

# EnviroMon

## DATA LOGGING SYSTEM

### Case Study - Birmingham Women's Hospital



#### The customer

Birmingham Women's NHS Foundation Trust is one of only two Trusts in the UK offering specialist care to women. Their main services include gynaecology, maternity, urogynaecology, fertility, cancer services, neonatal intensive care, genetics and physiotherapy, and they aim to be the first choice for women and babies. The Assisted Conception Unit is part of the integrated fertility services offered by Birmingham Women's Hospital, and provides the most advanced laboratory facilities in the Midlands. The ACU requires temperatures within the cryogenic units and freezers to remain constant to ensure the highest possible success rate for assisted conception.

#### The challenge

To meet and exceed the Human Fertilisation and Embryology Authority (HFEA) licensing standards, the ACU required a comprehensive, flexible and cost-effective monitoring system that facilitated remote access. Due to a mandatory directive issued in 2006, the hospital needed to ensure that critical parameters, such as temperature and air quality, were monitored to demonstrate conformity with the storage conditions.

## The solution

After much research, the Pico Technology EnviroMon system was selected. This system could be customised to meet all requirements of the business challenge. EnviroMon offered a modular, multi-parameter monitoring and safety alarm system.



## The EnviroMon system

Figure 1 shows how the EnviroMon system is connected. The network uses standard four-core data cable, so the modules can be hundreds of metres apart.

The EL001 and EL037 converters receive analogue signals from one or more sensors, digitise them, and pass the results to the data logger. These special modules can process non-specific inputs of analogue voltage or current.

Two types of temperature sensor are used: thermocouples for cryovessels, and thermistor probes for incubators. Thermocouples require a thermocouple amplifier for cold junction calibration and amplification.

The data logger interrogates all modules, saving the data at predetermined intervals in its on-board memory. It can be configured to activate an audible alarm and autodialler (for out-of-hours problems) should any parameter exceed its set range. The EL019 autodialler sends a recorded telephone message to a pre-installed list of telephone numbers. Following an alarm, staff can remotely interrogate the system by connecting to the PC through its modem.

Power to the EnviroMon system, PC and alarm system is provided through an uninterruptible power supply for safety and reliability.

## The EnviroMon software

The Windows-based EnviroMon software resides on the PC. During system setup, it allows each parameter to be configured using a combination of configuration files and Windows dialogs. Later, when the system is running, it records and displays data from the data logger.

