

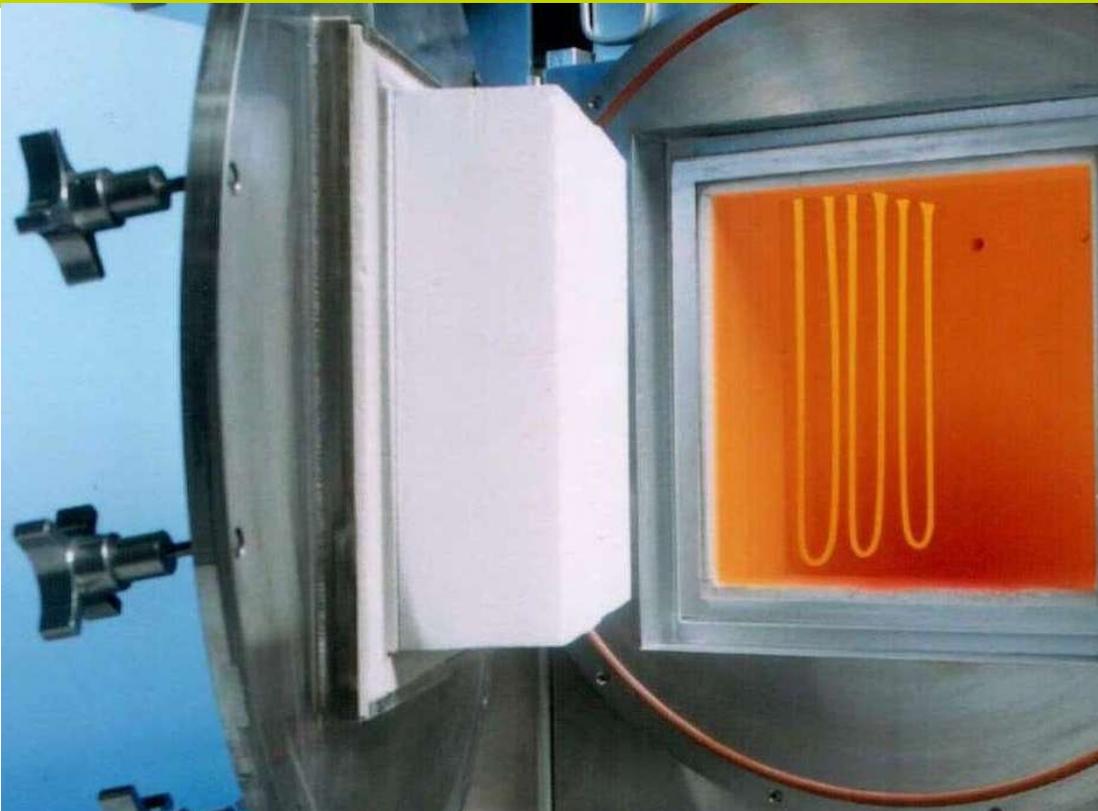
Heat Manufacturer, Sweden

Kanthal

Product: EPower Controller

www.kanthal.com

i n v e n t o r s
Eurotherm



"The concept is that the EPower™ instrument will be sold in conjunction with Kanthal Super heaters as a solution that has the potential to become the industry standard."

Bo Jonsson
Eurotherm Sales Manager

KANTHAL

Intelligent Control.

An innovative partnership with world renowned Kanthal Heaters.

Kanthal have successfully tested a feature of the EPower™ controller in a novel way, alongside their world leading brand of Molybdenum Disilicide (MoSi₂) heaters, known as Kanthal Super.

Kanthal is a world recognised brand in heating technology and is part of Sandvik Materials Technology, an international producer of advanced stainless steel, special alloys, and metallic and ceramic resistance materials. As such, Kanthal has access to world class resources including research and development and advanced processing technologies.

The Kanthal brand supports a global presence in segments wherever electricity is converted into heat, with a long history of developing and manufacturing electric resistance heating material and heating elements that provide the heat in a range of domestic appliances and industrial furnaces.

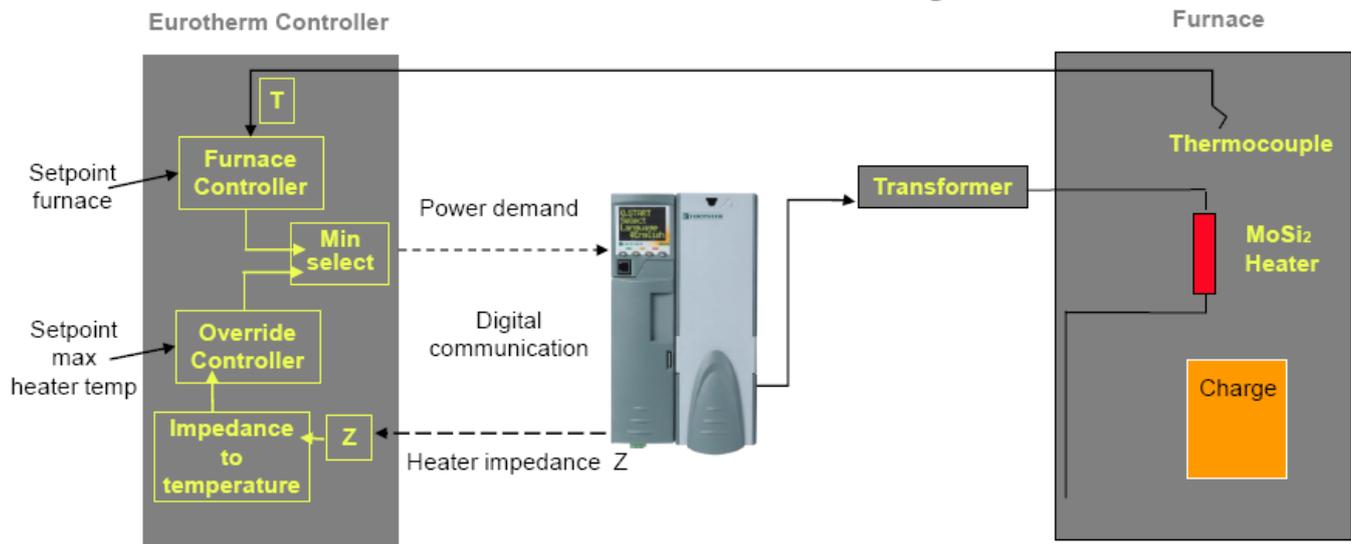
A key feature of MoSi₂ heaters is the relationship between impedance and heater temperature. Our feature that has been successfully tested supplies information about heater impedance.

Record Impedance provides the temperature of the heater and if you know that then this can prevent overheating and ultimately extends the lifetime of the heater. Also, the EPower unit is controlled by a 2704 over Master Comms. This enables the EPower Controller to supply all the raw data for calculations so adding even greater value to our solution.

There are further benefits with EPower technology across many applications:

EPower reports energy consumption over time, or used energy for a batch and this is crucial for three reasons:

Furnace and heater monitoring/control



1. **Process Analysis** – Most processes can be trimmed to consume less energy. EPower controllers report actual number of kWh or mWh used or saved; vital for precise analysis.
2. **Monitoring quality** – Energy is a key parameter in heat treatment processes not only in terms of cost. Knowledge of energy consumed means knowing exactly what has gone into the charge. EPower controllers can ensure the heat treatment process is running at optimum performance at all times.
3. **Peak power limiting strategies** using the Predictive Load Management option in EPower controllers. PLM leads to energy savings and possible cost savings.

To ensure best performance the EPower unit will:

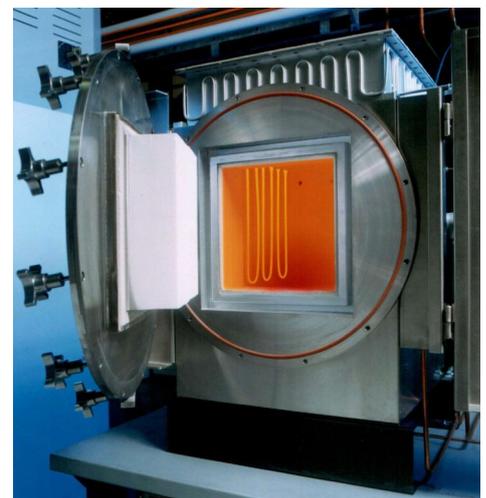
- Protect heaters from over temperature. Heaters are rated for max temperature typically 1700°C to 1850°C. Over temperature reduces heater lifetime. In extremes it can lead to immediate breakdown.
- Achieve maximum and consistent power. More power reduces process time and

time reduction generally means cost saving. Heater temperature control enables the use of minimum margins for power demand while still preventing overheating. This keeps the process time and costs down.

Our longstanding trust and expertise with this company has unlocked this cutting edge testing and future innovation.

The system has now been commissioned and was a great success. A fantastic partnership between two technologies that is unique in the marketplace.

This will add value across the heat treatment industry.



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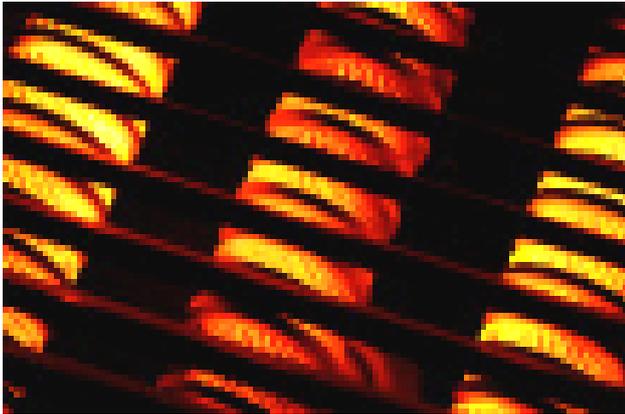
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Summary

- EPower solution to become the global industry standard
- New technology will add value across the whole industry
- Unrivalled power factor improvements

Challenge

- This is cutting edge technology and re use of engineering which has simply not been done before.

Solution

- EPower controller installed in conjunction with Kanthal Super heaters.
- EPower feature being tested supplies information about heater impedance
- EPower unit controlled by a 2704 over Master Comms

Benefit

- First to have this innovative technology
- Prevention of future overheating on all heaters by using EPower
- This will extend life of the heater so adding further value
- All raw data available in one technology means greater cost saving and simplicity for them and a greater offering to their end customer

A fusion of 40 years of technological development

Simple thyristor load control matures to sophisticated EPower™ energy controller

Reduces end user cost of energy with zero quality penalty

Multi EPower systems provide reductions in CO₂ emissions

Award Winning — Engineers' Choice Award and award for Innovation from The Franco British Business Awards sponsored by Barclays bank, leading French business newspaper Les Echos, UK Trade & Investment and VisitLondon.

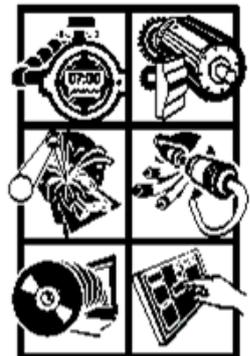


Les Echos
LE QUOTIDIEN DE L'ECONOMIE

UK
TRADE &
INVESTMENT



**CONTROL
ENGINEERING**



2008

**ENGINEERS'
CHOICE
AWARDS**

More Efficient Energy Production

The EPower controller's ability to continually and accurately predict, monitor and adjust to demand means specifically in this case absolutely accurate supply of information about heater impedance.

Knowing this means the prevention of future overheating on all heaters with this solution installed.

That is a major advantage and will not only mean greater performance and less downtime but is creating more efficient energy production and distribution.

This solution could reduce energy costs by improving overall process efficiency and we hope to achieve a fully endorsed solution as the global industry standard because of the enormous and unrivalled benefits.

- Prevention of future overheating on all heaters with this solution installed
- Extends the life of the heater so adding further value
- All raw data available in one technology means greater cost saving and simplicity for them and a greater offering to their end customer



* Authorised by: J Waddell, & Gerd Mayer Sandvik Materials Technology, Kanthal | Agreement to use as approved
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Written by Kate Merrick Invensys Eurotherm Global marketing communications. Email: kate.merrick@invensys.com

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