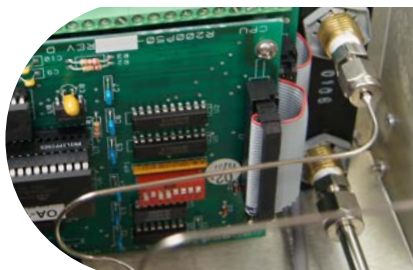


# MODEL 7100



**Neutronics**  
Gas Analysis Solutions

## Trace Oxygen Analyzer Compact Series/High Purity



### Small. Stable. Reliable

- 0 to 1000 ppm
- mini-zirconia oxide ZR-400 sensor
- $\pm 2.0\%$  accuracy
- internal or remote sensor mounting with KF fitting option
- $T_{90} < 10$  seconds

#### Description

The Neutronics Model 7100 is a compact analyzer designed for trace oxygen gas measurement. This analyzer features a rapid-response mini-zirconia sensor with a measurement range of 0 to 1000 ppm oxygen. Extremely fast response, high accuracy, and no requirement for periodic calibrations make this analyzer a low-maintenance solution that delivers reliable performance for critical process control applications.

#### Fast Response

The response time for the ZR-400 mini-zirconia oxygen sensor is 10 seconds. Accuracy is to within  $\pm 2.0\%$  of the measurement range. Operating service life is 3 to 4 years, and it has an unlimited shelf life. It is not affected by position and can be exposed to high atmospheric pressures with no impact on performance. This robust sensor has low cross-sensitivity to other gases and is unaffected by dry atmospheres or extremely cold storage temperatures.

#### Reliable Performance

The ZR-400 is a non-depleting limiting current type device based on a zirconia solid electrolyte sensor. With an integral heater and two electrodes, it is mounted directly onto a printed circuit board that supplies bias and heater voltages to the sensor element. A small capillary on the sensor surface controls diffusion of oxygen into the sensor. At operating temperature, oxygen is electrochemically reduced, causing current flow through the solid electrolyte. Oxygen concentration in the sample gas is determined by measuring the current flowing through the electrodes.

For the most accurate readings, the Model 7100 requires calibration at start-up using a flexible two-point calibration. During the normal service life of the sensor, no additional calibration is required.

#### Compact Modular Design

The Compact Series analyzers are easy to install. With a small footprint, the analyzers are designed to be flush mounted onto the surface of a control panel and integrated into a wide variety of equipment components.

#### Internal or Remote Sensor Mounting

The Model 7100 is available in two configurations – with the sensor mounted inside the analyzer housing in a flow-through chamber or with the sensor mounted externally and connected with a sensor interface cable. For remote mounting, the sensor is installed in a Stainless Steel housing with either a threaded connection for installation in a flow-through head or with a KF adapter fitting for installation designed for KF flange mounting.

#### Easy to Operate

The Model 7100 is shipped ready to install and operate with the complete configuration already programmed and tested by the factory. Setup parameters may be changed by the user by accessing the setup menu by pressing the buttons on the keypad. All parameters may be changed by using the RS-232 service port interface.

#### Communication Options

The user has a choice of options for communicating between the Model 7100 analyzer and the operating system controller. Two analog outputs are available: 4-20 mA and 0-1, 0-5, or 0-10 VDC. The RS-232 digital interface gives the user access to all settings including the option to restore the analyzer to its “out-of-box” or factory delivered settings.

#### Large Bright LED Display

The easy to read 7-segment large alphanumeric display shows the oxygen concentration and guides the user through system setup, calibration, and maintenance procedures.

#### Two Adjustable Alarms

Alarms with configurable relay outputs initiate active modes and light indicator LEDs based on user defined settings. The alarm status clears automatically when the measured oxygen concentration is within the set threshold value.

#### Auto or Fixed Range Measurement

The Model 7100 can be configured to automatically change the measurement range based on the concentration of oxygen in the process. System control devices require a continuous indication of the analyzer's selected range for accurate scaling. The Model 7100 analyzer features a 0-10 VDC auto-range identification output. Used in conjunction with the analog voltage and analog current outputs when auto-ranging is used, the auto-range ID provides an indication of the analog outputs' selected full-scale.



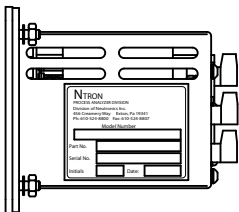
# MODEL 7100

## Trace Oxygen Analyzer

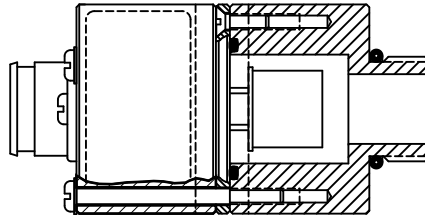
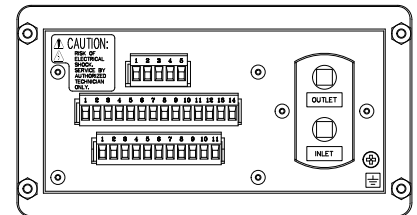
### Specifications

Type	Trace oxygen analyzer
Operating range	0-100 ppm, 0-1000 ppm, auto
Sensor	mini Zirconia, ZR-400
Accuracy	± 2.0% of range @ calibrated temperature and pressure or ± 3 ppm
Response time	T <sub>90</sub> < 10 seconds
Warm up time	60 seconds
Sensor expected service life	3 - 4 years
Relative humidity (analyzer)	0 - 95% non-condensing
Operating temperature	0 - 50° C (32 - 122° F)
Sample pressure	15"Hg vacuum to 7 psig (0.5 to 1.5 bar)
Display	7-segment, 0.75" alphanumeric LED, 4 characters LEDs for system status: run, fault, alarm-1, alarm-3
Power supply	90 - 264 VAC or 24 VDC
Analog current output	4 - 20 mA, 12 VDC, powered by the analyzer
Analog voltage output	0-1, 0-5, 0-10 VDC
Relay outputs	two alarm relays, field adjustable Form C (SPDT) one system fault relay, non-adjustable Form B (SPST)
Serial service port	RS-232
Control panel rating	weatherproof NEMA 4, IP66
Rear electronics chassis rating	NEMA 1, IP20
Warranty	Analyzer: 12 months, Sensor: 6 months
Analyzer dimensions (LxWxH)	7.00" (117.80mm) x 4.125" (104.78mm) x 3.75" (95.25mm)
External sensor dimensions	1.5" diameter x 3.25" long (NEMA 1, IP20)
Weight	3 lbs (1.4 kg)

Specifications are subject to change without notice.



Analyzer Side View

Remote Sensor  
Housing Assembly

Internal Sensor

### Order Information

#### Part

7100B-N1, without check valve, with internal mini-Zirconia Oxide sensor  
 7100BE-N1, 90-264VAC, 1,2, or 3 meter cable  
 7100B-N1-CV, with check valve, with internal mini-Zirconia Oxide sensor  
 7124B-N1, without check valve, with internal mini-Zirconia Oxide sensor  
 7124BE-N1, 20-30VDC, 1, 2, 3, 6 or 9 meter cable

#### Part Number

C7-01-7100-05-0  
 C7-01-7100-06-X  
 C7-01-7100-07-0  
 C7-01-7124-05-0  
 C7-01-7124-06-1



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