



Level measurement – Radar

Overview	6
VEGAPULS series 60	8
Dimensions	20



VEGAPULS:

Non-contact measurement of liquids and solids under arduous process conditions

Measuring principle

Extremely short microwave pulses are emitted by the antenna system to the measured product, reflected by the product surface and received again by the antenna system. They spread with light velocity and the time from emission to reception of the signals is proportional to the level in the vessel. A special time spreading procedure enables reliable and accurate measurement of extremely short time periods. The radar instruments work with low emitted power in the C and K-band frequency range.

Latest microcomputer technology and proven ECHOFOX software detect the level echo reliably out of a number of false echoes and measure it precisely.

By simply entering the vessel dimensions, a level-proportional signal can be displayed. An adjustment with emptied and filled vessel is not necessary.

Unaffected by temperature and pressure

The propagation of microwaves is practically unaffected by the ambient temperature and pressure. Hence these radar sensors are ideal for use under extremely difficult process conditions. Pressures from vacuum up to 160 bar and temperatures from -40...400°C are no problem for radar measurement.

Unaffected by product properties

Fluctuations in product composition or even complete product changes do not influence the measuring result. A fresh adjustment is not necessary.

Frequency ranges for all applications

VEGA radar sensors are available in two different frequency ranges and thus offer a wide application range.

K-band sensors operate in a frequency range of more than 20 GHz. Thanks to this, very small antennas and compact process fittings can be used. Due to the high signal focussing, a very high accuracy of the measuring system can be achieved. C-band sensors characterize by a low frequency of 6 GHz. In most cases, buildup and pollution of the antenna system or foam on the product surface do not influence the measurement result.





Overview

VEGAPULS 61



VEGAPULS 62



VEGAPULS 63



Applications:	aggressive liquids in small vessels, under easy process conditions	storage and process vessels under arduous process conditions	aggressive liquids under arduous process conditions
Measuring range:	up to 10 m	up to 35 m	up to 20 m
Process fitting:	G1½A or PVDF	thread or flange	flange or hygienic fitting
Process temperature:	-40...80°C	-40...200°C	-40...150°C
Process pressure:	-1...3 bar (-100...300 kPa)	-1...40 bar (-100...4000 kPa)	-1...16 bar (-100...1600 kPa)
Accuracy:	+/- 5 mm	+/- 3 mm	+/- 3 mm
Emitting frequency:	K-band	K-band	K-band

VEGAPULS 65



VEGAPULS 66



VEGAPULS 68



Applications:	aggressive liquids under easy process conditions	storage and process vessels under arduous process conditions	large solid vessels under arduous process conditions
Measuring range:	up to 35 m	up to 35 m	up to 70 m
Process fitting:	G1½A or flange	flange	G1½A or flange
Process temperature:	-40...150°C	-40...400°C	-40...200°C
Process pressure:	-1...16 bar (-100...1600 kPa)	-1...160 bar (-100...16000 kPa)	-1...40 bar (-100...4000 kPa)
Accuracy:	+/- 10 mm	+/- 10 mm	+/- 15 mm
Emitting frequency:	C-band	C-band	K-band



VEGAPULS 61

Radar sensor for continuous level measurement with PVDF-encapsulated antenna system (K-band)

Especially suitable for small vessels for measurement of
aggressive liquids under easy process conditions

- wetted parts: PVDF
- measurement up to 50mm to the antenna edge possible
- accuracy +/- 5mm
- ECHOFOX signal processing with Fuzzy-Logic
- adjustment with PLICSCOM, HART handheld or PC
- 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 / Process temperature

A with encapsulated horn antenna / PVDF / -40...80°C

Process connection / Material

GP Thread G1½" PN3 / PVDF
NP Thread 1½"NPT PN3 / PVDF
CA Tri-Clamp 2" PN3 / 316L
CB Tri-Clamp 3" PN3 / 316L
RA Bolting DN50 PN3, DIN 11851 / 316L
RB Bolting DN80 PN3, DIN 11851 / 316L

Electronics

H Two-wire 4...20mA/HART®
V Four wire 4...20mA/HART® ¹⁾
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)
V Stainless steel 316L / IP66/IP68 (0.2bar)

Cable entry / Plug connection

M M20x1.5 / without
N ½"NPT / without

Indicating/adjustment module (PLICSCOM)

X without
A top mounted

PS61.

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¹⁾ Only in conjunction with Housing / Protection "D"

- Further process fittings and options on request



VEGAPULS 62

Radar sensor for continuous level measurement with horn antenna or with mounted 1/2" standpipe (K-band)

Especially suitable for storage tanks or process vessels for
measurement
of virtually all substances under arduous process conditions

- non-contact measurement unaffected by process pressure, process temperature and process gas
- measurement up to 50mm to the antenna edge possible
- accuracy +/- 3mm
- ECHOFOX signal processing with Fuzzy-Logic
- adjustment with PLICSCOM, HART handheld or PC
- 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

B	with horn antenna ø40 mm / 316L
C	with horn antenna ø48 mm / 316L
D	with horn antenna ø75 mm / 316L
E	with horn antenna ø95 mm / 316L
K	with parabolic antenna ø245mm / 316L
F	with ½"-standpipe / 316L ²⁾

Process connection / Material

GA	Thread G¾" PN40 / 316L ³⁾
NA	Thread ¾"NPT PN40 / 316L ³⁾
GD	Thread G1½" PN40 / 316L
ND	Thread 1½"NPT PN40 / 316L
FC	Flange DN50 PN40 Form C, DIN2501 / 316L
FD	Flange DN80 PN40 Form C, DIN2501 / 316L
FE	Flange DN100 PN16 Form C, DIN2501 / 316L
FK	Flange DN150 PN16 Form C, DIN2501 / 316L
AE	Flange 2" 150lb RF, ANSI B16.5 / 316L
AI	Flange 3" 150lb RF, ANSI B16.5 / 316L
AK	Flange 4" 150lb RF, ANSI B16.5 / 316L
AM	Flange 6" 150lb RF, ANSI B16.5 / 316L

Seal / Process temperature

2	FKM (Viton) / -40...130°C
3	Kalrez 6375 / -20...130°C
4	FKM (Viton) / -40...200°C
5	Kalrez 6375 / -20...200°C

Electronics

H	Two-wire 4...20mA/HART®
V	Four wire 4...20mA/HART® ¹⁾
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)
V	Stainless steel 316L / IP66/IP68 (0.2bar)

Cable entry / Plug connection

M	M20x1.5 / without
N	½"NPT / without

Indicating/adjustment module (PLICSCOM)

X	without
A	top mounted

PS62.

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¹⁾ Only in conjunction with Housing / Protection "D"

²⁾ Only in conjunction with Seal / Process temperature "4" or "5"

³⁾ Only in conjunction with Version / Material "F"

Length standpipe / Total length with horn antenna (mm)
per 100 mm of 316L

- Further process fittings and options on request



VEGAPULS 63

Radar sensor for continuous level measurement with plastic encapsulated antenna system (K-band)

Particularly suitable for measurement of very aggressive liquids
or under hygienic process conditions

- only one wetted material
- measurement up to 50mm to the antenna edge possible
- accuracy +/- 3mm
- ECHOFOX signal processing with Fuzzy-Logic
- adjustment with PLICSCOM, HART handheld or PC
- 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 / Process temperature

P with encapsulated horn antenna / TFM-PTFE / -40...150°C
V hyg.encaps.horn ant. / TFM-PTFE+Viton / -25...130°C ²⁾
E hyg.encaps.horn ant. / TFM-PTFE+EPDM / -40...130°C ²⁾

Process connection / Material

CA Tri-Clamp 2" / 316L
CB Tri-Clamp 3" / 316L
CC Tri-Clamp 4" / 316L
RA Bolting DN50 PN16, DIN 11851 / 316L
RB Bolting DN80 PN16, DIN 11851 / 316L
LB Hyg.connection w. tension flange DN32PN16 / 316L ³⁾
LA Hyg.connection w. compression nut F40 PN16 / 316L ³⁾
TB Tuchenhausen Varivent DN25...; PN10 / 316L ³⁾
QB Neumo biocontrol sz. 50 PN16 / 316L ³⁾
FC Flange DN50PN40 Form C, DIN2501 / 316L
FD Flange DN80PN40 Form C, DIN2501 / 316L
FE Flange DN100PN16 Form C, DIN2501 / 316L
FK Flange DN150PN16 Form C, DIN2501 / 316L
AE Flange 2" 150lb RF, ANSI B16.5 / 316L
AI Flange 3" 150lb RF, ANSI B16.5 / 316L
AK Flange 4" 150lb RF, ANSI B16.5 / 316L
AM Flange 6" 150lb RF, ANSI B16.5 / 316L

Electronics

H Two-wire 4...20mA/HART®
V Four wire 4...20mA/HART® ¹⁾
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)
V Stainless steel 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

PS63.

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¹⁾ Only in conjunction with Housing / Protection "D"

²⁾ Only in conjunction with Process connection / Material "LA", "LB", "QB" or "TB"

³⁾ Only in conjunction with Version / Material / Process temperature "V" or "E"

- Further process fittings and options on request



VEGAPULS 65

Radar sensor for continuous level measurement with rod antenna system (C-band)

Especially suitable for vessels with small process connection
For measurement of aggressive liquids under easy process
conditions

- wetted parts: PVDF or PTFE
- measurement up to 100mm to the antenna edge possible
- accuracy +/- 10mm
- ECHOFOX signal processing with Fuzzy-Logic
- adjustment with PLICSCOM, HART handheld or PC
- instrument from the plics® family



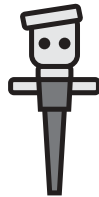


VEGAPULS 66

**Radar sensor for continuous level measurement
with horn antenna or with mounted 2" standpipe (C-band)**

Especially suitable for the measurement of liquids and solids
under arduous or extreme process conditions

- non-contact measurement unaffected by process pressure, process temperature and process gas
- measurement up to 100mm to the antenna edge possible
- accuracy +/- 10mm
- ECHOFOX signal processing with Fuzzy-Logic
- adjustment with PLICSCOM, HART handheld or PC
- 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	without horn antenna for standpipe
D	with horn antenna ø75 mm / 316L ²⁾
E	with horn antenna ø96 mm / 316L ²⁾
H	with horn antenna ø145 mm/316L
I	with horn antenna ø195 mm / 316L
J	with horn antenna ø 240 mm / 316L
F	with standpipe ø50 mm / 316L

Process connection / Material

FC	Flange DN50PN40 Form C, DIN2501 / 316L
FD	Flange DN80PN40 Form C, DIN2501 / 316L
FE	Flange DN100PN16 Form C, DIN2501 / 316L
FK	Flange DN150PN16 Form C, DIN2501 / 316L
FL	Flange DN200PN16 Form C, DIN2501 / 316L
FI	Flange DN250PN16 Form C, DIN2501 / 316L
AE	Flange 2" 150lb RF, ANSI B16.5 / 316L
AI	Flange 3" 150lb RF, ANSI B16.5 / 316L
AK	Flange 4" 150lb RF, ANSI B16.5 / 316L
AM	Flange 6" 150lb RF, ANSI B16.5 / 316L
AN	Flange 8" 150lb RF, ANSI B16.5 / 316L
AP	Flange 10" 150lb RF, ANSI B16.5 / 316L

Seal / Process temperature

2	FKM (Viton) / -40...150°C
3	Kalrez 6375 / -20...150°C
G	Graphite and ceramic / -60...250°C
H	Graphite and ceramic / -60...400°C

Electronics

H	Two-wire 4...20mA/HART®
V	Four wire 4...20mA/HART® ¹⁾
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)
V	Stainless steel 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

PS66.

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¹⁾ Only in conjunction with Housing / Protection "D"

²⁾ Only for measurement in Standpipes / Bypass tubes

Length standpipe / Total length with horn antenna (mm)
per 100 mm of 316L

- Version with standpipe possible from flange DN 80/ANSI 3"
- Further process fittings and options on request



VEGAPULS 68

Radar sensor for continuous level measurement for solids with horn or parabolic antenna (K-band)

Especially suitable for the measurement of solids with optional
swivelling holder

For optimum adaptation to the vessel geometry and material cone

- non-contact measurement unaffected by dust generation and pneumatic filling
- accuracy +/- 15mm
- ECHOFOX signal processing with Fuzzy-Logic
- adjustment with PLICSCOM, HART handheld or PC
- instrument from the plics® family



**Approval**

XX	without
CX	ATEX II 1G, 1/2G, 2G EEx ia IIC T5
CK	ATEX II 1G, 1/2G, 2G EEx ia IIC T5+ATEX II 1/2 D IP6X T ¹⁾
DX	ATEX II 1/2G, 2G EEx d ia IIC T5 ²⁾
GX	ATEX II 1/2 D IP6X T ¹⁾

Version / Material

B	with horn antenna ø40 mm / 316L
C	with horn antenna ø48 mm / 316L
D	with horn antenna ø75 mm / 16L
E	with horn antenna ø95 mm / 316L
K	with parabolic antenna ø245 mm / 316L

Process connection / Material

GD	Thread G1½" PN40 / 316L
ND	Thread 1½" NPT PN40 / 316L
1C	Swivelling holder with flange DN50/2" / 316L
1D	Swivelling holder with flange DN80/3" / 316L
1E	Swivelling holder with flange DN100/4" / 316L
FC	Flange DN50 PN40 Form C, DIN2501 / 316L
FD	Flange DN80 PN40 Form C, DIN2501 / 316L
FE	Flange DN100 PN16 Form C, DIN2501 / 316L
FK	Flange DN150 PN16 Form C, DIN2501 / 316L
AE	Flange 2" 150lb RF, ANSI B16.5 / 316L
AI	Flange 3" 150lb RF, ANSI B16.5 / 316L
AK	Flange 4" 150lb RF, ANSI B16.5 / 316L
AM	Flange 6" 150lb RF, ANSI B16.5 / 316L

Seal / Process temperature

2	FKM (Viton) / -40...130°C
3	Kalrez 6375 / -20...130°C
4	FKM (Viton) / -40...200°C
5	Kalrez 6375 / -20...200°C

Electronics

H	Two-wire 4...20mA/HART®
V	Four wire 4...20mA/HART® ²⁾
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)
V	Stainless steel 316L / IP66/IP68 (0.2bar)

Cable entry / Plug connection

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

Indicating/adjustment module (PLICSCOM)

X	without
A	top mounted

PS68.								
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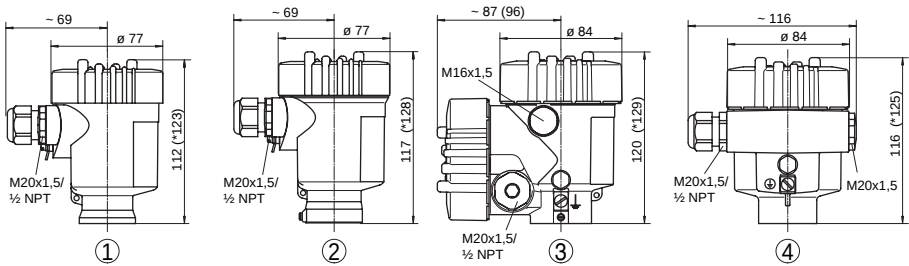
¹⁾ Only in conjunction with Housing / Protection "A", "D" or "V"

²⁾ Only in conjunction with Housing / Protection "D"

- Further process fittings and options on request

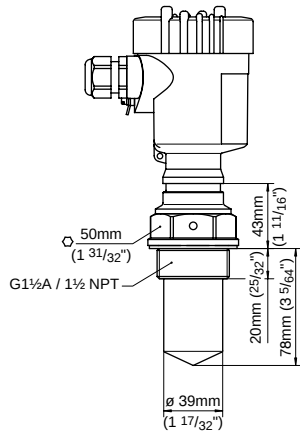


Housings

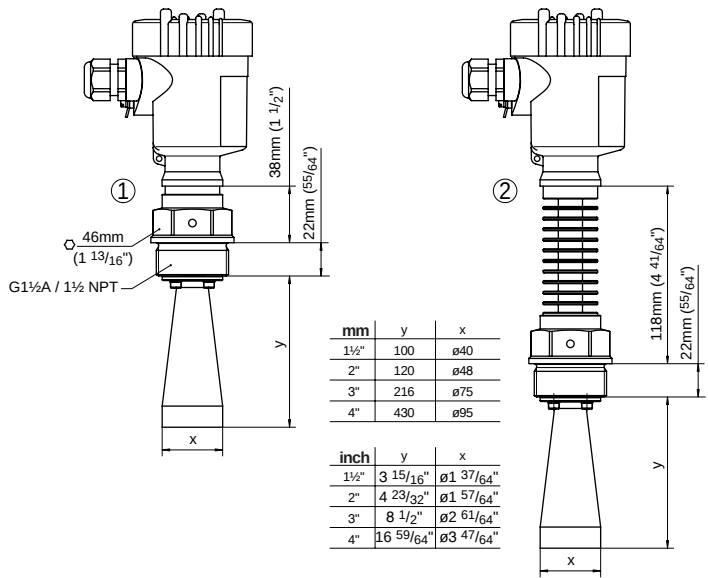


- 1 Plastic housing (* dimension with integrated PLICSCOM)
- 2 Stainless steel housing (* dimension with integrated PLICSCOM)
- 3 Aluminium double chamber housing (* dimension with integrated PLICSCOM)
- 4 Aluminium housing (* dimension with integrated PLICSCOM)

VEGAPULS 61



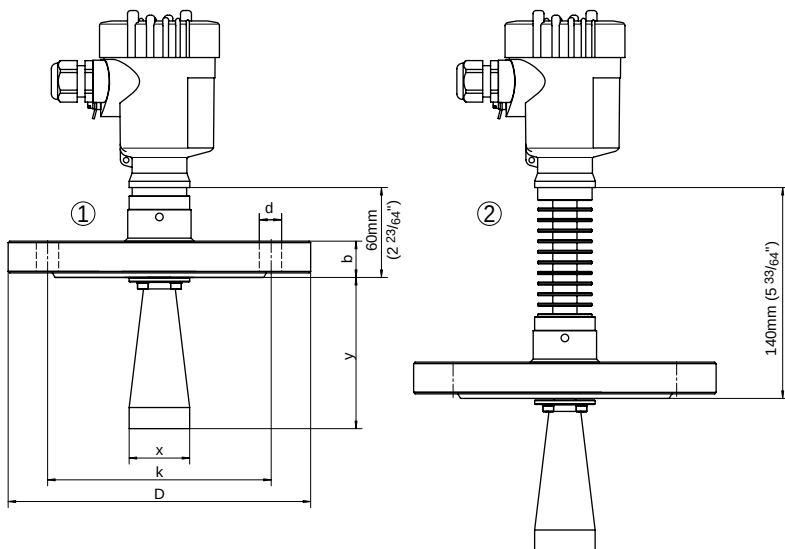
VEGAPULS 62 – threaded version with horn antenna



- 1 Standard
 - 2 with temperature adapter
- Specifications in mm or inch



VEGAPULS 62 – flange version

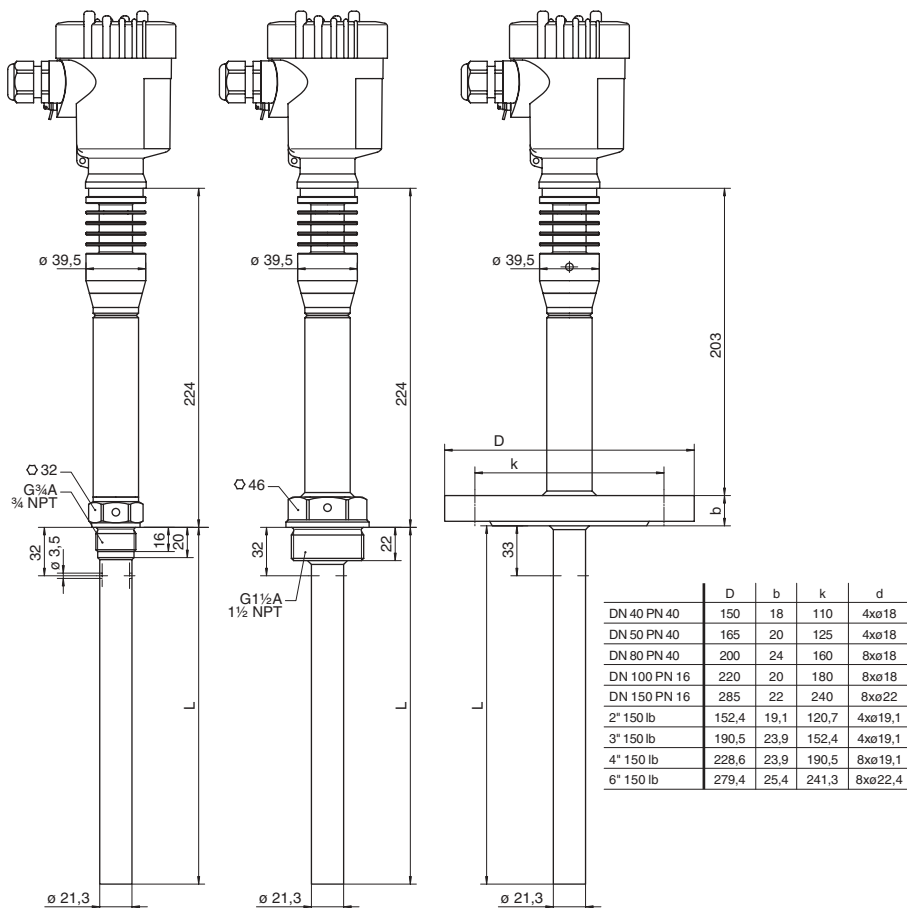


mm	D	b	k	d	x	y
DN 40 PN 40	150	18	110	4xø18	40	100
DN 50 PN 40	165	20	125	4xø18	48	120
DN 80 PN 40	200	24	160	8xø18	75	216
DN 100 PN 16	220	20	180	8xø18	95	430
DN 150 PN 16	285	22	240	8xø22	95	430
2" 150 lb	152,4	19,1	120,7	4xø19,1	48	120
3" 150 lb	190,5	23,9	152,4	4xø19,1	75	216
4" 150 lb	228,6	23,9	190,5	8xø19,1	95	430
6" 150 lb	279,4	25,4	241,3	8xø22,4	95	430

inch	D	b	k	d	x	y
DN 40 PN 40	5 29/32"	45/64"	4 21/64"	4xø45/64"	1 37/64"	3 15/16"
DN 50 PN 40	6 1/2"	25/32"	4 59/64"	4xø45/64"	1 57/64"	4 23/32"
DN 80 PN 40	7 7/8"	15/16"	6 19/64"	8xø45/64"	2 61/64"	8 1/2"
DN 100 PN 16	8 21/32"	25/32"	7 3/32"	8xø45/64"	3 47/64"	16 59/64"
DN 150 PN 16	11 7/32"	55/64"	9 29/64"	8xø55/64"	3 47/64"	16 59/64"
2" 150 lb	6"	3/4"	4 3/4"	4xø3/4"	1 57/64"	4 23/32"
3" 150 lb	7 1/2"	15/16"	6"	4xø3/4"	2 61/64"	8 1/2"
4" 150 lb	9"	15/16"	7 1/2"	8xø3/4"	3 47/64"	16 59/64"
6" 150 lb	11"	1"	9 1/2"	8xø7/8"	3 47/64"	16 59/64"

- 1 Standard
 2 with temperature adapter
 d Diameter and number of holes in the flange
 Specifications in mm or inch

VEGAPULS 62 – standpipe antenna

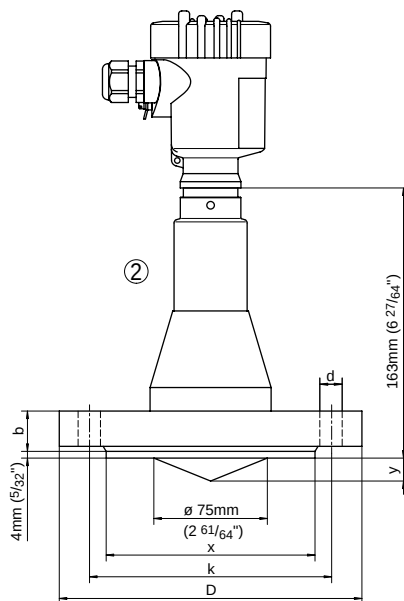
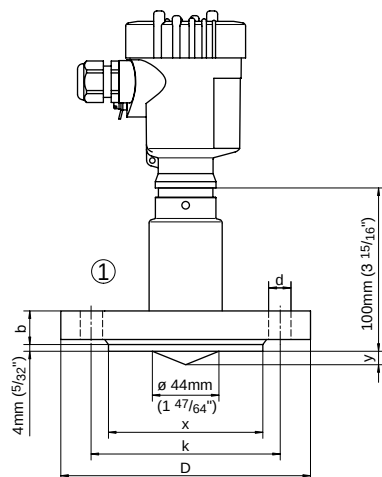


	D	b	k	d
DN 40 PN 40	150	18	110	4xø18
DN 50 PN 40	165	20	125	4xø18
DN 80 PN 40	200	24	160	8xø18
DN 100 PN 16	220	20	180	8xø18
DN 150 PN 16	285	22	240	8xø22
2" 150 lb	152,4	19,1	120,7	4xø19,1
3" 150 lb	190,5	23,9	152,4	4xø19,1
4" 150 lb	228,6	23,9	190,5	8xø19,1
6" 150 lb	279,4	25,4	241,3	8xø22,4

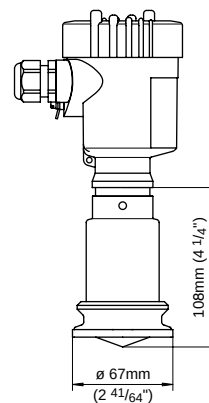
- d Diameter and number of holes in the flange
 Level measurement – Radar



VEGAPULS 63



VEGAPULS 63 – Tri-Clamp

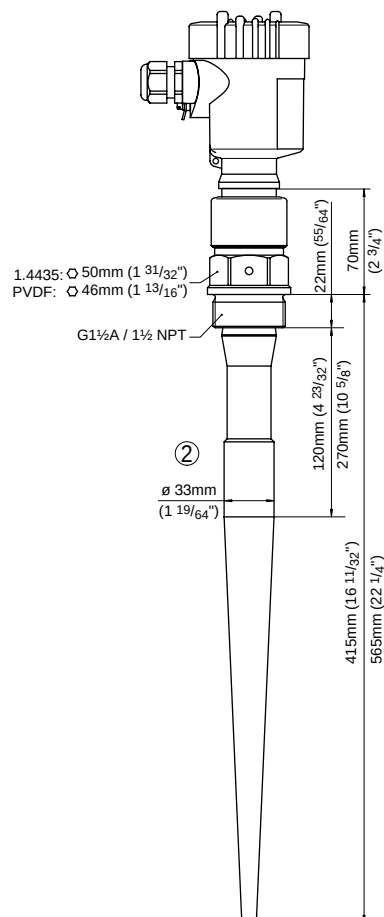
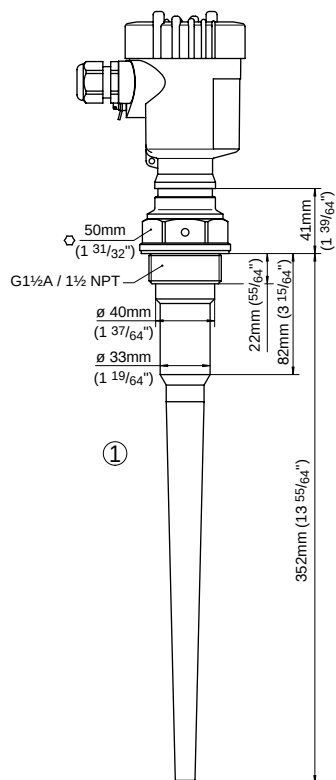


mm	D	b	k	d	x	y
DN 50 PN 40	165	20	125	4xø18	102	8
DN 80 PN 40	200	24	160	8xø18	138	14
DN 100 PN 16	220	20	180	8xø18	158	14
DN 150 PN 16	285	22	240	8xø22	212	14
2" 150 lb	152,4	19,1	120,7	4xø19,1	91,9	8
3" 150 lb	190,5	23,9	152,4	4xø19,1	127	14
4" 150 lb	228,6	23,9	190,5	8xø19,1	157,2	14
6" 150 lb	279,4	25,4	241,3	8xø22,4	215,9	14

inch	D	b	k	d	x	y
DN 50 PN 40	6 1/2"	25/32"	4 59/64"	4xø45/64"	4 1/64"	5/16"
DN 80 PN 40	7 7/8"	15/16"	6 19/64"	8xø45/64"	5 7/16"	35/64"
DN 100 PN 16	8 21/32"	25/32"	7 3/32"	8xø45/64"	6 7/32"	35/64"
DN 150 PN 16	11 7/32"	55/64"	9 29/64"	8xø55/64"	8 11/32"	35/64"
2" 150 lb	6"	3/4"	4 3/4"	4xø3/4"	3 5/8"	5/16"
3" 150 lb	7 1/2"	15/16"	6"	4xø3/4"	5"	35/64"
4" 150 lb	9"	15/16"	7 1/2"	8xø3/4"	6 3/16"	35/64"
6" 150 lb	11"	1"	9 1/2"	8xø7/8"	8 1/2"	35/64"

- 1 Flange DN50/2"
 - 2 Flange DN80...150/3"...6"
 - d Diameter and number of holes in the flange
- Specifications in mm or inch

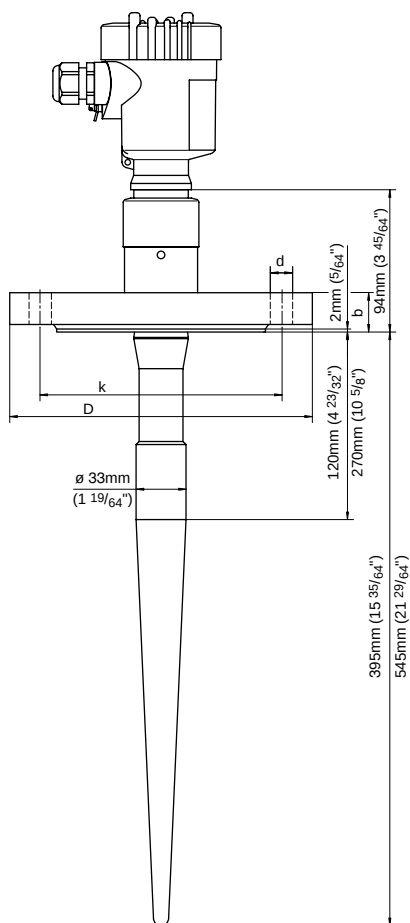
VEGAPULS 65 - threaded version



- 1 for socket length 50 mm
 - 2 for socket length 100 mm (250 mm)
- Specifications in mm or inch



VEGAPULS 65 – flange version



mm	D	b	k	d
DN 50 PN 40	165	20	125	4xø18
DN 80 PN 40	200	24	160	8xø18
DN 100 PN 16	220	20	180	8xø18
DN 150 PN 16	285	22	240	8xø22
2" 150 lb	152,4	19,1	120,7	4xø19,1
3" 150 lb	190,5	23,9	152,4	4xø19,1
4" 150 lb	228,6	23,9	190,5	8xø19,1
6" 150 lb	279,4	25,4	241,3	8xø22,4

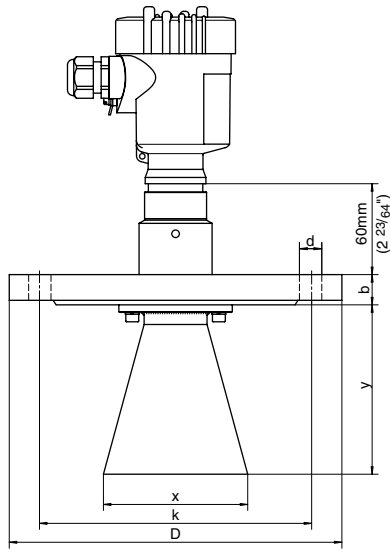
inch	D	b	k	d
DN 50 PN 40	6 1/2"	25/32"	4 59/64"	4xø45/64"
DN 80 PN 40	7 7/8"	15/16"	6 19/64"	8xø45/64"
DN 100 PN 16	8 21/32"	25/32"	7 3/32"	8xø45/64"
DN 150 PN 16	11 7/32"	55/64"	9 29/64"	8xø55/64"
2" 150 lb	6"	3/4"	4 3/4"	4xø3/4"
3" 150 lb	7 1/2"	15/16"	6"	4xø3/4"
4" 150 lb	9"	15/16"	7 1/2"	8xø3/4"
6" 150 lb	11"	1"	9 1/2"	8xø7/8"

d Diameter and number of holes in the flange
for socket length 100 mm (250 mm)
Specifications in mm or inch



VEGAPULS 66

-40...150°C



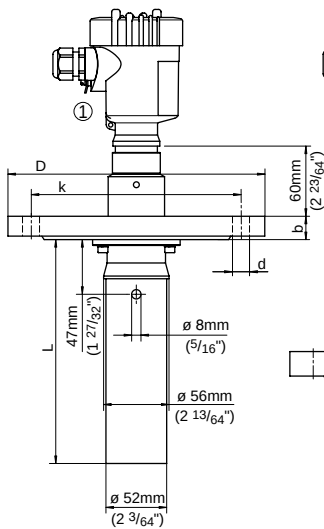
mm	D	b	k	d	x	y
DN 50 PN 40	165	20	125	4xø18	-	-
DN 80 PN 40	200	24	160	8xø18	75	75
DN 100 PN 16	220	20	180	8xø18	96	110
DN 150 PN 16	285	22	240	8xø22	146	205
DN 200 PN 16	340	24	295	12xø22	190	300
DN 250 PN 16	405	26	355	12xø26	240	380
2" 150 lb	152,4	19,1	120,7	4xø19,1	-	-
3" 150 lb	190,5	23,9	152,4	4xø19,1	75	75
4" 150 lb	228,6	23,9	190,5	8xø19,1	96	110
6" 150 lb	279,4	25,4	241,3	8xø22,4	146	205
8" 150 lb	342,9	28,4	298,5	8xø22,4	190	300
10" 150 lb	406,4	30,2	362	12xø25,4	240	380

inch	D	b	k	d	x	y
DN 50 PN 40	6 1/2"	25/32"	4 59/64"	4xø45/64"	-	-
DN 80 PN 40	7 7/8"	15/16"	6 19/64"	8xø45/64"	2 61/64"	2 43/64"
DN 100 PN 16	8 21/32"	25/32"	7 3/32"	8xø45/64"	3 25/32"	4 9/64"
DN 150 PN 16	11 7/32"	55/64"	9 29/64"	8xø55/64"	5 3/4"	7 9/32"
DN 200 PN 16	13 25/64"	15/16"	11 39/64"	4xø55/64"	7 31/64"	10 35/64"
DN 250 PN 16	15 15/16"	1 1/32"	13 31/32"	4xø1 1/32"	9 29/64"	14 11/64"
2" 150 lb	6"	3/4"	4 3/4"	8xø3/4"	-	-
3" 150 lb	7 1/2"	15/16"	6"	8xø3/4"	2 61/64"	2 43/64"
4" 150 lb	9"	15/16"	7 1/2"	8xø3/4"	3 25/32"	4 9/64"
6" 150 lb	11"	1"	9 1/2"	8xø7/8"	5 3/4"	7 9/32"
8" 150 lb	13 1/2"	1 1/8"	11 3/4"	8xø7/8"	7 31/64"	10 35/64"
10" 150 lb	16"	1 3/16"	14 1/4"	12xø1"	9 29/64"	14 11/64"

d Diameter and number of holes in the flange
Specifications in mm or inch

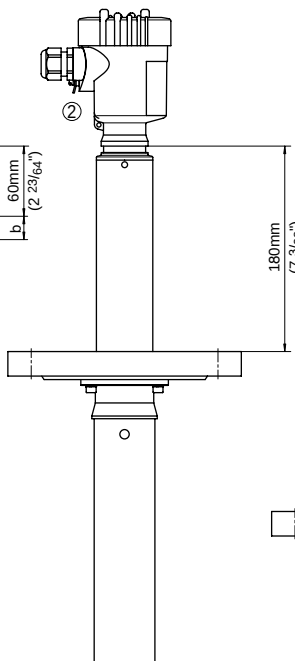
VEGAPULS 66 – pipe antenna

-40...150°C



mm	D	b	k	d
DN 80 PN 16/40	200	24	160	8xø18
DN 100 PN 16	220	20	180	8xø18
DN 150 PN 16	285	22	240	8xø22
DN 200 PN 16	340	24	295	12xø22
DN 250 PN 16	405	26	355	12xø26
3" 150 lb	190,5	23,9	152,4	4xø19,1
4" 150 lb	228,6	23,9	190,5	8xø19,1
6" 150 lb	279,4	25,4	241,3	8xø22,4
8" 150 lb	342,9	28,4	298,5	8xø22,4
10" 150 lb	406,4	30,2	362	12xø25,4

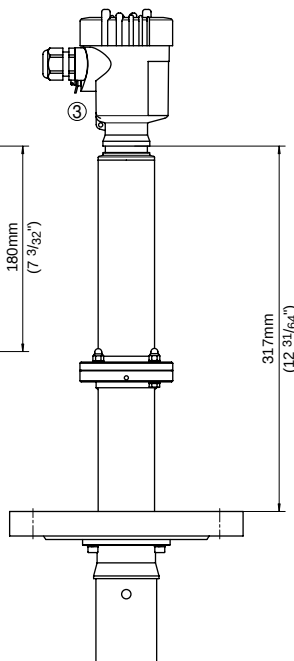
-60...250°C



inch	D	b	k	d
DN 80 PN 16/40	7 7/8"	15/16"	6 19/64"	8xø45/64"
DN 100 PN 16	8 21/32"	25/32"	7 3/32"	8xø45/64"
DN 150 PN 16	11 7/32"	55/64"	9 29/64"	8xø55/64"
DN 200 PN 16	13 25/64"	15/16"	11 39/64"	12xø55/64"
DN 250 PN 16	15 15/16"	1 1/32"	13 31/32"	12xø1 1/32"
3" 150 lb	7 1/2"	15/16"	6"	4xø3/4"
4" 150 lb	9"	15/16"	7 1/2"	8xø3/4"
6" 150 lb	11"	1"	9 1/2"	8xø7/8"
8" 150 lb	13 1/2"	1 1/8"	11 3/4"	8xø7/8"
10" 150 lb	16"	1 3/16"	14 1/4"	12xø1"

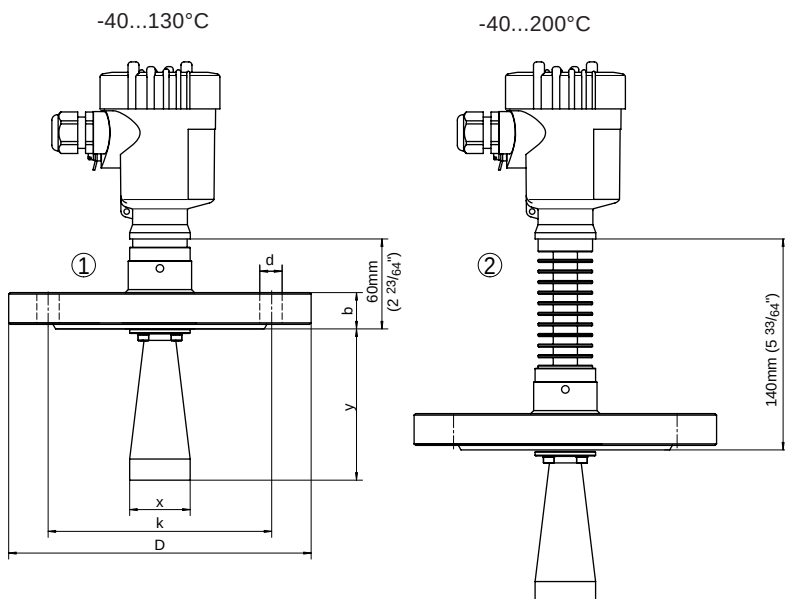
d Diameter and number of holes in the flange
Specifications in mm or inch

-60...400°C





VEGAPULS 68 – flange version with horn antenna

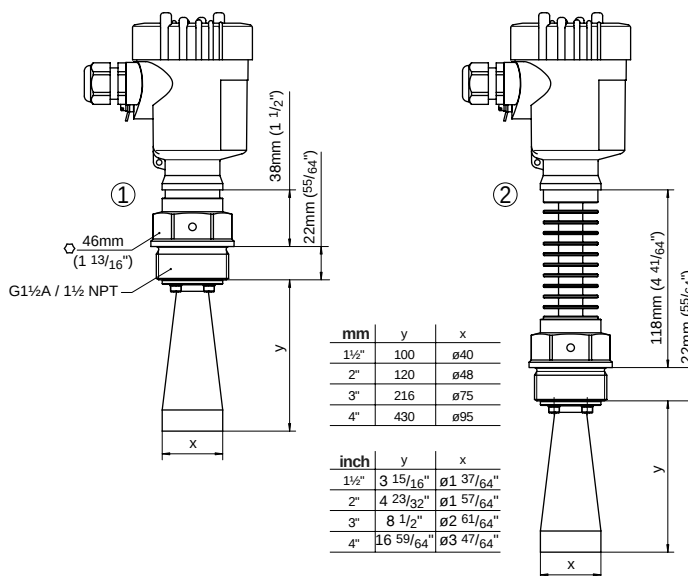


mm	D	b	k	d	x	y
DN 40 PN 40	150	18	110	4xø18	40	100
DN 50 PN 40	165	20	125	4xø18	48	120
DN 80 PN 40	200	24	160	8xø18	75	216
DN 100 PN 16	220	20	180	8xø18	95	430
DN 150 PN 16	285	22	240	8xø22	95	430
2" 150 lb	152,4	19,1	120,7	4xø19,1	48	120
3" 150 lb	190,5	23,9	152,4	4xø19,1	75	216
4" 150 lb	228,6	23,9	190,5	8xø19,1	95	430
6" 150 lb	279,4	25,4	241,3	8xø22,4	95	430

inch	D	b	k	d	x	y
DN 40 PN 40	5 29/32"	45/64"	4 21/64"	4xø45/64"	1 37/64"	3 15/16"
DN 50 PN 40	6 1/2"	25/32"	4 59/64"	4xø45/64"	1 57/64"	4 23/32"
DN 80 PN 40	7 7/8"	15/16"	6 19/64"	8xø45/64"	2 61/64"	8 1/2"
DN 100 PN 16	8 21/32"	25/32"	7 3/32"	8xø45/64"	3 47/64"	16 59/64"
DN 150 PN 16	11 7/32"	55/64"	9 29/64"	8xø55/64"	3 47/64"	16 59/64"
2" 150 lb	6"	3/4"	4 3/4"	4xø3/4"	1 57/64"	4 23/32"
3" 150 lb	7 1/2"	15/16"	6"	4xø3/4"	2 61/64"	8 1/2"
4" 150 lb	9"	15/16"	7 1/2"	8xø3/4"	3 47/64"	16 59/64"
6" 150 lb	11"	1"	9 1/2"	8xø7/8"	3 47/64"	16 59/64"

- 1 Standard
 2 with temperature adapter
 d Diameter and number of holes in the flange
 Specifications in mm or inch

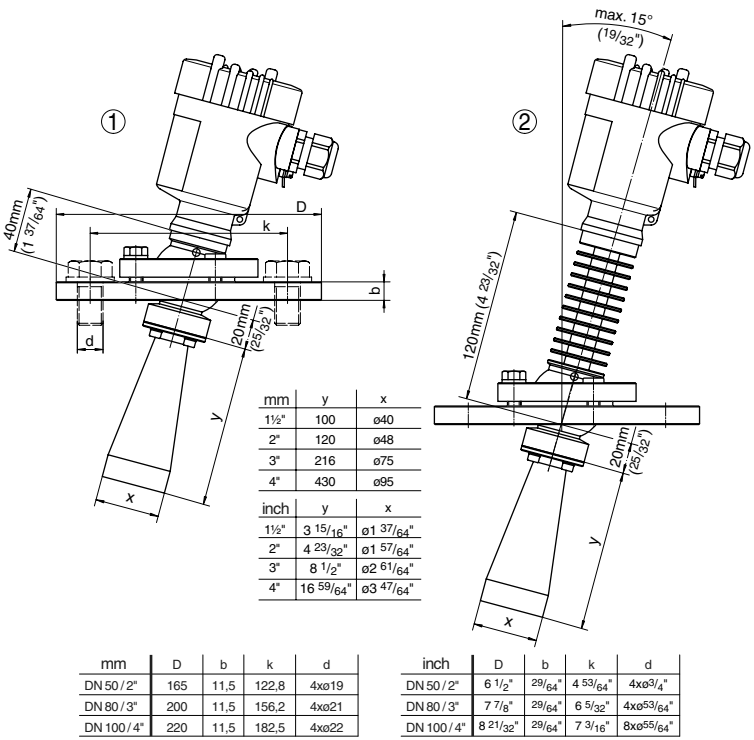
VEGAPULS 68 – threaded version with horn antenna



- 1 Standard
 2 with temperature adapter
 Specification in mm or inch

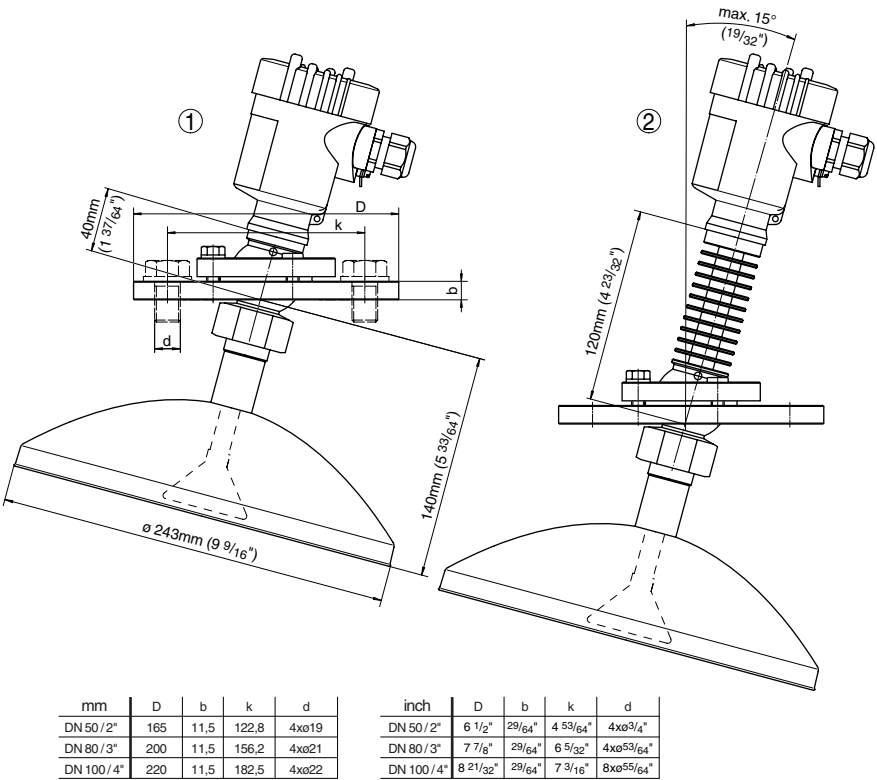


VEGAPULS 68 – swivelling holder with horn antenna



- 1 Standard
2 with temperature adapter
d Diameter and number of holes in the flange
Specifications in mm or inch

VEGAPULS 68 – swivelling holder with parabolic antenna



- 1 Standard
2 with temperature adapter
d Diameter and number of holes in the flange
Specifications in mm or inch