



Model 1632 Oxygen Analyser



Oxygen measurement saves on fuel bills

The Novatech 1632 Oxygen Analyser is ideal for:

- Boilers
- Heat treatment furnaces
- Ceramic kilns
- Other fossil-fuel and gas fired appliances

The Novatech 1632 Oxygen Analyser is a smart investment that soon pays for itself through fuel savings as well as reducing pollution!

Efficient combustion control requires continuous monitoring of oxygen. In addition to the benefit of lowering fuel usage, there is also less pollution by products of inefficient combustion including CO, SO_x, and NO_x.

Novatech's unique standby oxygen sensor feature prevents costly shutdowns or reduced plant output if a sensor failure occurs

In the operation of boilers for electrical power generation, the failure of the Oxygen sensor requires that excess air be increased to 20% as a safety measure, with consequent reduction in power output! Novatech's solution to this is the 1632 Analyser that accepts inputs from two Oxygen sensors, averaging the two readings. In case of either one of the sensors failing, the analyser warns the operator and locks onto the remaining sensor so that the boiler can continue to operate at optimum efficiency.

In other applications, failure of the Oxygen sensor necessitates shutting down the plant,

thus causing extremely costly interruptions to production. The Novatech 1632 prevents this by continuing to monitor the remaining sensor.

The Novatech 1632 tells you what's happening

Plant operators are alerted to failure of a sensor by a plain English message on the analyser's two-line LCD readout. With two oxygen sensors connected to the Novatech 1632 Analyser, the average of the two sensors can be displayed on the upper line and transmitted on the channel 1 output, while the channel 2 output can be configured to transmit other menu-selected variables including:

- Probe emf
- Log Oxygen
- Oxygen deficiency
- Linear Oxygen
- CO₂
- % combustibles, stack temperature, etc

The Novatech 1632 Oxygen Analyser

- Easy-to-operate, reliable, no regular calibration needed. An annual check of four reference voltages is all that is necessary
- Local 2 x 16 character display and two transmitted 4-20 mA isolated outputs
- Accurate, rapid response, low drift Zirconia Oxygen sensors (ask for DS 1230 and DS 1234 specification sheets)
- Dual Oxygen sensor option; the Novatech 1632 will automatically switch over to the good sensor in case of failure of the other sensor

- Automatic probe purge cycle
- Automatic gas calibration check
- Dual fuel selection
- Compensation for flue pressure variation
- Main burner ON safety interlock
- RS232 / 485 computer/printer interface
- Up to three programmable alarm relays warning of very low, low or high Oxygen, purge, probe temperature and calibration error

Accuracy and reliability

The Novatech 1632 Analyser can display and transmit %-combustibles on channel 2, thus monitoring the combustion process for fuel rich or reducing conditions.

Other applications include:

- Reduction control in ceramic kilns
- Control of exothermic / endothermic generators
- Monitoring dangerous combustion conditions

Call Novatech to discuss your application

Modbus™

The 1632 Oxygen Analyser is now shipping with Modbus™ protocol as a standard feature. Connect up to 31 Oxygen Analysers on the Modbus™ RS485 network and all analysers can then be interrogated by a computer or PLC.

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Specifications

Range of Output 1

Field selectable from the following:

- Linear: 0-1% Oxygen to 0-100% Oxygen
- Log: 0.1-20% Oxygen
- Reducing: 10^{-30} to 10^{+2} Oxygen

Output 2

Oxygen with selectable options as per output 1 using the second sensor input if it is connected or the following selectable variables for sensor 1:

- Combustibles
- Probe EMF
- Log Oxygen
- Reducing Oxygen
- Oxygen Deficiency
- Carbon Dioxide
- Stack Temp

Range of Indication

- Auto ranging from 10^{-30} to 100% Oxygen

Indication Choice Lower Line

Any or all of the following can be selected for display:

- Probe EMF
- Probe Temp
- Ambient Temp
- Run Hours & Date since last service
- Sensor Impedance
- Oxygen Deficiency
- Carbon Dioxide
- Auxiliary Temperature

Accuracy and Repeatability

- $\pm 1\%$ of actual measured oxygen value with a repeatability of $\pm 0.5\%$ of measured value.
For example at 2% oxygen the accuracy would be $\pm 0.02\%$ oxygen

Inputs

- One or two zirconia oxygen probes or sensors
- Stack or spare thermocouple, type K or R
- Main flame safety interlock (for heated probes only)
- Purge pressure switch
- Dual fuel selector

Outputs

- Two linearised 4-20 mA DC outputs (max. load 1000 Ω)

Alarms

- Common alarm relay with 20 alarm functions & three programmable alarm relays for low, very low & high Oxygen, probe under temperature, calibration error, purge occurring & horn

Computer / Printer Communications

- RS 232 or RS 485 for connection of a computer terminal or printer for diagnostics of the analyser, probe, sensor or combustion appliance MODBUS™

Purge and Calibration Check

- One purge & two calibration check output relays to operate mains voltage, solenoid valves

Reference Gas or Sampling Pump

- Integral diaphragm pump

Relay Contacts

- 0.5A-24 VAC, 1A-30 VDC, 50 VAC or 30 VDC max.

Operating Temperature

- 0-50°C
- 5-95% RH (non-condensing)

Connection Cable

- Special cable containing shield, thermocouple compensating lead, sensor conductors & heater conductors where a heated probe or sensor is used

Power Requirements

- 240 or 120 VAC, 50/60 Hz, 115 VA (heated probe or sensor), 5 VA (unheated probe)

Weight

- 3.2 Kg

Enclosure

- IP65, suitable for outdoors, wall or surface mounting
- IP54 with internal reference air pump

Dimensions

- 260 mm wide by 160 mm high by 95 mm deep

Accessories

- In-situ probes & sampling sensors
- Ex d enclosures for hazardous areas
- Probe & sensor cables
- Sample aspirators
- Purge & calibration check gas solenoid valves
- Calibration check flowmeters

Ordering Information

- Specify model 1632 Oxygen Analyser with cable length of 10, 20, 30, 40 or 50 metres, with optional weather-proof connector, sampling pump connection if required

Distributed by:



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