AMETEK®
PROCESS INSTRUMENTS

MEASURES: **Specific gravity**

PRODUCT DATA SHEET

Ranarex Gas Gravitometer

A portable gravitometer delivering accurate, sensitive and fast-responding measurements in an easy-to-use package

The Ranarex Gas Gravitometer is designed to be simple to understand and operate. The chassis of the gravitometer forms two cylindrical, gas-tight measuring chambers, which each have a separate inlet and outlet connection. In each chamber there is an impeller and an impulse wheel, both with axial vanes. An electric motor and drive belt rotate the impellers at the same speed and in the same direction. The impellers draw continuous flow of gas sample into the upper chamber, and reference air into the lower chamber. They spin the gas and air against the vanes of the corresponding impulse wheels. As the spinning gas and air impinge against the vanes, they create torques on the impulse wheels that are proportional to the density of the gas and of the air.

These torques are transmitted from the chambers to two external measuring wheels. A flexible tape is wrapped on the measuring wheel rims in the crossed direction so that the torque creates two opposing forces. The measuring system divides the torque of the gas by the torque of the air. This is the same ratio as the density of the gas divided by the density of the air which is the specific gravity.

Accurate and reliable performance

The Ranarex Gas Gravitometer has a proven track record of over 60 years with an estimated 30,000 installations. It is the analyzer of choice for measurements of specific gravity.

Portable Gravitometer

No elaborate setup is required for the portable version. The unit can be operated from the floor, a bench, or hung from the wall with either a standard AC power supply or a 12-Volt vehicle battery through a DC-AC inverter.

Low cost and easy-to-use

The Gravitometer is constructed of durable, corrosion resistant mechanical components with no fragile glass or electronic parts, minimizing installation and reducing total cost of ownership.

KEY BENEFITS

- Meets ASTM D1070
- Instantaneous response with no time required for chemical reaction or gas diffusion
- Installation requires only piping or tubing and electrical power. No special skills required
- Jeweled pivots and permanently lubricated ball bearings minimize wear and virtually eliminate servicing
- Eliminates span drift to ensure permanently accurate calibration

KEY MARKETS

- Natural gas
- Refining
- Chemical and petrochemical
- Steel and heat treating

APPLICATIONS

- Natural gas custody transfer, pipelines, and blending
- Natural gas liquids separation/LPG
- Refining recycle gases and catalytic reformers
- Combustion analysis
- Sewage treatment
- Petroleum off gases
- Fuel gas systems
- Hydrogen (H_2) in ammonia (NH_3) manufacturing and H_2 processing
- Dry sulfur chloride (SO_2), dry NH_3, wet or dry hydrogen sulfide (H_2S)
- Coke oven gas, water gas, producer gases in steel mills, chemical plants, etc.

PERFORMANCE SPECIFICATIONS

Accuracy	±0.5% of actual value
Readings	Indicating only
Drive motor	115 VAC, 60 Hz or 230 VAC, 50 Hz
Sample flow rate	15-20 Scf/hour
Sample pressure	20 psig maximum
Specific gravity range	Dual scale: 0.52 to 1.03 and 0.97 to 1.90
Ambient air reference dryer	Silica gel
Flowmeter	Built-in sample gas flowmeter
Actual weight	220v model: 20.9 kg (46 lb) 115v model: 17.2 kg (38 lb)
Ship weight	22.7 kg (50 lb)

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