Level and pressure instrumentation for wastewater treatment

Industry Portfolio

Looking Forward VEGA

Instrumentation for wastewater treatment

Accurate, service-proven instrumentation

VEGA is an experienced supplier of instrumentation for sewage treatment plants. The company has been delivering level and pressure sensors to such plants around the world for decades.

VEGA instrumentation provides accurate measurement data as a basis for automatic control of the various process steps. All sensors use state-of-the-art technology and are optimized and certified for deployment in wastewater treatment facilities.

VEGA measurement technology for wastewater treatment:

- Reasonable price
- Fast delivery
- Simple integration

Content Industry Portfolio

1	**Sewer network**	Gauge measurement
2	**Rainwater overflow basin**	Level measurement
3	**Stormwater retention basin**	Level measurement
4	**Vacuum dewatering system**	Level measurement
5	**Pumping station**	Level measurement
6	**Sewage lifting station**	Level measurement
7	**Intake channel**	Flow rate measurement
8	**Sludge receiving station**	Level measurement
9	**Coarse and fine screens**	Gauge measurement
10	**Sand trap**	Point level detection
11	**Sand washing**	Point level measurement
12	**Mixing and equalization tanks**	Gauge measurement
13	**Precipitant and chemicals station**	Level measurement and point level detection
14	**Lime silo**	Level measurement
15	**Conditioning**	Level measurement
16	**Sludge concentration tank**	Level measurement
17	**Digester**	Level measurement and level detection
18	**Gas pipeline**	Quantity measurement
19	**Gas storage facility**	Volume and pressure monitoring
20	**Sludge granulate silo**	Level measurement
21	**Sludge dewatering**	Point level detection
22	**Sludge drying**	Density measurement
24	**Process water**	Level measurement
25	**Pump room**	Flood protection
26	**Gauge station**	Gauge measurement

Application: Sewer network

Reliable
Operation even in case of flooding

Cost-effective
Maintenance-free operation

Convenient
Simple to install and setup

Level measurement in a sewer network

Wastewater from households and industrial operations is carried through a sewerage system to the clarification plant. In large sewer systems, the water levels are monitored at key points in the network.

VEGAPULS WL 61

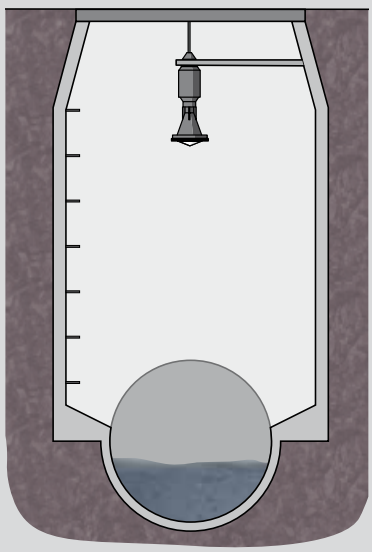
Accurate assessment of the capacity utilisation in the sewerage system can be done using a non-contact level measurement in the sewer

- Maintenance-free measuring principle reduces operating costs
- Highly resistant materials ensure a long service life
- Reliability through submersible sensor design (IP 68, 3 bar)

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value display



Level measurement in a sewer network

VEGAPULS WL 61

Radar sensor for continuous level measurement of water and waste water

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of product, process and ambient conditions

Measuring range:	bis 15 m (49 ft)
Process fitting:	thread G1½ mounting strap Compression flanges from DN 80, 3"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +2 bar (-100 … +200 kPa)

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

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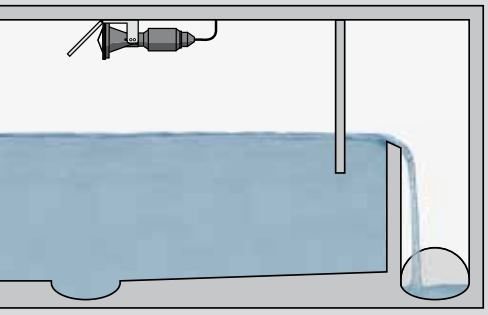
Stormwater overflow chamber

Reliable
High operational reliability even in case of flooding

Cost-effective
Reliable measurement and maintenance-free operation

Convenient
Extremely simple setup and adjustment



Level measurement in the stormwater overflow chamber

Large Combined Sewer Overflows (CSO's) protect the wastewater treatment plant from a capacity overload during heavy rain. The precipitation is temporarily stored and then delivered to the treatment plant at a reduced rate. If the stormwater basin cannot hold the accumulating quantities of water, part of it will be discharged. Due to legal requirements, such operational events and discharged water quantities have to be measured and documented.

VEGAPULS WL 61

Non-contact level measurement provides basis for documentation of impounding and discharging events

- Non-contact, maintenance-free measurement
- Small dead band allows measurement up to the ceiling
- High accuracy allows measurement of discharge volume with one sensor
- Reliable full signal even if sensor is inundated

Hydrostatic level measurement as an alternative:

VEGAWELL 52

Hydrostatic level measurement for continuous monitoring of impounding and discharging events

- High accuracy and operational reliability
- Long-term stability thanks to ceramic measuring cell
- Very simple setup and commissioning

VEGAMET 391

- Signal conditioning and display instrument for level and
- discharge volum
- Display and storage of the impounded volume
- Calculation of the discharge volume:
- Data transmission over Ethernet or analogue 4 ... 20 mA

VEGA

Level measurement in the stormwater oveflow chamber

VEGAPULS WL 61

Radar sensor for continuous level measurement of water and waste water

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of product, process and ambient conditions

Measuring range:	up to 15 m (49 ft)
Process fitting:	thread G1½ mounting strap compression flanges from DN 80, 3"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +2 bar (-100 … +200 kPa)

VEGAWELL 52

Suspension pressure transmitter with CERTEC® measuring cell

- High reliability through maximum overload and vacuum resistance of the ceramic measuring cell
- High plant availability through integrated overvoltage protection
- Versatile use through robust housing and cable design

Measuring cell:	CERTEC®
Sensor diameter:	ab 22 mm
Measuring range:	0 … +60 bar (0 … +6000 kPa)
Process temperature:	-20 … +80 °C (-4 ... +176 °F)
Deviation in characteristics:	0.2 %; 0.1 %

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

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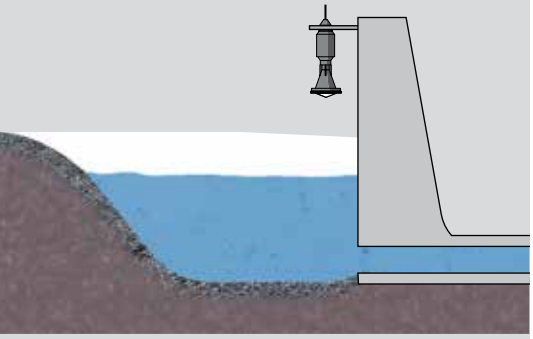
Application: Stormwater retention basin

Reliable
Accurate measurement in any weather conditions

Cost-effective
Simple installation on existing infrastructure

Convenient
Maintenance-free operation



Level measurement in a stormwater retention basin

In case of heavy rainfall, the rainwater is temporarily stored in the open, artificial reservoir. The water reservoir buffers the drainage and the water is pretreated through natural settlement.

VEGAPULS WL 61

Continuous level readings are the basis formonitoring the flow in the sewer system and help protect against flooding

- Non-contact, maintenance-free measurement
- Ideal for fast-changing water levels
- Independent of ambient weather or surface conditions

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value display

Wireless transmission of measured values as an alternative:

PLICSRADIO T61/R61

Transmitting and receiving unit for wireless transmission of measurement data to the control room

- River level measurement without signal cabling
- Continuous transmission of the level data

Level measurement in a stormwater retention basin

VEGAPULS WL 61

Radar sensor for continuous level measurement of water and waste water

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of product, process and ambient conditions

Measuring range:	up to15 m (49 ft)
Process fitting:	thread G1½ mounting strap compression flanges from DN 80, 3"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +2 bar (-100 … +200 kPa)

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

PLICSRADIO T/R61

Single channel emitting/receiving unit for wireless communication

- Reliable radio transmission and indication of measured values over a distance of approx. 1 km
- Economical operation through license, registration-free and free-of-charge use of the radio distance
- Reliable and stable data transmission through integrated safety mechanisms

Input PLICSRADIO T61:	1x HART with/without sensor power supply
Input PLICSRADIO R61:	PLICSRADIO T61
Output PLICSRADIO T61:	-
Output PLICSRADIO R61:	1 x 4 ... 20 mA
Input:	Display/adjustment module PLICSCOM
Adjustment:	Display/adjustment module PLICSCOM or PACTware/DTM
Mounting:	Wall or pipe

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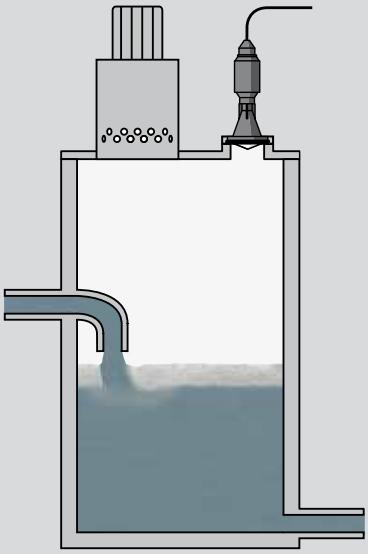
Application: Vacuum sewerage system

Reliable
Operation under all process and pressure conditions

Cost-effective
Maintenance-free operation of the plant

Convenient
Simple installation and setup



Level measurement in a vacuum tank

When new developments are opened up, it can be quite expensive to build a sewage network with a suitable downward fall. In such cases, a vacuum sewer network offers an interesting alternative to traditional sewer systems. The wastewater is transported to the pumping station under vacuum, which allows significantly smaller pipes to be used and stretches of upward slope spanned.

A central vacuum pumping unit conveys the wastewater from households via a central sewage discharge into the public sewer system. An ultrasonic sensor cannot function in a vacuum.

VEGAPULS WL 61

To control the system, the level in the vacuum tank must be continuously monitored

- Reliable operation under changing pressure conditions
- Reliable level measurement even when there is foam or an unsteady, agitated surface
- Non-contact measurement allows maintenance-free operation

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value display

Level measurement in a vacuum tank

VEGAPULS WL 61

Radar sensor for continuous level measurement of water and waste water

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of product, process and ambient conditions

Measuring range:	bis 15 m (49 ft)
Process fitting:	thread G1½ mounting strap Compression flanges from DN 80, 3"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +2 bar (-100 … +200 kPa)

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

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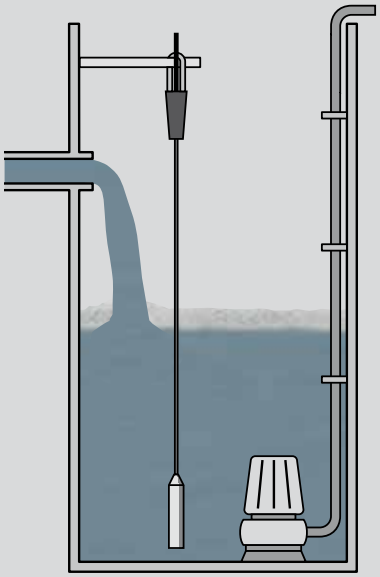
Application: Pumping station

Reliable
Reliable measurement of the level

Cost-effective
Optimal operating times through pump switchover

Convenient
Maintenance- and trouble-free operation



Level measurement in the pumping station

Wastewater from households and businesses together with surface water, is carried to the wastewater treatment plant via an extensive sewer system. If the natural gradient is not steep enough, numerous pumping stations are required to create a sufficient height difference.

VEGAWELL 52

Submersible hydrostatic level sensor for for cost-effective sump pit pump control

- Simple installation and reliable measurement in tight spaces
- Long term stability allows maintenance-free operation
- Robust ceramic measuring cell ensures reliable operation

High accuracy through use of optimally graduated measuring cells

Non-contact radar technology as an alternative:

VEGAPULS WL 61

Non-contact level measurement in the sump pit for cost-effective pump control

- Non-contact, absolutely maintenance-free measurement
- Independent of built-in fitments and foam
- Simple mounting reduces installation and setup costs

VEGAMET 391

Signal conditioning and display instrument for pump control

- Simple setup and adjustment
- Integrated pump and runtime control
- Controls up to 4 pumps with fault monitoring

Level measurement in the pumping station

VEGAWELL 52

Suspension pressure transmitter with CERTEC® measuring cell

- High reliability through maximum overload and vacuum resistance of the ceramic measuring cell
- High plant availability through integrated overvoltage protection
- Versatile use through robust housing and cable design

Measuring cell:	CERTEC®
Sensor diameter:	from 22 mm
Measuring range:	0 … +60 bar (0 … +6000 kPa)
Process temperature:	-20 … +80 °C (-4 ... +176 °F)
Deviation in characteristics:	0.2 %; 0.1 %

VEGAPULS WL 61

Radar sensor for continuous level measurement of water and waste water

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of product, process and ambient conditions

Measuring range:	up to 15 m (49 ft)
Process fitting:	thread G1½ mounting strap compression flanges from DN 80, 3"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +2 bar (-100 … +200 kPa)

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

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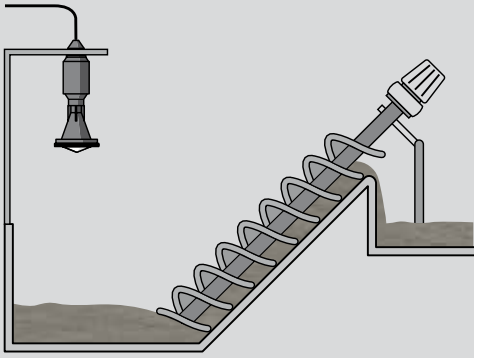
Application: Sewage lifting station

Reliable
Effective pump control under all process and surface conditions

Cost-effective
Maintenance-free operation throug non-contact measurement technology

Convenient
Easy to install and set up



Level measurement in the sewage lifting station

The heavily soiled, greasy wastewater from households and commercial enterprises flows into the sewage lifting station. The dirty water and floating materials contained therein are raised to a higher level with a screw pump and then flow into the settlement plant along a natural downward gradient.

VEGAPULS WL 61

Non-contact level measurement in the sump pit for cost-effective pump control

- Non-contact, absolutely maintenance-free measurement
- Independent of built-in fitments and foam
- Simple mounting reduces installation and setup costs

Hydrostatic level measurement as an alternative:

VEGAWELL 52

Hydrostatic level measurement in the sump pit for cost-effective pump control

- Long term stability allows maintenance-free operation
- Robust ceramic measuring cell ensures reliable operation
- High accuracy through use of optimally graduated measuring cells

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value display

VEGA

Level measurement in the sewage lifting station

VEGAPULS WL 61

Radar sensor for continuous level measurement of water and waste water

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of product, process and ambient conditions

Measuring range:	up 15 m (49 ft)
Process fitting:	thread G1½ mounting strap compression flanges from DN 80, 3"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +2 bar (-100 … +200 kPa)

VEGAWELL 52

Suspension pressure transmitter with CERTEC® measuring cell

- High reliability through maximum overload and vacuum resistance of the ceramic measuring cell
- High plant availability through integrated overvoltage protection
- Versatile use through robust housing and cable design

Measuring cell:	CERTEC®
Sensor diameter:	from 22 mm
Measuring range:	0 … +60 bar (0 … +6000 kPa)
Process temperature:	-20 … +80 °C (-4 ... +176 °F)
Deviation in characteristics:	0.2 %; 0.1 %

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
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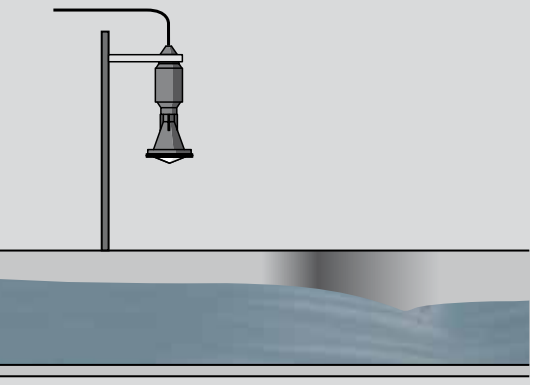
Application: Intake channel

Reliable
High measuring precision, independent of temperature

Cost-effective
Low maintenance costs

Convenient
Flow-proportional output signal



Flow-rate measurement in open channels

Heavily polluted wastewater is in many cases transported to the treatment plant via open channels. Measurement of the wastewater quantities entering the treatment plant is the basis for calculation of its operating costs.

VEGAPULS WL 61

Continuous, non-contact flow measurement of wastewater in open channels

- Non-contact measurement reduces maintenance requirements
- Very high accuracy, because independent of temperature influences
- Integrated flow curve makes flow-proportional output signal possible

VEGAMET 391

Signal conditioning and display instrument for flow measurement

- Integrated flow curve for direct quantity indication
- Data memory for measured values and status information
- Simple setup and adjustment

Flow-rate measurement in open channels

VEGAPULS WL 61

Radar sensor for continuous level measurement of water and waste water

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of product, process and ambient conditions

Measuring range:	up to 15 m (49 ft)
Process fitting:	thread G1½ mounting strap compression flanges from DN 80, 3"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +2 bar (-100 … +200 kPa)

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
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Application: Sludge receiving station

Reliable
Content measurement under all operating conditions

Cost-effective
Simple installation in existing facilities

Convenient
Maintenance-free operation even with heavy build up

Level measurement in the sludge receiving station

Sewage sludge from small decentralized sewage treatment plants or sewer cleaning operations is delivered in special vehicles. It is collected in a receiving tank and then transferred to the main sewage treatment plant for processing.

VEGAPULS 61

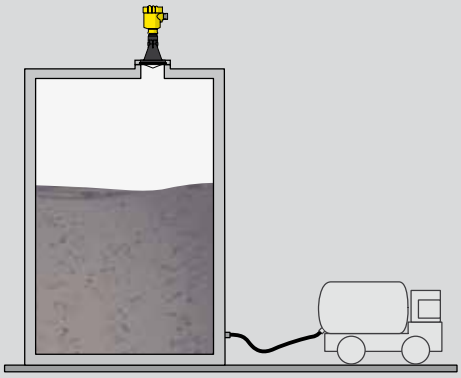
Non-contact monitoring of the level in the sludge receiving station

- Non-contact, maintenance-free measurement
- High reliability even with foam and build up in the tank
- Unaffected by vapours and temperature fluctuations

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value Display



Level measurement in the sludge receiving station

VEGAPULS 61

Radar sensor for continuous level measurement of liquids

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of process conditions

Measuring range:	up to 35 m (115 ft)
Process fitting:	thread G1½, 1½ NPT mounting strap compression flanges from DN 80, 3" adapter flanges from DN 100, 4"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +3 bar (-100 … +300 kPa)

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
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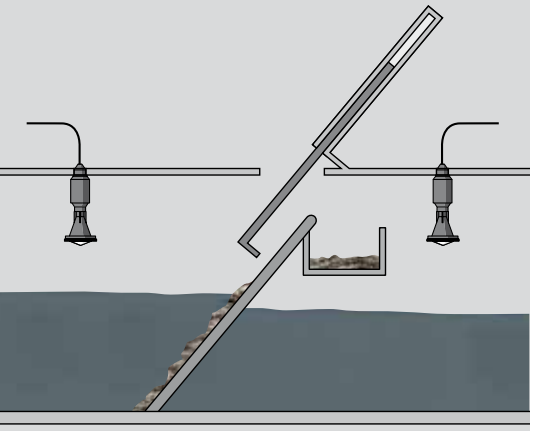
Application: Coarse and fine screens

Reliable
Reliable control of screen cleaning functions

Cost-effective
Non-contact, wear-free measurement

Convenient
Maintenance-free operation of plant



Differential water level measurement for control of screen raking

Mechanical cleaning removes larger, floating and entrainedmatter from the in-take rakes, screens or sieves. This protects the following process stages from buildup, clogging and abrasion.

Solids with diameters greater than 25 mm are trapped in the coarse screens, sometimes finer secondary screens remove smaller residual materials. The screenings are processed in a press and then disposed of.

VEGAPULS WL 61

The difference between the water level either side of the screen indicates the degree of contamination of the screen and activates the rake or cleaning process

- Reliable, maintenance-free measurement
- Simple installation thanks to contactless measuring principle
- Unaffected by foam or condensation

Hydrostatic level measurement as an alternative:

VEGAWELL 52

The difference between the water level in front of and behind the screen indicates the degree of contamination of the screen.

- Wear-free measurement due to ceramic measuring cell
- High accuracy and repeatability via small pressure ranges
- High long-term stability

VEGAMET 625

Signal conditioning device and display instrument for two level sensors

- Highly versatile use through three scalable current outputs for control of displays and downstream systems, such as PLC or SCADA
- Simple integration into Intranet/Extranet through integrated web server
- Simple data logging and history retrieval with integrated memory

Differential water level measurement for control of screen raking

VEGAPULS WL 61

Radar sensor for continuous level measurement of water and waste water

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of product, process and ambient conditions

Measuring range:	up to15 m (49 ft)
Process fitting:	thread G1½ mounting strap compression flanges from DN 80, 3"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +2 bar (-100 … +200 kPa)

VEGAWELL 52

Suspension pressure transmitter with CERTEC® measuring cell

- High reliability through maximum overload and vacuum resistance of the ceramic measuring cell
- High plant availability through integrated overvoltage protection
- Versatile use through robust housing and cable design

Measuring cell:	CERTEC®
Sensor diameter:	from 22 mm
Measuring range:	0 … +60 bar (0 … +6000 kPa)
Process temperature:	-20 … +80 °C (-4 ... +176 °F)
Deviation in characteristics:	0,2 %; 0,1 %

VEGAMET 625

Signal conditioning and display instrument for level sensors

- Versatile use through three scalable current outputs for control of indications and connected systems such as e.g. a PLC
- Simple integration in the Intranet/Extranet through integrated Web server
- Simple data recording and history retrieval with instruments with digital interface

Input:	2 x 4 … 20 mA/HART sensor input with transmitter power supply (only HART capable sensors)
Output:	3 x 0/4 … 20 mA current output 3 x relay outputs 1 x fail safe relay
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC
Mounting:	carrier rail 35 x 7.5 acc. to EN 50022

44799-EN-130402

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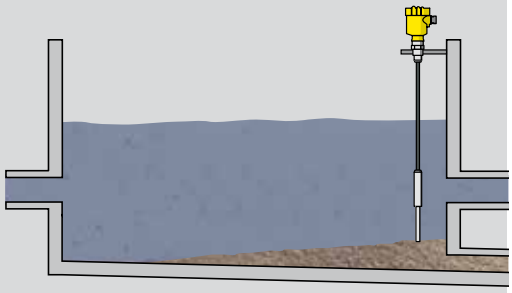
Application: Grit trap

Reliable
Efficient control of the grit trap cleaning process

Cost-effective
Targeted cleaning depending on quantity of deposited grit

Convenient
Simple installation and maintenance-free



Point level detection in a grit trap

Through circulation and aeration of the wastewater, mineral substances such as grit and sand settle to the bottom of the stilling basin. Equipment break-down and damage through wear or clogging are prevented by removing the sand.

VEGAVIB 62

Level detection of settled grit under water

- Reliable function through product-independent switching point
- Wear and maintenance free operation
- Freely moving sensor element and highly durable suspension cable

VEGATOR 636

VEGATOR 636 Ex is a signal conditioning instrument for point level detection for VEGASWING, VEGAVIB and VEGAWAVE vibrating level switches in two-wire version.

- Extensive monitoring detects short circuit and circuit break in the measuring line as well as disturbances or malfunctions in the sensor
- Simple, convenient SIL and WHG function testing with test button
- Simple installation via DIN rail mounting

Point level detection in a grit trap

VEGAVIB 62

Vibrating level switch with suspension cable for granular bulk solids

- Minimum time and cost expenditure thanks to simple setup without medium
- Reliable function through product-independent switching point
- Low maintenance costs

Version:	suspension cable up to 80 m
Measuring range:	bulk solids from 20 g/l
Process fitting:	thread from G1, 1 NPT flanges from DN 32, 1½" hygienic fittings
Process temperature:	-40 … +150 °C (-40 ...+302 °F)
Process pressure:	-1 … +6 bar (-100 … +600 kPa)

VEGATOR 636

Signal conditioning instrument for point level alarm

- Extensive monitoring detects short circuit and circuit break in the measuring line as well as disturbances or malfunctions in the sensor
- Simple, convenient SIL and WHG function testing with test button
- Simple installation via DIN rail mounting

Sensor input:	1 x (vibrating level switch))
Relais output:	1 x spdt
Transistor output:	1 x
Switching hysteresis:	fixed
Protection:	IP 20
Operating voltage:	20 ... 250 V AC, 20 ... 72 V DC

44800-EN-130402

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Application: Washer system

Reliable
Ceramic cell enables reliable measurement

Cost-effective
Maintenance-free operation of the measuring point

Convenient
Simple installation and adjustment

Measurement of sand concentration in the sand washer

Before the settled out grit can be used as recycled material, it is cleansed of organic matter in the grit washing plant. The washed grit is then dewatered in a screw press and discharged into a storage vessel.

VEGABAR 82

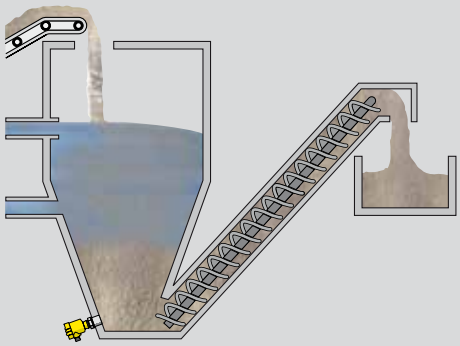
Measurement of the concentration of washed sand for discharge control

- Measurement of sand height via hydrostatic pressure measurement
- Wear-free ceramic measuring cell ensures reliable operation
- High accuracy even with small measuring ranges

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value display



Measurement of the concentration of washed sand for discharge control

VEGABAR 82

Pressure transmitter with ceramic measuring cell

- High plant availability through maximum overload and vacuum resistance of the ceramic measuring cell
- Measurement down to the last drop through smallest measuring ranges with high accuracy
- Low maintenance costs thanks to wear-free ceramic measuring cell

Measuring cell:	CERTEC®, MINI-CERTEC®
Measuring range:	-1 … +100 bar (-100 … +10000 kPa)
Process fitting:	thread from G½, ½ NPT flanges from DN 15, 1½" hygienic fittings
Process temperature:	-40 … +150 °C (-40 ... +302 °F)
Accuracy class:	0,2 %; 0,1 %; 0,05 %

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

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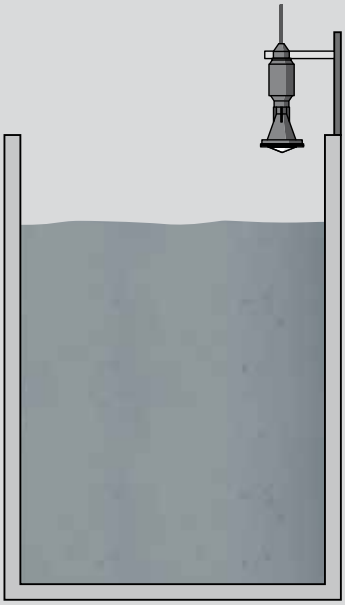
Application: Mixing and equalisation ponds

Reliable
Measurement in all process conditions

Cost-effective
Maintenance-free operation

Convenient
Simple installation and setup



Water level measurement in the flow equalization basin

These basins compensate for peak loads, strong inflow volume or concentration fluctuations. When the rate or quality is stabilised, the wastewater is pumped from the basin into the subsequent primary treatment stages.

VEGAPULS WL 61

Continuous level readings for control of the aeration pumps and cleaning units

- Non-contact, maintenance-free measurement
- Independent of vessel furniture and surface foam
- Trouble-free operation and high availability

Hydrostatic level measurement as an alternative:

VEGAWELL 52

Continuous level readings for control of the pumps and cleaning units

- High accuracy and operational reliability
- Long-term stability thanks to ceramic measuring cell
- Very simple setup and commissioning

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value display

Water level measurement in the flow equalization basin

VEGAPULS WL 61

Radar sensor for continuous level measurement of water and waste water

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of product, process and ambient conditions

Measuring range:	up to15 m (49 ft)
Process fitting:	thread G1½ mounting strap compression flanges from DN 80, 3"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +2 bar (-100 … +200 kPa)

VEGAWELL 52

Suspension pressure transmitter with CERTEC® measuring cell

- High reliability through maximum overload and vacuum resistance of the ceramic measuring cell
- High plant availability through integrated overvoltage protection
- Versatile use through robust housing and cable design

Measuring cell:	CERTEC®
Sensor diameter:	from 22 mm
Measuring range:	0 … +60 bar (0 … +6000 kPa)
Process temperature:	-20 … +80 °C (-4 ... +176 °F)
Deviation in characteristics:	0,2 %; 0,1 %

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

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Application: Precipitant and chemicals station

Reliable
High operational reliability through the use of chemically resistant materials

Cost-effective
Optimal dosing of chemicals

Convenient
Reliable, maintenance-free measurement

Level measurement and point level detection in the chemical tank

Through the addition of chemicals, the phosphates in wastewater are precipitated out in primary sedimentation, in aeration systems, or in special precipitation and secondary clarification basins. Precipitants such as ferric chloride bind the phosphate chemically and deposit it in the sludge.

VEGAPULS 61

Continuous level measurement data for continuous inventory control and optimal dosing

- Operationally reliable, maintenance-free measurement
- Chemically resistant, plastic-encapsulated instrument version
- High accuracy independent of outgassing and temperature fluctuations

VEGASWING 63

Back up point level detection system to avoid overfilling the tank with media hazardous to water

- High chemical resistance through use of application-oriented materials
- Adjustment and maintenance free operation
- Approved as overfill protection system according to SIL and WHG

VEGATOR 636

Signal conditioning instrument for point level detection with vibrating level switches

- Extensive monitoring detects short circuit and signal line break as well as malfunctions in the sensor
- Simple, convenient SIL and WHG function testing with test button

Level measurement and point level detection in the chemical tank

VEGAPULS 61

Radar sensor for continuous level measurement of liquids

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of process conditions

Measuring range:	up to 35 m (115 ft)
Process fitting:	thread G1½, 1½ NPT mounting strap compression flanges from DN 80, 3" adapter flanges from DN 100, 4"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +3 bar (-100 … +300 kPa)

VEGASWING 63

Vibrating level switch with tube extension for liquids

- Minimum time and cost expenditure thanks to simple setup without medium
- Precise and reliable function through product-independent switching point
- Low maintenance costs

Version:	tube extension up to 6 m
Materials:	316L, Hastelloy, ECTFE, PFA, enamel, Monel
Process fitting:	thread from G¾, ¾ NPT flanges from DN 25, 1" hygienic fittings
Process temperature:	-50 … +250 °C (-58 ... + 482 °F)
Process pressure:	-1 … +64 bar (-100 … +6400 kPa)

VEGATOR 636

Signal conditioning instrument for point level alarm

- Extensive monitoring detects short circuit and circuit break in the measuring line as well as disturbances or malfunctions in the sensor
- Simple, convenient SIL and WHG function testing with test button
- Simple installation via DIN rail mounting

Sensor input:	1 x (vibrating level switch))
Relais output:	1 x spdt
Transistor output:	1 x
Switching hysteresis:	fixed
Protection:	IP 20
Operating voltage:	20 ... 250 V AC, 20 ... 72 V DC

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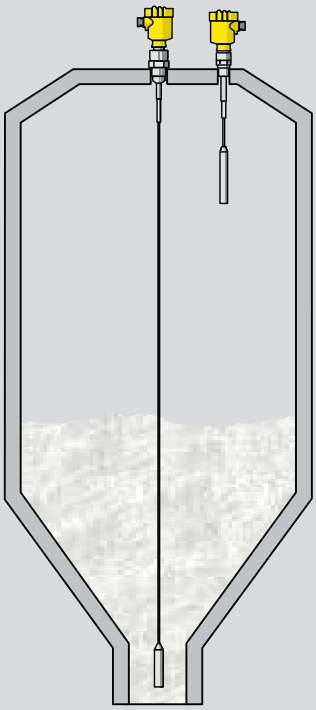
Application: Lime silo

Reliable
Reliable measurement even during filling

Cost-effective
Utilises entire silo volume, maintenance free

Convenient
Simple installation and setup



Level measurement and high level detection in the lime silo

In the nitrogen and phosphorus removal stage, lime is used for stabilizing the pH value. Stored in silos, it is added to the wastewater as a solid or as an aqueous suspension.

VEGAFLEX 82

Continuous level measurement in the lime silo to ensure sufficient stocks

- Independent of moisture content and product composition
- Preset measuring range ensures simple adjustment and commissioning
- Robust cable version guarantees maintenance-free operation

VEGACAP 65

Point level detection for full signal during filling

- Point level detection for reliable high level alarm during filling
- Mechanically robust sensor version guarantees long service life
- cable length shortened for easy adaptation to vessel size

VEGATOR 621

Signal conditioning instrument for point level detection with continuously measuring 4 ... 20 mA sensors.

- Simple adjustment of the switching point via a potentiometer
- Integrated fault monitoring with LED indication detects
- short-circuit and signal line break
- Simple installation through carrier rail mounting

VEGA

Level measurement and high level detection in the lime silo

VEGAFLEX 82

TDR-Sensor zur kontinuierlichen Füllstandmessung von Schüttgütern

- The guided adjustment enables a simple, time-saving and reliable setup
- Shortenable probes offer a simple standardisation and highest flexibility in the planning
- Virtually all bulk solids can be measured with the automatic probe end tracking

Version:	exchangeable cable probe (ø 4 mm, ø 6 mm, ø 11 mm) exchangeable rod probe (ø 16 mm)
Measuring range:	cable probe up to 75 m rod probe up to 6 m
Process fitting:	thread from G¾, ¾ NPT flanges from DN 25, 1”
Process temperature:	-40 … +200 °C (-40 ... +392 °F)
Process pressure:	-1 … +40 bar (-100 … +4000 kPa)

VEGACAP 65

Capacitive cable electrode for level detection

- Long lifetime and reduced maintenance through robust mechanical construction
- High flexibility through shortenable probe
- Reliable switching point due to large gravity weight

Version:	partly insulated cable
Measuring range:	up to 32 m (105 ft)
Process fitting:	thread from G1, 1 NPT flanges from DN 50, 2"
Materials:	steel, 316L, PTFE, PE
Process temperature:	-50 … +200 °C (-58 ... +392 °F)
Process pressure:	-1 … +64 bar (-100 … +6400 kPa)

VEGATOR 621

Signal conditioning instrument for level detection

- Simple adjustment of the switching point via a potentiometer
- Integrated fault monitoring with LED indication detects short-circuit and line break
- Simple installation through carrier rail mounting

Input:	1 x 4 ... 20 mA sensor input active
Output:	1 x relay output 1 x transistor output
Integration time:	adjustable
Switching hysteresis:	fix
Operating voltage:	20 ... 250 V AC, 50/60 Hz 20 ... 72 V DC

44804-EN-130402

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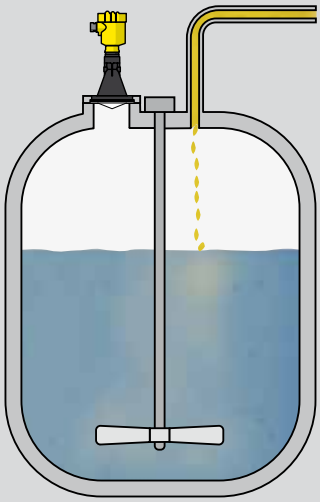
Application: Conditioning

Reliable
High chemical resistance

Cost-effective
Independent of changing product characteristics

Convenient
Simple installation and setup



Level measurement in the conditioning tank

The applied chemicals and precipitants are suitably conditioned to ensure that they reach the wastewater in an optimal, low concentration. They are metered out according to the degree of pollution and mixed with the wastewater.

VEGAPULS 61

Optimal control of dosage through accurate, continuous level measurement

- Operationally reliable, accurate measurement
- Highly chemically resistant unaffected by vapours
- Direct display of the actual filling
- No minimum distance (dead band)

Measurement with ultrasound as an alternative:

VEGASON 61

Continuous level measurement data for permanent inventory control and optimal dosage

- Operationally reliable, maintenance-free measurement
- Reliable measurement, independent of product properties
- Direct display of overfilling

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value display

Level measurement in the conditioning tank

VEGAPULS 61

Radar sensor for continuous level measurement of liquids

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of process conditions

Measuring range:	up to 35 m (115 ft)
Process fitting:	thread G1½, 1½ NPT mounting strap compression flanges from DN 80, 3" adapter flanges from DN 100, 4"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +3 bar (-100 … +300 kPa)

VEGASON 61

Ultrasonic sensor for continuous level measurement

- Maintenance-free operation through non-contact measuring principle
- Reliable measurement independent of product features
- Price-favourable solution for simple applications

Measuring range:	in liquids: 0,25 … 5 m (1 ... 16 ft) in bulk solids:0,25 … 2 m (1 ... 7 ft)
Process fitting:	thread G1½, 1½ NPT
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-0.2 …+2 bar (-20 … +200 kPa)

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

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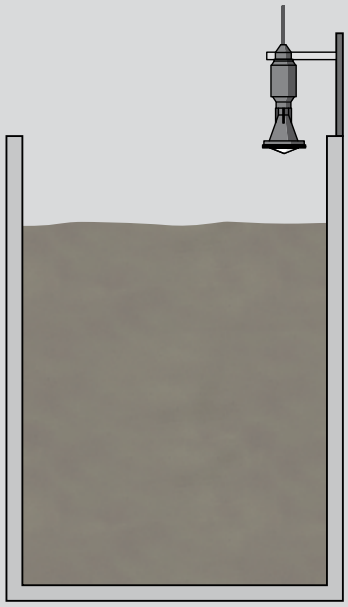
Application: Sludge thickener tank

Reliable
Reliable content data acquisition in the receiving container

Cost-effective
Maintenance-free operation through non-contact measurement

Convenient
Simple mounting and setup



Level measurement in a sludge concentration tank

Before the sludge enters the digestion tower, it is stored in large vessels. During storage, the sludge is dewatered and thickened sometimes scrapers and agitators are used to accelerate the process.

VEGAPULS WL 61

Continuous level measurement for uninterrupted monitoring of sludge volume

- Operationally reliable, maintenance-free measurement
- Non-contact, wear-free measurement
- Simple mounting and setup

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value display

Level measurement in a sludge concentration tank

VEGAPULS WL 61

Radar sensor for continuous level measurement of water and waste water

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of product, process and ambient conditions

Measuring range:	up to 15 m (49 ft)
Process fitting:	thread G1½ mounting strap compression flanges from DN 80, 3"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +2 bar (-100 … +200 kPa)

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

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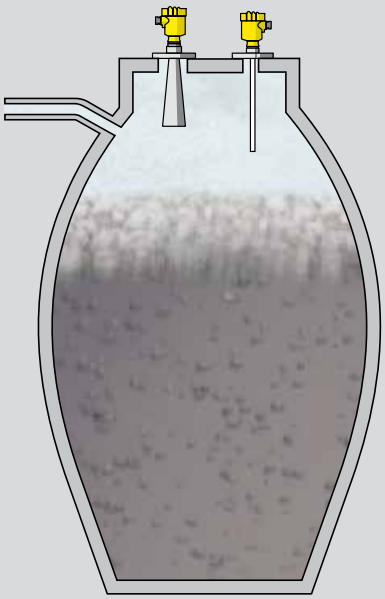
Application: Digester

Reliable
Protection against overfilling, even with foam present

Cost-effective
Maintenance-free operation of digester

Convenient
Low maintenance costs and optimal gas production



Level measurement and point level detection of foam in the digester

In heated, closed digesters, the organic components of the sludge are decomposed under anaerobic conditions. Combustible gases such as methane are released from the sludge retrieved and used as fuel for heating.

VEGAPULS SR 68

Accurate, reproducible measured values for control of the filling process

- Reliable measurement, even with foam and density changes
- Independent of gas concentration and pressure fluctuations
- Maintenance-free operation with non-contact measurement

VEGACAP 64

Detection of the conductive foam prevents it from entering the gas facility

- Reliable foam detection, even with different foam consistencies
- Unaffected by contamination and buildup
- Simple mounting and setup

VEGATOR 621

Signal conditioning instrument for point level detection with continuously measuring 4 ... 20 mA sensors.

- Simple adjustment of the switching point via a potentiometer
- Integrated fault monitoring with LED indication detects short-circuit and signal line break
- Simple installation through carrier rail mounting

Level measurement and point level detection of foam in the digester

VEGAPULS SR 68

Radar sensor for continuous level measurement of bulk solids

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Reliable measurement independent of vapour, dust and noise

Measuring range:	up to 30 m (98 ft)
Process fitting:	thread from G1½, 1½ NPT flanges from DN 50, 2"
Process temperature:	-40 … +250 °C (-40 ... +482°F)
Process pressure:	-1 … +100 bar (-100 … +10000 kPa)

VEGACAP 64

Capacitive rod electrode for level detection of adhesive products

- Reduced number of cleaning cycles through measurement insensitive to buildup
- Maximum use of the vessel, because measurement over the complete probe length
- Long lifetime and low maintenance requirement through robust construction

Version:	fully insulated rod
Measuring range:	up to 4 m (13 ft)
Process fitting:	thread from G¾, ¾ NPT flanges from DN 50, 2"
Materials:	316L, PTFE, steel
Process temperature:	-50 … +200 °C (-58 ... +392 °F)
Process pressure:	-1 … +64 bar (-100 … +6400 kPa)

VEGATOR 621

Signal conditioning instrument for level detection

- Simple adjustment of the switching point via a potentiometer
- Integrated fault monitoring with LED indication detects short-circuit and line break
- Simple installation through carrier rail mounting

Input:	1 x 4 ... 20 mA sensor input active
Output:	1 x relay output 1 x transistor output
Integration time:	adjustable
Switching hysteresis:	fix
Operating voltage:	20 ... 250 V AC, 50/60 Hz 20 ... 72 V DC

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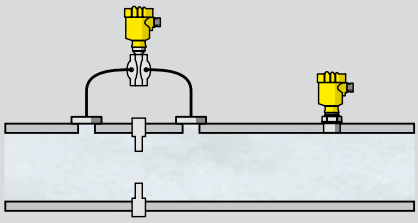
Application: Gas pipeline

Reliable
Dependable density and flow monitoring

Cost-effective
Reliable information on the gas quantity produced

Convenient
Maintenance-free sensor and application technology



Flow meter for sludge gas

The biogas generated from the sludge is used for the environmentally friendly production of heat and electricity. It is transported through a gas pipeline to the storage tanks.

VEGABAR 52

Monitoring of gas pressure

- Sensor provides intrinsically safe output signal
- Meets the requirements of ATEX EEx ia IIC T6
- Maintenance-free operation through long-term stability of the ceramic measuring cell

VEGADIF 65

Measurement of gas volume that is taken from the digester

- Detection of the gas volume with standard orifice plate and differential pressure transmitter
- Simple adaptation to existing systems through different orifice plate dimensions
- Reliable measurement and maintenance-free operation

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value display

Flow meter for sludge gas

VEGABAR 82

Pressure transmitter with ceramic measuring cell

- High plant availability through maximum overload and vacuum resistance of the ceramic measuring cell
- Measurement down to the last drop through smallest measuring ranges with high accuracy
- Low maintenance costs thanks to wear-free ceramic measuring cell

Measuring cell:	CERTEC®, MINI-CERTEC®
Measuring range:	-1 … +100 bar (-100 … +10000 kPa)
Process fitting:	thread from G½, ½ NPT flanges from DN 15, 1½" hygienic fittings
Process temperature:	-40 … +150 °C (-40 ... +302 °F)
Accuracy class:	0,2 %; 0,1 %; 0,05 %

VEGADIF 65

Differential pressure transmitter with metal measuring diaphragm

- Measurement of very low differential pressures through high precision measured value detection
- High reliability through integrated overload diaphragm
- Versatile use through a variety of measuring ranges and process fittings

Measuring cell:	metallic
Measuring range:	from -10 … +10 mbar (-1 … +1 kPa) to -40 … +40 bar (-4000 … +4000 kPa)
Process fitting:	¼ - 18 NPT, RC ¼
Process temperature:	-40 … +120 °C (-40 … +248 °F) with chemical seal assembly -40 … +400 °C
Deviation in characteristics:	0,15 %; 0,075 %

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

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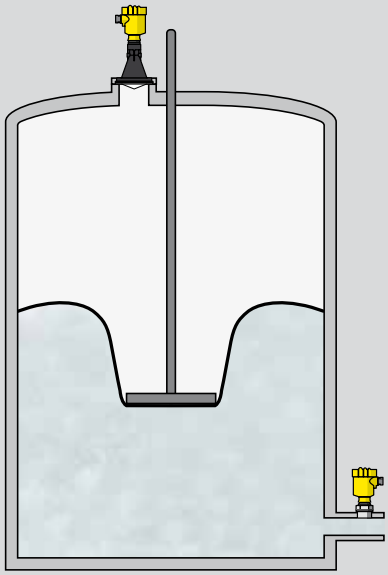
Application: Biogas storage facility

Reliable
Reliable monitoring of density and flow

Cost-effective
Detailed information on the gas quantity produced

Convenient
Maintenance-free operation of the sensor technology



Volume and pressure monitoring in the biogas storage facility

After drying, the methane gas is temporarily stored in a gas reservoir. Depending on the design of the reservoir, either a flexible diaphragm of plastic or a floating roof is used for volume equalization.

VEGAPULS 61

Continuous level measurement for uninterrupted gas volume measurement

- Operationally reliable, maintenance-free measurement
- Independent of ambient conditions
- Simple installation even in existing gas storage facilities
- No dead band, so measurement is possible right up to the vessel ceiling

VEGABAR 82

Monitoring of the gas pressure in the gas reservoir

- High measuring accuracy through use of finely graduated measuring cells
- Robust sensor construction for high availability
- Long-term stability of the ceramic measuring cell ensures maintenance-free operation

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value display

Volume and pressure monitoring in the biogas storage facility

VEGAPULS 61

Radar sensor for continuous level measurement of liquids

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of process conditions

Measuring range:	up to 35 m (115 ft)
Process fitting:	thread G1½, 1½ NPT mounting strap compression flanges from DN 80, 3" adapter flanges from DN 100, 4"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +3 bar (-100 … +300 kPa)

VEGABAR 82

Pressure transmitter with ceramic measuring cell

- High plant availability through maximum overload and vacuum resistance of the ceramic measuring cell
- Measurement down to the last drop through smallest measuring ranges with high accuracy
- Low maintenance costs thanks to wear-free ceramic measuring cell

Measuring cell:	CERTEC®, MINI-CERTEC®
Measuring range:	-1 … +100 bar (-100 … +10000 kPa)
Process fitting:	thread from G½, ½ NPT flanges from DN 15, 1½" hygienic fittings
Process temperature:	-40 … +150 °C (-40 ... +302 °F)
Accuracy class:	0,2 %; 0,1 %; 0,05 %

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

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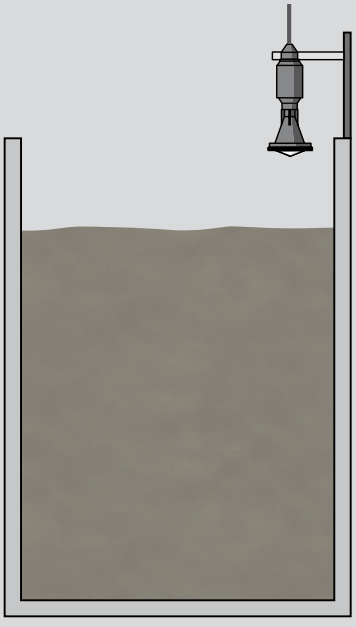
Application: Sludge storage tank

Reliable
Measurement of sludge contents in storage

Cost-effective
Maintenance-free operation through non-contact measurement

Convenient
Simple installation and setup



Level measurement in the sludge storage tank

The anaerobically stabilized, digested sludge in the digester is pumped into a sludge storage tank. The centrifuge or press for final mechanical sludge dewatering is fed from this tank.

VEGAPULS WL 61

Continuous level measurement for uninterrupted monitoring of sludge volume

- Operationally reliable, maintenance-free measurement
- Non-contact, wear-free measurement
- Simple mounting and setup

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value display

Level measurement in the sludge storage tank

VEGAPULS WL 61

Radar sensor for continuous level measurement of water and waste water

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of product, process and ambient conditions

Measuring range:	bis 15 m (49 ft)
Process fitting:	thread G1½ mounting strap Compression flanges from DN 80, 3"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +2 bar (-100 … +200 kPa)

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

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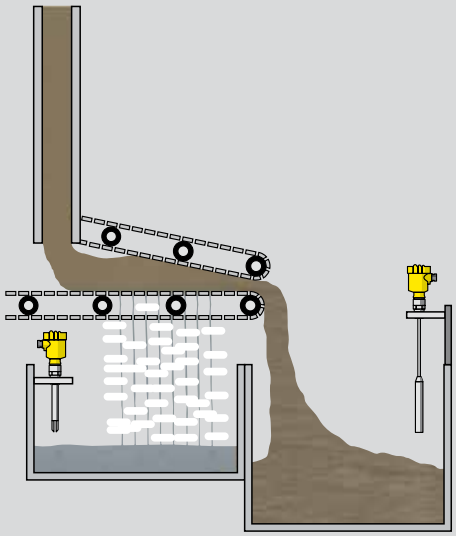
Application: Sludge dewatering

Reliable
Handles changing process conditions

Cost-effective
Optimal operation of the facility

Convenient
Robust, maintenance-free sensor technology



Level detection of sludge and water

Before drying, the residual sludge is dewatered in centrifuges or filter presses. The water generated water passes back through the treatment plant.

VEGASWING 63

Point level detection in the filter water tank for pump control

- Reliable point level switching, even with changing water composition
- Adjustment-free and easy to install
- Maintenance-free Operation

VEGACAP 66

Full signal for detecting the filter cake during discharge

- Reliable point level detection, even with adhesive media
- Simple sensor installation and adjustment
- Maintenance and wear free Operation

VEGATOR 621

Signal conditioning instrument for point level detection with continuously measuring 4 ... 20 mA sensors.

- Simple adjustment of the switching point via a potentiometer
- Integrated fault monitoring with LED indication detects short-circuit and signal line break
- Simple installation through carrier rail mounting

Level detection of sludge and water

VEGASWING 63

Vibrating level switch with tube extension for liquids

- Minimum time and cost expenditure thanks to simple setup without medium
- Precise and reliable function through product-independent switching point
- Low maintenance costs

Version:	tube extension up to 6 m
Materials:	316L, Hastelloy, ECTFE, PFA, enamel, Monel
Process fitting:	thread from G¾, ¾ NPT flanges from DN 25, 1" hygienic fittings
Process temperature:	-50 … +250 °C (-58 ... + 482 °F)
Process pressure:	-1 … +64 bar (-100 … +6400 kPa)

VEGACAP 66

Capacitive cable electrode for level detection

- Long lifetime and reduced maintenance through robust mechanical construction
- Savings through simple mounting and setup
- Simple planning due to variable switching point

Measuring range:	up to 32 m (105 ft)
Process fitting:	thread from G1, 1 NPT flanges from DN 50, 2"
Materials:	316L, PTFE, steel
Process temperature:	-50 … +150 °C (-58 ... +302 °F)
Process pressure:	-1 … +40 bar (-100 … +4000 kPa)

VEGATOR 621

Signal conditioning instrument for level detection

- Simple adjustment of the switching point via a potentiometer
- Integrated fault monitoring with LED indication detects short-circuit and line break
- Simple installation through carrier rail mounting

Input:	1 x 4 ... 20 mA sensor input active
Output:	1 x relay output 1 x transistor output
Integration time:	adjustable
Switching hysteresis:	fix
Operating voltage:	20 ... 250 V AC, 50/60 Hz 20 ... 72 V DC

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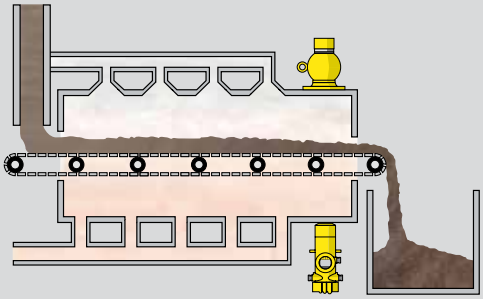
Application: Sludge drying

Reliable
Non contact monitoring of conveyor belt loading

Cost-effective
Optimal plant operation, minimal modification

Convenient
Simple installation without mounting system or major process interruption



Measurement of belt loading and mass flow in a thermal sludge drying facility

To minimize the sludge volume, water is evaporated from the sludge in the thermal drying facility. Under a stream of hot air at +80° to +130° C, the sewage sludge is dried in a belt drier.

MINITRAC 31

Continuous monitoring of conveyor belt loading

- Non-contact measurement of the sludge level in the dryer
- Simple retrofitting during operation
- Optimal, cost-effective dryer control

VEGASOURCE 31

Source container with locking device

- Optimal shielding allows use without control area
- Minimal space requirement and simple mounting
- Operational safety through pneumatic ON/OFF switching

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value display

Measurement of belt loading and mass flow in a thermal sludge drying facility

MINITRAC 31

Radiation-based sensor for density measurement

- Simple retrofitting during production processes
- High plant availability through non-contact measurement
- Exact measuring results independent of the process conditions

Version:	sensor with integrated NaI detector
Mounting:	from outside on pipelines or the vessel
Reproducibility:	+/- 0,1 %

VEGASOURCE 31

Source container for the reception of the source capsule

- Reliable shielding allows use without control sections
- Small space requirement and simple mounting
- Reliability through pneumatic switch-ON / switch-OFF

Version:	source container with locking facility
Mounting:	flange DN 100 PN 16
Exit angle:	5°, 20° oder 40"
Materials:	steel C22.8, 304, 316L

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

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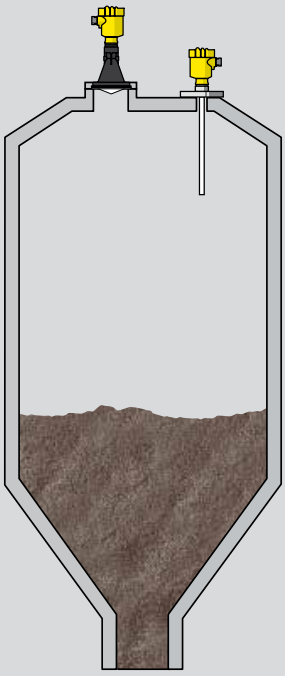
Application: Sludge granulate silo

Reliable
Protection against overfilling even with build-up

Cost-effective
Allows maximum utilization of vessel capacity

Convenient
Reliable, maintenance-free operation



Level measurement in the sludge granulate silo

After thermal drying, the dried sludge is stored in silos for further use. The granulated product is deposed of in landfills, used in agriculture or burned for energy generation.

VEGAPULS 67

Continuous level measurement in the granulate silo

- Simple mounting and setup
- Unaffected by ambient conditions and dust generation
- Maintenance free through contactless measurement

VEGACAP 64

Point level detection for reliable full signal during filling

- Insensitive to build up and adjustment-free
- Robust and maintenance free
- Reliable protection against overfillen

VEGATOR 621

Signal conditioning instrument for point level detection with continuously measuring 4 ... 20 mA sensors.

- Simple adjustment of the switching point via a potentiometer
- Integrated fault monitoring with LED indication detects short-circuit and line break
- Simple installation through carrier rail mounting

Level measurement in the sludge granulate silo

VEGAPULS 67

Radar sensor for continuous level measurement of bulk solids

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Reliable measurement independent of vapour, dust and noise

Measuring range:	up to 15 m (49 ft)
Process fitting:	mounting strap compression flanges from DN 80, 3"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure: -	1 … +2 bar (-100 … +200 kPa)
Accuracy:	+/- 2 mm

VEGACAP 64

Kapazitive Stabmesssonde zur Grenzstanderfassung

- Reduced number of cleaning cycles through measurement insensitive to buildup
- Maximum use of the vessel, because measurement over the complete probe length
- Long lifetime and low maintenance requirement through robust construction

Measuring range:	up to 4 m (13 ft)
Process fitting:	thread from G¾, ¾ NPT flanges from DN 50, 2"
Materials:	316L, PTFE, steel
Process temperature:	-50 … +200 °C (-58 ... +392 °F)
Process pressure:	-1 … +64 bar (-100 … +6400 kPa)

VEGATOR 621

Signal conditioning instrument for level detection

- Simple adjustment of the switching point via a potentiometer
- Integrated fault monitoring with LED indication detects short-circuit and line break
- Simple installation through carrier rail mounting

Input:	1 x 4 ... 20 mA sensor input active
Output:	1 x relay output 1 x transistor output
Integration time:	adjustable
Switching hysteresis:	fix
Operating voltage:	20 ... 250 V AC, 50/60 Hz 20 ... 72 V DC

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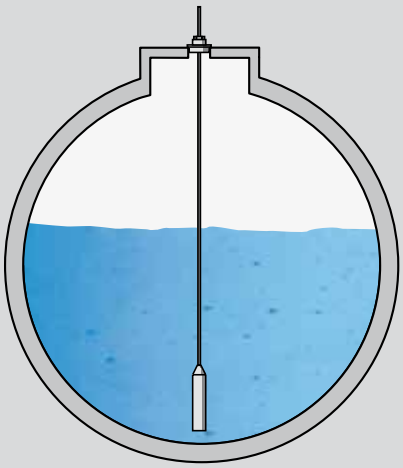
Application: Process water tank

Reliable
Precise process water volume measurement

Cost-effective
Maintenance-free measurement with ceramic cell

Convenient
Simple installation and setup



Level measurement in the process water tank

The process water is collected in tanks or open basins. pumps convey the water for cleaning and rinsing to various locations in the wastewater treatment plant.

VEGAWELL 52

Detection of process water levels for protection against flooding

- Cost-effective, precise and long-term stable level measurement
- Front-flush ceramic measuring cell
- Wear and maintenance free Operation

VEGAMET 391

Power supply for sensor, measurement data processing and display

- Simple regulation and control of level and pressure measuring instruments
- Analogue and digital outputs for connection to process control systems
- Large measured value display

Level measurement in the process water tank

VEGAWELL 52

Suspension pressure transmitter with CERTEC® measuring cell

- High reliability through maximum overload and vacuum resistance of the ceramic measuring cell
- High plant availability through integrated overvoltage protection
- Versatile use through robust housing and cable design

Measuring cell:	CERTEC®
Sensor diameter:	from 22 mm
Measuring range:	0 … +60 bar (0 … +6000 kPa)
Process temperature:	-20 … +80 °C (-4 ... +176 °F)
Deviation in characteristics:	0,2 %; 0,1 %

VEGAMET 391

Signal conditioning and indicating instrument for level sensors

- Steady utilization of the pumps through integrated pump management
- Completely integrated function unit for flow volume measurement
- Simple integration in the Intranet/Extranet through integrated Web server

Input:	1 x 4 … 20 mA/HART sensor input with transmitter power supply
Output:	1 x 0/4 … 20 mA sensor input up to 6 x relay outputs
Mounting:	front panel or wall or carrier rail 35 x 7.5 acc. to EN 50022
Operating voltage:	20 … 253 V AC, 50/60 Hz, 20 … 253 V DC

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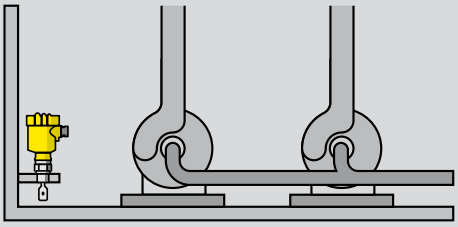
Application: Pump room

Reliable
Protection and early warning against flooding

Cost-effective
Simple installation and highly dependable function

Convenient
Maintenance-free operation



Flood protection in the pump room

To protect the process pumps, leakage water arising from a faulty pump seal, for example, is detected and an alarm is triggered.

VEGASWING 61

Point level detection signals an alarm in case of flooding

- Reliable detection even of small amounts of water
- Adjustment-free and easy to install
- Maintenance-free operation, fail safe design

VEGATOR 636

VEGATOR 636 Ex is a signal conditioning instrument for level detection with vibrating level switches

- Extensive monitoring detects short circuit and circuit break in the signal line as well as disturbances or malfunctions in the sensor
- Simple, convenient SIL and WHG function testing with test button
- Simple installation via DIN rail mounting

Flood protection in the pump room

VEGASWING 61

Vibrating level switch for liquids

- Minimum time and cost expenditure thanks to simple setup without medium
- Precise and reliable function through product-independent switching point
- Low maintenance costs

Materials:	316L, Hastelloy, ECTFE, PFA, enamel, Monel
Process fitting:	thread from G¾, ¾ NPT flanges from DN 25, 1" hygienic fittings
Process temperature:	-50 … +250 °C (-58 ... +482 °F)
Process pressure:	-1 … +64 bar (-100 … +6400 kPa)

VEGATOR 636

Signal conditioning instrument for point level alarm

- Extensive monitoring detects short circuit and circuit break in the measuring line as well as disturbances or malfunctions in the sensor
- Simple, convenient SIL and WHG function testing with test button
- Simple installation via DIN rail mounting

Sensor input:	1 x (vibrating level switch))
Relais output:	1 x spdt
Transistor output:	1 x
Switching hysteresis:	fixed
Protection:	IP 20
Operating voltage:	20 ... 250 V AC, 20 ... 72 V DC

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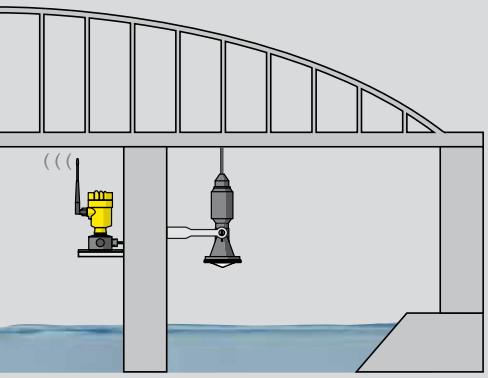
Application: Gauge station

Reliable
Monitors river level in any conditions

Cost-effective
Minimal engineering and maintenance-free

Convenient
Fast, flexible installation and easy signal transmission



River level measurement

Accurate monitoring of the river level is an important prerequisite to be able to react quickly and correctly in the event of a flood. Visual, on-site level monitoring requires great effort, particularly for facilities in remote areas.

VEGAPULS WL 61

River level measurement in the open for flood prevention

- Simple installation on existing structures, no stilling tubes
- Robust and weatherproof measuring unit (protection class IP 68)
- Non-contact measurement for continuous, trouble-free operation

PLICSRADIO T61/R61

Transmitting and receiving unit for wireless transmission of measurement data to the control room

- River level measurement without cabling for the signal line
- Continuous transmission of the level data

River level measurement

VEGAPULS WL 61

Radar sensor for continuous level measurement of water and waste water

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of product, process and ambient conditions

Measuring range:	bis 15 m (49 ft)
Process fitting:	thread G1½ mounting strap Compression flanges from DN 80, 3"
Process temperature:	-40 … +80 °C (-40 ... +176 °F)
Process pressure:	-1 … +2 bar (-100 … +200 kPa)

PLICSRADIO T61

Single channel emitting unit for wireless communication

- Reliable radio transmission and indication of measured values over a distance of approx. 1 km
- Economical operation through license, registration-free and free-of-charge use of the radio distance
- Reliable and stable data transmission through integrated safety mechanisms

Input:	1 x HART with/without sensor power supply
Output:	-
Indication:	display/adjustment module PLICSCOM
Adjustment:	display/adjustment module PLICSCOM or PACTware/DTM
Mounting:	wall or tube

PLICSRADIO R61

Single channel receiving unit for wireless communication

- Reliable radio transmission and indication of measured values over a distance of approx. 1 km
- Economical operation through license, registration-free and free-of-charge use of the radio distance
- Reliable and stable data transmission through integrated safety mechanisms

Input:	PLICSRADIO T 6x
Output:	1 x 4 ... 20 mA
Anzeige:	display/adjustment module PLICSCOM
Bedienung:	display/adjustment module PLICSCOM or PACTware/DTM
Mounting:	wall or tube

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plics® – easy is better

Instrument platform plics®

The plics® idea is simple: Each instrument is assembled from prefabricated components once the order is received. This modular design allows full flexibility when selecting the required sensor features. You receive your customized, user-friendly instrument within an amazingly short time. And the best part: these instrumens are more cost-effective and advantageous in every way – and that throughout their entire life cycle.

Display and adjustment

The display and adjustment module PLICSCOM is used for measured value indication, adjustment and diagnosis of the sensor. Its menu structure is simple and allows for quick setup and commissioning. Status messages are displayed in plain text.

Connection

The mobile VEGACONNECT is used to connect your instrument to a PC via the USB interface. Parameterization of the instruments is carried out with the tried-and-true adjustment software PACTware and the appropriate DTM. For EDD-based adjustment we also offer graphics-driven EDDs.

Recognition of maintenance requirements

The integrated self-monitoring function of plics® instruments continuously reports on the status of the instruments. Status messages allow proactive and cost-effective maintenance. All diagnostic data can be called up easily and quickly in plain text via the built-in memory functions.

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Looking Forward VEGA