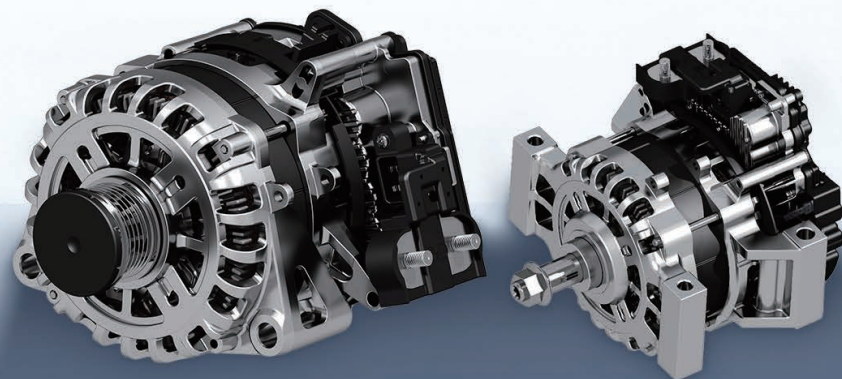


12V / 24V / 48V

Intelligent Inverter-Based Generator

by ULTRADRIVE Technology™



Benefits

✓ Rapid Charging

Up to 300A high output, ideal for 12V / 24 V / 48V HP Lithium Battery

✓ Wide Compatibility

Compatibility with rated 14.4V / 27.2 / 51.2V LiFePO₄ and other chemistries battery

✓ 85% Overall High Efficiency

Consume far less power from engine and generate far less heat, resulting in substantial fuel savings over the whole life cycle

✓ Superior Idle Output

Extreme low turn-on speed with charging capability of 1500rpm(>2kW), efficiently charges the battery while the vehicle is stationary

✓ Customized Mechanical & Electrical Interfaces

Simplified Plug and Play harness to easy installation and flexible CAN compatibility with RVC, CAN2.0B, J1939 and other protocols

✓ 2 in 1, Motor Integrated with Controller

Compact and lightweight design, no external regulator required

✓ Comprehensive Diagnosis & Protection

Voltage and Current monitor & protection, Thermal monitor & derating, Load dump protection and etc.

✓ Fully Software Controllable

Support both Continuously Adjustable Voltage Closed Loop Control and Current Limitation Closed Loop Control for safe battery charging system

✓ Dedicated Drivability Performance Improvement

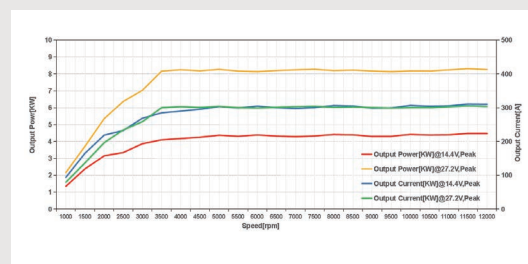
Software-defined Slew Rate of charging power ramp up & down for smooth drivability, Software-defined Adaptive Idle of charging power reduce for preventing engine stall

✓ All Automotive Grade

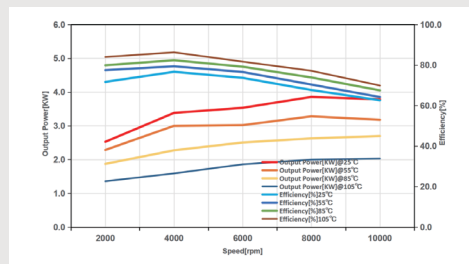
Rigorous and strictest design, testing and manufacturing standard to ensure high quality



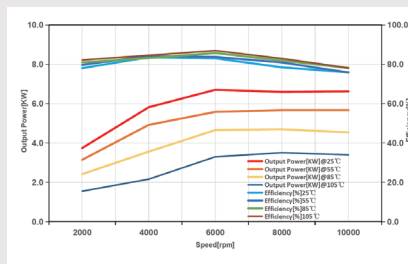
Output Curves



Measured Maximum
Output Performance@14.4V & 27.2V



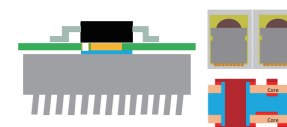
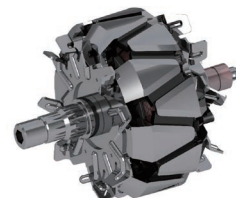
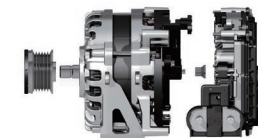
Measured Continuous
Output Performance@14.4V



Measured Continuous
Output Performance@27.2V

Features

- HESM Technology (Hybrid Excitation Synchronous Motor):**
Excitation winding rotor with 16 pieces permanent magnets inserted, improve high output and efficiency;
- Advanced Hairpin Winding**
Increase the slot fill factor of stator and the power density 1.65kW/kg;
- Asymmetric Dual Three-Phase Stator**
Eliminate the 5th and 7th harmonic magnetolectric potentials and decrease output torque ripple and optimize NVH performance;
- Dual Internal Fan**
Low noise fan design improves external heat dissipation;
- All Chips Automobile AEC-Q101 & Q200 Qualified**
Infineon TriCore MCU, Multi-core SW architecture, 10KHz frequency, faster and more stable, control respond time less than 150ms, control accuracy ±5%;
- Multiple Physical Sensors**
7x Current sampling, 8x Voltage sampling, 1x Rotating motor position sampling, 9x Temperature sampling sensors for higher control accuracy and safer protection;
- Leading SVPWM Control Algorithm**
FOC control algorithm combined with MTPA control technology provides higher control efficiency and accuracy, lower torque ripple of system;
- 24 Pieces Infineon's Modern MOSFETs @2x 350A in Parallel**
The power module offers a supreme thermal performance and an improved electrical performance;



Specification

Model	BLM1205	BLM2408	BLM4815HP
Operation Voltage	9-16V	20-30V	32-60V
Rated Voltage	14.4V	27.2V	51.2V
Operating Temperature	-40°C ~ 110°C	-40°C ~ 110°C	-40°C ~ 110°C
Max. DC Output	300A@14.4V	300A@27.2V	300A@48V
Continuous Power	3.8 kW @ 25°C, 10000RPM 3.2 kW @ 55°C, 10000RPM 2.7 kW @ 85°C, 10000RPM 2.0 kW @ 105°C, 10000RPM	6.6 kW @ 25°C, 10000RPM 5.7 kW @ 55°C, 10000RPM 4.5 kW @ 85°C, 10000RPM 3.4 kW @ 105°C, 10000RPM	11.3 kW @ 25°C, 10000RPM 10.0 kW @ 55°C, 10000RPM 7.5 kW @ 85°C, 10000RPM 6.0 kW @ 105°C, 10000RPM
Turn-on Speed	500 RPM; 90A@1000RPM; 160A@1500RPM at 14.4V	500 RPM; 80A@1000RPM; 135A@1500RPM at 27.2V	500 RPM; 40A@1000RPM; 80A@1500RPM at 51.2V
Maximum Speed	16000 RPM Continuous, 18000 RPM Intermittent	16000 RPM Continuous, 18000 RPM Intermittent	16000 RPM Continuous, 18000 RPM Intermittent
CAN Communication Protocol	Customer Specific; eg. CAN2.0B 500kbps or J1939 250kbps; "Blind mode wo CAN" supported	Customer Specific; eg. CAN2.0B 500kbps or J1939 250kbps "Blind mode wo CAN" supported	Customer Specific; eg. CAN2.0B 500kbps or J1939 250kbps "Blind mode wo CAN" supported
Operation Mode	Continuously Adjustable Voltage Setpoint & Current Limitation	Continuously Adjustable Voltage Setpoint & Current Limitation	Continuously Adjustable Voltage Setpoint & Current Limitation
Temperature Protection	Yes	Yes	Yes
Voltage Protection	Yes with Load Dump Protection	Yes with Load Dump Protection	Yes with Load Dump Protection
Weight	9 KG	9 KG	9 KG
Dimension	164 L x 150 D mm	164 L x 150 D mm	164 L x 150 D mm
Overall Efficiency	Max. 85%	Max. 85%	Max. 85%
Cooling	Integrated Dual Fans	Integrated Dual Fans	Integrated Dual Fans
Rotation	Clockwise/ Counter Clockwise	Clockwise/ Counter Clockwise	Clockwise/ Counter Clockwise
Pulley	Customer Specific	Customer Specific	Customer Specific
Mounting	Customer Specific	Customer Specific	Customer Specific
Case Construction	Cast Aluminum Alloy	Cast Aluminum Alloy	Cast Magnesium Alloy
Connector	MOLEX 0.64 USCAR CONNECTOR SEALED	MOLEX 0.64 USCAR CONNECTOR SEALED	MOLEX 0.64 USCAR CONNECTOR SEALED
Isolation Level	H	H	H
IP Level	Motor: IP25, Inverter: IP69K	Motor: IP25, Inverter: IP69K	Motor: IP25, Inverter: IP69K

All pictures shown are for reference only and data are based on ROYPOW standard test procedures. Actual performance may vary according to local conditions. Only authorized personnel are allowed to operate or make adjustments to the alternators. We reserve the right to make revisions as well as product alterations and improvements at any time without prior notice. Technical data and illustrations are not binding. We assume no liability for misprints.