

Turntide SL121 Motor Controller




Turntide Smart Motor System™



Providing the power and intelligence behind the Turntide Smart Motor System, the Turntide SL121 motor controller provides the next-generation architecture for Turntide smart motors running at lower horsepower ranges (1-3 hp).

With a new and improved design topology, SL121 is engineered for stable and continuous performance of Turntide’s optimal efficiency V01 motor, providing reliable operation while drastically reducing energy use within HVAC systems and other industrial motor applications. SL121 utilizes industry-grade Wi-Fi and via the Remote Monitoring Kit (sold separately) connects to the cloud, enabling remote monitoring and commissioning to allow for continuous optimization of motor performance and speed.

Turntide SL121 Motor Controller: Key Benefits

 <p>Seamless Speed Modulation</p>	 <p>Designed for Energy Reduction</p>	 <p>Remote Monitoring and Commissioning</p>
<p>SL121 modulates motor speed in sync with the Turntide V01 motor, leveraging fan affinity laws to produce massive energy savings</p>	<p>SL121 runs proprietary controls that monitor motor feedback to use the least amount of energy possible at any motor speed</p>	<p>Connected to the cloud, SL121 collects real-time motor data, which can be used for further runtime optimization or fault detection and diagnostics</p>

Other Features of the SL121 Motor Controller

- **Provides optimal performance for low HP motor applications** – up to 3HP
- **High bus capacitance** for stable and safe thermal performance during motor operation
- **Two +24VDC power outputs** for connecting additional sensors to monitor equipment 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** using Turntide’s proprietary Cascade configuration software platform to allow for full customization of sequences and settings

The SL121 motor controller is engineered specifically for Turntide’s optimal efficiency V01 motor, enabling maximized reduction of energy use and carbon footprint. Unlike a variable frequency drive (VFD), an SL121 controller can modulate speed without any hindrance to motor longevity or performance.

IMPORTANT: The Turntide SL121 motor controller only works with the Turntide V01 motor.



Motor Controller System Characteristics

Product Name	Motor Controller	Model	SL121
Compatible Turntide Motor Series	V01	Ingress Protection Code	IP20
Rated Output Power Range	3 hp (2.2 kW)	Motor to Controller Power Wire	14 AWG
Peak Motor Controller Efficiency	98.0%	Ambient Temperature Range	-10°C to +40°C
Mounting Hole Pattern	183.0 mm x 163.1 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	6.7 lb (3.0 kg)	Wi-Fi Interface	802.11 b/g/n (802.11n up to 150 Mbps)

SKU	Input Line Voltage	Input Frequency	Input Line Current	Rated Output Voltage
SL121-2030A	3PH 208 / 230 V~	60 Hz	10.3A (@208 V~)	3PH @208 V~ (295 V \Rightarrow)
			9.1A (@230 V~)	3PH @230 V~ (340 V \Rightarrow)
		50 Hz	10.5A (@200 V~)	3PH @200 V~ (280 V \Rightarrow)
			9.3A (@230 V~)	3PH @230 V~ (340 V \Rightarrow)
SL121-4030A	3PH 460 V~	60 Hz	6.5A (@460 V~)	3PH @460 V~ (680 V \Rightarrow)
		50 Hz	6.7A (@400 V~)	3PH @400 V~ (590 V \Rightarrow)

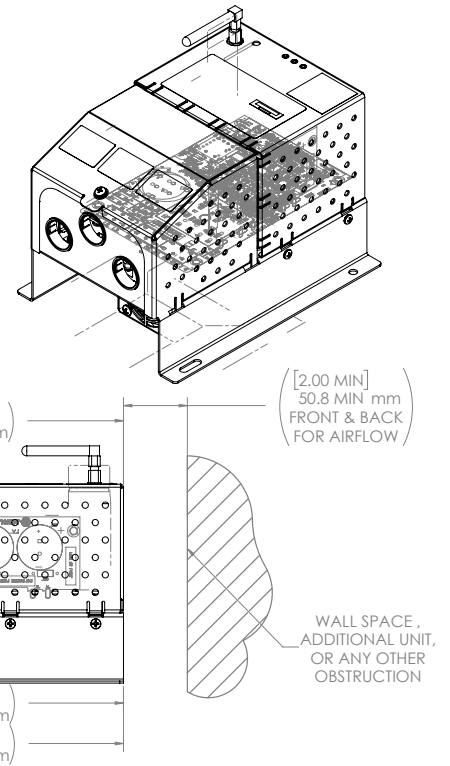
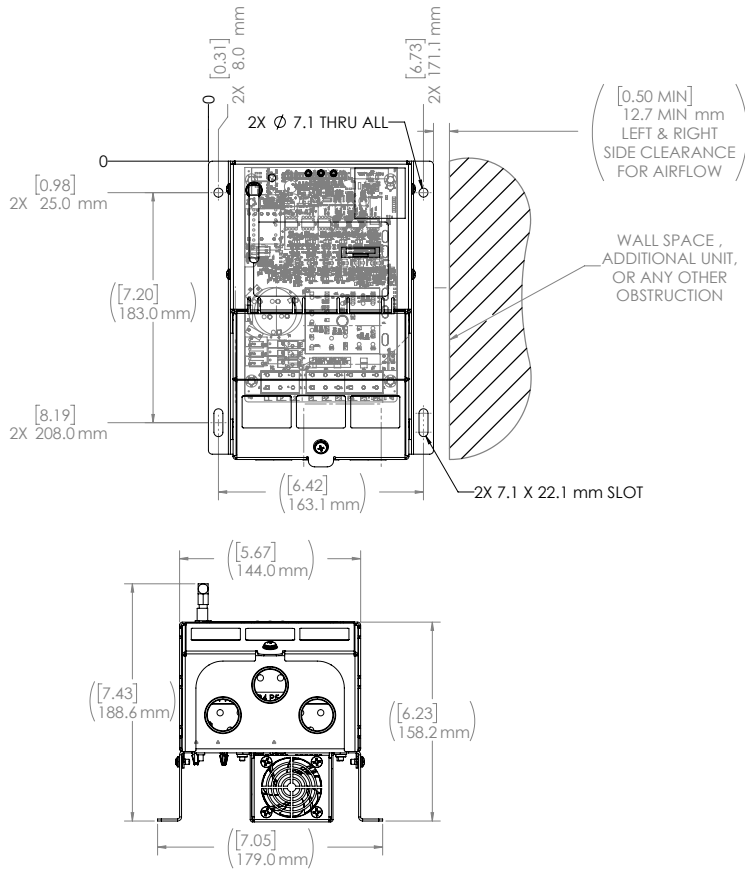
Certifications



UL: 61800-5-1, 61800-5-2
 CSA: C22.2#274, C22.2#61800-5-2
 IEC*: 6100-5-1, 61800-5-2

*Certifications pending

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 SL121 motor controller must be mounted within 40 feet from the Turntide Remote Monitoring Kit (or equipment networking device).

[See the RMK data sheet for details](#)

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: <ul style="list-style-type: none"> Voltage Mode: 0-10V Current Mode: 0-20mA; or 4-20mA Resistive Mode External Logic Mode
2	24VDC Aux Power Outputs (up to 500mA)

SL121 Motor Controller SKU Options

SKU	Description
SL121-2030A-RT	3HP Turntide SL121 Smart Motor Controller with WiFi, 208-230V, RTU Prewired
SL121-4030A-RT	3HP Turntide SL121 Smart Motor Controller with WiFi, 400-460V, RTU Prewired
SL121-2030A-AA	3HP Turntide SL121 Smart Motor Controller with WiFi, 208-230V
SL121-4030A-AA	3HP Turntide SL121 Smart Motor Controller with WiFi, 400-460V

Turntide Smart Motor System: Motor and Motor Controller SKU Pairing Guide

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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TURNTIDE TECHNOLOGIES

Our breakthrough technologies accelerate electrification and sustainable operations for energy-intensive industries