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.

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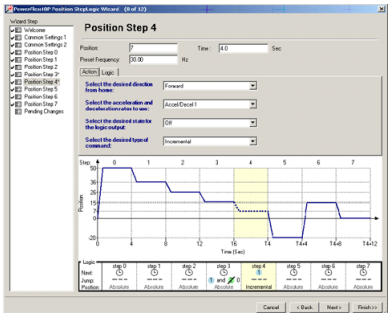
PowerFlex 40P AC Drive Features

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

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

a

Drive	
Code	Type
22D	PowerFlex 40P

b

Voltage Rating		
Code	Voltage	Ph.
B	240V ac	3
D	480V ac	3
E	600V ac	3

c1

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)

c2

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)

c3

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)

d

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)

e

HIM	
Code	HIM Version
1	Display/Fault Reset Only
2	Display/Fault Reset Only (Plate Drive)

f

Emission Class	
Code	EMC Filter
0	No Filter

g

Version	
Code	Version
4	Standard

h

Optional	
Code	Purpose
AA through ZZ	Reserved for custom firmware

User Installed Options

IP30/NEMA 1/UL Type 1 Conversion Kit

Description	Drive Frame	Catalog Number
IP30/NEMA 1/UL Type 1 Kit *Description:* Field installed kit. Converts drive to IP30/NEMA 1/UL Type 1 enclosure. Includes conduit box with mounting screws and plastic top panel.	B	22-JBAB
	C	22-JBAC
IP30/NEMA 1/UL Type 1 Kit with Communication Option *Description:* Field installed kit. Converts drive to IP30/NEMA 1/UL Type 1 enclosure. Includes communication option conduit box with mounting screws and plastic top panel.	B	22-JBCB
	C	22-JBCC

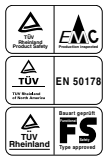
Human Interface Module Option Kits and Accessories

Description	Catalog Number
Remote Human Interface Module (HIM) – Panel Mount *Description:* LCD Display, Remote Panel Mount, Digital Speed Control, CopyCat capable, IP66 (NEMA Type 4X/12) indoor use only, Includes 2.0 meter cable. *Note:* The 22-HIM-C2S is smaller than the 22-HIM-C2 and cannot be used as a direct replacement.	22-HIM-C2S
Remote Human Interface Module (HIM) – Handheld *Description:* LCD Display, Remote Handheld, Digital Speed Control, Full Numeric Keypad, CopyCat capable, IP30 (NEMA Type 1), Includes 1.0 meter cable, Panel Mount with optional Bezel Kit.	22-HIM-A3
Remote Human Interface Module (HIM) – Wireless Handheld *Description:* Remote Handheld, Wireless Interface Module with *Bluetooth®* technology, IP30 (NEMA Type1), Panel Mount with optional bezel kit.	22-WIM-N1
Remote Human Interface Module (HIM) – Wireless Handheld *Description:* Remote Handheld, Wireless Interface Module with *Bluetooth* technology, IP66 (NEMA Type 4X/12) indoor use only.	22-WIM-N4S
Bezel Kit *Description:* Panel Mount for LCD Display, Remote Handheld unit, IP30 (NEMA Type 1). Includes a 22-RJ45CBL-C20 cable.	22-HIM-B1
DSI HIM Cable *Description:* DSI HIM to RJ45 cable. 1.0 Meter (3.3 Feet) 2.9 Meter (9.51 Feet)	 22-HIM-H10 22-HIM-H30

PC Programming Software

Item	Description	Catalog Number
DriveExecutive	"Windows" based software package that provides an intuitive means for monitoring or configuring Allen-Bradley drives and communications adapters online and offline. Compatibility: Windows 98, ME, NT, 4.0 (Service Pack 3 or later), 2000 and XP. ❶	9303-4DTE01ENE
DriveTools™ SP Suite - includes DriveExecutive, DriveObserver		9303-4DTS01ENE
DriveTools™ SP Suite Upgrade from DriveExecutive - includes DriveExecutive, DriveObserver		9303-4DTE2S01ENE
DriveExplorer™ Software	"Windows" based software package that provides an intuitive means for monitoring or configuring Allen-Bradley drives and communications adapters online and offline. Compatibility: Windows 98, ME, NT, 4.0 (Service Pack 3 or later), 2000 and XP. ❶❷❸	9306-4EXP02ENE
Pocket DriveExplorer™ Software	"Windows" based software package for monitoring and configuring Allen-Bradley drive and communication adapters.	9306-4PXP01ENE

❶ Setup Wizards are available for use with DriveTools SP and DriveExplorer (Lite/Full) only.
❷ See www.ab.com/drive/ for support devices.
❸ DriveExplorer Lite available for free, download at: http://www.ab.com/drives/driveexplorer/free_download.html.

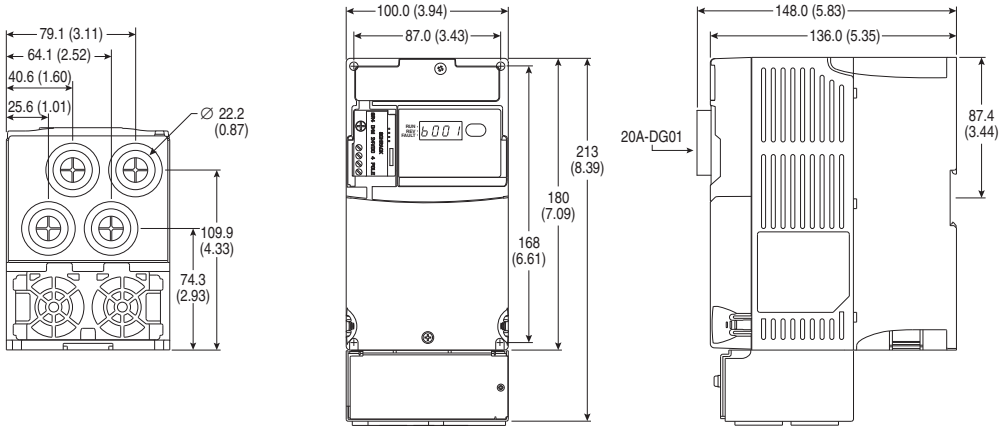
Category	Specification	
Agency Certification		Listed to UL508C and CAN/CSA-22.2
		Certified to AS/NZS, 1997 Group 1, Class A
		Marked for all applicable European Directives EMC Directive (89/336) EN 61800-3, EN 50081-1, EN 50082-2 Low Voltage Directive (73/23/EEC) EN 50178, EN 60204
		Certified to EN 954-1, Category 3. Meets Functional Safety (FS) when used with the DriveGuard Safe-Off Option (Series B).
	The drive is also designed to meet the appropriate portions of the following specifications: NFPA 70 - US National Electrical Code NEMA ICS 3.1 - Safety standards for Construction and Guide for Selection, Installation and Operation of Adjustable Speed Drive Systems. IEC 146 - International Electrical Code.	
Protection	Bus Overvoltage Trip 200-240V AC Input: 380-460V AC Input: 460-600V AC Input:	 405V DC bus (equivalent to 290V AC incoming line) 810V DC bus (equivalent to 575V AC incoming line) 1005V DC bus (equivalent to 711V AC incoming line)
	Bus Undervoltage Trip 200-240V AC Input: 380-480V AC Input: 460-600V AC Input P042 = 3 “High Voltage”: P042 = 2 “Low Voltage”:	 210V DC bus (equivalent to 150V AC incoming line) 390V DC bus (equivalent to 275V AC incoming line) 487V DC bus (equivalent to 344V AC incoming line) 390V DC bus (equivalent to 275V AC incoming line)
	Power Ride-Thru:	100 milliseconds
	Logic Control Ride-Thru:	0.5 seconds minimum, 2 seconds typical
	Electronic Motor Overload Protection:	Provides class 10 motor overload protection according to NEC article 430 and motor over-temperature protection according to NEC article 430.126 (A) (2). UL 508C File 29572.
	Overcurrent:	200% hardware limit, 300% instantaneous fault
	Ground Fault Trip:	Phase-to-ground on drive output
	Short Circuit Trip:	Phase-to-phase on drive output
Environment	Altitude:	1000 m (3300 ft) max. without derating. Above 1000 m (3300 ft) derate 3% for every 305 m (1000 ft).
	Maximum Surrounding Air Temperature without derating: IP20, Open Type: IP30, NEMA Type 1, UL Type 1: Flange and Plate Mount:	 –10 to 50° C (14 to 122° F) –10 to 40° C (14 to 104° F) Heatsink:–10 to 40° C (14 to 104° F) Drive:–10 to 50° C (14 to 122° F)
	Cooling Method Convection: Fan:	 0.4 kW (0.5 HP) drives and all Flange and Plate drives All other drive ratings
	Storage Temperature:	–40 to 85 degrees C (–40 to 185 degrees F)
	Atmosphere:	**Important:** Drive **must** **not** be installed in an area where the ambient atmosphere contains volatile or corrosive gas, vapors or dust. If the drive is not going to be installed for a period of time, it must be stored in an area where it will not be exposed to a corrosive atmosphere.
	Relative Humidity:	0 to 95% non-condensing
	Shock (operating):	15G peak for 11ms duration (±1.0 ms)
	Vibration (operating):	1G peak, 5 to 2000 Hz
Electrical	Voltage Tolerance:	200-240V ±10% 380-480V ±10% 460-600V ±10%
	Frequency Tolerance:	48-63 Hz
	Displacement Power Factor:	0.98 across entire speed range
	Maximum Short Circuit Rating:	100,000 Amps Symmetrical
	Actual Short Circuit Rating:	Determined by AIC Rating of installed fuse/circuit breaker
	Transistor Type:	Isolated Gate Bipolar (IGBT)

Approximate Dimensions

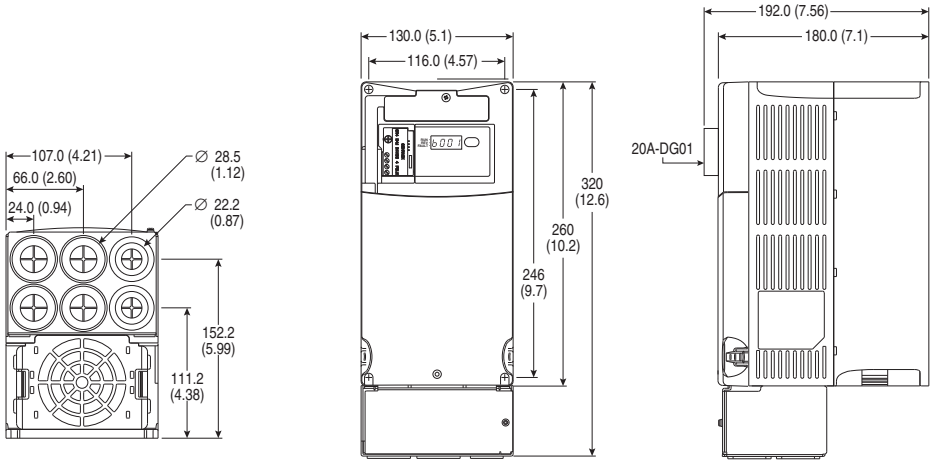
Ratings are in kW and (HP).

Frame	240V AC – 3-Phase		480V AC – 3-Phase		600V AC – 3-Phase	
B	0.4 (0.5) 0.75 (1.0) 1.5 (2.0)	2.2 (3.0) 3.7 (5.0)	0.4 (0.5) 0.75 (1.0) 1.5 (2.0)	2.2 (3.0) 4.0 (5.0)	0.75 (1.0) 1.5 (2.0)	2.2 (3.0) 4.0 (5.0)
C	11.0 (15.0) 15.0 (20.0)	18.5 (25.0) 22.0 (30.0)	5.5 (7.5) 7.5 (10.0)	11.0 (15.0)	5.5 (7.5) 7.5 (10.0)	11.0 (15.0)

IP 30/NEMA 1/ UL Type 1 Option Kit without Communication Option



Frame B
(Shown with IP30/NEMA 1/UL Type 1 conversion kit.)



Frame C
(Shown with IP30/NEMA 1/UL Type 1 conversion kit.)