

Schneider Electric and Transtherm Cooling Industries Ltd team up for smart cooling



PROJECT AT A GLANCE

Project Type

Industry

Location

United Kingdom

Number of buildings

One

Applications

Cooling systems

MAIN PRODUCTS & SERVICES

HVAC M168

M171 PLC

RS-485 Modbus

Altivar 212 VSD

CUSTOMER BENEFITS

- A more connected energy infrastructure
- Ability to remotely monitor energy usage, temperatures and operational modes
- Longer life for machine fans
- Greater savings and reduced carbon footprint



Headquartered in Coventry, Transtherm Cooling Industries Ltd has been pioneering the technological advancement of commercial heat exchangers, refrigerant and water-cooling systems since 1989. Like other manufacturers today, it faces the challenge of designing machinery compatible with the internet of things (IoT), where users can remotely monitor and manage their equipment from anywhere. Its dry air blast cooler and adiabatic cooler machinery is supplied all over the world, and serves customers in both the commercial and industrial sectors.

The Challenge

Along with data centres, the coolers are used in other buildings where operations take place around the clock, such as hospitals, universities, public buildings and retail environments. These type of organisations demand complete visibility over their energy infrastructure, whereby safety features can be monitored, readings can be shared, and processes can be fine-tuned remotely.

In addition around 18 per cent of the UK's carbon emissions come from non-domestic buildings, and improving energy and asset management across them needs to be a priority. The UK has set targets to reduce greenhouse emissions to 50 percent of 1990 levels by 2025, and 20 per cent of 1990 levels by 2050. In order to achieve these goals, the industrial and commercial sectors need to adopt smart solutions that optimise energy management using data.

The Solution

With the industrial internet looming large on the horizon, Transtherm partnered with Schneider Electric to future-proof its cooling systems, allowing for smart communication between machines and remote access, as well as energy efficiency and noise reduction gains.

In order for Transtherm to achieve this, Schneider Electric dedicated HVAC M168 and M171 PLCs are embedded in the cooling systems. Two RS-485 Modbus connections allow a Modbus Master connection to provide effective communication to the internal aspects of the control systems, and a Modbus Slave only connection provides the customer with an option to communicate with the cooler from their BMS system. This enables them to remotely monitor energy usage, temperatures and operational modes, as well as adjusting settings using control parameters bespoke to the cooler's control systems.

The Benefits

A more connected energy infrastructure

With Schneider Electric's PLCs embedded in the cooling systems, Transtherm's customers benefit from a more connected energy infrastructure, where data can be harnessed to create a smarter, more efficient building environment. Having networked devices means greater communication amongst the cooling systems. They gain smart cooling, whereby organisations have both the information and the ability to make continual improvements, reduce emissions and save money.

Additional energy efficiency gains are achieved with the use of Schneider Electric drives, embedded within Transtherm cooling systems to reduce noise and power. The Altivar 212 is a variable speed drive for 3-phase asynchronous motors from 0.75 kW to 75 kW. It is specifically designed for HVAC variable torque applications, and due to its eco-energy based design, energy savings of up to 70 per cent can be achieved compared to a traditional control system.

Nick Bound, Managing Director at Transtherm says "Energy management is something our customers are increasingly aware of and remote monitoring and access of HVAC systems is a fantastic tool that gives organisations greater control over their estate."

Longer life for machine fans

The installed drives also provide machine fans with a longer life, as they facilitate a significantly softer start and stop of the cooling system's motor. With multiple technical, environmental and financial benefits, the addition of Schneider Electric's drives and PLCs means Transtherm has ultimately been able to sell more equipment. Furthermore, its customers have been able to make greater savings, while at the same time reducing their carbon footprints and future-proofing in an increasingly strict regulatory environment.

Working collaboratively

Initial introduction of this product range was made by Schneider Electric's authorised distributor BPX Electro Mechanical. Director Roger Collins explains; "Transtherm initially approached us with a view to improving the connectivity and scalability of their systems, as well as consolidating the number of components per panel. As they are a loyal customer of Schneider Electric industrial control products integrating the automation offer was an ideal progression. We are delighted that the Schneider Electric HVAC Controllers have proven so successful and all parties are continuing to work closely to develop the offer"

"As a supplier to OEMs Transtherm Cooling Industries we are continually driving towards providing the most reliable, high performance, innovative and energy efficient solutions to their customers. This embodies our own philosophy towards product evolution and energy management which has fostered both growth and invitation of our HVAC controllers and dedicated HVAC variable speed drives. This is also complemented by our wider industrial offer that provides product commonality throughout their range of control systems." says Alexandre Flory, UK OEM Manager at Schneider Electric.

"The ability for HVAC systems to connect with one another and feed important information back to customers should lay the path for a smarter, more holistic way of managing environments, where continual improvements and efficiencies can be gained.

Our drives and PLCs are now in use across Transtherm's entire range of dry air blast cooler and adiabatic cooler systems, used everywhere from schools and hospitals, to industrial plants, retail complexes and the latest energy efficient data centres. With the number of connected devices expected to pass 17 billion in the next five years, connected energy infrastructure is becoming a necessity, and this is an important step towards that future."