Product Data Sheet
PDS 71-Bx438/rev.B
July 2004

DISSOLVED OXYGEN SENSOR

- DESIGNED FOR CARBONATED BEVERAGES
- LONGER SENSOR LIFE
- LESS MAINTENANCE REQUIRED
- FAST RESPONSE
- MINIMAL FLOW SENSITIVITY
- LOWER TOTAL COST OF OWNERSHIP
- MINIMAL CO_2 OFFSETS

The Model Bx438 sensor is designed to monitor trace levels of dissolved oxygen in beer and other carbonated beverages. The Bx438 sensor utilizes a robust membrane, which increases the life of the membrane. The sensor is designed to withstand significantly more clean in place (CIP) cycles than other dissolved oxygen sensors.

Unique Design: Most dissolved oxygen sensors operate by reduction of oxygen at the surface of the cathode. If the cathode is in direct contact with the solution, then interference effects from other substances may lead to inaccurate readings. The Model Bx438 cathode is covered with a gas permeable membrane. The oxygen diffusing through the membrane is completely reduced at the cathode, and the current between anode and cathode is proportional to the oxygen content in the sample.

The design for the membrane is the key to achieving high performance. The Model Bx438 uses a proprietary membrane material. This thick, steel-meshed-reinforced, double layer membrane enables the sensor to withstand high pressures and temperatures while maintaining high diffusion rates, resulting in stable outputs and fast response times.

Longer Sensor Life/Less Maintenance: Due to the unique design of the sensor, maintenance is rarely required. The special double membrane design is less sensitive to contamination from protein and other fouling agents. The electrode construction guarantees excellent stability even after numerous sterilization cycles. Competitive dissolved oxygen sensors require maintenance after as few as 3-5 cycles. The model Bx438 sensor lasts through as many as 30-50 cycles.

Minimal Flow Sensitivity: Model Bx438 membrane material and overall design ensure that the flow rate has minimal effect on the sensor's measurements. The unique design also experiences minimal drift in low flow environments.

Zero Polarization Voltage: Many competitive amperometric dissolved oxygen sensors set the polarization voltage to -670 mV. This set point may lead to offset readings due to carbon dioxide effects at low oxygen concentrations. The Model Bx438 sensor uses a zero polarization voltage setpoint, which results in the most accurate dissolved oxygen readings.

Total Cost of Ownership Comparison: Many competitive amperometric dissolved oxygen sensors require frequent maintenance, such as membrane replacement, cathode replacement, and electrolyte replenishment. The Model Bx438 sensor's robust design minimizes the maintenance needed for a stable dissolved oxygen measurement. The cost to maintain the Model Bx438 sensor will be approximately one-third the cost required to maintain competitive dissolved oxygen sensors.

ORDERING INFORMATION

Model Bx438 sensor provides a stable signal even in the harshest conditions. The sensor is designed to operate in breweries and other beverage plants, and can withstand clean-in-place cycles. The Bx438 comes in two insertion lengths, and comes standard with a variopol connector head. It can be used with either an insertion mounting assembly or a retractable mounting assembly.

MODEL Bx438	Dissolved Oxygen in Carbonated Beverages Sensor (12 mm Diameter)
CODE	**DESCRIPTION**
01	120 mm
02	225 mm

PN	VARIOPOL CABLE
9120550	Cable, with VP 6.0 cable coaxial connection, 3 m (9.8 ft)
9120564	Cable, with VP 6.0 cable coaxial connection, 5 m (16.4 ft)

PN	MOUNTING ACCESSORIES
9160478	Insertion assembly, 70 mm insertion (use 120 mm sensor)
9160477	Retractable assembly, 70 mm insertion (use 225 mm sensor)
99SQ4870	Flexifit 1 1/2" triclamp adapter
9160484	Service kit for insertion mounting assembly
9160486	Service kit for retractable mounting assembly
9160483	15 degree weld in socket, G 1 1/4 in. thread, 44 mm

PN	SERVICING ACCESSORIES
24107-00	Service kit for sensors, including three membranes and o-rings
24108-00	50 ml electrolyte
24109-00	Polarization Module

Model Bx438
Dissolved Oxygen Sensor

The Retractable Mounting Assembly can be used with Model Bx438 to achieve insertion and removal of the sensor without shutting down the process.

SPECIFICATIONS

Temperature: -10 to100 Deg C (14 to 212°C)

Maximum Pressure: 175 psig (12 bar)

Wetted materials: Stainless steel, gold, silicone, EPDM (FDA approved)

Process Connection: PG 13.5 thread

Sensor Lengths: 120 mm or 225 mm

Sensor output in air: 180 to 400 nA

Response time (Air to CO_2): T_{98} < 60 Sec

Temperature Compensation: 22K NTC

Cable Connector: Variopol 6.0

Compatible Mounting Accessory: Insertion or Retractable

Compatible Analyzers: 54eA, Xmt-A, 5081A

Specifications subject to change without notice.

CHOICE OF INSTRUMENTS

Model Xmt Analyzer

Model 5081 Transmitter

Model 54e Analyzer

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