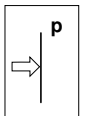


VEGA

Operating Instructions VEGABAR 17



Process pressure

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Supplementary documentation



Information:

Supplementary documents appropriate to the ordered version come with the delivery. You can find them listed in chapter "*Product description*".

Instructions manuals for accessories and replacement parts



Tip:

To ensure reliable setup and operation of your VEGABAR 17, we offer accessories and replacement parts. The associated documents are:

- 32036 - Welded socket and seals

1 About this document

1.1 Function

This operating instructions manual provides all the information you need for mounting, connection and setup as well as important instructions for maintenance and fault rectification. Please read this information before putting the instrument into operation and keep this manual accessible in the immediate vicinity of the device.

1.2 Target group

This operating instructions manual is directed to trained personnel. The contents of this manual should be made available to these personnel and put into practice by them.

1.3 Symbolism used



Information, tip, note

This symbol indicates helpful additional information.



Caution: If this warning is ignored, faults or malfunctions can result.

Warning: If this warning is ignored, injury to persons and/or serious damage to the instrument can result.

Danger: If this warning is ignored, serious injury to persons and/or destruction of the instrument can result.



Ex applications

This symbol indicates special instructions for Ex applications.



List

The dot set in front indicates a list with no implied sequence.



Action

This arrow indicates a single action.



Sequence

Numbers set in front indicate successive steps in a procedure.

2 For your safety

2.1 Authorised personnel

All operations described in this operating instructions manual must be carried out only by trained specialist personnel authorised by the plant operator.

During work on and with the device the required personal protection equipment must always be worn.

2.2 Appropriate use

VEGABAR 17 is a pressure transmitter for measurement of gauge pressure, absolute pressure and vacuum.

You can find detailed information on the application range in chapter "*Product description*".

Operational reliability is ensured only if the instrument is properly used according to the specifications in the operating instructions manual as well as possible supplementary instructions.

For safety and warranty reasons, any invasive work on the device beyond that described in the operating instructions manual may be carried out only by personnel authorised by the manufacturer. Arbitrary conversions or modifications are explicitly forbidden.

2.3 Warning about misuse

Inappropriate or incorrect use of the instrument can give rise to application-specific hazards, e.g. vessel overfill or damage to system components through incorrect mounting or adjustment.

2.4 General safety instructions

This is a high-tech instrument requiring the strict observance of standard regulations and guidelines. The user must take note of the safety instructions in this operating instructions manual, the country-specific installation standards as well as all prevailing safety regulations and accident prevention rules.

The instrument must only be operated in a technically flawless and reliable condition. The operator is responsible for trouble-free operation of the instrument.

During the entire duration of use, the user is obliged to determine the compliance of the required occupational safety measures with the current valid rules and regulations and also take note of new regulations.

2.5 Safety approval markings and safety tips

The safety approval markings and safety tips on the device must be observed.

2.6 CE conformity

This device fulfills the legal requirements of the applicable EC guidelines. By attaching the CE mark, VEGA provides a confirmation of successful testing. You can find the CE conformity declaration in the download area of "www.vega.com".

2.7 Safety instructions for Ex areas

Please note the Ex-specific safety information for installation and operation in Ex areas. These safety instructions are part of the operating instructions manual and come with the Ex-approved instruments.

2.8 Safety instructions for oxygen applications

For instruments in oxygen applications the special instructions in chapters "*Storage and transport*", "*Mounting*" as well as "*Technical data*" under "*Process conditions*" must be noted. Furthermore the valid national regulations, implementation instructions and memorandums of the BG (professional assoc.) must be noted.

2.9 Environmental instructions

Protection of the environment is one of our most important duties. That is why we have introduced an environment management system with the goal of continuously improving company environmental protection. The environment management system is certified according to DIN EN ISO 14001.

Please help us fulfil this obligation by observing the environmental instructions in this manual:

- Chapter "*Packaging, transport and storage*"
- Chapter "*Disposal*"

3 Product description

3.1 Configuration

Scope of delivery

The scope of delivery encompasses:

- VEGABAR 17 process pressure transmitter
- Depending on the version, with plug connector, connection cable or terminal housing
- Documentation
 - this operating instructions manual
 - Ex-specific "*Safety instructions*" (with Ex-versions)
 - if necessary, further certificates

Configuration

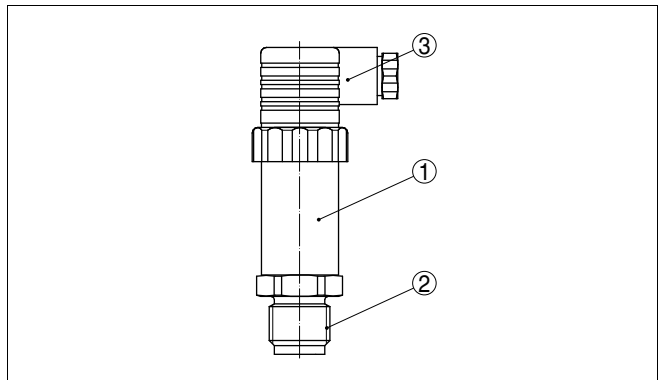


Fig. 1: VEGABAR 17 with plug connector according to DIN 43650-A

- 1 Housing with electronics
- 2 Process fitting
- 3 Plug connector

Type label

The type label contains the most important data for identification and use of the instrument:

- Article number
- Serial number
- Technical data
- Article numbers documentation

With the serial number, you can access the delivery data of the instrument via "www.vega.com", "VEGA Tools" and "serial number search". In addition to the type label outside, you can also find the serial number on the inside of the instrument.

3.2 Principle of operation

Area of application	VEGABAR 17 is a pressure transmitter for measurement of gauge pressure, absolute pressure or vacuum. Measured products are gases, vapours and liquids. The front flush versions are also suitable for use in viscous or contaminated products.
Functional principle	The process pressure acts on the sensor element via the stainless steel diaphragm. The process pressure causes a resistance change which is converted into a corresponding output signal and outputted as measured value. ¹⁾
Voltage supply	Two-wire electronics 4 ... 20 mA for power supply and measured value transmission on the same cable.

3.3 Operation

VEGABAR 17 has no adjustment options. However, two potentiometers are integrated for the recalibration of zero and span.

3.4 Packaging, transport and storage

Packaging	<p>Your instrument was protected by packaging during transport. Its capacity to handle normal loads during transport is assured by a test according to DIN EN 24180.</p> <p>The packaging of standard instruments consists of environment-friendly, recyclable cardboard. For special versions, PE foam or PE foil is also used. Dispose of the packaging material via specialised recycling companies.</p> <p>Instruments for oxygen applications are sealed in PE foil and provided with a label "Oxygen! Use no Oil". Remove this foil just before mounting the instrument! See instruction under "<i>Mounting</i>".</p>
Transport	Transport must be carried out under consideration of the notes on the transport packaging. Nonobservance of these instructions can cause damage to the device.
Transport inspection	The delivery must be checked for completeness and possible transit damage immediately at receipt. Ascertained transit damage or concealed defects must be appropriately dealt with.
Storage	Up to the time of installation, the packages must be left closed and stored according to the orientation and storage markings on the outside.

¹⁾ Measuring ranges up to 16 bar: piezoresistive sensor element with internal transmission liquid, with measuring ranges up to 25 bar: Strain gauge (DMS) sensor element on the rear of the stainless steel diaphragm (dry).

Unless otherwise indicated, the packages must be stored only under the following conditions:

- Not in the open
- Dry and dust free
- Not exposed to corrosive media
- Protected against solar radiation
- Avoiding mechanical shock and vibration

Storage and transport temperature

- Storage and transport temperature see chapter "*Supplement - Technical data - Ambient conditions*"
- Relative humidity 20 ... 85 %

4 Mounting

4.1 General instructions

Suitability for process conditions

Make sure that all parts of the instrument in contact with the measured product, especially the sensor element, process seal and process fitting, are suitable for the existing process conditions such as process pressure, process temperature as well as the chemical properties of the medium.

You can find the specifications in chapter "*Technical data*" in the or on the type label.

Diaphragm protection



Caution:

After removal of the diaphragm protective cover, the diaphragm must not be pressed.

Oxygen applications



Danger:

Instruments in the version "*Oil and grease free for oxygen*" should be unpacked just before mounting. After the protective cover of the process fitting has been removed, the label "O₂" on the process fitting is visible. Contamination by oil, grease and dirt should be avoided. Danger of explosion!

4.2 Mounting instructions

Mounting position

VEGABAR 17 functions in any installation position. It is mounted according to the same directives as a manometer (DIN EN 839-2).



Information:

We recommend using lock fittings, measuring instrument holders and siphons from our line of accessories.

4.3 Mounting steps

Welding the socket

For mounting VEGABAR 17, a welded socket is required. You can find these components in the supplementary instructions manual "*Welded socket and seals*".

Sealing/Screwing in

For the following process fittings use the O-ring seal that belongs to the respective instrument.

- or -

With the following process fittings, seal the thread with teflon, hemp or a similar seal material:

- Process fitting ½ NPT
- Process fitting ¼ NPT

- Screw VEGABAR 17 into the welded socket. Tighten the hexagon screw on the process fitting. Wrench size, see chapter "*Dimensions*", torque see chapter "*Technical data*".



Fig. 2: Installation of VEGABAR 17

5 Connecting to power supply

5.1 Preparing the connection

Note safety instructions

Always keep in mind the following safety instructions:

- Connect only in the complete absence of line voltage
- If overvoltage surges are expected, overvoltage arresters should be installed.



Tip:

We recommend VEGA overvoltage arrester ÜSB 62-36G.X.

Take note of safety instructions for Ex applications



In hazardous areas you should take note of the appropriate regulations, conformity and type approval certificates of the sensors and power supply units.

Select power supply

The supply voltage and the current signal are carried on the same two-wire connection cable.

Provide a reliable separation between the supply circuit and the mains circuits according to DIN VDE 0106 part 101.

VEGA power supply units VEGATRENN 149AEx, VEGASTAB 690, VEGADIS 371 as well as all VEGAMETs meet this requirement. When using one of these instruments, protection class III is ensured for VEGABAR 17.

Bear in mind the following factors regarding supply voltage:

- Output voltage of the power supply unit can be lower under nominal load (with a sensor current of 20.5 mA or 22 mA in case of fault message)
- Influence of additional instruments in the circuit (see load values in chapter "*Technical data*")

Selecting connection cable

The instrument is connected with standard two-wire cable without screen. If electromagnetic interference is expected which is above the test values of EN 61326 for industrial areas, screened cable should be used.

Use cable with round cross-section. A cable outer diameter of 5 ... 9 mm (0.2 ... 0.35 in) ensures the seal effect of the cable gland. If you are using cable with other diameter or cross-section, you have to exchange the seal or use a suitable cable gland.

For the version with round plug connector M12 x 1, the suitable confectioned connection cable (article no. ASL.1S.) is available from the line of VEGA accessory with 5 m, 10 m or 25 m length.

Cable screening and grounding

Connect the cable screen on both ends to ground potential.

If potential equalisation currents are expected, the connection on the processing side must be made via a ceramic capacitor (e. g. 1 nF, 1500 V). The low frequency potential equalisation currents are thus suppressed, but the protective effect against high frequency interference signals remains.

Select connection cable for Ex applications



Take note of the corresponding installation regulations for Ex applications.

5.2 Connection procedure

Connection via angle plug connector

Proceed as follows:

- 1 Loosen the screw on the rear of the plug connector
- 2 Remove the plug connector and seal from VEGABAR 17
- 3 Remove the plug insert out of the plug housing

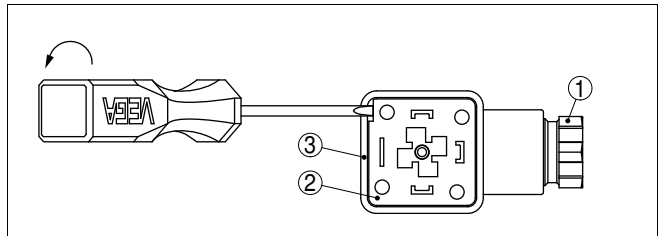


Fig. 3: Loosen the plug insert

- 1 Cable gland
- 2 Plug insert
- 3 Plug housing

- 4 Remove approx. 5 cm of the cable mantle, strip approx. 1 cm insulation from the individual wires
- 5 Lead the cable through the cable gland into the plug housing
- 6 Connect the wire ends to the screw terminals according to the wiring plan

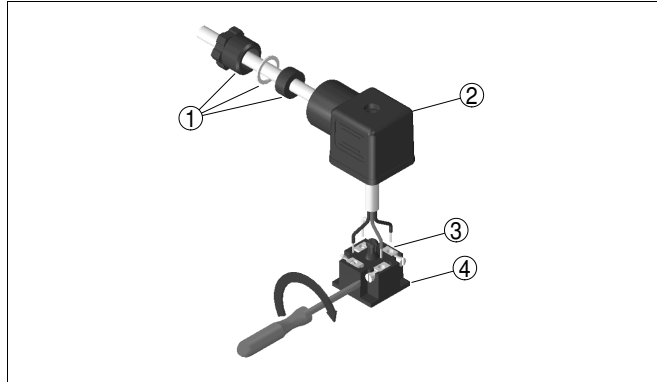


Fig. 4: Connection to the screw terminals

- 1 Cable gland
- 2 Plug housing
- 3 Plug insert
- 4 Plug seal

- 7 Snap the plug insert into the plug housing and insert the sensor seal
- 8 Plug the plug insert with seal to VEGABAR 17 and tighten the screw

The electrical connection is finished.

Connection via angle plug connector with hinged cover

Proceed as follows:

- 1 Loosen the screw in the cover of the plug connector
- 2 Open the cover and remove it
- 3 Press the plug insert downwards
- 4 Loosen the screws of the strain relief and cable entry

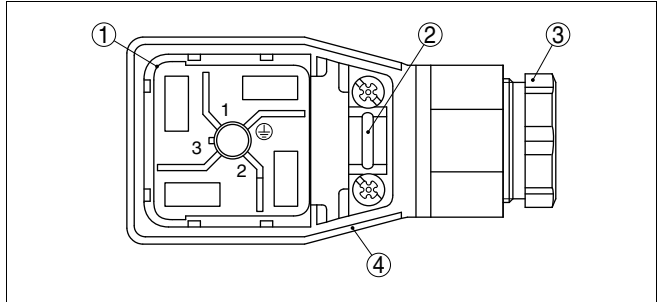


Fig. 5: Loosen the plug insert

- 1 Plug insert
- 2 Strain relief
- 3 Cable gland
- 4 Plug housing

- 5 Remove approx. 5 cm of the cable mantle, strip approx. 1 cm insulation from the individual wires
- 6 Lead the cable through the cable gland into the plug housing
- 7 Connect the wire ends to the screw terminals according to the wiring plan

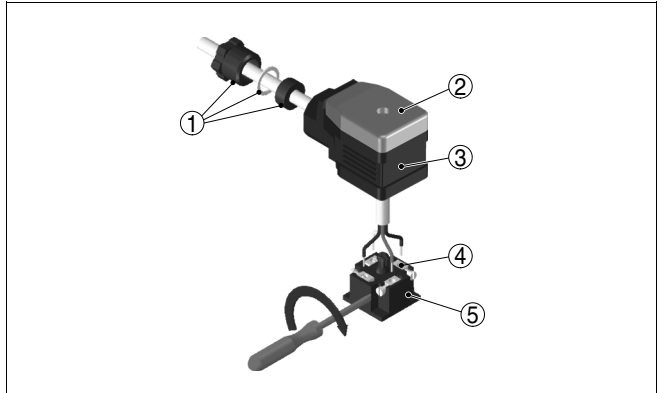


Fig. 6: Connection to the screw terminals

- 1 Cable gland
- 2 Cover
- 3 Plug housing
- 4 Plug insert
- 5 Plug seal

- 8 Snap the plug insert into the plug housing and insert the sensor seal

**Information:**

Note the correct arrangement, see illustration

- 9 Tighten the screws on the strain relief and cable entry
- 10 Hook in the cover and push onto the plug connection, tighten cover screw
- 11 Plug the plug insert with seal to VEGABAR 17 and tighten the screw

The electrical connection is finished.

5.3 Wiring plan

**Angle plug connector
according to DIN 43650-
A**

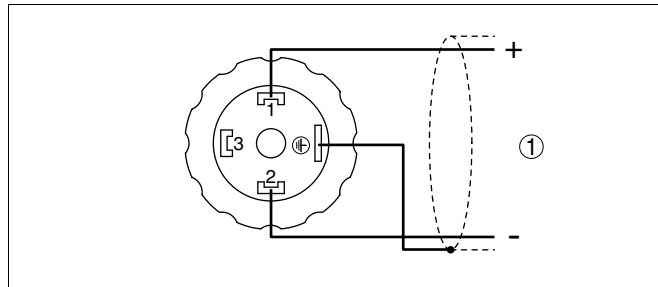


Fig. 7: Wiring plan, angle plug connector according to DIN 43650-A, top view to VEGABAR 17

1 Voltage supply and signal output

**Round plug connector
M12 x 1**

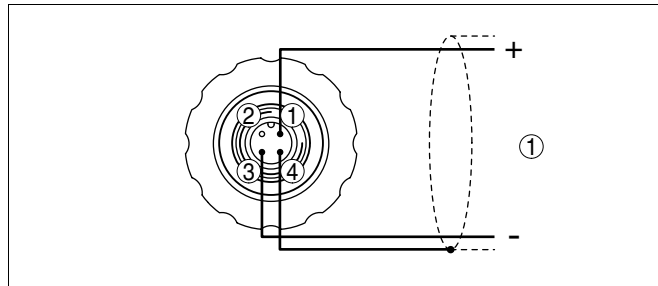


Fig. 8: Wiring plan, round plug connector M12 x 1, top view to VEGABAR 17

1 Voltage supply and signal output

Cable outlet

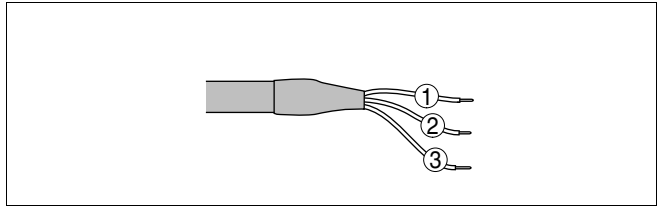


Fig. 9: Wiring plan cable outlet

- 1 brown (+) power supply and signal output
- 2 green (-) power supply and signal output
- 3 blue = cable screen

Terminal housing

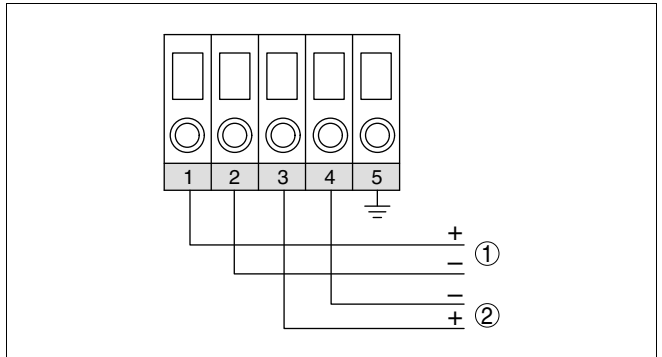


Fig. 10: Wiring plan, terminal housing

- 1 To power supply or the processing system
- 2 Control instrument (4 ... 20 mA measurement)

6 Set up

6.1 Setup procedure

After mounting and electrical connection, VEGABAR 17 is ready for operation.

VEGABAR 17 delivers a current of 4 ... 20 mA according to the actual process pressure. Further settings are not necessary.

6.2 Recalibration

Zero and span can be readjusted via potentiometer.

Recommended recalibration cycle: 1 year.

Angled and round plug connector, cable outlet

Proceed as follows:

- 1 In closed status, unscrew the handle ring and open the instrument

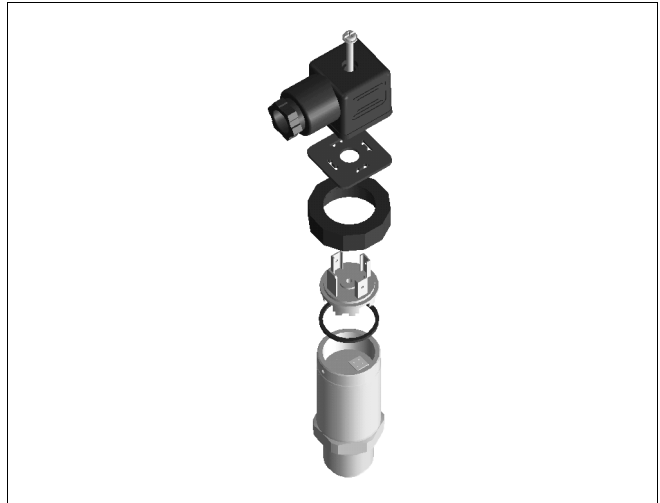


Fig. 11: Open the instrument

- 2 Adjust zero in unpressurized condition
- 3 Set a span with a sufficiently precise reference pressure²⁾
- 4 Check zero

²⁾ At least 3-times as exact as the pressure transmitter.

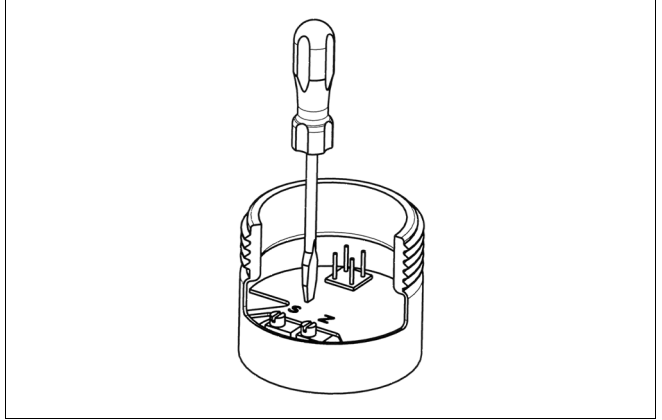


Fig. 12: Adjustment zero and span

Z zero
S span

5 Close the instrument and tighten the handle ring

Terminal housing

Proceed as follows:

1 Screw on the housing cover in connected status

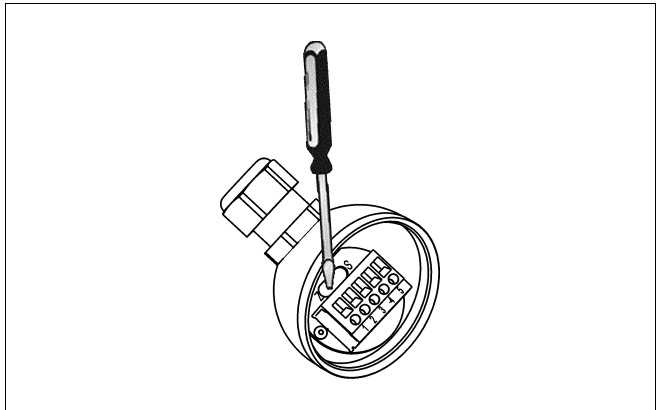


Fig. 13: Adjustment zero and span

Z zero
S span

2 Adjust zero in unpressurized condition

3 Set a span with a sufficiently precise reference pressure³⁾

4 Check zero

³⁾ At least 3-times as exact as the pressure transmitter.

5 Screw the housing cover on

7 Maintenance and fault rectification

7.1 Maintenance

When used in the correct way, no special maintenance is required in normal operation.

7.2 Remove interferences

Reaction when malfunctions occur

The operator of the system is responsible for taken suitable measures to remove interferences.

Causes of malfunction

A maximum of reliability is ensured. Nevertheless, faults can occur during operation. These may be caused by the following, e.g.:

- Sensor
- Process
- Voltage supply
- Signal processing

Fault rectification

The first measure to be taken is to check the output signal. In many cases, the causes can be determined this way and the faults rectified.

24 hour service hotline

However, should these measures not be successful, call the VEGA service hotline in urgent cases under the phone no. **+49 1805 858550**.

The hotline is available to you 7 days a week round-the-clock. Since we offer this service world-wide, the support is only available in the English language. The service is free of charge, only the standard telephone costs will be charged.

Checking the 4 ... 20 mA signal

- ? No 4 ... 20 mA signal
- Connection to voltage supply wrong
 - Check connection according to chapter "*Connection steps*" and if necessary, correct according to chapter "*Wiring plan*"
 - No voltage supply
 - Check cables for breaks; repair if necessary
 - supply voltage too low or load resistance too high
 - Check, adapt if necessary
- ? Steady output signal with pressure change
- electronics module or measuring cell defective
 - Exchange instrument or return instrument for repair



In Ex applications, the regulations for the wiring of intrinsically safe circuits must be observed.

Reaction after fault rectification

Depending on the failure reason and measures taken, the steps described in chapter "*Set up*" must be carried out again, if necessary.

7.3 Instrument repair

If a repair is necessary, please proceed as follows:

You can download a return form (23 KB) from our Internet homepage www.vega.com under: "*Downloads - Forms and certificates - Repair form*".

By doing this you help us carry out the repair quickly and without having to call back for needed information.

- Print and fill out one form per instrument
- Clean the instrument and pack it damage-proof
- Attach the completed form and, if need be, also a safety data sheet outside on the packaging
- Please ask the agency serving you for the address of your return shipment. You can find the respective agency on our website www.vega.com under: "*Company - VEGA worldwide*"

8 Dismounting

8.1 Dismounting steps

**Warning:**

Before dismounting, be aware of dangerous process conditions such as e.g. pressure in the vessel, high temperatures, corrosive or toxic products etc.

Take note of chapters "*Mounting*" and "*Connecting to power supply*" and carry out the listed steps in reverse order.

8.2 Disposal

The instrument consists of materials which can be recycled by specialised recycling companies. We use recyclable materials and have designed the electronics to be easily separable.

WEEE directive 2002/96/EG

This instrument is not subject to the WEEE directive 2002/96/EG and the respective national laws. Pass the instrument directly on to a specialised recycling company and do not use the municipal collecting points. These may be used only for privately used products according to the WEEE directive.

Correct disposal avoids negative effects to persons and environment and ensures recycling of useful raw materials.

Materials: see chapter "*Technical data*"

If you have no possibility to dispose of the old instrument professionally, please contact us concerning return and disposal.

9 Supplement

9.1 Technical data

General data

Materials, wetted parts

– Process fitting	316Ti
– Diaphragm	316Ti
– Diaphragm with front flush version	316Ti, Hastelloy C4
– Seal, O-ring	FKM, EPDM, NBR

Materials, non-wetted parts

– Internal transmission liquid	Synthetic oil, Halocarbon oil ⁴⁾
– Housing	316Ti
– Terminal housing	316Ti
– Ground terminal	316Ti
– Plug	PA
– Cable gland	PA, 316Ti
– Plug seal	Silicone
– Connection cable	PUR

Weight approx.

– Version with plug connector, cable outlet	0,2 kg (0.441 lbs)
– Version with terminal housing	0,35 kg (0.772 lbs)

Output variable

Output signal	4 ... 20 mA
Zero and span adjustable via potentiometer	±5 %
Step response time (10 ... 90 %)	
– Standard version	≤ 1 ms
– Version for medium temperature < -30 °C (-22 °F)	≤ 10 ms
– Version for measuring ranges < 25 bar	≤ 10 ms
– Version with front-flush diaphragm	≤ 10 ms

⁴⁾ Synthetic oil: For measuring ranges up to 16 bar, FDA listed for the food processing industry. For measuring ranges up to 25 bar not available.

⁵⁾ Halocarbon oil: In general in oxygen applications as well as in oil and grease-free applications, no with vacuum measuring ranges, not with absolute measuring ranges < 1 bar_{abs}.

Reference conditions and actuating variables (similar to DIN EN 60770-1)

Reference conditions according to DIN EN 61298-1

- Temperature +15 ... +25 °C (+59 ... +77 °F)
- Relative humidity 45 ... 75 %
- Air pressure 860 ... 1060 mbar/86 ... 106 kPa (12.5 ... 15.4 psi)

Determination of characteristics

Limit point adjustment according to IEC 61298-2

Reference installation position

upright, diaphragm points downward

Input variable

The availability of the respective measuring range depends on the corresponding process fitting.

Nominal range	Overload, max. pressure	Overload, min. pressure
Gauge pressure		
-0.1 ... 0 bar/-10 ... 0 kPa	1 bar/100 kPa	-1 bar/-100 kPa
-0.16 ... 0 bar/-16 ... 0 kPa	1.5 bar/150 kPa	-1 bar/-100 kPa
-0.25 ... 0 bar/-25 ... 0 kPa	2 bar/200 kPa	-1 bar/-100 kPa
-0.4 ... 0 bar/-40 ... 0 kPa	2 bar/200 kPa	-1 bar/-100 kPa
-0.6 ... 0 bar/-60 ... 0 kPa	4 bar/400 kPa	-1 bar/-100 kPa
-1 ... 0 bar/-100 ... 0 kPa	5 bar/500 kPa	-1 bar/-100 kPa
-1 ... 3 bar/-100 ... 300 kPa	10 bar/1000 kPa	-1 bar/-100 kPa
0 ... 0.1 bar/0 ... 10 kPa	1 bar/100 kPa	-1 bar/-100 kPa
0 ... 0.16 bar/0 ... 16 kPa	1.5 bar/150 kPa	-1 bar/-100 kPa
0 ... 0.25 bar/0 ... 25 kPa	2 bar/200 kPa	-1 bar/-100 kPa
0 ... 0.4 bar/0 ... 40 kPa	2 bar/200 kPa	-1 bar/-100 kPa
0 ... 0.6 bar/0 ... 60 kPa	4 bar/400 kPa	-1 bar/-100 kPa
0 ... 1 bar/0 ... 100 kPa	5 bar/500 kPa	-1 bar/-100 kPa
0 ... 1.6 bar/0 ... 160 kPa	10 bar/1000 kPa	-1 bar/-100 kPa
0 ... 2.5 bar/0 ... 250 kPa	10 bar/1000 kPa	-1 bar/-100 kPa
0 ... 4 bar/0 ... 40 kPa	17 bar/1700 kPa	-1 bar/-100 kPa
0 ... 6 bar/0 ... 600 kPa	35 bar/3500 kPa	-1 bar/-100 kPa
0 ... 10 bar/0 ... 1000 kPa	35 bar/3500 kPa	-1 bar/-100 kPa
0 ... 16 bar/0 ... 1600 kPa	80 bar/8000 kPa	-1 bar/-100 kPa
0 ... 25 bar/0 ... 2500 kPa	50 bar/5000 kPa	-1 bar/-100 kPa
0 ... 40 bar/0 ... 4000 kPa	80 bar/8000 kPa	-1 bar/-100 kPa
0 ... 60 bar/0 ... 6000 kPa	120 bar/12 MPa	-1 bar/-100 kPa
0 ... 100 bar/0 ... 10 MPa	200 bar/20 MPa	-1 bar/-100 kPa
0 ... 160 bar/0 ... 16 MPa	320 bar/32 MPa	-1 bar/-100 kPa
0 ... 250 bar/0 ... 25 MPa	500 bar/50 MPa	-1 bar/-100 kPa
0 ... 400 bar/0 ... 40 MPa	800 bar/80 MPa	-1 bar/-100 kPa
0 ... 600 bar/0 ... 60 MPa	1200 bar/120 MPa	-1 bar/-100 kPa
0 ... 1000 bar/0 ... 100 MPa	1500 bar/150 MPa	-1 bar/-100 kPa

Nominal range	Overload, max. pressure	Overload, min. pressure
Absolute pressure		
0 ... 0.25 bar/0 ... 25 kPa	2 bar/200 kPa	
0 ... 0.4 bar/0 ... 40 kPa	2 bar/200 kPa	
0 ... 0.6 bar/0 ... 60 kPa	4 bar/400 kPa	
0 ... 1 bar/0 ... 100 kPa	5 bar/500 kPa	
0 ... 1.6 bar/0 ... 160 kPa	10 bar/1000 kPa	
0 ... 2.5 bar/0 ... 250 kPa	10 bar/1000 kPa	
0 ... 4 bar/0 ... 400 kPa	17 bar/1700 kPa	
0 ... 6 bar/0 ... 600 kPa	35 bar/3500 kPa	
0 ... 10 bar/0 ... 1000 kPa	35 bar/3500 kPa	
0 ... 16 bar/0 ... 1600 kPa	80 bar/8 MPa	

Deviation⁶⁾

Deviation $\leq 0.5 \%$

Influence of the product or ambient temperature⁷⁾

The following specifications apply to values within the compensated temperature range, i.e. 0 ... 80 °C (176 °F), reference temperature 20 °C (68 °F).

Average temperature coefficient of the zero signal

- Standard $< 0.2 \%/10 \text{ K}$
- Meas. ranges 0 ... 0.1 and 0 ... 0.16 bar $< 0.4 \%/10 \text{ K}$

Average temperature coefficient of the span $< 0.2 \%/10 \text{ K}$

The following specifications are valid for values not within the compensated temperature range.

Average temperature coefficient of the zero signal

- Standard typ. $< 0.2 \%/10 \text{ K}$
- Meas. ranges 0 ... 0.1 and 0 ... 0.16 bar typ. $< 0.4 \%/10 \text{ K}$

Average temperature coefficient of the span typ. $< 0.2 \%/10 \text{ K}$

Long-term stability (similar to DIN 16086, DINV 19259-1 and IEC 60770-1)

Long-term drift of the zero signal⁸⁾ $< 0.2 \%/year$

⁶⁾ Relating to the adjusted span, incl. non-linearity, hysteresis and non-reproducibility.

⁷⁾ Relating to the set span, incl. hysteresis and repeatability.

⁸⁾ Under reference conditions, relating to the adjusted span.

Ambient conditions

Ambient temperature (note temperature de-rating!) -20 ... +80 °C (-4 ... +176 °F)

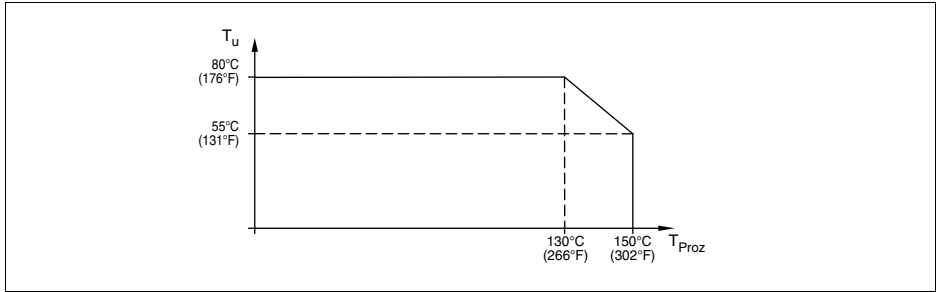


Fig. 14: Temperature derating VEGABAR 17

Storage and transport temperature -30 ... +105 °C (-22 ... +221 °F)

Process conditions

Product temperature

- Standard -30 ... +100 °C (-22 ... +212 °F)
- additional -40 ... +125 °C (-40 ... +257 °F)
- with cooling element -20 ... +150 °C (-4 ... +302 °F)
- EEx ia version -20 ... +80 °C (-4 ... +176 °F)
- Version for oxygen applications -20 ... +60 °C (-4 ... +140 °F)

Shock resistance

- Version with terminal housing 600 g according to IEC 60068-2-27 (mechanical shock)
- Standard version 1000 g according to IEC 60068-2-27 (mechanical shock)

Vibration resistance

- Version with terminal housing 10 g according to IEC 60068-2-6 (vibration at resonance)
- Standard version 20 g according to IEC 60068-2-6 (vibration at resonance)

Electromechanical data

Angled plug connector

- Version 4-pole according to DIN 43650-A
- Outer cable diameter 6 ... 8 mm

Circular plug connector

- Version 4-pole M12 x 1

Cable outlet

- Diameter 6.8 mm

Terminal housing

- Cable entry for cable outer diameter 6 ... 8 mm
- Spring-loaded terminals for wire cross-section up to 2.5 mm² (AWG 14)

Voltage supply

Supply voltage

- Version with plug or cable outlet 10 ... 30 V DC
- Version with terminal housing 11 ... 30 V DC

Load

- Version with cable outlet $RA \leq (U-10V)/0,02 \text{ A}$ - (length of the cable version in m x 0.14 Ω)
- Version with plug see diagram
- Version with terminal housing see diagram

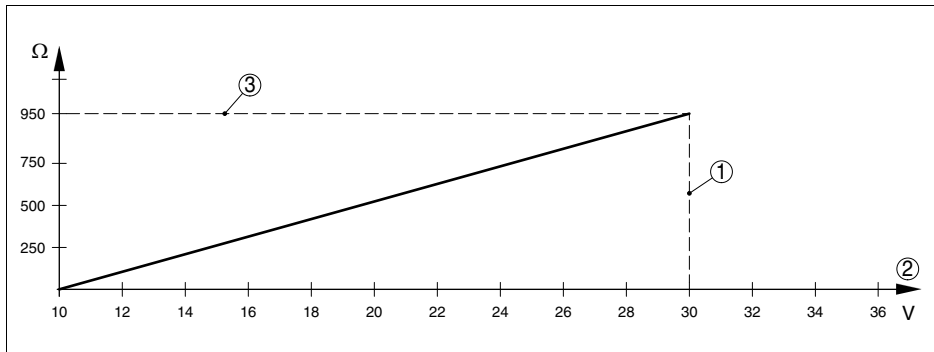


Fig. 15: Voltage diagram VEGABAR 17 with plug

- 1 Voltage limit
- 2 Supply voltage
- 3 Max. load

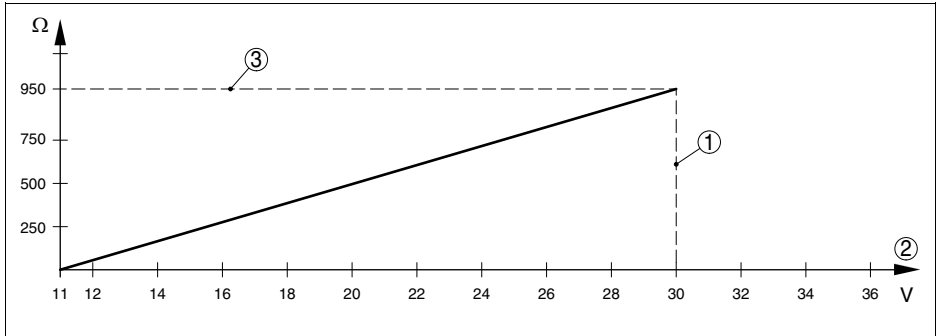


Fig. 16: Voltage diagram VEGABAR 17 with terminal housing

- 1 Voltage limit
- 2 Supply voltage
- 3 Max. load

Electrical protective measures

Protection⁹⁾

- with angled plug connector IP 65
- with round plug connection IP 65
- with cable outlet IP 67, IP 68, 0.5 bar
- with terminal housing IP 67

Voltage resistance Insulation according to EN 50020, 6.4, 12

Interference resistance

- HF 10 V/m
- Burst 2 kV

Other protective measures Interpolation and shortcircuit protection

Approvals

Depending on the version, instruments with approvals can have different technical data.

For these instruments, the corresponding approval documents have to be taken into account. These are part of the delivery or can be downloaded under www.vega.com via "VEGA Tools" and "serial number search" as well as via "Downloads" and "Approvals".

⁹⁾ According to EN 60529/IEC 529.

9.2 Dimensions

VEGABAR 17 - standard housing

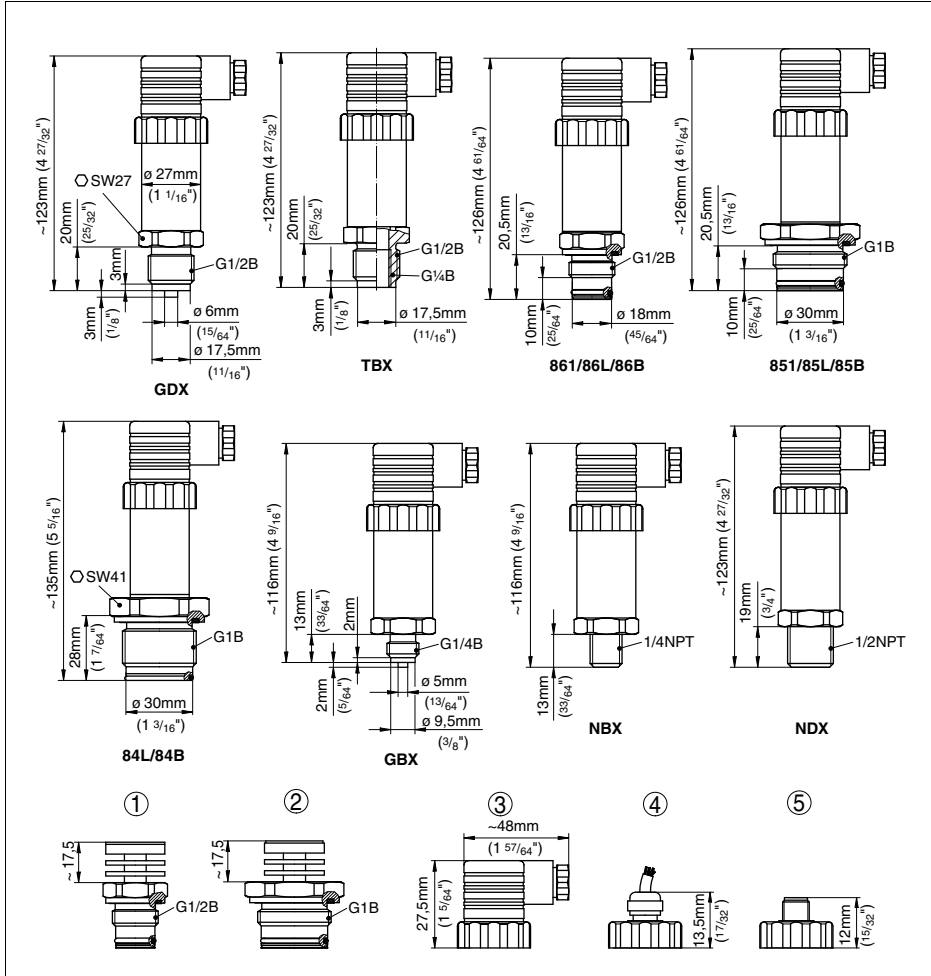


Fig. 17: VEGABAR 17 - dimensions with * in brackets apply to Ex versions, GDX = G $\frac{1}{2}$ B manometer connection, TBX = G $\frac{1}{2}$ B, inner G $\frac{1}{4}$ B, 84L/84B = G1 B front-flush max. 25 bar, 851/85L/85B = G1 B front-flush with O-ring up to 1.6 bar, 861/86L/86B = G $\frac{1}{2}$ B front-flush with O-ring > 1.6 bar, GBX = G $\frac{1}{4}$ B manometer connection, NBX = $\frac{1}{4}$ NPT thread, NDX = $\frac{1}{2}$ NPT thread

- 1 Cooling element G $\frac{1}{2}$ B
- 2 Cooling element G1 B
- 3 Plug according to DIN 43650-A
- 4 Cable outlet
- 5 M12 x 1 plug

VEGABAR 17 - terminal housing

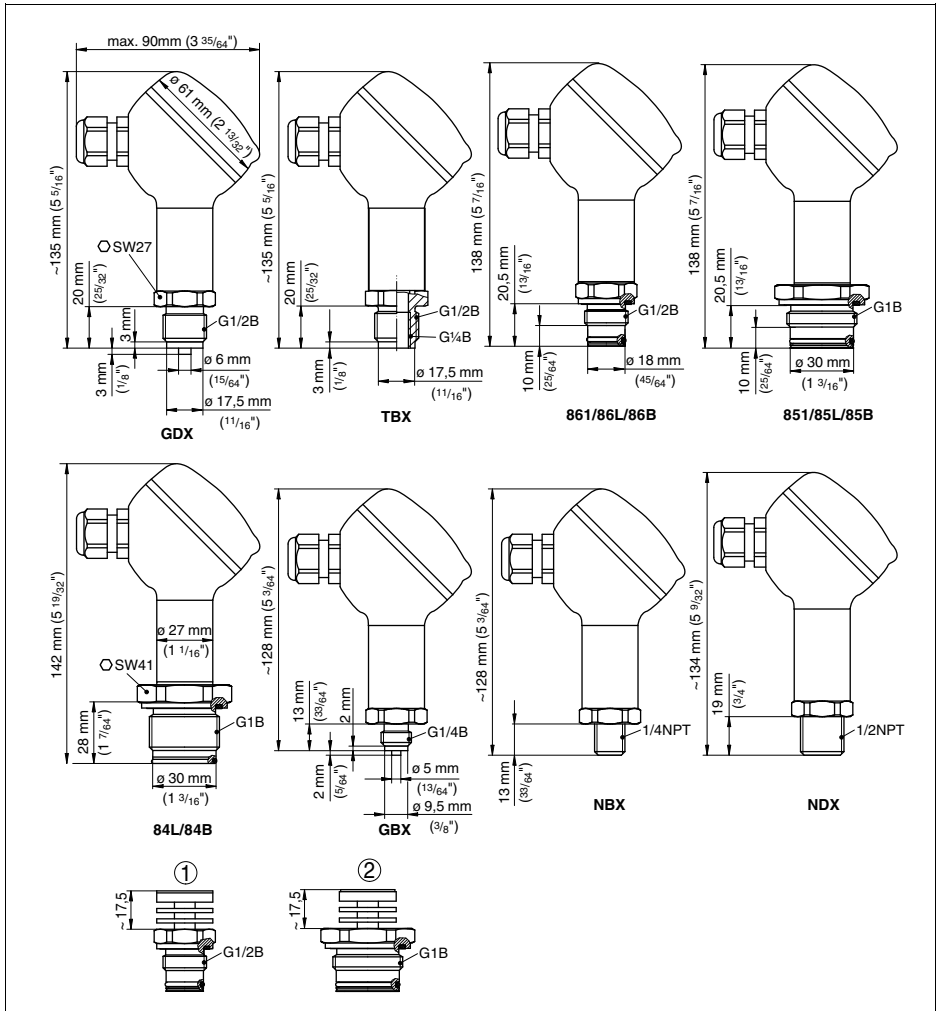


Fig. 18: VEGABAR 17 - terminal housing, GDX = G $\frac{1}{2}$ B manometer connection, TBX = G $\frac{1}{2}$ B, inner G $\frac{1}{4}$ B, 84L/84B = G1 B front-flush max. 25 bar, 851/85L/85B = G1 B front-flush with O-ring up to 1.6 bar, 861/86L/86B = G $\frac{1}{2}$ B front-flush with O-ring > 1.6 bar, GBX = G $\frac{1}{4}$ B manometer connection, NBX = $\frac{1}{4}$ NPT thread, NDX = $\frac{1}{2}$ NPT thread
 1 Cooling element G $\frac{1}{2}$ B
 2 Cooling element G1 B



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