



MODEL

1738 Dew Point Transmitter

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

The Novatech 1738 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 Controls uses a catalyst that attracts oxygen molecules in the same way as the surface of the steel does inside the furnace.

Using the Novatech 1738 is easy and convenient

- Simply enter the percentage of hydrogen used by the furnace
- Very low maintenance and re-calibration
- Two fully programmable isolated 4-20mA outputs
- Built in Modbus™ slave protocol and digital RS-485 networking

Dual sensors to provide redundancy to prevent costly shutdowns if a probe failure occurs

The Novatech 1738 Dew Point Transmitter accepts inputs from two sensors, averaging the two readings, or providing separate 4-20mA 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 1738 tells you what's happening

Plant operators are alerted to failure of the probe by a plain English message on the transmitter's LCD display. There are 30 probe and transmitter alarms, plus 4 process alarms.

The upper line display indicates:

- Oxygen % – auto-ranging from $1 \times 10^{-30}\%$ to 100%

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

One or two zirconia oxygen probes or sensors

One zirconia sensor & auxiliary thermocouple type J, K, R or S

Burner "On" signal (dry contact)

Purge air flow switch

Outputs

Four programmable alarm relays

Two isolated 4-20mA or 0-20mA

SSR outputs to purge & calibration check gas solenoid valve

Range of outputs

Dew point -60 to 40°C

Average dew point -60 to 40°C

Linear oxygen 0 to 100%

Average linear oxygen 0 to 100%

Reducing oxygen 10^{-30} to 100%

Average reducing oxygen 10^{-30} to 100%

Pre-reactive oxygen 0 to 10%

Average pre-reactive oxygen 0 to 10%

Probe EMF 0 to 1300mV

Auxiliary TC temperature 0 to 1400°C

Alarms

Common alarm relay with 20 user selectable instrument alarm functions

Three programmable process alarm relays:

Oxygen high

Oxygen deviation

Dew point high

Dew point deviation

Pre-reactive oxygen high (two separate thresholds)

Probe temperature low

Cal. check in progress

Purge in progress

Any alarm condition not selected for the common alarm

Multiple selections can be made for all relays

Alarm contacts

Normally open failsafe (open for alarm state)

250VAC / 30VDC, 2A

Range of local indication

1.0 x 10^{-30} to 100% oxygen

0.01ppm to 10,000ppm – automatically defaults to exponential format below 0.01ppm and percent format above 10,000ppm (1%)

Network interface

RS-485 MODBUS™

Secondary parameter display

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

Probe 1/2 dew point

Average dew point

Probe 1/2 TC temperature

Probe 1/2 EMF

Probe 1/2 impedance

Probe 1/2 oxygen %

Average oxygen %

Probe 1/2 pre-reactive O₂

Average pre-reactive O₂

Auxiliary TC temperature

Ambient temperature

Ambient RH%

Runtime

Service date

4-20mA output 1

4-20mA output 2

Probe 2 & average parameters only available with two probes

Accuracy

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

Environmental rating

Operating temperature -25°C to 55°C (-10°F to 130°F)

Relative humidity 5% to 95% (non-condensing)

Altitude 2000m maximum

Power requirements

Mains voltage 100 to 240VAC -6/+10%, 50/60Hz

Overvoltage category II (IEC60364-4 443)

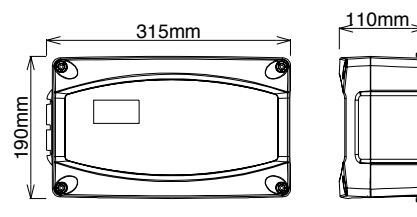
Power 5W plus probe power

Degree of protection

IP65

IP54 with internal reference air pump

Dimensions



315mm x 190mm x 110mm (12.4" x 7.5" x 4.3")

Weight

3.3kg (7.3lb)