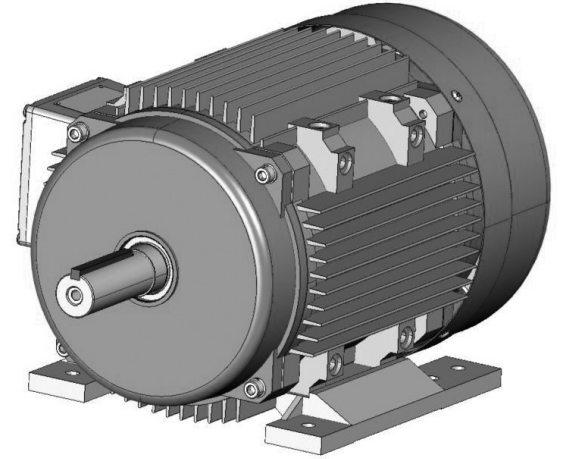


Turntide™ Smart Motor System: V04 (20-25 HP)

The Turntide Smart Motor System delivers unprecedented energy efficiency in a highly reliable switched reluctance design. This software-driven motor solution includes a Smart Motor and Motor Controller, complete with networking and connection capabilities to Turntide Cloud™. The patented Turntide Motor System is proven to significantly reduce energy consumption, dramatically reducing energy costs and carbon footprint resulting from electric motor operation.

The V04 motor is suitable for a range of new and retrofit HVAC, refrigeration, and pumping applications in both fixed and variable speed.



Turntide Smart Motor System

FEATURES	SMART MOTOR SYSTEM BENEFITS
Turntide Cascade® - PC graphic-based programming tool, part of the Turntide Controls Platform	Provides for customization to assure your motor control sequences can be accomplished for every application.
Configurable sequence of operation based on internal and external sensor feedback using up to 18 integrated I/O points	Reduces hardware needed to control HVAC and other equipment, reducing overall cost of system implementation.
Safe DC bus discharge	Ensures internal voltages of the Turntide Motor Controller are rapidly discharged for safe service and maintenance immediately after power down
Turntide Cloud	Provides monitoring and remote reporting, enabling extended data logging and alerts and alarms based on selectable parameters, protecting equipment and assuring the most efficient operation.
Built-in soft start and brownout protection	Eliminates nuisance service calls and interruptions to building operation due to inadvertent circuit breaker trips, reducing maintenance costs.

Motor System Characteristics

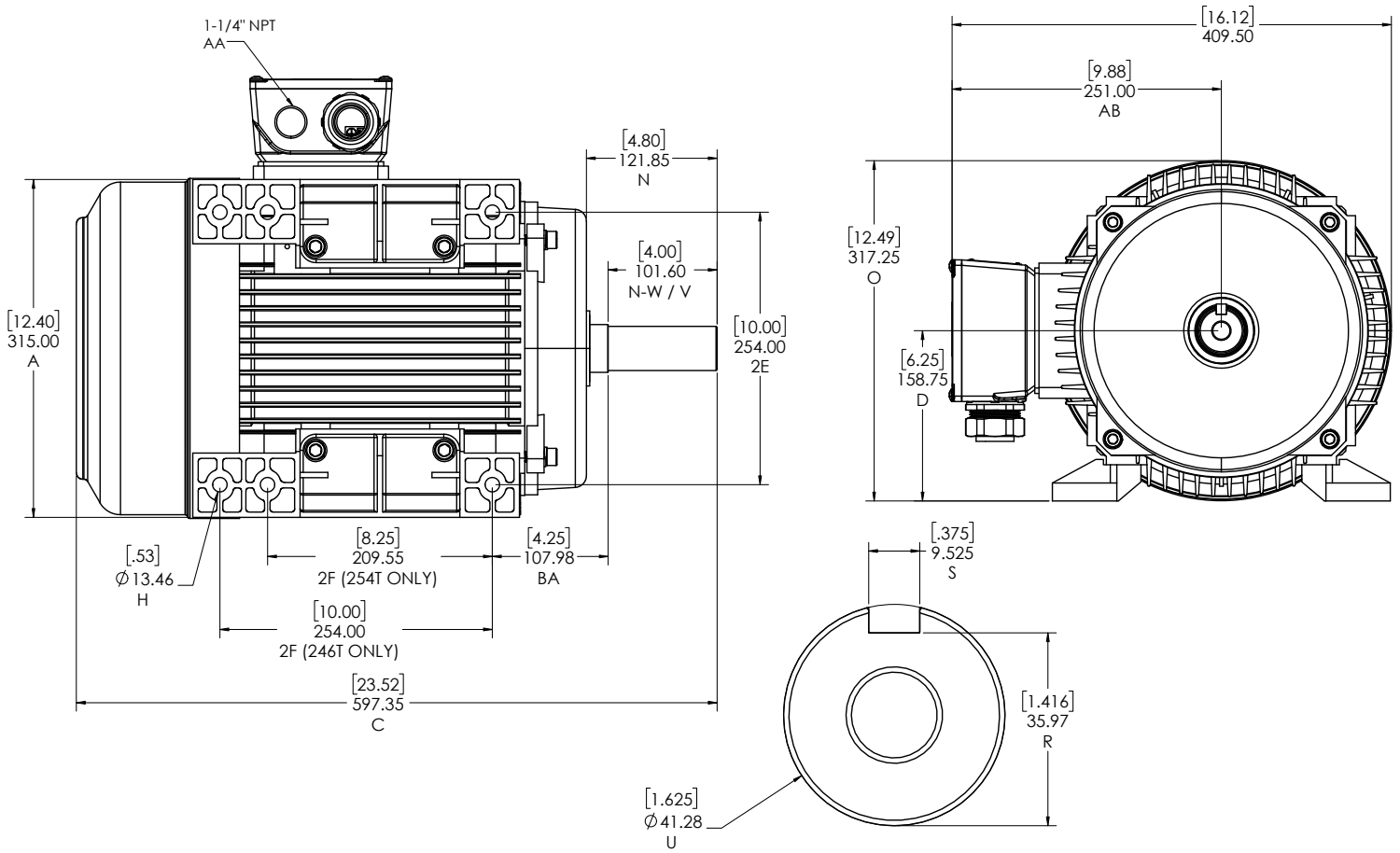
Motor Model SKU	V04-2000-4-K00	V04-2500-4-K00	Supply Voltage/Frequency	460VAC
Motor Controller Model	SL100-025-4		Supply Frequency	60 Hz
Rated Power	20 HP / 15.0 kW	25 HP / 18.6 kW	Motor Duty Rating	Continuous
Rated RPM	1800 RPM		Motor Ingress Protection	IP20 Rating
Rated Service Factor	1.15		Motor Controller Ingress Protection	IP66 Rating
Operating RPM	300-3600 RPM		Motor to Controller Power Wire	10 AWG
Peak System Efficiency	92.7%		Insulation Class	H
Peak Motor Efficiency	94.0%		Ambient Temperature Range	-10°C to +40°C
Supply Phase	3-Phase		Relative Humidity	95%, non-condensing
Motor Enclosure	TEFC		Motor Controller Weight	20.0 lb (9.1 kg)
Motor Frame Sizes	254T/256T		Motor Weight	185 lb (84.0 kg)



Certified to CSA STD C22.2#100, & C22.2#274 and conforms to UL 1004-1, UL 1004-8, & UL STD 508C



Motor Dimensions



Dimension Table (in inches)

NEMA	D	2E	2F	H	U	V	BA	C
254T	6 ¼	10	8 ¼	Ø17/32	1 58	4	4 ¼	23.52
256T			10					

Definitions:

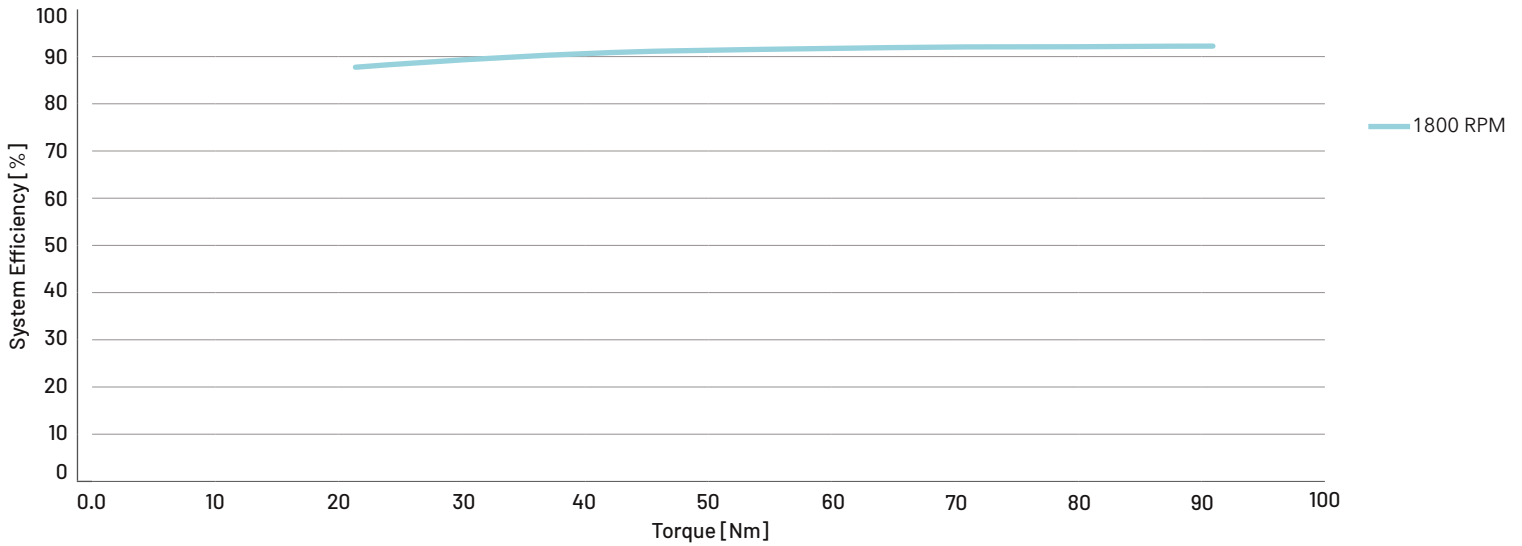
- D - height of shaft
- E - 1/2 distance between foot holes side-to-side
- 2F - distance between foot holes front to back
- H - foot hole size
- U - shaft diameter
- V - shaft length
- BA - distance from front foot hole to back of shaft horizontally
- C - overall length

Motor Mounting

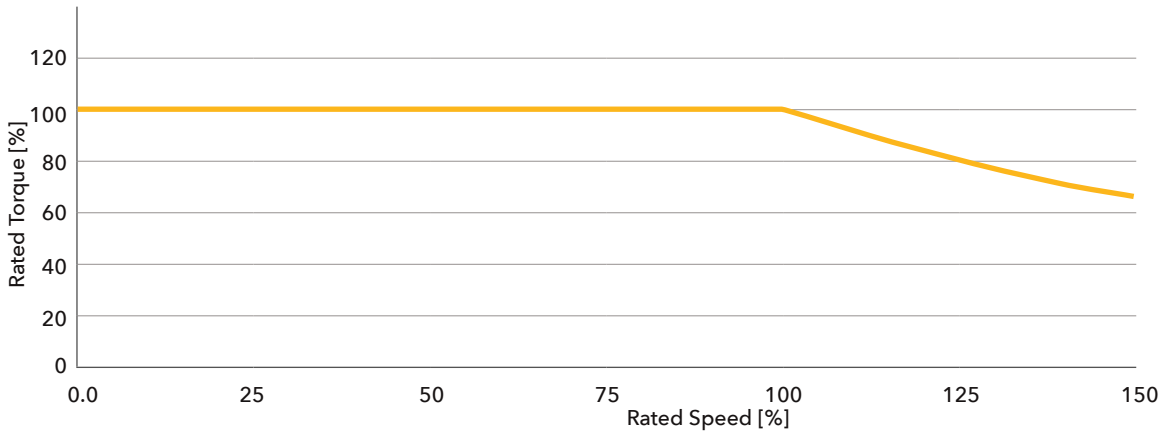
Securely install motor with ½ inch bolts to a firm, rigid mounting surface with minimum vibration to establish good alignment with the driven load and the motor shaft. Proper alignment of the coupling mechanism with the motor shaft is critical to minimizes vibration and maximizes equipment life.



System Efficiency vs Torque



Torque-Speed Curve



Motor Name Plate

		SMC Smart Motor HR-SRM Motors www.softwremotor.com
OUTPUT.....	20.0-25.0hp/15.0-18.6kW at 1800 RPM	Made in India
MODEL.....	V04-2500-4-K00	
SERVICE FACTOR.....	1.15	
PEAK EFFICIENCY.....	94.0%	
FRAME.....	254T/256T	
MAX AMB.....	40°C	
INSULATION CLASS.....	H	
DUTY.....	CONTINUOUS	
AMPS.....	25A	
ENCLOSURE.....	TEFC	
U.S. Pat. Nos. at https://softwremotor.com/patents WARNING: This motor may only be operated using supplied SMC Motor Controller. AVERTISSEMENT: Ce moteur doit être utilisé avec le contrôleur de moteur SMC fourni. On Peut pas utiliser un autre contrôleur. CAUTION: Use supply wires suitable for 75° C. ATTENTION: Employer des fils d'alimentation adéquats pour 75° C.		

Motor Controller Name Plate

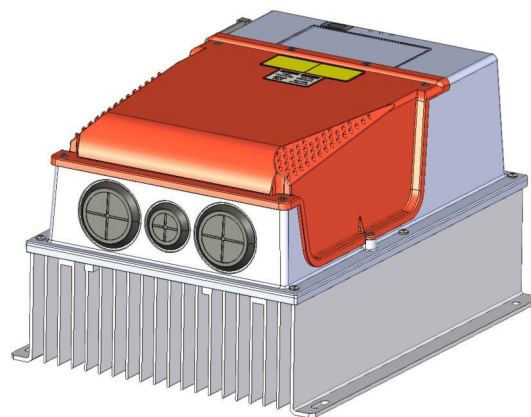
		SMC Motor Controller HR-SRM Motors www.softwremotor.com											
MODEL	SL100-025-4												
MOTOR	V03 / V04												
INPUT	<table border="1"> <thead> <tr> <th rowspan="2">VOLTS 3PH</th> <th colspan="2">CURRENT</th> </tr> <tr> <th>10 HP (V03)</th> <th>25 HP (V04)</th> </tr> </thead> <tbody> <tr> <td>208/230 VAC 60Hz</td> <td>24-26A</td> <td>29A</td> </tr> <tr> <td>460 VAC 60Hz</td> <td>16A</td> <td>29A</td> </tr> </tbody> </table>		VOLTS 3PH	CURRENT		10 HP (V03)	25 HP (V04)	208/230 VAC 60Hz	24-26A	29A	460 VAC 60Hz	16A	29A
	VOLTS 3PH	CURRENT											
		10 HP (V03)	25 HP (V04)										
208/230 VAC 60Hz	24-26A	29A											
460 VAC 60Hz	16A	29A											
OUTPUT	3PH 280-680VDC MAX HP 25.0												
Conforms to UL STD 508C Certified to CSA STD C22.2#274 WARNING: This SMC Motor Controller will only operate stated SMC Smart Motor. AVERTISSEMENT: Ce contrôleur de moteur SMC doit être utilisé qu'avec moteur de la série de intelligent SMC.		LISTED Intertek 5003619											

Made in China



Turntide Motor Controller

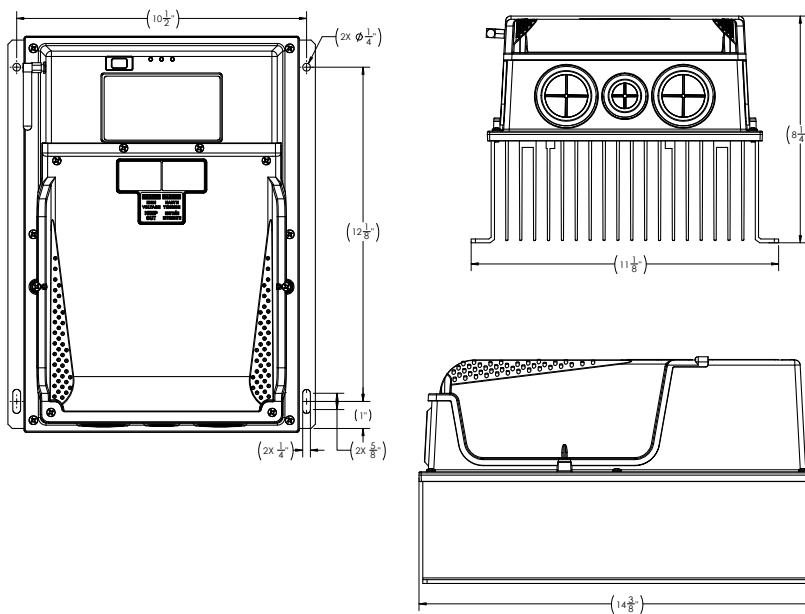
The Turntide Motor Controller controls all operations of the Turntide Smart Motor and is required for motor operation. Its internal program assures that the motor is operating at the highest efficiency at any speed in any application. It does this by monitoring the internal sensors and feedback from the Smart motor and adjusting control signals for optimization. The Motor Controller provides physical connection for 18 input and output connections for control and monitoring of associated equipment such as RTUs, AHUs and pumps. The Motor Controller can be configured with Cascade software to operate under an infinite number of control scenarios. When connected with the Turntide supervisor, remote configuration, updates, alerts, alarms, and system data logging can be delivered through Turntide Cloud or a BMS system.



Motor Controller I/O

QTY	Description
7	Programmable digital inputs
1	Programmable voltage output: 0-10V, 10mA limit
4	Relay outputs: 1A, 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)

Motor Controller Dimensions



Motor Controller Mounting

Securely install the motor controller to a solid mounting surface with $\frac{1}{4}$ inch bolts using the four screw tabs on the base. Must be mounted vertically with conduits facing

Indemnity

The information in this document is subject to change without notice and should not be construed as a commitment by Turntide Technologies or Software Motor Company. Turntide Technologies assumes no responsibility for any errors that may appear in this document. In no event shall Turntide Technologies be liable for incidental or consequential damages arising from use of this document or the software and hardware described in this document.



1295 Forgewood Avenue, Sunnyvale, CA 94089

sales@turntide.com

Turntide Technologies (formerly Software Motor Company) has developed the world's most efficient and intelligent electric motor system. The revolutionary Smart Motor System is based on proven switched reluctance technology, now managed with advanced cloud software and connected to precise controls via IoT. Turntide's vision is to eliminate the 25% of global electricity consumption that is wasted by legacy motors, thus accelerating the world's transition from fossil fuels. Turntide is based in Sunnyvale, Calif., with offices in San Francisco; Arlington, Wash.; and Kennesaw, Ga. Turntide has installed Smart Motor Systems with dozens of customers, reducing their motor electricity consumption by an average of 64%, and is powering the systems of leading OEMs. For further information, visit www.turntide.com.