CASESTUDY: *Coors Brewery introduces 4B Hotbus Security Monitoring System*

The Coors Brewery in Burton-on-Trent has been a pilot customer for the installation of 4B's Hot-Bus Hazard Monitoring System.

In the brewing industry stakes are high, since it is a high volume business where downtimes can be very expensive.

In the case of the Coors Brewery, the processing of a batch of 300 tons of grain, running down from the top of the malting plant to the bottom, takes 3 days.
The cost of a batch being lost can amount to about £50K according to Plant Engineer Roger Wright.

At the same time, production equipment is exposed to very tough operating conditions.
Blowing hot air at a temperature of up to 80ºC through the drying rooms reduces the lifetime of the equipment and fan bearings, which if left to run in a hot condition, lose their lubricating medium.

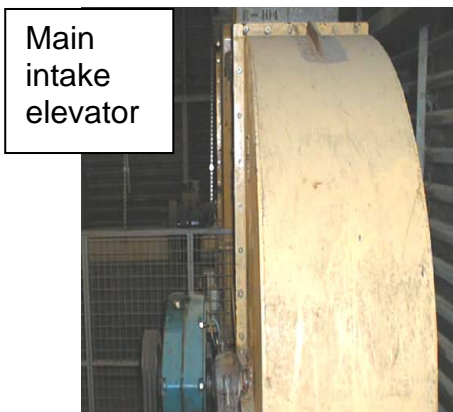Silo complex

Main intake elevator

Preventative maintenance can help reduce the risk of equipment failure and downtimes.
By constantly monitoring the bearing temperature, it is possible to anticipate the point at which the bearing is going to stop working effectively.

Kiln fan room

Preventative maintenance is what the 4B HotBus Hazard Monitoring System is all about.

A serial network for continuous bearing temperature and remote sensor monitoring, the 4B HotBus digital monitoring system allows the different sensors in a plant to be connected into one network and to be displayed in real time on one output unit.

The system is extremely user-friendly. It comes with user adjustable alarm and shutdown trip points, an easy-to-use logging and trending software and it gives the user the facility to enter his own sensor names.

Before Coors Brewery started to use the 4B Hot-Bus System, the company's hazard monitoring system was a patchwork of home-made stand-alone equipment that was linked to an output monitor.
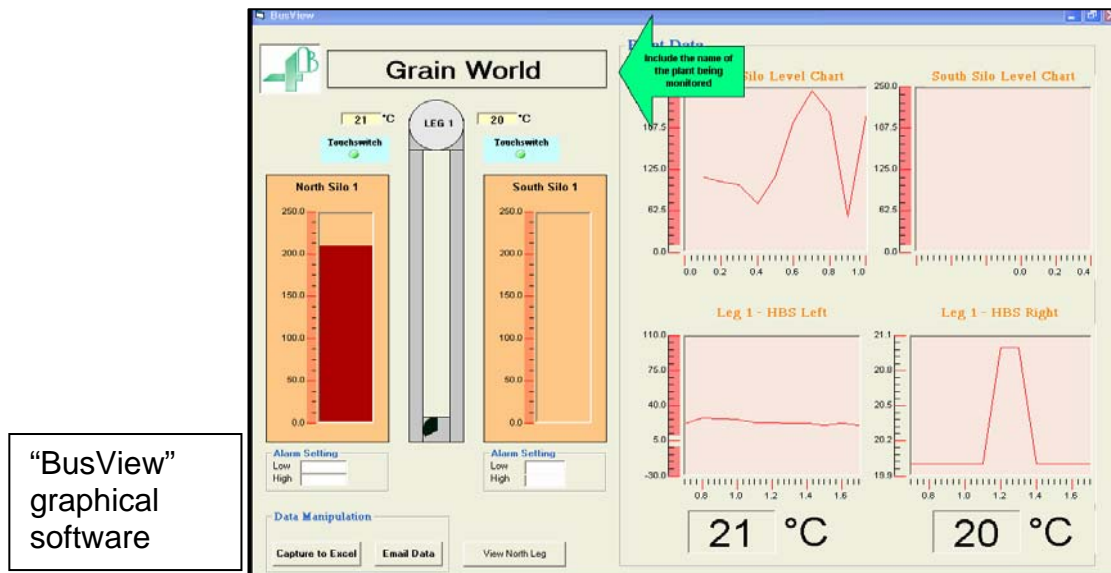
The problem with such small, isolated equipment is threefold: it is more expensive; it becomes obsolete in a short period of time and it cannot be monitored in a very effective way.

At Coors Brewery, the 4B HotBus System has brought massive improvement.

"The 4B HotBus Systems finally allows us to comply with ATEX requirements", Plant Engineer Roger Wright points out. Another key benefit for him is the fact that the 4B HotBus system" provides alarm outputs to shut down the plant as well as providing valuable maintenance information".

The 4B HotBus monitoring system has recently become even user-friendlier through the introduction of a graphical plant monitoring software, called "BusView". With "BusView" users of the 4B HotBus network can display their plant data in a more meaningful way, using photographic data or plant schematics. Plant data can be captured into an Excel spreadsheet for further analysis, and e-mails can be triggered for certain plant data or alarm conditions.

At Coors, plans are to make the 4B HotBus system the standard hazard monitoring system for the other plants within the group at Burton-on-Trent.

"BusView" graphical software

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TECHNICAL BACKGROUND INFORMATION:

COORS BREWERY PROJECT   (BURTON MALTINGS, BURTON ON TRENT)

A consultation document concerning compliance with ATEX Legislation was presented to the Coors Engineering department, and it highlighted the need to install a temperature monitoring system on some of their handling equipment. As a result of this a seminar was arranged and presented to the Coors' engineering department with a view to making them aware of the options available and the benefits of each of them. Further consultation took place between the parties involved and the T500 Elite digital monitor was finally chosen as the system to be installed at the Burton (Hawkins Lane) Maltings.

The system comprised of 3 networks, each having its own T500 Elite and R500 Relay Unit. The smallest of the three networks covered the area containing the kiln fans and required only 3 addressable nodes whilst a second network of comparable size utilized 8 nodes. The third and largest network, covering the silos and bulk storage areas, supported a total 30+ nodes and stretched to a total length of 830 mtrs without the need to install any "repeaters" on the line. All of the networks were used to monitor NTC bearing sensors that screwed into an existing grease nipple without the loss of the maintenance function of the nipple.

The three networks were then connected to an F500 gateway device that allowed them to operate with the data logging and trending software also supplied by Braime. This system allows all of the alarms generated by the T500 to be captured and displayed in real time, thus giving the maintenance department a timely warning that a problem exists within the plant. The system will also capture "fleeting" alarms of <100ms that would otherwise remain undetected and could consequently pose serious problems. Another option that is available is the printer interface to allow the alarms that have been registered to be printed to hard copy as they occur.

As this system is constantly under review and development several new types of node that allow alternative sensors to be monitored ~ 4/20mA, 0 -5vDC, PT100 / PT1000 ~ have been prototyped and can be made available.

The following page shows a schematic detailing the 3 levels of the T500 Elite "Hotbus" system. They range from a simple digital temperature monitoring system with adjustable trip points to a complex communications system that can be interfaced to an end-users DCS.

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