DATASHEET

Turntide P06 Motor Controller

Turntide Smart Motor System ™



Providing the power and intelligence behind the Turntide Smart Motor System, the Turntide P06 motor controller provides the next-generation architecture for Turntide smart motors running at a wide range of horsepower (1 – 15 HP).

With a new and improved design topology, P06 is engineered for stable and continuous performance of Turntide's optimal efficiency motors, providing reliable operation while drastically reducing energy use within HVAC systems and other industrial motor applications.

Turntide P06 Motor Controller: Key Benefits

Seamless Speed Modulation	Designed for Energy Reduction
P06 modulates motor speed in sync with Turntide motors to leverage fan affinity laws to produce massive energy savings	P06 runs proprietary controls that monitor motor feedback to use the least amount of energy possible at any motor speed

Other Features of the P06 Motor Controller

- **Supports higher horsepower ranges** up to 15 hp motor operation
- **High bus capacitance** for safe thermal performance during motor operation
- **One +24VDC power output** for connecting sensors to monitor operating conditions
- **Easy-to-access I/O terminals** to simplify system installation
- **Plenum rated** to ensure product safety in harsh operating environments
- **Programmable inputs and outputs** to allow for ultimate customization of sequences and settings

The P06 motor controller is engineered for Turntide's optimal efficiency motors, helping customers run electric motors at optimal operating levels, at drastically reduced energy use, cost, and carbon footprint. Unlike a variable frequency drive (VFD), the P06 motor controller operates in sync with Turntide HR-SRM motors. With its customized power topology and motor control methodology, the P06 motor controller runs Turntide motors without stressing the motor system, with minimum impact to system efficiency.

IMPORTANT: The Turntide P06 motor controller only works with Turntide motors (V01, V02, V03)



Motor Controller System Characteristics

Product Name	Motor Controller	**Model**	P06
Compatible Turntide Motor Series	V01/V02/V03	**Ingress Protection Code**	IP65
Rated Output Power Range	1-15HP (0.75 - 11 kW)	**Motor to Controller Power Wire**	10-14 AWG
Peak Motor Controller Efficiency	98.0%	**Ambient Temperature Range**	-10°C to +40°C
Mounting Hole Pattern	363.0 mm x 174.0 mm	**Relative Humidity**	95%, non-condensing
Mounting Fastener	1/4 inch or M7	**Wi-Fi Frequency Range**	2.4 GHz ~ 2.5 GHz (single band)
Motor Controller Weight	11.0 lb (5.0 kg)	**Wi-Fi Interface**	802.11 b/g/n (802.11n up to 150 Mbps)
Minimum Firmware Version	2.7		

P06 Motor Controller SKU Options

SKU	Description
P06-1500-RT	15HP Turntide P06 Smart Motor Controller, 400-460V, RTU Prewired
P06-0500-RT	5HP Turntide P06 Smart Motor Controller, 400-460V, RTU Prewired
P06-1500-AA	15HP Turntide P06 Smart Motor Controller, 400-460V
P06C-1500-RT	15HP Turntide P06 Smart Motor Controller, 575V, RTU Prewired
P06C-0500-RT	5HP Turntide P06 Smart Motor Controller, 575V, RTU Prewired

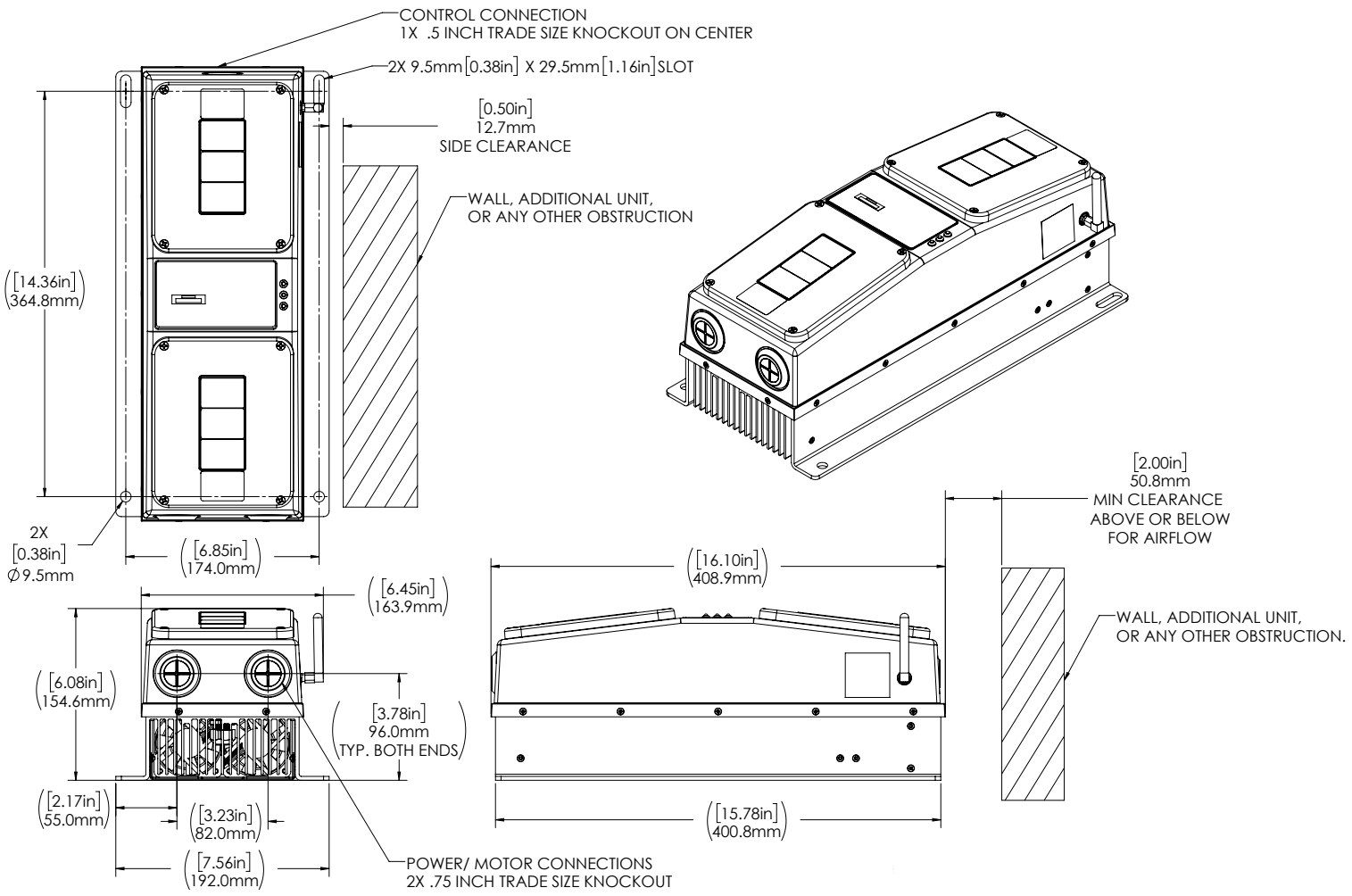
SKU	Input Line Voltage	Input Frequency	Input Line Current	Motor	Rated Output Voltage
P06-1500-AA/RT P06-0500-RT P06-SL	3 PH 208/230V~	60 Hz	11-16A (@208 V~)	V01 or V02	3PH 295 V⎓ (@208 V~)
			9.5-14A (@230 V~)		3PH 340 V⎓ (@230 V~)
	3 PH 460V~		5A	V01	3PH 680 V⎓ (@460 V~)
			5.5A	T01	
			9.5A	V02	
			18A	V03	
	3 PH 200/230V~	50 Hz	11.3-18A (@200 V~)	V01 or V02	3PH 280 V⎓ (@200 V~)
			10-14A (@230 V~)		3PH 340 V⎓ (@230 V~)
	3 PH 400V~		6A	V01	3PH 590 V⎓ (@400 V~)
			2.5 kW - 4.3 Arms*	T01	
			4 kW - 7.9 Arms*	V02	
			11 kW - 20 Arms*	V03	
P06C-1500-RT P06C-0500-RT	3PH 575 V~	60 Hz	8.5A	V02	3PH 850 V⎓ (@575 V~)
			16A	V03	

*Estimated input AC phase currents

Certifications

UL: 61800-5-1, 61800-5-2,
CSA: C22.2#274, C22.2#61800-5-2
IEC: 61800-5-1, 61800-5-2, 61800-3

Motor Controller Dimensions



Motor Controller Mounting

Securely install the motor controller to a solid mounting surface with a ¼ inch or M7 fastener using the four screw tabs on the base.

Motor Controller Connectivity

To ensure a stable and reliable connection to Wi-Fi, the P06 motor controller must be mounted within 40 feet from a networking device.

Motor Controller I/O Points

QTY	Description
7	Programmable digital inputs
1	1 programmable analog output: 0-10V, 0-20mA or 4-20mA, user selectable
4	Relay outputs: 0.3A, 125VAC limit
4	Universal inputs, individually selectable as: • Voltage Mode: 0-10V • Current Mode: 0-20mA; or 4-20mA • Resistive Mode • External Logic Mode
1	24VDC Aux Power Output (up to 250mA)

Turntide Smart Motor System for HVAC Retrofit

Turntide Smart Motor Product Line	Max Horsepower	Voltage Rating	Turntide Smart Motor SKU	Motor Controller SKU						
				SL121-2030	SL121-4030	P06-0500	P06C-0500	P06-1500	P06C-1500	P06-SL
V-Series for General Purpose	3 HP	208/230V	V01-0300-2	✓		✓				
		460V	V01-0300-4		✓	✓				
		575V	V01-0300-6				✓			
	5 HP	208/230V	V02-0500-2			✓		✓		
		460V	V02-0500-4			✓		✓		
		575V	V02-0500-6				✓		✓	
	10 HP	460V	V03-1000-4					✓		
		575V	V03-1000-6						✓	
	15 HP	460V	V03-1500-4					✓		
		575V	V03-1500-6						✓	

Indemnity

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