

Case Study



> Epson

Epson Telford Ltd, part of the Seiko Epson Corporation, manufactures and distributes printer supplies and media products throughout Europe from its base in Shropshire. Airedale's air conditioning products are playing a major role in the precise control of temperature and air quality in critical areas at the Shropshire facility. Key solutions have been provided by Airedale controls specialists in delivering a total system of control, monitoring and remote alarm, in tandem with a staged integration of new, energy saving units, fine tuned to Epson's needs.

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Epson Telford Requirements

The 42,000 m² plant in Shropshire is Epson's sole European manufacturing site and employs 1,100 staff involved in plastic injection moulding and ink cartridge assembly, in clean rooms where continuous system operation requires a 24/7 precise cooling capability that is both efficient and reliable.

Controls Criteria

Air conditioning plays a major role in the Epson manufacturing facility where control of both temperature and air quality is so critical. Two standard Airedale chillers have been providing cooling to close control units in Epson's two clean rooms. However the existing BACnet system could only monitor certain aspects of the air conditioning system, so engineers had to go and physically check it. In addition isolated areas highlighted the need to create a total system in which all elements are connected together and monitored for maximum efficiency and performance.

The alarm system also needed addressing. A small team of maintenance engineers covered the whole site, and had to expend time suiting up every time they entered a clean room. Frequently they were called out for non-critical alarms because the BACnet system monitoring the close control units in the clean rooms was unable to differentiate between a critical and non-critical alarm.

With the cooling load on site increasing and new energy saving, free-cooling chiller technology available from Airedale, forward-thinking management at Epson has superseded the two existing standard Airedale chillers with three Ultima FreeCool chillers, in order to expand system capability at the same time as cutting energy costs.

Unit Specification

- > AireWorks BMS and AireTronix controls using Trend interface cards*
- > Three Ultima FreeCool dual system 750kW chillers, which have replaced the standard chillers and increased system capability whilst cutting energy costs, provide cooling to all Airedale indoor units
- > Twenty one units for close control in the two clean rooms
- > Eighteen ceiling cassettes for staff comfort

* AireTronix can be integrated into a wide range of BMS systems by using plug-in cards or gateways

AireTronix Controls: Maximising Energy Savings

Ultima FreeCool chillers are equipped with sophisticated AireTronix controls, fully programmable to maximise product efficiency, energy savings and compatibility. Offering powerful analogue and digital control, AireTronix controllers can be interfaced to an Ethernet network enabling Epson to display and modify parameters of the installation using standard Internet browsers. By using the Internet to access and navigate through data cables, Epson can check on the system from off-site locations.

The ongoing partnership between Airedale and Epson has seen the development on-site of a controls strategy which is fine-tuned to Epson's needs, with the ability to customise operational parameters on site and change set points remotely. A unique aspect of this strategy puts Epson ahead of the field in operating free-cooling on three separate chillers linked to the same circuit. Epson is able to make maximum use of the environment, with an option for mechanical cooling to top up any of the three chillers.

Says Paul Lovegrove, General Affairs Assistant Manager at Epson Telford: "AireTronix also allows us to monitor the indoor fresh air system, compensating for high temperature. With the help of Airedale's intelligent AireWorks BMS and their maintenance team we can see which units are 'hot spots' and deal with them. Any upgrades Airedale do on the control side, such as improved strategies, we can download them."

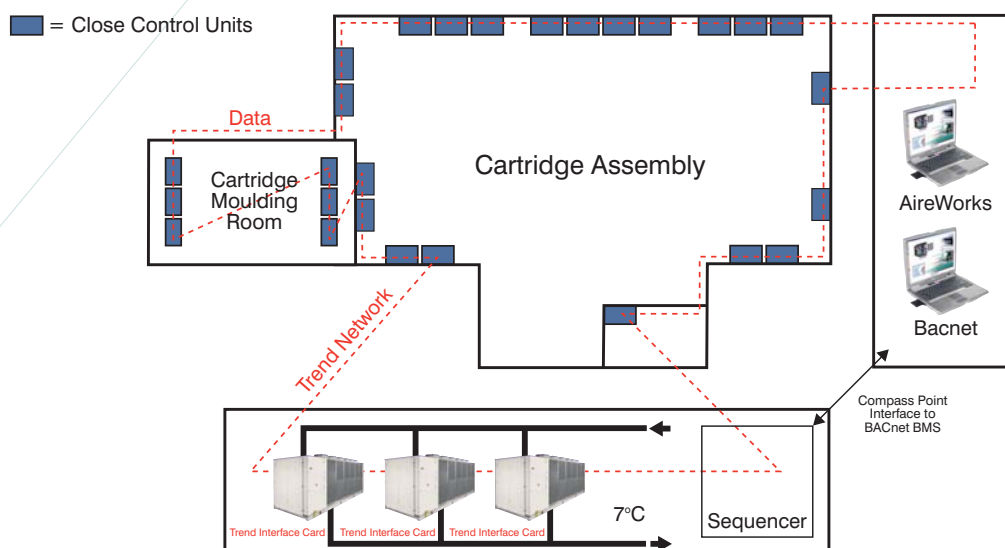


AireWorks BMS Supervision

AireWorks was installed at Epson with the phasing-in of the first of Airedale's three Ultima FreeCool chillers. AireWorks is the software program which supervises, monitors and maintains liquid chillers and air-conditioning systems managed by AireTronix controllers. It offers automated alarm monitoring, analysis of data and the optimisation of operational parameters. AireWorks can act as a server allowing access to a graphical representation using a web browser such as Internet Explorer. AireWorks enables Epson to monitor the system and make changes to the way it is controlled, all of which can be carried out remotely.

During the phasing-in of the first FreeCool chiller, Airedale redesigned the Sequence software to allow monitoring of both new and old chillers, integrating them into the existing BACnet system by utilising Compass points. Chiller water diverting valves could be controlled and during high load conditions the conventional chillers were used as 'top up' or 'standby' when required.

Now all Ultima FreeCool Chillers are fully monitored via Epson's AireWorks BMS. "AireWorks gives us a self-learning 'building block' system onto which we can bolt on more chillers and, with the click of a button, pull back information automatically. There is no limit to what we can do."



AireWorks BMS installed at Epson, integrates three new FreeCool chillers and existing close control units into one system

Remote, Intelligent Alarm

AireWorks incorporates all twenty close control units located in the clean rooms and packing area and provides an efficient 24/7 remote alarm indication system. All alarms can now be identified from one control office eliminating unnecessary call-outs for non critical alarms, hence saving vast amounts of engineers' time. Minor incidents are dealt with on a cluster basis. Remote monitoring and control via AireWorks means that temperature setpoints are easily changeable as opposed to sending an engineer, and performance graphs are readily available.

Adds Paul Lovegrove: "The result is an alarm system that is far more user-friendly and cost efficient. AireWorks BMS gives us an advanced network of chillers integrated into one control platform."



The AireTronix Controls Centre in Leeds features live, hands-on demonstrations. For details call Airedale Controls on +44 (0)113 2387731 / 2391000 or email controls@airedale.com

- > For the latest information on our Controls please visit : www.airedale.com
- > Please refer to the technical manuals for more detailed information
- > Airedale participates in the Eurovent Certification programme as a founder member. The performance data of certified products is independently verified and identified within the relevant sales literature.

Your nearest Airedale distributor is:



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