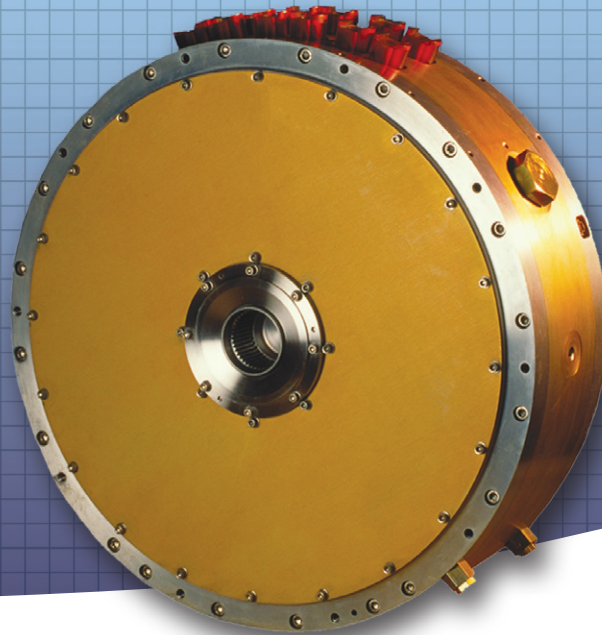


Highly Efficient and Compact Power for Demanding Environments



PA44-450/LC PERMANENT MAGNET MOTOR

Rugged, Reliable and Powerful

The DRS PA series of permanent magnet (PM) brushless motors are built to perform under the world's most demanding conditions. The completely sealed and liquid cooled PA44 is CE ATEX certified to operate in moist and dusty environments and in extreme temperatures (-40 to +60°C). With over 450 motors installed to-date it has proven to survive four times longer than other motors in the same application.

PM motors, which can also be configured as generators, differ from wound-field synchronous machines because their high-strength magnets (not wire-wound rotor poles) generate the rotor flux. Consequently, more current is used to produce torque with fewer parts, making these PM motors incredibly torque dense. Even at stall they provide continuous high torque for positive control! PM technology also provides considerable fuel savings (due

to its high efficiency performance at full and part load); improved reliability and maintainability (due to the simpler rotor construction); and greater durability and robustness (due to the larger airgap).

Thanks to its pancake-like axial design, the PA series of motors are inherently lightweight and compact. With 1450 ft-lbs of rated torque, the PA44-450 is one of the most power dense 450 HP motors available today. Plus with its dual stator design, the PA44 can operate at half power if necessary.

Proven by years of rugged oil and gas top drive performance, the DRS PA44 motor is ideal for demanding jobs small dimensions, efficient performance and precise control are essential.

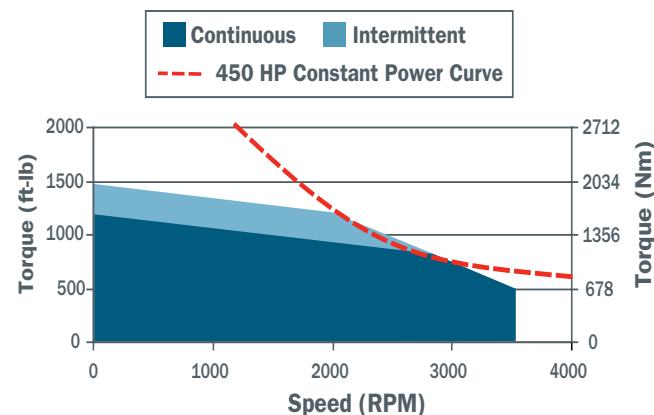
HIGHLIGHTS

- Rugged design
- Extremely power dense
- Efficient
- Liquid cooled
- Dual stator
- CE ATEX Certified: IPX4 water spray IPX5 dust
- Stackable to 1350 HP
- Certified IP Class I Div. II Explosive Environments
- Can be configured as a generator

MOTOR SPECIFICATIONS

Rated power	450 HP (336 kW)
Rated speed	3600 RPM
Efficiency at rated speed	95%
Rated torque	1,475 ft-lb (2,000 N-m)
Rated current	425 A rms
Pole Pairs	14
Torque constant	3.52 ft-lb/A rms (4.78 N-m/A rms)
Torque versus speed	See graph
Phase inductance	120 μ H
Phase resistance	48 mOhm
Voltage constant	0.24 V/rpm (240 V amplitude @1,000 rpm)
Rated voltage	800 V peak
Frequency constant	0.233 Hz/rpm (233 Hz @ 1,000)

TORQUE-SPEED CHARACTERISTICS



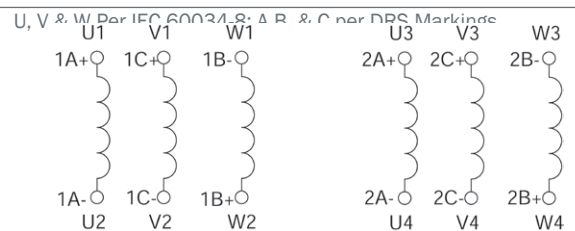
ENVIRONMENTAL

Cooling	Liquid (water/glycol)
Rated cooling inlet temperature	120 °F (49 °C)
Coolant flow rate	7 gpm, 26.6 lpm (3.5 gpm per stator)
Coolant flow rate	7 gpm, 26.6 lpm (3.5 gpm per stator)
Maximum allowable stator temperature	302 °F (150 °C)
Operating ambient temperatures	-40 to 140 °F (-40 to +60 °C)
Max safe rotor over-speed	6,000 rpm
Max safe rotor over-speed voltage	1440 V
Motor bearing lubrication interval	10,000 hours
Shaft position sensing	Integral resolver, 5 Vrms, 2500 Hz
Rotor temperature sensing (optional)	Infrared non-contact probe
Stator temperature sensing	Thermistor, 2 in each stator

MECHANICAL

Mounting	24.6 inches (625 mm) bolt circle
Diameter	25.5 inches (648 mm)
Length	8.8 inches (224 mm)
Standard shaft type	DIN 5480 Spline (W60 x 2 x 30 x 28 x 9g)
Weight	395 lbs. (195 kg)
Rotor moment of inertia	0.9 Kg m2

CONNECTIONS



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