Level Sensors / Transmitters

to measure of liquids media

Applications

- Chemical, petrochemical, liquid natural gas, off-shore
- ship-building, machine-building industry
- manufacturing industry, power plants
- pharmaceutical industry, beverage- and food industry, Water treatment

Special features

- Application limits: T = -80 °C to +200 °C
P = vacuum to 100 bar
ρ ≥ 400 kg/m³
- Explosion-proof designs
- Programmable head-mounted transmitter units 4 ... 20 mA, HART, Profibus, PA and Foundation Fieldbus
- Application specific designs available

Description

KSR Level Sensors/Transmitters are used to measure and transmit the level of liquids in conjunction with a KSR Control Unit. It is based on the float principle with magnetic transmission in a 3-wire potentiometer circuit.

A float with a built-in magnetic system actuates small reed contacts through the wall of the guide tube. These reed switches form a resistance measuring chain that continuously generates a voltage proportional to the height of the level. The resistance measuring chain is closely stepped and is made up from small chips soldered onto a PCB. Due to this assembly the generated voltage is virtually continuous. Depending on requirements and design different contact separations from 5 to 18 mm are available.

Signal transmission:

Loop-powered control units in terminal box, 4 ... 20 mA output, HART, Profibus, PA und Foundation Fieldbus.

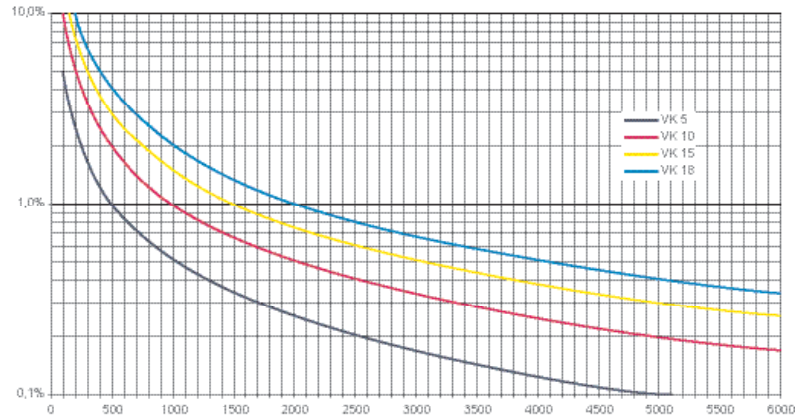
Technical advantages

- The simple operating principle is suitable for a wide variety of applications.
- Continuous measurement of liquid levels independent of physical or chemical changes of the liquid, e.g. foam, conductivity, dielectric constant, S.G., pressure, vacuum, temperature, vapour, condensation, bubbles, boiling effects.
- Signal transmission over large distances

Simple installation and commissioning, onetime calibration only, no re-calibration necessary.

- Display proportional to the height of the level or the contents of the vessel.
- Set point relays continuously adjustable over full range.
- High repeatability of set points.
- Interface and product level measurement possible at Δ-S.G. ≥ 50 kg / m^3

Accuracy Level Sensors / Transmitters



Measuring range in mm

Approvals

ATEX 94/9/EC

PED 97/23/EC

TÜV SÜD Industrie Service GmbH

IBExU Institut für Sicherheitstechnik GmbH

Physikalisch Technische Bundesanstalt PTB

Bundesamt für Wehrtechnik und Beschaffung

Germanischer Lloyd

KEMA

Laboratoire Central des Industries Electriques

Bureau Veritas

DEMKO

Det Norske Veritas

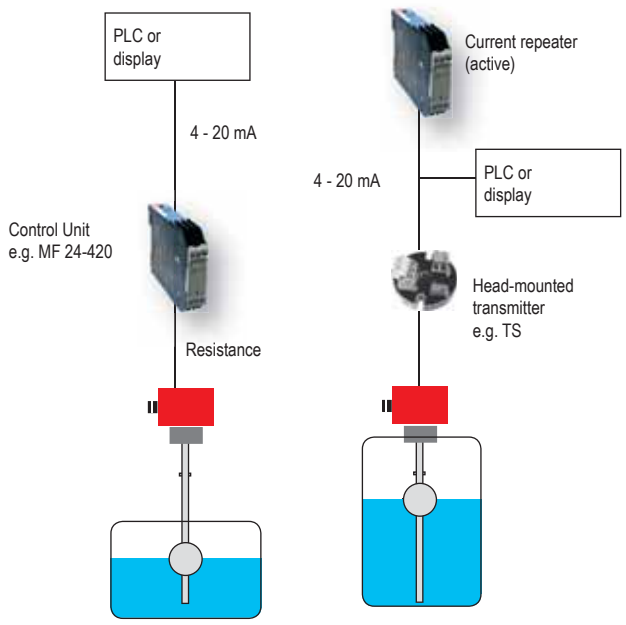
Gosgortechnadzor OGS Oil & Gas Safety

GOST

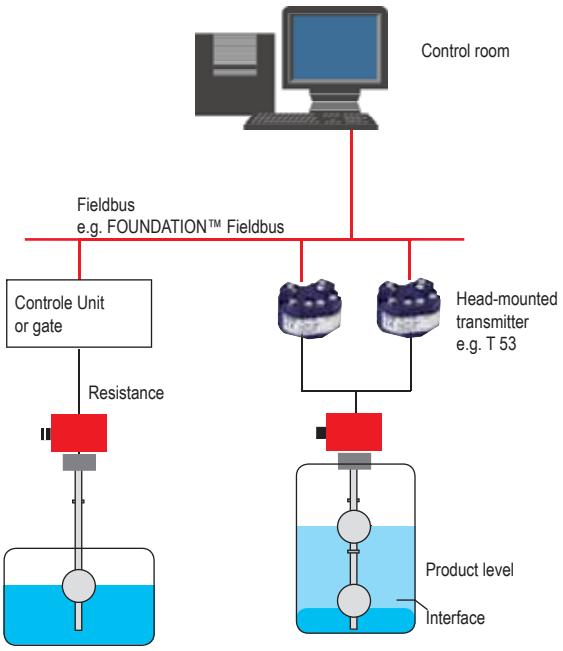
Factory Mutual Research Corporation

Applications

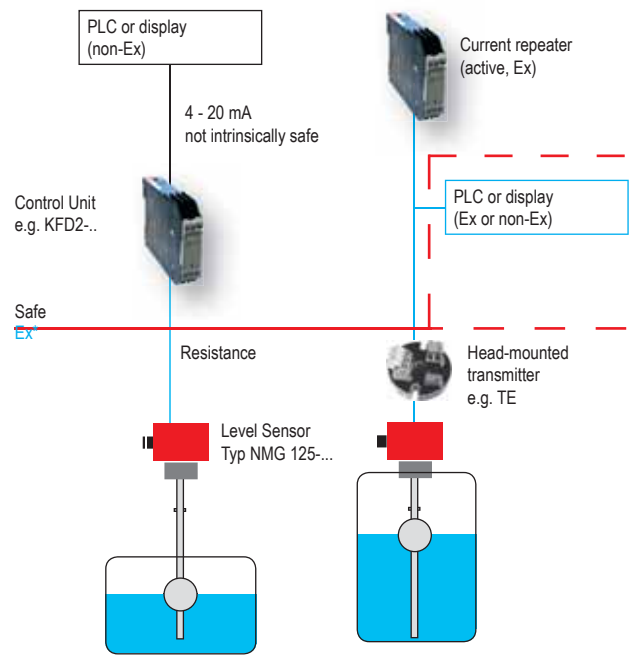
Standard-Applications



Fieldbus

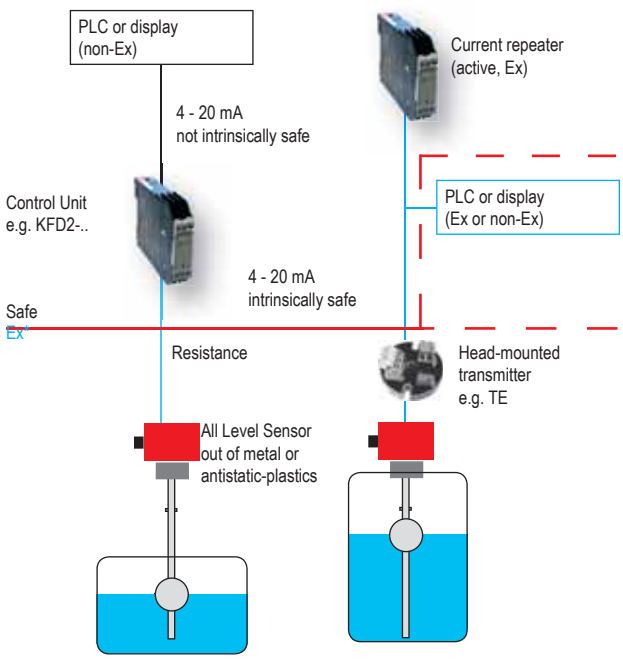


Applications for Ex-Zone 0



*Ex-Zone 0 in vessel

Applications for Ex-Zone 1, 2



*only Ex-Zone 1 or 2

Type Code

Code	1.	Key	2.	Key	3.	Key
1		Electrical connection		Design process connection		Material process connection
.../.../...	-	(none) -connecting cable	ER	Mounting thread upwards (BSP)	V	Stainless steel 1.4571
	A	Terminal box Aluminium	R	Mounting thread downwards (BSP)	VE	Stainless steel electro-polished
	AB	Terminal box Polypropylene	ENPT	Mounting thread upwards (NPT)	VEC	Stainless steel E-CTFE-coated
	AP	Terminal box Polyester	NPT	Mounting thread downwards (NPT)	VTF	Stainless steel PTFE-lined
	AVT	Terminal box Stainless steel 1.4571	MR	Dairy fitting acc. to DIN 11851	T	Titanium
		Stainless steel with screw cap	F	Flange (DIN, ANSI, or JIS)	HB	Hastelloy B
	ADF	Terminal box Aluminium	FC	Clamp connection acc. to DIN 32676	HC	Hastelloy C
		Flameproof	IS	Sanitary nozzle (Ingoldstutzen)	P	PVC
	ASC4	Coupler plug C 164-232-F-4P			PP	Polypropylene
	ASM12	Plug M12x1- 4-pole			PF	PVDF
2		Size process connection				
.../.../...	...	Thread size in inches				
	...	Dairy fitting size DN - DN 150				
	.../	flange nominal size	.../	Flange, pressure rating	...	Flange face
DIN		DN 50 - DN 200		PN 6 - PN 100		Standard form C optional E, A, F, N
ANSI		2" - 8"		Class 150 - 600		Standard RF optional RTJ, FF, LT, LG
JIS		2" (DN 50) - 8" (DN 200)		5 K - 63 K		Standard RF optional RTJ, FF, LT, LG
Clamp		DN 25 - DN 100; 1" - 4"				
3		Guide tube material		Contact separation		Optional code
.../.../...	V	Stainless steel 1.4571	K 18	18 mm	HT..	High temperature design* +120 °C ... +200 °C
	VE	Stainless steel electro-polished	K 15	15 mm	TT..	Low temperature design* -10 °C ... -80 °C
	VEC	Stainless steel E-CTFE-coated	K 10	10 mm		*only contact separations 5/10/15 mm
	VTF	Stainless steel PTFE-lined	K 5	5 mm		
	T	Titanium			PT100	Temperature probe PT 100 (2-,3- or 4-core
	HB	Hastelloy B			..TH..	Temperature switch ... °C - closing or opening
	HC	Hastelloy C				
	P	PVC				
	PP	Polypropylene				
	PF	PVDF				
4		Option, Head-mounted transmitter in terminal box				
...	TS	Typ TS - Standard design				
	TE	Ex-design type TE				
	TEH	Programmable type TEH-HART®				
	TD	Profibus-Foundation Fieldbus type T 53				
	T32.1S	HART®; intrinsically safe				
	TLH	HART®; with LCD-display				
	TLEH	HART®; LCD-display; intrinsically safe				
5		Guide tube length		OD Guide tube		
L.../...	L.../	Length in mm	...	OD in mm		
6		Float design		OD Float		
.../...	.../	Material (Code3, 1. key	...	Fload OD in mm		
7		Connection cable		Cable material		
.../...	.../	Length in Meter	-	PVC grey		
			blue	PVC blue		
			SIL	Silicone		
			PUR	PUR		

Ordering examples

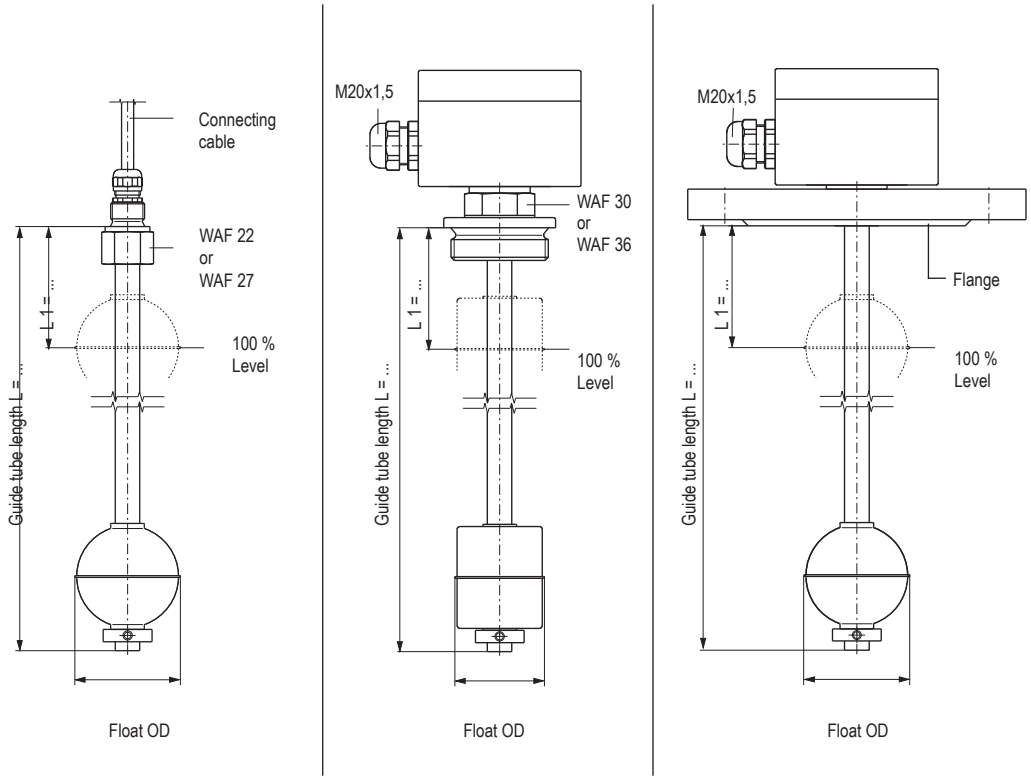
	Electrical Connection		Process-Connection		Guide tube material		Option		Guide tube		Float		Cable
	design / material		size		contact separation		transmitter		length / Ø				length / material
Code	1	-	2	-	3	-	4	-	5	-	6	-	7
	AFV	-	50/6/F	-	VK15/TT30	-	TS	-	L950/12	-	V44R	-	-

Product Programm Overview

Please select connecting option and material and turn to the page referred to in the following table.

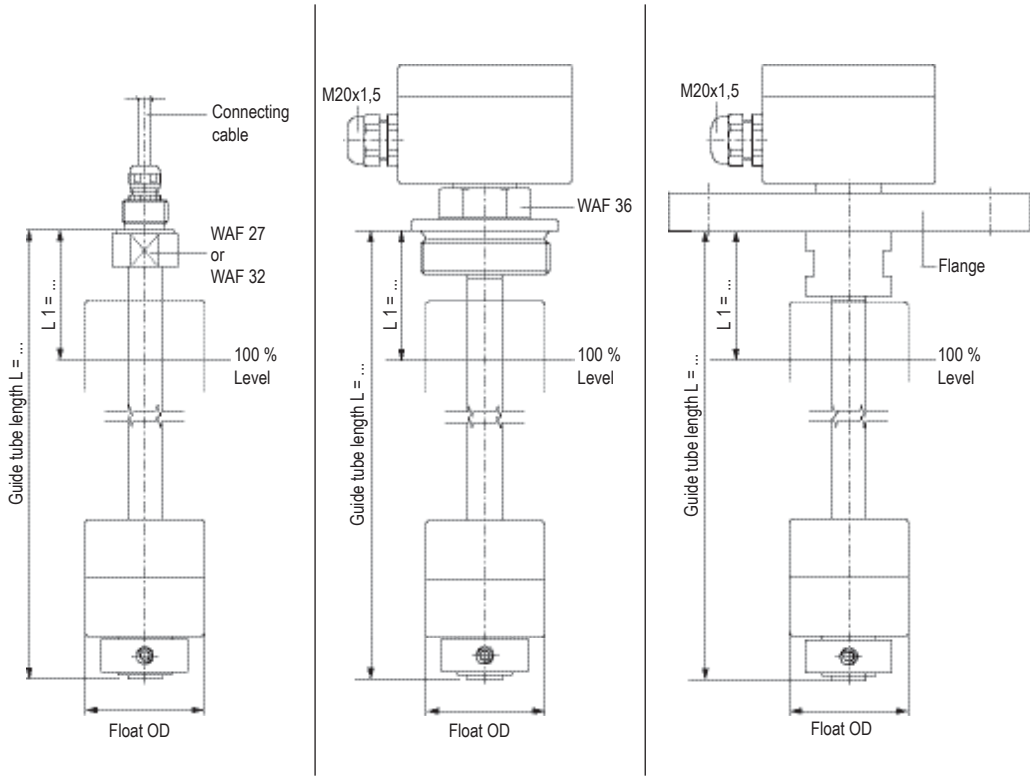
Process Connection	Material Stainless steel SS 316 Ti (1.4571)	Stainless steel SS 316 Ti (1.4571)	PVC / PP / PVDF	Stainless steel 1.4571, E-CTFE-beschichtet or PTFE-ummantelt
Thread BSP 3/8“ BSP 1/2“ BSP 1“ 	Page 6	—	Page 7 / 8 / 9	—
Thread BSP 1/2“ BSP 2“ 	Page 6 Nahrungsmittel-Ausführung Stainless steel 1.4404 Page 11 Pharma-Ausführung Stainless steel 1.4435 Page 12	Page 13 / 14	Page 7 / 8 / 9	—
Flange DN...PN.. 	Page 6	Page 13 / 14	Page 7 / 8 / 9	Page 10

Design: Stainless steel SS 316 Ti (1.4571)



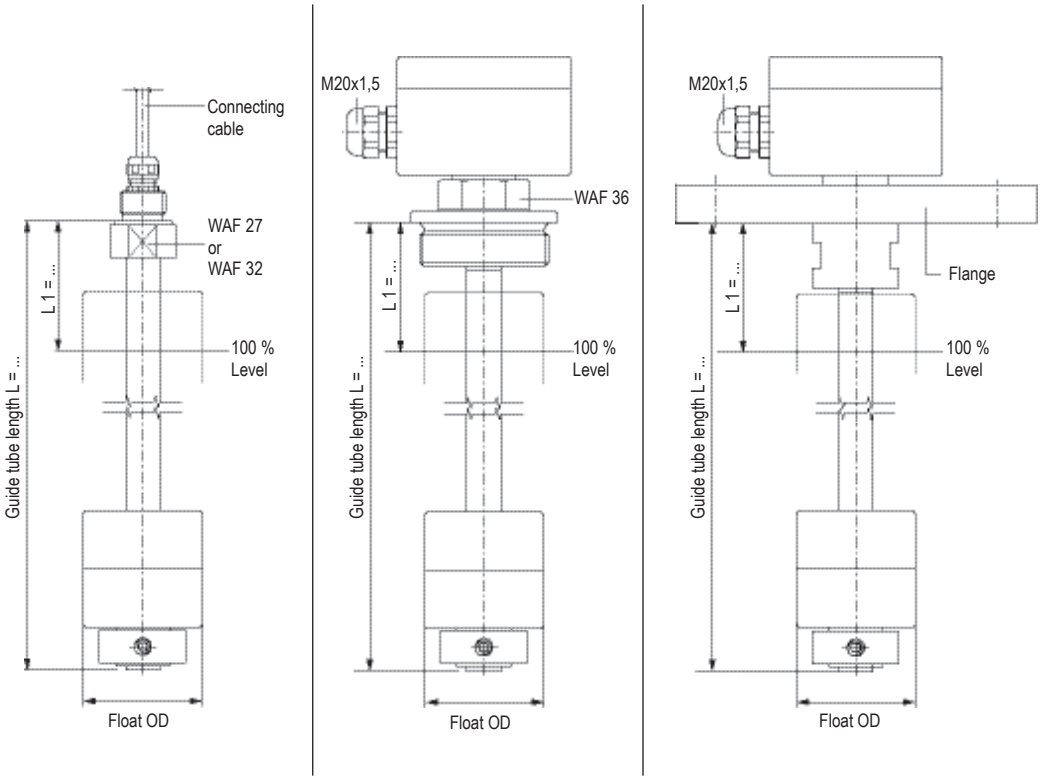
	ERV-...-VK..-L.../..-V..R-1...		ARV-...-VK..-L.../..-V..R		AFV-.../.../..-VK..-L.../..-V..R	
Electrical connection	Cable PVC grey, PVC blue, Silicone, Oilflex		Terminal box Aluminium 80 x 75 x 57 mm Option Polypropylene, Polyester, Stainless steel			
Process connection	Mounting thread upwards		Mounting thread downwards		Mounting flange DIN DN 50 - DN 200, PN 6 - PN 100	
	BSP 3/8"	BSP 1/2"	BSP 1 1/2" or BSP 2"		ANSI 2" - 8", Class 150 - 600	
Guide tube - Ø	12 or 14 mm	18 mm	12 or 14 mm	18 mm	12 or 14 mm	18 mm
Guide tube length max.	3000 mm	6000 mm	3000 mm	6000 mm	3000 mm	6000 mm
Float	V44R, V52R, V62R, V83R guide tube - Ø 12 or 14 mm V80R, V98R,V105R, V120R guide tube - Ø 18 mm					
Limit S.G. 85 % Nominal S.G. 50 % Nominal pressure	see Tables page 16/17 (Floats)					
Temperature range Standard	PVC- / PUR cable -10 °C ... +80 °C Silicone cable -10 °C ... +120 °C		-20 °C ... +120 °C			
High temperature			Optional code (HT..) +120 °C ... +200 °C			
Low temperature			Optional code (TT..) -20 °C ... -80 °C			
Contact separation	K 18 = 18 mm K 15 = 15 mm K 10 = 10 mm K 5 = 5 mm					
HT- or TT-Design			K 15 (.T..) = 15 mm K 10 (.T..) = 10 mm K 5 (.T..) = 5 mm			
Overall resistance of measuring chain dependent on length and contact separation						
Cable length	Distance between level sensor/transmitter and control unit max. 2000 m, 3-core, shielded					
Orientation	vertical ± 30°					
Ingress protection	IP 65					
	Materials SS 316 (1.4435), 1.4539, Titanium, Hastelloy and others available upon request					

Design: PVC



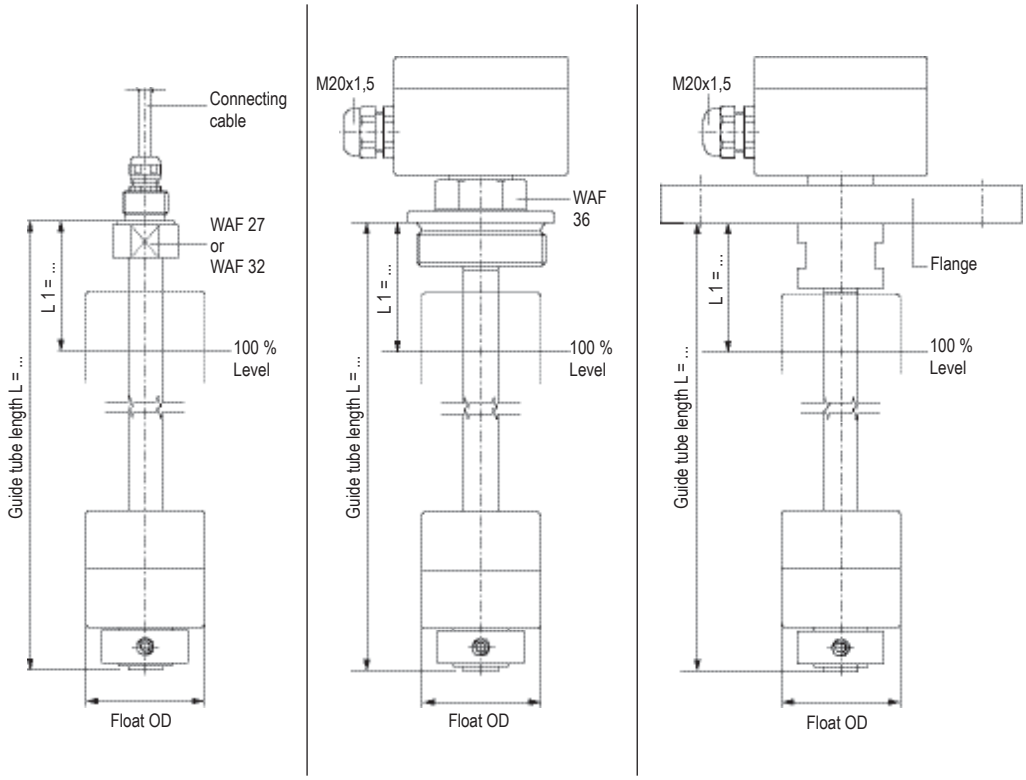
	ERP-...-PK..-L.../..-P..R-1...		APRP-...-PK..-L.../..-P..R		APFP-.../10-PK..-L.../..-P..R	
Electrical connection	Cable PVC-grey, PVC-blue, Silicone, Oilflex		Terminal box Polyester 80 x 75 x 55 mm			
Process connection	Mounting thread upwards		Mounting thread downwards		Mounting flange DIN DN 65 - DN 125, PN 10 Form A	
	BSP 1/2“	BSP 1“	BSP 2“		ANSI 2 1/2“ - 5“, Class 150 FF	
Guide tube - Ø	16 mm	20 mm	16 mm	20 mm	16 mm	20 mm
Guide tube length max.	3000 mm	5000 mm	3000 mm	5000 mm	3000 mm	5000 mm
Float	P55R guide tube - Ø 16 mm P55R/26, P80R guide tube - Ø 20 mm					
Limit S.G. 85 % Nominal S.G. 50 %	see Tables page 16/17 (Floats)					
Nominal pressure	max. 3 bar					
Temperature range	0 °C ... +60 °C					
Contact separation	K 18 = 18 mm K 15 = 15 mm K 10 = 10 mm K 5 = 5 mm					
Overall resistance of measuring chain dependent on length and contact separation						
Cable length	Distance between level sensor/transmitter and control unit max. 2000 m, 3-core, shielded					
Orientation	vertical ± 30°					
Ingress protection	IP 65					

Design: Polypropylene



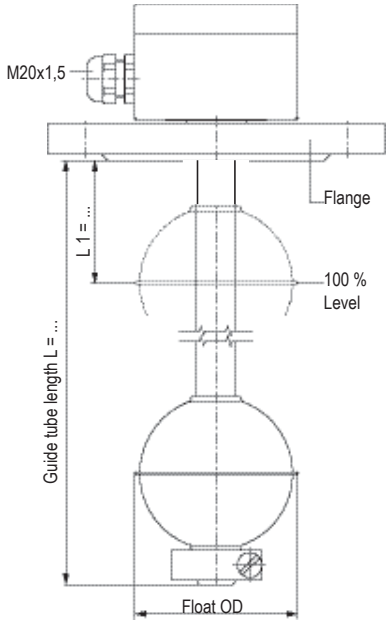
	ERPP-...-PPK..-L.../..-PP..R-1...		APRPP-...-PPK..-L.../..-PP..R		APFPP-.../10-PPK..-L.../..-PP..R	
Electrical connection	Cable PVC-grey, PVC-blue, Silicone, PUR		Terminal box Polyester 80 x 75 x 55 mm			
Process connection	Mounting thread upwards		Mounting thread downwards		Mounting flange DIN DN 65 - DN 125, PN 10 Form A	
	BSP 1/2“	BSP 1“	BSP 2“		ANSI 2 1/2“ - 5“, Class 150 FF	
Guide tube - Ø	16 mm	20 mm	16 mm	20 mm	16 mm	20 mm
Guide tube length max.	3000 mm	5000 mm	3000 mm	5000 mm	3000 mm	5000 mm
Float	PP55R guide tube - Ø 16 mm PP55R/26, PP80R guide tube - Ø 20 mm					
Limit S.G. 85 % Nominal S.G. 50 %	see Tables page 16/17 (Floats)					
Nominal pressure	max. 3 bar					
Temperature range	-10 °C ... +80 °C					
Contact separation	K 18 = 18 mm K 15 = 15 mm K 10 = 10 mm K 5 = 5 mm					
Overall resistance of measuring chain dependent on length and contact separation						
Cable length	Distance between level sensor/transmitter and control unit max. 2000 m, 3-core, shielded					
Orientation	vertical ± 30°					
Ingress protection	IP 65					

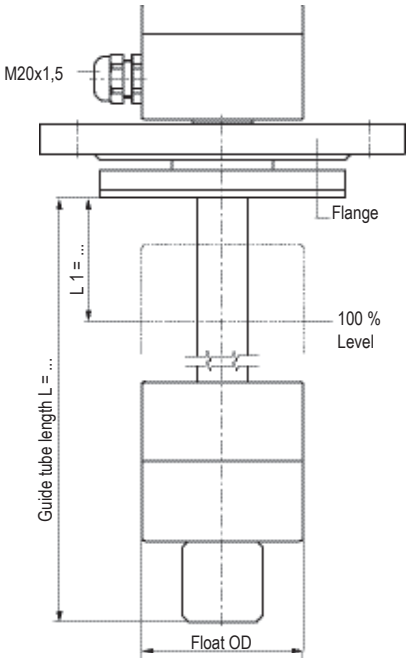
Design: PVDF



	ERPF-...-PFK..-L.../..-PF..R-1...		APRPF-...-PFK..-L.../..-PF..R		APFPF-.../10-PFK..-L.../..-PF..R	
Electrical connection	Cable PVC-grey, PVC-blue, Silicone, PUR		Terminal box Polyester 80 x 75 x 55 mm			
Process connection	Mounting thread upwards BSP 1/2“	BSP 1“	Mounting thread downward BSP 2“		Mounting flange DIN DN 65 - DN 125, PN 10 Form A ANSI 2 1/2“ - 5“, Class 150 FF	
Guide tube - Ø	16 mm	20 mm	16 mm	20 mm	16 mm	20 mm
Guide tube length max.	3000 mm	5000 mm	3000 mm	5000 mm	3000 mm	5000 mm
Float	PF55R guide tube - Ø 16 mm PF55R/26, PF80R guide tube - Ø 20 mm					
Limit S.G. 85 % Nominal S.G. 50 %	see Tables page 16/17 (Floats)					
Nominal pressure	max. 3 bar					
Temperature range	-10 °C ... +100 °C					
Contact separation	K 18 = 18 mm K 15 = 15 mm K 10 = 10 mm K 5 = 5 mm					
Overall resistance of measuring chain dependent on length and contact separat						
Cable length	Distance between level sensor/transmitter and control unit max. 2000 m, 3-core, shielded					
Orientation	vertical ± 30°					
Ingress protection	IP 65					

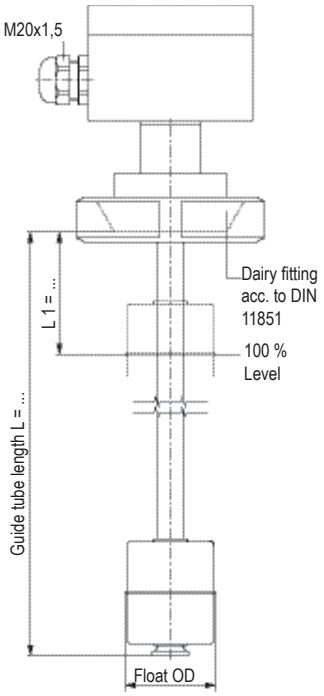
Design: Stainless steel SS 316 Ti (1.4571), ECTFE-coated or PTFE-lined
– Option: anti-static –

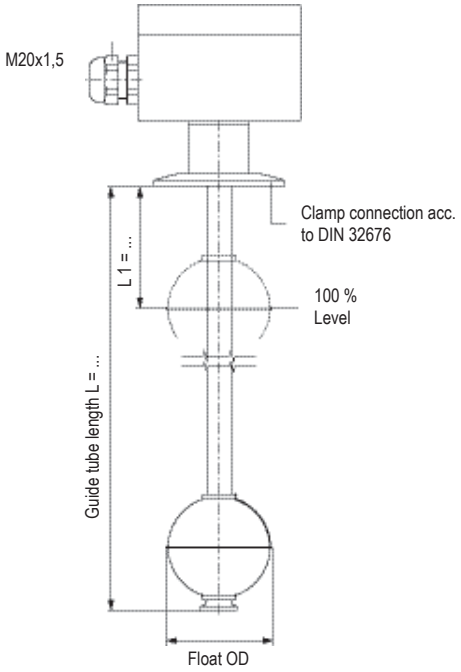




	AFVEC-.../../..-VECK..-L.../18-VEC..R	AFVTF-.../../..-VTFK..-L.../25-TF..R
Electrical connection	Terminal box Aluminium 80 x 75 x 57 mm Option: Polypropylene, Polyester, Stainless steel	
Process connection	Mounting flange to DIN DN 50 - DN 200, PN 6 - PN 100 or to ANSI 2" - 8", Class 150 - 600	
Guide tube - Ø	18 mm	25 mm, PTFE-lining = 3,5 mm thick
Guide tube length max.	4000 mm	5000 mm
Float	VEC81R, VEC99R, VEC106R, VEC121R	TF80R, TF90R
Limit S.G. 85 % Nominal S.G. 50 %	see Tables page 16/17 (Floats)	
Nominal pressure	see Tables page 16/17 (Floats)	max. 3 bar
Temperature range	dep. on liquid	
Contact separation	K 18 = 18 mm K 15 = 15 mm K 10 = 10 mm K 5 = 5 mm	
Overall resistance of measuring chain dependent on length and contact separation		
Cable length	Distance between level sensor/transmitter and control unit max. 2000 m, 3-core, shielded	
Orientation	vertical ± 30°	
Ingress protection	IP 65	

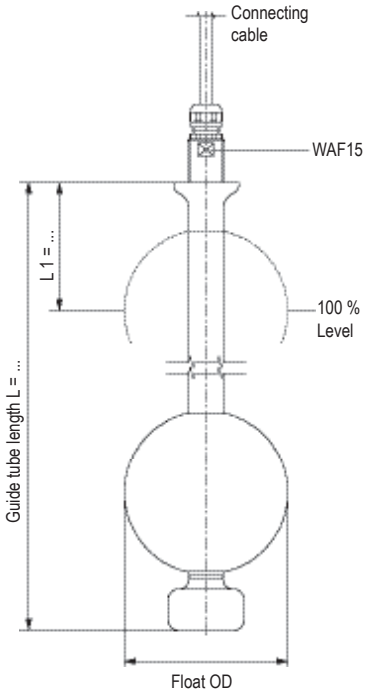
Design: Food industry applications
– Stainless steel SS 316 L –





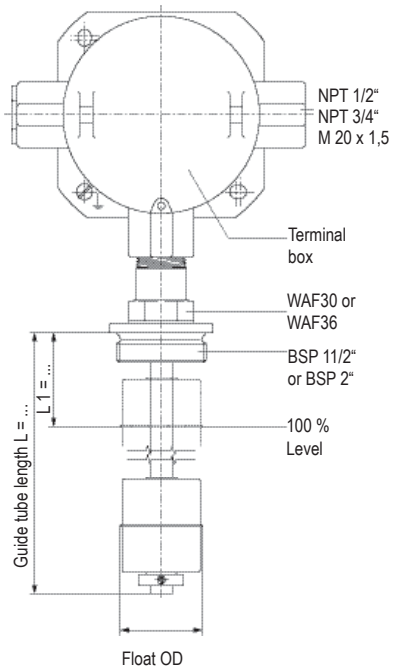
	AMRV-...-VEK..-L.../..-VE..R	AFCV-...-VEK..-L.../..-VE..R
Electrical connection	Terminal box Aluminium 80 x 75 x 57 mm Option: Polypropylene, Polyester, Stainless steel	
Process connection	Dairy fitting acc. to DIN 11851 DN 50 - DN 150	Clamp connection acc. to DIN 32676 DN 25 - DN 100 or 1" - 4"
Guide tube - Ø	12 mm, 14 mm, 18 mm	
Guide tube length max.	3000 mm guide tube Ø 12 and 14 mm, 6000 mm guide tube Ø 18 mm	
Schwimmer	VE44R, VE52R, VE62R, VE83R guide tube Ø 12 and 14 mm VE80R, VE98R, VE105R, VE120R guide tube Ø 18 mm	
Limit S.G. 85 % Nominal S.G. 50 % Nominal pressure	see Tables page 16/17 (Floats)	
Temperature range	-20 °C ... +120 °C	
High temperature	Optional code (HT..) +120 °C ... +200 °C	
Low temperature	Optional code (TT..) -20 °C ... -80 °C	
Contact separation	K 18 = 18 mm K 15 = 15 mm K 10 = 10 mm K 5 = 5 mm	
HT- or TT-Design	K 15 (.T..) = 15 mm K 10 (.T..) = 10 mm K 5 (.T..) = 5 mm	
Overall resistance of measuring chain dependent on length and contact separation		
Cable length	Distance between level sensor/transmitter and control unit max. 2000 m, 3-core, shielded	
Orientation	vertical ± 30°	
Ingress protection	IP 65	

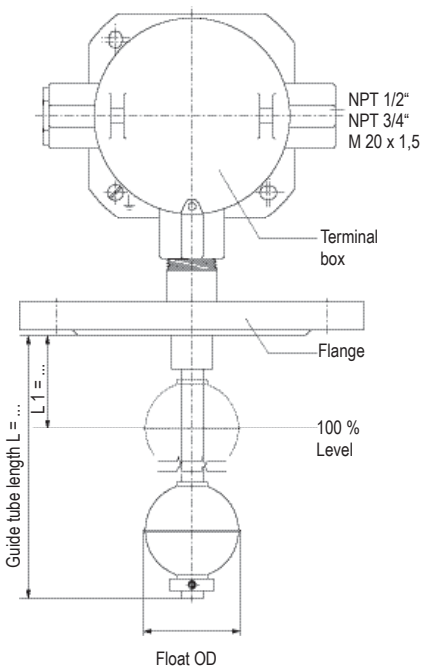
Design: For sanitary applications
– Stainless steel SS 1.4435 –



	ERV-3/8"-VK..-L.../17-V80/88/R2/3A/35-1...	
Electrical connection	Cable PVC-grey, PVC-blue, Silicone, PUR	Option Terminal box
Process connection	Mounting thread upwards BSP 3/8"	Mounting flange to DIN or ANSI Dairy fitting acc. to DIN 11851 Clamp connection acc. to DIN 32676 Sanitary nozzle (Ingoldstutzen)
Guide tube - Ø	17,2 mm Stainless steel 316 L (1.4435) or Uranus B6 (1.4539) - ground and polished	
Guide tube length max.	5000 mm	
Float	V80R2/3A/.. Stainless steel 316 L (1.4435) or Uranus B6 (1.4539) - ground and polished	
Limit S.G. 85 %	715 kg/m3	
Nominal S.G. 50 %	1220 kg/m3	
Nominal pressure	25 bar	
Temperature range Standard	PVC- / PUR cable -10 °C ... +80 °C Silicone cable -10 °C ... +120 °C	-20 °C ... +120 °C
High temperature		Optional code (HT..) +120 °C ... +200 °C
Low temperature		Optional code (TT..) -20 °C ... -80 °C
Contact separat	K 18 = 18 mm K 15 = 15 mm K 10 = 10 mm K 5 = 5 mm	
HT- or TT-Design		K 15 (.T..) = 15 mm K 10 (.T..) = 10 mm K 5 (.T..) = 5 mm
Overall resistance of measuring chain dependent on length and contact separation		
Cable length	Distance between level sensor/transmitter and control unit max. 2000 m, 3-core, shielded	
Orientation	vertical ± 30°	
Ingress protection	IP 65	

Design: II 2 G Ex d IIC T6
II 2 D Ex tD A21 IP 65 T 80 °C
TÜV 09 ATEX 7632 X
– Stainless steel SS 316 Ti (1.4571) –

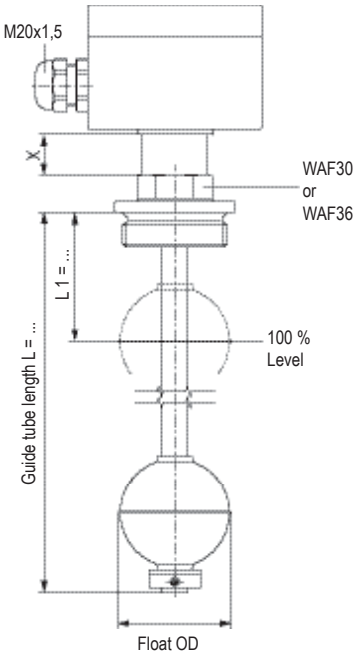


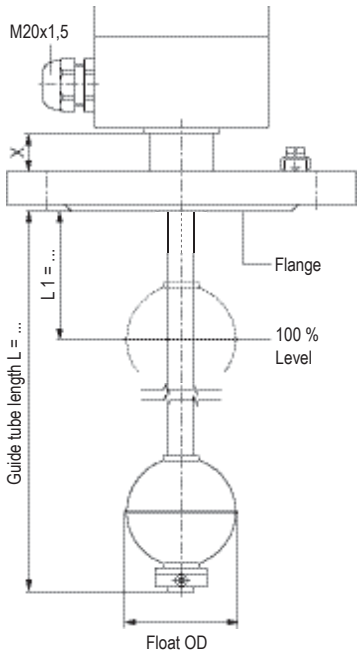


	AF-ADF-RV..-VK..-L.../..-V..R	AF-ADF-FV.../..-VK..-L.../..-V..R
Electrical connection	Terminal box Aluminium	
Process connection	Mounting thread downwards BSP 1 1/2“ or BSP 2“	Mounting flange DIN DN 50 - DN 350, PN 6 - PN 40 ANSI 2“- 14“, Class 150 - 300
Guide tube - Ø	12 mm, 14 mm, 18 mm	
Guide tube length max.	3000 mm guide tube Ø 12 and 14 mm, 6000 mm guide tube Ø 18 mm	
Float	V44R, V52R, V62R, V83R guide tube Ø 12 and 14 mm V80R, V98R,V105R, V120R guide tube Ø 18 mm	
Limit S.G. 85 % Nominal S.G. 50 % Nominal pressure	see Tables page 16/17 (Floats)	
Temperature range	T4 - 120 °C, T5 - 95 °C, T6 - 80 °C	
Contact separation	K 18 = 18 mm K 15 = 15 mm K 10 = 10 mm K 5 = 5 mm	
Overall resistance of measuring chain dependent on length and contact separation		
Connection cable	3-core, shielded	
Orientation	vertical ± 30°	
Ingress protection	IP 65	

Design: II 1/2G EEx ia IIC T4-T6 KEMA 01 ATEX 1052X
– II 2D T80 °C IP6X –
– Stainless steel SS 316 Ti (1.4571) –

Process temperature	Raised terminal box
	X
< 60 °C	0 mm
< 100 °C	60 mm





	NMG125-ARV..-VK..-L.../..-V..R- (MU)	NMG125-AFV.../..-VK..-L.../..-V..R- (MU)
Electrical connection	Terminal box Aluminium 80 x 75 x 57 mm	Option Stainless steel, Polyester
Process connection	Mounting thread downwards BSP 1 1/2“ or BSP 2“	Mounting flange DIN DN 50 - DN 200, PN6 - PN 100 ANSI 2“ - 8“, Class 150 - 600
Guide tube - Ø	12 mm, 14 mm, 18 mm	
Guide tube length max.	see option A and B on page 15	
Float	V44R, V52R, V62R, V83R guide tube Ø 12 and 14 mm V80R, V98R, V105R, V120R guide tube Ø 18 mm	
Limit S.G. 85 % Nominal S.G. 50 % Nominal pressure	see Tables page 16/17 (Floats)	

Temperature class		T4	T5	T6	
Surface temperature	max.		135 °C	100 °C	85 °C
Process temperature	max.		100 °C	65 °C	50 °C
Ambient temperature at terminal box	max.		60 °C	60 °C	60 °C

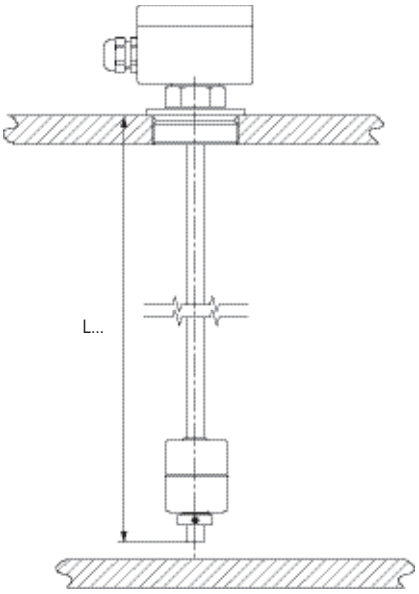
Contact separation	K 18 = 18 mm K 15 = 15 mm K 10 = 10 mm K 5 = 5 mm
Overall resistance of measuring chain	3,2 kΩ ... 50 kΩ Optional code MU approx. 1000 Ω
Control circuit	for hazardous area EEx ia IIC, only for use in certified intrinsically safe circuits Transmitter external with max. 120 mA, max. 28 V Head-mounted transmitter acc. to certificate of transmitter
Type code MU	only for use in certified intrinsically safe circuits with max. 50 mA, max. 20 V
Connection cable	3-core, shielded
Orientation	vertical ± 30°
Ingress protection	IP 65
	Materials Titanium and Hastelloy upon request

Design:

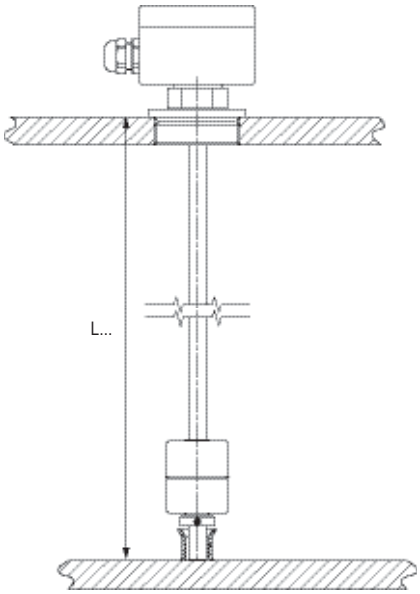
– Option A Mounted on top of tank –
– Option B Mounted on top of tank and fixed at bottom of tank –

Limitation of max. guide tube length for Level Sensor/Transmitter type NMG125....

Option A

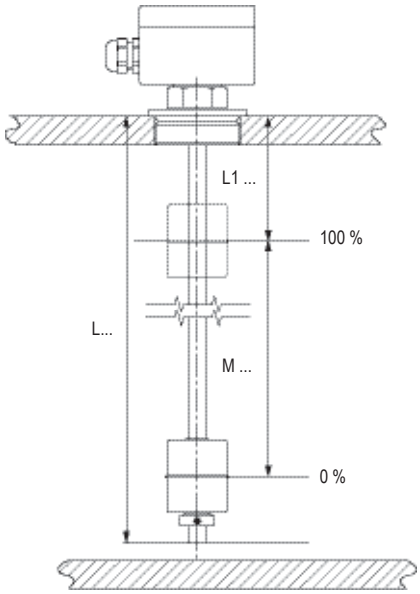


Option B



Option A Mounted on top of tank		Option B Mounted on top of tank and fixed at bottom of tank
max. length	Guide tube	max. length
660 mm	Ø 12 x 1	3500 mm
940 mm	Ø 14 x 1	5000 mm
1600 mm	Ø 14 x 2	6000 mm
3000 mm	Ø 18	6500 mm

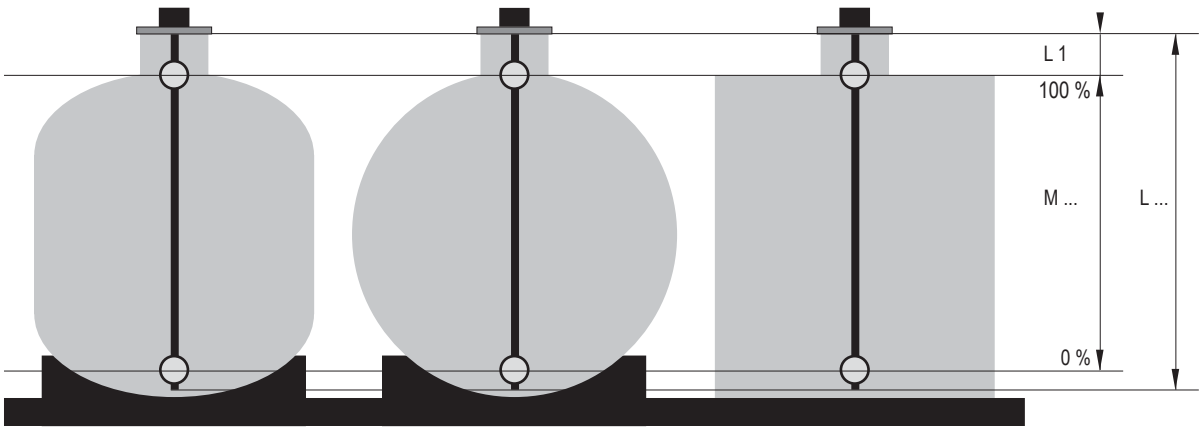
Order information
100 % level



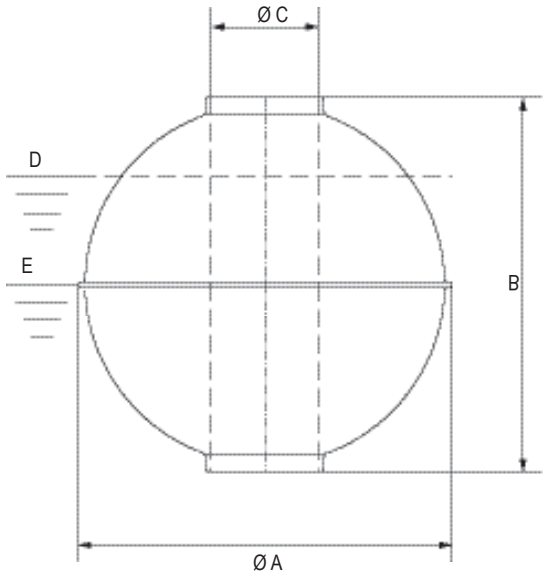
Please always provide dimension L1 and insertion length L. It is not possible to change the measuring range after manufacture.

L1 = 100 %-level (distance flange face to waist of float)
M = Measuring range (distance 0% - 100 %)
L = Insertion length of level sensor/transmitter

Installation examples



Spherical floats (K)

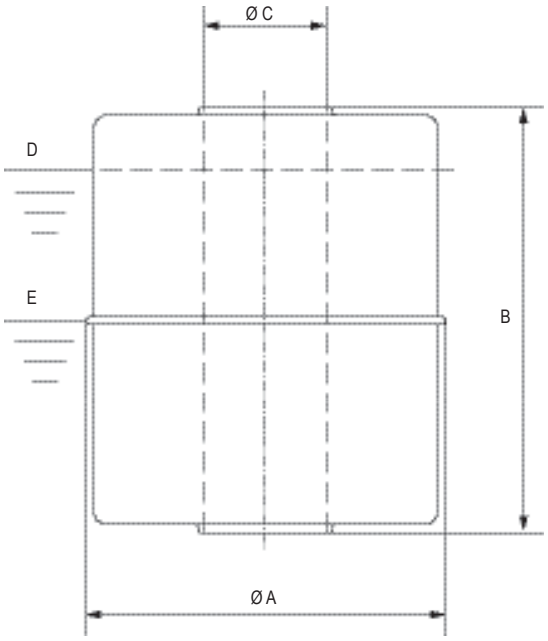


D = Limit S.G.
at 85 % immersed float

E = Nominal S.G.
at 50 % immersed float

Material	Type Code 6	A Ø mm	B mm	C Ø mm	Max. operating pressure bar	Max. operating temperature °C	Weight g	Volume cm3	Limit S.G. (D) 85 % kg/m3	Nominal S.G. (E) 50 % kg/m3
Stainless steel SS 316 Ti	V52R	52	52	15	40	250	35	57	727	1236
	V62R	62	61	15	32	250	52	102	597	1015
	V83R	83	81	15	25	250	89	254	412	701
	V80R	80	76	23	25	250	104	198	617	1049
	V98R	98	96	23	25	250	202	423	561	954
	V105R	105	103	23	25	250	234	529	520	884
	V120R	120	117	23	25	250	272	811	394	671
	V120R/38	120	116	38	25	250	332	726	537	914
	V200R	200	192	56	16	250	1710	3460	581	989
	V300R	300	294	56	16	250	3820	13120	342	582
Titanium Grade 2 (3.7035)	T52R	52	52	15	25	250	30	57	623	1060
	T52R/0,6	52	52	15	60	250	38	57	790	1342
	T52R/0,8	52	52	15	80	250	48	57	997	1696
	T62R	62	62	15	25	250	42	102	482	820
	T83R	83	81	15	25	250	75	254	343	583
	T80R	80	76	23	25	250	146	198	866	1473
	T98R	98	96	23	25	250	193	423	536	912
	T105R	105	103	23	25	250	187	529	416	707
	T120R	120	117	23	25	250	217	811	315	535
Stainless steel SS 316 Ti	VEC81R	81	77	22	25	dep. on liquid	128	238	634	1077
E-CTFE-	VEC99R	99	97	22	25	dep. on liquid	245	441	653	1111
coated	VEC106R	106	104	22	25	dep. on liquid	278	549	595	1011
	VEC121R	121	118	22	3	dep. on liquid	310	837	435	740

Cylindrical floats (Z)



D = Limit S.G.
at 85 % immersed float

E = Nominal S.G.
at 50 % immersed float

Material	Type Code 6	A Ø mm	B mm	C Ø mm	Max. operating pressure bar	Max. operating temperature °C	Weight g	Volume cm3	Limit S.G. (D) 85 % kg/m3	Nominal S.G. (E) 50 % kg/m3
Stainless steel SS 316 Ti	V44R	44	52	15	16	250	38	60	740	1258
Titanium Grade 2 (3.7035)	T44R	44	52	15	16	250	32	60	645	1098
PVC	P55R	55	54	22	3	60	68	99	805	1369
	P80R	80	79	25	3	60	162	330	577	981
Polypropylene	PP55R	55	54	22	3	80	50	99	592	1007
	PP80R	80	79	25	3	80	123	330	438	745
PVDF	PF55R	55	69	22	3	100	88	128	809	1375
	PF80R	80	79	25	3	100	198	330	706	1200
PTFE	TF80R	80	100	28	3	dep. on liquid	250	441	667	1134
	TF90R	90	100	28	3	dep. on liquid	285	575	584	992

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