



Level measurement – Ultrasonic

Contents	Page
Overview	40
VEGASON series 60	42
VEGASON series 70	48
Dimensions	50

VEGASON:

Non-contact measurement of liquids and solids with ultrasonic waves



Measuring principle

Short ultrasonic impulses between 10 kHz and 70 kHz are emitted by the transducer to the measured product, reflected by the product surface and received again by the transducer. They spread with sound velocity and the time from transmission to receipt of the signal is proportional to the level in the vessel.

Latest microcomputer technology and proven ECHOFOX software select the level echo out of a number of false reflections and measure it precisely.

Just by entering the vessel dimensions, a level-proportional signal can be displayed. An adjustment with emptied and filled vessel is no longer necessary!

Wide application range

With different emitting frequencies levels can be measured in a measuring range between 4 m and 70 m. Optional swivelling holders enable an ideal orientation of the sensors in the solid range.

Unaffected by product properties

Fluctuations of the product composition or complete product changes do not influence the measurement result. A new adjustment is not necessary.



Overview

VEGASON 61



VEGASON 62



VEGASON 63



Applications:	liquids and solids in virtually all industries, especially in the water and sewage water industry	liquids and solids in virtually all industries, especially in the water and sewage water industry	liquids and solids in virtually all industries
Measuring range:	liquids: 0.25 ... 5 m solids: 0.25 ... 2 m	liquids: 0.4 ... 8 m solids: 0.4 ... 3.5 m	liquids: 0.6 ... 15 m solids: 0.6 ... 7 m
Process fitting:	G1½A of PVDF	G2A of PVDF	compression flange or mounting loop
Process temperature:	-40...80°C	-40...80°C	-40...80°C
Process pressure:	-0.2...3 bar (-20...300 kPa)	-0.2...3 bar (-20...300 kPa)	-0.2...2 bar (-20...200 kPa)
Replacement for:	VEGASON 51	VEGASON 52	VEGASON 53

VEGASON 64



VEGASON 65



VEGASON 66



Applications:	solids	solids	solids
Measuring range:	liquids: 1 ... 25 m solids: 1 ... 15 m	liquids: 0.8 ... 45 m solids: 0.8 ... 25 m	liquids: 1.4 ... 70 m solids: 1.4 ... 45 m
Process fitting:	flange with optional swivelling holder	flange with optional swivelling holder	flange with optional swivelling holder
Process temperature:	-40...80°C	-40...80°C	-40...150°C
Process pressure:	-0.2...1.5 bar (-20...150 kPa)	-0.2...1.5 bar (-20...150 kPa)	-0.2...1.5 bar (-20...150 kPa)
Replacement for:	VEGASON 54	VEGASON 55	VEGASON 56

VEGASON 61

Compact ultrasonic sensor for continuous level measurement

Especially suitable for measurement of liquids and solids in virtually all industries, particularly in the water and waste water economy



- transducer of PVDF with EPDM seal and integrated temperature sensor for correction of the running time
- accuracy +/- 10mm
- ECHOFOX signal processing with Fuzzy-Logic
- adjustment with PLICSCOM, HART handheld or PC
- instrument from the plics® family

Measuring range:

- Liquids : 0.25...5 m
- Solids : 0.25...2 m



Approval

- XX** without
- XM** Ship approval
- CX** ATEX II 1G, 1/2G, 2G EEx ia IIC T6
- CM** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + Ship approval

Version/Process temperature

- A** Standard / 80°C

Process connection/Material

- G** Thread G1½A/PVDF
- N** Thread 1½"NPT/PVDF

Electronics

- H** 4...20mA HART®
- V** Four wire 20...72VDC, 20...250VAC/4...20mA HART®¹⁾
- P** Profibus PA
- F** Foundation Fieldbus

Housing/Protection

- K** Plastic/IP66/IP67
- A** Aluminium/IP66/IP67
- D** Aluminium double chamber/IP66/IP67
- V** Stainless steel 1.4435(316L)/IP66/IP67

Cable entry/Plug connection

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

Indicating-adjustment module (PLICSCOM)

- X** without
- A** mounted

SN61. [] [] [] [] [] [] [] [] [] []

¹⁾ Only in conjunction with housing version "D"

VEGASON 62

Compact ultrasonic sensor for continuous level measurement

Especially suitable for measurement of liquids and solids in virtually all industries, particularly in the water and waste water industry

- transducer of PVDF with EPDM seal and integrated temperature sensor for correction of the running time
- accuracy +/- 10mm
- ECHOFOX signal processing with Fuzzy-Logic
- adjustment with PLICSCOM, HART handheld or PC
- instrument from the plics® family



Measuring range:

- Liquids : 0.4...8 m
- Solids : 0.4...3.5 m



Approval

- XX** without
- XM** Ship approval
- CX** ATEX II 1G, 1/2G, 2G EEx ia IIC T6
- CM** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + Ship approval

Version/Process temperature

- A** Standard / 80°C

Process connection/Material

- G** Thread G2A/PVDF
- N** Thread 2"NPT/PVDF

Electronics

- H** 4...20mA HART®
- V** Four wire 20...72VDC,20...250VAC/4...20mA HART®¹⁾
- P** Profibus PA
- F** Foundation Fieldbus

Housing/Protection

- K** Plastic/IP66/IP67
- A** Aluminium/IP66/IP67
- D** Aluminium double chamber/IP66/IP67
- V** Stainless steel 1.4435(316L)/IP66/IP67

Cable entry/Plug connection

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

Indicating-adjustment module (PLICSCOM)

- X** without
- A** mounted



¹⁾ Only in conjunction with housing version "D"

VEGASON 63

Compact ultrasonic sensor for continuous level measurement

Especially suitable for measurement of liquids and solids in virtually all industries



- transducer of UP with stainless steel diaphragm (1.4571) and integrated temperature sensor for correction of the running time
- accuracy +/- 10mm
- ECHOFOX signal processing with Fuzzy-Logic
- adjustment with PLICSCOM, HART handheld or PC
- instrument from the plics® family

Measuring range:

- Liquids : 0.6...15 m
- Solids : 0.6...7 m



Approval

- XX** without
- XM** Ship approval
- GX** ATEX II 1/2 D IP66 T¹⁾

Version/Process temperature

- A** Standard / 80°C

Process connection/Material

- X** with compression flange
- A** Compression flange DN100PN16/PPH
- B** Compression flange DN100PN16/1.4435
- C** Mounting loop of 1.4301
- D** Compression flange ANSI 4"150psi of PPH
- E** Compression flange ANSI 4"150psi of 1.4435

Electronics

- H** 4...20mA HART®
- V** Four wire 20...72VDC, 20...250VAC/4...20mA HART®¹⁾
- P** Profibus PA
- F** Foundation Fieldbus

Housing/Protection

- K** Plastic/IP66/IP67
- A** Aluminium/IP66/IP67
- D** Aluminium double chamber/IP66/IP67
- V** Stainless steel 1.4435(316L)/IP66/IP67

Cable entry/Plug connection

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

Indicating-adjustment module (PLICSCOM)

- X** without
- A** mounted

SN63.									
-------	--	--	--	--	--	--	--	--	--

¹⁾ Only with housing version "D" and electronics "V"

VEGASON 64

Ultrasonic sensor for continuous level measurement

Especially suitable for measurement of solids with optional swivelling holder for optimum adaptation to the vessel geometry and material cone



- transducer of PA with stainless steel diaphragm (1.4571) and integrated temperature sensor for correction of the running time
- sensor in compact version or with separate transducer
- accuracy +/- 10mm
- ECHOFOX signal processing with Fuzzy-Logic
- adjustment with PLICSCOM, HART handheld or PC
- instrument from the plics® family

Measuring range:

- Liquids : 1...25 m
- Solids : 1...15 m



Approval

- XX** without
- GX** ATEX II 1/2 D IP66 T

Version / Process temperature

- A** compact in flange version (version A)/ 80°C
- B** compact with swivelling holder (version B)/ 80°C
- C** separate with swivelling holder (version C)/ 80°C
- D** separate with thread (version D)/ 80°C

Seal/Process temperature

- EP** Flange DN200 of PP ¹⁾
- EA** Flange DN200 of Aluminum ¹⁾
- LP** Flange 8" of PP ¹⁾
- LA** Flange 8" of Aluminum ¹⁾
- AS** Swivelling holder w. flange DN50/2"/galv. St ²⁾
- BS** Swivelling holder w. flange DN80/3"/galv. St ²⁾
- GS** Thread G1A of galvanized steel ³⁾

Electronics

- V** Four wire 20...72VDC, 20...250VAC/4...20mA HART®
- P** Profibus PA
- F** Foundation Fieldbus

Housing/Protection

- D** Aluminium double chamber/IP66/IP67

Cable entry/Plug connection

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

Indicating-adjustment module (Plicscom)

- X** without
- A** mounted

SN64.								
-------	--	--	--	--	--	--	--	--

¹⁾ Only for version "A"

²⁾ Only for version "B" and "C"

³⁾ Only for version "D"

Connection cable in m

Connection cable > 5m f. version C or D; per meter > 5m

VEGASON 65

Ultrasonic sensor for continuous level measurement

Especially suitable for measurement of solids with optional swivelling holder for optimum adaptation to the vessel geometry and material cone



- transducer of UP with diaphragm of Al and PE foam rubber coating as well as integrated temperature sensor for correction of the running time
- sensor in compact version or with separate transducer
- accuracy +/- 10mm
- ECHOFOX signal processing with Fuzzy-Logic
- adjustment with PLICSCOM, HART handheld or PC
- instrument from the plics® family

Measuring range:

- Liquids : 0.8...45 m
- Solids : 0.8...25 m



Approval

- XX** without
- GX** ATEX II 1/2 D IP66 T

Process connection/Material

- A** compact in flange version (version A)/ 80°C
- B** compact with swivelling holder (version B)/ 80°C
- C** separate with swivelling holder (version C)/ 80°C
- D** separate with thread (version D)/ 80°C

Seal/Process temperature

- FP** Flange DN250 of PP¹⁾
- FA** Flange DN250 of Aluminium¹⁾
- MP** Flange 10" of PP¹⁾
- AS** Swivelling holder w. flange DN50/2"/galv. St²⁾
- BS** Swivelling holder w. flange DN80/3"/galv. St²⁾
- GS** Thread G1A of galvanized steel³⁾

Electronics

- V** Four wire 20...72VDC,20...250VAC/4...20mA HART®
- P** Profibus PA
- F** Foundation Fieldbus

Housing/Protection

- D** Aluminium double chamber/IP66/IP67

Cable entry/Plug connection

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

Indicating-adjustment module (PLICSCOM)

- X** without
- A** mounted

SN65.

--	--	--	--	--	--	--	--

¹⁾ Only for version "A"

²⁾ Only for version "B" and "C"

³⁾ Only for version "D"

Connection cable in m

Connection cable > 5m f. version C or D; per meter > 5m

VEGASON 66

Ultrasonic sensor for continuous level measurement

Especially suitable for measurement of solids with optional swivelling holder for optimum adaptation to the vessel geometry and material cone

- transducer of UP with PFA-coated diaphragm of Al as well as integrated temperature sensor for correction of the running time
- sensor in compact version or with separate transducer
- accuracy +/- 10mm
- ECHOFOX signal processing with Fuzzy-Logic
- adjustment with PLICSCOM, HART handheld or PC
- instrument from the plics® family



Measuring range:

- Liquids : 1.4...70 m
- Solids : 1.4...45 m



Approval

- XX** without
- AX** ATEX II 2G EEx ia IIC T6
- AK** ATEX II 2G EEx ia IIC T6 + ATEX II 1/2 D IP66 T
- GX** ATEX II 1/2 D IP66 T

Process connection/Material

- A** compact in flange version (version A)/ 80°C
- B** compact with swivelling holder (version B)/ 150°C
- C** separate with swivelling holder (version C)/ 150°C
- D** separate with thread (version D)/ 150°C

Seal/Process temperature

- EP** Flange DN200 of PP¹⁾
- EA** Flange DN200 of Aluminum¹⁾
- LP** Flange 8" of PP¹⁾
- LA** Flange 8" of Aluminum¹⁾
- AS** Swivelling holder w. flange DN50/2"/galv. St²⁾
- BS** Swivelling holder w. flange DN80/3"/galv. St²⁾
- GS** Thread G1A of galvanized steel³⁾

Electronics

- V** Four wire 20...72VDC,20...250VAC/4...20mA HART®
- P** Profibus PA
- F** Foundation Fieldbus

Housing/Protection

- D** Aluminium double chamber/IP66/IP67

Cable entry/Plug connection

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

Indicating-adjustment module (PLICSCOM)

- X** without
- A** mounted

SN66.								
-------	--	--	--	--	--	--	--	--

¹⁾ Only for version "A"
²⁾ Only for version "B" and "C"
³⁾ Only for version "D"

Connection cable in m

Connection cable > 5m f. version C or D; per meter > 5m

VEGASON 71 - 75

Ultrasonic sensors with processing electronics for continuous level measurement of liquids and solids

- non-contact and maintenance-free
- adjustment without vessel filling and emptying
- for level, difference or flow measurement
- relay output and pulse counter as option
- transducer and electronics connected with coax cable

Process fitting	: G1A
Transducer housing	: PVDF
Process temperature	: -20...80°C
Process pressure	: up to 1 bar (100 kPa)
Protection transducer	: IP68



Instrument type

71-D	VEGASON71-D (meas. range 0.4...4m flow measurement)
72-1	VEGASON72-1 (meas. range 0.5...5m 1 channel)
72-2	VEGASON72-2 (meas. range 0.5...5m 2 channels)
73-1	VEGASON73-1 (meas. range 0.8...10m 1 channel)
73-2	VEGASON73-2 (meas. range 0.8...10m 2 channels)
74-1	VEGASON74-1 (meas. range 0.8...20m 1 channel)
74-2	VEGASON74-2 (meas. range 0.8...20m 2 channels)
75-1	VEGASON75-1 (meas. range 1.0...30m 1 channel)
75-2	VEGASON75-2 (meas. range 1.0...30m 2 channels)

Approval

.X without

Supply voltage

M 16...42VAC/16...60VDC

L 90...250VAC/120...250VDC

Material transducer

D PVDF

Current output

X without

L 4...20mA, galvanically separated

J 4...20mA, individually galvanically separated

Relay output

X without

1 1 module, 2 relays(1 count.rel., 1 relay with type ..D)

2 2 modules, 4 relays(1 count. rel., 3 relays w.type ..D)

Integrated pulse counter

C with (on VEGASON ..D and relay output 1 or 2)

X without

SON							
-----	--	--	--	--	--	--	--

Cable measurement loop 1 in m

deviating from standard length (5 m) per m

Cable measurement loop 2 in m

deviating from standard length (5 m) per m

Swivelling holder VEGASON 70

Swivelling holder for transducer SW 71...75 suitable for counter flange
DIN - DN150 PN16, ANSI - 6" 150psi

Holder material

- V** StSt 1.4571(316Ti)
- S** Galvanized steel

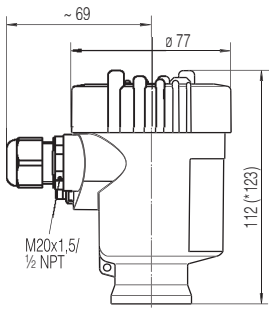


SONHALT.

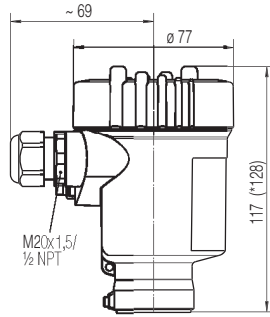
- Mounting accessory see chapter "Accessory"



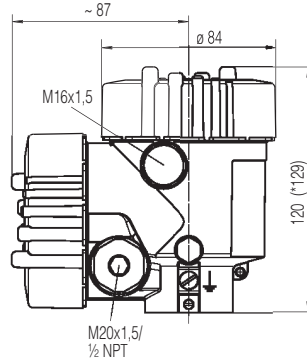
Plastic housing



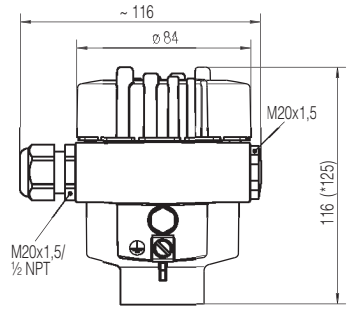
Stainless steel housing



Aluminium double chamber housing

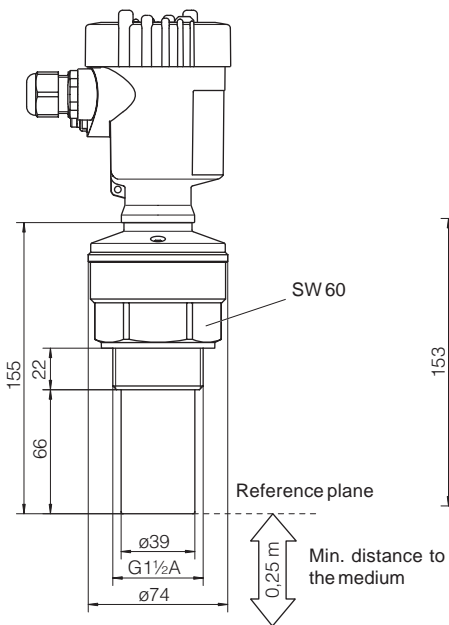


Aluminium housing

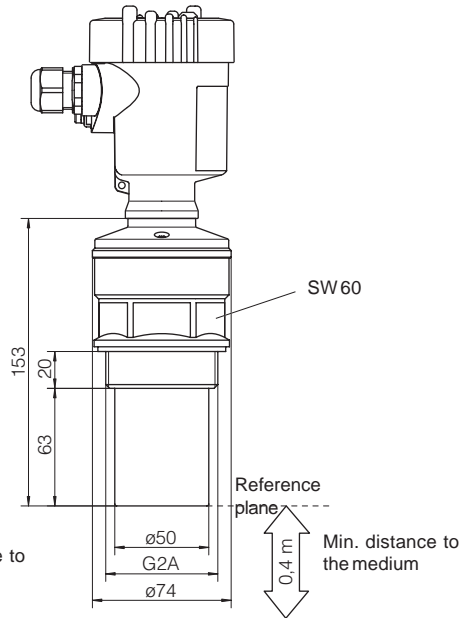


* with display

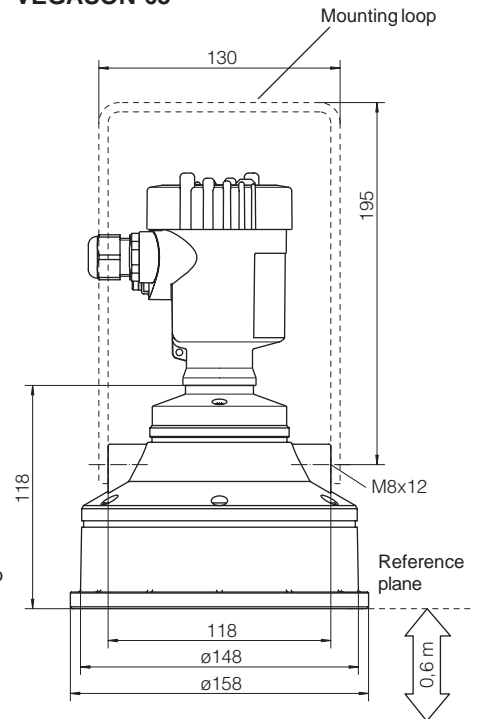
VEGASON 61



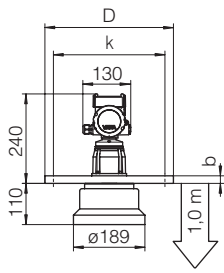
VEGASON 62



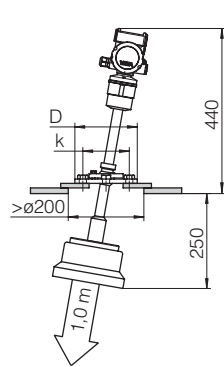
VEGASON 63



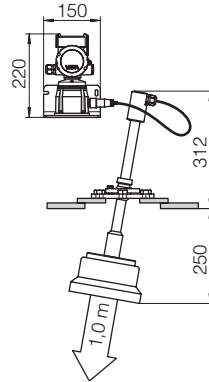
VEGASON 64



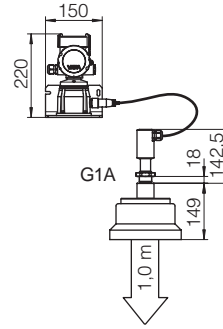
Version A



Version B

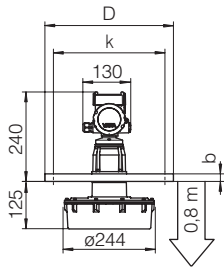


Version C

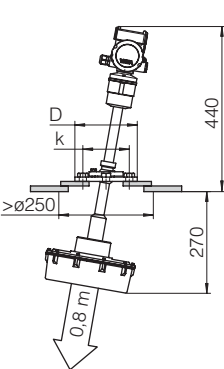


Version D

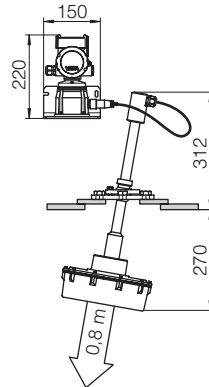
VEGASON 65



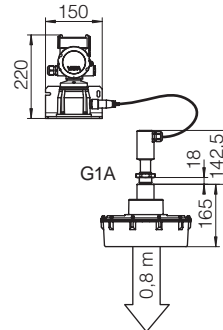
Version A



Version B

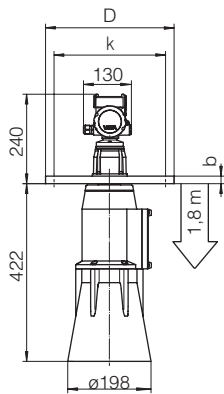


Version C

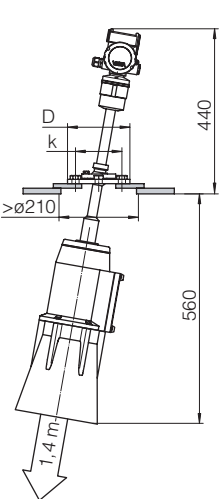


Version D

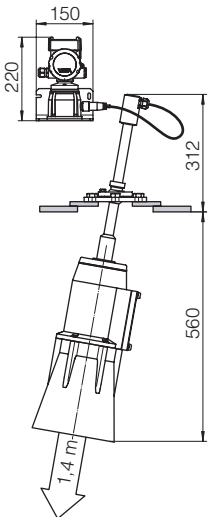
VEGASON 66



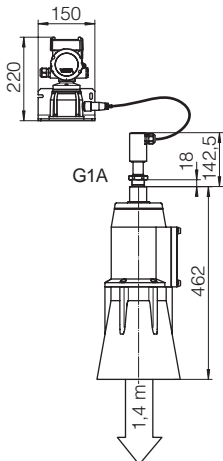
Version A



Version B



Version C



Version D

Flange connection acc. to DIN 2501,
seal ledge acc. to DIN 2526 Form D

Size	Flange D	b	k	Holes No.	d ₂
DN 50 PN 16/40	165	20	125	4	18
DN 80 PN 16/40	200	24	160	8	18
DN 200 PN 16	340	24	295	12	22
DN 250 PN 16	405	26	355	12	26

Flange connection acc. to
ANSI B16.5, RF

Size	Flange D	b	k	Holes No.	d ₂
2" 150 lb	152.4	19.1	120.7	4	19.1
3" 150 lb	190.5	23.9	152.4	4	19.1
8" 150 lb	342.9	28.4	298.5	8	22.4
10" 150 lb	406.4	30.2	362	12	25.4

VEGASON 72-1 ... 75-1
VEGASON 72-2 ... 75-2
VEGASON 71D

