

# NEMA Full Voltage Power Devices

## NEMA Rated Full Voltage Starters - Magnetic

# Section 1

### CR307, CR407 Magnetic Starters

Nonreversing, Combination, NEMA Type 1, 3R, 12, 4/4X  
 NEMA Sizes 0-6, Thermal Magnetic Circuit Breaker Type  
 600 Volts Maximum 50/60 Hertz

List Price includes a holding interlock, pressure terminals for the line and load connections, plus a 3-leg block type overload relay (manual reset). Fuses not included. All enclosures include external reset. Three heaters should be ordered as separate items. See pages 1-153 to 1-159 for selection.

#### CR307/407 Thermal Magnetic Circuit Breaker Type

Voltage (60Hz)	NEMA Size	Maximum Horsepower	Continuous Amp Rating	CB Rating (Amps)	NEMA Type 1		NEMA Type 3R		NEMA Type 12		NEMA Type 4/4X	
					Product Number CR	Product Number CR	Price	Product Number CR	Price	Product Number CR	Price	
200-208	0	2	18	15	307B08TC1AAAAA	407B608TC1AAAAA	407B208TC1AAAAA	407B408TC1AAAAA				
200-208	0	3	18	20	307B08TD1AAAAA	407B608TD1AAAAA	407B208TD1AAAAA	407B408TD1AAAAA				
200-208	1	5	27	30	307C08TF1AAAAA	407C608TF1AAAAA	407C208TF1AAAAA	407C408TF1AAAAA				
200-208	1	7 1/2	27	40	307C08TG1AAAAA	407C608TG1AAAAA	407C208TG1AAAAA	407C408TG1AAAAA				
200-208	2	10	45	50	307D08TH1AAAAA	407D608TH1AAAAA	407D208TH1AAAAA	407D408TH1AAAAA				
200-208	3	15	90	80	407E08TL1AAAAA	407E608TL1AAAAA	407E208TL1AAAAA	407E408TL1AAAAA				
200-208	3	20	90	100	407E108TN1AAAAA	407E608TN1AAAAA	407E208TN1AAAAA	407E408TN1AAAAA				
200-208	3	25	90	125	407E108TQ1AAAAA	407E608TQ1AAAAA	407E208TQ1AAAAA	407E408TQ1AAAAA				
200-208	4	30	135	150	407F108TR1AAAAA	407F608TR1AAAAA	407F208TR1AAAAA	407F408TR1AAAAA				
200-208	4	40	135	200	407F108TT1AAAAA	407F608TT1AAAAA	407F208TT1AAAAA	407F408TT1AAAAA				
200-208	5	75	270	400	307G123CAA	307G623CAA	307G223CEA	307G423CAAA				
200-208	6	150	540	800	307HH123EAAA	307HH623EAAA	307HH223EAEA	307HH423EAAA <sup>2</sup>				
230-240	0	3	18	15	307B03TC1AAAAA	407B603TC1AAAAA	407B203TC1AAAAA	407B403TC1AAAAA				
230-240	1	5	27	25	307C03TE1AAAAA	407C603TE1AAAAA	407C203TE1AAAAA	407C403TE1AAAAA				
230-240	1	7 1/2	27	40	307C03TG1AAAAA	407C603TG1AAAAA	407C203TG1AAAAA	407C403TG1AAAAA				
230-240	2	10	45	50	307D03TH1AAAAA	407D603TH1AAAAA	407D203TH1AAAAA	407D403TH1AAAAA				
230-240	2	15	45	70	307D03TK1AAAAA	407D603TK1AAAAA	407D203TK1AAAAA	407D403TK1AAAAA				
230-240	3	20	90	90	407E03TM1AAAAA	407E603TM1AAAAA	407E203TM1AAAAA	407E403TM1AAAAA				
230-240	3	25	90	110	407E103TP1AAAAA	407E603TP1AAAAA	407E203TP1AAAAA	407E403TP1AAAAA				
230-240	3	30	90	125	407E103TQ1AAAAA	407E603TQ1AAAAA	407E203TQ1AAAAA	407E403TQ1AAAAA				
230-240	4	40	135	175	407F103TS1AAAAA	407F603TS1AAAAA	407F203TS1AAAAA	407F403TS1AAAAA				
230-240	4	50	135	200	407F103TT1AAAAA	407F603TT1AAAAA	407F203TT1AAAAA	407F403TT1AAAAA				
230-240	5	60	270	250	307G103AAA	307G603AAA	307G203AEA	307G403AAAA				
230-240	5	75	270	300	307G103BAA	307G603BAAA	307G203BEA	307G403BAAA				
230-240	5	100	270	400	307G103CAA	307G603CAA	307G203CEA	307G403CAAA				
230-240	6	200	540	800	307HH103EAAA	307HH603EAAA	307HH203EAEA	307HH403EAAA <sup>2</sup>				
460-480	0	5	18	15	307B04TC1AAAAA	407B604TC1AAAAA	407B204TC1AAAAA	407B404TC1AAAAA				
460-480	1	7 1/2	27	20	307C04TD1AAAAA	407C604TD1AAAAA	407C204TD1AAAAA	407C404TD1AAAAA				
460-480	1	10	27	25	307C04TE1AAAAA	407C604TE1AAAAA	407C204TE1AAAAA	407C404TE1AAAAA				
460-480	2	15	45	40	307D04TG1AAAAA	407D604TG1AAAAA	407D204TG1AAAAA	407D404TG1AAAAA				
460-480	2	20	45	50	307D04TH1AAAAA	407D604TH1AAAAA	407D204TH1AAAAA	407D404TH1AAAAA				
460-480	2	25	45	60	307D04TJ1AAAAA	407D604TJ1AAAAA	407D204TJ1AAAAA	407D404TJ1AAAAA				
460-480	3	30	90	60	407E04TJ1AAAAA	407E604TJ1AAAAA	407E204TJ1AAAAA	407E404TJ1AAAAA				
460-480	3	40	90	80	407E104TL1AAAAA	407E604TL1AAAAA	407E204TL1AAAAA	407E404TL1AAAAA				
460-480	3	50	90	100	407E104TN1AAAAA	407E604TN1AAAAA	407E204TN1AAAAA	407E404TN1AAAAA				
460-480	4	60	135	125	407F104TQ1AAAAA	407F604TQ1AAAAA	407F204TQ1AAAAA	407F404TQ1AAAAA				
460-480	4	75	135	150	407F104TR1AAAAA	407F604TR1AAAAA	407F204TR1AAAAA	407F404TR1AAAAA				
460-480	4	100	135	200	407F104TT1AAAAA	407F604TT1AAAAA	407F204TT1AAAAA	407F404TT1AAAAA				
460-480	5	125	270	250	307G104AAA <sup>1</sup>	307G604AAA <sup>1</sup>	307G204AEA <sup>1</sup>	307G404AAA <sup>1</sup>				
460-480	5	150	270	300	307G104BAA	307G604BAAA	307G204BEA	307G404BAAA				
460-480	5	200	270	400	307G104CAA	307G604CAAA	307G204CEA	307G404CAAA				
460-480	6	400	540	800	307HH104EAAA	307HH604EAAA	307HH204EAEA	307HH404EAAA <sup>2</sup>				
575-600	0	5	18	15	307B05TC1AAAAA	407B605TC1AAAAA	407B205TC1AAAAA	407B405TC1AAAAA				
575-600	1	7 1/2	27	15	307C05TC1AAAAA	407C605TC1AAAAA	407C205TC1AAAAA	407C405TC1AAAAA				
575-600	1	10	27	20	307C05TD1AAAAA	407C605TD1AAAAA	407C205TD1AAAAA	407C405TD1AAAAA				
575-600	2	15	45	30	307D05TF1AAAAA	407D605TF1AAAAA	407D205TF1AAAAA	407D405TF1AAAAA				
575-600	2	20	45	40	307D05TG1AAAAA	407D605TG1AAAAA	407D205TG1AAAAA	407D405TG1AAAAA				
575-600	2	25	45	50	307D05TH1AAAAA	407D605TH1AAAAA	407D205TH1AAAAA	407D405TH1AAAAA				
575-600	3	30	90	50	407E105TK1AAAAA	407E605TK1AAAAA	407E205TK1AAAAA	407E405TK1AAAAA				
575-600	3	40	90	70	407E105TK1AAAAA	407E605TK1AAAAA	407E205TK1AAAAA	407E405TK1AAAAA				
575-600	3	50	90	80	407E105TL1AAAAA	407E605TL1AAAAA	407E205TL1AAAAA	407E405TL1AAAAA				
575-600	4	60	135	100	407F105TN1AAAAA	407F605TN1AAAAA	407F205TN1AAAAA	407F405TN1AAAAA				
575-600	4	75	135	125	407F105TQ1AAAAA	407F605TQ1AAAAA	407F205TQ1AAAAA	407F405TQ1AAAAA				
575-600	4	100	135	150	407F105TR1AAAAA	407F605TR1AAAAA	407F205TR1AAAAA	407F405TR1AAAAA				
575-600	5	150	270	250	307G105AAA	307G605AAA	307G205AEA	307G405AAAA				
575-600	5	200	270	300	307G105BAA	307G605BAAA	307G205BEA	307G405BAAA				
575-600	6	400	540	600	307HH105DAAA	307HH605DAAA	307HH205DAEA	307HH405DAAA <sup>2</sup>				

<sup>1</sup>For ordinary starting duty only.

<sup>2</sup>Painted steel Type 4 enclosure is standard for NEMA Size 6 forms.

- NEMA Size 0-6 starters with 115-120 Volt, 60-Hertz coil for separate control are available at listed prices. To order, replace Digits 8 and 9 of listed Product Numbers with 02. Example: CR407B604TC1AAAAA with 115-120 Volt, 60-Hertz coil for separate control becomes CR407B602TC1AAAAA.
- Motor full load current should not exceed continuous ampere rating of starter.



# 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 <sup>1</sup>										
	4a	One (Red Only) <sup>2</sup>	1									
	4b	One (Specify Red or Green) (HEAVY-DUTY, CR104P)	Any									
	4c	Two (Includes 1 NC Auxiliary Contact) <sup>4</sup> (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 <sup>4</sup>	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) <sup>5</sup>	Any									
	5f	Single Illuminated Push Button, Unwired (Specify Marking) <sup>5</sup>	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) <sup>5</sup>	Any									
6g	Key Operated Maintained (Specify Marking and Key-Removal Positions) (Specify Two or Three Positions) <sup>5</sup>	Any										
6h	Nonstandard Markings	Any										

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

<sup>1</sup> 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.

