

VSH82

The combination transducer VSH82 (Pirani/hot cathode) measures absolute pressure from atmospheric to ultrahigh vacuum.

The intelligent, micro processor controlled Smartline transducers automatically manage the appropriate interaction of both vacuum sensors regarding measurement ranges and switching points.

Smartline uses a high tech design and provides safe, easy to use and cost effective process control.

Typical Applications

- Analysis technology
- Coating plants and vapor deposition
- Sputtering plants
- Vacuum furnaces
- Process engineering
- Measuring and controlling in the fine and ultrahigh vacuum range

Smartline Vacuum Transducer Absolute Pressure 1000 to 1×10^{-9} mbar

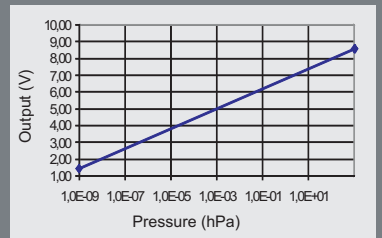
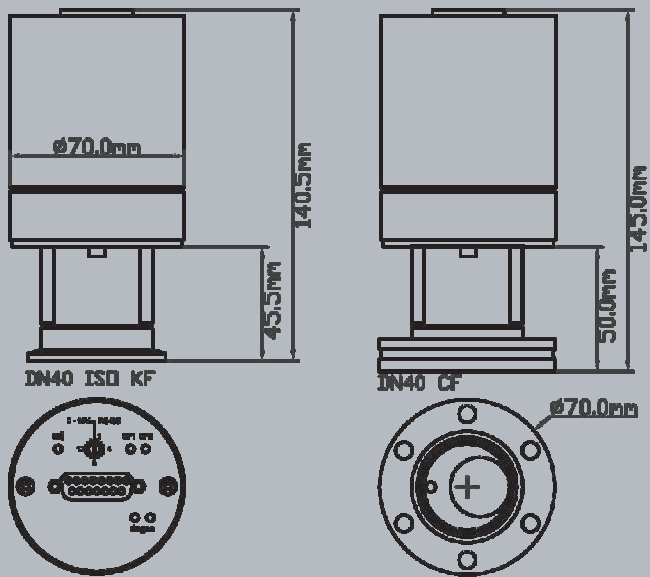


Smartline

Benefits

- Combination sensor with wide measuring range
- The hot cathode sensor is automatically switched on and off by the Pirani
- Patented pulsed Pirani sensor with extended range allows operation of hot cathode at lower pressure and increase of lifetime
- Excellent repeatability and high accuracy
- Low thermal and electrical interference with the vacuum process
- Bayard-Alpert with double filament, in the event of filament failure the gauge automatically switches to the backup
- Insensitive against inrush of air
- Two independent, dry relay switch points
- Logarithmic signal output 0 - 10 V provides easy interpretation
- RS485 interface
- The digital output signals can be transmitted error free over long distances (up to 500 m)
- Replaceable sensor heads
- Low power consumption
- Correct pressure readings by means of separate gas type correction factors for Pirani and hot cathode sensors
- Metal sealed stainless steel sensor cell with detachable protective screen
- Resistant, EMC compatible metal housing
- Precise pushbutton digital adjustment of zero pressure and atmospheric





$$V_{out} / V = 0,6 \log (p / \text{mbar}) + 6,8$$

$$p / \text{mbar} = 10^{(V_{out} / V - 6,8) / 0,6}$$

Technical Data

Measuring Principle	Heat conduction (Impulse Pirani), Bayard Alpert, dep. on gas type
Materials In Contact With Vacuum	Stainl. steel 1.4307, Ni, W, Pt, yttrium coated iridium, glass, ceramic
Measurement Range	1000 - 1×10^{-9} mbar ($750 - 1 \times 10^{-9}$ Torr), max. overpressure 4 bar abs.
Accuracy	1000 - 20 mbar: < 30 % from reading 20 - 5×10^{-3} mbar: < 10 % from reading < 5×10^{-3} mbar: < 15% from reading
Response Time	200 ms, 500 ms for switching BA emission currents
Repeatability	5%
Emission Current	10 μ A, 100 μ A, 1 mA
Degas	Ohmic heating of the anode
Voltage Supply	19 - 30 VDC
Electrical Connection	Sub-D, 15-pole, male
Power Consumption	Approx. 6.5 W (without switch points)
Operating Temperature	+5...+50°C
Storage Temperature	-20...+70°C
Maximum Bake Out Temperature	180°C at the flange (electronic detached)
Output Signal	0 - 10 VDC, measuring range 2.0 - 8.6 VDC, logarithmic, 1V / decade
Serial Interface	RS485: 9600 baud, address switch 1 - 15
Switch Points	2 switch-over relays, 60 V, 0.5 A
Vacuum Connection	Stainless steel flange DN 40 ISO-KF (VSH82MV) Stainless steel conflat flange DN 40 CF (VSH82MVCF)
Protection Class	IP40
Weight	Approx. 665 g

Product Codes

- VSH82MV**
 Combination transducer Pirani/Bayard Alpert, 1000 to 1×10^{-9} mbar, with DN 40 ISO-KF connection; output 0 - 10 V, logarithmic, RS485
- VSH82MVCF**
 As above, with DN 40 CF connection

Accessories:

- W1506002**
 Measuring cable, shielded, 2 m (for VD9)
- W1506006**
 Measuring cable, shielded, 6 m (for VD9)
- W1515002**
 Measuring cable, shielded, 2 m (for VD10)
- W1515006**
 Measuring cable, shielded, 6 m (for VD10)
- BVSH82KF40**
 Sensor head DN 40 ISO-KF for replacement
- BVSH82CF**
 Sensor head DN 40 CF for replacement