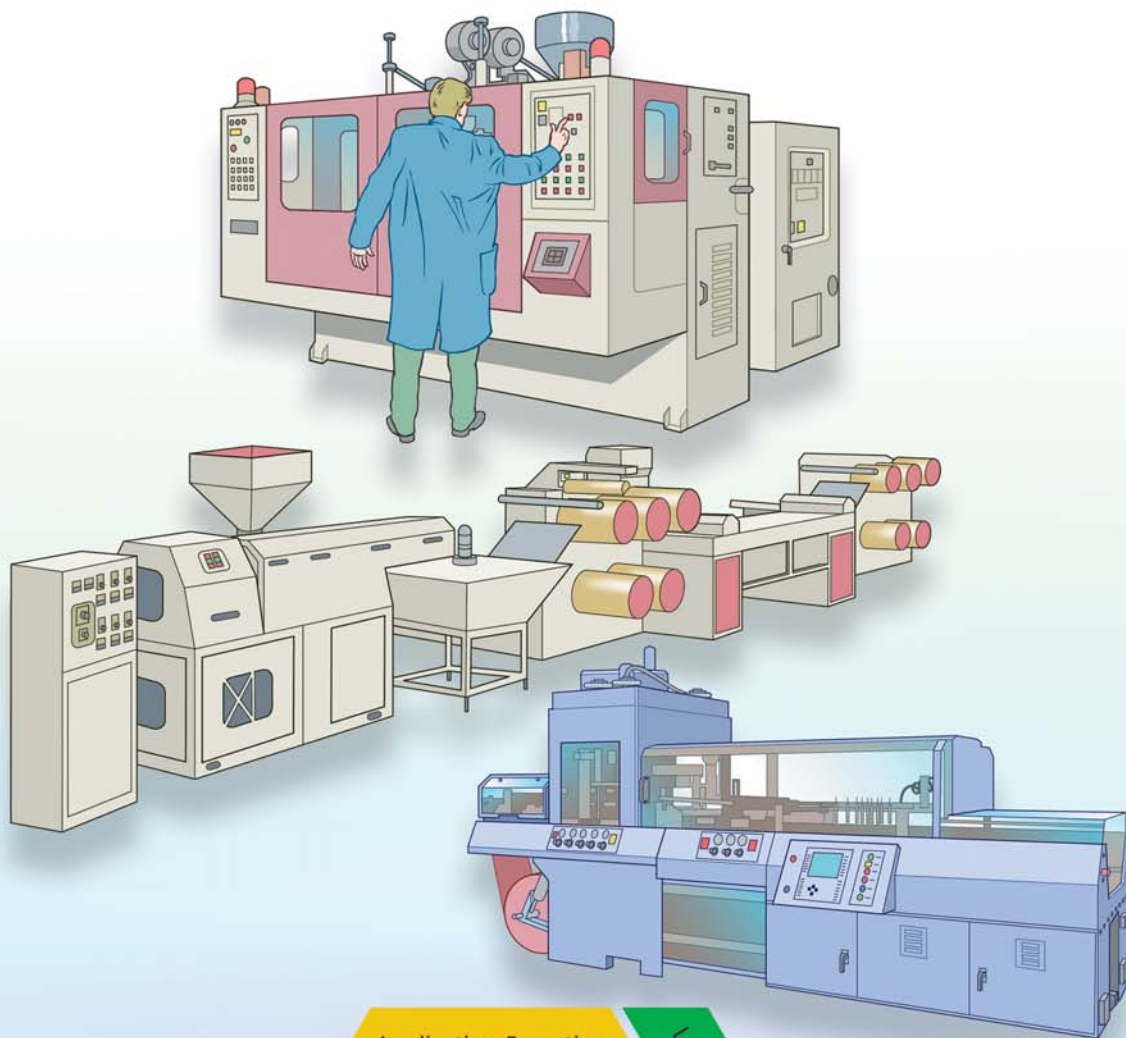


EUROTHERM® FLEXIBLE SOLUTIONS

Plastics

ADDING VALUE AT EVERY
LEVEL OF THE PLASTICS INDUSTRY



EUROTHERM® – A company with quality products and solutions that understands plastic applications

- Knowledgeable and friendly
- Strength through application experience
- Products to improve your process performance
- Worldwide presence – through Eurotherm offices and a network of partners

For over 40 years Eurotherm has built an international reputation for developing premium quality, 'fit for purpose' products and solutions. The Eurotherm brands (Eurotherm, Action Instruments, Barber-Colman, Chessell®, Continental® and ERO) have long been recognised for leading the plastics automation market. This has been derived from an exceptionally high understanding of thousands of industrial applications and process requirements from an extensive range of global industries.

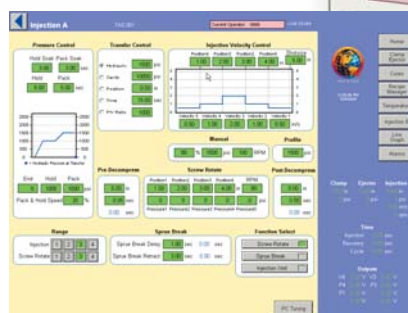


Each of the solutions we provide is drawn from a comprehensive family of configurable process control, data management and scalable automation systems.

The 'Eurotherm Difference', however, is much more than just superior products and flexible solutions.

The care and support of our customers is one of our main priorities and our aim is to work with you, so that you can benefit from the experience that can only come from the world's leader in control and measurement solutions. You will find us a genuinely friendly team of people, who are open-minded and accessible and prepared to make the extra effort to find the optimum solution to your requirement.

A key corporate strength is our "customer care" culture – which goes far beyond the norm. Wherever they are located, customers can gain access to application specialists for exceptionally high standards of technical advice and, with an international network of support engineers, on-site assistance can be provided rapidly. This service is backed up by our excellent training and repair facilities. Our aim is to provide friendly expertise for an application focussed complete solution service.



A Long Line of
World Class Products

120

560

94

808

EM-1

EM-2

MACO® III SYSTEMS

MACO IV, V, VI SYSTEMS

TMS

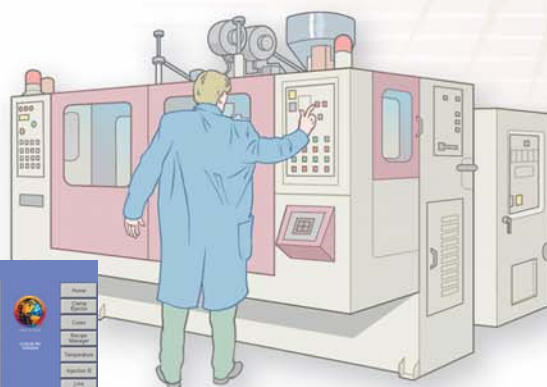
2000 SERIES

3000 SERIES

MINI8™ CONTROLLER

7100 SERIES

TE10 SERIES



Leading the Plastics Industry

- **Integrated automation**
- **Flexible solutions**
- **Application expertise**
- **Low life cycle costs**

INTELLIGENT INTEGRATOR

RFS

WONDERWARE® FACTORYSUITE™

OPTIMA TOUCH

ER SERIES

K SERIES

EM-3

EM-3c

MACO BREEZE II

MACO COMPACT

MACO 4000, 5000, 6000

MACO 8000

MACO DS, RS

The name Eurotherm is synonymous with excellence and precision control in plastics automation.

To achieve this recognition we are constantly adapting to the ever-changing needs of the plastic producers and machinery builders.

Integrated Automation...

Eurotherm is leading the market into a new era where the requirement is not just for high quality automation products but for instruments to work in harmony – from field to business systems. Integrating all aspects of a manufacturing plant to provide the plastic producer with the maximum return on investment.

Flexible Solutions...

From the very beginning of the plastics industry, Eurotherm has provided reliable temperature control equipment. Over the years, we have developed a comprehensive line of superior control products for all aspects of plastic machines. We continue to set industry standards with innovative discrete components and total machine control systems.

Eurotherm is your ideal partner to determine the best solution for your plant today, while planning how to evolve it into the future. Eurotherm's flexible solutions can improve your productivity by reducing the development, deployment, maintenance and administration of your automation solutions.

Application Expertise...

Our application experience is key to providing the right solution for you. As automation systems become more sophisticated, support and understanding of your systems becomes a major part of our complete solution offering. Eurotherm Plastic Application Specialists, with highly developed application and automation skills, can become extensions to your organisation working with you to optimise your processes:

- **Create complete automation strategies**
- **Apply Eurotherm products to lower your life cycle costs**
- **Preventative maintenance visits to support you throughout the lifetime of your automation solution**

Low Life Cycle Costs...

Lower life cycle costs are a result of Eurotherm understanding the needs of plastics producers and machinery builders. By combining the understanding of these needs with our leading control and automation expertise, Eurotherm can offer the solutions and services to lower your costs.

- **Decreased cycle times**
- **Less operator time**
- **Better parts quality**
- **Less scrap**
- **Reduced set up times**
- **Less downtime**

EUROTHERM – Leader in Integrated Automation

The Eurotherm offering adds value at every level of the plastics industry. From efficient control on the factory floor to collecting and interpreting data that allows for informed business decisions to be made in the boardroom. Eurotherm provides complete solutions to increase your performance and productivity.

Process data where you want it, when you want it and how you want it...

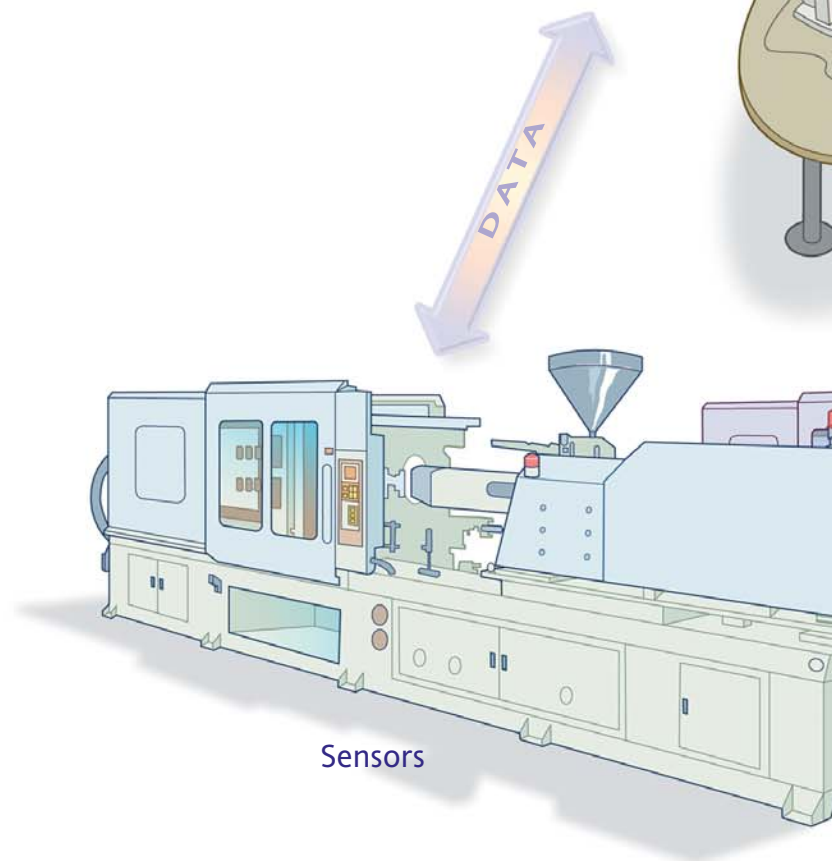
- Complete access to plant data including machine and job status
- Production monitoring, records and reports
- Real-time and historical parameter graphing
- Intuitive use through a common development environment
- Remote diagnostics with Internet and modem capabilities

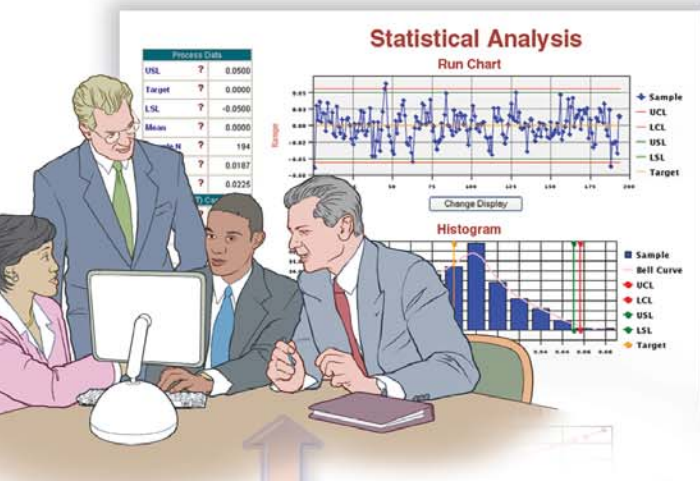
Our applications include:

- Blenders
- Blow Molding Machines
- Chillers
- Conveyors
- Die Bolts
- Dryers
- Extrusion Lines
- Gear Pumps
- Gravimetric and Volumetric Feeders
- Hot Runners
- Injection Molding Machines
- Presses
- Robots
- Rotational Molding Machines
- Rubber Extrusion
- Structural Foam Machines
- Thermoforming Machines
- Thermoset Compression Molding Machines

Complete integration of
Production Data into Business Systems

PLANT WIDE AUTOMATION

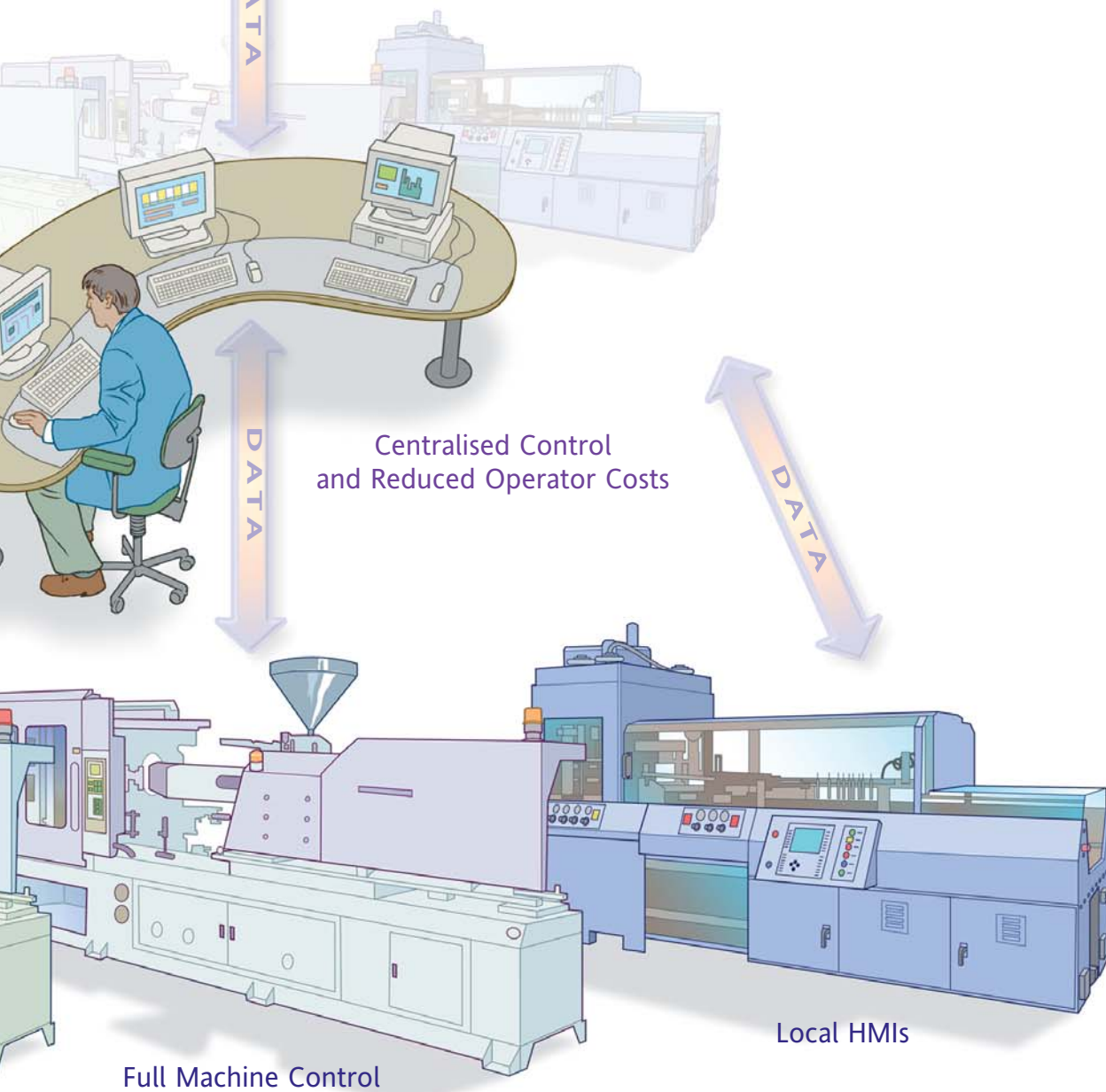




Business Management

The Eurotherm Integrated Automation solutions incorporates the factory floor data and seamlessly integrate it with the business systems – where plastic processing and management decisions are made. Our open development platform is designed for third party integration – enabling systems integrators and machine builders to bring their knowledge and value to the solutions they provide.

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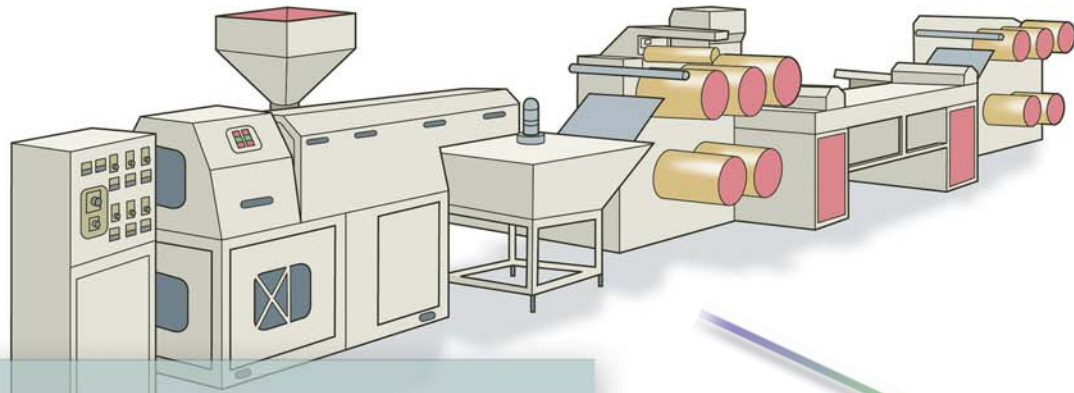


Complete Control - Temperature, Pressure, Line Speed, Motion and Power Switching

www.eurotherm.com/plastics

EUROTHERM – Leader in Flexible Solutions

Eurotherm leads the plastic market with flexible solutions. Our diverse product offering and application expertise allows each producer or machinery builder to have their own unique solution.

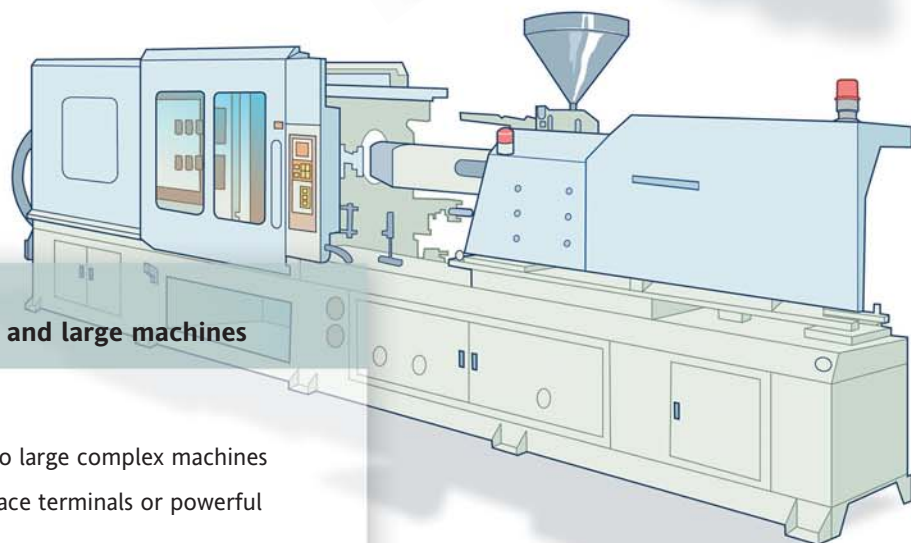


PROBLEM:

Your line needs to be reconfigured for a different product

Eurotherm Solution:

- Easy expansion with multiple bus networks
- Re-configurable building block architectures
- Less programming time with efficient programming tools
- Quick installation with DIN rail mounted components
- Training classes for setup and programming
- Re-usable programming libraries
- Automatic set-up and optimisation of key operating processes



PROBLEM:

You need a control solution for small and large machines

Eurotherm Solution:

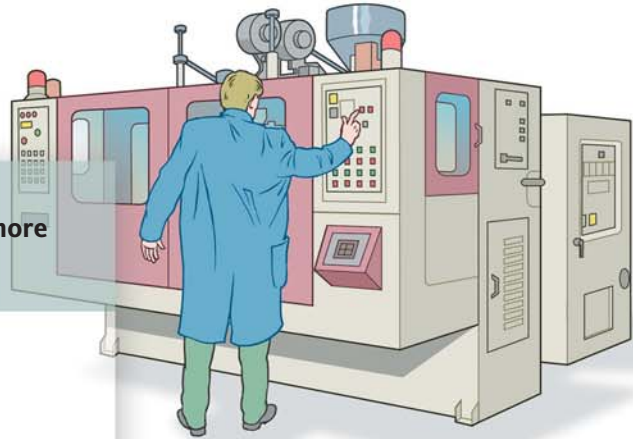
- Scalability from small simple machines to large complex machines
- Cost effective dedicated operator interface terminals or powerful computer based operator stations
- Open loop or advanced closed loop process control
- Less spare parts and training with common assemblies between small and large systems

PROBLEM:

You have expanded your plant and you need to do more with fewer people

Eurotherm Solution

- Remote diagnostics with Internet or modem connectivity
- Faster set-up with intuitive operator interfaces
- Fast diagnostics with on-line program diagnostics and editing
- Higher productivity with adaptive parameter changes

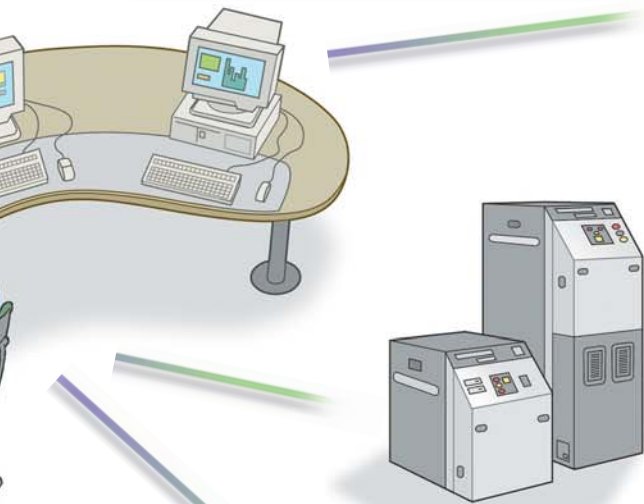


PROBLEM:

You need an operator interface panel dedicated to the features of your equipment

Eurotherm Solution:

- Customisable messages even on small single loop temperature controllers
- Unique custom designed operator interfaces
- Less cost with the removal of unneeded functions

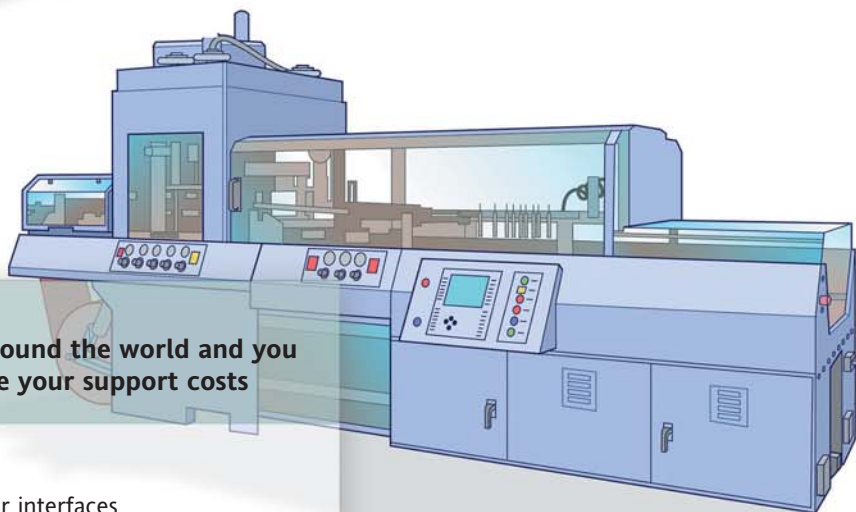


PROBLEM:

You have machines around the world and you would like to minimise your support costs

Eurotherm Solution:

- Multi-lingual operator interfaces
- International regulatory compliance
- Global support network
- Worldwide warranty



EUROTHERM – Products designed for Plastic Applications

Our range of application experience could help you to increase productivity and lower costs. All of our solutions into the Plastics industry are flexible and scalable to suit the process exactly.



Extruder Temperature and Melt Pressure Control

Eurotherm temperature controllers are designed specifically for plastic applications. Special purpose algorithms automatically set up and optimise the controllers for heat/cool zones whether the zone is fan, water or oil cooled. These algorithms ensure that there is a perfectly smooth transition between heating and cooling and that precision control is maintained at all screw speeds regardless of the resin being processed.



The output cycling characteristic of the controllers is tailored specifically for the heating or cooling devices being driven and maximizing output resolution allowable by the actuating device. This provides precise temperature control that is unmatched in the extrusion industry.

Eurotherm auto-tuning melt pressure controllers maintain constant melt pressure by controlling screw drive speed. Constant pressure is essential to part quality and uniformity. Automatic tuning reduces set-up time and ensures optimal control.

Total Machine Control (Electric or Hydraulic Machines)

Plastics producers and machinery builders are always pressed to lower production costs. By combining the understanding of these needs with Industry Leading control and processing expertise, Eurotherm offers total machine control systems.

The Eurotherm Barber-Colman control systems are specifically designed to save OEMs and Plastics Processors time and money. They are based on a revolutionary building block architecture that is designed to adopt to the ever changing needs of the plastics industry. The result is an open and scalable system that contains four decades of injection, extrusion, blow molding and thermoforming knowledge. Our application experience is key to providing the right solution for you. Support and understanding of your process and then choosing the right system, is a major part of our complete solution offering.

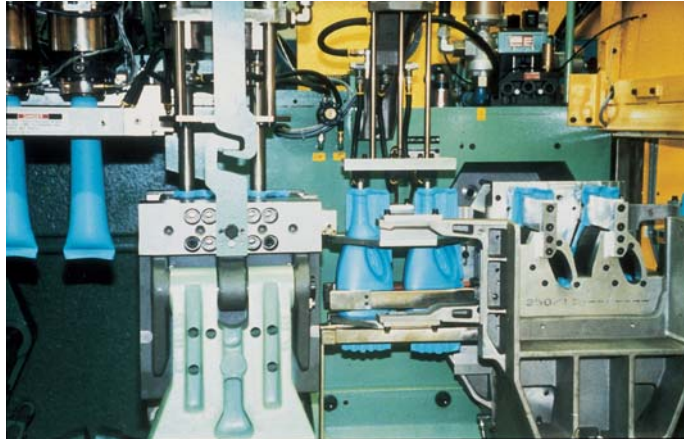
Eurotherm Plastic Application Specialists, with highly developed application and automation skills, can become extensions to your organization working with you to optimize your processes providing excellent ROI.

- **Low Installed Cost**
- **Dedicated to The Plastics industry**
- **High Productivity – Precise Control**
- **Scalable – Building Block Architecture**
- **Programmable to meet your needs**



Blow Molding Parison Control

The sophisticated shapes and appearances that are demanded by users of blow molded products have placed new burdens on the blow molder. Not only are the newer shapes more difficult to produce, they may also demand new resins requiring more precise control during processing and forming. The Eurotherm Parison Control module, with tooling position updates every 0.1 milliseconds, is designed to shorten cycle times, minimise material usage, and improve part production quality and volume.



Eurotherm designs products that optimise and simplify the user interfaces making for a quick and easy parison thickness set-up. Little or no training is required to become proficient with the operator interfaces, saving you time and money in set-up and operation.

Injection Molding Process Control

Eurotherm IMPACT™ advanced process control significantly simplifies the set up of a machine part. With little or no knowledge of process control theory, the molder can set up the machine for optimal and efficient performance. IMPACT process control provides auto-tuning for the velocity, pack, hold, back pressure and boost stages of the injection cycle.

IMPACT process control creates a theoretical model of the system to be controlled and uses this to account for real world deadtime and lags in the injection machine barrel - allowing superior control even with the most difficult shots. This model is regenerated after every injection shot, allowing the user to account for short and long-term deviations in the injection moulding process.



Using IMPACT process control to set up the machine provides considerable cost benefits:

- **Reduced set-up times**
- **Decreased cycle times**
- **Better parts quality**
- **Less scrap**
- **Less downtime**
- **More consistency shot to shot**

Motion Control

The two biggest obstacles to faster cycle times are clamp speed and repeatable positioning accuracy. In typical injection or blow moulding processes, clamps and shuttles must be slowed well in advance of the closed position to avoid damaging the machine. Time is also needed to compensate for the unpredictability of clamp positioning at any given instant in the cycle.

The advanced Eurotherm EZ PRO™ acceleration/deceleration motion controller decreases the motion time and improving the accuracy and repeatability of the machine's clamps, pins, shuttles and ejectors. This provides decreased cycle times, higher volume throughput, better part quality and less scrap.



EUROTHERM – Leading products for the plastics market

Eurotherm is committed to providing the plastics market with automation products and components that are simple and utilise the latest technologies and techniques.

Plant Wide Automation

Wonderware FactorySuite Automation system

- Collect and manage production information
- Visualise and analyse the process
- Track and improve production operations

Total Machine Controllers (Electric or Hydraulic Machines)

MACO Compact, MACO 4000 or DS Systems for Injection Molding

MACO 6000 or DS Systems for Blow Molding

EM3, EM-3c for Extrusion

MACO Breeze II Systems for Parison Control

- Low Installed Cost – Dedicated to Plastic Machines
- High Productivity – Precise Control
- Scalable – Building Block Architecture
- Programmable to meet your needs

Embedded OEM Controllers

K Series

- Ideal for Auxiliary Equipment like Chillers and Dryers – Application Specific Interfaces
- Highest Feature/Cost Ratio – Custom Builds

DIN Rail Mountable Temperature Controllers

2500

Mini8 Controller

RFS

- Wide Offering - Single or Multi-Loop Packaging
- Simple connectivity - Ethernet, DeviceNet®, Profibus DP, Modbus, Modbus Plus and ControlNet Communications
- Instant Load Failure Detection

1/32 DIN – 2132, FKS

1/16 DIN – 2216e, 3216, LME

1/8 DIN – 2208e, 3208, 3508, TMS

- Higher Productivity – Precise Temperature Control
- Instant Load Failure Detection – Current Meter Display
- Easy Connectivity – Modbus, DeviceNet, Profibus, Ethernet Communications

Pressure Controllers

1/4 DIN – 2604, 2704

- Less Set-up Time – Auto-tuning Pressure Control
- Intuitive Displays – Customisable Messages

Indicators for Melt Temperature, Speed, Pressure or Current

1/32 DIN – 2132i

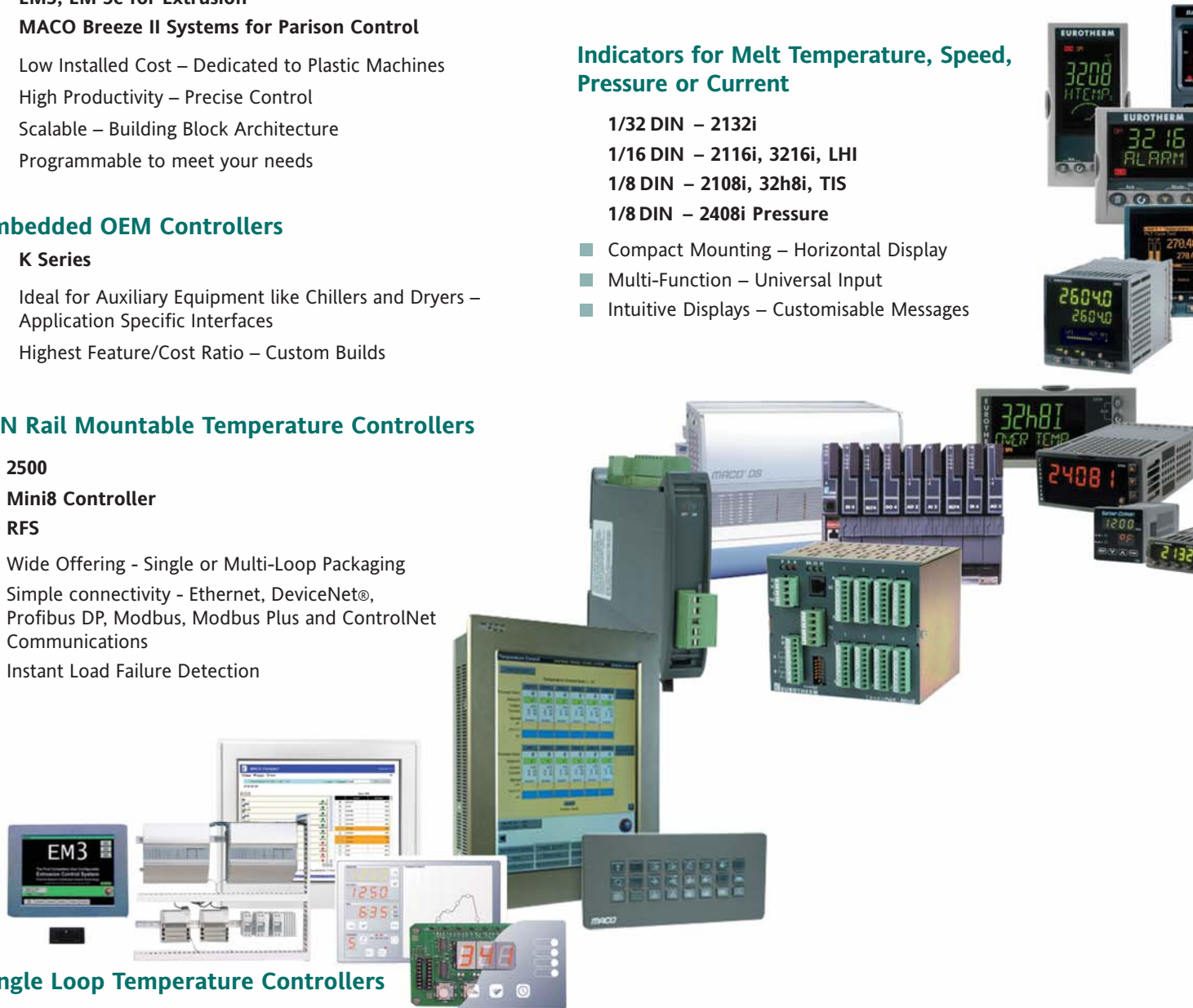
1/16 DIN – 2116i, 3216i, LHI

1/8 DIN – 2108i, 32h8i, TIS

1/8 DIN – 2408i Pressure

- Compact Mounting – Horizontal Display
- Multi-Function – Universal Input
- Intuitive Displays – Customisable Messages

Single Loop Temperature Controllers



Industrial PCs

Intelligent Integrator OPtima Touch

- Versatile – All-in-one or Separate Monitor/Computer Packaging
- Cost Competitive – 10, 12, 15-inch Touch Screen Displays
- Matching Push Button Stations with DeviceNet, Interbus-S, Modbus Plus, Ethernet, Profibus DP, ControlNet Communications

Power Controllers

7100 Series

TE10 Series

- Complete Range – Single or Three Phase, 16-400 Amps
- Reduced Wiring – Modbus or Profibus Communications

Drives

ER Series

ERCFW Series

- Wide choice of variable speed AC and DC drives
- Power ratings up to many hundreds of kilowatts
- Compact units – save in cabinet size

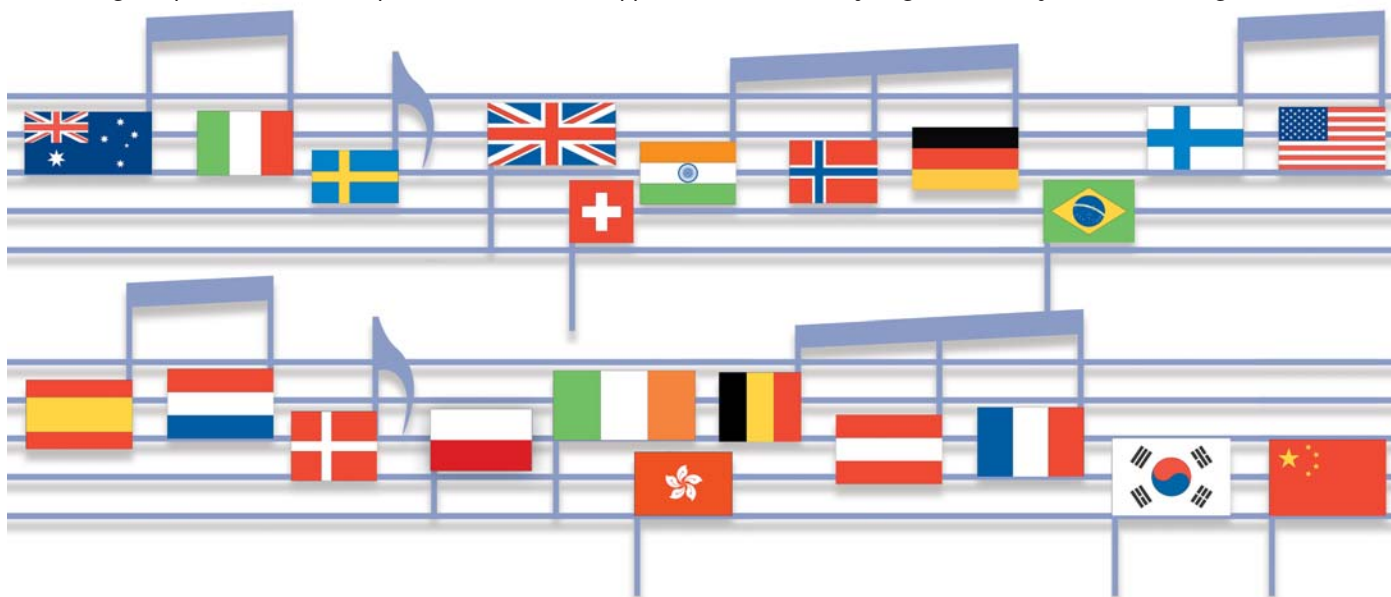
Thermocouples and RTDs

- Industry Standard for Plastics molding and Extrusion



Eurotherm: International sales and service

Understanding and providing local support is a key part of Eurotherm business. Complementing worldwide Eurotherm offices are a whole range of partners and a comprehensive technical support team, to ensure you get a service you will want to go back to.



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ED53

Eurotherm is also represented in the following countries:

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Azerbaijan	Mali
Bahrain	Mexico
Bangladesh	New Zealand
Benin	Niger
Bosnia and Herzegovina	Nigeria
Bulgaria	Oman
Burkina Faso	Pakistan
Cameroon	Philippines
Canada	Puerto Rico
Czech Republic	Qatar
Egypt	Romania
Georgia	Russia
Greece	Saudi Arabia
Guinea-Conakry	Serbia and Montenegro
Hungary	Singapore
Indonesia	Slovak Republic
Iran	Slovenia
Iraq	South Africa
Israel	Sri Lanka
Ivory Coast	Thailand
Japan	Togo
Jordan	Tunisia
Kazakhstan	Turkey
Kenya	Turkmenistan
Kuwait	UAE
Latvia	Ukraine
Lithuania	Uzbekistan

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F +82 (0)2 3462 3078

Represented by:

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