

# 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

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



# Expertise and Responsiveness Since 1970

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## Products

Our product portfolio includes vacuum sensors, vacuum transducers, vacuum meters, vacuum switches, 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 e.g.: 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 vacuum products. Included applications are for example process industry, coating, analytics and R&D as well as semiconductor and solar.

## Made in Germany since 1970

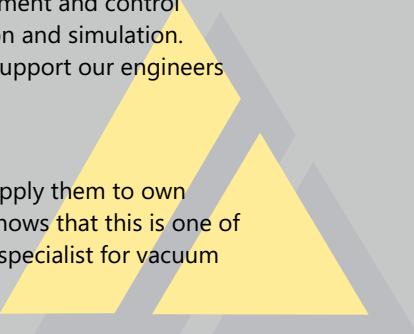
As an experienced specialist for vacuum, measurement and control technology, we use the latest tools for construction and simulation. Purpose-built testing and calibration equipment support our engineers when developing our path-breaking products.

## Setting standards for decades

To bring forward innovative ideas in a team and apply them to own products - The number of patented innovations shows that this is one of our main strengths. Decade-long experience as a specialist for vacuum metrology helps us in this regard.

## Expertise and Responsiveness

We are already involved today in your technological needs of tomorrow. Our ambition to fulfil even the most demanding requirements of complex applications helps our customers to reach their goals. We do not only stand for quality in terms of our gauges, precision is also essential for us within the entire manufacturing process, our quality management and our customer service.



# Product Overview

## Vacuum Gauges

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### VD8

Compact vacuum meters  
with data logger

1600 - 5e-4 mbar



### Smartline™

Intelligent vacuum  
transducers with digital  
interfaces

1200 - 5e-10 mbar



### Analogline

Analog vacuum transducers  
with compact dimensions

2000 - 5e-5 mbar



### PVC Ion Gauge and Vacuum System Controller

for passive UHV hot cathode  
ion gauges

# Product Overview

## Vacuum Gauges

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<b>VD81</b>	Piezo	1600 - 1 mbar
<b>VD83</b>	Pirani	100 - 5e-4 mbar
<b>VD84</b>	Pirani (external)	100 - 1e-3 mbar
<b>VD85</b>	Piezo/Pirani	1200 - 5e-4 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	Abs.: 1200 - 1e-4 mbar
<b>VSP</b>	Pirani	1000 - 1e-4 mbar
<b>VCP</b>	Pirani (corrosion resistant)	1000 - 5e-4 mbar
<b>VSI</b>	Cold cathode	2e-3 - 5e-9 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)	1400 - 5e-10 mbar

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<b>VSC</b>	Piezo	1400 - 1 mbar
<b>VCC</b>	Capacitive	200 - 0,1 mbar
<b>VSP</b>	Pirani	1000 - 1e-4 mbar
<b>SP36</b>	Pirani	1000 - 1e-4 mbar
<b>VCP</b>	Pirani (corrosion resistant)	1000 - 5e-4 mbar
<b>VSP passive</b>	Pirani	1000... 100 - 1e-3 mbar
<b>VSR</b>	Piezo/Pirani	2000 - 5e-5 mbar
<b>VD6</b>	Controller (1 channel)	1400 - 1e-4 mbar
<b>VD12</b>	Controller (2 channels)	1400 - 5e-10 mbar

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<b>PVC uni</b>	Controller for 1x Hot Cathode Ion Gauge
<b>PVC duo</b>	Controller for 2x Hot Cathode Ion Gauge

# Product Overview

## Switches, components & more

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**Software &  
Accessories**



**Robust vacuum  
switches**

1200 - 1e-3 mbar



**Vacuum  
components**

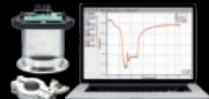


**Calibration &  
Services**

# Product Overview

## Switches, components & more

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**Software**

**Accessory sets**

**Connection adapters**

**Replacement sensor**

**IP54 mating plugs**

**Bluetooth adapter**

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**VRP Pirani, 20 - 1e-3 mbar**

**VRC Piezo, 1200 - 5 mbar**

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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**

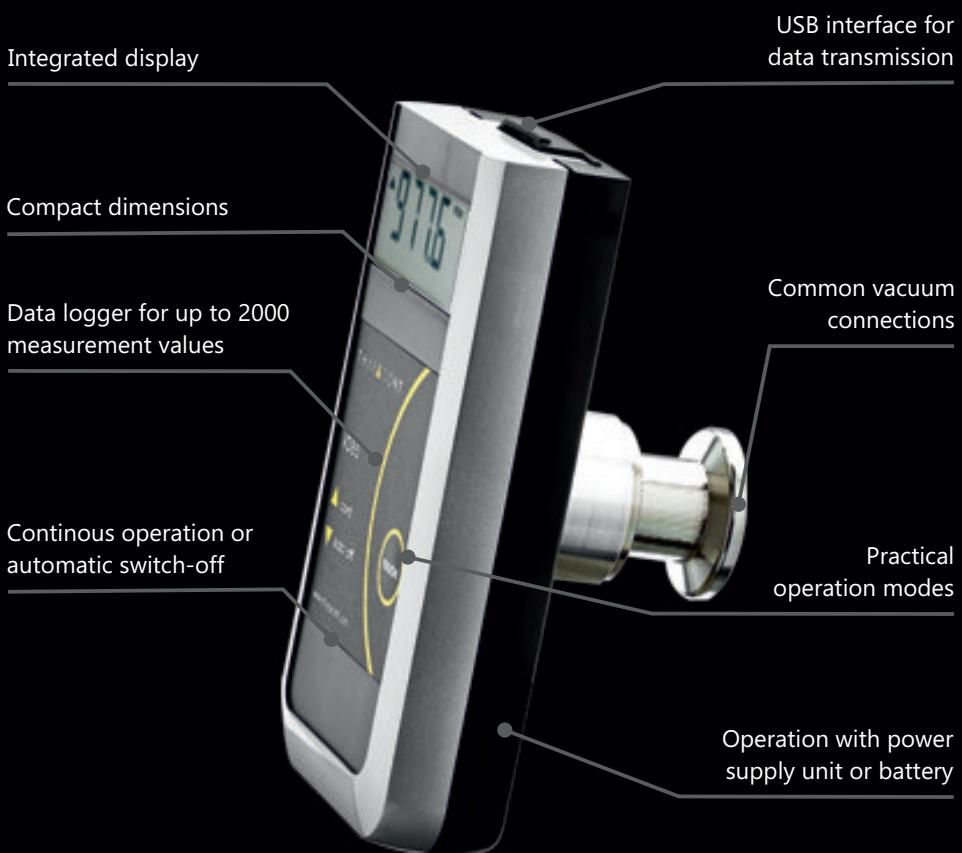
**Consultation and application service**

# VD8

## 1600 to 5e-4 mbar

The compact vacuum meters of our VD8 series measure absolute pressure in the range of 1600 to 5e-4 mbar.

Advanced electronics guarantee precise and reproducible measuring results.



# Compact vacuum meters with data logger

## An all-purpose gauge

The VD8 compact vacuum meter can be used as a portable instrument or for permanent installation in vacuum facilities. They can easily be connected to vacuum pumps or vacuum systems or be directly put in the vacuum chamber.



## Comfortable recording of measurements

All VD8 compact vacuum meters feature an integrated data logger and save the pressure values independent of a PC throughout the measurement.

## Maximum flexibility

Gauge type VD84 has an external Pirani sensor on a spiral cable. It is ideally suited for installation of the sensor in a position which is difficult to reach or to check the pressure at multiple measuring points. The external sensor stays permanently mounted at the respective facility.



## Determining of leakage rates

VD8 are ideally suited to examine the tightness of vacuum chambers and vacuum systems via rate of rise measurement.



## VacuGraph™ Software

VacuGraph vacuum software for Windows, Linux and MacOS enables an easy visualization and analysis of data. This is especially beneficial in applications where values must be documented e.g. by saving and comparing process characteristics for audits and quality assurance. Practical features like the tool to calculate the leakage rate complete the software.

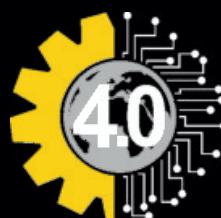


# Smartline™

## 1200 to 5e-10 mbar

Smartline

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



# Intelligent vacuum transducers with digital interfaces

## Durable sensors

The Pirani with increased measuring range in the Thycracont combination gauges controls the ionization sensors in such a way that they are only switched on at a very low pressure. This conserves the sensor technology and allows a long lifetime of the gauges. Alternatively, switch and transition ranges between the vacuum sensors are individually configurable.



## Robust and reliable

The Pirani and cold cathode transducers are also available with a particularly high over pressure stability of 16 bar. As a service for the higher overpressure stability, we offer a corresponding inspection certificate 3.1 inclusive of a test report.

## 3-in-1 for loadlocks

The vacuum transducer VSL measures absolute pressure in the range of 1200...1e-4 mbar as well as relative pressure in relation to the environment in the range of -1060...+340 mbar (depending on ambient pressure). The metal sealed gauge head uses multi sensor technology combining two piezo sensors with a Pirani. Users thus profit from a reliable, space- and cost-saving solution. This gauge is designed in particular for the challenges involved in load lock applications and easy to integrate in the plant control system.



## VacuGraph™ and VacuSniff™

The VacuGraph software for Windows, Linux and MacOS is the optimum tool to analyze, visualize and save your measurement data. For a comfortable gauge configuration there is even a free lite version of the software available. In combination with the Bluetooth adapter (SLKBT) the VacuGraph software can even be used on mobile devices (Android). Furthermore, a free measurement app (VacuSniff) is available in the Playstore and allows for the mobile monitoring of up to 16 Smartline vacuum transducers.

## Useful replacement sensors

Thanks to our plug-and-play solution with calibrated exchange sensors, a quick and easy replacement of worn or contaminated sensor heads can be made simply by the user. Time and cost for maintenance are thus reduced to a minimum.



## Fit for industry 4.0

All our Profinet transducers are capable of communicating with OPC UA servers. They support 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 or optimize maintenance cycles.

# Analogline

## 2000 to 5e-5 mbar

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

## Compact and economical

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.



## 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 plant control system (PLC). Controllers with 1 or 2 channels are available as well.

## Extended measuring range

The combination sensor Piezo/Pirani covers a wide measuring range from 2000 to  $5,0 \times 10^{-5}$  mbar with a high accuracy over the entire measuring range. Due to the excellent reproducibility and reliability are stable production processes standard.



## Simple and smart re-adjustment

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.

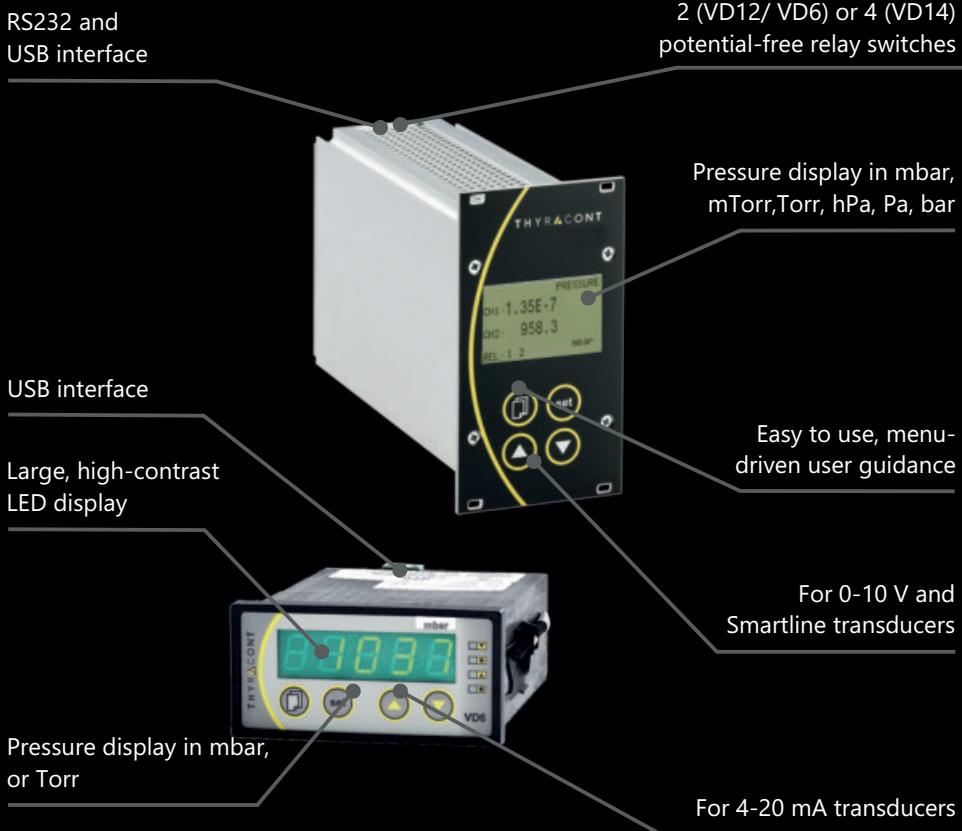
## Robust and reliable

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 extra high overpressure stability of 16 bar abs. including a testing certificate 3.1 is available for our Piranis.



# 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 4 devices.



# Practical vacuum controllers with up to 4 channels

## Controller

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, the VD12 and VD14 are available.

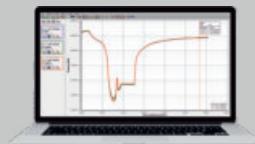


## Automatic identification

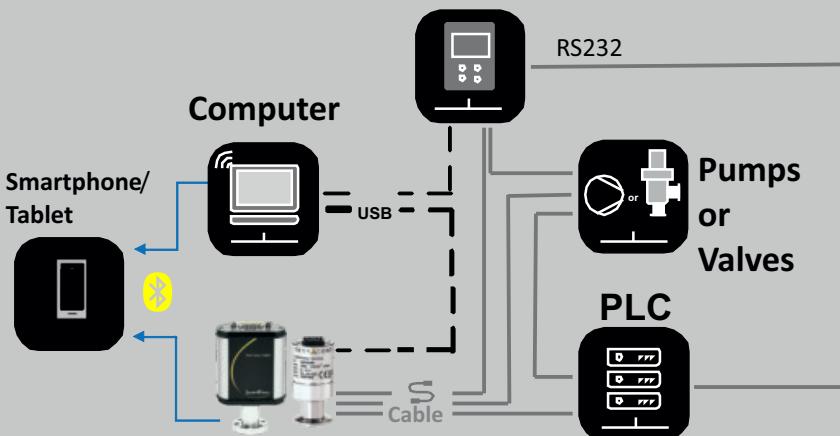
The transducers are connected in chains to the 2 or 4 channel controllers. The controller identifies automatically which types of transducers are connected.

## 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 be easily adjusted using VacuGraph software (lite version available free of charge) or alternatively via software command.

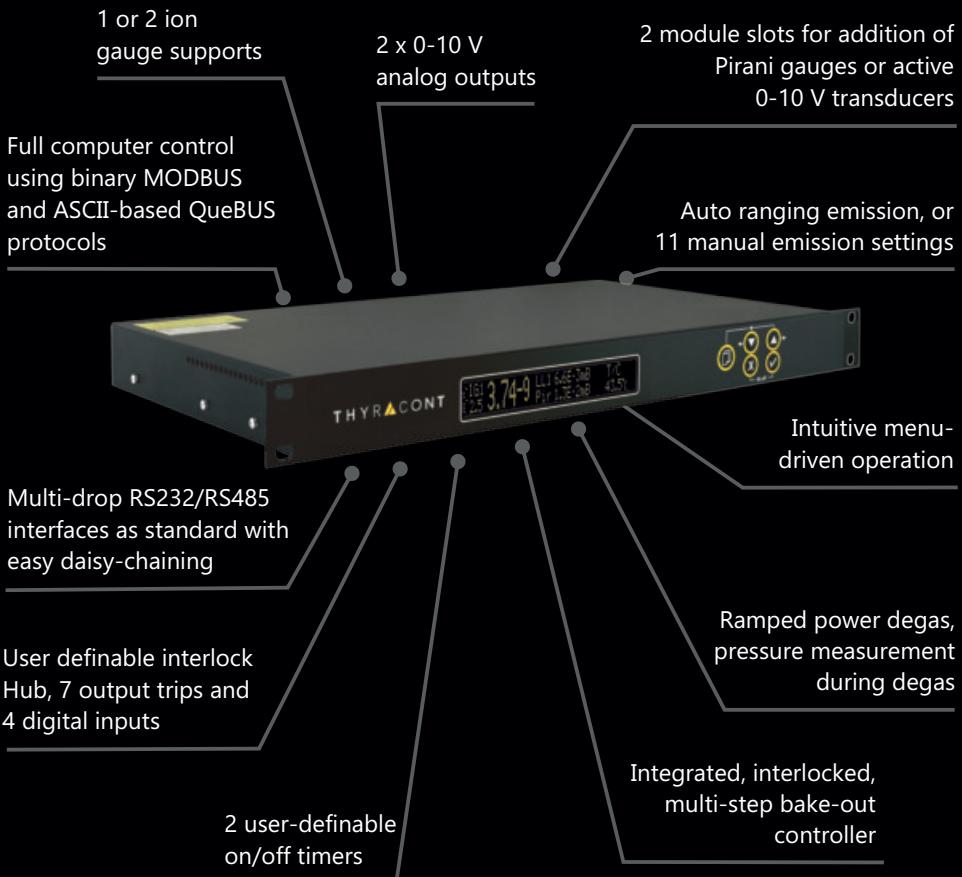


## Controller



# PVC Ion Gauge and Vacuum System Controller

for passive UHV hot cathode ion gauges



# PVC Ion Gauge and Vacuum System Controller

## 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  $1 \times 10^{-2} \dots 3 \times 10^{-11}$  mbar. Emission currents can be set to fixed values or controlled and optimized automatically.



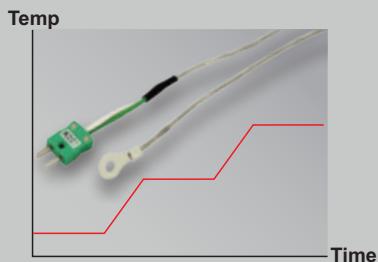
## Beam Flux Monitoring

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



## Support of Additional Gauges

2 slots allow users to install plug-in modules for operation of additional secondary gauges. Module E or 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

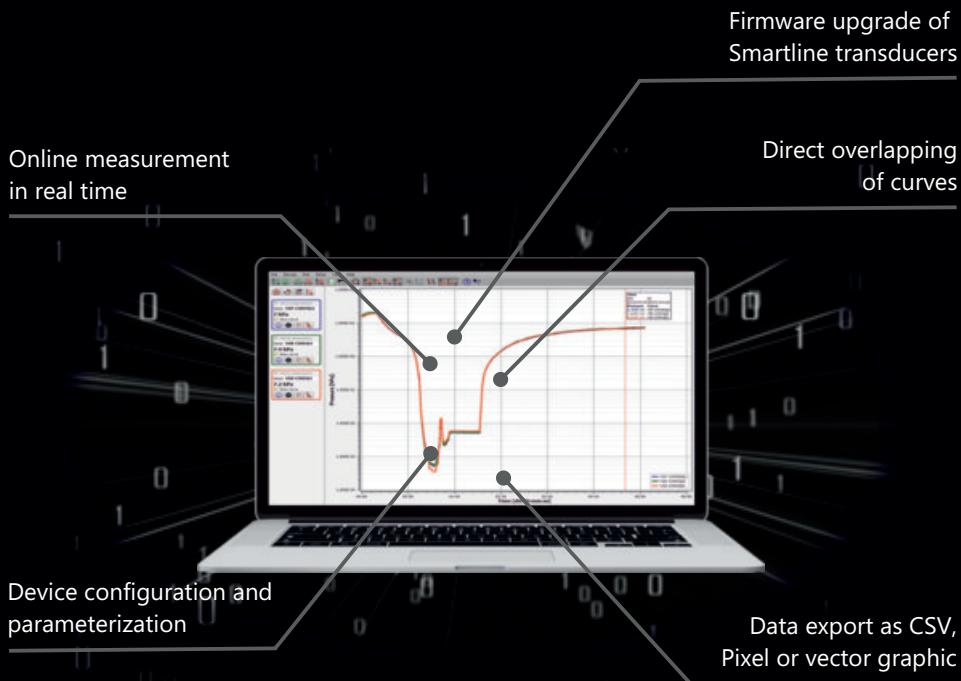
(B\_IG19BA, B\_IG19FIL, B\_TCK28, VSP521, VSP841, WIG19010, WVSP5003, WVSP8003)



# Software

## VacuGraph™ (VGR)

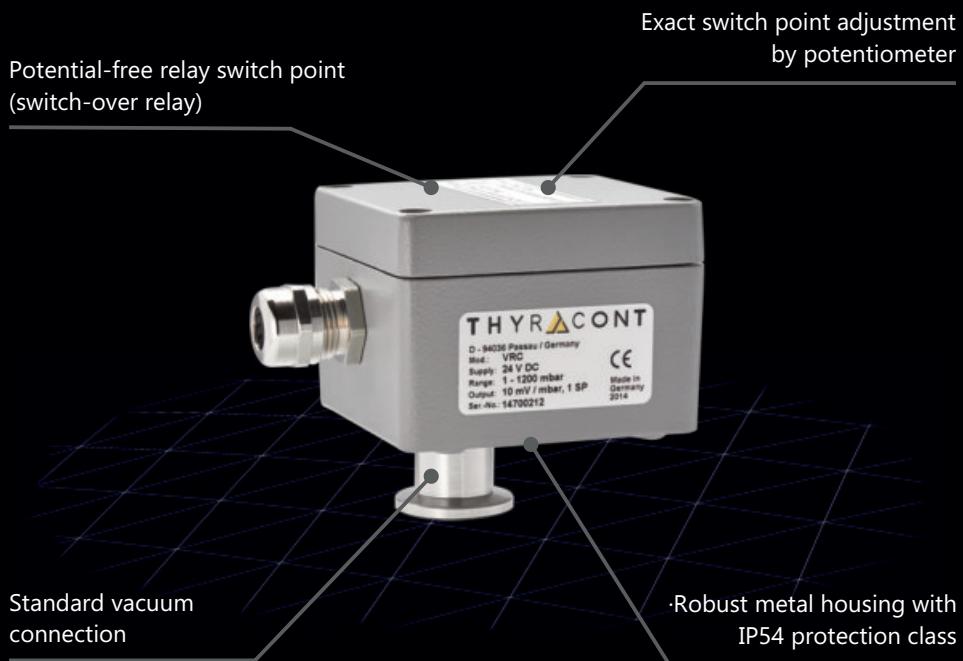
The VacuGraph software for Windows is the optimum tool to analyze, visualize and save your measurement data. For a comfortable gauge configuration there is even a free lite version of the software available.



# Vacuum switches

## 1200 to 1e-3 mbar

The product series Vacuum switches offers 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.



# 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, baffels, components

## Connection and sealing elements

In order to enable a quick and easy installation of your gauge, you can also find clamps and centering rings within our product range.



## Adapters and reduction pieces

For the quick adjustment of vacuum connections, we offer corresponding reduction pieces beside the diverse flange variations of our transducers. The adaption of small flange to diverse thread and hose connection is also easily 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 cooler metal surface with protective effect on the vacuum sensors.



## Components against contamination and coating

Thyracont developed special metal baffles, constructed to prevent possible coating of the sensor to a large extent. They keep particles and oil molecules from getting into the vacuum sensor. Also seal rings with a fine wire filter can be used in the 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 ourselves. You will therefore receive straight forward responses for technical queries. Also, questions concerning offers and delivery times will be answered in a quick and accurate manner. A wide range of services and our experience as a specialist for vacuum metrology make us your partner of choice for vacuum solutions.



TESTED &  
APPROVED

# Expertise and Responsiveness

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## **Professional calibration**

Each sensor is provided with 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 to have your gauges calibrated in annual intervals. A service contract with the duration of 5 years includes besides the yearly examination and works calibration also a reminder service.

## **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 malfunction, we do not only offer a professional repair service but can also provide you with exchange products for a quick replacement.

## **Warranty**

Thyracont has always offered a warranty above legal standards. Competitors usually offer 12 months - the warranty period you receive on new Thyracont products has always been 24 months.

## **Online-Shop**

Data sheets, drawings and prices of every single product can easily be seen in our online shop. There, you also have the possibility to request offers or directly place an order.

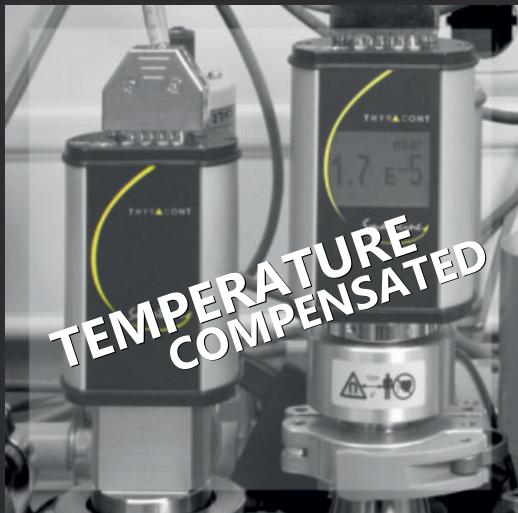
## **On site for you**

It is especially important for us to always maintain the personal contact to our customers. Therefore, 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)



## Expertise & Responsiveness

We have manufactured vacuum metrology and controllers since 1970. Satisfied customers are the utmost concern of our experienced, 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.



## Notes

## Notes

## Notes

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