



#### 18 kW Motor

BluWāv Systems has developed an 18 kW peak motor for automotive, marine, and military vehicle applications. BluWāv has demonstrated a pair of motors that were designed to package into the rear of an SUV, mounted to the chassis of the vehicle. A half shaft from the motor to the wheel completes the powertrain. The motors also provide regenerative braking for increased vehicle range, shorter stopping distances, and reduced brake wear.

The motor is a brushless DC, permanent magnet. The power electronics are IGBT-based with an integrated DSP for motor control. The control electronics can communicate with CAN including J1939 as well as RS-232 and RS-485 protocols.

The motor can be used for many different vehicle applications with moderate modifications: It can be used as the primary drive in battery-electric or series-hybrid vehicles or as a supplemental drive in a parallel hybrid architecture, providing independent wheel control for all-wheel drive functionality and stability enhancement. For automotive, the use of these motors can be added to an existing vehicle to give it AWD functionality, important for vehicles that not have been designed to accommodate a traditional AWD system. For marine applications, a single motor in a series hybrid architecture replaces the primary drive unit.

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Parameter	Measurement	Unit
<b>Electrical: †</b>		
Peak Power @ 3000 motor rpm	18	kW
Continuous Power at 1600 motor rpm	10	kW
Peak Torque @ 2500 motor rpm	85	Nm
Continuous Torque	60	Nm
Speed Range	1250	rpm
Bus Voltage	240	VDC
Peak Bus Current	110	A
Peak Efficiency	> 92	%

<b>Mechanical: ‡</b>		
Gearing	~ 4:1	(Other Ratios Available)
Radial Load, static	750	kg
Radial Load, dynamic	6,600	kg
Axial load	640	kg
Motor Outside Diameter	230	mm
Motor Width (Motor Only)	170	mm
Motor Weight	75	kg
Noise	< 55	dB
Motor – Suspension Interface	Chassis Mounted	

<b>Thermal :</b>		
Temperature, operation	-20 to +85	°C
Temperature Storage	-40 to +125	°C

† Continuous values assume air cooling. A liquid-cooled version of this motor is being developed, significantly improving the continuous operating values.  
‡ Values are application dependent and will differ based on vehicle requirements

#### Application Information :

The motors are suitable for use with automotive, marine, and military vehicles. They can be used in a single drive setup for marine applications and in any multiple of two on a vehicle: two wheel drive, four wheel drive, or more based on the number of wheels. They can be added to create a parallel hybrid on an existing vehicle platform, or they can be used as primary drive motors in a battery-electric or series hybrid architecture.

#### Features, Functions and Benefits :

- Chassis mounted design
- Modular design to suit a variety of applications
- Low operating costs and cost of ownership
- Modular for various braking solutions
- Accessible gear box for ease of maintenance
- Improved stopping performance via regenerative braking and intelligent controls
- Can be air or liquid cooled
- Extremely quiet operation
- Zero emissions

#### BluWav Technology :

BluWāv is a designer and manufacturer of electric motors and battery systems. Core technology and capabilities include:  
Brushless DC motors with the highest torque and power density available in the industry  
Proven motor technology in consumer, commercial and military applications  
Battery system and battery management system design  
Full electric and hybrid electric propulsion system engineering and design capabilities including full vehicle modeling and simulation  
Core engineering disciplines including electrical and electronics design, software and controls development, and mechanical design

Please call us for custom designs to suit your application needs.

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