

Specifications and Features for P5 Drive 600 Volt

The GPD 506/P5 is designed specifically for applications where overload and starting torque requirements are well known. Common applications of this type include fans, centrifugal pumps, commercial laundry machines, grinders, buffers, low-viscosity mixers, centrifuges and saws.

- *Constant torque and variable torque ratings.*
- *V/Hz Control Mode.*
- *Alpha/numeric operator...* Full function LCD english language operator and keypad with easy-to-read 16 character two-line format display. Easy input and monitoring of operating parameters.
- *Built-in PID control...* Eliminates cost of external device. Full featured scalable PID feedback with display and an inverse signal function.
- *Energy savings control...* Automatic output voltage adjustment in response to actual motor loading. Real-time energy savings based on motor algorithms. Increases motor efficiency by several percent.
- *Network Communications links to DeviceNet or ModBus RTU.*
- *Under torque detection...* Alerts the operator to conditions such as loss of load or broken fan belts.
- *Dual-bridge, 12-pulse rectification...* By using a zig-zag input transformer with dual secondary, input current harmonic distortion factor can be reduced over 90%.

Performance Features

- Ratings:
 - 3/4 to 100 HP at 208 VAC
 - 3/4 to 125 HP at 230 VAC
 - 3/4 to 500 HP (VT) at 460 VAC
 - 3/4 to 400 HP (CT) at 460 VAC
 - 2 to 200 HP (VT) at 600 VAC
- Overload capacity:
 - VT 120% for 60 sec (180% peak)
 - CT 150% for 60 sec (200% peak)
- Starting torque: 150%
- DC injection braking: ramp or coast to stop, adjustable, current limited
- Electronic reversing
- Adjustable accel/decel: 0.1 to 3600 sec (2 each)
- Controlled speed range: 40:1
- Critical frequency rejection: 2 selectable, adjustable bands
- Torque limiting circuit: 30 to 180%
- Drive efficiency: 96 to 98%
- Energy Saving control: improves

Design Features

- 32-bit microprocessor logic
- Surface mount devices
- Carrier frequency: selectable to 15 kHz
- Keypad operator controls
- LCD display: English alpha/numeric sixteen character two lines
- 24 VDC control logic
- Programmable contacts, one form C and one NO
- Timer function: contact-initiated
- RS-232 communications port
- Volts/hertz ratio: Programmable custom V/Hz patterns
- Multi-speed settings: 6 available
- Remote speed reference: 0 to 10 VDC or 4 to 20 mA
- Setpoint (PID) control with inverse input and Sleep function
- Signal follower: bias and gain
- Analog monitor output: 0 to 10 VDC

- motor efficiency
- Displacement power factor: 0.98
- Output frequency: 0.1 to 400 Hz
- Frequency resolution:
0.01 Hz with digital reference,
0.06 Hz with analog reference
- Frequency regulation:
0.01% digital (-10 ° to 40 °C),
0.1% analog (15 ° to 35 °C)
- Torque boost: full range, auto
- Jog forward and reverse
- Power loss ride-thru: 2 sec
- Inertia ride-thru
- Selectable auto restart after
momentary power loss
- Programmable auto restart (0 to 10
attempts) after resettable fault
- DC bus reactor: 30 to 125 HP at 230
VAC, 30 to 250 HP at 460 VAC
- Slip Compensation

- NEMA 1 enclosed or protected
chassis
- UL, cUL and ce listed; IEC 146
- MTBF: exceeds 28 years

Service Conditions

- Ambient service temperature:
-10 °C to 40 °C (104 °F) NEMA
1, to 45 °C (113 °F) protected
chassis
- Humidity: non-condensing to 95%
- Altitude: to 3300 ft; higher by
derating
- Input voltage: +10%/-15%, 200 to
230 VAC, 380 to 460 VAC, 500 to
600 VAC
- Input frequency: 50/60 Hz ± 5%
- 3-phase, 3-wire, phase sequence

Protective Features

- Current limited stall prevention
- Synchronized start into rotating
motor via speed search
- DC bus CHARGE indicator
- Optically-Isolated controls
- Phase-to-phase / phase-to-neutral
short circuit protection
- Ground fault protection
- Electronic motor overload
- Current and torque limit
- Fault circuit: overcurrent,
overvoltage, and overtemperature
- Over torque protection
- Under torque protection

Drive with C21 Bypass

- Ratings: 2 to 125 HP at 230 VAC, 1
to 500 HP at 460 VAC,
- NEMA 1 or NEMA 12 enclosure
- Door-interlocked circuit breaker

- Contactors: line, load, bypass
- Thermal overload relay (class 20)
- Control transformer
- Selector switches: Auto / Manual, Drive / Off / Bypass, Test / Normal
- Lights: Power, Fault
- Terminal Strip: customer use
- Optional auto transfer and smoke purge