



ETC1044 Boiler Temperature Sensor

The ETC1044 boiler temperature sensor is a high-accuracy device engineered for monitoring temperatures up to 400°C. Designed for full compatibility with ETC6000 series controllers, it ensures precise control and thermal safety across high-demand combustion systems.

Features

- **0-400°C Measurement Range:** Ideal for steam and thermal oil applications.
- **24-30 VDC Operation:** Aligns with standard ETC control systems.
- **Compact Stainless Probe:** 6 mm x 200 mm for easy integration in pockets.
- **Tool-Free Swap-Out:** Install in standard pockets for easy replacement.
- **IP65 Sealed Housing:** Built to endure harsh plant environments.
- **Optimized for 180-400°C:** Delivers best accuracy in critical high-temp zones.

Benefits

- **Efficient Boiler Control:** Enables responsive burner modulation and shutdown.
- **Minimized Downtime:** Easy-to-replace design avoids draining the system during servicing.
- **Improved Safety:** Helps maintain safe temperature limits for boiler protection.
- **Versatile Application:** Suitable for steam, thermal oil, and water boilers.
- **Reliable Performance:** Maintains accuracy in fluctuating thermal environments.
- **Integrated Design:** Fully compatible with ETC6000 analogue input configurations.

The ETC1044 boiler temperature sensor is a rugged, high-temperature measurement device purpose-built for use in industrial environments requiring accurate thermal monitoring above standard boiler thresholds. Rated for continuous measurement from 0 to 400°C, and delivering its best accuracy between 180 and 400°C, it's the sensor of choice for high-demand systems such as thermal oil heaters, high-pressure steam boilers, and energy-intensive process plants.

Unlike many general-purpose sensors, the ETC1044 is designed specifically to operate in conjunction with the ETC6000 burner management platform. Its analogue output feeds directly into the system's control logic, allowing real-time monitoring and rapid thermal response. This integration enables advanced functions such as PID modulation, burner cut-out on over-temperature, temperature-driven fuel switching, and alarm logging—all essential for safe and efficient plant operation.

Constructed with a 6 mm diameter, 200 mm long stainless steel probe and a durable sensor body rated to IP65, the ETC1044 resists moisture and dust ingress even in harsh installation environments. It is typically installed into a thermal well or pocket that is built into the boiler or heat exchanger shell. This approach provides both physical protection and a major service advantage: the sensor can be withdrawn for maintenance or replacement without needing to drain the system, depressurize it, or open critical pipework.

The ETC1044 offers two connection options: a hardwired M16 conduit entry for permanent installations and a 12 mm plug-and-socket system ideal for fast replacements or field calibration scenarios. Both ensure signal reliability and mechanical robustness under temperature fluctuations and vibration.

When connected to the ETC6000 system, the ETC1044's output is interpreted by one of the controller's analogue inputs, typically A/I 6. The system then uses this signal to track boiler temperature in real time, adjusting modulation output as needed or triggering safety sequences if thresholds are breached. In high-energy systems, where thermal load changes rapidly, the ETC1044 enables tight control, reducing thermal lag and improving responsiveness. This translates into more consistent product quality in process heating, fewer nuisance shutdowns, and better protection of downstream equipment.

Thermal accuracy is a particular strength of the ETC1044. With a sensor element accuracy of $\pm 0.5\%$ of span and a typical system accuracy of $\pm 0.1\%$, the sensor supports precise control even in critical operating bands. The EN12067 compliance accuracy of $\pm 0.6\%$ of value gives operators confidence that the sensor will maintain regulatory performance standards over time, even under cyclical heating and cooling.

Another practical advantage is the sensor's minimal maintenance requirements. Because it is installed in a well, it is protected from direct contact with process fluids, which extends its service life. Routine inspection typically involves checking signal readings via the ETC6000 interface, confirming physical integrity, and verifying that the sensor remains secure and electrically connected. When needed, replacement is a simple unplug-and-swap procedure, keeping downtime to a minimum.

In demanding boiler rooms, where heat management is as much about safety as it is about performance, the ETC1044 provides dependable temperature monitoring that contributes to both. Its role in supporting critical safety logic—such as fuel cut-off, shutdown delay, or automatic reset lockout—is integral to modern burner systems and helps meet the strict operating requirements of today’s industrial energy users.

Whether used in a single-boiler system or part of a complex cascade managed by ETC’s plant master controller, the ETC1044 helps ensure thermal conditions remain within safe and efficient bounds. Its ability to operate at elevated temperatures, combined with ETC6000 integration, makes it a powerful tool for engineers tasked with maintaining process continuity, plant safety, and energy performance.

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