Measurement technology for level and pressure

Food industry

In food production, the key factors for instrumentation in ensuring quality, efficiency and plant availability are hygienic design, reliable measurement data and easy integration into automation systems. Modern level and pressure instrumentation must be capable of far more than simple measurement and control: It must reliably withstand CIP and SIP processes, clean to the highest hygiene requirements and deliver repeatable results, even under changing process conditions.

VEGA offers customised instrument solutions for these needs – in all kinds of applications, from storage tanks to bottling lines. Certified hygienic design, robust measurement technology and a well-thought-out hygienic adapter system for process fittings simplify planning, installation and standardisation. With IO-Link, APL, Bluetooth and uniform adjustment, devices can be set up and commissioned quickly and maintained with ease.

Perfect cleanability

Thanks to securely protected seals, all-metal housings and extremely smooth surfaces (surface roughness <0.3 µm) in contact with the process medium, VEGA devices are ideally suited for use in the food industry.

Hygienic design and approvals

VEGA meets the highest hygienic requirements, with instrumentation certified for EHEDG, 3-A, EC 1935/2004 and FDA standards. The measurement technology thus ensures reliable, hygienic processes.

Front-flush. Flexible. Hygienic.

With standardised process and hygienic fittings, as well as suitable adapter solutions, devices can be quickly integrated, easily standardised and flexibly planned. Flush-mounted integration into the process facilitates cleaning and supports hygienic plant design.

Pressure instrumentation

To ensure safe processes, consistent product quality and reliable plant protection, VEGA offers hygienic pressure measurement technology in ceramic and metallic versions. A front-flush, gap-free design and high temperature resistance ensure hygienic operation – even during CIP/SIP processes, with viscous media and under challenging conditions.

	BASIC	BASIC	PRO	PRO
	VEGABAR 29	**VEGABAR 38**	**VEGABAR 82**	**VEGABAR 83**
	Process pressure	**Process pressure**	**Process pressure**	**Process pressure**
Application/version	Fully welded metallic measuring cell, for high temperatures and pressures	Oil-free and abrasion-resistant ceramic measuring cell with high overload resistance	Oil-free and abrasion-resistant ceramic measuring cell with high overload resistance	Fully welded metallic measuring cell, for high temperatures and pressures
Process temperature	-40 … +130 °C 1 h @ +135 °C steam	-40 … +130 °C 1 h @ +135 °C steam	-40 … +150 °C	-40 … +200 °C
Measuring range	Absolute and relative -1 … +1000 bar (-100 … +100000 kPa)	Absolute and relative -1 … +60 bar (-100 … +6000 kPa)	Absolute and relative -1 … +100 bar (-100 … +10000 kPa)	Absolute and relative -1 … +1000 bar (-100 … +100000 kPa)
Signal output	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)	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	PACTware/DTM, IODD, VEGA Tools app (Bluetooth), 360° colour status display	Integrated on-site display and 3-key operation, VEGA Tools app (Bluetooth), PACTware/DTM, 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)
Approvals	EC 1935/2004, FDA, 3A, EHEDG, Ex approval (dust/gas Ex)	EC 1935/2004, FDA, Ex approval (gas Ex)	EC 1935/2004, FDA, 3A, overfill protection, Ex approval (dust/gas Ex)	EC 1935/2004, FDA, 3A, EHEDG, overfill protection, Ex approval (dust/gas Ex)

Level instrumentation

Whether small mixing vessel or large storage tank: VEGA level sensors reliably detect liquids, pastes and bulk solids – even during extreme temperature fluctuations, foaming and CIP/SIP processes. Sensors that do not protrude into the vessel allow for a particularly easy-to-clean installation without any cleaning blind spots. This enhances process reliability, hygiene and efficiency.

	BASIC	BASIC	PRO	PRO
	VEGAPULS 31	**VEGAPULS 42**	**VEGAPULS 6X**	**VEGAFLEX 83**
	Radar	**Radar**	**Radar**	**Guided radar**
Application/version	For liquids and bulk solids	For liquids and bulk solids; suitable for small vessels and agitators; short reaction time	For liquids and bulk solids; suitable for use with agitators; high measurement accuracy	For liquids of all kinds; suitable for high temperatures, steam and foam formation
Process temperature	-40 … +80 °C	-40 … +130 °C	-196 … +450 °C	-40 … +150 °C
Process pressure	-1 … +3 bar (-100 … +300 kPa)	-1 … +16 bar (-100 … +1600 kPa)	-1 … +160 bar (-100 … +16000 kPa)	-1 … +16 bar (-100 … +1600 kPa)
Measuring range	up to 20 m	up to 15 m	up to 120 m	Probe: Cable up to 32 m, probe: Rod up to 4 m
Signal output	4 ... 20 mA/HART	Three-wire (PNP/NPN, 4 ... 20 mA), IO-Link	4 … 20 mA/HART, APL, Profibus PA, Modbus	4 … 20 mA/HART, Profibus PA, Foundation Fieldbus
Display/adjustment	Integrated on-site display and 3-key operation, VEGA Tools app (Bluetooth), PACTware/DTM	PACTware/DTM, VEGA Tools app (Bluetooth), 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)
Approvals	Ex approval (Gas-Ex), WHG (overfill protection)	FDA, 3A, EHEDG	EC 1935/2004, FDA, 3A, EHEDG, overfill protection, Ex approval (dust/gas Ex)	EHEDG, FDA, Ex approval (dust/gas Ex), overfill protection

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Point level measurement

A level switch is used to detect when a predefined level of liquids, pastes, powders or coarse bulk solids has been reached. Level switches provide protection against overfill and dry run, and are ideal for hygiene-critical applications, even where deposits build up and cleaning processes are involved.

	PRO	PRO	PRO	BASIC
	VEGASWING X	**VEGAVIB 61**	**VEGAWAVE 61**	**VEGAPOINT 24**
	Vibration	**Vibration**	**Vibration**	**Capacitive**
Application/version	Liquids with densities from 0.38 g/cm³, compact, tube and suspension cable versions	Granular bulk solids from 20 g/l Compact version	Granular bulk solids from 8 g/l Compact version	Adhesive and highly viscous media Compact version
Process temperature	-196 … +450 °C	-50 … +250 °C	-50 … +250 °C	-40 … +115 °C
Process pressure	-1 … +160 bar (-100 … +16000 kPa)	-1 … +16 bar (-100 … +1600 kPa)	-1 … +25 bar (-100 … +2500 kPa)	-1 … +25 bar (-100 … +2500 kPa)
Signal output	Relay, transistor (NPN/PNP), NAMUR, contactless switch, two-wire 8/16 mA (4 ... 20 mA), HART	Relay, transistor, two-wire, NAMUR output, contactless switch	Relay, transistor, two-wire, NAMUR output, contactless switch	Transistor (PNP/NPN) Transistor with IO-Link
Display/adjustment	Display, adjustment and communication module XCOM	LED indicator lamp or switching status display PLICSLED	LED indicator lamp or switching status display PLICSLED	PACTware/DTM, IODD, VEGA Tools app (Bluetooth), 360° colour status display
Approvals	FDA, 3A, EHEDG, Ex approvals, overfill protection, cybersecurity	FDA, 3A, EHEDG, Ex approval (dust/gas Ex)	Ex approval (dust/gas Ex)	EG 1935/2004, FDA, 3A, EHEDG, Ex approval (dust/gas Ex)

VEGA added value

VEGAsense gives meaning to data

VEGAsense provides intelligent digital functions throughout the entire instrument lifecycle:

- Intuitive and simple adjustment
- Digital test assistants, including documentation
- Comprehensive diagnostic functions for self-monitoring

VEGAcare is a service with added value

VEGAcare offers free services that provide optimal support in daily work:

- Expert advice on applications
- 24/7 service hotline
- Digital customer portal myVEGA
- Video tutorials

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