Pirani Standard Gauge PVG-500 PVG-502

Safety
Symbols Used

DANGER Information on preventing any kind of physical injury.
WARNING Information on preventing extensive equipment and environmental damage.
Caution Information on correct handling or use. Damage can lead to malfunctions or minor equipment damage.

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Technical Data

Measurement principle thermal conductance according to Pirani

Accuracy (%) 5% x 10^−6 mbar

Resolution 1% of reading

Repeatability 2% of reading

He Ne 100…1000 mbar ±50% of reading

Air 2•10^-3 mbar ±15% of reading

Freon 12 8642 ±3 mbar at +40 °C

Measurement principle  thermal conductance according to Pirani

Volt (mbar)

Pressure reading (gauge adjusted for air)

Gauge identification 27.0 kΩ, referenced to supply common (voltage at pin 4 = 5 V)

Adjustment one tactile switch for ATMA and HV adjustment

Switching functions SP1, SP2

Threshold value indication and setting one tactile switch at measurement signal output. Press briefly for threshold indication. Keep pressing or push beyond for threshold setting.

Setting range 2•10^-5…500 mbar

Hysteresis 10% above lower threshold

Relay contact closed open

Supply voltage VDC 14…30 V

Current consumption mA <500 (max. starting current)

Power consumption W 1 W

Materials exposed to vacuum DN 1 4301, DN 1 4305, DN 1 4445, glass, Ni, N2 P2

Filament PVG-500 PVG-502 N

PVG-500 PVG-502

Operation ° C +5 … +60

Vacuum connection ° C 80

Filament ° C 110

Storage ° C +5 … +65

Relative humidity % 85% at temperatures up to +31 °C, decreasing to 50% at +40 °C

Use indoors only, altitude up to 2000 m

Mounting orientation any

Degree of protection (IP)


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Power Connection

Make sure the vacuum connection is properly made (→ "Vacuum Connection").

If no sensor cable is available, make one according to the following diagram:

![Diagram of sensor cable connection]

Connect the sensor cable to the gauge and the controller.

![Diagram of sensor cable connection]

Operation

When the supply voltage is applied, the measurement signal is available between pins 3 and 5 (relationship between measurement signal and pressure → "Technical Data").

Allow a stabilization period of at least 10 minutes. It is advisable to operate the gauge continuously, irrespective of the pressure.

Gas Type Dependence

The measurement value is gas dependent. The pressure reading applies to dry air, O₂, CO and N₂. For other gases, it has to be corrected (→ "Technical Data").

If the gauge is operated with an Agilent controller, a calibration factor for correction of the actual reading can be applied (→ U of the corresponding controller).

Adjusting the Gauge

The gauge is factory calibrated. Due to long time operation or contamination, a zero drift could occur. Periodically check the zero and adjust if necessary.

For adjusting the zero, operate the gauge under the same ambient conditions and in the same mounting orientation as normally.

The gauge is adjusted to default values. However, it can also be adjusted to other pressure values, if the exact pressure value is known (reference measurement).

If you are using a seal with centering ring and filter, check that they are clean or replace them if necessary (→ "Deinstallation").

Activate the gauge and operate it at atmospheric pressure for at least 10 minutes.

Press the button with a pin (max. 1.1 mm) and the ATM adjustment is carried out. The gauge is adjusted to 1000 mbar (1 VDC) by default. By pressing the button, the pressure value is increased towards 1000 mbar or, by pressing it again, decreased towards 500 mbar until the button is released or the limit is reached.

Switching Functions

The setpoints are adjustable within a pressure range of 2·10⁻² – 500 mbar (voltage range of 2.67 – 9.61 VDC).

Each switching function provides a floating relay contact (→ "Electrical Connection"). The status of the switching function is indicated by a LED.

![Diagram of switching functions]

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The status of the relay and LED is not affected by pressing the button.

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Deinstallation

DANGER: contaminated parts

Contaminated parts can be detrimental to health and environment.

Before beginning to work, check whether any parts are contaminated. Adhere to the relevant regulations and take the necessary precautions when handling contaminated parts.

Spare Parts

When ordering spare parts, always indicate:

- all information on the product nameplate
- description and ordering number according to the spare parts list:

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Ordering number</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVG502KF16S</td>
<td>PVG502CF16S</td>
</tr>
<tr>
<td>PVG502KF16</td>
<td>PVG502CF16</td>
</tr>
<tr>
<td>PVG502KF16RS</td>
<td>PVG502CF16RS</td>
</tr>
</tbody>
</table>

Maintenance, Repair

In case of sensor contamination or a malfunction, the sensor can be replaced.

Gauge failures due to contamination or wear and tear, as well as expirable parts (e.g. filter), are not subject to repair.

Agilent assumes no liability and the warranty becomes null and void if any repair work is carried out by the end-user or third parties.

WARNING: substances detrimental to the environment

Products or parts thereof (mechanical and electrical components, operating fluids etc.) can be detrimental to the environment.

Dispose of such substances in accordance with the relevant local regulations.

Separating the components

After disassembling the product, separate its components according to the following criteria:

- Contaminated components

Contaminated components (radioactive, toxic, acoustic or biological hazard etc.) must be decontaminated in accordance with the relevant national regulations, separated according to their materials, and disposed of.

- Other components

Such components must be separated according to their materials and recycled.

Returning the Product

In case of sensor contamination or a malfunction, the sensor can be replaced.

If the gauge is operated with an Agilent controller, a calibration factor for correction of the actual reading can be applied (→ "Technical Data").

The gauge is factory calibrated. Due to long time operation or contamination, a zero drift could occur. Periodically check the zero and adjust if necessary.

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