

VEGAPULS C 21

Modbus and Levelmaster protocol

Radar sensor for continuous level measurement



Application area

The VEGAPULS C 21 is the ideal radar sensor for non-contact level measurement with high accuracy requirements in all standard applications where a high degree of protection is required.

It is particularly suitable for level measurement in water treatment, in pumping stations and rain overflow basins, for flow measurement in open channels, for level monitoring and for many other industrial areas.

The sensor is suitable both for measuring liquids and for use on small bulk solids silos or bulk solids containers.

Your benefit

- Maintenance-free operation due to non-contact 80 GHz radar technology
- Exact measuring results independent of product, process and ambient conditions
- High plant availability because wear and maintenance-free. Exact measurement results independent of medium, process and ambient conditions

Function

The sensor emits a continuous radar signal through the antenna. The emitted signal is reflected by the medium and received as an echo by the antenna.

The frequency difference between the emitted and received signal is proportional to the distance and depends on the filling height. The determined filling height is converted into a respective output signal and output as measured value.

Technical data

Measuring range up to	15 m (49.21 ft)
Deviation	≤ 2 mm
Beam angle	8°
Measuring frequency	W-band (80 GHz technology)
Output signal	Digital output signal according to standard EIA-485
Data protocols	Modbus RTU, Modbus ASCII, Levelmaster
Process fitting	Thread G1½, 1½ NPT, R1½
Mounting connection	Thread G1, 1 NPT, R1
Process pressure	-1 ... +3 bar (-100 ... +200 kPa/-14.5 ... +43.51 psig)
Process temperature	-40 ... +80 °C (-40 ... +176 °F)
Ambient temperature	-40 ... +80 °C (-40 ... +176 °F)
Bluetooth standard	Bluetooth 5.0 (downward compatible to Bluetooth 4.0 LE)
Max. effective range	25 m (82 ft)
Operating voltage	8 ... 30 V DC
Protection rating	IP66/IP68 (3 bar) acc. to IEC 60529, Type 4P acc. to UL 50

Materials

The wetted parts of the instrument are made of PVDF. The process seal is made of FKM. The connection cable is PUR insulated.

You will find a complete overview of the available materials and seals in the "Configurator" at www.vega.com and "Products".

Housing versions

The housing is optimized for applications in the water/waste water industry and manufactured of PVDF. Due to the encapsulated cable gland, protection rating IP66/IP68 (3 bar) is achieved.

Electronics versions

The instruments are available in different electronics versions. Apart from the two-wire electronics with 4 ... 20 mA/HART, two digital versions with SDI-12 and Modbus/Levelmaster protocol are possible.

Approvals

Worldwide approvals are available for VEGA instruments, e.g. for use in hazardous areas, on ships or in hygienic applications.

The technical data in the respective safety instructions are valid for approved instruments (e.g. with Ex approval). In some cases, these data can differ from the data listed herein.

You can find detailed information on the existing approvals with the appropriate product on our homepage.

Adjustment

Adjustment via the signal cable

The adjustment via the signal cable is carried out via an RS 485/USB interface adapter and a PC/notebook using DTM/PACTware.

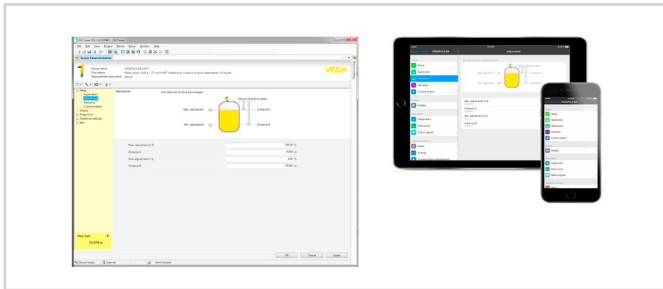
Wireless adjustment via Bluetooth

The Bluetooth version of the device enables wireless connection to smartphones/tablets (iOS/Android) or Windows PCs.



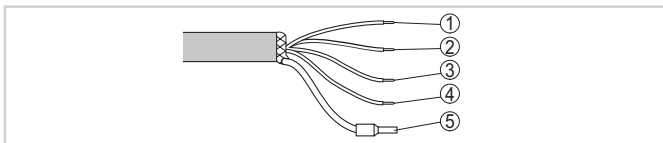
Wireless connection to standard operating devices

Operation is via a free app from the "Apple App Store", the "Google Play Store" or the "Baidu Store". Alternatively, adjustment can also be carried out via PACTware/DTM and a Windows PC.



Adjustment via PACTware or app

Electrical connection

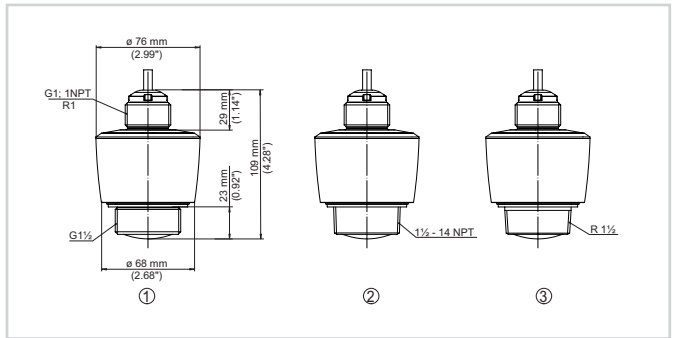


Wire assignment in permanently connected connection cable

- 1 brown (+) for voltage supply
- 2 blue (-) for voltage supply
- 3 Brown (+) Modbus signal D0
- 4 Blue (-) Modbus signal D1
- 5 Shielding

You can find details on electrical connection in the instrument operating instructions at www.vega.com/downloads.

Dimensions

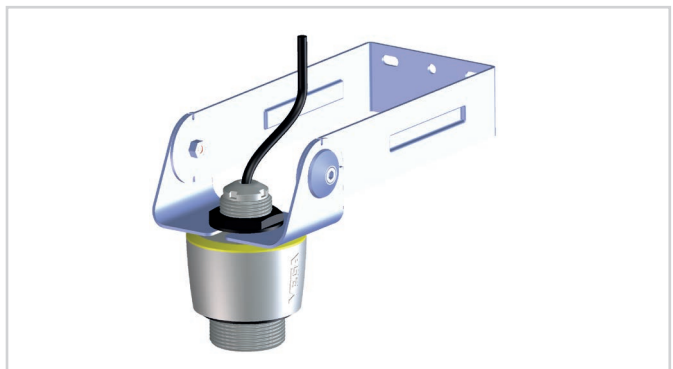


Dimensions VEGAPULS C 21

- 1 Thread G1 1/2
- 2 Thread 1 1/2 NPT
- 3 Thread R1 1/2

Mounting accessories

For the VEGAPULS C 21 the suitable mounting accessories for ceiling or wall mounting is available.



Mounting strap with adjustable sensor holder for sensors with axial cable outlet - Wall mounting (example)

You can find further information on the mounting accessory on our homepage.

Information

You can find further information on the VEGA product line on our homepage.

In the download section on our homepage you'll find operating instructions, product information, brochures, approval documents, instrument drawings and much, much more.

Software accessories such as the current device software and the appropriate operating software are also available there.

Instrument selection

On our homepage under "Products" you can select the suitable measuring principle and instrument for your application.

You can find detailed information on the instrument versions at www.vega.com and "Products".

Contact

You can find your personal contact person at VEGA on our homepage www.vega.com and "Contact".