

## MODEL 2010BR



Since 2004 the Model 2010BR has been the unquestioned market leader, the industry-standard hazardous area trace oxygen analyzer. Over the years it has been continuously refined to the point that it now provides every feature you can possibly need – and many that you may not have thought of - in a compact, easily installed low-cost package. Many thousands of these analyzers are operating to specification in the harshest environments all over the country.

- Display reads oxygen from 0.05ppm up to 25.0% with no range changes
- Analog output and alarms can be configured to operate over any of ten ranges from 0-10ppm to 0-25% for best resolution
- Field selectable analog output - 1-5V or 4-20mA, isolated.
- CSA approved to meet Class 1 Div. 1 Group BCD with a flammable sample
- Complete sample system built in to AMI's patented cell block.
- Very rapid response time from air to low ppm levels.
- Easily replaceable sensor, no tools required.
- T-2 sensor resistant to 10ppm H<sub>2</sub>S standard. Optional T-4 resistant up to 500ppm H<sub>2</sub>S.
- Simple, versatile installation.
- Operates either off 117VAC or 12–24VDC with very low power consumption
- Available integral explosion-proof heater for cold environments
- Analog output can be easily calibrated to a SCADA system or flow computer.
- 2 independent, fully adjustable alarm settings with relaycontacts.
- Complete alarm logic programming: latching or non-latching, open or close on alarm, high alarm or low alarm, alarm-on delays and alarm hold-off. Integral data logger: Logs data for 15 days @ 1min intervals and 30 days @ 2min. intervals, etc.
- USB connectivity to a PC: Allows complete access to the internal functions and settings.
- ModBus: Industry standard protocol over RS485.
- Oxygen Sensor life indication.

Trace oxygen analyzers are essentially leak detectors. AMI's patented cell block allows the analyzer to be built with almost no possibility of internal leaking, with minimal volume and with front-panel sensor access. All sample handling components – the flow meter, needle valve and a four-way sample/span/off selection valve – are integrated into a solid metal block.

Connections between them are drilled passages. The result is a highly reliable sample system with all necessary components provided, and a very fast “come-down” time – when a sensor is replaced, or calibrated on air with a 1 minute exposure (at 70°F), it takes about 15 minutes for it to come down to below 10ppm. Competitive analyzers typically take hours.

The AMI oxygen sensor is inherently faster than competitive sensors due to its metallic body and large active electrode area. The standard T2 sensor is also naturally resistive to hydrogen sulfide up to 10ppm H<sub>2</sub>S over its warrantied life, while the T4 is capable of resisting up to 500ppm H<sub>2</sub>S, with no scrubber material required, and hence no maintenance or leakage issues. The sensor is immediately accessible on the front panel of the analyzer, and can be replaced in seconds. It is not necessary to expose the sensor to air unshorted while installing it as is the case with most analyzers (which significantly increases their come-down time). As a result, although a span gas port is provided, it is practical to accurately calibrate this analyzer on air in less than a minute.

For low temperature operation an integral (approved) explosion-proof heater can be supplied. This unit directly heats the cell block and thus is extremely efficient, allowing operation off a solar panel system down to -20F. It does not require additional enclosures or wiring. For extreme environments down to -40F, an outer insulated enclosure can be supplied, but no additional power is required.

The analyzer is approved by CSA for operation in a Class 1 Division 1 Group BCD hazardous area with a flammable gas as the sample. No additional safety barriers are needed. The analyzer can be calibrated and sensor replaced without declassifying the area because the analytical electronics are intrinsically safe, protected by internal safety barriers. The electronic and software package is exceptionally complete, and all features are provided as standard with no additional cost (except for the heater). Even with the heater it is capable of operating off a battery and solar panel, and it logs power brown outs and failures should they occur. It also logs the ambient and the sensor temperatures so can be used to alarm on the failure of a catalytic heater if one is used in a remote location. It tracks the life of the sensor, indicates the remaining life, logs the calibration history and logs the oxygen readings over its operational (output) range, and also tracks excursions of up to ten times that range.

The analyzer can be wall-mounted with 4 externally accessible screws, or bolted to a 2" pipe using standard U bolts.

# FEATURES

- 10 user selectable output ranges
- 3 ½ digit LCD
- 2 fully adjustable oxygen concentration alarms
- Alarm delays
- Alarm hold off/Bypass
- RFI protected
- 1-5VDC or 4-20mA. isolated analog output signals
- USB virtual comport and Modbus Bidirectional RS485 communication for advanced features.
- Datalog – 15 days oxygen reading recording at 1 minute per sample
- Calibration history – stores the last five calibrations with time, date, span factor and calibration gas.
- Brown-out history – stores the last five brown-outs and recoveries.
- Power up history – stores the last ten times the unit was powered up.
- Advanced analog output calibration.
- Power requirements: Choice of 12–24VDC or 115VAC power
- Low minimum detection limit 0.05ppm
- Excellent repeatability
- Extended operating temperature range
- Fast upscale/downscale response times
- Patented Cellblock Technology: Allows for all components such as flow control valve, flow meter, 3-way calibration valve, and compression fittings to be an integral part of the cellblock, eliminating long lengths of tubing and fittings.
- Other benefits of this design include compact size, faster response times and front panel sensor access without the need for tools.
- Area Classification: Approved by CSA International to UL and CSA standards as meeting requirements for Class 1, Div. 1, Groups B,C,D with a flammable gas sample
- Unaffected by changes in flow rate from 0.1 to 2.0 SCFH
- Wall mount or 2.0" pipe
- Compact size
- 2 year warranty for analyzer, parts and labor
- 6 month sensor warranty, life expectancy 1-2 years
- Requires AMI User Interface software

# SPECIFICATIONS

- 10 user selectable output ranges: 0-10ppm, 0-50ppm, 0-100ppm, 0-500ppm, 0-1000ppm, 0-.500%, 0-1%, 0-5%, 0-10% and 25%
- The selection of an output range simultaneously controls the two alarms, the analog output and the data logger so that all 4 functions operate on the same range
- Digital display: 3 ½ digit LCD. Reads full scale from 0.05ppm to 25.0% independently of output range selection
- Alarms: 2 fully adjustable oxygen concentration alarms Dry contacts 5A. @24VDC/115VAC
- Alarm delays: Programmable from 0-300 minutes
- Alarm hold off: Programmable from 0-120 minutes
- Isolated analog output signal: 1-5VDC or 4-20mA Represents the output range selected: 0-10ppm, 0-50ppm, 0-100ppm, 0-500ppm, 0-1000ppm, 0-.500%, 0-1%, 0-5% 0-10% and 25%
- Data logger: Logs data for 15 days @ 1 minute intervals; 30 days @ 2 minute intervals, etc. Represents the output range selected:
- 0-10ppm, 0-50ppm, 0-100ppm, 0-500ppm, 0-1000ppm, 0-.500%,
- 0-1%, 0-5%, 0-10% and 25%. Overrange capability up to ten times the range selected.
- Power requirements: 12–24VDC/ 115VAC; <70mA. @12VDC non- heated; <24W @12VDC with heated option. Alternative 117VAC available.
- Minimum detection: 50ppb of oxygen
- Repeatability: +/- 1% of range or +/- 0.2ppm of oxygen, whichever is greater
- Operating temperature range: 25 to 115° F non-heated; -20 to 115° F heated option, -40° F to 115°F with optional extreme weather enclosure.
- Diurnal temperature specification: < +/- 3 % of scale over temperature range
- 90% upscale response times: 10ppm – 25% <10 seconds 0-10ppm < 25 seconds. Typical downscale response:1 minute exposure to air down to 10ppm: < 15 minutes
- Area Classification: Approved by CSA International to UL and CSA standards as meeting requirements for Class 1, Div. 1, Groups B,C,D with a flammable gas sample
- Inlet gas pressure: 0.5 to 150psig
- Gas connections: ¼" 316 S.S. compression fittings
- Wetted parts: 316 S.S. fittings, electroless nickel plated cellblock, gold plated contacts, acrylic flow meter and Viton O-rings
- Unaffected by changes in flow rate from 0.1 to 2.0 SCFH
- Mounting: Wall mount or 2.0" pipe
- Dimensions: 13.0"W x 9.5"H x 5.0"D
- Weight: 16 lbs.