

Baking with Moeller Automation



Small and medium-sized branches can only survive if they can fully utilise their savings potential by means of rationalisation, automation and optimising processes. The key factor here is the baking process itself. This is because a baking oven needs only 40 to 60 % of the energy used in a bakery.

The problem is that the production of bakery products uses a relatively small proportion of the energy. The radiation of the heat and the thermal currents are the main causes of energy consumption, and these must be used more effectively. The only question remaining is: What kind of technology is the most suitable? One more thing: the cost!

The residual heat of the baking ovens can for example be transferred to a heat store using a thermal oil/water heat exchanger. In this way and through the use of different technologies 33 % of the energy supplied during the baking operation can be recycled (on a baking oven with a separate outlet for flue gas and steam).

The bakery trade is in a process of change. The increasing size of bakeries and the number of branches means more and more competition.



Heat combination system for greater efficiency

The heat combination system uses a Moeller XVC100 HMI-PLC with the highly granular XI/ON remote I/O system. The HMI-PLC continuously monitors and regulates temperatures in all parts of the system, and switches on the thermal oil heating system when necessary.

The system can also be adapted to customer requirements and conditions if necessary. The PLC interfaces provided allow all system components to be networked to form one intelligent energy management system.

XVC100 HMI-PLC enables significant savings in operating costs

In the application, the text display of the PLC shows all temperatures and operating states, and entries can be made via a membrane keyboard. Password protected operator levels, 24 hour and 7 day time switches, manual mode and automatic functions are all available.

The HMI-PLC also controls the entire temperature regulation system.

By selecting different heating curves, the heat combination system can be adapted to any existing or planned heating system.

The Easy control relay is the inexpensive alternative to PLCs in bakery shop ovens.

Easy and MFD-Titan® on the baking oven provide operation, display, control and regulation functions all on the one device for:

- the temperature of each heating zone
- the operating mode (manual/auto)
- the lighting
- the steam outlet via a valve



Feature	End customer benefit
Considerable simplification of drying and cooling processes	Easy training for operating personnel
One device for display, operation, control and regulation	Considerable cost savings by reducing the number of devices required
Clear, user-friendly multi-lingual operator guidance	Language-neutral standardisation possible
Standard interface, e.g. for documentation	Requirement for FDA documentation
Cheaper than solution with conventional control technology	Considerable cost savings compared to PLC solution
Complete device technology from a single source	Simplified service and spare parts management
Device front with small dimensions but high degree of protection	Integration possible in any machine operator panel

