Model
1632 Oxygen Transmitter

Oxygen measurement saves on fuel bills

The Novatech 1632 Oxygen Transmitter is ideal for:

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

The Novatech 1632 Oxygen Transmitter 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, SOx, and NOx.

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 Transmitter that accepts inputs from two Oxygen sensors, averaging the two readings. In case of either one of the sensors failing, the transmitter 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 transmitter's two-line LCD readout. With two oxygen sensors connected to the Novatech 1632 Transmtter, 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
- CO_2
- % combustibles, stack temperature, etc

The Novatech 1632 Oxygen Transmitter

- 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 Transmitter 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 Transmitter is now shipping with Modbus™ protocol as a standard feature. Connect up to 31 Oxygen Transmitters on the Modbus™ RS485 network and all transmitters can then be interrogated and configured remotely using a computer or PLC.

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

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

Accuracy and Repeatability

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

Inputs

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

Outputs

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

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 MODBUS™ for connection of a computer terminal or printer for diagnostics of the transmitter, probe, sensor or combustion appliance

Purge and Calibration Check

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

Data Sheet 1632

Reference Air

- 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

- 3.7 kg

Enclosure

- IP65, without internal reference air pump suitable for outdoors, wall or surface mounting

Dimensions

- 280 mm wide by 180 mm high by 95 mm deep

Accessories

- In-situ probes & sampling sensors
- Probe & sensor cables
- Sample aspirators
- Purge & calibration check gas solenoid valves
- Calibration check flowmeters

Ordering Information

- Specify model 1632 Oxygen Transmitter with cable length of 5 to 50 metres in 5m increments, with optional weather-proof connector.

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