



Eurotherm®

Oil and Gas Analysis Machine Control with E+PLC⁴⁰⁰

Advanced control, data management and
visualization in a modular platform solution



eurotherm.com/eplc

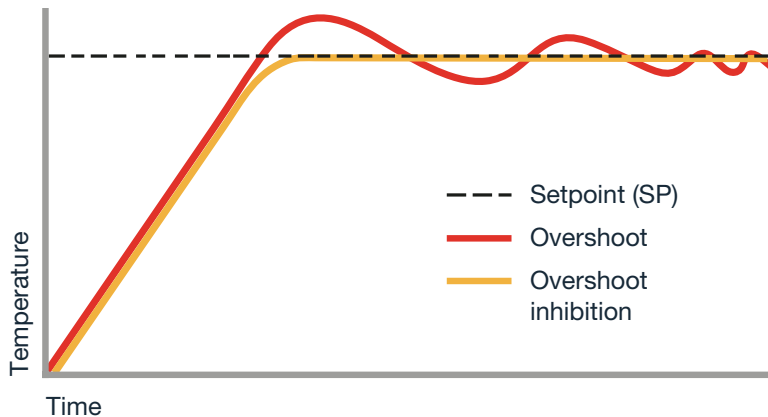


A petrochemical plant chose Eurotherm™ E+PLC⁴⁰⁰ with an HMI touch panel for the automation of a new oil and gas analysis machine.

The machine was designed within the company's research and development department utilizing their specialist intellectual property, to be scaled up later for factory use in multiple plants. Control system standardization was therefore an important feature, to help achieve repeatable results in global locations.

Oil and gas samples are loaded into a small cylinder oven, where a variety of tests are carried out to analyse their properties using mass spectrometry. The results are used to work out the ideal catalysts for 'cracking' individual batches of oil into different products. The temperature of the sample in the oven needs to be precise and the customer has always relied on Eurotherm control to achieve repeatable results. The system being replaced had previously used Eurotherm discrete temperature controllers with a third party programmable logic controller and a master PC. The PC had become out of date, difficult to maintain, and slow to run programs and synchronize with the rest of the equipment.

PID Features for Stable Repeatable Control



Eurotherm cutback and over-ramp suppression functions significantly minimize overshoot and instability, reducing the risk of over or under-heating thermally processed materials. They also help to optimize energy usage and minimize production time and waste.



Features, Solutions and Services Included:

- Multiple control loops and setpoint programs
- Repeatable precise control
- User level access control
- Controlled access to company IP
- Batch data recording
- Visualization of historical trends for benchmarking
- Single platform solution

"Eurotherm are our preferred supplier of discrete control and recording products but in the past we had to use them in conjunction with 3rd party PLCs. We carried out controlled testing to compare the control performance of the E+PLC⁴⁰⁰ with the discrete controller. The results were exactly the same, and E+PLC⁴⁰⁰ is now our preferred solution due to its combined PLC and recording functionality."

System Integration Engineer

The customer needed several precision PID control loops, a setpoint programmer capable of at least 50 programs, accurate measurement, repeatable control, and programmable logic.

The E+PLC⁴⁰⁰ modular platform satisfied these requirements due to its multiple precision control loops and setpoint programmers, accurate I/O, and PLC functionality. User password control enabled research and development engineers to limit operator access to process parameters and unique intellectual property within the program.

Important process parameters could be recorded by batch in internal memory, for archiving via USB or FTP (file transfer protocol) to a historian server. Process data could then be accessed by quality engineering managers via the enterprise business system (EBS), for global benchmarking across identical machines, and for business reporting purposes.

“We really like the flexibility of the visualization. We can overlay the trend traces to compare the process to the programmed temperature profile, and record it all to review at a later date if we need to”.

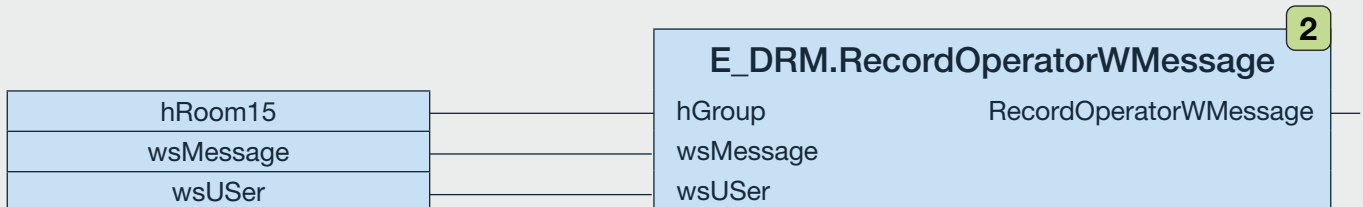
Quality Engineer

“We like the fact we can now edit the temperature profile during a run rather than waiting until the end or restarting”.

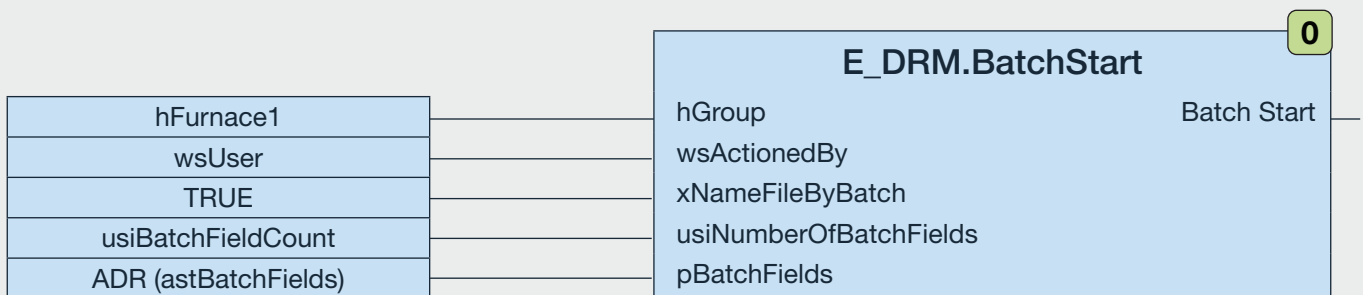
Research and Development Engineer

Batch Functionality

The batch function can be called from the data recording management library by command buttons or sequences, to record relevant messages into tamper resistant history files. For example, the status of equipment can be logged to provide end-of-batch information, such as the energy used a by a connected EPack power controller.



Batch Start and Stop records can be triggered from any language (FBD, LD, ST etc.) in any work flow and can easily be added to the tamper resistant recorded history files. The application designer can configure all recorded parameters such as batch field names, to provide an application specific solution.



Eurotherm

Faraday Close, Worthing,
West Sussex, BN13 3PL
United Kingdom
Phone: + 44 (0)1903 268500

www.eurotherm.com

CODESYS® a trademark of 3S-Smart Software Solutions GmbH

Document Number HA033075 Issue 2

Watlow, Eurotherm, EurothermSuite, EFit, EPack, EPower, Eycon, Chessell, Mini8, nanodac, piccolo and versadac are trademarks and property of Watlow its subsidiaries and affiliated companies. CODESYS® is a trademark of 3S-Smart Software Solutions GmbH. All other trademarks are the property of their respective owners.

©Watlow Electric Manufacturing Company. All rights reserved.

Contact your local sales representative

