Measurement Technology for Level and Pressure

Wastewater Treatment

Precise measurement technology at an attractive price: Level and pressure sensors from VEGA combine decades of experience with state-of-the-art technology. Once installed and commissioned, they operate virtually autonomously, delivering reliable and precise measuring results over extended periods. This saves time and money.

All materials used – from seals and process fittings to housings – are precisely tailored to the respective application. VEGA sensors have all current international approvals for the wastewater sector.

Encapsulation – THE alternative to safety barriers

Thanks to the right encapsulation material and electronics version that meets Zone 1 requirements, it's possible to take advantage of protection type "encapsulation" with VEGAPULS C series radar level sensors. That means: No safety barrier, no special cables and no complex intrinsic safety assessment required!

VEGA added value

VEGAsense makes data make sense

VEGAsense provides intelligent digital functions throughout the entire lifecycle of an instrument: These include intuitive adjustment, digital test assistants and diagnostic functions for self-monitoring.

VEGAcare is a service with added value

VEGAcare offers free services that make day-to-day work easier. These include professional application consulting, a 24/7 service hotline, the myVEGA digital customer portal, as well as video tutorials.

Pressure instrumentation

Pressure instrumentation is used to measure process and differential pressure, as well as level, volume, density and flow rate.

VEGA pressure transmitters deliver precise measured values in gases, vapours and liquids throughout the entire wastewater treatment process.

	BASIC	PRO	PRO	PRO
	VEGABAR 28	**VEGABAR 82**	**VEGADIF 85**	**VEGAWELL 52**
	Process pressure	**Process pressure**	**Differential pressure**	**Hydrostatic**
Application/Version	Inexpensive, compact, for liquids and gases	High overload resistance and wide range of process fittings for liquids and gases	Highly accurate measurement even with the smallest pressure differences, for liquids and gases	Robust and versatile pressure transmitter in cable version, for liquids
Process temperature	-40 … +130 °C/ 1 h @ +135 °C steam	-40 … +150 °C	-40 … +400 °C	-20 … +80 °C
Measuring range	Absolute and relative -1 ... +60 bar (-100 ... +6000 kPa)	Absolute and relative -1 … +100 bar (-100 … +10000 kPa)	+0.01 … +40 bar (+1 … +4000 kPa)	Absolute and relative 0 … +60 bar (0 … +6000 kPa)
Signal output	Two-wire: 4 ... 20 mA Three-wire: IO-Link, transistor (PNP/NPN), 4 ... 20 mA (active)	4 … 20 mA, 4 … 20 mA/HART, Profibus PA, Foundation Fieldbus, Modbus	4 … 20 mA, 4 … 20 mA/HART, Profibus PA, Foundation Fieldbus	4 … 20 mA 4 … 20 mA/HART + Pt100
Indication/ Adjustment	PACTware/DTM, VEGA Tools app (Bluetooth), IODD, 360° colour status display	PLICSCOM, PACTware/DTM, VEGADIS 81, VEGADIS 82, VEGA Tools app (Bluetooth)	PLICSCOM, PACTware/DTM, VEGADIS 81, VEGADIS 82, VEGA Tools app (Bluetooth)	PACTware/DTM, VEGADIS 82
Approvals	Ex approval (dust/gas Ex)	WHG (overfill protection), Ex approval (dust/gas Ex), food safety certification FDA, CE1935/2004, drinking water suitability	WHG (overfill protection), Ex approval (dust/gas Ex)	WHG (overfill protection), Ex approval (dust/gas Ex), drinking water suitability

Level instrumentation

In continuous level measurement, the levels of liquids or bulk solids in tanks or silos are recorded with one of several different measuring methods and converted into electronic signals.

Radar sensors measure the level in, for example, pumping stations, gas storage facilities or sewage collection points contactlessly and unaffected by soiling or temperature fluctuations.

A level switch is used to detect when a predefined level of liquids, pastes, powders or coarse bulk solids has been reached. Its switching command then starts or stops the filling process.

	BASIC	BASIC	PRO	AIR
	VEGAPULS C 11/C 22	**VEGAPULS C 23**	**VEGAPULS 6X**	**VEGAPULS AIR 41**
	Radar	**Radar**	**Radar**	**Radar**
Application/Version	Simple/moderate process conditions, universal measuring range, wire connected, hermetically sealed	Moderate process conditions, large measuring range, wire connected, hermetically sealed	High measurement accuracy, universal application, wide range of antenna designs	Autonomous radar sensor with measured value transmission via wireless networks
Process temperature	C 11: -40 … +60 °C C 22: -40 … +80 °C	-40 … +80 °C	-196 … +450 °C	-20 … +60 °C
Process pressure	-1 ... +3 bar (-100 ... +300 kPa)	-1 ... +3 bar (-100 ... +300 kPa)	-1 … +160 bar (-100 … +16000 kPa)	-1 ... +2 bar (-100 … +200 kPa)
Measuring range	C 11: up to 10 m C 22: up to 20 m	Up to 30 m	Up to 120 m	Up to 20 m
Signal output	C 11: 4 … 20 mA C 22: 4 … 20 mA/HART, SDI-12, Modbus	4 … 20 mA/HART, SDI-12, Modbus	4 … 20 mA/HART, APL, Profibus PA, Foundation Fieldbus, Modbus	NB-IoT (LTE-Cat-NB1), LTE-M (LTECAT-M1), LoRa WAN, Bluetooth
Indication/ Adjustment	Smartphone/Tablet/PC, VEGA Tools app (Bluetooth), PACTware/DTM	Smartphone/Tablet/PC, VEGA Tools app (Bluetooth), PACTware/DTM	PLICSCOM, PACTware/DTM, VEGADIS 81, VEGADIS 82, VEGA Tools app (Bluetooth)	VEGA Tools app (Bluetooth), PACTware/DTM, VEGA Inventory System
Approvals	WHG (overfill protection), mCerts, Ex approval (dust/gas Ex), food, drinking water, no approvals with VEGAPULS C 11		WHG (overfill protection), Ex approval (dust/gas Ex), food, drinking water	–

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Indicating instruments and controllers

Various components and signal processing software are available for the further processing and integration of the measured values. These convert the analogue or digital signals from the measuring instruments into information, i.e. measured values, that can be displayed on indicating instruments or transmitted to the process control system.

	VEGADIS 82	VEGAMET 141	VEGAMET 341	VEGAMET 841
	Indicating instrument	**Controller**	**Controller**	**Controller + Data Logger**
Application/Version	Remote display and adjustment unit for looping into the signal line	Measured value display, limit value monitoring, pump control, flow measurement		
Input	Measured value display and adjustment of 4 ... 20 mA, 4 ... 20 mA/HART sensors	1/2x 4 … 20 mA sensor input		
Output		1/2x 0/4 … 20 mA current output, 3x operating relays, 1x fault signal relay (instead of a operating relay)		
Mounting	Pipe, panel, wall mounting or carrier rail	DIN rail 35 x 7.5 mm	Front panel mounting	Wall/pipe mounting
Indication	Standard, with backlighting	LCD matrix display, black-white backlight with colour change according to status, relay or measured value		

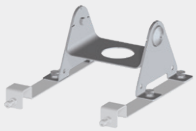
Mounting made easy

Mounting accessories for VEGAPULS BASIC radar sensors

Pre-assembled mounting brackets of high-quality stainless steel – including screws, matching wall plugs and drilling template – ensure quick and secure installation. On tanks with sockets or mounting bosses, the sensors are mounted directly or with adapter flanges made of glass fibre reinforced PPh.

Mounting bracket for ceiling mounting

Mounting bracket for plastic containers/IBCs



Mounting bracket with adjustable sensor adapter

Examples of mounting accessories

vega.com/wastewater