

NEMA Full Voltage Power Devices

NEMA Rated Full Voltage Starters - Magnetic

Section 1

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

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 . 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 1-153 to 1-159 for selection.

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

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 1-6
 Factory Installed Modifications: See pages 1-124 to 1-131

Field Installed Modifications: See pages 1-132 to 1-138
 Extra Auxiliary Contacts: See pages 1-132 to 1-134
 Heater Selection Tables: See pages 1-153 to 1-159

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

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 1-153 to 1-159 for selection.

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		A102AFA		-	-	-	-
00	9	230-240	1	A003AFA		A103AFA		-	-	-	-
0	18	115-120	1	B002BBA		B102DAA		B202DAA		B402CCA	
0	18	230-240	2	B003BBA		B103DAA		B203DAA		B403CCA	
1	27	115-120	2	C002FSA		C102DAA		C202ALA		C402BXA	
1	27	230-240	3	C003FSA		C103DAA		C203ALA		C403BXA	

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

Section 1

CR309 Magnetic Starters

Two-Speed, Two-Winding, 3-3 pole

Non-combination, Open, NEMA Type 1, 3R, 12, 4/4X

NEMA Sizes 0-5 With Thermal Overload Relay

600 Volts Maximum 50/60 Hertz

Three-Phase

List Price includes a holding interlock, mechanical and cross-electrical interlock, pressure terminals for the line and load connections, plus a 3-leg block type overload relay (manual reset) for each speed. All enclosures include external reset. One NO isolated contact on each overload relay is available as an option at (for both). To order, change suffix AKA to LKA for Product Numbers listed in table. Refer to page 1-76 for two-speed combination forms. Six heaters should be ordered as separate items. See pages 1-153 to 1-159 for selection.

The Product Numbers listed are starters suitable for wye or closed delta connected motor windings. For open delta connected motor windings, contact your nearest GE Representative.

CR309, Three-Phase Two-Winding Magnetic Starters

NEMA Size	Continuous Ampere Rating ¹	Voltage (60 Hz)	Horsepower	Open Type		NEMA Type 1		NEMA Type 3R		NEMA Type 12		NEMA Type 4/4X	
				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	Product Number CR309	List Price GO-10G
0	18	Separate Control—115-120 V		B002AKA		B102AKA		B602AKA		B202AKA		B402AKA	
0	18	200-208	3	B023AKA		B123AKA		B623AKA		B223AKA		B423AKA	
0	18	230-240	3	B003AKA		B103AKA		B603AKA		B203AKA		B403AKA	
0	18	460-480	5	B004AKA		B104AKA		B604AKA		B204AKA		B404AKA	
0	18	575-600	5	B005AKA		B105AKA		B605AKA		B205AKA		B405AKA	
1	27	Separate Control—115-120 V		C002AKA		C102AKA		C602AKA		C202AKA		C402AKA	
1	27	200-208	7 1/2	C023AKA		C123AKA		C623AKA		C223AKA		C423AKA	
1	27	230-240	7 1/2	C003AKA		C103AKA		C603AKA		C203AKA		C403AKA	
1	27	460-480	10	C004AKA		C104AKA		C604AKA		C204AKA		C404AKA	
1	27	575-600	10	C005AKA		C105AKA		C605AKA		C205AKA		C405AKA	
2	45	Separate Control—115-120 V		D002AKA		D102AKA		D602AKA		D202AKA		D402AKA	
2	45	200-208	10	D023AKA		D123AKA		D623AKA		D223AKA		D423AKA	
2	45	230-240	15	D003AKA		D103AKA		D603AKA		D203AKA		D403AKA	
2	45	460-480	25	D004AKA		D104AKA		D604AKA		D204AKA		D404AKA	
2	45	575-600	25	D005AKA		D105AKA		D605AKA		D205AKA		D405AKA	
3	90	Separate Control—115-120 V		E002AKA		E102AKA		E602AKA		E202AKA		E402AKA	
3	90	200-208	25	E023AKA		E123AKA		E623AKA		E223AKA		E423AKA	
3	90	230-240	30	E003AKA		E103AKA		E603AKA		E203AKA		E403AKA	
3	90	460-480	50	E004AKA		E104AKA		E604AKA		E204AKA		E404AKA	
3	90	575-600	50	E005AKA		E105AKA		E605AKA		E205AKA		E405AKA	
4	135	Separate Control—115-120 V		F002AKA		F102AKA		F602AKA		F202AKA		F402AKA	
4	135	200-208	40	F023AKA		F123AKA		F623AKA		F223AKA		F423AKA	
4	135	230-240	50	F003AKA		F103AKA		F603AKA		F203AKA		F403AKA	
4	135	460-480	100	F004AKA		F104AKA		F604AKA		F204AKA		F404AKA	
4	135	575-600	100	F005AKA		F105AKA		F605AKA		F205AKA		F405AKA	
5	270	Separate Control—115-120 V		G002AKA		G102AKA		G602AKA		G202AKA		G402AKA	
5	270	200-208	75	G023AKA		G123AKA		G623AKA		G223AKA		G423AKA	
5	270	230-240	100	G003AKA		G103AKA		G603AKA		G203AKA		G403AKA	
5	270	460-480	200	G004AKA		G104AKA		G604AKA		G204AKA		G404AKA	
5	270	575-600	200	G005AKA		G105AKA		G605AKA		G205AKA		G405AKA	

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



Enclosure Descriptions: See Section 12

NEMA Full Voltage Power Devices

NEMA Rated Full Voltage Starters - Magnetic

Section 1

CR309 Magnetic Starters

Two-Speed, One-Winding (Consequent Pole), 5-3 pole
 Non-combination, Open, NEMA Type 1, 3R, 12, 4/4X
 NEMA Sizes 0-5 With Thermal Overload Relay
 600 Volts Maximum 50/60 Hertz

Three-Phase

List Price includes a holding interlock, mechanical and cross-electrical interlock, pressure terminals for the line and load connections, plus a 3-leg block type overload relay (manual reset) for each speed. All enclosures include external reset. One NO isolated contact on each overload relay is available as an option at (for both). To order, change suffix AEA to LEA for Product Numbers listed in table. Six heaters should be ordered as separate items. See pages 1-153 to 1-159 for selection.

Starters are wired for constant or variable torque motor application. Reconnection of control wiring may be required for constant horsepower application. Motor full-load current should not exceed continuous ampere rating of starter. Refer to Coil Table, page 1-6, for other available coils including 50 Hertz.

CR309, Three-Phase One-Winding Magnetic Starters

NEMA Size	Continuous Ampere Rating ¹	Voltage (60 Hz)	Horsepower	Open Type		NEMA Type 1		NEMA Type 3R		NEMA Type 12		NEMA Type 4/4X	
				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	Product Number CR309	List Price GO-10G
0	18	Separate Control—115-120 V		R002AEA		R102AEA		R602AEA		R202AEA		R402AEA	
0	18	200-208	3	R023AEA		R123AEA		R623AEA		R223AEA		R423AEA	
0	18	230-240	3	R003AEA		R103AEA		R603AEA		R203AEA		R403AEA	
0	18	460-480	5	R004AEA		R104AEA		R604AEA		R204AEA		R404AEA	
0	18	575-600	5	R005AEA		R105AEA		R605AEA		R205AEA		R405AEA	
1	27	Separate Control—115-120 V		S002AEA		S102AEA		S602AEA		S202AEA		S402AEA	
1	27	200-208		S023AEA		S123AEA		S623AEA		S223AEA		S423AEA	
1	27	230-240	7 1/2	S003AEA		S103AEA		S603AEA		S203AEA		S403AEA	
1	27	460-480	10	S004AEA		S104AEA		S604AEA		S204AEA		S404AEA	
1	27	575-600	10	S005AEA		S105AEA		S605AEA		S205AEA		S405AEA	
2	45	Separate Control—115-120 V		T002AEA		T102AEA		T602AEA		T202AEA		T402AEA	
2	45	200-208	10	T023AEA		T123AEA		T623AEA		T223AEA		T423AEA	
2	45	230-240	15	T003AEA		T103AEA		T603AEA		T203AEA		T403AEA	
2	45	460-480	25	T004AEA		T104AEA		T604AEA		T204AEA		T404AEA	
2	45	575-600	25	T005AEA		T105AEA		T605AEA		T205AEA		T405AEA	
3	90	Separate Control—115-120 V		U002AEA		U102AEA		U602AEA		U202AEA		U402AEA	
3	90	200-208	25	U023AEA		U123AEA		U623AEA		U223AEA		U423AEA	
3	90	230-240	30	U003AEA		U103AEA		U603AEA		U203AEA		U403AEA	
3	90	460-480	50	U004AEA		U104AEA		U604AEA		U204AEA		U404AEA	
3	90	575-600	50	U005AEA		U105AEA		U605AEA		U205AEA		U405AEA	
4	135	Separate Control—115-120 V		W002AEA		W102AEA		W602AEA		W202AEA		W402AEA	
4	135	200-208	40	W023AEA		W123AEA		W623AEA		W223AEA		W423AEA	
4	135	230-240	50	W003AEA		W103AEA		W603AEA		W203AEA		W403AEA	
4	135	460-480	100	W004AEA		W104AEA		W604AEA		W204AEA		W404AEA	
4	135	575-600	100	W005AEA		W105AEA		W605AEA		W205AEA		W405AEA	
5	270	Separate Control—115-120 V		Z002AEA		Z102AEA		Z602AEA		Z202AEA		Z402AEA	
5	270	200-208	75	Z023AEA		Z123AEA		Z623AEA		Z223AEA		Z423AEA	
5	270	230-240	100	Z003AEA		Z103AEA		Z603AEA		Z203AEA		Z403AEA	
5	270	460-480	200	Z004AEA		Z104AEA		Z604AEA		Z204AEA		Z404AEA	
5	270	575-600	200	Z005AEA		Z105AEA		Z605AEA		Z205AEA		Z405AEA	

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



Other Coil Voltages: See page 1-6
 Factory Installed Modifications: See pages 1-124 to 1-131

Field Installed Modifications: See pages 1-132 to 1-138
 Extra Auxiliary Contacts: See pages 1-132 to 1-134
 Heater Selection Tables: See pages 1-153 to 1-159

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

Section 1

CR306, CR307, CR308, CR309, CR310, CR311, CR387, CR390, CR407, CR408, CR410, CR411, CR487, CR490 Magnetic Starters

Factory-Installed Modifications

Starter Modifications—Factory Installed

The general information at the top of page 1-124 regarding factory-installed modifications, also applies to those listed in the table below.

Type of Installation/ Starters	Item No.	Modifications	Enclosure Type	Starter NEMA Size								
				00	0	1	2	3	4	5	6	
Pilot Devices Mounted In Cover or Flange of CR306, CR307, CR308, CR387, CR407, CR408, CR487	4	Indicating Light ¹										
	4a	One (Red Only) ²	1									
	4b	One (Specify Red or Green) (HEAVY-DUTY, CR104P)	Any									
	4c	Two (Includes 1 NC Auxiliary Contact) ⁴ (HEAVY-DUTY, CR104P)	Any									
	4d	One Push-To-Test and/or Transformer Type (Red or Green)	Any									
	4e	Two Push-To-Test (Includes 1 NC Auxiliary Contact) and/or Transformer Type ⁴	Any									
Pilot Devices Mounted In Cover or Flange of CR309, CR310, CR311, CR390, CR410, CR411, CR490	5	Push Buttons										
	5a	FORWARD-STOP-REVERSE	Any									
	5b	HIGH-LOW-OFF	Any									
	5c	FAST-SLOW-STOP	Any									
	5d	HIGH-LOW Push Button and H-O-A Selector Switch	Any									
	5e	Single Push Button, Unwired (Specify Marking) ⁵	Any									
	5f	Single Illuminated Push Button, Unwired (Specify Marking) ⁵	Any									
	6	Selector Switches										
	6a	LOW-OFF-HIGH	Any									
	6b	SLOW-OFF-FAST	Any									
	6c	FORWARD-OFF-REVERSE	Any									
	6d	LOW-HIGH and HAND-OFF-AUTO	Any									
	6e	HAND-OFF-AUTO	Any									
	6f	Single Selector Switch Maintained (Specify Marking and Positions) (Specify Two or Three Positions) ⁵	Any									
6g	Key Operated Maintained (Specify Marking and Key-Removal Positions) (Specify Two or Three Positions) ⁵	Any										
6h	Nonstandard Markings	Any										

Note: For indicating light modifications on CR309-311 & CR390, see p. 1-124.

¹ One indicating light: Wired in parallel with operating coil.

Two indicating lights: Red is wired in parallel with operating coil, green is wired through an auxiliary contact.

Factory-installed field modification kit for sizes 00-4 and size 5 without CPT.

Not available in NEMA Size 00. Use Size 0 starter and modification.

Maximum of three additional auxiliary contacts available on size 0-1.

Specify CR104P operator and contact block by product number.

Control Circuit Fusing

Per the NEC and UL508 Section 18.2 - Control Circuit Fuses must be used when the branch circuit protective device rating is too large to serve as protection for the control circuit. This depends on the control wire size and whether all control circuit wires are within the enclosure. See table below:

Provide supplemental control circuit protection if control circuits with wires longer than 12 inches are connected to branch circuit protection exceeding the ratings below

Control Circuit Wire Size (AWG)	Maximum Branch Circuit Protection Rating (Amperes)		Maximum Supplemental Control Circuit Protection Rating (Amperes)
	Conductors within Enclosure	Conductors outside Enclosure	
22	12	3	3
20	20	5	5
18	25	7	7
16	40	10	10
14	100	45	20
12	120	60	25

The factory must provide this protection, if the circuit provided by the factory requires the fuses. The factory will provide control circuit fuses in enclosed starters and contactors with pilot devices, control relays or other control components that are factory wired; when used with line voltage control; when the size listed below is being supplied.

Non-combination starters (CR305, CR306, CR309, CR385, CR386)

Size 4 and above

Combination starters

Size 0-3 with Mag-Break Protector

Size 3 with:

—Circuit Breaker greater than 100 amps, or

—Fuse Clips greater than 100 amps, or

Size 4 and above with any circuit breakers, circuit protector or fuse clips.

Control Circuit fuses (Modification 9) must be added to the enclosed starter or contactor pricing.

All CPTs will be supplied with primary fuses. CPTs without primary fuses are no longer available.

When control circuit fuses are not factory supplied, customer provided wiring or branch circuit protection sizing to these contactors and starters may still require that the customer/installer add the fusing in the field. It will be the customer/installer's responsibility to ensure code compliance under these conditions.

