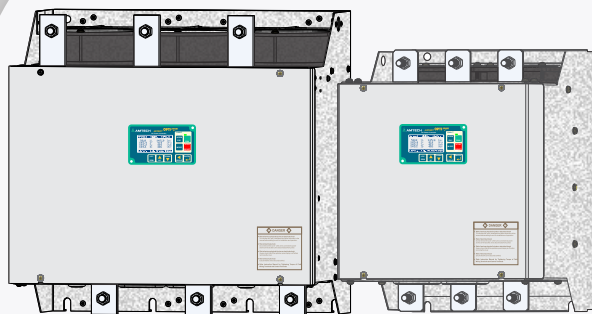


Features

- Also known as Heater Controller
- Fully Digital Control
- 3-Phase control, can be controller individual phase
- Universal control supply 90...270V AC 50/60Hz
- **Four Firing Modes**
- **Six Operation Mode**
- **Four Load Connection**
- **Three Control Modes**
- State of the art Impedance Relay function protects against load element short / open circuit
- Energy Meter Standard, displayed in both kWh & MWh
- Standard PID function can be used as independent PID controller
- Total 11 selectable firing reference
- In-built PLC Function with Axpert-Drive logic programming tool for easy programming
- Conformal coating on all circuit boards (PCBs) as standard to protect against 3C3 environment
- Commissioning mode for easy commissioning
- Peak logger
- 128X64 Graphical LCD Display (IP65) with white back light and Real Time Clock (RTC), 9-Key Keypad and 3 status indication LED for Run, Stop, Fault
- Displays 8 Parameters simultaneously with Control mode, Firing mode and Status
- 3 user settable preventive maintenance timer
- Isolated RS-485 Modbus Communication with Axpert-Communicator software for remote monitoring
- Fully Configurable Analog and Digital Inputs / Outputs
- Stores last 20 Diagnostic faults with of 8 key operational parameter values, status and time at the time of fault
- Senses current in all three phases and all three phase O/P voltage provides Current, Voltage & Power information. Also provides complete load protection like partial load failure (Open or Short), Over current, Over load, Under load etc..
- Energy efficient design - Cooling fan control as per heat-sink temperature. This will increase fan life and also reduce the power consumption
- External fan control option



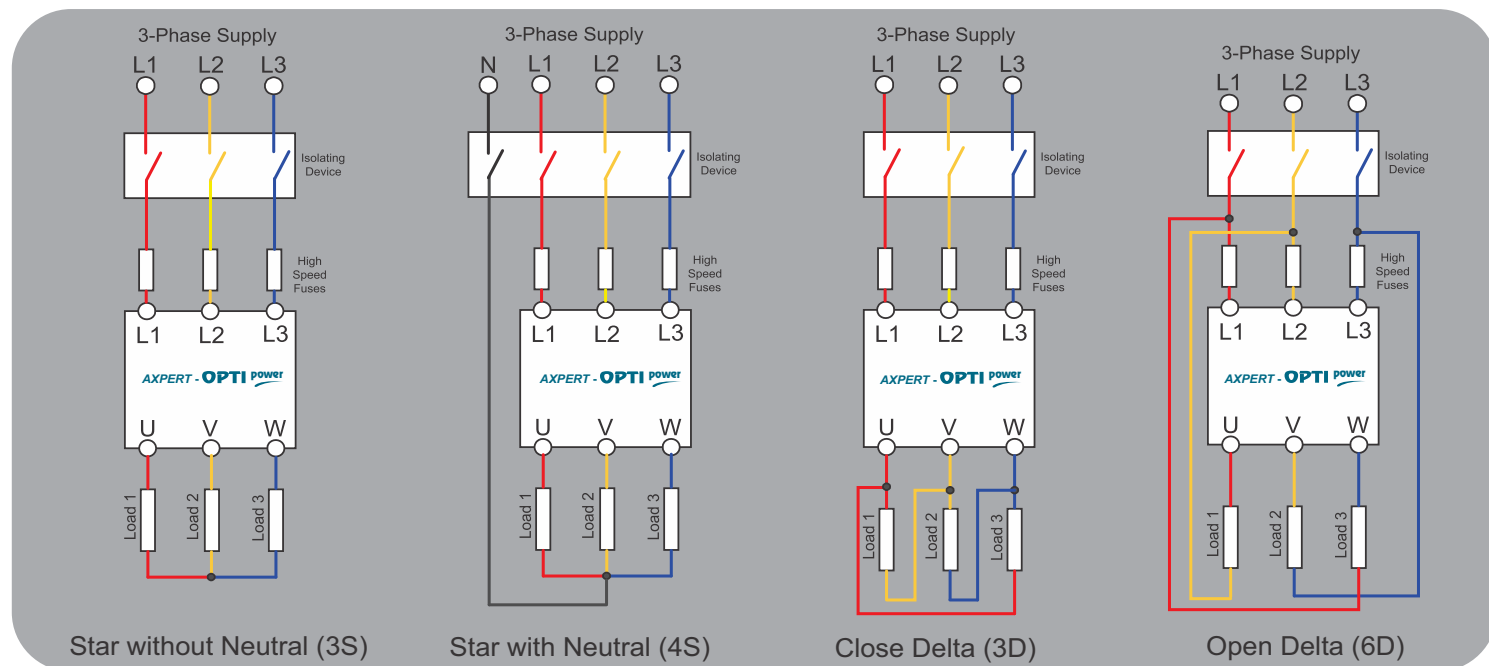
20...3900 A, 7...4500 kW
200...690 Voltage

Standard SPECIFICATIONS

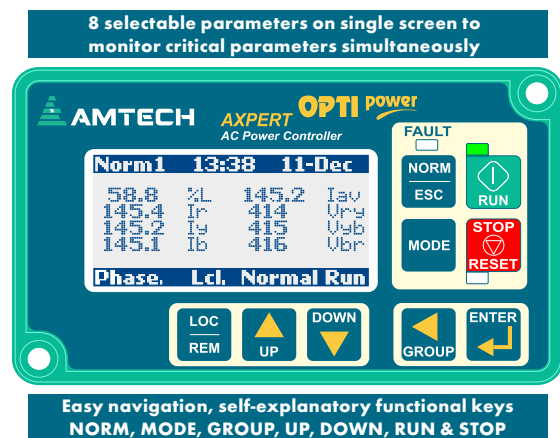
Power Source		4: 200...480 VAC or 6: 200...690 VAC, 3-Phase, 3-Wire, 50/ 60 Hz																					
External Control Supply		1-Phase, 50/60 Hz, 90...270 V or 115 V or 230 V (Refer order code detail for control supply)																					
Tolerance		Voltage tolerance: -15%, +10%, Frequency tolerance: ±5%																					
AMT-APC-XXXXA-4/6-X ¹⁾		0020	0038	0055	0065	0080	0100	0130	0160	0180	0215	0250	0280	0360	0400	0500	0630	0700	0800	0900	1100	1300	
Applicable load current(A)		20	38	55	65	80	100	130	160	180	215	250	280	360	400	500	630	700	800	900	1100	1300	
Control system		Fully Digital control using 32-bit floating point Digital Signal Controller																					
Operation Specifications	Linearity	O/P voltage linear to the command signal																					
	Current feedback	Load current: Adjustable											Load loss level: 0...200 %										
		I limit: 10...200 %											I trip: 100... 250 %										
		I unbalance: 30...100 %																					
	Load Connection	3S (3-Phase Star, Neutral floating)											3D (3-Phase Close Delta)										
		4S (3-Phase Star with Neutral)											6D (3-Phase Open Delta)										
	Control Phases	Common 3-Phase control or Individual phase wise control																					
	Firing Mode	Phase Angle Firing					Firing reference programmable between 10 different options: Local, AI1, AI2, AI3, Static pot, Serial, PID Output, PLC A/O 1...3																
							Ramp up time: 0.1...100.0 sec																
							Ramp down time: 0.1...100 .0 sec																
		Full Wave Burst Firing					Total Cycle: 10...60000 Cycles																
							On Cycle: Calculated based on firing reference and 12 options are same Phase Angle Firing																
		Burst with Soft Start					Soft Start Cycle: 0...255 Cycle																
	Burst with Delayed Triggered					Adjustable delay of first pulse: 0...90 degree																	
	Operation Mode	Voltage Regulation																					
		Current Regulation																					
		Power Regulation																					
		Voltage square (V2) Regulation																					
		Current square (I2) Regulation																					
Open Loop																							
Control Mode	Local (Digital Operation Panel)																						
	Terminal																						
	Serial																						
PID Controller	Inbuilt PID can be used as stand alone PID Controller																						
I/O Specifications	Digital Inputs	6 Digital Inputs, Sink/Source and Active Close/Active Open selectable																					
	Analog Input	Programmable options: Not Used, Terminal, Ext Flt, Fault Reset, E-Stop, Phase Angle, Ref Increase, Ref Decrease, Ref Select 0, Ref Select1, PID Bypass, PID Disable, RUN, STOP, Main Contactor, PLC I/P 1...6																					
	Digital Outputs	3 Analog Inputs with settable Gain, Bias, Minimum and Maximum scaling, 12 Bit Ai1 & AI2: 0...10 Vdc/4...20 mA AI3: 0...±10 Vdc																					
		2 Digital Outputs, open collector type, Active Close/Active Open selectable																					
		Programmable options: Not Used, Ready, Run, Terminal, Fault Alarm, Low Cur Alarm, High Cur Alarm, Temp Alarm, PID Up Limit, PID Lo Limit, Main Contactor, Ext FAN Control, Mains Off Fault, Phase Loss Fault, Phase Direction Fault, Over Freq Fault, Under Freq Fault, Over Current Fault, Load Loss Fault, I-Unbalance Fault, Over Voltage Fault, Over load Fault, Ground Fault, External Fault, Emergency Stop Fault, Power Not Ok Fault, Firing Fault, SCR short Fault, Thermistor Fault, Thermostat Fault, EEPROM Fault, Watch Dog Fault, Partial Load Loss, Partial Load Short, PLC O/P 1...5, PID F/B Low limit, PID F/B Up limit																					
	Potential Free Contacts	3 Relays, 1-NO, 1-NC for 5 A @ 240 VAC Programmable options same as digital output																					
	Analog Outputs	3 Analog Outputs with settable Gain, Bias, Minimum and Maximum scaling, 12 Bit Ao1 & AO2: 0...10 Vdc / 4...20 mA AO3: 0...±10 Vdc																					
		Programmable between 10 different options: Output Voltage, Output Current, I/P Active Power, I/P Reactive Power, O/P Active Power, Heat sink temperature, PID Output, PLC A/O 1...3																					
	Network Connectivity	Isolated RS-485 for PC Interface with Modbus-RTU protocol as standard, optional protocols are Profibus-DP (slave), DeviceNet, CANopen, Ethernet, ControlNet																					
+24V supply	Max. Total current drain from terminal = 100 mA																						
Display	Display and Keypad module	Digital Operation Panel 128x64 Graphical LCD with white back light LED, 9-Key Keypad, 3 Status indicating LED for Run, Stop, Fault, Real Time Clock (RTC) Simultaneous display of 8 selectable monitor parameters, Two graph screens with selectable graph signal and resolution and Auto rotation of screens with settable time interval																					
Protective	Transient Protection	RC Snubber across thyristor MOV across input power supply																					
	Fault History	Last 20 faults with date & time, status and 8 operational parameters (Output current, Output voltage, Active Power, Input voltage (Vry & Vyb), Heatsink temperature, Reference value, Total power ON time)																					
	Diagnosis Functions	Helps in pinpointing the fault: Peak Monitoring, Number of Power On, Over temperature fault, I/P over voltage fault, Over current fault, Ground fault, Overload fault, Auto restart monitoring; 3 warning timers for maintenance																					
	Protective Function	Over current fault, Over load fault, Ground fault, Load loss fault, Partial load loss fault, Partial load short, I-Unbalance fault, Emergency Stop Fault, Communication Loss, Phase Loss fault, I/P over voltage fault, Mains off fault, Phase direction fault, SCR Short Fault, Firing fault, Over frequency fault, Under frequency fault, Watch Dog Fault, Thermistor Over Temperature, Thermistor Not Connected, Thermistor Short Fault, Thermostat NC Fault, Thermostat Over Temperature, External Fault, Main Contactor Fault, Power Not ok																					
Environment	Installation Location	Indoor																					
	Ambient Temperature	-15...50 °C (5...122 °F)																					
	Storage Temperature	-20...70 °C (-4...158 °F)																					
	Altitude (above sea level)	1000 m (3300 ft) without derating, above this derate 3% per 305 m (1000 ft)																					
	Humidity	0...95% maximum non-condensing																					
Enclosure	IP00																						
Reference Standard		UL 508, IEC 60947-4-3, IEC 60947-1, CE (EN 60947-4-3), IEC 60529																					

1: Contact Amtech for higher rating

Typical Connection Diagram



Display



Norm1 13:38 11-Dec
58.8 %L 145.2 Iav
145.4 Ir 414 Urv
145.2 Iv 415 Uvb
145.1 Ib 416 Ubr

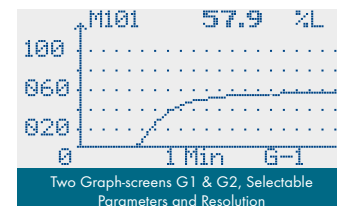
Phase. Lcl. Normal Run
Second screen with 8 selectable parameters,
Monitor critical parameters simultaneously

Norm4 13:38 11-Dec
Output Current
58.8 %L

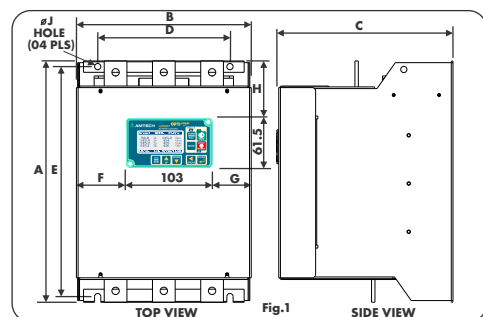
Phase. Lcl. Normal Run
Single parameter screen, Large fonts, Better
Readability

Norm3 13:38 11-Dec
0.81 PF
84.5 Po

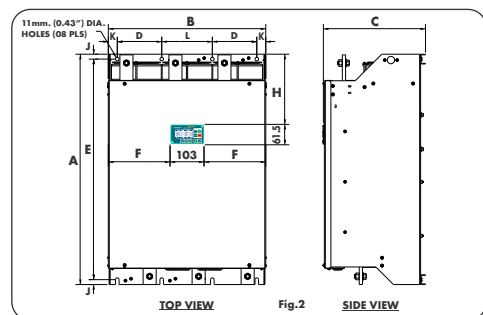
Phase. Lcl. Normal Run
Two parameter screen, Large fonts, Selectable
parameters



Outline Dimensions



Model	Dimensions in mm (Inch)									Weight in kg (lb)
	A	B	C	D	E	F	G	H	J	
AMT-APC-0020A, -0038A, -0055A, -0065A, -0080A, -0100A, -0130A, -0160A, -0180A, -0215A										
Fig.1	292 (11.5)	209 (8.2)	210 (8.3)	83 (3.2)	272 (10.7)	53 (2.0)	53 (2.0)	68.5 (2.7)	9 (0.3)	9.8 (20.6)
AMT-APC-0250A, -0280A										
Fig.1	352 (13.8)	209 (8.2)	249 (9.8)	83 (3.2)	332 (13.0)	53 (2.0)	53 (2.0)	102.5 (4.0)	9 (0.3)	13.4 (29.5)
AMT-APC-0360A, -0400A										
Fig.1	390 (15.3)	288 (11.3)	255 (10.0)	221 (8.7)	370 (14.5)	92 (3.6)	92 (3.6)	120 (4.7)	11 (0.4)	21.0 (46.3)



Model	Dimensions in mm (Inch)										Weight in kg (lb)
	A	B	C	D	E	F	H	J	K	L	
AMT-APC-0500A, -0630A, -0700A											
Fig.2	470 (18.5)	484 (19.0)	318 (12.5)	136 (5.3)	440 (17.3)	190 (7.4)	171 (6.7)	15 (0.6)	28.5 (1.1)	155 (6.1)	45 (99.2)
AMT-APC-0800A, -0900A, -1100A, -1300A											
Fig.2	565 (22.2)	578 (22.7)	358 (14.0)	173 (6.8)	535 (21.0)	237 (9.3)	214 (8.4)	15 (0.6)	27.5 (1.0)	177 (6.9)	78 (171.9)

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We provide complete motor control system solutions or individual system components to address industry specific requirements and optimize your process.

Our solutions are simple, compatible and environment friendly, resulting in efficient production, cost optimization and minimizing human intervention. It even leads to energy conservation especially in typical Fan, Blower, Pump applications.

Flagship Solutions

- Apxert-Eazy+ Series VFD
- Apxert-VT240S Series VFD
- Apxert-Hivert Series Medium Voltage Drive
- Apxert-Opti torque Series Soft Starter
- Apxert-Eazy HF Series High Frequency Drive

Applications

- Fans, Blowers, Pumps
- Compressors, Centrifuges
- Agitators & Conveyors
- Crane, Hoist & Elevator
- Rolling Mill, Sugar Mill, Pulp Mill, Coal/Raw Mill

AUTOMATION



MACHINE AUTOMATION

LINE AUTOMATION



PLANT AUTOMATION

NETWORKING AUTOMATION

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Over 35 years experience in Machine, Line, Plant and Networking Automation has helped us to find the best solution in terms of functionality, sustainability and efficiency.

Flagship Solutions

Jet Control series PLC Controllers, Expansion Modules, Jet view Soft SCADA, HMIs, Jet Move series Servo and Axes Control System.

Applications

- Paper Machine Automation
- Textiles Manufacturing
- Packaging
- Winder Machine
- Crane & Material Handling Equipment
- CNC Machines
- Semiconductor Assembly Line
- Retrofit solutions

POWER QUALITY



ACTIVE HARMONIC FILTER

ACTIVE FRONT END CONVERTER



STATCON: MULTI-FUNCTIONAL ACTIVE STATIC VAR COMPENSATOR

WIDEBAND HARMONIC FILTER

"ONE STOP SOLUTION TO QUALITY POWER"

Amtech's Power Quality Solutions offer you the synergy of multiple benefits - energy conservation, enhanced operational efficiency and reliability through a dedicated range of products and services.

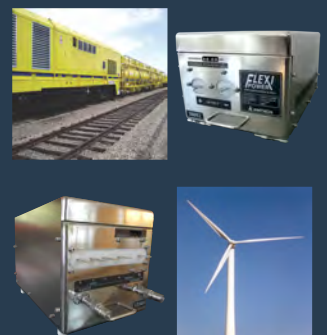
Products

- Apxert-i-Sine Series Active Front-end Converter
- Apxert-i-Sine Series Active Harmonic Filter (AHF)
- Apxert-i-Sine Series Active Static VAR Compensator (STATCON)
- Harmonic Reactor
- Sinus Filter
- EMI/RFI Filter

Services

- Harmonic Audit and Solutions to comply with IEEE-519 standard
- System design, optimization & payback analysis
- Consultancy for Power Quality improvement
- Training on Power Quality Management
- Energy Audit and solutions by experienced BEE certified professionals

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- High Voltage Power Supply
- Battery back-up drive & systems for critical loads
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- Digital Heater Controller
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- Drive Train

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- Solution for Oil, Gas & Mining
- Power Electronics product development & testing
- Product verification & validation
- Retrofit Solutions



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