



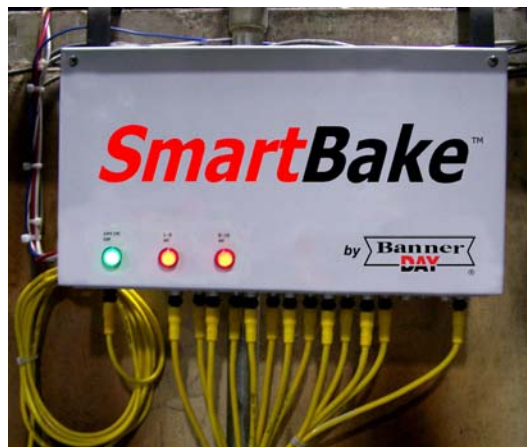
## **SmartBake™** Modular System

By Edward J. Baldwin, Senior Controls Engineer

**SmartBake™** by Banner-Day is the next evolution in the control of direct fired bakery ovens. **SmartBake™** is a modular system that enables precision control of an oven, while offering simple and rapid installation. **SmartBake™** provides the ability to phase in an oven control retrofit project over an extended period enabling better capital spending management within today's tight budgets.

As with Banner-Day's Total Oven Control (TOC™) package, **SmartBake™** utilizes Banner-Day's precision burner control strategy. This strategy allows a typical oven to maintain zone temperatures within +/- 2 °F of setpoint, while optimizing lateral heat definition. When coupled with Banner-Day's patented rectification ignitor, you have a system that is precise, reliable, easy to install and nearly maintenance free.

The core of the **SmartBake™** system is the **SmartBake™** zone panel. The standard **SmartBake™** zone panel is designed to control up to sixteen (16) burners, with the capacity to be expanded up to 32 burners. In those instances when a zone contains more than 32 burners, the remaining burners can be integrated with the addition of **SmartBake™** "daughter" panels. Up to 160 burners can be controlled by each **SmartBake™** zone panel. Each burner is connected to the **SmartBake™** zone panel by a cable supplied with a quick disconnect fitting, enabling rapid installation. There is also a cable with a quick disconnect fitting to include a pressure transducer for monitoring of the zone air header pressure.



**SmartBake™** Zone Control Panel

Each **SmartBake™** zone panel is designed to be installed and used completely independent and stand-alone. A central PLC with the associated size, cost, network cabling, etc. is not required. Each **SmartBake™** zone panel requires only a power feed for the burners (typically 24VAC) and 24VDC to power the electronics. The **SmartBake™** system can be installed one zone at a time, as finances and time allow.

While designed for stand-alone operation, **SmartBake™** zone panels are capable of integration into a complete system without **ANY** changes to their configuration other than the installation of a communications cable. Flexibly designed, **SmartBake™** can be:

- Integrated with a central PLC of an overall system and installed at the same time (such as with a complete Banner-Day TOC™ package).
- Installed with a plan to integrate with a future central PLC to be installed at a later date when budgets and time constraints permit.
- Integrated into an existing PLC already in place.



**SmartBake™** Running Bun Oven

The standard **SmartBake™** system communicates via Ethernet. Other communications options, including DeviceNet and Modbus serial, are also available. **SmartBake™** comes equipped to communicate using BOTH Ethernet I/P and Modbus TCP, making it immediately compatible with the majority of PLC and HMI manufacturers. This includes Allen-Bradley (both the SLC 5/05 and Logix family) and Modicon.

Integration with an existing central PLC system is simple and straight forward. Because **SmartBake™** is designed with stand-alone capabilities, only a minimal amount of information transfer is necessary when incorporating with a central PLC system. Little or no programming is required in the central PLC to establish communications with a **SmartBake™** system. **SmartBake™** is designed to be easily integrated by bakers into their current systems with minimal engineering and programming requirements.

### **Summary**

The modular **SmartBake™** system provides the baker the precision burner control that he's come to expect from Banner-Day, all in a package that's easy to install and maintain. **A central PLC is not needed**, saving the expense, space and effort, especially in today's tight capital budget environment.

The **SmartBake™** approach is future proof, designed for integration at any time with a central PLC. Compatibility is nearly universal, with built-in communications capabilities that cover the majority of PLC systems, with many other communications options available.

The standard **SmartBake™** zone panel is purposely sized to cover the vast majority of direct fired ovens in today's marketplace, with expansion capabilities to cover any situation.

In all, **SmartBake™** by Banner-Day is the ideal tool to start building a premier oven control system, provide precision control to an existing system and minimize downtime requirements when installing a Banner-Day TOC™ system.

**Are you ready to start baking smart?**

**SmartBake™ by Banner-Day**

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**Banner-Day**

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