



Industry Information Environment and Recycling

Measurement technology for
effective environmental protection

Looking Forward

VEGA



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Responsibility for people and the environment

VEGA's range of products and services for the measurement of level, limit level and pressure are setting the standard in the environment industry. That's because VEGA systematically combines the latest technologies with comprehensive industry-specific knowledge. And because our guiding principle has absolute priority: long-term and fair cooperation based on high esteem for environmental technologies and people.

Procurement from a single source: A complete line of measurement engineering products

VEGA has been a technological leader in the area of radar level measurement since the 1990s. Additional measuring principles like ultrasonic, guided microwave, nucleonic and capacitive round out the company's portfolio of level and switching instrumentation. VEGA's pressure transmitters measure hydrostatic pressure as well as process and differential pressure.

Modular and cost effective: The instrument system plics®

plics® is VEGA's unique modular instrument system. It allows the user to create a tailored combination of sensor, process fitting, electronics and housing. With this system you can choose exactly the measurement technology you really need. The simple, standardized adjustment system helps you put the instrument into operation quickly and efficiently.

Comprehensive safety: Instrumentation for the environment industry

- Measurement instrumentation protected against environmental influences by robust, tight housings
- Reliable function through highest instrument quality
- Very high availability and operational safety through SIL classification
- Fulfilment of approval requirements for overfill and explosion protection

Reliability for a demanding sector

From nanotechnology to CO₂ neutral coal power plants or from cost-effective plant purification systems to modern biomass fuels – environmental technology is becoming the growth industry of the 21st century. VEGA's trendsetting measurement technology proves its worth under the demanding operating conditions of modern environmental engineering.

Applications for all processes

Measuring tasks range from simple hydrostatic measurement of landfill leachate to contactless layer thickness measurement in garbage incineration at temperatures up to +1000 °C. The application possibilities for level detection are just as varied: whether simple blockage alarm in a digester buffer container or leak detection in a double-walled container holding special waste. When it comes to differential pressure measurement, e.g. for throughput measurement of combustion air, a wide variety of hydrostatic and process pressure measuring techniques are available.

Reliability, even under the toughest conditions

The environment industry places very high demands on housings, electronics and sensors. No problem for VEGA, because all components can be designed for the expected conditions. The robust housings convince users through their high mechanical stability. The actual measurement sensors withstand temperatures up to +400 °C and are resistant to acids and lyes. These features are made possible by temperature decoupling elements and high-resistance materials like PTFE, Hastelloy, tantalum and enamel.





Independent of material properties and process conditions

Substances with very different chemical properties come together in landfill leachate and special waste handling operations. Moreover, the measuring conditions are aggravated by chemical reactions, temperature fluctuations and mechanical agitators. VEGA's intelligent measurement technology features application-specific parameters to provide maximum functional reliability even under these conditions.

Solutions for environmental technologies

VEGA delivers exactly the solutions the sector needs. Whether for garbage incineration, flue gas cleaning, stripping columns or biogas reactors – thanks to the wide range of physical measuring principles at its disposal, VEGA can solve practically any measurement problem. The available process fittings range from straining clamps for leachate wells to flange connections with encapsulated antenna system for receiving chambers.

plics[®] – easy is better



Indicating and adjustment module					
Electronics					
Housings					
Process fittings					
Sensors					

-  Explosion protection
-  Safety standards
-  Hygiene standards
-  Ship approvals



Trendsetting measurement technology orientates itself around the people who use it. That's why we developed plics® – the world's first modular product system for instrumentation. Every one of our sensors is custom built from plics® components and thus optimally fulfils the requirements of every industry and its specific applications.

Simpler planning with plics®

The free choice and combination of sensor, process fitting, electronics and housing simplifies instrument selection and engineering for use in machines and on plants. With plics®, cost reduction starts right at the planning stage.

Clear advantages in plant construction

Short delivery time, uncomplicated connection, fast setup and commissioning save the plant builder significant time and costs. The configuration of VEGA instruments, their wiring and their commissioning is always the same. Whoever knows this can work with any plics® measuring principle and application at any time.

Assistance for the user

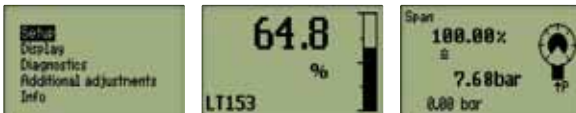
plics® delivers a convincing performance in daily use due to its high operational reliability, simplified servicing and reduced spares stock through the use of many common parts. The consistency of technology and operation simplifies and accelerates working with different plics® instruments. Adjustment always follows the same menu-driven procedures and is carried out on PLICSCOM, alternatively using PC based adjustment software for setup on-plant, or via the control room.

plics® for a safer environment for everyone

plics® provides the best prerequisites for safe processes in the environment industry through reliable and exact measurements. plics® instruments have all relevant approvals for the responsible handling of dangerous special wastes.

- Cost-effective instrumentation through customized instrument configuration
- Chemical and mechanical ruggedness through high-resistance housing materials
- Simple planning and fast commissioning thanks to integrated technology and adjustment
- Easier servicing through backup of adjustment parameters in the adjustment module

Where man and machine meet: Adjustment and system integration

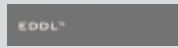
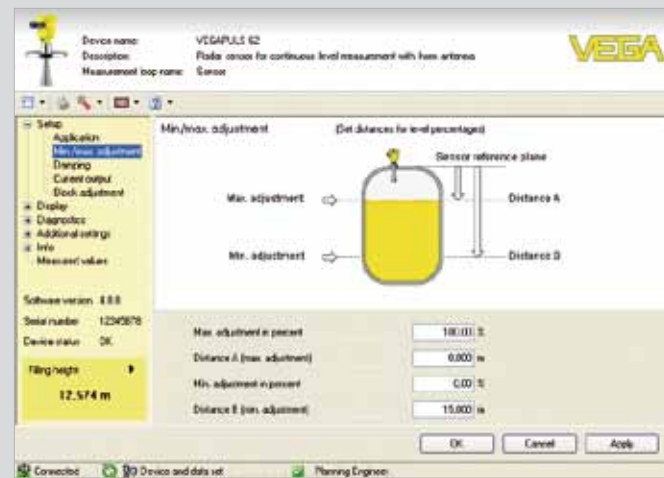


Instrument adjustment on site with PLICSCOM

The indicating and adjustment module PLICSCOM can be plugged into any plics® instrument at any time. It functions as a measured value indication on the instrument and as an on-site adjustment device. The structure of the adjustment menu is clearly organized and makes setup and commissioning easy. In addition, the status messages are displayed in clear, readable text. When an instrument is exchanged, PLICSCOM ensures fast availability of the measuring point: all sensor data are saved by pressing a key on PLICSCOM and later copied into the replacement sensor.

Instrument adjustment via PC and control system

FDT/DTM technology is an innovative, manufacturer-independent description technology for field instruments. Complex field instruments can be operated as easily with laptop computers and PCs as with the current engineering and operating environments of control systems. With DTMs the sensors are configurable down to the last detail and important adjustments can be carried out easily and quickly. As a system-independent operating system for DTMs, PACTware is the first choice for many field device manufacturers. VEGA also delivers the corresponding field device descriptions for system environments that depend on EDD description technology.



All current standards for measurement data transmission

VEGA offers practice oriented solutions: from the proven 4... 20 mA/HART measurement data transmission to Fieldbus technologies like Profibus PA or Foundation Fieldbus to wireless transmission. For level detection, the selection ranges from contactless switch to relay and transistor right through to NAMUR signal.

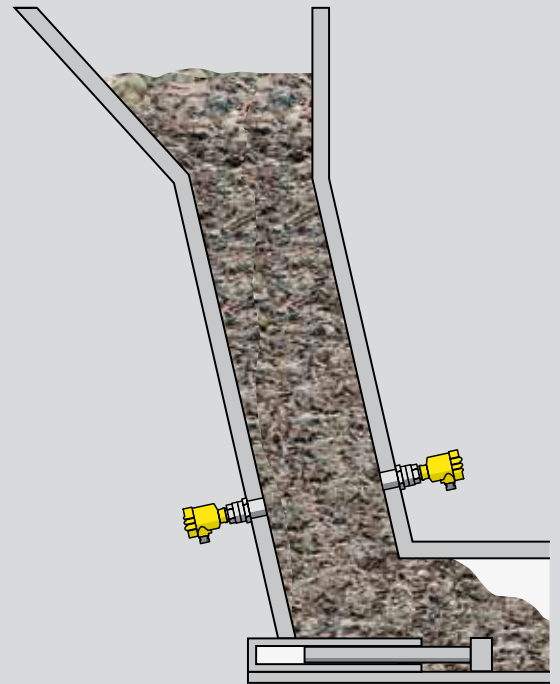
Communication at all levels

VEGA supports all main standards for uniform, centralized field instrument operation. If the instruments are integrated in primary management or control systems, the field instruments can be accessed for adjustment, servicing and diagnosis purposes via the existing infrastructure. Both DTM as well as EDD description technologies are supported.

Waste incineration

Furnace feed shaft

A crane system lifts the waste out of the garbage bunker and transports it to the feed shaft. In the lower area of the shaft, a hydraulic piston moves the waste material to the combustion grate. The combustion control system optimizes the cycle time, stroke length and stroke speed of the hydraulic piston. The height and uniform distribution of the waste column in the shaft prevents unwanted air from reaching the fire and ensures a continuous supply of waste material for the combustion process on the grate. For that reason the level in the feed shaft must be monitored and made available to the crane operator.



Level detection with VEGAMIP 61

The level switch VEGAMIP 61 uses a microwave beam to detect the minimum level with several measuring points at the same height in the feed shaft. Every measuring point consists of a transmitter and a receiver mounted opposite each other in the shaft walls. The entire cross-section of the shaft is covered with this arrangement. Due to the non-contact measuring technique, VEGAMIP 61 requires no servicing.



VEGAMIP 61

- Reliable detection of the level
- Non-contact measurement
- Wear and maintenance-free

Incinerator

To ensure that the waste burns completely, temperatures in excess of +1000 °C must be reached. This is accomplished by blowing in large quantities of air, primary air from below and secondary air from above. Air quantity and air pressure must be precisely measured. Moreover, a defined waste layer thickness of approx. 50 cm on the combustion grate is required to ensure even burning. State-of-the-art measurement technology makes automated, economic operation possible here.



Layer thickness measurement with VEGAPULS 68

The waste layer thickness on the grate is measured continuously with the radar sensor VEGAPULS 68. The sensor measures right through the hot burning gases and flames that can be in excess of +1000 °C. Focused antenna signals enable very precise measurement and control of the charging process.

Air measurement with VEGADIF 65 and VEGABAR 52

Air quantity, i.e. air flow, is measured in the respective supply tube with a VEGADIF 65. This is done by passing the air through a Venturi section, generating a differential pressure of a few millibars, and the flow is calculated by precise measurement of the pressure difference. In addition, the air absolute pressure in the supply tube is measured with a VEGABAR 52 pressure transmitter.



VEGAPULS 68

- Non-contact measurement up to 75 m
- Reliable function even in hot media
- Maintenance-free through antenna air rinsing



VEGADIF 65

- Metallic differential pressure measuring cell
- Small measuring ranges down to 10 mbar
- Measuring precision 0.075 %



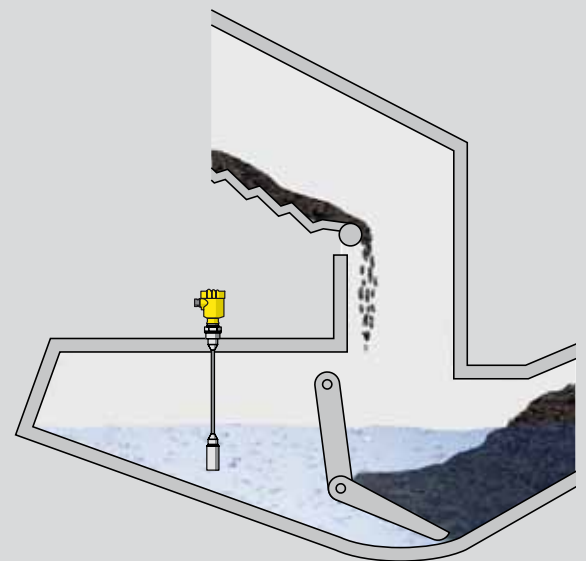
VEGABAR 52

- High overload resistance
- Special vibration resistance

Waste incineration

Ash disposal via the deslagger

At the end of the grate, the burned out, hot combustion residue is discharged into the water bath of the deslagger. Complete quenching takes place here. The slag is then removed from the deslagger via a mechanical discharge system, which also squeezes out most of the excess water. A certain amount of water in the deslagger is lost through evaporation and the mechanical discharging process. The loss depends on the temperature of the residue and its water absorption capacity. This being the case, the level in the deslagger must be constantly replenished through reliable measurement.



Level measurement with VEGABAR 66 or VEGAPULS 67

A continuous level measurement via a suspension pressure transmitter VEGABAR 66 controls the automatic discharge of the water/slag mixture. The ceramic measuring cell of this pressure transmitter is highly resistant to the abrasive slag. It is also front-flush, which generally protects it from buildup.

Extreme soiling and buildup can occur, however. In such cases, the level measurement is made with a non-contact radar sensor, VEGAPULS 67. Its efficient measuring system is also not affected by surface foam.



VEGABAR 66

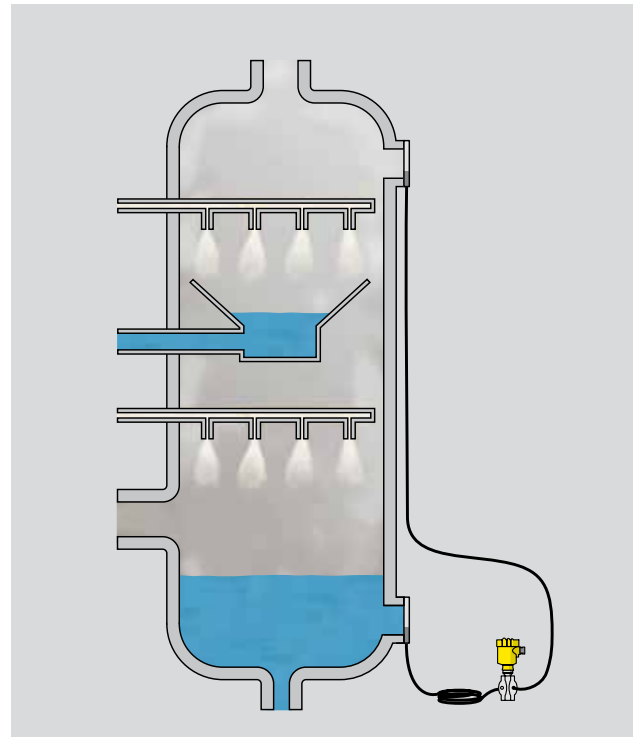
- Front-flush ceramic measuring cell CERTEC®
- High resistance against abrasion

VEGAPULS 67

- Non-contact measurement up to 15 m
- Reliable function even with surface foam
- Maintenance-free through encapsulated antenna system

Flue gas scrubbing in a scrubber system

After the waste incineration process, many pollutants and toxic substances are released into the flue gas. The gas must therefore be cleaned before it is released into the environment. So further cleaning steps, such as electrostatic filters and catalytic converters, are implemented in addition to the flue gas scrubbing. Harmful acidic gases like sulphur dioxide must be dissolved out in the flue gas scrubber. To accomplish this, lime water washing solution is sprayed in the gas in the scrubber column. The lime residues are then filtered out of the washing water and used as a raw material, e.g. for production of gypsum plasterboard. A constant level is required for the continuous cleaning process in the washing column.



Level measurement with VEGADIF 65

Due to the difficult process conditions in the scrubber column, such as the turbulent surface of the medium, negative pressure and aggressive substances, the differential pressure transmitter VEGADIF 65 is used for level measurement here. This instrument is especially suitable since it operates completely unaffected by these process conditions. Additionally, the version with chemical seal system and capillary lines enables front-flush installation and the use of high resistance diaphragm materials.



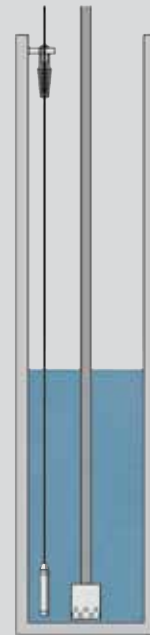
VEGADIF 65

- High chemical stability through tantalum diaphragm
- Reliable function even with turbulent medium surface
- Front-flush mounting

Landfill

Leachate measurement

Landfill leachate arises from surface water penetrating the landfill, as well as the water pressed out of the landfill mass by compression. The pollutants contained in the landfill waste are partially washed out and represent a considerable danger for local ground and surface water. The leachate must therefore be contained by an underground seal of the landfill, drained out and collected in wells and fed into a multistage treatment plant. A level measurement is needed in each leachate well to control the drainage pumps and provide information about the condition of the landfill.



Level measurement with VEGAWELL 52

The level in the individual well pipes is measured by the suspension pressure transmitter VEGAWELL 52. With its PE coating it is optimally protected against the corrosive leachate. The measurement protects the pumps from running dry and also keeps the water level from rising too high.

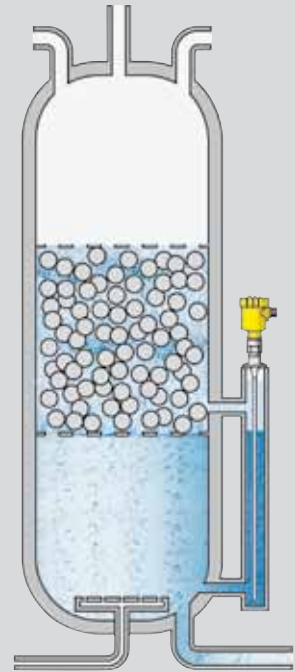


VEGAWELL 52

- Front-flush ceramic measuring cell CERTEC®
- Suspension cable and transmitter protected by highly resistant PE

Leachate treatment in a stripping column

After the first physical and chemical treatments of the leachate, it is further treated in an approx. 3 m high reactor, the so-called stripping column. Here, nitrogen and carbon compounds are broken down with the help of microorganisms. A filling material is packed into the middle area of the reactor to improve the reaction. In additional physical processes the treated leachate is cleaned, evaporated and separated as a distillate. An exact level measurement at the base of the stripping column is required for optimal operation.



Level measurement with VEGAFLEX 63

The surface of the medium in the reactor is very turbulent due to air streaming in from below. A direct level measurement in the stripping column is therefore not possible. That's why the TDR sensor VEGAFLEX 63 in conjunction with a bypass tube is implemented here. The bypass tube itself together with the probe rod forms a coaxial system. A reliable measurement is thus guaranteed, even when there are welded seams and deposits in the bypass tube and overflowing right up to the sensor occurs.



VEGAFLEX 63

- High measuring precision
- Unaffected by product properties
- Independent of pressure, temperature and density

Special waste treatment

Receiving chambers for special waste

Special waste can include varnishes, paints and thinners as well as acids, lyes and emulsions. These materials accumulate in the chemical industry, in metal processing and in vehicle construction. In special waste treatment, substances harmful to the environment are converted into ecologically compatible substances, i.e. they are rendered suitable for long-term deposition. Before treatment begins, the liquid special waste is collected in receiving chambers. There, level measurements guarantee automated, monitored operation of the system and thus protect personnel and environment.



Level measurement with VEGAPULS 63

The radar sensor VEGAPULS 63 is the optimal solution for special waste with different chemical and physical characteristics. It works reliably under difficult process conditions like steam, temperature fluctuations and agitated surfaces.

Maximum signal with VEGACAP 63

The maximum signal delivered by a fully PTFE-insulated, capacitive level switch VEGACAP 63 prevents overflowing in the receiving chambers.

Leak detection with VEGASWING 63

VEGASWING 63 has proved to be a very good leakage detector in the containers, which are double walled for safety reasons. In combination with the signal conditioning instrument VEGATOR 636, it fulfils the requirements of SIL2.



VEGAPULS 63

- Non-contact measurement
- for all media
- Small minimum distance, no socket required
- Flat antenna system of chemically highly resistant material



VEGACAP 63

- Robust and maintenance-free
- Chemically highly resistant material



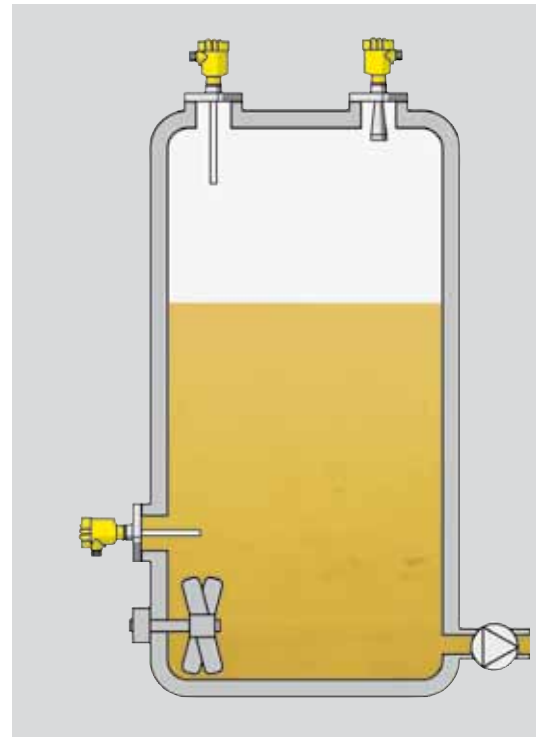
VEGASWING 63

- Product-independent and adjustment-free
- Test via keystroke on the accompanying signal conditioning instrument
- Chemically highly resistant through ECTFE coating

Storage tanks for intermediate storage

The treatment of special waste is carried out through different chemical and thermal processes. So that these processes can be operated continuously, defined quantities of special waste, varnishes, paints and thinners are buffered in tanks up to 15 m high. Agitators in the tanks prevent sedimentation and clumping together of fibrous materials and pigments at the bottom of the tanks.

A reliable level measurement guarantees uninterrupted processes in waste treatment.



Level measurement with VEGAPULS 62

The radar sensor VEGAPULS 62 is the ideal device for this level measurement. The radar sensor operates completely unaffected by the vapours from the waste and delivers exact measuring results even when the agitators are in motion.



VEGAPULS 62

- Non-contact measurement for all media
- Small minimum distance
- Reliable function even in gases and vapours

Level detection with VEGACAP 64

Being highly insensitive to buildup, capacitive compact level switches have proven to be a good solution for level detection in the area of varnishes and paints. That's why VEGACAP 64 is used here as overflow protection in compliance with the Water Resource Act, and as dry run protection for the agitators and the discharge pump.



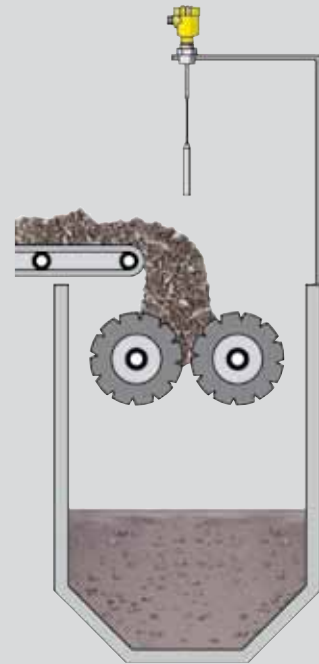
VEGACAP 64

- Robust and maintenance-free
- Insensitive to buildup and adjustment-free
- Chemically highly resistant materials

Biogas production

Buffer container for pretreated bio-waste

Bio-waste is produced in private households, commercial enterprises and in the food processing industry. The delivered bio-waste is chopped up in a shredder and mechanically sorted into digestables and solid, non-decomposable components. The digestables are fed into the multistage digestion process via the buffer container. To prevent overfilling in the buffer containers, a very reliable backup detection is required here.



Backup detection with VEGACAP 66

The digestates reach the buffer container via screw or belt conveyors. A fully insulated, capacitive cable measuring probe, VEGACAP 66, reports a possible backup and thus prevents an overfilling of the buffer container.

Depending on the temperature generated by the process, steam may form in the buffer container. VEGACAP 66 is not affected by this and continues to operate reliably.



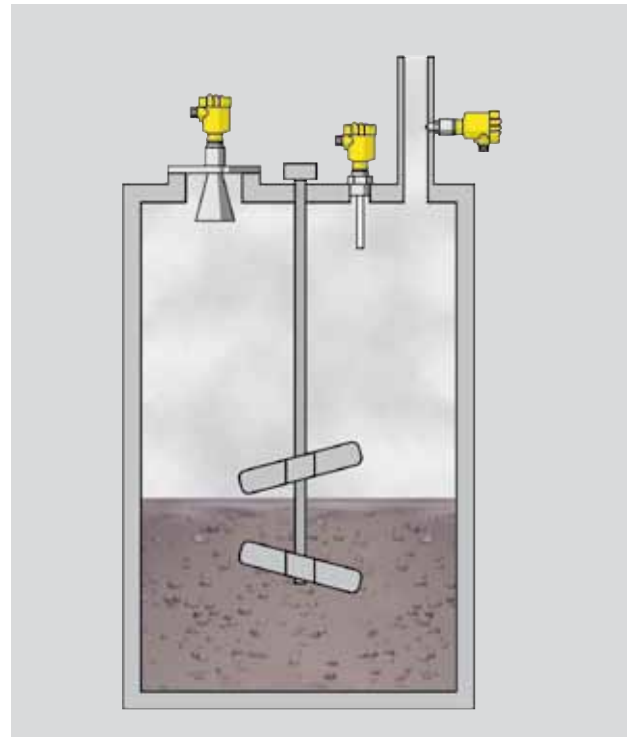
VEGACAP 66

- Simple installation
- Robust and maintenance-free

Biogas reactor

A biogas reactor is a part of the multistage process of digestion. Microorganisms use the complex combination of substances in the digestate as nutrient and energy supply and decompose it. The main product of this decomposition is biogas, which consists of energy-rich methane and carbon dioxide. The generated biogas is collected in a gas tank and converted into electricity and heat in the combined heat and power plant.

Defined levels in the individual reactors are required for optimal digestion. Typical process conditions in the reactors are gas overlay, temperatures up to +55 °C and multistage agitators.



Level measurement with VEGAPULS 62

VEGAPULS 62 radar sensors are implemented here for continuous level measurement. These instruments measure the level exactly even under extremely difficult process conditions.

Overfill protection according to WHG with VEGACAP 64

The mandatory overfill protection according to WHG (Water Resource Act) is realized with a VEGACAP 64 capacitive rod measuring probe. It delivers an exact switching point even when covered with the strongly adhesive buildup.

Pressure measurement with VEGABAR 52

To control gas generation, the gas pressure in the reactors is measured with mbar precision. The pressure transmitter VEGABAR 52 has proven itself perfectly suited for this task.



VEGAPULS 62

- Non-contact level measurement
- Independent of pressure, temperature and gas overlay
- Reliable function also in steam



VEGACAP 64

- Insensitive to buildup and adjustment-free
- Simple setup and commissioning
- Robust and maintenance-free



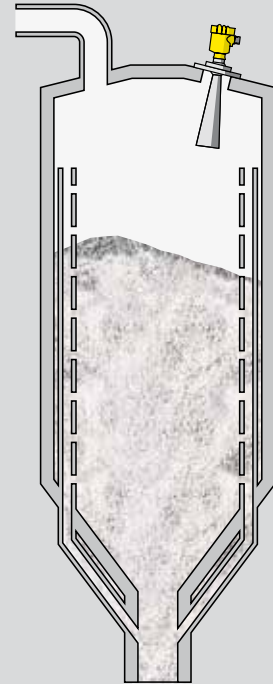
VEGABAR 52

- Special vibration resistance
- Ceramic measuring cells with small measuring ranges

Recycling

Granulate silos in plastic recycling

Even complete plastic windows can be recycled in a special process. They are first pulverised in shredders, then sorted into their various components: metals, glass and rubber. The left-over pieces of PVC are chopped up, sorted and granulated into a uniform particle size. At the end of the recycling process, a pure, high-quality PVC granulate is ready for use as raw material for new windows. It is stored in large silos fitted with aeration tubes for uniform colour mixing. For control of production and delivery, the contents of the silos must be monitored via a level measurement.



Level measurement with VEGAPULS 68

The radar sensor VEGAPULS 68 is the optimal solution for level measurement in the mixing silo, where noise and dust – especially during filling – as well as abrasive materials abound. Specially developed for bulk solids applications with unfavourable reflective properties, because it is non-contact, there are no wear problems. Its high sensitivity guarantees exact measuring results even if the granulate has a low ϵ_r value.

Level measurement with VEGAPULS 67

VEGAPULS 67 is an economical alternative solution for smaller silos. It has the same metrological features as VEGAPULS 68 and a measuring range up to 15 m.



VEGAPULS 68

- Non-contact measurement with radar
- Measuring range up to 75 m
- Swivelling holder for optimal sensor orientation

VEGAPULS 67

- Non-contact measurement with radar
- Measuring range up to 15 m
- Adjustable seal for optimal sensor orientation

Cullet silos in scrap glass recycling

Glass is manufactured from quartz sand, lime and soda at temperatures up to +1600 °C. The melting process is very energy intensive, so easily melting waste glass is often added to the melt in certain proportions. After being delivered, the waste glass is first crushed and contaminants are sorted out. Then the material is transported to the cullet silos and fed into the melting process from there. To ensure a continuous supply of material for the melting furnace, a reliable level measurement is required in the cullet silos.



Level measurement with VEGAPULS 67

The radar sensor VEGAPULS 67 is the optimal solution for level measurement in the cullet silo due to the noise and dust during the filling process as well as the abrasive, sharp-edged glass fragments. Specially developed for bulk solids with unfavourable reflective properties, it measures contactlessly and entirely without wear. For larger silos over 15 m high, the radar sensor VEGAPULS 68 is used.

Backup detection with VEGAMIP 61

The microwave barrier VEGAMIP 61 serves as a backup detection device. It consists of a transmitter and a receiver and is mounted on the side of the feed shaft. A ceramic adapter makes the microwave barrier completely resistant against the abrasive waste glass.



VEGAPULS 67

- Non-contact measurement with radar
- Measuring range up to 15 m
- Adjustable seal for optimal sensor orientation



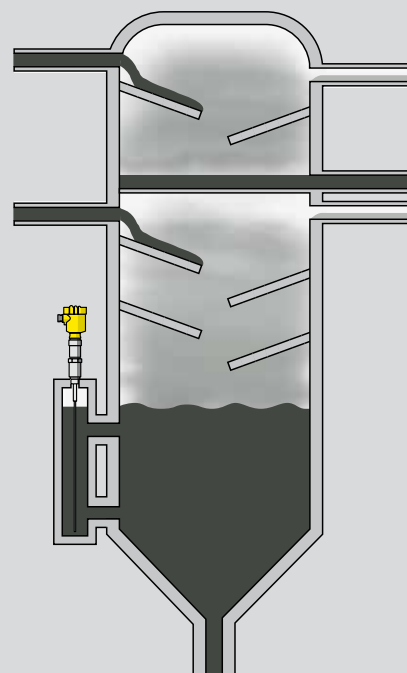
VEGAMIP 61

- Reliable backup detection
- Non-contact measurement
- Wear and maintenance-free

Recycling

Dewatering column in waste oil regeneration

Waste oil recovery is carried out in several process steps, one of which takes place in the dewatering column. The waste oil, which contains water and components that boil off easily, is heated to a temperature of +105 °C in the lower part of the column. The water vaporizes and is conducted away after condensation. After reaching the proper temperature, the oil is transported through pipes to the upper part of the column, where the remaining water vaporizes. Controlling the level in the column is the prerequisite for optimal dewatering.



Level measurement with VEGAFLEX 66

The surface of the oil is very agitated due to the action of the pumps and the heating. A direct level measurement in the column is not possible, so it is carried out in a bypass tube. The TDR sensor VEGAFLEX 66 is used here.

Together with the rod probe, the bypass tube itself becomes a coaxial system. A reliable measurement is guaranteed even if there are welded seams or deposits in the bypass or overflowing up to the sensor occurs.



VEGAFLEX 66

- Direct use in existing bypass tubes
- High measuring precision
- Unaffected by product characteristics
- Independent of pressure, temperature and density

Instrument overview



VEGAPULS 62



Radar sensor for continuous level measurement

- Non-contact measurement
- Simple mounting
- Wear and maintenance-free
- Unaffected by pressure, temperature, gas and dust
- High accuracy

Process temperature: -200 ... +450 °C (-328 ... +842 °F)

Process pressure: -1 ... +160 bar (-100 ... +16000 kPa)

Process fitting: Thread G1½ A or 1½ NPT
Flange from DN 50 or ANSI 2"

Measuring range: up to 35 m (115 ft)



VEGAPULS 63



Radar sensor for continuous level measurement

- Non-contact measurement
- Encapsulated antenna system
- Front-flush installation
- Wear and maintenance-free
- High measuring precision

Process temperature: -200 ... +200 °C (-328 ... +392 °F)

Process pressure: -1 ... +16 bar (-100 ... +1600 kPa)

Process fitting: Flanges from DN 50 or ANSI 2"
Tri-Clamp from 2"

Measuring range: up to 35 m (115 ft)



VEGAPULS 67



Radar sensor for continuous level measurement of bulk solids

- Non-contact measurement
- Encapsulated antenna system
- Wear and maintenance-free
- Unaffected by pressure, temperature, gas and dust
- High measuring precision

Process temperature: -40 ... +80 °C (-40 ... +176 °F)

Process pressure: -1 ... +2 bar (-100 ... +200 kPa)

Process fitting: Flanges from DN 80 or ANSI 2"
or mounting strap ANSI 3"

Measuring range: up to 15 m (49 ft)

The pictured instruments are standard models.



Explosion protection



Safety standards



Hygienic standards

Instrument overview



VEGAPULS 68



Radar sensor for continuous level measurement of bulk solids

- Non-contact measurement
- Simple installation
- Wear and maintenance-free
- Unaffected by pressure, temperature, gas and dust
- High measuring precision

Process temperature: -200 ... +450 °C (-328 ... +842 °F)

Process pressure: -1 ... +160 bar (-100 ... +16000 kPa)

Process fitting: Thread G1½ A or 1½ NPT
Flanges from DN 50 or ANSI 2"

Measuring range: up to 75 m (246 ft)



VEGAFLEX 63



TDR sensor for continuous level measurement

- Easy setup without adjustment
- Unaffected by product properties
- Insensitive to dust, pressure, buildup and condensate
- Wear and maintenance-free
- High measuring precision

Process temperature: -40 ... +150 °C (-40 ... +302 °F)

Process pressure: -0.5 ... +16 bar (-50 ... +1600 kPa)

Process fitting: Flange from DN 50 or ANSI 2"
Tri-Clamp from 1"

Measuring range: Cable up to 32 m (105 ft)
Rod up to 4 m (13 ft)



VEGAFLEX 66



TDR sensor for continuous level measurement

- Easy setup without adjustment
- Independent of medium properties
- Insensitive to dust, steam, buildup and condensate
- Wear and maintenance-free
- High measuring precision

Process temperature: -200 ... +400 °C (-328 ... +752 °F)

Process pressure: -1 ... +400 bar (-100 ... +40000 kPa)

Process fitting: Thread G¾ A or ¾ NPT
Flange from DN 40 or ANSI 2"

Measuring range: Cable up to 32 m (105 ft)
Rod up to 6 m (20 ft)
Coax up to 6 m (20 ft)

The pictured instruments are standard models.



VEGACAP 63



Capacitive rod electrode for point level detection

- Robust and maintenance-free
- High functional reliability
- Simple mounting and setup

Process temperature: -50 ... +200 °C (-58 ... +392 °F)

Process pressure: -1 ... +64 bar (-100 ... +6400 kPa)

Process fitting: Thread G $\frac{3}{4}$ A or $\frac{3}{4}$ NPT
Flange from DN 25 or ANSI 1"

Measuring range: up to 6 m (20 ft)



VEGACAP 64



Capacitive rod probe for point level detection

- Exact switching point even in strongly adhesive media
- Robust and maintenance-free
- High functional reliability
- Highly resistant PTFE insulation

Process temperature: -50 ... +200 °C (-58 ... +392 °F)

Process pressure: -1 ... +64 bar (-100 ... +6400 kPa)

Process fitting: Thread G $\frac{3}{4}$ A or $\frac{3}{4}$ NPT
Flanges from DN 25 or ANSI 1"

Measuring range: up to 6 m (20 ft)



VEGACAP 66



Capacitive rod probe for point level detection

- Service proven, robust and maintenance-free
- High functional reliability
- Simple mounting and setup

Process temperature: -50 ... +150 °C (-58 ... +302 °F)

Process pressure: -1 ... +16 bar (-100 ... +1600 kPa)

Process fitting: Thread G1 A or 1 NPT
Flange from DN 25 or ANSI 1"

Measuring range: up to 32 m (105 ft)



Instrument overview



VEGASWING 63



Vibrating level switch for liquids with tube extension

- Setup without adjustment
- Product-independent switching point
- Very high reproducibility
- Wear and maintenance-free

Process temperature: -50 ... +250 °C (-58 ... +482 °F)

Process pressure: -1 ... +64 bar (-100 ... +6400 kPa)

Process fitting: Thread from G $\frac{3}{4}$ A or $\frac{3}{4}$ NPT
Flanges from DN 50 or ANSI 1"

Probe length: up to 6 m (20 ft)



VEGAMIP T/R 61



Microwave barrier for level measurement in bulk solids and liquids

- Non-contact measurement
- Insensitive to soiling
- Unaffected by changing product properties
- Wear and maintenance-free
- Simple adjustment

Process temperature: -40 ... +80 °C (-40 ... +176 °F)

Process pressure: -1 ... +4 bar (-100 ... +400 kPa)

Process fitting: from G1 $\frac{1}{2}$ A resp. 1 $\frac{1}{2}$ NPT
Compression flange ANSI 3"



VEGABAR 52



Pressure transmitter with CERTEC® measuring cell

- Dry, ceramic-capacitive sensor element
- High accuracy
- Very high overload and vacuum resistance
- Small measuring ranges

Process temperature: -40 ... +150 °C (-40 ... +302 °F)

Process fitting: Manometer connection G $\frac{1}{2}$ A
Thread from G $\frac{1}{2}$ A resp. $\frac{1}{2}$ NPT
Flanges from DN 25 resp. ANSI 1"
Fittings for the food processing and paper industry

Measuring range: -1 ... +72 bar (-100 ... +7200 kPa)

The pictured instruments are standard models.



VEGABAR 66



Suspension pressure transmitter with CERTEC® measuring cell

- Dry, ceramic-capacitive sensor element
- High abrasion and overload resistance
- High measuring precision

Process temperature: -40 ... +100 °C (-40 ... +212 °F)

Process pressure: -1 ... +130 bar (-100 ... +13000 kPa)

Process fitting: Straining clamp, threaded fitting G1½ A or 1½ NPT
Thread G1½ A or 1½ NPT
Flanges from DN 50 or ANSI 2"

Measuring range: +0.1 ... +25 bar (+10 ... +2500 kPa)



VEGAWELL 52



Suspension pressure transmitter for level measurement of liquids

- Dry, ceramic-capacitive CERTEC® measuring cell
- High abrasion and overload resistance
- Integrated overvoltage protection

Process temperature: -20 ... +80 °C (-4 ... +176 °F)

Process fitting: Straining clamp
Threaded fitting G1 A resp. 1 NPT and G1½ A resp. 1½ NPT
Thread G½ A resp. ½ NPT and G1 A resp. 1 NPT

Measuring range: +0.1 ... +25 bar (+10 ... +2500 kPa)



VEGADIF 65



Differential pressure transmitter with metal measuring diaphragm

- Very good reproducibility and long-term stability
- Deviation < 0.075 %
- High resistance diaphragm materials

Process temperature: Basic version -40 ... +85 °C (-40 ... +185 °F)
Chemical seal -40 ... +400 °C (-40 ... +752 °F)

Process fitting: Basic version NPT ¼-18 acc. to IEC 61518
Chemical seal Flanges from DN 32 or 2"
Hygienic fittings from DN 32 or 2"

Δp measuring range: 0.01 ... 40 bar (0.145 ... 4000 kPa)



Explosion protection



Safety standards



Hygienic standards



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Looking Forward **VEGA**