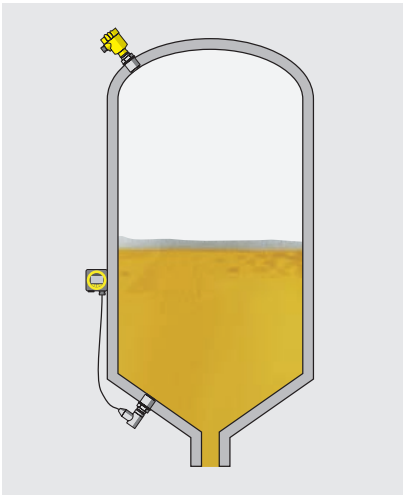
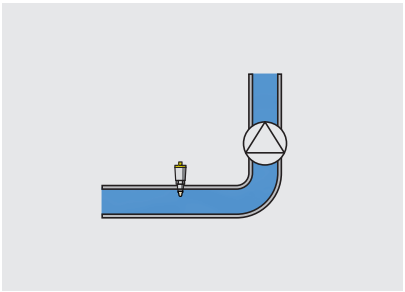
Process pressure





Area of application

The process pressure transmitters and pressure switches of the VEGABAR series can measure the pressures and levels of liquids, gases and vapours. As well as general applications, there are special designs for use in chemically aggressive liquids, and in hazardous or hygienic areas.
The instruments are ideal for detecting relative or absolute pressure in applications with condensation or rapid temperature changes, and can also measure the temperature of the medium. Their versatility and precision enable use for submersible hydrostatic level measurement in liquids or slurries. All VEGABAR series 80 transmitters can be interconnected to create an electronic differential pressure system.

Measuring principle

The pressure of the measured medium acts on a pressure measuring cell, which converts it into an electronic signal. There is a range of measuring cell technologies employed in the VEGABAR range: Ceramic-capacitive CERTEC® and MINI-CERTEC®, metallic METEC®, piezoelectric and strain gauge cells – to best meet individual application requirements.

Advantages

These instruments cover a particularly large measuring range, from vacuum to extremely high pressures. Their integrated self-monitoring function guarantees high operational reliability. An especially high degree of safety and dependability is guaranteed by the process pressure transmitters that use dry, ceramic-capacitive measuring cells. They are characterized by their high overload resistance, long-term stability and thermal shock compensation.

	VEGABAR 18	VEGABAR 19
		
Application	Liquids and gases	Liquids and gases, even at high pressure
Deviation	0.5 %	0.5 %
Measuring cell Measuring cell seal	Ceramic measuring cell FKM	Metallic measuring cell –
Process fitting	½" standard thread	½" standard thread
Process temperature	-40 … +100 °C	-40 … +100 °C
Measuring range	Relative 0 … +60 bar (0 ... +6000 kPa)	Relative 0 … +100 bar (0 ... +10000 kPa)
Overload resistance	up to 150-fold measuring range	up to 4-fold measuring range
Signal output	Two-wire: 4 … 20 mA	Two-wire: 4 … 20 mA
Approvals	–	–
Benefit	▪ Low-cost version with extremely small installation dimensions ▪ High plant availability due to the highly robust overload and vacuum resistance of the ceramic measuring cell	▪ Low-cost version with extremely small installation dimensions ▪ Universally applicable due to fully welded metallic measuring cell construction

Process pressure

	VEGABAR 28	VEGABAR 29	VEGABAR 38
			
Application	Liquids and gases	Liquids and gases, even at high pressure	Liquids and gases
Deviation	0.3 %	0.3 %	0.3 %
Measuring cell Measuring cell seal	Ceramic measuring cell FKM, EPDM, FFKM	Metallic measuring cell –	Ceramic measuring cell FKM, EPDM, FFKM
Process fitting	Optional flush thread and hygienic fittings, universal connector for hygiene adapter	Optional flush thread and hygienic fittings, universal connector for hygiene adapter	Optional flush thread and hygienic fittings, universal connector for hygiene adapter
Process temperature	-40 … +130 °C/ 1 h @ +135 °C steam	-40 … +130 °C/ 1 h @ +135 °C steam	-40 … +130 °C/ 1 h @ +135 °C steam
Measuring range	Absolute and relative -1 ... +60 bar (-100 ...+6000 kPa)	Absolute and relative -1 ... +1000 bar (-100 ... +10000 kPa)	Absolute and relative -1 ... +60 bar (-100 ...+6000 kPa)
Overload resistance	up to 150-fold measuring range	up to 4-fold measuring range	up to 150-fold measuring range
Signal output	Two-wire: 4 ... 20 mA Three-wire: PNP/NPN, 4 ... 20 mA, IO-Link	Two-wire: 4 ... 20 mA Three-wire: PNP/NPN, 4 ... 20 mA, IO-Link	Two-wire: 4 ... 20 mA Three-wire: PNP/NPN, 4 ... 20 mA, IO-Link
Display/adjustment	VEGA Tools app, IODD	VEGA Tools app, IODD	Integrated on-site display and 3-key operation, VEGA Tools app, IODD
Approvals	ATEX, IEC, cULus, NEPSI, EAC, INMETRO, IA, CCOE, TIIS, EG 1935/2004, FDA, 3-A, EHEDG, China FDA, Ship	ATEX, IEC, cULus, NEPSI, EAC, INMETRO, IA, CCOE, TIIS, EG 1935/2004, FDA, 3-A, EHEDG, China FDA, Ship	ATEX, IEC, cULus, NEPSI, EAC, INMETRO, IA, CCOE, TIIS, KOSHA/KTL, SEPRO, EG 1935/2004, FDA, 3-A, EHEDG, China FDA, Ship
Benefit	▪ Simple inventory management thanks to configurable signal output ▪ Highly visible, adjustable full-colour multidirectional (360°) switch status display ▪ User-friendly, wireless setup and diagnosis via Bluetooth with smartphone ▪ Simple integration into control systems through IO-Link communication	▪ Simple inventory management thanks to configurable signal output ▪ Highly visible, adjustable full-colour multidirectional (360°) switch status display ▪ User-friendly, wireless setup and diagnosis via Bluetooth with smartphone ▪ Simple integration into control systems through IO-Link communication	▪ Simple inventory management thanks to configurable signal output ▪ Simple setup thanks to large on-site display with VDMA operation and additional texts ▪ Simple integration into control systems through IO-Link communication

	VEGABAR 39	VEGABAR 81	VEGABAR 82	VEGABAR 83
				
	Liquids and gases, even at high pressure	Liquids and gases with high temperatures	Liquids and gases	Liquids and gases also with high pressures
	0.3 %	0.2 %	0.2 %; 0.1 %; 0.05 %	0.2 %; 0.1 %; 0.075 %
	Metallic measuring cell –	Chemical seal system –	CERTEC®, MINI-CERTEC® –	Piezoresistive/thin film strain gauge/METEC® –
	Optional flush thread and hygienic fittings, universal connector for hygiene adapter	Thread from G½, ½ NPT, flanges from DN 25, 1", hygienic fittings of 316L, Alloy 400, Tantalum, gold	Flanges from DN 15, ½", hygienic fittings, thread from G½ of 316L, Duplex, PVDF, Alloy	Thread from G½, ½ NPT, flanges from DN 25, 1", hygienic fittings of 316L, Alloy
	-40 … +130 °C/ 1 h @ +135 °C steam	-90 … +400 °C	-40 … +150 °C	-40 … +200 °C
	Absolute and relative -1 ... +1000 bar (-100 ... +10000 kPa)	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)
	up to 4-fold measuring range	Depending on chemical seal system	up to 200-times measuring range	up to 150-times measuring range
	Two-wire: 4 ... 20 mA Three-wire: PNP/NPN, 4 ... 20 mA, IO-Link	4 … 20 mA, 4 … 20 mA/HART, Profibus PA, Foundation Fieldbus	4 … 20 mA, 4 … 20 mA/HART, Profibus PA, Foundation Fieldbus	4 … 20 mA, 4 … 20 mA/HART, Profibus PA, Foundation Fieldbus
	Integrated on-site display and 3-key operation, VEGA Tools app, IODD	PLICSCOM, PACTware, VEGADIS 81, VEGADIS 82	PLICSCOM, PACTware, VEGADIS 81, VEGADIS 82	PLICSCOM, PACTware, VEGADIS 81, VEGADIS 82
	ATEX, IEC, cULus, NEPSI, EAC, INMETRO, IA, CCOE, TIIS, KOSHA/KTL, SEPRO, EG 1935/2004, FDA, 3-A, EHEDG, China FDA, Ship	ATEX, IEC, FM, CSA, EAC (GOST), Overfill protection, Ship, SIL2/3	ATEX, IEC, FM, CSA, EAC (GOST), Overfill protection, Ship, SIL2/3	ATEX, IEC, FM, CSA, EAC (GOST), Overfill protection, Ship, SIL2/3
	▪ Simple inventory management thanks to configurable signal output ▪ Simple setup thanks to large on-site display with VDMA operation and additional texts ▪ Simple integration into control systems through IO-Link communication	▪ Optimal process adaptation through selection of various product-contacting materials, filling media and temperature couplers ▪ Reliable measurement, even with extreme product temperatures	▪ High resistance to abrasion and corrosion through use of high-quality Sapphire Ceramic® ▪ High plant availability through maximum overload resistance and absolute vacuum resistance ▪ Absolutely front-flush process fittings ensure maintenance-free operation	▪ Universal application thanks to fully welded measuring cell ▪ Reliable measurement even at high pressures ▪ Excellent accuracy, even with strongly fluctuating process temperatures

Electronic differential pressure see page 51