

# VSP

## Smartline Vacuum Transducer Absolute Pressure 1000 to $1 \times 10^{-4}$ mbar

The processor controlled VSP with robust helix filament is ideal for precise measurements in the fine vacuum range.

Smartline represents cutting edge technology providing safe, precise and cost effective process control.



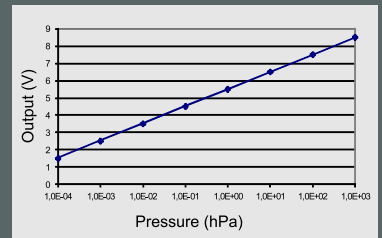
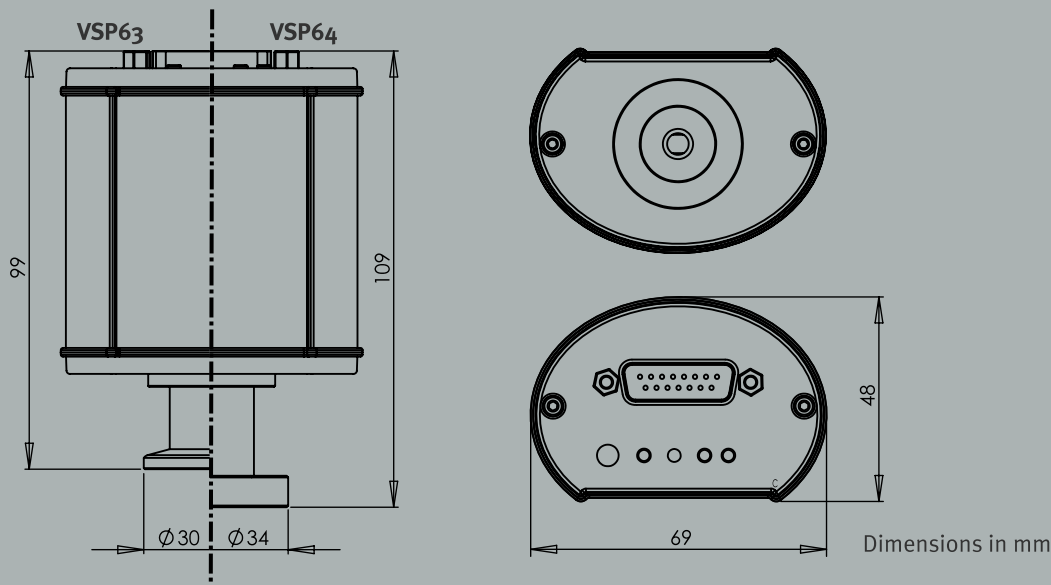
*Smartline*

### Typical Applications

- Analysis instruments
- Operational control of roughing pumps and vacuum plants
- Safety circuits in vacuum systems
- Vacuum furnaces
- Leakage tests
- Freeze drying
- Process engineering
- Vacuum centrifuges

### Benefits

- Durable Pirani helix filament
- High resolution
- Good accuracy and excellent reproducibility
- Two independent, potential-free relay switch points
- Short response time
- Filament is protected against oil and solvent vapors by a metal screen
- Stable measurements due to optimized temperature compensation
- Small volume of the measuring cell e. g.  $1,8 \text{ cm}^3$  for VSP63D
- Metal sealed stainless steel sensor, suitable for UHV applications
- Easily replaceable sensor heads with stored calibration data
- LEDs for device status and switch points
- Suitable for Thyracont 2 and 4 channel display and control units VD12 / VD10
- Digital RS485 interface and additional analog output signal 1.5-8.5 V or EtherCAT
- Digital adjustment of zero and atmospheric pressure via pushbutton or interface
- Large, integrated LCD display with background illumination (VSP63DL, VSP64DL)
- Display flashes in bright red color in case of error, compared to green lighting in the normal mode (VSP63DL, VSP64DL)
- Easy connection with PLCs
- The digital output signal can be transmitted error-free over long distances (up to 500 m)
- Baud rate 9.6 kBd to 115 kBd
- Rugged, EMI-proof metal housing
- Protection class IP54 (VSP63E/VSP64E)
- Vacuum connection by stainless steel small flange DN 16 ISO-KF or conflat flange DN 16 CF-F



$$V_{\text{out}} (\text{V}) = \log (p(\text{hPa})) + 5.5$$

$$p (\text{hPa}) = 10^{(V_{\text{out}}(\text{V}) - 5.5)}$$

## Technical Data

Measuring Principle	Pirani
Materials In Contact With Vacuum	Stainless steel 1.4307, nickel, tungsten, glass
Measurement Range	1000 - 1 x 10 <sup>-4</sup> mbar (750 - 1 x 10 <sup>-4</sup> Torr), max. overpressure 4 bar abs.
Accuracy	1000 - 20 mbar: ca. ±30 % from reading 20 - 2 x 10 <sup>-3</sup> mbar: < ±10 % from reading < 2 x 10 <sup>-3</sup> mbar: < factor 2
Repeatability	±2% from reading
Reaction Time	< 100 ms
Voltage Supply	20 - 30 VDC
Electrical Connection	VSP63D/DL, VSP64D/DL: SubD 15pol., male, lockable VSP63E, VSP64E: M12 circular connector, female, lockable, 1x A standard, 5pol., 2x D coded, 4 pol.
Power Consumption	2.5W additionally 0.8 W for EtherCAT /relays / LCD
Operating Temperature	+5...+60°C (rel. humidity max. 80% at 30°C noncondensing)
Storage Temperature	-40...+65°C
Max. Bake Out Temperature	125°C at the flange
Output Signal	0-10VDC, measuring range 1.5 to 8.5 VDC, logarithmic, 1V / decade, load resistor > 10k Ω (VSP63D/DL, VSP64D/DL)
Serial Interface	RS485: 9.6 kBd to 115 kBd, address switch 1 - 16
Switch Points	2 switch-over relays, 50 VAC / 2 A, 30 VDC / 2 A, max. 60 VA
Vacuum Connection	DN 16 ISO-KF (VSP63), DN 16 CF-F (VSP64)
Protection Class	IP54 (VSP63E, VSP64E), IP40 (VSP63D/DL, VSP64D/DL)
Weight	190 g

## Product Codes

- VSP63D**  
 Pirani transducer  
 1000 - 1 x 10<sup>-4</sup> mbar,  
 DN 16 ISO-KF connection  
 output RS485 and 0-10V
- VSP63DL**  
 As VS63D, with LCD display
- VSP63E**  
 As VS63D,  
 output RS485 and EtherCAT
- VSP64D**  
 Pirani transducer  
 1000 - 1 x 10<sup>-4</sup> mbar,  
 DN 16 CF-F connection,  
 output RS485 and 0-10V
- VSP64DL**  
 As VSP64D, with LCD display
- VSP64E**  
 As VSP64D,  
 output RS485 and EtherCAT

## Accessories:

- SLN4**  
 Plug-in power supply 24 V
- SLKUSB**  
 Interface converter RS485-USB
- VGR**  
 VacuGraph™ software for Windows
- W1515002**  
 Measuring cable for VD12 and  
 VD10, shielded 2 m
- W1515006**  
 As W1515002, 6 m
- W1515020**  
 As W1515002, 20 m
- Replacement sensor heads**  
 B\_VSP63, B\_VSP64

Alterations reserved (VSPA03)