

HIGH PURITY OXYGEN ANALYSER SYSTEMS

MODEL 5100

COMPACT INTELLIGENT PERCENT OXYGEN ANALYSER

ONE OF THE NTRON OXYGEN ANALYSER RANGE!

OEM APPLICATIONS INCLUDING WELDING, PURGED ATMOSPHERES, AIR SEPARATION, FOOD PACKAGING, HEAT TREATING, GAS GENERATION/BLENDING, SOLDER REFLOW & GLOVE BOX MONITORING



General

The Ntron Model 5100 provides an affordable and versatile Oxygen Analyzer solution ideal for portable and fixed gas generation standard process monitoring. The unit delivers high-purity gas measurement in a range from 0-1% through to 0-100% in an auto range or fixed range modes.

A small footprint and compact size makes the Ntron 5100 easy to install. The unit's expected operational life is five to ten years.

The low-maintenance, long-life Zirconia sensor has virtually unlimited shelf life and will not dry out or freeze.

Features

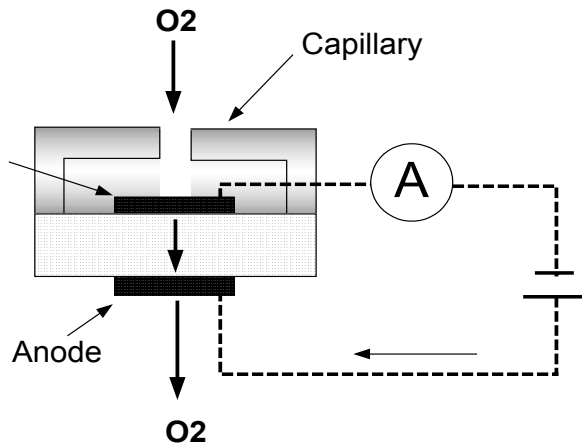
- **Compact, Microprocessor Based Unit**
- **Flow Through Head for Positive Pressure Sampling!**
- **Removable Terminal blocks !**
- **Sensor can be Internal or Remote and is not position sensitive.**
- **Standard Outputs: 4-20 mA, Analog Voltage, Bi-Directional RS-232**
- **Local Color Coded Mode LEDs and Pushbutton Interface**

Ntron's Zirconia Technology advantage

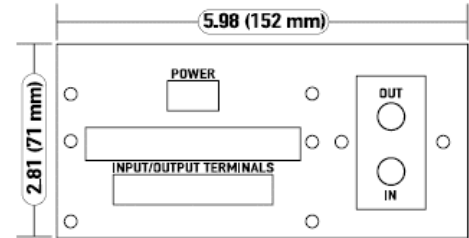
The Ntron High Purity Product line offers a combination of electrochemical and Zirconia oxide sensors. Zirconia sensors provide fast response and long life and are also very stable over long periods of time. Zirconia sensors are solid-state devices utilizing a yttria-based Zirconia solid electrolyte sensor. The robust design of the Zirconia sensor assures accurate measurement as well as a quick response characteristic to serve a wide range of oxygen measurement applications.

A major advantage of the Zirconia sensor is that it is not affected by position. Additionally, there exists no real limitation on shelf life or storage temperature. Sensors may be exposed to severe temperatures and perform to specification once brought up to operating conditions and may be exposed to several G-Force with no ill effect on performance.

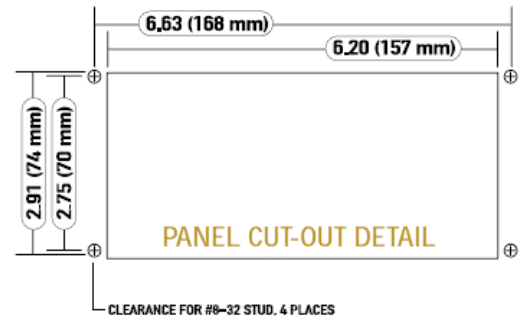
The mini Zirconia oxygen sensor used in the 5100 Oxygen Analyser is constructed of ZrO₂ ceramic solid electrolyte and has an on-board heater. The unique design of the thick film heater has low power consumption. Unlike many solid state oxygen sensors, the sensor does not require a reference gas for normal operation. When voltage is applied to the sensor, oxygen ions are pumped through a zirconia disk from the cathode side to the anode. A capillary diffusion hole at the cathode limits the flow of oxygen into the cathode area where it is immediately converted to oxygen ions and pumped. The current generated by the flow of oxygen ions is relative to the concentration of oxygen entering the cathode area. This current is referred to as the limiting current.



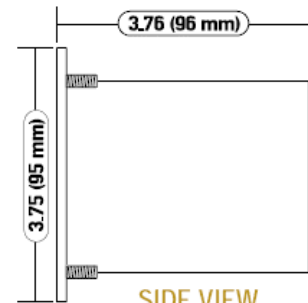
Mechanical Dimensions:



BACK PANEL DETAIL



PANEL CUT-OUT DETAIL



SIDE VIEW

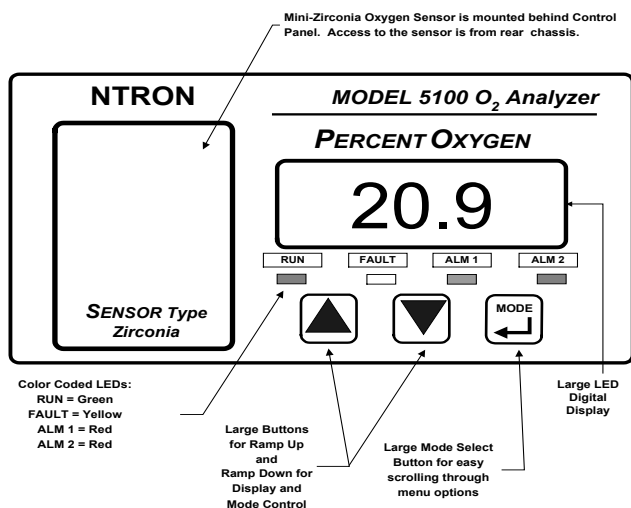
Dimensions in Inches (mm)



Model 5100 Specifications

February 2003, Rev. A

Sensor Type:	Mini Zirconia Sensor
Measurement Range:	0-1%/010%/0-25%/0-50%/0-100% oxygen , Auto or Fixed Range.
Sample Method:	Positive Pressure, 1/8 inch NPT female ports in Delrin
Display:	19.0 mm LED digital display. Color Coded LEDs for system status: Alarms 1 & 2 = Red, System Fault = Yellow, System OK & on-line = Green
Signal Interface	RS-232 service port, 4-20mA negative ground, 0-10VDC range ID and choice of 0-1VDC or 0-5VDC or 0-10VDC analog oxygen signal
Alarm Output Signals:	Two alarms with adjustable form C relay outputs. Configurable for fail-safe or fail-alarm mode, ascending or descending trip. One system fault relay.
Response Time:	< 15 seconds for 90% response due to step change in Oxygen.
Accuracy:	At constant temperature: $\pm 2\%$ range Over operating temperature: $\pm 5\%$ range When calibrated @ target concentration @ STP: $\pm 1\%$ range.
Warm up Time:	Approximately 20 minutes to reach thermal equilibrium with ambient temperature.
Power:	5W at 115/230VAC 50/60Hz, single phase or 10 Watts @ 12-30VDC (battery backup capability)
Sample Port:	1/8 inch NPT Female (lower port: sample input, upper port: sample output)
Operating Temperature:	5° to 45° C
Storage Temperature:	-15° to 50° C
Humidity:	0-95% non-condensing
Warranty:	12 months from date of shipment under normal operation.
Sample Flow:	1.4 - 2.0 SLPM @ constant pressure
Weight:	0.85 Kg.
Mechanical:	Aluminum panel . Faceplate: IP66 Housing: IP20



Analyser Benefits:

Long Life Sensor (3-5 years) provides Low Maintenance Costs

Multiple Outputs provide flexibility

Quick to use: 2-5 minute warm-up!

Can be exposed to any level of Oxygen air and ready to use in seconds!

Sensor will not Dry Out or Freeze!

