

AXPERT *Eazy*

High Frequency Drive

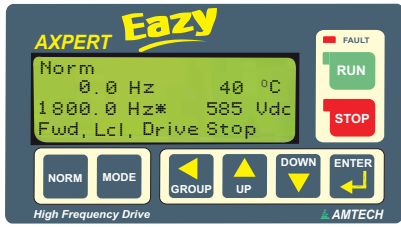
Standard Features:

- 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



AN ISO 9001 : 2008 COMPANY



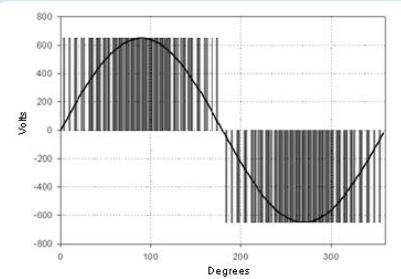


EASY OPERATION

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.

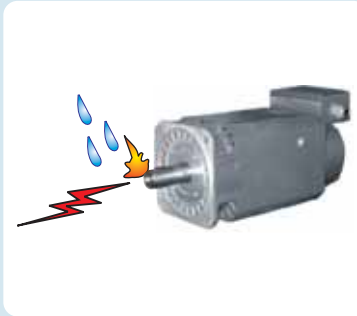


ADVANCED DSP CONTROL

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

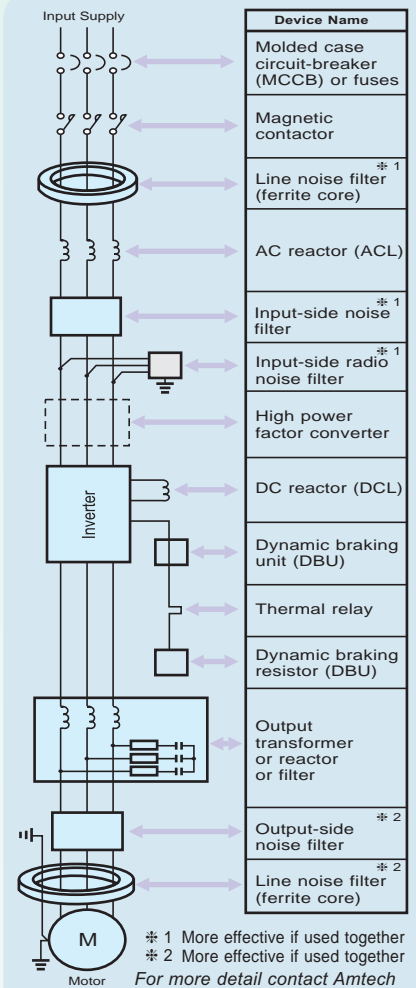
This drives are designed considering the harsh environment of machine tool industry like higher operating temperature of 50°C, higher vibration, higher moisture, conductive metal dust and oily environment. This drives are equipped with three current sensors in each phase hence 100% protected against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



TYPICAL APPLICATIONS

This high speed drives are suitable for various applications like-

- o Internal Grinding Machine
- o Surface Grinding Machines
- o Universal Grinding Machines
- o Crank pin Grinder
- o Center less Grinder
- o Special Purpose High Speed Machines
- o Lens Polishing.
- o Milling Machines



The following options are offered at extra cost based on customer requirement.

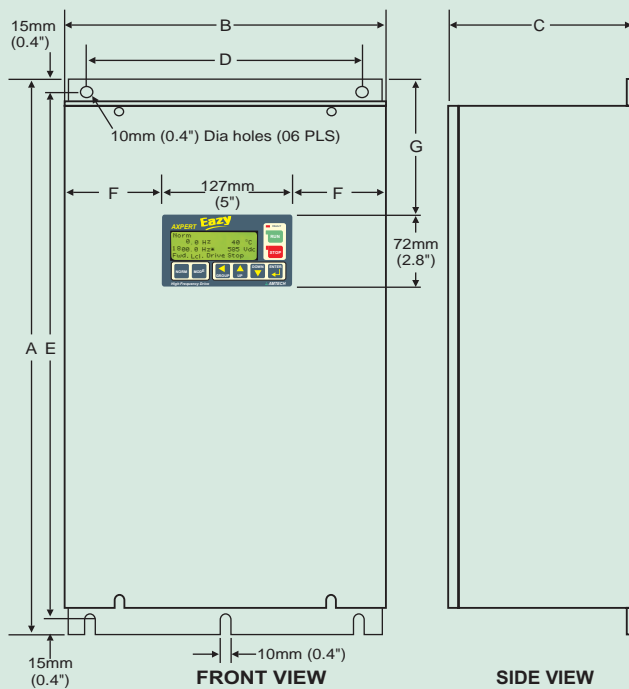
- o Cabinets Floor mounted type for better NEMA protection as per requirement and customized.
- o Input FSU, MCCB and power contactor for input power isolation purpose.
- o Line Reactor for harmonic reduction and protection against line voltage fluctuation.
- o EMI Filter for noise reduction.
- o Output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

STANDARD SPECIFICATIONS

Power		380~460 VAC, 3-Phase, 3-Wire, 50/ 60 Hz (200~220 VAC available as optional)										
Tolerance		Voltage tolerance: +10, -15%, Frequency tolerance: +/-5%										
AXPERT Eazy AMT -□□□ HF		1P5	2P2	4P0	5P5	7P5	011	015	018	022	030	037
Rated Capacity	kW	1.5	2.2	4.0	5.5	7.5	11	15	18	22	30	37
	Hp	2.0	3.0	5.0	7.5	10	15	20	25	30	40	50
Rated Current (A) Note 1		3.6	5.5	8.6	13	17	23	31	37	44	60	73
Applicable Motor kW		1.5	1.5	4.0	5.5	7.5	11	15	18	22	30	37
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										
	Voltage Boost	0~20%										
	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 Note 2										
	Overload Capacity	150% Overload for 60 seconds at every 10 minutes										
Operation Specifications	Speed Search Function	When enabled, rotating motor can be started at any moment										
	Power Loss Carry Through	Up to 5 seconds for smooth operation of the system during power loss										
	DC Braking	DC Braking start frequency 0.1~50 Hz, Time: 0~25 seconds, Brake current: 15 to 150%										
	Frequency Setting Input	Digital Input: Digital Operation Panel (Local) or Serial RS 485										
		Potentiometer : 2 k Ohm										
		FSV : 0~5Vdc or 0~10Vdc (or Inverse)										
		FSI : 0~20mA or 4~20mA (or Inverse)										
		IIN : 4~20mA										
	Digital Inputs	Static Pot : Freq Increase/Frequency Decrease using digital I/P										
		Preset Speeds : Using Preset input-0, 1 & 2										
		8 Programmable digital inputs, sink / source selectable logic										
		Programmable to 26 different options: Not Used, Jog Select, Ramp Select, Preset i/p-0, Preset i/p-1, Preset i/p-2, Freq Increase, Freq Decrease, Emergency Stop, Fault Reset, Ext Fault, Terminal, Ref Select 0, Ref Select 1, Reverse, Base Ld I/P, Motor Sel 1, Motor Sel 2, Motor Sel 3, Motor Sel 4, E-stop(NC), Ext fault(NC), RUN, stop, Enable (NO), Enable(NC)										
		4-Programmable Sequence Outputs, open collector type										
	Digital outputs	Programmable to 24 different options: Not Used, Run, Local, Reverse Run, I-Detection, Freq Attain, 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, Thermal Trip, Temp Alarm, Ready, Crush current detection, Fault.										
		3-Programmable relays										
Potential Free Contacts	1-NO, 1-NC for 2A @ 240Vac Programmable to 24 different options same as digital outputs											
Programmable Analog Outputs	2-Programmable analog voltage outputs VO1 & VO2: 0~10Vdc											
	2-Programmable analog current outputs IO1 & IO2: 4~20mA 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											
Auto Restart	Adjustable up to 5 times for ten faults											
PID Controller	Inbuilt PID can be used as stand alone											
Display	Display and Keypad unit	20-Character, 4-Line LCD panel with backlit, 8-Key keypad, 3-Status indicating LED for Run, Stop and Fault-Simultaneous display of eight selectable monitor parameters										
Protective Specifications	Protective Function	Current Limit, Over current fault, Timed over current fault, Load side short circuit fault, Under current fault, Over voltage fault, Under voltage fault, Temperature fault, Output phase loss fault, Ground fault, External fault, Charging fault, Current sensor fail fault, EEPROM Fault, 4~20 mA reference missing fault, Emergency stop, Communication loss fault, Spindle hot / short										
	Smooth Operation	Speed Search, Auto Restart and Power Loss Carry Through functions heat sink temperature alarm										
	Fault History	Last ten faults with status and operational parameters like output frequency, output current, dc bus voltage, heat sink temperature, input voltage Vry, energy in kWh, MWh and total conduction time										
	Electronic thermal overload	150% Overload for 60 Seconds										
Environment	Installation location	Indoor										
	Vibration	As per EN 60068-2-6, 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										

Note1: Indicates the total effective value including the higher harmonics **Note2:** If the default carrier frequency is exceeded, derate the output current by 5% per 1kHz as the reduced rating.

OUTLINE DIMENSION



Model	Dimensions in mm (inch)								Weight in kg (lb)
	A	B	C	D	E	F	G	H	
AMT 1P5									
AMT 2P2									
AMT 4P0	469 (18.5)	250 (9.8)	262 (10.3)	196.5 (7.7)	438.5 (17.3)	62 (2.4)	111 (4.4)	62 (2.4)	17 (37.5)
AMT 5P5									
AMT 7P5									
AMT 011									
AMT 015	585 (23.0)	250 (9.8)	300 (11.8)	196.5 (7.7)	565 (22.2)	61.5 (2.4)	186 (7.3)	61.5 (2.4)	29 (63.9)
AMT 018									
AMT 022									
AMT 030	700 (27.6)	322 (12.7)	365 (14.4)	217 (8.5)	680 (26.8)	97.5 (3.8)	144 (5.7)	97.5 (3.8)	40 (88.2)
AMT 037									

• Above 50HP rating please consult factory.

Also from AMTECH



EXPERT VT 240S
AC DRIVE

EXPERT-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
- Sensorless PM motor 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

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



EXPERT Eazy
AC DRIVES (High Power)

EXPERT 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



EXPERT - OPTI Torque
Electronic Soft Starter

EXPERT 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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