Level measurement – Guided microwave

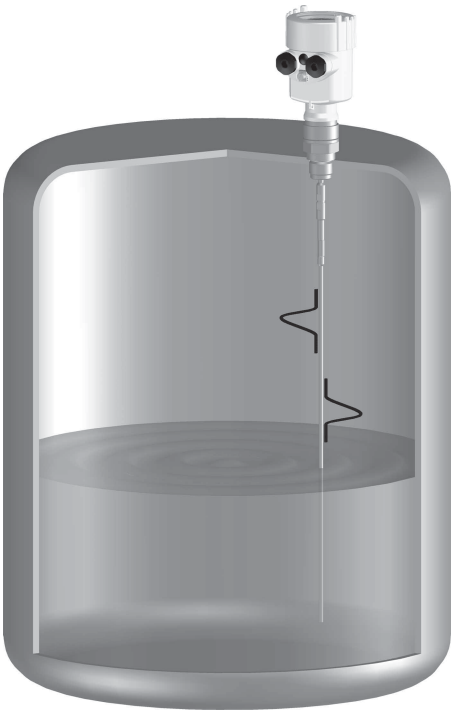
Contents **Page**

VEGAFLEX:

Universal sensors for solids and liquids

Measuring principle
High frequency microwave impulses are coupled to a cable or rod and guided along the probe. The impulses are reflected by the product surface and received by the processing electronics. A microcontroller identifies these level echoes measured by means of the ECHOFOX® software, evaluates them and converts them into a level information.

Due to this measuring principle, the comprehensive adjustment with the product is no longer necessary. The instruments are adjusted to the ordered electrode length. The shortable cable and rod versions are suitable for individual adaptation to the local conditions.



Insensitive to dust and steam
Even process conditions such as high dust and noise generation or strong steamy atmospheres do not influence the accuracy of the measurement.

Unaffected by material fluctuations
Density fluctuations, different granulation or even fluidising do not influence the accuracy. This applies also to the change from dry to wet gravel.

Buildup: No problem!
Strong buildup on the electrode or on the vessel wall does not affect the measuring result.

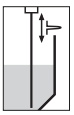
Wide application range
With measuring ranges up to 30 m, the sensors are also suitable for high vessels. Temperatures up to 150°C and pressures from vacuum up to 40 bar cover a wide application range.

Vessels with installations
By using a coaxial guide tube, VEGAFLEX 65 operates completely unaffected by vessel installations such as e.g. heating spirals or struts. A special adjustment is not necessary.

Adjustment possibilities of the instruments as well as the configuration of a measuring system are described in detail in chapter “Processing systems”.

Overview

	VEGAFLEX 61	VEGAFLEX 62	VEGAFLEX 65
			
Applications:	liquids light weight solids	heavy solids	liquids
Version:	with exchangeable cable (ø 4 mm) or rod (ø 4 mm)	with exchangeable cable (ø 6 mm)	coaxial configuration
Measuring range:	cable: up to 30 m rod: up to 6 m	up to 30 m	up to 6 m
Process connection:	from G¾A	from G1½A	from G¾A
Accuracy:	+/- 3 mm	+/- 3 mm	+/- 3 mm
Replacement for:	VEGAFLEX 51 VEGAFLEX 54	VEGAFLEX 52	VEGAFLEX 55



VEGAFLEX 61

Level sensor acc. to the measuring principle of the guided microwave (TDR)

For universal use in light solids and liquids

- setup without adjustment
- independent of product features
- insensitive to dust, vapour and buildup
- probes can be shortened
- signal processing ECHOFOX® for echo analysis with Fuzzy-Logic

Dielectric constant : from 1.7

Approval
- **XX** without
- **XM** Ship approval (GL,LRS;ABS;RINA;CSS)
- **CX** ATEX II 1G, 1/2G, 2G EEx ia IIC T6
- **CA** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + WHG
- **CM** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + Ship approval
- **DX** ATEX II 1/2G, 2G EEx d ia IIC T6 [1)]
- **GX** ATEX II 1/2D IP6X T

Version/Material
- **A** exchangeable cable ø4 mm w. gravity weight/1.4401
- **C** exchangeable rod ø6 mm/1.4435(316L)

Process connection/Material
- **GB** Thread G¾A PN40/1.4435(316L)
- **NB** Thread ¾NPT PN40/1.4435(316L)
- **GC** Thread G1A PN40/1.4435(316L)
- **NC** Thread 1NPT PN40/1.4435(316L)
- **GD** Thread G1½A PN40/1.4435(316L)
- **ND** Thread 1½NPT PN40/1.4435(316L)
- **FA** Flange DN25PN40 Form C,DIN2501/1.4435(316L)
- **FB** Flange DN40PN40 Form C,DIN2501/1.4435(316L)
- **FC** Flange DN50PN40 Form C,DIN2501/1.4435(316L)
- **FD** Flange DN80PN40 Form C,DIN2501/1.4435(316L)
- **AA** Flange 1"150lb RF,ANSI B16.5/1.4435(316L)
- **AE** Flange 2"150lb RF,ANSI B16.5/1.4435(316L)
- **AI** Flange 3"150lb RF,ANSI B16.5/1.4435(316L)

Seal/Process temperature
- **1** Viton/-30...150°C
- **3** EPDM/-40...150°C

Electronics
- **H** 4...20mA HART®
- **P** Profibus PA
- **F** Foundation Fieldbus

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

Cable entry/Plug connection
- **M** M20x1.5/without
- **N** ½NPT/without

Indicating-adjustment module
- **X** without
- **A** mounted

FX61. ☐☐☐☐☐☐☐☐☐

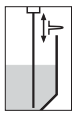
[1)] Only in conjunction with housing version "D"

Length in mm

per 100 mm cable of 1.4401
per 100 mm rod of 1.4435

Probe lengths: ☐ mm
Cable: min. 1000 mm, max. 32000 mm
Rod: min. 500 mm, max. 4000 mm

- Further process connections upon request
- Profibus accessory see chapter "Signal conditioning instruments and communication"

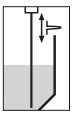


VEGAFLEX 62

Level sensor acc. to the measuring principle of the guided microwave (TDR)
For universal use in heavy solids

- setup without adjustment
- independent of product features
- insensitive to dust, vapour and buildup
- probe can be shortened
- signal processing ECHOFOX® for echo analysis with Fuzzy-Logic

Dielectric constant : from 1.7



Appvoral
- **XX** without
- **XM** Ship approval (GL,LRS;ABS;RINA;CSS)
- **CX** ATEX II 1G, 1/2G, 2G EEx ia IIC T6
- **CA** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + WHG
- **CM** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + Ship approval
- **DX** ATEX II 1/2G, 2G EEx d ia IIC T6 [1)]
- **GX** ATEX II 1/2D IP6X T

Version/Material
- **A** exchangeable cable ø 6mm w. gravity weight/1.4401

Process connection/Material
- **GD** Thread G1½A PN40/1.4435(316L)
- **ND** Thread 1½NPT PN40/1.4435(316L)

Seal/Process temperature
- **1** Viton/-30...150°C
- **3** EPDM/-40...150°C

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

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

Cable entry/Plug connection
- **M** M20x1.5/without
- **N** ½NPT/without

Indicating-adjustment module
- **X** without
- **A** mounted

FX62.								

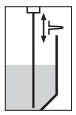
[1)] Only in conjunction with housing version "D"

Length in mm

per 100 mm cable of 1.4401
per 100 mm rod of 1.4435

Probe lengths: ☐ mm (min. 1000 mm, max. 32000 mm)

- Further process connections upon request
- Profibus accessory see chapter "Signal conditioning instruments and communication"

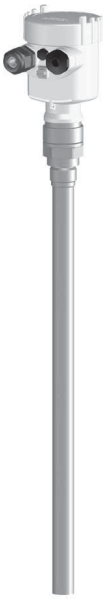


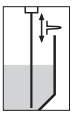
VEGAFLEX 65

Level sensor acc. to the measuring principle of the guided microwave (TDR)
For universal use in low viscosity liquids

- max. accuracy +/- 3 mm
- setup without adjustment
- independent of product features
- independent of socket lengths and lateral installations
- signal processing ECHOFOX® for echo analysis with Fuzzy-Logic

Dielectric constant : from 1.4





Approval
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- **CA** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + WHG
- **CM** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + Ship approval
- **DX** ATEX II 1/2G, 2G EEx d ia IIC T6 [1)]
- **GX** ATEX II 1/2D IP6X T

Version/Material
- **A** Coax probe/1.4435(316L)

Process connection /Material
- **GB** Thread G¾A PN40/1.4435(316L)
- **NB** Thread ¾NPT PN40/1.4435(316L)
- **GC** Thread G1A PN40/1.4435(316L)
- **NC** Thread 1NPT PN40/1.4435(316L)
- **GD** Thread G1½A PN40/1.4435(316L)
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- **FD** Flange DN80PN40 Form C,DIN2501/1.4435(316L)
- **AA** Flange 1"150lb RF,ANSI B16.5/1.4435(316L)
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- **AI** Flange 3"150lb RF,ANSI B16.5/1.4435(316L)

Seal/Process temperature
- **1** Viton/-30...150°C
- **3** EPDM/-40...150°C

Electronics
- **H** 4...20mA HART®
- **P** Profibus PA
- **F** Foundation Fieldbus

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

Cable entry/Plug connection
- **M** M20x1.5/without
- **N** ½NPT/without

Indicating-adjustment module
- **X** without
- **A** mounted

FX65.								

[1)] Only in conjunction with housing version "D"

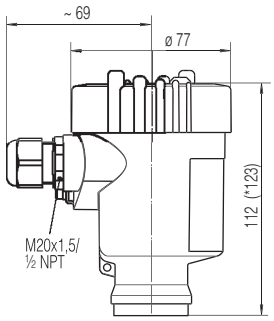
Length in mm

per 100 mm of 1.4401

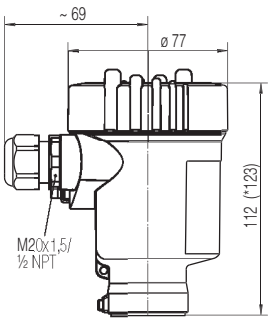
Probe lengths: ☐ mm (min. 300 mm, max. 6000 mm)

- Further process connections upon request
- Profibus accessory see chapter "Signal conditioning instruments and communication"

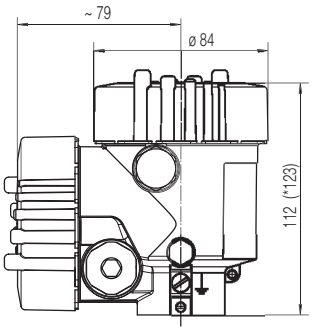
Plastic housing



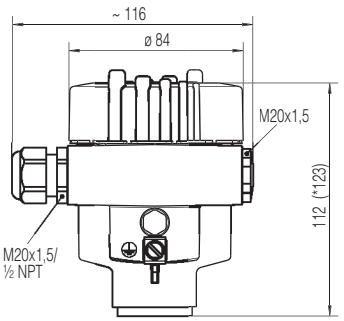
Stainless steel housing



Aluminium double chamber housing

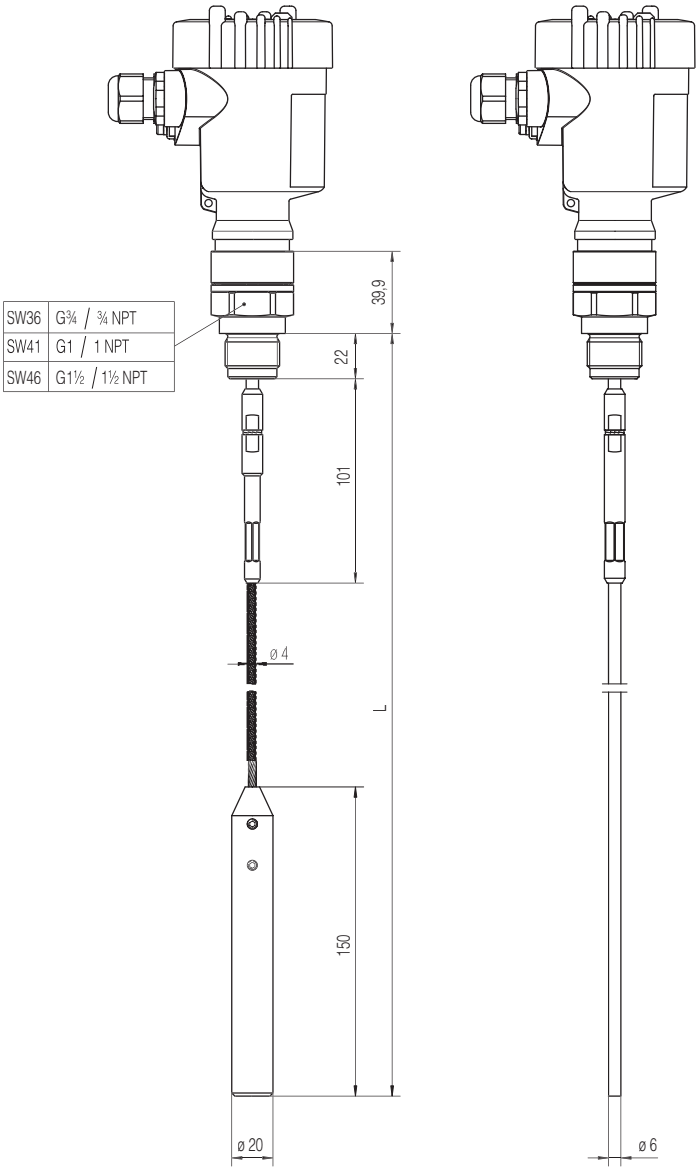


Aluminium housing

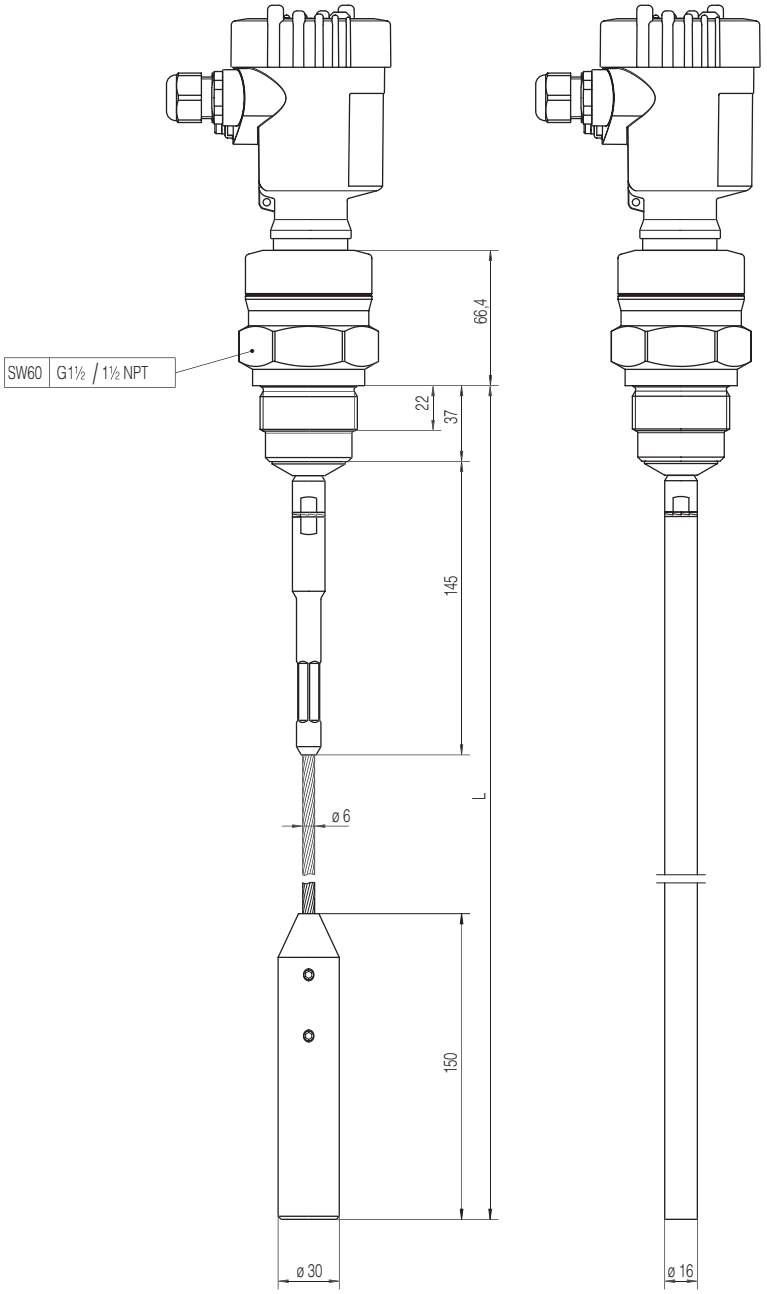


* with indication

VEGAFLEX 61



VEGAFLEX 62



VEGAFLEX 65