

Level measurement - Capacitive

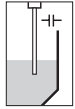
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Dimensions	_____	82

VEGACAL series 60

Level measurement in bulk solids and liquids

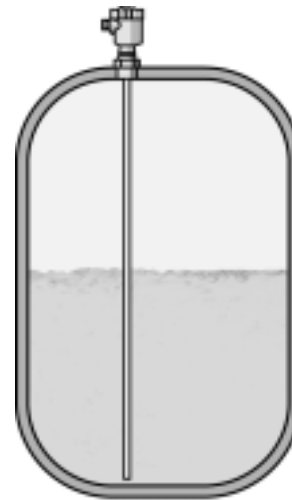
Measuring principle

The proven capacitive measuring principle is one of the most common measuring principles for level measurement in the industrial measurement technology. Sensor and vessel form the two electrodes of a capacitor. A capacitance change caused by a level change is processed by the integrated electronics and converted into a switching signal. The level measurement is carried out via the complete sensor length without a dead zone. Thanks to cable and rod versions, suitable instruments are available for all applications.



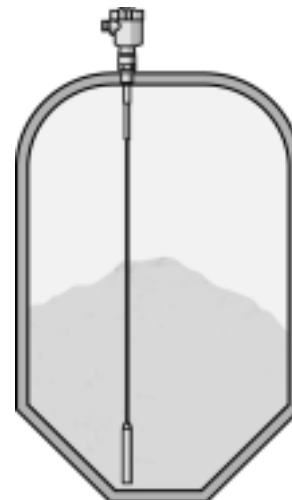
Applications in liquids

Mainly fully insulated instrument versions are used in these applications. Hence measurements of corrosive liquids or adhesive products are no problem. The mounting of the instruments is easy and the rugged construction is the basis for an interference and maintenance free operation.



Applications in bulk solids

Partly insulated versions are preferably used in bulk solids. Also here, we have the proven, rugged configuration as basis for the manifold and reliable use, e.g. in the aggregates and mining industry.



Overview

VEGACAL 62



VEGACAL 63



VEGACAL 64



Applications:	solids, non-conductive liquids	conductive liquids	adhesive, conductive liquids
Version:	with partly insulated rod	with fully insulated rod	with fully insulated rod
Process fitting:	from G $\frac{3}{4}$ A	from G $\frac{3}{4}$ A	from G $\frac{3}{4}$ A
Process temperature:	-50 ... 200 °C	-50 ... 200 °C	-50 ... 150 °C
Process pressure:	-1 ... 64 bar (-100 ... 6400 kPa)	-1 ... 64 bar (-100 ... 6400 kPa)	-1 ... 64 bar (-100 ... 6400 kPa)



VEGACAL 65



VEGACAL 66



VEGACAL 67



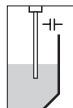
Applications:	solids, non-conductive liquids	liquids, solids	solids
Version:	with cable	with insulated cable	with rod or cable
Process fitting:	from G1 A	from G1 A	from G1 $\frac{1}{2}$ A
Process temperature:	-50 ... 200 °C	-50 ... 150 °C	-50 ... 400 °C
Process pressure:	-1 ... 64 bar (-100 ... 6400 kPa)	-1 ... 40 bar (-100 ... 4000 kPa)	-1 ... 16 bar (-100 ... 1600 kPa)

VEGACAL 62

Capacitive rod electrode for level measurement

For use in solids and non-conductive liquids

- robust and maintenance-free
- high reliability
- easy installation and mounting
- measurement along the complete probe length
- PTFE partly insulated
- 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
- CK** ATEX II 1G,1/2G,2G EEx ia IIC T6+ATEX II 1/2D,2D IP6X T¹⁾
- DX** ATEX II 1/2G, 2G EEx d ia IIC T6²⁾
- GX** ATEX II 1/2D, 2D IP6XT¹⁾

Version / Process temperature

- A** Standard / -50 ... 150°C
- B** Standard / -50 ... 200°C
- C** with screening tube 316L / -50 ... 150°C³⁾
- D** with screening tube 316L / -50 ... 200°C³⁾

Process fitting / Material

- GA** Thread G¾A PN64 / 316L
- GC** Thread G1A PN64 / 316L
- GD** Thread G1½ PN64 / 316L
- GS** Thread G1½A PN64 / Steel

Electronics

- H** 4...20mA/HART®
- X** for connection to a signal conditioning instrument
- P** Profibus PA
- F** Foundation Fieldbus

Housing / Protection

- K** Plastic / IP66/IP67
- A** Aluminium / IP66/IP68 (0.2 bar)
- D** Aluminium double chamber / IP66/IP68 (0.2 bar)
- 8** StSt (electropolished) 316L / IP66/IP68 (0.2bar)

Cable entry / Plug connection

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

Indicating/adjustment module (PLICSCOM)

- X** Without
- A** Top mounted

Additional equipment

- X** Without

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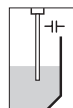
¹⁾ Not in conjunction with Housing / Protection "K"
²⁾ Only in conjunction with Housing / Protection "D"
³⁾ Not in conjunction with Process fitting / Material "GA", "GS"

Length in mm (from seal surface)
 316L (100-6000 mm) per 100 mm

Length screening tube in mm
 316L (50-5960 mm) per 100 mm

Insulation length in mm
 PTFE insulated (50-5990 mm) per 100 mm

• Further process fittings and options on request

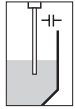


VEGACAL 63

Fully insulated, capacitive rod electrode for level measurement

For use in liquids

- robust and maintenance-free
- high reliability
- easy installation and mounting
- measurement along the complete probe length
- insulation thickness 2 mm
- 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
- CK ATEX II 1G,1/2G,2G EEx ia IIC T6+ATEX II 1/2D,2D IP6X T¹⁾
- DX ATEX II 1/2G, 2G EEx d ia IIC T6²⁾
- GX ATEX II 1/2D, 2D IP6X T¹⁾

Version / Process temperature

- E PE insulation / -40...80°C
- F PTFE insulation / -50...150°C
- G PTFE insulation / -50...200°C
- H PE insulation and concentric tube 316L / -40...80°C³⁾
- I PTFE insulation and concentric tube 316L / -50...150°C³⁾
- J PTFE insulation and concentric tube 316L / -50...200°C³⁾

Process fitting / Material

- GA Thread G³/₄A PN64 / 316L
- GC Thread G1A PN64 / 316L
- GD Thread G1¹/₂ PN64 / 316L
- GS Thread G1¹/₂A PN64 / Steel

Electronics

- H 4...20mA/HART®
- X for connection to a signal conditioning instrument
- P Profibus PA
- F Foundation Fieldbus

Housing / Protection

- K Plastic / IP66/IP67
- A Aluminium / IP66/IP68 (0.2 bar)
- D Aluminium double chamber / IP66/IP68 (0.2 bar)
- 8 StSt (electropolished) 316L / IP66/IP68 (0.2bar)

Cable entry / Plug connection

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

Indicating/adjustment module (PLICSCOM)

- X Without
- A Top mounted

Additional equipment

- X Without

CL63.											
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¹⁾ Not in conjunction with Housing / Protection "K"
²⁾ Only in conjunction with Housing / Protection "D"
³⁾ Not in conjunction with Process fitting / Material "GA", "GS"

Length in mm (from seal surface)

316L/PE fully insulated (100-6000 mm) per 100 mm
 316L/PTFE fully insulated (100-6000 mm) per 100 mm

Length concentric tube in mm

316L (100-6000 mm) per 100 mm

• Further process fittings and options on request

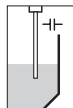


VEGACAL 64

Fully insulated, capacitive rod electrode for level measurement

For use in adhesive, conductive liquids

- robust and maintenance-free
- easy installation and mounting
- high reliability
- measurement along the complete probe length
- insulation thickness 1 mm
- 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
- CK** ATEX II 1G,1/2G,2G EEx ia IIC T6+ATEX II 1/2D,2D IP6X T¹⁾
- DX** ATEX II 1/2G, 2G EEx d ia IIC T6 ²⁾
- GX** ATEX II 1/2D, 2D IP6X T¹⁾

Version / Process temperature

- R** FEP insulation / -50...150°C

Process fitting / Material

- GA** Thread G^{3/4}A PN64 / 316L
- GC** Thread G1A PN64 / 316L
- GD** Thread G1^{1/2} PN64 / 316L
- GS** Thread G1^{1/2}A PN64 / Steel

Electronics

- H** 4...20mA/HART®
- X** for connection to a signal conditioning instrument
- P** Profibus PA
- F** Foundation Fieldbus

Housing / Protection

- K** Plastic / IP66/IP67
- A** Aluminium / IP66/IP68 (0.2 bar)
- D** Aluminium double chamber / IP66/IP68 (0.2 bar)
- 8** StSt (electropolished) 316L / IP66/IP68 (0.2bar)

Cable entry / Plug connection

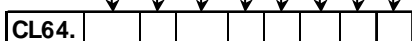
- M** M20x1.5 / without
- N** 1/2NPT / without

Indicating/adjustment module (PLICSCOM)

- X** Without
- A** Top mounted

Additional equipment

- X** Without



¹⁾ Not in conjunction with Housing / Protection "K"
²⁾ Only in conjunction with Housing / Protection "D"

Length in mm (from seal surface)
 316L/FEP fully insulated (200-4000 mm) per 100 mm

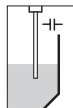
• Further process fittings and options on request

VEGACAL 65

Capacitive cable electrode for level measurement

For use in non-conductive liquids and solids

- robust and maintenance-free
- high reliability
- easy installation and mounting
- measurement along the complete probe length
- 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
- CK ATEX II 1G,1/2G,2G EEx ia IIC T6+ATEX II 1/2D,2D IP6X T¹⁾
- DX ATEX II 1/2G, 2G EEx d ia IIC T6²⁾
- GX ATEX II 1/2D, 2D IP6X T¹⁾

Version / Process temperature

- K Cable ø 6mm / 316 with gravity weight / -50...150°C
- U Cable ø6mm with screening tube a. gr.weight/-50...150°C³⁾
- L Cable ø 6mm / 316 with gravity weight / -50...200°C³⁾
- V Cable ø6mm w.screening tube a. grav.weight/-50...200°C³⁾

Process fitting / Material

- GC Thread G1A PN64 / 316L
- GD Thread G1½ PN64 / 316L
- GS Thread G1½A PN64 / Steel

Electronics

- H 4...20mA/HART®
- X for connection to a signal conditioning instrument
- P Profibus PA
- F Foundation Fieldbus

Housing / Protection

- K Plastic / IP66/IP67
- A Aluminium / IP66/IP68 (0.2 bar)
- D Aluminium double chamber / IP66/IP68 (0.2 bar)
- 8 StSt (electropolished) 316L / IP66/IP68 (0.2bar)

Cable entry / Plug connection

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

Indicating/adjustment module (PLICSCOM)

- X Without
- A Top mounted

Additional equipment

- X Without



¹⁾ Not in conjunction with Housing / Protection "K"
²⁾ Only in conjunction with Housing / Protection "D"
³⁾ Not in conjunction with Process fitting / Material "GS"

Length in mm (from seal surface)
 316 (400-32000 mm) per 100 mm
Length screening tube in mm
 316L (70-4000 mm) per 100 mm
Insulation length in mm
 PTFE (50-1000 mm) per 100 mm

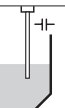
• Further process fittings and options on request

VEGACAL 66

Fully insulated, capacitive cable electrode for level measurement

For use in liquids and solids

- robust and maintenance-free
- high reliability
- easy installation and mounting
- PTFE fully insulated
- 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
- CK ATEX II 1G,1/2G,2G EEx ia IIC T6+ATEX II 1/2D,2D IP6X T¹⁾
- DX ATEX II 1/2G, 2G EEx d ia IIC T6²⁾
- GX ATEX II 1/2D, 2D IP6X T¹⁾

Version / Process temperature

- N PTFE insulated cable ø8mm w. gravity weight/-50...150°C

Process fitting/ Material

- GC Thread G1A PN40 / 316L
- GD Thread G1½ PN40 / 316L
- GS Thread G1½A PN40 / Steel

Electronics

- H 4...20mA/HART®
- X for connection to a signal conditioning instrument
- P Profibus PA
- F Foundation Fieldbus

Housing / Protection

- K Plastic / IP66/IP67
- A Aluminium / IP66/IP68 (0.2 bar)
- D Aluminium double chamber / IP66/IP68 (0.2 bar)
- 8 StSt (electropolished) 316L / IP66/IP68 (0.2bar)

Cable entry / Plug connection

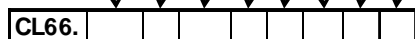
- M M20x1.5 / without
- N ½NPT / without

Indicating/adjustment module (PLICSCOM)

- X Without
- A Top mounted

Additional equipment

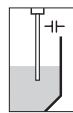
- X Without



¹⁾ Not in conjunction with Housing / Protection "K"
²⁾ Only in conjunction with Housing / Protection "D"

Length in mm (from seal surface)

316/PTFE insulated (400-32000 mm) per 100 mm



• Further process fittings and options on request

VEGACAL 67

Capacitive high temperature electrode for level measurement

For use in solids under high temperatures

- robust and maintenance-free
- high reliability
- easy installation and mounting
- electrode can be shortened
- instrument from the plics® family

 plics®



Approval

XX without

Version / Process temperature

- 1** Ceramic-insulated rod probe / -50...300°C
- 3** Ceramic-insulated rod probe / -50...400°C ¹⁾
- 2** Ceramic-insulated cable probe / -50...300°C
- 4** Ceramic-insulated cable probe / -50...400°C ¹⁾

Process fitting / Material

GD Thread G1 ½ PN40 / 316L

Electronics

- H** 4...20mA/HART®
- X** for connection to a signal conditioning instrument
- P** Profibus PA
- F** Foundation Fieldbus

Housing / Protection

- K** Plastic / IP66/IP67
- A** Aluminium / IP66/IP68 (0.2 bar)
- D** Aluminium double chamber / IP66/IP68 (0.2 bar)
- 8** StSt (electropolished) 316L / IP66/IP68 (0.2bar)
- B** Lateral cable outlet IP68, ext. housing plastic/IP66/67

Cable entry / Plug connection

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

Indicating/adjustment module (PLICSCOM)

- X** Without
- A** Top mounted

Additional equipment

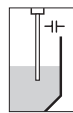
- X** Without



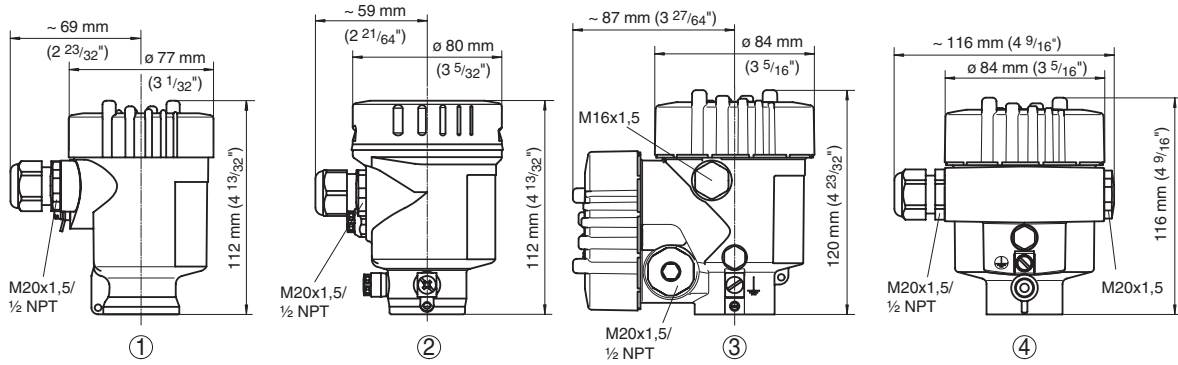
¹⁾ In conjunction with Housing/Protection "B"

Length in mm (from seal surface)

Rod/316L (275-6000 mm) per 100 mm
 Cable/316 (500-40000 mm) per 100 mm

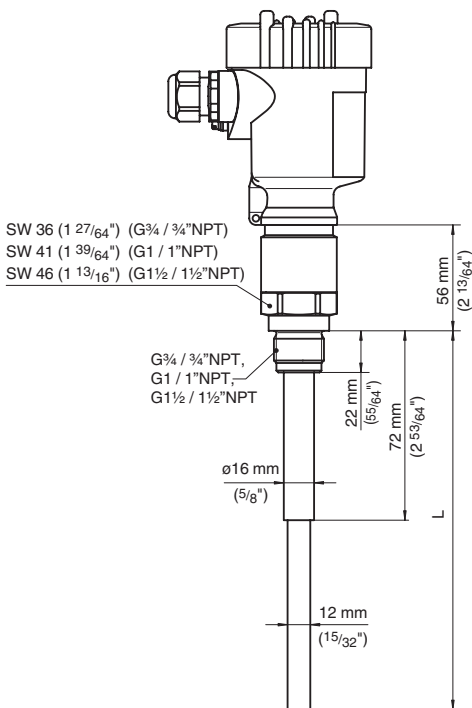


Housings

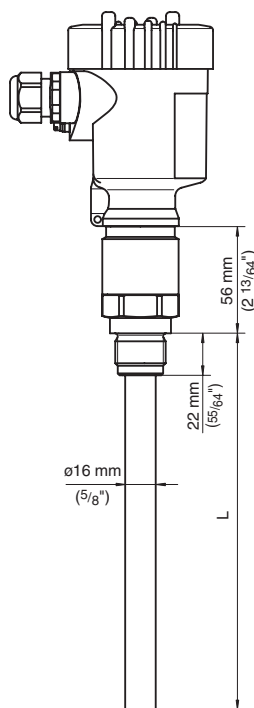


- 1 Plastic housing
- 2 Stainless steel housing
- 3 Aluminium double chamber housing
- 4 Aluminium housing

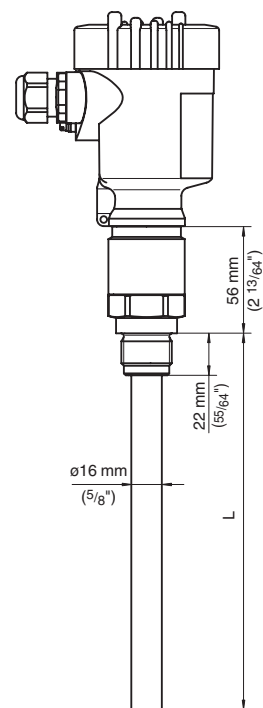
VEGACAL 62



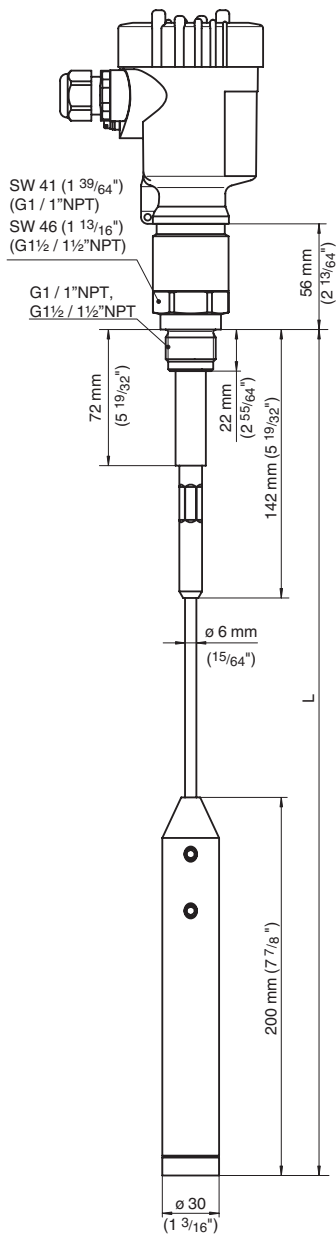
VEGACAL 63



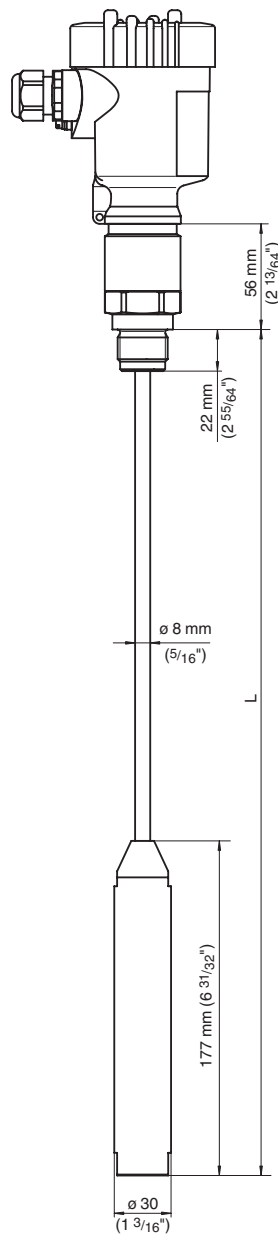
VEGACAL 64



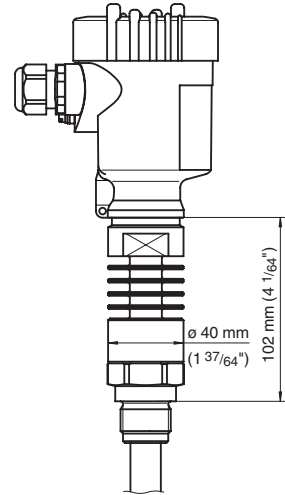
VEGACAL 65



VEGACAL 66



**Temperature adapter
VEGACAL 62, 63 and 65**



VEGACAL 67

