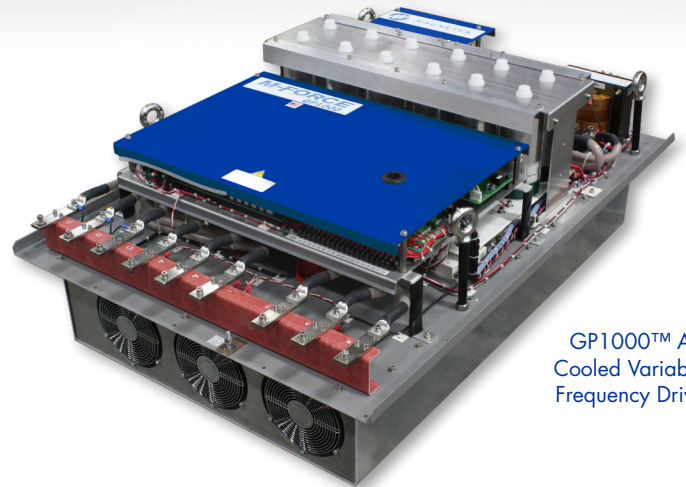


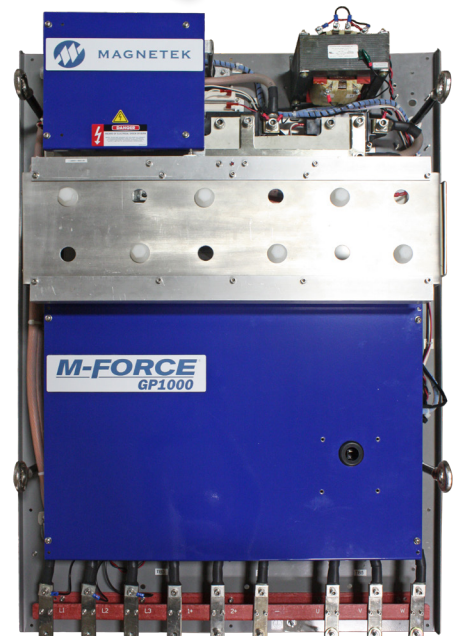


Magnetek's M-FORCE® GP1000 Air and Liquid Cooled Variable Frequency Drives utilize three level control to offer the best solution for challenging installations. These unique 995 VAC drives are the only models with this architecture available on the market.

The GP1000 drive is a high flexibility, vector or V/F control inverter with improved speed and torque performance. This innovative three level control reduces motor winding stress, decreases electrical noise, and minimizes drive-induced problems associated with long motor cables and premature motor bearing failures.



GP1000™ Air
Cooled Variable
Frequency Drive



GP1000™ Liquid
Cooled Variable
Frequency Drive



MAGNETEK
M I N I N G



GP1000™ AIR AND LIQUID COOLED VARIABLE FREQUENCY DRIVES



PRODUCT FEATURES

Several control modes are provided. In open loop vector mode, the latest flux observer algorithms extend speed range and provide maximum starting torque. In closed loop vector mode, 0.01% speed regulation and 1000:1 control range can be achieved. Zero-servo capability provides position control at zero speed.

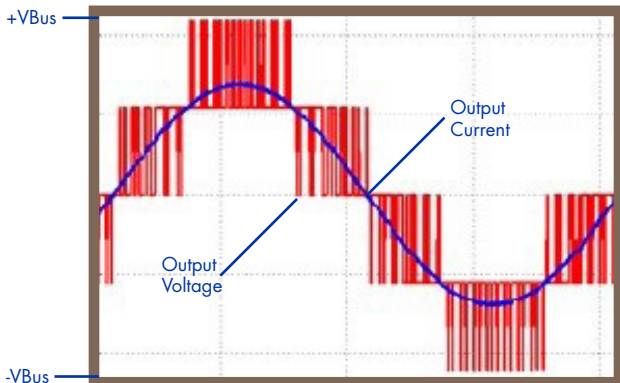
The GP1000 drives support the industry's preference for open network architecture and connectivity, with network choices such as DeviceNet, Profibus-DP, Ethernet, and others.

GREATER RELIABILITY

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

QUALITY BUILD

Magnetek designs, builds, and tests our products in our ISO 9001 certified manufacturing facility.



GP1000 3-Level Control

DESIGN FEATURES

The GP1000's inverter architecture and advanced control parameters minimize installation problems. It offers three autotuning methods to optimize motor control, including new static autotuning, which does not require load decoupling or motor rotation, greatly reducing set up time.

GP1000 drives combine state-of-the-art components with innovative design. The three level inverter provides a premium, high-performance solution for challenging application requirements.

COMPONENT BENEFITS OF GP1000

- **Film bus capacitors versus electrolytics**
 - Over two times the life expectancy
 - Dry design will not leak
 - Overload surge rating of 1.5 x rated voltage
 - Unlimited shelf life — no reforming required
- **Fifth generation 1200V IGBTs in a three level design versus second generation 2500V IGBTs in a two level design**
 - Three level requires twice as many IGBTs
 - Total switching losses are reduced
 - Lower heating of components

BENEFITS OF GP1000 THREE LEVEL CONTROL

- **Extended motor lead length: 300 meter**
 - Meets NEMA MG1 part 31
- **Four times the motor bearing life**
- **Quiet operation: 5-10 dB of noise reduction compared to two level control**
- **Common mode noise: 50% reduction**
- **Up to 44% lower inverter losses than two level control**

STANDARD FEATURES

- Operating modes
 - Volts/Hertz: constant V/F or adjustable fan curve V/F
 - Open Loop Vector
 - Closed Loop Vector: required feedback option card
- DC Link Choke for reduced DC ripple on bus
 - Reduced motor losses and heating
- Simplified programming
 - Quick start and modified parameter groups
- Power loss ride-thru
 - Auto-restart or inertia ride-thru
- Control logic: 24 VDC sinking or sourcing
- Electronic motor overload protection
- Static motor auto-tuning
- Speed search: bi-directional into rotating motor
- Process control: PID, reference with PID trim
- Skip frequency
 - Prohibit operation at up to three frequencies to eliminate machine resonance
- RS-232/422/485: adjustable level and time
- Timer function: programmable on/off delay
- Common DC-Bus capability: all models

OPTIONS

- Serial interface options
- Ethernet/IP, Modbus TCP/IP, Profibus-DP, and DeviceNet
 - EMC compliant (CE) input filter
 - NEMA 12 or NEMA 4 enclosures
 - Input breaker, disconnect, and fusing
 - Line reactor

INPUTS/OUTPUTS

Analog inputs: -10 to ± 10 VDC, 0 to 10V or 4 to 20 mA, Pulse Train

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

Overtorque/undertorque detection

DC-Bus over-voltage protection

DC-Bus under-voltage protection

Fault circuit: over-current, over-voltage, and over-temperature

SERVICE CONDITIONS

Ambient service temperatures:

- Liquid Cooled: -10 to 50°C

(122°F) open chassis type

- Air Cooled: -10 to 45°C (113°F)

Humidity: non-condensing 95%

Altitude: to 3300 feet (1000 meter)

Input voltage: +10%/-15%, 3 phase, 850/995 VAC

Input frequency: 50/60 Hz \pm 5%
3 phase, 3 wire phase insensitive

AGENCY APPROVALS

UL/61800.5.1 IEC (Pending)

CE with optional filter

PERFORMANCE FEATURES

Ratings: 100-300 HP, 350-600 HP, 995 VAC, 1140 VAC optional

Overload capacity: 150% for one minute, 200% for five seconds

Starting torque: 150% of rated torque (flux vector mode)

Output frequency: 0.01 to 400 Hz

Controlled speed range: 1:300 (open loop vector control 2), 1:1000 (Flux vector control)

Speed regulation: $\pm 0.2\%$ (open loop vector control, 25°C \pm 10°C), $\pm 0.02\%$ (Flux vector control, 25°C \pm 10°C)

Speed/frequency resolution: 0.01% with digital reference, 0.1% with analog reference

Electronic reversing

Stall prevention

Drive efficiency: 96 to 98%

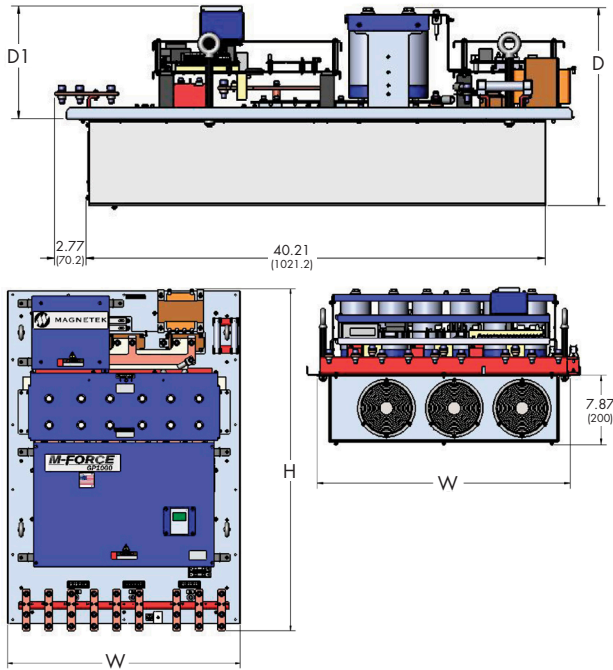
Displacement power factor: 0.98

Power loss ride-thru: 2 seconds

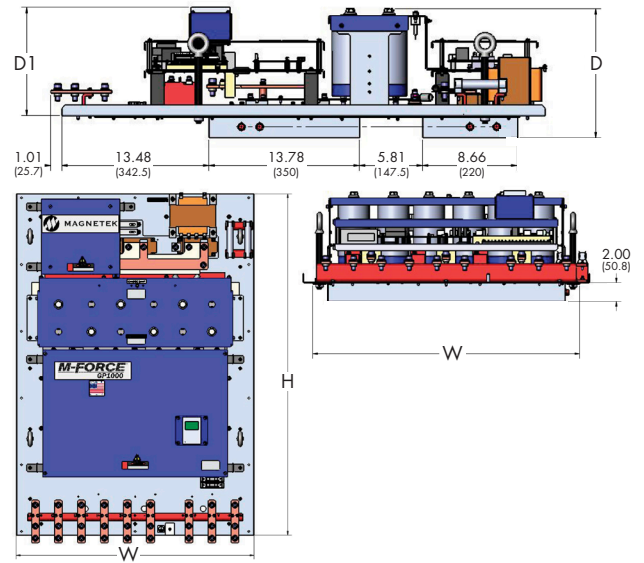
Inertial ride-thru

Selectable auto restart after momentary power loss

AIR COOLED DIMENSIONS



LIQUID COOLED DIMENSIONS



DIMENSIONS AND RATINGS

Model #	Input Voltage		Frequency	Cooling	Constant Torque				Variable Torque				Dimensions			
	VAC	Hz			HP	Kw	FLA	OLA	HP	Kw	FLA	OLA	H	W	D	D1
GP1000-100-50	995	50	Air	100	75	60	90	150	110	90	108	45.6 in (1158 mm)	31 in (786 mm)	17.75 in (451 mm)	9.88 in (251 mm)	
GP1000-215-50	995	50	Air	300	225	180	270	350	260	210	252	45.6 in (1158 mm)	31 in (786 mm)	17.75 in (451 mm)	9.88 in (251 mm)	
GP1000-360-50	995	50	Air	500	375	300	450	600	450	360	432	66 in (1676 mm)	31 in (786 mm)	17.75 in (451 mm)	9.88 in (251 mm)	
GP1000-100-60	995	60	Air	100	75	60	90	150	110	90	108	45.6 in (1158 mm)	31 in (786 mm)	17.75 in (451 mm)	9.88 in (251 mm)	
GP1000-215-60	995	60	Air	300	225	180	270	350	260	210	252	45.6 in (1158 mm)	31 in (786 mm)	17.75 in (451 mm)	9.88 in (251 mm)	
GP1000-360-60	995	60	Air	500	375	300	450	600	450	360	432	66 in (1676 mm)	31 in (786 mm)	17.75 in (451 mm)	9.88 in (251 mm)	
GP1000-100-50-L	995	50	Liquid	100	75	60	90	150	110	90	108	45.6 in (1158 mm)	31 in (786 mm)	11.88 in (302 mm)	9.88 in (251 mm)	
GP1000-215-50-L	995	50	Liquid	300	225	180	270	350	260	210	252	45.6 in (1158 mm)	31 in (786 mm)	11.88 in (302 mm)	9.88 in (251 mm)	
GP1000-100-60-L	995	60	Liquid	100	75	60	90	150	110	90	108	45.6 in (1158 mm)	31 in (786 mm)	11.88 in (302 mm)	9.88 in (251 mm)	
GP1000-215-60-L	995	60	Liquid	300	225	180	270	350	260	210	252	45.6 in (1158 mm)	31 in (786 mm)	11.88 in (302 mm)	9.88 in (251 mm)	

Contact us today at 800.288.8178 or 262.783.3500 for a custom power solution to optimize your mining application.

