

## Turttide Axial Flux Motor AF125

The Turttide Axial Flux Motor 125 (AF125) offers exceptional power density, with one of the highest peak power ratings, in its class, at up to 7 kW/kg at 800V<sub>DC</sub>.

With a peak efficiency of up to 95%, the AF125 is well-suited for high-performance demand in a compact space claim. It offers smooth, quiet operation with low torque ripple while supporting inverter supply voltages of up to 850V<sub>DC</sub>.



## Features

- 3-phase connection for easy interfacing with current inverter technology
- Short and compact motor length
- Configurable options for the top box and coolant port orientation
- Low cogging and low ripple torque give smooth, quiet operation in direct drive applications
- Compact design with flat front and back faces for mounting
- IP67-rated shaft seals (optional)
- Low inertia composite rotor with excellent dynamic stability
- Suitable for inverter supply voltages up to 850V<sub>DC</sub>
- Liquid cooling using water/glycol for enhanced performance
- Integrated PT100 winding temperature sensors
- Sin/Cos resolver for out-of-the-box compatibility with most commercially available inverters
- Offered in 3,4,5 and 6-turn arrangements, allowing standard offerings to meet the customer-specific torque requirements

## Applications



### TURNTIDE TECHNOLOGIES

*Turttide Technologies designs and manufactures breakthrough electric motors, power electronics and energy storage solutions that optimize performance, reliability, and efficiency in all things that move.*

Turttide Technologies, Eighth Avenue, Team Valley Trading Estate, Gateshead, NE11 0QA, UK

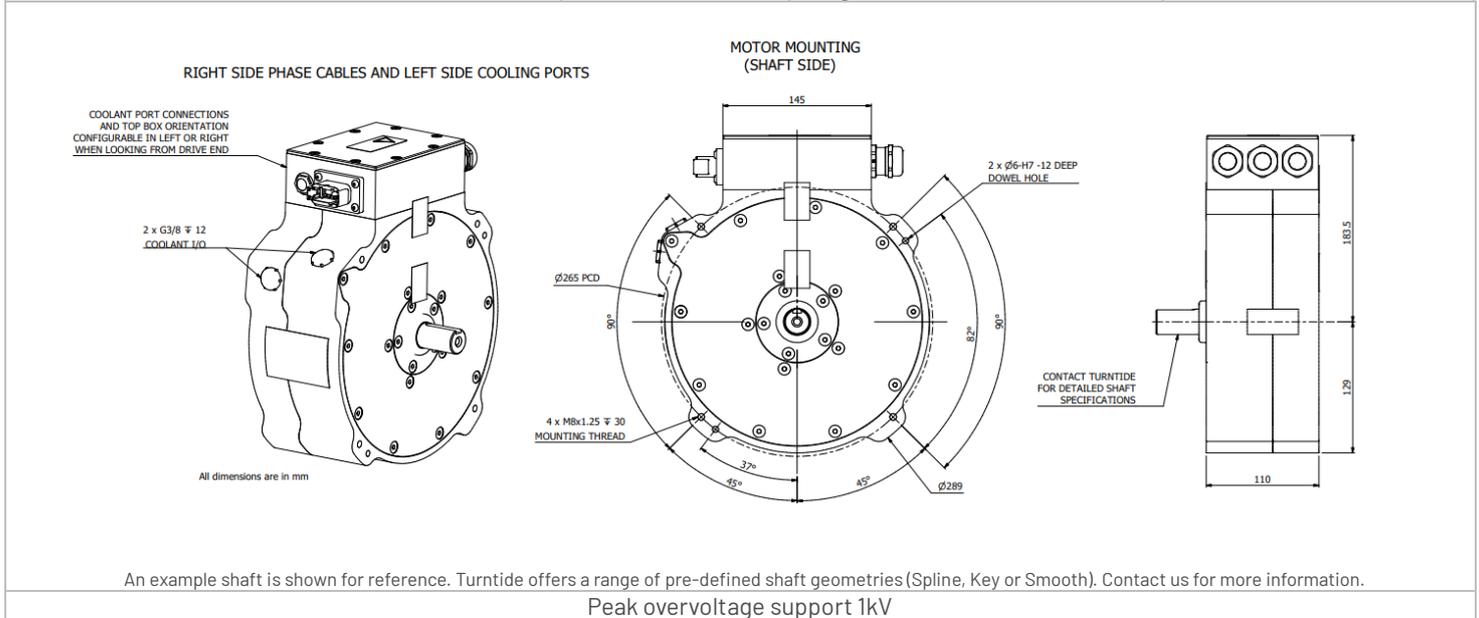
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Details are correct at time of publishing

TTN-MAN-005  
V5.0 – 17/12/2024

# Specification

Voltage Level (V <sub>DC</sub> )	360		800		
	Motor Speed		3 turns	5 turns	3 turns
<b>Max Speed (rpm)</b>					8000
<b>Peak Performance (S2-20 seconds)</b>					
<b>Maximum Torque (Nm)</b>	210	230	210	230	
<b>Maximum Power (kW)</b>	97	59	175	129	
<b>Continuous Performance (S1-60 mins)</b>					
<b>Continuous Maximum Torque (Nm)</b>					85
<b>Continuous Maximum Power (kW)</b>					55
<b>Maximum Continuous Current (A<sub>rms</sub>)</b>					190
<b>Coolant Flow rate</b>					
<b>Recommended Coolant Flow (l/min)</b>					8
<b>Environmental</b>					
<b>Coolant Temperature Range</b>	-20°C to 85°C	<b>Max Winding Temperature</b>		Up to 170°C	
<b>Ambient Temperature Range</b>	-20°C to 90°C	<b>IP Rating</b>		IP67, (with optional shaft seal)	
<b>Coolant Type</b>	BS6580-1992 or equivalent				
Any temperature above 45°C ambient and 55°C coolant will require a derating in performance from the controller.					
<b>Motor Data Interface</b>					
<b>Thermal interface (Located in the end windings)</b>	2x PT100	<b>Resolver</b>		1x LTN RE-15-1-K68 Single pole pair	
<b>Mass, Dimensions and Drawings</b>					
<b>Weight (kg)</b>	25, Dry weight	<b>Depth (mm)</b>		110	
<b>Diameter (mm)</b>	289	<b>Height (mm)</b>		312.5	



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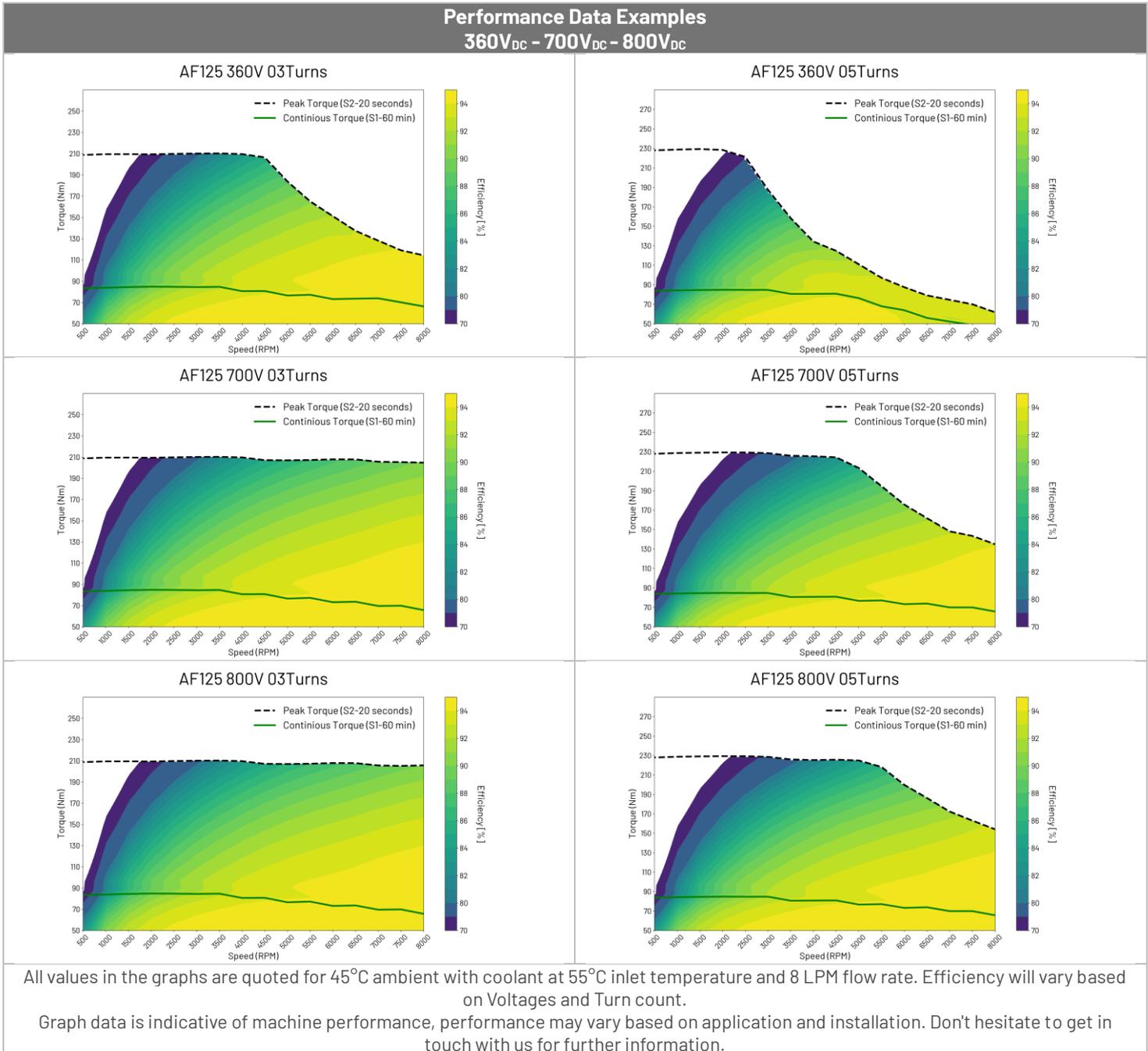
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**Performance Data Examples**  
360V<sub>DC</sub> - 700V<sub>DC</sub> - 800V<sub>DC</sub>



All values in the graphs are quoted for 45°C ambient with coolant at 55°C inlet temperature and 8 LPM flow rate. Efficiency will vary based on Voltages and Turn count.

Graph data is indicative of machine performance, performance may vary based on application and installation. Don't hesitate to get in touch with us for further information.

For more information on this product or Turntide's range of inverters, motors, batteries, pumps and fans, please visit our website or contact our team of experts at [electrificationsales@turntide.com](mailto:electrificationsales@turntide.com).

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