



# PowerPhase<sup>®</sup> 150

for electric, hybrid electric, and fuel cell powered vehicles



## Key Features:

- 650 Nm peak torque
- 150 kW peak, 100 kW continuous motor power
- 150 kW peak, 100 kW continuous generator power
- Full Power at 340-420 VDC
- EV/HEV traction drive or HEV starter/generator system
- Efficient, power dense, brushless permanent magnet motor
- Microprocessor-controlled inverter with sine wave drive
- Application-friendly graphical user interface
- Regenerative Braking

## Driver Electronics Incorporate:

Serial communication  
CAN bus compatibility  
Diagnostic capability  
Temperature sensing/alarm  
Speed sensing  
Graphical user interface

## Benefits:

Tight voltage regulation  
Improved braking and extended range  
Suitable for automotive applications  
Enhanced thermal management  
Torque, speed, and voltage control modes  
Rugged, weatherproof enclosure  
Liquid cooling  
Light weight

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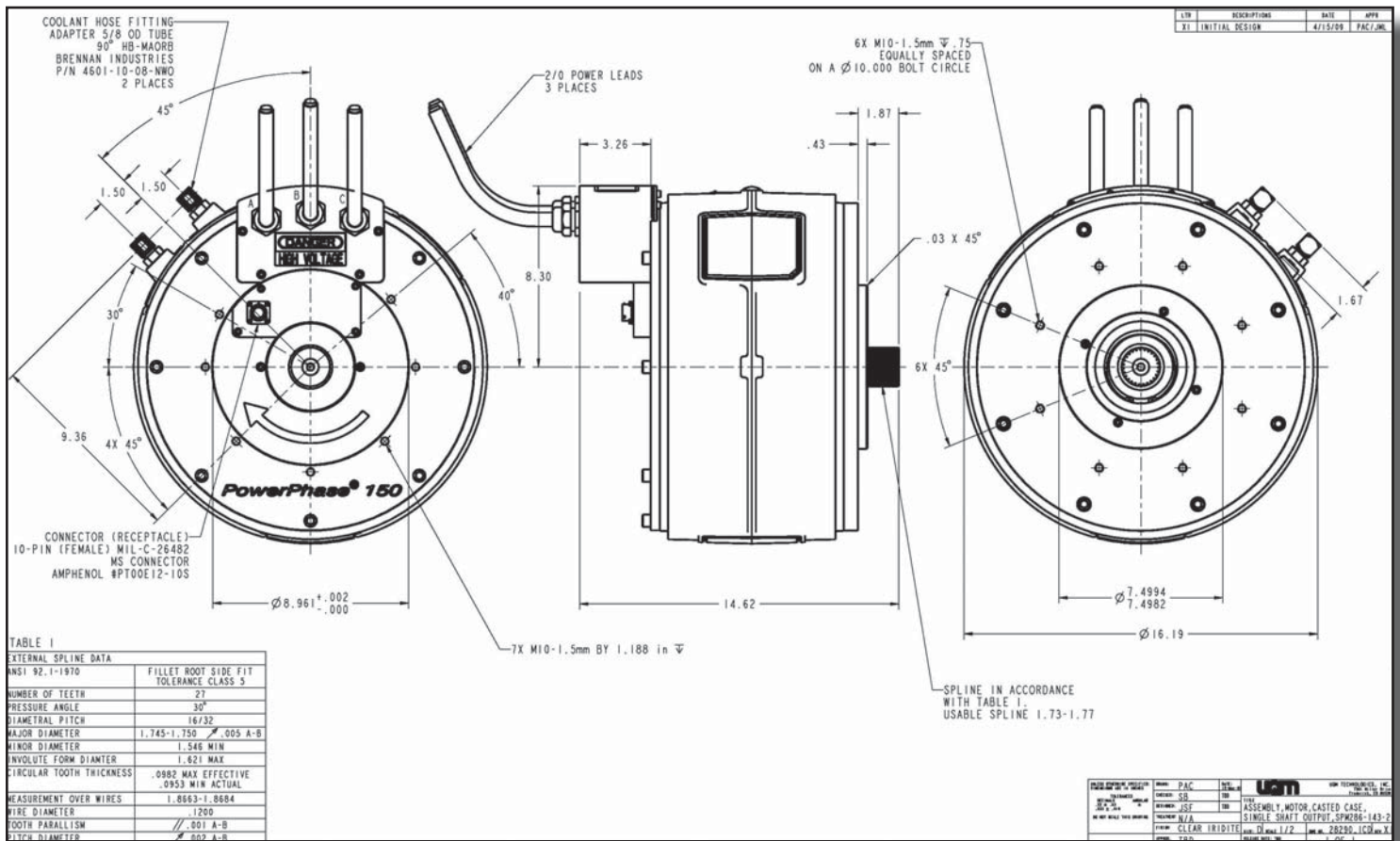
## HPM150 Motor/Generator

### Dimensions

Length	9.49 in	241 mm
Diameter	15.94 in	405 mm
Weight (with 6 ft leads)	208 lb	95 kg

### Performance

Peak power	200 hp	150 kW
Continuous power at 3,000 rpm	134 hp	100 kW
Peak torque	480 lbf•ft	650 N•m
Continuous torque	295 lbf•ft	400 N•m
Maximum speed	5000 RPM	
Maximum efficiency	95%	
Power density (based on 150 kW)	0.96 hp/lb	1.57 kW/kg



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## DD45-500L Inverter/Controller

### Operating Voltage

Nominal input range	340 to 420 VDC
Operating voltage input range	240 to 420 VDC
Minimum voltage limit	240 VDC (with derated power output)
Input current limitation	500 A

### Inverter Type

Control type	PWM & phase advance, 3-Phase Brushless PM
Power device	IGBT module half bridge × 3
Switching frequency	12.5 kHz
Standby power consumption	17 W (inverter and microprocessor)

### Dimensions

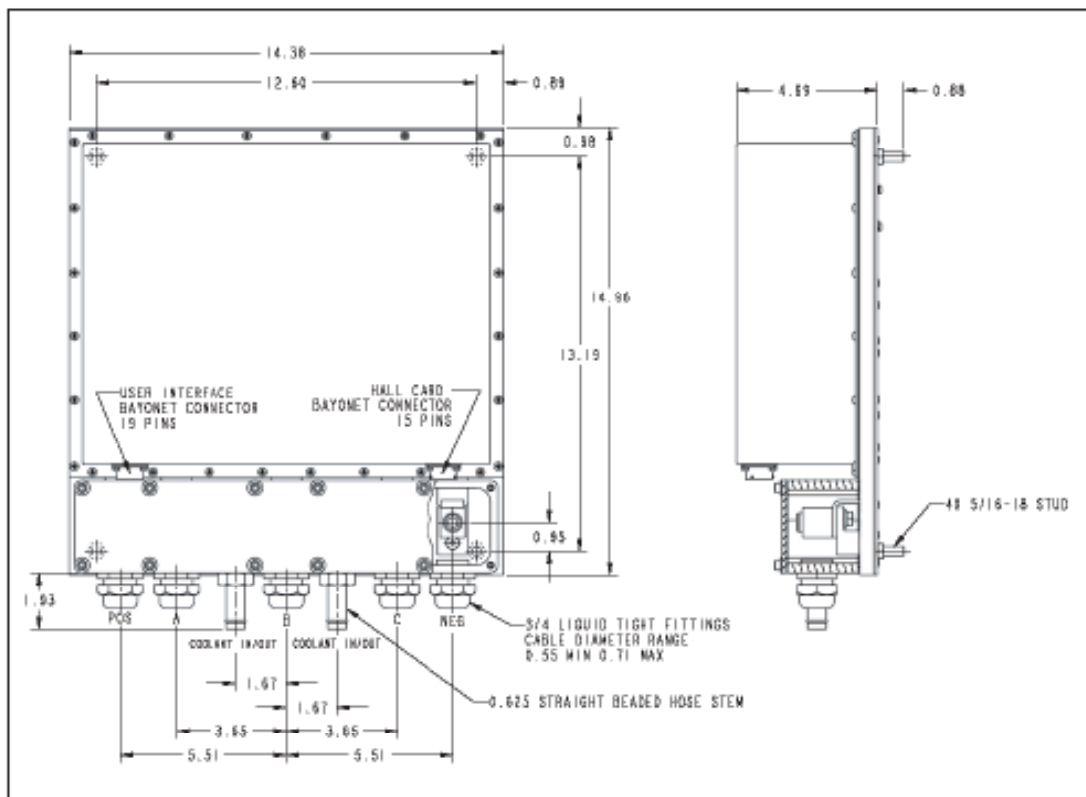
Length	14.96 in	380 mm
Width	14.37 in	365 mm
Height	4.69 in	119 mm
Weight	35.0 lb	15.9 kg

### Liquid Cooling System

Minimum coolant flow	8 l/min (50/50 water/glycol mix)
Max. inlet temp of controller	131° F 55° C
Inner diameter of hose	5/8 in 16 mm
Max. inlet pressure	10 psig 0.7 bar

### TI2812 Digital Signal Processor (internally packaged)

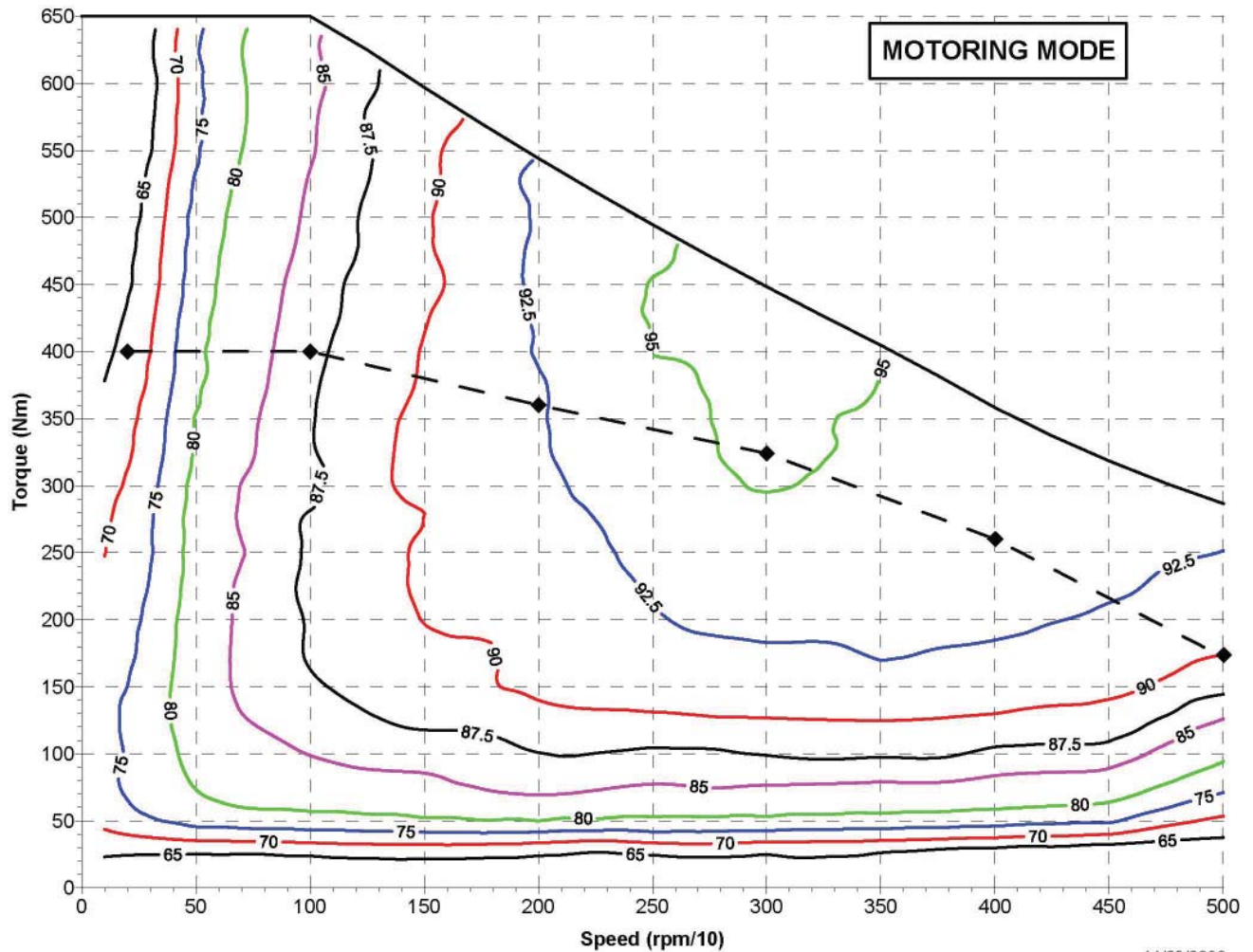
Nominal input voltage	12 VDC
Input supply voltage range	8 to 15 VDC
Input supply current range	0.3 to 0.5 A



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## Motoring Efficiency Map

Includes controller and motor



### Testing Conditions

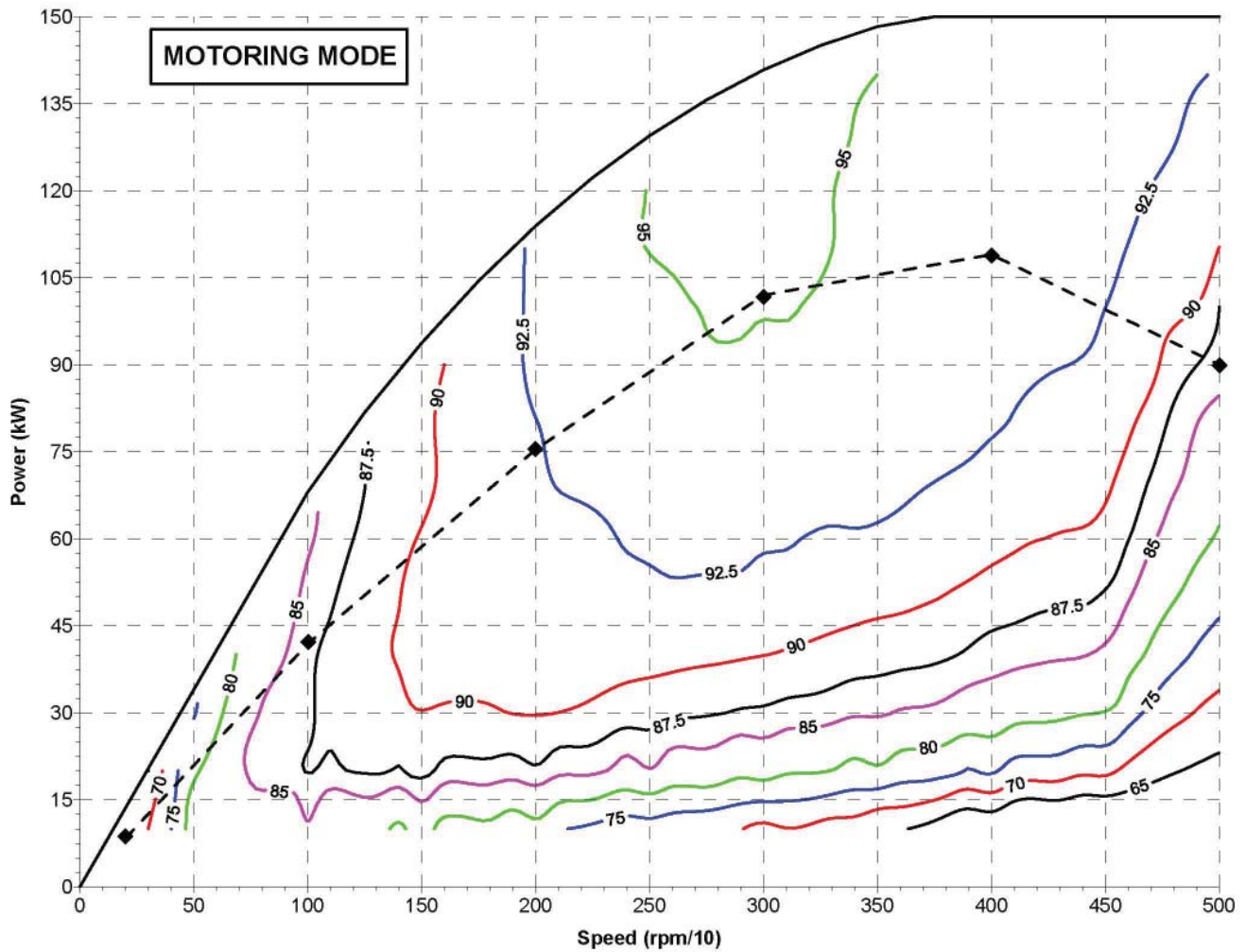
Continuous Output: 360 VDC input, 55°C coolant

Peak Output: 360 VDC input, 55°C coolant, duration 30-90 seconds

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## Motoring Efficiency Map

Includes controller and motor



11/23/2009

### Testing Conditions

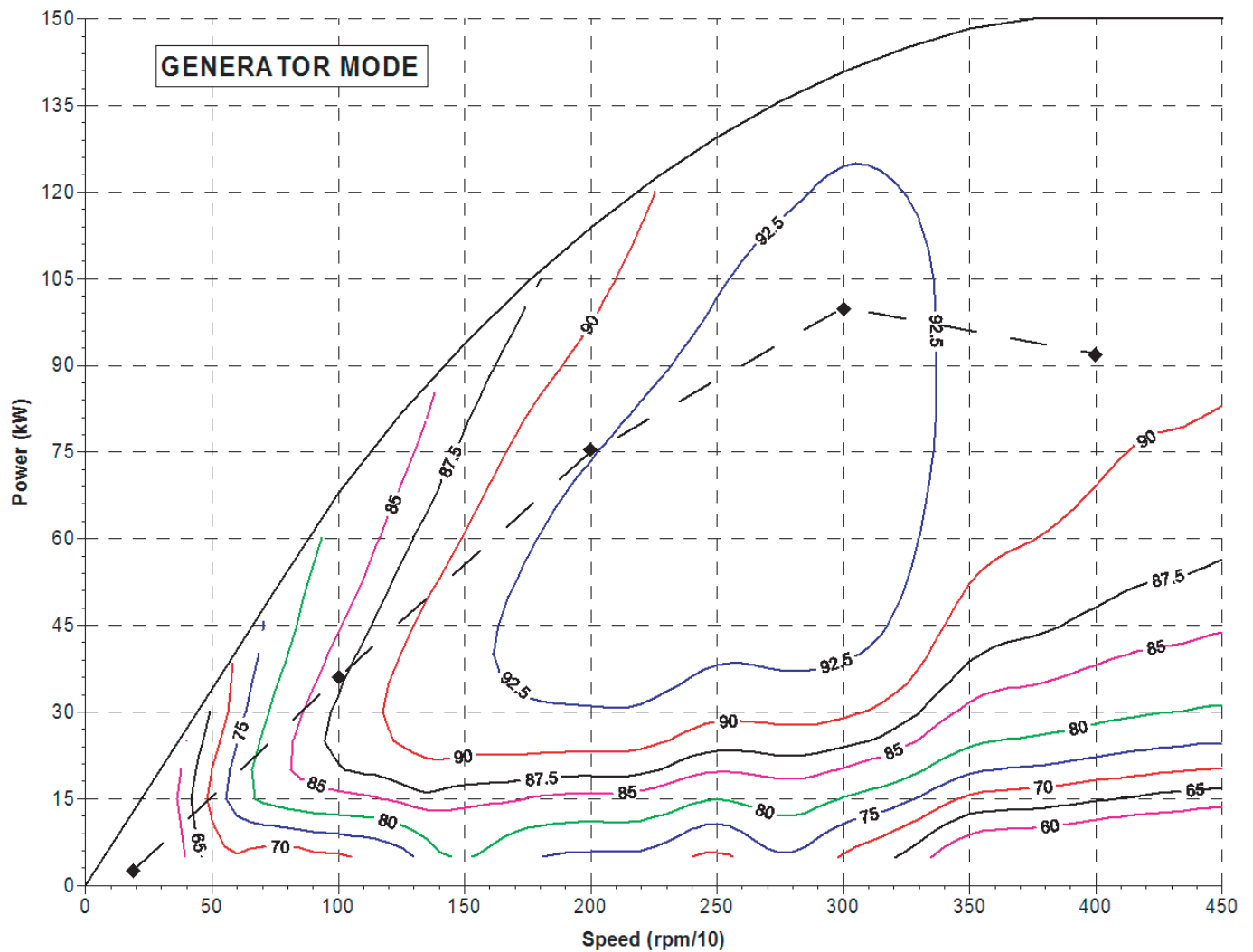
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## Generating Efficiency Map

Includes controller and generator



### Testing Conditions

Continuous Output: 360 VDC input, 55°C coolant

Peak Output: 360 VDC input, 55°C coolant, duration 30-90 seconds