ph instruments
srg technology

VIM-2

First Stationary and Mobile Spinning Rotor Gauge with Battery & Grid Operation

Key Advantages:

- **Grid & battery operated**
- **>3 h battery operation time**
- **Measuring range:**
  10 mbar to 5 x 10^{-7} mbar
- **High intrinsic accuracy**
- **Neglectable drift over time**
- **No electronics inside vacuum**
- **Cost-effective two-part design**
- **Plug and measure**
- **App included**
- **Internal & external data logger**
- **Bluetooth (optional)**

Applications:

- **Thermal vacuum insulation**
- **Conductive vacuum insulation**
- **Preventive maintenance**
- **Documentation, QC, R&D**
- **Trouble shooting and safety check without opening the vacuum chamber**

0-10 VDC out USB TYPE C **RS 485** **24 VDC**

Introduction

The VIM-2 is a stationary (grid operation) and mobile, battery-operated, highly accurate and long-term stable vacuum pressure gauge based on Spinning Rotor Gauge (SRG) technology.

SRGs are characterized by two main components:

- A simple, all-metal sensor, connected to the vacuum system
- A measuring head & electronics unit, outside the vacuum system

The all-metal sensor consists of a stainless-steel sphere inside a stainless-steel thimble. Its sensor sphere is magnetically lifted and accelerated by the measuring head, which inductively measures the spin deceleration of the sphere. The measured deceleration rate is used to calculate the pressure of the vacuum system with high accuracy.

SRG technology advantage

SRGs are well known transfer standards in metrology due to their high accuracy and long-term stability. Combined with its simple, but robust sensor design with no electronic components inside the vacuum, the SRG offers unique properties including:

- 1% achievable accuracy of reading from 0.1 to 1x 10^{-6} mbar
- Safe & clean measurements:
  No contamination/heating/ionization by SRG sensor
- Long term stability: <1.5%/year drift
- Corrosion & deposition insensitive

VIM-2: Ideal for vacuum insulation application

- Extensive measurement range compared to Pirani/thermocouple gauges
- Reliable and permanent sensor mounting by welding
- No failures caused by electrical feedthroughs
- Resistant to mechanical stress (mechanical protection included)
- Reliable measurements thanks to a strong magnetic field and high sensor rotation frequency
- Ideal for field work: Battery operation, display, and internal logger
- Cost effective: One electronics unit, shared with multiple sensors

✉info@ph-instruments.eu www.ph-instruments.eu +43 720 500217

Technical Data

Measurement Principle	Spinning Rotor Gauge
Measurement Range	10 mbar to 5 x 10^{-7} mbar
Achievable Accuracy	10 mbar to 0.1 mbar 10% of reading 0.1 to 1 x 10^{-6} mbar 1% of reading
Measurement Time	1, 3, 5, 10, 20, 30 s or adaptive
Long Term Stability	< 1.5 % drift each year
Wetted Materials	1.4404, 1.4034
Alignment	Horizontal
Hardware Interfaces	USB Type C, Bluetooth (optional), High Density 15 pin
Digital Interfaces	USB, Bluetooth (optional), RS 232 (service), RS 485
Communication Protocol	Modbus protocol, ASCII protocol (optional), LabView driver (optional)
Internal Data Logger	1023 values
Remote Control / GUI	Win7/10
Operating Temperature	Electronics 10°C to 40°C (50°F to 104°F) Measurement head 10°C to 50°C (50°F to 122°F) Sensor tube bakeable until 150°C (302°F) elastomer sealed 450°C (842°F) metal sealed
Power Requirements	18 to 28 VDC
Analog Output	0 to 10 VDC configurable
Flange Type	KF 25, KF40, CF40, 8 VCR, 1/8” NPT, welding socket
Weight	Device 1650 g (58 oz), power adapter 510 g (18 oz), head 750 g (26.5 oz)
Dimensions	L x B x H = 325 x 275 x 100 mm (13 x 11 x 4 in.)
Power Supply	Grid or battery operation
Power Consumption	Maximum 1.5 A at 24 VDC, typically < 1 A
Run Time in Battery Mode	> 3 h
Battery Charging Time	In 4.5 h to more than 95% of current capacity
Response Time (fast mode)	1 s

Distributore esclusivo per l'Italia:

Gambetti
Vacuum Technology and Related Solutions

About us

ph-instruments develops, manufactures and sells vacuum measurement systems with unique technologies for demanding tasks in industry, research and science. Our guidelines are to provide our customers with cost-effective and application-related solutions. Our specialists each have more than 20 years of experience in measuring and regulating pressures in the vacuum sector. The products are developed and produced in Germany and Austria and meet the highest quality standards for measuring accuracy, sustainability and reliability. Innovative technologies help to increase energy efficiency and thus protect the environment from unnecessary CO2 emissions.