

**1000/2000 Series  
POWERBLOK® MODULE**



**Features**

- A universal servo-drive integrated on a Power Hybrid Module.
- Designed for direct PWM Servo Control
- Designed for use with Deta Tau's PMAC controllers and other digital controllers.
- Focused on the demanding needs of design engineers in OEM and systems integration applications.
- All inputs are optically isolated.
- An optically isolated Gate Drive buffer array, translates the PWM commands into appropriately scaled IGBT drive signals to produce the PWM power waveforms required.
- High fidelity current feedback. This synchronized current feedback and control is one of the keys to the superior servo performance possible with an all digital PowerBlok® system.
- Choice of OEMs and system integrators requiring the flexibility to independently optimize the drive, heat sink and power supply, based on their specific needs.

**Command Interface Features**

- Optically isolated PWM commands
- Adjustable PWM frequency to 10 kHz
- Dead Time logic to prevent IGBT shoot-through
- Digital Serial A/D motor current feedback
- 7 - segment fault /status display

**Protection Features**

- Short circuit and ground fault
- Instantaneous over-current protection
- Over-voltage, under-voltage protection
- Base plate over temperature
- PWM frequency fault
- Serial fault status feedback

**Specifications**

- AC Line Input Frequency:  
47 to 66 Hz
- Line Impedance:  
1% to 5%
- Voltages:  
120 V, 120/240 V, 200/240 V, 380/480 V
- Capacitance Required:  
Standard and High Capacitance CapBlok® available
- Operating Temperature:  
0 - 70° C - module with sufficient heat sink  
0 - 40° C - (50° C, 1-3 Hp) - assembled drive configurations
- Storage Temperature:  
-20 - 100° C
- Max Substrate Temperature:  
90° C
- Relative Humidity:  
0 - 95% Non-condensing
- Altitude:  
1000m (3300 ft.) Max.  
De-rating 2 % for every 330 m (1000ft)
- Vibration:  
IEC68-2
- Efficiency:  
97% 6 - 21.5 kw Ratings  
95% 0.8 - 3.8 kw Ratings
- Power Ratings:  
0.8 to 2.1 kw at 120 Vac  
1 to 11.2 kw at 230 Vac  
1 to 21.5 kw at 460 Vac
- Fan Output, Max Allowable current:  
Series 1000, Start 600 mA, Run 300 mA  
Series 2000, Start 1.2 A, Run 800 mA
- Max allowable PWM:  
10 kHz, PWM frequencies over 5 kHz may require derating

## PowerBlok® Technical Specifications

### 1000 Series

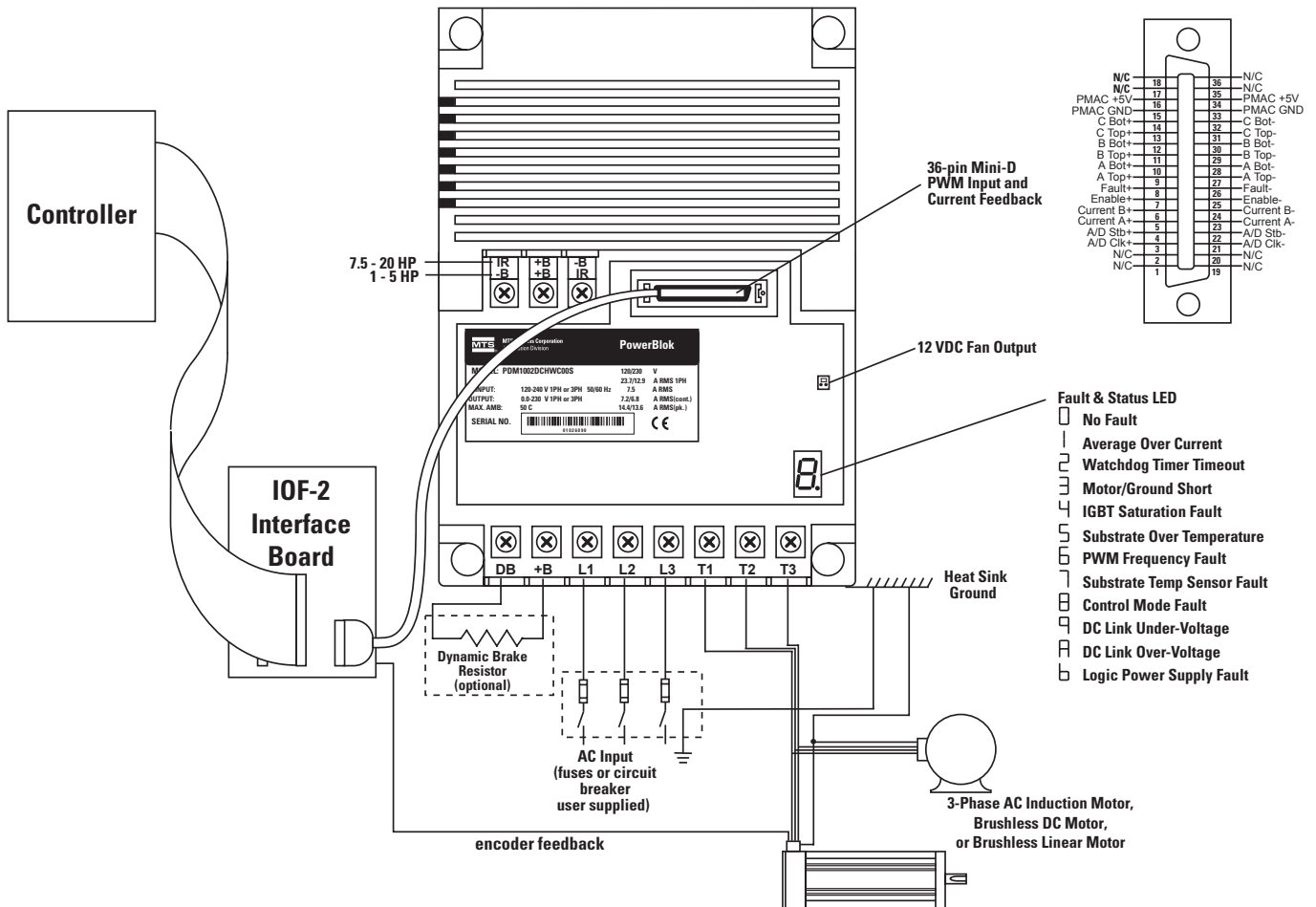
PowerBlok Module Type Number	1001C	1002C	1003C	1001D	1002D	1003D	1005D	1001E	1002E	1003E	1005E	
<b>PDM</b>												
AC Line Input Voltage	VAC 120V±10%			200/240V±10%				380/480V±10%				
Cont. Output Cur.(RMS)	Arms	4.0	7.2	10.4	3.6	6.8	9.6	15.2	1.8	3.4	4.8	7.6
Peak Output Cur.(RMS)	Arms	8.0	14.4	20.8	6.8	13.6	19.2	30.4	3.6	6.8	9.6	15.2

### 2000 Series

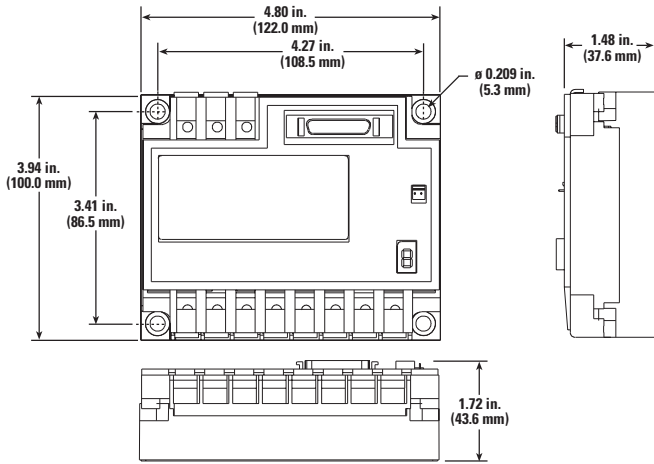
PowerBlok Module Type Number	2007D	2010D	2007E	2010E	2015E	2020E	
<b>PDM</b>							
AC Line Input Voltage	VAC 200/240V±10%			380/480V±10%			
Cont. Output Cur.(RMS)	Arms	22	28	11	14	21	27
Peak Output Cur.(RMS)	Arms	44	56	22	28	31.5	35

## Connection Diagram

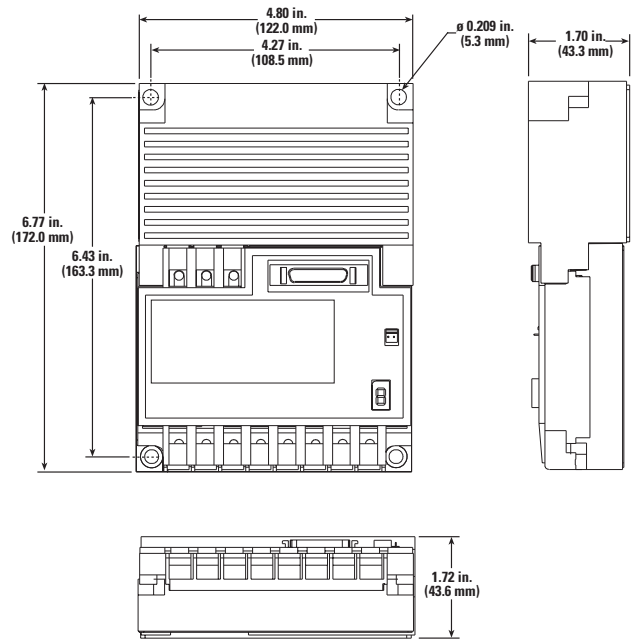
\*Showing only 1 axis



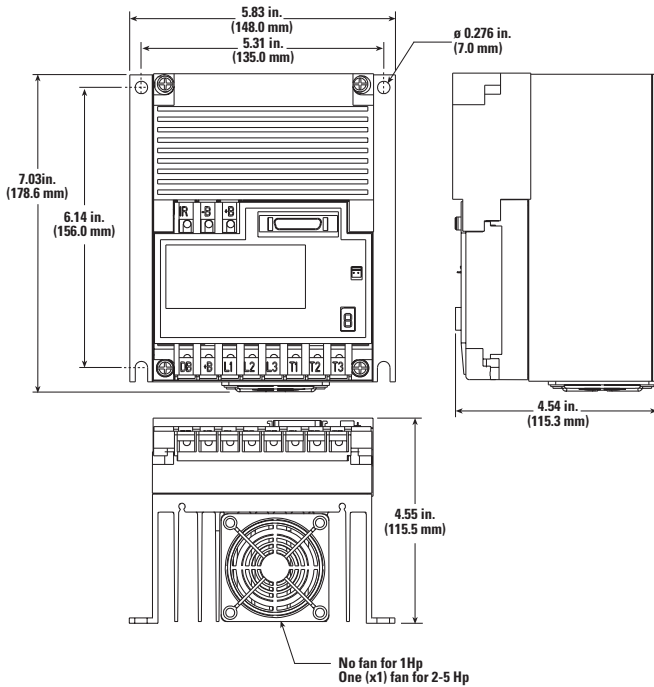
### Module Dimensions



### Module with CapBlok® Dimensions

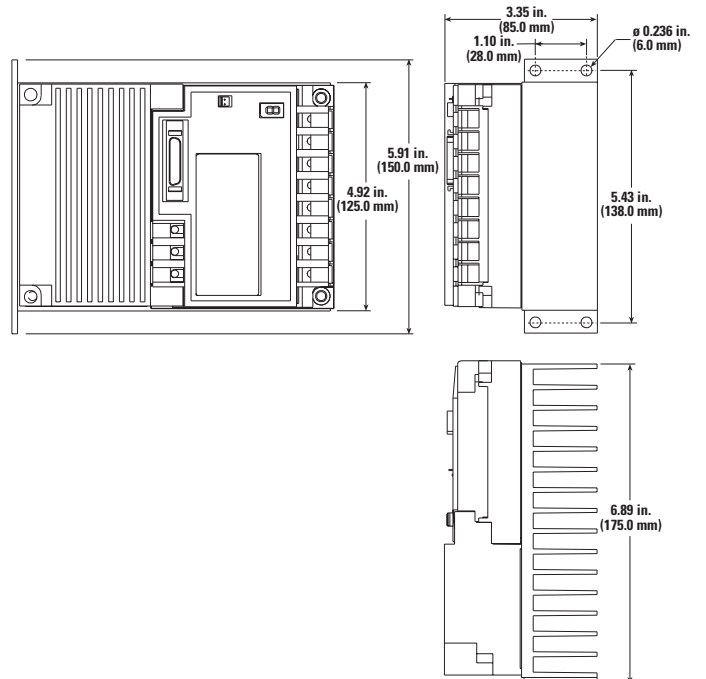


### Wall Mount Dimensions

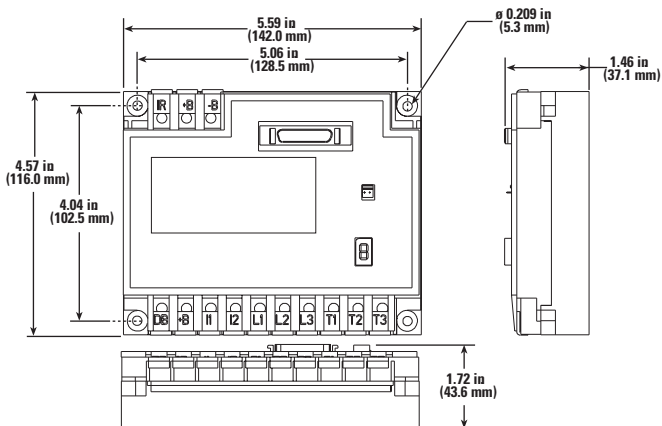


### Bookend Dimensions

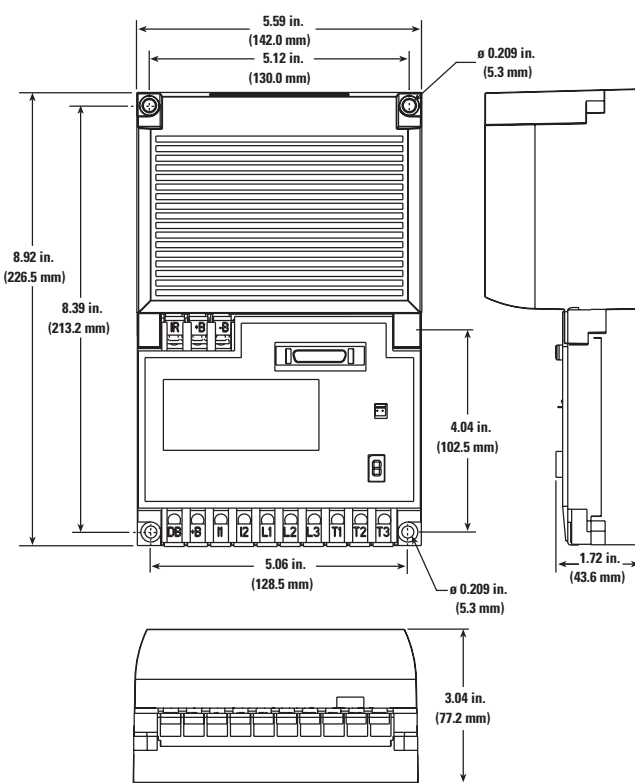
\* Available upon request



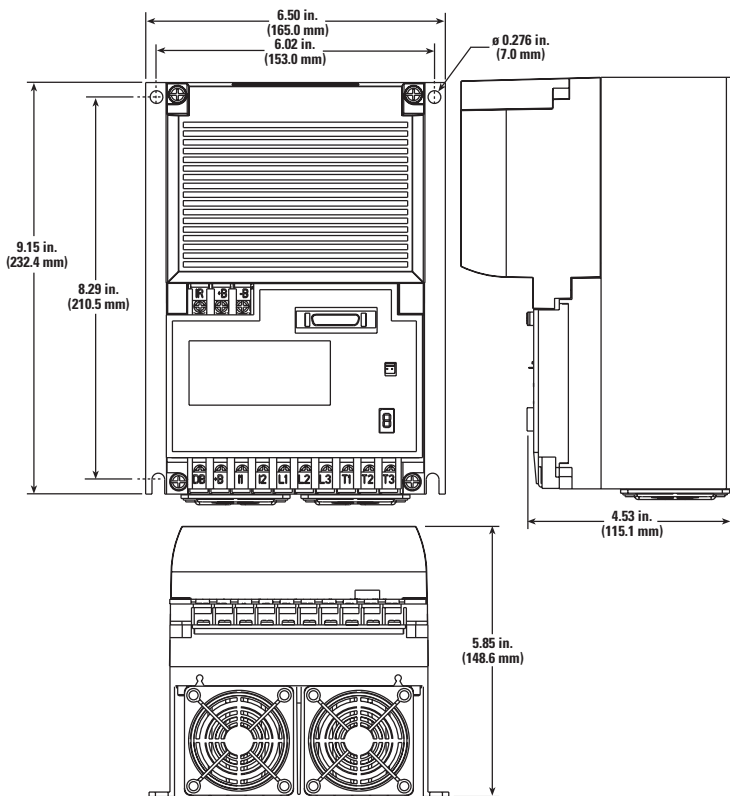
**Module Dimensions**



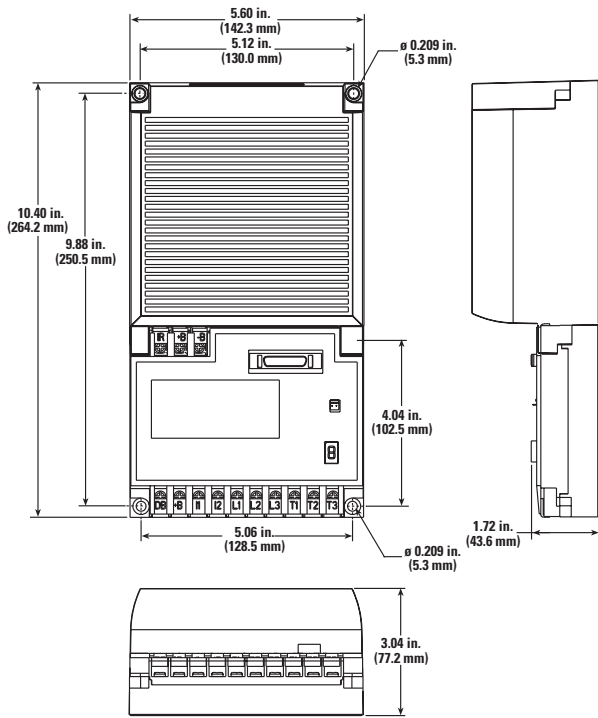
**Module (7.5-10 Hp) Dimensions with CapBlok®**



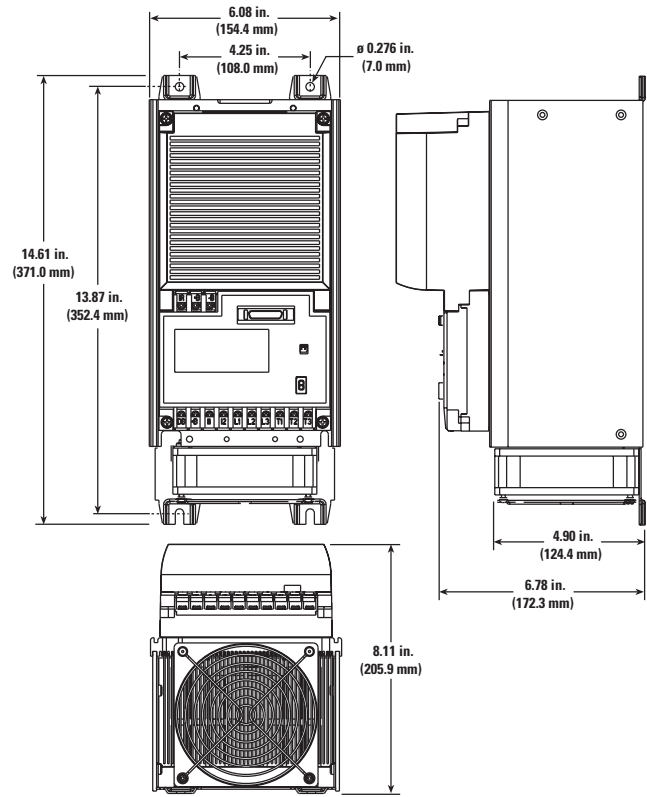
**Module (7.5-10 Hp) Dimensions with CapBlok® and Heat Sink**



**Module (15-20 Hp) Dimensions with CapBlok®**



**Module (15-20 Hp) Dimensions with CapBlok® and Heat Sink**



**PowerBlok Components & Accessories**

**120 VAC CapBlocs**

CS-1-C	0.5 Hp	CapBlok Module	120 VAC	2800 µF	50/60 Hz
CS-2-C	1.0 Hp	CapBlok Module	120 VAC	4200 µF	50/60 Hz
CS-3-C	1.5 Hp	CapBlok Module	120 VAC	4200 µF	50/60 Hz

**230 VAC CapBlocs**

CS-1-D	1 Hp	CapBlok Module	200-240 VAC	540 µF	50/60 Hz
CS-2-D	2 Hp	CapBlok Module	200-240 VAC	1080 µF	50/60 Hz
CS-3-D	3 Hp	CapBlok Module	200-240 VAC	1080 µF	50/60 Hz
CS-5-D	5 Hp	CapBlok Module	200-240 VAC	1620 µF	50/60 Hz
CS-7-D	7 Hp	CapBlok Module	200-240 VAC	3000 µF	50/60 Hz
CS-10-D	10 Hp	CapBlok Module	200-240 VAC	3000 µF	50/60 Hz

**460 VAC CapBlocs**

CS-1-E	1 Hp	CapBlok Module	380-480 VAC	135 µF	50/60 Hz
CS-2-E	2 Hp	CapBlok Module	380-480 VAC	270 µF	50/60 Hz
CS-3-E	3 Hp	CapBlok Module	380-480 VAC	270 µF	50/60 Hz
CS-5-E	5 Hp	CapBlok Module	380-480 VAC	405 µF	50/60 Hz
CS-7-E	7 Hp	CapBlok Module	380-480 VAC	750 µF	50/60 Hz
CS-10-E	10 Hp	CapBlok Module	380-480 VAC	750 µF	50/60 Hz
CS-15-E	15 Hp	CapBlok Module	380-480 VAC	1350 µF	50/60 Hz
CS-20-E	20 Hp	CapBlok Module	380-480 VAC	1350 µF	50/60 Hz

\*Mounting hardware is not included within the CapBlok ship kit, but may be ordered separately.

## Miscellaneous Accessories

Part Number	Description
<b>IOF-2</b>	<b>Digital Interface Board</b> - Panel mount, terminal connectors for encoder feedback.
<b>IOF-2-DR</b>	<b>Digital Interface Board</b> - Din rail mount, terminal connectors for encoder feedback.
<b>IOF-2-DB</b>	<b>Digital Interface Board</b> - Panel mount, 15 pin D connectors for encoder feedback.
<b>IOF-2-DR-DB</b>	<b>Digital Interface Board</b> - Din rail mount, 15 pin D connectors for encoder feedback.
<b>MK10</b>	<b>Mount Kit</b> - Contains the mounting screws and "Thermastrate" thermal mounting pads for 10 1000 Series Blok and CapBlok assemblies.
<b>MK20</b>	<b>Mount Kit</b> - Contains the mounting screws and "Thermastrate" thermal mounting pads for 10 2000 Series Blok and CapBlok assemblies.
<b>DBRXX-XXXX</b>	<b>Dynamic Brake Resistor</b> - Consult Dynamic Brake Resistor Data Sheet for standard available sizes. For non-standard ratings - consult factory.

## Ordering Chart

Example: PDM1005ECSWC00S

PDM	10	05	E	CS	WC	00S
CONTROL TYPE	SIZE	RATING*	VOLTAGE	CAPACITANCE	HEAT SINK	CONFIGURATION
PDM = PowerBlok	10 - 1000 Series	01	C = 120 V	CS = Standard	BB = Bookshelf 1 Hp	00S = Standard
	20 - 2000 Series	02	D = 200/240 V	CH = High, rated for single-phase inputs on 1 and 2 Hp Drive Modules	WC = Wall Mount 1-5 Hp	XXX = Special
		03	E = 380/460 V		WE = Wall Mount 7.5-10 Hp	
		05			WG = Wall Mount 15-20 Hp	
		07				
		10				
		15				
		20				

\* See technical specifications