

Date: 31-05-2020

150 KW POLYWAVE MOTOR

SPECIFICATIONS

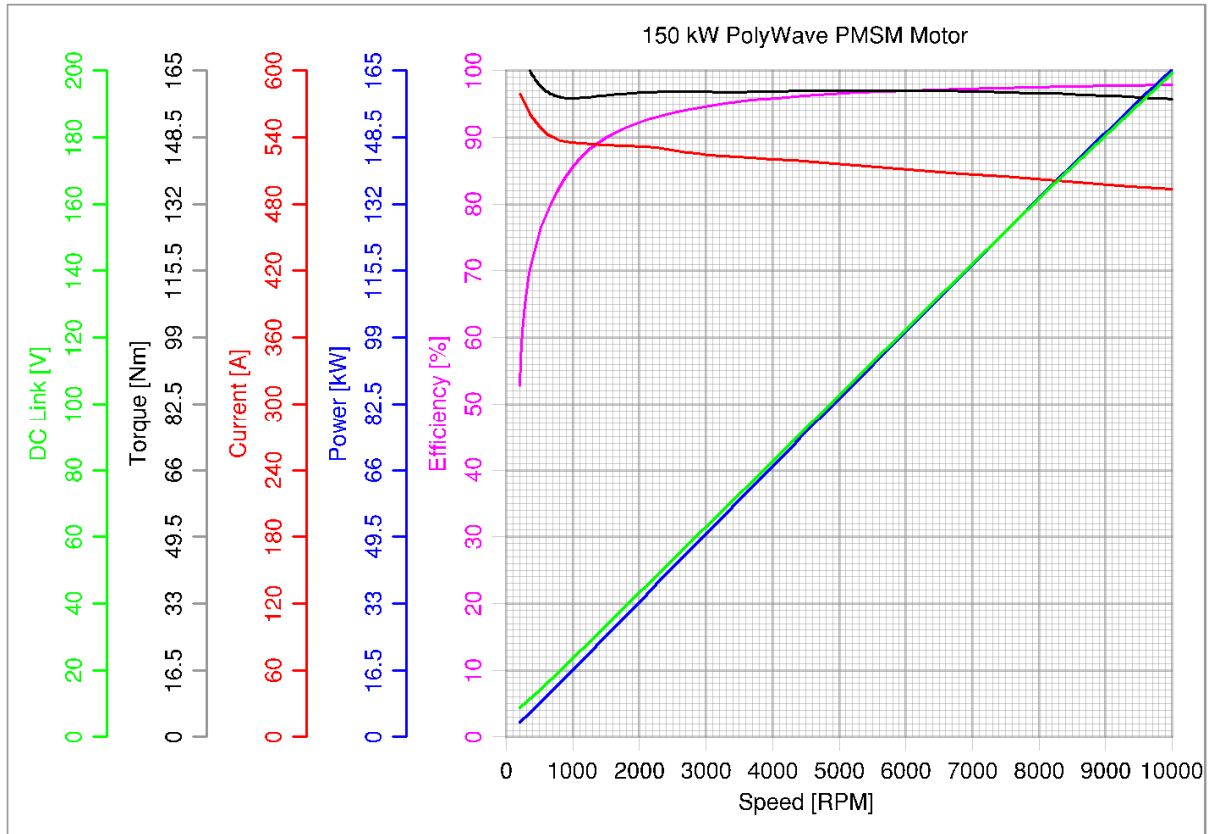
Power	150 kW
Torque	160 Nm
Speed	9000 rpm
Rated voltage	850 V
Rated current	550 A
Efficiency	98%
Current density	12.5 A/mm ²
Motor weight	35 kg
Stator OD	255 mm
Cooling method	Stator: oil; Rotor: air

POLYWAVE TECHNOLOGY SUMMARY

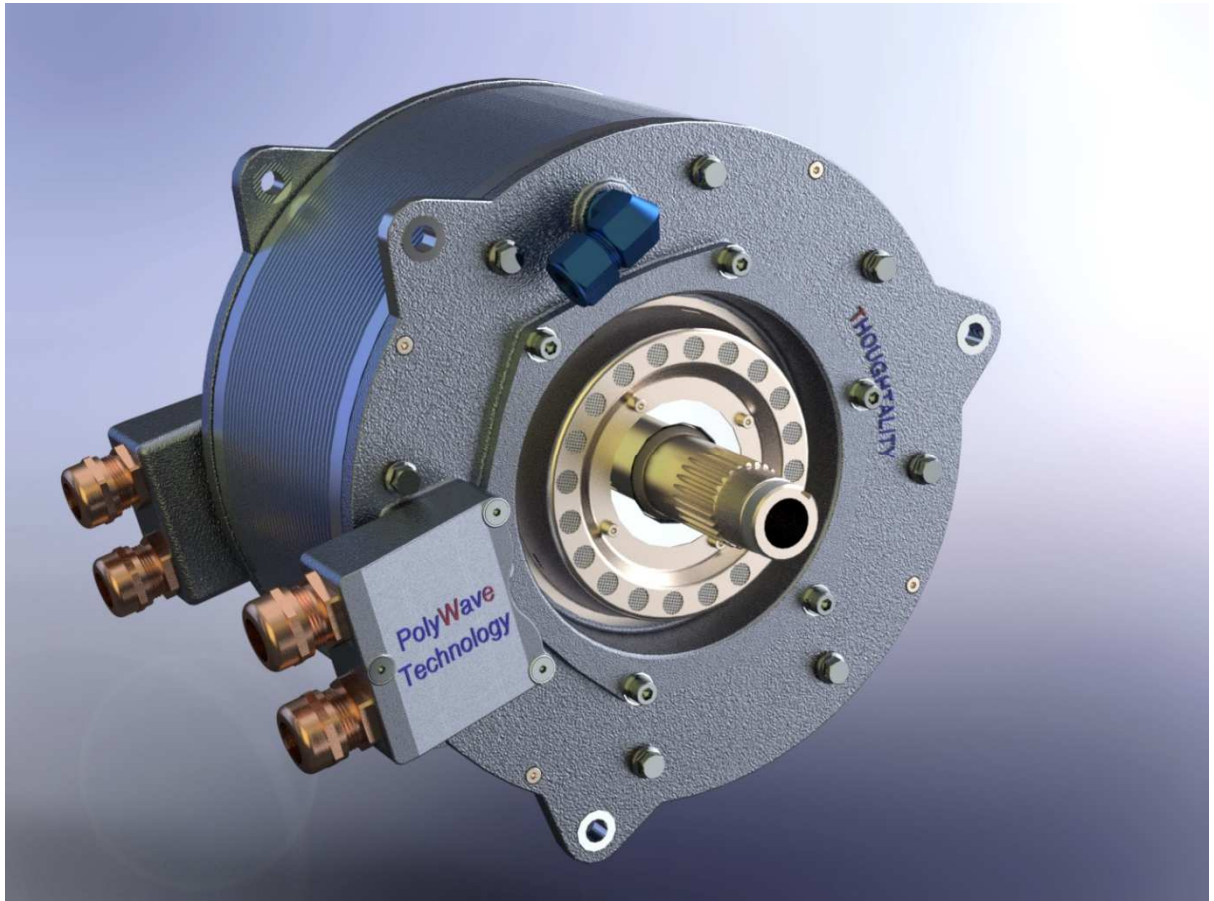
This motor is a Permanent Magnet Synchronous Motor type and uses our PolyWave Two-phase technology. The technology is flexible to allow for other than sinusoidal wave operation with specific advantages some of which are listed below.

1. The air-gap is of constant depth and flux is uniform. (Unlike sinusoidal flux distribution, the air-gap is better utilised with full flux).
2. The square-wave drive configuration has very simple Power Electronics, therefore cheaper, lighter and low part count for reliability and minimum or no maintenance.
3. This technology has built in simple pick-up coils giving instantaneous speed and infinite position signals. (Not need for resolvers or hall sensors. Cheaper, less part count, less maintenance, more reliability.)
4. All phases are energised 100% of rotation unlike in BLDC motors but as in 3-phase PMSM motors.
5. This technology has zero cogging. (Better quality torque).
6. Motor or generator stator windings are extremely compact with minimum end windings. (Less copper).
7. Gravimetric and volumetric power and torque densities are comparable and in cases superior to existing, high-end, state of the art sinusoidal driven, three-phase Permanent Magnet Synchronous Motors.
8. The two-phase configuration is markedly simpler in construction and operation than current technology.
9. In the 2-phase alternator configuration the output voltage may be rectified with simple, passive semiconductors (diodes) to give a high-quality, ripple-free DC current.
10. Armature windings are of the concentric type which are simple to mass produce.
11. In a 3-phase alternator mode the output is high quality sinusoidal 3-phase current. This is not possible with existing turbo generators, windmills or hydro driven alternators.
12. The torque output is high quality, ripple-free, on par with high-end sinusoid driven motors.

PERFORMANCE CURVES



150 KW PMSM MOTOR



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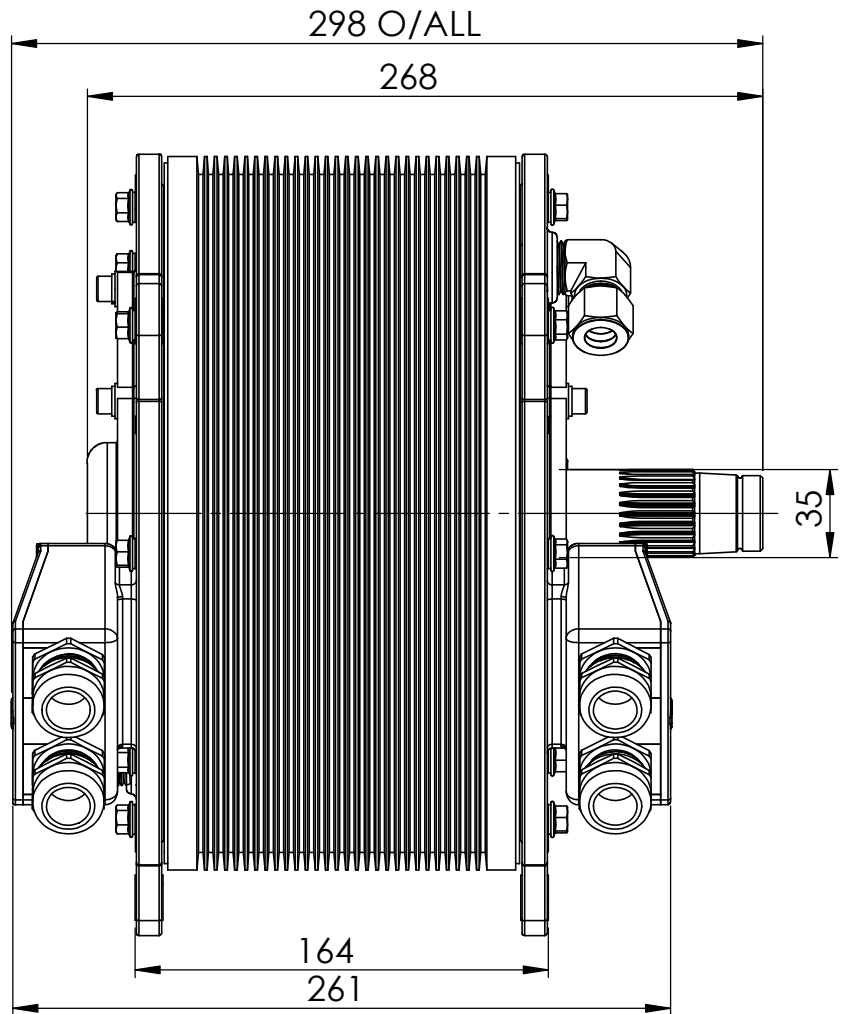
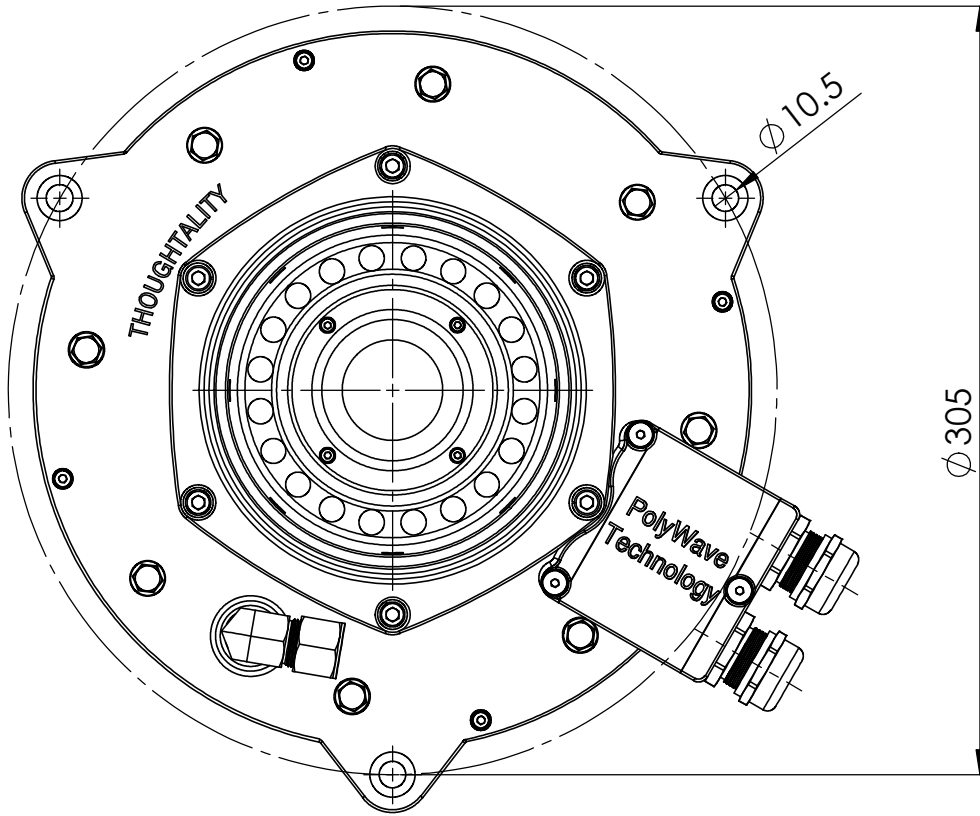
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MATERIAL

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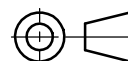
NEXT ASS'Y

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DATE

28-02-20

150 kW MOTOR



DRG. NO.

Motor assy

Client

SCALE

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SHEET 1 OF 1

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