



Model **1638** Dew Point Transmitter

Accurate continuous monitoring of oxygen in hydrogen / nitrogen atmospheres used in annealing furnaces

The Novatech 1638 detects changes in the dew point of annealing furnaces allowing operators to take corrective action to prevent expensive re-work due to oxidation of the product. The dew point is calculated from the amount of oxygen measured in the furnace. The unique sensor manufactured by Novatech uses a catalyst that attracts oxygen molecules in the same way as the surface of the steel does inside the furnace.

Using the Novatech 1638 is easy and convenient

- Simply enter the percentage of hydrogen used by the furnace.
- The 1638 is self-calibrating, performing a calibration cycle for all inputs, every minute.
- Output to a computer or printer is provided via RS233 or RS485 ports, facilitating diagnostics of the transmitter and probe. Up to 31 transmitters can be connected over a Modbus™ network.

The Novatech 1638 Transmitter readily adapts to your process control system

The 1638 Transmitter has two 4-20 mA linearised outputs to operate with remote controllers and/or indicators.

The instrument's common alarm relay can activate remote process alarm devices.

The separate, 'probe not ready' alarm relay prevents erroneous operation.

An alarm horn driver relay is provided.

Novatech's unique dual sensor feature prevents costly shutdowns if a sensor failure occurs

The Novatech 1638 Dew Point Transmitter accepts inputs from two sensors, averaging the two readings, or providing separate 4-20 mA outputs for each sensor. In case of either one of the sensors failing, the transmitter warns the operator and locks onto the remaining sensor so that the process can continue to operate.

The Novatech 1638 tells you what's happening

Plant operators are alerted to failure of the probe by a plain English message on the transmitter's two-line LCD readout. There are 30 probe and transmitter alarms, plus 4 process alarms. The upper line display indicates:

Oxygen %. Auto-ranging from 1 x 10⁻³⁰% to 100% oxygen.

The lower line display can indicate any of the following:

- Dew point
- Pre-reactive oxygen %
- Sensor EMF
- Probe temperature
- Probe impedance
- Ambient temperature
- Relative Humidity
- Date/time
- Run hours

Specifications

Inputs

- Zirconia oxygen probe, heated or unheated
- Furnace thermocouple, field selectable as type K or R
- Process purge complete / main flame established safety interlock (for heated probes)
- Purge pressure switch
- Remote alarm accept

Outputs

- Two linearised 4 to 20 mA DC outputs, max. load 1000Ω
- Common alarm relay
- Three other alarm relays with selectable functions

Computer

- RS 232-C or RS 485 for connection of a computer terminal or printer for diagnostics of the transmitter, sensing probe, or process. This connection is suitable for network connection to computers, DCSs or PLCs using MODBUS™ protocol.

Range of Indication, Upper Line

- Oxygen auto ranging from 1 x 10⁻³⁰% to 100%
- Dew point -60 °C to +40 °C, -76 °F to +104 °F

Indication Choice, Lower Line

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

- Dew point probe 1
- Dew point probe 2 **
- Dew point probe 1 and 2 averaged **
- Date - time
- Run hours since last service
- Date of last service
- Oxygen probe 2 **
- Oxygen probe 1 and 2 averaged **
- Probe EMF 1
- Probe EMF 2 **
- Temperature probe 1
- Auxiliary Thermocouple Temperature *
- Temperature probe 2 **
- Impedance probe 1
- Impedance probe 2 **
- Ambient Temperature
- Ambient Relative Humidity

* If the transmitter is enabled for 1 probe

** If the transmitter is enabled for 2 probes

Accuracy

- ±1% of actual measured oxygen value with a repeatability of ±0.5% of measured value.

Relay Contacts

- 0.5A 24 VAC, 1A 36 VDC

Ambient Temperature

- 0 to 50°C

Power Requirements

- 240 or 110V, 50/60 Hz, 115 VA (heated probe)
- 5 VA (unheated probe)

Weight

- Transmitter, 3.7 Kg

Mounting

- Suitable for wall or surface mounting.

Dimensions

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

Distributed by:



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