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OXYGEN ANALYZERS

PRODUCT DATASHEET

SERIES 1300™

Oxygen Deficiency Monitor

System Description

The Series 1300 Oxygen Deficiency Monitor is a digitally controlled instrument with a measuring range of 0-30%. Oxygen values are displayed to the nearest tenth of a percent on a high contrast front panel liquid crystal display (LCD). The monitor is housed in a resilient polycarbonate, wall mountable general purpose enclosure. Standard input power to the Series 1300 is 90-264 VAC, 47-63 Hz. The eloquence of the Series 1300 is its simple operation, as well as its ease of expandability. Included are four individually adjustable Form C alarm relays. The Series 1300 can be programmed to provide a maximum of nine individual alarm events and can be expanded to support up to a maximum of 8 remote optional horn and strobe annunciators with a single monitor. Two scaleable analog outputs are standard, as is RS-232 serial communications. Each Series 1300 includes an internally mounted audible alarm as well as visual alarm indicators.

Enhanced Electrolyte System (Ees)

The Series 1300 Oxygen Deficiency Monitor can be equipped with a local oxygen sensor and/or up to two remote sensors. The sensors featured in the Series 1300 are extended life electrochemical oxygen sensors designed with a proprietary Enhanced Electrolyte System (EES™) that extends the life expectancy of the sensor to years instead of approximately 12 months typical of most “fuel cell type” sensors. The oxygen sensors are designed with open diffusers eliminating the need to use sample pumps. The sensors are backed with a **full three (3) year warranty**. Users can expect sensor life well beyond years, helping to ensure reliable and trouble free performance.

Away With Frequent False Low Alarms

A common problem caused by fuel cell type sensors is the tendency of the monitor to produce **false** low oxygen alarms due to the rapid depletion of the sensor's anode. As the sensor deteriorates, its electrical output drops simulating a low oxygen signal often resulting in **false** low oxygen alarms. When **false** low oxygen alarms happen on a repeated basis, a potentially dangerous condition is created. Personnel may choose to ignore the alarms believing "its just another **false** alarm" even if it is an actual low oxygen event. The Series 1300™'s oxygen sensor with EES™ greatly enhances the stability of the oxygen measurement helping to eliminate these annoying and troublesome problems.

Advanced Digital Interface (Adi)

The Advanced Digital Interface (ADI) provides the ability to easily and quickly expand the capabilities of the Series 1300. With ADI, the Series 1300 is easily field expandable to operate with a maximum of **three oxygen sensors** and eight optional horn and strobe annunciators. ADI automatically detects the addition of sensors and/or horn and strobes for quick and effortless expansion of the Series 1300. ADI also detects if a sensor(s) is enabled but not connected, ensuring the integrity of the areas being monitored.

Built-In Data Logger-Standard

Among the many standard features of the Series 1300 Oxygen Deficiency Monitor is the built-in data logger providing the capability to store time-stamped oxygen data. Users can download oxygen data via RS-232 for subsequent use with conventional spreadsheet programs. Real-time or historical oxygen data can be displayed as well as documented. This is particularly useful when attempting to meet municipal, state, and federal regulatory requirements, or for mandated verification at the plant level.

Let's Clear Up The Fuzzy Claims

A number of manufacturers of oxygen monitors using **high temperature** zirconium oxide sensors (CLO_2) claim the monitors operate for over 10 years without requiring calibration. However, the instruction manuals often tell a different tale. Wording such as, "over time, oxygen readings may **decrease in value** and adjustments to the oxygen readings must be made" (**also known as calibration**) contradict the marketing hype. Individuals experienced with safety monitors recognize that periodic instrument checks are essential to help ensure the safety of personnel.

Comparison Of Oxygen Monitors

Features	Series 1300 Oxygen Monitor	Fuel Cell Oxygen Monitors	High Temperature Zirconium Oxide (Clo_2) Monitors
3 Year Warranty on **Both** Electronics and Sensor.	Yes	**No**	**No**
Accepts up to a maximum of 3 Oxygen Sensors with a single Electronic Control Readout.	Yes	**No**	**No**
Built-in Data Logger Standard.	Yes	**No**	**Limited availability**
Easy Field Replacement of Sensor.	Yes	**Yes**	**No** – When the sensor fails from high temperature fatigue (@450C) both sensor and electronics often need replacement representing a significant expense.
Built-in Four Alarm Relay Contacts Standard.	Yes	**No**	**No**
Insensitive to Changes in Ambient Air Flow (HVAC/ Air Handling Systems).	Yes	**Yes**	**No** – Changes in airflow may cool the high temperature sensor producing erroneous oxygen readings.
Protection From Frequent False Low Oxygen Alarms.	Yes	**No**	**Yes**
Quick Start-up	Yes	**Yes**	**No** – Typically takes 30-60 minutes to "warm up".

Overall Performance

Measurement Range:	0-30% Oxygen
Accuracy:	±1% of full scale
Response Time:	90% of full scale response in less than 20 seconds
Sensor Type:	Extended life electrochemical oxygen sensor
Temperature Compensation:	Standard
Operating Temperature:	50° to 104° F (10° to 40°C) /90% max humidity (non-condensing)
Product Warranty:	Three years sensor and electronics
Calibration:	Ambient air or calibration gas

Electrical

Display:	4 Line by 20 Character LCD
Input Power:	Universal 90 to 264 VAC, 47 to 63 Hz standard
Standard Outputs:	Two 0-20 mADC or 4-20 mADC, user configurable
Serial Communication:	RS-232 Standard
Oxygen Alarm Relays:	Four (4) SPDT Form C contacts rated 10A (250 VAC) 5A (100 VDC. Alarms may be cleared manually or automatically (latching), by user selection. Individually configurable to be set as high or low alarms for any sensor.
Audible Alarm:	Internal audible alarm rated at 85 decibels (nominal) with specific alarm canceling accessible via menu
Data Logger:	1 to 60 second time interval. Selectable sensors. Selectable Time stamp. Output in character separated values (CSV).

Mechanical

Electronics Control Unit:	Light gray polycarbonate, equivalent to NEMA 1 (IP 30). Wall mountable.
Electronics Control Unit Dimension*:	Depth: 3.5 in (90.1 mm) Width: 6.3 in (159.2 mm) Height: 10.8 in (274.9 mm)
Sensor Mounting:	Either within electronics enclosure or with remote sensor enclosure
Sensor Inputs:	Up to a maximum of three (3)
Optional Remote Sensor Enclosure:	Light gray polycarbonate, equivalent to NEMA 1 (IP 30)
Optional Remote Sensor Enclosure Dimensions*:	Depth: 3.5 in (90.1 mm) Width: 6.7 in (170.2 mm) Height: 6.1 in (154.9 mm)
Weight **(Control Electronics):** **(Remote Sensor):**	 3.2 lbs. (1.45 kg) 0.8 lbs. (0.36 kg)

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