



Float Level Meter
Schwimmer Füllstandmesser



746 - 748



ING. ROLF HEUN

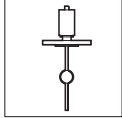
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Float Level Gauge

Level sensor using a magnetic float to operate reed switches in a resistive chain to give a dis-continuous output
 3-wire resistance transmitter or
 2-wire 4-20 mA transmitter with integrated R/I-converter, HART
 Materials in contact with media hermetically sealed

Product group **746**

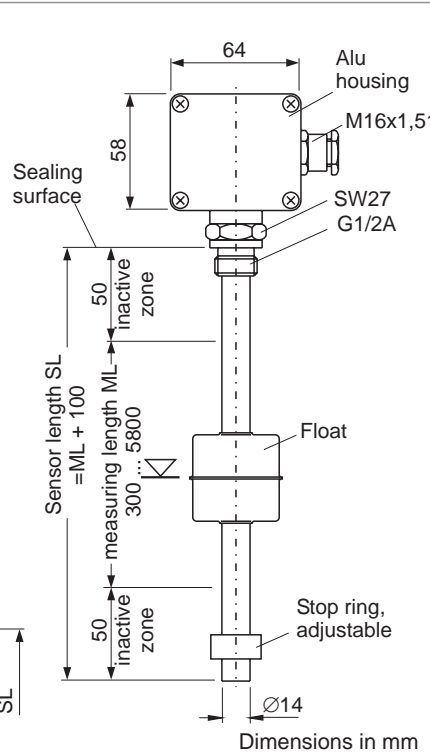
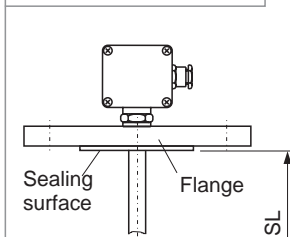
Type **1XXX**

Sheet: 1/1 Revision: 7

Date: 03/07



Example picture:
Flange mounted
Cylindric float



Field of Application

This level sensor is for measuring liquid level or interface dis-continuously. It only can be used vertically. Depending on the float material used (1.4571, Titanium) it can be used for a broad range of applications. The Ex-proof versions can be used in Zone 1 and Zone 2, the R-transmitter type 1XX2.2 only in combination with Zener-barriers.

General Data

Resolution .115X.X / .110X.X / .105X.X: 15/10/5 mm
 Hysteresis: 8 mm
 Linearity of
 R/I-converter / Reed chain: ± 0,15 % / ± 1,5 %
 Temperature coefficient: <0,015 %/°C
 Measuring length ML: 300...5800
 Connection: Thread G1/2A
 or flanges from DN50 DIN/2" ANSI
 Housing material, dimension: Alu, 64x58x37 mm
 Diameter slide tube: 14 mm
 Weight: G1/2A: ca. 0,8 kg + 7 g/cm

Design Data

Pressure: see Float selection table, max. 6,4 MPa
 Temperature Ambient: -40 to +80 °C
 Temperature Media: -40 to +125 °C
 Material in contact with media: 1.4571...
 Ex-classification: .1XX2.7: II 1G EEx ia IIC T6...T1
 U/I/P: 28 V/120 mA/0,84 W
 L/C: ≤10 µH/≤1 nF

Electrical Data

Cable gland: M16x1,5 (for Ex blue)
 Ingress protection EN 60529: IP 67
 Total resistance R Reed chain: 940 Ω/m

R/I-converter

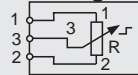
	.1XX1.7	.1XX2.7
Supply voltage	8...36 VDC	8..28 VDC
Supply current	4...20 mA	4...20 mA
max. burden at 24 V	800 Ω	695 W
setting range	0 %	2,5...4,5 mA
	100 %	4...20 mA
		20...4 mA

Float selection table

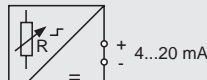
Shape	Density	Press. [MPa]	Material	Dimension HxDxD [mm]	Ordering no.
Cylinder	> 0,75	ANSI 150	1.4571	43x43x15,5	SZ0431504444
Cylinder	≥ 0,5	ANSI 300	3.7025/35	156x56x16	SZ1561605664
Ball	> 0,65	ANSI 150	1.4571	52x52x15,5	SK0521505354

Floats for lower densities, interface measurement or higher pressures on request

Connection diagram



Type 746.1XXX.2
3-wire R-Transmitter



Type 746.1XX1.7 Std./ .1XX2.7 Ex
2-wire R/I-converter

Certificates

2-wire transmitter:
Hart transmitter:

DEMKO 99 ATEX 127088
KEMA 03 ATEX 1537
Subject to alterations

Ordering no.

7 4 6 . 1 X X X . X - X X X X

Resolution
05=5 mm
10=10 mm
15=15 mm

1=Standard
2=EEx ia IIC

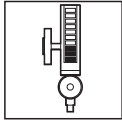
Accessories

Zener barrier	745.1040
Transmitter feed circuit	745.1050/51

Sensor length [mm]
e. g. 0600 = 600 mm

2=3-wire R-Transmitter
7=2-wire R/I-converter int.
H=HART transmitter





Floats for float level meters

Skid pipe floats for use with the float level meters type 746.

Product group **746**

Type **FLOAT**

Sheet: 1/1 Revision: 1

Date: 06/10

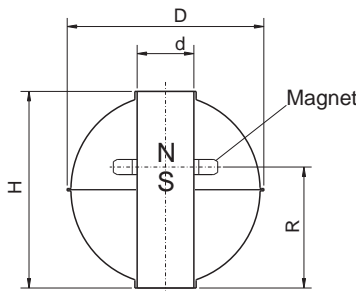


Fig. A

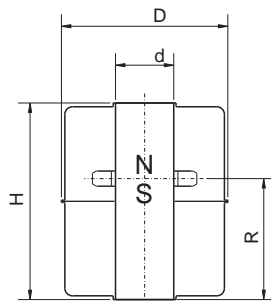


Fig. B

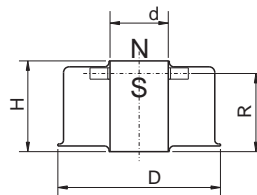


Fig. C

Ball floats

Nom /g/cm ³	Min /g/cm ³	PN /MPa	Material	D x H x d x R /mm	Fig.	Ordering no.
0.95	0.70	4.0	316Ti	52x52x15x 32	A	SK0521570459
0.74	0.55	2.5	316Ti	52x52x15x 32	A	SK0521550359
0.57	0.55	5.0	Ti Gr. 1/2	52x52x15x 43	A	SK0521550509
1.04	0.75	20.0	Ti 6Al4V	61x62x15x 37	A	SK06115720TA

Cylindrical floats

Nom /g/cm ³	Min /g/cm ³	PN /MPa	Material	D x H x d x R /mm	Fig.	Ordering no.
0.95	0.90	0.6	316Ti	43x24x15x 21	C	SZ0431590159
1.02	0.70	1.6	316Ti	44x52x15x 32	B	SZ0441570259
0.55	0.48	2.5	Ti Gr. 2/3	56x156x16x108		SZ0561650309
0.58	0.50	4.0	Ti Gr. 2/3	56x156x16x108		SZ0561650409
0.63	0.55	6.4	Ti Gr. 2/3	56x156x16x108		SZ0561660609

Field of application

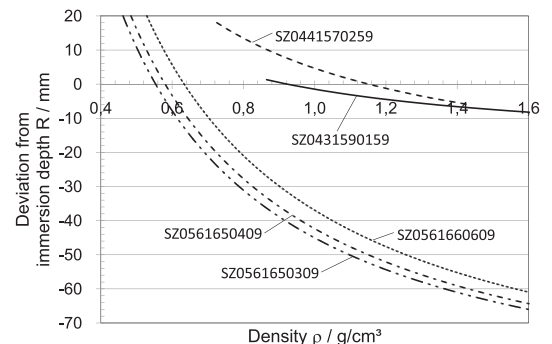
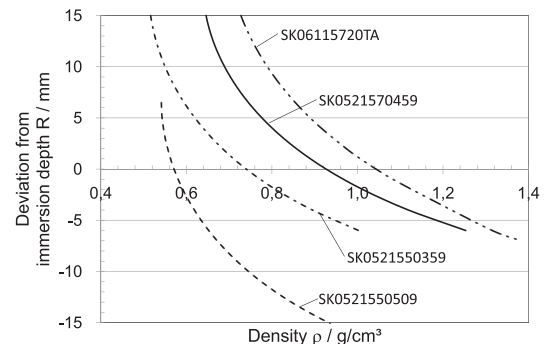
The floats are used for contactless transmission of the liquid level in a vessel to the sensors of the float level meters type 746. Therefore, a ring magnet is mounted inside the float.

Nom: At this density, the float is immersed up to R.
Min: Minimum possible density.

Design data

Storage temperature -25...+85 °C
Max. media temperature: -200...+250 °C

Interface floats on request
Special materials on request
Higher pressures on request

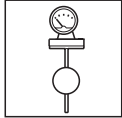


Subject to alterations

Ordering no.

S X X X X X X X X X X X	
Shape	Sphere Cylinder
Dimens. D / mm	e. g. 56 mm
Dimens. d / mm	e. g. 15 mm
	0 9 Ti Gr. 1/2 5 9 316Ti T A Ti 6Al4V
	2 0 e. g. 20 MPa
	8 e. g. 0.8 g/cm ³
	K Z
	0 5 6
	1 5
	Material
	Pressure / MPa
	min. Density / g/cm ³





Dial type Float Level Gauge

Open or closed tanks.
Limit switches as Microswitch or proximity switch.
Potentiometric remote control.

Product group **748**

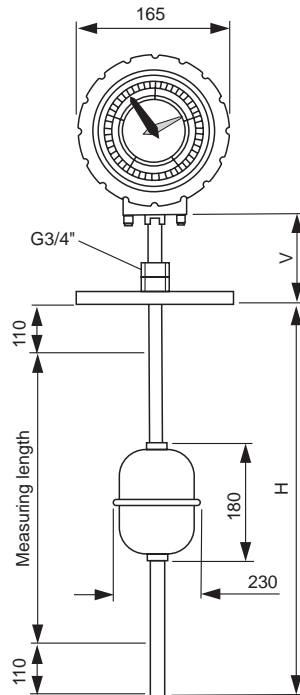
Type **205X**

Sheet: 1/1

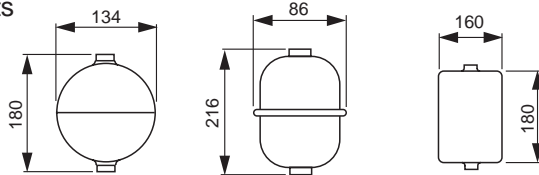
Revision: 2

Date:

11/04



Floats



Dimensions in mm

Field of application

This float level gauge Type 748.205X is for measuring liquid levels via a drag float and a wire which operates a mechanical mechanism. It is designed to work with a broad range of pressure and densities in zone 0, 1 and 2.

General Data

Accuracy: +0.2 %
Non-linearity/special: max. +0.5/0.3 %
Measuring length max.: 5 000 mm
Mounting position: vertical
Flange: from DN100/PN 6 - 25, DIN, ANSI

Design Data

T Proc
- normal version: -50...+150 °C
- special version: -150...+350 °C
P Proc: max. 2.2 MPa
Density: from 0,6 to 1.9 g/cm³
Material
- flange, guide pipe: SS
- float: SS, PP
- dial housing: cast Aluminium
Ex-protection class: II 2G EEx d IIB T6

Electrical Data

Micro switch

- Switch voltage: 250 V AC
- Switch current: 2 A AC

Proximity switch

- power supply: 10...30 VDC
- switch current: 100 mA
- frequency: 3000 Hz
- output: pnp/npn transistor

Analogue Output

- power supply: 230/24 VAC/24 VDC
- output: 4...20 mA
- burden: 50...500
- Ex-protection class: II 1G EEx ia IIB T4
Ingress protection: IP65

Float table

Type	134/180	82/216	160/180
Material	SS	SS	PP
Pressure max.	2.2 MPa	2.2 MPa	1.0 MPa
Density	0.7...1.64 g/cm ³	0.95...1.64 g/cm ³	0.92...1.64 g/cm ³

Certificates

Transmitter:
Ex d Gehäuse:

FTZU 02 ATEX 0226X
FTZU 02 ATEX 0139X

Subject to alterations

Ordering no.

7	4	8	.	2	0	5	X	-	X	X				X	X	X	-	X	X	X	X	-	X	X	X	X	Length in mm
Pro-tection		Standard	1	A		0	Analogue output 4...20 mA		X		X	X	s. MG Flange	Flange connection													
		Ex	2	C		1	Analogue output and 1 contact																				
				S		X	Contacts, X=number (max. 5)																				
									Output																		



