

Radar

Continuous level measurement



Overview

VEGAPULS series 60

Antenna cover

Page 18

Page 20

Page 38

VEGAPULS

Non-contact measurement under all process conditions

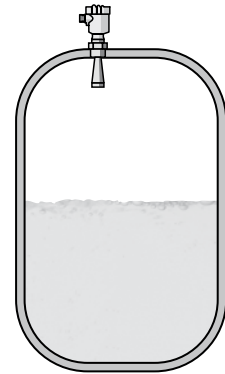
Measuring principle

Extremely short microwave impulses are emitted by the antenna system to the measured product, reflected by the product surface and received again by the antenna system. The time from emission to reception of the signals is proportional to the level in the vessel. A special time spreading procedure enables the reliable and precise measurement of the extremely short signal running times. The radar sensors are available in different C, K and W-band frequency ranges, this ensures the optimum solution for the different applications. The proven ECHOFOX signal processing analysis the reflections in the vessel based on long-standing experience and detects the level signal reliably. The adaptation to the respective application is really simple through the selection of the application parameters.

Applications

Level in liquids

Two different emitting frequencies are available for these applications. The compact, high frequency K-band sensors VEGAPULS 61, 62 and 63 are particularly suitable for applications where high accuracy is required. Since even with small antenna sizes, an excellent signal focusing is reached, hence mounting on small mounting openings is possible. The low frequency C-band sensors VEGAPULS 65 and 66 can penetrate foam and strong condensation and are thus particularly suitable for arduous process conditions. Unaffected by steam, gas composition, pressure and temperature changes, radar sensors detect the product surface of different products reliably and ensure thus an optimum process.













Level in bulk solids

The high frequency sensors VEGAPULS 67, 68 and 69 in K-band technology are used for these applications. Thanks to the very good focusing of the signals, the level is detected reliably independent of silo installations or buildup on the vessel wall. A high sensitivity electronics optimized to the requirements of the bulk solids measurement, enables a reliable level measurement of different products up to a distance of 120 m. The measuring principle is unaffected by strong dust generation, filling noise, air turbulences by pneumatic filling and temperature fluctuations and ensures a reliable and maintenance-free operation of the systems. The application area covers applications in the food processing industry and the plastic processing up to the steel generation and mineral rock processing.



Overview

Instrument type		Measuring range Accuracy	Process fitting	Process temperature	Process pressure
VEGAPULS WL 61 Liquids in the water and sewage management		up to 15 m, +/- 2 mm	Thread G1½, mounting strap, compression flanges from DN 80, 3"	-40 ... +80 °C	-1 ... +2 bar (-100 ... +200 kPa)
VEGAPULS 61 Liquids under easy process conditions		up to 35 m, +/- 2 mm	Thread G1½, 1½ NPT, mounting strap, compression flanges from DN 80, 3"	-40 ... +80 °C	-1 ... +3 bar (-100 ... +300 kPa)
VEGAPULS 62 Storage tanks, reactors and process vessels, also with arduous process conditions		up to 35 m, +/- 2 mm	Thread from G1½, 1½ NPT, flanges from DN 50, 2"	-196 ... +450 °C	-1 ... +160 bar (-100 ... +16000 kPa)
VEGAPULS 63 Aggressive liquids or with hygienic requirements		up to 35 m, +/- 2 mm	Hygienic fittings, slotted nuts, flanges from DN 50, 2"	-196 ... +200 °C	-1 ... +16 bar (-100 ... +1600 kPa)
VEGAPULS 65 Liquids under easy process conditions		up to 35 m, +/- 8 mm	Thread from G1½, 1½ NPT, flanges from DN 50, 2"	-40 ... +150 °C	-1 ... +16 bar (-100 ... +1600 kPa)
VEGAPULS 66 Storage tanks, process vessels or standpipes under arduous process conditions		up to 35 m, +/- 8 mm	Flanges from DN 50, 2"	-60 ... +400 °C	-1 ... +160 bar (-100 ... +16000 kPa)
VEGAPULS 67 Bulk solids under easy process conditions		up to 15 m, +/- 2 mm	Mounting strap, compression flanges from DN 80, 3"	-40 ... +80 °C	-1 ... +2 bar (-100 ... +200 kPa)
VEGAPULS SR 68 Bulk solids also under arduous process conditions		up to 30 m, +/- 2 mm	Thread G1½, 1½ NPT, flanges from DN 50, 2"	-40 ... +250 °C	-1 ... +100 bar (-100 ... +10000 kPa)
VEGAPULS 68 Bulk solids also under arduous process conditions		up to 75 m, +/- 2 mm	Thread G1½, 1½ NPT, flanges from DN 50, 2"	-196 ... +450 °C	-1 ... +160 bar (-100 ... +16000 kPa)
VEGAPULS 69 Bulk solids in higher or very narrow vessels		up to 120 m, +/- 5 mm	Mounting strap, compression flanges, flanges from DN 80, 3"	-40 ... +200 °C	-1 ... +3 bar (-100 ... +300 kPa)

VEGAPULS WL 61



Radar sensor for continuous level measurement of water and waste water

Application area

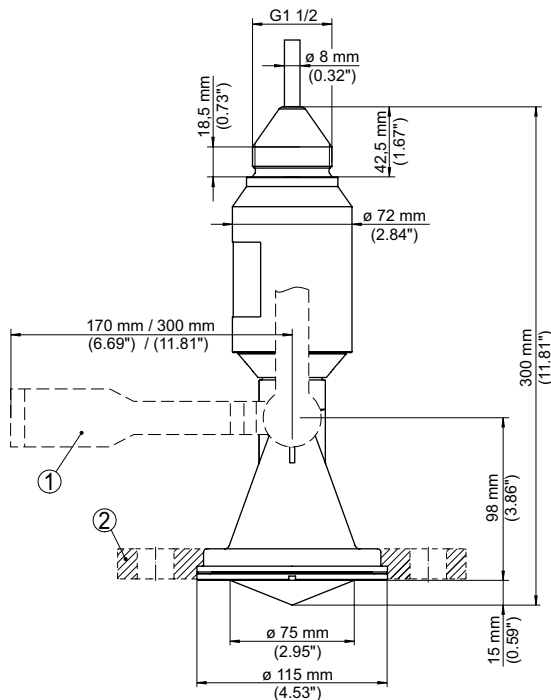
The VEGAPULS WL 61 is the ideal sensor for all applications in water and sewage water applications. It is particularly suitable for use in water processing, pump stations as well as overflow basins, for flow measurement in open flumes and gauge monitoring. The VEGAPULS WL 61 is an economical solution through versatile and simple mounting options. The flood-proof IP 68 housing ensures a maintenance-free permanent operation.

Your benefit

- 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

Technical data

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



- 1 Mounting strap
- 2 Combi compression flange

You will find further process fittings and options under www.vega.com/configurator.

You will find further drawings and tables under www.vega.com/downloads.

You will find mounting accessory, welded sockets and housing overviews in chapter "Accessory".

Approval

- XX** without
- AX** ATEX II 3G Ex nA IIC T6 Gc X
- CX** ATEX II 1G, 1/2G, 2G Ex ia IIC T6 Ga, Ga/Gb, Gb
- CX** IEC Ex ia IIC T6 Ga, Ga/Gb, Gb

Version / Material / Process temperature

- B** with plastic horn antenna (ø80mm) / PP / -40...+80°C

Process fitting / Material

- XX** without
- XG** Counter nut G1½ / PPH
- XC** Mounting strap, length: 170mm / 316L
- XD** Mounting strap, length: 300mm / 316L
- YD** Compression flange suitable for flanges 3" 150lb, DN80 PN16 / PP-GF30

Electronics

- H** Two-wire 4...20mA/HART®
- P** Two-wire Profibus PA
- F** Two-wire Foundation Fieldbus

Housing / Protection

- K** Plastic single chamber / IP68 (2bar) / with cable outlet

Cable / Material

- A** 6 m suspension cable (can be shortened) / PUR
- T** individually selectable length / PUR

Additional equipment

- X** without



Cable length

from >6 m, per additional 100 mm cable of PUR

VEGAPULS 61



Radar sensor for continuous level measurement of liquids

Application area

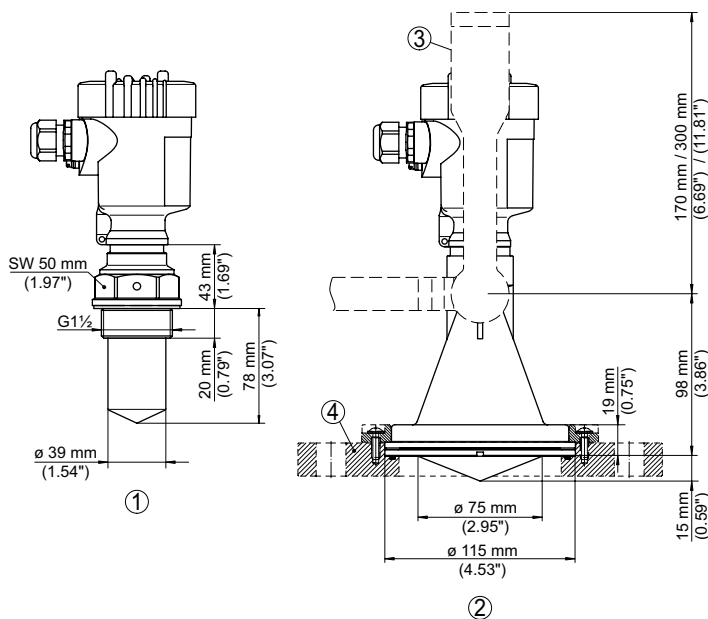
The VEGAPULS 61 is a radar sensor for continuous level measurement of liquids under simple process conditions. The VEGAPULS 61 is an economical solution through its simple and versatile mounting possibilities. The encapsulated antenna system ensures a maintenance-free operation.

Your benefit

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

Technical data

Measuring range:	up to 35 m
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
Process pressure:	-1 ... +3 bar (-100 ... +300 kPa)
Accuracy:	+/- 2 mm
SIL qualification:	optionally up to SIL2



- 1 Version with encapsulated antenna system (ø 40 mm)
- 2 Version with plastic horn antenna (ø 80 mm)
- 3 Mounting strap
- 4 Adapter flange

You will find further process fittings and options under www.vega.com/configurator.
 You will find further drawings and tables under www.vega.com/downloads.
 You will find mounting accessory, welded sockets and housing overviews in chapter "Accessory".

Approval

- XX without
- XM Ship approval
- CX ATEX II 1G, 1/2G, 2G Ex ia IIC T6
- CA ATEX II 1G, 1/2G, 2G Ex ia IIC T6 + WHG
- CM ATEX II 1G, 1/2G, 2G Ex ia IIC T6 + Ship approval
- CI IEC Ex ia IIC T6
- DX ATEX II 1/2G, 2G Ex d ia IIC T5/T6
- DI IEC Ex d ia IIC T6

Version / Material / Process temperature

- A with encapsulated horn antenna (ø40mm) / PVDF / -40...+80°C
- B with plastic horn antenna (ø80mm) / PP / -40...+80°C

Process fitting / Material

- XX without
- GP Thread G1½ PN3, DIN3852-A / PVDF
- NP Thread 1½NPT PN3, ASME B1.20.1 / PVDF
- XG Counter nut G1½ / PPH
- CA Clamp 2" PN3 (ø64mm) DIN32676, ISO2852 / 316L
- CB Clamp 3" PN3 (ø91mm) DIN32676, ISO2852 / 316L
- RA Slotted nut DN50 PN3, DIN11851 / 316L
- RB Slotted nut DN80 PN3, DIN11851 / 316L
- XC Mounting strap, length: 170mm / 316L
- XD Mounting strap, length: 300mm / 316L
- YD Compression flange suitable for flanges 3" 150lb, DN80 PN16 / PP-GF30
- AE Adapter flange DN100 PN16 / PP-GF30, seal: FKM (SHS FPM 70C3 GLT)
- AH Adapter flange DN150 PN16 / PPH, seal: FKM (SHS FPM 70C3 GLT)
- FK Adapter flange 4" 150lb, ASME / PP-GF30, seal: FKM (SHS FPM 70C3 GLT)
- FM Adapter flange 6" 150lb, ASME / PPH, seal: FKM (SHS FPM 70C3 GLT)
- UC Adapter flange DN100 10K, JIS / PPH, seal: FKM (SHS FPM 70C3 GLT)
- UE Adapter flange DN150 10K, JIS / PPH, seal: FKM (SHS FPM 70C3 GLT)

Electronics

- H Two-wire 4...20mA/HART®
- 1 Two-wire 4...20mA/HART® and PLICSMOBILE
- B Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz
- I Four-wire 4...20mA/HART®; 9.6...48V DC; 20...42V AC
- P Two-wire Profibus PA
- F Two-wire Foundation Fieldbus

Housing / Protection

- K Plastic single chamber / IP66/IP67
- A Aluminium single chamber / IP66/IP68 (0.2 bar)
- D Aluminium double chamber / IP66/IP68 (0.2bar)
- 8 Stainless steel single chamber (electropolished) / IP66/IP68 (0.2 bar)
- W Stainless steel double chamber / IP66/IP68 (0.2 bar)
- R Plastic 2-chamber / IP66/IP67

Cable entry / Cable gland / Plug connection

- M M20x1.5 / with / without
- N ½NPT / without / without

Display/adjustment module PLICSCOM

- X Without
- A Mounted

Additional equipment

- X without



VEGAPULS 62



Radar sensor for continuous level measurement of liquids

Application area

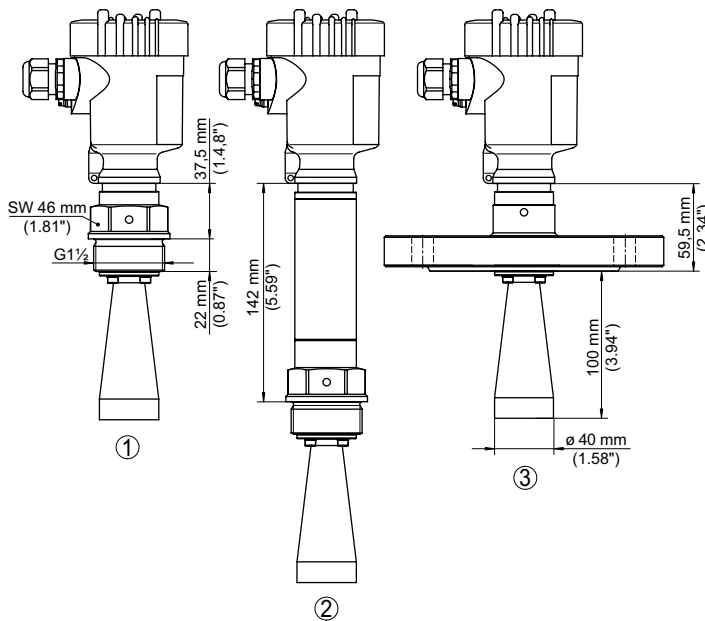
The VEGAPULS 62 is a universally implementable radar sensor for continuous level measurement of liquids. It is suitable for level measurement in storage containers, reactors and process vessels, even under difficult process conditions. With its various antenna versions and materials, VEGAPULS 62 is the optimal solution for almost all applications and processes. Its wide temperature and pressure range makes project planning simple.

Your benefit

- Maintenance-free operation through non-contact measuring principle
- High plant availability, because wear and maintenance-free
- Exact measuring results independent of pressure, temperature, gas and steam

Technical data

Measuring range:	up to 35 m
Process fitting:	thread from G1½, 1½ NPT flanges from DN 50, 2"
Process temperature:	-196 ... +450 °C
Process pressure:	-1 ... +160 bar (-100 ... +16000 kPa)
Measuring accuracy:	+/- 2 mm
SIL qualification:	optionally up to SIL2



- 1 Threaded version
- 2 Threaded version with temperature adapter up to +250 °C
- 3 Flange version

Antenna- \varnothing	Length	Beam angle
40 mm	100 mm	20°
48 mm	120 mm	15°
75 mm	216 mm	10°
95 mm	430 mm	8°
245 mm (parabolic)	138 mm	3°

You will find further process fittings and options under www.vega.com/configurator.

You will find further drawings and tables under www.vega.com/downloads.

You will find mounting accessory, welded sockets and housing overviews in chapter "Accessory".

Approval

- XX without
- XM Ship approval
- CX ATEX II 1G, 1/2G, 2G Ex ia IIC T6
- CA ATEX II 1G, 1/2G, 2G Ex ia IIC T6 + WHG
- CM ATEX II 1G, 1/2G, 2G Ex ia IIC T6 + Ship approval
- CI IEC Ex ia IIC T6
- DX ATEX II 1/2G, 2G Ex d ia IIC T5/T6
- DI IEC Ex d ia IIC T6
- CK IEC Ex ia IIC Ga, Ga/Gb, Gb + Ex t IIIC T* Da, Da/Db, Db
- DK IEC Ex d IIC Ga/Gb, Gb + Ex t IIIC T* Da, Da/Db, Db
- RX IEC Ex t IIIC T* Da, Da/Db, Db

Version / Material

- B with horn antenna (ø40mm) / 316L
- C with horn antenna (ø48mm) / 316L
- D with horn antenna (ø75mm) / 316L
- E with horn antenna (ø95mm) / 316L
- K with parabolic antenna (ø245mm) / 316L
- F with 1/2"-standpipe / 316L

Process fitting / Material

- GA Thread G3/4 PN40, DIN3852-A / 316L
- NA Thread 3/4NPT PN40, ASME B1.20.1 / 316L
- GD Thread G1 1/2 PN40, DIN3852-A / 316L
- ND Thread 1 1/2NPT PN40, ASME B1.20.1 / 316L
- GB Thread G1 1/2 PN100, DIN3852-A / 316L
- NB Thread 1 1/2NPT PN100, ASME B1.20.1 / 316L
- FC Flange DN50 PN40 Form C, DIN2501 / 316L
- FD Flange DN80 PN40 Form C, DIN2501 / 316L
- FE Flange DN100 PN16 Form C, DIN2501 / 316L
- FK Flange DN150 PN16 Form C, DIN2501 / 316L
- AE Flange 2" 150lb RF, ASME B16.5 / 316L
- AI Flange 3" 150lb RF, ASME B16.5 / 316L
- AK Flange 4" 150lb RF, ASME B16.5 / 316L
- AM Flange 6" 150lb RF, ASME B16.5 / 316L

Seal / Process temperature

- 2 FKM (SHS FPM 70C3 GLT) and PTFE / -40...+130°C
- 3 FFKM (Kalrez 6375) and PTFE / -20...+130°C
- F FFKM (Kalrez 6375) and PEEK / -20...+250°C
- H Graphite and ceramic / -196...+450°C

Electronics

- H Two-wire 4...20mA/HART®
- 1 Two-wire 4...20mA/HART® and PLICSMOBILE
- B Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz
- I Four-wire 4...20mA/HART®; 9.6...48V DC; 20...42V AC
- P Two-wire Profibus PA
- F Two-wire Foundation Fieldbus

Housing / Protection

- K Plastic single chamber / IP66/IP67
- A Aluminium single chamber / IP66/IP68 (0.2 bar)
- D Aluminium double chamber / IP66/IP68 (0.2bar)
- 8 Stainless steel single chamber (electropolished) / IP66/IP68 (0.2 bar)
- W StSt double chamber / IP66/IP68 (0.2bar)
- R Plastic 2-chamber / IP66/IP67

Cable entry / Cable gland / Plug connection

- M M20x1.5 / with / without
- N 1/2NPT / without / without

Display/adjustment module PLICSCOM

- X Without
- A Mounted

Additional equipment

- X without

PS62.												
-------	--	--	--	--	--	--	--	--	--	--	--	--

Length standpipe / Total length

316L (200-5850 mm) per 100 mm

VEGAPULS 63



Radar sensor for continuous level measurement of liquids

Application area

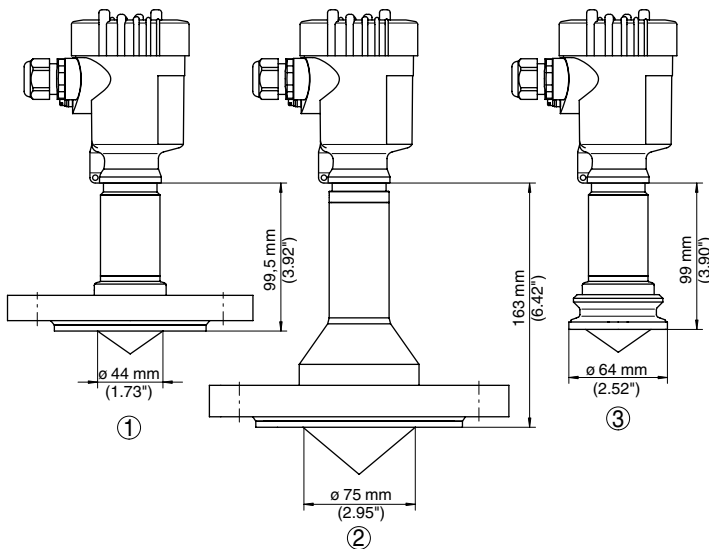
The VEGAPULS 63 is a radar sensor for continuous level measurement of aggressive liquids or with hygienic requirements. It is suitable for applications in storage tanks, process vessels, dosing vessels and reactors. The encapsulated antenna system of VEGAPULS 63 protects the VEGAPULS 63 against pollution and ensures a maintenance-free permanent operation. The front-flush mounting ensures an optimum cleanability even with high hygienic requirements.

Your benefit

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

Technical data

Measuring range:	up to 35 m
Process fitting:	hygienic fittings slotted nuts flanges from DN 50, 2"
Process temperature:	-196 ... +200 °C
Process pressure:	-1 ... +16 bar (-100 ... +1600 kPa)
Accuracy:	+/- 2 mm
SIL qualification:	optionally up to SIL2



- 1 Flange version DN 50
- 2 Flange version DN 80
- 3 Clamp version 2"

You will find further process fittings and options under www.vega.com/configurator.
 You will find further drawings and tables under www.vega.com/downloads.
 You will find mounting accessory, welded sockets and housing overviews in chapter "Accessory".

Approval

- XX** without
- XM** Ship approval
- CX** ATEX II 1G, 1/2G, 2G Ex ia IIC T6
- CA** ATEX II 1G, 1/2G, 2G Ex ia IIC T6 + WHG
- CM** ATEX II 1G, 1/2G, 2G Ex ia IIC T6 + Ship approval
- CI** IEC Ex ia IIC T6
- DX** ATEX II 1/2G, 2G Ex d ia IIC T5/T6
- DI** IEC Ex d ia IIC T6
- CK** IEC Ex ia IIC Ga, Ga/Gb, Gb + Ex t IIIC T* Da, Da/Db, Db
- DK** IEC Ex d IIC Ga/Gb, Gb + Ex t IIIC T* Da, Da/Db, Db
- RX** IEC Ex t IIIC T* Da, Da/Db, Db
- TX** ATEX I M2 Ex ia I Mb

Version / Material / Process temperature

- N** Hygienically encapsulated horn antenna / PTFE / -40...+200°C
- J** Hygienically encapsulated horn antenna / PTFE / -196...+200°C
- R** Hygienically encapsulated horn antenna / PTFE (8mm) / -40...+200°C
- V** Hygienically encapsulated horn antenna / PTFE and FKM / -20...+130°C
- E** Hygienically encapsulated horn antenna / PTFE and EPDM / -40...+130°C

Process fitting / Material

- CA** Clamp 2" PN16 (ø64mm) DIN32676, ISO2852 / 316L
- CB** Clamp 3" PN10 (ø91mm) DIN32676, ISO2852 / 316L
- CC** Clamp 4" PN10 (ø119mm) DIN32676, ISO2852 / 316L
- RA** Slotted nut DN50 PN16, DIN 11851 / 316L
- RB** Slotted nut DN80 PN16, DIN 11851 / 316L
- LB** Hygienic fitting with tension flange DN32 PN16 / 316L
- LA** Hygienic fitting F40 PN16; with compression nut / 316L
- TB** Varivent Form F DN25 (1"), D=50mm / 316L
- QB** for NEUMO BioControl D50 PN16 / 316L
- FC** Flange DN50 PN40 Form C, DIN2501 / 316L
- FD** Flange DN80 PN40 Form C, DIN2501 / 316L
- FE** Flange DN100 PN16 Form C, DIN2501 / 316L
- LO** Flange DN125 PN40 Form V13, DIN2501 / 316L
- FK** Flange DN150 PN16 Form C, DIN2501 / 316L
- FM** Flange DN150 PN40 Form C, DIN2501 / 316L
- LM** Flange DN150 PN40 Form V13, DIN2501 / 316L
- AE** Flange 2" 150lb RF, ASME B16.5 / 316L
- AI** Flange 3" 150lb RF, ASME B16.5 / 316L
- AK** Flange 4" 150lb RF, ASME B16.5 / 316L
- AM** Flange 6" 150lb RF, ASME B16.5 / 316L

Electronics

- H** Two-wire 4...20mA/HART®
- 1** Two-wire 4...20mA/HART® and PLICSMOBILE
- B** Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz
- I** Four-wire 4...20mA/HART®; 9.6...48V DC; 20...42V AC
- P** Two-wire Profibus PA
- F** Two-wire Foundation Fieldbus

Housing / Protection

- K** Plastic single chamber / IP66/IP67
- A** Aluminium single chamber / IP66/IP68 (0.2 bar)
- D** Aluminium double chamber / IP66/IP68 (0.2bar)
- 8** Stainless steel single chamber (electropolished) / IP66/IP68 (0.2 bar)
- W** StSt double chamber / IP66/IP68 (0.2bar)
- R** Plastic 2-chamber / IP66/IP67

Cable entry / Cable gland / Plug connection

- M** M20x1.5 / with / without
- N** ½NPT / without / without

Display/adjustment module PLICSCOM

- X** Without
- A** Mounted

Additional equipment

- X** without

PS63.

VEGAPULS 65



Radar sensor for continuous level measurement of liquids

Application area

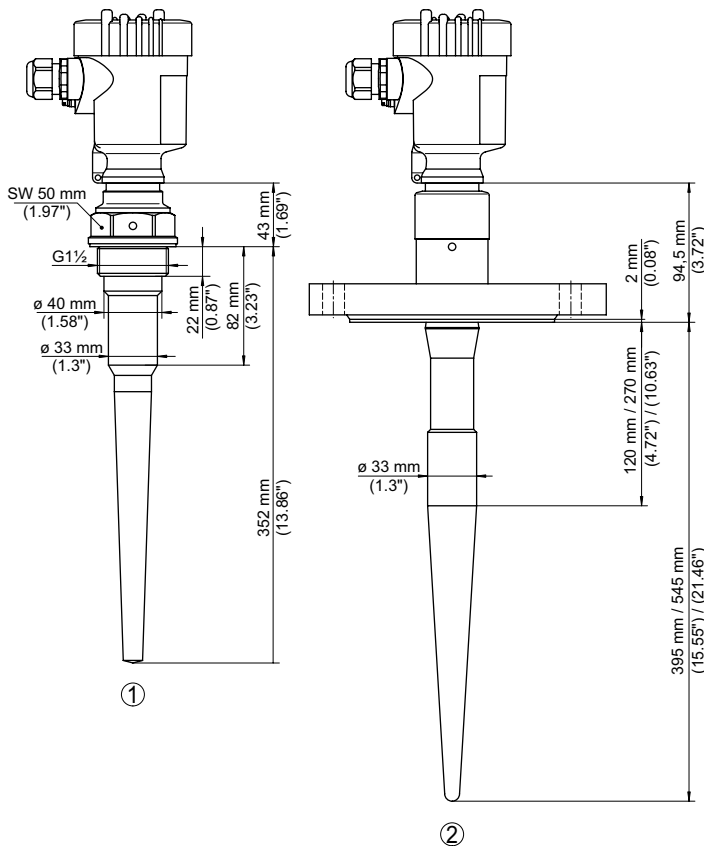
The VEGAPULS 65 is a radar sensor for continuous measurement of liquids under simple process conditions. It is particularly suitable for level measurement in vessels with small process fittings and under simple process conditions. The slim rod antenna enables the installation in small vessel openings.

Your benefit

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

Technical data

Measuring range:	up to 35 m
Process fitting:	thread from G1½, 1½ NPT flanges from DN 50, 2"
Process temperature:	-40 ... +150 °C
Process pressure:	-1 ... +16 bar (-100 ... +1600 kPa)
Accuracy:	+/- 8 mm
SIL qualification:	optionally up to SIL2



- 1 Threaded version G1½
- 2 Flange version DN 80

You will find further process fittings and options under www.vega.com/configurator.
 You will find further drawings and tables under www.vega.com/downloads.
 You will find mounting accessory, welded sockets and housing overviews in chapter "Accessory".

Approval

- XX** without
- XM** Ship approval
- CX** ATEX II 1G, 1/2G, 2G Ex ia IIC T6
- CA** ATEX II 1G, 1/2G, 2G Ex ia IIC T6 + WHG
- CM** ATEX II 1G, 1/2G, 2G Ex ia IIC T6 + Ship approval
- CI** IEC Ex ia IIC T6
- DX** ATEX II 1/2G, 2G Ex d ia IIC T5/T6
- DI** IEC Ex d ia IIC T6

Version / Material / Process temperature

- K** Rod antenna for socket length: 50mm / PVDF and PTFE / -40...+130°C
- L** Rod antenna for socket length: 100mm / PTFE / -40...+130/+150°C
- M** Rod antenna for socket length: 250mm / PTFE / -40...+130/+150°C

Process fitting / Material

- GD** Thread G1½ PN16, DIN3852-A / 316L
- GP** Thread G1½ PN3, DIN3852-A / PVDF
- ND** Thread 1½NPT PN16, ASME B1.20.1 / 316L
- NP** Thread 1½NPT PN3, ASME B1.20.1 / PVDF
- FC** Flange DN50 PN40 Form C, DIN2501 / 316L, PTFE plated
- FD** Flange DN80 PN40 Form C, DIN2501 / 316L, PTFE plated
- FE** Flange DN100 PN16 Form C, DIN2501 / 316L, PTFE plated
- FK** Flange DN150 PN16 Form C, DIN2501 / 316L, PTFE plated
- AE** Flange 2" 150lb RF, ASME B16.5 / 316L, PTFE plated
- AI** Flange 3" 150lb RF, ASME B16.5 / 316L, PTFE plated
- AJ** Flange 3" 300lb RF, ASME B16.5 / 316L, PTFE plated
- AK** Flange 4" 150lb RF, ASME B16.5 / 316L, PTFE plated
- AM** Flange 6" 150lb RF, ASME B16.5 / 316L, PTFE plated

Electronics

- H** Two-wire 4...20mA/HART®
- 1** Two-wire 4...20mA/HART® and PLICSMOBILE
- B** Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz
- I** Four-wire 4...20mA/HART®; 9.6...48V DC; 20...42V AC
- P** Two-wire Profibus PA
- F** Two-wire Foundation Fieldbus

Housing / Protection

- K** Plastic single chamber / IP66/IP67
- A** Aluminium single chamber / IP66/IP68 (0.2 bar)
- D** Aluminium double chamber / IP66/IP68 (0.2bar)
- 8** Stainless steel single chamber (electropolished) / IP66/IP68 (0.2 bar)
- W** StSt double chamber / IP66/IP68 (0.2bar)
- R** Plastic 2-chamber / IP66/IP67

Cable entry / Cable gland / Plug connection

- M** M20x1.5 / with / without
- N** ½NPT / without / without

Display/adjustment module PLICSCOM

- X** Without
- A** Mounted

Additional equipment

- X** without

PS65.

VEGAPULS 66



Radar sensor for continuous level measurement of liquids

Application area

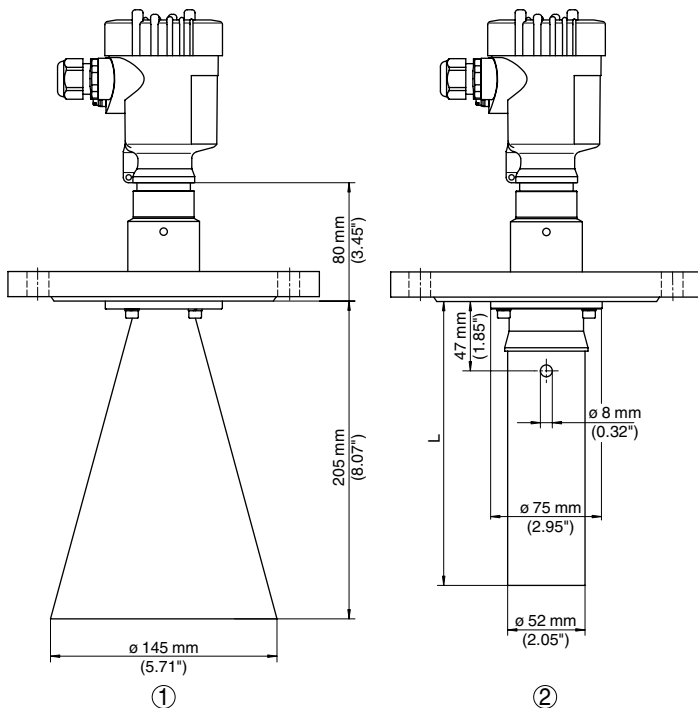
The VEGAPULS 66 is a sensor for continuous level measurement of liquids under arduous process conditions. It is suitable for applications in storage tanks, process vessels or standpipes. The VEGAPULS 66 can be used universally thanks to different antenna versions.

Your benefit

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

Technical data

Measuring range:	up to 35 m
Process fitting:	flanges from DN 50, 2"
Process temperature:	-60 ... +400 °C
Process pressure:	-1 ... +160 bar (-100 ... +16000 kPa)
Accuracy:	+/- 8 mm
SIL qualification:	optionally up to SIL2



- 1 Version with horn antenna ø 145 mm
- 2 Version with standpipe antenna

Antenna-ø	Length	Beam angle
75 mm	75 mm	38°
96 mm	113 mm	30°
145 mm	205 mm	20°
195 mm	296 mm	17°
240 mm	380 mm	14°

You will find further process fittings and options under www.vega.com/configurator.

You will find further drawings and tables under www.vega.com/downloads.

You will find mounting accessory, welded sockets and housing overviews in chapter "Accessory".

Approval

- XX without
- XM Ship approval
- CX ATEX II 1G, 1/2G, 2G Ex ia IIC T6
- CA ATEX II 1G, 1/2G, 2G Ex ia IIC T6 + WHG
- CM ATEX II 1G, 1/2G, 2G Ex ia IIC T6 + Ship approval
- CI IEC Ex ia IIC T6
- DX ATEX II 1/2G, 2G Ex d ia IIC T5/T6
- DI IEC Ex d ia IIC T6
- CK IEC Ex ia IIC Ga, Ga/Gb, Gb + Ex t IIIC T* Da, Da/Db, Db
- DK IEC Ex d IIC Ga/Gb, Gb + Ex t IIIC T* Da, Da/Db, Db
- RX IEC Ex t IIIC T* Da, Da/Db, Db

Version / Material

- A for standpipe / 316L
- D with horn antenna (ø75mm) / 316L
- E with horn antenna (ø96mm) / 316L
- H with horn antenna (ø145mm) / 316L
- K with horn antenna (ø140mm) / enamel
- I with horn antenna (ø195mm) / 316L
- J with horn antenna (ø240mm) / 316L
- F with standpipe (ø52mm) / 316L

Process fitting / Material

- FC Flange DN50 PN40 Form C, DIN2501 / 316L
- FD Flange DN80 PN40 Form C, DIN2501 / 316L
- FE Flange DN100 PN16 Form C, DIN2501 / 316L
- FK Flange DN150 PN16 Form C, DIN2501 / 316L
- FL Flange DN200 PN16 Form C, DIN2501 / 316L
- FI Flange DN250 PN16 Form C, DIN2501 / 316L
- AE Flange 2" 150lb RF, ASME B16.5 / 316L
- AI Flange 3" 150lb RF, ASME B16.5 / 316L
- AK Flange 4" 150lb RF, ASME B16.5 / 316L
- AM Flange 6" 150lb RF, ASME B16.5 / 316L
- AN Flange 8" 150lb RF, ASME B16.5 / 316L
- AP Flange 10" 150lb RF, ASME B16.5 / 316L
- LP Flange 10" 150lb RJF, ASME B16.5 / 316L

Seal / Process temperature

- 2 FKM (A+P GLT FPM 70.16-06) / -40...+150°C
- 3 FFKM (Kalrez 6375) / -20...+150°C
- G Graphite and ceramic / -60...+250°C
- H Graphite and ceramic / -60...+400°C

Electronics

- H Two-wire 4...20mA/HART®
- 1 Two-wire 4...20mA/HART® and PLICSMOBILE
- B Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz
- I Four-wire 4...20mA/HART®; 9.6...48V DC; 20...42V AC
- P Two-wire Profibus PA
- F Two-wire Foundation Fieldbus

Housing / Protection

- K Plastic single chamber / IP66/IP67
- A Aluminium single chamber / IP66/IP68 (0.2 bar)
- D Aluminium double chamber / IP66/IP68 (0.2bar)
- 8 Stainless steel single chamber (electropolished) / IP66/IP68 (0.2 bar)
- W StSt double chamber / IP66/IP68 (0.2bar)
- R Plastic 2-chamber / IP66/IP67

Cable entry / Cable gland / Plug connection

- M M20x1.5 / with / without
- N ½NPT / without / without

Display/adjustment module PLICSCOM

- X Without
- A Mounted

Additional equipment

- X without



Length standpipe / Total length

316L (500-5950 mm) per 100 mm

VEGAPULS 67



Radar sensor for continuous level measurement of bulk solids

Application area

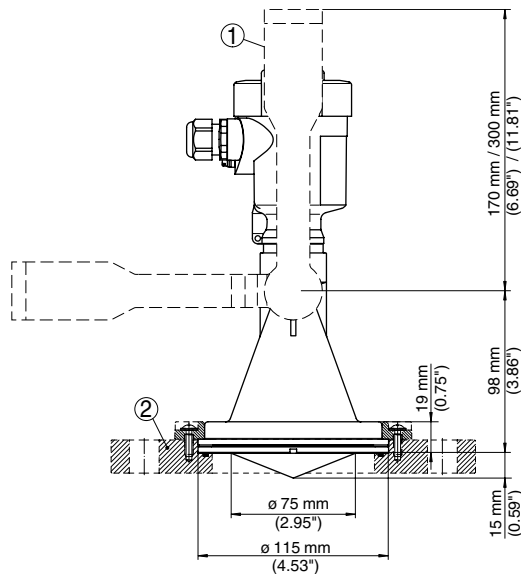
The VEGAPULS 67 is a sensor for continuous level measurement of bulk solids under simple process conditions. It is suitable for smaller silos and vessels. The VEGAPULS 67 is an economical solution through its versatile and simple mounting options. The encapsulated antenna system ensures maintenance-free permanent operation even with strong buildup.

Your benefit

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

Technical data

Measuring range:	up to 15 m
Process fitting:	mounting strap compression flanges from DN 80, 3"
Process temperature:	-40 ... +80 °C
Process pressure:	-1 ... +2 bar (-100 ... +200 kPa)
Accuracy:	+/- 2 mm
SIL qualification:	optionally up to SIL2



- 1 Mounting strap
- 2 Adapter flange

You will find further process fittings and options under www.vega.com/configurator.

You will find further drawings and tables under www.vega.com/downloads.

You will find mounting accessory, welded sockets and housing overviews in chapter "Accessory".

Approval

- XX** without
- RX** ATEX II 1D, 1/2D, 2D Ex t IIIC T* Da, Da/Db, Db
- RX** IEC Ex t IIIC T* Da, Da/Db, Db

Version / Material / Process temperature

- B** with plastic horn antenna (ø80mm) / PP / -40...+80°C

Process fitting / Material

- XX** without
- XC** Mounting strap, length: 170mm / 316L
- XD** Mounting strap, length: 300mm / 316L
- YD** Compression flange suitable for flanges 3" 150lb, DN80 PN16 / PP-GF30
- AE** Adapter flange DN100 PN16 / PP-GF30, seal: FKM (SHS FPM 70C3 GLT)
- AH** Adapter flange DN150 PN16 / PP-GF30, seal: FKM (SHS FPM 70C3 GLT)
- FK** Adapter flange 4" 150lb, ASME / PPH, seal: FKM (SHS FPM 70C3 GLT)
- FM** Adapter flange 6" 150lb, ASME / PPH, seal: FKM (SHS FPM 70C3 GLT)

Electronics

- H** Two-wire 4...20mA/HART®
- 1** Two-wire 4...20mA/HART® and PLICSMOBILE
- B** Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz
- I** Four-wire 4...20mA/HART®; 9.6...48V DC; 20...42V AC
- P** Two-wire Profibus PA
- F** Two-wire Foundation Fieldbus

Housing / Protection

- K** Plastic single chamber / IP66/IP67
- A** Aluminium single chamber / IP66/IP68 (0.2 bar)
- D** Aluminium double chamber / IP66/IP68 (0.2bar)
- 8** Stainless steel single chamber (electropolished) / IP66/IP68 (0.2 bar)
- W** StSt double chamber / IP66/IP68 (0.2bar)
- R** Plastic 2-chamber / IP66/IP67

Cable entry / Cable gland / Plug connection

- M** M20x1.5 / with / without
- N** ½NPT / without / without

Display/adjustment module PLICSCOM

- X** Without
- A** Mounted

Additional equipment

- X** without

PS67.

VEGAPULS SR 68



Radar sensor for continuous level measurement of bulk solids

Application area

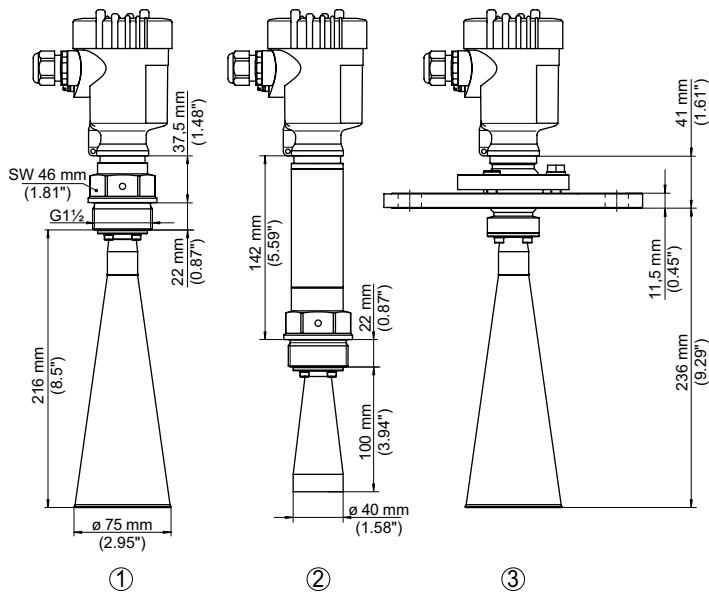
The VEGAPULS SR 68 is a radar sensor for continuous measurement of bulk solids even under difficult process conditions. It is particularly suitable for level measurement in high silos and large bunkers. The VEGAPULS SR 68 is an economical solution thanks to the simple setup and the reliable, maintenance-free operation.

Your benefit

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

Technical data

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



- 1 Threaded version with horn antenna
- 2 Threaded version with horn antenna and with temperature adapter
- 3 Version with horn antenna and swivelling holder

Antenna-ø	Length	Beam angle
40 mm	100 mm	20°
48 mm	120 mm	15°
75 mm	216 mm	10°
95 mm	430 mm	8°

You will find further process fittings and options under www.vega.com/configurator.
 You will find further drawings and tables under www.vega.com/downloads.
 You will find mounting accessory, welded sockets and housing overviews in chapter "Accessory".

Approval

XX	without
CX	ATEX II 1G, 1/2G, 2G Ex ia IIC T5
CK	ATEX II 1D, 1/2D, 2G Ex ia IIC + II 1D, 1/2D, 2D Ex t IIIC
CI	IEC Ex ia IIC T6 Ga, Ga/Gb, Gb
DX	ATEX II 1/2G, 2G Ex d ia IIC T5/T6
DI	IEC Ex d ia IIC T6
CK	IEC Ex ia IIC Ga, Ga/Gb, Gb + Ex t IIIC T* Da, Da/Db, Db
DK	IEC Ex d IIC Ga/Gb, Gb + Ex t IIIC T* Da, Da/Db, Db
RX	ATEX II 1D, 1/2D, 2D Ex t IIIC T* Da, Da/Db, Db
RX	IEC Ex t IIIC T* Da, Da/Db, Db
TX	ATEX I M2 Ex ia I Mb

Version / Material

B	with horn antenna (Ø40mm) / 316L
C	with horn antenna (Ø48mm) / 316L
D	with horn antenna (Ø75mm) / 316L
E	with horn antenna (Ø95mm) / 316L
K	with parabolic antenna (Ø245mm) / 316L

Process fitting / Material

GD	Thread G1½ PN40, DIN3852-A / 316L
ND	Thread 1½NPT PN40, ASME B1.20.1 / 316L
GB	Thread G1½ PN100, DIN3852-A / 316L
NB	Thread 1½NPT PN100, ASME B1.20.1 / 316L
1F	Swivelling holder with flange 2" 150lb / 316L
1G	Swivelling holder with flange 3" 150lb / 316L
1H	Swivelling holder with flange 4" 150lb / 316L
1O	Swivelling holder with flange DN50 PN16 / 316L
1P	Swivelling holder with flange DN80 PN16 / 316L
1Q	Swivelling holder with flange DN100 PN16 / 316L
FC	Flange DN50 PN40 Form C, DIN2501 / 316L
FD	Flange DN80 PN40 Form C, DIN2501 / 316L
FE	Flange DN100 PN16 Form C, DIN2501 / 316L
AE	Flange 2" 150lb RF, ASME B16.5 / 316L
AI	Flange 3" 150lb RF, ASME B16.5 / 316L
AK	Flange 4" 150lb RF, ASME B16.5 / 316L

Seal / Process temperature

2	FKM (SHS FPM 70C3 GLT) and PTFE / -40...+130°C
3	FFKM (Kalrez 6375) and PTFE / -20...+130°C
F	FFKM (Kalrez 6375) and PEEK / -20...+250°C

Electronics

H	Two-wire 4...20mA/HART®
1	Two-wire 4...20mA/HART® and PLICSMOBILE
B	Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz
I	Four-wire 4...20mA/HART®; 9.6...48V DC; 20...42V AC
P	Two-wire Profibus PA
F	Two-wire Foundation Fieldbus

Housing / Protection

K	Plastic single chamber / IP66/IP67
A	Aluminium single chamber / IP66/IP68 (0.2 bar)
D	Aluminium double chamber / IP66/IP68 (0.2bar)
8	Stainless steel single chamber (electropolished) / IP66/IP68 (0.2 bar)
W	StSt double chamber / IP66/IP68 (0.2bar)
R	Plastic 2-chamber / IP66/IP67

Cable entry / Cable gland / Plug connection

M	M20x1.5 / with / without
N	½NPT / without / without

Display/adjustment module PLICSCOM

X	Without
A	Mounted

Additional equipment

X	without
K	Rinsing connection
V	Rinsing connection with reflux valve

PSSR68.

VEGAPULS 68



Radar sensor for continuous level measurement of bulk solids

Application area

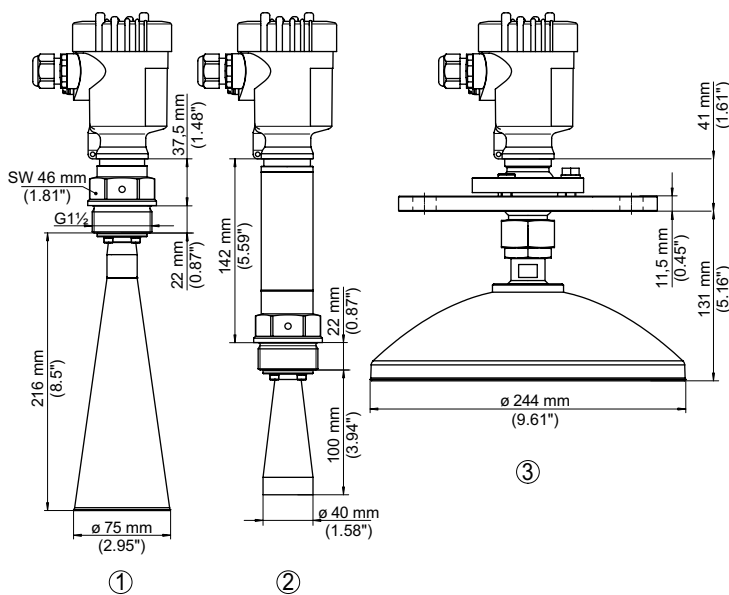
The VEGAPULS 68 is a radar sensor for continuous measurement of bulk solids also under difficult process conditions and with large measuring ranges. The sensor is ideal for level measurement in high silos, large bunkers, stone crushers and in the furnace. The VEGAPULS 68 with different antenna versions and materials is the optimum solution for virtually all applications and processes. Through the wide temperature and pressure range, the sensor can be used universally and enables a simple planning.

Your benefit

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

Technical data

Measuring range:	up to 75 m
Process fitting:	thread from G1½, 1½ NPT flanges from DN 50, 2"
Process temperature:	-196 ... +450 °C
Process pressure:	-1 ... +160 bar (-100 ... +16000 kPa)
Accuracy:	+/- 2 mm
SIL qualification:	optionally up to SIL2



- 1 Threaded version with horn antenna
- 2 Threaded version with horn antenna and with temperature adapter
- 3 Version with parabolic antenna and swivelling holder

Antenna-ø	Length	Beam angle
40 mm	100 mm	20°
48 mm	120 mm	15°
75 mm	216 mm	10°
95 mm	430 mm	8°
245 mm (parabolic)	138 mm	3°

You will find further process fittings and options under www.vega.com/configurator.

You will find further drawings and tables under www.vega.com/downloads.

You will find mounting accessory, welded sockets and housing overviews in chapter "Accessory".

Approval

- XX** without
- XM** Ship approval
- CX** ATEX II 1G, 1/2G, 2G Ex ia IIC T5
- CM** ATEX II 1G, 1/2G, 2G Ex ia IIC T5 + Ship approval
- CK** ATEX II 1G, 1/2G, 2G Ex ia IIC + II 1D, 1/2D, 2D Ex t IIIC
- CI** IEC Ex ia IIC T6 Ga, Ga/Gb, Gb
- DX** ATEX II 1/2G, 2G Ex d ia IIC T5/T6
- DI** IEC Ex d ia IIC T6
- CK** IEC Ex ia IIC Ga, Ga/Gb, Gb + Ex t IIIC T* Da, Da/Db, Db
- DK** IEC Ex d IIC Ga/Gb, Gb + Ex t IIIC T* Da, Da/Db, Db
- RX** ATEX II 1D, 1/2D, 2D Ex t IIIC T* Da, Da/Db, Db
- RX** IEC Ex t IIIC T* Da, Da/Db, Db
- TX** ATEX I M2 Ex ia I or I M2 Ex ia I Mb

Version / Material

- B** with horn antenna (ø40mm) / 316L
- C** with horn antenna (ø48mm) / 316L
- D** with horn antenna (ø75mm) / 316L
- E** with horn antenna (ø95mm) / 316L
- K** with parabolic antenna (ø245mm) / 316L

Process fitting / Material

- GD** Thread G1½ PN40, DIN3852-A / 316L
- ND** Thread 1½NPT PN40, ASME B1.20.1 / 316L
- GB** Thread G1½ PN100, DIN3852-A / 316L
- NB** Thread 1½NPT PN100, ASME B1.20.1 / 316L
- 1F** Swivelling holder with flange 2" 150lb / 316L
- 1G** Swivelling holder with flange 3" 150lb / 316L
- 1H** Swivelling holder with flange 4" 150lb / 316L
- 1O** Swivelling holder with flange DN50 PN16 / 316L
- 1P** Swivelling holder with flange DN80 PN16 / 316L
- 1Q** Swivelling holder with flange DN100 PN16 / 316L
- FC** Flange DN50 PN40 Form C, DIN2501 / 316L
- FD** Flange DN80 PN40 Form C, DIN2501 / 316L
- FE** Flange DN100 PN16 Form C, DIN2501 / 316L
- AE** Flange 2" 150lb RF, ASME B16.5 / 316L
- AI** Flange 3" 150lb RF, ASME B16.5 / 316L
- AK** Flange 4" 150lb RF, ASME B16.5 / 316L

Seal / Process temperature

- 2** FKM (SHS FPM 70C3 GLT) and PTFE / -40...+130°C
- 3** FFKM (Kalrez 6375) and PTFE / -20...+130°C
- F** FFKM (Kalrez 6375) and PEEK / -20...+250°C
- H** Graphite and ceramic / -196...+450°C

Electronics

- H** Two-wire 4...20mA/HART®
- 1** Two-wire 4...20mA/HART® and PLICSMOBILE
- B** Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz
- I** Four-wire 4...20mA/HART®; 9.6...48V DC; 20...42V AC
- P** Two-wire Profibus PA
- F** Two-wire Foundation Fieldbus

Housing / Protection

- K** Plastic single chamber / IP66/IP67
- A** Aluminium single chamber / IP66/IP68 (0.2 bar)
- D** Aluminium double chamber / IP66/IP68 (0.2bar)
- 8** Stainless steel single chamber (electropolished) / IP66/IP68 (0.2 bar)
- W** StSt double chamber / IP66/IP68 (0.2bar)
- R** Plastic 2-chamber / IP66/IP67

Cable entry / Cable gland / Plug connection

- M** M20x1.5 / with / without
- N** ½NPT / without / without

Display/adjustment module PLICSCOM

- X** Without
- A** Mounted

Additional equipment

- X** without
- K** Rinsing connection
- V** Rinsing connection with reflux valve

PS68.															
-------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

VEGAPULS 69



Radar sensor for continuous level measurement of bulk solids

Application area

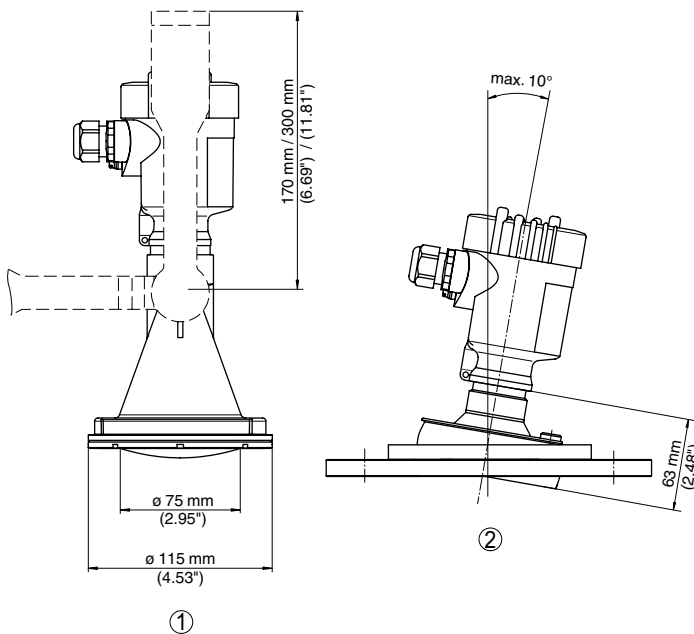
The VEGAPULS 69 is a sensor for continuous measurement of bulk solids under different process conditions. It is ideal for level measurement in very high silos, large bunkers and segmented vessels. Thanks to the very good signal focussing a simple setup and reliable measurement is ensured. The VEGAPULS 69 can be equipped with an encapsulated plastic antenna or a lens antenna integrated in the metal flange. This enables the optimum adaption to different application areas.

Your benefit

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

Technical data

Measuring range:	up to 120 m
Process fitting:	flanges from DN 80, 3"
Process temperature:	-40 ... +200 °C
Process pressure:	-1 ... +3 bar (-100 ... +300 kPa)
Accuracy:	+/- 5 mm



- 1 Plastic horn antenna with mounting strap
- 2 Metal jacketed lens antenna with swivelling holder

You will find further process fittings and options under www.vega.com/configurator.
 You will find further drawings and tables under www.vega.com/downloads.
 You will find mounting accessory, welded sockets and housing overviews in chapter "Accessory".

Scope

- A** Europe
- I** worldwide

Approval

- X** for Ex-free area
- C** ATEX II 1G, 1/2G, 2G Ex ia IIC T6
- D** ATEX II 1/2G, 2G Ex d ia IIC T6
- E** ATEX II 1/2G, 2G Ex d IIC T6
- R** ATEX II 1D, 1/2D, 1/3D, 2D IP66
- C** IEC Ex ia IIC T6
- D** IEC Ex d ia IIC T6
- E** IEC Ex d IIC T6
- R** IEC Ex t IIC T... IP66

Version / Material

- B** with plastic horn antenna / PP
- C** Metal jacketed lens antenna with rinsing air connection / PEEK

Process fitting / Material

- XX** without
- XC** Mounting strap, length: 170mm / 316L
- XD** Mounting strap, length: 300 mm / 316L
- YD** Compression flange suitable for flanges 3" 150lb, DN80 PN16 / PP-GF30
- AA** Adapter flange DN100 PN16 Form B, DIN / PP-GF30
- AD** Adapter flange DN150 PN16 Form B, DIN / PP-GF30
- AL** Adapter flange 4" 150lb FF, ASME / PP-GF30
- AM** Adapter flange 6" 150lb FF, ASME / PP-GF30
- SD** Swivelling holder with flange 4" 150lb FF, ASME / 316L
- SE** Swivelling holder with flange 6" 150lb FF, ASME / 316L
- SA** Swivelling holder with flange DN100 PN16 Form B, DIN / 316L
- SB** Swivelling holder with flange DN150 PN16 Form B, DIN / 316L
- FA** Flange DN80 PN16 Form B, DIN / 316L
- FB** Flange DN100 PN16 Form B, DIN / 316L
- FC** Flange DN150 PN16 Form B, DIN / 316L
- FD** Flange 3" 150lb FF, ASME / 316L
- FE** Flange 4" 150lb FF, ASME / 316L
- FF** Flange 6" 150lb FF, ASME / 316L

Seal / Process temperature

- C** PP / -40...+80°C
- D** FKM (SHS FPM 70C3 GLT) and PP / -40...+80°C
- A** FKM (SHS FPM 70C3 GLT) and PEEK / -40...+130°C
- B** FKM (SHS FPM 70C3 GLT) and PEEK / -40...+200°C

Electronics

- H** Two wire 4...20mA/HART®
- B** Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz
- I** Four-wire 4...20mA/HART®; 9.6...48V DC; 20...42V AC
- P** Two-wire Profibus PA
- F** Two-wire Foundation Fieldbus

Supplementary electronics

- X** without

Housing / Protection

- K** Plastic single chamber / IP66/IP67
- A** Aluminum single chamber / IP66/IP68 (0.2 bar)
- D** Aluminium double chamber / IP66/IP68 (0.2bar)
- 8** Stainless steel single chamber (electropolished) / IP66/IP68 (0.2 bar)
- W** Stainless steel double chamber / IP66/IP68 (0.2 bar)
- R** Plastic double chamber / IP66/IP67

Cable entry / Connection

- M** M20x1.5 / Cable gland PA black ø5-9mm (standard)
- N** ½NPT / Blind plug

Display/adjustment module PLICSCOM

- X** Without
- A** Mounted

Additional equipment

- X** without

Certificates

- M** yes (e.g. FDA; EN 10204-3.1; NACE)
- X** no

PS69.																			
-------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Antenna cover for VEGAPULS SR68/68

Antenna cover of plastic or flexible Gore® diaphragm

The antenna cover can be retrofitted and avoids dust layers in the antenna system. The necessary mounting material is included in the scope of delivery.



Cover for antenna / Material / Temperature max.

- D Horn antenna (ø75mm) / PP / +80°C
- F Horn antenna (ø75mm) / PTFE / +130°C
- L Horn antenna (ø75mm) / PTFE textile for flange / +250°C
- H Horn antenna (ø75mm) / PTFE textile with silicone ring / +200°C
- E Horn antenna (ø95mm) / PP / +80°C
- G Horn antenna (ø95mm) / PTFE / +130°C
- M Horn antenna (ø95mm) / PTFE textile for flange / +250°C
- I Horn antenna (ø95mm) / PTFE textile with silicone ring / +200°C
- K Parabolic antenna (ø245mm) / PTFE textile / +200°C

↓

PS68ANTAB.XX	
--------------	--

Variable seal for VEGAPULS 67/69

Variable seal for sensor inclination



For flange / Material

- 33602 DN80 PN10-40, 3" 150lb ASME, DN80 10K JIS / EPDM
- 33750 DN100 PN10-16, 4" 150lb ASME, DN100 10K JIS / EPDM
- 33751 DN150 PN10-16, 6" 150lb ASME, DN150 10K JIS / EPDM
- 35744 DN200 PN10-16, 8" 150lb ASME / EPDM

↓

PS67VDI.	
----------	--