



The Magnetek SD1000™ Air and Liquid Cooled Variable Frequency Drives (VFD) can operate applications ranging from simple variable or constant torque, to sophisticated networked systems.

The SD1000 Air and Liquid Cooled family of VFDs builds upon the proven control design platform used on Magnetek's SD500 traction drives. Each drive is custom designed to handle common mine voltage of 950 Volts AC, and power engineered using the latest IGBT technology. The drive offers four modes of control, network communication options, application-specific drive software, and standard plus optional input/outputs to fulfill your specific requirements.

This rugged and reliable drive is designed for tough mining environments. It is available as a panel-only or mounted in an enclosure, providing the right environmental protection. The dual ratings, Normal and Heavy Duty, enable the most economical match of overload capacity and starting torque for the application. High-slip braking can eliminate the need for dynamic braking resistors for high inertia loads.

DESIGN FEATURES

- LCD keypad display, 5 lines x 16 characters, backlit
- Setpoint (PID) trim control
- Signal follower: bias and gain
- Up/down/hold reference (digital M.O.P.)
- Timer function; on/off delay
- 32-bit microprocessor logic
- Easy access, quick start parameter groups
- Nonvolatile memory/program retention
- Flash memory for update and custom applications
- 24 VDC control logic
- Synchronized start into rotating motor
- Motor auto-tuning, static and dynamic
- Terminal strip, quick disconnect

SD1000™ 1000V Air and Liquid Cooled Variable Frequency Drive

PRODUCT FEATURES

Our standard factory programmed drive is ready to run right away. For operational simplicity and clarity, the LCD operator display has 5 lines x 16 characters, and can be set to one of 7 languages. The intuitive keypad includes parameter copying to move a chosen set of parameters between drives. If the application requires programming, the SD1000 Air Cooled VFD makes it easy. Parameters are grouped in easy-to-use sets; Quick Start and Advanced, to enhance parameter and data management.

The SD1000 supports the industry's open architecture and open connectivity demands with network communications choices such as DeviceNet, Profibus-DP, and others. Drive coordination with other equipment is simplified with inputs and outputs for digital pulse train, 4 to 20 mA, -10 to +10 V, and an assortment of programmable contacts.

PERFORMANCE FEATURES

- Ratings: 75 - 450 HP, 950 VAC
- Overload capacity: 150% for 1 min Constant Torque, nominal 110% for 1 min normal duty
- Starting torque: 150%
- Output frequency: 0.01 to 300 Hz for heavy duty
- Controlled speed range: 40:1 (V/f), 50:1 (V/f with PG), 200:1 (open loop), 1000:1 (closed loop)
- Speed regulation: 2-3% (V/f), 0.02% (V/f with PG), 0.2% (open loop), 0.01% (closed loop)
- Speed/frequency resolution: 0.01% with digital reference, 0.1% with analog reference, 0.1 Hz with Modbus
- Electronic reversing
- Stall prevention
- Drive efficiency: 96 to 98%
- Displacement power factor: 0.98
- Power loss ride-thru: 2 seconds
- Inertial ride-thru
- Selectable auto restart after momentary power loss

INPUTS/OUTPUTS FEATURES

- Analog inputs: -10 to +10 VDC (20K ohms) or 4 to 20 mA (250 ohm)
- Analog outputs: -10 to +10 VDC or 4-20 mA proportional to output parameters
- Digital inputs: 8 multi-function
- Programmable outputs: Three form A
- Fault contacts: form C
- RS-485/422 communication terminals

PROTECTIVE FEATURES

- DC bus CHARGE indicator
- Optically-Isolated controls
- Electronic motor overload
- Current and torque limit
- Over-torque/under-torque detection
- Fault circuit: over-current, over-voltage, and over-temperature

SERVICE CONDITIONS

- Ambient service temperatures: -10 to 40°C (104°F) NEMA 1, to 45°C (113°F) protected chassis
- Humidity: non-condensing 95%
- Altitude: to 3300 feet (1000 meter)
- Input voltage: +10%/-15%, 3 phase 850/1100VAC
- Input frequency: 50/60 Hz ± 5%
- 3-phase, 3-wire phase insensitive

MAGNETEK...OVER 30 YEARS AND 10,000 DRIVES OF MINING EXPERIENCE