PowerFlex 400 AC Drive

Providing users with easy installation and ideal for mechanical fan and pump systems, the PowerFlex 400 AC drive offers a wide range of built-in features allowing for seamless HVAC building system integration. The PowerFlex 400 is designed to meet global OEM, contractor and end-user demands for flexibility, space savings and ease-of-use.

Ratings	200…240V: 2.2…37 kW / 3…50 Hp / 12…145 A
	380…480V: 2.2…250 kW / 3…350 Hp / 6…460 A
Motor Control	V/Hz control
Communications	Integral RS 485, Common Industrial Protocol
User Interface	Integral programming keypad and local LED
Enclosures	IP20, IP30
Additional Features	PID/ PIP for fan and pump applications
Certifications	• UL • IEC (Designed to Meet) • cUL • CE • C-Tick • UL508C Plenum Rating
Options	See pages 24… 31
Additional Information	PowerFlex 400 Technical Data, publication 22C-TD001 PowerFlex 400 User Manual, publication 22C-UM001

200...240V AC, Three-Phase Drives

Drive Ratings					Panel Mount	Flange Mount
		Output Current ✳				
kW	Hp	A	Frame Size	Rating	Cat. No.	Cat. No.
2.2	3	12	C	IP20, NEMA/UL Open Type ❋	**22C-B012N103**	**22C-B012F103**
3.7	5	17.5	C	IP20, NEMA/UL Open Type ❋	**22C-B017N103**	**22C-B017F103**
5.5	7.5	24	C	IP20, NEMA/UL Open Type ❋	**22C-B024N103**	**22C-B024F103**
7.5	10	33	C	IP20, NEMA/UL Open Type ❋	**22C-B033N103**	**22C-B033F103**
11	15	49	D	IP30, NEMA/UL Type 1	**22C-B049A103**	–
15	20	65	D	IP30, NEMA/UL Type 1	**22C-B065A103**	–
18.5	25	75	D	IP30, NEMA/UL Type 1	**22C-B075A103**	–
22	30	90	D	IP30, NEMA/UL Type 1	**22C-B090A103**	–
30	40	120	E	IP30, NEMA/UL Type 1	**22C-B120A103**	–
37	50	145	E	IP30, NEMA/UL Type 1	**22C-B145A103**	–

✳ Drive terminals are sized according to UL. Depending on operating ambient and wire used, some local or national codes may require a larger wire size than what the power terminals can accept. Multiple conductors, 90°C wire, and/or lugs may be required. Refer to the PowerFlex 400 *User Manual* for details on terminal block wire ranges.

❋ IP30, NEMA/UL Type 1 can be achieved for panel mount drives with top cover and optional conduit box kit installed. Field installed conversion kit specified under User Installed Options.

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

Drive Ratings					Panel Mount	Flange Mount
		Output Current ∗				
kW	Hp	A	Frame Size	Rating	Cat. No.	Cat. No.
2.2	3	6	C	IP20, NEMA/UL Open Type ❋	**22C-D6P0N103**	**22C-D6P0F103**
4	5	10.5	C	IP20, NEMA/UL Open Type ❋	**22C-D010N103**	**22C-D010F103**
5.5	7.5	12	C	IP20, NEMA/UL Open Type ❋	**22C-D012N103**	**22C-D012F103**
7.5	10	17	C	IP20, NEMA/UL Open Type ❋	**22C-D017N103**	**22C-D017F103**
11	15	22	C	IP20, NEMA/UL Open Type ❋	**22C-D022N103**	**22C-D022F103 ‡**
15	20	30	C	IP20, NEMA/UL Open Type ❋	**22C-D030N103**	**22C-D030F103 ‡**
18.5	25	38	D	IP30, NEMA/UL Type 1	**22C-D038A103**	–
22	30	45.5	D	IP30, NEMA/UL Type 1	**22C-D045A103**	–
30	40	60	D	IP30, NEMA/UL Type 1	**22C-D060A103**	–
37	50	72	E	IP30, NEMA/UL Type 1	**22C-D072A103**	–
45	60	88	E	IP30, NEMA/UL Type 1	**22C-D088A103**	–
55	75	105	E	IP30, NEMA/UL Type 1	**22C-D105A103**	–
75	100	142	E	IP30, NEMA/UL Type 1	**22C-D142A103**	–
90	125	170	F	IP30, NEMA/UL Type 1	**22C-D170A103**	–
110	150	208	F	IP30, NEMA/UL Type 1	**22C-D208A103**	–
132	200	260	G	IP30, NEMA/UL Type 1	**22C-D260A103 §**	–
160	250	310	G	IP30, NEMA/UL Type 1	**22C-D310A103 §**	–
200	300	370	H	IP30, NEMA/UL Type 1	**22C-D370A103 §**	–
250	350	460	H	IP30, NEMA/UL Type 1	**22C-D460A103 §**	–

∗ Drive terminals are sized according to UL. Depending on operating ambient and wire used, some local or national codes may require a larger wire size than what the power terminals can accept. Multiple conductors, 90°C wire, and/or lugs may be required. Refer to the PowerFlex 400 *User Manual* for details on terminal block wire ranges.

❋ IP30, NEMA/UL Type 1 can be achieved for panel mount drives with top cover and optional conduit box kit installed. Field installed conversion kit specified under User Installed Options.

‡ 11 and 15 kW (15 and 20 Hp) Frame C flange mount drives require external DC series bus inductor.

§ 132…250 kW (200…350 Hp) have an integral AC bus choke.

PowerFlex 4-Class Options

Human Interface Modules and Accessories

Description	Cat. No.	Used with PowerFlex Drive				
		4M	4	40	40P	400
Remote (Panel Mount) LCD Display, Digital Speed Control, CopyCat Capable. IP66 (NEMA/UL Type 4X/12) Indoor Use Only. Includes 2.0 meter cable.	**22-HIM-C2S** §	✓	✓	✓	✓	✓
Remote Handheld, LCD Display, Full Numeric Keypad, Digital Speed Control, CopyCat Capable. IP30 (NEMA/UL Type 1). Includes 1.0 meter cable. Panel mount with optional Bezel Kit.	**22-HIM-A3**	✓	✓	✓	✓	✓
Remote Handheld, Wireless Interface Module with Bluetooth* Technology. IP30 (NEMA/UL Type 1). Panel Mount with optional Bezel Kit.	**22-WIM-N1**	✓	✓	✓	✓	✓
Remote (Panel Mount), Wireless Interface Module with Bluetooth Technology. IP66 (NEMA/UL Type 4X/12) Indoor Use Only.	**22-WIM-N4S**	✓	✓	✓	✓	✓
Bezel Kit. Panel Mount for LCD Display, Remote Handheld Unit. IP30 (NEMA/UL Type 1). Includes a 22-RJ45CBL-C20 cable.	**22-HIM-B1**	✓	✓	✓	✓	✓
DSI HIM Cable (DSI HIM to RJ45 cable)						
1.0 Meter (3.3 Feet) DSI HIM Cable (DSI HIM to RJ45 cable)	**22-HIM-H10**	✓	✓	✓	✓	✓
2.9 Meter (9.51 Feet) DSI HIM Cable (DSI HIM to RJ45 cable)	**22-HIM-H30**	✓	✓	✓	✓	✓

§ The 22-HIM-C2S is smaller than the 22-HIM-C2 and cannot be used as a direct replacement.

Safety Options

Description	Cat. No.	Used with PowerFlex Drive				
		4M	4	40	40P	400
DriveGuard Safe Torque-Off	**20A-DG01**				✓	

Other Options

Description	Cat. No.	Used with PowerFlex Drive				
		4M	4	40	40P	400
Auxiliary Relay Board - Expands drive output capabilities - Frames D-H only.	**AK-U9-RLB1**					✓

Terminators

Description ✴	Cat. No.	Used with PowerFlex Drive				
		4M	4	40	40P	400
for use with 3.7 kW (5 Hp) & below drives	**1204-TFA1**	✓	✓	✓	✓	✓
for use with 1.5 kW (2 Hp) & up drives	**1204-TFB2**	✓	✓	✓	✓	✓

✴ Refer to Appendix A of publication *DRIVES-IN001* for selection information.

Reflected Wave Reduction Modules

Voltage	ND kW	ND Hp	Cat. No.	Used with PowerFlex Drive				
				4M	4	40	40P	400
	2.2…4	3…5	**1321-RWR8-DP**	✓	✓	✓	✓	✓
	4	5	**1321-RWR12-DP**	✓		✓	✓	✓
	5.5	7.5	**1321-RWR18-DP**	✓		✓	✓	✓
	7.5	10	**1321-RWR25-DP**	✓		✓	✓	✓
	11	15	**1321-RWR25-DP**	✓		✓	✓	✓
	15	20	**1321-RWR35-DP**					✓
	18.5	25	**1321-RWR45-DP**					✓
380… 480V AC	22	30	**1321-RWR55-DP**					✓
	30	40	**1321-RWR80-DP**					✓
	37	50	**1321-RWR80-DP**					✓
	45	60	**1321-RWR100-DP**					✓
	55	75	**1321-RWR130-DP**					✓
	75	100	**1321-RWR160-DP**					✓
	90	125	**1321-RWR200-DP**					✓
	110	150	**1321-RWR250-DP**					✓
	149	200	**1321-RWR320-DP**					✓
	187	250	**1321-RWR320-DP**					✓
	4	5	**1321-RWR8-EP**			✓	✓	
500… 600V AC	5.5	7.5	**1321-RWR12-EP**			✓	✓	
	7.5	10	**1321-RWR18-EP**			✓	✓	
	11	15	**1321-RWR25-EP**			✓	✓	

Reflected Wave Reduction Modules w/Common Mode Choke

Description ✴	Cat. No.	Used with PowerFlex Drive				
		4M	4	40	40P	400
17A with Common Mode Choke	**1204-RWC-17-A**	✓	✓	✓	✓	✓

✴ Refer to Appendix A of publication *DRIVES-IN001* for selection information.

Communication Option Kits

Description	Cat. No.	4M	4	40	40P	400
BACnet® MS/TP RS485 Communication Adapter	22-COMM-B		✓‡	✓♣		✓
ControlNet™ Communication Adapter	22-COMM-C	✓‡	✓‡	✓♣	✓♣	✓
DeviceNet™ Communication Adapter	22-COMM-D	✓‡	✓‡	✓♣	✓♣	✓
EtherNet/IP™ Communication Adapter	22-COMM-E	✓‡	✓‡	✓♣	✓♣	✓
LonWorks® Communication Adapter	22-COMM-L		✓‡	✓♣	✓♣	✓
PROFIBUS™ DP Communication Adapter	22-COMM-P	✓‡	✓‡	✓♣	✓♣	✓
Serial Converter Module (RS485 to RS232). Provides serial communication via DF1 protocol for use with DriveExplorer and DriveExecutive™ software. Includes DSI to RS232 serial converter, 1203-SFC serial cable, 22-RJ45CBL-C20 cable, and DriveExplorer Lite CD.	22-SCM-232	✓	✓	✓	✓	✓
Serial Cable. 2.0 meter with a locking low profile connector. Connects the serial converter to a 9-pin sub-miniature D female computer connector.	1203-SFC	✓	✓	✓	✓	✓
Serial Null Modem Adapter. Use when connecting the serial converter to DriveExplorer on a handheld PC.	1203-SNM	✓	✓	✓	✓	✓
Universal Serial Bus™ (USB) Converter includes 2m USB, 20-HIM-H10 & 22-HIM-H10 Cables	1203-USB	✓	✓	✓	✓	✓
DSI Cable. 2.0 meter RJ45 to RJ45 cable, male to male connectors.	22-RJ45CBL-C20	✓	✓	✓	✓	✓
Splitter Cable. RJ45 one to two port splitter cable.	AK-U0-RJ45-SC1	✓	✓	✓	✓	✓
Terminal Block. RJ45 two position terminal block (6 pieces) with two 120 Ohm terminating resistors (loose).	AK-U0-RJ45-TB2P	✓	✓	✓	✓	✓
Terminating Resistors. 120 Ohm resistor embedded in an RJ45 connector (2 pieces).	AK-U0-RJ45-TR1	✓	✓	✓	✓	✓
DSI External Communications Kit. External mounting kit for 22-COMM Communication Adapters.	22-XCOMM-DC-BASE	✓	✓	✓	✓	✓
External Communications Kit Power Supply Optional 100…240V AC Power Supply for External DSI Communications Kit.	20-XCOMM-AC-PS1	✓	✓	✓	✓	✓
Compact I/O Module (3 Channel)	1769-SM2	✓	✓	✓	✓	✓
Serial Flash Firmware Kit Updates drive firmware via computer.	AK-U9-FLSH1					✓
Communication Adapter Cover Houses the Communication Adapter for B & C Frame drives. Note: Cover adds 25 mm (0.98 in.) to the overall depth of the drive.						
Frame B Drive	22B-CCB			✓➤		
Frame C Drive	22B-CCC			✓➤		
Frame C Drive	22C-CCC					✓➤
Frame B Drive	22D-CCB				✓➤	
Frame C Drive	22D-CCC				✓➤	

‡ PowerFlex 4 & 4M drives require External DSI Communication Kits. Communication Adapters cannot be drive mounted.

♣ Requires a Communication Adapter Cover when used with Frame B & C PowerFlex 40/40P drives or Frame C PowerFlex 400 drives.

➤ If IP30, NEMA/UL Type 1 is required, a 22-JBCB (Frame B drives) or 22-JBCC (Frame C drives) must also be ordered.

IP30, NEMA/UL Type 1 Conversion Kit

Description	Frame	Cat. No.	4M	4	40	40P	400
Converts IP20 drive to IP30, NEMA/UL Type 1 enclosure. Includes conduit box, mounting screws and plastic top panel.	A	22-JBAA		✓			
	B	22-JBAB		✓	✓	✓	
	C	22-JBAC			✓	✓	✓
Converts IP20 drive to IP30, NEMA/UL Type 1 enclosure. Includes communication option conduit box, mounting screws and plastic top panel.	B	22-JBCB			✓	✓	
	C	22-JBCC			✓	✓	✓