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*NEMA Size 1
Cat. No. CN55DN3AB*

Reversing

Reversing contactors are used primarily for reversing single- or three-phase motors in applications where running overcurrent protection is either not required or is provided separately. They consist of two contactors mechanically and electrically interlocked to prevent line shorts and energization of both contactors simultaneously.

Features

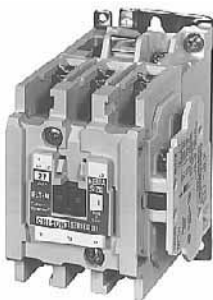
- Designed specifically for use in applications requiring NEMA ratings. Contactors meet or exceed NEMA standards ICS 2-1993.
- Long life twin break, silver cadmium oxide contacts — provide excellent conductivity and superior resistance to welding and arc erosion.
- Designed to 3,000,000 electrical operations at maximum hp ratings up through 25 hp at 600V.
- Steel mounting plate standard on all open type contactors.

Non-reversing

- Holding circuit contact(s) supplied as standard:
 - Sizes 00 – 3 have NO auxiliary contact block mounted on right hand side (on Size 00, contact occupies 4th power pole position — no increase in width).
 - Sizes 4 – 5 have a NO contact block mounted on left side.
 - Sizes 6 – 7 have a 2NO/2NC contact block on top left.
 - Size 8 has a NO/NC contact block on top left back and a NO contact block on top right back.

Reversing

- One NO-NC side mounted interlock supplied as standard on each contactor for Sizes 00 – 8.



NEMA Size 1 — Cat. No. CN15DN3AB

Product Description

Non-reversing

Contactors are most commonly used to switch motor loads in applications where running overcurrent protection is either not required or is provided separately. Contactors consist of a magnetically actuated switch which can be remotely operated by a push-button station or pilot device such as a proximity switch, limit switch, float switch, auxiliary contacts, etc.

Technical Data

Table 33-92. Wire (75°C) Sizes — AWG or kcmil — Open and Enclosed

NEMA Size	Power Terminals Line or Load	Control Terminals Cu Only
00	12 – 16 stranded; 12 – 14 solid Cu	12 – 16 stranded 12 – 14 solid
0	8 – 16 stranded; 10 – 14 solid Cu	
1	8 – 14 stranded or solid Cu	
2	3 – 14 (upper) and/or 6 – 14 (lower) stranded or solid ① Cu	
3	1/0 – 14 Cu/Al	
4	250 mcm – 6	
5	750 kcmil – 2, or (2) 250 kcmil – 3/0 Cu/Al	
6	(2) 750 kcmil – 3/0 Cu/Al	
7	(3) 750 kcmil – 3/0 Cu/Al	
8	(4) 750 kcmil – 4/0 Cu/Al	

① Two compartment box lug.

Table 33-93. Plugging and Jogging Service Horsepower Ratings ②

NEMA Size	200V	230V	460V	575V
00	—	1/2	1/2	1/2
0	1-1/2	1-1/2	2	2
1	3	3	5	5
2	7-1/2	10	15	15
3	15	20	30	30
4	25	30	60	60
5	60	75	150	150
6	125	150	300	300

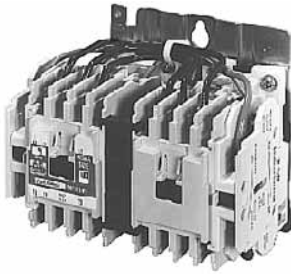
② Maximum horsepower where operation is interrupted more than 5 times per minute or more than 10 times in a 10 minute period. NEMA standard ICS 2-1993 table 2-4-3.

Kits and Accessories

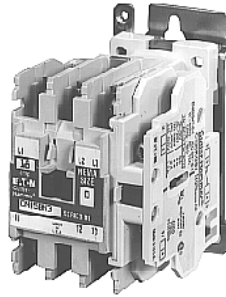
- Auxiliary Contacts, contactor mounted — **Pages 33-96 and 33-97.**
- Transient Suppressor, for magnet coil — **Pages 33-94.**
- Timers — Solid-State and Pneumatic, mount on contactor — **Page 33-93.**

Renewal Parts Publication Numbers

- See **Page 33-101.**



**NEMA Size 00
3-Pole Contactor
Cat. No. CN55AN3AB**



**NEMA Size 0
3-Pole Contactor
Cat. No. CN15BN3AB**



**NEMA Size 3
3-Pole Contactor
Cat. No. CN15KN3A**

Product Selection — 3-Pole Contactors

Table 33-94. Type CN15/CN55 NEMA Contactors — 3-Pole Non-reversing and Reversing

NEMA Size	Continuous Ampere Rating	Maximum UL Horsepower ①						3-Pole Non-reversing		3-Pole Reversing	
		1-Phase		3-Phase				Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
		115V	230V	208V	240V	480V	600V				
00	9	1/3	1	1-1/2	1-1/2	2	2	CN15AN3_B		CN55AN3_B	
0	18	1	2	3	3	5	5	CN15BN3_B		CN55BN3_B	
1	27	2	3	7-1/2	7-1/2	10	10	CN15DN3_B		CN55DN3_B	
2	45	3	7-1/2	10	15	25	25	CN15GN3_B		CN55GN3_B	
3	90			25	30	50	50	CN15KN3_		CN55KN3_	
4	135			40	50	100	100	CN15NN3_		CN55NN3_	
5	270			75	100	200	200	CN15SN3_		CN55SN3_	
6	540			150	200	400	400	CN15TN3_B		CN55TN3_B	
7	810			200	300	600	600	CN15UN3_		CN55UN3_	
8 ②	1215			400	450	900	900	CN15VN3_		CN55VN3_	

① Maximum horsepower rating of starters for 380V 50 Hz applications:

NEMA Size	00	0	1	2	3	4	5	6	7	8
Horsepower	1-1/2	5	10	25	50	75	150	300	600	900

② Common control. For separate 120V control, insert letter **D** in 7th position of listed Catalog Number. EXAMPLE: CN15VND3C.

Magnet Coils — AC and DC

Contactors listed in this section also have a 50 Hz rating as shown in the adjacent table. Select required contactor by Catalog Number and replace the magnet coil alpha designation in the Catalog Number () with the proper Code Suffix from the adjacent table.

For Sizes 00 – 2, the magnet coil alpha designation will be the next to the last digit of the listed Catalog Number. EXAMPLE: For a 380V, 50 Hz coil, change CN15AN3_B to CN15AN3LB. For all other sizes, the magnet coil alpha designation will be the last digit of the listed Catalog Number.

For DC Magnet Coils, see Accessories, Pages 33-98 – 33-99.

Table 33-95. AC Suffix Code

Coil Volts and Hertz	Code Suffix
120/60 or 110/50	A
240/60 or 220/50	B
480/60 or 440/50	C
600/60 or 550/50	D
208/60	E
277/60	H
208 – 240/60 ③	J
240/50	K
380 – 415/50	L
550/50	N
24/60, 24/50 ④	T
24/50	U
32/50	V
48/60	W
48/50	Y

③ NEMA Sizes 00 and 0 only.

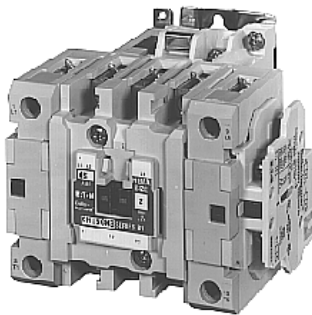
④ NEMA Sizes 00 and 0 only. Sizes 1 – 8 are 24/60 only.

Technical Data Pages 33-89 – 33-91
 Dimensions Pages 33-104 – 33-105
 Special Modifications . . . Page 33-100
 Accessories Pages 33-92 – 33-100
 Discount Symbol 1CD1

Product Selection — 2-, 4- and 5-Pole Contactors

Table 33-96. Type CN15 NEMA Contactors — 2-, 4- and 5-Pole Non-reversing

NEMA Size	Continuous Ampere Rating	Maximum UL Horsepower						2-Pole Non-reversing		4-Pole Non-reversing		5-Pole Non-reversing	
		1-Phase (2-Pole)		3-Phase				Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
		115V	230V	208V	240V	480V	600V						
00	9	1/3	1	1-1/2	1-1/2	2	2	CN15AN2_B		CN15AN4_B		—	
0	18	1	2	2	3	5	5	CN15BN2_B		—		—	
1	27	2	3	7-1/2	7-1/2	10	10	CN15DN2_B		CN15DN4_B		CN15DN5_B	
2	45	3	7-1/2	10	15	25	25	CN15GN2_B		CN15GN4_B		CN15GN5_B	
3	90			25	30	50	50	CN15KN2_		—		—	
4	135			40	50	100	100	CN15NN2_		—		—	
5	270			75	100	200	200	CN15SN2_		—		—	
6	540			150	200	400	400	CN15TN2_B		—		—	



**NEMA Size 2
5-Pole Contactor
Cat. No. CN15GN5AB**

Magnet Coils — AC or DC

Select required starter by Catalog Number and replace the magnet coil alpha designation in the Catalog Number () with the proper Code Suffix from the adjacent table.

For Sizes 00 – 2, the magnet coil alpha designation will be the next to the last digit of the listed Catalog Number. **EXAMPLE:** For a 380V, 50 Hz coil, change CN15BN3_B to CN15BN3LB. For all other sizes, the magnet coil alpha designation will be the last digit of the listed Catalog Number.

For **DC Magnet Coils**, see Accessories, **Pages 33-98 – 33-99.**

Table 33-97. AC Suffix Code

Coil Volts and Hertz	Code Suffix
120/60 or 110/50	A
240/60 or 220/50	B
480/60 or 440/50	C
600/60 or 550/50	D
208/60	E
277/60	H
208 – 240/60 ①	J
240/50	K
380 – 415/50	L
550/50	N
24/60, 24/50 ②	T
24/50	U
32/50	V
48/60	W
48/50	Y

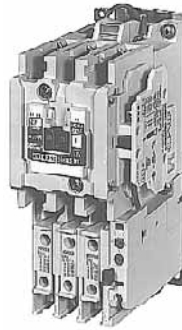
① NEMA Sizes 00 and 0 only.

② NEMA Sizes 00 and 0 only. Sizes 1 – 8 are 24/60 only.

Technical Data **Pages 33-89 – 33-91**
 Dimensions **Pages 33-104 – 33-105**
 Special Modifications **Page 33-100**
 Accessories **Pages 33-92 – 33-100**
 Discount Symbol **1CD1**

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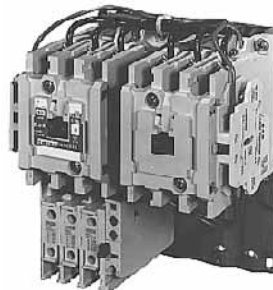


NEMA Size 1 — Cat. No. AN16DN0AB

Product Description

Non-reversing

Three-phase, full voltage magnetic starters are most commonly used to switch AC motor loads. Starters consist of a magnetically actuated switch (contactor) and an overload relay assembled together.



NEMA Size 1 — Cat. No. AN56DN0AB

Reversing

Three-phase, full voltage magnetic starters are used primarily for reversing of 3-phase squirrel cage motors. They consist of two contactors and a single overload relay assembled together. The contactors are mechanically and electrically interlocked to prevent line shorts and energization of both contactors simultaneously.

Features

- Bimetallic Ambient Compensated Overload relays — available in three basic sizes covering applications up to 900 hp — reducing number of different contactor/overload relay combinations that have to be stocked.
- These overload relays feature:
- Selectable Manual or Automatic Reset operation.

- Interchangeable heater packs adjustable $\pm 24\%$ to match motor FLA and calibrated for 1.0 and 1.15 service factors. Heater packs for smaller overload relay will mount in larger overload relay — useful in derating applications such as jogging.
 - Load lugs built into relay base.
 - Single-phase protection, Class 20 or Class 10 trip time.
 - Overload trip indication.
 - Electrically isolated NO-NC contacts (pull RESET button to test).
 - The C396 is a self-powered, robust electronic overload designed for integrate use with Freedom NEMA contactors.
 - Tiered feature set to provide coverage specific to your application.
 - Broad 5:1 FLA range for maximum flexibility.
 - Coverage from 0.05 – 1500 Amps to meet all your needs.
 - Long life twin break, silver cadmium oxide contacts — provide excellent conductivity and superior resistance to welding and arc erosion. Generously sized for low resistance and cool operation.
 - Designed to 3,000,000 electrical operations at maximum hp ratings up through 25 hp at 600V.
 - Steel mounting plate standard on all open type starters.
 - Wired for separate or common control.
- Non-reversing**
- Holding circuit contact(s) supplied as standard:
 - Sizes 00 – 3 have a NO auxiliary contact block mounted on right-hand side (on Size 00, contact occupies 4th power pole position — no increase in width).
 - Sizes 4 – 5 have a NO contact block mounted on left side.
 - Sizes 6 – 7 have a 2NO/2NC contact block on top left.
 - Size 8 has a NO/NC contact block on top left back and a NO on top right back.
- Reversing**
- Each contactor (Size 00 – 8) supplied with one NO-NC side mounted contact block as standard. NC contacts are wired as electrical interlocks.

Dimensions

Non-reversing Contactors

Table 33-147. Approximate Dimensions and Shipping Weights — Open Type

NEMA Size	Number of Poles	Dimensions in Inches (mm)					F	G	Ship Wt. Lbs. (kg)
		Wide A	High B	Deep C	Mounting				
00	2-4	1.75 (44.5)	3.88 (98.6)	3.49 (88.6)	1.50 (38.1) ①	3.38 (85.9)	4.62 (117.3)	.54 (13.7)	1.7 (.8)
0	2-3	1.75 (44.5)	3.88 (98.6)	3.49 (88.6)	1.50 (38.1) ①	3.38 (85.9)	4.62 (117.3)	.54 (13.7)	1.8 (.8)
1-2	2-3	2.56 (65.0)	5.05 (128.3)	4.44 (112.8)	2.00 (50.8) ①	4.50 (114.3)	5.80 (147.3)	.54 (13.7)	3.1 (1.4)
1-2	4	3.44 (87.4)	5.05 (128.3)	4.44 (112.8)	2.00 (50.8) ①	4.50 (114.3)	5.80 (147.3)	.54 (13.7)	3.6 (1.6)
1-2	5	4.32 (109.7)	5.05 (128.3)	4.44 (112.8)	2.00 (50.8) ①	4.50 (114.3)	5.80 (147.3)	.54 (13.7)	4.0 (1.8)
3	2-3	4.08 (103.6)	7.17 (182.1)	5.94 (150.9)	3.00 (76.2)	6.63 (168.4)	—	—	8.5 (3.9)
4	2-3	7.05 (179.1)	9.11 (231.4)	7.25 (184.2)	6.00 (152.4)	8.50 (215.9)	—	—	20.0 (9.1)
5	2-3	7.05 (179.1)	13.12 (333.2)	7.78 (197.6)	6.00 (152.4)	12.50 (317.5)	—	—	23.0 (10.4)
6	3	8.63 (219.2)	13.54 (343.9)	8.88 (225.6)	4.33 (110.0)	8.63 (219.2)	—	—	35.0 (15.9)
7	3	11.02 (279.9)	19.30 (490.2)	11.46 (291.1)	6.89 (175.0)	11.02 (279.9)	—	—	100.0 (45.4)
8	3	13.00 (330.2)	24.50 (622.3)	13.63 (346.2)	4.22 (107.2)	14.86 (377.4)	—	—	160.0 (72.6)

① Center mounting slot at bottom supplied only on Size 00 and 0 contactors.

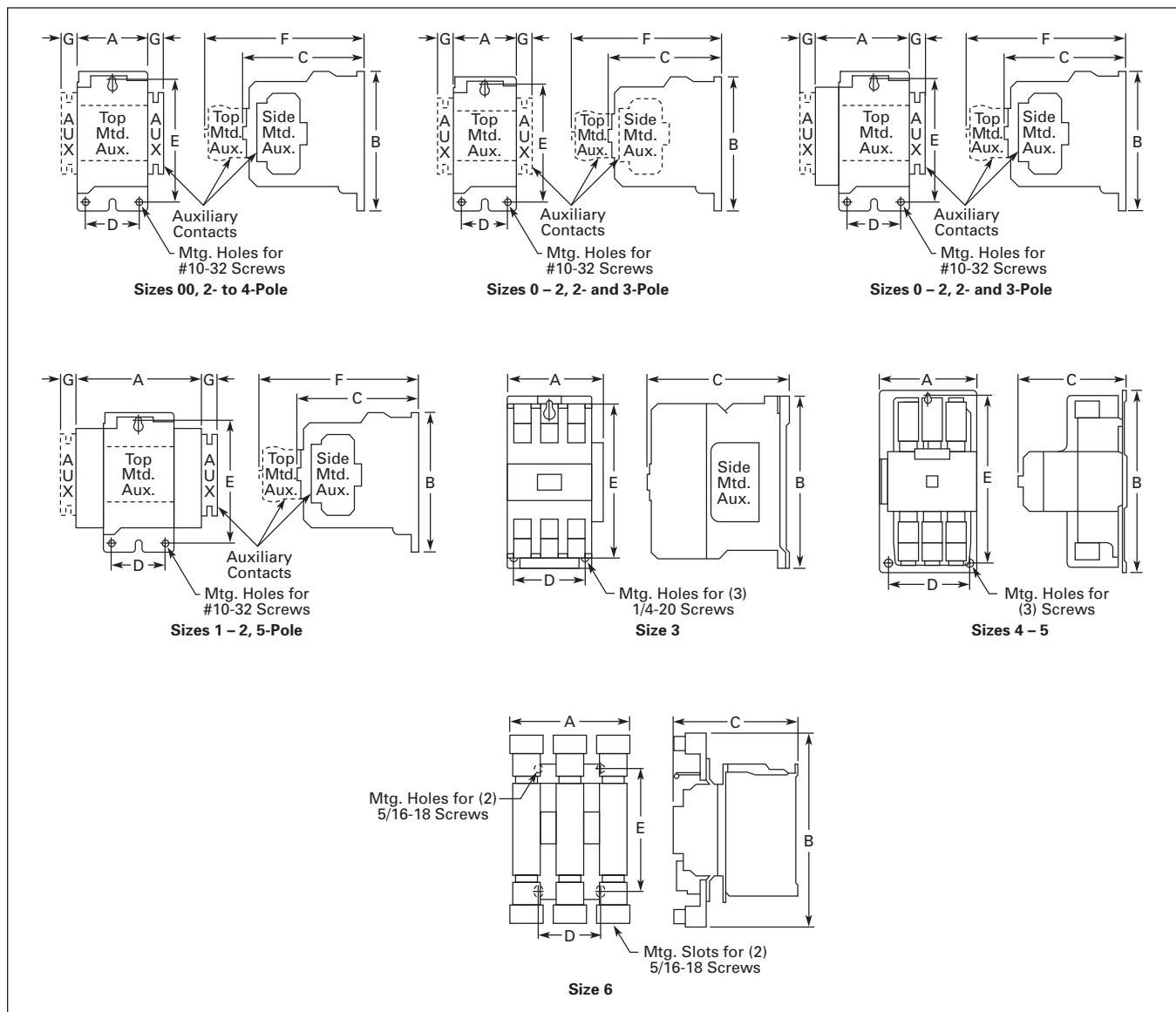


Figure 33-34. Approximate Dimensions

Reversing Contactors

Table 33-148. Approximate Dimensions and Shipping Weights — Open Type

NEMA Size	Dimensions in Inches (mm)						Ship Wt. Lbs. (kg)	
	Wide A	High B	Deep C	Mounting		F		G
				D	E			
00 – 0	4.20 (106.7)	4.35 (110.5)	3.52 (89.4)	3.50 (88.9)	3.86 (98.0)	4.90 (124.5)	.54 (13.7)	3.3 (1.5)
1 – 2	5.71 (145.0)	5.05 (128.3)	4.44 (112.8)	5.25 (133.4)	3.63 (92.2)	5.80 (147.3)	.54 (13.7)	7.8 (3.5)
3	8.70 (221.0)	7.17 (182.1)	5.94 (150.9)	7.00 (177.8)	6.63 (168.4)	—	—	17.0 (7.7)
4	14.68 (372.9)	9.11 (231.4)	7.25 (184.2)	13.50 (342.9)	8.50 (215.9)	—	—	47.0 (21.3)
5	14.50 (368.3)	12.25 (311.2)	7.78 (197.6)	13.50 (342.9)	11.50 (292.1)	—	—	63.0 (28.6)
6	19.77 (502.2)	16.61 (421.9)	9.90 (251.5)	18.00 (457.2)	12.00 (304.8)	—	—	80.0 (36.3)
7	28.00 (711.2)	26.75 (679.5) ①	12.75 (323.9)	12.75 (323.9)	11.00 (279.4)	—	—	260.0 (118.0)
8	30.13 (765.3)	39.00 (990.6) ①	14.69 (373.1)	14.13 (358.9)	15.00 (381.0)	—	—	350.0 (158.9)

① Includes cross wiring.

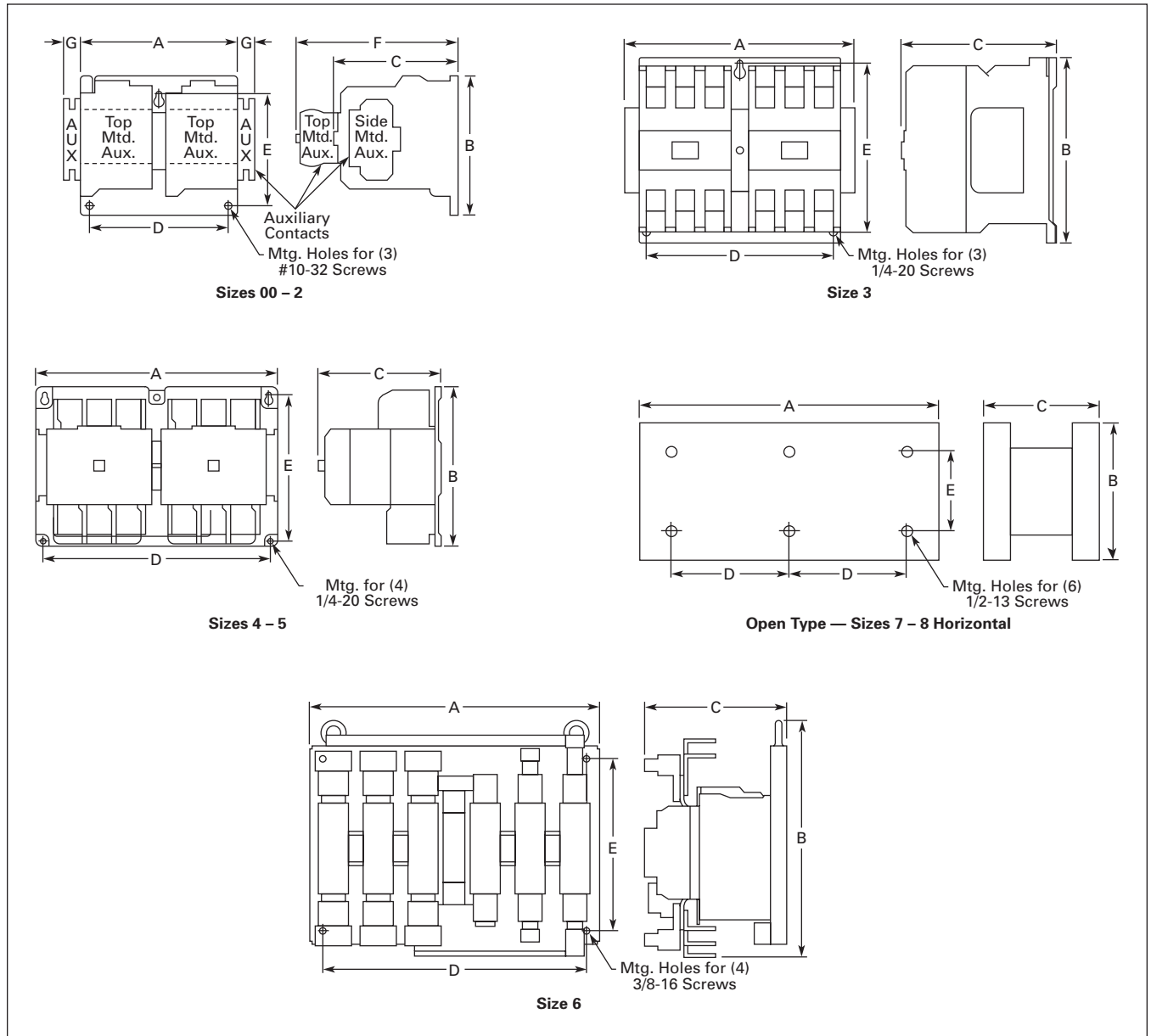


Figure 33-35. Approximate Dimensions