



Product Information

Process pressure

Pressure transmitter

VEGABAR 81, 82, 83

VEGA

Contents

Take note of safety instructions for Ex applications



Please note the Ex specific safety information which you can find on our homepage www.vega.com/downloads under "*Approvals*" and which comes with every instrument. In hazardous areas you should take note of the corresponding regulations, conformity and type approval certificates of the sensors and power supply units. The sensors must only be operated on intrinsically safe circuits. The permissible electrical values are stated in the certificate.

1 Measuring principle

1.1 Overview

The VEGABAR 81, 82 and 83 can be used universally for the measurement of gases, vapours and liquids. The instrument series is designed for all applications in industrial measurement engineering. The pressure transmitters are the ideal solution for special as well as standard applications. Setup and commissioning is always the same. The VEGABAR 81, 82 and 83 offer maximum reliability and operational safety.

1.2 Measuring cell technology

VEGABAR 81

The VEGABAR 81 is equipped with a chemical seal system. It consists of a process diaphragm as well as an isolating liquid. The process diaphragm is available in different materials.

The process pressure acts on the sensor element via the chemical seal system and an internal stainless steel diaphragm. The process pressure causes a resistance change which is converted into a corresponding output signal and outputted as measured value.

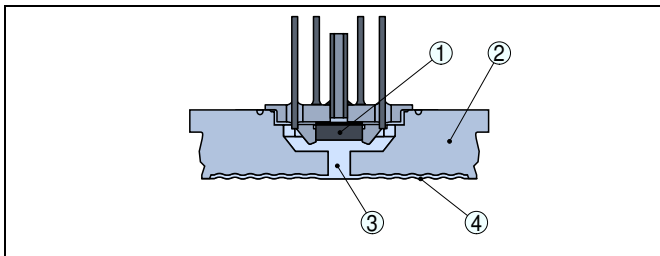


Fig. 1: Configuration of the piezoresistive measuring cell in VEGABAR 81

- 1 Sensor element
- 2 Base element
- 3 Process diaphragm
- 4 Silicone oil filling

For measuring ranges up to 16 bar, a piezoresistive sensor element with internal transmission liquid is implemented, for measuring ranges from 25 bar, a strain gauge (DMS) sensor element on the back side of the stainless steel diaphragm (dry).

VEGABAR 82

The sensor element is the CERTEC® measuring cell with front-flush, abrasion resistant ceramic diaphragm. The hydrostatic pressure of the medium or the process pressure causes a capacitance change in the measuring cell via the diaphragm. This change is converted into an appropriate output signal.

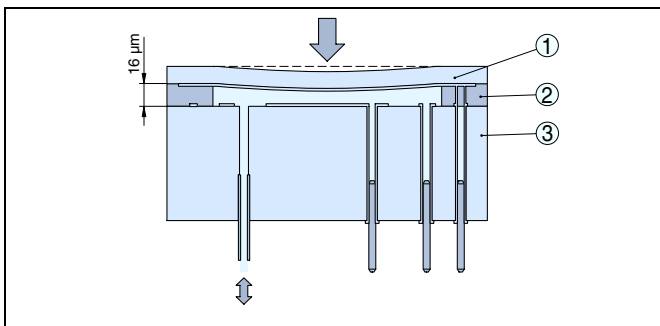


Fig. 2: Configuration of the CERTEC® measuring cell in VEGABAR 82

- 1 Diaphragm
- 2 Soldered glass bond
- 3 Base element

The CERTEC® measuring cell is also equipped with a temperature sensor. The temperature value can be displayed via the display and adjustment module or processed via the signal output.

VEGABAR 83

The process pressure acts via the process diaphragm to the sensor element. The process pressure causes a resistance change which is converted into a corresponding output signal and outputted as measured value. The process diaphragm is available in different materials.

For measuring ranges up to 16 bar, a piezoresistive sensor element with internal transmission liquid is used, and for measuring ranges 25 bar and higher, a strain gauge (DMS) sensor element on the back side of the stainless steel diaphragm (dry) is used.

With small measuring ranges or higher temperatures, the METEC® measuring cell is used. It consists of the ceramic-capacitive CERTEC® measuring cell and a special, temperature-compensated chemical seal system.

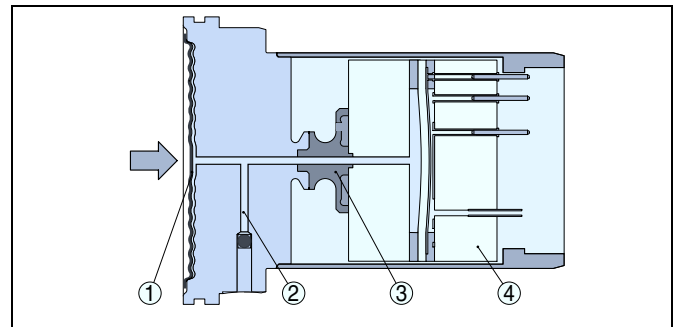


Fig. 3: Configuration of the METEC® measuring cell in VEGABAR 83

- 1 Process diaphragm
- 2 Isolating liquid
- 3 FeNi adapter
- 4 CERTEC® measuring cell

2 Type overview

VEGABAR 81



VEGABAR 82



VEGABAR 83



Measuring cell	Piezoresistive/DMS	CERTEC®	Piezoresistive/strain gauge, METEC®
Diaphragm	Metal	Ceramic	Metal
Media	gases, vapours and liquids, also aggressive ones, at high temperatures	gases, vapours and liquids, also with abrasive substances	gas, vapours and liquids, also viscous
Process fitting	Thread from ½" or ½ NPT Flanges from DN 20 Boltings, tube isolating diaphragm each from DN 25	Thread from 1" or ½ NPT Flanges from DN 25 Extension fittings from 1"	Thread from 1" or ½ NPT Flanges from DN 20 Boltings, tube isolating diaphragm each from DN 25
Material Process fitting	316L	316L, PVDF, Hastelloy C-22, Hastelloy C-276	316L
Diaphragm material	316L, Hastelloy C276, Tantalum, gold on 316L	Al ₂ O ₃ ceramic	316Ti, Elgiloy 2.4711, Hastelloy C-276, gold-coated, gold/rhodium-coated
Measuring cell seal	-	FKM, EPDM, FFKM	-
Isolating liquid	Silicone oil, high temperature oil, halocarbon oil, med. white oil	Dry measuring system	Silicone oil, Halocarbon oil Med. white oil
Measuring range	-1 ... +1000 bar/-100 ... +100 MPa (-14.5 ... +14500 psig)	-1 ... +100 bar/-100 ... +10 MPa (-14.5 ... +1450 psig)	-1 ... +1000 bar/-100 ... +100 MPa (-14.5 ... +14500 psig)
Smallest measuring range	0.4 bar/40 kPa (5.802 psig)	0.025 bar/2.5 kPa (1.45 psig)	0.1 bar/10 kPa (1.45 psig)
Process temperature	-40 ... +400 °C (-40 ... +752 °F)	-40 ... +150 °C (-40 ... +302 °F)	-40 ... +200 °C (-40 ... +392 °F)
Smallest deviation	< 0.2 %	< 0.05 %	< 0.075 %
Signal output	4 ... 20 mA, 4 ... 20 mA/HART, Profibus PA, Foundation Fieldbus, Modbus		
Interface	Digital interface for Slave-Master combination		
Indication/Adjustment	PLICSCOM, PACTware, VEGADIS 81, VEGADIS 62		
Approvals	Ship building, ATEX, IEC, overfill protection, FM, CSA, GOST		

3 Instrument selection

Application area

VEGABAR 81

The VEGABAR 81 is a pressure transmitter with chemical seal for pressure and level measurement. The process-adapted chemical seal system of VEGABAR 81 ensures reliable measurement even in highly corrosive and hot media.

VEGABAR 82

The VEGABAR 82 pressure transmitter can be used universally for measurement of gases, vapours and liquids. Even materials like sand are no problem for the abrasion-resistant ceramic measuring cell. The VEGABAR 82 is an economical solution for a multitude of applications in all areas of industry.

VEGABAR 83

The VEGABAR 83 is a pressure transmitter for pressure measurement of gases, vapours and liquids in all industries. VEGABAR 83 offers special advantages for applications with high pressures.

Configuration and housing protection classes

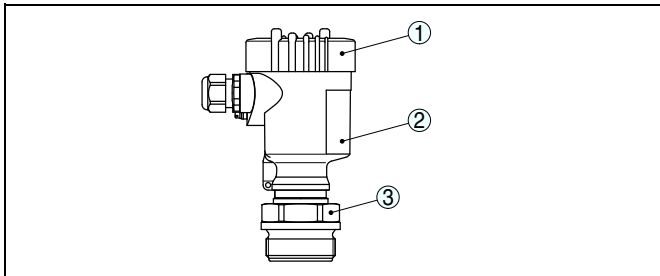


Fig. 4: Example of a VEGABAR 82 with connection G1½ and plastic housing with protection IP 66/IP 67

- 1 Housing cover with integrated display and adjustment module (optional)
- 2 Housing with electronics
- 3 Process fitting with measuring cell

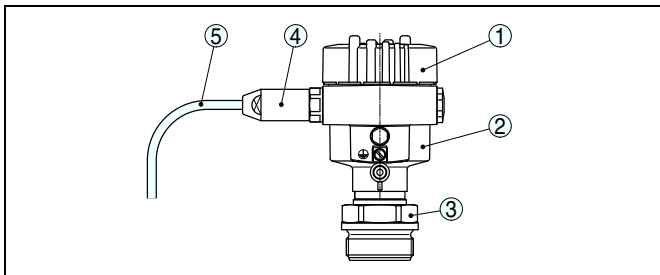


Fig. 6: Example of a VEGABAR 82 with flange and aluminium housing in protection IP 66/IP 68, 1 bar

- 1 Housing cover with integrated display and adjustment module (optional)
- 2 Housing with electronics
- 3 Process fitting with measuring cell
- 4 Cable gland
- 5 Connection cable

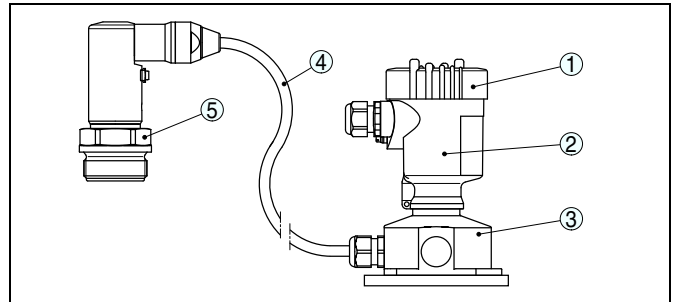


Fig. 8: Example of a VEGABAR 82 with flange and stainless steel housing with protection rating IP 68 and external electronics

- 1 Housing cover with integrated display and adjustment module (optional)
- 2 Housing with electronics
- 3 Housing base
- 4 Connection cable
- 5 Process fitting with measuring cell

Measured variables

The pressure transmitters VEGABAR 81, 82 and 83 are suitable for measurement of the following process variables:

- Process pressure
- Level

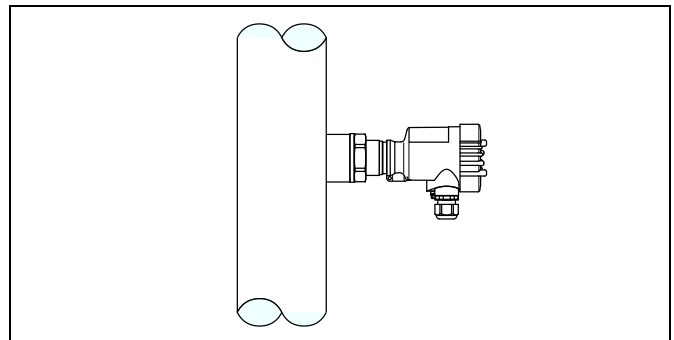


Fig. 10: Process pressure measurement

In conjunction with a Slave sensor for electronic differential pressure measurement, the instruments are also suitable for the measurement of the following process variables:

- Differential pressure
- Level
- Flow
- Density
- Interface

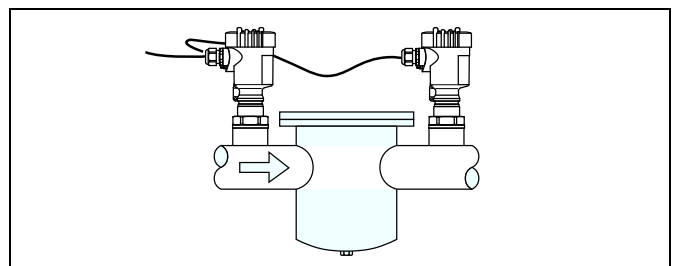






Fig. 11: Differential pressure measurement via Master-Slave combination




4 Selection criteria



		VEGABAR 81	VEGABAR 82	VEGABAR 83
Wear through process	Aggressive products	●	–	●
	Abrasive products	–	●	–
Process temperature up to	150 °C (302 °F)	●	●	●
	200 °C (302 °F)	●	●	●
	400 °C (752 °F)	●	–	–
Measuring system	Dry	–	●	–
	Oil-filled	●	–	●
Version process fittings	Front-flush	●	●	●
	Hygienic	●	●	●
Largest measuring range	100 bar (10 MPa)	●	●	●
	400 bar (40 MPa)	●	–	●
	1000 bar (100 MPa)	●	–	●
Smallest measuring range	400 mbar (40 kPa)	●	●	●
	100 mbar (10 kPa)	–	●	●
	25 mbar (2,5 kPa)	–	●	–
Vacuum applications up to	1 mbar _{abs} (100 Pa)	–	●	–
Suitability for industry-specific applications	Aggregates and mining industry	–	●	●
	Chemical	●	●	–
	Power generation	●	●	–
	Foodstuffs	●	●	●
	Metal production	–	●	●
	Offshore	●	●	–
	Paper	●	●	●
	Petrochemical	●	●	–
	Pharmaceutical	●	●	–
	Shipbuilding	–	●	●
	Environment and recycling industry	–	●	–
	Water, waste water	–	●	–
	Cement industry	–	●	●

5 Housing overview

Plastic PBT		
Protection rating	IP 66/IP 67	IP 66/IP 67
Version	Single chamber	Double chamber
Application area	Industrial environment	Industrial environment

Aluminium		
Protection rating	IP 66/IP 67, IP 66/IP 68 (1 bar)	IP 66/IP 67, IP 66/IP 68 (1 bar)
Version	Single chamber	Double chamber
Application area	Industrial environment with increased mechanical wear	Industrial environment with increased mechanical wear

Stainless steel 316L			
Protection rating	IP 66/IP 67 IP 69K	IP 66/IP 67 IP 66/IP 68 (1 bar)	
Version	Single chamber electropolished	Single chamber precision casting	Double chamber precision casting
Application area	Aggressive environment, food processing, pharmaceutical	Aggressive environment, extreme mechanical wear	

Separate version		
Material	Stainless steel 316L	plastic PBT Stainless steel 316L
Protection rating	IP 68 (25 bar)	IP 65 IP 66/IP 67
Function	Transmitter	External electronics
Application area	Extremely moist environment	Industrial environment

6 Mounting

Installation position

The instruments function in any installation position. But the installation position can influence the measurement, depending on the measuring system. This can be compensated by a position correction.

It is useful to select an installation position you can easily reach for mounting and connecting as well as later retrofitting of an display and adjustment module. For this purpose, the housing can be rotated by 330° without the use of any tools. You can also install the indicating and adjustment module in four different positions (each displaced by 90°).

Mounting examples and measurement setups

The following illustrations show mounting examples and measurement setups.

Process pressure measurement

The VEGABAR measures the pressure in a pipeline.

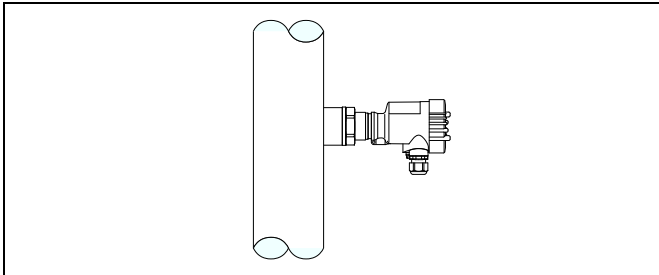


Fig. 12: Process pressure measurement on a pipeline with VEGABAR

Level measurement

The VEGABAR measures the level in a vessel.

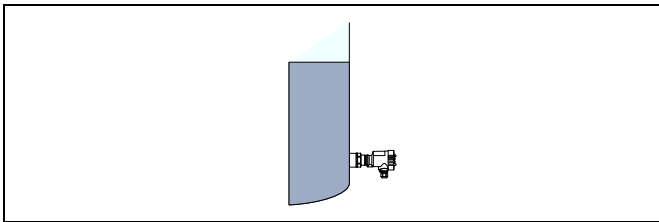


Fig. 14: Level measurement in a vessel with VEGABAR

Differential pressure measurement

The VEGABAR measures the differential pressure between input and output of a filter.

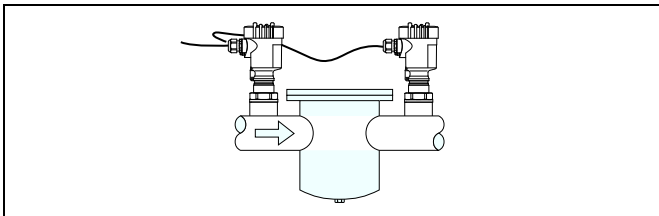


Fig. 16: Differential pressure measurement on a filter with VEGABAR and Slave sensor

Flow measurement

The VEGABAR measures the flow via the pressure difference between the front and back sides of an orifice plate.

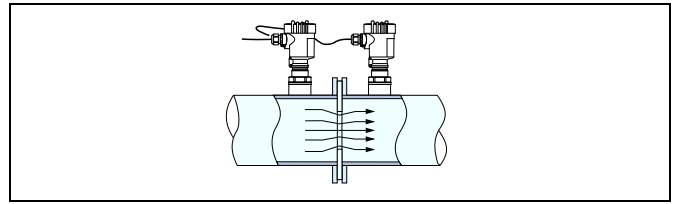


Fig. 18: Flow measurement through an orifice with VEGABAR and a Slave sensor

Density measurement

The VEGABAR measures the density of the medium in a vessel.

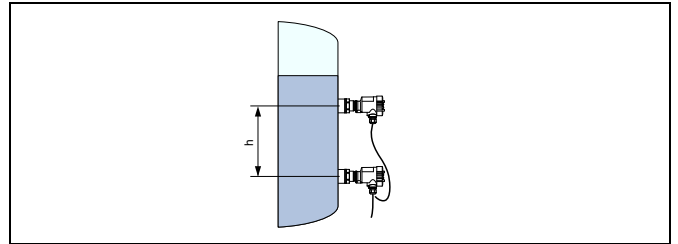


Fig. 20: Density measurement on a vessel with VEGABAR and Slave sensor

Interface measurement

The VEGABAR measures the interface of two liquids in a vessel.

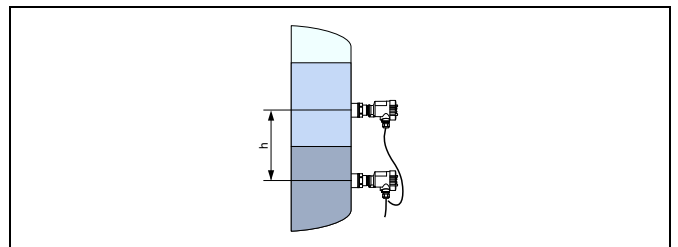


Fig. 22: Interface measurement on a vessel with VEGABAR and Slave sensor

7 Electronics - 4 ... 20 mA - two-wire

Configuration of the electronics

The pluggable electronics is mounted in the electronics compartment of the instrument and can be exchanged by the user when servicing is required. The electronics is completely encapsulated to protect against vibration and moisture.

The terminals for voltage supply as well as the contact pins with I²C interface for parameter adjustment are located on the upper side of the electronics. With the double chamber housing, the terminals are located in the separate connection compartment.

Voltage supply

Power supply and current signal are carried on the same two-wire cable. The operating voltage can differ depending on the instrument version.

You can find the data of the voltage supply in chapter "Technical data" in the operating instructions manual of the respective instrument.

Provide a reliable separation between the supply circuit and the mains circuits according to DIN EN 61140 VDE 0140-1.

Data of the voltage supply:

- Operating voltage
 - 9.6 ... 35 V DC
- Permissible residual ripple - Non-Ex, Ex-ia instrument
 - for U_N 12 V DC: $\leq 0.7 V_{eff}$ (16 ... 400 Hz)
 - for U_N 24 V DC: $\leq 1.0 V_{eff}$ (16 ... 400 Hz)
- Permissible residual ripple - Ex-d-ia instrument
 - for U_N 24 V DC: $\leq 1.0 V_{eff}$ (16 ... 400 Hz)

Keep in mind the following additional factors that influence the operating voltage:

- Lower output voltage of the power supply unit under nominal load (e.g. 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" of the operating instructions of the respective instrument)

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 61326-1 for industrial areas, screened cable should be used.

In the product configurator of VEGABAR, different cable glands are available. This selection covers all cable diameters in the range of 4 ... 12 mm (0.16 ... 0.47 in).

Cable screening and grounding

If screened cable is required, we recommend to connect the cable screen on both ends to ground potential. In the sensor, the screen must be connected directly to the internal ground terminal. The ground terminal on the outside of the housing must be connected to the ground potential (low impedance).

Connection

Single chamber housing

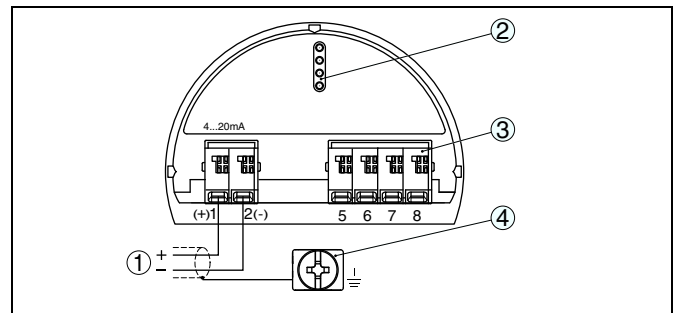


Fig. 24: Electronics and connection compartment, single chamber housing

- 1 Voltage supply/Signal output
- 2 For display and adjustment module or interface adapter
- 3 For external display and adjustment unit
- 4 Ground terminal for connection of the cable screen

8 Electronics - 4 ... 20 mA/HART - two-wire

Configuration of the electronics

The pluggable electronics is mounted in the electronics compartment of the instrument and can be exchanged by the user when servicing is required. The electronics is completely encapsulated to protect against vibration and moisture.

The terminals for voltage supply as well as the contact pins with I²C interface for parameter adjustment are located on the upper side of the electronics. With the double chamber housing, the terminals are located in the separate connection compartment.

Voltage supply

Power supply and current signal are carried on the same two-wire cable. The operating voltage can differ depending on the instrument version.

You can find the data of the voltage supply in chapter "Technical data" in the operating instructions manual of the respective instrument.

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Data of the voltage supply:

- Operating voltage
 - 9.6 ... 35 V DC
- Permissible residual ripple - Non-Ex, Ex-ia instrument
 - for U_N 12 V DC: ≤ 0.7 V_{eff} (16 ... 400 Hz)
 - for U_N 24 V DC: ≤ 1.0 V_{eff} (16 ... 400 Hz)
- Permissible residual ripple - Ex-d-ia instrument
 - for U_N 24 V DC: ≤ 1.0 V_{eff} (16 ... 400 Hz)

Keep in mind the following additional factors that influence the operating voltage:

- Lower output voltage of the power supply unit under nominal load (e.g. 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" of the operating instructions of the respective instrument)

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 61326-1 for industrial areas, screened cable should be used.

In the product configurator of VEGABAR, different cable glands are available. This selection covers all cable diameters in the range of 4 ... 12 mm (0.16 ... 0.47 in).

We generally recommend the use of screened cable for HART multidrop mode.

Cable screening and grounding

If screened cable is required, we recommend to connect the cable screen on both ends to ground potential. In the sensor, the screen must be connected directly to the internal ground terminal. The ground terminal on the outside of the housing must be connected to the ground potential (low impedance).

Connection

Single chamber housing

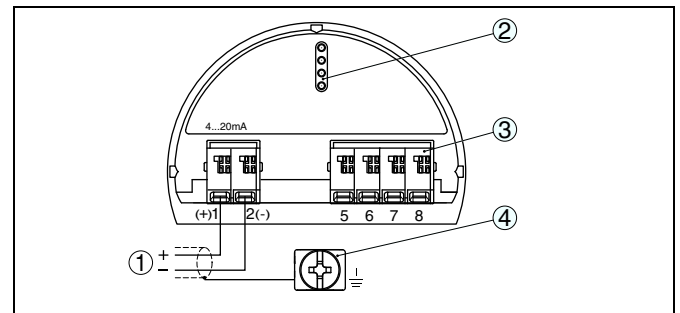


Fig. 25: Electronics and connection compartment, single chamber housing

- 1 Voltage supply/Signal output
- 2 For display and adjustment module or interface adapter
- 3 For external display and adjustment unit
- 4 Ground terminal for connection of the cable screen

Double chamber housing

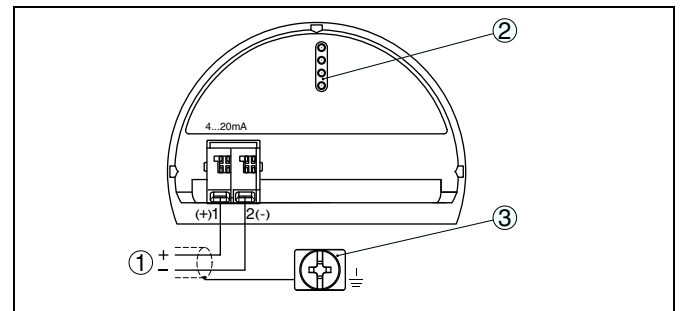


Fig. 26: Connection compartment, double chamber housing

- 1 Voltage supply/Signal output
- 2 For display and adjustment module or interface adapter
- 3 Ground terminal for connection of the cable screen

9 Electronics - Profibus PA

Configuration of the electronics

The pluggable electronics is mounted in the electronics compartment of the instrument and can be exchanged by the user when servicing is required. The electronics is completely encapsulated to protect against vibration and moisture.

The terminals for voltage supply as well as the plug with I²C interface for parameter adjustment are located on the upper side of the electronics. On the double chamber housing, these connection elements are located in the separate connection compartment.

Voltage supply

The voltage supply is provided by a Profibus DP /PA segment coupler.

Data of the voltage supply:

- Operating voltage
 - 9 ... 32 V DC
- Max. number of sensors per DP/PA segment coupler
 - 32

Connection cable

Connection is carried out with screened cable according to Profibus specification.

In the product configurator of VEGABAR, different cable glands are available. This selection covers all cable diameters in the range of 4 ... 12 mm (0.16 ... 0.47 in).

Make sure that the entire installation is carried out according to the Profibus specification. In particular, make sure that the bus is terminated with suitable terminating resistors.

Cable screening and grounding

With systems with potential equalisation, connect the cable screen directly to ground potential at the power supply unit, in the connection box and at the sensor. The screen in the sensor must be connected directly to the internal ground terminal. The ground terminal outside on the housing must be connected to the potential equalisation (low impedance).

In systems without potential equalisation, connect the cable screen directly to ground potential on the power supply unit and the sensor. In the connection box or T-distributor, the screen of the short stub to the sensor must not be connected to ground potential or to another cable screen.

Connection

Single chamber housing

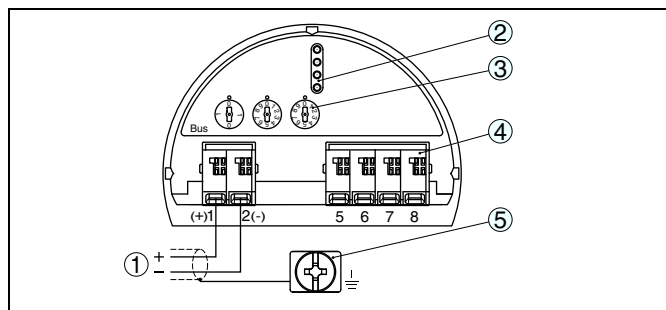


Fig. 27: Electronics and connection compartment, single chamber housing

- 1 Voltage supply/Signal output
- 2 For display and adjustment module or interface adapter
- 3 Selection switch for bus address
- 4 For external display and adjustment unit
- 5 Ground terminal for connection of the cable screen

Double chamber housing

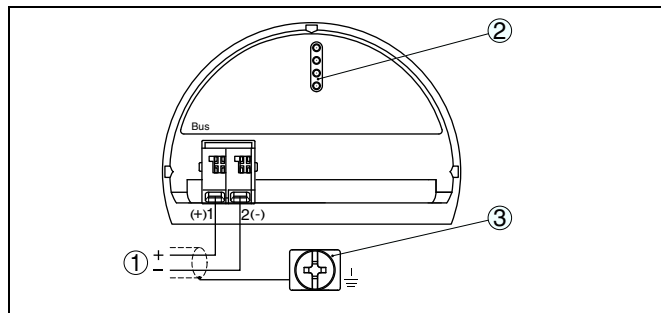


Fig. 28: Connection compartment, double chamber housing

- 1 Voltage supply/Signal output
- 2 For display and adjustment module or interface adapter
- 3 Ground terminal for connection of the cable screen

10 Electronics - Foundation Fieldbus

Configuration of the electronics

The pluggable electronics is mounted in the electronics compartment of the instrument and can be exchanged by the user when servicing is required. The electronics is completely encapsulated to protect against vibration and moisture.

The terminals for voltage supply as well as the plug with I²C interface for parameter adjustment are located on the upper side of the electronics. On the double chamber housing, these connection elements are located in the separate connection compartment.

Voltage supply

Power supply via the H1 Fieldbus cable.

Data of the voltage supply:

- Operating voltage
 - 9 ... 32 V DC
- max. number of sensors
 - 32

Connection cable

Connection is carried out with screened cable according to Fieldbus specification.

In the product configurator of VEGABAR, different cable glands are available. This selection covers all cable diameters in the range of 4 ... 12 mm (0.16 ... 0.47 in).

Make sure that the entire installation is carried out according to the Fieldbus specification. In particular, make sure that the bus is terminated with suitable terminating resistors.

Cable screening and grounding

With systems with potential equalisation, connect the cable screen directly to ground potential at the power supply unit, in the connection box and at the sensor. The screen in the sensor must be connected directly to the internal ground terminal. The ground terminal outside on the housing must be connected to the potential equalisation (low impedance).

In systems without potential equalisation, connect the cable screen directly to ground potential on the power supply unit and the sensor. In the connection box or T-distributor, the screen of the short stub to the sensor must not be connected to ground potential or to another cable screen.

Connection

Single chamber housing

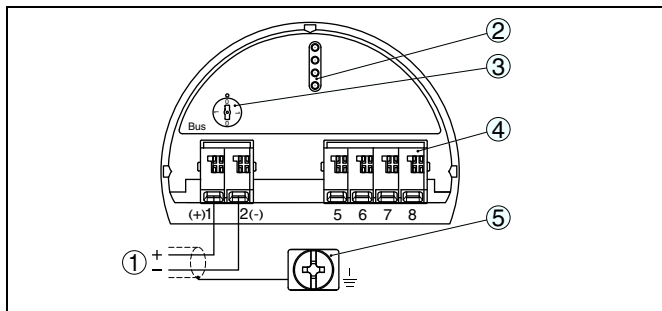


Fig. 29: Electronics and connection compartment, single chamber housing

- 1 Voltage supply/Signal output
- 2 Contact pins for the display and adjustment module or interface adapter
- 3 Selection switch for bus address
- 4 For external display and adjustment unit
- 5 Ground terminal for connection of the cable screen

Double chamber housing

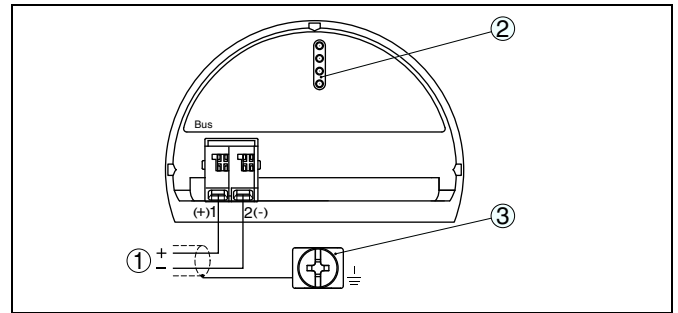


Fig. 30: Connection compartment, double chamber housing

- 1 Voltage supply/Signal output
- 2 For display and adjustment module or interface adapter
- 3 Ground terminal for connection of the cable screen

11 Electronics - Slave sensor

Configuration of the electronics

The pluggable electronics is mounted in the electronics compartment of the instrument and can be exchanged by the user when servicing is required. The electronics is completely encapsulated to protect against vibration and moisture.

The terminals for voltage supply as well as the contact pins with I²C interface for parameter adjustment are located on the upper side of the electronics. With the double chamber housing, the terminals are located in the separate connection compartment.

Voltage supply

The Slave sensor can be mounted up to 25 m away from the Master sensor, by which it is directly powered. A separate power supply is not required.

Connection cable

Connect the cable screen on both ends to ground potential. In VEGABAR Slave and Master sensor, the screen must be connected directly to the internal ground terminal. The ground terminal on the outside of the respective housing must be connected to the potential equalisation (low impedance).

Connection cable

VEGABAR is connected to the sensor with standard four-wire, screened cable.

In the product configurator of VEGABAR, different cable glands are available. This selection covers all cable diameters in the range of 4 ... 12 mm (0.16 ... 0.47 in).

Connection

Single chamber housing

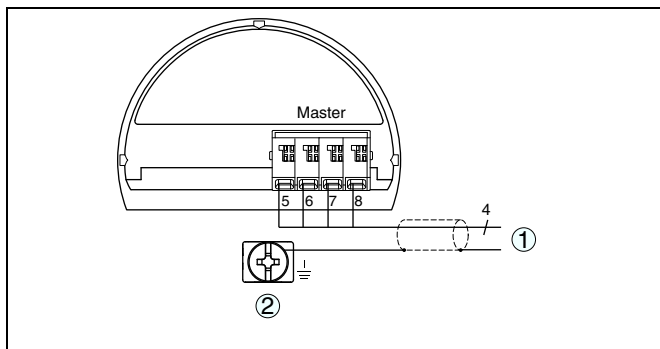


Fig. 31: Electronics and connection compartment Slave sensor

- 1 To the Master sensor
- 2 Ground terminal for connection of the cable screen¹⁾

¹⁾ Connect screen here. Connect ground terminal on the outside of the housing as prescribed. The two terminals are galvanically connected.

12 Operation

12.1 Overview

The sensors can be adjusted with the following adjustment media:

- With the display and adjustment module
- With external display and adjustment unit
- an adjustment software according to FDT/DTM standard, e.g. PACTware and PC

as well as via systems from other manufacturers, dependent on the signal output:

- A HART handheld (4 ... 20 mA/HART)
- The adjustment program AMS (4 ... 20 mA/HART and Foundation Fieldbus)
- The adjustment program PDM (Profibus PA)
- A configuration tool (Foundation Fieldbus)

The entered parameters are generally saved in the sensor, optionally also in the display and adjustment module or in the adjustment program.

12.2 Display and adjustment module PLICSCOM

The pluggable display and adjustment module is used for measured value indication, operation and diagnosis. It is equipped with an illuminated full dot matrix as well as four keys for adjustment.



Fig. 32: Display and adjustment module PLICSCOM

The display and adjustment module is integrated in the respective sensor housing or in the external indicating and adjustment unit. After mounting, the sensor as well as the display and adjustment module are splash-proof even without housing cover.

12.3 PACTware/DTM

As an alternative to the display and adjustment module, the sensor can also be configured via a Windows PC. To do this, the configuration software PACTware and a suitable instrument driver (DTM) according to the FDT standard are required. The current PACTware version as well as all available DTMs are compiled in a DTM Collection. The DTMs can also be integrated into other frame applications according to the FDT standard.

All device DTMs are available as a free-of-charge standard version and as a full version that must be purchased. In the standard version, all functions for complete setup are already included. An assistant for simple project configuration simplifies the adjustment considerably. Saving/printing the project as well as import/export functions are also part of the standard version.

In the full version there is also an extended print function for complete project documentation as well as a save function for measured value and echo curves. In addition, there is a tank calculation program as well as a multiviewer for display and analysis of the saved measured value and echo curves.

Connection of the PC via VEGACONNECT

The interface converter VEGACONNECT is required for connection of the PC. On the computer side, the connection is made via USB interface. The VEGACONNECT is placed instead of the display and adjustment module to the sensor, the connection to the sensor is made automatically. As an alternative the connection via the HART signal can be carried out on any position of the signal cable with 4 ... 20 mA/HART sensors.

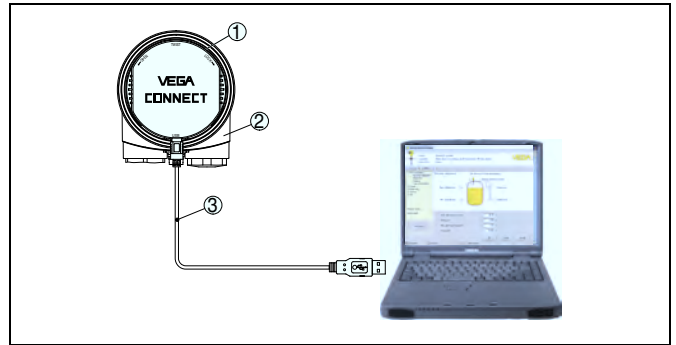


Fig. 33: Connection via VEGACONNECT and USB

- 1 VEGACONNECT
- 2 plics® sensor
- 3 USB cable to the PC

Necessary components:

- VEGABAR
- PC with PACTware and suitable DTM
- VEGACONNECT
- Voltage supply/Processing system

12.4 Alternative adjustment programs

PDM

For HART and Profibus PA sensors, device descriptions are available as EDDs for the adjustment program PDM. The device descriptions are already included in the current version of the PDM. Newer instrument drivers that are not yet delivered with the PDM are available in the download section.

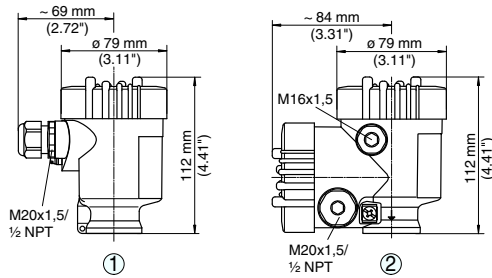
AMS

For HART and Foundation Fieldbus sensors, device descriptions are available as EDDs for the adjustment program AMS. The device descriptions are already included in the current version of the AMS. Newer instrument drivers that are not yet delivered with the AMS are available in the download section.

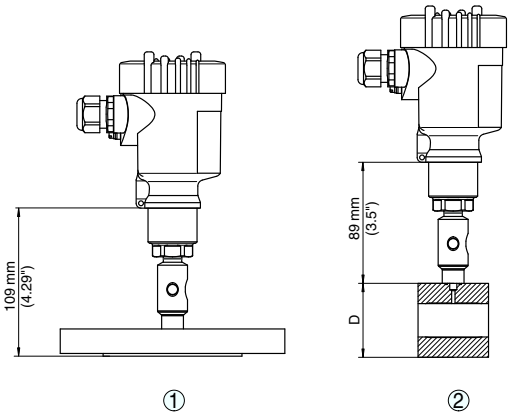
13 Dimensions

Plastic housing

VEGABAR 81

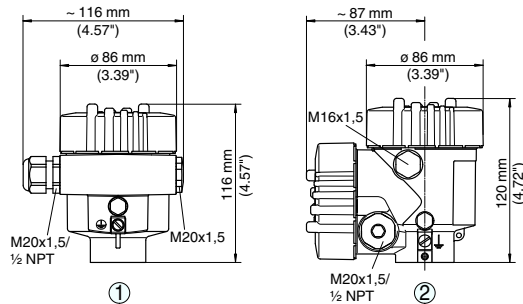


- 1 Single chamber housing
- 2 Double chamber housing



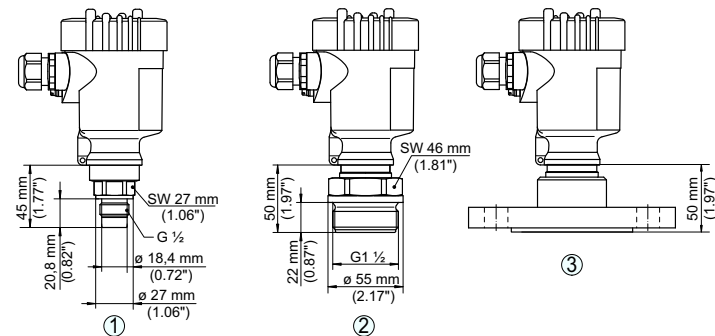
Aluminium housing

- 1 Flange version
- 2 Version with tube isolating diaphragm



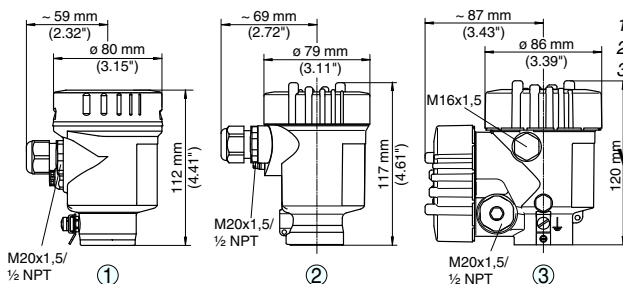
- 1 Single chamber housing
- 2 Double chamber housing

VEGABAR 82



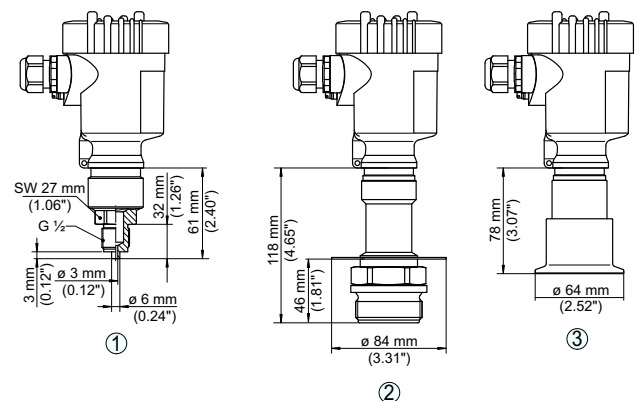
Stainless steel housing

- 1 Threaded version G1½ A
- 2 Threaded version G½ A, inner G¼ A
- 3 Threaded version G½ A, inner G¼ A, PVDF



- 1 Single chamber housing electropolished
- 2 Single chamber housing precision casting
- 2 Double chamber housing precision casting

VEGABAR 83



- 1 Threaded version G1½ A
- 2 Threaded version G1½ A, 200 °C
- 3 Tri-Clamp version 2"

The listed drawings are only an excerpt of the available process fittings. You can find more drawings at www.vega.com/downloads under "Drawings".



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Subject to change without prior notice

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