

PowerFlex 4 AC Drive



- Volts per Hertz
- Open Loop Speed Regulation
- 0.2...1.1 kW • 0.25...1.5 Hp • 1.6...6 A
- 0.2...3.7 kW • 0.25...5 Hp • 1.4...17.5 A
- 0.37...3.7 kW • 0.5...5 Hp • 1.4...8.7 A
- N/A
- N/A
- IP20, NEMA/UL Type Open: -10 to 50 °C (14 to 122 °F)
- IP20, Zero Stacking: -10 to 40 °C (14 to 104 °F)
- IP30, NEMA/UL Type 1: -10 to 40 °C (14 to 104 °F)
- Flange = 50 °C (122 °F)
- Internal (1 phase) • External (3 phase)
- UL, CE, cUL, C-Tick
- 150% for 60 secs • 200% for 3 secs
- 0...240 Hz
- Local Keypad • Remote Keypad
- RSLogix 5000 • Studio 5000 • DriveTools SP
- Connected Components Workbench (CCW)
- Integral RS485 (Modbus RTU)
- Optional: *DeviceNet, *EtherNet/IP, *PROFIBUS DP, *ControlNet, *LonWorks, *BACnet, *Bluetooth
- *Optional network for use only with DSI External Communications Kit
- Qty. 1 (unipolar voltage)
- None
- Qty. 1 (uses an Analog Input)
- Qty. 5 (24V DC, 2 programmable)
- Qty. 1 (form C)
- None
- Internal IGBT except catalog numbers ending in "3"
- No

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PowerFlex 40 AC Drive



- Volts per Hertz
- Sensorless Vector Control
- Open Loop Speed Regulation
- 0.37...1.1 kW • 0.5...1.5 Hp • 2.3...6 A
- 0.37...7.5 kW • 0.5...10 Hp • 2.3...33A
- 0.37...11 kW • 0.5...15 Hp • 1.4...24 A
- 0.75...11 kW • 1...15 Hp • 1.7...19 A
- N/A
- IP20, NEMA/UL Type Open: -10 to 50 °C (14 to 122 °F)
- IP20, Zero Stacking: -10 to 40 °C (14 to 104 °F)
- IP30, NEMA/UL Type 1: -10 to 40 °C (14 to 104 °F)
- IP66, NEMA/UL Type 4X/12: -10 to 40 °C (14 to 104 °F)
- Flange = 50 °C (122 °F)
- Internal (1 phase) • External (3 phase)
- UL, CE, cUL, C-Tick
- 150% for 60 secs • 200% for 3 secs
- 0...400 Hz
- Local Keypad • Remote Keypad
- RSLogix 5000 • Studio 5000 • DriveTools SP
- Connected Components Workbench (CCW)
- Integral RS485 (Modbus RTU)
- Optional: DeviceNet, EtherNet/IP, PROFIBUS DP, ControlNet, LonWorks, BACnet, Bluetooth
- Qty. 2 (1 bipolar voltage, 1 current)
- Qty. 1 (unipolar voltage or current)
- Qty. 1 (uses an Analog Input)
- Qty. 7 (24V DC, 4 programmable)
- Qty. 1 (form C)
- Qty. 2
- Internal IGBT
- No

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PowerFlex 40P AC Drive



- Volts per Hertz
- Sensorless Vector Control
- Closed Loop Speed Regulation
- N/A
- 0.37...7.5 kW • 0.5...10 Hp • 2.3...33 A
- 0.37...11 kW • 0.5...15 Hp • 1.4...24 A
- 0.75...11 kW • 1...15 Hp • 1.7...19 A
- N/A
- IP20, Open Type: -10 to 50 °C (14 to 122 °F)
- IP20, Zero Stacking: -10 to 40 °C (14 to 104 °F)
- IP30, NEMA Type 1, UL Type 1: -10 to 40 °C (14 to 104 °F)
- Flange and Plate Mount: Heatsink: -10 to 40 °C (14 to 104 °F)
- Drive: -10 to 50 °C (14 to 122 °F)
- External
- UL, CE, cUL, C-Tick, TUV FS ISO/EN13849-1 (EN954-1)
- 150% for 60 secs • 200% for 3 secs
- 0...500 Hz
- 4 Digit LED Display and Fault Reset
- Remote Keypad • RSLogix 5000 • Studio 5000 • DriveTools SP
- Connected Components Workbench (CCW)
- Integral RS485 (Modbus RTU)
- Optional: DeviceNet, EtherNet/IP, PROFIBUS DP, ControlNet, LonWorks, Bluetooth
- Qty. 2 (1 bipolar voltage, 1 current)
- Qty. 1 (unipolar voltage or current)
- Qty. 1 (uses an Analog Input)
- Qty. 7 (24V DC, 5 programmable)
- Qty. 1 (form C)
- Qty. 2
- Internal IGBT
- Safe Torque-Off SIL2, PLd, Cat 3

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PowerFlex 400 AC Drive



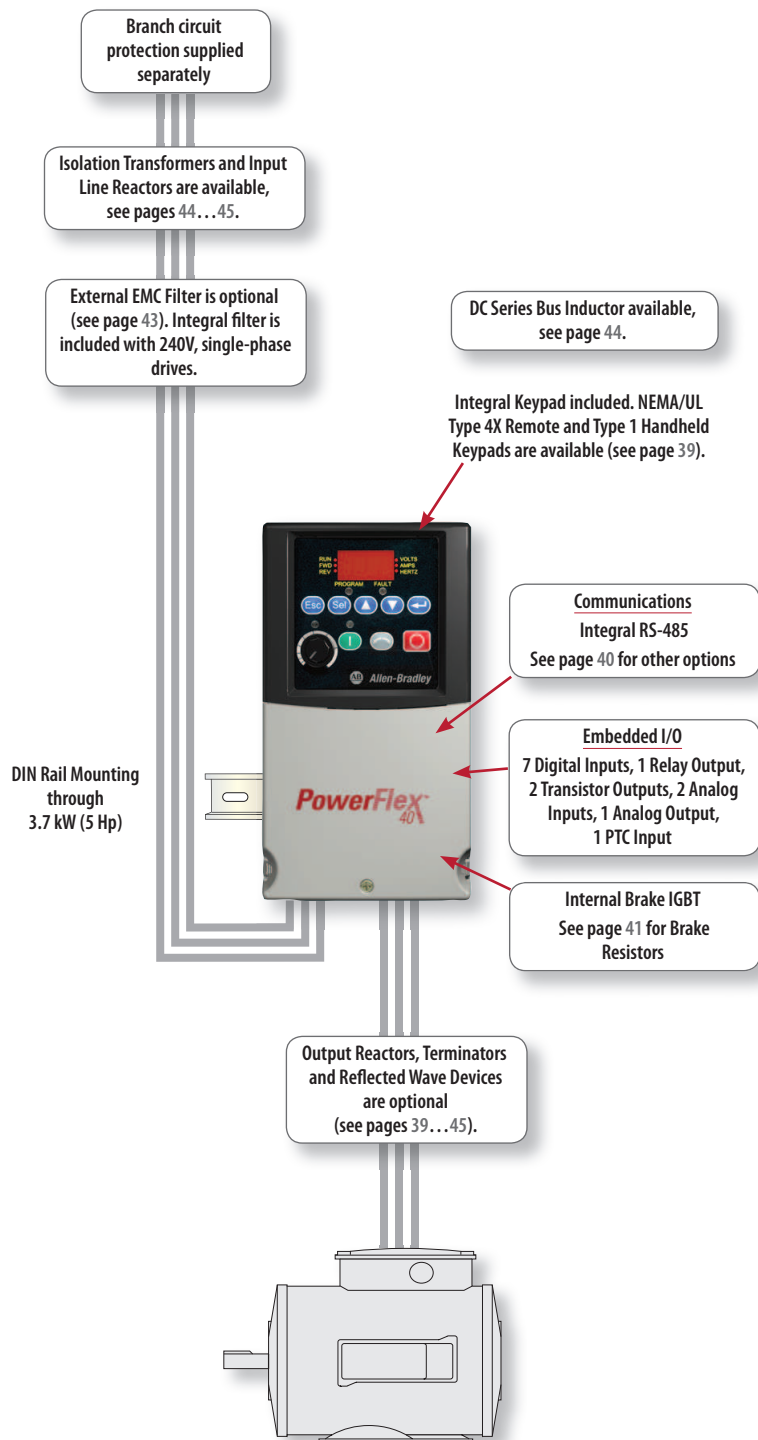
- Volts per Hertz
- Open Loop Speed Regulation
- N/A
- 2.2...37 kW • 3.0...50 Hp • 12...145 A
- 2.2...250 kW • 3.0...350 Hp • 6...460 A
- N/A
- N/A
- IP20, NEMA/UL Type Open, Frame C: -10 to 50 °C (14 to 122 °F)
- IP20, NEMA/UL Type Open, Frame D and up: -10 to 45 °C (14 to 113 °F)
- IP30, NEMA/UL Type Open, all frames: -10 to 45 °C (14 to 113 °F)
- External
- UL, CE, cUL, C-Tick
- 110% for 60 secs
- 0...320 Hz
- Local Keypad • Remote Keypad
- RSLogix 5000 • Studio 5000 • DriveTools SP
- Connected Components Workbench (CCW)
- Integral RS485 (Modbus RTU, Metasys N2, P1-FLN)
- Optional: DeviceNet, EtherNet/IP, PROFIBUS DP, ControlNet, LonWorks, BACnet, Bluetooth
- Qty. 2 (1 bipolar voltage or current, 1 unipolar voltage or current)
- Qty. 2 (unipolar voltage or current)
- Qty. 1 (uses an Analog Input)
- Qty. 7 (24V DC, 4 programmable)
- Qty. 2 (form C)
- Qty. 1
- No
- No

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PowerFlex 40 AC Drive

The PowerFlex 40 AC drive gives OEMs, machine builders and end users performance-enhancing motor control in an easy to-use, compact package. The PowerFlex 40 features sensorless vector control to meet low speed torque demands helping to improve application performance.

With flexible packaging options and an uncomplicated programming structure, this drive can be quickly and easily installed and configured for a variety of applications.



PowerFlex 40 AC Drive at a glance

Ratings

100...120V:	0.4...1.1 kW / 0.5...1.5 Hp / 2.3...6 A
200...240V:	0.4...7.5 kW / 0.5...10 Hp / 2.3...33 A
380...480V:	0.4...11 kW / 0.5...15 Hp / 1.4...24 A
500...600V:	0.75...11 kW / 1...15 Hp / 1.7...19 A

Motor Control

- V/Hz Control
- Sensorless Vector Control

Enclosures

- IP20, NEMA/UL Type Open
- Plate Drive
Front = IP20, NEMA/UL Type Open
- Flange Mount
Front = IP20, NEMA/UL Type Open,
Back/Heatsink = IP40/54/65,
NEMA/UL Type 1/12/4/4X
- IP66, NEMA/UL Type 4X
- IP30, NEMA/UL Type 1 (with optional kit)

Certifications

- C-Tick
- c-UL, UL
- CE
- RoHS

Options

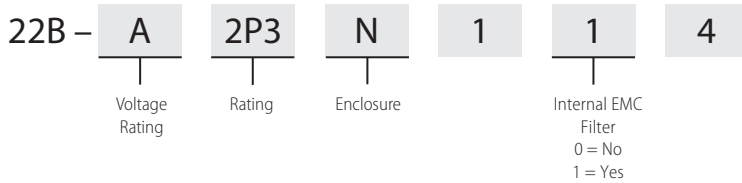
See pages 39...45

Additional Information

PowerFlex 4/40 Technical Data, publication 22-TD001

PowerFlex 40 User Manual, publication 22B-UM001

Catalog Number Explanation



Product Selection

100...120V AC, Single-Phase Input, Three-Phase Output Drives (50/60 Hz, No Filter)

Drive Ratings				IP20, NEMA/UL Type Open	IP20 Plate Drive §	IP20 Flange Mount ★	IP66, NEMA/UL Type 4X
kW	Hp	Output Current	Frame Size	Cat. No.	Cat. No.	Cat. No.	Cat. No.
		A					
0.4	0.5	2.3	B	22B-V2P3N104	22B-V2P3H204	22B-V2P3F104	22B-V2P3C104
0.75	1	5	B	22B-V5PON104	22B-V5POH204	22B-V5POF104	22B-V5POC104
1.1	1.5	6	B	22B-V6PON104	22B-V6POH204	22B-V6POF104	22B-V6POC104

§ Plate Drive – Front = IP20, NEMA/UL Type Open.

★ Flange Mount – Front = IP20, NEMA/UL Type Open, Back/Heatsink = IP40/54/65, NEMA/UL Type 1/12/4/4X.

200...240V AC, Single-Phase Input, Three-Phase Output Drives (50/60 Hz)

Drive Ratings				IP20, NEMA/UL Type Open	IP20 Plate Drive §	IP20 Flange Mount ★	IP66, NEMA/UL Type 4X
kW	Hp	Output Current	Frame Size	Cat. No.	Cat. No.	Cat. No.	Cat. No.
		A					
with Integral "S Type" EMC Filter ‡							
0.4	0.5	2.3	B	22B-A2P3N114	–	–	–
0.75	1	5	B	22B-A5PON114	–	–	–
1.5	2	8	B	22B-A8PON114	–	–	–
2.2	3	12	C	22B-A012N114	–	–	–
No Filter							
0.4	0.5	2.3	B	22B-A2P3N104	22B-A2P3H204	22B-A2P3F104	22B-A2P3C104
0.75	1	5	B	22B-A5PON104	22B-A5POH204	22B-A5POF104	22B-A5POC104
1.5	2	8	B	22B-A8PON104	22B-A8POH204	22B-A8POF104	22B-A8POC104
2.2	3	12	C	22B-A012N104	22B-A012H204	22B-A012F104	–

§ Plate Drive – Front = IP20, NEMA/UL Type Open.

★ Flange Mount – Front = IP20, NEMA/UL Type Open, Back/Heatsink = IP40/54/65, NEMA/UL Type 1/12/4/4X.

‡ This filter is suitable for use with a cable length of up to 10 meters for Class A and 1 meter for Class B environments.

200...240V AC, Three-Phase Drives (50/60 Hz, No Filter)

Drive Ratings				IP20, NEMA/UL Type Open	IP20 Plate Drive §	IP20 Flange Mount ★	IP66, NEMA/UL Type 4X
kW	Hp	Output Current	Frame Size	Cat. No.	Cat. No.	Cat. No.	Cat. No.
		A					
0.4	0.5	2.3	B	22B-B2P3N104	22B-B2P3H204	22B-B2P3F104	22B-B2P3C104
0.75	1	5	B	22B-B5PON104	22B-B5POH204	22B-B5POF104	22B-B5POC104
1.5	2	8	B	22B-B8PON104	22B-B8POH204	22B-B8POF104	22B-B8POC104
2.2	3	12	B	22B-B012N104	22B-B012H204	22B-B012F104	22B-B012C104
3.7	5	17.5	B	22B-B017N104	22B-B017H204	22B-B017F104	22B-B017C104
5.5	7.5	24	C	22B-B024N104	22B-B024H204	22B-B024F104	–
7.5	10	33	C	22B-B033N104	22B-B033H204	22B-B033F104	–

§ Plate Drive – Front = IP20, NEMA/UL Type Open.

★ Flange Mount – Front = IP20, NEMA/UL Type Open, Back/Heatsink = IP40/54/65, NEMA/UL Type 1/12/4/4X.

380...480V AC, Three-Phase Drives (50/60 Hz, No Filter)

Drive Ratings				IP20, NEMA/UL Type Open	IP20 Plate Drive §	IP20 Flange Mount ★	IP66, NEMA/UL Type 4X
kW	Hp	Output Current	Frame Size	Cat. No.	Cat. No.	Cat. No.	Cat. No.
		A					
0.4	0.5	1.4	B	22B-D1P4N104	22B-D1P4H204	22B-D1P4F104	22B-D1P4C104
0.75	1	2.3	B	22B-D2P3N104	22B-D2P3H204	22B-D2P3F104	22B-D2P3C104
1.5	2	4	B	22B-D4PON104	22B-D4POH204	22B-D4POF104	22B-D4POC104
2.2	3	6	B	22B-D6PON104	22B-D6POH204	22B-D6POF104	22B-D6POC104
4	5	10.5	B	22B-D010N104	22B-D010H204	22B-D010F104	22B-D010C104
5.5	7.5	12	C	22B-D012N104	22B-D012H204	22B-D012F104	–
7.5	10	17	C	22B-D017N104	22B-D017H204	22B-D017F104	–
11	15	24	C	22B-D024N104	22B-D024H204 ♣	22B-D024F104 ♣	–

§ Plate Drive – Front = IP20, NEMA/UL Type Open.

★ Flange Mount – Front = IP20, NEMA/UL Type Open, Back/Heatsink = IP40/54/65, NEMA/UL Type 1/12/4/4X.

♣ Requires use of external DC Bus inductor or AC Line Reactor.

500...600V AC, Three-Phase Drives (50/60 Hz, No Filter)

Drive Ratings				IP20, NEMA/UL Type Open	IP20 Plate Drive §	IP20 Flange Mount ★	IP66, NEMA/UL Type 4X
kW	Hp	Output Current	Frame Size	Cat. No.	Cat. No.	Cat. No.	Cat. No.
		A					
0.75	1	1.7	B	22B-E1P7N104	22B-E1P7H204	22B-E1P7F104	22B-E1P7C104
1.5	2	3	B	22B-E3PON104	22B-E3POH204	22B-E3POF104	22B-E3POC104
2.2	3	4.2	B	22B-E4P2N104	22B-E4P2H204	22B-E4P2F104	22B-E4P2C104
4	5	6.6	B	22B-E6P6N104	22B-E6P6H204	22B-E6P6F104	22B-E6P6C104
5.5	7.5	9.9	C	22B-E9P9N104	22B-E9P9H204	22B-E9P9F104	–
7.5	10	12	C	22B-E012N104	22B-E012H204	22B-E012F104	–
11	15	19	C	22B-E019N104	22B-E019H204	22B-E019F104	–

§ Plate Drive – Front = IP20, NEMA/UL Type Open.

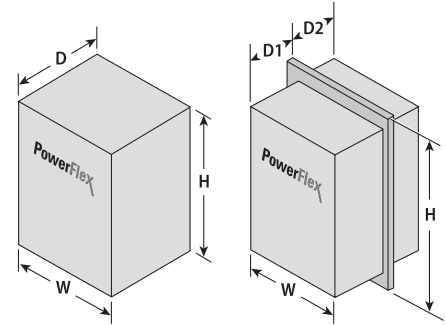
★ Flange Mount – Front = IP20, NEMA/UL Type Open, Back/Heatsink = IP40/54/65, NEMA/UL Type 1/12/4/4X.

Approximate Dimensions and Weights

Dimensions are in mm (in.) - weights are in kg (lb)

IP20, NEMA/UL Type Open

Frame	H	W	D	Weight
B	180.0 (7.09)	100.0 (3.94)	136.0 (5.35)	2.22 (4.9)
	213.0 (8.39) ★		-	
	244.0 (9.61) ‡		161.0 (6.33) ‡	
C	260.0 (10.20)	130.0 (5.10)	180.0 (7.10)	4.31 (9.5)
	320.0 (12.60) ★		-	
	320.0 (12.60) ‡		205.0 (8.08) ‡	



★ Drive with IP30, NEMA 1/UL Type 1 option kit installed.

‡ Drive with IP30, NEMA 1/UL Type 1 option kit and Communication Option (22-JBCx) installed.

Plate Drive

Frame	H	W	D	Weight
B	125.0 (4.92)	204.0 (8.03)	97.5 (3.84)	1.68 (3.7)
C	284.0 (11.18)	155.0 (6.10)	108.0 (4.25)	2.59 (5.7)

IP66, NEMA/UL Type 4X/12

Frame	H	W	D	Weight
B	270.0 (10.63)	165.0 (6.50)	198.0 (7.80)	5.30 (11.7)

Flange Mount

Frame	H	W	D1	D2	Weight
B	250.0 (9.84)	244.0 (9.61)	94.3 (3.71)	63.1 (2.48)	4.53 (10.0)
C	325.0 (12.80)	300.0 (11.81)	105.8 (4.17)	138.2 (5.44)	11.93 (26.3)

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. Includes 2.0 meter cable. IP66, NEMA Type 4X/12 - Indoor Use Only.	22-HIM-C2S ☛	✓	✓	✓	✓	✓
Remote Handheld, LCD Display, Full Numeric Keypad, Digital Speed Control, CopyCat Capable. Includes 1.0 meter cable. IP30, NEMA Type 1. Panel mount with optional Bezel Kit.	22-HIM-A3	✓	✓	✓	✓	✓
Bezel Kit. Panel Mount for LCD Display, Remote Handheld Unit. IP30, NEMA 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)	22-HIM-H10	✓	✓	✓	✓	✓
2.9 Meter (9.5 Feet)	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) and below drives	1204-TFA1	✓	✓	✓	✓	✓
for use with 1.5 kW (2 Hp) and up drives	1204-TFB2	✓	✓	✓	✓	✓

★ For selection information, refer to Appendix A of the Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication Drives-IN001.

Reflected Wave Reduction Modules

Voltage	ND kW	ND Hp	Cat. No.	Used with PowerFlex Drive				
				4M	4	40	40P	400
380... 480V AC	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					✓
	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					✓
500... 600V AC	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			✓	✓	
	5.5	7.5	1321-RWR12-EP			✓	✓	
	7.5	10	1321-RWR18-EP			✓	✓	
	11	15	1321-RWR25-EP			✓	✓	

Reflected Wave Reduction Module with Common Mode Choke

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

★ For selection information, refer to Appendix A of the Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication Drives-IN001.

Communication Option Kits

Description	Cat. No.	Used with PowerFlex Drive				
		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 and 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 and C Frame drives. Note: Cover adds 25 mm (0.98 in.) to the overall depth of the drive.						
Frame B Drive (PowerFlex 40)	22B-CCB			✓ ◆		
Frame C Drive (PowerFlex 40)	22B-CCC			✓ ◆		
Frame C Drive (PowerFlex 400)	22C-CCC					✓ ◆
Frame B Drive (PowerFlex 40P)	22D-CCB				✓ ◆	
Frame C Drive (PowerFlex 40P)	22D-CCC				✓ ◆	

- ‡ When a 22-COMM-P adapter is configured for multi-drive mode, a PowerFlex 40, 40P or 400 drive must be used as a master drive on the network.
- § PowerFlex 4 and PowerFlex 4M drives require External DSI Communication Kits. Communication Adapters cannot be drive mounted.
- △ Requires a Communication Adapter Cover when used with Frame B and 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.	Used with PowerFlex Drive				
			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			✓	✓	✓

Dynamic Brake Resistors

Drive Rating			Minimum Resistance	Resistance [♣]	Cat. No. [▽]	Used with PowerFlex Drive				
Voltage	kW	Hp	Ohms ±10%	Ohms ±5%		4M	4	40	40P	400
100...120V, 50/60 Hz, Single-Phase	0.2	0.25	48	91	AK-R2-091P500		✓			
	0.4	0.5	48	91	AK-R2-091P500		✓	✓		
	0.75	1	48	91	AK-R2-091P500		✓	✓		
	1.1	1.5	48	91	AK-R2-091P500			✓		
200...240V, 50/60 Hz, Single-Phase	0.2	0.25	48	91	AK-R2-091P500		✓			
	0.4	0.5	48	91	AK-R2-091P500		✓	✓		
	0.75	1	48	91	AK-R2-091P500		✓	✓		
	1.5	2	48	91	AK-R2-091P500		✓	✓		
	2.2	3	32	47	AK-R2-047P500			✓		
200...240V, 50/60 Hz, Three-Phase	0.2	0.25	48	91	AK-R2-091P500		✓			
	0.4	0.5	48	91	AK-R2-091P500		✓	✓	✓	
	0.75	1	48	91	AK-R2-091P500		✓	✓	✓	
	1.5	2	48	91	AK-R2-091P500		✓	✓	✓	
	2.2	3	32	47	AK-R2-047P500		✓	✓	✓	
	3.7	5	19	47	AK-R2-047P500		✓	✓	✓	
	5.5	7.5	13	30	AK-R2-030P1K2	✓		✓	✓	
380...480V, 50/60 Hz, Three-Phase	7.5	10	10	30	AK-R2-030P1K2	✓		✓	✓	
	0.4	0.5	97	360	AK-R2-360P500		✓	✓	✓	
	0.75	1	97	360	AK-R2-360P500		✓	✓	✓	
	1.5	2	97	360	AK-R2-360P500		✓	✓	✓	
	2.2	3	97	120	AK-R2-120P1K2		✓	✓	✓	
	4.0	5	77	120	AK-R2-120P1K2		✓	✓	✓	
	5.5	7.5	55	120	AK-R2-120P1K2	✓		✓	✓	
	7.5	10	39	120	AK-R2-120P1K2	✓		✓	✓	
500...600V, 50/60 Hz, Three-Phase	11	15	24	120	AK-R2-120P1K2 &	✓		✓	✓	
	0.75	1	120	360	AK-R2-360P500			✓	✓	
	1.5	2	120	360	AK-R2-360P500			✓	✓	
	2.2	3	82	120	AK-R2-120P1K2			✓	✓	
	4.0	5	82	120	AK-R2-120P1K2			✓	✓	
	5.5	7.5	51	120	AK-R2-120P1K2			✓	✓	
	7.5	10	51	120	AK-R2-120P1K2			✓	✓	

♣ Verify resistor Ohms against minimum resistance for drive being used.

▽ Resistors listed are rated 5% duty cycle.

& Requires two resistors wired in parallel.

Spare Parts

Description		Cat. No.	Used with PowerFlex Drive				
			4M	4	40	40P	400
Fan Replacement Kits	Fan Replacement Kit - Frame A	SK-U1-FAN1-A1		✓			
	Fan Replacement Kit - Frame B, 1 Fan	SK-U1-FAN1-B1		✓	✓	✓	
	Fan Replacement Kit - Frame B, 2 Fans	SK-U1-FAN2-B1		✓	✓	✓	
	Fan Replacement Kit - Frame A	SK-U1-FFAN1-A1	✓				
	Fan Replacement Kit - Frame B	SK-U1-FFAN1-B1	✓				
	Fan Replacement Kit - Frame C	SK-U1-FFAN1-C1	✓				
	Fan Replacement Kit - Frame C, 1 Fan	SK-U1-FAN1-C1			✓	✓	✓★
	Fan Replacement Kit - Frame C, 1 Fan, 15 Hp	SK-U1-FAN1-C2			✓	✓	✓‡
	Fan Replacement Kit, NEMA 4X	SK-U1-FAN1-B4			✓		
	Fan Replacement Kit - Frame D, 2 Fans, B049... B090 & D038... D060 Ratings	SK-U1-FAN2-D1					✓
	Fan Replacement Kit - Frame E, 2 Fans, B120... B145 & D072... D142 Ratings	SK-U1-FAN2-E2					✓
	Fan Replacement Kit - Frame F, 2 Fans, IGBT, D170 & D208 Ratings	SK-U1-FAN2-F1					✓
	Fan Replacement Kit - Frame F, 1 Fan, Rectifier, D170 & D208 Ratings	SK-U1-FAN1-F2					✓
	Fan Replacement Kit - Frame F, 1 Fan, Choke, D170 & D208 Ratings	SK-U1-FAN1-F3					✓
	Fan Replacement Kit - Frame G, 1 Fan (Side), D260 & D310 Ratings	SK-U1-FAN1-G1					✓
	Fan Replacement Kit - Frame G, 4 Fans (Bottom), D260 & D310 Ratings	SK-U1-FAN4-G3					✓
	Fan Replacement Kit - Frame H, 1 Fan (Upper Side), D370 & D460 Ratings	SK-U1-FAN1-H1					✓
	Fan Replacement Kit - Frame H, 1 Fan (Middle Side), D370 & D460 Ratings	SK-U1-FAN1-H2					✓
	Fan Replacement Kit - Frame H, 4 Fans (Bottom), D370 & D460 Ratings	SK-U1-FAN4-H3					✓
Covers	Encoder Terminal Cover (All Frames)	SK-U1-DCVR4-EN				✓	
	Frame A Cover with Power Terminal Guard	SK-U1-ACVR1-A1		✓			
	Frame B Cover with Power Terminal Guard	SK-U1-ACVR1-B1		✓			
	Frame A Cover	SK-U1-FCVR-A1	✓				
	Frame B Cover	SK-U1-FCVR-B1	✓				
	Frame C Cover	SK-U1-FCVR-C1	✓				
	Frame B Cover with Power Terminal Guard	SK-U1-BCVR1-B1			✓		
	Frame C Cover with Power Terminal Guard	SK-U1-BCVR1-C1			✓		
	Frame B Cover, NEMA 4X	SK-U1-BCVR1-B4			✓		
	Frame B Cover with Power Terminal Guard	SK-U1-DCVR3-B1				✓	
	Frame C Cover with Power Terminal Guard	SK-U1-DCVR3-C1				✓	
	Frame C Cover with Power Terminal Guard	SK-U1-CCVR1-C1					✓
	Frame D Cover	SK-U1-CCVR1-D1					✓
	Frame E Cover	SK-U1-CCVR1-E1					✓
	Frame F Cover	SK-U1-CCVR1-F1					✓
	Frame G Cover	SK-U1-CCVR1-G1					✓
	Frame H Cover	SK-U1-CCVR1-H1					✓
	NEMA 4X Replacement Conduit Plugs	SK-U1-PLUGS-B4			✓		

★ 3...10 Hp at 200...240V AC and 3...10 Hp at 380...480V AC.

‡ 15...20 Hp at 380...480V AC.

EMC Filters (Required to Meet CE Certification)

Drive Ratings			PowerFlex 4M		PowerFlex 4		PowerFlex 40/40P		PowerFlex 400
Input Voltage	kW	Hp	S Type Filter	L Type Filter	S Type Filter	L Type Filter	S Type Filter	L Type Filter	IPO0 (NEMA/UL Type Open)
			Cat. No. ★	Cat. No. §	Cat. No. ★	Cat. No. §	Cat. No. ★	Cat. No. §	Cat. No. ★
100...120V, 50/60 Hz, Single-Phase	0.2	0.25	–	22F-RF010-AL	–	22-RF010-AL	–	–	–
	0.4	0.5	–	22F-RF010-AL	–	22-RF010-AL	–	22-RF018-BL Δ	–
	0.75	1	–	22F-RF025-BL	–	22-RF018-BL	–	22-RF018-BL Δ	–
	1.1	1.5	–	22F-RF025-BL	–	22-RF025-CL ♣	–	22-RF018-BL Δ	–
200...240V, 50/60 Hz, Single-Phase	0.2	0.25	‡	22F-RF010-AL	‡	22-RF010-AL	–	–	–
	0.4	0.5	‡	22F-RF010-AL	‡	22-RF010-AL	‡	22-RF018-BL Δ	–
	0.75	1	‡	22F-RF010-AL	‡	22-RF010-AL	‡	22-RF018-BL Δ	–
	1.5	2	‡	22F-RF025-BL	‡	22-RF018-BL	‡	22-RF018-BL Δ	–
200...240V, 50/60 Hz, Single-Phase, NO BRAKE	0.2	0.25	–	–	‡	22-RF010-AL	–	–	–
	0.4	0.5	–	–	‡	22-RF010-AL	–	–	–
	0.75	1	–	–	‡	22-RF010-AL	–	–	–
	1.5	2	–	–	‡	22-RF018-BL	–	–	–
200...240V, 50/60 Hz, Three-Phase	0.2	0.25	22F-RF9P5-AS	22F-RF9P5-AL	22-RF9P5-AS	22-RF9P5-AL	–	–	–
	0.4	0.5	22F-RF9P5-AS	22F-RF9P5-AL	22-RF9P5-AS	22-RF9P5-AL	22-RF021-BS ◆	22-RF021-BL	–
	0.75	1	22F-RF9P5-AS	22F-RF9P5-AL	22-RF9P5-AS	22-RF9P5-AL	22-RF021-BS ◆	22-RF021-BL	–
	1.5	2	22F-RF9P5-AS	22F-RF9P5-AL	22-RF9P5-AS	22-RF9P5-AL	22-RF021-BS ◆	22-RF021-BL	–
	2.2	3	22F-RF021-BS	22F-RF021-BL	22-RF021-BS	22-RF021-BL	22-RF021-BS ◆	22-RF021-BL	22-RF034-CS
	3.7	5	22F-RF021-BS	22F-RF021-BL	22-RF021-BS	22-RF021-BL	22-RF021-BS ◆	22-RF021-BL	22-RF034-CS
	5.5	7.5	22F-RF039-CS	22F-RF039-CL	–	–	22-RF034-CS	22-RF034-CL	22-RF034-CS
	7.5	10	22F-RF039-CS	22F-RF039-CL	–	–	22-RF034-CS	22-RF034-CL	22-RF034-CS
	11	15	–	–	–	–	–	–	22-RFD070
	15	20	–	–	–	–	–	–	22-RFD100
	18.5	25	–	–	–	–	–	–	22-RFD100
	22	30	–	–	–	–	–	–	22-RFD150
	30	40	–	–	–	–	–	–	22-RFD150
	37	50	–	–	–	–	–	–	22-RFD180
380...480V, 50/60 Hz, Three-Phase	0.4	0.5	22F-RF6P0-AS	22F-RF6P0-AL	22-RF5P7-AS	22-RF5P7-AL	22-RF012-BS	22-RF012-BL	–
	0.75	1	22F-RF6P0-AS	22F-RF6P0-AL	22-RF5P7-AS	22-RF5P7-AL	22-RF012-BS	22-RF012-BL	–
	1.5	2	22F-RF6P0-AS	22F-RF6P0-AL	22-RF5P7-AS	22-RF5P7-AL	22-RF012-BS	22-RF012-BL	–
	2.2	3	22F-RF012-BS	22F-RF012-BL	22-RF012-BS	22-RF012-BL	22-RF012-BS	22-RF012-BL	22-RF018-CS
	3.7	5	22F-RF012-BS	22F-RF012-BL	22-RF012-BS	22-RF012-BL	22-RF012-BS	22-RF012-BL	22-RF018-CS
	5.5	7.5	22F-RF026-CS	22F-RF026-CL	–	–	22-RF018-CS	22-RF018-CL	22-RF018-CS
	7.5	10	22F-RF026-CS	22F-RF026-CL	–	–	22-RF018-CS	22-RF018-CL	22-RF018-CS
	11	15	22F-RF026-CS	22F-RF026-CL	–	–	22-RF026-CS	22-RF026-CL	22-RF026-CS
	15	20	–	–	–	–	–	–	22-RFD036
	18.5	25	–	–	–	–	–	–	22-RFD050
	22	30	–	–	–	–	–	–	22-RFD050
	30	40	–	–	–	–	–	–	22-RFD070
	37	50	–	–	–	–	–	–	22-RFD100
	45	60	–	–	–	–	–	–	22-RFD100
	55	75	–	–	–	–	–	–	22-RFD150
	75	100	–	–	–	–	–	–	22-RFD180
	90	125	–	–	–	–	–	–	22-RFD208
	110	150	–	–	–	–	–	–	22-RFD208
132	200	–	–	–	–	–	–	22-RFD323	
160	250	–	–	–	–	–	–	22-RFD480	
200	300	–	–	–	–	–	–	22-RFD480	
250	350	–	–	–	–	–	–	22-RFD480	

EMC Filters (continued)

Drive Ratings			PowerFlex 4M		PowerFlex 4		PowerFlex 40/40P		PowerFlex 400
Input Voltage	kW	Hp	S Type Filter	L Type Filter	S Type Filter	L Type Filter	S Type Filter	L Type Filter	IPOO (NEMA/UL Type Open)
			Cat. No. ★	Cat. No. §	Cat. No. ★	Cat. No. §	Cat. No. ★	Cat. No. §	Cat. No. ★
500...600V, 50/60 Hz, Three-Phase	0.75	1	–	–	–	–	–	22-RF8P0-BL	–
	1.5	2	–	–	–	–	–	22-RF8P0-BL	–
	2.2	3	–	–	–	–	–	22-RF8P0-BL	–
	4.0	5	–	–	–	–	–	22-RF8P0-BL	–
	5.5	7.5	–	–	–	–	–	22-RF015-CL	–
	7.5	10	–	–	–	–	–	22-RF015-CL	–
	11	15	–	–	–	–	–	22-RF024-CL	–

- ★ This filter is suitable for use with a cable length of up to 10 meters for Class A and 1 meter for Class B environments.
- ‡ Drives are available in these ratings with internal “S Type” filters.
- § This filter is suitable for use with a cable length of up to 100 meters for Class A and 5 meters for Class B environments.
- ♣ The piggyback mounting option cannot be used with Frame B PowerFlex 4 drives and Frame C EMC Line Filters.
- △ PowerFlex 40 Only.
- ◆ Filter must be Series B or later.

DC Series Bus Inductors

Voltage	Drive Rating			Inductance	Cat. No.	Used with PowerFlex Drive				
	kW	Hp	Amps	mH		4M	4	40	40P	400
200...240V, 50/60 Hz, Three-Phase	2.2	3	12	1.00	1321-DC12-1					✓
	3.7	5	17.5	0.65	1321-DC18-1					✓
	5.5	7.5	32	0.85	1321-DC32-1			✓		✓
	7.5	10	40	0.75	1321-DC40-2			✓		✓
400...480V, 50/60 Hz, Three-Phase	2.2	3	6	2	1321-DC9-2					✓
	4.0	5	10.5	2.1	1321-DC12-2					✓
	5.5	7.5	18	3.75	1321-DC18-4			✓		✓
	7.5	10	25	1.28	1321-DC25-4			✓		✓
	11	15	32	2.68	1321-DC32-3			✓		✓
	15	20	30	2.5	1321-DC40-4					✓
500...600V, 50/60 Hz, Three-Phase	5.5	7.5	12	2.1	1321-DC12-2_600			✓		
	7.5	10	18	3.75	1321-DC18-4			✓		
	11	15	25	1.28	1321-DC25-4			✓		

Isolation Transformers for PowerFlex 400 - IP32, NEMA/UL Type 3R Standalone, 4...6% Nominal Impedance

Rating		Wiring Diagram (see page 126)	208V Primary	230V Primary	460V Primary		575V Primary	
			208V, 60 Hz, Three-Phase Secondary	230V, 60 Hz, Three-Phase Secondary	230V, 60 Hz, Three-Phase Secondary	460V, 60 Hz, Three-Phase Secondary	230V, 60 Hz, Three-Phase Secondary	460V, 60 Hz, Three-Phase Secondary
			Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
2.2	3.0	1	1321-3TW005-XX	1321-3TW005-AA	1321-3TW005-BA	1321-3TW005-BB	1321-3TW005-CA	1321-3TW005-CB
22	30	2	–	1321-3TW040-AA	1321-3TW040-BA	1321-3TW040-BB	1321-3TW040-CA	1321-3TW040-CB
30	40	2	–	1321-3TW051-AA	1321-3TW051-BA	1321-3TW051-BB	1321-3TW051-CA	1321-3TW051-CB
37	50	2	–	1321-3TH063-AA	1321-3TH063-BA	1321-3TH063-BB	–	–
45	60	2	–	–	–	1321-3TH075-BB	–	–
55	75	2	–	–	–	1321-3TH093-BB	–	–
75	100	2	–	–	–	1321-3TH118-BB	–	–
90	125	2	–	–	–	1321-3TH145-BB	–	–
110	150	2	–	–	–	1321-3TH175-BB	–	–
132	200	2	–	–	–	1321-3TH220-BB	–	–
160	250	2	–	–	–	1321-3TH275-BB	–	–
200	300	2	–	–	–	1321-3TH330-BB	–	–
250	350	2	–	–	–	1321-3TH440-BB	–	–

Line Reactors - 3% Impedance

Voltage	Drive Ratings			IP00 ★ (NEMA/UL Open Type)	IP11 ★ (NEMA/UL Type 1)	Used with PowerFlex Drive				
	kW	Hp	Amps	Cat. No.	Cat. No.	4M	4	40	40P	400
200...240V, 60 Hz, Three-Phase	0.2	0.25	2.0	1321-3R2-A	—	✓	✓			
	0.4	0.5	4.0	1321-3R4-B	—	✓	✓	✓	✓	
	0.75	1	8.0	1321-3R8-B	—	✓	✓	✓	✓	
	1.5	2	8.0	1321-3R8-A	—	✓	✓	✓	✓	
	2.2	3	12	1321-3R12-A	1321-3RA12-A	✓	✓	✓	✓	✓
	3.7	5	17.5	1321-3R18-A	1321-3RA18-A	✓	✓	✓	✓	✓
	5.5	7.5	24	1321-3R25-A	1321-3RA25-A	✓		✓	✓	✓
	7.5	10	33	1321-3R35-A	1321-3RA35-A	✓		✓	✓	✓
	11	15	49	1321-3R45-A	1321-3RA45-A					✓
	15	20	65	1321-3R55-A	1321-3RA55-A					✓
	18.5	25	75	1321-3R80-A	1321-3RA80-A					✓
	22	30	90	1321-3R80-A	1321-3RA80-A					✓
	30	40	120	1321-3R100-A	1321-3RA100-A					✓
37	50	145	1321-3R130-A	1321-3RA130-A					✓	
380...480V, 60 Hz, Three-Phase	0.4	0.5	2.0	1321-3R2-B	—	✓	✓	✓	✓	
	0.75	1	4.0	1321-3R4-C	—	✓	✓	✓	✓	
	1.5	2	4.0	1321-3R4-B	—	✓	✓	✓	✓	
	2.2	3	6.0	1321-3R8-C	1321-3RA8-C	✓	✓	✓	✓	✓
	4.0	5	10.5	1321-3R8-B	1321-3RA8-B	✓	✓	✓	✓	✓
	5.5	7.5	12	1321-3R12-B	1321-3RA12-B	✓		✓	✓	✓
	7.5	10	17	1321-3R18-B	1321-3RA18-B	✓		✓	✓	✓
	11	15	22	1321-3R25-B	1321-3RA25-B	✓		✓	✓	✓
	15	20	30	1321-3R35-B	1321-3RA35-B					✓
	18.5	25	38	1321-3R35-B	1321-3RA35-B					✓
	22	30	45.5	1321-3R45-B	1321-3RA45-B					✓
	30	40	60	1321-3R55-B	1321-3RA55-B					✓
	37	50	72	1321-3R80-B	1321-3RA80-B					✓
	45	60	88	1321-3R80-B	1321-3RA80-B					✓
	55	75	105	1321-3R100-B	1321-3RA100-B					✓
	75	100	142	1321-3R130-B	1321-3RA130-B					✓
	90	125	170	1321-3R160-B	1321-3RA160-B					✓
110	150	208	1321-3R200-B	1321-3RA200-B					✓	
500...600V, 60 Hz, Three-Phase	0.75	1	2.0	1321-3R2-B	—			✓	✓	
	1.5	2	4.0	1321-3R4-C	—			✓	✓	
	2.2	3	4.0	1321-3R4-B	—			✓	✓	
	4.0	5	8.0	1321-3R8-C	—			✓	✓	
	5.5	7.5	12	1321-3R12-B	—			✓	✓	
	7.5	10	12	1321-3R12-B	—			✓	✓	
	11	15	18	1321-3R18-B	—			✓	✓	

★ Catalog numbers listed are for 3% impedance. 5% impedance reactor types are also available. Refer to 1321 Power Conditioning Products Technical Data, publication 1321-TD001.