

NEW Oxygen Sensor with Intelligence

Patented by Teledyne in 1964 the Micro Fuel Cell oxygen sensor concept has evolved into an industry standard for the measurement of oxygen in a wide variety of applications including automotive emission test equipment, life support devices and numerous medical products.



Drawing on its 40 plus years in producing electrochemical sensors Teledyne has now introduced a new type of intelligent electrochemical oxygen sensor to meet modern requirements

The new IAS smart sensor Combines

- Teledyne's field proven Micro Fuel Cell
- with Micro Chip technology
- to create a smart sensor.

The new sensor provides the ability to communicate with the host device whether it be a ventilator, Incubator or Oxygen controller through a product specific keyed and encrypted RS232 output. Output data includes serial number, manufacture date, remaining life, signal level and diagnostics.

Keyed Encrypting:

By using a product specific code it establishes a means to protect the performance of your product by preventing unauthorized sub standard replacement sensors from being used in your equipment possibly compromising its performance

Remaining life:

Always a problem in the past now the amount of fuel consumed by the sensor is stored in memory and compared to a fixed value that represents 100% of the sensors fuel capacity. The difference between the fuel capacity and consumed value is display as the sensors predicted remaining life in % hours. This information is useful in preventing "In Service" failures and for scheduling maintenance.

Diagnostics:

The sensor internal diagnostics provides information critical to the sensors performance and signal condition. The measured parameters include zero offset, abnormal quiescence, output range too low or too high and erratic signals. It can also alert the user to excess drift due to contamination or poisoning Erratic outputs caused by connection problems or defects are detectable

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SPECIFICATIONS

Analysis Range	0 to 100% or 0 to 2 ATM
Full Scale Accuracy	+1- 2% at constant temperature and pressure
Response time	90% of step change in < 5 seconds
Offset	Less than 0.5% of oxygen equivalent at 25 C in zero gas after 36 secs
Humidity	0-99% (none condensing)
Operating Temperature range	0 to 40 C
Temperature compensation error	+1-2% of full scale over operating temperature range. Worst case tracking error after maximum temperature change is +1- 5% of full scale. Note: Tracking error assumes sample gas is at same temperature as sensors.
Power requirements	+ 5 v dc
Storage Temperature	0 to 50 C
Communication protocol	R5232 9600 baud rate (No parity 8 data bits 1 stop bit)
Expected life	36 months in air @ 25 °C, Sea level
Shelf life	24 months
Warranty	24 months against defects in material and workmanship. Life is warranted for worst-case condition i.e. continues exposure to 100% oxygen.
Dimensions	Diameter 1 5/32 (29.5 mm Length 2 3/16 (55.0 mm)
Weight	1.3 oz
	DATA OUTPUT
Serial Number	SER: XXXXXX
Manufacture date	MEG: XX!XX!XX
Remaining life	LIFE: XXX % (0-100%)
Signal output	SENS: 0-1023
	DIAGNOSTICS
	Binary representation. Output is in decimal format
Offset	
Offset OK Offset not OK	XXXX XXXX XXXX XXXO XXXX XXXX XXXX XXX1
Output	
Output normal Abnormal quiescence	XXXX XXXX XXXX XXOX XXXX XXXX XXXX XX1X
Output range (low)	
Output within dynamic range	XXXX XXXX XXXX XOXO XXXX XXXX XXXX X1XX
Output below dynamic range	
Output range (high)	
Output within dynamic range	XXXX XXXX XXXX OXXX XXXX XXXX XXXX 1XXX
Output above dynamic range	
Output stability	
Erratic signal detected	XXXX XXXX XXXO XXXX XXXX XXXX XXX1 XXXX



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