

Industry: Food & Drink

Products Used: FX PLCs /// HMIs

PLC controlled incubators improve egg hatching rates

Heron Research Ltd has developed a new incubator that has improved hatching rates in some cases by up to 5%. Accurate environment control is vital for successful egg hatching and Heron uses Mitsubishi Electric's FX2N micro PLCs and HMIs to control temperature, humidity and air flow in their incubators.



Control is carried out by using the unique auto-tuning, three-term, (PID) control functions within the FX2N. The auto-tuning function not only saves engineering time in initial setting up of the control functions, it also ensures the system delivers the best possible temperature and humidity control performance. Chicken eggs take 21 days to hatch in the incubators and the environment needed for successful hatching varies during this time. Heron use the FX2N on-board Calendar/Timer function that also supports both elapsed time and time of day commands to control the environmental changes in the incubators through the hatching period.

Application story first released April 1998 by Mitsubishi Electric UK

Operators set up and monitor the incubators using a Mitsubishi E700 Human Machine Interface (HMI). The 16 colour HMI, with its touch screen controls, displays information as a combination of graphics and text and is presented in the operator's language, making current status information and historical trends simple to access and easy to understand.

According to Roger Banwell, Technical Director at Heron Research, "the E700 was chosen for its ease of use. Reliability was another important consideration in choosing both the FX2N and the E700".

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Heron Research

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With the Mitsubishi Electric automation equipment, Heron Research has achieved up to a 5% improvement in the average hatching rate of fertile eggs in some cases which was not previously thought possible and their hatching average is now around 93%.