VACUUM SOLUTIONS

Mobile Gauge

Vacuum Measurement Equipment
VACTEST TTP 900

Instruction Manual

SERVICE
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VACUUM APP

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Table of Contents

1 Safety

- Read and follow the instructions of this manual.
- Inform yourself regarding hazards, which can be caused by the product or arise in your system.
- Comply with all safety instructions and regulations for accident prevention.
- Check regularly that all safety requirements are being complied with.
- Take account of the ambient conditions when installing your gauge. The protection class is IP 40 (the unit is protected against penetration of foreign bodies).
- Adhere to the applicable regulations and take the necessary precautions for the process media used.
- Consider possible reactions between materials and process media.
- Consider possible reactions of the process media due to the heat generated by the product.
- Before you start working, find out whether any of the vacuum components are contaminated.
- Do not carry out any unauthorized conversions or modifications on the unit.
- Adhere to the relevant regulations and take the necessary precautions when handling contaminated parts.
- When returning the unit to us, please enclose a declaration of contamination.
- Communicate the safety instructions to other users.

This instruction manual highlights potential hazards where appropriate. Safety notes and warning messages are tagged with one of the keywords DANGER, WARNING, CAUTION, NOTICE and NOTE as follows:

DANGER

... indicates an imminent dangerous situation that will result in death or serious injuries if not prevented.

WARNING

... indicates a potentially dangerous situation that could result in death or serious injuries.

CAUTION

... indicates a potentially dangerous situation that could result in minor injuries.

NOTICE

... indicates a potentially dangerous situation that could result in damage to property.

NOTE

... indicates helpful tips and recommendations, as well as information for efficient and trouble-free operation.

2 VACTEST TTP 900

2.1 For Orientation

These operating instructions describe installation and operation of the VACTEST TTP 900.

The article number can be found on the product's type label. Technical modifications are reserved without prior notification.

2.2 Delivery Content

Included in the delivery consignment are:

- VACTEST TTP 900
- Protective cover
- 9 Volt block battery
- Instruction manual

Available Accessories:

- Windows Software VACTEST Explorer

2.3 Product Description

The VACTEST TTP 900 is measuring total gas pressure in the range 100 – $1x10^{-3}$ mbar.

The VACTEST TTP 900 is equipped with a Pirani sensor and temperature compensated. It can be mounted to suitable flanges. When using a suitable battery, the instrument can also be operated completely under vacuum. Pressure is displayed continuously over the whole measurement range.

Due to the integrated data logger functionality, it is possible to store up to 2000 measurements in the device. By means of the USB or Bluetooth interface you can transmit the stored measurement data to a PC or record measurements online on PC as well.

Measurement Principle

The VACTEST TTP 900 is operated with an external Pirani sensor, which uses the heat conduction of gases for measuring vacuum. In a bridge circuit the filament is heated to constant temperature, the necessary bridge voltage is a measure for total gas pressure.

Warm-up-time

Pressure is displayed immediately after the VACTEST TTP 900 is switched on. To take advantage of the maximum accuracy in fine vacuum range it can be appropriate to allow for stabilization time of 2 minutes, especially when extreme pressure changes have occurred.

Accuracy

The device is factory adjusted. Through contamination, ageing or extreme climatic conditions the need for readjustment may arise. Accuracy therefore may be reduced in the range below 10^{-2} mbar and above 20 mbar.

Dependency on gas type

Due to the Pirani sensor, measurements are depending on composition and type of the gas being measured. The device is adjusted for N2 and dry air. With He and CO deviations will be almost negligible below 0.5 mbar. For other gas types a correction factor can be entered which produces correct pressure readings below 0.5 mbar (see *Maintenance and Service* [➔ 23]).

2.4 Proper Use

NOTE

The device is not designed for use in a corrosive atmosphere!

Dust, oil or condensing vapours will affect sensor performance and may cause malfunctions!

Aggressive media such as halogenides, carbon or oxygen plasma can reduce the devices lifetime!

The TTP 900 serves exclusively to provide absolute pressure measurements in gaseous media in the range of 100 – 1 x 10^{-3} mbar. It may only be connected to components specifically provided for such purpose. Please respect the admissible overload.

2.5 Improper Use

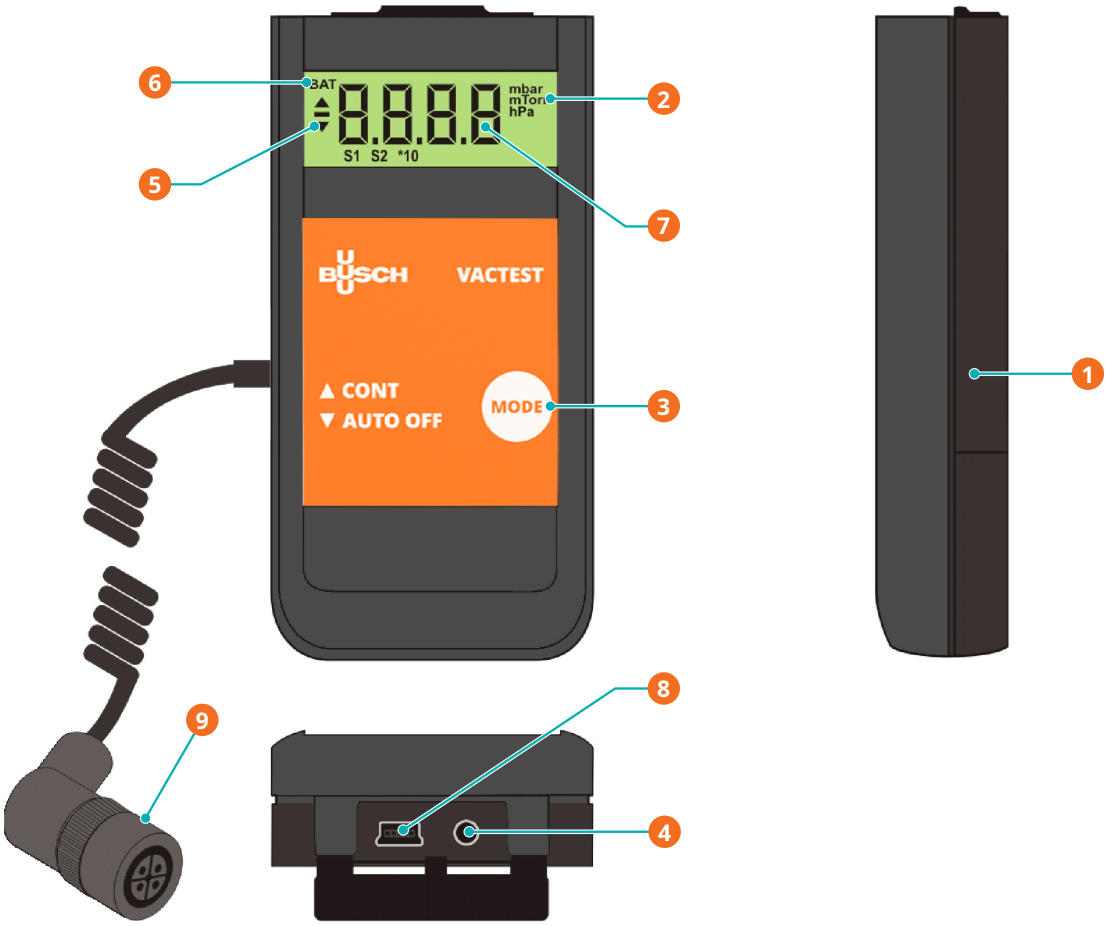
The use for purposes not mentioned above is regarded as improper, in particular:

- Connection to pumps or units which are not suitable for this purpose according to their operating instructions.
- Connection to components containing touchable, voltage carrying parts.

No liability or warranty will be accepted for claims arising from improper use.

The user bears the responsibility with respect to the used process media.

2.6 Overview



Description			
1	Battery Compartment Cover	2	Pressure Unit
3	Mode-Key	4	Mains Adapter Connection 12...15 VDC = 50 mA, Jack 2.5 mm (+ on top)
5	Operation Mode	6	Renew Battery Indication
7	Pressure Display Refresh: 1.0s 100 – 1.0-3 mbar "ur": < 1.0-3 mbar	8	USB Interface
9	Sensor Connector		

3 Installation

CAUTION

Unauthorized modifications.

Risk to injury!

- Modifications or conversions of the gauge are not allowed.

3.1 Notes for Installation

Installation location: Indoor

For not fully air conditioned open buildings and operation rooms:

Temperature: +5 °C ... +50 °C

Rel. humidity: 5 - 85% , non-condensing

Air Pressure: 860 - 1060 hPa (mbar)

3.2 Vacuum Connection

CAUTION

Unintended opening of clamp with an overpressure in the vacuum system over 1000 mbar.

Risk to injury!

Damage to your health!

- Parts may fly around.
- Unsecured hose connections can release process media.

CAUTION

Overpressure in the vacuum system over 1500 to 4000 mbar

Damage to your health!

The elastomer washers cannot withstand the pressure and can release process media.

- Use sealing rings with an outer centering ring.

NOTE

When mounting the VACTEST avoid forced twisting or violent opening. This can damage the device.

NOTICE

Dirt and damage at the vacuum flange and/or thread connection.

Impairs the function of the gauge!

- Make sure that the flange and/or thread connection is/are clean, dry and free of grease.
- When handling the instrument, make sure that the flange and/or thread connection is/are protected against dirt and damage.

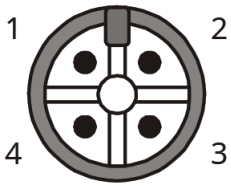
- Remove the protective cover (is required again during maintenance work!).
- Make vacuum connection via ISO KF small flange or thread connector.
- Make sure that the vacuum vessel and the sensor flange are electrically grounded. If using a tube connection, ground the sensor separately or power the device with a battery.
- Use metal clamps, that can be opened and closed with appropriate tools only (e.g. strap retainer-tension-ring).
- Use sealing rings with a centering ring.

The device may be mounted in any orientation. Mounting with the flange to the top, however, can lead to early contamination and malfunction. An upright orientation with flange to the bottom is to be preferred in order to keep particles and condensates out of the sensor cell. Further the device is adjusted in the upright position ex works.

3.3 Sensor Connection

The external Pirani sensor is connected to the connector of the spiral cable.

Connector Type: Type Binder Series 713, 4pin, female



Pin No.	Description
Pin 1	PTC (KTY110, 2kΩ/20°C)
Pin 2	PTC (KTY83-110, 1kΩ/20°C)
Pin 3	Filament
Pin 4	GND

3.4 Electrical Connection

DANGER

Live wires.

Risk of electrical shock!

- Electrical installation work must only be executed by qualified personnel.

3.4.1 Battery Operation

Before operating the gauge a suitable battery or rechargeable battery must be inserted.

- Pull the battery cover on the back of the unit downwards and insert the battery
- Close the cover again by pushing it upwards until it snaps into position.

Battery types:

– 9 Volt AlMn block battery type 6LR 61; lifetime max. 40 hours

– 9 Volt Lithium block battery; lifetime max. 100 hours.

NOTICE

Inferior or damage batteries may leak gas or liquid under vacuum.

Risk of damage to the gauge!

- If it is intended to expose the entire gauge to vacuum, seek confirmation from the battery supplier that the battery is vacuum proof.

NOTE

Low battery power is indicated by the "BAT" - prompt in the upper left corner of the display. Operation of the gauge is still possible. When the battery is completely discharged, the gauge switches off.

For disposing used batteries, see *Maintenance and Service* [➔ 23].

NOTE

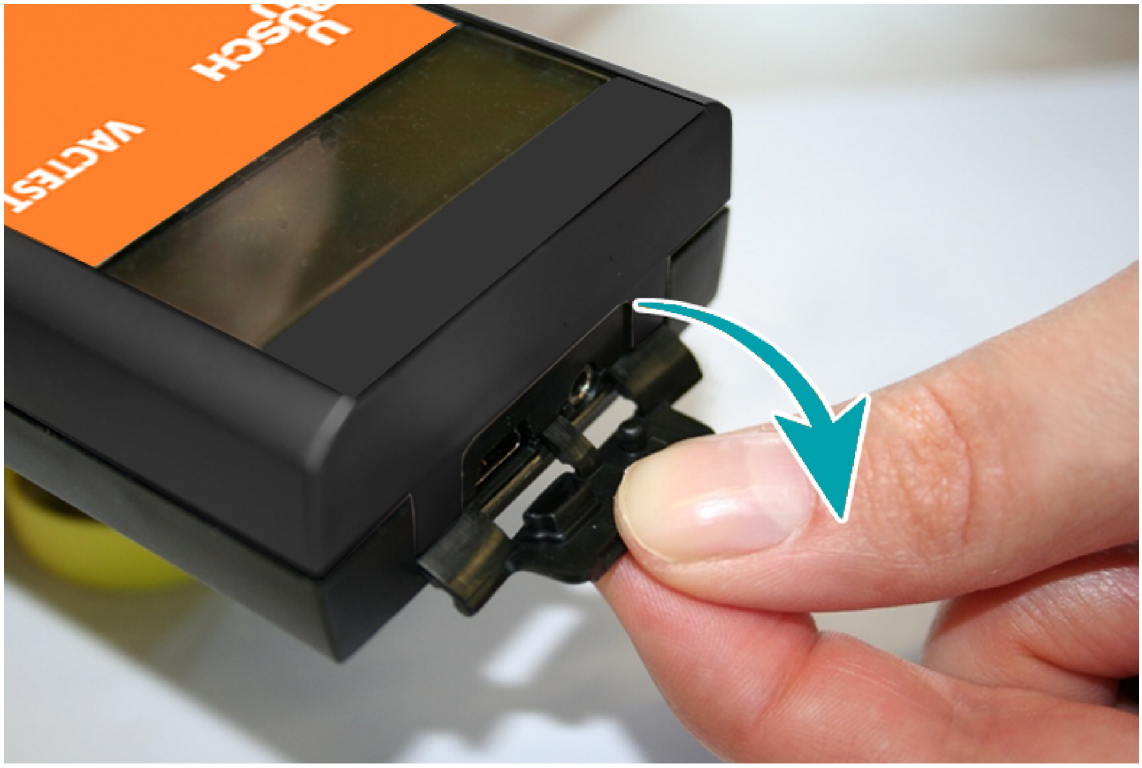
Rechargeable batteries must be removed for charging. For charging rechargeable batteries, use suitable, commercially available chargers.

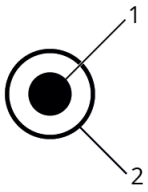
3.4.2 Operation with External Power Supply

The gauge can be operated alternatively with an external 12...15 VDC power supply. The socket for the power supply is located behind the protective rubber lid.

To access the sockets (plug-in power supply and USB):

- Open the lid carefully and pull it out slightly.





Pin No.	Description
Pin 1	Jack Plug 2.5mm,12...15 VDC
Pin 2	AGND

CAUTION

Device is not grounded properly, when using external power supply.

Fluctuating pressure readings can occur!

- Use a metal clamp to connect the vacuum chamber to a grounded surface.

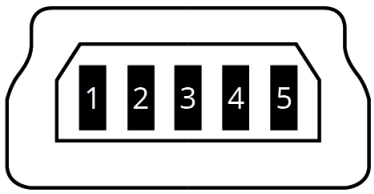
NOTE

The battery can remain in the gauge when the external power supply is used. For charging rechargeable batteries, use suitable, commercially available chargers.

3.5 USB Interface

The USB port can be connected to a PC via VACTEST explorer to read out stored measurement data, transmit measurement values or configure the gauge.

Connector Type: Mini Jack Type B



Pin No.	Description
Pin 1	VCC, +5V
Pin 2	Data –
Pin 3	Data +
Pin 4	GND
Pin 5	GND

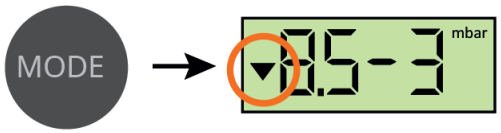
4 Operation

4.1 Pressure Measurement

Short-Term Operation (Auto-Off Mode)

- To perform this operation, press the **Mode-Key**.

When you press the key, the actual pressure is displayed on the gauge screen, as shown below.



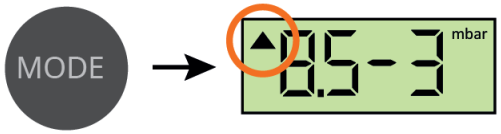
After 20 seconds the vacuum meter is automatically switched off.

Continuous Operation (Cont. Mode)

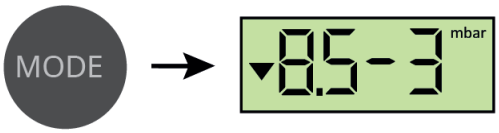
NOTE

The Cont Mode operation is available only when the Data Logger function is disabled.

- To perform this operation, press the **Mode-Key** again. Within 20 seconds the actual pressure will be displayed.



In **Cont Mode** the gauge keeps operating continuously, until it is switched-off manually or, after the maximum operation time has elapsed, automatically (see *Maximum Operation Time* [➔ 19])



Pressing **Cont. Mode-Key** again, the device will return to **Auto-Off Mode**

4.2 Pressure Measurement with Data Logging

NOTE

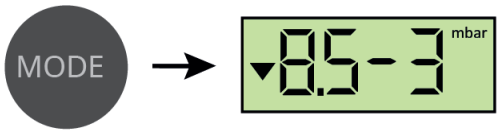
To operate the device as a pressure gauge with data storage functionality the logging function must be activated as described in chapter *Logging Rate* [➔ 16].

This chapter describes all the operations of pressure gauge. These operations are applicable for pressure gauge with data storage functionality.

Short-Term Operation (Auto-Off Mode)

- To perform this operation, press **Mode-Key** of the device.

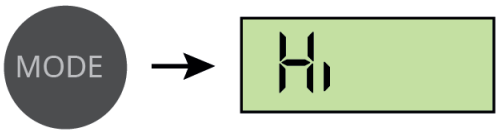
When you press the key, the actual pressure is displayed on the gauge screen, as shown below.



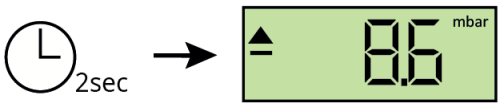
After 20 seconds the vacuum meter is automatically switched off.

Stored Maximum Pressure

- To perform this operation, press the **Mode-Key** again, below data displays on the gauge screen.



After two more seconds the stored maximum pressure is displayed on the gauge screen as shown below.

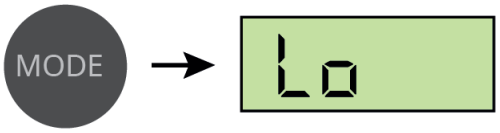


NOTE

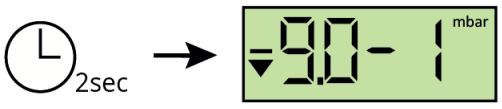
If the Mode-Key is not pressed again, the operation returns to Auto-Off Mode after 4 seconds.

Stored Minimum Pressure

- To perform this operation, press **Mode-Key** again, below data displays on the gauge screen.



After two more seconds the stored minimum pressure is displayed on the gauge screen as shown below.

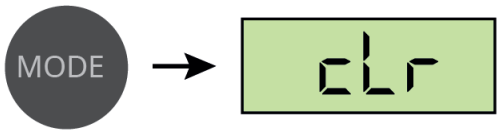


NOTE

If the Mode-Key is not pressed again, the operation returns to Auto-Off Mode after 4 seconds.

Delete Memory

- To perform this operation, press **Mode-Key** again, below data displays on the gauge screen.



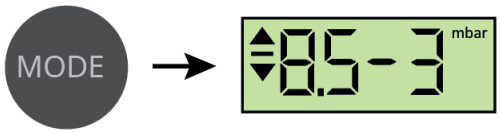
After pressing the **Mode-Key** again deletes stored min./max. values as well as all the previous data stored in memory.

NOTE

If the Mode-Key is not pressed again, the operation returns to Auto-Off Mode after 4 seconds.

Data Logger Mode

- To perform this operation, press the **Mode-Key** again, the actual pressure displays on the gauge screen.



The data memory is deleted. The gauge is in Data Logger Mode and immediately stores newly recorded extremal pressure values and –if applicable- up to 2000 pressure data with the preset storage rate (see *Logging Rate* [➔ 16]).

For data storage a battery-independent memory-IC is used whereas the stored extremal values are lost when the battery is exchanged.

Data logging is stopped if no further memory is available, when the vacuum meter is switched-off or when it is connected to a PC via USB (see *PC Mode* [➔ 14]).

In the Data Logger Mode, the gauge keeps operating continuously until it is switched-off manually or, after the maximum operation time has elapsed, automatically (see *Maximum Operation Time* [➔ 19]).

Switch-off the vacuum meter

- To perform this operation, press **Mode-Key** twice. The operation will return to **Auto-Off Mode**.

4.3 PC Mode

The gauge can be connected to a PC via a USB interface in order to transmit the measurement data. The VACTEST explorer software supports recording current pressure values (online measurement) as well as reading out the measurement values stored within the gauge.

The measurement data are plotted as a diagram and can be exported as a text file for further analysis. The separately saved values of minimum and maximum pressure cannot be transmitted to the PC.

Further you can perform any parameter settings such as recording rate, display unit or gas correction factor easily by means of the VACTEST explorer.

The gauge is switched into PC Mode as soon as a cable connection with a free PC USB port is established:

The gauge is now ready for bidirectional data transmission. The communication is performed according to the Busch communication protocol.; detailed information is available in a separate description.

NOTE

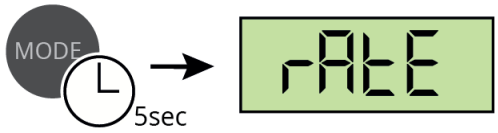
When the gauge is switched to PC mode, the gauge will stop displaying actual pressure and recording data.

After the USB cable is disconnected the gauge switches into "**Auto-Off Mode**".

5 Configuration

To switch the gauge into Configuration Mode;

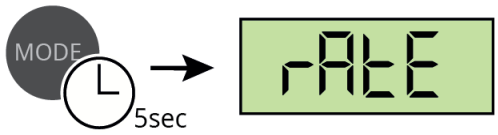
- With the instrument switched-off, press and hold the **Mode-Key** for approx. 5 seconds until the display shows “**rAtE**”.



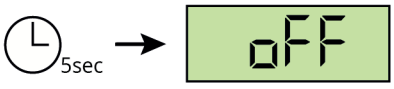
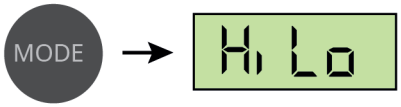
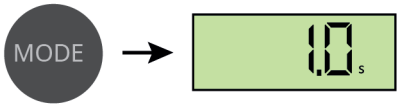
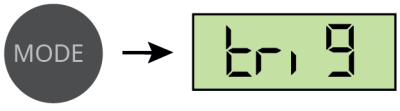
5.1 Logging Rate

To set the logging rate and activate the data logging functionality of the gauge, switch the unit into Configuration Mode. For this the gauge must be switched-off.

- Press and hold the **Mode-Key** for 5 seconds until the display shows "rAtE".



- After additional 5 seconds the current rate setting for internal data recording is displayed and can now be adjusted with using the **Mode-Key**. Below table is described different setting mode of the logging rate:

Setting Mode	Display and Description
oFF	 "off" : data logging is disabled.
HiLo	 "HiLo" means that only minimum and maximum pressure is stored. These values can be displayed but cannot be transmitted to a PC!
1.0s/2.0s/10s/1min/10min	 Save measurements every 1.0 seconds.
trig	 "trig" means that new measurements are saved only if the new value differs more than 2 digits from the one that was stored previously (e.g.2.3 - 2.5). Data volume is reduced this way and optimum memory utilization achieved.

When data logging is active minimum and maximum pressure are recorded simultaneously.

NOTE

Via USB interface the user can set logging rates between 1.0 s and 6000 s. The logging rate which was set previously is also available for choice in the gauge display and shown after "trig".

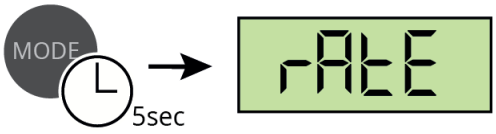
Without further keystroke the vacuum meter is switched into **Auto-Off Mode** after 5 seconds. The last settings are saved.

5.2 Adjustment

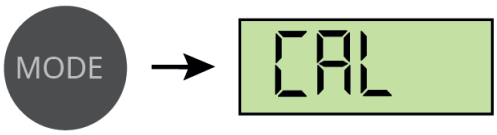
The device is factory adjusted. Through use under different climatic conditions, through extreme temperature changes, ageing or contamination readjustment can become necessary.

To adjust the gauge, switch the unit into **Configuration Mode**. For this the gauge device must be switched-off.

- Press and hold the **Mode-Key** for 5 seconds until the display shows "rAtE".

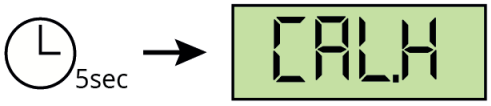


- After displaying “rAtE”, press the **Mode-Key** until the displays shows “CAL”.

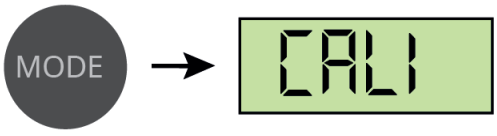


Adjustment on Atmosphere Pressure

- After 5 more seconds the display shows “CAL.H”.



- Press the **Mode-Key** now to adjust the gauge on atmosphere pressure. During the adjustment procedure the display shows "CALI".



When the adjustment is done, the gauge switches to **Auto-Off Mode**.

NOTE

Adjustment on atmosphere pressure is possible only when the actual pressure is above 40 mbar. Otherwise, adjustment is denied and the error message "Err" displayed.

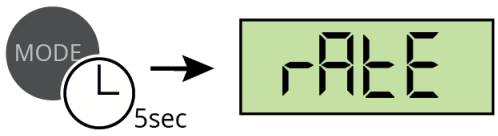
Adjustment on Zero Pressure

NOTE

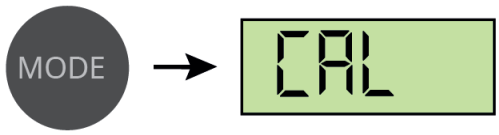
For adjustment on zero pressure the actual pressure inside the sensor has to be less than 1 x10^{-4} mbar! The pressure reading must be less than 4x10^{-2} mbar, otherwise the adjustment is denied and the error message "Err" displayed.

To adjust the gauge on zero pressure, switch the unit into **Configuration Mode**. For this the gauge device must be switched-off.

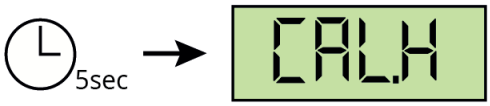
- Press and hold the **Mode-Key** for 5 seconds until the display shows "rAtE".



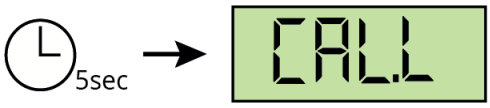
- After displaying “rAtE”, press the **Mode-Key** until the displays shows “CAL”.



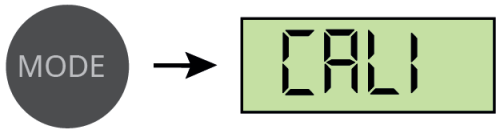
- After 5 more seconds the display shows “CAL.H”.



- After 5 more seconds the display shows “CAL.L”.



- Press **Mode-Key** for adjustment. During the adjustment procedure the display shows "CALI".

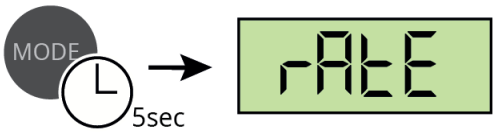


When the adjustment procedure is done, the gauge device switches to **Auto-Off Mode**.

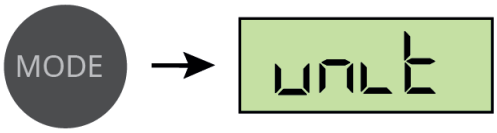
5.3 Pressure Units

In order to adjust the gauge display to pressure unit, switch the device into **Configuration Mode**. Before you start this adjustment make sure that the gauge device is switched-off.

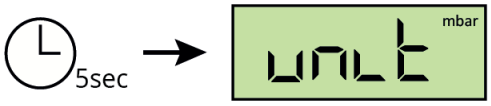
- Press and hold the **Mode-Key** until the display shows "rAtE".



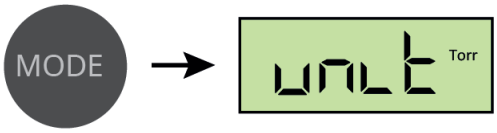
- After displaying “rAtE”, press the **Mode-Key** until the display shows “unit”.



- After 5 more seconds the current unit setting is displayed as shown below:



- You can select a pressure unit; "mbar", "Torr" or "hPa" with using the **Mode-Key**.



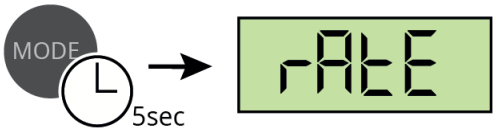
When the pressure unit setting is done, the gauge switches to **Auto-Off Mode** after approx. 5 seconds. The last selected pressure unit is saved.

5.4 Maximum Operation Time

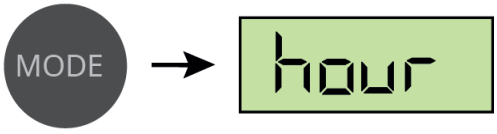
When the gauge is operating continuously in **Cont. Mode** or **Data Logger Mode** the device stays switched-on, until a selected maximum operation time has elapsed.

To configure the maximum operation time, switch the gauge device into **Configuration Mode**. Before you start this configuration, make sure that the gauge device is switched-off.

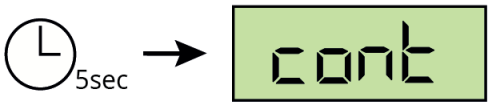
- Press and hold the **Mode-Key** until the display shows "rAtE".



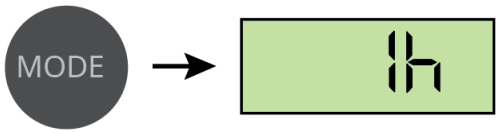
- After displaying “rAtE”, press the **Mode-Key** until the display shows “hour”.



- After 5 more seconds the current setting of maximum operation time is displayed as shown below:



- Select a timespan from 1hr to 24hrs or “cont” (no switch-off) with using the **Mode-Key**.



Without further keystroke, the gauge switches to **Auto-Off Mode** after approx. 5 seconds. The last specified maximum operation time is saved.

5.5 Gas Correction Factor

The pressure reading of gauge depends on type and composition of the gas being measured. The device is adjusted for N2 and dry air, for He and CO the deviation can be neglected below 0.5 mbar. For other gases a correction factor can be set which produces correct readings below 0.5 mbar. The measurements of the Pirani sensor are hereby multiplied with the correction factor.

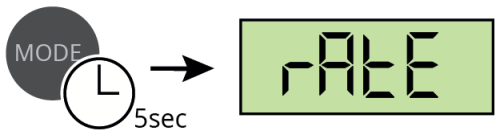
Correction factor for pirani sensor

Gas Name	Value	Gas Name	Value	Gas Name	Value	Gas Name	Value
Ar	1.6	CO_2	0.89	He	1.0	Ne	1.4
CO	1.0	H_2	0.57	N_2	1.0	Kr	2.4

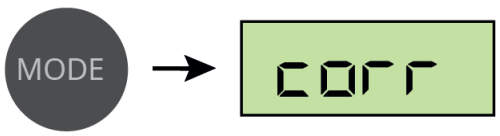
Configuring the Gas Connection factor

In order to configure the gas connection factor, switch the gauge device into **Configuration Mode**. Before you start this configuration, make sure that the gauge device is switched-off.

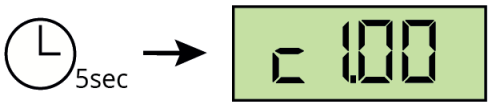
- Press and hold the **Mode-Key** until the display shows "rAtE".



- After displaying “rAtE”, press the **Mode-Key** until the display shows “corr”.

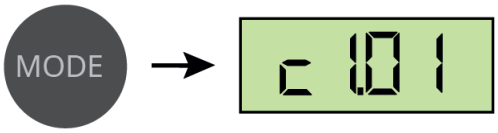


- After 5 more seconds the current gas connection factor setting is displayed as shown below.



Note: The setting range for gas connection factor is 0.20 to 8.00.

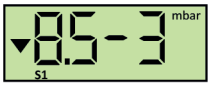
- You can set the gas connection factor value with using the **Mode-Key**. Press and hold the **Mode-Key** the value count increases automatically to 8.00 and restarts at 0.20.



Without further keystroke, the gauge switches to **Auto-Off Mode** after approx. 5 seconds. The last specified gas connection factor value is saved.

NOTE

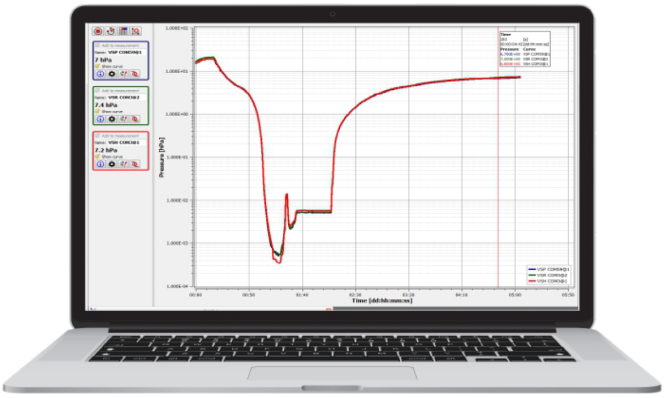
When a correction factor other than 1.00 is set, the symbol "S1" will be displayed at the bottom edge of the display.



6 VACTEST Explorer Software

VACTEST Explorer software has been especially developed for use with VACTEST gauges from **Busch Vacuum Solutions** and is compatible with operating system Windows.

VACTEST Explorer features plotting and saving of measurement data as well as comfortable configuration of all device parameters.



Download: *www.buschvacuum.com*

- Plot, analyze and save measurement curves
- Compare multiple plots
- Export measurement data for MS Excel
- Transfer of recorded measurements from the data logger to a PC
- Automatic calculation of leak rates from rate-of-rise measurements
- Easy configuration of all device parameters

Without a VACTEST Explorer Pro license, users face the following constraints:

- No saving, exporting, printing, or timing of measurements.
- A maximum measurement duration of 5 minutes.
- Limited to one live measurement tab/window.
- Inability to read datalogger devices.

Upgrading to a VACTEST Explorer Pro license removes these restrictions, offering a more versatile and efficient measurement experience.

7 Maintenance and Service

DANGER

Danger of possibly contaminated parts!

Contaminated parts can cause personal injuries.

- Inform yourself regarding possible contamination before you start working.
- Be sure to follow the relevant instructions and take care of necessary protective measures.

CAUTION

The unit is not prepared for customer repair!
Defective sensor heads can be exchanged on-site by calibrated replacement sensors.

NOTE

Malfunction of the unit which is caused by contamination or wear and tear is not covered by warranty.

The unit requires no maintenance. External dirt and soiling can be removed by a damp cloth.

When returning the gauge for service please fill out a declaration of contamination and include it in the shipment. This document is mandatory to protect our service staff.

7.1 Errors and Malfunctions

The device will show error messages as plain text on the display. Additionally, the following typical issues can appear:

Problem	Possible Cause	Correction
High measurement error	Wear and tear, contamination, extreme temperature, incorrect adjustment	Replace sensor or send unit to repair
Displays “UR”	Pressure under range	Pressure is below $1x10^{-3}$ mbar
Displays error message “Err”	Adjustment done at wrong pressure	Displayed pressure must be >40 mbar for atmosphere adjustment, $<4x10^{-2}$ mbar for zero adjustment
	Measurement error out of adjustment range	Send unit for repair
Displays error message “Err1”	Sensor is not connected	Check connection and plug
	Defective sensor	Send unit for repair

7.2 Important Notes for Disposal

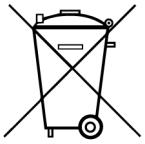
According to WEEE directive 2012/19/EU and ElektroG3, the national law regarding distribution, withdrawal and environmentally acceptable disposal of electric and electronic equipment, this product must not be dumped in normal unsorted waste. For withdrawal and free disposal of used appliances please contact your Busch Vacuum Solutions service or return the product with a filled-in declaration of contamination. Alternatively, you can dispose used appliances at officially set-up collecting points.

If your instrument contains batteries or rechargeable batteries, these must be removed and properly disposed in compliance with applicable national directives. The end user is legally obligated to return used batteries, they must not be dumped in normal unsorted waste. Batteries or rechargeable batteries may contain harmful substances or heavy metals, symbols shown on the battery have the following meaning:

Pb - battery contains more than 0,004 mass percent of lead

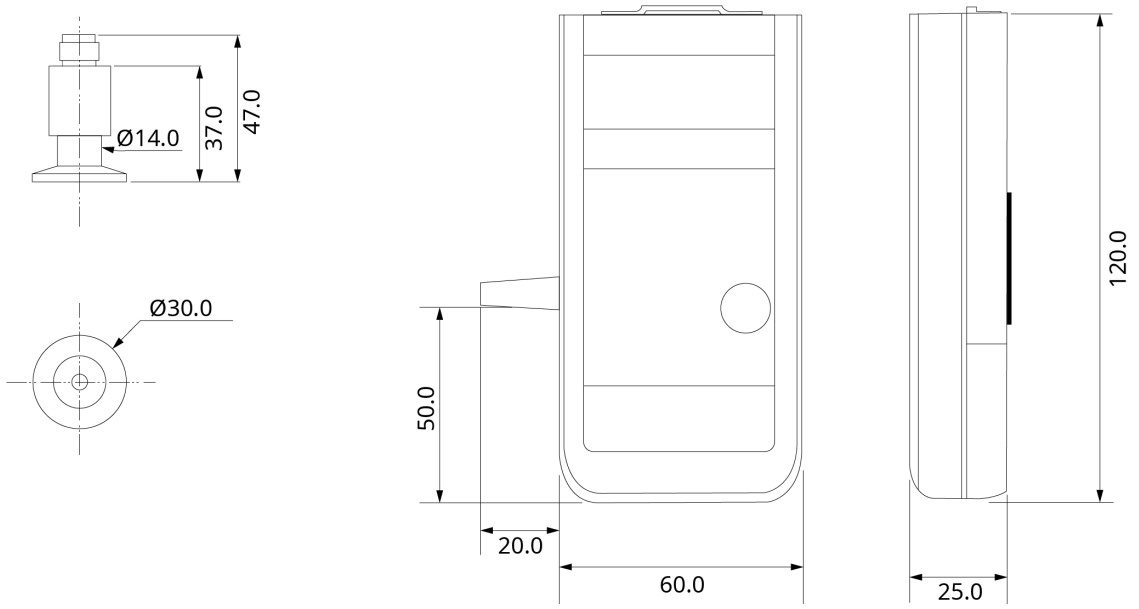
Cd - battery contains more than 0,002 mass percent of cadmium

Hg - battery contains more than 0,0005 mass percent of mercury



The symbol of a crossed dustbin denotes that marked products must not be dumped in normal unsorted waste but must be returned at officially set-up collecting points.

8 Technical Data



Description	
Measurement principle	Heat conduction Pirani (Depending on gas type)
Materials in contact with vacuum	Stainl. steel 1.4305, nickel, tungsten, glass
Measuring range	100 - 1.0x10^{-3} mbar (75 - 1.0x10^{-3} Torr)
Overpressure limit	4 bar abs.
Resolution	100 - 10 mbar: 1 mbar < 10 mbar: 2 digits mantissa, 1 decimal place
Accuracy	100 - 20 mbar: approx.. 30% f. reading 20 - 1.0x10^{-2} mbar: 10% f. reading
Measuring Rate	1.0 s
Logging rates	1 ... 6000 s
Operating temperature	+5 ... +50 °C
Storage temperature	-20 ... +60 °C
Power Supply	9 V battery or 12...15 VDC external
Electrical Connection	Mini-jack 2.5 mm for plug-in power supply
Power Consumption	Approx. 110 mW (clocked)
Operation Time	Li-battery: <100 h, 6LR61 Alkaline: <40 h
Serial interface	Mini-USB, Type B, 5pin, female, Virtual Com Port protocol
Vacuum connection	Small flange DN16 ISO KF
Display	LCD 12 mm
Protection class	IP 40
Weight	200 g (incl. battery)

9 EU Declaration of Conformity

The manufacturer

Busch Produktions GmbH
Schauinslandstr. 1
DE-79689 Maulburg

fulfill(s) all the relevant provisions from EU directives:

– 'Electromagnetic Compatibility' (EMC) 2014/30/EU

– 'RoHS' 2011/65/EU Restriction of the use of certain hazardous substances in electrical and electronic equipment (incl. all related applicable amendments)

and comply(-ies) with the following harmonized standards that have been used to fulfill those provisions:

Standard	Title of the Standard
EN 61326-1: 2013 Group 1 / Class B	Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements
EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Legal person authorized to compile the technical file and authorized representative in the EU (if the manufacturer is not located in the EU):

Busch Dienste GmbH
Schauinslandstr. 1
DE-79689 Maulburg

Maulburg, 02.01.2024

Dr. Martin Gutmann

General Manager

Busch Produktions GmbH

10 UK Declaration of Conformity

The manufacturer

Busch Produktions GmbH
Schauinslandstr. 1
DE-79689 Maulburg

fulfill(s) all the relevant provisions from UK legislations:

– Electromagnetic Compatibility Regulations 2016

– Restriction of the use of certain hazardous substances in Electrical and Electronic Equipment Regulations 2012

and comply(-ies) with the following designated standards that have been used to fulfill those provisions:

Standard	Title of the Standard
EN 61326-1: 2013 Group 1 / Class B	Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements
EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Legal person authorized to compile the technical file and importer in the UK (if the manufacturer is not located in the UK):

Busch (UK) Ltd
30 Hortonwood
Telford – UK

Maulburg, 02.01.2024

Dr. Martin Gutmann

General Manager

Busch Produktions GmbH

BUSCH GROUP

The Busch Group is one of the world's largest manufacturers of vacuum pumps, vacuum systems, blowers, compressors and gas abatement systems. Under its umbrella, the group houses three well-known brands: Busch Vacuum Solutions, Pfeiffer Vacuum and centrotherm clean solutions. Together, they offer solutions to a wide range of industries. A global network of highly competent local teams in 44 countries ensures that expert, tailor-made support is always available near you. Wherever you are. Whatever your business.

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- Busch Group service centers
- Busch Group local representatives

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