



The Allen-Bradley PowerFlex 700 AC drive is compact and flexible, offering control that will be common across a large power range.

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Conformity to Standards

The PowerFlex 700 conforms to the following:

Conformity to:	Standard Product
UL Listed	✓
CSA Certified (c-UL)	✓
IEC Classified	✓
CE Approved	✓
VDE Approved	✓
C-Tick	✓

Drive Description

The PowerFlex 700 AC drive offers a flexible package of power, control and operator interface. It is designed to meet the demands for space, flexibility and performance. The many features allow the user to easily configure the drive for most application needs. Available ratings include; 0.5 to 40 HP output at 480V AC input. Bookshelf design optimizes panel space by allowing Zero Stacking™ (zero side clearance) mounting of the drives.

An LCD Human Interface Module (also used with the PowerFlex 70), provides multilingual text for startup, metering, programming, and troubleshooting.

A cassette that houses the main control and I/O boards is separately removable from the power structure. The cassette is the same for all drive ratings, simplifying installation and maintenance for the entire product line. I/O boards are available as 24V DC/AC or 115V AC.

Optional internal communication modules provide fast and efficient control and/or data exchange with host controllers over popular interfaces. These interfaces include; DeviceNet™, ControlNet™, Remote I/O, Serial Communications and other open control and communication networks. PC tools such as DriveExplorer™ and DriveTools 2000™ assist with programming, monitoring and troubleshooting the PowerFlex 700.

Catalog Number Explanation

Position											
1-3	4	5-7	8	9	10	11	12	13	14	15	16
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	Code Type	Code Rating	Code Type
20B PowerFlex 700	A User Manual N No Manual	A Filtered	0 None

Code Voltage Ph.	Code Operator Interface	Code w/Resistor	Code I/O I/O Volts
D 480V AC 3	0 Blank Cover 2 Digital LCD 3 Full Numeric LCD 4 Analog LCD 5 Prog. Only LCD	Y Yes ❶ N No	A Std. 24V DC/AC B Std. 115V AC N None -

Code Enclosure	Code w/Brake IGBT	Code Version
A IP 20, NEMA Type 1	Y Yes	C ControlNet (Coax) D DeviceNet I Interbus P Profibus DP R RIO N None

Output Current @ 480V 60Hz Input
Code Amps HP
1P1 1.1 0.5
2P1 2.1 1.0
3P4 3.4 2.0
5P0 5 3.0
8P0 8 5.0
011 11 7.5
014 14 10
022 22 15
027 27 20
034 34 25
040 40 30
052 52 40

Same method up to 999A. See example below for 1000 & Up
 1K2 1200 940

❶ Not available for Frame 3 drives or larger.

Product Selection

380-480V AC, Three-Phase Drives

Output Amps						Nominal Power Ratings				IP20, NEMA Type 1		Frame Size
480V AC Input ❶			380-400V AC Input			Normal Duty		Heavy Duty		Catalog Number	*	
Cont.	1 Min.	3 Sec.	Cont.	1 Min.	3 Sec.	kW	HP	kW	HP	20B . . .		
1.1	1.2	1.6	1.3	1.4	1.9	0.37	0.5	0.25	0.33	D1P1A0AYNANA0		0
2.1	2.4	3.2	2.1	2.4	3.2	0.75	1	0.55	0.75	D2P1A0AYNANA0		0
3.4	4.5	6	3.5	4.5	6	1.5	2	1.1	1.5	D3P4A0AYNANA0		0
5	5.5	7.5	5	5.5	7.5	2.2	3	1.5	2	D5P0A0AYNANA0		0
8	8.8	12	8.7	9.9	13.2	4	5	3	3	D8P0A0AYNANA0		0
11	12.1	16.5	11.5	13	17.4	5.5	7.5	4	5	D011A0AYNANA0		0
14	16.5	22	15.4	17.2	23.1	7.5	10	5.5	7.5	D014A0AYNANA0		1
22	24.2	33	22	24.2	33	11	15	7.5	10	D022A0AYNANA0		1
27	33	44	30	33	45	15	20	11	15	D027A0AYNANA0		2
34	40.5	54	37	45	60	18.5	25	15	20	D034A0AYNANA0		2
40	51	68	43	55.5	74	22	30	18.5	25	D040A0AYNANA0		3
52	60	80	56	64.5	86	30	40	22	30	D052A0AYNANA0		3

❶ Catalog number corresponds to output amps in these columns. Drive must be programmed to lower voltage to obtain higher currents shown at right.

Factory Installed Options

Human Interface Modules (HIM) - IP20/NEMA Type 1 (Position 9)



Catalog Code: 0
No HIM (Blank Cover)
*:



Catalog Code: 2
LCD Digital Speed
*:



Catalog Code: 3
LCD Full Numeric
*:



Catalog Code: 4
LCD Analog Speed
*:



Catalog Code: 5
LCD Programmer Only
*:

Documentation

Description	Catalog Code (Position 10)	*
User Manual	A	
No User Manual	N	

Internal Brake IGBT

Drive Input Voltage	Brake IGBT	Frame	Catalog Code (Position 11)	*
380-480V AC	Standard	0-3	Y	

Internal Dynamic Brake Resistors

These resistors have a limited duty cycle. Refer to the PowerFlex Dynamic Braking Selection Guide to determine if an internal resistor will be sufficient for your application. An external resistor may be required.

Drive Input Voltage	Frame	Brake Resistance	Catalog Code (Position 12)	*
380-480V AC	0	115 Ohm	Y	
	1	115 Ohm	Y	
	2	68 Ohm	Y	

Internal EMC Filter

Drive Input Voltage	CE Filter	Frame	Catalog Code (Position 13)	*
380-480V AC	Standard	0-3	A	

Internal Communication Adapters

Description	Catalog Code (Position 14)	*
DeviceNet	D	
Remote I/O	R	
Profibus	P	
Interbus	I	

I/O Options

Description	Catalog Code (Position 15)	*
No I/O	N	
24V DC/AC	A	
115V AC	B	

User Installed Options

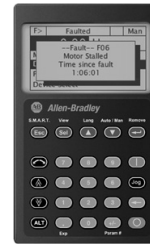
Human Interface Module Option Kits



No HIM (Blank Plate)
20-HIM-A0



LCD Digital Speed
20-HIM-A2



LCD Full Numeric
20-HIM-A3



LCD Analog Speed
20-HIM-A4



LCD Programmer Only
20-HIM-A5



Remote (Panel Mount)
Full Numeric
20-HIM-C3



Remote (Panel Mount)
Programmer Only
20-HIM-C5

Description	Handheld/Local (Drive Mount)		Remote (Panel Mount) IP 66, UL Type 4x/12 ①	
	Catalog No.	*	Catalog No.	*
Blank Plate	20-HIM-A0		–	
LCD Display, Digital Speed	20-HIM-A2		–	
LCD Display, Full Numeric Keypad	20-HIM-A3		20-HIM-C3 ②	
LCD Display, Analog Speed Potentiometer	20-HIM-A4		–	
LCD Display, Programmer Only	20-HIM-A5		20-HIM-C5 ②	

- ① For indoor use only.
- ② Includes a PowerFlex HIM Interface Cable (20-HIM-H10).

Human Interface Module Interface Cables

Description	Catalog No.	*
PowerFlex HIM Interface Cable, 1 m (39 in.) ③	20-HIM-H10	
Cable Kit (Male-Female) ④⑤		
0.33 Meters (1.1 Feet)	1202-H03	
1 Meter (3.3 Feet)	1202-H10	
3 Meter (9.8 Feet)	1202-H30	
9 Meter (29.5 Feet)	1202-H90	

- ③ Required only when HIM is used as handheld or remote.
- ④ Required in addition to 20-HIM-H10 for distances up to a total maximum of 10 Meters (32.8 Feet).

I/O Option Kits

Description	Catalog No.	*
24V DC/AC	20-DA1-A0	
115V AC	20-DA1-B0	

Communication Option Kits

Description	Catalog No.	*
DeviceNet Communication Adapter	20-COMM-D	
Remote I/O Communication Adapter	20-COMM-R	
Profibus Communication Adapter	20-COMM-P	
Interbus Communication Adapter	20-COMM-I	
Smart Self-powered Serial Converter (RS-232) includes 1203-SFC and 1202-C10 Cables	1203-SSS	
Serial Null Modem Adapter	1203-SNM	

Internal Dynamic Brake Resistor Kits

These resistors have a limited duty cycle. Refer to the PowerFlex Dynamic Braking Selection Guide to determine if an internal resistor will be sufficient for your application. An external resistor may be required.

Drive Input Voltage	Brake Resistance	Frame	Catalog No.	*
380-480V AC	115 Ohm	0	20BD-DB1-0	
	115 Ohm	1	20BD-DB1-1	
	68 Ohm	2	20BD-DB1-2	

Isolation Transformers

480V, 60 Hz, Three-Phase
460V Primary & 460V Secondary

Drive Catalog Number	Motor Rating	IP 20 (Nema Type 1) Catalog Number	*
20BD1P1	0.33 HP	1321-3T005-BB	
	0.5 HP	1321-3T005-BB	
20BD2P1	0.75 HP	1321-3T005-BB	
	1 HP	1321-3T005-BB	
20BD3P4	1.5 HP	1321-3T005-BB	
	2 HP	1321-3T005-BB	
20BD5P0	3 HP	1321-3T005-BB	
20BD8P0	5 HP	1321-3T007-BB	
20BD011	7.5 HP	1321-3T011-BB	
20BD014	10 HP	1321-3T014-BB	
20BD022	15 HP	1321-3T020-BB	
20BD027	20 HP	1321-3T027-BB	

⦿ 50hz add 12.5%. Requires custom quote.

Input and Output Line Reactors⁷ - 480V, 60 Hz, Three-Phase

Standard Drive Catalog Number	HP Rating		3% Impedance				5% Impedance			
	Normal Duty	Heavy Duty	IP 00 (Open Style)		IP 10 (Nema Type 1)		IP 00 (Open Style)		IP 10 (Nema Type 1)	
			Catalog Number	*	Catalog Number	*	Catalog Number	*	Catalog Number	*
20BD2P1	1	0.75	1321-3R2-A		1321-3RA2-A		1321-3R2-B		1321-3RA2-B	
20BD3P4 ¹	2	1.5	1321-3R4-B		1321-3RA4-B		1321-3R4-C		1321-3RA4-C	
20BD3P4 ²	2	1.5	1321-3R4-C		1321-3RA4-C		1321-3R4-D		1321-3RA4-D	
20BD5P0 ³	3	2	1321-3R4-B		1321-3RA4-B		1321-3R4-C		1321-3RA4-C	
20BD5P0 ⁴	3	2	1321-3R8-C		1321-3RA8-C		1321-3R8-D		1321-3RA8-D	
20BD8P0 ¹	5	3	1321-3R8-B		1321-3RA8-B		1321-3R8-C		1321-3RA8-C	
20BD8P0 ²	5	3	1321-3R4-B		1321-3RA4-B		1321-3R4-C		1321-3RA4-C	
20BD011 ¹	7.5	5	1321-3R12-B		1321-3RA12-B		1321-3R12-C		1321-3RA12-C	
20BD011 ²	7.5	5	1321-3R8-B		1321-3RA8-B		1321-3R8-C		1321-3RA8-C	
20BD014 ¹	10	7.5	1321-3R18-B		1321-3RA18-B		1321-3R18-C		1321-3RA18-C	
20BD014 ²	10	7.5	1321-3R12-B		1321-3RA12-B		1321-3R12-C		1321-3RA12-C	
20BD022 ¹	15	10	1321-3R25-B		1321-3RA25-B		1321-3R25-C		1321-3RA25-C	
20BD022 ²	15	10	1321-3R18-B		1321-3RA18-B		1321-3R18-C		1321-3RA18-C	
20BD027 ¹	20	15	1321-3R35-B		1321-3RA35-B		1321-3R35-C		1321-3RA35-C	
20BD027 ²	20	15	1321-3R25-B		1321-3RA25-B		1321-3R25-C		1321-3RA25-C	
20BD034 ³	25	20	1321-3R35-B		1321-3RA35-B		1321-3R35-C		1321-3RA35-C	
20BD034 ⁴	25	20	1321-3R45-B		1321-3RA45-B		1321-3R45-C		1321-3RA45-C	
20BD040 ²	30	25	1321-3R35-B		1321-3RA35-B		1321-3R35-C		1321-3RA35-C	
20BD040 ⁵	30	25	1321-3R45-B		1321-3RA45-B		1321-3R45-C		1321-3RA45-C	
20BD040 ⁶	30	25	1321-3R55-B		1321-3RA55-B		1321-3R55-C		1321-3RA55-C	
20BD052 ²	40	30	1321-3R45-B		1321-3RA45-B		1321-3R45-C		1321-3RA45-C	
20BD052 ⁵	40	30	1321-3R55-B		1321-3RA55-B		1321-3R55-C		1321-3RA55-C	
20BD052 ⁶	40	30	1321-3R80-B		1321-3RA80-B		1321-3R80-C		1321-3RA80-C	

- ¹ Normal Duty Input/Output and Heavy Duty Output
- ² Heavy Duty Input
- ³ Normal Duty/Heavy Duty Input
- ⁴ Normal Duty/Heavy Duty Output
- ⁵ Normal Duty Input
- ⁶ Normal Duty Output/Heavy Duty Output
- ⁷ Input line reactors were sized based on the NEC fundamental motor amps.
Output line reactors were sized based on the VFD rated output currents.

Notes