

# **TELEDYNE ANALYTICAL INSTRUMENTS**



## **MODEL OT-3** *Designed to Measure O<sub>2</sub> in Natural Gas*

### **The Challenge**

At a time when domestic natural gas companies seek to lessen the United States' dependence on foreign resources and attain greater production from our reserves, Teledyne has supported the mission with reliable equipment for measuring oxygen in natural gas. The OT-3 is designed to run continuously for years with minimal maintenance and streamline the work of field technicians.

This innovative instrument utilizes new sensor technology -- Teledyne's own A-2CNG sensor -- engineered with CO<sub>2</sub> resistant electrolyte. Even more exciting, this sensor has a built-in acid gas scrubber (patent pending).

Competitors' units rely on a bulky, external scrubber that requires frequent maintenance and replacement. Restructuring the sensor to accommodate the scrubber simplifies upkeep while minimizing instrument size.

### **The Solution**

The OT-3 Natural Gas Oxygen Measurement System accurately monitors trace oxygen levels in a variety of gases at the ppm level.

The transmitter is equipped with two user-selectable

### **Measuring Oxygen in Natural Gas**

- *Controls quality*
- *Prevents corrosion*

oxygen analysis ranges and is acceptable for operation in Class I, Division 2, Groups B, C, and D hazardous environments when used in conjunction with a non-incendive power source.

The OT-3 system is housed in a weatherproof NEMA-4 case. For access to the Micro-fuel Cell and transmitter controls, the front door swings open.

The OT-3 is designed to work with a variety of Flow Computers, such as TotalFlow or FlowBoss, and the system can be ordered in either AC or DC powered versions.

### **The Sensor**

The heart of the system is Teledyne's own A-2CNG Micro-fuel Cell oxygen sensor. This cell is a sealed electrochemical device which translates the amount of oxygen present in a sample into an electrical current. And unlike other sensors on the market, it comes complete with a built-in acid gas scrubber.

### **Features**

- Two analysis ranges, user selectable
- Designed to work in tandem with the predominant FCUs in the industry
- Operates at as low as 10 VDC
- High sensitivity (0.5% FS)
- High accuracy ( $\pm 2\%$  of full scale at constant temperature)
- Insensitive to flow variation
- Fast response and recovery
- Long-life maintenance-free Micro-fuel Cell sensor
- Unaffected by reducing agents (HCs, CO, SO<sub>2</sub>, etc.)
- Easy to calibrate; no zero gas required
- Rugged NEMA-4 bulkhead mount enclosure
- Stainless steel sample system
- H<sub>2</sub>S scrubber
- Optional heater

**Built for Reliability and Performance**

# Model OT-3 Oxygen in Natural Gas Analyzer

## Specifications

Ranges:	Two user selectable ranges between 0-10 ppm and 0-9999 ppm oxygen, and a 0-25 % (nominal); Air Calibration range
Sensor type:	A-2C or A-2C InstaTrace / B-2C or B-2C InstaTrace for low CO <sub>2</sub> streams
Signal Output:	Voltage: 0-10 VDC, negative ground Current: 4-20 mA, negative ground
Accuracy:	$\pm 2$ % of full scale at constant temperature; $\pm 5$ % of full scale through operating temperature range (At 100 ppm and higher) once temperature equilibrium is reached.  $\pm 1$ ppm for 10 ppm range under above conditions.
Display:	Light emitting diode (LED) display
System operating temp:	0-50 °C
Response time:	90 % in less than 65 seconds at 25°C (68°F)
System power requirement:	AC (100-240 VAC, 50/60Hz @ 2.8W), or DC (10-36 VDC @ 2.8W )
System enclosure:	NEMA 4 enclosure; 40 cm x 30 cm x 20.6 cm (15.8" x 11.8" x 8.1")  Suitable for use in Class 1, Div. 2 as long as the relay ratings are followed  DC Rating: 0-30 VDC maximum @ 0.9 Amps maximum  AC Rating: 125 VAC maximum @ 0.2 Amps maximum; minimum reliable switching rating: 10 +A @ 10mV

Range ID:	0-10 VDC
Alarms:	Two user-settable non-latching alarms, with user adjustable programmable 0-20 min delay; one power failure relay. (All are failsafe.)
Weight:	30.9 Lbs (14 Kg)

## **TELEDYNE** **ANALYTICAL INSTRUMENTS**

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## Warranty

Instrument is warranted for 1 year against defects in material or workmanship

NOTE: Specifications and features will vary with application. The above are established and validated during design, but are not to be construed as test criteria for every product. All specifications and features are subject to change without notice.

