

# VSL - Smartline Vacuum Transducer Piezo / Pirani

Absolute Pressure 1200 ...  $1 \times 10^{-4}$  mbar

Relative Pressure -1060 ... +340 mbar

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made for  
LOADLOCKS

**PROFINET**<sup>®</sup>

**EtherCAT**<sup>®</sup>

**RS485**

**0-10 V**

## VSL at a glance

- Combination gauge with integrated multiple sensor system
- Three different sensing modalities for measuring absolute and relative pressure; Ideal for loadlock application
- Two piezo diaphragm sensors to monitor chamber pump-down and vent-up
- Differential pressure output for precisely triggering door-open function
- Pirani sensor measuring down to  $10^{-4}$  mbar controls low-pressure transfer between loadlock and process chamber minimizing particle events
- High accuracy, optimal resolution and excellent stability
- Two independent relay set-points can be assigned to any of the sensor functions
- Short response time of up to 40 ms
- Possibility of zero balancing sensors via RS485, Profinet or EtherCAT interface
- Stable readings due to optimized temperature compensation
- Measurements independent of gas type above 20 mbar

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## Technical Data

Measurement Principle	Piezo-resistive / heat conduction Pirani (Pirani, depending on gas type)
Measurement Range	Absolute: 1200 - $1e-4$ mbar (900 - $1e-4$ Torr) Relative: -1060...+340 mbar (-795...+255 Torr)(dep. on ambient pressure)
Overload	4 bar abs.
Accuracy	Absolute: 1200 - 40 mbar: 0.3% f. scale end, 40 - $2e-3$ mbar: 10% f. reading Relative: 0.25% f. span
Repeatability	1200 - 40 mbar: 0.1 % f. scale end, 40 - $1e-2$ mbar: 2% f. reading
Materials with Vac. Contact	Stainless steel 1.4307, tungsten, nickel, glass, gold, silicon oxide
Reaction Time	40 ms
Operating Temperature	+5...+60°C (Profinet +5...+50°C)
Storage Temperature	-40...+65°C
Bake Out Temperature	Max. 125 °C at the flange (voltage supply switched-off)
Voltage Supply	20 - 30 VDC
Power Consumption	Max. 2.5 W, add. 0.8 W for EtherCAT / relays /LCD, 1.6 W for Profinet
Output Signal	0-10 VDC, min. 10 k $\Omega$ , measuring range 1.5 to 8.58 VDC, log. (Default) except for EtherCAT, Profinet
Digital Interface	RS485: 9.6 kBd to 115 kBd, 8 databit, 1 stopbit, no parity, EtherCAT, Profinet
Switch Points	2x relay, potential free, 50 VAC / 2 A or 30 VDC / 2 A, max. 60 VA except for EtherCAT, Profinet
Electrical Connection	RS485/0-10V: SubD, 15-pole, male RS485/EtherCAT/Profinet: 1x M12 A / 2x M12 D, female
Vacuum Connection	DN 16 ISO-KF (VSL53), DN 16 CF-F (VSL54)
Protection Class	Up to IP54 (SubD with XB15SL05 adaptor)
Weight	195 g (VSL53D)



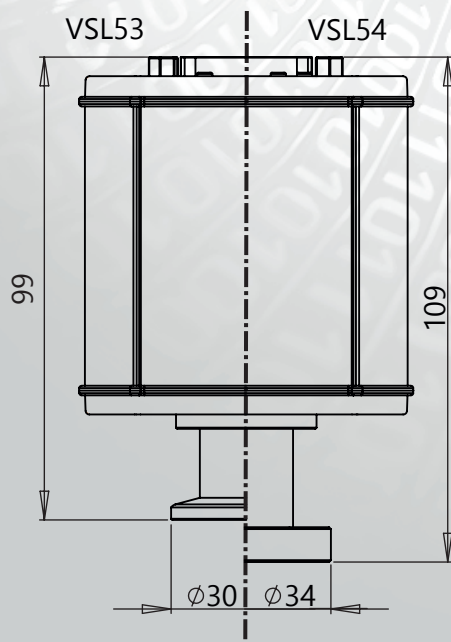
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## Dimensions in mm



## Model designations

- VSL53D DN16 ISO-KF, 0-10V and RS485
- VSL54D DN16 CF-F, 0-10V and RS485
- VSL53DL DN16 ISO-KF, 0-10V and Rs485, with LCD display
- VSL54DL DN16 CF-F, 0-10V and RS485, with LCD display
- VSL53E DN16 ISO-KF, EtherCAT and RS485
- VSL54E DN16 CF-F, EtherCAT and RS485
- VSL53PN DN16 ISO-KF, Profinet and RS485
- VSL54PN DN16 CF-F, Profinet and RS485

## Accessories

- Replacement sensor heads: B\_VSL53, B\_VSL54
- SLCASE Smartline protective plastic case, SLN4 plug-in power supply, SLKUSB interface converter RS485-USB, VGR VacuGraph software lite version

Further accessories as well as detailed information about our product family can be found in our Smartline brochure.

