



Energy • Technology • Control



ETC6000 Series Burner Control System

ETC6003 Burner Control System

The ETC6003 Burner Control System offers advanced control for dual gas burners, seamlessly managing single and mixed fuel profiles. With IoT compatibility and real-time monitoring, it optimises operations for enhanced efficiency and reduced emissions.

Features:

- **Fuel flexibility:** Suitable for dual gas burners.
- **Streamlined operations:** All burner start up sequence functions and timings fully integrated.
- **Ignition System Integration.**
- **Multi sensor flame monitoring:** IR, UV, photocell and ionisation flame detector supported.
- **Dual drive management:** Control of two variable speed drives for combustion air and fuel pump control.
- **Extensive actuator support:** Up to 10 rotary actuators can be assigned.
- **Enhanced safety measures:** Fuel safety valve control and proving for two gas delivery systems.
- **Multi-curve configuration:** Up to 4 fuel:air ratio profile curve sets can be programmed.
- **Comprehensive application support:** Versatile programming options allowing most applications to be addressed.
- **Integrated oxygen trimming:** Oxygen trim option using dedicated ETC oxygen probe and interface.
- **Flexible system expansion:** Options for oil firing or boiler water control expansion.
- **IoT-enabled integration:** Connectivity with Modbus and Profibus networks empowers remote operation and monitoring.
- **Smart boiler room ready:** Designed for seamless integration with modern smart boiler systems.

Benefits:

- **Energy-efficient performance:** Improved combustion and improved turndown saves up to 5% on fuel costs and significantly reduces harmful CO₂ and other flue gas emissions.
- **Enhanced positioning accuracy:** Rotary actuators with a positioning accuracy of $\pm 0.1^\circ$ replace conventional characterising cams and linkages and eliminates backlash and hysteresis.
- **Energy-saving strategy:** Using a second setpoint during periods of low demand can save up to 10% in fuel usage.
- **Secure system operation:** Passcode protection to prevent untrained/unauthorised changes to combustion set-up.
- **Enhanced operational insights:** Software allows advanced interfacing functions and collection/trend logging of data.
- **Fuel-saving optimisation:** Oxygen trim saves up to 3.5% fuel usage.
- **Industrial process optimisation:** Allows burning of waste gas generated during industrial processes.
- **Operational flexibility:** Switches smoothly between primary and waste gas fuels to optimise costs and performance.
- **Compliance assurance:** Facilitates compliance with emissions regulations, providing peace of mind for environmentally conscious operations.

The ETC6003 Burner Control System is purpose-built for dual gas fuel burners, offering advanced control and management for applications that require the use of two distinct gas fuels. It is designed to seamlessly handle systems that switch between separate gas sources, such as natural gas and a waste gas, ensuring efficient and reliable burner performance. However, it is important to note that the ETC6003 is not designed for blended firing—where two fuels are continuously blended to optimise burning a waste gas fuel. Instead, it excels in situations where a facility needs to alternate between two gas fuels, making it an ideal choice for sites that utilise a regular gas fuel as their primary source and wish to incorporate a waste gas fuel when available.

This dual-fuel capability is particularly valuable for industrial sites looking to optimise fuel usage and reduce operational costs. For example, a facility might use natural gas as its primary fuel for regular operations but have access to a secondary, often lower-cost, waste gas fuel, such as biogas, refinery off-gas, or landfill gas. The ETC6003 allows for smooth transitions between these fuel sources, ensuring the burner system operates efficiently and safely, regardless of which gas is being used at any given time. This flexibility is crucial in industries that aim to reduce fuel expenses by maximising the use of alternative fuel sources whenever they are available.

While the ETC6003 does not support blended firing, its ability to switch between gas fuels provides significant operational advantages. By enabling sites to use a secondary waste gas when possible, the system helps reduce reliance on more expensive primary gas fuels, offering the potential for considerable cost savings. In addition, the ETC6003's precise control over air-fuel ratios during fuel transitions ensures optimal combustion performance for both gas types, improving burner efficiency, reducing emissions, and enhancing burner turndown capabilities.

The ETC6003 integrates a wide range of critical functions into a single, compact unit, making it a comprehensive solution for dual-fuel burner management. These features include gas valve proving, leak detection, flame supervision, PID modulation, and air-fuel ratio control, all designed to improve system reliability and simplify installation. By consolidating these functions into one unit, the ETC6003 reduces the need for multiple standalone components and complex wiring, which can lower installation costs and minimise potential points of failure. This integrated approach also makes the system easier to maintain, contributing to long-term operational efficiency.

Furthermore, the compact design of the ETC6003, part of the ETC6000 series, allows it to be installed directly within the burner enclosure, saving valuable space and reducing installation complexity. This small A5 'footprint' makes it an ideal solution for both new installations and retrofits, particularly in environments where space is at a premium.

For additional efficiency gains, the ETC6003 can be configured with optional features such as fan speed control via a variable frequency drive (VFD) and oxygen trim. These enhancements further optimise the combustion process by precisely controlling airflow and adjusting the air-fuel mixture in real time based on oxygen levels in the exhaust gases. This results in improved fuel efficiency and reduced emissions, contributing to both economic savings and environmental sustainability.

In summary, the ETC6003 Burner Control System is an ideal solution for dual gas fuel applications where switching between two distinct fuel sources is necessary. Its flexibility, reliability, and efficiency make it a valuable tool for industries looking to optimise fuel use, reduce costs, and lower emissions, particularly in sites with access to both a regular gas fuel and a waste gas option.

For further information on the ETC6003 Burner Control System contact ETC today for bespoke solutions tailored to your needs.

Energy Technology & Control Ltd.

Caburn House • Brooks Road • Lewes • East Sussex • BN7 2BY • UK

+44 (0)1273 480667 • sales@energytechnologycontrol.com

energytechnologycontrol.com

