

FP5 Fan & Pump AC Drive

Ratings:

- 0.75 to 100 HP at 208 Vac
- 0.75 to 125 HP at 230 Vac
- 0.75 to 500 HP at 460 Vac

- CE Marking (73 / 23 / EEC / 460V only)
- Multi-Line, LCD, "English" Keypad
- PID Sleep Function



The FP5 is a variable torque AC drive which produces an output of adjustable voltage and frequency to control the speed of squirrel cage induction motors. This PWM design is ideal for applications where momentary overload and starting torque requirements are minimal. The overload rating is 125% for 60 seconds. Standard features include setpoint (PID) control, energy-savings mode, power consumption monitoring, and methods for harmonic distortion reduction. Low motor noise and high efficiency are other outstanding features. The FP5 is ideal for most fan/pump applications.

Approvals:

- UL, cUL, CE

Design:

- Analog monitor output: 0 to 10Vdc
- Carrier frequency: selectable to 15 kHz
- DC bus reactor included:
 - 30 to 125 HP at 230Vac
 - 30 to 250 HP at 460Vac
- Keypad operator controls
- LCD display: English alpha/numeric 2 lines x 16 character
- MTBF: exceeds 28 years
- Multi-speed settings
- NEMA 1 enclosed or protected chassis
- Multi-Line, LCD, "English" Keypad
- PID Sleep Function
- Programmable contacts, one Form C and one normally open
- Remote speed reference:
 - 0 to 10Vdc or 4 to 20 mA
- RS-232 communications port
- Setpoint (PID) control with inverse input
- Signal follower: bias and gain
- Surface mount devices
- Timer function: contact-initiated
- 12 pulse ready
- 24 Vdc control logic
- 32-bit microprocessor logic

Operating Conditions:

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

Options:

- Current monitor output card
- Manual and auto 3 contactor bypass
- Many control interface devices
- Pressure to electrical transducer
- Rapidpak pre-engineered industrial solutions
- Siemens FLN
- Serial communications:
 - Devicenet
 - Echelon LonWorks
 - Interbus-S
 - Metasys (N2) Interface
 - Mini-Smart Card
 - Profibus
 - RS-232C
 - RS-485
- Saflink
- 12-pulse rectification with separately ordered input transformer:
 - 30 to 125 HP at 230Vac
 - 30 to 250 HP at 460Vac

Protection:

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

Performance:

- Adjustable accel/decel:
 - 0.1 to 3600 sec (2 each)
- Controlled speed range: 40:1
- Critical frequency rejection:
 - 2 selectable, adjustable bands
- DC injection braking: ramp or coast to stop, adjustable, current limited
- Displacement power factor: 0.98
- Drive efficiency: 96 to 98%
- Energy Saving control: improves motor efficiency
- Frequency regulation:
 - 0.01% digital (-10° to 40°C)
 - 0.1% analog (15° to 35°C)
- Frequency resolution:
 - 0.01 Hz with digital reference
 - 0.06 Hz with analog reference
- Inertia ride-thru
- Output frequency:
 - 0.1 to 400 Hz
- Overload Capacity:
 - 125% for 60 sec (180% peak)
- Power loss ride-thru: 2 sec
- Programmable auto restart after momentary power loss
- Selectable auto restart after momentary power loss
- Torque boost: full range, auto
- Torque limiting circuit:
 - 30 to 180%