



UNIQUE VACUUM SOLUTIONS

Diaphragm Vacuum Gauge

DVG-1S



Accuracy : 0.75% of reading

Repeatability : 0.1% of reading

Range :0.1 to 1333 mbar / 0.1 to 1000 Torr

Advantages:

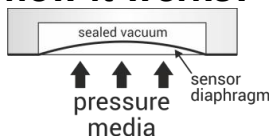
- Ceramic diaphragm sensor with excellent chemical resistance.
- Programmable current output 4-20mA.
- Programmable Voltage output 0-10V dc.
- Has built in temperature compensation circuit.
- Robust SS316 design.
- IP67 enclosure for harsh environment.
- Optional SSR available for setpoint outputs.

Applications:

- PVD coating
- Mass spectrometers.
- Electron microscope.
- Fore-line vacuum.
- Freeze drying.
- Sterilisation process.
- Load lock systems.
- Vacuum furnaces.

With the high accuracy and tested repeatability standards of this DVG-1S sensor, this is the best cost effective replacement solution for conventional capacitance monometers with measurement from 1333 down to 0.1 mbar.

how it works?



The DVG-1S is based on a ceramic aluminum oxide sensor diaphragm that converts the applied pressure to an electric signal. The sensor element is a dry cell diaphragm design.

Measurement performance

These DVG-1S transmitters are calibrated and compensated for ambient temperature drifts. This DVG-1S comes with standard factory calibration certificate, we also provide calibration certificates traceable to standards as optional.

Analog and digital options

The DVG-1S is available with industry standard analog 4-20 mA current output or 0-10 VDC voltage output. The analog output can be scaled and configured using our interface software.

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TECHNICAL DATA

MODEL	DVG-1S
SPECIFICATIONS	Measuring range : 3 decades Accuracy of reading : 0.75% of reading Accuracy of full-scale : +/- 0.1 % BFSL Repeatability : 0.1% of reading Thermal drift (offset, base: 22 °C) : +/- 0.01%/°C of full-scale (from +10 to +50°C) Output signal (Voltage version) : 0-10 VDC (Programmable scaling) Output resolution (Voltage version) : 16 bit / 150 µV Output signal (Current version) : 4-20 mA (Programmable scaling) Output resolution (Current version) : 16 bit / 244 nA Solid-state relay contact rating (optional) : 250 mA, 50 VDC / VAC peak
Environmental conditions for operation	Operating ambient temperature : -40 to +100 °C Media temperature at flange : -40 to +125 °C Storage ambient temperature : -40 to +125 °C Maximum media pressure : 2000 mbar / 1500 Torr Burst media pressure : 3000 mbar / 2250 Torr Mounting position : Any Protection rating, EN 60529/A2:2013 : IP67, IP65 Humidity, IEC 68-2-38 : 98%, non-condensing
Power supply	Supply voltage : 12-30 VDC Power consumption (voltage version) : 240 mW (max) Power consumption (current version) : 600 mW (max) Reverse polarity protection : Yes Overvoltage protection : Yes Internal fuse : 100 mA (thermal recoverable)
Materials	Enclosure : SS 1.4404 / AISI 316L Electrical connector DIN 175301-803A : PA Nylon Electrical connector M12 IEC 61076-2-101: PA Nylon, Nickel plated Zinc alloy Process connection (media wetted) : SS 1.4404 / AISI 316L Sensor diaphragm (media wetted) : Ceramic Al ₂ O ₃ 96% Sealing (media wetted) FKM (Viton®) or optional FFKM Process leak tightness (ISO 27895:2009) : <1·10 ⁻⁹ mbar·l/sec.

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G 1/4 DIN 3852-E

46.1

12.0

27.0

34.2

12.0

46.1

Technical drawing of a 1/4 inch DIN 3852-E plug valve handle. The drawing shows a side view of the handle with various dimensions. The handle has a hexagonal base with a diameter of 12.0. The total length of the handle is 47.7. The distance from the base to the center of the plug is 16.8. The distance from the base to the center of the handle is 35.7. The distance from the base to the end of the handle is 52.5. The handle is labeled 'G 1/4 DIN 3852-E'.

Technical drawing of the G 1/4 DIN 3852-E valve assembly. The drawing shows a side view of the valve with various dimensions indicated:

- Total length: 47.7
- Distance from end face to center of first thread: 12.0
- Distance between centers of two threads: 35.7
- Distance from end face to center of second thread: 55.7
- Distance from end face to end of body: 20.0
- Overall height: 31.0
- Thread specification: G 1/4 DIN 3852-E
- A wrench icon is shown at the bottom left, indicating the tool used for adjustment.

CVG-1-		1	0	1	1	0	0	1	1	1	1
Process connection		Connection									
DIN 3852-E, G 1/4" A	1	1 M12 x 1, 4 pin									
DN16KF	8	2 DIN175301-803 Form A									
		3 Cable 1 meter (3.3 feet)									
		4 Cable 3 meter (9.9 feet)									
		5 Cable 5 meter (16.4 feet)									
		6 M12 x 1, 4 p. + mating connector									
		7 DIN175301-803 Form A + mating connector									
Range		Setpoints									
0 200 mbar	0 2	0 None									
0 500 mbar	0 5	1 On/Off Solid State Relay									
0 1000 mbar	0 6										
0 200 Torr	1 2										
0 500 Torr	1 5										
0 1000 Torr	1 6										
Sensor type		Digital interface									
Gauge	1	1 S4-Connect™									
Absolute	2										
		Analog Output									
		1 0-10 VDC linear									
		2 0-5 VDC linear									
		3 1-10 VDC linear									
		4 4-20 mA linear									
		5 1-5 VDC linear									
		6 1-6 VDC linear									
		7 0.5-4.5 VDC linear									



UNIQUE VACUUM SOLUTIONS

Digital Vacuum Gauge DVG-100A



1000mbar to 0
760mm of Hg to 0



ABSOLUTE VACUUM MEASUREMENT

The UVS **DVG 100A** Vacuum Gauge Controller displays vacuum pressure as measured from a transmitter tube. The **Model DVG 100A** unit covers the range from 1000 mbar to 0 OR 760 mm of Hg to 0, and controls relay with independent set point.

TECHNICAL SPECIFICATIONS

MODLE	DVG - 100A
Number of sensor channels	ONE
Measuring Range	1000 mbar to 0 / 760 mm of Hg to 0
Resolution	1 mbar / 1 mm of Hg
Accuracy @ 25 °C	±0.75 % of the reading
Units of Display	m.Bar and mm of Hg, unit selection from front panel
Temp. Range	+2 to +50 deg. Celsius
VAC. Display	4-digit bright red LED, 14 mm high
Process control set points	one
Process Control Relays	One relay output, potential free contacts; available through 6 pin metal shell connector on the rear panel
Nonvolatile Memory	Only for set points
Operating Voltage	universal power supply, input voltages from 90 ~ 264VAC 50/60 Hz
Mounting	¼ DIN 92 x 92 mm (3.62" x 3.62")
Environmental Considerations	not for use with explosive or corrosive gases
End fittings for the sensor	Standard KF-10, 1/4" BSP male thread let.
Sensor cable length	Available in lengths of 2 mtrs, 5 mtrs, 8 mtrs.
Overall dimention	96mm X 96mm X 110mm

Features at a Glance

■ **Space saving rugged design- 1/8 DIN console** ■ **Space saving rugged design- 1/8 DIN console** ■
Mounts in any orientation ■ **brass body measuring cell with metal-sealed feed through**

Applications

■ Controlling high vacuum systems ■ Fore vacuum pressure monitoring ■ Safety circuits in vacuum systems ■ General vacuum measurement & control in the fine and rough vacuum range.

Calibration:

Unique Vacuum Solutions offers a convenient recalibration service to help users of vacuum measurement pirani/ thermocouple/ full range gauges to maintain all of their vacuum gauges in Certified and peak condition, regardless of the original manufacturer. All makes of vacuum gauges can also be calibrated / repaired if required. The calibration certificates are available only on request at additional cost. PI contact before ordering.

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