



Customer Requirements

A major dairy product manufacturer is required to monitor cheese shaping machines on the production line. A Programmable Logic Controller (PLC) is used to drive the valve sequencing for the machinery. The system is designed to produce 3000 kg of product per hour, but the system is unable to achieve this target. A logging solution is required to determine where the PLC algorithms can be optimised in order to increase profitability.



A cheese factory: These facilities are heavily automated and rely on machine timing to achieve production targets.

dataTaker DT80

- 1 A cost effective data logger expandable to 100 channels, 200 isolated or 300 single-ended analog inputs
- 2 Built-in web and FTP server allows for remote access to logged data, configuration and diagnostics
- 3 Modbus slave and master functionality allows connection to Modbus sensors and devices and to SCADA systems
- 4 Smart serial sensor channels capable of interfacing to RS232, RS485, RS422 and SDI-12 sensors
- 5 Rugged design and construction provides reliable operation under extreme conditions
- 6 Includes USB memory stick support for easy data and program transfer



dataTaker Solution

Equipment

dataTaker DT80 data logger

Sensors

Programmable Logic Controller (PLC)

Implementation Notes

A dataTaker DT80 can be wired to monitor and record the output states of the PLC, more specifically to record the time and valve state whenever a valve is opened or closed. The DT80 also records the number of cycles of each shaping machine. This is achieved by connecting the control lines to the digital inputs on the DT80, which monitors these lines for changes in digital states.

The DT80 can store approximately 10 million data points, which is large enough to be able to record high-speed digital states of PLCs for extended periods of time.

The recorded data can be presented as a state machine, which shows the exact timing of each valve. From this, the variations of each machine can be determined and the valve sequencing optimised in the PLC algorithm. This will in turn allow the manufacturer to increase their cheese production to reach their 3000kg targets and increase profitability.

This application is only one example of many whereby a smart logging system can be paired with a programmable logic controller to accomplish complex tasks and solve timing problems.