

# THYRACONT

*V a c u u m   I n s t r u m e n t s*



**INTELLIGENT VACUUM MEASUREMENT  
SINCE 1970**

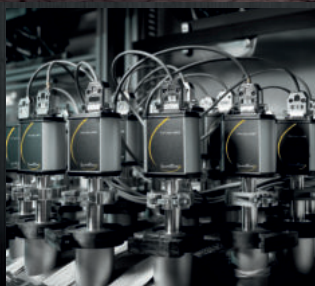
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**[www.thyracont-vacuum.com](http://www.thyracont-vacuum.com)**

# Intelligent Vacuum Measurement Since 1970

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Thyracont has been manufacturing vacuum metrology in Germany since 1970, giving quality and reliability the utmost importance through all departments.



# Joy in Innovation Since 1970

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## **Products**

Our product portfolio includes vacuum sensors, vacuum transducers, vacuum meters, vacuum switches and controllers as well as accessories and vacuum components. Depending on your scope of tasks, we can offer a wide range of measuring principles in various combinations: piezo, Pirani, capacitive, cold cathode and hot cathode.

## **Applications**

Vacuum allows a great variety of manufacturing processes. The same large field of applications is served by our products. Included applications are for example process industry, coating, analytics, and R & D as well as semiconductor and solar.

## **Made in Germany since 1970**

We have been developing and manufacturing vacuum metrology in Germany for more than 50 years, basing our work on reliability and high-quality products.

## **For decades we have set the standards**

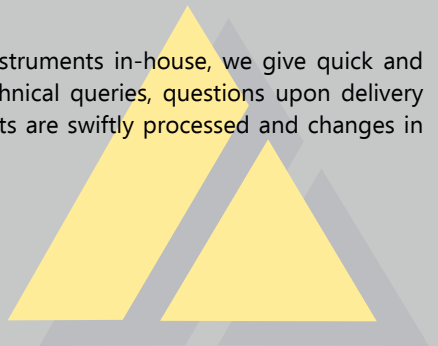
Being curious, always questioning previous approaches, and rethinking our ways - joy in innovation and change has been our main driving force for new developments from the very beginning on. In our teams, creative ideas are always welcome and quickly put into practice thanks to flat hierarchies. By that, our products have continuously been setting new standards, resulting in a series of patents.

## **We measure nothing, accurately.**

Precision is found throughout our company: in our instruments, our production processes, our quality control, and our order processing. We focus on accuracy and continuous development across all company functions.

## **Expertise and responsiveness**

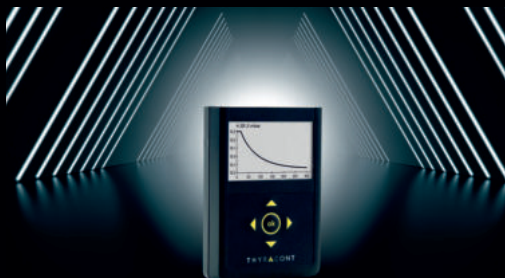
Manufacturing all our measuring and control instruments in-house, we give quick and accurate straight forward responses to your technical queries, questions upon delivery dates, or price quotations. All customers' requests are swiftly processed and changes in requirements are handled flexibly.



# Product Overview

## Vacuum Gauges

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### VD800 Series

Compact vacuum meters  
with large data logger

2000 -  $5\text{e-}5$  mbar



### USB-C Transducers

Vacuum transducers  
with USB-C interface

2000-  $5\text{e-}5$  mbar



### Smartline™

Intelligent vacuum  
transducers with digital  
interfaces

1200 -  $5\text{e-}10$  mbar

# Product Overview

## Vacuum Gauges

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<b>VD800</b>	To read-out external USB transducers	
<b>VD810</b>	Piezo	2000 - 1 mbar
<b>VD850</b>	Piezo/Pirani	1200 - 5e-5 mbar

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<b>VSCUSB</b>	Piezo	2000 - 1 mbar
<b>VSRUSB</b>	Piezo/Pirani	2000 - 5e-5 mbar

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<b>VSR</b>	Piezo/Pirani	1200 - 1e-4 mbar
<b>VCR</b>	Piezo/Pirani	1200 - 5e-4 mbar
<b>VSL</b>	Piezo/Pirani	1200 - 1e-4 mbar
<b>VCL</b>	Piezo/Pirani	1200 - 5e-4 mbar
<b>VSP</b>	Pirani	1000 - 1e-4 mbar
<b>VCP</b>	Pirani (corrosion resistant)	1000 - 5e-4 mbar
<b>VSM</b>	Pirani/cold cathode	1000 - 5e-9 mbar
<b>VSH</b>	Pirani/hot cathode	1000 - 5e-10 mbar
<b>VD12/14</b>	Controller (2/4 channels)	



# Product Overview

## Vacuum Gauges

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### Analogline

Analog vacuum transducers with compact dimensions

2000- 5e-5 mbar



### Robust Vacuum Switches

1200 - 1e-3 mbar



### PVC Ion Gauge and Vacuum System Controller

For passive UHV hot cathode ion gauges

# Product Overview

## Vacuum Gauges

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VSC	Piezo	1400 - 1 mbar
VCC	Capacitive	200 - 0.1 mbar
VSP	Pirani	1000 - 1e-4 mbar
SP3	Pirani	1000 - 1e-4 mbar
VCP	Pirani (corrosion resistant)	1000 - 5e-4 mbar
VSP passive	Pirani	1000...100 - 1e-3 mbar
VSR	Piezo/Pirani	2000 - 5e-5 mbar
VD6	Controller (1 channel)	
VD12	Controller (2 channels)	

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**VRP (Pirani, 20 - 1e-3 mbar)**  
**VRC (Piezo, 1400 - 1 mbar)**

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**PVC uni**                      Controller for 1 UHV hot cathode ion gauge  
**PVC duo**                     Controller for 2 UHV hot cathode ion gauges

# Product Overview

## Software, Components, Services

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**Software &  
Accessories**



**Vacuum  
Components**



**Calibration &  
Services**



# **Product Overview**

## **Software, Components, Services**

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### **Software**

**Accessory sets**

**Connection adapters**

**Replacement sensors**

**IP54 mating plugs**

**Bluetooth® adapter**

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### **Sealing elements**

**Pipe components, spiral tubes**

**Filters and protective covers**

**Connection elements**

**Adapters and reduction pieces**

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### **Calibration**

**Maintenance and service**

**Switching point adjustment**

**Output-characteristics configuration**

**Warranty**

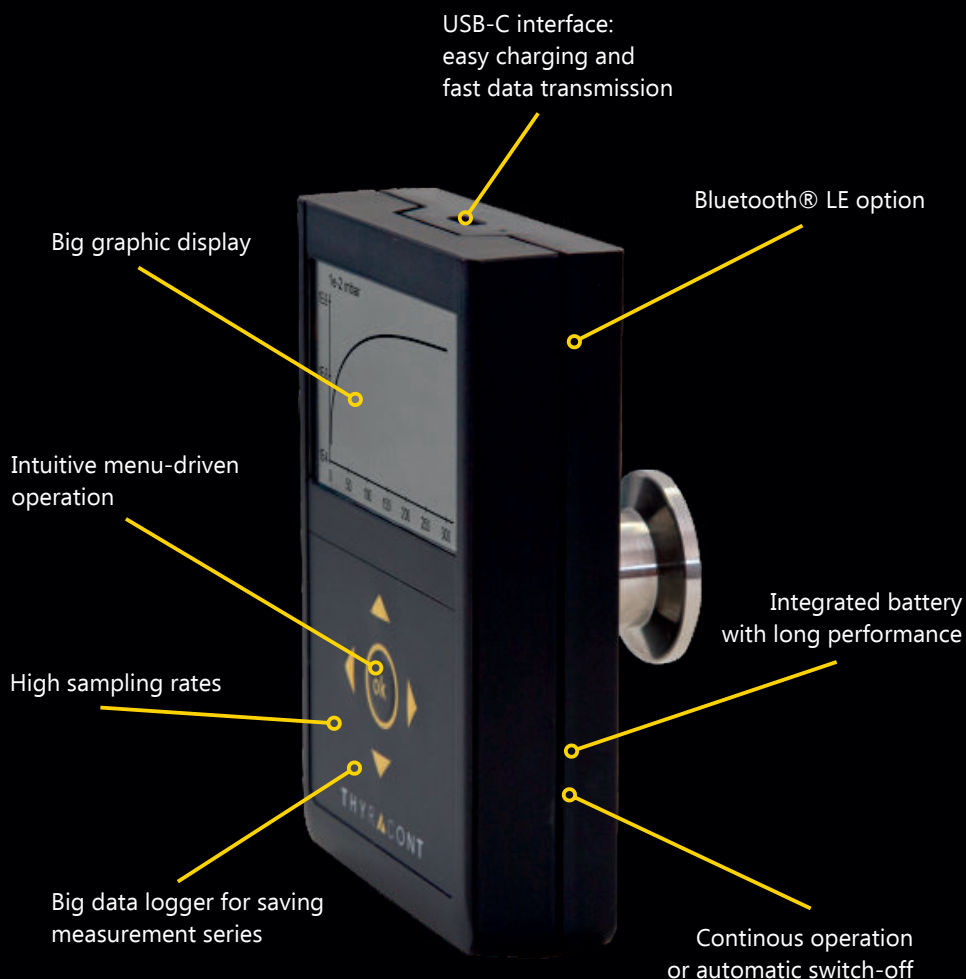
**Online shop**

**Consultation and application service**

# VD800-Series

## 2000 to 5e-5 mbar

The compact vacuum meters of our VD800 series measure absolute pressure in the range of 2000 to 5e-5 mbar and relative pressure in the range of -1060 to +1200 mbar. USB-C interface, data logger, and a big graphic display offer maximum flexibility for service tasks, quality control, and maintenance works.



# Compact Vacuum Meters with big Graphic Display

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Clean design, intuitive menu navigation, large data logger and precise measurement results – the VD800 series is on the road to the future, consistently concentrating on the users' needs.

## Versatile vacuum meters

The devices can be used as portable instruments or for permanent vacuum installations. They can easily be connected to vacuum pumps or systems, to external sensors or be placed directly into the vacuum chamber.

## Big graphic display

The integrated display and a 4+1 membrane keypad allow an intuitive menu navigation. Measured values and pressure graphs can directly be read out on-site.

## USB-C / Bluetooth® LE

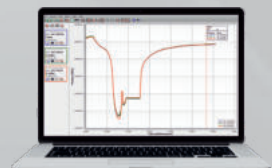
The USB-C interface – or optional Bluetooth® LE for wireless data transfer – allows a direct read-out of the measured data and the export of measurement series stored in the data logger.

## Rate of rise measurement

Our VD800 are perfectly suited for the long-term control of the increase in pressure to secure the tightness of vacuum chambers and vacuum systems.

## VacuGraph™ software

The VacuGraph™ software can be used to read out the data logger, and to easily visualize and analyze the measured data. This is especially beneficial in applications where data must be documented e.g., by saving and comparing pump-down characteristics for audits and quality assurance.



# USB-C Transducers

## 2000 to 5e-5 mbar

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The USB-C transducers offer maximum flexibility and precision. Via their USB-C interface the transducers are particularly quick and easy to integrate into systems.



# USB-C Vacuum Transducers with Compact Dimensions

The USB-C transducers measure in a range of 2000 to  $5 \times 10^{-5}$  mbar. Their compact construction is ideally suited for industrial applications with reduced space.

## Extended measuring range

Owing to their extended measuring range, the USB-C transducers are suited for a variety of applications. Their excellent reproducibility and reliability ensure stable production processes.

## Robust and reliable

Their robust metal housing and IP40 protection class electrical connectors make them the perfect choice for rough industrial environments.

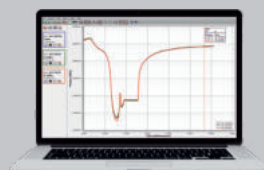
## USB-C interface

The measured data can be read-out quickly and easily via the transducers' USB-C interface. A precise, digital adjustment to zero pressure or atmosphere pressure is also possible. The transducer automatically recognizes which adjustment point is relevant.

## Intuitive handling via software or app

The VacuGraph™ software permits an easy visualization and analysis of the measured data. Measurement curves can be compared or saved for quality management.

The Android app VacuSniff™ complements the software.

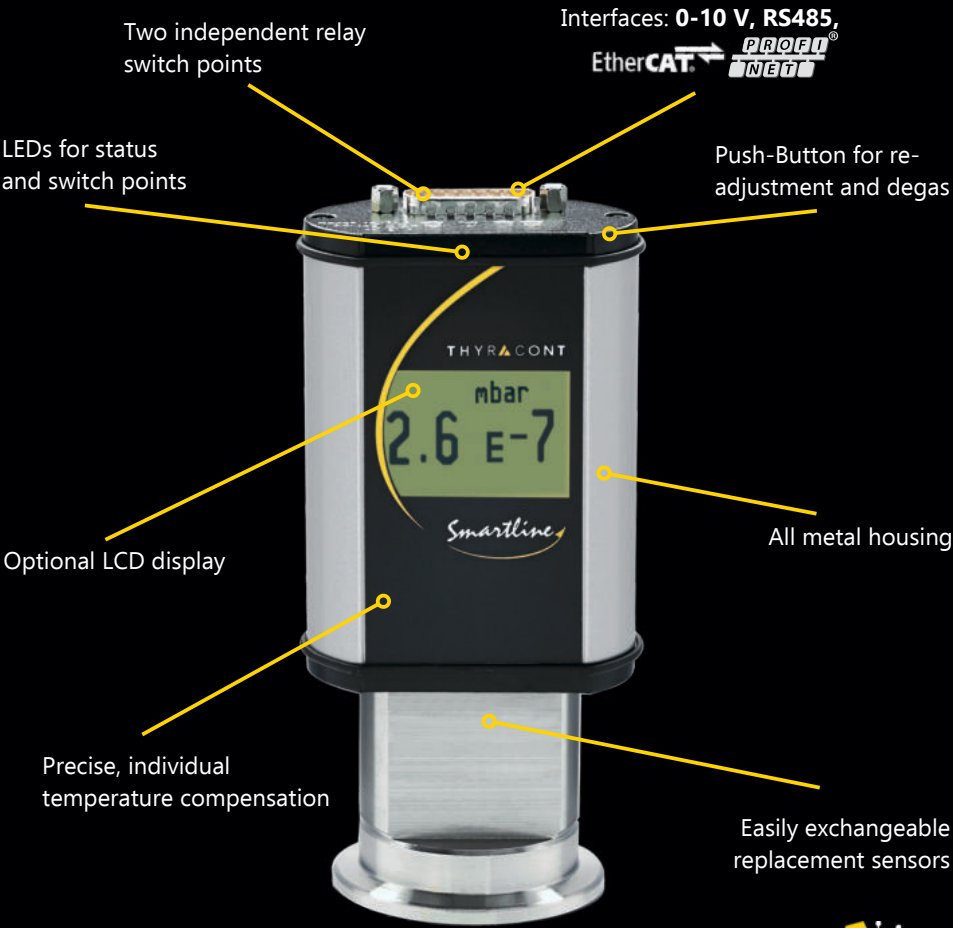


# Smartline™

## 1200 to 5e-10 mbar



The digital transducers of our Smartline™ series measure from 1200 to 5e-10 mbar. With their modern combination sensors these transducers are able to cover different pressure areas such as fine and high vacuum with high precision.





# Intelligent Vacuum Transducers with Digital Interfaces

The digital transducers of the Smartline™ family are characterized by their particularly efficient micro controllers.

## Durable sensors

The Pirani with increased measuring range in our combination gauges controls the ionization sensors in such a way that they are only switched on at a very low pressure. This protects the sensor technology and allows for a long service life of the gauges. Switch and transition ranges between the sensors can be configured individually.

## 3-in-1 for loadlocks

The vacuum transducer VSL measures absolute as well as relative pressure. The metal sealed gauge head uses multi-sensor technology combining two piezo sensors with a Pirani. Users profit from a reliable, space- and cost-saving solution. This gauge is designed in particular for the challenges involved in loadlock applications and is easy to integrate in the plant control system.

## Useful replacement sensors

Our plug-and-play solution with calibrated exchange sensors allows a quick and easy replacement of worn or contaminated sensor heads by the user. Time and costs for maintenance are thus reduced to a minimum.

## Robust and reliable

The Pirani and cold cathode transducers are also available with a particularly high over pressure stability of 16 bar. For the higher overpressure stability we offer a corresponding inspection certificate 3.1.

## VacuGraph™ and VacuSniff™

The VacuGraph™ software is the optimum tool to analyze, visualize and save your measurement data. For a comfortable gauge configuration a free lite version of the software is available. Furthermore, a free measurement app (VacuSniff™) allows the mobile monitoring of up to 16 Smartline™ vacuum transducers.

## Fit for industry 4.0

All our Profinet transducers can communicate with OPC UA servers. They support MRP and a bidirectional, lossless data transfer between all components from individual I/O Signals to the ERP level and even to the cloud. That provides an efficient way to manage downstream processes and to optimize maintenance cycles.

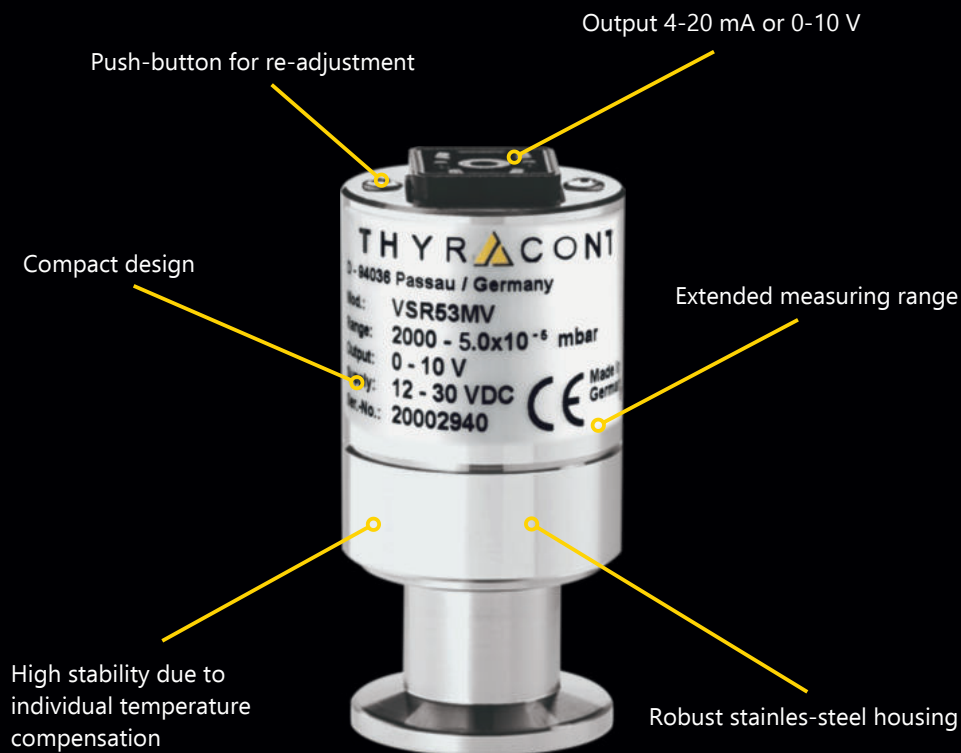


# Analogline

## 2000 to 5e-5 mbar

ANALOGLINE

The transducers of the Analogline measure in the range of 2000 to 5e-5 mbar. Individually temperature compensated and equipped with their microprocessor control, the transducers reach an outstanding accuracy and a high stability of measurements.



# Analog Vacuum Transducers with Compact Dimensions

Analogline transducers are ideally suited for applications where space is at a premium. At the same time, the compact transducers offer an excellent price-performance ratio.

## Extended measuring range

The combination sensor Piezo/Pirani covers a wide measuring range from 2000 to  $5 \times 10^{-5}$  mbar with a high accuracy over the entire measuring range. Its excellent reproducibility ensures maximum reliability and stable production processes.

## Robust and reliable

In addition to their robust metal housing, Analogline transducers are fitted with electrical connectors that offer IP54 protection class for 4-20 mA models or IP40 protection class on 0-10 VDC models. A service for the extra high overpressure stability of 16 bar abs. including a testing certificate 3.1 is available for our Piranis.

## Standard output signal

The linear respectively logarithmic output signal of the transducers (4-20 mA or 0-10 V) can easily be read out by a programmable logic controller (PLC). Controllers with one or two channels are available as well.

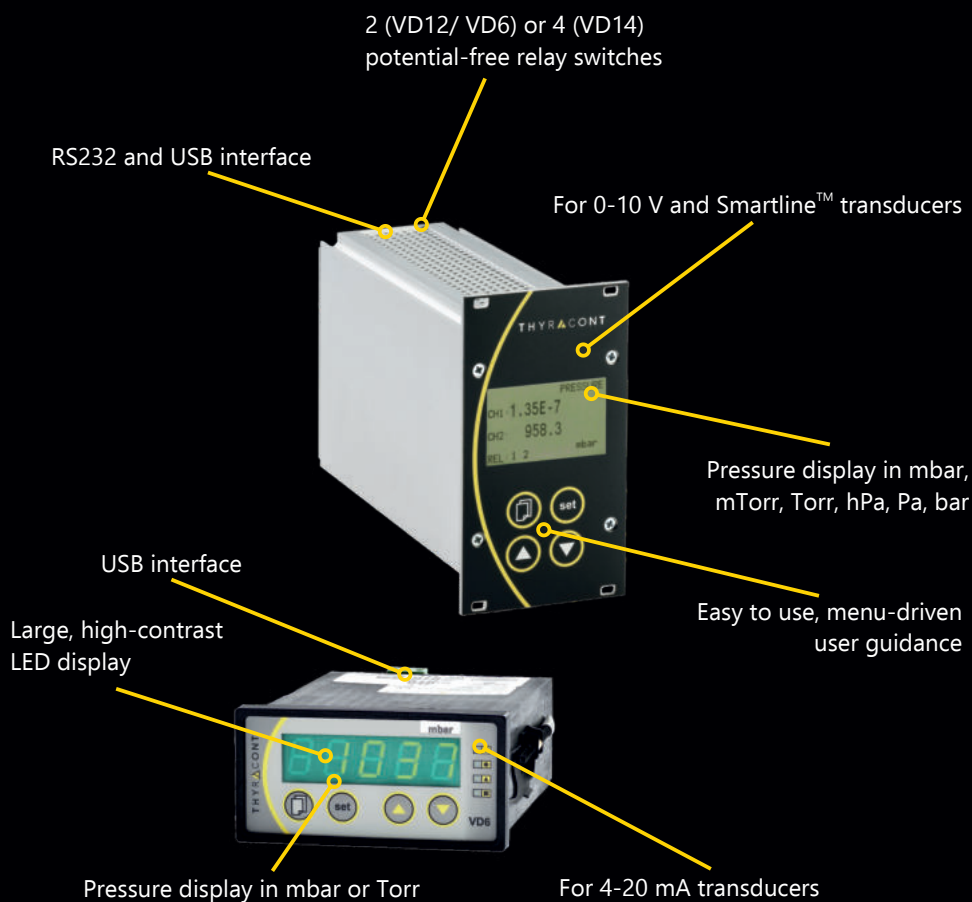
## Simple and smart re-adjustment

An exact digital re-adjustment to atmospheric pressure or zero pressure is possible via the push button „adj“(adjust). The transducer recognizes automatically which adjustment point is relevant.



# Controller

The practical controllers are compatible with the gauges of the product lines Analogline (controllers VD6, VD12) and Smartline™ (controllers VD12, VD14). They enable the comfortable control of up to four devices.



# Practical Vacuum Controllers with up to 4 Channels

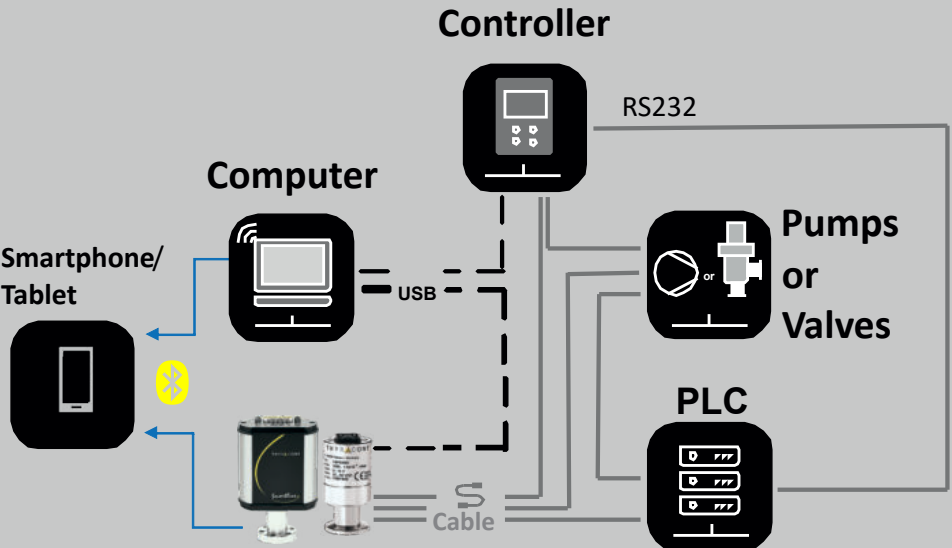
Analogline transducers can be combined with the vacuum controllers VD6 (1 channel, for 4-20 mA transducers) and VD12 (up to 2 channels, for 0-10 V transducers). The controllers come with further features and serial interfaces. For transducers of the Smartline™ series, controllers VD12 and VD14 are available.

## Automatic identification

The transducers are connected in chains to the 2 or 4 channel controllers. The controller identifies automatically which types of transducers are connected.

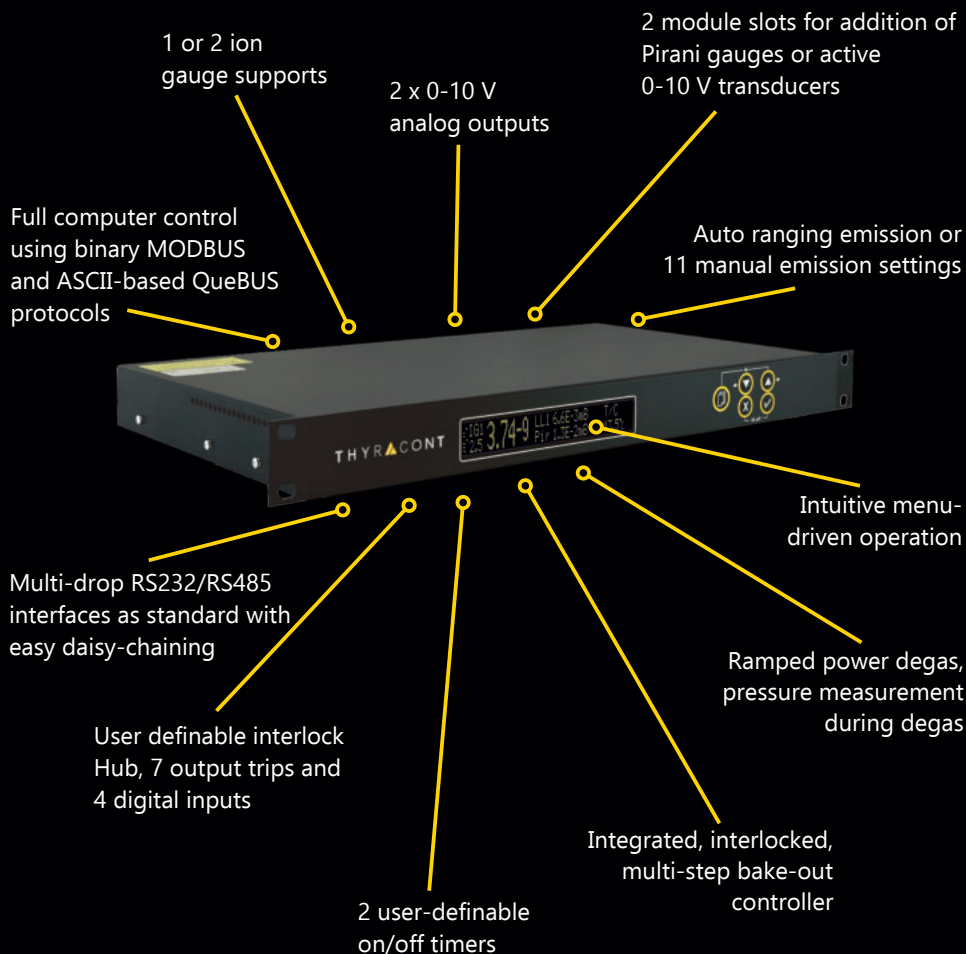
## VacuGraph™ software

The parameters of the controller as well as the parameters of the transducers (e.g., units, output characteristics, gas type correction factors, switch points, etc.) can easily be adjusted using the VacuGraph™ software (lite version available free of charge) or alternatively via software command.



# PVC Ion Gauge and Vacuum System Controller

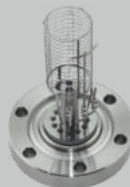
For passive UHV hot cathode ion gauges.





# PVC Ion Gauge and Vacuum System Controller

The PVC supports one or two hot cathode ion gauges for pressure control in UHV systems and processes. Suitable gauges B\_IG19BA are available with dual Yttria coated Iridium filaments covering a range of  $1\text{e-}2 \dots 3\text{e-}11$  mbar. Emission currents can be set to fixed values or controlled and optimized automatically.



## Beam flux monitoring

Measurements can be displayed in pressure units or alternatively as direct, emission-corrected ion current for beam flux monitoring.



## Support of additional gauges

Two slots allow users to install plug-in modules for the operation of additional secondary gauges. Modules E and F support passive Pirani sensors VSP521 or VSP841, module W can be configured to support a great variety of active 0-10 V vacuum transducers.

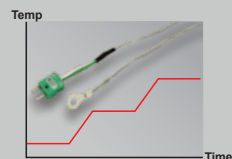
## Bake-out control

The PVC supports input from a type K thermocouple (B\_TCK28). Any combination of interlock hub trips as well as pressure or digital inputs can be assigned for power switching to implement a vacuum system bake-out control. Up to 6 ramp/soak steps and an auto-degas of the ion gauge at the end of the bake-out can be programmed.



## Accessories

B_IG19BA	Ion gauge sensor (passive)
B_IG19FIL	Spare filament
B_TCK28	Thermocouple type K, 2m bakeable + 8m extension
VSP521	Passive Pirani sensor
VSP841	Passive vacuum sensor
WIG19010	BA sensor cable 10 m
WVSP5003	VSP521 sensor cable 3m
WVSP8003	VSP841 sensor cable 3m



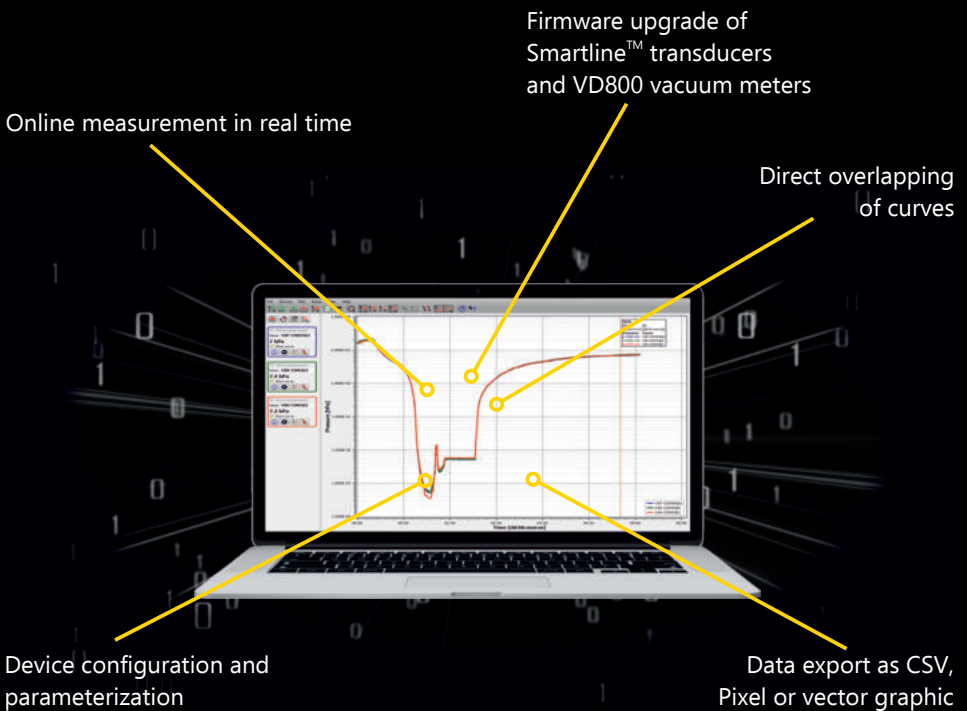
# Software

## VacuGraph™

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The VacuGraph™ software is the optimum tool to analyze, visualize and save your measurement data. For a comfortable gauge configuration a free Lite-Version of the software is available.

The additional Android-App VacuSniff™ supports the visualization of the measured values on smartphones and tablets.



# Vacuum Switches

## 1200 to 1e-3 mbar

The product series vacuum switches includes the VRC (Piezo) with a chemically resistant ceramic sensor as well as the VRP (Pirani) with a durable Pirani filament. Both switches feature high reliability and excellent reproducibility.

Potential-free relay switch point  
(switch-over relay)

Exact switch point adjustment  
by potentiometer



Standard vacuum connection

Robust metal housing  
with IP54 protection class

# Vacuum Components

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We offer a wide range of vacuum components to enable the immediate use of our products for our customers.

Special centering rings with integrated wire filter or baffles as well as spiral tubes protect your sensor against contamination.



# Adapters, Baffles, Components

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## Connection and sealing elements

To enable a quick and easy installation of your gauge, you can find clamps and centering rings in our product range.



## Adapters and reduction pieces

For the quick adjustment of vacuum connections, we offer corresponding reduction pieces in addition to the diverse flange variations of our transducers. The adaption of small flanges to diverse thread and hose connections is also possible.



## Components against deposition

In rough and fine vacuum, different components help to capture deposits, which can be caused for example by oil lubricated vacuum pumps. Angle pieces and spiral tubes have proved successful as vapors condense on their cool metal surface with protective effects on the vacuum sensors.

## Components against contamination and coating

We developed special metal baffles, constructed to prevent a possible coating of the sensor to a large extent by keeping particles and oil molecules from penetrating the vacuum sensor. Additionally, seal rings with a fine wire filter can be used in fine and high vacuum to protect the vacuum sensor against dirt, dust, and condensate.



# Calibration & Service

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We produce our entire range of measuring and control instruments in-house. You will therefore receive straight forward responses to all technical queries as well as questions concerning offers and delivery times. A wide range of services and our experience as a specialist for vacuum metrology make us your partner of choice for vacuum solutions.





# Expertise and Responsiveness

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## **Professional calibration**

Each sensor is provided with an individual temperature compensation that is applied using a specially developed 4-point calibration method. These calibrations are traceable to national DAkkS standards for maximum measuring precision. Depending on the application, we suggest having your gauges calibrated in annual intervals.

## **Preventive service, maintenance, and repair**

To avoid cost-intensive failures, our technical experts offer a large scale of consulting services. We gladly assist you regarding questions on how to optimally protect the devices in difficult applications. If a device shows any malfunction, we do not only offer a professional repair service but can also provide you with exchange products for a quick replacement.

## **Warranty**

We have always offered a warranty above legal standards. Whilst competitors usually offer a 12 months warranty, our warranty period on new products has always been 24 months.

## **Online shop**

You can easily view data sheets, drawings and prices of every single product in our online shop. The shop also gives you the opportunity to request offers or directly place an order.

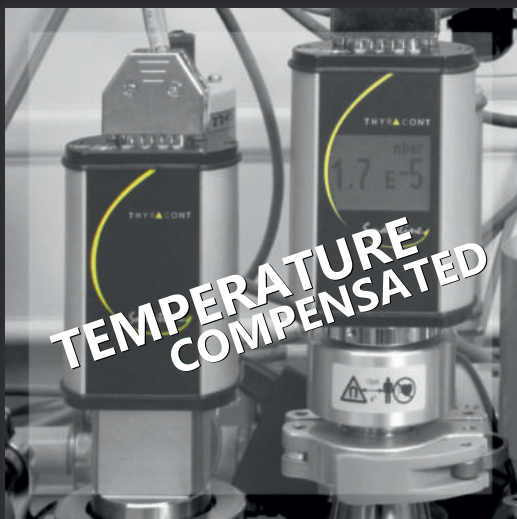
## **On site for you**

It is especially important for us to always maintain the personal contact with our customers. You can regularly meet us at exhibitions or conventions. Furthermore, our responsible sales representatives are gladly at your disposal for an online meeting or personal consultation.

Contact us:

Phone: +49 851 95986 0

E-mail: [direct@thyracont-vacuum.com](mailto:direct@thyracont-vacuum.com)



**TEMPERATURE  
COMPENSATED**



**MADE IN  
GERMANY**



**WARRANTY  
24 MONTHS**

### Expertise & Responsiveness

We have manufactured vacuum metrology and controllers since 1970. Satisfied customers are the utmost concern of our experienced and highly qualified staff. A wide range of services as well as our extensive knowledge of vacuum technology and its applications make us your partner of choice for vacuum solutions.



**A LARGE  
SCALE OF  
CONSULTING  
SERVICES**



**ON SITE  
FOR YOU**

## Notes

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## Notes

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