

Delphi Integrated Inverter, Converter and Controller

Delphi's integrated inverter, DC / DC converter and controller for hybrid vehicles offers vehicle manufacturers a high-value power solution for mild hybrid vehicles. Providing the convenience of power electronics integrated in a single package, the inverter / converter / controller is a proven component of Delphi's Power Box, a self-contained hybrid propulsion system for mild hybrids.

▶ The Delphi Advantage

- Implemented using high-volume, low-cost Delphi powertrain controller building blocks as foundation
- Application software available

▶ Functionality

- Inverter
 - Converts high-voltage DC into multi-phase AC required to drive hybrid vehicles
 - Converts AC from the motor into DC to charge the vehicle battery
- Controller
 - Controls hybrid vehicle propulsion, coordinating energy storage and propulsion sources
 - Acts as communication interface to vehicle and electric drive / battery
 - Acts as gateway between communication busses
- DC / DC Converter
 - Creates DC voltages to power accessories, HVAC and power steering

▶ Availability

- In production



Delphi's integrated inverter, converter and controller saves space and reduces cost while providing high performance.

► **Specifications**

Environmental	<ul style="list-style-type: none"> • Air-cooled • 80 to 134V_{dc} input operating voltage • -30 to +70°C ambient operation
DC / AC Inverter	<ul style="list-style-type: none"> • 120V • Three-phase AC motor • 20kW peak, vector-controlled • Up to 150 amps continuous phase current, with sufficient cooling • Peak phase current in excess of 300 amps
DC / DC Converter	<ul style="list-style-type: none"> • 1.6kW isolated 14 V_{dc} unidirectional • 12.5 – 15.5 V_{dc} output voltage range
Controller	<ul style="list-style-type: none"> • Main processor <ul style="list-style-type: none"> ○ 32-bit ○ 128 MHz Freescale Viper™ ○ 3Mbyte flash, 128Kbyte SRAM • Motor control processor <ul style="list-style-type: none"> ○ 128 MHz Freescale Taipan™ ○ 2Mbyte flash, 64Kbyte SRAM

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