



PowerFlex® 700 User Manual


This document provides updated information for the PowerFlex 700 User Manual (publication 20B-UM001x-EN-P). Included is updated/corrected information for all drives, new information about Common Bus (DC input) drives and additional drive ratings. Place this document with your User Manual for further reference.

Parameter Changes

Page 3-10. Description has been updated.

004	[Torque Current] Based on the motor, the amount of current that is in phase with the fundamental voltage component.	Default: Min/Max: Units:	Read Only Drive Rating × -2/+2 0.1 Amps
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Page 3-18. Description has been updated.

422	Vector [Pulse In Scale]  Sets the scale factor/gain for the Pulse Input when P423 is set to "Pulse Input." Calculate for the desired speed command as follows: for Hz, [Pulse In Scale] = $\frac{\text{Input Pulse Rate (Hz)}}{\text{Desired Cmd. (Hz)}}$ for RPM, [Pulse In Scale] = $\frac{\text{Input Pulse Rate (Hz)}}{\text{Desired Cmd. (RPM)}} \times \frac{120}{[\text{Motor Poles}]}$	Default: Min/Max: Units:	64 2/20000 1
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Page 3-26. New parameter added.

139	Vector [PI BW Filter] Provides filter for Process PI error signal. The output of this filter is displayed in [PI Error Meter]. Zero will disable the filter.	Default: Min/Max: Units:	0.0 Radians 0.0/240.0 Radians 0.1 Radians	137
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Page 3-28. The Default value was updated.

151	[PWM Frequency] Sets the carrier frequency for the PWM output. Drive derating may occur at higher carrier frequencies. For derating information, refer to . . .	Default: Min/Max: Units:	4 kHz 2 kHz (Frames 4-6, 600/690VAC) 2/10 kHz 1 kHz
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Pages 3-42. Min/Max value for parameters 476-487 is now ± 32767 .

Alarms

The following alarm is new.

Alarm	No.	Type ⁽¹⁾	Description
TB Ref Cflct Vector			Terminal Block Reference Conflict prevents the drive from starting. The conflict occurs when you select "Auto/Manual" (factory default for [Digital In3 Sel], parameter 363) and also reprogrammed [TB Man Ref Sel], parameter 96. The use of an analog input for this function is "exclusive," meaning that no other use for the selected analog input may be programmed. If parameter 96 was reprogrammed to "Analog In 2" as the manual speed reference, you must reprogram all of the other factory default uses for that input. If "Analog In 1" is selected, you must verify that another speed ref source has also been programmed for Analog Input 1. These may include parameters 90, 93, 117, 128 and 179. To remove the drive inhibit, either reprogram the selections for references to an Analog Input or deactivate the "Auto/Manual" Function by reprogramming [Digital In3 Sel] to another function or "Unused."

⁽¹⁾ See User Manual for a description of alarm types.

Specifications

The Voltage Tolerance specification has been updated.

Category	Specification					
Electrical	Voltage Tolerance:	Voltage Class	Nominal Line Voltage	Typical Motor Voltage	Drive Input Voltage	
		200	200	200	180-264	200-264
			208	208		208-264
			240	230		230-264
		400	380	380	342-528	380-528
			400	400		400-528
			480	460		460-528
		600	600	575	432-660	575-660
		600/690	690	690	432-759	575-759 ⁽²⁾

⁽¹⁾ Rated current is available across the entire range. The drive will output rated HP from nominal motor voltage to nominal drive voltage +10%. Below nominal motor voltage input (230,460,575), the drives output HP will be derated linearly with the input voltage. Example: a 5 HP, 480V drive operated at 342V will produce linearly increasing HP up to 3.7 HP @ 44.6 Hz (342/460*60). This point becomes the effective above 44.6 Hz, if the load demands more power, current will increase and/or speed will decrease.

⁽²⁾ 690V must be neutral-grounded (grounded-Y) Only.

Common Bus (DC Input) Additions

The following material pertains to Common Bus (DC Input) drives only.

Cooling Fan Voltage

Common Bus drives require user supplied 120 or 240V AC to power the cooling fans. The power source is connected between “0 VAC” and the terminal corresponding to your source voltage (see [Figure 1](#)).

Table A Fan VA ratings (DC Input Only)

Frame	Rating (120V or 240V)
5	100 VA
6	138 VA

Power Terminal Block Specifications

Common Bus drives have additional terminals for the fan power supply. Refer to [Figure 1](#) for terminal identification.

No.	Name	Frame	Description	Wire Size Range ⁽¹⁾		Torque	
				Maximum	Minimum	Maximum	Recommended
④	Fan Terminal Block	5-6	User Supplied Fan Voltage	4.0 mm ² (10 AWG)	0.5 mm ² (22 AWG)	0.6 N-m (5.3 lb.-in.)	0.6 N-m (5.3 lb.-in.)

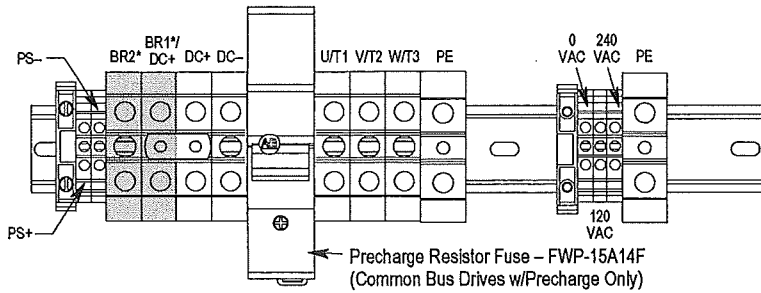
⁽¹⁾ Maximum/minimum sizes that the terminal block will accept - these are not recommendations.

Important Common Bus (DC Input) Application Notes

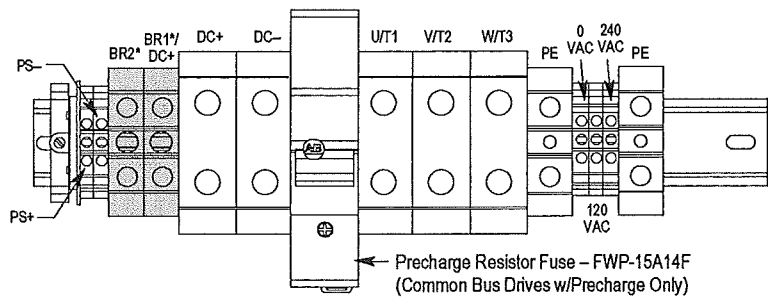
1. If drives without internal precharge are used (Frames 5 & 6 only), then:
 - a) precharge capability must be provided in the system to guard against possible damage, and
 - b) disconnect switches Must Not be used between the input of the drive and a common DC bus without the use of an external precharge device.
2. If drives with internal precharge (Frames 0-6) are used with a disconnect switch to the common bus, then:
 - a) an auxiliary contact on the disconnect must be connected to a digital input of the drive. The corresponding input (parameter 361-366) must be set to option 30, “Precharge Enable.” This provides the proper precharge interlock, guarding against possible damage to the drive when connected to a common DC bus.
 - b) the drive must have firmware version 2.002 or above (Standard & Vector Control).

Figure 1 Power Terminal Block – Common Bus (DC Input) Drives

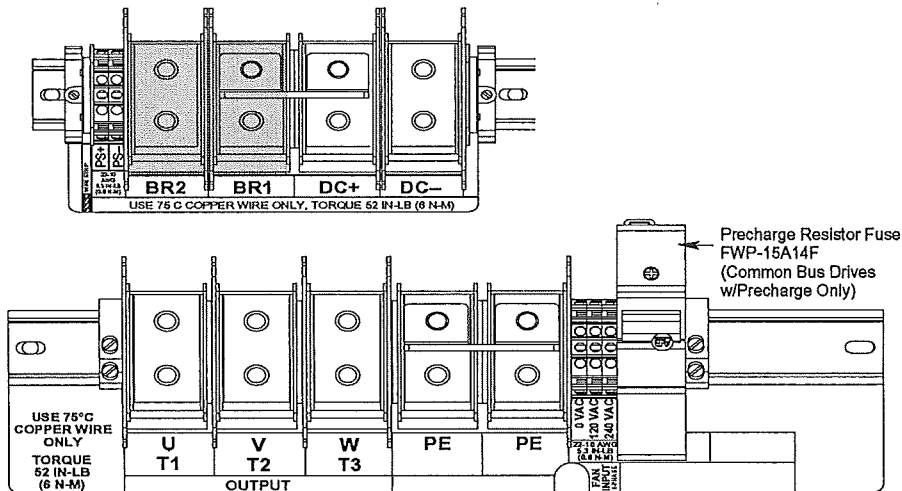
Frame 5 – 75 HP



Frame 5 – 100 HP



Frame 6



Catalog Number Explanation

Refer to the following page for updated explanation. Special attention should be directed to “Note 5,” explaining that Vector Control drives utilize DPI Only.

Drive, Fuse & Circuit Breaker Ratings

Tables have been updated to include new ratings. Refer to pages [6-11](#). New tables have been added for Common Bus (DC Input) drives on page [12](#). Updated Frame Reference table is on page [14](#).

Catalog Number Explanation

20B	D	2P1	A	3	A	Y	N	A	R	A	0
Drive	Voltage Rating	Rating	Enclosure	HIM	Documentation	Brake	Brake Resistor	Emission	Comm Slot	I/O	Feedback
Code Type 20B 700	Code Enclosure A IP 20, NEMA Type 1 N Open	Code Operator Interface 0 Blank Cover 2 Digital LCD 3 Full Numeric LCD 4 Analog LCD 5 Prog. Only LCD	Code Type A User Manual N No Manual	Code w/Resistor Y Yes ⁽¹⁾ N No	Code CE Filter A Yes B Yes	Code CM Choke Yes No	Code Control I/O Volts A Std. 24V DC/AC B Std. 115V AC C Vector ⁽⁵⁾ 24V DC/AC D Vector ⁽⁵⁾ 115V AC N Std. None	Code Type 0 None 1 Encoder, 12V			
Code Voltage Ph. Prechg.											
B 240V AC 3 -											
C 400V AC 3 -											
D 480V AC 3 -											
E 600V AC ⁽³⁾ 3 -											
F 690V AC 3 -											
H 540V DC ⁽⁴⁾ - N											
J 650V DC ⁽⁴⁾ - N											
P 540V DC ⁽⁴⁾ - Y											
R 650V DC ⁽⁴⁾ - Y											
208/240V 60Hz Input											
Code Amps Amps kW (HP)											
2P2 2.5 2.2 0.37 (0.5)											
4P2 4.8 4.2 0.75 (1.0)											
6P8 7.8 6.8 1.5 (2.0)											
9P6 11 9.6 2.2 (3.0)											
015 17.5 15.3 4.0 (5.0)											
022 25.3 22 5.5 (7.5)											
028 32.2 28 7.5 (10)											
042 48.3 42 11 (15)											
052 56 52 15 (20)											
070 78.2 70 18.5 (25)											
080 92 80 22 (30)											
104 120 104 30 (40)											
130 130 130 37 (50)											
154 177 154 45 (60)											
192 221 192 55 (75)											
400/480V 60Hz Input											
Code Amps Amps kW (HP)											
1P1 1.3 1.1 0.37 (0.5)											
2P1 2.1 2.1 0.75 (1.0)											
3P4 3.5 3.4 1.5 (2.0)											
5P0 5 5 2.2 (3.0)											
8P0 8.7 8 4.0 (5.0)											
011 11.5 11 5.5 (7.5)											
014 15.4 14 7.5 (10)											
022 22 22 11 (15)											
027 30 27 15 (20)											
034 37 34 18.5 (25)											
040 43 40 22 (30)											
052 56 52 30 (40)											
065 72 65 37 (50)											
077 85 77 45 (60)											
096 105 96 55 (75)											
125 125 125 75 (100)											
140 140 140 75 (100)											
156 170 156 90 (125)											
180 205 180 110 (150)											
600V 60Hz Input ⁽³⁾											
Code Amps kW (HP)											
0P9 0.9 0.37 (0.5)											
1P7 1.7 0.75 (1.0)											
2P7 2.7 1.5 (2.0)											
3P9 3.9 2.2 (3.0)											
6P1 6.1 4.0 (5.0)											
9P0 9.0 5.5 (7.5)											
011 11 7.5 (10)											
017 17 11 (15)											
022 22 15 (20)											
027 27 18.5 (25)											
032 32 22 (30)											
041 41 30 (40)											
052 52 37 (50)											
062 62 45 (60)											
077 77 55 (75)											
099 99 75 (100)											
125 125 90 (125)											
144 144 110 (150)											
690V 60Hz Input											
Code Amps kW (HP)											
052 52 45 (50)											
060 60 55 (60)											
082 82 75 (75)											
098 98 90 (100)											
Code Version											
C ControlNet (Coax)											
D DeviceNet											
E Ethernet/IP											
R RIO											
S RS-485											
N None											
(1) Not available for Frame 3 drives or larger.											
(2) Brake (GBT) is standard on Frames 0-3 and optional on Frames 4-6.											
(3) Note: CE Certification testing has not been performed on 600V class drive.											
(4) Frames 5 & 6 Only.											
(5) Vector Control Option utilizes DPI Only.											

(1) Not available for Frame 3 drives or larger.

(2) Brake IGBT is standard on Frames 0-3 and optional on Frames 4-6.

(3) Note: CE Certification testing has not been performed on 600V class drives.

(4) Frames 5 & 6 Only.

(5) Vector Control Option utilizes DPI Only.

Table B 208 Volt AC Input Protection Devices (See page 11 for Notes)

Drive Catalog Number	HP Rating		Input Ratings		Output Amps			Dual Element Time Delay Fuse		Non-Time Delay Fuse		Circuit Breaker ⁽³⁾ Max. ⁽¹⁰⁾	Motor Circuit Protector ⁽⁴⁾ Max. ⁽¹⁰⁾	140M Motor Starter with Adjustable Current Range ⁽⁵⁾⁽⁶⁾ Available Catalog Numbers ⁽⁷⁾			
	N	D	Amps	kVA	Cont.	1 Min.	3 Sec.	Min. ⁽¹⁾	Max. ⁽²⁾	Min. ⁽¹⁾	Max. ⁽²⁾						
208 Volt AC Input																	
20BB2P2	0	0.5	0.33	1.9	0.7	2.5	2.8	3.8	3	6	3	10	15	3	140M-C2E-B25	140M-D8E-B25	—
20BB4P2	0	1	0.75	3.7	1.3	4.8	5.6	7.0	6	10	6	17.5	15	7	140M-C2E-B63	140M-D8E-B63	—
20BB6P8	1	2	1.5	6.8	2.4	7.8	10.4	13.8	10	15	10	30	30	15	140M-C2E-C10	140M-D8E-C10	140M-F8E-C10
20BB9P6	1	3	2	9.5	3.4	11	12.1	17	12	20	12	40	40	15	140M-C2E-C16	140M-D8E-C16	140M-F8E-C16
20BB015	1	5	3	15.7	5.7	17.5	19.3	26.3	20	35	20	70	70	30	140M-C2E-C20	140M-D8E-C20	140M-F8E-C20
20BB022	1	7.5	5	23.0	8.3	25.3	27.8	38	30	50	30	100	100	30	140M-C2E-C25	140M-D8E-C25	140M-F8E-C25
20BB028	2	10	7.5	29.6	10.7	32.2	38	50.6	40	70	40	125	125	50	—	—	140M-CMN-4000
20BB042	3	15	10	44.5	16.0	48.3	53.1	72.5	60	100	60	175	175	70	—	—	140M-CMN-6300
20BB052	3	20	15	51.5	17.1	56	64	86	80	125	80	200	200	100	—	—	140M-CMN-9300
20BB070	4	25	20	72	25.9	78.2	93	124	90	175	90	300	300	100	—	—	140M-CMN-9000
20BB080	4	30	25	84.7	30.5	92	117	156	110	200	110	350	350	150	—	—	140M-CMN-9000
20BB104	5	—	30	84.7	30.5	92	138	175	125	200	125	350	300	150	—	—	140M-CMN-9000
		40	—	113	40.7	120	132	175	150	250	150	475	350	150	—	—	—
20BB130	5	—	40	98	35.3	104	156	175	125	225	125	400	300	150	—	—	—
		50	—	122	44.1	130	143	175	175	275	175	500	375	250	—	—	—
20BB154	6	—	50	141	50.9	150	225	300	200	300	200	500	450	250	—	—	—
		60	—	167	60.1	177	195	266	225	350	225	500	500	250	—	—	—
20BB192	6	—	60	167	60.1	177	266	308	225	350	225	500	500	250	—	—	—
		75	—	208	75.0	221	243	308	300	450	300	600	600	400	—	—	—

Table C 240 Volt AC Input Protection Devices (See page 11 for Notes)

Drive Catalog Number	HP Rating @ 480V	Input Ratings		Output Amps		Dual Element Time Delay Fuse		Non-Time Delay Fuse		Circuit Breaker ⁽³⁾ Max. ⁽¹⁰⁾	Motor Circuit Protector ⁽⁴⁾ Max. ⁽¹⁰⁾	140M Motor Starter with Adjustable Current Range ⁽⁵⁾⁽⁶⁾ Available Catalog Numbers ⁽⁷⁾					
		ND	HD	Amps	kVA	Cont.	1 Min.	3 Sec.	Min. ⁽¹⁾				Max. ⁽²⁾				
240 Volt AC Input																	
20BB2P2	0	0.5	0.33	1.7	0.7	2.2	2.4	3.3	3	6	3	10	15	3	140M-C2E-B25	140M-D8E-B25	—
20BB4P2	0	1	0.75	3.3	1.4	4.2	4.8	6.4	5	8	5	15	15	7	140M-C2E-B63	140M-D8E-B63	—
20BB6P8	1	2	1.5	5.9	2.4	6.8	9	12	10	15	10	25	25	15	140M-C2E-C10	140M-D8E-C10	140M-F8E-C10
20BB9P6	1	3	2	8.3	3.4	9.6	10.6	14.4	12	20	12	35	35	15	140M-C2E-C10	140M-D8E-C10	140M-F8E-C10
20BB015	1	5	3	13.7	5.7	15.3	16.8	23	20	30	20	60	60	30	140M-C2E-C16	140M-D8E-C16	140M-F8E-C16
20BB022	1	7.5	5	19.9	8.3	22	24.2	33	25	50	25	80	80	30	140M-C2E-C25	140M-D8E-C25	140M-F8E-C25
20BB028	2	10	7.5	25.7	10.7	28	33	44	35	60	35	100	100	50	—	—	140M-F8E-C32
20BB042	3	15	10	38.5	16.0	42	46.2	63	50	90	50	150	150	50	—	—	140M-F8E-C45
20BB052	3	20	15	47.7	19.8	52	63	80	60	100	60	200	200	100	—	—	140M-CMN-6300
20BB070	4	25	20	64.2	26.7	70	78	105	90	150	90	275	275	100	—	—	140M-CMN-9000
20BB080	4	30	25	73.2	30.5	80	105	140	100	180	100	300	300	100	—	—	140M-CMN-9000
20BB104	5	—	30	73	30.5	80	120	160	100	175	100	300	300	100	—	—	140M-CMN-9000
		40	—	98	40.6	104	115	175	125	225	125	400	300	150	—	—	—
20BB130	5	—	40	98	40.6	104	156	175	125	225	125	400	300	150	—	—	—
		50	—	122	50.7	130	143	175	175	275	175	500	375	250	—	—	—
20BB154	6	—	50	122	50.7	130	195	260	175	275	175	500	375	250	—	—	—
		60	—	145	60.1	154	231	308	200	300	200	600	450	250	—	—	—
20BB192	6	—	60	145	60.1	154	231	308	200	300	200	600	450	250	—	—	—
		75	—	180	74.9	192	211	288	225	400	225	600	575	250	—	—	—

Table E 480 Volt AC Input Protection Devices (See page 11 for Notes)

Drive Catalog Number	HP Rating		Input Ratings		Output Amps		Dual Element Time Delay Fuse		Non-Time Delay Fuse		Circuit Breaker ⁽³⁾ Max. ⁽¹⁰⁾	Motor Circuit Protector ⁽⁴⁾ Max. ⁽¹⁰⁾	140M Motor Starter with Adjustable Current Range ⁽⁵⁾⁽⁶⁾ Available Catalog Numbers ⁽⁷⁾		
	ND	HD	Amps	kVA	Cont.	1 Min.	3 Sec.	Min. ⁽¹⁾	Max. ⁽²⁾	Min. ⁽¹⁾				Max. ⁽²⁾	
480 Volt AC Input															
20BD1P1	0	0.5	0.33	0.9	0.7	1.1	1.2	1.6	3	3	6	15	3	140M-C2E-B16	—
20BD2P1	0	1	0.75	1.6	1.4	2.1	2.4	3.2	3	6	8	15	3	140M-C2E-B25	—
20BD3P4	0	2	1.5	2.6	2.2	3.4	4.5	6.0	4	8	12	15	7	140M-C2E-B40	140M-D8E-B40
20BD5P0	0	3	2	3.9	3.2	5.0	5.5	7.5	6	10	6	20	7	140M-C2E-C63	140M-D8E-B63
20BD8P0	0	5	3	6.9	5.7	8.0	8.8	12	10	15	10	30	15	140M-C2E-C10	140M-D8E-C10
20BD011	0	7.5	5	9.5	7.9	11	12.1	16.5	15	20	15	40	15	140M-C2E-C16	140M-F8E-C16
20BD014	1	10	7.5	12.5	10.4	14	16.5	22	17.5	30	17.5	50	20	140M-C2E-C16	140M-F8E-C16
20BD022	1	15	10	19.9	16.6	22	24.2	33	25	50	25	80	30	140M-C2E-C25	140M-D8E-C25
20BD027	2	20	15	24.8	20.6	27	33	44	35	60	35	100	50	—	140M-F8E-C32
20BD034	2	25	20	31.2	25.9	34	40.5	54	40	70	40	125	50	—	140M-F8E-C45
20BD040	3	30	25	36.7	30.5	40	51	68	50	90	50	150	50	—	140M-F8E-C45
20BD052	3	40	30	47.7	39.7	52	60	80	60	110	60	200	70	—	140M-CMN-4000
20BD065	3	50	40	59.6	49.6	65	78	104	80	125	80	250	100	—	140M-CMN-4000
20BD077	4	—	50	59.6	49.6	65	98	130	80	125	80	250	100	—	140M-CMN-6300
		60	—	72.3	60.1	77	85	116	100	170	100	300	100	—	140M-CMN-9000
20BD096	5	—	60	72.3	60.1	77	116	154	100	170	100	300	100	—	140M-CMN-9000
		75	—	90.1	74.9	96	106	144	125	200	125	350	125	—	140M-CMN-9000
20BD125	5	—	75	90.1	74.9	96	144	168	125	200	125	350	125	—	—
		100	—	117	97.6	125	138	163	150	250	150	500	150	—	—
20BD140	6	—	75	90	75	105	158	210	125	225	125	400	125	—	—
		100	—	131	109	140	154	210	175	300	175	550	250	—	—
20BD156	6	—	100	131	109	125	188	250	175	250	175	500	250	—	—
		125	—	147	122	156	172	234	200	350	200	600	250	—	—
20BD180	6	—	125	147	122	156	234	312	200	350	200	600	250	—	—
		150	—	169	141	180	198	270	225	400	225	600	250	—	—

Table F 600 Volt AC Input Protection Devices (See page 11 for Notes)

Drive Catalog Number	HP Rating		PWM Freq. kHz	Temp. °C	Input Ratings		Output Amps		Dual Element Time Delay Fuse		Non-Time Delay Fuse		Circuit Breaker ⁽³⁾ Max. ⁽¹⁰⁾	Motor Circuit Protector ⁽⁴⁾ Max. ⁽¹⁰⁾	
	ND	HD			Amps	kVA	Cont.	1 Min.	3 Sec.	Min. ⁽¹⁾	Max. ⁽²⁾	Min. ⁽¹⁾			Max. ⁽²⁾
600 Volt AC Input															
20BE0P9	0	0.5	0.3	4	50	0.7	0.7	0.9	1.1	1.4	1	3	1	3	3
20BE1P7	0	1	0.5	4	50	1.3	1.4	1.7	2	2.6	2	4	2	6	3
20BE2P7	0	2	1	4	50	2.1	2.1	2.7	3.6	4.8	3	6	3	10	3
20BE3P9	0	3	2	4	50	3.0	3.1	3.9	4.3	5.9	6	9	6	15	7
20BE6P1	0	5	3	4	50	5.3	5.5	6.1	6.7	9.2	9	12	9	20	15
20BE9P0	0	7.5	5	4	50	7.8	8.1	9	9.9	13.5	10	20	10	35	15
20BE011	1	10	7.5	4	50	9.9	10.2	11	13.5	18	15	25	15	40	15
20BE017	1	15	10	4	50	15.4	16.0	17	18.7	25.5	20	40	20	60	20
20BE022	2	20	15	4	50	20.2	21.0	22	25.5	34	30	50	30	80	30
20BE027	2	25	20	4	50	24.8	25.7	27	33	44	35	60	35	100	50
20BE032	3	30	25	4	50	29.4	30.5	32	40.5	54	40	70	40	125	50
20BE041	3	40	30	4	50	37.6	39.1	41	48	64	50	90	50	150	100
20BE052	3	50	40	4	50	47.7	49.6	52	61.5	82	60	110	60	200	100
20BE062	4	60	50	2	50	58.2	60.5	62	78	104	80	125	80	225	100
20BE077	5	75	—	2	50	72.3	75.1	77	85	116	90	150	90	300	100
20BE099	5	100	—	2	40	92.9	96.6	99	109	126	125	200	125	375	150
	—	—	75	2	40	72.3	75.1	77	116	138	100	175	100	300	100
20BE125	6	125	—	2	50	117	122	125	—	—	150	250	150	375	250
20BE144	—	—	100	2	50	92.9	96.6	125	—	—	125	250	125	375	250
	6	150	—	2	—	135	141	144	—	—	175	300	175	400	250
20BE144	—	—	125	2	—	117	122	144	—	—	150	300	150	400	250
	—	—	125	2	—	117	122	144	—	—	150	300	150	400	250

Table G 690 Volt AC Input Protection Devices (See page 11 for Notes)

Drive Catalog Number	kW Rating ND	PWM Freq. kHz	Temp. °C	Input Ratings		Output Amps		Dual Element Time Delay Fuse		Non-Time Delay Fuse		Circuit Breaker ⁽³⁾	Motor Circuit Protector ⁽⁴⁾
				Amps	kVA	Cont.	1 Min.	3 Sec.	Min. ⁽¹⁾	Max. ⁽²⁾	Min. ⁽¹⁾	Max. ⁽²⁾	Max. ⁽¹⁰⁾
690 Volt AC Input													
20BF052	5 45	—	50	46.9	56.1	52	57	78	60	110	60	175	—
	—	37.5	50	40.1	48.0	46	69	92	50	90	50	150	—
20BF060	5 55	—	50	57.7	68.9	60	66	90	80	125	80	225	—
	—	45	50	46.9	56.1	52	78	104	60	110	60	175	—
20BF082	5 75	—	50	79.0	94.4	82	90	123	100	200	100	375	—
	—	55	50	57.7	68.9	60	90	120	80	125	80	225	—
20BF098	5 90	—	40	94.7	113	98	108	127	125	200	125	375	—
	—	75	40	79.0	94.4	82	123	140	100	200	100	375	—

Notes:

- (1) Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping.
- (2) Maximum protection device size is the highest rated device that supplies drive protection. For US NEC, minimum size is 125% of motor FLA. Ratings shown are maximum.
- (3) Circuit Breaker - inverse time breaker. For US NEC, minimum size is 125% of motor FLA. Ratings shown are maximum.
- (4) Motor Circuit Protector - instantaneous trip circuit breaker. For US NEC minimum size is 125% of motor FLA. Ratings shown are maximum.
- (5) Bulletin 140M with adjustable current range should have the current trip set to the minimum range that the device will not trip.
- (6) Manual Self-Protected (Type E) Combination Motor Controller, UL listed for 208 Wye or Delta, 240 Wye or Delta, 480Y/277 or 600Y/347. Not UL listed for use on 480V or 600V Delta/Delta systems.
- (7) The AIC ratings of the Bulletin 140M Motor Protector may vary. See publication 140M-SG001B-EN-P.
- (8) 20BC085 current rating is limited to 45 degrees C ambient.
- (9) 20BC205 current rating is limited to 40 degrees C ambient.
- (10) Maximum allowable rating by US NEC. Exact size must be chosen for each installation.

Table J PowerFlex 700 Frames

Frame	AC Input								DC Input			
	208/240		400V		480V		600V		540V		650V	
	ND HP	HD HP	ND kW	HD kW	ND HP	HD HP	ND HP	HD HP	ND HP	HD HP	ND HP	HD HP
0	0.5	0.33	0.37	0.25	0.5	0.33	—	—	0.37	0.25	0.5	0.33
	1	0.75	0.75	0.55	1	0.75	—	—	0.75	0.55	1	0.75
	—	—	1.5	0.75	2	1.5	—	—	1.5	0.75	2	1.5
	—	—	2.2	1.5	3	2	—	—	2.2	1.5	3	2
	—	—	4	2.2	5	3	—	—	4	2.2	5	3
	—	—	5.5	4	7.5	5	—	—	5.5	4	7.5	5
1	2	1.5	7.5	5.5	10	7.5	10	7.5	7.5	5.5	10	7.5
	3	2	11	7.5	15	10	15	10	11	7.5	15	10
	5	3	—	—	—	—	—	—	—	—	—	—
	7.5	5	—	—	—	—	—	—	—	—	—	—
2	10	7.5	15	11	20	15	20	15	15	11	20	15
	—	—	18.5	15	25	20	25	20	18.5	15	25	20
3	15	10	22	18.5	30	25	30	25	22	18.5	30	25
	20	15	30	22	40	30	40	30	30	22	40	30
	—	—	37	30	50	40	50	40	37	30	50	40
4	25	20	45	37	60	50	60	50	45	37	60	50
	30	25	—	—	—	—	—	—	—	—	—	—
5	40	30	55	45	75	60	75	60	55	45	75	60
	50	40	—	—	100	75	100	75	—	—	100	75
6	60	50	75	55	125	100	—	—	75	55	125	100
	75	60	90	75	150	125	—	—	90	75	150	125
	—	—	110	90	—	—	—	—	110	90	—	—

Notes:



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