



# PowerPhase<sup>®</sup> 145

for electric, hybrid electric, and fuel cell powered vehicles



## Key Features:

- 400 Nm peak torque
- 145 kW peak, 85 kW continuous motor power
- 145 kW peak, 85 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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## 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

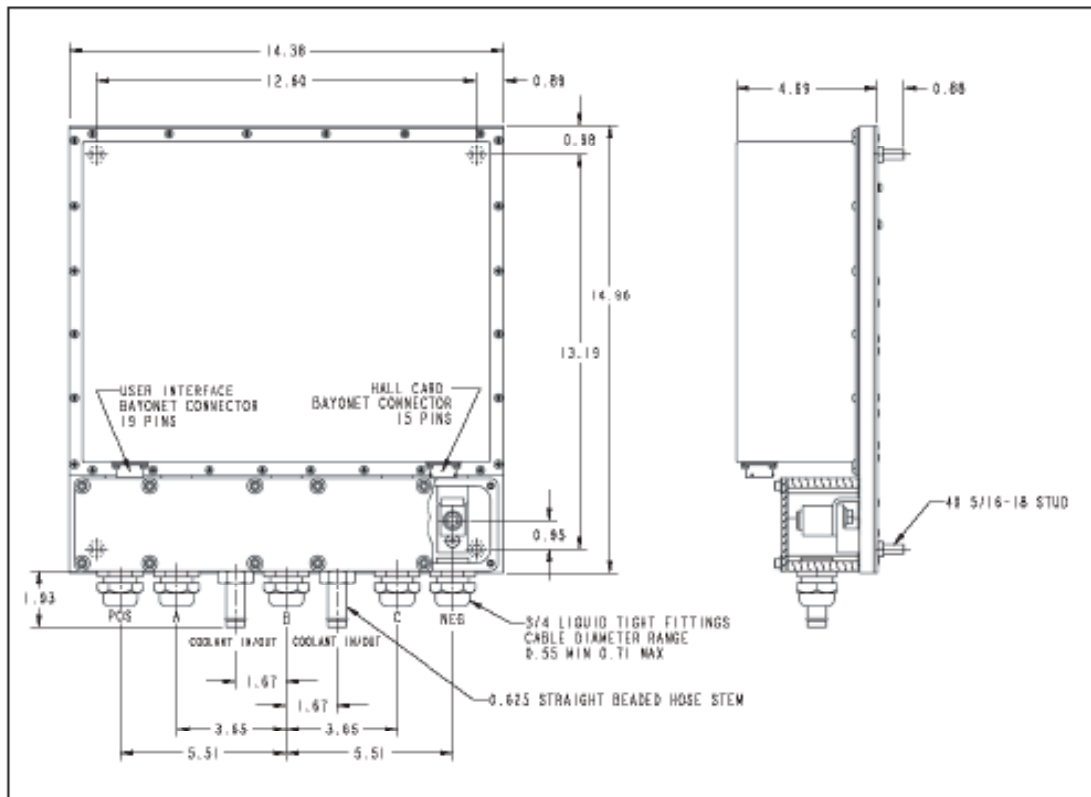
Length	14.96 in	380 mm
Width	14.37 in	365 mm
Height	4.69 in	119 mm
Weight	35.0 lb	15.9 kg

### 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)

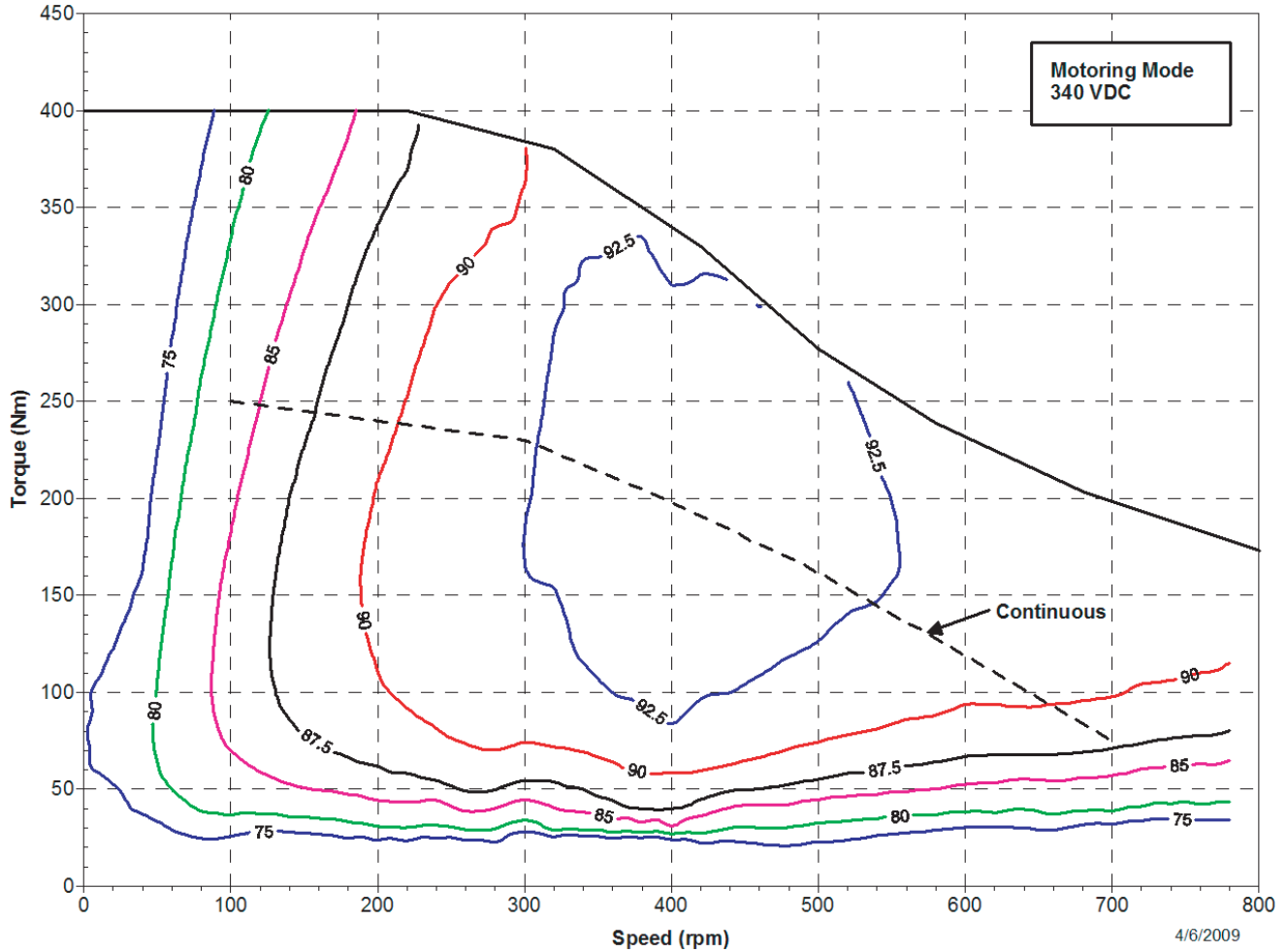
Nominal input voltage	12 VDC
Input supply voltage range	8 to 15 VDC
Input supply current range	0.3 to 0.5 A



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## Motoring Efficiency Map

Includes controller and motor



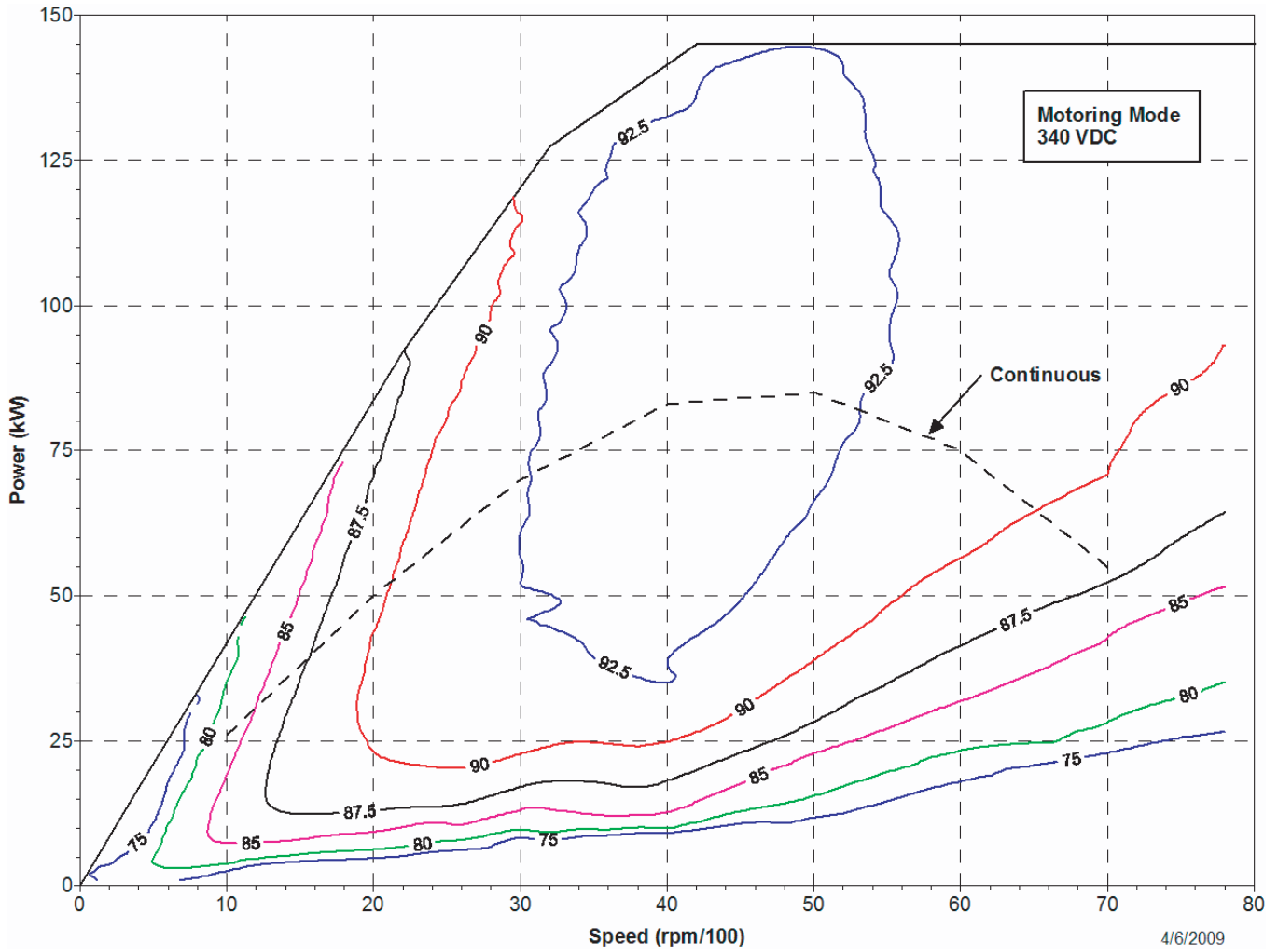
### Testing Conditions

Continuous Output: 85 kW at 5,000 rpm with 340 VDC input, 55°C coolant

Peak Output: 145 kW with 340 VDC input, 55°C coolant, duration 30-90 seconds

## Motoring Efficiency Map

Includes controller and motor

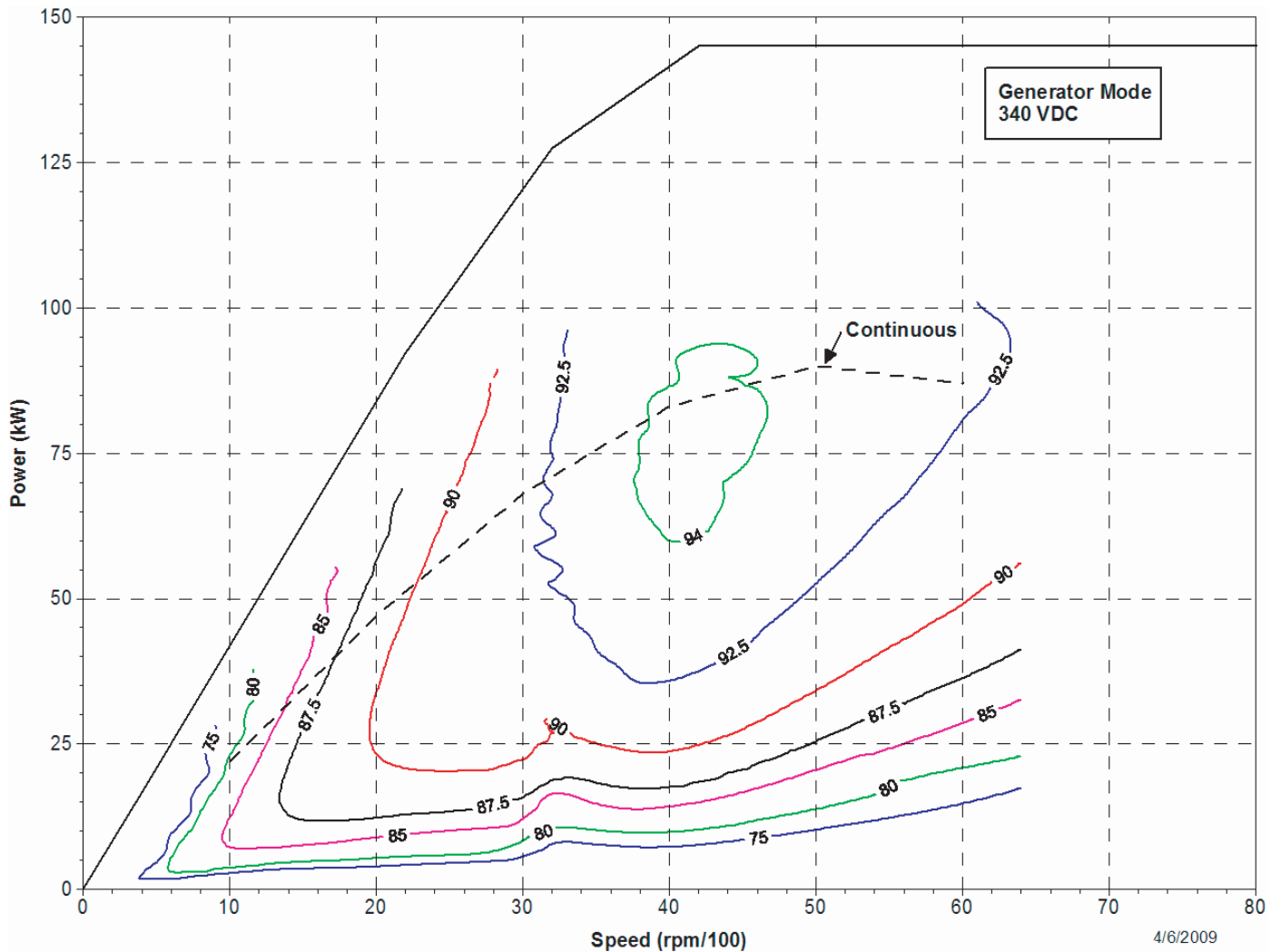


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## Generating Efficiency Map Includes controller and generator



### Testing Conditions

Continuous Output: 85 kW at 5,000 rpm with 340 VDC input, 55°C coolant  
Peak Output: 145 kW with 340 VDC input, 55°C coolant, duration 30-90 seconds