GATES THERMALPRO ELECTRIC WATER PUMPS
AXIAL FLUX 400-2.5KW PLATFORM

ThermalPro Axial Flux water pumps have been specifically developed to optimise energy efficiency while delivering performance and reliability improvements for the application's overall cooling systems.

SYSTEM OVERVIEW	
Model	400 – 2.5kW platform
Motor type	Three-phase brushless Axial Flux
Motor mass	2.1Kg
Voltage range	12V to 800V*
Flow rate (l/min)	<250
Max. operating speed	<7000 rpm
Control strategy	PWM, LIN, CAN
Coolant temperature	-40°C to 120°C (-40°F to 248°F)
Ambient temperature	-40°C to 135°C (-40°F to 275°F)
IP rating	IP67

*400V and 800V pump are currently under development.

GATES AXIAL FLUX EWP DESIGN:

Higher power density and more compact package over equivalent radial flux machines

DRY ROTOR
Increased motor efficiency, durability, reliability & NVH (vs a standard Radial Flux
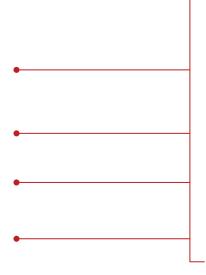
CHASSIS OR DIRECT MOUNTING
Flexibility to available package

CONTROL BOARD
PWM, LIN & CAN communication

MODULAR AND SCALABLE
Creating a "family" architecture to different application requirement

MOTOR DESIGN	
Motor details	Up to 12 tooth 10 poles
Motor housing material	ADC
Volute housing and impeller	ADC or glass reinforced plastic
Winding type	Non-overlap concentrated
Winding material	Copper or aluminum
Stator & rotor core material	SMC (Soft Magnetic Composite)
Permanent magnet	Ferrous / Rare earth
Temperature protection	Over temperature
Voltage protection	Overvoltage, undervoltage, short circuit
Load protection	No-load, overload, locked impeller, anti-reverse connection
Coolant specification	Ethylene glycol to water ratio dielectric coolant

STANDARDS	
Functional safety	ISO-26262*
Safety of intended functionality	ISO 21448
Cyber security	ISO 21434*
EMC	ISO 11451 / ISO 11452 / ISO 10605 / CISPR25
Temperature shock test	DIN EN 60068-2-14
Dust test	ISO 20653
Thermal cycle	IEC 60068-2-14
Vibration test	ISO 16750-3 / DIN EN 60068-2-6 / DIN 60068-2-64

*Subject to customer requirement specification.

GATES.COM
E2/70681