

O₂ Gas Analyzer (ppm)

HIGHEST ACCURACY & LOWEST COST



O₂ Gas Analyzer (ppm)

Transdox-3100L O₂

4 available configurations:

- * Transdox 3100 L: O₂.
- * Transdox 3100 LA: O₂ - CO₂.
- * Transdox 3100 LB: O₂ - CO.
- * Transdox 3100 LD: O₂ - H₂O.

Optional swing handle, Pely-style carry case, printer and gas filter.

amperis

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The Transdox 3100L oxygen analyzer allows fast and accurate oxygen analysis over the range 0.1ppm to 1% O₂ using a special high precision ppm electrochemical oxygen cell, a range of CO₂ concentrations from ppm up to 100%, range of CO concentrations from 0-3% up to 100% (range for CO₂ and CO specified by the customer at the time of ordering) and range of H₂O concentrations from either -60°C to +20°C or -100°C to +20°C dp (dew-point). This special low range analyzer is designed for applications where a traditional zirconia sensor is not suitable. This includes applications where the measurement gas contains VOCs, solvents, fuels, helium or hydrogen.

The analyzer provides continuous on-line oxygen, carbon dioxide and carbon monoxide analysis, with a typical response time less than three minutes for a response from 1% down to 1000ppm. Below 10ppm response times are considerably longer due to the way electrochemical sensors work. The dew-point sensors are OEM modules and have a typical response time of ten minutes for dew-point gas compositions.

The analyzer is fitted with a special cell housing which allows the reading to stabilize as quickly as possible, and is fully temperature and pressure compensated for enhanced accuracy. At the heart of the Transdox 3100L is a top-of-the-range Nitto motor-driven diaphragm vacuum pump. The flow of gas can be adjusted using the flow gauge/needle valve on the front panel of the analyzer. Typical flow rate is 1 liter per minute. Alternatively the pump can be independently switched off and operated under flowing gas conditions.

The O₂ cell is very sensitive to exposure to high concentrations of oxygen, including air, and to prevent damage the unit is fitted with solenoid valves to keep the cell in the measurement gas at all times; even when switched off. An internal pressure sensor compensates for small changes in gas pressure to keep the readings stable. The dew-point sensors are high precision transmitters that are fully factory calibrated and is supplied with its own Calibration Certificate, providing direct traceability to Humidity Standards. The sensor is certified at thirteen dew-point levels across its operating range against a certified reference hygrometer, using a mass-flow humidity generator system as a source of reference calibration gas.

The analyzer is packed with features including fully programmable alarm circuits, programmable analogue outputs, easy calibration (user selectable gases), RS232 (optionally RS485) communications and a full set of communications/data-logging software that is MS Excel compatible. Optional swing handle, Peli-style carry case, printer and gas filters are available.

Features:

- Continuous gas sampling via powerful yet quiet internally located motor-driven pump.
- Flow rate controlled by needle valve/flow gauge on front panel.
- Measurement range available:
 - Transdox 3100 L : 0.1ppm to 10,000ppm (1%) oxygen.
 - Transdox 3100 LA : 0.1ppm to 10,000ppm (1%) oxygen & 0-5000ppm, 0-1%, 0-5%, 0-10%, 0-30% and 0-100% CO₂.
 - Transdox 3100 LB : 0.1ppm to 10,000ppm (1%) oxygen and 0-100% CO.
 - Transdox 3100 LD : 0.1ppm to 10,000ppm (1%) oxygen. Either -60°C to +20°C or -100°C to +20°C H₂O dew-point range.
- Accuracy ±2% of oxygen reading with a precision ±0.5%, ±2% full scale accuracy for CO₂ measurements, and ±2% full scale accuracy for CO measurements.
- Easy to calibrate by the user using ANY TWO gases.
- Large back-lit LCD display showing O₂, CO, CO₂ temperature and pressure (user-selectable units).
- RS232 / RS485, 0-5V and 4-20mA current loop outputs (both user programmable).
- Windows configuration and data logging software with MS-Excel compatible graphing included.
- Fully programmable alarms with outputs and visual/audible warning.
- Optional printer, carry handle & transport case available.
- Works on any worldwide mains voltage 90-260 Vac.
- Accurate oxygen analysis in hydrogen, helium and gases containing solvents. Internal pressure sensor fitted for automatic pressure correction (3100LD).

Applications:

Transdox 3100 L, Transdox 3100 LA and Transdox 3100 LB:

- Measuring ppm levels of oxygen and CO in helium and hydrogen containing gases.
- Industrial processes using low oxygen environments, e.g., wave soldering under nitrogen, vacuum welding.
- Control of critical O₂ or CO or CO₂ atmospheres where low O₂ partial pressures are required.
- Testing the purity of inert gases such as argon and nitrogen.
- Measuring oxygen in gases containing VOCs, solvents and fuel.
- Applications where it is not possible to use a hot zirconia sensor.
- Control of critical oxygen atmospheres where high partial pressures are required (Transdox 3100 L).
- Multi-layer capacitor furnaces (Transdox 3100 L and Transdox 3100 LA).
- Forming gas analysis.

Transdox 3100 LD:

- Laboratory scale furnace experiments where the control and monitoring of oxygen, carbon dioxide and carbon monoxide is critical (Transdox 3100LA & Transdox 3100LB).
- Applications where extremely dry gases must be used.
- Industrial Gas Production.
- Gases used in electronics production and medical applications.
- Catalytic reformer cycle.
- Moisture in natural gas or gases where zirconia sensors are not suitable.
- Moisture in high-voltage switchgear quench gases.
- Monitoring of desiccant dryers for compressed air or plastic moulding apparatus.

Specifications Transdox 3100L O₂

Technical Data: Analyzer

Voltage	90-260Vac, 50/60Hz
Analyzer dimensions	350mm x 263mm x 150mm
Weight	7 kg
Display	16 x 2 character (9mm) back lit LCD
Warm up time	3-4 minutes at 20°C
Operating temperature	5°C to 35°C
Voltage outputs	0-5V linear, user-programmable
Current outputs	4-20mA linear, user-programmable
Digital outputs	RS232 (RS485 option available): data streamed on demand
Calibration	Requires 1 or 2 user selectable gas mixtures
Sample pump	24Vdc motor-driven diaphragm pump

Technical Data: Sensor

O₂ Sensor	0.1ppm to 10,000ppm; ±2% of reading
CO₂ Sensor	0-5000ppm, 0-1%, 0-5%, 0-10%, 0-30% and 0-100%; ±2% of full scale
CO Sensor	0-3%, 0-10%, 0-30% or 0-100%; ±2% of full scale
H₂O Sensor	-60°C to +20°C or -100°C to +20°C dp; ± 2°C dp
Life expectancy	2 years: O ₂ , >5 years H ₂ O, >10 years CO ₂ & CO
Response time O₂ (gas flow rate 1ltr.min ⁻¹)	< 180s from 10,000 to 100ppm < 10 min from 1000 to 10ppm < 5 h from 10ppm to < 1ppm
Response time CO and CO₂	T90 approximately 10s (90% response time)
Response time H₂O (gas flow rate 1ltr.min ⁻¹)	Approximately 10 minutes for a 90% step change in dew-point
Maximum free air displacement	7 litres per minute (0-28 cfm)
Noise level	45db (max) at 1 meter
Maximum inlet temperature	50°C
Sample connections	4mm ID / 6mm OD nipple type