# Grain & Feed

## Coors Brewery Introduces 4B HotBus™ Security Monitoring System

## Challenge

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 80º C 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.

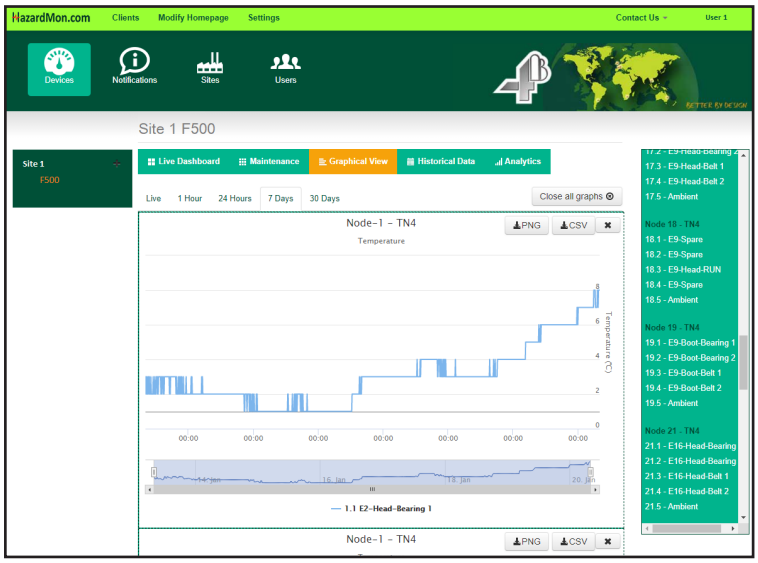
Silo Complex

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.
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.

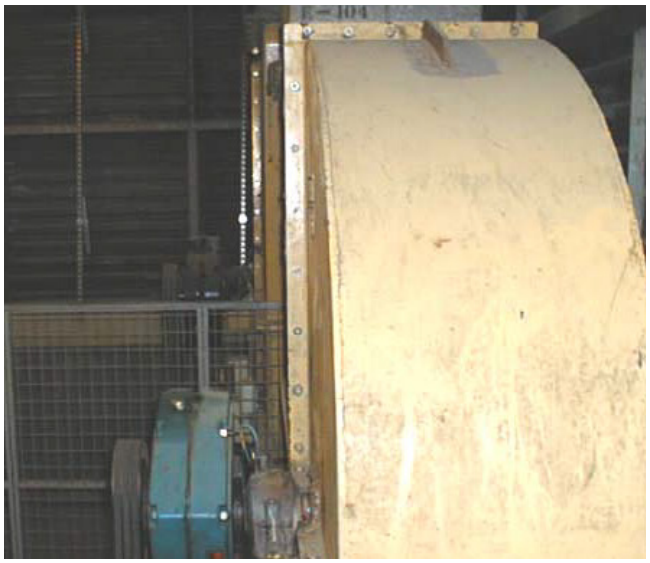
The system is extremely user-friendly. It comes with user adjustable alarm and shutdown trip points, an easy-to-use logging and trending software and it gives the user the facility to enter his own sensor names.

Before Coors Brewery started to use the 4B HotBus™ System, the company's hazard monitoring system was a patchwork of standalone equipment that was linked to an output monitor.

The problem with standalone 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.




HazardMon.com® Cloud Monitoring Solution



Main Intake Elevator

# Solution

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 the HazardMon.com® Cloud Monitoring Solution, which provides status notifications and data logging for bucket elevators and conveyors. Live system status, graphs and historical data can be viewed on any web-enabled device (smartphone, tablet PC, desktop or laptop computer). Emails can be sent to notify users whenever a change in the system's health is detected. An automated maintenance feature allows site operators to verify that all sensors on the system are operational and working correctly.

4B HotBus™ system installed in a facility control room

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.

# 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 Hotbus™ 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 4B. This system allows all of the alarms generated by the T500 to be captured and displayed in real time, 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.

New sensor developments provide additional types for temperature monitoring: 4/20mA and PT100 and speed measurement: 4/20mA. These new and existing sensor types can be used in conjunction with latest range of hazard monitors: fourth generation Watchdog™ Super Elite and IE Node. The Watchdog™ Super Elite provides comprehensive, standalone protection for single elevators and the IE Node provides a sensor interface to PLC systems via Industrial Ethernet: Modbus TCP, EthernetIP, ProfiNet. Both systems fully support Hazardmon.

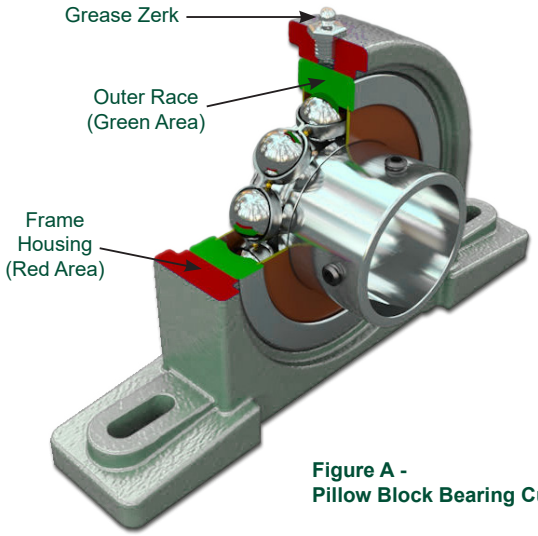



**Figure A -**
**Pillow Block Bearing Cutaway**

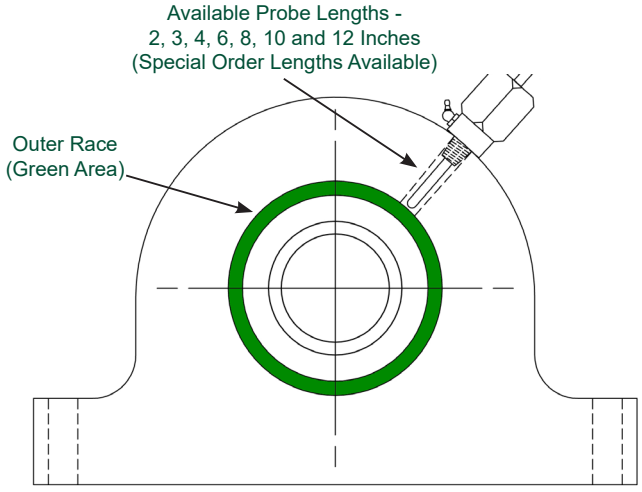



**Figure B -**
**ADB Sensor Installation**