

NEMA Full Voltage Power Devices

NEMA Rated Full Voltage Starters - Magnetic

CR309 Magnetic Reversing Starters

600 Horsepower Maximum, Open, NEMA Type 1, 3R, 12, 4/4X
 NEMA Sizes 00-7
 600 Volts Maximum
 50/60 Hertz

Application

These reversing starters are used for full-voltage starting and reversing of squirrel-cage induction motors up to 600 horsepower, 600 Volts maximum.

These starters are used for single-phase or polyphase motors on applications where plugging and/or reversing operations are required.

Refer to page 1-9 for features of basic starter.

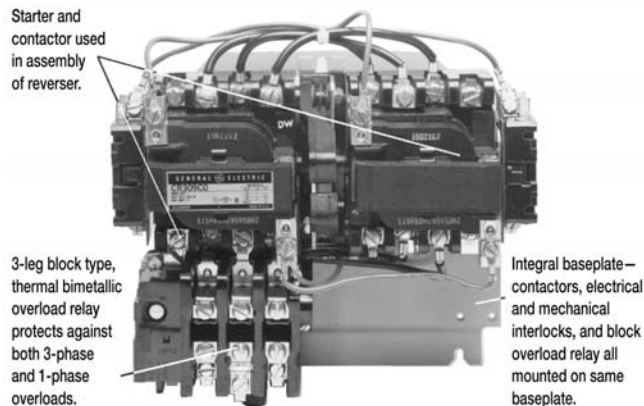
Jogging Duty

The horsepower ratings shown in the product tables for CR309 reversing starters are not to be used when operation requires continuous plug-stop or jogging (inching) duty at a rate in excess of five times per minute or 10 times in 10 minutes. Refer to page 1-6 for information.

Product Number Selection Instructions

- Specify by complete Product Number and form.
 Example: CR309D103 is a Size 2 reversing starter, three-pole in NEMA Type 1 enclosure with 230-240-Volt, 60-Hertz coil @ **\$1086.00, GO-10G**.
- Order forms not listed or with special modifications by complete description using a listed Product Number as reference wherever possible.
 Example: Similar to CR309D103 except with three-position FORWARD-REVERSE-STOP push button in cover.
 Total **List Price \$1326.00, GO-10G**.
- Reversing starters are available with coils of other ratings than those shown in listing on pages 1-20 and 1-21. Refer to coil suffix table on page 1-6 for information. To order forms with other coil ratings, insert suffix from coil table in place of fifth and sixth numbers of listed starter Product Number shown on page 1-20 or 1-21.
 Example: A CR309C102 NEMA Size 1 reverser in Type 1 enclosure with 24-Volt, 60-Hertz coil becomes a CR309C124.
- 50-Hertz Forms**
 Pricing for 50-Hertz forms is the same as shown in tables for 60-Hertz reversing and combination reversing starters. Order by description using a listed Product Number as reference. Refer to page 1-6 for horsepower ratings of starters at 380-Volt, 50 Hertz.
- Starters Less Overload Relays**
 CR309 open NEMA Types 1 and 3R reversing starters (with horizontal mechanical interlock) are available without overload relays. The following table shows omission prices to be deducted from those list prices as shown in tables on pages 1-20 and 1-21. Order desired form by adding the suffix, in parenthesis, to Product Number of Open, Types 1, 3R, 4/4X, and 12 forms shown in pricing table on pages 1-20 and 1-21, that include overload relays.
 Example: To omit overload protection from a size 0 starter, Product Number CR309B103, order CR309B103BAA @ **\$456.00, GO-10G**

List Price Deduction for Omission of Overload Relays and Suffix to Add to Product Number				
Size 00, 0, 1	Size 2	Size 3	Size 4	Size 5
\$30 (BAA)	\$54 (ALA)	\$90 (ALA)	\$144 (ALA)	\$504 (ALA)



Typical CR309 Reversing Starter

6. Product Notes

Motor full-load current should not exceed continuous ampere rating of starter. External reset not included on standard listed forms (NEMA Type 12).

Order heaters by complete Product Number from appropriate heater tables on pages 1-155 to 1-161.

Reference Publications

Descriptive bulletin	GEA-10928
Instructions	
NEMA Size	Publication Number
00, 0, 1	GEH-5190
2	GEH-4775
3	GEH-4806
4	GEH-4807
5	GEH-4839
6	GEH-5198

CR309 Magnetic Reversing Starters – Contents

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NEMA Full Voltage Power Devices

NEMA Rated Full Voltage Starters - Magnetic

CR309 Magnetic Reversing Starters

Section 1

Non-combination, Open, NEMA Type 1, 3R, 12, 4/4X
 NEMA Sizes 00-7 With Thermal Overload Relay
 600 Volts Maximum 50/60 Hertz

Check Speedi Configurator for product availability and premium through GE Fastrac Program.

Three-Phase

List Price includes a holding interlock, mechanical and cross-electrical interlock on each contactor, pressure terminals for the line and load connections, plus a 3-leg block type overload relay (manual reset). One NO isolated contact on the overload relay is available as an option at **\$24.00, GO-10G**. To order add suffix LAA to Product Numbers listed in table for Enclosed types, and Open forms with horizontal mechanical interlock only. Three heaters should be ordered as separate items. See pages 1-155 to 1-161 for selection.

List price **\$9.00 each, GO-10H**.

CR309, Three-Phase Magnetic Reversing Starters

NEMA Size	Continuous Ampere Rating ¹	Voltage (60 Hz)	Horsepower	Open Type w/ Vertical Mechanical Interlock		Open Type w/ Horizontal Mechanical Interlock		NEMA Type 1		NEMA Type 3R		NEMA Type 12 ³		NEMA Type 4/4X	
				Product Number	List Price	Product List	Product List	Product List	Product List	Product List	Product List	Product List	Product List		
				CR309	GO-10G	CR309	GO-10G	CR309	GO-10G	CR309	GO-10G	CR309	GO-10G	CR309	GO-10G
00	9	Separate Control—115-120 V		-	-	A002	\$390.00	A102	\$414.00	-	-	-	-	-	-
00	9	200-208	1 1/2	-	-	A023	\$390.00	A123	\$414.00	-	-	-	-	-	-
00	9	230-240	1 1/2	-	-	A003	\$390.00	A103	\$414.00	-	-	-	-	-	-
00	9	460-480	2	-	-	A004	\$390.00	A104	\$414.00	-	-	-	-	-	-
00	9	575-600	2	-	-	A005	\$390.00	A105	\$414.00	-	-	-	-	-	-
0	18	Separate Control—115-120 V		B002CAA	\$462.00	B002	\$462.00	B102	\$486.00	B602	\$594.00	B202	\$594.00	B402	\$762.00
0	18	200-208	3	B023CAA	\$462.00	B023	\$462.00	B123	\$486.00	B623	\$594.00	B223	\$594.00	B423	\$762.00
0	18	230-240	3	B003CAA	\$462.00	B003	\$462.00	B103	\$486.00	B603	\$594.00	B203	\$594.00	B403	\$762.00
0	18	460-480	5	B004CAA	\$462.00	B004	\$462.00	B104	\$486.00	B604	\$594.00	B204	\$594.00	B404	\$762.00
0	18	575-600	5	B005CAA	\$462.00	B005	\$462.00	B105	\$486.00	B605	\$594.00	B205	\$594.00	B405	\$762.00
1	27	Separate Control—115-120 V		C002CAA	\$522.00	C002	\$522.00	C102	\$558.00	C602	\$666.00	C202	\$666.00	C402	\$942.00
1	27	200-208	7 1/2	C023CAA	\$522.00	C023	\$522.00	C123	\$558.00	C623	\$666.00	C223	\$666.00	C423	\$942.00
1	27	230-240	7 1/2	C003CAA	\$522.00	C003	\$522.00	C103	\$558.00	C603	\$666.00	C203	\$666.00	C403	\$942.00
1	27	460-480	10	C004CAA	\$522.00	C004	\$522.00	C104	\$558.00	C604	\$666.00	C204	\$666.00	C404	\$942.00
1	27	575-600	10	C005CAA	\$522.00	C005	\$522.00	C105	\$558.00	C605	\$666.00	C205	\$666.00	C405	\$942.00
2	45	Separate Control—115-120 V		D002AMA	\$990.00	D002	\$990.00	D102	\$1086.00	D602	\$1266.00	D202	\$1266.00	D402	\$1710.00
2	45	200-208	10	D023AMA	\$990.00	D023	\$990.00	D123	\$1086.00	D623	\$1266.00	D223	\$1266.00	D423	\$1710.00
2	45	230-240	15	D003AMA	\$990.00	D003	\$990.00	D103	\$1086.00	D603	\$1266.00	D203	\$1266.00	D403	\$1710.00
2	45	460-480	25	D004AMA	\$990.00	D004	\$990.00	D104	\$1086.00	D604	\$1266.00	D204	\$1266.00	D404	\$1710.00
2	45	575-600	25	D005AMA	\$990.00	D005	\$990.00	D105	\$1086.00	D605	\$1266.00	D205	\$1266.00	D405	\$1710.00
3	90	Separate Control—115-120 V		E002AMA	\$1644.00	E002	\$1644.00	E102	\$1812.00	E602	\$2208.00	E202	\$2208.00	E402	\$2736.00
3	90	200-208	25	E023AMA	\$1644.00	E023	\$1644.00	E123	\$1812.00	E623	\$2208.00	E223	\$2208.00	E423	\$2736.00
3	90	230-240	30	E003AMA	\$1644.00	E003	\$1644.00	E103	\$1812.00	E603	\$2208.00	E203	\$2208.00	E403	\$2736.00
3	90	460-480	50	E004AMA	\$1644.00	E004	\$1644.00	E104	\$1812.00	E604	\$2208.00	E204	\$2208.00	E404	\$2736.00
3	90	575-600	50	E005AMA	\$1644.00	E005	\$1644.00	E105	\$1812.00	E605	\$2208.00	E205	\$2208.00	E405	\$2736.00
4	135	Separate Control—115-120 V		F002AMA	\$4014.00	F002	\$4014.00	F102	\$4326.00	F602	\$4938.00	F202	\$4938.00	F402	\$5958.00
4	135	200-208	40	F023AMA	\$4014.00	F023	\$4014.00	F123	\$4326.00	F623	\$4938.00	F223	\$4938.00	F423	\$5958.00
4	135	230-240	50	F003AMA	\$4014.00	F003	\$4014.00	F103	\$4326.00	F603	\$4938.00	F203	\$4938.00	F403	\$5958.00
4	135	460-480	100	F004AMA	\$4014.00	F004	\$4014.00	F104	\$4326.00	F604	\$4938.00	F204	\$4938.00	F404	\$5958.00
4	135	575-600	100	F005AMA	\$4014.00	F005	\$4014.00	F105	\$4326.00	F605	\$4938.00	F205	\$4938.00	F405	\$5958.00
5	270	Separate Control—115-120 V		G002AMA	\$7713.00	G002	\$7713.00	G102	\$9519.00	G602	\$10839.00	G202	\$10839.00	G402	\$11631.00
5	270	200-208	75	G023AMA	\$7713.00	G023	\$7713.00	G123	\$9519.00	G623	\$10839.00	G223	\$10839.00	G423	\$11631.00
5	270	230-240	100	G003AMA	\$7713.00	G003	\$7713.00	G103	\$9519.00	G603	\$10839.00	G203	\$10839.00	G403	\$11631.00
5	270	460-480	200	G004AMA	\$7713.00	G004	\$7713.00	G104	\$9519.00	G604	\$10839.00	G204	\$10839.00	G404	\$11631.00
5	270	575-600	200	G005AMA	\$7713.00	G005	\$7713.00	G105	\$9519.00	G605	\$10839.00	G205	\$10839.00	G405	\$11631.00
6	540	440-600	400	²	\$18201.00	-	-	²	\$21201.00	²	\$22821.00	²	\$22821.00	²	\$24201.00
7	810	440-600	600	²	\$25803.00	-	-	-	-	-	-	-	-	-	-

¹Motor full load current should not exceed continuous ampere rating of the starter.

²Order by description giving complete data on motor being controlled, control circuit voltage, enclosure type and modifications desired.

³External reset not included on standard listed forms.



Other Coil Voltages: See page 1-8
 Factory Installed Modifications: See pages 1-126 to 1-133

Field Installed Modifications: See pages 1-134 to 1-140
 Extra Auxiliary Contacts: See pages 1-134 to 1-136
 Heater Selection Tables: See pages 1-155 to 1-161

NEMA Full Voltage Power Devices

NEMA Rated Full Voltage Starters - Magnetic

CR309 Magnetic Reversing Starters

Non-combination, Open, NEMA Type 1, 3R, 12, 4/4X
 NEMA Sizes 00-7 With Thermal Overload Relay
 600 Volts Maximum 50/60 Hertz

Check Speedi Configurator for product availability and premium through GE Fastrac Program.

Single-Phase

For four-wire split phase or capacitor start induction motor (60 Hertz) overload protection. One heater should be ordered as a separate item. See pages 1-155 to 1-161 for selection.
List price \$9.00 each, GO-10H.

CR309, Single-Phase Magnetic Reversing Starters

NEMA Size	Continuous Ampere Rating ¹	Voltage	Horsepower	Open Type		NEMA Type 1		NEMA Type 12 ²		NEMA Type 4/4X ²	
				Product Number CR309	List Price GO-10G	Product Number CR309	List Price GO-10G	Product Number CR309	List Price GO-10G	Product Number CR309	List Price GO-10G
00	9	115-120	1/3	A002AFA	\$375.00	A102AFA	\$399.00	-	-	-	-
00	9	230-240	1	A003AFA	\$375.00	A103AFA	\$399.00	-	-	-	-
0	18	115-120	1	B002BBA	\$447.00	B102DAA	\$471.00	B202DAA	\$579.00	B402CCA	\$747.00
0	18	230-240	2	B003BBA	\$447.00	B103DAA	\$471.00	B203DAA	\$579.00	B403CCA	\$747.00
1	27	115-120	2	C002FSA	\$507.00	C102DAA	\$543.00	C202ALA	\$651.00	C402BXA	\$927.00
1	27	230-240	3	C003FSA	\$507.00	C103DAA	\$543.00	C203ALA	\$651.00	C403BXA	\$927.00

¹Motor full load current should not exceed continuous ampere rating of the starter.
²External reset not included on standard listed forms.



NEMA Full Voltage Power Devices NEMA Rated Full Voltage Starters - Magnetic CR309 Magnetic Reversing Starters

Section 1

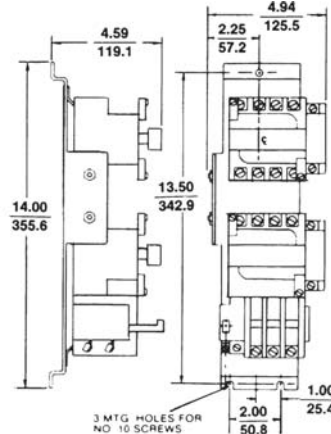
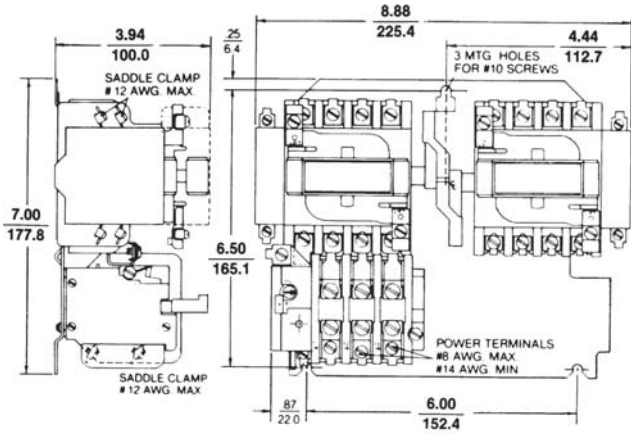
Non-combination

200 Horsepower Maximum

NEMA Sizes 00-5

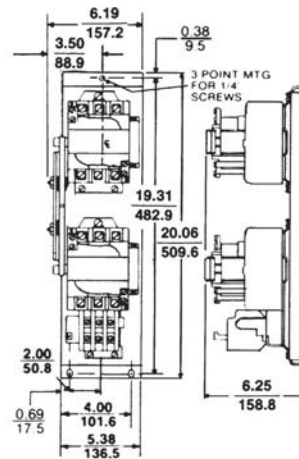
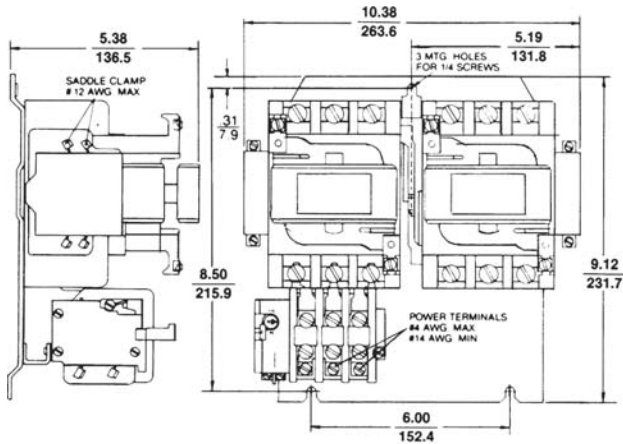
600 Volts Maximum

Outlines, Dimensions (in./mm), and Weights (For Estimating Only)



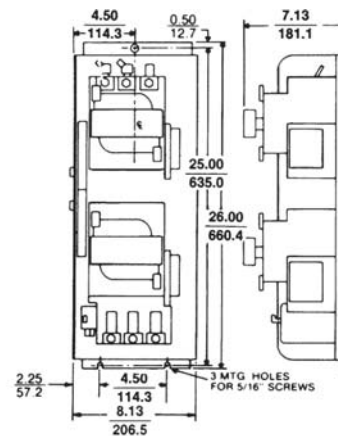
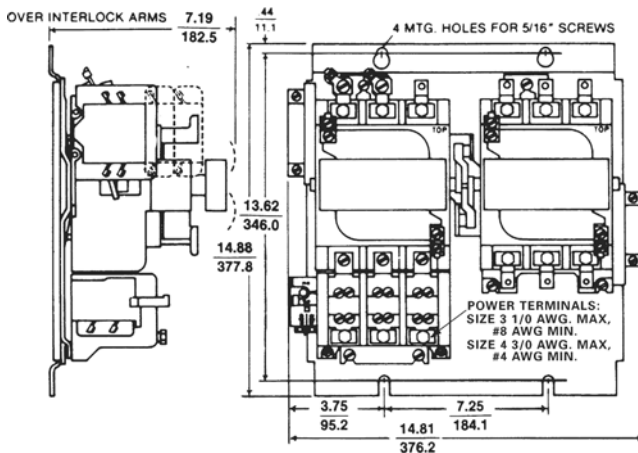
Open Type, NEMA Size 00, 0 and 1 Reversing (Horizontal); 7 3/4 lbs.

Open Type, NEMA Size 0 and 1 Reversing (Vertical); 7 1/4 lbs.



Open Type, NEMA Size 2 Reversing (Horizontal), 16 1/4 lbs.

Open Type, NEMA Size 2 Reversing (Vertical); 16 1/4 lbs.



Open Type, NEMA Size 3 and 4 Reversing (Horizontal); 49 lbs.

Open Type, NEMA Size 3 and 4 Reversing (Vertical); 49 lbs.



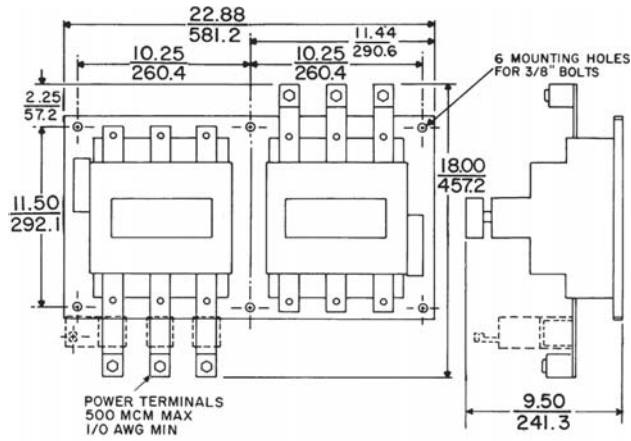
Product Number Selection Instructions: See page 1-19

NEMA Full Voltage Power Devices

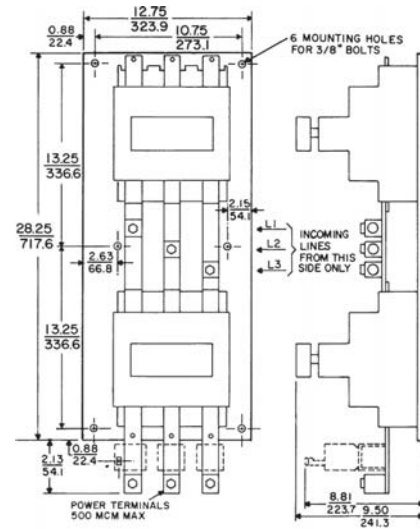
NEMA Rated Full Voltage Starters - Magnetic

CR309 Magnetic Reversing Starters

Non-combination
 200 Horsepower Maximum
 NEMA Sizes 00-5
 600 Volts Maximum
 Outlines, Dimensions ($\frac{\text{in}}$), and Weights (For Estimating Only)



Open Type, NEMA Size 5 Reversing (Horizontal); 115 lbs.



Open Type, NEMA Size 5 Reversing (Vertical), 115 lbs.



NEMA Full Voltage Power Devices

NEMA Rated Full Voltage Starters - Magnetic

CR309 Magnetic Reversing Starters

Section 1

Non-combination

200 Horsepower Maximum

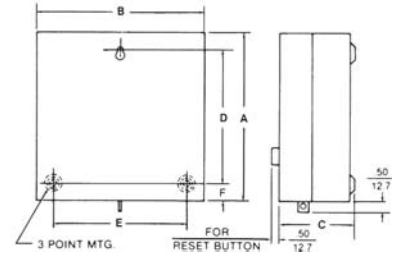
NEMA Sizes 00-5

600 Volts Maximum

Outlines, Dimensions in. (mm), and Weights (For Estimating Only)

CR309 NEMA Type 1 NEMA Sizes 00-2 Reversing

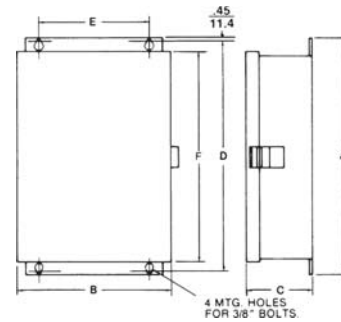
NEMA Size	Dimension A	Dimension B	Dimension C	Dimension D	Dimension E	Dimension F	Mounting Screw Size	Shipping Weight (lbs)
00, 0, 1	10.00 (254.0)	10.00 (254.0)	4.62 (117.4)	8.00 (203.2)	8.00 (203.2)	1.00 (25.4)	# 10	12 1/2
2	13.25 (336.6)	12.00 (304.8)	6.12 (155.4)	11.00 (279.4)	9.00 (228.6)	1.12 (28.6)	1/4"	27 1/2



NEMA Type 1, Sizes 00-2 Reversing

CR309 NEMA Type 1 NEMA Sizes 3-5 Reversing

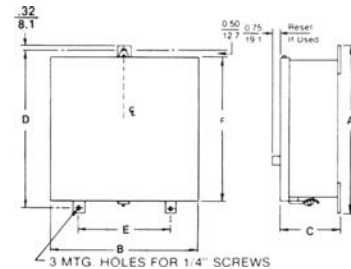
NEMA Size	Dimension A	Dimension B	Dimension C	Dimension D	Dimension E	Dimension F	Shipping Weight (lbs)
3	24.00 (609.6)	18.00 (457.2)	8.62 (219.1)	23.00 (584.2)	13.00 (330.2)	21.62 (549.1)	80
4	30.00 (762.0)	18.00 (457.2)	8.62 (219.1)	29.00 (736.6)	13.00 (330.2)	27.62 (701.6)	100
5	51.13 (1298.7)	32.00 (812.8)	11.50 (292.1)	51.12 (1298.4)	27.00 (685.8)	50.12 (1273.0)	286



NEMA Type 1, Sizes 3-5 Reversing

CR309 NEMA Type 12 NEMA Sizes 0-2 Reversing

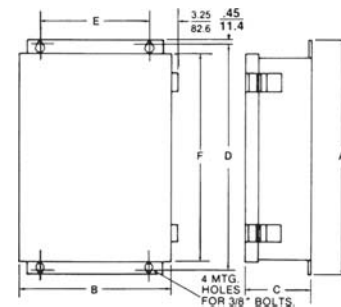
NEMA Size	Dimension A	Dimension B	Dimension C	Dimension D	Dimension E	Dimension F	Shipping Weight (lbs)
0, 1	11.87 (301.5)	10.25 (260.4)	4.75 (120.6)	11.00 (279.4)	7.00 (177.8)	10.25 (260.4)	13
2	14.64 (371.8)	12.25 (311.2)	6.25 (158.8)	14.00 (355.6)	9.00 (228.6)	13.25 (336.6)	29



NEMA Type 12, Sizes 0-2 Reversing

CR309 NEMA Type 12 NEMA Sizes 3-5 Reversing

NEMA Size	Dimension A	Dimension B	Dimension C	Dimension D	Dimension E	Dimension F	Shipping Weight (lbs)
3	24.00 (609.6)	18.00 (457.2)	7.88 (200.0)	23.00 (584.2)	13.00 (330.2)	21.38 (543.0)	85
4	30.00 (762.0)	18.00 (457.2)	7.88 (200.0)	29.00 (736.6)	13.00 (330.2)	26.38 (670.0)	100
5	51.50 (1308.1)	32.00 (812.8)	10.25 (260.4)	50.50 (1282.7)	27.00 (685.8)	48.75 (1238.3)	286



NEMA Type 12, Sizes 3-5 Reversing



Product Number Selection Instructions: See page 1-19

NEMA Full Voltage Power Devices

NEMA Rated Full Voltage Starters - Magnetic

CR309 Magnetic Reversing Starters

Section 1

Non-combination

200 Horsepower Maximum

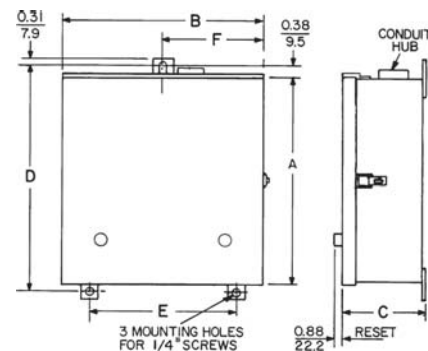
NEMA Sizes 00-5

600 Volts Maximum

Outlines, Dimensions in. (mm), and Weights (For Estimating Only)

CR309 NEMA Type 3R NEMA Sizes 0-2 Reversing

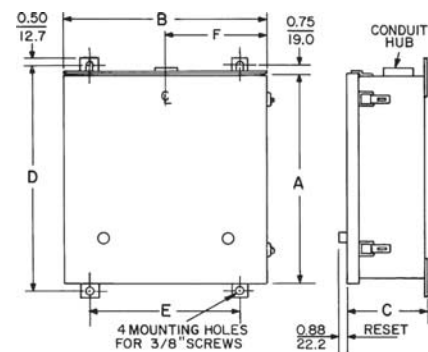
NEMA Size	Dimension A	Dimension B	Dimension C	Dimension D	Dimension E	Dimension F	Shipping Weight (lbs)
0, 1	14.50 (368.3)	10.38 (263.5)	4.75 (120.6)	15.00 (381.0)	11.00 (279.4)	5.19 (131.7)	30
2	16.50 (419.1)	12.50 (317.5)	6.50 (165.1)	17.00 (431.8)	12.00 (304.8)	6.25 (158.8)	50



NEMA Type 3R, Sizes 0-2 Reversing

CR309 NEMA Type 3R NEMA Sizes 3-5 Reversing

NEMA Size	Dimension A	Dimension B	Dimension C	Dimension D	Dimension E	Dimension F	Shipping Weight (lbs)
3	26.00 (660.4)	21.00 (533.4)	8.00 (203.2)	27.50 (698.5)	15.00 (381.0)	10.50 (266.7)	90
4	30.00 (762.0)	21.00 (533.4)	8.00 (203.2)	31.50 (800.1)	15.00 (381.0)	10.50 (266.7)	105
5	48.00 (1219.2)	32.00 (812.8)	10.25 (260.4)	49.50 (1257.3)	26.00 (660.4)	16.00 (406.4)	286



NEMA Type 3R, Sizes 3-5 Reversing

CR309 NEMA Type 4/4X NEMA Sizes 0-5 Reversing

NEMA Size	Height	Width	Depth	Shipping Weight (lbs)
0, 1	15.63 (397.0)	10.38 (263.7)	5.50 (139.7)	30
2	17.63 (447.8)	12.50 (317.5)	7.50 (190.5)	50
3	29.00 (736.6)	21.00 (533.4)	8.88 (225.6)	90
4	33.00 (838.2)	21.00 (533.4)	8.88 (225.6)	105
5	47.55 (1207.8)	36.00 (914.4)	11.12 (282.4)	260

