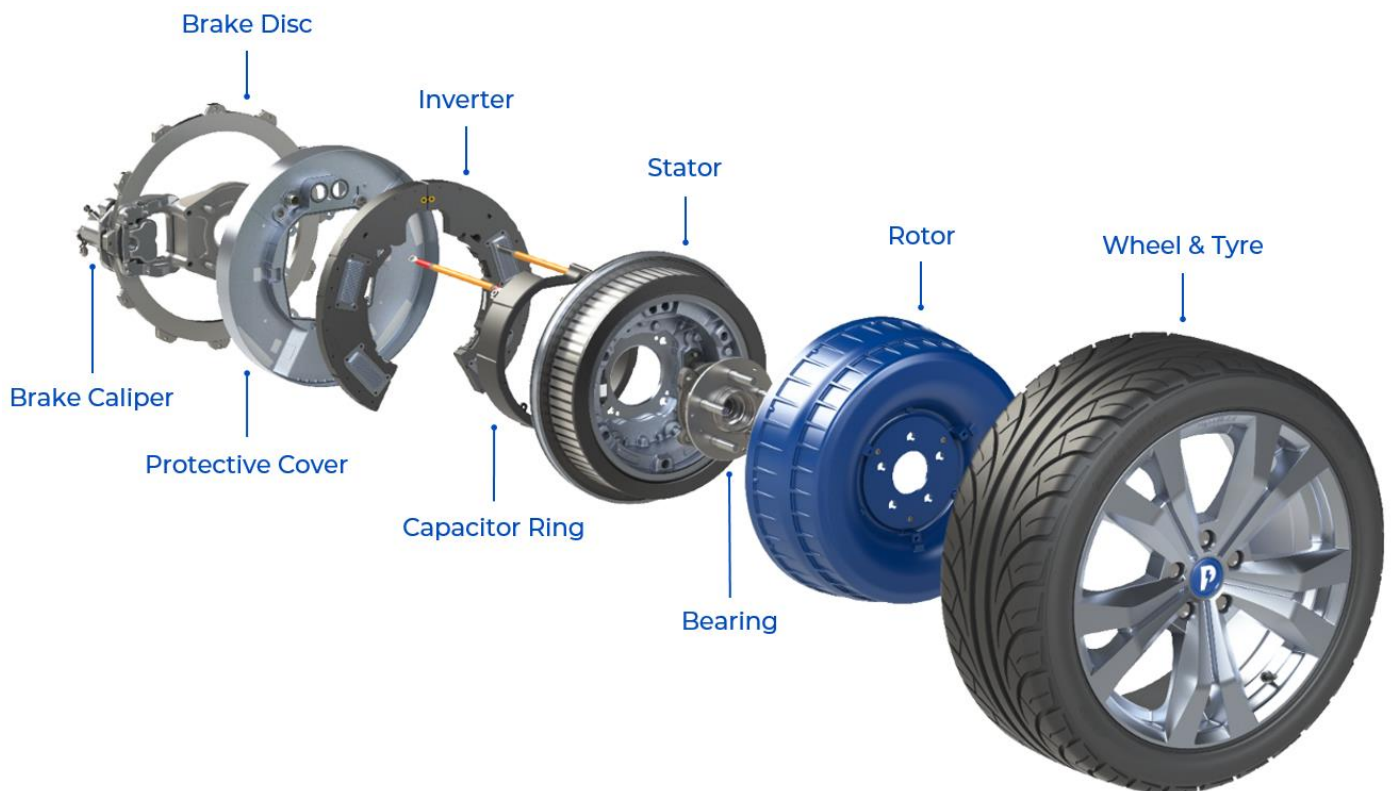


# PROTEAN Drive

## Pd18 4250 Datasheet

Protean Electric is an automotive technology firm. Our ProteanDrive in-wheel motors have integrated inverter and digital control, packaged with a compatible friction brake. All made using patented technologies to withstand a 300,000km vehicle lifetime, including water and dirt ingress, shock and vibration, pot-holes and kerb strike.



### Features:

- Packaged into an 18" wheel rim
- Torque demand control over CAN bus
- High torque direct drive (no gearing) for optimal efficiency
- Permanent magnet synchronous radial flux machine with outer rotor
- Design lifetime of 300,000km or 15 years with verification through bench and vehicle durability testing
- Integrated friction brake
- Integrated wheel bearing
- Integrated inverter and control electronics with distributed architecture
- Developed in accordance with ISO 26262 functional safety standard
- Up to 2ms response time for advanced vehicle dynamics and active safety control

## Parameters:

Characteristic		Pd18 4250	Units
Peak Output Power *	@400 Vdc	90	kW
Continuous Output Power *		60	kW
Peak Torque (available for up to 18 seconds)		1250	Nm
Overboost Torque** (available for up to 3 seconds)		1400	Nm
Continuous Torque		650	Nm
Highest Efficiency (combined motor and inverter)		93	%
Motor Dimensions (diameter, axial depth to rear of stator, excluding cable glands)		433, 125	mm
Motor Mass (including inverter, excluding bearing, brake and cables)		36	kg
Maximum Speed ***		1600	rpm
HV DC Supply Voltage Range		150 to 430	Vdc
Coolant Inlet Temperature Range		-40 to +70	°C
Coolant Flow Rate (up to 50/50 Water/Glycol)		13	LPM
Ambient Temperature Range		-40 to +90	°C
Control Interface (torque demand)		CAN 2.0b	
Ingress Protection Rating		IP6K9K	
Power and Control Electronics		Integrated inverter with distributed architecture	
Foundation Braking Solution		Integrated brake disc	

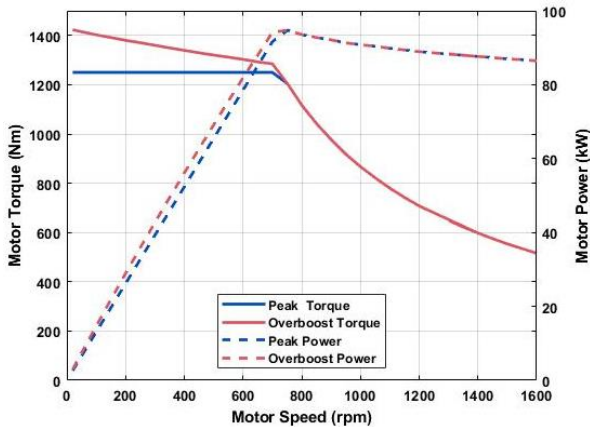
\* Maximum achievable power is approximately proportional to HV DC supply voltage, and in standard operating conditions

\*\* Voltage and speed dependent

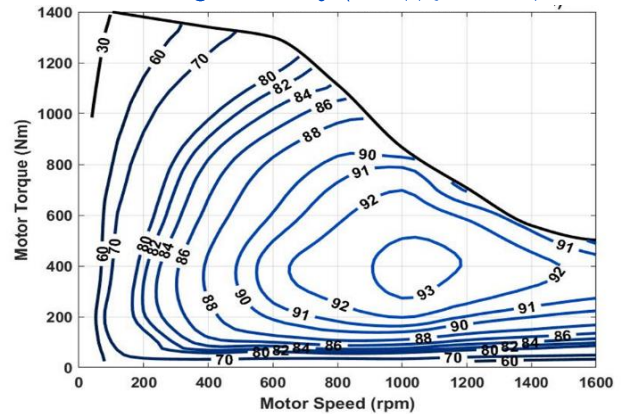
\*\*\* Higher speed variant available on application up to 2200rpm

## Performance at 400 Vdc and 50 °C coolant:

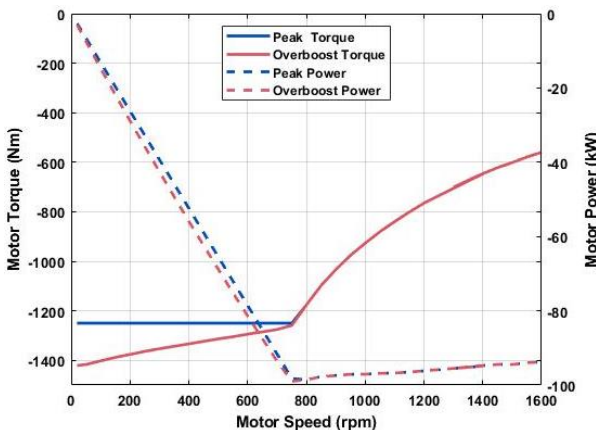
Driving Torque & Power



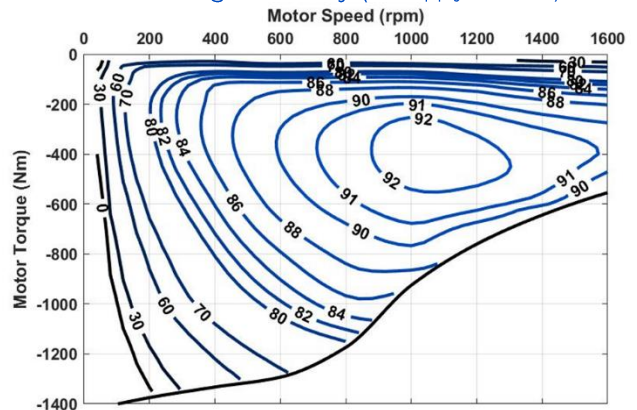
Driving Efficiency (DC supply-to-wheel)



Braking Torque & Power



Braking Efficiency (DC supply-to-wheel)



NOTE: Driving and braking efficiency is combined motor and inverter, excluding bearing losses, and including seal

For more information please visit our website or email [info@proteanelectric.com](mailto:info@proteanelectric.com)

Pd18 4250 datasheet is representative of product supplied at time of writing, is not guaranteed and subject to change, no warranty is implied.

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