

PowerFlex 4 and 40 AC Drives

Bulletin Numbers 22A and 22B

Topic	Page
Summary of Changes	2
Product Overview	3
Packaging and Mounting	3
Start Up, Programming, and Operation	3
Optimized Performance	4
Sensorless Vector Performance	4
Sensorless Vector Control	4
Performance	4
I/O	5
Communications	5
Versatile Programming and Network Solutions	6
PC Programming Software	6
Catalog Number Explanation	8
Product Selection	9
User Installed Options	10
Installation Considerations	15
Control Wiring	16
Specifications	18
Parameter Descriptions	21
Product Dimensions	25
Additional Resources	33



Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

Topic	Page
Updated template	throughout
Removed section PowerFlex 4 and PowerFlex 40 Configured Drives	throughout
Added Inclusive Language Acknowledgment	2
Updated PC Programming Software	6
Updated Human Interface Module Option Kits and Accessories	10
Updated Communication Option Kits	10
Updated Programming Software	11
Updated Dynamic Brake Resistors – PowerFlex 4	11
Updated Dynamic Brake Resistors – PowerFlex 40	12
Added 140MT motor protectors and 100-E contactors to Drive Ratings – PowerFlex 4	18
Updated footnote for Drive Ratings – PowerFlex 4	18
Added 140MT motor protectors and 100-E contactors to Drive Ratings – PowerFlex 40	19
Updated footnote for Drive Ratings – PowerFlex 40	20
Updated Technical Specifications	20
Updated Additional Resources	32

Rockwell Automation recognizes that some of the terms that are currently used in our industry and in this publication are not in alignment with the movement toward inclusive language in technology. We are proactively collaborating with industry peers to find alternatives to such terms and making changes to our products and content. Please excuse the use of such terms in our content while we implement these changes.

Product Selection

Drive Ratings			PowerFlex 4			IP20 Flange Mount ⁽¹⁾	PowerFlex 40			IP66, UL Type 4X Panel Mount	IP20 Flange Mount ⁽¹⁾
Input Voltage	kW	HP	Output Current	Catalog Number	Frame Size	Catalog Number	Output Current	Catalog Number	Frame Size	Catalog Number	Catalog Number
120V 50/60 Hz 1-phase No Filter	0.2	0.25	1.5 A	22A-V1P5N104	A	22A-V1P5F104	—	—	—	—	—
	0.4	0.5	2.3 A	22A-V2P3N104	A	22A-V2P3F104	2.3 A	22B-V2P3N104	B	22B-V2P3C104	22B-V2P3F104
	0.75	1.0	4.5 A	22A-V4P5N104	B	22A-V4P5F104	5.0 A	22B-V5P0N104	B	22B-V5P0C104	22B-V5P0F104
	1.1	1.5	6.0 A	22A-V6P0N104	B	22A-V6P0F104	6.0 A	22B-V6P0N104	B	22B-V6P0C104	22B-V6P0F104
240V 50/60 Hz 1-phase NO BRAKE No Filter	0.2	0.25	1.4 A	22A-A1P4N103	A	—	—	—	—	—	—
	0.4	0.5	2.1 A	22A-A2P1N103	A	—	—	—	—	—	—
	0.75	1.0	3.6 A	22A-A3P6N103	A	—	—	—	—	—	—
	1.5	2.0	6.8 A	22A-A6P8N103	B	—	—	—	—	—	—
	2.2	3.0	9.6 A	22A-A9P6N103	B	—	—	—	—	—	—
240V 50/60 Hz 1-phase NO BRAKE With Integral "S Type" EMC Filter ⁽²⁾	0.2	0.25	1.4 A	22A-A1P4N113	A	—	—	—	—	—	—
	0.4	0.5	2.1 A	22A-A2P1N113	A	—	—	—	—	—	—
	0.75	1.0	3.6 A	22A-A3P6N113	A	—	—	—	—	—	—
	1.5	2.0	6.8 A	22A-A6P8N113	B	—	—	—	—	—	—
	2.2	3.0	9.6 A	22A-A9P6N113	B	—	—	—	—	—	—
240V 50/60 Hz 1-phase With Integral "S Type" EMC Filter ⁽²⁾	0.2	0.25	1.5 A	22A-A1P5N114	A	—	—	—	—	—	—
	0.4	0.5	2.3 A	22A-A2P3N114	A	—	2.3 A	22B-A2P3N114	B	—	—
	0.75	1.0	4.5 A	22A-A4P5N114	A	—	5.0 A	22B-A5P0N114	B	—	—
	1.5	2.0	8.0 A	22A-A8P0N114	B	—	8.0 A	22B-A8P0N114	B	—	—
	2.2	3.0	—	—	—	—	12.0 A	22B-A012N114	C	—	—
240V 50/60 Hz 1-phase No Filter	0.2	0.25	1.5 A	22A-A1P5N104	A	22A-A1P5F104	—	—	—	—	—
	0.4	0.5	2.3 A	22A-A2P3N104	A	22A-A2P3F104	2.3 A	22B-A2P3N104	B	22B-A2P3C104	22B-A2P3F104
	0.75	1.0	4.5 A	22A-A4P5N104	A	22A-A4P5F104	5.0 A	22B-A5P0N104	B	22B-A5P0C104	22B-A5P0F104
	1.5	2.0	8.0 A	22A-A8P0N104	B	22A-A8P0F104	8.0 A	22B-A8P0N104	B	22B-A8P0C104	22B-A8P0F104
	2.2	3.0	—	—	—	—	12.0 A	22B-A012N104	C	—	22B-A012F104
240V 50/60 Hz 3-phase No Filter	0.2	0.25	1.5 A	22A-B1P5N104	A	22A-B1P5F104	—	—	—	—	—
	0.4	0.5	2.3 A	22A-B2P3N104	A	22A-B2P3F104	2.3 A	22B-B2P3N104	B	22B-B2P3C104	22B-B2P3F104
	0.75	1.0	4.5 A	22A-B4P5N104	A	22A-B4P5F104	5.0 A	22B-B5P0N104	B	22B-B5P0C104	22B-B5P0F104
	1.5	2.0	8.0 A	22A-B8P0N104	A	22A-B8P0F104	8.0 A	22B-B8P0N104	B	22B-B8P0C104	22B-B8P0F104
	2.2	3.0	12.0 A	22A-B012N104	B	22A-B012F104	12.0 A	22B-B012N104	B	22B-B012C104	22B-B012F104
	3.7	5.0	17.5 A	22A-B017N104	B	22A-B017F104	17.5 A	22B-B017N104	B	22B-B017C104	22B-B017F104
	5.5	7.5	—	—	—	—	24.0 A	22B-B024N104	C	—	22B-B024F104
	7.5	10.0	—	—	—	—	33.0 A	22B-B033N104	C	—	22B-B033F104
480V 50/60 Hz 3-phase No Filter	0.4	0.5	1.4 A	22A-D1P4N104	A	22A-D1P4F104	1.4 A	22B-D1P4N104	B	22B-D1P4C104	22B-D1P4F104
	0.75	1.0	2.3 A	22A-D2P3N104	A	22A-D2P3F104	2.3 A	22B-D2P3N104	B	22B-D2P3C104	22B-D2P3F104
	1.5	2.0	4.0 A	22A-D4P0N104	A	22A-D4P0F104	4.0 A	22B-D4P0N104	B	22B-D4P0C104	22B-D4P0F104
	2.2	3.0	6.0 A	22A-D6P0N104	B	22A-D6P0F104	6.0 A	22B-D6P0N104	B	22B-D6P0C104	22B-D6P0F104
	3.7	5.0	8.7 A	22A-D8P7N104	B	22A-D8P7F104	—	—	—	—	—
	4.0	5.0	—	—	—	—	10.5 A	22B-D010N104	B	22B-D010C104	22B-D010F104
	5.5	7.5	—	—	—	—	12.0 A	22B-D012N104	C	—	22B-D012F104
	7.5	10.0	—	—	—	—	17.0 A	22B-D017N104	C	—	22B-D017F104
	11.0	15.0	—	—	—	—	24.0 A	22B-D024N104	C	—	22B-D024F104 ⁽³⁾
600V 50/60 Hz 3-phase No Filter	0.75	1.0	—	—	—	—	1.7 A	22B-E1P7N104	B	22B-E1P7C104	22B-E1P7F104
	1.5	2.0	—	—	—	—	3.0 A	22B-E3P0N104	B	22B-E3P0C104	22B-E3P0F104
	2.2	3.0	—	—	—	—	4.2 A	22B-E4P2N104	B	22B-E4P2C104	22B-E4P2F104
	4.0	5.0	—	—	—	—	6.6 A	22B-E6P6N104	B	22B-E6P6C104	22B-E6P6F104
	5.5	7.5	—	—	—	—	9.9 A	22B-E9P9N104	C	—	22B-E9P9F104
	7.5	10.0	—	—	—	—	12.0 A	22B-E012N104	C	—	22B-E012F104
	11.0	15.0	—	—	—	—	19.0 A	22B-E019N104	C	—	22B-E019F104

(1) Meets IP40/54/65 (NEMA 1/12/4/4X) when installed in an enclosure of like rating.

(2) This filter is suitable for use with a cable length of at least 10 meters (33 feet) for Class A and 1 meter for Class B environments.

(3) Requires use of an external DC Bus Inductor or AC Line Reactor.

The highlighted cells apply to PowerFlex 40 drives only.

- (3) 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, corner ground, or high-resistance ground systems.
- (4) When using a Manual Self-protected (Type E) Combination Motor Controller, the drive must be installed in a ventilated or non-ventilated enclosure with the minimum volume that is specified in this column. Application-specific thermal considerations may require a larger enclosure.
- (5) 200...240V AC — 1-phase drives are also available with an integral EMC filter. Catalog suffix changes from N104 to N114 or N103 to N113.

Drive Ratings – PowerFlex 40

Catalog Number	Output Ratings		Input Ratings			Branch Circuit Protection				Power Dissipation	
	kW (HP)	Amps	Voltage Range	kVA	Amps	Fuses ⁽¹⁾	140M/140MT Motor Protectors (2)(3)	Contactors	Min Enclosure Volume ⁽⁴⁾ (in. ³)	Internal	Total
100...120V AC (±10%) — 1-phase Input, 0...230V 3-phase Output											
22B-V2P3N104	0.4 (0.5)	2.3	90...132	1.15	9.0	15	140M-C2E-C16 140MT-C3E-C16	100-C12 100-E12	1655	9	30
22B-V5P0N104	0.75 (1.0)	5.0	90...132	2.45	20.3	35	140M-D8E-C20 140MT-D9E-C20	100-C23 100-E26	1655	12	55
22B-V6P0N104	1.1 (1.5)	6.0	90...132	3.0	24.0	40	140M-F8E-C32	100-C37 100-E38	1655	12	70
200...240V AC (±10%) — 1-phase Input, 0...230V 3-phase Output ⁽⁵⁾											
22B-A2P3N104	0.4 (0.5)	2.3	180...264	1.15	6.0	10	140M-C2E-B63 140MT-C3E-B63	100-C09 100-E09	1655	9	30
22B-A5P0N104	0.75 (1.0)	5.0	180...264	2.45	12.0	20	140M-C2E-C16 140MT-C3E-C16	100-C12 100-E12	1655	12	55
22B-A8P0N104	1.5 (2.0)	8.0	180...264	4.0	18.0	30	140M-D8E-C20 140MT-D9E-C20	100-C23 100-E26	1655	16	80
22B-A012N104	2.2 (3.0)	12.0	180...264	5.5	25.0	40	140M-F8E-C32	100-C37 100-E38	2069	11	110
200...240V AC (±10%) — 3-phase Input, 0...230V 3-phase Output											
22B-B2P3N104	0.4 (0.5)	2.3	180...264	1.15	2.5	6	140M-C2E-B40 140MT-C3E-B40	100-C09 100-E09	1655	9	30
22B-B5P0N104	0.75 (1.0)	5.0	180...264	2.45	5.7	10	140M-C2E-C10 140MT-C3E-C10	100-C09 100-E09	1655	12	55
22B-B8P0N104	1.5 (2.0)	8.0	180...264	4.0	9.5	15	140M-C2E-C16 140MT-C3E-C16	100-C12 100-E12	1655	16	80
22B-B012N104	2.2 (3.0)	12.0	180...264	5.5	15.5	25	140M-C2E-C16 140MT-C3E-C16	100-C23 100-E26	1655	16	115
22B-B017N104	3.7 (5.0)	17.5	180...264	8.6	21.0	35	140M-F8E-C25	100-C23 100-E26	1655	16	165
22B-B024N104	5.5 (7.5)	24.0	180...264	11.8	26.1	40	140M-F8E-C32	100-C37 100-E38	2069	28	225
22B-B033N104	7.5 (10.0)	33.0	180...264	16.3	34.6	60	140M-F8E-C45	100-C60 100-E65	2069	28	290
380...480V AC (±10%) — 3-phase Input, 0...460V 3-phase Output											
22B-D1P4N104	0.4 (0.5)	1.4	342...528	1.4	1.8	3	140M-C2E-B25 140MT-C3E-B25	100-C09 100-E09	1655	15	30
22B-D2P3N104	0.75 (1.0)	2.3	342...528	2.3	3.2	6	140M-C2E-B40 140MT-C3E-B40	100-C09 100-E09	1655	13	40
22B-D4P0N104	1.5 (2.0)	4.0	342...528	4.0	5.7	10	140M-C2E-B63 140MT-C3E-B63	100-C09 100-E09	1655	13	60
22B-D6P0N104	2.2 (3.0)	6.0	342...528	5.9	7.5	15	140M-C2E-C10 140MT-C3E-C10	100-C09 100-E09	1655	17	90
22B-D010N104	4.0 (5.0)	10.5	342...528	10.3	13.0	20	140M-C2E-C16 140MT-C3E-C16	100-C23 100-E26	1655	14	150
22B-D012N104	5.5 (7.5)	12.0	342...528	11.8	14.2	25	140M-D8E-C20 140MT-D9E-C20	100-C23 100-E26	2069	23	160
22B-D017N104	7.5 (10.0)	17.0	342...528	16.8	18.4	30	140M-D8E-C20 140MT-D9E-C20	100-C23 100-E26	2069	24	200
22B-D024N104	11.0 (15.0)	24.0	342...528	23.4	26.0	50	140M-F8E-C32	100-C43 100-E40	2069	25	285
460...600V AC (±10%) — 3-phase Input, 0...575V 3-phase Output											
22B-E1P7N104	0.75 (1.0)	1.7	414...660	2.1	2.3	6	140M-C2E-B25 140MT-C3E-B25	100-C09 100-E09	1655	13	40