

Advancing thermal manufacturing processes

Eurotherm[®]



Plant



Machine



Operator

Redefining power and process control, for better energy efficiency, production optimization and regulatory compliance

eurotherm.com/heattreat

 **WATLOW**[®]
Powered by Possibility

Metals

- Fabricated
- Automotive
- Aerospace

Composites

- Automotive
- Aerospace
- Consumer

Glass

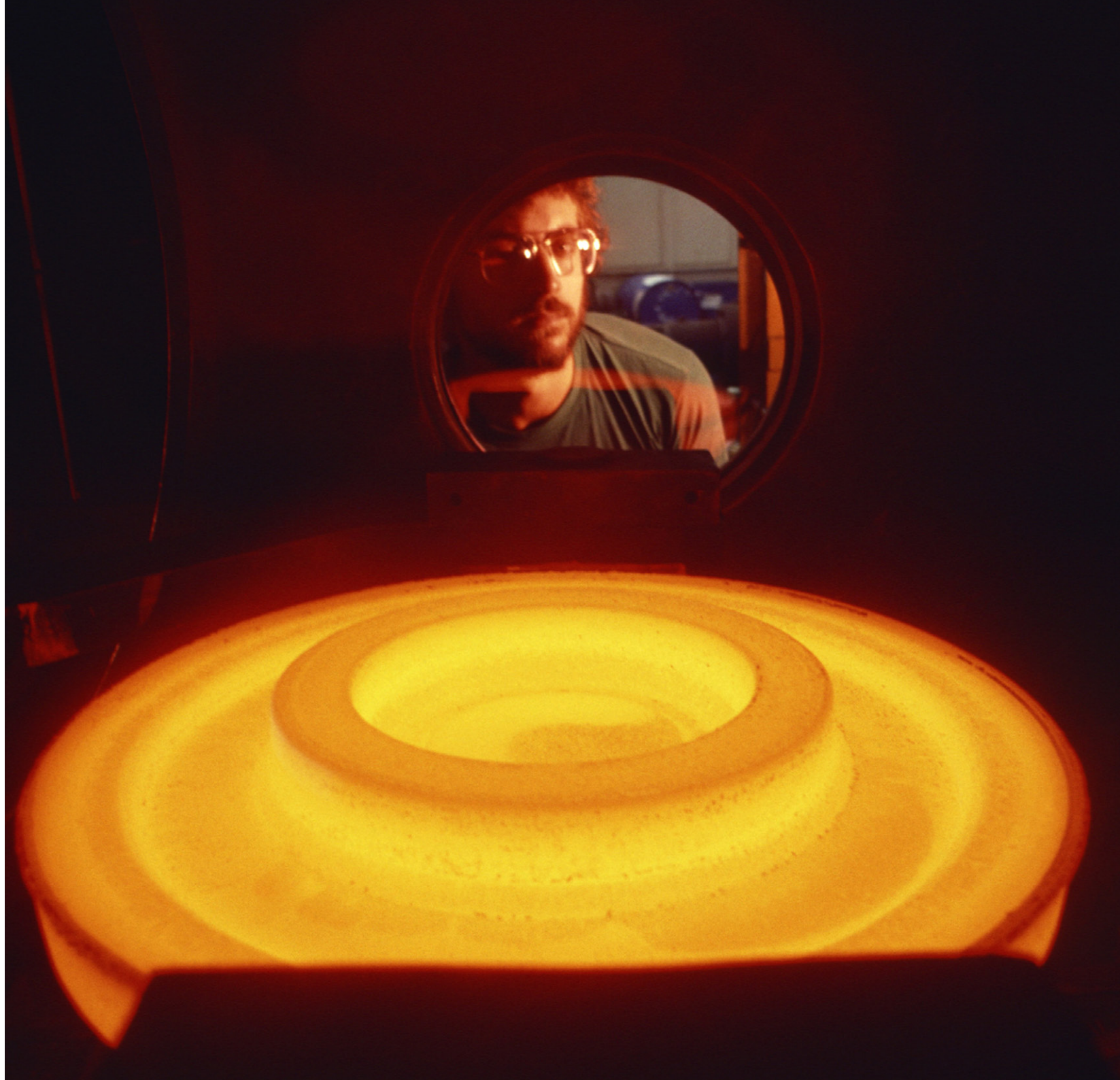
- Flat
- Tube
- Fiber
- Hollow and pressed

Petroleum

- Oils
- Fuels
- Chemicals
- Plastics

Components

- Computer
- Electronics



Be prepared for future regulations



For thermal manufacturing industries that need to maximize their productivity in a sustainable way, it's important to think ahead before investing in new equipment. How will future energy, environmental and manufacturing regulations affect your business, and will you be able to meet changing customer demands?

Next-gen technology for a new era

Sticking with basic or traditional control and automation solutions may cost less at the start, but think about the implications a few years down the line. Those who can't meet environmental targets will be forced to pay taxes, and will not have the flexibility to increase productivity if customer demands increase. Will your chosen technology help you meet the compliance challenges of new manufacturing standards as customers adopt next generation materials?

Selecting a supplier who understands your process and offers you well designed adaptable options, puts you in a much better position to minimize the impact of future regulatory and productivity changes.

Over the years, Eurotherm™ has been at the forefront of power, process control and data acquisition in thermal manufacturing industries, providing scalable next-gen solutions with fast ROI (Return On Investment). Based on our products, systems and services they are specifically designed to save energy, optimize efficiency and aid compliance to industrial regulations, with the flexibility to buy what you need now and expand later.

Sustainability and efficiency solutions

- Energy saving power control
- Intelligent combustion control
- High efficiency precision process control
- Specialized solutions for regulated industries
- Adaptable to meet future challenges



Reduce your energy costs and carbon footprint

Thermal manufacturing processes require high amounts of energy, and some traditional heating technologies have not changed for many years. Out of date components and system designs in electric and gas heating applications are becoming less economically viable, due to unnecessary energy waste and unacceptable emissions.

Manufacturers who don't make the leap to modern control technologies risk paying unnecessarily high energy costs for day to day operations, plus fines for going over their energy tariff and taxes for failing to meet energy and environmental targets. Old style "fixed" systems also make it difficult to increase production if you need to meet growing customer demand. Think about how these issues could affect your business in the near future.

Over the years Eurotherm have developed a range of scalable power control solutions ideal for the efficient operation of high energy manufacturing processes. From advanced power controllers, specialized transformers and expertly designed systems, to intelligent burner control, the methods and technologies used help prevent unnecessarily high energy costs, fines and taxes, and offer a cost effective way to increase productivity in a stepwise manner.



Latest power equipment and system design

- Up to date products and best in class partnerships enable energy and maintenance saving strategies
- Best practice system layout based on years of design knowledge minimizes energy usage
- Redundant power methodology keeps the process running in the event of component failure

Power management

- Predictive load management and load shedding technologies automatically prevent the plant from exceeding its energy tariff

Fossil fuel combustion

- Strategies for optimizing combustion and reducing emissions

Scalable architecture

- Easily add more power to increase production when needed

A “one stop shop” for automation and power

Profit from sustainability power solutions

- Energy and environmental costs are minimized, less risk of related taxes and fines
- Substantial energy savings provide fast ROI
- High availability of electric heating systems, lowers the risk of downtime
- Productivity can be increased to meet demand when needed
- Publish energy and environmental KPIs that stand out from the crowd



Eurotherm has over 55 years of process automation experience providing leading edge, integrated automation and power solutions. In combination with precision power and process control it forms a one-stop shop for thermal manufacturers.

- Advanced power control
- Intelligent combustion control
- Precision process control



Achieve sustainability while optimizing productivity

Getting the most out of your plant assets while meeting sustainability goals is an increasing challenge that impacts both your profitability and the environment. Whether you're a high end manufacturer trying to keep ahead of the competition or a mass producer needing to maximize productivity, in order to improve production efficiency or minimize waste, you really need to understand what's going on in the process.

If you're not measuring key process parameters, you don't have visibility of good and bad parts of the process. If you're not recording the data you can't work out what's going on, or see if your improvements are working. It makes it almost impossible to optimize overall equipment effectiveness (OEE), production quality and your resulting operational and sustainability KPIs.

Measure accurately

Signal measurements can be affected by sensor accuracy, operating conditions, wiring layout and input accuracy of the hardware. All of these have been taken into account in our product and system designs.

Sensors and where to put them

Eurotherm supply a range of high accuracy temperature sensors and probes. Our experienced engineering team can advise on the best cable type and layout for the operating conditions, as well as optimum sensor placement to acquire useful measurements and soft sensor calculations from the system.

Efficient 24/7 process control with high quality output

Specialist control algorithms and strategies are at the heart of Eurotherm control. Designed to prevent common temperature related issues in high temperature applications, they provide stability and repeatability in the process.

For high availability of continuous processes we offer redundant architecture, which in combination with our process optimization methods results in continuous high quality product, manufactured at an optimum rate, with minimum waste.

Planning for better operational efficiency and OEE

In some plants, operational processes such as equipment compliance procedures are still paper driven, and therefore time consuming and prone to mistakes. Lost, damaged or poorly maintained paperwork can cause unnecessary workflow interruptions, which in some cases result in audit failure.

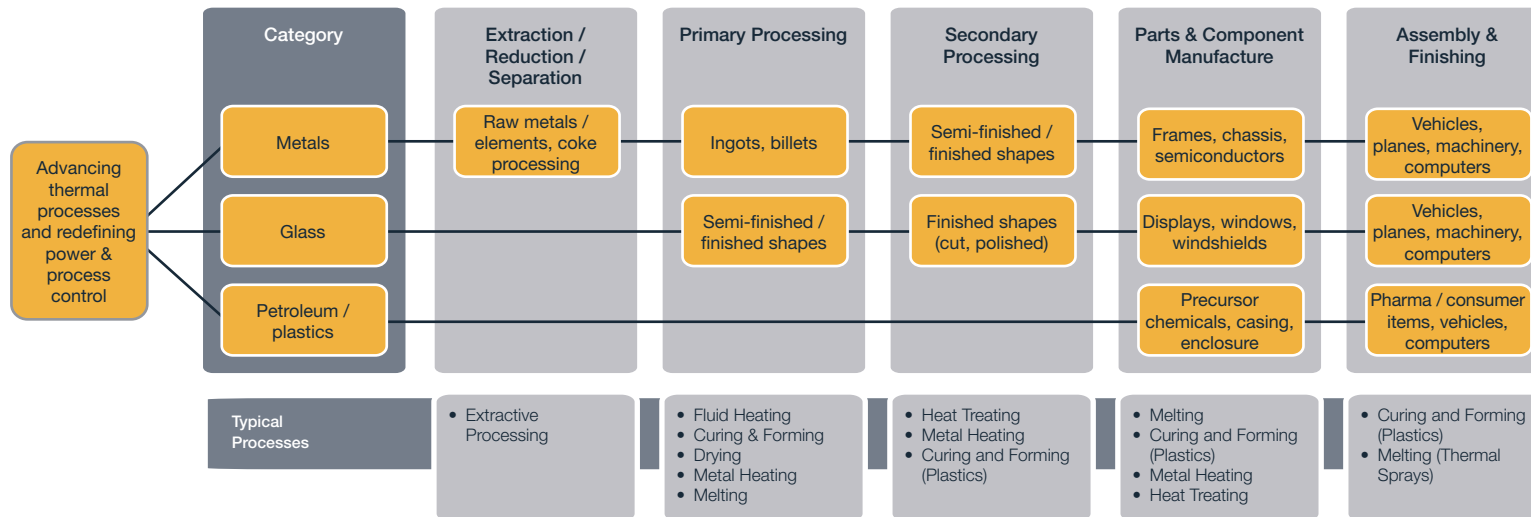
To solve these typical issues Eurotherm offer digitized online services that automate common conformance related procedures. Planning and scheduling tools enable efficient compliance management of your plant equipment and staff, while tablet based applications improve the efficiency of processes like calibration by enabling fast reliable mobile access to your compliance information when and where you need it.



Designed for process efficiency from the sensor right to the heart of the control system

- Measure accurately even in electrically noisy environments
- Analyze and improve process efficiency through accurate measurement and precision control
- Easily comply with industrial regulations using application specific control functions
- Minimize the risk of downtime thanks to redundant architecture and hot-swappable modular design
- Eliminate the hassle of operating system upgrades and software incompatibility using off-the-shelf products instead of PC based control
- Benefit from best practice system design and process optimization strategies implemented by knowledgeable engineering teams
- Achieve stable repeatable processes with minimal waste, for better sustainability KPIs
- Optimize O.E.E (Overall Equipment Effectiveness) aided by online plant compliance management tools and application know-how
- Always be ready for an audit thanks to secure digitized storage and easy access to compliance information

Thermal manufacturing know-how



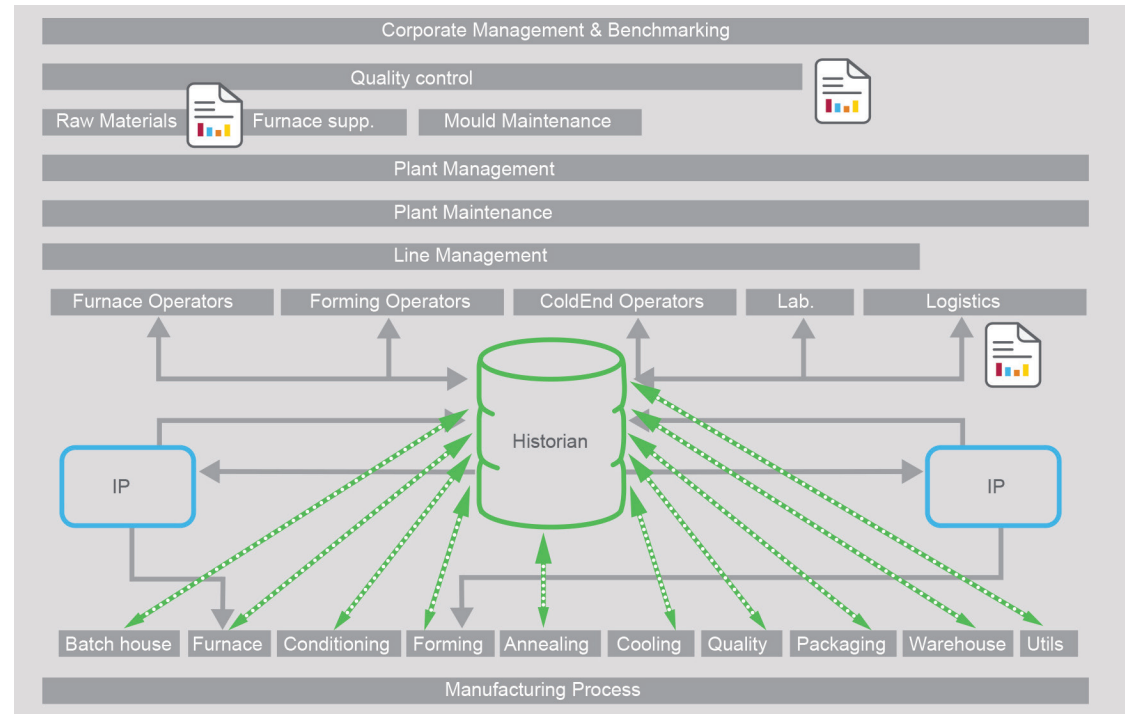
Ready for IIoT?

Whether you call it Industry 4.0 or the Industrial Internet of Things, the next industrial revolution is already here enabling smarter machines. However, benefiting from this kind of technology often means taking some evolutionary steps.

Older plants were not designed with modern communications, data acquisition and analytical tools in mind so it can be a struggle to collect and collate information. Many of today's plant information systems still suffer from mixed automation and data systems that are not easily connected into a single data server, requiring unnecessary human resource to extract meaningful results. If you are responsible for improvement projects and the reporting of KPIs how can you get useful data out of these systems and utilize it in the best way?

Connectivity for a smarter future

Eurotherm products and solutions offer a range of industrial communication protocols to transfer data from different systems to one place, and connect to IIoT technologies. From raw materials to the warehouse and beyond, historical and real-time process data are brought together in a single historian. It is then easily accessed, retrieved and analyzed using accompanying tools by everyone from plant personnel to corporate management. For companies embracing the benefits of cloud technology, Eurotherm Online Services (EOS) are available for data storage and plant compliance management, accessed via smart phones, tablets and PC browsers.



Collecting digital, analog and 3rd party format plant data in a single historian server simplifies analysis and reporting at every level

Seamless data acquisition

If you want to utilize your data historically it needs to be acquired reliably. A common practice is to record process data using a PC based system. The problem with this is, if communication is lost, so is the data. Information gaps can make analysis, benchmarking and reporting impossible especially when they go unnoticed for long periods of time.

Eurotherm's recording strategy does not suffer from this issue as the data is continuously recorded in the internal memory. Our specialized store-and-forward strategy seamlessly backfills data to the historian when communications are restored.

Improve and benchmark the process with data analytics

Data Management and analysis with a difference

Multiple communication protocols

- Enable connectivity of different systems for data capture

Point of measurement data recording

- Data still available if communications are lost

Eurotherm store-and-forward technology

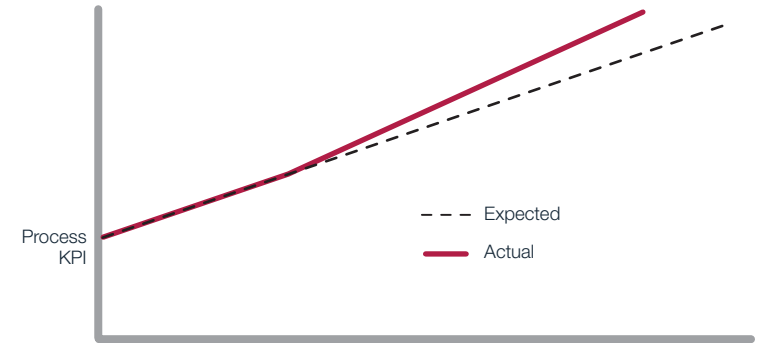
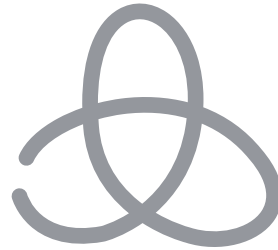
- Automatically backfills data to historian servers when communications are restored

Single historian server

- All your plant data in one place, easily accessed from all levels for analysis, benchmarking and reporting

Once you've got measuring, recording and archiving sorted you can start analyzing and comparing energy usage, productivity and quality data, both in real time and historically.

After you have made improvements, benchmarking your process will enable you to spot previously unforeseen issues caused by ageing equipment, different batches of raw materials and different machine operations.



What can you do with data analytics?

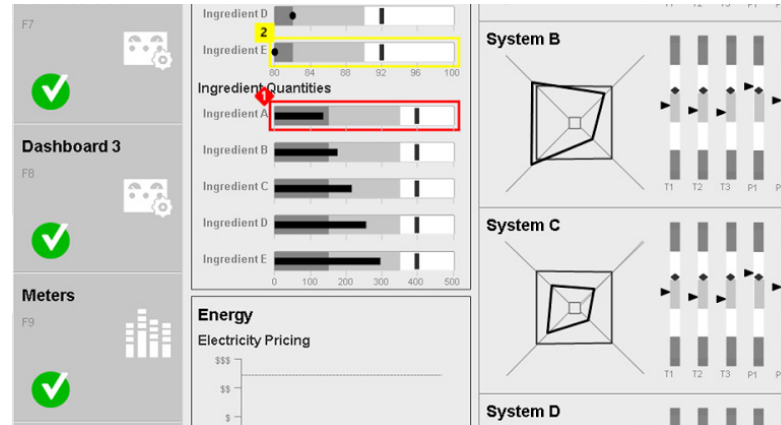
Comparing live process data with historical benchmark data allows you to:

- Prevent process deviation and waste caused by different batches of raw materials
- Get notified when energy usage is escalating due to worn out components and equipment
- Calculate, predict and control emissions
- Plan ahead for maintenance to optimize OEE

Smarter visualization for better operational efficiency

Improvements to HMIs over the last few years have brought enhanced graphics to the process, but this sometimes results in information overload for the user.

Eurotherm engineers work with you to design meaningful visualization that gives users better situational awareness. Careful consideration is given to graphical representation of data so it is immediately obvious even to an inexperienced operator when they need to take action.



Simplified view

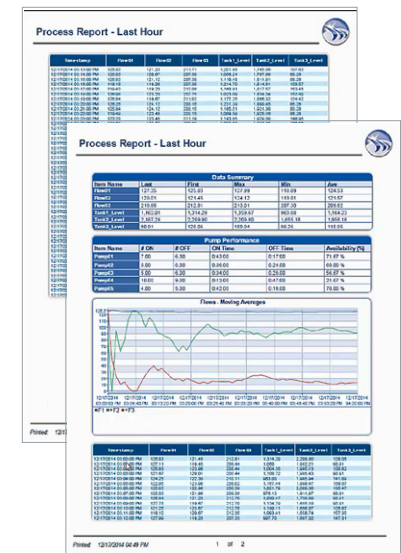
The operator is only shown what is needed:

- Only important system parameters are shown and represented using simplified visual methods
- Simple color and shapes are used to highlight issues and instruct the user

Demonstrate improvements and report KPIs

How many of your personnel are wasting time generating reports by hand?

To demonstrate energy and process improvements are working, pass useful detail to maintenance engineers and visualize your KPIs, our industrial reporting package enables you to generate reports and dashboards either on the fly, or automatically from a template directly from the historian. Whether triggered on an alarm or event, it can then be automatically pushed to the person who needs it.



Choose the right supplier

When you're selecting a product or system supplier, don't forget the value provided by a knowledgeable engineering team. How well will they understand your particular process, application and the goals you want to achieve?

Choosing Eurotherm gets you an international team of longstanding dedicated sales, project and service engineers with vast experience in thermal process control. Familiarity with regulated industry norms enables us to implement the most efficient solutions for best process consistency across all your machines and plants.

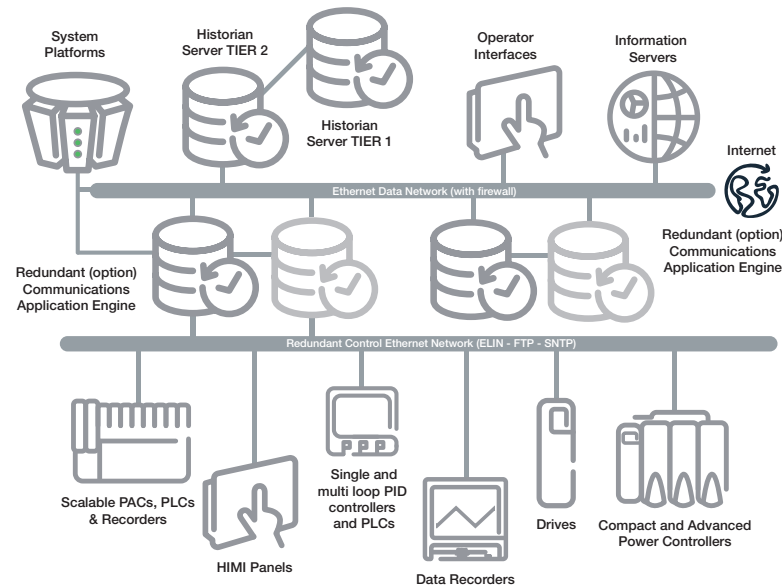
From product sales and small R&D (research and development) projects, to full scale system projects

- Knowledgeable international support teams
- Eurotherm's products, systems and services are compliant or certified to a number of internationally recognised standards including applicable regulatory requirements. For country and application specific information visit

eurotherm.com/certificates

Engineering expertise

- Thermal process applications
- High efficiency process control
- Energy saving power and combustion control
- Regulatory standards compliance



Scalable system architecture

Based on scalable precision control and secure data acquisition products, Eurotherm systems provide a flexible platform for all sizes of project.

Ideal for expanding small R&D projects up to full scale production, or increasing the capacity of your production line when you need to.

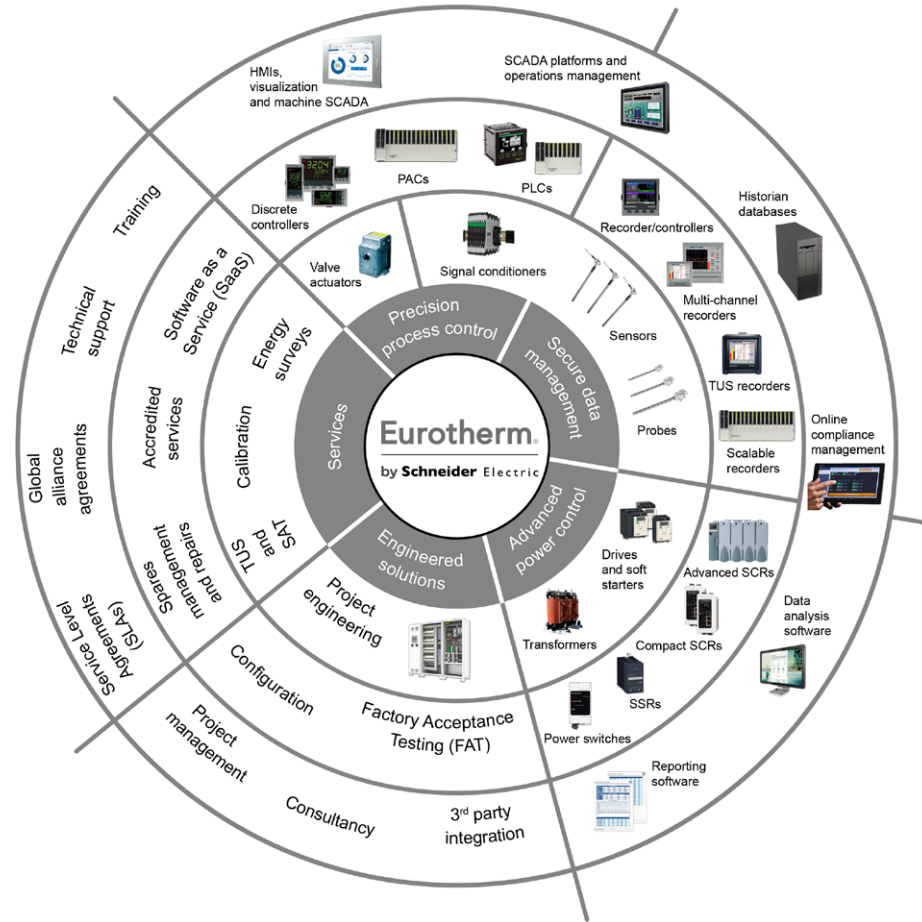
Contact your regional experts



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Products, solutions and services designed with thermal manufacturing processes in mind



Ready to take the next step?

Find out how we're redefining the way power and process control are applied in your industry

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