



MODEL 1735 Water Vapour Transmitter 1231HWV Probe

In-situ water vapour analysis in high humidity applications

Moisture measurement improves product quality and consistency and reduces fuel costs for drying and baking processes.

Novatech has enhanced its range of analysers by adding the 1735 Water Vapour Transmitter and the 1231HWV Oxygen Probe. The 1735 Transmitter uses the measure of oxygen to calculate the level of water vapour by using the difference between the wet oxygen reading and the dry oxygen reading.

The Novatech zirconia probes incorporate the world's most rugged zirconia sensors. Now there is a Novatech oxygen probe designed especially for baking and drying ovens.

Used with the 1735 Water Vapour Transmitter, the 1231HWV Oxygen Probe is capable of reading the oxygen concentration in atmospheres with up to 99.99% water vapour and at temperatures up to 600°C (1,100°F).

The 1735 / 1231HWV Water Vapour analysis provides rapid payback for processes such as:

- Drying ovens
- Baking ovens
- Paper drying hoods
- Gypsum and plasterboard dryers
- Timber drying kilns

The 1735 / 1231HWV water vapour analysis can provide accurate moisture control in atmospheres up to 600°C:

Easy to operate, reliable and no regular calibration needed. Select the unit of measure to display and output from:

- Water vapour %
- Dew point
- Mixing ratio
- Absolute humidity
- Specific humidity
- Dryer relative humidity
- Oxygen %

Accurate, rapid response, low drift, robust zirconia oxygen sensor.

Highly responsive, eg: typically 3 seconds for indirect heated applications.

- RS-232 / RS-485 Modbus™ interface
- Two isolated 4-20mA outputs
- Programmable alarms

Accurate and reliable

The oxygen sensor, which measures water vapour due to oxygen displacement in the oven atmosphere, provides accurate and virtually drift-free measurement for years.

Controlling humidity

The 1735 / 1231HWV can be used with controllers, including PLCs, to provide accurate continuous control of the moisture level.

Direct fired processes

The 1735 / 1231HWV measures the “wet” oxygen level of the process using an in situ zirconia oxygen probe and can accept a remote signal input (4-20mA) proportional to the dry oxygen level to then calculate the percent water vapour in the process. If this signal is not available from an existing CEMS installation then the 1735 can be supplied with a reference gas sensor (See separate brochure, model 1234) and a simple sampling system to determine the “dry” oxygen level in the process.

The 1231HWV Oxygen Probe and the 1735 Transmitter is designed in Australia and manufactured in the Melbourne factory.

The sensor embodies the research and development of Australia's premier research organisation, CSIRO.

The probe can be inserted directly into the oven / dryer therefore eliminating the need for a high-maintenance sampling system.

SPECIFICATIONS

Model 1735 Water Vapour Transmitter

Inputs

Two zirconia oxygen probes or sensors or

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 valves

Range of outputs

Water vapour % 0 to 100%

Dew point -50 to 100°C

Mixing ratio 0 to 10,000g/kg

Specific humidity 0 to 1,000g/kg

Dryer temperature 0 to 400°C

Relative humidity 0 to 100%

Alarms

Common alarm relay with 20 user selectable instrument alarm functions

Three programmable process alarm relays

Alarm contacts

Normally open failsafe (open for alarm state)

240VAC / 30VDC, 2A

Network interface

RS-485 MODBUS™

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

Contact Novatech for specific applications for other measured process variables

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)

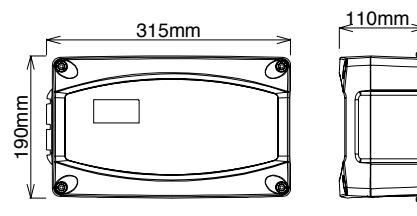
Power 5W plus probe power

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)

Model 1231HWV Probe

Applications

High moisture atmospheres up to 600°C

Probe insertion length

250, 350, 500, 750, 1000mm

Process connection

1.5" BSPT or NPT

Outer sheath

32mm OD 316 stainless steel with 42mm filter

Electrical connection

Supplied with weatherproof connector and cable specified length up to 50m

Heater

Yes

Internal thermocouple

Type 'K'

Response time

Typically <4 seconds

Head temperature

100°C (212°F) max

Reference air connection

1/4" tube

Probe cable

Supplied with weatherproof connector to specified length up to 50 meters (165ft)

Gas flow

<50cc/min

Particulate filter

30µm sintered titanium alloy

Weight

2.1Kg + 160g per 100mm insertion length