SD500™ SEVERE DUTY AC TRACTION DRIVE

Severe Duty with DC Input

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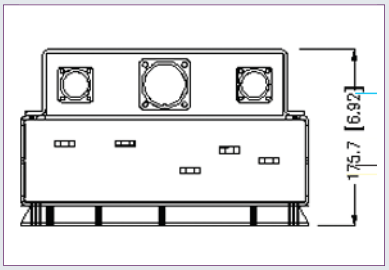
Magnetek designed the SD500™ specifically for use in higher performance electric or hybrid cars, buses, delivery vehicles and mining equipment.

The Magnetek's SD500™ Severe Duty AC Traction Drive design is based on a proven line of state-of-the-art industrial controllers. The drive can be connected to either a permanent magnet or induction AC motor. This combination of AC motor and controller is the best choice for high system efficiency at a wide range of motor speeds. It also can be used on the series or parallel hybrid scheme that includes a generator. Magnetek has been successfully providing SD500 traction drives for commercial applications since 1997.

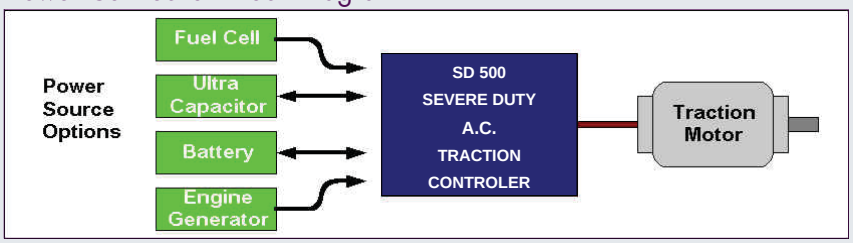
KEY BENEFITS

- Flux Vector Control Method
- Input Voltage Range from battery power
  - 150 to 400 VDC input for 230 VAC motor operation
  - 300 to 800 VDC input for 460 VAC motor operation
- 60 to 240 kW peak
- -10 to 55°C ambient temperature

SD500™ Top Dimensional View



Power Connection Block Diagram



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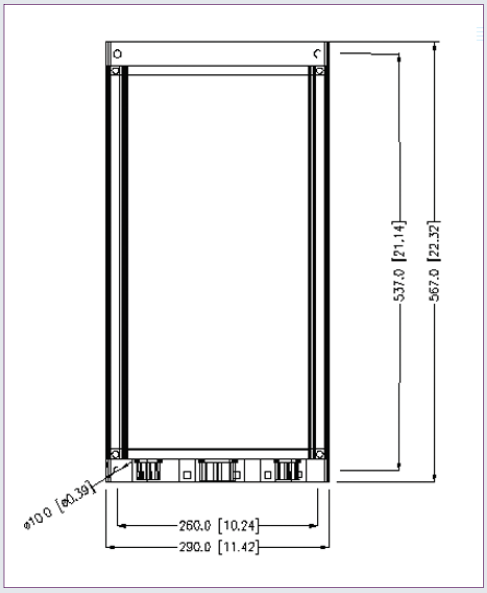
PRODUCT FEATURES AND APPLICATIONS

PERFORMANCE FEATURES

- Compatible with battery, generator-battery, generator-capacitor hybrid systems
- Full regenerative capabilities
- Wide battery voltage range
- Smooth torque from stall to 400 Hz
- Quiet operation
- Quick connect sealed connectors
- 96-98% efficiency
- Third generation Insulated Gate Bipolar Transistors (IGBT's)
- Laminated DC bus design reduces RFI and EMI emissions
- Integrated pre-charge contactor
- No need for buck-boost converter when used with an Ultra-capacitor System
- Single or two pedal control
- Brake light output relay during regen
- Adjustable over- and under-voltage suppression algorithm
- Battery current limit adjustment

SD500™ dimensional view



PROTECTIVE FEATURES

- Output short circuit
- Output over current
- Output phase loss
- Over- and under-voltage
- Motor overload protection
- Over-temperature protection
- Overtorque/undertorque detection
- Battery deep discharge prevention
- Battery state-of-charge monitor
- Motor speed limit protection
- Individually adjustable pedal response
- Regenerative braking disable switch
- Air or liquid cooled
- Multi-line, multi-language keypad display unit used to monitor and make application adjustments.
- Performance-economy mode
- Surface mount technology
- 32 bit Risc Microprocessor
- Aluminum enclosure for RFI shielding
- Total digital control
- Serial communication port
- Digital and analog outputs for dash controls
- Automatic tuning function for use with custom motors
- 12 VDC supply start and run signals
- 12 V forward/reverse input switch

APPLICATIONS

- Mining equipment—battery hauler, conveyor systems, multi-belters, long wall face conveyors, crushers and continuous miners
- Electric transit buses, cars and shuttle vehicles
- Port and distribution tractor