



Description

The GTT is used for the measurement of the gas permeability of films and similar materials.

Features

■ The device has been designed without any wear parts, making it exceptionally **low-maintenance**.

■ It comes with a **highly robust sensor** (piezoresistive pressure sensor) and can withstand the sudden ingress of air during a measurement without being damaged in any way. It is also immune from the oversaturation that can affect electrochemical sensors.

■ A precise, temperature stabilized pressure sensor and a smart analysis software enables **highly sensitive measurements of gas transmission**.

■ Its ability to directly measure the gas transmission of a wide range of different test gases significantly **increases the number of potential uses** for this device. For instance, the properties of the materials being tested can often be measured much faster and more precisely. The device does not require any modifications to be used for different test gases.

■ The device comes with a **gas-saving mode** in which the flow rate of the test gas can be reduced to approximately 1.2 l per hour – so the contents of a small, standard 10l bottle can give 60 days of measurement.

■ **Several measurement modes** enable values including the time lag to be calculated. This is needed in order to determine further physical properties such as the solubility and the diffusion coefficient.

■ The **temperature is controlled electrothermally** by ultra-precise, energy-efficient Peltier elements during the sampling process, covering the full temperature range of 15°C to 45°C that is conventionally used for measurements. This gives the user numerous options for determining other material properties, such as the activation energy.

■ The humidity and the temperature of the test gas is continuously sampled during the complete measurement. An optional installation kit, together with an enhanced software, provides to **humidify the test gases** inside the GTT.

■ The measurement principle used means that the **requirements for generating a vacuum are relatively low**. As the starting pressure level has no impact within a broad range (up to 10 hPa), all that is needed is a simple rotary vane pump or a multi stage diaphragm pump.

Specifications

Test method	Quantitative determination of the Gas Transmission Rate of film materials using differential pressure methods (manometric methods) according to ISO 15105-1
Test gas	All non-corrosive, inert gases
Gas flow of the test gas	50 cm ³ /min approx. \ 20 cm ³ /min using test gas save mode
Measuring Range	0.05 cm ³ /(m ² ×d×bar) to 20.000 cm ³ /(m ² ×d×bar) [up to 10E6 cm ³ /(m ² ×d×bar) with masking]
Resolution	0.01 cm ³ /(m ² ×d×bar)
Leak rate of the test system	better 0.05 cm ³ /(d×bar)
Pressure sensor permeat pressure	piezoresistive element, temperature stabilised
Range	0 hPa to 1000 hPa (1,2 bar max.)
Tolerance	better 0.3% FS
Resolution (display)	0.01 hPa
Resolution (internal)	0.01 Pa (24 bit)
Pressure sensor test gas	0 hPa to 1200 hPa
Tolerance	better 1% FS
Resolution (display)	0,1 hPa
Humidity sensor test gas	10% R.H. to 90% R.H.
Tolerance	better 3%
Temperature sensor test gas	0°C to 80°C
Tolerance	better 3%
Sample temperature range	15°C to 45°C
Tolerance	better 1 °C
Temperature constancy	better 0.2 °C
Control	in-build, 10" touch panel PC, high industrial standard
Dimensions	approximately 45 x 50 x 30 cm
Weight	approximately 22 kg
Storage temperature	0°C to 50°C
Working temperature	20°C - 26°C (to be constant during testing)
Relative humidity	max. 80%, non-condensing
Electrical connection GTT	100-240 VAC, 50-60 Hz, power consumption approx. 150 W

Benötigtes Zubehör

- **Vacuum pump** required for the measuring principle
- **Vacuum grease** to seal the sample at the edge
- **Test gas supply** eg: cylinder with pressure reducer

Extensions

- **Humidity control** regulates the relative humidity of the test gas to a desired value
- **curxViewer** PC software for evaluating and processing GTT measurement files

■ User management

- **Control** PC software for controlling the test process
- **Measurement** PC software for controlling the measurement process

■ Sensor adjustment

- **Control** PC software for controlling the test process
- **Measurement** PC software for controlling the measurement process