Pressure sensors for all applications

Process, hydrostatic and differential pressure

VEGA HOME OF VALUES

Customised solutions for successful process control

We are experts in pressure instrumentation with over 50 years experience, working closely with partners in numerous industries worldwide. Our innovative and reliable pressure transmitters can be easily integrated into your processes and offer superior performance. They stand for high accuracy, wide pressure ranges, are certified for hygiene and they stay reliable – even under extreme conditions: abrasion, aggressive substances, high temperatures, high humidity and diffusion.

From concept to the finished end-product: Our pressure sensors are produced in an environmentally conscious way using leading-edge technologies.

Process pressure, hydrostatic pressure and differential pressure: Our hi-tech, proven in service pressure transmitters are used to create optimal solutions for the process industry.

Always the right sensor for your application

Ceramic-capacitive measuring cell

VEGA develops and manufactures all the core components of the measuring instruments itself. This also applies to the ceramic-capacitive CERTEC® and the metallic METEC® measuring cells.

They are produced under “Clean Room Class 100” conditions to ensure they deliver unrivalled precision.

Each one is calibrated on DKD-certified test benches – their calibration certificate is an integral part of the scope of delivery.

Chemical seal system

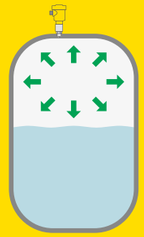
Differential pressure measuring cell

Metallic measuring cells

Overview of pressure instrumentation

Process pressure

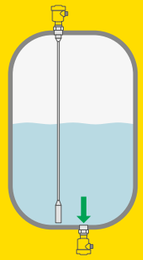
Process pressure transmitters to monitor relative or absolute pressures in pipelines or closed vessels in production systems. They measure liquids, gases and vapours – and also work reliably in applications with condensation or rapid temperature changes.



- Large measuring range: from full vacuum to very high pressures
- High operational reliability through integrated self-monitoring
- High overload resistance, long-term stability and temperature shock compensation by using dry, ceramic-capacitive measuring cell technology

Hydrostatic pressure

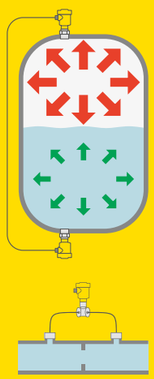
In this type of pressure measurement, the sensor’s measuring cell detects even the smallest changes in hydrostatic pressure, which increases or decreases depending on the level of the liquid. With this operating principle, which VEGA offers with ceramic-capacitive or metallic measuring cells, the liquid pressures in tanks, pipelines, basins, or even lakes can be reliably measured.



- An additional output of the temperature of the medium, is also possible
- Hydrostatic pressure measurement is unaffected by foaming or internal vessel installations
- Precise adaptation to the process is enabled with a wide selection of measuring cells and housing materials

Differential pressure

Differential pressure measurement is used to measure pressure, level, density and flow of liquids, suspensions, gases or vapours. VEGA offers both conventional DP transmitters and electronic differential pressure transmitter systems. While high static pressures and large pressure differences are the domain of conventional differential pressure, the electronic differential pressure solution offers a flexible combination of sensor and cell types, simple cabling and easier installation, as well as freedom from the influence of ambient temperatures on the measured value.



- Extensive application spectrum thanks to wide selection of measuring ranges and process fittings
- Even detects pressures of just a few millibars
- By utilising a chemical seal, even processes with extreme temperatures can be measured safely and reliably

Process pressure: Integration at low cost

Everything in view with IO-Link sensors: There is no easier or faster way to visualise operating states. Thanks to a 360° illuminated ring, the display can be seen from any direction and the status remains easily recognisable at all times, even in daylight.

Bluetooth IO-Link

Process pressure: Three for any eventuality

VEGABAR 81: versatile, unaffected by hot and chemically aggressive media

VEGABAR 82: robust, abrasion-resistant, dry ceramic measuring cell

VEGABAR 83: elastomer-free, fully welded, high process pressures, metallic measuring cell

Bluetooth

Differential pressure: Unique competencies

Electronic differential pressure: any variants in the **VEGABAR 80 range** can be combined – wide temperature differences, vacuum, abrasion, cost-optimised

Classic differential pressure VEGADIF 85 universal, large pressure differentials, high static pressures, robust operational reliability using an integrated overload diaphragm

Bluetooth

Hydrostatic: Detecting the smallest changes in pressure

VEGAWELL 52: features extremely high overload and vacuum resistance, for all water/wastewater applications

VEGABAR 86: abrasion-resistant, highly stable ceramic measuring cell for critical level measurements, like highly ionic water

VEGABAR 87: metallic measuring cell, gap-free stainless steel tube version, for large measuring ranges

	BASIC	BASIC	BASIC
	VEGABAR 18/19	**VEGABAR 28/29**	**VEGABAR 38/39**
	Low-cost version with extremely small installation dimensions	Simple integration into control systems through IO-Link communication	Simple setup thanks to large on-site display with VDMA operation and additional texts
			
Application	Liquids and gases	Liquids and gases	Liquids and gases
Deviation	0.5 %	0.3 %	0.3 %
Measuring cell **Measuring cell seal**	Metallic measuring cell or ceramic measuring cell FKM	Metallic measuring cell or ceramic measuring cell FKM, EPDM, FFKM	Metallic measuring cell or ceramic measuring cell FKM, EPDM, FFKM
Process fitting	Standard thread, G½, G1, ½ NPT, 1 NPT, optional front-flush; 316L	Thread, optionally with front-flush and hygienic fittings, universal connection for hygienic adapter; 316L, Duplex steel, PEEK	Thread, optionally with front-flush and hygienic fittings, universal connection for hygienic adapter; 316L, Duplex steel, PEEK
Process temperature	-40 … +100 °C	-40 … +130 °C/ 1 h @ +135 °C steam	-40 … +130 °C/ 1 h @ +135 °C steam
Measuring range	Relative 0 ... +100 bar (0 ... +10000 kPa)	Absolute and relative -1 ... +1000 bar (-100 ... +100000 kPa)	Absolute and relative -1 ... +1000 bar (-100 ... +10000 kPa)
Overload resistance	up to 150-fold measuring range	up to 150-fold measuring range	up to 150-fold measuring range
Signal output	Two-wire: 4 … 20 mA	Two-wire: 4 ... 20 mA Three-wire: IO-Link, transistor (PNP/NPN), 4 ... 20 mA (active)	Two-wire: 4 ... 20 mA Three-wire: IO-Link, transistor (PNP/NPN), 4 ... 20 mA (active)
Display/adjustment	–	PACTware/DTM, VEGA Tools app, IODD, Bluetooth, full-colour multidirectional switching status indication	Integrated on-site display and 3-key operation, PACTware/DTM, VEGA Tools app, IODD, Bluetooth, full-colour multidirectional switching status indication
Approvals	–	ATEX, Ship, Food industry	ATEX, Ship, Food industry

	PRO	PRO	PRO
	VEGABAR 81	**VEGABAR 82**	**VEGABAR 83**
	Simple process adaptation, versatile configuration, equipped with temperature standoff	High resistance to abrasion and corrosion through use of high-quality Sapphire Ceramic®	Reliable measurement even at high pressures
			
Application	Liquids and gases with high temperatures	Liquids and gases	Liquids and gases also with high pressures
Deviation	0.2 %; 0.1 %	0.2 %; 0.1 %; 0.05 %	0.2 %; 0.1 %; 0.075 %
Measuring cell **Measuring cell seal**	Chemical seal system –	CERTEC®, MINI-CERTEC® FKM, EPDM, FFKM	Piezoresistive/thin film strain gauge/METEC® –
Process fitting	Thread from G½, ½ NPT, flanges from DN 25, 1", hygienic fittings of 316L, Alloy, Duplex steel, Tantalum, gold	Thread from G½, ½ NPT, flanges from DN 15, ½", hygienic fittings; 316L, Alloy, Duplex steel, PVDF, PEEK	Thread from G¼, ¼ NPT, flanges from DN 25, 1", hygienic fittings; 316L, Alloy
Process temperature	-90 … +400 °C	-40 … +150 °C	-40 … +200 °C
Measuring range	Absolute and relative -1 … +1000 bar (-100 … +100000 kPa)	Absolute and relative -1 … +100 bar (-100 … +10000 kPa)	Absolute and relative -1 … +1000 bar (-100 … +100000 kPa)
Overload resistance	Depending on chemical seal system	up to 200-fold measuring range	up to 150-fold measuring range
Signal output	4 … 20 mA, 4 … 20 mA/HART, Profibus PA, Foundation Fieldbus, Modbus	4 … 20 mA, 4 … 20 mA/HART, Profibus PA, Foundation Fieldbus, Modbus	4 … 20 mA, 4 … 20 mA/HART, Profibus PA, Foundation Fieldbus, Modbus
Display/adjustment	PLICSCOM, PACTware/DTM, VEGADIS 81, VEGADIS 82, VEGA Tools app	PLICSCOM, PACTware/DTM, VEGADIS 81, VEGADIS 82, VEGA Tools app	PLICSCOM, PACTware/DTM, VEGADIS 81, VEGADIS 82, VEGA Tools app
Approvals	ATEX, Ship, SIL, Food industry	ATEX, Ship, SIL, Food industry	ATEX, Ship, SIL, Food industry

	PRO	PRO
	Electronic differential pressure	**VEGADIF 85**
	Exact differential pressure measurement without capillary lines	Measurement of extremely low differential pressures through high-precision measurement data acquisition
		
Application	Liquids and gases, even at high pressures and temperatures	Liquids and gases
Deviation	0.2 %; 0.1 %; 0.05 %	0.065 %
Measuring cell	Depending on the sensor of VEGABAR series 80	Metallic measuring cell 316L, Alloy, gold
Process fitting	Thread from G¼, ¼ NPT, flanges from DN 25, 1", hygienic fittings; 316L, Duplex steel, PVDF, Alloy, PEEK	¼-18 NPT, M10, optional with chemical seal assembly, metallic of 316L, Alloy
Process temperature	-40 … +400 °C	-40 … +105 °C
Measuring range	±0.025 … ±1000 bar (±2.5 … ±100000 kPa)	±0.01 … ±40 bar (+1 … +4000 kPa)
Overload resistance	up to 200-fold measuring range	up to 400 bar
Signal output	4 ... 20 mA/HART, Profibus PA, Foundation Fieldbus	4 … 20 mA, 4 … 20 mA/HART, Profibus PA, Foundation Fieldbus
Display/adjustment	PLICSCOM, PACTware/DTM, VEGADIS 81, VEGADIS 82, VEGA Tools app	PLICSCOM, PACTware/DTM, VEGADIS 81, VEGADIS 82, VEGA Tools app
Approvals	ATEX, Ship, SIL, Food Industry	ATEX, Ship, SIL

The chemical seal: stands up to any challenge

For optimal reliability and safety, the entire chemical seal arrangement – from the separating diaphragm to the temperature adapter – is made of special materials to form a fully welded, hermetically sealed measurment system.

	PRO	PRO
	VEGAWELL 52	**VEGABAR 86/87**
	Versatile application thanks to robust housing and cable design	Maximum operational availability and accuracy maintained through high overload and vacuum resistance
		
Application	Liquids	Liquids
Sensor diameter	22 mm or 32 mm	32 mm or 40 mm
Deviation	0.1 %; 0.2 %	0.1 %
Measuring cell	CERTEC®/MINI-CERTEC®	METEC® oder CERTEC®
Measuring cell seal	FKM, EPDM, FFKM	FKM, EPDM, FFKM
Process fitting	Straining clamp, thread, suspension cable, threaded fitting of 316L, PVDF, Duplex steel, Titanium	Straining clamp, suspension cable, threaded fitting, thread from G1½, 1½ NPT, flanges from DN 40, 2" of 316L, PVDF
Process temperature	-20 … +80 °C	-20 … +100 °C
Measuring range	Absolute and relative 0 … +60 bar (0 … +6000 kPa)	Absolute and relative 0 … +25 bar (0 … +2500 kPa)
Overload resistance	up to 150-fold measuring range	up to 200-fold measuring range
Signal output	4 … 20 mA 4 … 20 mA/HART + Pt100	4 … 20 mA, 4 … 20 mA/HART, Profibus PA, Foundation Fieldbus, Modbus
Display/adjustment	PACTware/DTM, VEGADIS 82	PLICSCOM, PACTware/DTM, VEGADIS 81, VEGADIS 82, VEGA Tools app
Approvals	ATEX, Ship, Drinking water approvals	ATEX, Ship, SIL

Instrument adjustment made easy

With the VEGA Tools app, all Bluetooth-equipped sensors can also be operated remotely – and all information relevant to your instruments is at your fingertips, anytime and anywhere. To use it, simply scan the data matrix code or barcode on the type plate or enter the serial number.

Go directly to the VEGA Tools app:

Download on the App Store

GET IT ON Google Play

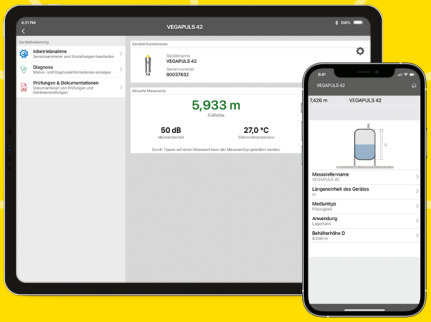
Intuitive menu navigation

Simple adjustment with smartphone or tablet

Quick visualisation

Simplified display and diagnostic functions

QR code according to IEC 61406 offers direct connection to the digital twin

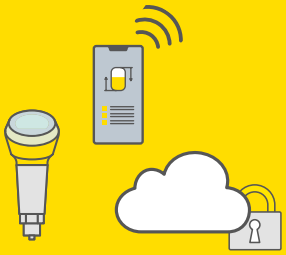


Instrument information, from order code to delivery date, available anywhere

Sensor history can be viewed any time

Backup and Restore

All sensor data secured: Save backups in myVEGA free of charge, with no fees or time limits.



INFORMATION

Would you like to know more?
Simply scan the QR code

www.vega.com/pressure

CONSULTATION

Need expert advice?
Just give us a call.

Advice on all products and applications
Mon–Fri from 8:00 AM to 4:00 PM

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