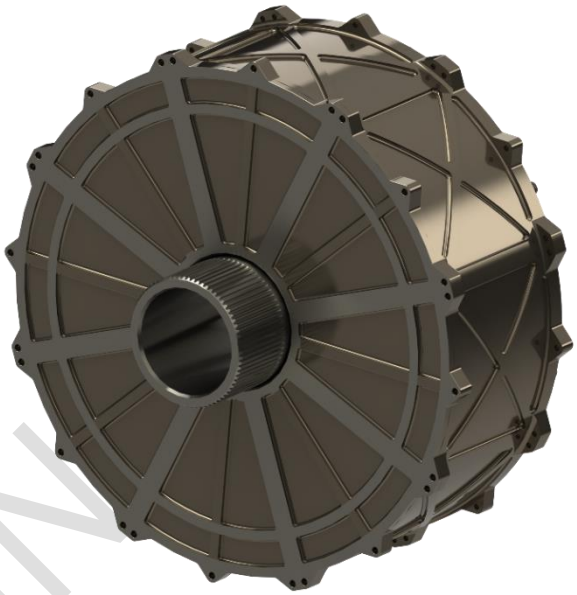
HPDM-1500 Datasheet

The HPDM-1500 is a fault-tolerant, high specific power multisector integrated motor drive with a continuous power rating of 1.5 MW at 2700 rpm, making it well-suited for direct-drive applications. This unit features H3X's proprietary core technology with best-in-class power density and is capable of four-quadrant operation (can be used as a motor or generator).

	VALUE	UNITS
Max Continuous Power	1.5	MW
Max Continuous Torque	5300	Nm
Mass (+/- 20%)	125	kg
Max Speed	2700	RPM
Specific Power (continuous)	12	kW/kg
Peak Efficiency	97	%
Per-Sector DC Input Voltage	400 – 850	VDC
HVDC Input Voltage*	Up to 3.4	kV
Maximum Operating Altitude	45,000	ft
Diameter	540	mm
Length	288	mm
# of Independent Drive Sectors (Inverter + Winding)	8	
Operating Temperature	-40 - 60	deg C
Coolant Medium	Liquid (WEG)	
Communication Protocol	CAN	
Stackability	Up to 6x	



These specifications, the power/torque curves, and the efficiency map are approximate, based on simulation results and dynamometer data. Contact H3X to determine suitability for your application.

***note:** this feature is still in development, and is achieved by connecting inverters in series*

Features

- **No single point of electrical failure –** If an irrecoverable fault occurs in a single sector, the unit can continue operating safely at >85% of rated power continuously
- **Step change in EPU specific power –** 12 kW/kg continuous
- **Simple direct drive configuration –** Low maintenance and capable of reacting propeller loads with motor bearings
- **HVDC Input up to 3.4 kV to minimize cable weight –** Each individual sector only sees 400 — 850 V.
- **8 independent HVDC connectors –** Facilitates optional independent fault tolerant power delivery chains
- **Hollow shaft for variable pitch mechanism and motor stacking –** Up to 6x HPDM-1500s (~9 MW) can be axially stacked
- **Online health monitoring and predictive maintenance –** proprietary "self-dyne" capability for pre-flight check