# M-FORCE™

## SD500 SEVERE DUTY AC TRACTION DRIVE SYSTEM




Magnetek's M-Force SD500 Severe Duty AC Traction Drive System is part of our proven line of state-of the-art industrial controllers. The system can be connected to permanent magnet or induction AC motors for high system efficiency at a wide range of motor speeds. This fully regenerative drive with DC input can be used in a variety of mining applications including battery-operated mobile vehicles, conveyer systems, crushers, locomotives and continuous miners.

MAGNETEK
MINING

## DISPLAY

The explosion-proof Display provides real-time performance monitoring of the control system. The Display allows for system programming and re-configuration, data reporting, and troubleshooting without having to gain access to the motors, temperature transducers, or hydraulic components.

## CONTROLLER

The rugged Controller monitors and controls all of the M-Force SD Drives in the system providing safety and fault reporting. The Controller provides full-time monitoring of motor and drive temperature, battery health status, system faults, run time, and a host of other features.

System component control of:

- CAN BUS Communication
- Pressure and temperature transducers
- Analog/digital inputs from gas pedal, joystick, and other switching devices
- Inputs from PLC and other controllers

## CUSTOM ENGINEERED SYSTEMS

Magnetek can provide engineered power solutions for transportation, mining, marine or locomotive applications with custom-designed M-Force SD500 Variable Frequency Drives. Magnetek can also provide custom monitoring, data collection and display systems integrated with any Magnetek M-Force SD Drive to provide the ultimate in assured performance and control. Our flexible building-block approach allows us to configure a custom Display and Controller to your exact requirements. The control interface provides real-time diagnostics for preventative maintenance and troubleshooting reducing down time and repairs.

## IMPROVED PERFORMANCE

Adjustable operating speeds, torque limits, and controlled stopping allow for smooth operation and increased power from stall to 400 Hz.

## INCREASED ENERGY EFFICIENCY

A custom engineered system can improve the power factor and reduce in-rush currents to minimize energy consumption.

## GREATER RELIABILITY

Controlled start-up torque reduces the wear and tear on the motor and connected load, which reduces mechanical breakdown to extend motor life.

## QUALITY BUILT

Magnetek Mining designs, builds and tests our products in our ISO 9001:2000 certified manufacturing facility and has completed Part 46 Training from the Mine Safety and Health Administration (MSHA), allowing our experienced technicians to assist with application start-up procedures.

**Contact us today at 888.428.2299 for a custom power solution to optimize your mining application.**

# PRODUCT FEATURES

## POWER SOURCE OPTIONS

- Fuel Cell
- Ultra Capacitor
- Battery
- Engine Generator
- Generator-Battery Hybrid System
- Generator-Capacitor Hybrid System

## PERFORMANCE FEATURES

- Flux Vector control
- 96% - 98% efficiency
- Full regenerative capabilities
- Wide battery voltage range
  - 150 to 400 VDC input for 230 VAC motor
  - 300 to 800 VDC input for 460 VAC motor
- Smooth torque from stall to 400 Hz
- 60 to 240 kW peak
- -10° to 55° C ambient temperature
- Insolated Gate Bipolar Transistors (IGBTs)
- Air and liquid cooled
- Single- or two-pedal control
- Reduced EMI emissions
- RFI shielding
- Adjustable over- and under-voltage suppression algorithm
- Automatic tuning function for use with custom motors
- Communication options available
- Performance-economy mode
- 12 VDC supply start and run signals