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Eurotherm

Food and Beverage Industry

A complete service for controlling and recording your process

imagine making the impossible possible

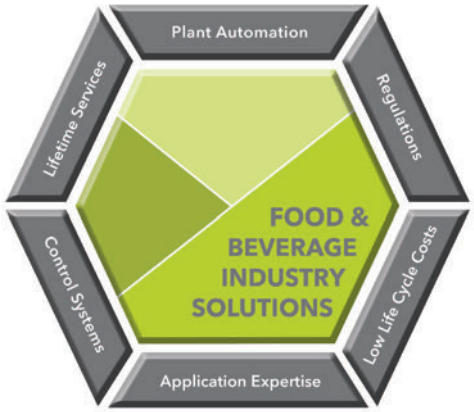
Invensys Eurotherm Food & Beverage Industry ...

Invensys Eurotherm is a partner who understands your process. We are a global company taking care of all your process automation and power control solutions; a partner with the global presence to speak the native language of your local plants' personnel. We understand your automation problems and can solve them with you, offering dedicated support that solves your problem always and at any time, from operations through to technical engineering and on to your purchasing function. We can and do **imagine** making the impossible possible for our food & beverage industry customers.

Why choose Invensys Eurotherm?

Eurotherm is a recognised supplier specialised in controlling industrial processes and rendering them compliant.

- Recognised know-how in terms of implementing solutions with an optimal investment return
- More than 40 years of experience in the field of processes, data recording and use, regulation and progressive automation solutions
- Sustainable solutions designed to improve the reliability and efficiency of your processes throughout their lifecycles
- Proven experience in the use and implementation of multi-supplier and multi-platform solutions
- Specialised teams provide in-depth experience in system validation
- Global expertise with on-site service provision and assistance
- A close partnership with food & beverage equipment manufacturers (national and international)
- Teams work alongside yours in a drive for mutual success
- Compliance with standards ISO 9001, ISO/TC34, TickIT, PAT…



PROGRESSIVE APPROACH
Connectivity at all levels
DeviceNet/EtherNet/IP
Secure data

FDA 21 CFR Part 11
Solutions adapted to applications
Integration of third-party solutions
PLANT WIDE VISUALISATION

Profibus/Modbus
High-precision regulation
MODULARITY
SECURE, REMOTE VISUALISATION

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... solutions provider

Expertise in data authorisation, validation and traceability

Eurotherm understands the importance and difficulty of efficient validation and can help you to reduce the costs and complexity of implementation in accordance with the applicable regulations within the food & beverage industry.

- Hundreds of solution references validated worldwide
- Native integration of requirements 21 CFR Part 11 in our products
- Compliance with the standards for good practice (BPF, GMP, HACCP etc.)
- Proven test and validation techniques to guarantee repeatability
- Standard validation models.

Confidence in measured value for your money

Eurotherm has made it its aim to develop products and services specifically designed for:

- Solutions adapted to your needs – basic equipment (controller/recorder) to control part of your process all the way up to the controller system, enabling control of a production unit
- Reduction of costs, time and complexity of the validation processes
- Re-using expertise at international and local level from the perspective of reducing integration time
- Accompaniment throughout the lifecycles of your installations to optimise productivity. Service contracts of different levels to protect your investment
- A complete range of services designed to provide you with the best value from your system –
  - Installation
  - Implementation
  - Commissioning
  - Training
  - Calibration
  - Spare parts management
  - Technical support
  - Leasing

BATCH MANAGEMENT Managing recipes
Supervising installation
PERFORMANCE MONITORING Recording data Application blocks – Sterilisation – Humidity
Automation of Processes
DCS DISTRIBUTED CONTROL SYSTEM PRODUCTION REPORTS

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Recognised experience in many applications

The breadth of our experience in the application field will enable you to increase your productivity and reduce your costs. The solutions we offer are flexible and can be extended; they are fully adaptable to your process. They also incorporate, as standard, functions compliant with the ANSES, FDA and other regulations.

Examples of applications

Cheese manufacture – Draining – refining – storage

The different stages in cheese manufacture require full understanding of the process:

- Temperature and humidity regulation
- Recording data
- Historization

Case Study

Chocolate manufacture – conching – tempering

The manufacture of chocolate is done through several processing stages which require maintenance of the liquid state up to the final stage – tempering (turning into solid state). Conching and tempering are two important phases since the quality of the final product depends on mastering these two processes.

Conching
A fundamental stage in the creation of chocolate, conching enables homogenisation of the product emerging from the grinder. These machines consist of a vessel with a double wall which enables circulation of the warm and cool water, and a series of mechanisms which create continuous grinding and mixing movements. This operation mainly prevents moisture loss, but also changes the taste, fineness and homogenisation of the chocolate.

Tempering
Tempering is a delicate stage which involves carefully turning the chocolate from liquid or semi-liquid state to solid state.

The chocolate is heated to a specific temperature until the cocoa butter crystals have completely fused. Next, it is carefully cooled down to a specific temperature.

It is easy to spot good tempering because it produces a glossy and smooth appearance; good, clear snap; firm bite; smooth, silky, homogenous texture in the mouth; which develop all the aromas and taste.

Solution

- Temperature regulation of the warm and cool water circulation of the conche
- Recording of data
- Accurate temperature control of the vat
- Programming temperature profiles
- Controlling the electric heating circuit
- Historization

Case Study

Charcuterie – salting, smoking, curing

The growth of bacteria that cause food spoilage is influenced by humidity, temperature and exposure to air.

Production of charcuterie is always based on three techniques – salting, smoking and curing. These contribute to the microbiological stability of the product.

Salt, the oldest ingredient in meat processing, has antibacterial properties. According to the amount of salt used, it will be stored at either room temperature or at refrigerated temperature. Smoking, in charcuterie, primarily aims to complete curing which already began with the reduction in water content through salting, adding antibacterial compounds and also adding flavour. The products are put in smoke from the slow pyrolysis of wood scrapings heated by electric resistance.

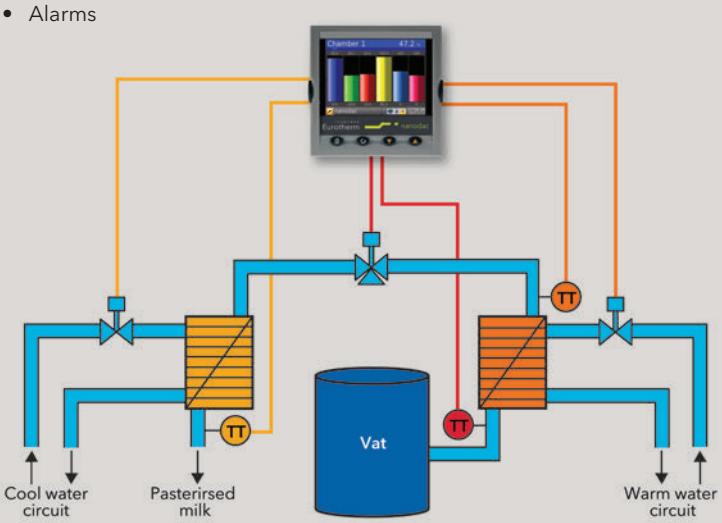
Finally, curing enables dehydration of the product – by reducing the water content, this technique directly acts on the physicochemical and microbiological properties of the foods.

Solution

- Cooling control (salting)
- Recording and historization: temperature, humidity
- Temperature control of autoclaves (cooking)
- Batch management

Dairy – pasteurisation

- Checking and monitoring hot and cold product circuits
- Recording data and batches; generating reports
- Indication of success/failure
- Personalised local graphic display
- Secure data collection
- Alarms



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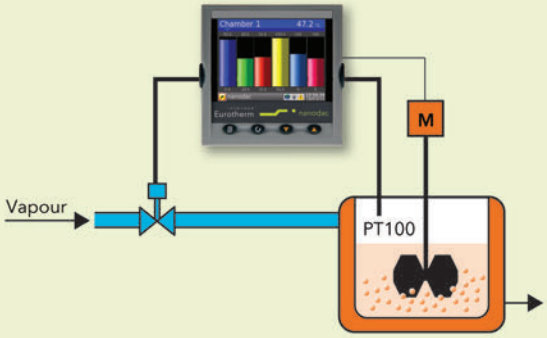
Mixer/cooker

- Accurate control of boiling temperature
- Adherence to boiling time
- Storage of different boiling recipes
- Secure electronic recording of the boiling temperature



Case Study

Brewing

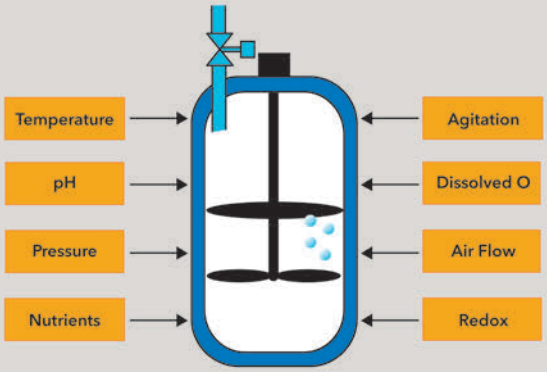
Each stage of the beer-making process requires controls of a multitude of variables – temperature, humidity, pH, pressure etc. Full understanding of these variables will define the quality of the beer.

The principal stages of the processes:

- Mashing – heating the mixture of crushed grains and water
- Kilning – drying the green malt in an oven with hot pulsed air
- Brewing – heating the wort, cooling the liquid
- Fermentation – essential stage which determines the appearance, smell, taste and texture of the beer

Solution

- Accurate measurement of pH
- Accurate control of temperature, humidity, pressure etc.
- Programming temperature profiles
- Management of historization alarms



Case Study

Mixing the preparation with fruit or other ingredients

Pieces of fruit are mixed in the finished yoghurt before being put in pots. This process carries a high contamination risk and the preparation must be suitably heated to destroy all the vegetative micro-organisms, but without altering the texture and flavour of this fruit-based preparation.

Solution

- Accurate measurement of pH
- Control of cooling temperature in the vat
- Recording and storing data for traceability
- Controlling heating temperature
- Managing manufacturing batches

Progressive Solutions

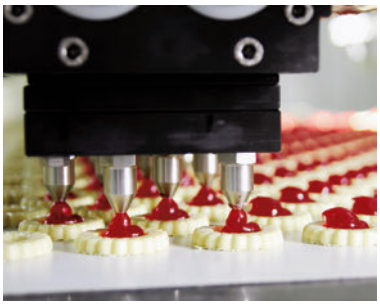
From the laboratory all the way to the complete production workshop

From a basic control loop to information management and distributed control systems, Eurotherm offers you progressive and modular solutions adapted to your applications and your budget. The extensions are easily incorporated into your system as your needs evolve.

The notion of integration is a key aspect of the Eurotherm service. Our products are designed from the perspective of total connectivity to function based on the communication standards of the industry. Eurotherm also suggests, if required, the integration of third party equipment within its services.

The Eurotherm expertise in the automation of processes, control, secure data recording and supervision is reflected at all levels of our systems. Our high availability (redundancy) solutions enable you to increase your productivity, and the use of standard functions minimises integration costs. Responding to the requirements of FDA 21 CFR Part 11 is a native function of the Eurotherm service. In this way, the validation process is greatly simplified.

Our aim:
To offer you solutions adapted to your applications within a complete service, designed to minimise your costs and optimise your investment returns.

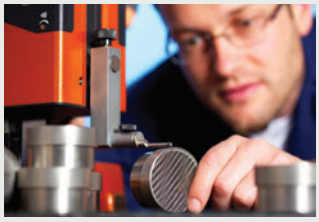


Calibration on the full measuring chain

In order to comply with the regulations of your work or simply to remain competitive, you could be asked to show calibration certificates for your equipment which will enable you to retain your accreditation or comply with your internal procedures.

Eurotherm offers the advantage of providing a service for the full measuring chain from temperature sensor to controller. This service ranges from calibration to correction, as required. This procedure involves verification using a calibrator to check whether the produced measurement does in fact correspond to the expected value and within the required tolerance margins. If not, adjustment is carried out on the equipment.

This work can be done at your convenience on your installation. Once the results of all the measuring points have been collected, we can issue you with a UKAS calibration.



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When all comes together success is guaranteed

Distributed control system

Our systems enable optimisation in running your factory and to respond to the various requirements in the area of distributed control systems, maintenance, and management of the installations. Users can rapidly access the relevant data.

- Predefined controller/visualisation screens
- Client/server architecture with main server and backup server
- Trend graphs
- Advanced alarm function
- Recipe manager according to ISA-S88
- Compliant with regulation 21 CFR Part 11
- Unique global database with audit trail
- Clock synchronisation

Advanced DCS controller range

Configurable PAC controllers are the cornerstone of distributed systems enabling continuous analogue, logical and sequential control. They can be used autonomously or networked for more extensive systems.

- Distributed and/or centralised controller units
- Continuous and sequential control with management of job modules
- Native redundancy with smooth transfer warm restart
- Visualisation and modification of programmes online (programming according to ISA-S88)
- Peer-to-peer communication
- Opening to industrial networks Modbus, Profibus etc.

Information manager

The information manager reconciles the power and flexibility of a relational database with the speed and compression of a history software package in real-time.

- It collects and stores all the factory data
- The real-time and historical factory information is accessible by all users
- The integrated Microsoft SQL server provides standard access through SQL requests
- Based on the historization monitoring platform in real-time with Historian and Wonderware
- It complies with the recommendation 21 CFR Part 11
- Client server architecture
- Store & Forward function guaranteeing continuity of data recording, even in the event of communication failure

All functions of supervision in a human-machine interface

The Eycon™ visual supervisor is a multifunctional data controller with data recording and integrated display which provides all the functions needed to control and monitor processes. It can be used autonomously or as distributed architecture for more extensive systems.

- Compliant with regulation 21 CFR Part 11 concerning recording and electronic signatures
- Programmer for recipes and setpoints
- Accurate, continuous and sequential control
- Batch manager according to ISA-S88 with batch recording
- USB and FTP transfers for recording data and audit trails
- Compatibility with Modbus and Profibus
- Barcode reader and printer connection
- Clock synchronisation

A service adapted to meet your process needs

Registration & traceability *Pasteurisation – incubation – tempering – fermentation – draining – cooking*

Protection, traceability and completeness of data

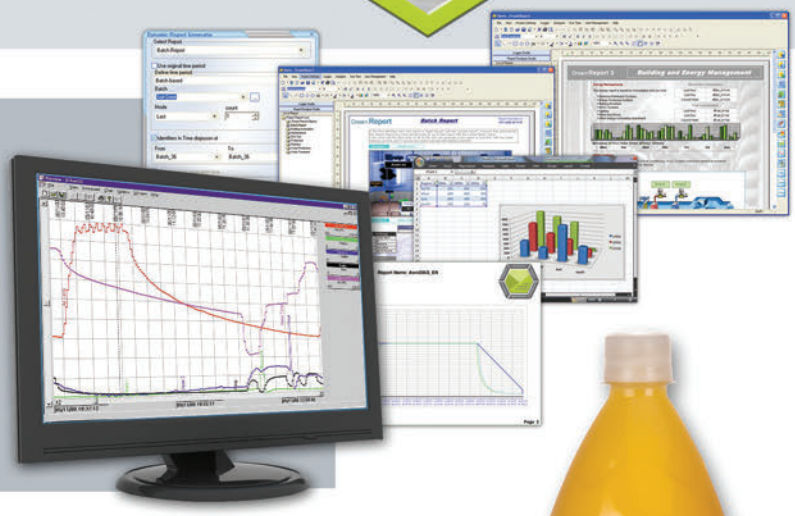
Your most valuable assets for the traceability of your process are the data collected and compliance with the registration standards applicable in the food & beverage industry. Our paperless chart recorders provide state-of-the-art data protection and security.

- Electronic lock to protect removable media*
- Audit trail for 21 CFR Part 11 (FDA)
- Unlimited unique user names and passwords*
- Multiple archiving strategies
- Special "Store & Forward" function to guarantee continuous recording of data in the event of communication being interrupted

* 6000 Series only

Use of data

- Secure visualisation and analysis of data
- The Review software creates graphs and enables export to other software such as Excel®
- Automatic transfer and saving of folders via Ethernet
- Automatic report publication and distribution (Dream Report software)
- Automatic printing at the end of a batch
- Research and analysis of batches
- Secure, binary files with checksum (UHH)



Combined recording and control

- Two functions – recording and control – in a compact format (96x96mm)
- Dual channel programmer
- Up to 4 universal inputs
- Up to 34 recording channels
- Application blocks: sterilisation and humidity
- Protection of your know-how thanks to OEM security, which prevents configuration cloning
- Washdown IP66 display

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Control *Sterilisation – mixing – draining – refining – charcuterie – brewing – conserving…*

Controllers and indicators

With more than 20 models within our range of controllers and indicators, we can supply you with a product that is perfectly adapted to your process: from simple temperature controller to the advanced process controllers utilising "application" blocks (e.g. hygrometry) and mathematical and logic functions for more complex applications.

- Single or multi-loop control PID: temperature (hot/cold), flow rate, pressure, level etc.
- Programming function enabling the creation of profiles for temperature, etc.
- Simplified implementation thanks to the automatic regulation of settings
- Simple and user-friendly use with clear display of messages
- Storage of manufacturing recipes
- Standard communications of Modbus, Profibus, DeviceNet and Ethernet enabling full integration in the system networks
- Simple configuration using a quick-start code, and for advanced applications with iTools, a user-friendly and intuitive configuration software used for all the Eurotherm ranges

Controlling electrical power *Conching – cooking – browning etc.*

Relay/static contactors and power dimmers

For cooking, browning and other processes, we provide an extensive range of contactors and power dimmers used for controlling your heating elements: resistances and infra-red.

- From 3KW to several hundred KW
- Mono, bi or tri-phase versions
- Compact format
- Patented device enabling reduction of your energy bills

Instrumentation *Fermentation – smoking – cooking*

Transmitters, flow meters, sensors and thermocouples

A range of instruments specifically designed for food & beverage processes

- Level transmitters
- Pressure transmitters – relative – absolute – differential
- Vortex flowmeter
- Analyser/ transmitter of pH
- Pt100 temperature sensor, thermocouples

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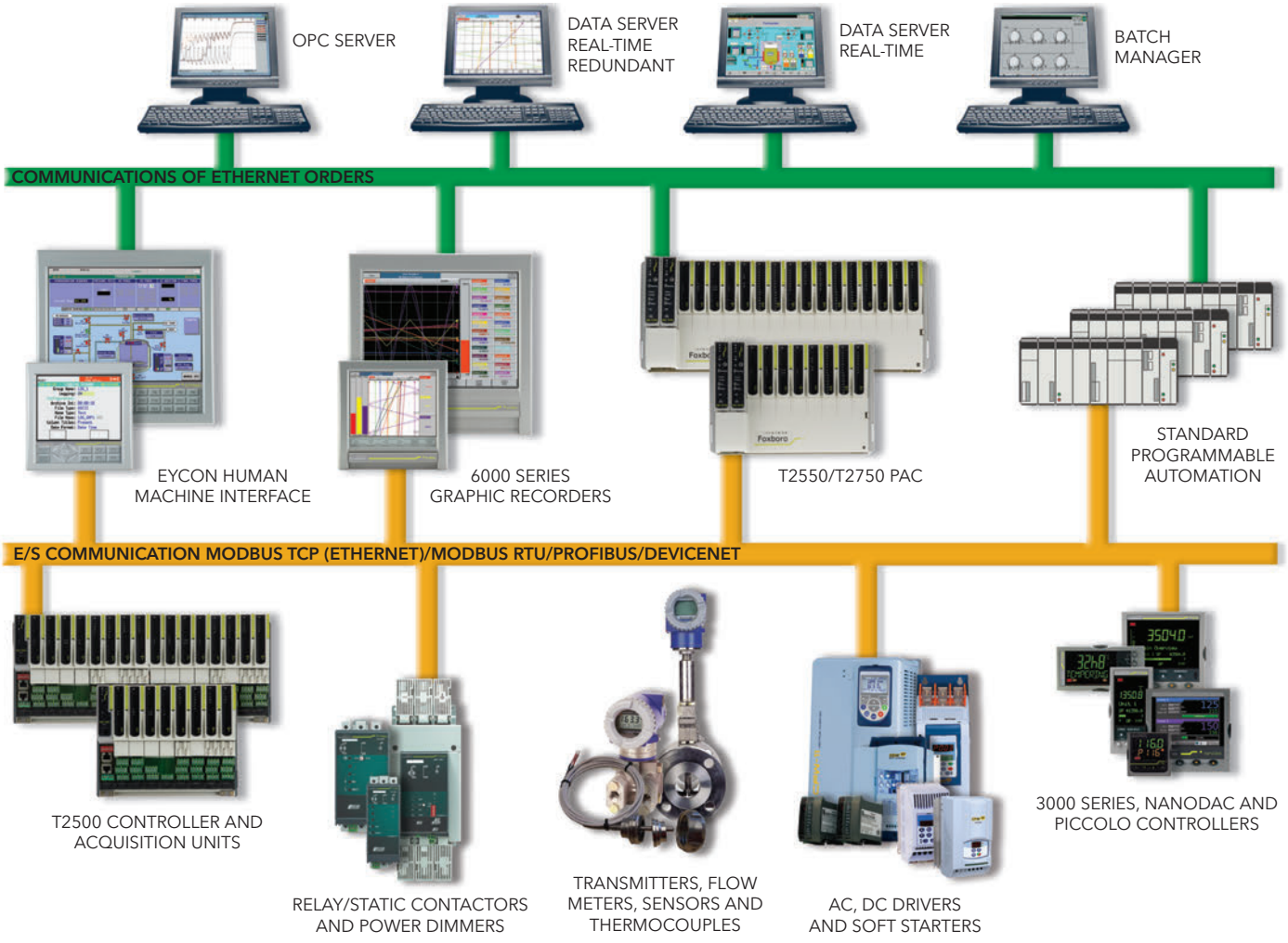
Drives so clever that they are simple

Throughout the food and beverage industry electrical motors and servo systems are used in raw material transportation, cutting lines, winders, top roller drives and many more applications. Invensys Eurotherm variable speed drives provide precision, compactness and flexibility along side potential energy savings. We offer a full range of drives; servo, AC as well as DC including the motors and electrical drive technology into the overall food and beverage plant automation.

- Open and closed loop vector control for power ratings up to 2000kW
- Wind/unwind control
- Speed or torque synchronization
- Top roll control
- Squeezing roll control
- Conveyor control

Example of a full management production workshop



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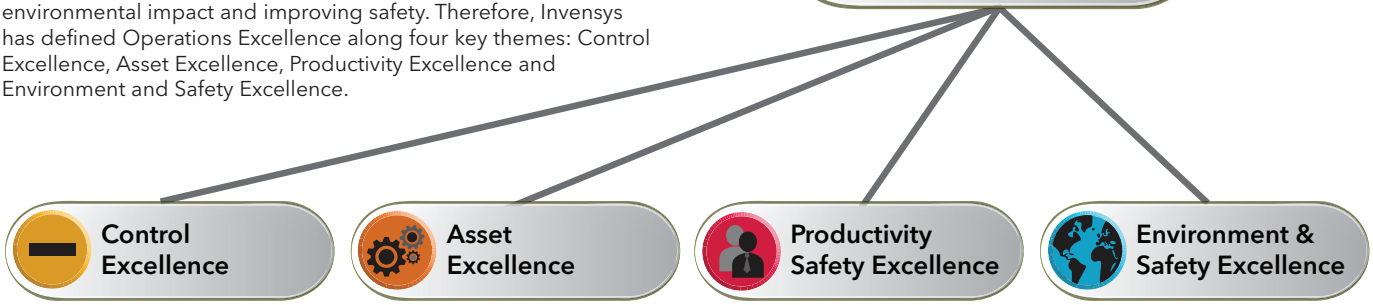
Operations Excellence

Invensys Operations Management division of Invensys was formed in May 2009 by combining Invensys Process Systems – Avantis®, Foxboro®, InFusion™, SimSci-Esscor™ and Triconex® – with Wonderware®, Eurotherm® and IMServ®. The basis for this move was each of these four traditionally separate and excellent business units would provide more value for clients working together to solve difficult business problems that could not be solved by each unit separately. The Invensys leadership believes that the combined business would help to define and develop leadership in an emerging market space referred to as Operations Management. Invensys Operations Management will focus all of its resources to help customers drive Operations Excellence into their businesses.

Attaining Operations Excellence requires that industrial companies maximize the efficiency and profitability from their operations through excellent control, drive maximum business value from all their industrial assets, continually drive and increase productivity from all operations-focused personnel, all while reducing negative environmental impact and improving safety. Therefore, Invensys has defined Operations Excellence along four key themes: Control Excellence, Asset Excellence, Productivity Excellence and Environment and Safety Excellence.



These four critical components of Operations Excellence provide the scope and maturity model for attaining Operations Excellence. They frame the scope by bringing to light the various aspects of focus that must be considered when striving for Operations Excellence. They also explain the maturity model as most industrial companies progress toward Real-Time Operations Excellence by starting with Control Excellence, moving to Asset Excellence, empowering their talent to drive Productivity Excellence and moving toward a holistic approach by balancing the profitability improvements possible through effective implementation of the first three excellence areas with the business constraints imposed by Environment and Safety Excellence. Although every company approaches all four areas simultaneously, to some degree, the formalization of a structured Operations Excellence approach often matures through these four stages.

The definition of Real-Time Operations Excellence is best expressed by focusing on both the ongoing aspects as well as the desired outcomes. The definition of Real-Time Operations Excellence is continuously improving profitability from industrial operations in real time. It should be noted that the focus could be a single asset, an industrial plant, or an entire industrial enterprise.

We know Food & Beverage, try us.

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Bahrain
Bangladesh
Barbados
Belarus
Bermuda
Bolivia
Bosnia and Herzegovina
Botswana
Brazil
Brunei Darussalam
Bulgaria
Cambodia
Cameroon
Canada
Central African Republic
Chad
Chile
Colombia
Congo
Costa Rica
Côte d'Ivoire
Croatia
Cyprus
Czech Republic
Denmark
Djibouti
Ecuador
Egypt
El Salvador
Eritrea
Estonia
Ethiopia
Fiji
Finland
Georgia
Ghana
Greece
Greenland
Guinea
Hungary
Iceland
Iraq
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Papua New Guinea
Paraguay
Peru
Poland
Qatar
Romania
Russia
Rwanda
Saudi Arabia
Senegal
Serbia and Montenegro
Sierra Leone
Slovakia
Slovenia
Somalia
South Africa
Sri Lanka
Sudan
Swaziland
Syria
Tajikistan
Tanzania
The Gambia
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