



## PowerFlex® 40 Standard Packaged AC Drives



### Product Description

PowerFlex 40 Standard Packaged AC drives are ideal for OEM's and end-users with special installation needs. Designed to meet your customer demand for space savings, applications flexibility and reliability, the PowerFlex 40 Standard Packaged AC drive options have been pre-engineered to ensure superior reliability.

### Standard Features

- This package integrates the PowerFlex 40 Standard Drive as the base power/control component.
- Enclosure features include...
  - NEMA Type 4/12 and 4X (IP66) indoor and outdoor applications (1)
  - Heat out the back design reduces enclosure size
  - Viewing window-drive display and all indicators are visible.
  - Mounting feet-orientation is adjustable per customer requirements
- The drive can be removed from the front of the enclosure for ease of assembly or repair.
- Low cost, highly configurable I/O inputs and/or 0-10V/4-20mA outputs that are not used by program standard features and options are available for customer use.

(1) Supports indoor and outdoor applications other than direct sunlight.

### Program Options

- Communication Options
  - DeviceNet
  - EtherNet/IP
  - Profibus
- Power Disconnect Options
  - Drive Input Fused Disconnect Switch
    - 100kA short circuit withstand rating
  - Motor Circuit Protector
    - 65kA short circuit withstand rating
- Door Mounted Operator Devices
  - Hand/Off/Auto Selector Switch
  - Auto/Manual Selector Switch
  - Start and Stop Pushbuttons
  - Forward/Reverse Selector Switch
  - Local Control Off/Run Forward and Local/Remote Selector Switches
  - Local/Off/Remote Selector Switch with One Normally Open Interposing Relay-(Panel)
- Quick Disconnect
  - DeviceNet Quick Disconnect-Bottom or left side mounted
- I/O Options
  - DeviceNet I/O with Hand/Off auto selector switch and power disconnect auxiliary contact. (4 in / 2 out) I/O quick disconnect optional.
  - DeviceNet Point I/O with IB4 (4 in)



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### Specifications

Drive Ratings – PowerFlex 40 Standard Packaged Drives					
Catalog Number	kW (HP)	Input Ratings		Output Ratings	
		Voltage	Amps	Voltage	Amps
23B-D1P4	0.4 (0.5)	480	1.8	460	1.4
23B-D2P3	0.75 (1.0)	480	3.2	460	2.3
23B-D4P0	1.5 (2.0)	480	5.7	460	4.0
23B-D6P0	2.2 (3.0)	480	7.5	460	6.0
23B-D010	4.0 (5.0)	480	13.0	460	10.5
23B-D012	5.5 (7.5)	480	14.2	460	12.0
23B-D017	7.5 (10)	480	18.4	460	17.0
23B-D024	11 (15)	480	26.0	460	24.0

### Specifications for Standard Packaged Drive Products

<b>Input/Output Ratings</b> <i>Output Frequency:</i> 0-400 Hz (Programmable) <i>Efficiency:</i> 97.5% (Typical)	<b>Approvals</b> 
<b>Fuses and Power Disconnecting Means</b>	
<i>140M Motor Circuit Protector:</i> Provides branch circuit protection, 65 kA short circuit withstand	
<i>194R Fused Disconnect:</i> Provides branch circuit protection, 100 kA short circuit withstand, Class J fuses	
<b>Protective Features</b>	
<i>Over Voltage:</i> 480V AC Input – Trip occurs at 810V DC bus voltage (equivalent to 575V AC incoming line)	
<i>Under Voltage:</i> 480V AC Input – Trip occurs at 390V DC bus voltage (equivalent to 275V AC incoming line)	
<b>Environment</b>	
<i>Ambient Operating Temperature, NEMA 4/12, 4X (IP66):</i> -10 to 40 degrees C (14 to 104 degrees F) <sup>(1)</sup>	
<i>Cooling Method Fan:</i> All drive ratings	
<b>Control</b>	
<i>Carrier Frequency:</i> 2-4 kHz. Drive rating and heat calculations are based on 4 kHz.	

<sup>(1)</sup> The design of the PowerFlex 40 Standard Packaged Drive NEMA 4/12 and 4X packages support indoor and outdoor applications that are not in direct sunlight.

### Specifications for Standard PowerFlex 40 Drives

<b>Digital Control Inputs (Input Current = 6mA)</b>	<b>Analog Control Inputs</b>
SRC (Source) Mode: 18-24V = ON, 0-6V = OFF SNK (Sink) Mode: 0-6V = ON, 18-24V = OFF	<i>4-20mA Analog:</i> 250 ohm input impedance <i>0-10V DC Analog:</i> 100k ohm input impedance <i>External Pot:</i> 1-10k ohms, 2 Watt minimum
<b>Control Output</b>	
<i>Programmable Output (form C relay)</i> Resistive Rating: 3.0A at 30V DC, 3.0A at 125V AC, 3.0A at 240V AC Inductive Rating: 0.5A at 30V DC, 0.5A at 125V AC, 0.5A at 240V AC	
<i>Opto Outputs</i> 30V DC, 50 mA Non-inductive	<i>Analog Output (10-bit)</i> 0-10V, 1k ohm Min.,
<b>Fuses and Circuit Breakers</b>	



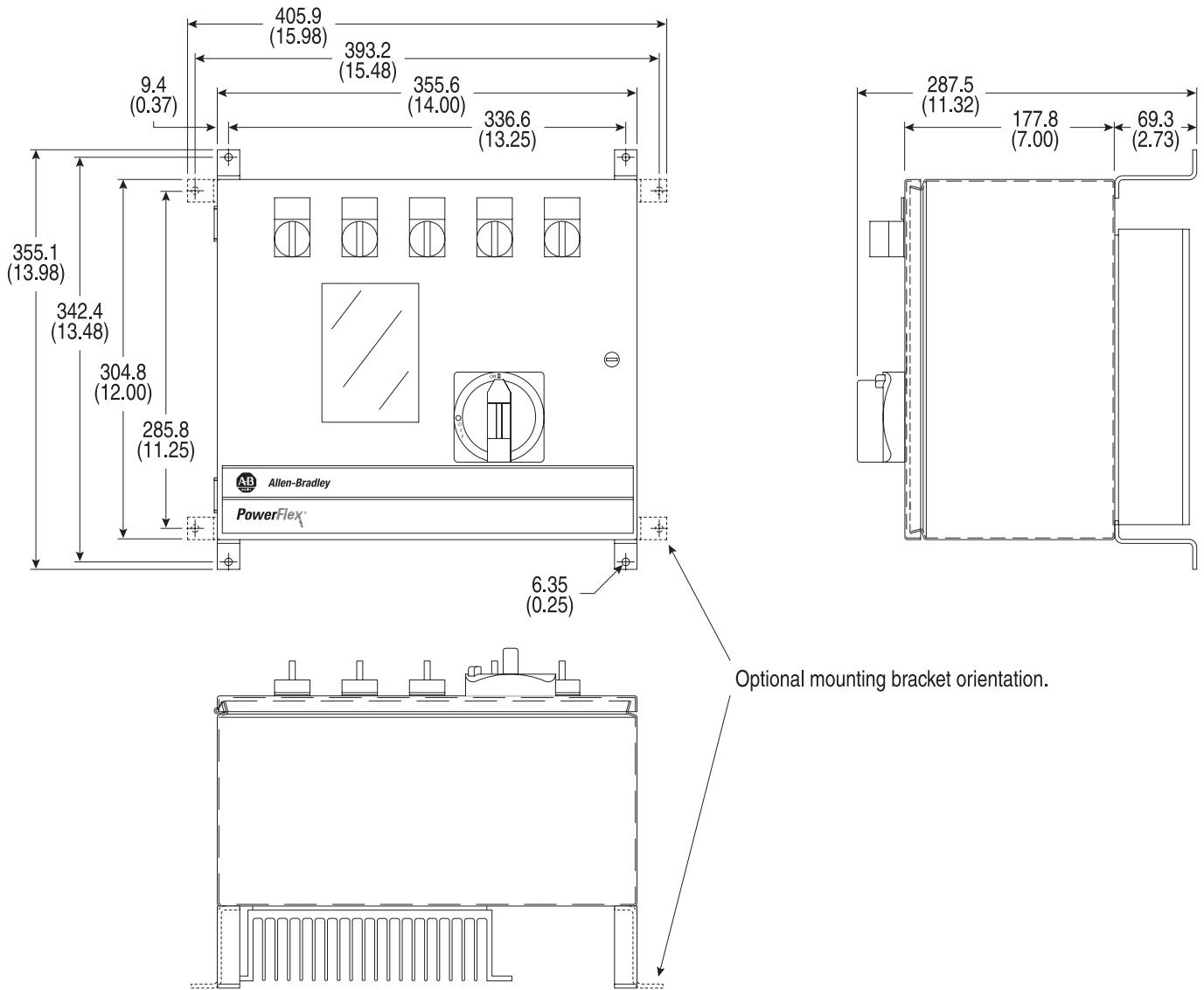
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<i>Recommended Fuse Type:</i> UL Class J, CC, T or Type BS88; 600V (550V) or equivalent.
<i>Recommended Circuit Breakers:</i> HMCP circuit breaker or equivalent.
<b>Protective Features</b>
<i>Motor Protection:</i> I <sup>2</sup> t overload protection – 150% for 60 Secs, 200% for 3 Secs (Provides Class 10 protection)
<i>Overcurrent:</i> 200% hardware limit, 300% instantaneous fault
<i>Control Ride Through:</i> Minimum ride through is 0.5 Secs – typical value 2 Secs
<i>Faultless Power Ride Through:</i> 100 milliseconds
<b>Dynamic Braking</b>
Internal brake IGBT included with all ratings
<b>Environment</b>
<i>Altitude:</i> 1000 m (3300 ft) max. without derating
<i>Storage Temperature:</i> –40 to 85 degrees C (–40 to 185 degrees F)
<i>Atmosphere:</i> <b>Important:</b> Drive <b>must not</b> 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.
<i>Relative Humidity:</i> 0 to 95% non-condensing
<i>Shock (operating):</i> 15G peak for 11ms duration (–/+ 1.0ms)
<i>Vibration (operating):</i> 1G peak, 5 to 2000 Hz
<b>Control</b>
<i>Frequency Accuracy</i> Digital Input: Within –/+ 0.05% of set output frequency. Analog Input: Within 0.5% of maximum output frequency. Analog Output: –/+ 2% of full scale, 10-bit resolution
<i>Speed Regulation – Open Loop with Slip Compensation:</i> –/+ 2% of base speed across a 40:1 speed range. 1% of base speed across a 60:1 speed range.
<i>Stop Modes:</i> Multiple programmable stop modes including – Ramp, Coast, DC-Brake, Ramp-to-Hold and S Curve.
<i>Accel/Decel:</i> Two independently programmable accel and decel times. Each time may be programmed from 0 – 600 seconds in 0.1 second increments.
<i>Intermittent Overload:</i> 150% Overload capability for up to 1 minute 200% overload capability for up to 3 seconds
<i>Electronic Motor Overload Protection:</i> Class 10 protection with speed sensitive response.



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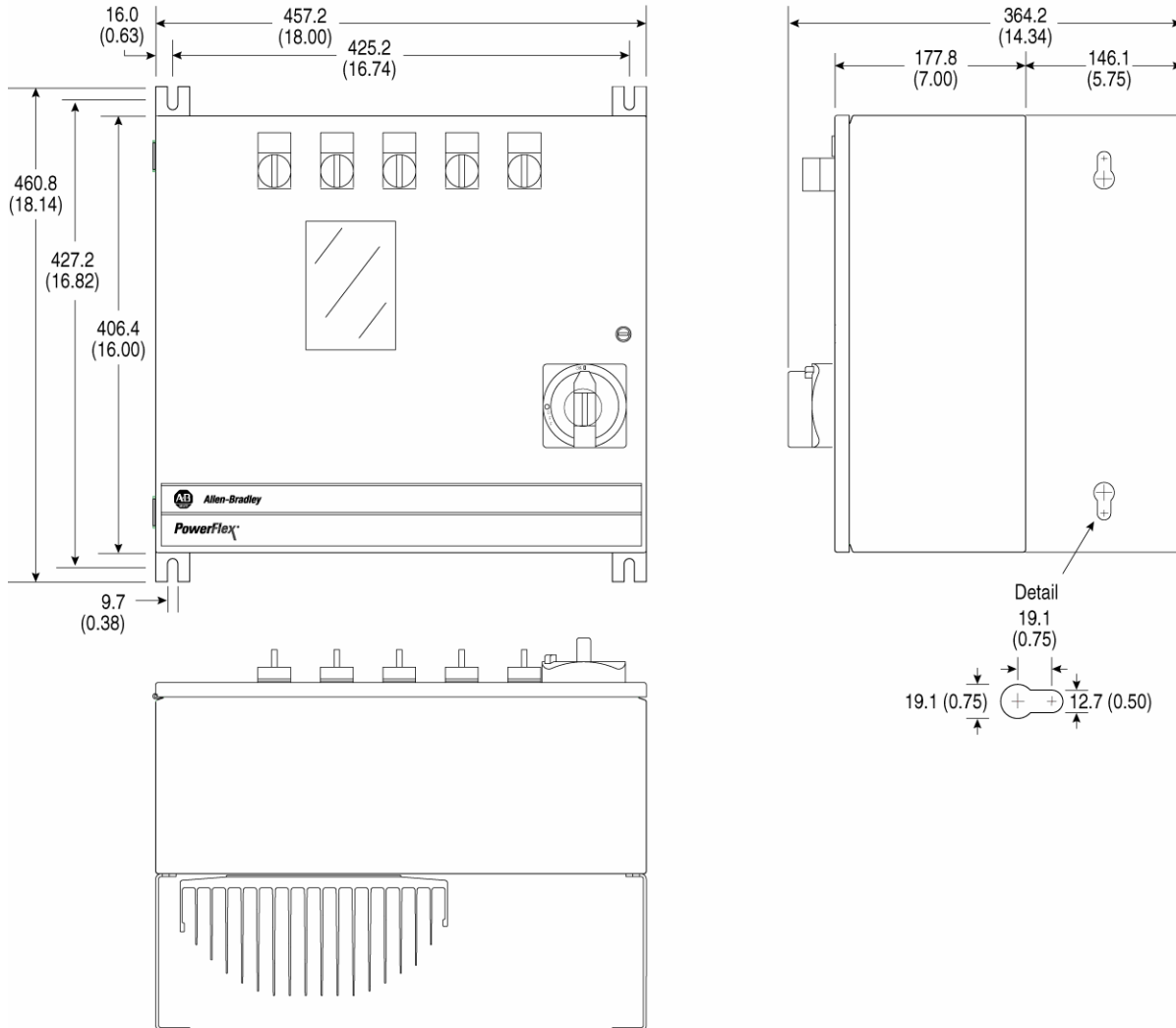
## Frame B Dimensions





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**Frame C**



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