

Switching - Capacitive

Overview _____	104
VEGACAP 62 - 67 _____	106
VEGACAP 27, 35, 98 _____	118
Dimensions _____	123

VEGACAP series 60:

Level detection in solids and liquids

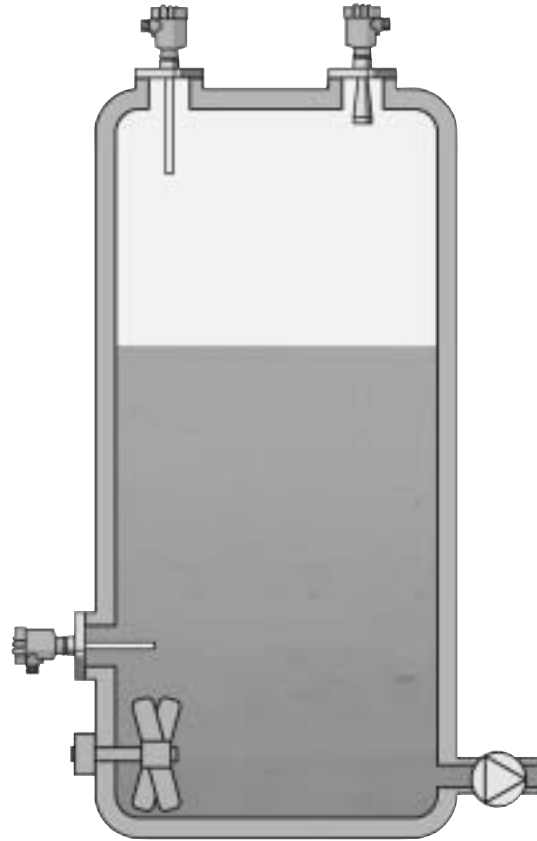
With the introduction of VEGACAP series 60, the proven capacitive measuring principle is now also part of the plics® family and completes the level switch program at VEGA.

To the measuring principle:

Sensor and vessel form the two electrodes of a capacitor. A capacitance change caused by a level change is evaluated by the integrated electronics and converted into an appropriate switching command.

The sensors are extremely rugged and maintenance-free and can be used in all industries. Whereby the fully insulated versions are mainly used in liquids, partly insulated versions are preferably used in solids. Also the measurement of aggressive and very adhesive products is no problem.

As the capacitive measuring principle sets no special requirements to the installation, a number of applications can be equipped with the new VEGACAP series 60 level switches.



Overview

VEGACAP 62

VEGACAP 63

VEGACAP 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...200°C
Process pressure:	-1...64 bar (-100...6400 kPa)	-1...64 bar (-100...6400 kPa)	-1...64 bar (-100...6400 kPa)
Replacement for:	VEGACAP 11 EL 11, EL 18, EK 11	VEGACAP 21 EL 21, EK 21	VEGACAP 26, 27 EL 26, EK 24


VEGACAP 65

VEGACAP 66

VEGACAP 67

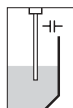

Applications:	solids, non-conductive liquids	liquids, solids	liquids, solids
Version:	with cable	with insulated cable	with rod or cable
Process fitting:	from G1A	from G $\frac{3}{4}$ A	from G1 $\frac{1}{2}$ A
Process temperature:	-50...200°C	-50...150°C	-50...300°C
Process pressure:	-1...64 bar (-100...6400 kPa)	-1...40 bar (-100...4000 kPa)	-1...16 bar (-100...1600 kPa)
Replacement for:	VEGACAP 31, 33, 34 EL 31, 33, 34	VEGACAP 52 EL 52, 53	VEGACAP 60, 61 EL 60, 61

VEGACAP 62

Partly insulated, capacitive rod electrode for level detection

For use in solids and non-conductive liquids

- robust and maintenance-free
- easy installation and mounting
- PTFE insulation
- probe can be shortened
- instrument from the plics® family



Approval

- XX without
- XM Ship approval
- XA Overfill protection according to WHG¹⁾
- CX ATEX II 1G, 1/2G, 2G EEx ia IIC T6²⁾
- CA ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + WHG²⁾
- CM ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + Ship approval²⁾
- CK ATEX II 1G, 1/2G, 2G EEx ia IIC T6+ATEX II 1/2D, 2D IP6XT³⁾
- GX ATEX II 1/2D, 2D IP6XT⁴⁾

Version / Temperature range

- A Standard / -50 ... 150°C
- B Standard / -50 ... 200°C
- C with screening tube 316L / -50 ... 150°C⁵⁾
- D with screening tube 316L / -50 ... 200°C⁵⁾

Process fitting / Material

- GA Thread G³/₄A PN64 / 316L
- GC Thread G1A PN64 / 316L
- GD Thread G1½ PN64 / 316L
- GS Thread G1½A PN64 / Steel

Electronics

- C Contactless electronic switch 20...253VAC/DC
- R Relay (DPDT) 20...72VDC/20...253VAC (5A)
- T Transistor (NPN/PNP) 10...55VDC
- Z Two-wire for connection to VEGATOR

Housing / Protection

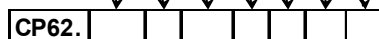
- K Plastic / IP66/IP67
- A Aluminium / IP66/IP68 (0.2bar)
- V Stainless steel 316L / IP66/IP68 (0.2bar)

Cable entry / Plug connection

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

Additional equipment

- X Without

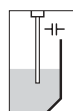


¹⁾ Only in conjunction with Electronics "C", "R" and "T"
²⁾ Only in conjunction with Electronics "Z"
³⁾ Not in conjunction with Housing / Protection "K" and only with Electronics "Z"
⁴⁾ Not in conjunction with Housing / Protection "K"
⁵⁾ Not in conjunction with Process fitting / Material "GA", "GS"

Length in mm (from seal surface)
 per 100 mm of 316L
Length screening tube in mm
 per 100 mm of 316L
Insulation length in mm
 per 100 mm of PTFE

Length: mm (min. 200 mm; max. 6000 mm)

- Further process fittings and options on request

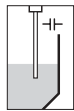


VEGACAP 63

Fully insulated, capacitive rod electrode for level detection

For use in conductive liquids

- robust and maintenance-free
- easy installation and mounting
- insulation thickness 2 mm
- instrument from the plics® family



- Approval**
- XX** without
 - XM** Ship approval
 - XA** Overfill protection according to WHG¹⁾
 - CX** ATEX II 1G, 1/2G, 2G EEx ia IIC T6²⁾
 - CA** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + WHG²⁾
 - CM** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + Ship approval²⁾

Version / Temperature range

- E** PE insulation / -40...80°C
- F** PTFE insulation / -50...150°C
- G** PTFE insulation / -50...200°C

Process fitting / Material

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

Electronics

- C** Contactless electronic switch 20...253VAC/DC
- R** Relay (DPDT) 20...72VDC/20...253VAC(5A)
- T** Transistor (NPN/PNP) 10...55VDC
- Z** Two-wire for connection to VEGATOR

Housing / Protection

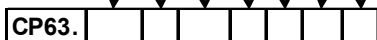
- K** Plastic / IP66/IP67
- A** Aluminium / IP66/IP68 (0.2bar)
- V** Stainless steel 316L / IP66/IP68 (0.2bar)

Cable entry / Plug connection

- M** M20x1.5 / without
- N** $\frac{1}{2}$ NPT / without

Additional equipment

- X** Without



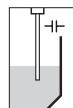
¹⁾ Only in conjunction with Electronics "C", "R" and "T"
²⁾ Only in conjunction with Electronics "Z"

Length in mm (from seal surface)

per 100 mm of 316L, PE fully insulated
 per 100 mm of 316L, PTFE fully insulated

Length: mm (min. 200 mm; max. 6000 mm)

- Further process fittings and options on request

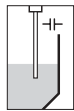


VEGACAP 64

Fully insulated, capacitive rod electrode with active length for level detection

For use in adhesive, conductive liquids

- robust and maintenance-free
- easy installation and mounting
- exact switching point even with very adhesive products
- instrument from the plics® family



Approval

- XX** without
- XM** Ship approval
- XA** Overfill protection according to WHG¹⁾
- CX** ATEX II 1G, 1/2G, 2G EEx ia IIC T6²⁾
- CA** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + WHG²⁾
- CM** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + Ship approval²⁾

Version / Temperature range

- F** PTFE insulation / -50...150°C
- G** PTFE insulation / -50...200°C

Process fitting / Material

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

Electronics

- C** Contactless electronic switch 20...253VAC/DC
- R** Relay (DPDT) 20...72VDC/20...253VAC(5A)
- T** Transistor (NPN/PNP) 10...55VDC
- Z** Two-wire for connection to VEGATOR

Housing / Protection

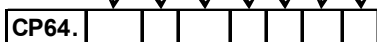
- K** Plastic / IP66/IP67
- A** Aluminium / IP66/IP68 (0.2 bar)
- V** Stainless steel 316L / IP66/IP68 (0.2bar)

Cable entry / Plug connection

- M** M20x1.5 / without
- N** $\frac{1}{2}$ NPT / without

Additional equipment

- X** Without



¹⁾ Only in conjunction with Electronics "C", "R" and "T"
²⁾ Only in conjunction with Electronics "Z"

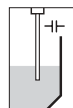
Length in mm (from seal surface)

per 100 mm of 316L, PTFE fully insulated

Length: mm (min. 200 mm; max. 6000 mm)

Active length: mm (min. 50 mm ... max. 300 mm)

- Further process fittings and options on request

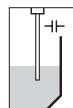


VEGACAP 65

Capacitive cable electrode for level detection

For use in non-conductive liquids and solids

- robust and maintenance-free
- easy installation and mounting
- instrument from the plics® family



Approval

- XX without
- XM Ship approval
- XA Overfill protection according to WHG¹⁾
- CX ATEX II 1G, 1/2G, 2G EEx ia IIC T6²⁾
- CA ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + WHG²⁾
- CM ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + Ship approval²⁾
- CK ATEX II 1G, 1/2G, 2G EEx ia IIC T6+ATEX II 1/2D, 2D IP6XT³⁾
- GX ATEX II 1/2D, 2D IP6XT⁴⁾

Version / Temperature range

- 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°C
- V Cable ø6mm w.screening tube a. grav.weight/-50...200°C³⁾
- M PA insul.steel cable ø12mm w.gravity weight/ -50...80°C

Process fitting / Material

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

Electronics

- C Contactless electronic switch 20...253VAC/DC
- R Relay (DPDT) 20...72VDC/20...253VAC(5A)
- T Transistor (NPN/PNP) 10...55VDC
- Z Two-wire for connection to VEGATOR

Housing / Protection

- K Plastic / IP66/IP67
- A Aluminium / IP66/IP68 (0.2 bar)
- V Stainless steel 316L / IP66/IP68 (0.2bar)

Cable entry / Plug connection

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

Additional equipment

- X Without



¹⁾ Only in conjunction with Electronics "C", "R" and "T"
²⁾ Only in conjunction with Electronics "Z"
³⁾ Not in conjunction with Housing / Protection "K" and only with Electronics "Z"
⁴⁾ Not in conjunction with Housing / Protection "K"

Length in mm (from seal surface)

- per 100 mm of 316
- per 100 mm of steel, PA fully insulated
- per 100 mm of 316

Insulation length in mm

- per 100 mm of PTFE

Length: mm (min. 400 mm; max. 32000 mm)

- Further process fittings and options on request

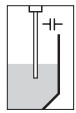


VEGACAP 66

Fully insulated, capacitive cable electrode for level detection

For use in liquids and solids

- robust and maintenance-free
- easy installation and mounting
- instrument from the plics® family



Approval

- XX** without
- XM** Ship approval
- XA** Overfill protection according to WHG¹⁾
- CX** ATEX II 1G, 1/2G, 2G EEx ia IIC T6²⁾
- CA** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + WHG²⁾
- CM** ATEX II 1G, 1/2G, 2G EEx ia IIC T6 + Ship approval²⁾

Version / Temperature range

- 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

- C** Contactless electronic switch 20...253VAC/DC
- R** Relay (DPDT) 20...72VDC/20...253VAC(5A)
- T** Transistor (NPN/PNP) 10...55VDC
- Z** Two-wire for connection to VEGATOR

Housing / Protection

- K** Plastic / IP66/IP67
- A** Aluminium / IP66/IP68 (0.2 bar)
- V** Stainless steel 316L / IP66/IP68 (0.2bar)

Cable entry / Plug connection

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

Additional equipment

- X** Without

CP66.									
--------------	--	--	--	--	--	--	--	--	--

¹⁾ Only in conjunction with Electronics "C", "R" and "T"
²⁾ Only in conjunction with Electronics "Z"

Length in mm (from seal surface)

per 100 mm of 316 PTFE insulated

Length: mm (min. 400 mm; max. 32000 mm)

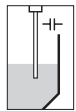
- Further process fittings and options on request



VEGACAP 67

Capacitive high temperature probe for level detection

- rugged and maintenance-free
- easy installation and mounting
- probe can be shortened
- instrument of the plics® family



Approval

XX without

Version / Temperature range

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

Process fitting / Material

GD Thread G1½ PN40 / 316L

Electronics

- C** Contactless electronic switch 20...253VAC/DC
- R** Relay (DPDT) 20...72VDC/20...253VAC(5A)
- T** Transistor (NPN/PNP) 10...55VDC
- Z** Two-wire for connection to VEGATOR

Housing / Protection

- K** Plastic / IP66/IP67
- A** Aluminium / IP66/IP68 (0.2 bar)
- V** Stainless steel 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

Additional equipment

X Without



Length in mm (from seal surface)

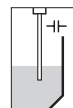
per 100 mm rod of 316L
per 100 mm cable of 316L

Length screening tube in mm

per 100 mm of 1.4571

Length: mm (min. 400 mm; max. 32.000 mm)

- Further process fittings and options on request

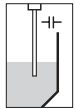
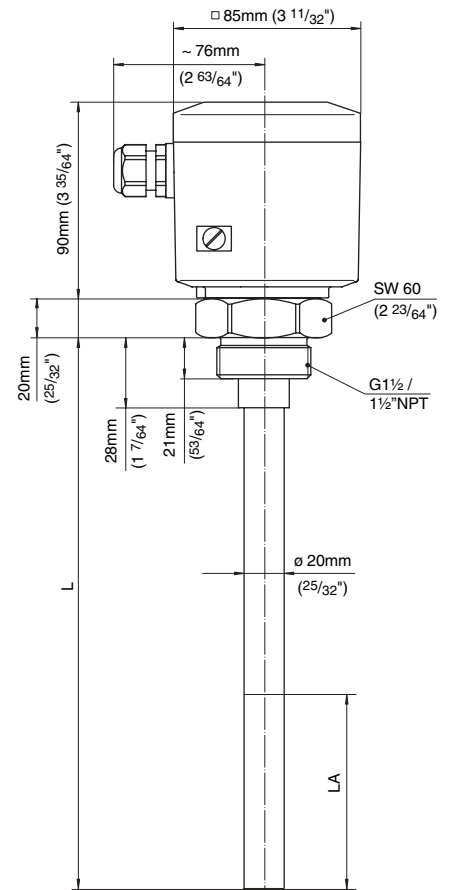


VEGACAP 27

Adjustment-free, capacitive compact level switch with fully insulated rod electrode for very adhesive products

For use as overflow or dry run protection system in adhesive, conductive liquids with a dielectric constant from 1.5

- exact switching point also with strong buildup
- setup without adjustment with product
- rugged and maintenance-free
- easy mounting



Approval

- .X Without
- .A Overfill protection according to WHG

Process fitting / Material

- GAV Thread G1A/316Ti
- GBS Thread G1½A/steel
- GBV Thread G1½A/316Ti
- NBS Thread 1½NPT/steel
- NBV Thread 1½NPT/316Ti
- TBV Tri-Clamp 1½"/316Ti
- TCV Tri-Clamp 2"/316Ti
- RCV Bolting DN50/316Ti
- PCV Flange DN50PN40/316Ti PTFE-plated

Material rod/Insulation

- ST Steel/PTFE
- SF Steel/PFA

Screening tube against condensation

- X without

Adapter (from 100°C with temperature adapter)

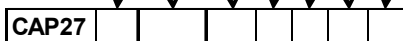
- X Without
- 2 Temperature up to 200°C/316Ti

Housing

- P Plastic PBT / IP66/67
- M Aluminium plastic coated / IP66/67

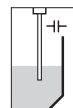
Electronics

- D Double relay (DPDT) 20...72VDC/20...250VAC(5A)



Total length L in mm

- per 100 mm of steel, PTFE fully insulated
- per 100 mm of steel, PFA fully insulated



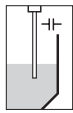
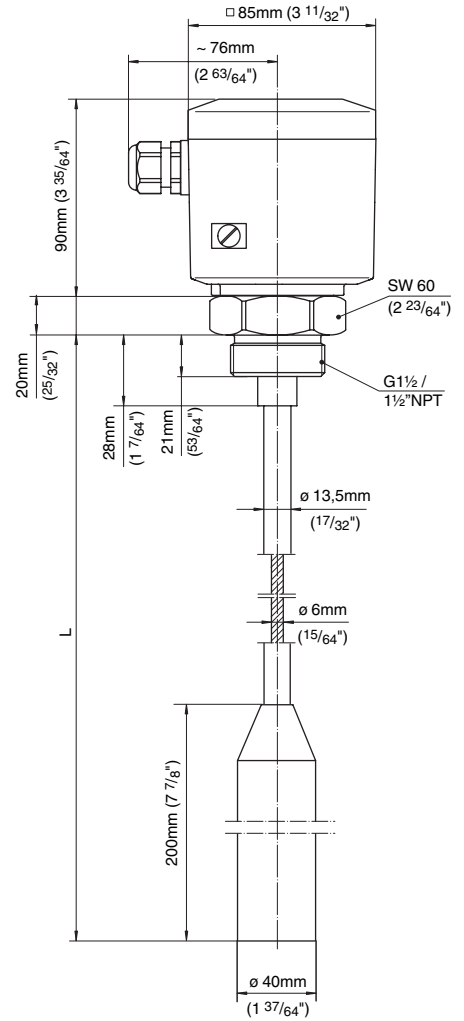
VEGACAP 35

Adjustment-free, capacitive compact level switch with PE/PA12 partly insulated cable electrode

Preferably for universal use as overflow protection in solids with dielectric constant from 1.5

- fully insulated cable with rugged, bare gravity weight
- exact switching point also with strong buildup or condensation
- setup without adjustment with product
- easy mounting
- electrode can be shortened

Process temperature : -40...80°C



Approval

- .X Without
- .A Overfill protection according to WHG

Process fitting / Material

- GBA** Thread G1½A/aluminium
- GBS** Thread G1½A/steel
- GBV** Thread G1½A/1.4571(316Ti)
- NBS** Thread 1½NPT/steel
- NBV** Thread 1½NPT/1.4571(316Ti)

Material cable

- S** Steel

Material insulation

- E** PE/PA 12

Screening tube

- X** without

Adapter

- X** without

Gravity weight

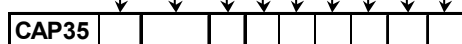
- S** Gravity weight 200mm/steel
- V** Gravity weight 200mm/1.4571(316Ti)

Housing

- P** Plastic PBT / IP66/67
- M** Aluminium plastic coated / IP66/67

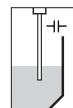
Electronics

- D** Double relay (DPDT) 20...72VDC/20...250VAC(5A)

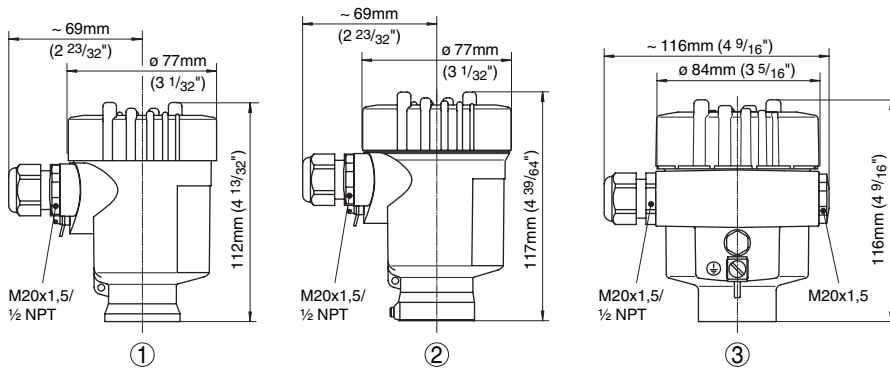


Cable length in mm

per 1000 mm of steel, PE/PA12 fully insulated



Housings

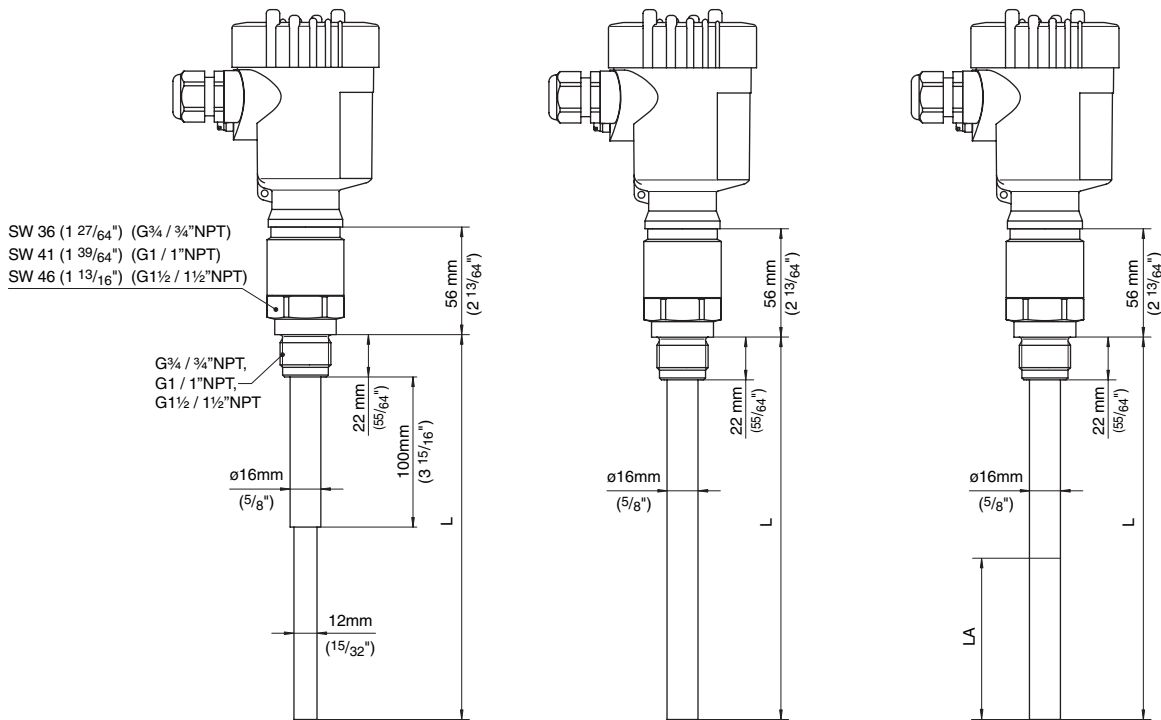


- 1 Plastic housing
- 2 Stainless steel housing
- 3 Aluminium housing

VEGACAP 62

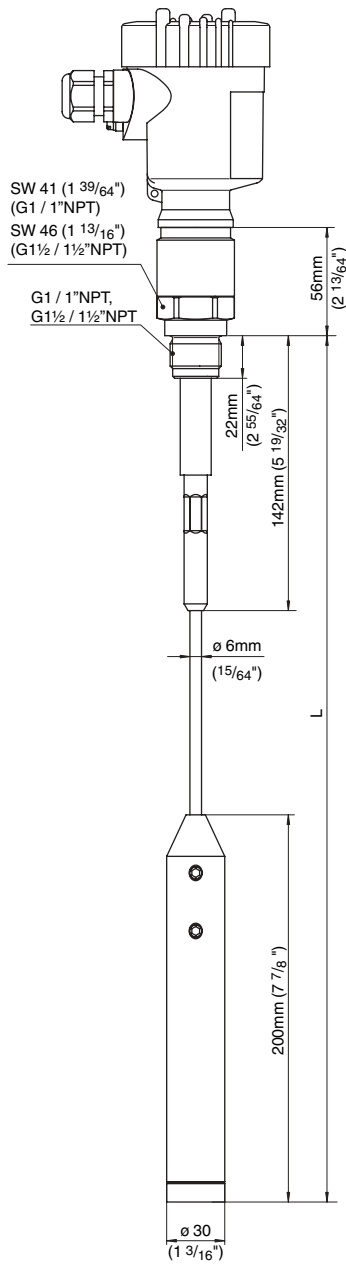
VEGACAP 63

VEGACAP 64

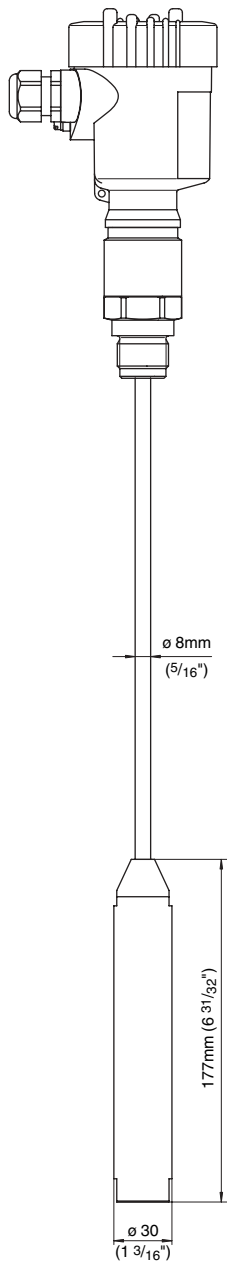


Specifications in mm or inch

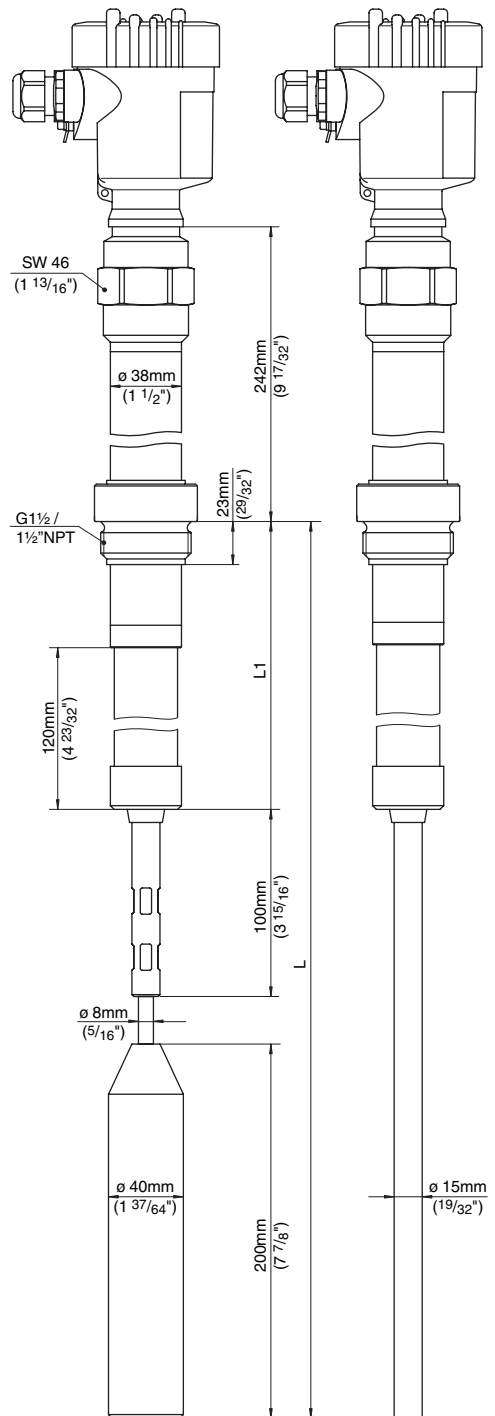
VEGACAP 65



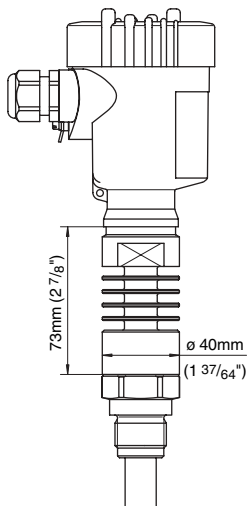
VEGACAP 66



VEGACAP 67



Temperature adapter



Specifications in mm or inch