VCL - Smartline Vacuum Transducer Piezo / Pirani
Absolute Pressure 1200 ... 5 x 10^{-4} mbar
Relative Pressure   -1060 ... +340 mbar

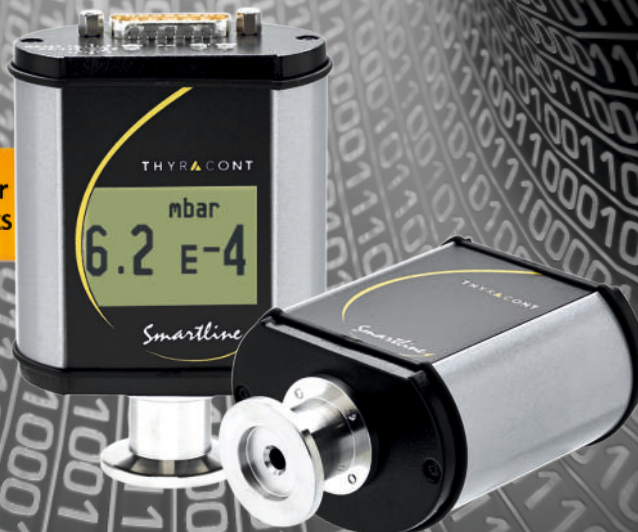**4.0**

Smartline

made for
LOADLOCKS

PROFI NET®
EtherCAT
RS485
0-10 V

THYRACONT
mbar
6.2 E-4
Smartline

Overview VSL vacuum transducer

- Two piezo diaphragm sensors to monitor chamber pump-down and vent-up; Pirani sensor measuring down to 1e-4 mbar controls low-pressure transfer between loadlock and process chamber minimizing particle events

- Suitable for demanding applications with aggressive media due to platinum rhodium filament

- Short response time of up to 40 ms

- Differential pressure output for precisely triggering door-open function

- High accuracy, optimal resolution and excellent stability

- Stable measurements due to optimized temperature compensation

- Measurements independent of gas type above 20 mbar

Overview Smartline vacuum transducers

- Digital RS485 interfaces plus 0-10 V output signal, EtherCAT or PROFINET, Bluetooth adapter SLKBT for wireless communication

- PROFINET transducers support MRP

- Exchangeable sensor heads with stored calibration data

- Large LCD display (exc. EtherCAT, PROFINET)

- Readjustment of zero and atmosphere by push-button or interface

- LEDs for device status and switch points

- Two independent, potentialfree relay switch points (exc. EtherCAT, PROFINET)

- Protection class up to IP54

- 0-10 V output signal can be scaled according to the required output characteristics. Exchange of existing vacuum gauges easily, independent of the manufacturer, without programming effort

- Intelligent sensors for simplified integration according to Industry 4.0 standards

- Metal sealed stainless steel sensor cell, suitable for UHV (He leakage rate <5e-10 mbar l / s)

- Expansion with 2 channel controller VD12 or 4 channel controller VD14 possible

- VacuGraph™ Windows software for visualisation, analysis and storage of measuring data

THYRACONT
Vacuum Instruments

Technical Data

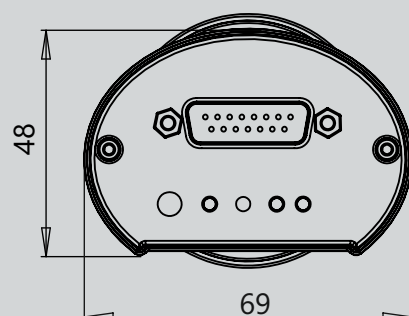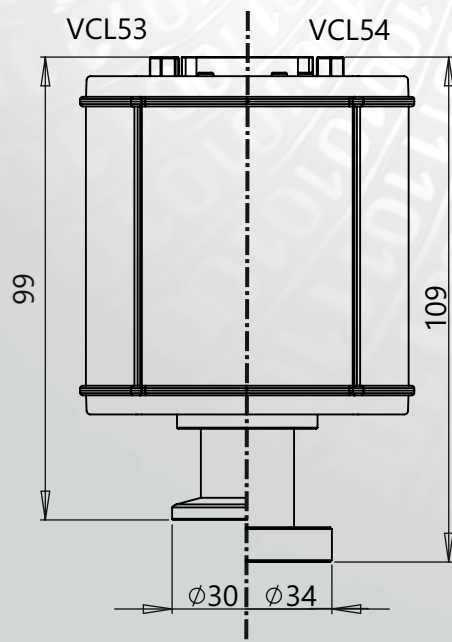|	
Measurement Principle	Piezo-resistive / heat conduction Pirani (Pirani, depending on gas type)
Measurement Range	Absolute: 1200 - 5e-4 mbar (900 - 5e-4 Torr) Relative: -1060...+340 mbar (-795...+255 Torr), dep. on ambient pressure
Overload	4 bar abs.
Accuracy	Absolute: 1200 - 10 mbar: 0.3 % f. s. 10 - 1e-2 mbar: 10 % f. r. Relative: 0.25 % f. spane
Repeatability	1200 - 10 mbar: 0.1 % f. s., 10 - 1e-2 mbar: 5 % f. r.
Materials with Vac. Contact	Stainl. steel 1.4307, platinum/rhodium, 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 kΩ, measuring range 2.2 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, 49 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 (VCL53), DN 16 CF-F (VCL54)
Protection Class	Up to IP54 (SubD with XB15SL05 adaptor)
Weight	Approx. 195 g (VCL53D)

VCL - Smartline Vacuum Transducer Piezo / Pirani

Absolute Pressure 1200 to 5 x 10^{-4} mbar

Relative Pressure   -1060... +340 mbar

Dimensions in mm

VCL53   VCL54

99

109

∅30   ∅34

48

69

Model designations

- VCL53D   DN16 ISO-KF, 0-10 V and RS485
- VCL54D   DN16 CF-F, 0-10 V and RS485

- VCL53DL   DN16 ISO-KF, 0-10 V and RS485, with LCD display
- VCL54DL   DN16 CF-F, 0-10 V and RS485, with LCD display

- VCL53E   DN16 ISO-KF, EtherCAT and RS485
- VCL54E   DN16 CF-F, EtherCAT and RS485

- VCL53PN   DN16 ISO-KF, Profinet and RS485
- VCL54PN   DN16 CF-F, Profinet and RS485

Accessories

- Replacement sensor heads: B_VCL53, B_VCL54
- 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.