

KEYWORDS

AC Power Control, SCR, Thyristor, Single-phase, 3-phase, Phase-angle Firing, Resistive Load, Inductive Load, Digital Current Limiting, Serial Interface, Programmable, PC Board, Systems.

APPLICATIONS

Industrial heater control systems, resistive and inductive loads; Power distribution and control; Industrial process control; Drying & Curing; Aqueous Coating Equipment; powder Coating Lines. Heat Treating, and Semiconductor Manufacturing.



APC 3-phase firing module with high dV/dT option and integrated power supply.

THIS INFORMATION IS OF INTEREST TO...

OEM System Engineers & Designers; Plant Maintenance Engineers and Managers; Integration component Buyers; Control Component Distributors and Resellers; Infrared Equipment & Machinery Manufacturers; Oven & Furnace Manufacturers.

DESCRIPTION

The Autographic APC line of AC Electric Digital Power Controllers includes single-phase and 3-phase SCR firing modules in open printed circuit board form and integrated assemblies that include matched firing boards, thyristors, heat-sinks and enclosures.

UNIQUE FEATURES & CAPABILITIES

APC is a truly digital controller. There are no potentiometer adjustments to make—ever. Control response is always linear, repeatable, and accurate. APC incorporates digitally run phase timing which accepts 50 or 60 Hz AC power and eliminates analog drift, or degradation.

APC accepts excitation/command signals formatted as mA loops, DC Voltage and digital serial. Highly advanced optical isolation and redundant digital power supply management firmware & circuitry provide improved reliability & safety

Controller output can be Phase Angle firing or Zero-Cross proportional control of single or poly-phase loads. Some models provide multiple output types.

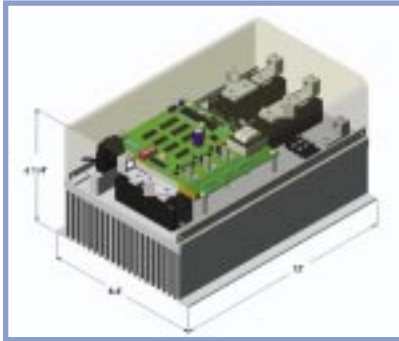
Configurations are available for resistive and inductive loads, including those with rectified transformer secondaries. Some APC models include field selectable inputs for both load types.

A standard “safe” mode for inductive loads allows for maximum phase shift. APC firmware update program from the manufacturer enables fine-tuning for maximum performance on inductive loads. APC’s standard current limiting provides 8-bit resolution and is field-set via DIP switch setting.



Advanced Power Controller is PC, PLC, LAN or Internet communications-capable because it includes integrated Serial Communications. An optional TCP/IP-ready feature is available on some models.

APC peripheral features are easily updated on site using Autographic's 'In-Circuit Programming' interface. System information and diagnostics can also be retrieved across this interface, or displayed on an optional LCD text display. Additional peripheral features such as our PID, PFA (predictive load failure analysis) or FVA (Flammable Vapor Sensor) modules are handled by the APC microcontroller/SOC architecture.



Rendering of 3-phase APC firing module with heat sink and cover, rated for 440/480 VAC, 65 A.



APC single-phase SCR firing module with open feature slots. DC power supply and heat sink not shown.

ADVANCED FEATURES:

- Powers resistive and inductive transformer coupled loads
- Optically isolated zero crossing and gate firing circuitry withstands high dV/dt events
- 0-5V; 0-10V; 0-20mA; 4-20mA; high & low impedance inputs standard
- SPI Serial Communications standard for command and system information
- Phase-Angle and Zero-Cross control modes
- Digital current limit detection latency is < 0.017 sec. Max current rise time per standard or customized algorithm.
- Easy set-up - NO TRIM POTS
- Standard configurable soft-start ramp eliminates use of special fuses
- Embedded Internet, LAN, Wireless client options
- Embedded PID control option
- Control of AC loads from 115V to 480V
- 3 Field configurable gate signal pulse types
- Automatic line frequency synchronization

MORE ADVANTAGES:

- Flexible - Powers resistive loads and inductive loads from 115 VAC to 480 VAC single or 3-phase from 30 to more than 1,000 Amps
- Absolute Value - More accurate, more features, lower cost to acquire and maintain
- Installs Easily - Jumpers & DIP switch settings configure the controller's basic functions
- Compatible - Connects to process controllers, PLC's, computers, Internet, wireless
- Intelligent - On-board non-volatile memory enables predictive load failure analysis and many other advanced monitoring and control functions
- Compact - Fits easily into new or existing designs
- Adaptable - Customized for OEM applications
- Expandable - Port slots for ASI's growing line of expansion modules allow space saving system configuration & layout.