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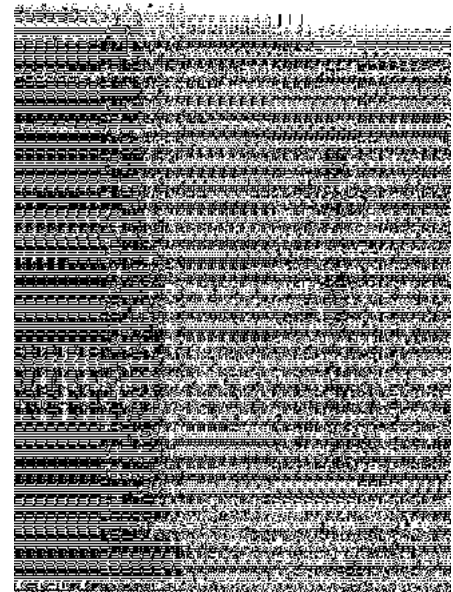
PowerFlex® 40P

ADJUSTABLE FREQUENCY AC DRIVES



Product Description

As part of the industry leading PowerFlex® family of AC drives, the PowerFlex 40P addresses your needs for closed loop control and category 3 Safe-off in a compact and cost effective design. The PowerFlex 40P AC drive is based on the popular PowerFlex® 40 AC drive platform and shares common options and accessories. Available in power ratings from 0.4 to 11 kW (0.5 to 15 HP) and in voltage classes of 240, 480 and 600 volts, PowerFlex 40P AC drives are designed to meet global OEM and end-user demands for flexibility, space savings and ease of use. PowerFlex 40P AC drives are cost-effective solutions for speed control of applications such as diverters, smart conveyors, packaging machines, palletizers, drafting machines, ring spinning machines and synthetic fiber spinning machines.



PowerFlex 40P AC Drive Features

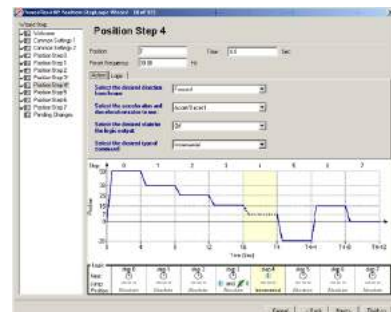
Flexible Packaging and Mounting Options

- Versatile packaging options allow for **panel mount NEMA 1/IP30** as well as **NEMA 4/IP66** (with like enclosure) using the plate/flange drives.
- **Plate drives** also allow for a reduction in overall enclosure size based on a 75% reduction in enclosed Watts.
- Installation can be a virtual snap using the **DIN rail mounting** feature on B frame drives. Panel mounting is also available, providing added flexibility.
- An optional **IP30 (NEMA 1) conduit box** is easily adapted to the standard IP20 (NEMA Type Open) product, providing increased environmental ratings.
- **Zero Stacking™** is allowable for ambient temperatures up to 40°C, saving valuable panel space. 50°C ambient temperatures are permitted with minimal spacing between drives.
- **External filters** are available for all PowerFlex 40P drive ratings to meet EN55011, Class A and B EMC requirements.



Start Up, Programming and Operation

- PowerFlex 40P drive programming is achieved by the use of an **external HIM** or via the resident DSI connection and the **PC programming tool**.
 - DriveTools™ SP
 - DriveExplorer™
 - Pocket DriveExplorer™
- **StepLogic™ wizards** available for DriveTools SP and DriveExplorer (Lite or Full) assist in setup of position or velocity StepLogic programming
- An **integral display and reset button** allows user to change display parameters and reset the drive if a fault occurs.
- **4 digit display** with 10 additional LED indicators provides an intuitive display of drive status and information.
- Integral **RS485 communications** can be used for programming from a PC. It can also be used in a multi-drop network configuration. A serial converter module provides connectivity to any controller with a DF1 port.
- The 10 most common application parameters are contained in the **Basic Program Group**. Common parameters shared with PowerFlex 40 are in the **Advanced Program Group**, and additional position control and fibers parameters located in **Enhanced Program Group**.
- A **NEMA Type 4X remote** and **NEMA Type 1 hand-held LCD keypad** provide additional programming and control flexibility, both featuring the popular CopyCat function.



StepLogic wizards available for ease of position or velocity StepLogic programming using drive software tools.



Catalog Number Explanation

1-3	4	5	6-8	9	10	11	12	13-14
22D	—	B	2P3	N	1	0	4	AA
<i>a</i>		<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>

<i>a</i>		
Drive		
Code	Type	
22D	PowerFlex 40P	

<i>b</i>		
Voltage Rating		
Code	Voltage	Ph.
B	240V ac	3
D	480V ac	3
E	600V ac	3

<i>c1</i>		
Rating		
200-240V Three-Phase Input		
Code	Amps	kW (Hp)
2P3	2.3	0.4 (0.5)
5P0	5.0	0.75 (1.0)
8P0	8.0	1.5 (2.0)
012	12	2.2 (3.0)
017	17.5	3.7 (5.0)
024	24	5.5 (7.5)
033	33	7.5 (10)

<i>c2</i>		
Rating		
380-480V Three-Phase Input		
Code	Amps	kW (Hp)
1P4	1.4	0.4 (0.5)
2P3	2.3	0.75 (1.0)
4P0	4.0	1.5 (2.0)
6P0	6.0	2.2 (3.0)
010	10.5	4.0 (5.0)
012	12	5.5 (7.5)
017	17	7.5 (10)
024	24	11 (15)

<i>c3</i>		
Rating		
460-600V Three-Phase Input		
Code	Amps	kW (Hp)
1P7	1.7	0.75 (1.0)
3P0	3.0	1.5 (2.0)
4P2	4.2	2.2 (3.0)
6P6	6.6	4.0 (5.0)
9P9	9.9	5.5 (7.5)
012	12	7.5 (10)
019	19	11 (15)

<i>d</i>	
Enclosure	
Code	Enclosure
N	Panel Mount - IP 20 (NEMA Type Open)
F	Flange Mount - IP 20 (NEMA Type Open)
H	Plate Drive - IP 20 (NEMA Type Open)

<i>e</i>	
HIM	
Code	HIM Version
1	Display/Fault Reset Only
2	Display/Fault Reset Only (Plate Drive)

<i>f</i>	
Emission Class	
Code	EMC Filter
0	No Filter

<i>g</i>	
Version	
Code	Version
4	Standard

<i>h</i>	
Optional	
Code	Purpose
AA through ZZ	Reserved for custom firmware

PowerFlex 40P Standard Drives

240V ac, Three-Phase Drives (50/60 Hz, No Filter)

Drive Ratings				Cat. No.		
kW	HP	Output Current (A)	Frame Size	IP20/NEMA Type Open	IP20 Plate Drive	IP20 Flange Mount ①
0.4	0.5	2.3	B	22D-B2P3N104	22D-B2P3H204	22D-B2P3F104
0.75	1.0	5.0	B	22D-B5P0N104	22D-B5P0H204	22D-B5P0F104
1.5	2.0	9.0	B	22D-B8P0N104	22D-B8P0H204	22D-B8P0F104
2.2	3.0	12	B	22D-B012N104	22D-B012H204	22D-B012F104
3.7	5.0	17.5	B	22D-B017N104	22D-B017H204	22D-B017F104
5.5	7.5	24	C	22D-B024N104	22D-B024H204	22D-B024F104
7.5	10	33	C	22D-B033N104	22D-B033H204	22D-B033F104

480V ac, Three-Phase Drives (50/60 Hz, No Filter)

Drive Ratings				Cat. No.		
kW	HP	Output Current (A)	Frame Size	IP20/NEMA Type Open	IP20 Plate Drive	IP20 Flange Mount ①
0.4	0.5	1.4	B	22D-D1P4N104	22D-D1P4H204	22D-D1P4F104
0.75	1.0	2.3	B	22D-D2P3N104	22D-D2P3H204	22D-D2P3F104
1.5	2.0	4.0	B	22D-D4P0N104	22D-D4P0H204	22D-D4P0F104
2.2	3.0	6.0	B	22D-D6P0N104	22D-D6P0H204	22D-D6P0F104
4.0	5.0	10.5	B	22D-D010N104	22D-D010H204	22D-D010F104
5.5	7.5	12	C	22D-D012N104	22D-D012H204	22D-D012F104
7.5	10	17	C	22D-D017N104	22D-D017H204	22D-D017F104
11	15	24	C	22D-D024N104	22D-D024H204	22D-D024F104

600V ac, Three-Phase Drives (50/60 Hz, No Filter)

Drive Ratings				Cat. No.		
kW	HP	Output Current (A)	Frame Size	IP20/NEMA Type Open	IP20 Plate Drive	IP20 Flange Mount ①
0.75	1.0	1.7	B	22D-E1P7N104	22D-E1P7H204	22D-E1P7F104
1.5	2.0	3.0	B	22D-E3P0N104	22D-E3P0H204	22D-E3P0F104
2.2	3.0	4.2	B	22D-E4P2N104	22D-E4P2H204	22D-E4P2F104
4.0	5.0	6.6	B	22D-E6P6N104	22D-E6P6H204	22D-E6P6F104
5.5	7.5	9.9	c	22D-E9P9N104	22D-E9P9H204	22D-E9P9F104
7.5	10	12	C	22D-E012N104	22D-E012H204	22D-E012F104
11	15	19	C	22D-E019N104	22D-E019H204	22D-E019F104

① Meets IP 40/54/65 (NEMA 1/12/4/4X) when installed in an enclosure of like rating.

Specifications

Drive Ratings

Catalog Number ^❶	Output Ratings		Input Ratings			Branch Circuit Protection				Estimated Power Dissipation
	kW (HP)	Amps	Voltage Range	kVA	Amps	Fuses	140M Motor Protectors ^❷ ❸	Contactors	Min. Enclosure Volume ^❹ (in. ³)	IP20 Open Watts
200 - 240V AC – 3-Phase Input, 0 - 230V 3-Phase Output										
22D-B2P3	0.4 (0.5)	2.3	180-264	1.15	2.5	6	140M-C2E-B40	100-C07	1655	40
22D-B5P0	0.75 (1.0)	5.0	180-264	2.45	5.7	10	140M-C2E-C10	100-C09	1655	60
22D-B8P0	1.5 (2.0)	8.0	180-264	4.0	9.5	15	140M-C2E-C16	100-C12	1655	85
22D-B012	2.2 (3.0)	12.0	180-264	5.5	15.5	25	140M-C2E-C16	100-C23	1655	125
22D-B017	3.7 (5.0)	17.5	180-264	8.6	21.0	30	140M-F8E-C25	100-C23	1655	180
22D-B024	5.5 (7.5)	24.0	180-264	11.8	26.1	40	140M-F8E-C32	100-C37	2069	235
22D-B033	7.5 (10)	33.0	180-264	16.3	34.6	60	140M-G8E-C45	100-C60	2069	305
380 - 480V AC – 3-Phase Input, 0 - 460V 3-Phase Output										
22D-D1P4	0.4 (0.5)	1.4	342-528	1.4	1.8	3	140M-C2E-B25	100-C07	1655	35
22D-D2P3	0.75 (1.0)	2.3	342-528	2.3	3.2	6	140M-C2E-B40	100-C07	1655	50
22D-D4P0	1.5 (2.0)	4.0	342-528	4.0	5.7	10	140M-C2E-B63	100-C09	1655	70
22D-D6P0	2.2 (3.0)	6.0	342-528	5.9	7.5	15	140M-C2E-C10	100-C09	1655	100
22D-D010	4.0 (5.0)	10.5	342-528	10.3	13.0	20	140M-C2E-C16	100-C23	1655	160
22D-D012	5.5 (7.5)	12.0	342-528	11.8	14.2	25	140M-D8E-C20	100-C23	2069	175
22D-D017	7.5 (10)	17.0	342-528	16.8	18.4	30	140M-D8E-C20	100-C23	2069	210
22D-D024	11 (15)	24.0	342-528	23.4	26.0	50	140M-F8E-C32	100-C43	2069	300
460 - 600V AC – 3-Phase Input, 0 - 575V 3-Phase Output										
22D-E1P7	0.75 (1.0)	1.7	414-660	2.1	2.3	6	140M-C2E-B25	100-C09	1655	50
22D-E3P0	1.5 (2.0)	3.0	414-660	3.65	3.8	6	140M-C2E-B40	100-C09	1655	70
22D-E4P2	2.2 (3.0)	4.2	414-660	5.2	5.3	10	140M-D8E-B63	100-C09	1655	100
22D-E6P6	4.0 (5.0)	6.6	414-660	8.1	8.3	15	140M-D8E-C10	100-C09	1655	160
22D-E9P9	5.5 (7.5)	9.9	414-660	12.1	11.2	20	140M-D8E-C16	100-C16	2069	175
22D-E012	7.5 (10)	12.2	414-660	14.9	13.7	25	140M-D8E-C16	100-C23	2069	210
22D-E019	11 (15)	19.0	414-660	23.1	24.1	40	140M-F8E-C25	100-C30	2069	300

❶ Ratings apply to all drive types; Panel Mount (N104), Flange Mount (F104), and Plate Drive (H204).

❷ The AIC ratings of the Bulletin 140M Motor Protector Circuit Breakers may vary. See [Bulletin 140M Motor Protection Circuit Breakers Application Ratings](#).

❸ 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.

❹ 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 specified in this column. Application specific thermal considerations may require a larger enclosure.