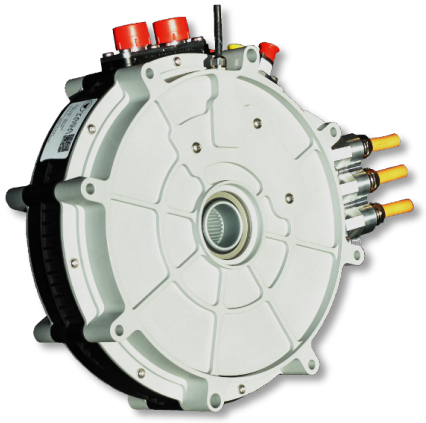


YASA

P400 Series E-Motors

YASA motors and generators are the smallest and lightest in their class. Based on YASA's unique Yokeless and Segmented Armature topology, the motors use less materials more efficiently to provide higher torque and power densities than any comparable motor or generator.

The **YASA P400 Series** of motor / generators are manufactured using advanced materials and proprietary construction techniques to enable high-volume production with significant customer cost benefits.

YASA P400 SERIES. Models from 20kW to 100kW continuous[1]:

Peak torque @450 A_{RMS} [2]	370 Nm
Continuous Torque [1]	Up to 300 Nm
Peak Power @700 V_{DC} [2]	160 kW
Continuous Power [1]	20 kW to 100 kW
Speed	0 – 8000 rpm
Peak Efficiency [3]	96%
Dry Mass [4]	from 24 kg

- Best-in-class torque and power density. Peak power density[2,4] > 6.7 kW/kg
- Dimensions from just 305mm (D) x 80.4mm (L)
- Through-shaft mounting and stacking capability
- Manufactured in volume

Applications where the YASA P400 Series excel include:

- Traction motors for on, off-road, rail and marine transport. Hybrid and full electric.
- Generators. Especially where size and weight are important in mobile and variable speed generation.
- P2 Hybrid. Generate, power boost and start from a small axial length. Ideal for transverse layout.
- Hydraulic replacement. Compact and efficient alternatives for hydraulic motors and starters.

AUTOMOTIVE OFF ROAD MARINE INDUSTRIAL AEROSPACE MOTORSPORT

The flexible, modular design of the P400 Series offers a range of torque and power combinations that can be tailored to optimise performance in specific applications.

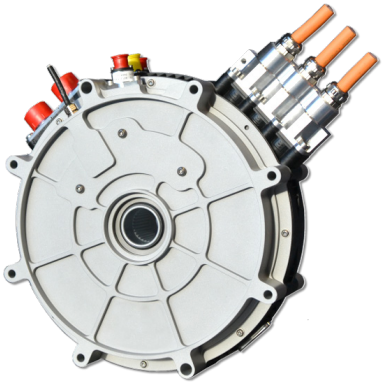
Please call +44 (0) 1865 952 100 or email sales@yasa.com to discuss your requirements.

1. Maximum continuous ratings are based on extrapolated test data for a YASA P400 HC motor with integrated rotor cooling, 30°C Ambient temp, 20 ltrs/min coolant flow and coolant inlet temp <65°C.
2. Peak torque & power ratings are given at 60°C rotor and 60°C coolant inlet temperature and 450 A_{RMS}.
3. Peak efficiency measured at the optimal operating area of the YASA P400 and does not include controller efficiency.
4. Mass for flange mounted cartridge version with a single cover incorporating a standard rotary position sensor. Mass is 28kg for the P400 HC model with integrated rotor fan cooling. Mass does not include coolant fluid or phase cables (due to various possible lengths and fixing strategies).

All data subject to change without notice.

www.yasa.com +44 (0) 1865 952 100 sales@yasa.com

P400 S - Standard Version



The P400 S is the versatile backbone of the P400 Series and offers exceptional peak performance in a lightweight sealed package. The S model is the first choice for simplified integration into automotive, marine and aerospace traction applications.

Mechanical

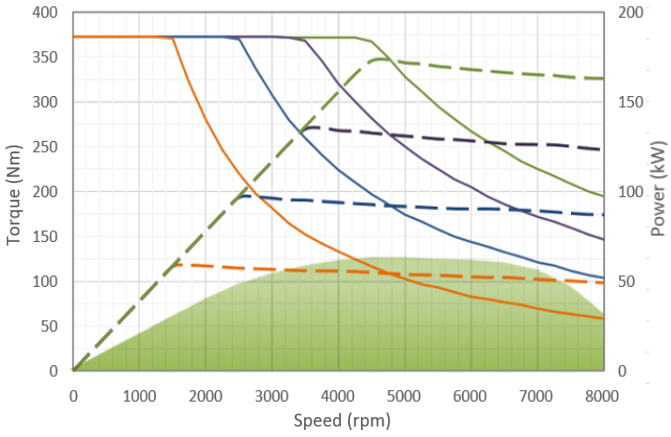
Casing Diameter	305mm
Mounting 8x Ø8.3	294mm PCD
Axial length	106.7mm
Dry Mass	27kg
Stator Cooling	Oil

Electrical

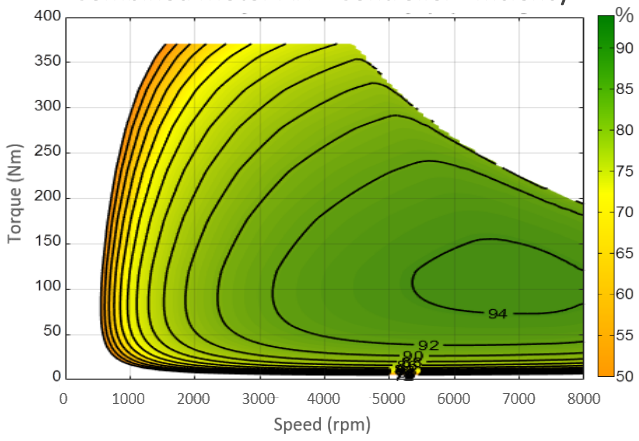
Peak Torque @450 A	up to 370 Nm
Continuous Torque	up to 300 Nm
Peak Power @700V	160 kW
Continuous Power	up to 60 kW
Maximum Speed	8000 rpm

Example Electrical Performance with 800V controller @450A_{RMS} **P400 S**

Power and Torque



Combined Motor AND Controller Efficiency



Peak (30 sec)

Torque	Power
700V	
550V	
400V	
250V	

Continuous Power
P400 S
24/7 Continuous
(Preliminary data)

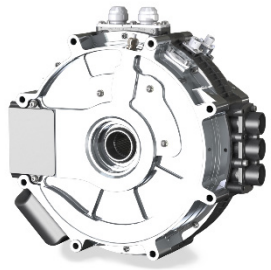
The specified P400 S performance is based on dynamometer test data. The performance available in your application may be different and will depend on drive cycle and installation details. Please contact us for detailed information.

Peak data at 60°C rotor, 60°C coolant inlet @20 ltrs/min and 60°C ambient

Continuous ratings at coolant inlet <50°C @20 ltrs/min, <30°C ambient.

P400 HC and P400 C

P400 HC High Continuous Output



- Up to **100kW continuous** 24/7
- Integrated rotor air cooling via air duct.
- Traction and power generation solution for enclosed engine bay environments.

P400 C Cartridge

- **Axial length 80.4 mm**
- Cartridge model for project integration
- Flexible package for the optimum performance in your application.

Performance in your application

The YASA P400 Series motors are available in a range of torque and speed combinations and with a variety of mechanical and cooling options.

Please **contact us** to discuss your application requirements. We can then supply detailed information on the YASA products and options that may be suitable for you.

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