

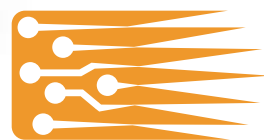
# **Spang** Power Electronics

## **851 Digital SCR Power Controller**

Advanced Digital  
Technology for  
High-Temperature  
Process Control

- *Glassmaking*
- *Fiberglass  
Manufacturing*
- *Other Industrial  
Heating  
Applications*

- Network Connectivity
- Multi-Firing  
Mode Capability
- On-Board Diagnostics
- Computer Calibration



**850 DIGITAL**  
*Power Controllers*

# The Power of Digital Flexibility

The 851 Digital SCR Power Controller from Spang Power Electronics offers the latest in Digital Signal Processing (DSP) technology and software. It increases real-time process control information and reduces installation costs.

Through network connectivity, you can improve system performance by cost-effectively linking multiple power controllers for central control through a programmable logic controller (PLC), or an industrial computer.

The 851 Digital SCR Power Controller operates in three different firing modes: 1) Phase-Angle; 2) Zero-Crossover; and 3) Zero-Crossover control into a transformer. The **multi-firing mode capability** allows for use of a single control amplifier and for common spare parts in multi-furnace facilities. This versatile controller is ideal for precise networked control of power in glassmaking, fiberglass manufacturing and other industrial heating applications.

## THE BENEFITS OF NETWORKED POWER CONTROL

- **Improved management of processing operations** through the use of the 851 Digital SCR Power Controller which provides real-time information.
- **Improved productivity** through faster startups and reduced downtime.
- **Lower installation and wiring costs** result from an optional local digital controller replacing panel meters, selector switches and pushbuttons.
- **Allows for real-time changes to process and control settings.**



## STANDARD FEATURES

- **Flexibility.** Unlike analog designs, which require a separate control amplifier for each firing mode, the 851 Digital SCR Power Controller allows a single amplifier to operate in any of three modes: Phase-Angle fired; Zero-Crossover fired; and Zero-Crossover fired into a transformer.
- **On-Board Diagnostics.** Fault memory allows the user to record problems and, through the use of a computer, observe trends that could indicate a need for process modification, troubleshooting or preventive maintenance.
- **Computerized Setup and Calibration.** Customer-provided computer allows for in-plant adjustments on the processing line. Digital "tuning" of bias and gain eliminates the need to manipulate potentiometers or dials.
- **Advanced Process and Fault Monitoring.** Allows for real-time readings of voltage, current, power and fault conditions, and for real-time changes to the set point that adjusts power to process requirements. Changes can be made any of three different ways:
  - Locally, using a customer-supplied computer.
  - Locally, with optional Local Digital Control feature.
  - Remotely, with the optional Network Communications feature.
- **Configurable Analog Input for Control Reference.** Digital controller can be used with a local temperature controller, the output of which can be any industry standard matched to the power controller's user-configurable analog input.
- **Operates on Universal Line Voltages.** Each power controller can operate on any line voltage from 24 to 600 VAC and 50/60 Hz.
- **Touch-Proof Mechanical Design.** This advanced packaging feature prevents unintentional contact with hazardous voltage, allowing for safer service and maintenance.

### OPTIONAL FEATURES

- **Network Communications.** Allows for remote control and monitoring of 851 Digital SCR Power Controllers with a PLC or industrial computer through connection to a DeviceNet™ network.
- **Local Digital Control.** User has a 4-digit LED display, 12 independent-status LEDs and 4 push-buttons, which allow local control of the power controller. The user can control unit output and change the desired set point, as well as monitor voltage, current or power on the LED display. Also allows for monitoring of faults for troubleshooting. The local digital display is available mounted directly on the unit (as shown), or it can be shipped loose with a cable connector for mounting on the panel door.



- **Separate Fuse Kits.** Kit includes fuse holder and a properly sized semiconductor fuse.
- **Custom Configurations** are available to meet specific mounting and cooling requirements, packaging and higher than standard ampacity ratings.

## SPECIFICATIONS

- Phase:** Single phase, two SCR switch
- Input Voltages:** 24 to 600 volt RMS
- Input Frequency:** Unit operates at 50/60 ± 2 Hz.
- Ambient:** Unit designed for 50°C/120°F maximum
- Ratings:** 50-200 amp standard current ratings (custom current ratings up to 1500 amp)
- Regulation:** ±1% (configurable for voltage, current, or power)
- Local Analog Input Signal:** Programmable to accept any input signal ranging from 4 to 20 mADC or 0 to 10 VDC
- Local Analog Output Signal:** Programmable to output various control signals from 4 to 20 mA or 0 to 5 VDC
- Control Power:** Customer-supplied 85 to 265VAC, single-phase



Spang Power Electronics designs and manufactures SCR power controllers, dry-type transformers, AC & DC power systems, AC & DC drive systems, custom AC & DC drives and automation control systems. To ensure that customers' requirements are always met on-time, Spang power control products are manufactured within an ISO 9001 certified quality system.

To learn more about the 851 Digital SCR Power Controller and all other Spang Power Electronics products, visit our Web site at [www.spangpower.com](http://www.spangpower.com) or contact us by phone or fax at the numbers listed below.

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