

# ECM XCM113 O<sub>2</sub> (Oxygen) Measurement System



ECM's XCM113 is a ceramic sensor-based O<sub>2</sub> measurement system designed for combustion monitoring and control. Applications include combustion engines and industrial combustion processes such as furnaces. For example, the XCM113 can be used to monitor the O<sub>2</sub> in the exhaust of a natural gas furnace and be part of a closed-loop control system. Maintaining a target exhaust O<sub>2</sub> will help maximize thermal efficiency and minimize emissions over the furnace's life. The XCM113 consists of a sensor, cabling, and a control module. The sensor is mounted in the exhaust of the combustion device and via an electrochemical O<sub>2</sub> pumping process, determines the %O<sub>2</sub> in the exhaust. The response time of the sensor is less than 200 ms. The module controls the temperature of the O<sub>2</sub> sensor so as to eliminate any measurement dependency on exhaust gas temperature. In addition, the control module outputs a 0 to 8V signal that is linear with %O<sub>2</sub>. This signal can be fed to a data acquisition or control system. The XCM113 will operate over a wide voltage range with a modest current draw and the system is easily calibrated in ambient air.

## Specifications

Measurement Range: 0 to 25% O<sub>2</sub>  
Accuracy: 0.1% O<sub>2</sub>  
Fuels Allowed: Any hydrocarbon fuel  
Calibration: Expose sensor to air  
O<sub>2</sub> Sensor Mounting: 18mm x 1.5mm thread  
Maximum Exhaust Temperature: 850°C

Module Voltage Output: 0 to 8V  
Module Output: Linear with %O<sub>2</sub>  
Module Size: 145mm x 120mm x 40mm  
Module Environment: -40 to 85°C, IP67  
Cable to Sensor: 34'  
Cable to Power: 4'  
Power: 11 to 28V, 5A max

**ECM** ENGINE CONTROL  
AND MONITORING

Los Altos • CA • 94023-0040 • USA • Tel: (408) 734-3433 • Fax: (408) 734-3433 • [www.ecm-co.com](http://www.ecm-co.com)

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Techniques protected under patents issued and pending

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