Standard Features:

- 80-Character, 4-Line LCD with backlit 8-key keypad (Plain English)
- Output frequency up to 1800Hz as standard, available upto 3000Hz optional
- Rating up to 215HP (160kW)
- Extensive Electronics Diagnostics
- 150% overload for 60 seconds
- Output short circuit and ground fault protection
- Output current unbalance and phase loss protection
- In-built metering on LCD keypad
- Password protected parameters
- Power loss ride through
- Gap eliminator function as standard
- Crush current detection
- Multi Spindle Selection
- Silent spindle operation due to high carrier frequency (18kHz) low spindle temperature
- MODBUS-RTU communication protocol as standard
- Designed for 50°C ambient temperature
- Analog inputs (04) / outputs (04)
- Digital inputs (08) / outputs (07)
- Motor thermistor input
- Fault history up to last ten faults with information of 8 important parameters
- Inbuilt PID controller
**STANDARD FEATURES**

**EASY OPERATION**

The AXPERT Eazy Series High Frequency Drives are specially designed to operate and program easily with few keys. A well designed user-friendly LCD display with 4 Line and 80 Characters is used for parameter setting, alarm messages and indications. The same is used for multi parameter display 8 parameters at a time. All information is displayed in plain English, no codes. The drive programming or troubleshooting can be done without use of instruction manual.

**REDUCED STRESS ON SPINDLE MOTOR**

The latest designed power circuit and IGBT drivers with unique PWM technology for high speed spindle motors, the ripple in output current are minimized, which results in reduction in magnetic noise, audible noise, spindle vibration and spindle heating.

**ADVANCED DSP CONTROL**

Latest high speed DSP control system allows operating decisions and close loops to be carried out at ultra high speed, which results in high accuracy and full protection. The software in this drive provides excellent fault protection and indicating the operating conditions.

**HIGHLY RELIABLE HARDWARE DESIGN & OUTPUT SHORT CIRCUIT PROTECTION**

This drives are designed considering the harsh environment of machine tool industry like higher operating temperature of 50ºC, higher vibration, higher moisture, conductive metal dust and oily environment. This drives are equipped with three current sensors in each phase hence 100% protected against output phase to phase and phase to earth short circuits.

**TYPICAL APPLICATIONS**

This high speed drives are suitable for various applications like-
- Internal Grinding Machine
- Surface Grinding Machines
- Universal Grinding Machines
- Crank pin Grinder
- Center less Grinder
- Special Purpose High Speed Machines
- Lens Polishing.
- Milling Machines

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**OPTIONS**

The following options are offered at extra cost based on customer requirement.
- Cabinets Floor mounted type for better NEMA protection as per requirement and customized.
- Input FSU, MCCB and power contactor for input power isolation purpose.
- Line Reactor for harmonic reduction and protection against line voltage fluctuation.
- EMI Filter for noise reduction.
- Output Reactor for less dV/dt to spindle.
- Output Multi Step Transformer For different type and rating of spindles.
- Dynamic Braking Units for sudden stoppage of high inertia load applications.
- Remote operator stations Customized as per requirement for remote operation.
- Custom Software for PC monitoring and recoding the parameters.
### STANDARD SPECIFICATIONS

#### Power

- **380~460 VAC, 3-Phase, 3-Wire, 50/60 Hz**
- **Voltage tolerance: +10, -15%, Frequency tolerance: +/- 5%**
- **200~220 VAC available as optional**

#### Rated Capacity

- **kW**
- **A**
- **Hp**
- **2.0**
- **3.5**
- **5.5**
- **8.6**
- **13.1**
- **17.3**
- **23.1**
- **31.2**
- **37.5**
- **1.5**
- **1.5**
- **4.0**
- **5.5**
- **7.5**
- **11.0**
- **15.0**
- **18.0**
- **22.0**
- **30.0**
- **37.0**

#### Applicable Motor kW

- **4.0**
- **5.5**
- **8.6**
- **13.1**
- **17.3**
- **23.1**
- **31.2**
- **37.5**
- **1.5**
- **1.5**
- **4.0**
- **5.5**
- **7.5**
- **11.0**
- **15.0**
- **18.0**
- **22.0**
- **30.0**
- **37.0**

#### Control Functions

- **Control Method**
  - Space Vector PWM Control
- **Frequency Range**
  - 0.1~1800.0 Hz Constant or Variable Torque (Optional upto 3000Hz)
- **Frequency Setting Resolution**
  - 0.1 Hz (Digital), Max Frequency: 4096 (Analog)
- **Output Frequency Resolution**
  - 0.027 Hz (16-bit)
- **V/Hz Characteristics**
  - 2-Preprogrammed patterns, 1-Custom 3-point setting pattern
- **Acceleration/Deceleration Time**
  - 0.1~1200 Seconds (2 Ranges)
  - Linear or S-Curve selective
- **Skip Frequency**
  - Three frequencies can be set, band can be set up to 10.0 Hz
- **Gap Eliminator**
  - Useful for the machine tools industries to close the gap between tool and the work piece using a fast feed rate
- **Slip Compensation**
  - Slip compensation frequency up to 5.0 Hz
- **Carrier Frequency**
  - Default 10 kHz, 2.0 ~ 18.0 kHz selectable with 0.1 kHz resolution
- **Overload Capacity**
  - 150% Overload for 60 seconds at every 10 minutes

#### Operation Specifications

- **Display**
  - 20-Character, 4-Line LCD panel with backlight, 8-Key keypad, 3-Status indicating LED for Run, Stop and Fault-Simultaneous display of eight selectable monitor parameters
- **Auto Restart**
  - Adjustable up to 5 times for ten faults
- **PID Controller**
  - Inbuilt PID can be used as stand alone

#### Protective Specifications

- **Display and Keypad unit**
  - 4-Programmable Sequence Outputs, open collector type
- **Potential Free Contacts**
  - 1-NO, 1-NC for 2A @ 240Vac
- **Programmable Analog Outputs**
  - Programmable between 7 different options: Output Frequency, Output Current, Output Power, Output Voltage, DC Bus Volt, PID Output and heatsink temperature
- **Network connectivity**
  - RS-485 for PC Interface with MODBUS-RTU protocol as standard
- **PID Low Limit**
  - Gap Eliminator Detection, Motor Sel 1, Motor Sel 2, Motor Sel 3, Motor Sel 4, Thermal Trip, Temp Alarm, Ready, Crush current detection, Fault
- **IDetection**
  - Speed Detect 1, Speed Detect 2, Acceleration, Deceleration, Timer Output, Zero Speed, Fault Alarm, PID Up Limit, PID Low Limit, Gap Eliminator Detection, Motor Sel 1, Motor Sel 2, Motor Sel 3, Motor Sel 4, E-stop(NC), Ext fault(NC), RUN, Stop, Enable(NO), Enable(NC)

#### Environment

- **Installation location**
  - Indoor
- **Vibration**
  - As per EN 60608-2-6, acceleration: 1 g, Frequency: 10 Hz - 150 Hz
- **Ambient temperature**
  - 0~50°C (32~122°F)
- **Storage temperature**
  - -20~70°C (-4~158°F)
- **Altitude (above sea level)**
  - 3300ft (1000 meter) without derating, above 3300ft (1000 meter) derate 5% per 1000ft (305 meter)
- **Humidity**
  - 0~95% maximum non-condensing
- **Enclosure**
  - IP00

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**Note 1:** Indicates the total effective value including the higher harmonics

**Note 2:** If the default carrier frequency is exceeded, derate the output current by 5% per 1kHz as the reduced rating.
Specifications in this catalog are subject to change without notice.

**AXPERT-VT240S** is High Performance Universal AC Drive having multi mode operations like

- V/f variable torque control
- V/F constant torque control
- Sensorless vector control
- Closed-loop vector control
- Closed-loop PM motor control

**Models:**
- Upto 600 HP (475 kW)
- Built-in PLC
- Multi pump control
- Traverse control for fiber
- Spinning frame function
- Elevator function
- Ratio Interlock
- Dynamic braking chopper built-in up to 30HP
- 50°C Ambient design
- High efficiency operations
- RS-485 Modbus Communication (Standard)

**Applications:**
- Extruders, Blower, Pump, HVAC
- Lifts, Elevators, Cranes
- Printing, Packing
- Knitting, Ring Spinning
- Calender, Paper machine
- Air compressors, Centrifuge
- Crusher & Aggregate

**PROCESS - PLC** combines all the characteristics of digital automation with the demand on axis control and data processing, handling included within a plain text programming language. Process PLC avoids all difficulties a conventional PLC has to face.

**Models:**
- NANO, DELTA, MIKRO
  - Plain Text language
  - Multitasking
  - Interface free programming
  - Networking system software
  - Man-machine interface
  - Drive to image processing
  - Axes control system
  - Circular / Linear interpolation
  - TCP/IP as network

**Applications:**
- Textile manufacturing
- Packaging technique
- Winding machinery
- Semiconductor manufacturing
- Material Handling
- Process engineering
- CNC machines

**AXPERT Eazy** drives are high performance & competitive when it comes to price-performance ratio. These drives clearly confirm the shifting trend from DC to AC technology. They also represent excellent dynamic motor behaviour.

**Models:**
- 40 HP to 1875 HP (30 kW to 1400 kW)
  - New generation IGBT power inverter
  - Control strategy - SVPWM
  - Power loss ride through
  - Built-in energy meter
  - Slip compensation
  - True OL & GF protection
  - Closed loop control
  - Customised software solutions like: pattern, ring frame, energy meter
  - User friendly 20x4 LCD backlit display & 8-key keypad
  - RS-485 Modbus Communication (Standard)

**Applications:**
- Textile
- Agitators
- Centrifuge
- Paper & Pulp
- Air Compressors
- Pumps & Fans

**AXPERT OPTI Torque**, the high performance electronic soft starters offer advanced technology in motor start, stop, protection, monitoring, diagnostics and automation.

**Models:**
- 37 kW to 710 kW (50 HP to 1000 HP)
  - Three Starting modes - Voltage ramp
  - Current ramp
  - Torque ramp
  - Soft stop facility
  - Configuration modes - Inline
  - Bypass
  - Inside Delta
  - Built-In Energy Meter
  - Full Motor Protection
  - User friendly 20x4 LCD backlit display & 8-key keypad
  - RS-485 MODBUS-RTU Communication (Standard)

**Applications:**
- Air Compressors
- Pumps and Fans
- Conveyors
- Escalators
- Ball Mills
- Agitators
- Pulpers
- Grinders

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**Also from AMTECH**

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