

PowerFlex 700S Drives with Phase II Control



Product Overview

The PowerFlex[®] 700S AC drive with Phase II control offers high performance drive control, advanced programming features, and built-in diagnostics for handling the most demanding applications. The PowerFlex 700S with DriveLogix[™] combines the powerful performance and flexible control of PowerFlex AC drives with the high-performance Logix engine to produce a highly functional, cost-effective drive and control solution.



**PowerFlex 700S AC Drive
with Slim Cassette**



**PowerFlex 700S AC Drive
with Expanded Cassette**

LISTEN.
THINK.
SOLVE.

Catalog Number Explanation

1-3	4	5-7	8	9	10	11	12	13	14	15	16	17
20D	D	2P1	A	0	E	Y	N	A	N	A	N	E
a	b	c	d	e	f	g	h	i	j	k	l	m

a	
Drive	
Code	Type
20D	PowerFlex 700S

b			
Voltage Rating			
Code	Voltage	Ph.	Prechg.
B §	240V AC	3 (6 pulse)	—
C §	400V AC	3 (6 pulse)	—
D §	480V AC	3 (6 pulse)	—
E ♣ §	600V AC	3 (6 pulse)	—
F ♂	690V AC	3 (6 pulse)	—
H ♂	540V DC	—	N
J ♂	650V DC	—	N
K ♂	810V DC	—	N
M ♂	932V DC	—	N
N >	325V DC	—	Y
P >	540V DC	—	Y
R >	650V DC	—	Y
T >	810V DC	—	Y
W >	932V DC	—	Y

♣ Note: CE Certification testing has not been performed on 600V class drives, Frames 1...4.

> Frames 5 & 6 Only.

♂ Frames 5 & up.

§ For DC input on Frames 1...4, use the corresponding AC input code B, C, D, or E.

c1				
ND Rating				
208/240V, 60Hz Input				
Code	208V Amps	240V Amps	Hp	Frame
4P2	4.8	4.2	1.0	1
6P8	7.8	6.8	2.0	1
9P6	11	9.6	3.0	1
015	17.5	15.3	5.0	1
022	25.3	22	7.5	1
028	32.2	28	10	2
042	48.3	42	15	3
052	56	52	20	3
070	78.2	70	25	4
080	92	80	30	4
104	120	104	40	5
130	130	130	50	5
154	177	154	60	6
192	221	192	75	6
260	260	260	100	6

c2			
ND Rating			
400V, 50 Hz Input			
Code	Amps	kW	Frame
2P1	2.1	0.75	1
3P5	3.5	1.5	1
5P0	5.0	2.2	1
8P7	8.7	4.0	1
011	11.5	5.5	1
015	15.4	7.5	1
022	22	11	1
030	30	15	2
037	37	18.5	2
043	43	22	3
056	56	30	3
072	72	37	3
085	85	45	4
105	105	55	5
125	125	55	5
170	170	90	6
205	205	110	6
260	260	132	6
261	261	132	9
300	300	160	9
385	385	200	10
460	460	250	10
500	500	250	10
590	590	315	11
650	650	355	11
730	730	400	11
820	820	450	12
920	920	500	12
1K0	1030	560	12
1K1	1150	630	13
1K3	1300	710	13
1K4	1450	800	13

c3			
ND Rating			
480V, 60 Hz Input			
Code	Amps	Hp	Frame
2P1	2.1	1.0	1
3P4	3.4	2.0	1
5P0	5	3.0	1
8P0	8	5.0	1
011	11	7.5	1
014	14	10	1
022	22	15	1
027	27	20	2
034	34	25	2
040	40	30	3
052	52	40	3
065	65	50	3
077	77	60	4
096	96	75	5
125	125	100	5
156	156	125	6
180	180	150	6
248	248	200	6
261	261	200	9
300	300	250	9
385	385	300	10
460	460	350	10
500	500	450	10
590	590	500	11
650	650	500	11
730	730	600	11
820	820	700	12
920	920	800	12
1K0	1030	900	12
1K1	1150	1000	13
1K3	1300	1200	13
1K4	1450	1250	13

c4

ND Rating			
600V, 60 Hz Input ♣			
Code	Amps	Hp	Frame
1P7	1.7	0	1
2P7	2.7	2	1
3P9	3.9	3	1
6P1	6.1	5	1
9P0	9	7.5	1
011	11	10	1
017	17	15	1
022	22	20	2
027	27	25	2
032	32	30	3
041	41	40	3
052	52	50	3
062	62	60	4
077	77	75	5
099	99	100	5
125	125	125	6
144	144	150	6
170	170	150	9
208	208	200	9
261	261	250	10
325	325	350	10
385	385	400	10
416	416	450	10
460	460	450	11
502	502	500	11
590	590	600	11
650	650	700	12
750	750	800	12
820	820	900	12
920	920	1000	13
1K0	1030	1100	13
1K1	1180	1300	13
1K5	1500	1600	14

♣ Note: CE Certification testing has not been performed on 600V class drives Frames 1...4.

d

Enclosure	
Code	Description
A *	IP20/IP21, NEMA Type 1, with Conformal Coat
B §	IP20, NEMA Type 1, MCC, with Conformal Coat
H §	IP54, NEMA Type 12, Rittal, with Conformal Coat
N +	Open/IP00, with Conformal Coat

* IP20 for Frames 1...6, IP21 for Frames 9 & up.

§ Frames 10 & up only.

+ Frames 9 & up only.

e

HIM	
Code	Operator Interface
0	Blank Cover
3	Full Numeric LCD
C	Full Numeric LCD, Door Mount ※

※ Frames 10 & up only.

c5

ND Rating			
690V, 50 Hz Input ♣			
Code	Amps	kW	Frame
052	52	45	5
060	60	55	5
082	82	75	5
098	98	90	5
119	119	110	6
142	142	132	6
170	170	160	9
208	208	200	9
261	261	250	10
325	325	315	10
385	385	355	10
416	416	400	10
460	460	450	11
502	502	500	11
590	590	560	11
650	650	630	12
750	750	710	12
820	820	800	12
920	920	900	13
1K0	1030	1000	13
1K1	1180	1100	13
1K5	1500	1500	14

♣ Note: CE Certification testing has not been performed on 600V class drives Frames 1...4.

f

Documentation	
Code	Documents
E	English Manual
N	No Documentation

g

Brake	
Code	w/Brake IGBT ‡
Y	Yes
N	No

‡ Brake IGBT is standard on Frames 1...3 and optional on Frames 4...9 only.

h

Brake Resistor	
Code	w/Resistor
Y	Yes *
N	No

* Not available for Frame 3 drives or larger.

i

Emission			
Code	CE Filter ♣	CM Choke	du/dt Filter
A ❖	Yes	Yes	No
B >	Yes	No	No
E +	Yes	No	Yes
N §	No	No	No

❖ Frames 1...6 only.

> Frames 9 & up only.

§ For use on a high resistive ground, an ungrounded distribution system, or a B phase grounded distribution system (Frame 9 only).

♣ Note: CE Certification testing has not been performed on 600V class drives Frames 1...4.

+ Frame 14 only.

j

Comm Slot	
Code	Version
N	None
C	DPI ControlNet (Coax)
D	DPI DeviceNet
E	DPI EtherNet/IP
1	DriveLogix ControlNet (Coax)
2	DriveLogix ControlNet Redundant (Coax)
3	DriveLogix ControlNet (Fiber)
4	DriveLogix ControlNet Redundant (Fiber)
5	DriveLogix DeviceNet (Open Conn.)
6	DriveLogix EtherNet/IP

k

Control Options *			
Code	Logix Expansion	Synchlink	Cassette
A	No	No	Expanded
B	No	Yes	Expanded
C	Yes	No	Expanded
D	Yes	Yes	Expanded
G +	N/A	No	Slim
H +	N/A	Yes	Slim

* Phase II Control available only.

+ Frames 1...9 only.

l

Feedback	
Code	Option
N ※	Standard (Incremental Encoder)
A ❖	Resolver
B ❖	Stegmann Hi-Resolution Encoder
C ❖	Multi-Device Interface
E ❖	2nd Encoder
S ❖	Safe-Off (w/2nd Encoder)
T ❖	Stegmann Hi-Res Enc. (w/2nd Encoder)
U ❖	Stegmann Hi-Res Enc. (w/Safe-Off)

※ One encoder interface included with base drive.

❖ Expanded cassette required.

m

Additional Config.	
Code	Description
E	Phase II Control
K	Phase II DriveLogix5730
L +	Phase II DriveLogix5730 with EtherNet/IP

+ This is an embedded EtherNet/IP option that is only available with DriveLogix5730.

Product Selection

Frames 1...6 - IP20, NEMA/UL Type 1, (Position d = A)

208/240V AC, Six-Pulse, Three-Phase Drives

240V AC Input ⁽¹⁾					208V AC input					IP20, NEMA/UL Type 1	Frame Size
Output Amp			Normal Duty HP	Heavy Duty HP	Output Amp			Normal Duty kW	Heavy Duty kW		
Cont.	1 Min.	3 Sec.			Cont.	1 Min.	3 Sec.			Cat. No., 20D...	
4.2	4.8	6.4	1	0.75	4.8	5.6	7	0.75	0.55	20DB4P2A0EYNNANANE	1
6.8	9	12	2	1.5	7.8	10.4	13.8	1.5	1.1	20DB6P8A0EYNNANANE	1
9.6	10.6	14.4	3	2	11	12.1	17	2.2	1.5	20DB9P6A0EYNNANANE	1
15.3	16.8	23	5	3	17.5	19.3	26.3	4.0	3.0	20DB015A0EYNNANANE	1
22	24.2	33	7.5	5	25.3	27.8	38	5.5	4.0	20DB022A0EYNNANANE	1
28	33	44	10	7.5	32.2	38	50.6	7.5	5.5	20DB028A0EYNNANANE	2
42	46.2	63	15	10	48.3	53.1	72.5	11	7.5	20DB042A0EYNNANANE	3
52	63	80	20	15	56	64	86	15	11	20DB052A0EYNNANANE	3
70	78	105	25	20	78.2	86	117.3	18.5	15	20DB070A0ENNANANE	4
80	105	136	30	25	92	117.3	156.4	22	18.5	20DB080A0ENNANANE	4
104 (80) ⁽²⁾	115 (120)	175 (160)	40	30	120 (92)	132 (138)	175 (175)	30	22	20DB104A0ENNANANE	5
130 (104) ⁽²⁾	143 (156)	175 (175)	50	40	130 (104)	143 (156)	175 (175)	37	30	20DB130A0ENNANANE	5
154 (130) ⁽²⁾	169 (195)	231 (260)	60	50	177 (150)	195 (225)	266 (300)	45	37	20DB154A0ENNANANE	6
192 (154) ⁽²⁾	211 (231)	288 (308)	75	60	221 (177)	243 (266)	308 (308)	55	45	20DB192A0ENNANANE	6
260 (205) ⁽²⁾	286 (305)	390 (410)	100	75	260 (205)	286 (305)	390 (410)	66	55	20DB260A0ENNANANE	6

(1) Catalog number corresponds to output amps in this column. Drive must be programmed to lower voltage to obtain higher currents shown at right.

(2) These drives have dual current ratings; one for normal duty applications, and one for heavy duty applications (in parenthesis). The drive may be operated at either rating.

380...480V AC, Six-Pulse, Three-Phase Drives

480V AC Input ⁽¹⁾					380...400V AC input					IP20, NEMA/UL Type 1	Frame Size
Output Amp			Normal Duty HP	Heavy Duty HP	Output Amp			Normal Duty kW	Heavy Duty kW		
Cont.	1 Min.	3 Sec.			Cont.	1 Min.	3 Sec.			Cat. No., 20D...	
2.1	2.4	3.2	1.0	0.75	2.1	2.4	3.2	0.75	0.55	20DD2P1A0EYNANANE	1
3.4	4.5	6	2.0	1.5	3.5	4.5	6	1.5	1.1	20DD3P4A0EYNANANE	1
5	5.5	7.5	3.0	2.0	5	5.5	7.5	2.2	1.5	20DD5P0A0EYNANANE	1
8	8.8	12	5.0	3.0	8.7	9.9	13.2	4.0	2.2	20DD8P0A0EYNANANE	1
11	12.1	16.5	7.5	5.0	11.5	13	17.4	5.5	4.0	20DD011A0EYNANANE	1
14	16.5	22	10	7.5	15.4	17.2	23.1	7.5	5.5	20DD014A0EYNANANE	1
22	24.2	33	15	10	22	24.2	33	11	7.5	20DD022A0EYNANANE	1
27	33	44	20	15	30	33	45	15	11	20DD027A0EYNANANE	2
34	40.5	54	25	20	37	45	60	18.5	15	20DD034A0EYNANANE	2
40	51	68	30	25	43	56	74	22	18.5	20DD040A0EYNANANE	3
52	60	80	40	30	56	64	86	30	22	20DD052A0EYNANANE	3
65	78	104	50	40	72	84	112	37	30	20DD065A0EYNANANE	3
77 (65) ⁽²⁾	85 (98)	116 (130)	60	50	85 (72) ⁽³⁾	94 (108)	128 (144)	45	37	20DD077A0ENNANANE	4
96 (77) ⁽²⁾	106 (116)	144 (154)	75	60	105 (85)	116 (128)	158 (170)	55	45	20DD096A0ENNANANE	5
125 (96) ⁽²⁾	138 (144)	163 (168)	100	75	125 (96)	138 (144)	163 (168)	55	45	20DD125A0ENNANANE	5
					140 (105)	154 (158)	210 (210)	75	55	20DC140A0ENNANANE ⁽⁵⁾	5
156 (125) ⁽²⁾	172 (188)	233 (250)	125	100	170 (140)	187 (210)	255 (280)	90	75	20DD156A0ENNANANE	6
180 (156) ⁽²⁾	198 (234)	270 (312)	150	125	205 (170) ⁽⁴⁾	220 (255)	289 (313)	110	90	20DD180A0ENNANANE	6
248 (180) ⁽²⁾	273 (270)	372 (360)	200	150	260 (205)	286 (308)	390 (410)	132	110	20DD248A0ENNANANE	6

(1) Catalog number corresponds to output amps in this column. Drive must be programmed to lower voltage to obtain higher currents shown at right.

(2) These drives have dual current ratings; one for normal duty applications, and one for heavy duty (in parenthesis). The drive may be operated at either rating.

(3) 380...400V, 85 A rating is limited to 45°C surrounding air.

(4) 380...400V, 205 A rating is limited to 40°C surrounding air.

(5) Catalog number corresponds to 380...400V AC input drive only.

600...690V AC, Six-Pulse, Three-Phase Drives

600V AC Input ⁽¹⁾⁽²⁾					690V AC input ⁽²⁾					IP20, NEMA/UL Type 1	Frame Size
Output Amp			Normal Duty HP	Heavy Duty HP	Output Amp			Normal Duty kW	Heavy Duty kW		
Cont.	1 Min.	3 Sec.			Cont.	1 Min.	3 Sec.			Cat. No., 20D...	
1.7	2	2.6	1.0	0.75						20DE1P7A0EYNANANE	1
2.7	3.6	4.8	2.0	1.5						20DE2P7A0EYNANANE	1
3.9	4.3	5.9	3.0	2.0						20DE3P9A0EYNANANE	1
6.1	6.7	9.2	5.0	3.0						20DE6P1A0EYNANANE	1
9	9.9	13.5	7.5	5.0						20DE9P0A0EYNANANE	1
11	13.5	18	10	7.5						20DE011A0EYNANANE	1
17	18.7	25.5	15	10						20DE017A0EYNANANE	1
22	25.5	34	20	15						20DE022A0EYNANANE	2
27	33	44	25	20						20DE027A0EYNANANE	2
32	40.5	54	30	25						20DE032A0EYNANANE	3
41	48	64	40	30						20DE041A0EYNANANE	3
52	61.5	82	50	40						20DE052A0EYNANANE	3
62	78	104	60	50						20DE062A0EYNANANE	4
					52 (46)	57 (69)	78 (92)	45	37.5	20DF052A0EYNANANE	5
					60 (52)	66 (78)	90 (104)	55	45	20DF062A0EYNANANE	5
77 (63) ⁽³⁾	85 (94)	116 (126)	75	60	82 (60)	90 (90)	120 (123)	75	55	20DE077A0ENNANANE	5
99 (77) ⁽³⁾	109 (116)	126 (138)	100	75	98 (82) ⁽⁴⁾	108 (123)	127 (140)	90	75	20DE099A0ENNANANE	5
125 (99) ⁽³⁾	138 (149)	188 (198)	125	100	119 (98)	131 (147)	179 (196)	110	90	20DE125A0ENNANANE	6
144 (125) ⁽³⁾	158 (188)	216 (250)	150	125	142 (119)	156 (179)	213 (238)	132	110	20DE144A0ENNANANE	6

(1) Catalog number corresponds to output amps in this column (except for drive catalog numbers 20DF052 and 20DF062). Drive must be programmed to lower voltage to obtain higher currents shown at right.

(2) CE Certification testing has not been performed on 600V class drives Frames 1...4.

(3) These drives have dual current ratings; one for normal duty applications, and one for heavy duty applications (in parenthesis). The drive may be operated at either rating.

(4) Rating is limited to 40°C surrounding air.

Frame 9 & Up - IP21, NEMA/UL Type 1, (Position d = A)

380...480V AC, Six-Pulse, Three-Phase Drives

480V AC Input ⁽¹⁾					380...400V AC input					IP21, NEMA/UL Type 1	Frame Size
Output Amp			Normal Duty HP	Heavy Duty HP	Output Amp			Normal Duty kW	Heavy Duty kW		
Cont.	1 Min.	3 Sec.			Cont.	1 Min.	3 Sec.			Cat. No., 20D...	
261 (205) ⁽²⁾	287 (308)	410 (410)	200	150	261 (205)	287 (308)	410 (410)	132	110	20DD261A0ENNBANANE	9
300 (245) ⁽²⁾	330 (368)	450 (490)	250	200	300 (245)	330 (368)	450 (490)	160	130	20DD300A0ENNBANANE	9
385 (300) ⁽²⁾	424 (450)	600 (600)	300	250	385 (300)	424 (450)	600 (600)	200	160	20DD385A0ENNBANANE	10
460 (385) ⁽²⁾	506 (578)	770 (770)	350	300	460 (385)	506 (578)	770 (770)	250	200	20DD460A0ENNBANANE	10
500 (420) ⁽²⁾	550 (630)	750 (840)	450	350	500 (420)	550 (630)	750 (840)	250	250	20DD500A0ENNBANANE	10
590 (520) ⁽²⁾	649 (780)	956 (956)	500	450	590 (520)	649 (780)	956 (956)	315	250	20DD590A0ENNBANANE	11
650 (590) ⁽²⁾	715 (885)	1062 (1062)	500	500	650 (590)	715 (885)	1062 (1062)	355	315	20DD650A0ENNBANANE	11
730 (650) ⁽²⁾	803 (975)	1095 (1170)	600	500	730 (650)	803 (975)	1095 (1170)	400	355	20DD730A0ENNBANANE	11
820 (730) ⁽²⁾	902 (1095)	1230 (1314)	700	600	820 (730)	902 (1095)	1230 (1314)	450	400	20DD820A0ENNBANANE	12
920 (820) ⁽²⁾	1012 (1230)	1380 (1476)	800	700	920 (820)	1012 (1230)	1380 (1476)	500	450	20DD920A0ENNBANANE	12
1030 (920) ⁽²⁾⁽²⁾	1133 (1370)	1555 (1600)	900	800	1030 (920)	1133 (1370)	1555 (1600)	560	500	20DD1K0A0ENNBANANE	12
1150 (1030) ⁽²⁾	1265 (1545)	1620 (1620)	1000	900	1150 (1030)	1265 (1545)	1620 (1620)	630	560	20DD1K1A0ENNBANANE	13
1300 (1150) ⁽²⁾	1430 (1725)	2079 (2079)	1200	1000	1300 (1150)	1430 (1725)	2079 (2079)	710	630	20DD1K3A0ENNBANANE	13
1450 (1200) ⁽²⁾	1595 (1800)	2175 (2400)	1250	1000	1450 (1200)	1595 (1800)	2175 (2400)	800	710	20DD1K4A0ENNBANANE	13

(1) Catalog number corresponds to output amps in this column. Drive must be programmed to lower voltage to obtain higher currents shown at right.

(2) Rating is limited to 35°C surrounding air.

600...690V AC, Six-Pulse, Three-Phase Drives

600V AC Input ⁽¹⁾⁽²⁾					690V AC input ⁽²⁾					IP21, NEMA/UL Type 1	Frame Size
Output Amp			Normal Duty HP	Heavy Duty HP	Output Amp			Normal Duty kW	Heavy Duty kW		
Cont.	1 Min.	3 Sec.			Cont.	1 Min.	3 Sec.			Cat. No., 20D...	
170 (144) ⁽³⁾	187 (216)	245 (245)	150	150	170 (144)	187 (216)	245 (245)	160	132	20DE170A0ENNBANANE	9
208 (170) ⁽³⁾⁽³⁾	230 (250)	289 (289)	200	150	208 (170) ⁽⁴⁾	230 (250)	289 (289)	200	160	20DE208A0ENNBANANE	9
261 (208) ⁽³⁾	287 (312)	375 (375)	250	200	261 (208)	287 (312)	375 (375)	250	200	20DE261A0ENNBANANE	10
325 (261) ⁽³⁾	358 (392)	470 (470)	350	250	325 (261)	358 (392)	470 (470)	315	250	20DE325A0ENNBANANE	10
385 (325) ⁽³⁾	424 (488)	585 (585)	400	350	385 (325)	424 (488)	585 (585)	355	315	20DE385A0ENNBANANE	10
416 (325) ⁽³⁾	458 (488)	585 (585)	450	350	416 (325)	458 (488)	585 (585)	400	315	20DE416A0ENNBANANE	10
460 (385) ⁽³⁾	506 (578)	693 (693)	450	400	460 (385)	506 (578)	693 (693)	450	355	20DE460A0ENNBANANE	11
502 (460) ⁽³⁾	552 (690)	828 (828)	500	450	502 (460)	552 (690)	828 (828)	500	450	20DE502A0ENNBANANE	11
590 (502) ⁽³⁾	649 (753)	904 (904)	600	500	590 (502)	649 (753)	904 (904)	560	500	20DE590A0ENNBANANE	11
650 (590) ⁽³⁾	715 (885)	1062 (1062)	700	650	650 (590)	715 (885)	1062 (1062)	630	560	20DE650A0ENNBANANE	12
750 (650) ⁽³⁾	825 (975)	1170 (1170)	800	700	750 (650)	825 (975)	1170 (1170)	710	630	20DE750A0ENNBANANE	12
820 (750) ⁽³⁾⁽⁴⁾⁽⁴⁾	902 (975)	1170 (1170)	900	700	820 (750)	902 (975)	1170 (1170)	800	630	20DE820A0ENNBANANE	12
920 (820) ⁽³⁾	1012 (1230)	1380 (1410)	1000	900	920 (820)	1012 (1230)	1380 (1410)	900	800	20DE920A0ENNBANANE	13
1030 (920) ⁽³⁾	1133 (1380)	1545 (1755)	1100	1000	1030 (920)	1133 (1380)	1545 (1755)	1000	900	20DE1K0A0ENNBANANE	13
1180 (1030) ⁽³⁾	1298 (1463)	1755 (1755)	1300	1100	1180 (1030)	1298 (1463)	1755 (1755)	1100	1000	20DE1K1A0ENNBANANE	13
1500 (1300) ⁽³⁾	1650 (1950)	2250 (2340)	1600	1400	1500 (1300)	1650 (1950)	2250 (2340)	1500	1300	20DE1K5A0ENNBANANE	14

(1) Catalog number corresponds to output amps in this column (except for drive catalog numbers 20DF052 and 20DF062). Drive must be programmed to lower voltage to obtain higher currents shown at right.

(2) CE Certification testing has not been performed on 600V class drives Frames 1...4.

(3) Rating is limited to 35°C surrounding air.

(4) 600V class drives at 820 amps (ND) such as 20DF820 & 20DE820 are only capable of producing 95% of starting torque under 10 Hz.

IP20, NEMA/UL Type 1, MCC (Position d = B)

380...480V AC, Six-Pulse, Three-Phase Drives

480V AC Input ⁽¹⁾					380...400V AC input					IP20, NEMA/UL Type 1	Frame Size
Output Amp			Normal Duty HP	Heavy Duty HP	Output Amp			Normal Duty kW	Heavy Duty kW		
Cont.	1 Min.	3 Sec.			Cont.	1 Min.	3 Sec.			Cat. No., 20D...	
385 (300) ⁽²⁾	424 (450)	600 (600)	300	250	385 (300)	424 (450)	600 (600)	200	160	20DD385B0ENNBANANE	10
460 (385) ⁽²⁾	506 (578)	770 (770)	350	300	460 (385)	506 (578)	770 (770)	250	200	20DD460B0ENNBANANE	10
500 (420) ⁽²⁾	550 (630)	750 (840)	450	350	500 (420)	550 (630)	750 (840)	250	250	20DD500B0ENNBANANE	10
590 (520) ⁽²⁾	649 (780)	956 (956)	500	450	590 (520)	649 (780)	956 (956)	315	250	20DD590B0ENNBANANE	11
650 (590) ⁽²⁾	715 (885)	1062 (1062)	500	500	650 (590)	715 (885)	1062 (1062)	355	315	20DD650B0ENNBANANE	11
730 (650) ⁽²⁾	803 (975)	1095 (1170)	600	500	730 (650)	803 (975)	1095 (1170)	400	355	20DD730B0ENNBANANE	11
820 (730) ⁽²⁾	902 (1095)	1230 (1314)	700	600	820 (730)	902 (1095)	1230 (1314)	450	400	20DD820B0ENNBANANE	12
920 (820)	1012 (1230)	1380 (1476)	800	700	920 (820)	1012 (1230)	1380 (1476)	500	450	20DD920B0ENNBANANE	12
1030 (920) ⁽²⁾⁽³⁾	1133 (1370)	1555 (1600)	900	800	1030 (920)	1133 (1370)	1555 (1600)	560	500	20DD1K0B0ENNBANANE	12

(1) Catalog number corresponds to output amps in this column. Drive must be programmed to lower voltage to obtain higher currents shown at right.

(2) These drives have dual current ratings; one for normal duty applications, and one for heavy duty (in parenthesis). The drive may be operated at either rating.

(3) Rating is limited to 35°C surrounding air.

600...690V AC, Six-Pulse, Three-Phase Drives

600...690V AC input					IP20, NEMA/UL Type 1	Frame Size
Output Amp			Normal Duty HP	Heavy Duty HP		
Cont. ⁽¹⁾	1 Min.	3 Sec.				
261 (208) ⁽²⁾	287 (312)	375 (375)	250	200	20DE261B0ENNBNANE	10
325 (261) ⁽²⁾	358 (392)	470 (470)	350	250	20DE325B0ENNBNANE	10
385 (325) ⁽²⁾	424 (488)	585 (585)	400	350	20DE385B0ENNBNANE	10
416 (325) ⁽²⁾	458 (488)	585 (585)	450	350	20DE416B0ENNBNANE	10
460 (385) ⁽²⁾	506 (578)	693 (693)	450	400	20DE460B0ENNBNANE	11
502 (460) ⁽²⁾	552 (690)	828 (828)	500	450	20DE502B0ENNBNANE	11
590 (502) ⁽²⁾	649 (753)	904 (904)	600	500	20DE590B0ENNBNANE	11
650 (590) ⁽²⁾	715 (885)	1062 (1062)	700	650	20DE650B0ENNBNANE	12
750 (650) ⁽²⁾	825 (975)	1170 (1170)	800	700	20DE750B0ENNBNANE	12
820 (750) ⁽²⁾⁽³⁾⁽⁴⁾	902 (975)	1170 (1170)	900	700	20DE820B0ENNBNANE	12

(1) Catalog number corresponds to output amps in this column.

(2) These drives have dual current ratings; one for normal duty applications, and one for heavy duty applications (in parenthesis). The drive may be operated at either rating.

(3) Rating is limited to 35°C surrounding air.

(4) 600V class drives at 820 amps (ND) such as 20DF820 & 20DE820 are only capable of producing 95% of starting torque under 10 Hz.

DC Input Drives

Note: DC input for Frames 1...4 use the same code as AC input. Refer to the tables below for frames 5 and 6.

325V DC Input Drives

325V DC Input ⁽¹⁾					280V DC input					DC Precharge	IP20, NEMA/UL Type 1	Frame Size
Output Amp			Normal Duty HP	Heavy Duty HP	Output Amp			Normal Duty kW	Heavy Duty kW			
Cont.	1 Min.	3 Sec.			Cont.	1 Min.	3 Sec.				Cat. No., 20D...	
104 (80) ⁽²⁾	115 (120)	175 (160)	40	30	120 (92)	132 (138)	175 (175)	30	22	Y	N104A0ENNANANE	5
154 (130) ⁽²⁾	169 (195)	231 (260)	60	50	177 (150)	195 (225)	266 (300)	45	37	Y	N154A0ENNANANE	6
192 (154) ⁽²⁾	211 (231)	288 (308)	75	60	221 (177)	243 (266)	308 (308)	55	45	Y	N192A0ENNANANE	6
260 (205) ⁽²⁾	286 (305)	390 (410)	100	75	260 (205)	286 (305)	390 (410)	66	55	Y	N260A0ENNANANE	6

(1) Catalog number corresponds to output amps in this column. Drive must be programmed to lower voltage to obtain higher currents shown at right.

(2) Frame 5 and 6 drives have dual current ratings; one for normal duty applications, and one for heavy duty applications (in parenthesis). The drive may be operated at either rating.

650V DC Input Drives

650V DC Input ⁽¹⁾					540V DC input					DC Precharge	IP20, NEMA/UL Type 1	Frame Size
Output Amp			Normal Duty HP	Heavy Duty HP	Output Amp			Normal Duty kW	Heavy Duty kW			
Cont.	1 Min.	3 Sec.			Cont.	1 Min.	3 Sec.				Cat. No., 20D...	
96 (77) ⁽²⁾	106 (116)	144 (154)	75	60	105 (85)	116 (128)	158 (170)	55	45	N	J096A0ENNANANE	5
96 (77) ⁽²⁾	106 (116)	144 (154)	75	60	105 (85)	116 (128)	158 (170)	55	45	Y	R096A0ENNANANE	5
125 (96) ⁽²⁾	138 (144)	163 (168)	100	75	125 (96)	138 (144)	163 (168)	55	45	N	J125A0ENNANANE	5
125 (96) ⁽²⁾	138 (144)	163 (168)	100	75	125 (96)	138 (144)	163 (168)	55	45	Y	R125A0ENNANANE	5
156 (125) ⁽²⁾	172 (188)	233 (250)	125	100	170 (140)	187 (210)	255 (280)	90	75	N	J156A0ENNANANE	6
156 (125) ⁽²⁾	172 (188)	233 (250)	125	100	170 (140)	187 (210)	255 (280)	90	75	Y	R156A0ENNANANE	6
180 (156) ⁽²⁾	198 (234)	270 (312)	150	125	205 (170) ⁽⁴⁾	220 (255)	289 (313)	110	90	N	J180A0ENNANANE	6
180 (156) ⁽²⁾	198 (234)	270 (312)	150	125	205 (170) ⁽⁴⁾	220 (255)	289 (313)	110	90	Y	R180A0ENNANANE	6
248 (180) ⁽²⁾⁽³⁾	273 (270)	372 (360)	200	150	260 (205) ⁽³⁾	286 (308)	390 (410)	132	110	N	J248A0ENNANANE	6
248 (180) ⁽²⁾⁽³⁾	273 (270)	372 (360)	200	150	260 (205) ⁽³⁾	286 (308)	390 (410)	132	110	Y	R248A0ENNANANE	6

(1) Catalog number corresponds to output amps in this column. Drive must be programmed to lower voltage to obtain higher currents shown at right.

(2) Frame 5 and 6 drives have dual current ratings; one for normal duty applications, and one for heavy duty applications (in parenthesis). The drive may be operated at either rating.

(3) Rating is limited to 45°C surrounding air.

(4) Rating is limited to 40°C surrounding air.

Specifications

Category	Specification	Frames 1...6 (690V Drive frames 5 & 6 only)						Frames 9 & Up				
Protection		200... 208V	240V	380/ 400V	480V	600V (frames 1...4)	600V/ 690V (frames 5&6)	380/400V	480V	500V	600V	690V
	AC Input Overvoltage Trip (Six Pulse, Three-Phase):	300VAC	300VAC	600VAC	600VAC	863VAC	863VAC	675VAC	675V AC	675V AC	889VAC	889VAC
	Bus Overvoltage Trip:	405VDC	405VDC	810VDC	810VDC	1164VDC	1164VDC	911VDC	911VDC	911VDC	1200VDC	1200VDC
	Bus Undervoltage Trip:	Adjustable						Adjustable				
	Nominal Bus Voltage:	281VDC	324VDC	540VDC	648VDC	810VDC	931VDC	540VDC	648VDC	645VDC	810VDC	931VDC
	Heat Sink Thermistor:	Monitored by microprocessor overtemp trip						Monitored by microprocessor overtemp trip				
	Drive Overcurrent Trip Software Current Limit: Hardware Current Limit: Instantaneous Current Limit:	Calculated value, 105% of motor rated to 200% of drive rated 105% of 3 sec. rating (158%...210%) 143% of 3 sec rating (215%...287%)						Calculated value, 105% of motor rated to 200% of drive rated 360% of rated Heavy Duty current (typical) —				
	Line Transients:	Up to 6000 volts peak per IEEE C62.41-1991						Up to 6000 volts peak per IEEE C62.41-1991				
	Control Logic Noise Immunity:	Showering arc transients up to 1500V peak						Showering arc transients up to 1500V peak				
	Power Ride-Thru:	15 milliseconds at full load						15 milliseconds at full load				
	Logic Control Ride-Thru	0.25 seconds, drive not running						0.25 seconds, drive not running				
	Ground Fault Trip:	Phase-to-ground on drive output						Phase-to-ground on drive output				
	Short Circuit Trip:	Phase-to-phase on drive output						Phase-to-phase on drive output				
Certifications	ATEX	EC-Type-Examination Certificate TÜV 05 ATEX 7202 for directive 94/9/EC. See Appendix E in the PowerFlex 700S Drives with Phase II Control Programming Manual, publication 20D-PM001 , for more information.						EC-Type-Examination Certificate TÜV 05 ATEX 7202 for directive 94/9/EC. See Appendix E in the PowerFlex 700S Drives with Phase II Control Programming Manual, publication 20D-PM001 , for more information.				
	C-Tick	(Does <u>not</u> include 600V AC Input frames 1...4 drives) Australian Communications and Media Authority In conformity with the following: Radiocommunications Act: 1992 Radiocommunications Standard: 2008 Radiocommunications Labelling Notice: 2008 Standards applied: EN 61800-3:1996						Australian Communications and Media Authority In conformity with the following: Radiocommunications Act: 1992 Radiocommunications Standard: 2008 Radiocommunications Labelling Notice: 2008 Standards applied: EN 61800-3:2004				
	c-UL-us	Listed to UL508C and C22.2 No. 14						Listed to UL508C and C22.2 No. 14				
	CE	In conformity with the following European Directives: EMC Directive (2004/108/EC) Low Voltage Directive (2006/95/EC) Standards Applied: EN 61800-3:2004 EN 50178:1997						In conformity with the following European Directives: EMC Directive (2004/108/EC) Low Voltage Directive (2006/95/EC) Standards Applied: EN 61800-3:2004 EN 50178:1997				
	TÜV	TÜV Rheinland - Certification applies to 20D-P2-DG01 Safety Option Module when installed in a frame 1...6, 208/240V and 400/480V, and frame 5 and 6, 600/690V drives. Standards applied: EN 61800-5-2:2007 EN 60204-1:2006 EN ISO 13849-1:2008 EN 62061:2005 IEC 61508 Part 1-7:1998, 2000, and 2010						TÜV Rheinland - Certification applies to 20D-P2-DG01 Safety Option Module when installed in a frame 9...14, 400/480V and 600/690V drives. Standards applied: EN 61800-5-2:2007 EN 60204-1:2006 EN ISO 13849-1:2008 EN 62061:2005 IEC 61508 Part 1-7:1998, 2000, and 2010				
Designed to Meet Applicable Requirements		IEC 61800-2 Adjustable speed electrical power drive systems - Part 2: General requirements IEC 61800-5-1 Adjustable speed electrical power drive systems - Safety requirements NFPA 70 – US National Electric Code NEMA 250 – Enclosures for Electrical Equipment						IEC 61800-2 Adjustable speed electrical power drive systems - Part 2: General requirements IEC 61800-5-1 Adjustable speed electrical power drive systems - Safety requirements NFPA 70 – US National Electric Code NEMA 250 – Enclosures for Electrical Equipment				

Category	Specification	Frames 1...6 (690V Drive - frames 5 & 6 only)				Frames 9 & Up			
Environment	Altitude:	1,000 m (3,300 ft.) max. without derating				(See Altitude Derating on page 108)			
	Surrounding Air Temperature without Derating:					Based on the drive rating. See tables in Drive Power Ratings on page 52 .			
	Open Type:	0° to 50° C (32° to 122° F)				Note: Frames 9 & 10 are rated 0° to 40° C (32° to 104° F) air temperature surrounding the drive module.			
	IP20:	0° to 50° C (32° to 122° F)							
	NEMA/UL Type 1:	0° to 40° C (32° to 104° F)							
	IP56, NEMA/UL Type 4X:	0° to 40° C (32° to 104° F)							
	Storage Temperature (all const.):	−40° to 70° C (−40° to 158° F)				−40° to 70° C (−40° to 158° F)			
	Relative Humidity:	5 to 95% non-condensing				5 to 95% non-condensing			
	Shock:	10G peak for 11 ms duration (±1.0 ms)				15G peak for 11ms duration (±1.0 ms)			
	Vibration:	0.152 mm (0.006 in.) displacement, 1G peak, 5.5 Hz				2 mm (0.0787 in.) displacement, 1G peak EN50178 / EN60068-2-6			
Sound:	Frame	Fan Speed	Sound Level	Note: Sound pressure level is measured at 2 meters.	Frame	Sound Level	Back-ground Noise Level	Note: Sound pressure level is measured at 1 meter. All devices measured are 400V IP21 and in power up mode.	
	1	30 CFM	59 dB		9	78	49		
	2	50 CFM	57 dB		10	77	49		
	3	120 CFM	61 dB		13	76	46		
	4	190 CFM	59 dB						
	5	200 CFM	71 dB						
	6	300 CFM	72 dB						
Atmosphere:	Important: Drive must not be installed in an area where the ambient atmosphere contains volatile or corrosive gas, vapors or dust. If the drive is not going to be installed for a period of time, it must be stored in an area where it will not be exposed to a corrosive atmosphere.								
Electrical	AC Input (Six-Pulse, Three-Phase) Voltage Tolerance:	(See Voltage Tolerance on page 108 for Full Power and Operating Range)				(See Voltage Tolerance on page 108 for Full Power and Operating Range)			
	Frequency Tolerance:	47...63 Hz				47...63 Hz.			
	Input Phases:	Six-pulse, three-phase input provides full rating for all drives. Single-phase operation provides 50% of rated current.				Six-pulse, three-phase input provides full rating for all drives. Single-phase operation provides 20% of rated current.			
	DC Input Voltage Tolerance:	±10% of Nominal Bus Voltage (above)				±10% of Nominal Bus Voltage (above)			
	Displacement Power Factor:	0.98 across speed range				0.98 across speed range			
	Efficiency:	97.5% at rated amps, nominal line volts				97.5% at rated amps, nominal line volts			
	Max. Short Circuit Current Rating: Using Recommended Fuse or Circuit Breaker Type:	Maximum short circuit current rating to match specified fuse/circuit breaker capability.							
		≤200,000 Amps				≤200,000 Amps			
Maximum Drive to Motor Power Ratio:	The drive to motor rating cannot exceed a 2:1 ratio				The drive to motor rating cannot exceed a 2:1 ratio				

Category	Specification	Frames 1...6 (690V Drive frames 5 & 6 only)	Frames 9 & Up
Control	Method Induction Motor: Brushless Motor:	Sine coded PWM with programmable carrier frequency, Indirect Self-Organized, Field-Oriented Control, Current-regulated. Ratings apply to all drives. Refer to the <i>PowerFlex 700S Phase II Control Reference Manual</i> , publication PFLEX-RM003..., for derating guidelines. The drive can be supplied as six pulse in a configured package.	
	Carrier Frequency	Drive rating: 4 kHz Settings: 2, 4, 6, 8, 10 kHz (6 kHz is for V/Hz operation only)	Drive rating: 2 kHz Settings: 2, 4, 6, 8, 10 kHz (6 kHz is for V/Hz operation only)
	Output Voltage Range:	0 to rated motor voltage	0 to rated motor voltage
	Output Frequency Range:	0...400 Hz	0...400 Hz Note: For output frequencies above 320...400 Hz consult the factory.
	Speed Control	Speed regulation - without feedback 0.1% of base speed across 120:1 speed range 120:1 operating range 50 rad/sec bandwidth	Speed regulation - without feedback 0.1% of base speed across 120:1 speed range 120:1 operating range 50 rad/sec bandwidth
		Speed regulation - with feedback 0.001% of base speed across 120:1 speed range 1000:1 operating range 744 rad/sec bandwidth	Speed regulation - with feedback 0.001% of base speed across 120:1 speed range 1000:1 operating range 300 rad/sec bandwidth
	Torque Regulation	Torque Regulation - without feedback $\pm 5\%$, 600 rad/sec bandwidth	Torque Regulation - without feedback $\pm 10\%$, 600 rad/sec bandwidth
		Torque Regulation - with feedback $\pm 2\%$, 2500 rad/sec bandwidth	Torque Regulation - with feedback $\pm 5\%$, 2500 rad/sec bandwidth
	Selectable Motor Control:	Field Oriented Control with and without a feedback device and permanent magnet motor control	
	Stop Modes:	Multiple programmable stop modes including – Ramp, Coast and Current Limit	
	Accel/Decel	Independently programmable accel and decel times adjustable from 0 to 6553.5 in 0.1 second increments	
	S-Curve Time	Adjustable from 0.5 to 4.0 seconds	
	Intermittent Overload:	110% Overload capability for up to 1 minute 150% Overload capability for up to 3 seconds	
	Current Limit Capability:	Independent Motoring and Regenerative Power Limits programmable to 800% of rated output current	
	Electronic Motor Overload Protection	Class 10 motor overload protection according to NEC article 430 and motor over-temperature protection according to NEC article 430.126 (A)(2). UL 508C File E59272.	