



# PowerPhase<sup>®</sup> 125

for electric, hybrid electric, and fuel cell powered vehicles



## Key Features:

- 300 Nm peak torque
- 125 kW peak, 45 kW continuous motor power
- 125 kW peak, 41 kW continuous generator power
- Full Power at 300-420VDC
- 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

# PowerPhase<sup>®</sup> 125

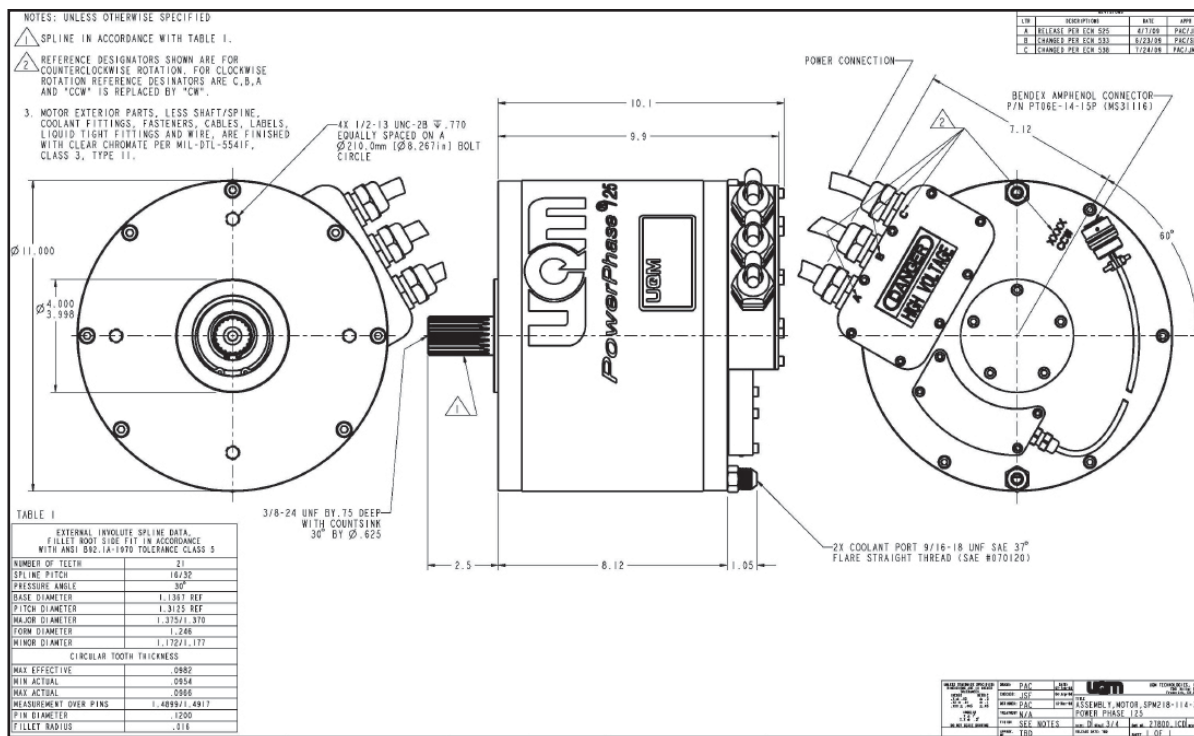
# HPM125 Motor/Generator

## Dimensions

Length	9.94 in	252 mm
Diameter	11.00 in	280 mm
Weight	90 lb	41 kg

## Performance

Peak power	167 hp	125 kW
Continuous power at 3,000 rpm	60 hp	45 kW
Peak torque	221 lbf•ft	300 N•m
Continuous torque	110 lbf•ft	150 N•m
Maximum speed	8000 RPM	
Maximum efficiency	94%	
Power density (based on 125 kW)	1.85 hp/lb	3.05 kW/kg



# PowerPhase<sup>®</sup> 125

## DD45-500L Inverter/Controller

### Operating Voltage

Nominal input range	300 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

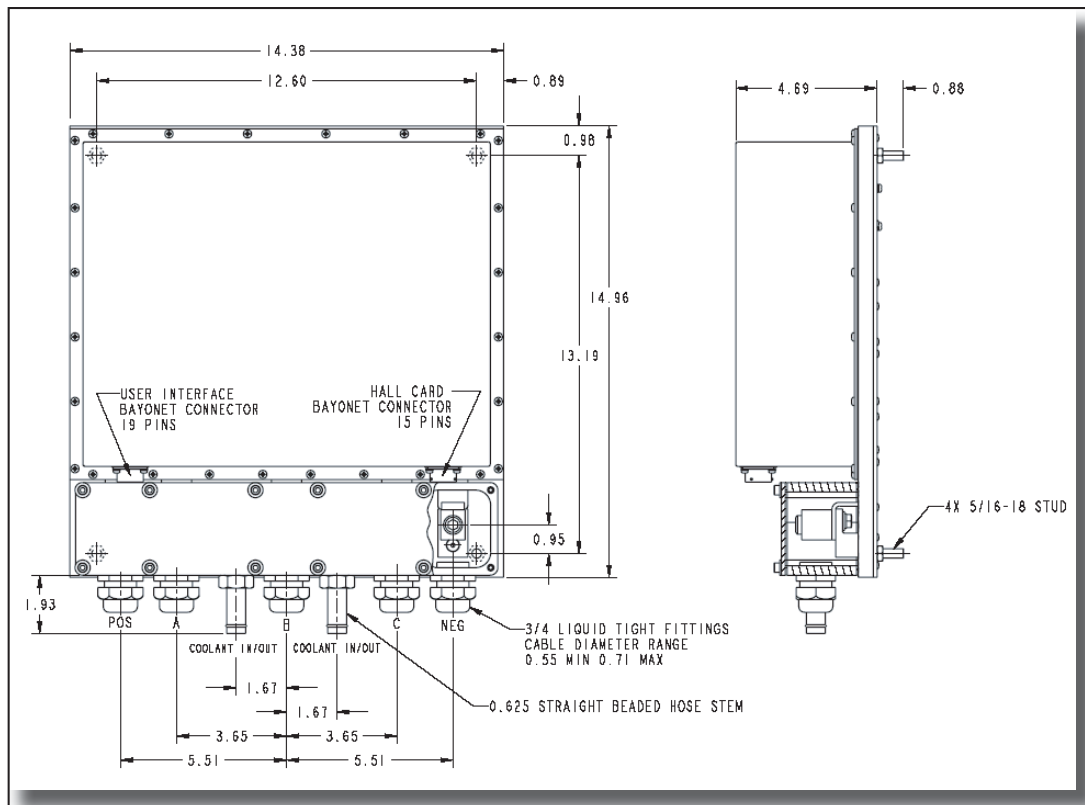
Length	14.96 in	380 mm
Width	14.37 in	365 mm
Height	4.69 in	119 mm
Weight	35.0 lb	15.9 kg

### 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)

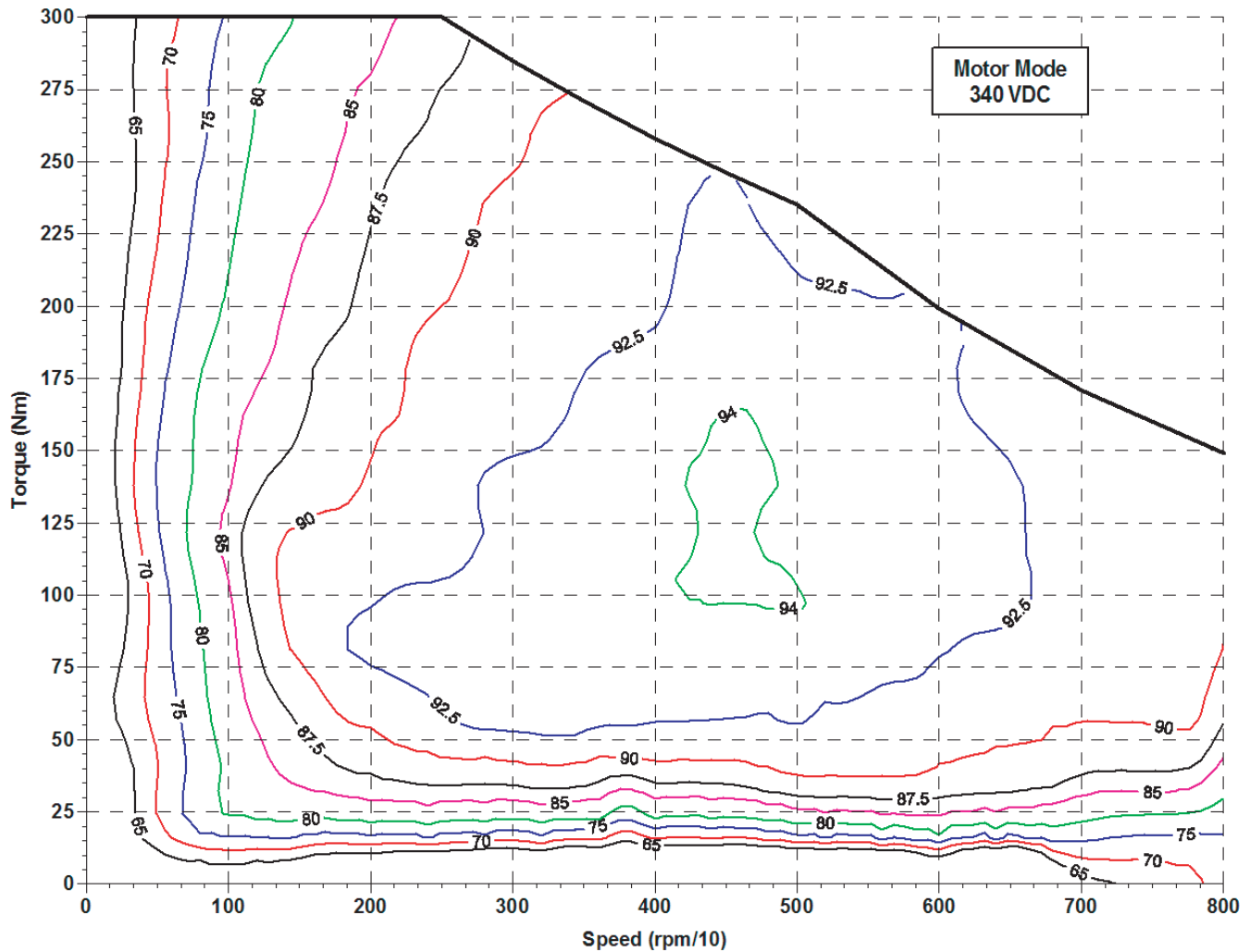
Nominal input voltage	12 VDC
Input supply voltage range	8 to 15 VDC
Input supply current range	0.3 to 0.5 A



# PowerPhase<sup>®</sup> 125

## Motoring Efficiency Map

Includes controller and motor



### Testing Conditions

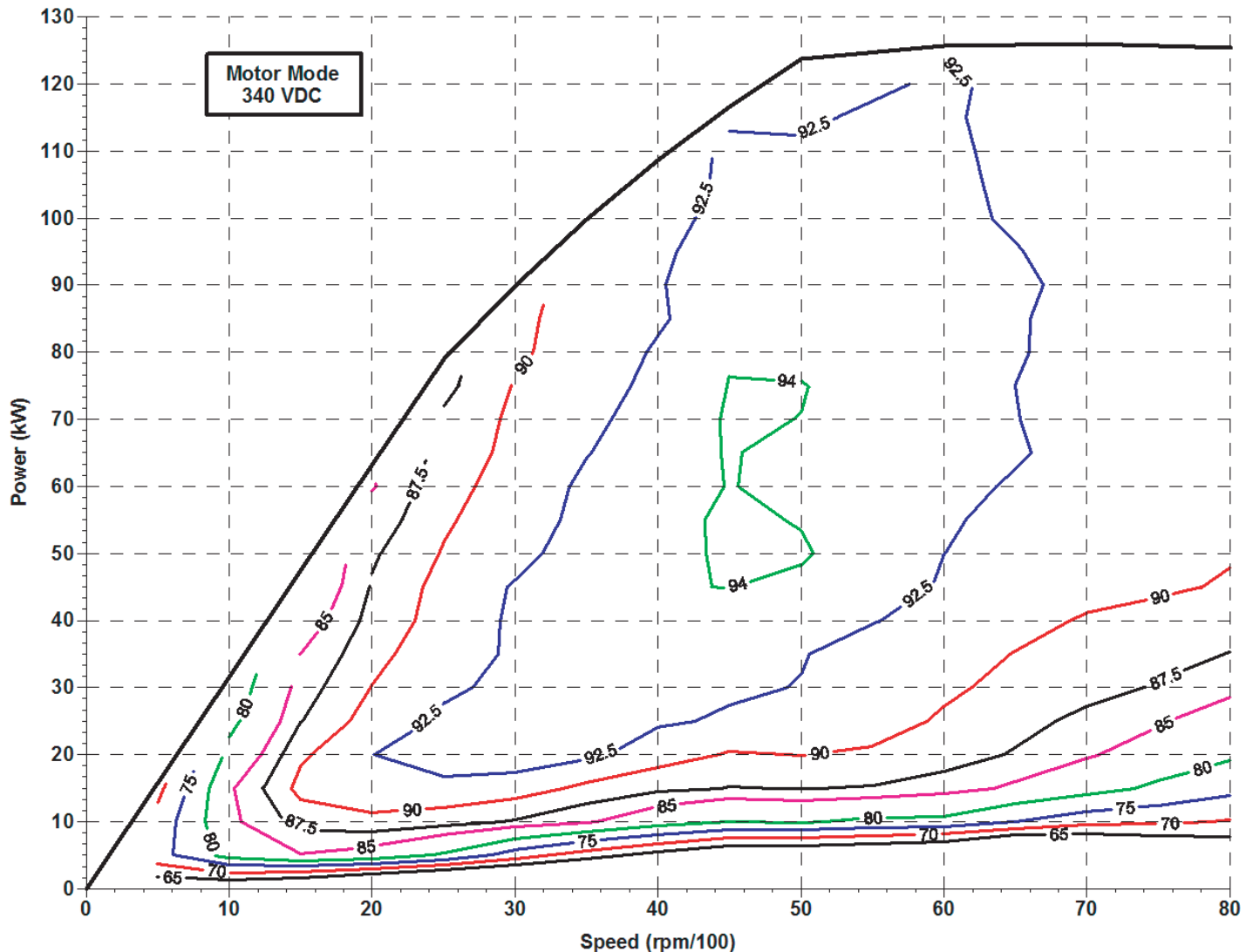
Continuous Output: 45 kW at 4,000 rpm with 300 VDC input, 55°C coolant

Peak Output: 300 VDC input, 55°C coolant, duration 30-90 seconds

# PowerPhase<sup>®</sup> 125

## Motoring Efficiency Map

Includes controller and motor



### Testing Conditions

Continuous Output: 45 kW at 4,000 rpm with 300 VDC input, 55°C coolant

Peak Output: 300 VDC input, 55°C coolant, duration 30-90 seconds