# DTS100

## Diffusivity Test System


- ***Automated sample gas flow and differential pressure control.***
- ***Wide diffusion measurement range - from 1ppm to 100%.***
- ***Fully autoranging.***
- ***Fast response time.***
- ***Programmable alarms and outputs.***
- ***Combines high sensitivity with ease of operation.***

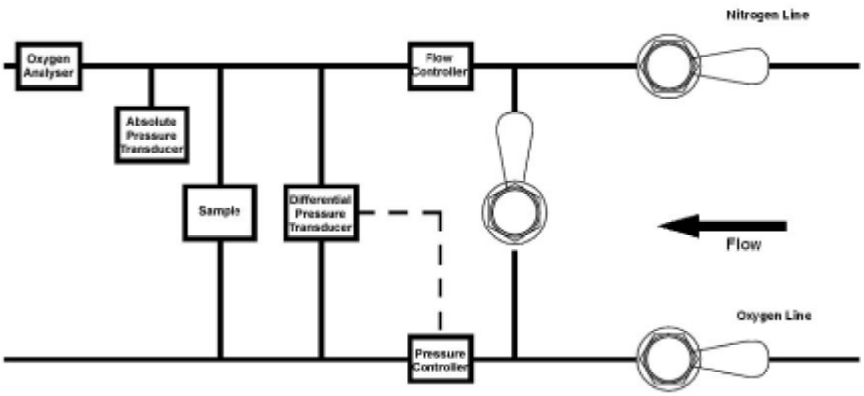
**Description**

The DTS100 is a floor standing, self-contained test system designed to measure the diffusivity of oxygen through porous samples.

The principal of operation is that pure nitrogen and oxygen are passed over opposite ends of the sample, the nitrogen gas is then passed to an oxygen analyser to determine the quantity of oxygen within the nitrogen.

As the differential pressure across the sample is zero, oxygen passing through the sample is due to diffusion alone.

A constant nitrogen flow is maintained using a mass flow controller to ensure that stable oxygen readings may be obtained. Differential pressure across the sample is monitored using a high stability capacitance manometer and flow in the oxygen line is modulated to achieve zero pressure. Closed loop control circuits carry out these functions automatically, eliminating potential human error.




Nitrogen flow rate, oxygen flow rate, differential pressure across the sample and concentration of oxygen in nitrogen are all displayed and can be data logged for later analysis

| Mechanical | |
|---|---|
| Package | Steel vented case |
| Size (enclosure) | 22U 19" rack cabinet |
| Mounting | Floor standing |
| Weight | 62 Kg |
| **Power Supply** | |
| Line Voltage | 240 VAC or 120 VAC |
| Line frequency | 50 - 60 Hz |
| Consumption | Less than 250 VA |
| Protection | T5A anti-surge fuse , 20 x 5mm |
| **Operating Conditions** | |
| Operating temperature range | +5°C to +50°C |
| Storage temperature range | -20°C to +70°C |
| Maximum relative humidity | 95% at 50°C |
| Warm up time to full accuracy | 2-3 Hours (assumes stabilised at ambient) |
| **Measurement and control** | |
| Flow | ±1% of full scale |
| Pressure | ±0.0005 mb |
| Diffusion (O2 in N2) | 100% to 100ppm: ±2% of reading or better |
| | 99ppm to 10 ppm: ±1ppm |
| | 9.9ppm to 0.1ppm: ±0.2ppm |