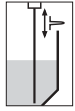




Level measurement - Guided microwave

Overview _____	28
VEGAFLEX series 60 _____	30
Dimensions _____	40



VEGAFLEX:

The universal sensors for solids and liquids

Measuring principle

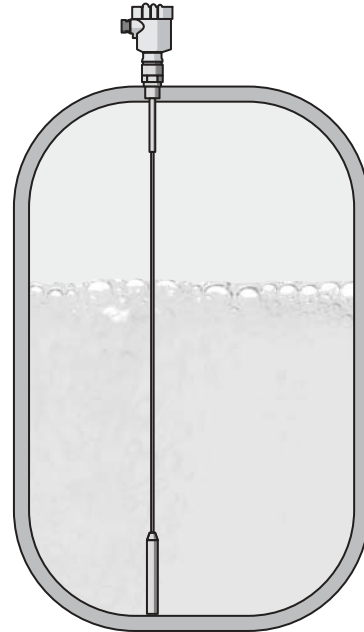
High frequency microwave pulses are coupled on a cable or rod and guided along the probe. The pulses are reflected by the product surface and received by the processing electronics. A microcomputer identifies these level echoes which are measured, evaluated and converted into a level information by the ECHO-FOX software.

Thanks to this measuring principle, the adjustment with the medium is no longer necessary. The instruments are preset to the ordered probe length. The cable and rod versions (shortable) can be adapted locally to the individual conditions.

Insensitive to dust, steam and product fluctuations

Even process conditions such as high dust and noise generation or very steamy atmospheres do not influence the accuracy of the measurement. Density fluctuations, different granulation sizes or even fluidization do not influence the accuracy. Even changes from dry to wet gravel are no problem.

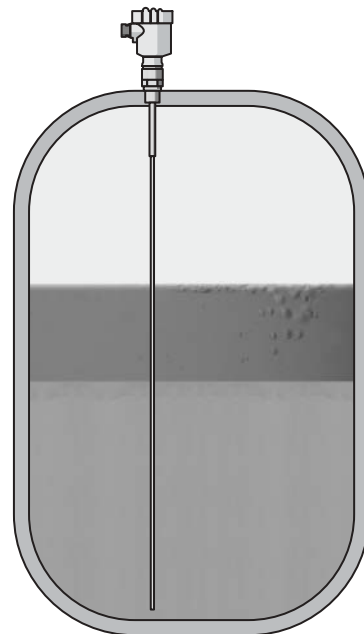
Strong buildup on the probe or the vessel wall does not influence the measurement result.



Interface measurement in liquids

Apart from the continuous level measurement of solids and liquids, the principle of the guided microwave was further developed for interface measurement. Typical applications are measurement of oil and water or solvents and water.

The microwave pulse is guided along a rod or rope and reflected by an interface with different dielectric value. The advantage compared to displacers and floats is that the measuring principle is independent of the density and does not use any moving parts. Maintenance-free operation is therefore guaranteed.



Overview



VEGAFLEX 61



VEGAFLEX 62



VEGAFLEX 65



Applications:	liquids light-weight solids	heavy solids	liquids
Version:	with exchangeable cable (\varnothing 4 mm) or rod (\varnothing 6 mm)	with exchangeable cable (\varnothing 6 mm) or rod (\varnothing 16 mm)	coaxial configuration
Measuring range:	cable: up to 32 m rod: up to 4 m	cable: up to 60 m rod: up to 6 m	up to 6 m
Process fitting:	from G $\frac{3}{4}$ A	from G1 $\frac{1}{2}$ A	from G $\frac{3}{4}$ A
Process temperature:	-40...150°C	-40...150°C	-40...150°C
Process pressure:	-1...40 bar (-100...4000 KPa)	-1...40 bar (-100...4000 KPa)	-1...40 bar (-100...4000 KPa)
Accuracy:	+/- 5 mm	+/- 5 mm	+/- 3 mm

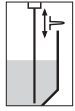
VEGAFLEX 66



VEGAFLEX 67



Applications:	liquids light-weight solids	interface measurement
Version:	with exchangeable cable (\varnothing 4 mm), rod (\varnothing 6 mm) or coaxial configuration	with exchangeable cable (\varnothing 4 mm), rod (\varnothing 6 mm) or coaxial configuration
Measuring range:	cable: up to 32 m rod: up to 4 m coax: up to 6 m	cable: up to 32 m rod: up to 4m coax: up to 6 m
Process fitting:	from G $\frac{3}{4}$ A	from G $\frac{3}{4}$ A
Process temperature:	-100...400°C	-40...150°C
Process pressure:	-1...160 bar (-100...16000 KPa)	-1...40 bar (-100...4000 KPa)
Accuracy:	from +/- 3 mm	+/- 10 mm



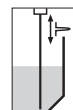
VEGAFLEX 61

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
- instrument from the plics® family





Approval

- XX** without
- XM** Ship approval
- 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 T6¹⁾
- GX** ATEX II 1/2D, 2D IP6X T²⁾

Version/Material

- A** exchangeable cable ø4 mm w. gravity weight/316
- C** exchangeable rod ø6 mm/316L

Process connection/Material

- GB** Thread G^{3/4}A PN40/316L
- NB** Thread 3/4NPT PN40/316L
- GC** Thread G1A PN40/316L
- NC** Thread 1NPT PN40/316L
- GD** Thread G1^{1/2}A PN40/316L
- ND** Thread 1^{1/2}NPT PN40/316L
- FA** Flange DN25PN40 Form C,DIN2501/316L
- FB** Flange DN40PN40 Form C,DIN2501/316L
- FC** Flange DN50PN40 Form C,DIN2501/316L
- FD** Flange DN80PN40 Form C,DIN2501/316L
- AA** Flange 1"150lb RF,ANSI B16.5/316L
- AE** Flange 2"150lb RF,ANSI B16.5/316L
- AI** Flange 3"150lb RF,ANSI B16.5/316L

Seal/Process temperature

- 1** Viton/-30...150°C
- 2** Kalrez 6375/-20...150°C
- 3** EPDM/-40...150°C

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 316L/IP66/IP67

Cable entry/Plug connection

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

Indicating-adjustment module (PLICSCOM)

- X** without
- A** top mounted

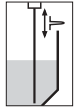
FX61.									
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¹⁾ Only in conjunction with housing version "D"
²⁾ Not in conjunction with housing version "K"

Length in mm (from seal surface)
per 100 mm cable of 316
per 100 mm rod of 316L

Probe length: mm cable: min. 1000 mm, max. 32000 mm
rod: min. 500 mm, max. 4000 mm

- Further process fittings and options on request



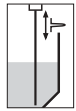
VEGAFLEX 62

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





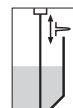
VEGAFLEX 65

Coaxial 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
- instrument from the plics® family





Approval

- XX** without
- XM** Ship approval
- 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⁾

Version/Material

- A** Coax probe/316L

Process connection/Material

- GB** Thread G³/₄A PN40/316L
- NB** Thread ³/₄NPT PN40/316L
- GC** Thread G1A PN40/316L
- NC** Thread 1NPT PN40/316L
- GD** Thread G1¹/₂A PN40/316L
- ND** Thread 1¹/₂NPT PN40/316L
- FA** Flange DN25PN40 Form C,DIN2501/316L
- FB** Flange DN40PN40 Form C,DIN2501/316L
- FC** Flange DN50PN40 Form C,DIN2501/316L
- FD** Flange DN80PN40 Form C,DIN2501/316L
- AA** Flange 1"150lb RF,ANSI B16.5/316L
- AE** Flange 2"150lb RF,ANSI B16.5/316L
- AI** Flange 3"150lb RF,ANSI B16.5/316L

Seal/Process temperature

- 1** Viton/-40...150°C
- 2** Kalrez 6375/-20...150°C
- 3** EPDM/-40...150°C

Electronics

- H** 4...20mA HART®
- 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 316L/IP66/IP67

Cable entry/Plug connection

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

Indicating-adjustment module (PLICSCOM)

- X** without
- A** top mounted

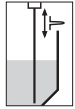
FX65.										
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¹⁾ Only in conjunction with housing version "D"

Length in mm (from seal surface)
per 100 mm of 316L

Probe length: mm (min. 300 mm, max. 6000 mm)

- Further process fittings and options on request



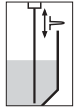
VEGAFLEX 66

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

For use in liquids and light solids under high temperatures and pressures

- setup without adjustment
- independent of product features
- insensitive to steam and condensation
- signal processing ECHOFOX for echo analysis with Fuzzy-Logic
- instrument from the plics® family





VEGAFLEX 67

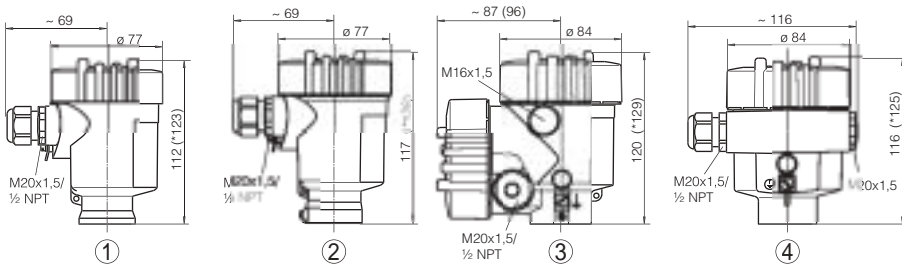
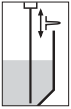
Interface sensor acc. to the principle of the guided microwave (TDR)

For use in liquids

- wear and maintenance-free
- insensitive to steam and condensation
- independent of density
- signal processing ECHOFOX for echo analysis with Fuzzy-Logic
- instrument from the plics® family

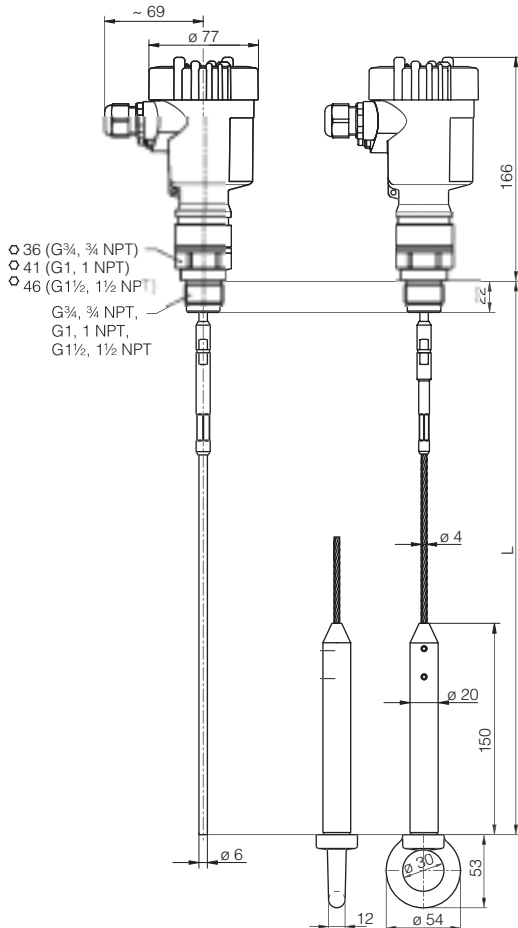


Housings

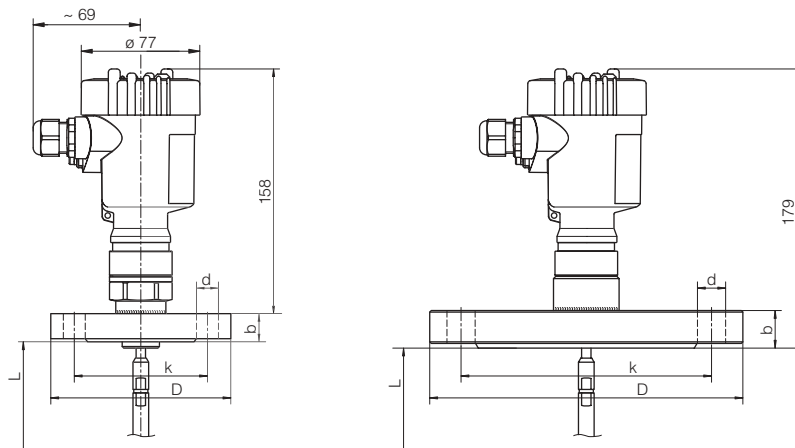


- 1 Plastic housing (* dimension with integrated PLICSCOM)
- 2 Stainless housing (* dimension with integrated PLICSCOM)
- 3 Aluminium double chamber housing (* dimension with integrated PLICSCOM)
- 4 Aluminium housing (* dimension with integrated PLICSCOM)

VEGAFLEX 61 - screwed version



VEGAFLEX 61 - flange version



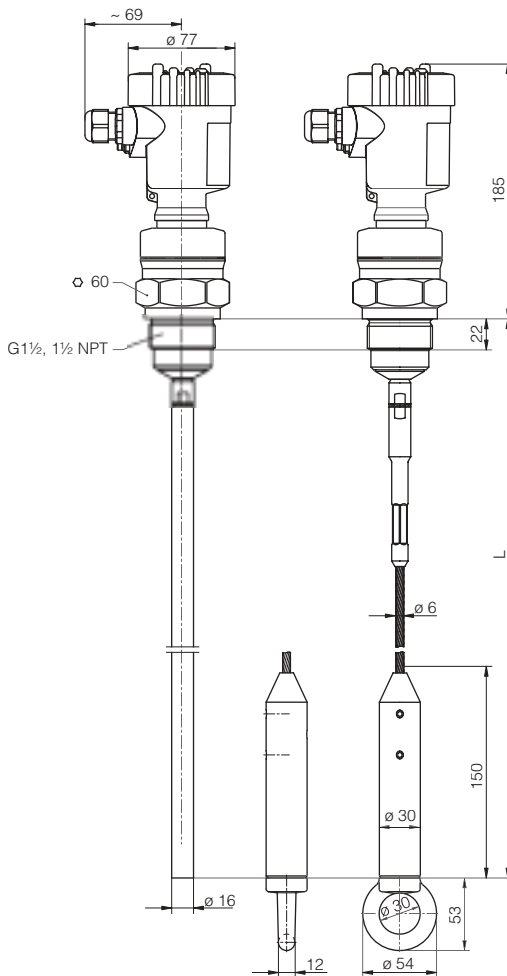
≤ DN 40 / 1½"

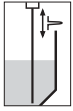
	D	b	k	d
DN 25 PN 40	ø115	18	ø85	4xø14
DN 40 PN 40	ø150	18	ø110	4xø18
1" 150 lb	ø108	14,2	ø78,2	4xø15,7
1" 300 lb	ø124	17,5	ø88,9	4xø19,1

≥ DN 50 / 2"

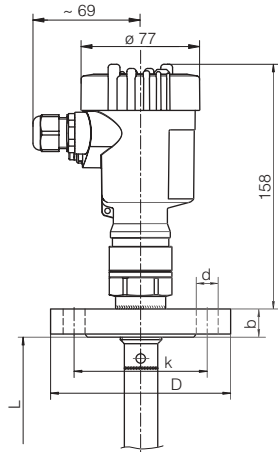
	D	b	k	d
DN 50 PN 40	ø165	20	ø125	4xø18
DN 80 PN 40	ø200	24	ø160	8xø18
DN 100 PN 16	ø220	20	ø180	8xø18
2" 150 lb	ø152,4	19,1	ø120,7	4xø19,1
2" 300 lb	ø165,1	22,4	ø127	4xø19,1
3" 150 lb	ø190,5	23,9	ø152,4	4xø19,1
3" 150 lb	ø209,5	28,4	ø168,1	4xø22,4

VEGAFLEX 62 - screwed version



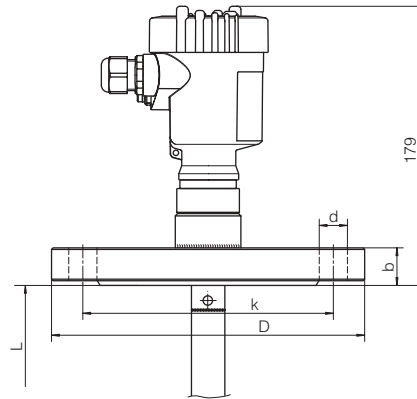


VEGAFLEX 65 - flange version



≤ DN 40 / 1 1/2"

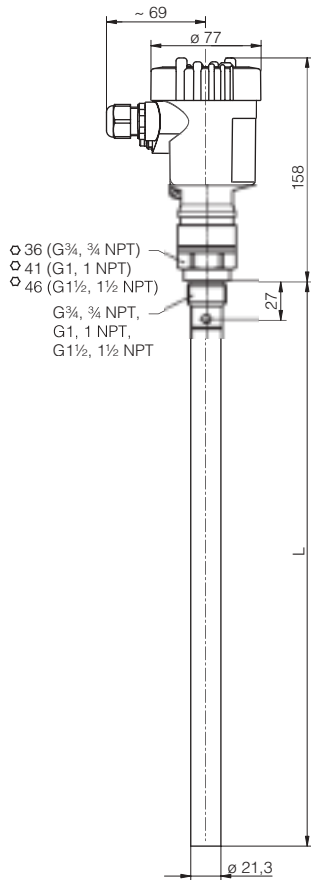
	D	b	k	d
DN 25 PN 40	ø115	18	ø85	4xø14
DN 40 PN 40	ø150	18	ø110	4xø18
1" 150 lb	ø108	14,2	ø78,2	4xø15,7
1" 300 lb	ø124	17,5	ø88,9	4xø19,1



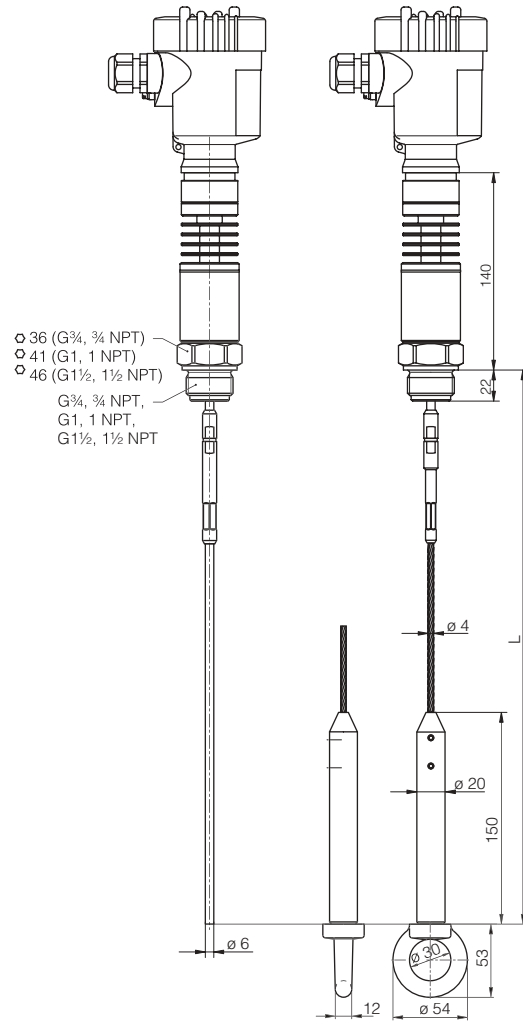
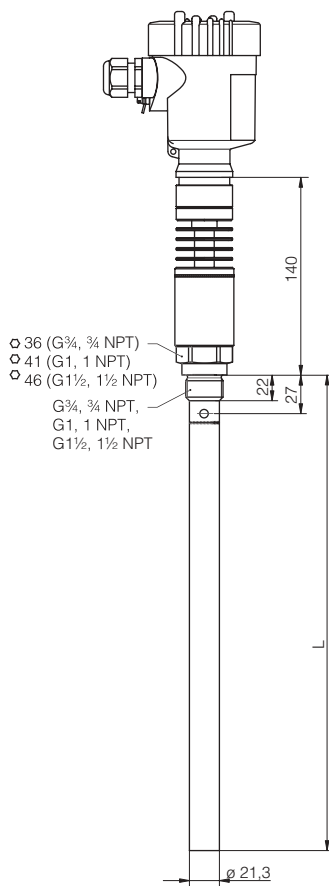
≥ DN 50 / 2"

	D	b	k	d
DN 50 PN 40	ø165	20	ø125	4xø18
DN 80 PN 40	ø200	24	ø160	8xø18
DN 100 PN 16	ø220	20	ø180	8xø18
2" 150 lb	ø152,4	19,1	ø120,7	4xø19,1
2" 300 lb	ø165,1	22,4	ø127	4xø19,1
3" 150 lb	ø190,5	23,9	ø152,4	4xø19,1
3" 150 lb	ø209,5	28,4	ø168,1	4xø22,4

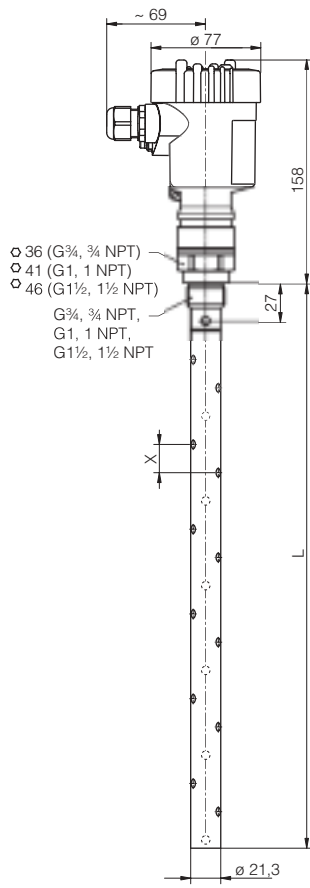
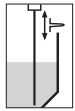
VEGAFLEX 65 - screwed version



VEGAFLEX 66



VEGAFLEX 67 - screwed version



X 20 mm, 120° displaced