	T/U to V – X	Vertical	<b>C321KM67</b>	

② Without cross-wiring.  
③ For use with latest series product.

**Table 33-117. Reversing Kits (Horizontal Contactor Mounting Only)**

Application		Catalog Number	Price U.S. \$
NEMA Size	IEC Size		
00	A – C	<b>C321KM60K14B</b>	
0	D – F	<b>C321KM60K13B</b>	
1	—	<b>C321KM60K15B</b>	
2	G – K	<b>C321KM60K16B</b>	
3	—	<b>C321KM60K17</b> ④	
—	L and M	<b>C321KM60K21</b> ④	
—	N	<b>C321KM60K18</b> ④	
4	—	<b>C321KM60K19</b> ④	
5	—	<b>C321KM60K20</b> ④	
—	P – S	<b>C321KM60K44</b> ④	

④ Kit includes (2) NC auxiliary contacts.

**Solid-State Timers**



*Solid-State Timer*

**Solid-State ON DELAY Timer — Side Mounted on Freedom Series NEMA 00 – 2, IEC A – K and C25D, C25E and C25F Frame**

This timer is designed to be **wired in series with the load** (typically a coil). When the START button is pushed (power applied to timer), the ON DELAY timing function starts. At the completion of the set timing period, timer and series wired load will both be energized.

**Table 33-118. Mounted Timer Product Selection**

Timing Range	Catalog Number ①②③	Price U.S. \$
.1 – 1.0 Seconds	<b>C320TDN1_</b>	
1 – 30 Seconds	<b>C320TDN30_</b>	
30 – 300 Seconds	<b>C320TDN300_</b>	
5 – 30 Minutes	<b>C320TDN3000_</b>	

- ① Add operating voltage Suffix to Catalog Number. **A** = 120V, **B** = 240V, **E** = 208V
- ② Rated .5 ampere pilot duty — not to be used on larger contactors.
- ③ Terminal connections are quick connects only. Two per side.

**Shorting Bar Kits**

These kits provide phase-to-phase power connections of contactors for field assembly. The kits include bus connections and mounting hardware. The shorting bars connect all three phases of a single contactor.

**Table 33-119. Product Selection**

Description	Catalog Number	Price U.S. \$
NEMA Size 3, IEC Sizes L – N	<b>C321SB18</b>	
NEMA Size 4, IEC Sizes A – S	<b>C321SB19</b>	
NEMA Size 6, IEC Sizes T and U	<b>C321SB22</b>	

**Pneumatic Timers — Top Mounted**

Attachment mounts on top of any NEMA Size 00 – 2 or IEC Size A – K Freedom Series starter or contactor (top mounted auxiliary contacts can not be installed on device when timer is used). Timer unit has 1NO-1NC isolated timed contacts — circuits in each pole must be the same polarity. Units are convertible from OFF to ON DELAY or vice-versa.



**Table 33-120. Product Selection**

Timing Range	Catalog Number	Price U.S. \$
.1 to 30 Seconds	<b>C320TP1</b>	
10 to 180 Seconds	<b>C320TP2</b>	

**Table 33-121. Maximum Ampere Ratings**

Description	Volts AC			
	120	240	480	600
Make	30	15	7.5	6
Break	3	1.5	.75	.6

**Locking Cover for Overload Relay — C306 Only**

Snap-on transparent or opaque plastic panel for covering access port to the overload relay trip setting dial — helps prevent accidental or unauthorized changes to trip and reset setting.



**Table 33-122. Product Selection**

Description	Min. Ordering Quantity (Std. Pkg.)	Catalog Number	Price U.S. \$
Clear cover, no accessibility	50	<b>C320PC3</b>	
Gray cover, no accessibility, with Auto only nib	50	<b>C320PC4</b>	
Gray cover, no accessibility, with Manual only nib	50	<b>C320PC5</b>	
Gray cover with FLA dial accessibility, A, B, C, D positions and Auto only nib	50	<b>C320PC6</b>	
Gray cover with FLA dial accessibility, A, B, C, D positions and Manual only nib	50	<b>C320PC7</b>	

**Identification Markers**

**IEC Sizes A – K, NEMA Sizes 00 – 2**

Designed to snap on the face of contactor for easy, personalized identification of individual devices. Includes holder and labels.

**Table 33-123. Product Selection**

Description	Catalog Number	Price U.S. \$
Identification Marker	<b>C320DL2</b>	

**Control Circuit Fuse Block**

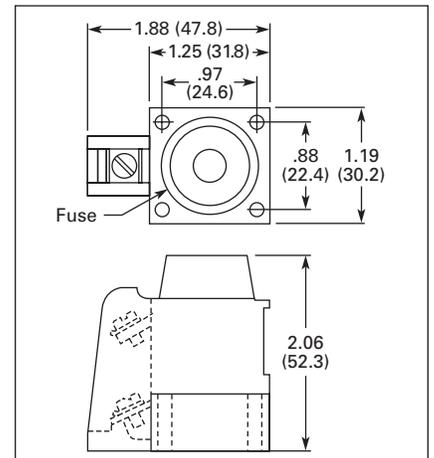
These panel mounted fuse holders, designed for control circuit protection or other similar low current requirements, have extractor type fuse caps. The Class CC rejection type fuses (KTK-R) used in these holders are intended for use with equipment designated as being suitable for use on systems having high available fault currents. If branch circuit protective device is 45A or greater, C320FBR fuse kit may be required for control circuit protection per NEC 430-72.



**Table 33-124. Product Selection**

Type	Max. Amperes	Catalog Number	Price U.S. \$
Fuse Holder Only	15 30	<b>C320FB</b> ④ <b>C320FBR</b> ⑤	

- ④ A fuse is not supplied, but holder will accept a Bussman Type KTK or KTK-R (13/32" x 1-1/2") fuse, 600V maximum.
- ⑤ Includes a 5A, 600V KTK-R fuse.



**Figure 33-28. Approximate Dimensions in Inches (mm)**

Accessories

**DIN Rail Mounting Channel —  
35 mm**

Designed for DIN rail mounting of IEC style contactors and starters.



DIN Rail

**Table 33-125. Product Selection**

Description	Catalog Number	Price U.S. \$
1 Meter Length	MC382MA1	

**Finger Protection Shields**

Snap-on shields for both contactors and starters provide IEC Type IP20 Finger Protection. Prevents accidental contact with line/load terminals.

**Table 33-126. Product Selection**

Application	Catalog Number	Price U.S. \$
NEMA Size 00, IEC Sizes A – C	C320LS1	
NEMA Size 0, IEC Sizes D – F	C320LS2	
NEMA Sizes 1 – 2, IEC Sizes G – K Contactors	C320LS3	
Reversing Contactors	C320LS4	
NEMA Size 1 Starters	C320LS5	
Reversing Starters	C320LS6	
NEMA Size 2, IEC Sizes G – K Starters	C320LS7	
Reversing Starters	C320LS8	

**Adapter to DIN Rail Mount**

**NEMA 1 – 2 and IEC G – K Contactors**

Designed to allow DIN rail mounting of NEMA 1 – 2 and IEC G – K contactors. Includes all hardware required to convert contactors from panel mounting to 35 mm DIN rail mounting.

**Table 33-127. Product Selection**

Catalog Number	Price U.S. \$
C320DN65	

**Transient Suppressor Kits**

**NEMA Sizes 00 – 2, IEC Sizes A – K**

These kits limit high voltage transients produced in the control circuit when power is removed from the contactor or starter coil. There are three separate suppressors for use on 24 – 120V, 208 – 240V or 277 – 480V coils respectively.



Cat. No. C320TS2

These devices mount directly to the coil terminals of Freedom Series contactors or starters NEMA Sizes 00 – 2, IEC Sizes A – K and lighting contactors 10 – 60A. Reversing devices will require two.

**Table 33-128. Product Selection**

Description	Coil ① Voltage	Catalog Number	Price U.S. \$
Transient Suppressor	24/120V	C320TS1	
	208/240V	C320TS2	
	277/480V	C320TS3	

① Suppressor is compatible with coil voltages/ranges as shown, both 50 and 60 Hz.

**NEMA Sizes 3 – 5, IEC Sizes L – S**

This device mounts on top of any side mounted auxiliary contact on Freedom Series NEMA Sizes 3 – 5, IEC Sizes L – S and lighting contactors 100 – 300A. It connects across coil terminals on any 120V contactor or starter magnet coil (reversing starters or contactors require 2).



Limits high voltage transients produced in the circuit when power is removed from the coil.

**Table 33-129. Product Selection**

Description	Coil Voltage	Catalog Number	Price U.S. \$
Transient Suppressor	120V	C320AS1	

**DC/AC Interface Module**

The Catalog Number C320DC Interface Module is an optically isolated solid-state switch which provides a means of operating AC coils with 5 – 48V DC control signal. It acts as a space saving interposing relay which can switch a specified 50/60 Hz AC source to the contactor or starter coil.



*Cat. No. C320DC*

The module may be directly attached to the coil terminals of any Freedom Series contactor or starter — NEMA Sizes 00 – 3, IEC Sizes A – N and lighting contactors 10 – 100A. It also has provisions for DIN rail mounting.

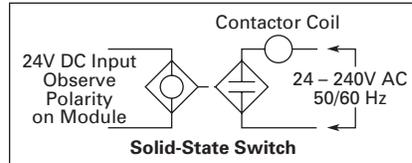
The module will operate coils within the voltage ranges shown in **Table 33-130**.

**Design Characteristics**

- DC Input: 5 – 48V DC at mA nominal
- AC Operating Voltage: 240V AC (360 VA) ±10% 50/60 Hz;
- DC Operating Voltage: 30V DC max. (.5A)
- AC Current Rating
  - 10A make (inrush)
  - 1A break (sealed)

**Table 33-130. Controller Coil Voltage Ranges**

Controller Catalog Number Prefix	Controller Size or Rating	Coil Range Volts AC
AE16, AE17, AE56, AE57, CE15, CE55	A – F G – K L – N	24 – 240 48 – 240 110 – 240
AN16, AN56, CN15, CN55	00 – 0 1 – 2 3	24 – 240 48 – 240 110 – 240
CN35	10 – 30A 60A 100A	24 – 240 48 – 240 110 – 240



**Figure 33-29. Typical Application**

**Adhesive Dust Cover**

**NEMA Sizes 00 – 2, IEC Sizes A – K**

These adhesive stickers come 25 to a package and provide extra protection from contaminants when applied to the sides of Freedom NEMA Sizes 00 – 2 and IEC Sizes A – K. Adhesive covers are easily applied to side opening where auxiliaries are not installed and provide extra protection from metal filings and other debris.

**Table 33-131. Product Selection**

Coil Voltage	Catalog Number	Price U.S. \$
5V DC 6V DC 9V DC	C320DC2V5 C320DC2V6 C320DC2V9	
12V DC 48V DC	C320DC2V12 C320DC2V48	

**Add-On Power Pole Kit**

**NEMA Sizes 00 – 2, IEC A – K**

This device mounts on the side of Freedom NEMA Size 00 – 2 and IEC Size A – K contactors. One unit can be mounted on each side and carries UL, cUL and IEC ratings. The device is rated for resistive, inductive and lighting applications.

**Table 33-133. Product Selection**

UL Ampere Rating					IEC 947 Ampere Rating			1NO Power Pole		
Inductive 600V	Resistive 600V	Horsepower 1-Phase		Locked Rotor 240V	Lighting Ballast Tungsten 480V	AC-1 600V	AC-3 600V	AC-5a AC-5b 480V	Catalog Number	Price U.S. \$
		115V	230V							
15	20	1/2	2	96	20	12	18	C320PPD10		

**Table 33-132. Product Selection**

Catalog Number	Price U.S. \$
C320DSTCVR (25 to a package)	

Accessories

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**Auxiliary Contacts**

**Contact Configuration Code**

This two-digit code is found on the auxiliary contact to assist in identifying the specific contact configuration. The first digit indicates the quantity of NO contacts and the second indicates the quantity of NC contacts.

**NEMA Sizes 00 – 2 — IEC Sizes A – K**

The auxiliary contacts listed below are designed for installation on Freedom Series starters and contactors. Snap-on design facilitates quick, easy installation.

These bifurcated design contact blocks, featuring silver cadmium alloy contacts, are well suited for use in very low energy (logic level) circuits.



Side Mounted



Top Mounted

**Table 33-134. Product Selection**

Description	Contact Configuration Code ①	Catalog Number	Price U.S. \$
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**Side Mounted**

1NO	10	C320KGS1	
1NC	01	C320KGS2	
1NO-1NC	11	C320KGS3	
2NO	20	C320KGS4	
2NC	02	C320KGS5	
1NO-1NCI	N/A	C320KGS6	
1NO (EC)-1NC (LO)	N/A	C320KGS7	
1NCI	N/A	C320KGS8	

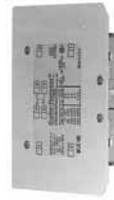
**Top Mounted**

1NO	10	C320KGT1	
1NC	01	C320KGT2	
1NO-1NC	11	C320KGT3	
2NO	20	C320KGT4	
2NC	02	C320KGT5	
1NO-1NCI	N/A	C320KGT6	
1NO (EC)-1NC (LO)	N/A	C320KGT7	
1NCI	N/A	C320KGT8	
3NO	30	C320KGT9	
2NO-1NC	21	C320KGT10	
1NO-2NC	12	C320KGT11	
3NC	03	C320KGT12	
4NO	40	C320KGT13	
3NO-1NC	31	C320KGT14	
2NO-2NC	22	C320KGT15	
1NO-3NC	13	C320KGT16	
4NC	04	C320KGT17	
3NO-1NCI	N/A	C320KGT18	
2NO-1NCI-1NC	N/A	C320KGT19	
2NO-1NO (EC)-1NC (LO)	N/A	C320KGT20	
1NO-1NC-1NO (EC)-1NC (LO)	N/A	C320KGT21	

**Note:** NCI = Normally Closed early opening designed for use in reversing applications. EC = Early Closing. LO = Late Opening.

① For reference only — not part of Catalog Number. See above.

**NEMA Sizes 3 – 8 — IEC Sizes L – Z**



Base Auxiliary Contact  
Cat. No. C320KGS42



Auxiliary Contact  
Cat. No. C320KGS22

**Table 33-135. Product Selection**

Circuit	Contact Configuration Code ②	Catalog Number	Price U.S. \$
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**Base Auxiliary Contacts — NEMA Sizes 3 – 5, IEC Sizes L – S**

Circuit	Contact Configuration Code	NEMA Size 3 IEC Sizes L – N	NEMA Sizes 4 – 5 IEC Sizes P – S	Price U.S. \$
		C320KGS31 C320KGS32	C320KGS41 C320KGS42	

**Auxiliary Contacts — NEMA Sizes 3 – 5, IEC Sizes L – S**

Circuit	Contact Configuration Code ③	Catalog Number	Price U.S. \$
		C320KGS20 C320KGS21 C320KGS22	

**Auxiliary Contacts, Sealed Logic Level – NEMA Sizes 3 – 5, IEC Sizes L – S**

Circuit	Contact Configuration Code ④	Catalog Number	Price U.S. \$
		C320KGS20L C320KGS21L C320KGS22L	

**Auxiliary Contacts — NEMA Sizes 6 – 8, IEC Sizes T – Z**

Circuit	Contact Configuration Code	Size	Catalog Number	Price U.S. \$
		NEMA 8, IEC Z NEMA 6 – 7 IEC T – X	C320KA5 C320KA6 C320KA8	

② For reference only — not part of Catalog Number. See above left.

③ NO-NC occupies two positions — L2 and L3, or R2 and R3.

See Figure 33-30 on Page 33-97.

④ Form C contacts.

**Auxiliary Contact Ratings (Amperes)**

**Table 33-136. Ratings — NEMA A600**

Current	AC Volts			
	120V	240V	480V	600V
Make and Interrupting	60	30	15	12
Break	6	3	1.5	1
Continuous	10	10	10	10

**Table 33-137. Ratings — NEMA P300**

Continuous Thermal Rating: 5A	
DC Volts	Make/Break Amperes
125	1.10
250	.55

**Table 33-138. Ratings — Logic Level**

Minimum Ratings for Logic Level and Hostile Atmosphere Application	
Minimum Amperes	20 mA
Minimum Volts	24V AC/DC

**Table 33-139. Ratings C320KGS20L, C320KGS21L, C320KGS22L**

DC-12		AC-12	
Ue	Ie	Ue	Ie
80	0.1	250	0.1

Discount Symbol ..... 1CD1C

**Auxiliary Contact Location**

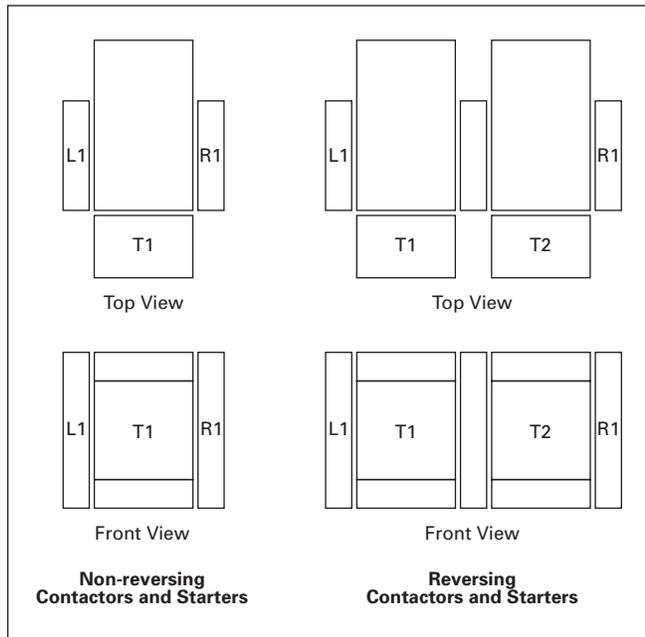
**NEMA Sizes 00 – 2, IEC Sizes A – K**

The sketches below illustrate the maximum number of auxiliary contacts that can be assembled to a contactor or starter and their locations.

**Table 33-140. Auxiliary Contacts**

Catalog Number	Size	Poles	Available Mounting Positions <sup>①②</sup>	
			Open Type	Enclosed
AE16	A – K	3	T1, L1	L1
AN16	00 0 – 2	3 3	T1, L1, R1 T1, L1	L1 L1
AE56	A – K	3	L1, R1	L1, R1
AN56	00 – 2	3	T1, T2	—
CE15	A – C	2 – 4	T1, L1, R1	L1, R1
	D – K	3	T1, L1	L1
	G – J	4	T1, R1	—
	G – J	5	T1	—
CN15	00	2 – 4	T1, L1, R1	L1
	0 – 2	2 – 3	T1, L1	L1
	1, 2	4	T1, L1	—
	1, 2	5	T1, L1	—
CN35	10A	2 – 4	T1, L1, R1	L1
	20 – 60A	2 – 3	T1, L1	L1
	60A	4	T1, L1	—
	60A	5	T1, L1	—
CE55	A – K	3	L1, R1	L1, R1
CN55	00 – 2	3	T1, T2	—

- ① Available positions on contactors or starters other than what is factory installed.
- ② When a pneumatic timer is mounted on contactor, only side mounted auxiliary contact positions are available. The solid-state timer, when added, takes up side mounted auxiliary contact position.



**Figure 33-30. Auxiliary Contact Location**

**NEMA Sizes 3 – 8, IEC Sizes L – Z**

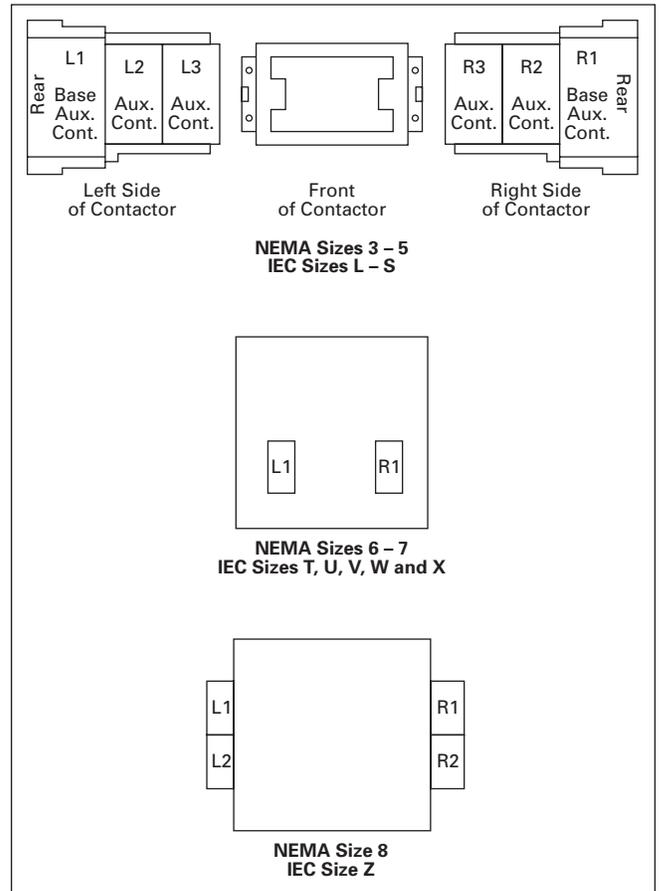
The sketches below illustrate the maximum number of auxiliary contacts that can be assembled to a contactor and their locations.

**Note:** A Base Auxiliary Contact must be added in position R1 before additional auxiliary contacts can be mounted on NEMA Size 3 and IEC Sizes L – N, or in L1 on NEMA Sizes 4 – 5 and IEC Sizes P – S.

**Table 33-141. Mounting Positions**

Size	Available Mounting Positions <sup>③</sup>
NEMA Size 3, IEC Sizes L – N	R2, R3, L1, L2, L3
NEMA Sizes 4 – 5, IEC Sizes P – S	L2, L3, R1, R2, R3
NEMA Sizes 6 – 7, IEC Sizes T – X	R1
NEMA Size 8, IEC Size Z	L2, R2

- ③ Available positions on contactors or starters other than what is factory installed.



**Figure 33-31. Auxiliary Contact Location**

Accessories

DC Magnet Coils

When Ordering Specify

Conversion Kit for Field Assembly

- Catalog Number

Factory Installed DC Coil

- For factory installed DC magnet coil on AC contactors or non-combination starters (open type only), substitute the Code Suffix from table below for the magnet coil identifier in the device Catalog Number.

EXAMPLE: For Size 0 AC contactor with a 24V DC coil, change AN16BN0AC to AN16BN0T1C.

Application

- Connect for separate control
- Not for use with cover control switch operators
- Use twin break, heavy-duty pilot devices.
- Designed for +10%, -20% rated voltage, continuous duty operation.

Non-reversing Kit Consists of:

- 1 Encapsulated DC magnet coil
- 1 NCI or NO/NCI side mounted auxiliary contact

Note: These kits are supplied with a NO/NCI side mounted auxiliary contact in place of the NCI contact.

- 2 Blue colored connection wires
- 1 Instruction publication

Operation

See next page for operation details.

Table 33-142. Product Selection

Contactor or Starter Size		Conversion Data				Complete Conversion Kit			Factory Installed		
NEMA	IEC	Volts	Magnet Coil			NCI Interlock	Catalog Number	Price U.S. \$	Ship Wt. Lbs. (kg)	Code Suffix	Adder U.S. \$
			Coil Number	Amps P.U./Seal	Watts P.U./Seal						
<b>Non-reversing — Kit includes NCI Side Mounted Auxiliary contact</b>											
00 and 0 CN35 – A, B, D D15 Relays	A – F	12	9-2988-11	6.4/.28	76.8/3.36	C320KGD1	C335KD3R1	1.0 (.5)		R1 T1 W1 A1	
		24	9-2988-12	3.2/.14	76.8/3.36	C320KGD1	C335KD3T1				
		48	9-2988-13	1.6/.07	76.8/3.36	C320KGD1	C335KD3W1				
		120	9-2988-14	.64/.028	76.8/3.36	C320KGD1	C335KD3A1				
① 00 and 0 CN35 – A, B, D D15 Relays	A – F	12	9-2988-11	6.4/.28	76.8/3.36	C320KGD2 ①	C335KD3R4	1.0 (.5)		R4 T4 W4 A4	
		24	9-2988-12	3.2/.14	76.8/3.36	C320KGD2 ①	C335KD3T4				
		48	9-2988-13	1.6/.07	76.8/3.36	C320KGD2 ①	C335KD3W4				
		120	9-2988-14	.64/.028	76.8/3.36	C320KGD2 ①	C335KD3A4				
1 and 2 CN35 – G	G – K	12	9-2990-1	15.4/.42	185/4.98	C320KGD5	C335KD4R4	1.0 (.5)		R4 T4 W4 A4	
		24	9-2990-2	7.7/.21	185/4.96	C320KGD5	C335KD4T4				
		48	9-2990-3	3.9/.11	185/5.04	C320KGD5	C335KD4W4				
		120	9-2990-4	1.5/.041	185/4.87	C320KGD5	C335KD4A4				
3 CN35 – K	L – N	12	9-3002-1	24/.40	293/4.84	C320KGD3	C335KD5R1	2.0 (.9)		R1 T1 W1 A1	
		24	9-3002-2	12/.20	288/4.75	C320KGD3	C335KD5T1				
		48	9-3002-3	6.1/.097	295/4.67	C320KGD3	C335KD5W1				
		120	9-3002-4	2.5/.038	298/4.57	C320KGD3	C335KD5A1				
4 and 5 CN35 – N, S	P – S	24	9-2026-4	18/.22	400/5.3	C320KGD3	C335KA3T1	2.5 (1.1)		T1B W1B A1B B1B	
		48	9-2026-3	9/.11	400/5.2	C320KGD3	C335KA3W1				
		120	9-2026-2	3.3/.05	450/5.4	C320KGD3	C335KA3A1				
		240	9-2026-1	1.7/.02	440/4.9	C320KGD3	C335KA3B1				
<b>Reversing</b>											
00 and 0 CN35 – A, B, D D15 Relays	A – F	12	(2) 9-2988-1	6.4/.28	76.8/3.36	(2) C320KGD1	C335RD3R1 ②	1.0 (.5)		R1 ③ T1 ③ W1 ③ A1 ③	
		24	(2) 9-2988-2	3.2/.14	76.8/3.36	(2) C320KGD1	C335RD3T1 ②				
		48	(2) 9-2988-3	1.6/.07	76.8/3.36	(2) C320KGD1	C335RD3W1 ②				
		120	(2) 9-2988-4	.64/.028	76.8/3.36	(2) C320KGD1	C335RD3A1 ②				
1 and 2 CN35 – G	G – K	12	(2) 9-2990-1	15.4/.42	185/4.98	(2) C320KGD3 ④		—	R1 ③ T1 ③ W1 ③ A1 ③		
		24	(2) 9-2990-2	7.7/.21	185/4.96	(2) C320KGD3 ④					
		48	(2) 9-2990-3	3.9/.11	185/5.04	(2) C320KGD3 ④					
		120	(2) 9-2990-4	1.5/.041	185/4.87	(2) C320KGD3 ④					

① These kits are supplied with a NO/NCI side mounted auxiliary contact in place of the NCI contact.  
 ② Kit does not include mechanical interlock or crossover wiring. Two NO/NCI top mounted auxiliary contacts are supplied for electrical interlocking.  
 ③ Factory installed DC coils on NEMA contactors and starters include a NO/NC top mounted auxiliary contact on each contactor for electrical interlocking. On IEC contactors and starters, a NC top mounted auxiliary contact is supplied on each contactor for electrical interlocking.  
 ④ Available factory assembled only.

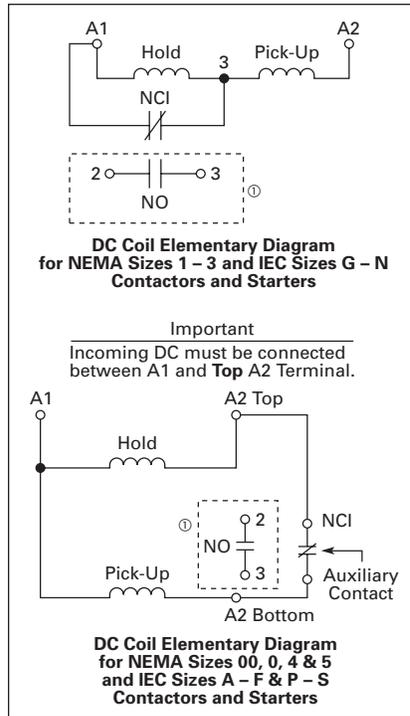
**Operation**

These DC coil kits have separate pick-up and seal windings. A **special** (side mounted) early-break NCI auxiliary contact is used to either disconnect the pick-up winding or insert the seal winding in series with the pick-up winding, depending on the frame size of the contactor. DC coil kits come in two styles, a suffix **1** and a suffix **4**. The 1 suffix contains only the **special** (side mounted) early break NCI auxiliary contact. The 4 suffix contains a **NO** contact in the same package as the **special** (side mounted) early-break NCI auxiliary contact.

**Note:** For NEMA Sizes 00 and 0 and IEC Sizes A – F, contactors may utilize either suffix 1 or 4 DC coil kits; starters may utilize suffix 4 DC coil kits only. For NEMA Sizes 1 and 2 and IEC Sizes G – K, both contactors and starters may utilize a suffix 4 DC coil kit only.

On the above sizes only, when the **special** auxiliary package is mounted on the side of a contactor or starter, **no** standard auxiliary contact may be mounted on the same side.

**Note:** For NEMA Sizes 3 – 5 and IEC Sizes L – S, special coil NCI clearing contact is an add-on auxiliary (**must** mount on a base mount auxiliary contact; normally a 1NO). This arrangement will normally account for two of the three contact positions on the side of each contactor or starter.



**Figure 33-32. Elementary Diagrams**  
① 1NO available in Suffix 4 kits only.

**Competitive Mounting Plates**



**C321CMP1**

The C321 adapter plates permit direct replacement of competitive starters with Freedom Series starters without drilling and tapping new mounting holes. Allen-Bradley 509, Eaton's Cutler-Hammer A10 (adapter plate not required for replacing A10 Starter Sizes 1, 4 and 5), Furnas 14, ESP100, General Electric CR206, CR306, Siemens SXL, Square D 8536, Westinghouse A200, B200.

**Table 33-143. Product Selection**

Freedom NEMA Size	Index Number ②	
	Catalog Number	Price U.S. \$
00, 0	C321CMP0	
1	C321CMP1	
2	C321CMP2	
3	C321CMP3	
4	C321CMP4	
5	C321CMP5	

② Handling Number Only — Does not appear on product. The handling number is stamped on the carton label only.

Table 33-144. Competitive Mounting Plates — Approximate Dimensions and Shipping Weights

NEMA Size	Catalog Number	Dimensions in Inches (mm)		Ship Wt. Lbs. (kg)
		Wide A	Deep B	
0-00	C321CMP0	3.25 (82.6)	8.50 (215.9)	.63 (.29)
1	C321CMP1	3.75 (95.3)	9.50 (241.3)	.90 (.41)
2	C321CMP2	3.75 (95.3)	10.25 (260.4)	1.20 (.54)
3	C321CMP3	6.00 (152.4)	12.75 (323.9)	2.40 (1.09)
4	C321CMP4	7.50 (190.5)	13.50 (342.9)	3.00 (1.36)
5	C321CMP5	11.00 (279.4)	19.00 (482.6)	6.63 (3.01)

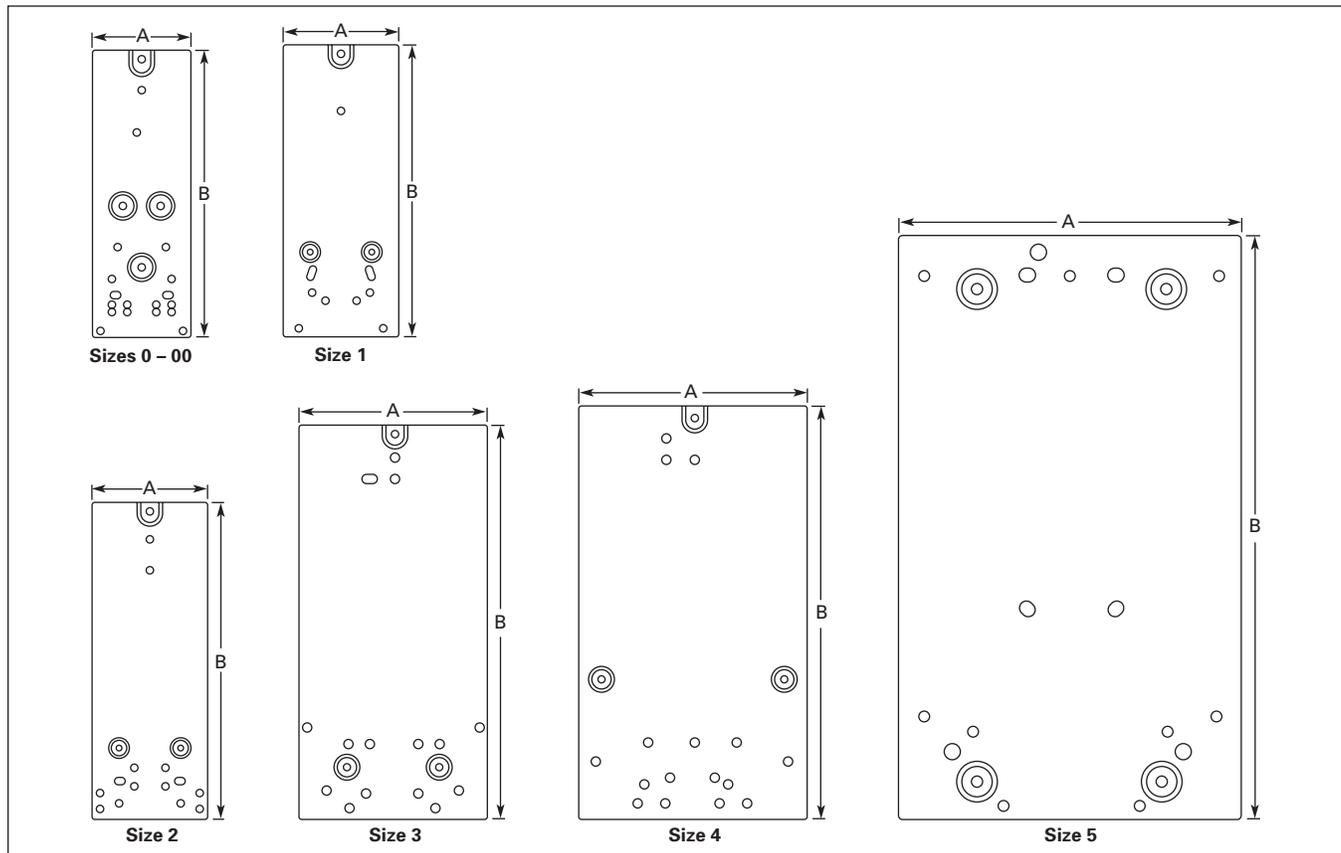


Figure 33-33. Approximate Dimensions

### Special Modifications

Table 33-145. For Catalog Numbers AE16, AE17, AN16, AE56, AE57, AN56, CE15, CN15, CN35, CE55, CN55

Addition or Special Feature	Starter Size and Price Adder (U.S. \$) — NEMA/IEC									
	00/ A-C	0/ D-F	1 —	2/ G-K	3/ L-N	4/ P-S	5/ T-U	6/ V	7/ W-X	8/ Z
<b>Control Circuit</b>										
Extra Auxiliary Circuit, Factory Installed NO or NC — each contact ①										
Transient Suppressor ①										
<b>Power Circuit</b>										
Contactor/Starter for Ring Lug Capability — Add Mod Code <b>T16</b> to Catalog Number (Power Terminals Only, Control Terminals as Standard) Standalone Overload Relays Can Not Accept Ring Lugs on Line Side										
<b>Factory Installed Dust Covers</b>										
Factory Installed C320DSTCVR — Add Mod Code <b>-53</b> to Catalog Number ①					NA	NA	NA	NA	NA	NA

① These modifications are generally available in Kit form at lower cost. See specific product sections for Kit listings.