INTRA-AUTOMATION

MESS- UND REGELINSTRUMENTE / MEASUREMENT AND CONTROL

TÜVRheinland® CERT ISO 9001

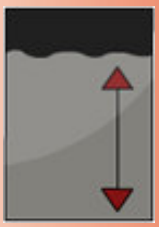
LEVEL GAUGING SYSTEM

Type: Maglink

Series: 5300 and 5400

Technical Information

07/2014



LEVEL

THE EXPERT IN LEVEL AND FLOW

LEVEL GAUGING SYSTEM

Type: Maglink

Series: 5300 and 5400

List of Contents:

1. General Information

1.1. Design and Measurement Principle

The Level Gauging System “Maglink” consists of three main modules:

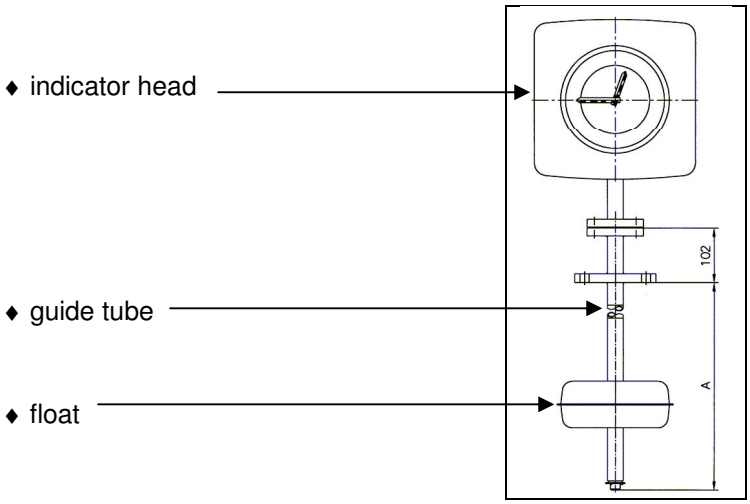


Fig. 01 Maglink

1. In the indicator head contains all the mechanical parts of the level indicator. First of all, this is the scale which is designed like the dial of a clock. Two pointers (standard device) indicate the liquid level in the tank. These pointers are driven by a transmitter which transmits a linear movement into a circular one. A wire is spooled around a drum in the indicator head, which is spring actuated. The other end is connected to the follower magnet, which is placed in the guide tube.
2. The guide tube is directly connected to the indicator head and completely sealed against the process. The wire hangs into the guide tube with the follower magnet at it’s end.
3. The float swims in the fluid to be measured. It is lead by the guide tube. In the float, there is a strong magnetic system, which builts up a strong magnetic link between the float and the follower magnet.

If now the fluid inside the tank rises or falls, the float will rise and fall, too. Due to the linked follower magnet in the guide tube, the drum in the indicator head gets turned by rolling up / down the wire. This rolling movement now gets transmitted by a gear box into the indication on the indication face of the indicator head.

In principle, there are two different series of Maglink Level Gauging Systems:

1.) MAGLINK series 5300 (for non-Ex applications)
2.) MAGLINK series 5400 (for Ex-applications)

1.2 Advantages of the Maglink-Level-Gauging-System

- sealed system for pressure or vacuum services
- high accuracy (linear transmission)
- materials of construction for corrosive services
- no calibration required
- remote electronic indication and/or alarm switches
- readability at eye level
- good readability by directly indicating scale ∅ 250 mm
- double-pointer-indication (standard)
- mechanical operation (explosion proof available)
- insensitive to foam
- simple operation and maintenance
- interface measurements
- weatherproof housing
- direct mounting on top of the tank, optional **indication on the side of the tank**
- open and sealed tanks
- underground tanks
- freight-, storage- and service tanks on ships
- isolation between measured room and measurement system
- simple mechanical assembly

2. Maglink-Components in Detail

2.1 Indication Head and Scale

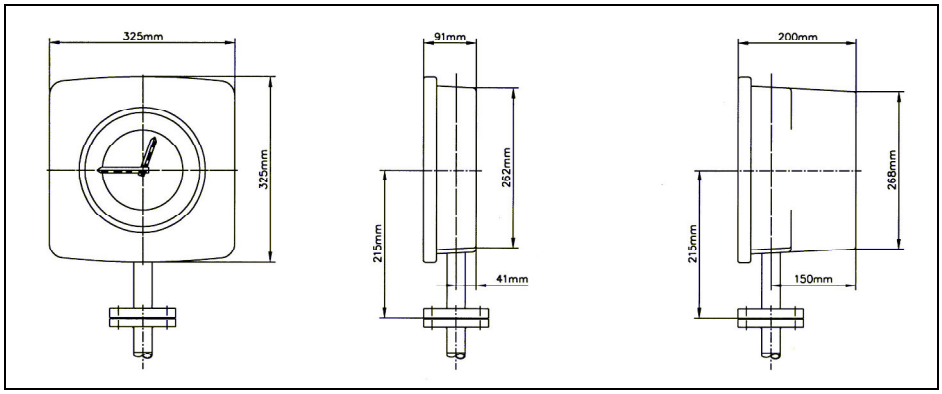


Fig. 01 Maglink-Head with flat housing with wide housing (Ex-version)

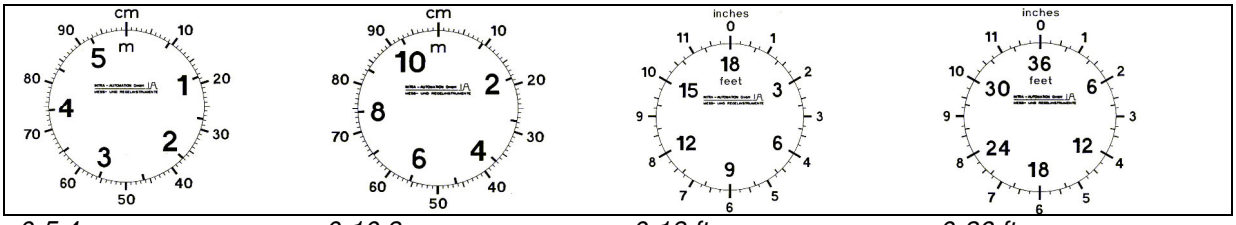
Basically there are three different housings:

- flat cast housing : used only for visual indication,
- wide cast housing : used for visual indication ***and*** optional level switches and/or integral transmitter for 4-20 mA output. In this case the housing is equipped with an additional cover on its backside for a simpler mounting, installation and maintenance.
- nautical housing: design for open sea ships

Technical data **housing**:

- materials : housing – cast aluminum (std), optional stainless steel (nautical) viewing glass, Ø220mm – glass (standard), optional Macrolon
- painting : PUR- polyester powder lacquer layer thickness approx. 70 µm color black
- ambient temperature : -40 °C (-40 °F) though 66 °C (150 °F)
- protection class : IP 65 (NEMA4)

Technical data **scale**:



0-5,4m 0-10,8m 0-18 ft 0-36 ft

Fig. 03: standard scales

The scale of the Maglink-Level-Gauge-System has a diameter of Ø 220 mm.
Two different kinds of scales can be chosen from.

- Standard scale

design:	double-pointer *(red / black)*
scaling:	meters *(red)*/ centimeters *(black)* or feet *(red)*/ inches *(black)*
measuring range::	0 - 5,4 m; 0 – 10,8 m; 0 – 18 ft or 0 – 36 ft
material:	aluminum, white primed

- Special scale (optional)

design:	one pointer *(black)*
scaling:	according to customer specification (i.e. in cm; mm; ft; inch; Liter; m^3)
measuring range:	according to customer specification
material:	aluminum, white primed

2.2 Guiding Tube

The guiding tube consists of the following parts:

- ♦ weld on head mounting flange, 1“ 150 lbs
- ♦ tank mounting flange, (standard DN50 PN16 or 2“ 150 lbs RF)
- ♦ guiding tube
- ♦ end stop or bottom support for measurement length A > 3000 mm

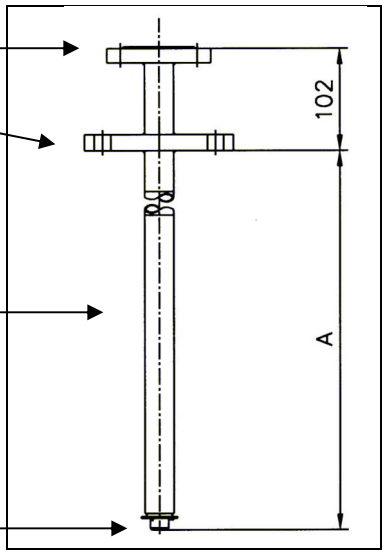


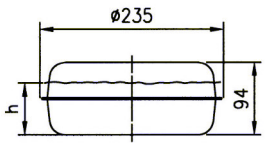
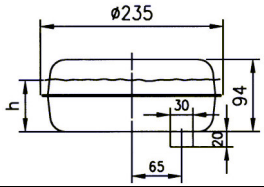
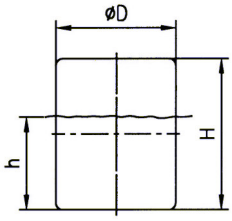
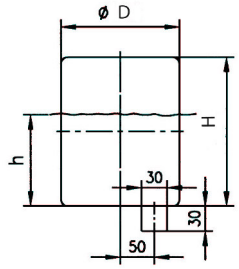
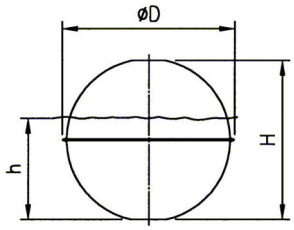
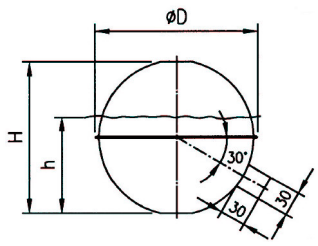
Fig. 04 Guiding tube

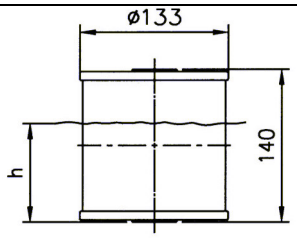
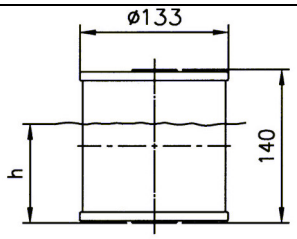
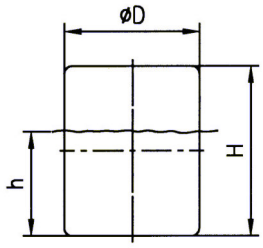
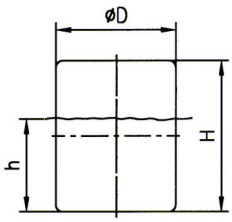
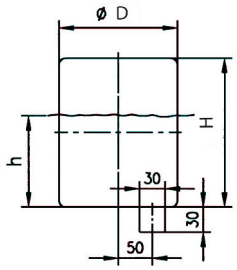
Technical data:

- materials : 1.4571 = 316 Ti (standard), PP, PVC, PVDF
  (further materials upon request)
- max. length : 14000 mm (from 6000mm multipart)
- max. operating temperature : 0 °C (32 °F) through 250 °C (480 °F) → 1.4571;
  0 °C (32 °F) through 60 °C (140 °F) → PP, PVC, PVDF
- max. operating pressure : 1.4571 = 316 Ti (standard),: Depends on selected float type
  PP, PVC, PVDF: 6 bar (102 psig)

2.3 Float Sytems

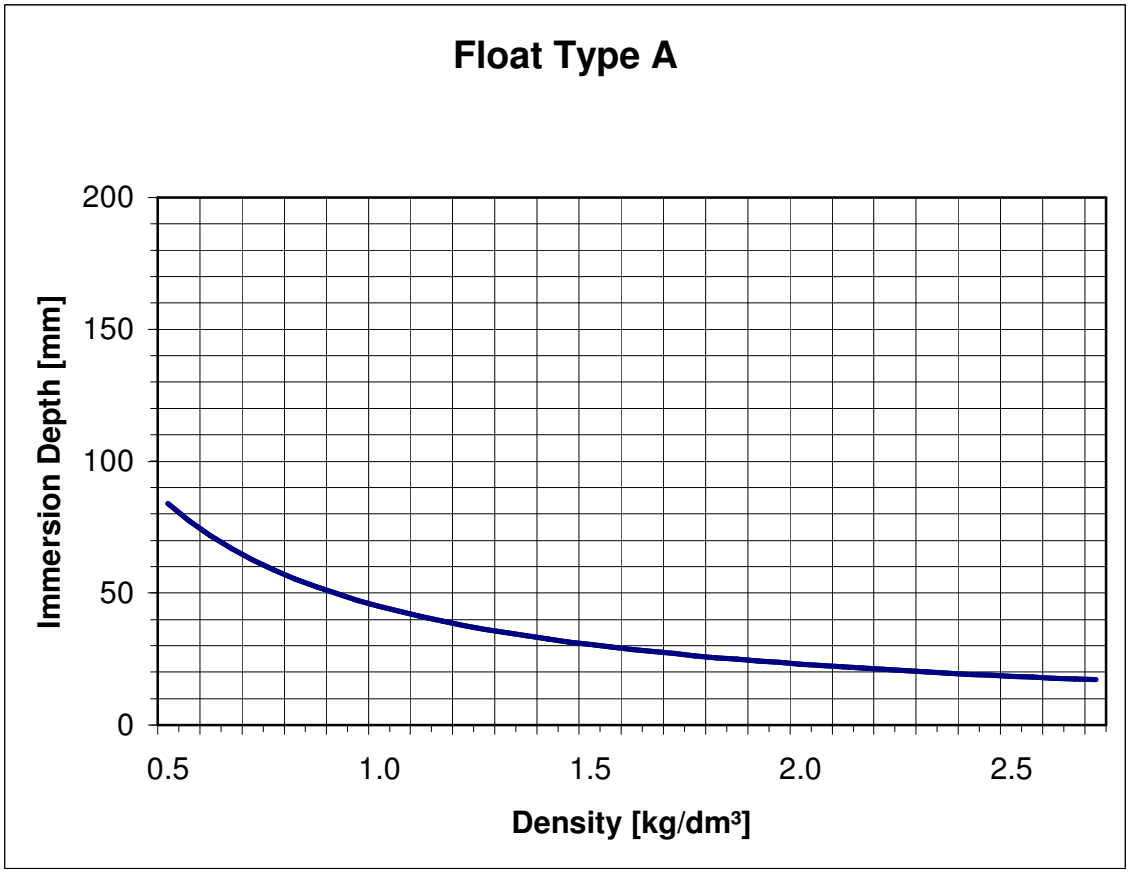
♦ **Types of Floats:**

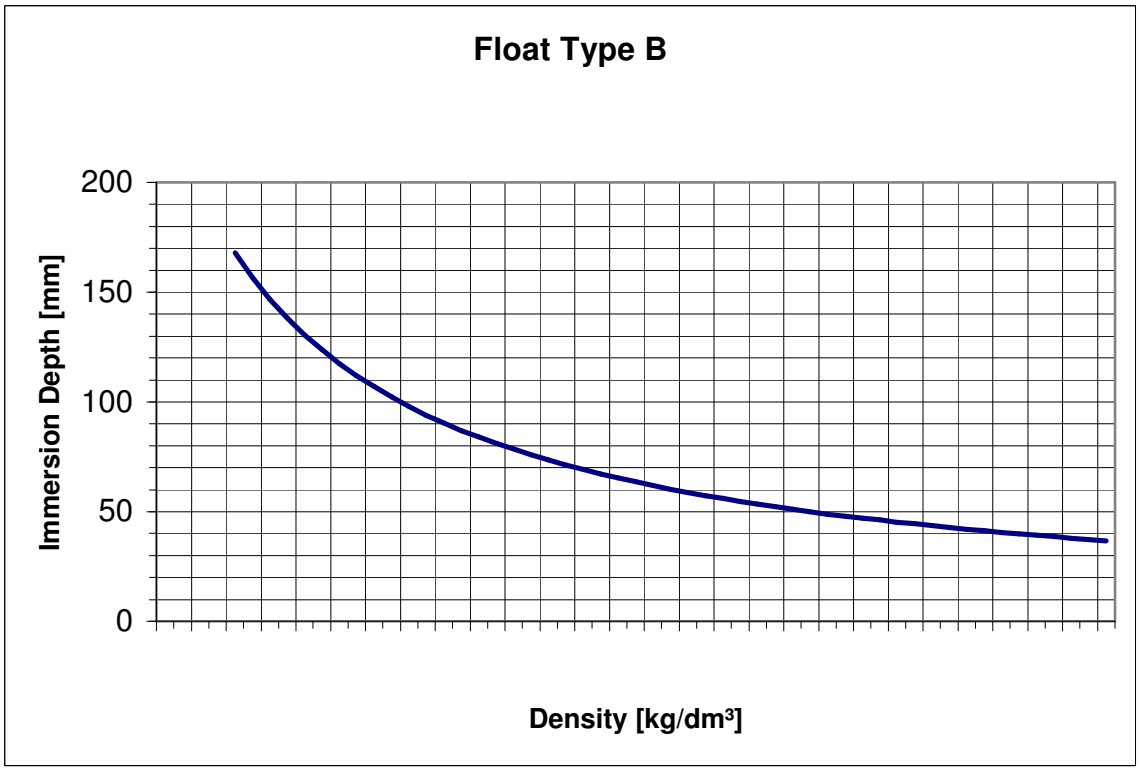
Float	Data *(1, 2, 3)*	Standard version	Ex-version
Type A (Standard) *(4)*	min. 0,5 kg/dm³ max. 3,5 bar (50 psig) max. 250 °C (480 °F) mat.: 1.4571 (316Ti)		
Type B *(4)*	min. 0,7 kg/dm³ max. 5 bar (150 psig) max. 250 °C (480 °F) ***mat.: 1.4571 (316Ti)*** ØD = 140 mm H = 178 mm		
Type C1 *(4)*	min. 0,75 kg/dm³ max. 25 bar (350 psig) max. 250 °C (480 °F) ***mat.: 1.4571 (316Ti)*** ØD = 190 mm H = 184 mm		
Type C2 *(4)*	min. 0,58 kg/dm³ max. 18 bar (250 psig) max. 250 °C (480 °F) ***mat.: 1.4571 (316Ti)*** ØD = 229 mm H = 206 mm		
Type C3 *(4)*	min. 0,35 kg/dm³ max. 8,5 bar (120 psig) max. 250 °C (480 °F) ***mat.: 1.4571 (316Ti)*** ØD = 267 mm H = 254 mm		

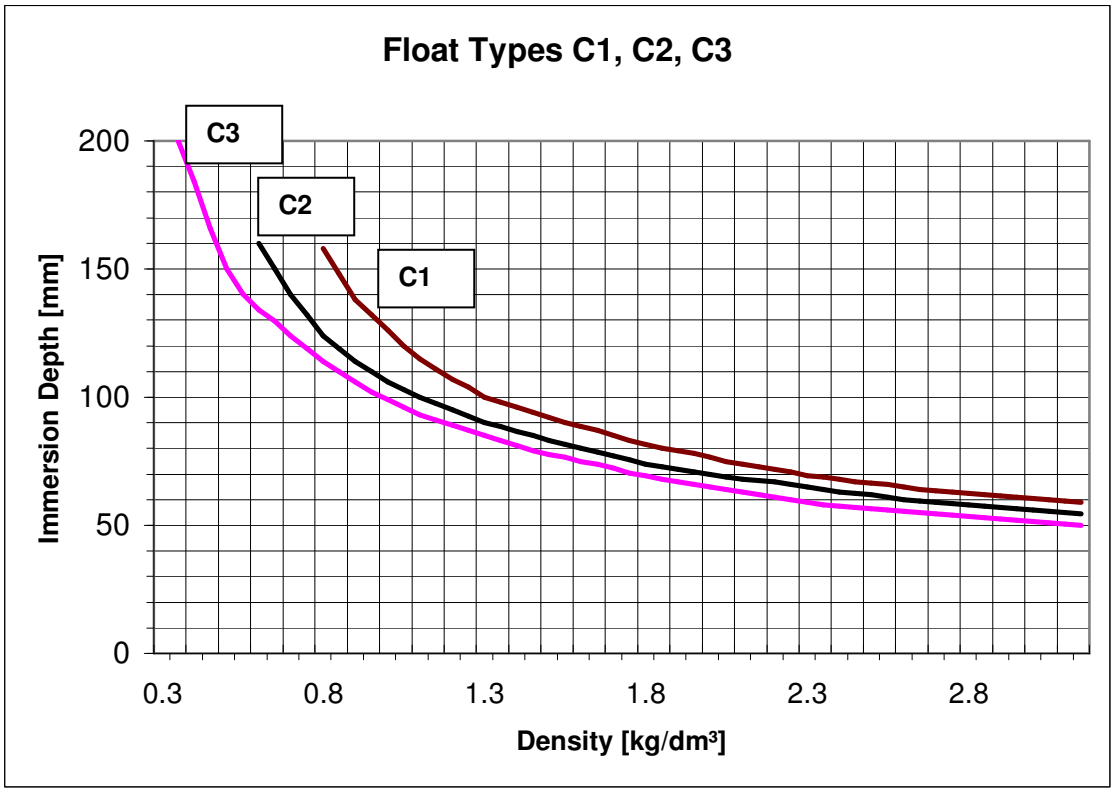
Float	**Data** *(1, 2, 3)*	**Standard version**	**Ex-version**
Type F1 *(4)*	min. 0,65 kg/dm³ max. 7 bar (100 psig) max. 60 °C (140 °F) mat.: ***Polypropylene (PP)***		
Type F2 *(4)*	min. 0,80kg/dm³ max. 7 bar (100 psig) max. 60 °C (140 °F) mat.: ***Polyvinyl chloride (PVC***)		
Type G *(5)*	min. 0,60 kg/dm³ max. 3,2 bar (45 psig) max. 250 °C (480 °F) mat.: ***Glass*** ØD = 150 mm H = 175 mm		
Type T *(4)*	min. 0,58 kg/dm³ max. 18 bar (250 psig) max. 250 °C (480 °F) ***mat.: Titan*** ØD = 94 mm H = 240 mm		

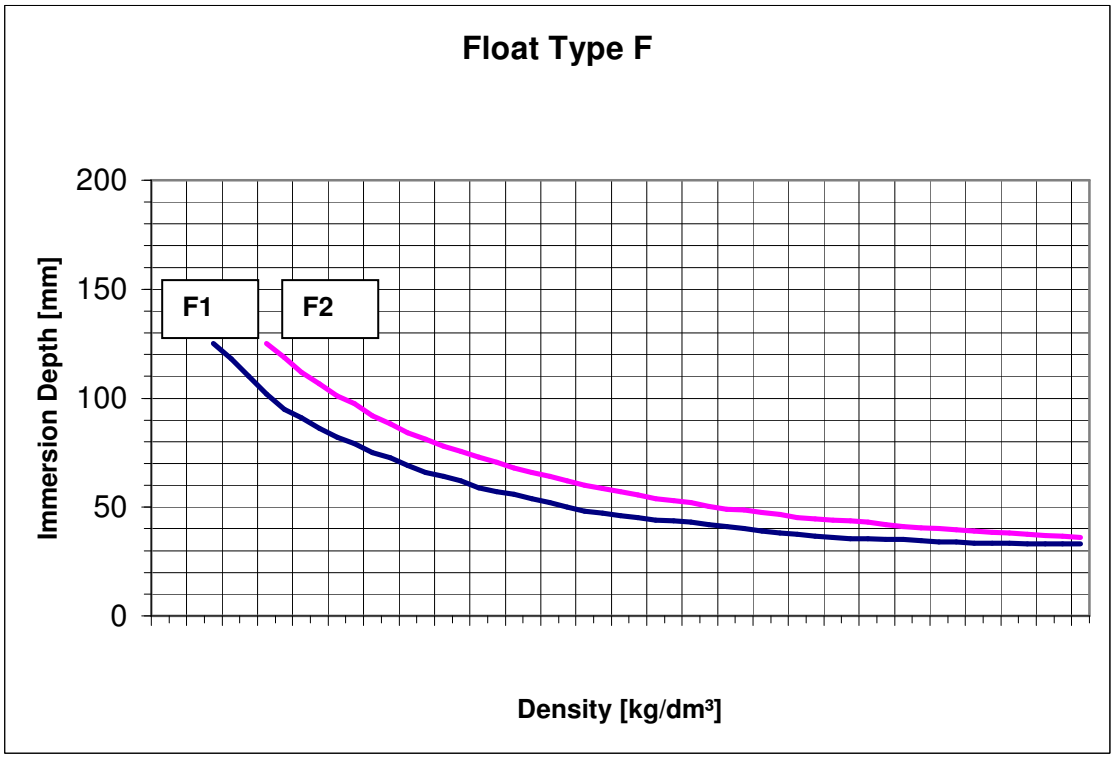
1) Except the glass float all other float types can be vented for high pressure applications
2) It should be avoided to use floats close to their specified minimal liquid density
3) Special materials and –dimensions upon request
4) Version for interface measurements requires a minimal difference in density of ***0,2 kg/dm³***
5) Version for interface measurements requires a minimal difference in density of ***0,4 kg/dm³***

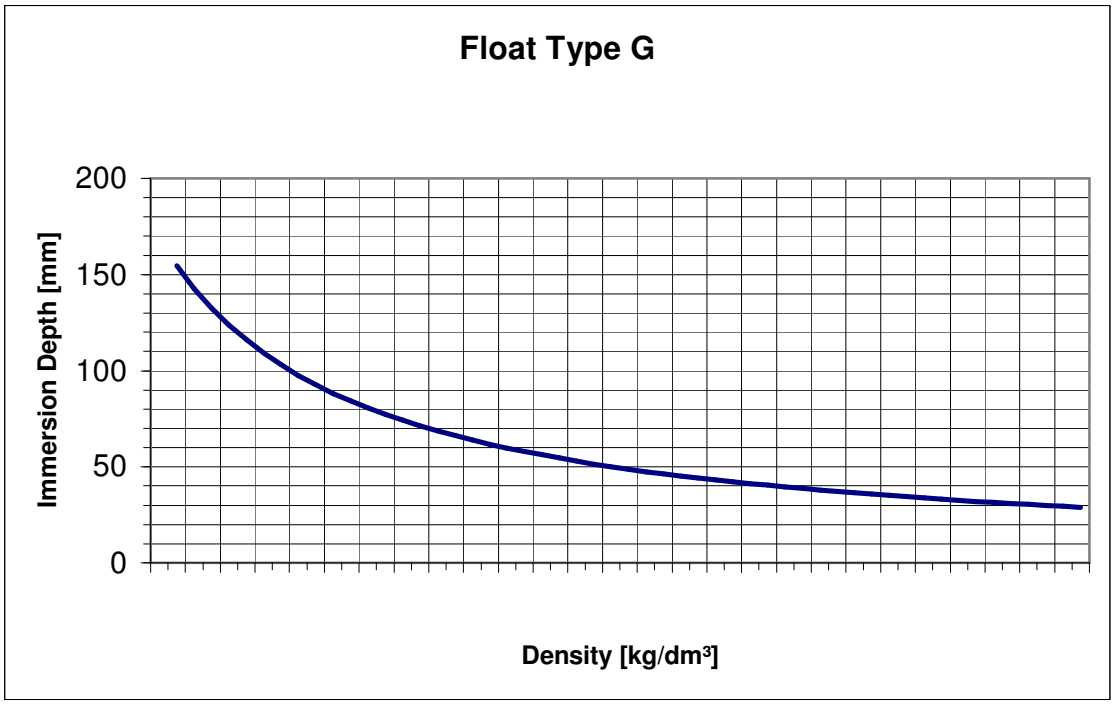
♦ **Immersions depths:**

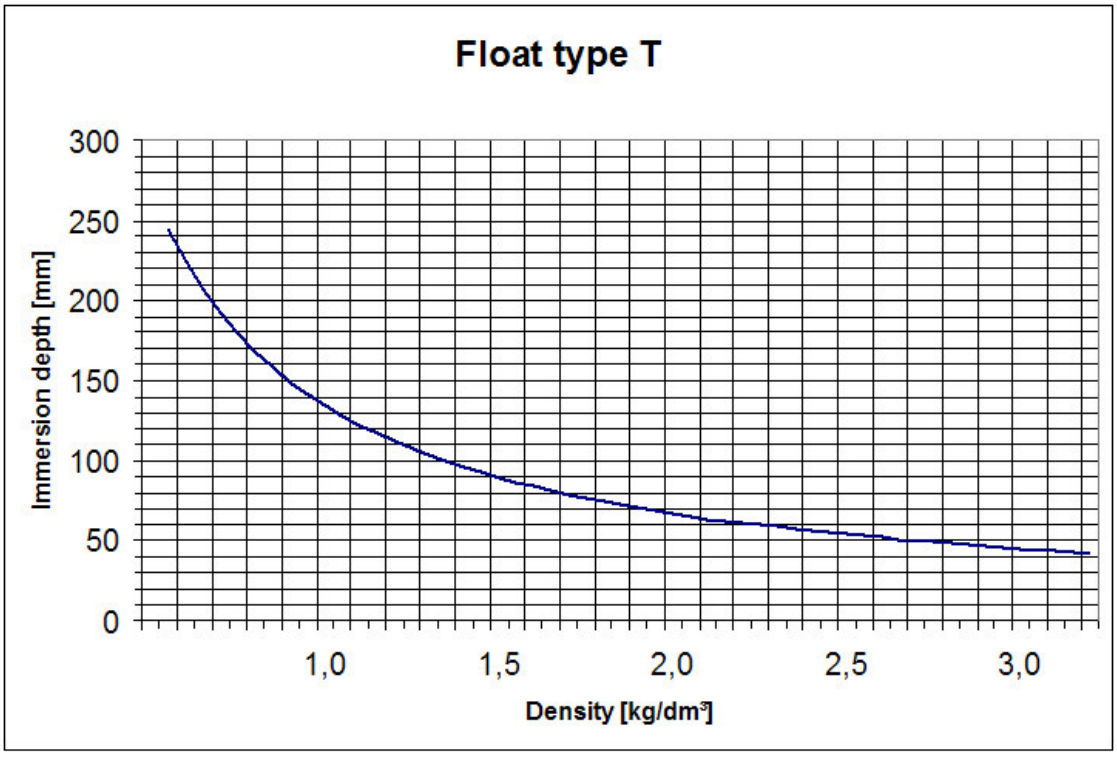





Float Types C1, C2, C3
C3
C2
C1
200
150
100
50
0
Immersion Depth [mm]
0.3
0.8
1.3
1.8
2.3
2.8
Density [kg/dm³]


Float Type F
F1
F2
200
150
100
50
0
Immersion Depth [mm]
Density [kg/dm³]


Float Type G
Immersion Depth [mm]
200
150
100
50
0
Density [kg/dm³]


Float type T
Immersion depth [mm]
300
250
200
150
100
50
0
1,0
1,5
2,0
2,5
3,0
Density [kg/dm³]

2.4 Switches / Transmitters

- **Switches**

Type	*Description*				
B	Slot proximity switch	Explosion protection Protection class Rated voltage Rated current Rated power Inductivity Capacity EMC	**Ex II 2 G EEx ia IIC T6** IP 67 max. 16 VDC (intrinsically safe circuit) max. 25 mA max. 34 mW 30 nF 100 µH EN 50014:1997; EN 50020:1994		
C	Micro switch (change-over contact) (SPDT)	Explosion protection Protection class Utilization category Rated voltage Rated current	**Ex II 2 G EEx de IIC bzw. EEx d IIC** IP 66 AC-15 max. 250 V max. 4 A	AC-15 max. 400 V max. 2 A	DC-13 max. 250 V max. 0,15 A

- **Transmitters**

Type	*Description*		
E	Position sensing transducer	Explosion protection Approval Rated voltage Rated current Rated power Capacity External burden EMC Accuracy Output signal	**Ex II 2 G EEx ia IIC T6** German Lloyd max. 30 VDC max. 160 mA max. 1 W ≤ 10 nF (internal) R = (supply voltage-12V)/ Signal value I EN 50014:1997; EN 50020:1994 ≤ 1,5 % of rate 4..20 mA (2-, 3- or 4-wire-version) 0..10/20 mA (3- or 4- wire-version)

3. Approvals

- Maglink Series **5300 (without explosion protection)**

Type	Approval
53__-**GL-**...	German Lloyd-approval

- Maglink Series **5400 (with explosion protection)**

Type	Approval
54__**-GL-**...	German Lloyd-approval
54**4**_**-D-**...	⟨Ex⟩ II 1/2 G EEx ed IIC T4
54**4**_**-I-**... 54**8**_**-I-**... 54**9**_**-I-**...	⟨Ex⟩ II 1/2 G EEx ia IIC T4
54__**-**...	⟨Ex⟩ II 1/2 G

4. Accuracies

- Measurement accuracy : ± (2 + L) mm
  with „L" = length of the guiding tube in meters
- Response sensitivity
  to float movements : ± 2 mm
- Reproducibility : ± 2 mm

5. Weights and Dimensions

- **Model 531../ 541.. (only Indication = flat indicator head)**
  appr. weight = 15 + (2 x L) + [$^1/_3$ x (F)²] *(metric units)*
  appr. weight = 33,05 + (0.111 x L) + [0.735 x (F)²] *(anglo-american units)*
- **Model 53..../ 54.... (Indication+switches/transmitter = deep indicator head)**
  appr. weight = 17 + (2 x L) + [$^1/_3$ x (F)²] *(metric units)*
  appr. weight = 37,45 + (0.111 x L) + [0.735 x (F)²] *(anglo-american units)*

Value	metric		***Example***
	Process flange ≤ DN65/ 2½"	***Process flange > DN65/ 2½"***	*Model 531.. with flange DN100* *Guide tube length = 3000 mm*
L	Length of guide tube in **m**	Length of guide tube in **m**	*L= 3*
F	**0**	Flange size in **inch**	*F = 4*
			Weight = 15+2x3+[$^1/_3$ x (4)²]=26,3 kg

Value	anglo-american		***Example***
	Process flange ≤ DN65/ 2½"	***Process flange > DN65/ 2½"***	*Model 531.. with flange 4"* *Guide tube length = 118 inch*
L	Length of guide tube in **inch**	Length of guide tube in **inch**	*L= 118*
F	**0**	Flange size in **inch**	*F = 4*
			Weight = 33,05+0,111x118+[0,735 x (4)²]=57,9 lbs

6. Order codes

6.1 Maglink Series 5300 (non-ex-version)

1. Maglink type										
53	standard, without Ex-approval									
	2. Maglink head									
	1	only local indicator								
	4	local indicator, max. 4 electr. switches or max. 3 slot initiators can be installed								
	8	local indicator, max. 1 electr. transmitter, max. 3 electr. switches or max. 3 slot-initiators can be installed								
	9	local indicator, max. 1 electr. Transmitter can be installed								
		3. Scale								
		1	0.. 5,4m							
		2	0..10,8m							
		3	0..18 feet							
		4	0..36 feet							
		5	single-pointer execution (f.e.: in inches, %, liter)							
			-							
				4. Certificates						
				0	without					
				GL	German Lloyd Approval for cargo, storage and service tanks on ships offshore installations					
				Y4	other					
					5. transmitter					
					0	without				
					E	1 electr. transmitter; output: (0)4...20 mA; power supply: 12...36 V; -20...70 °C; accurracy: <= 1,5%				
					Y5	other				
						6. Switches				
						00	none			
						B1	1 slot initiator type B; 3mA/8VDC			
						B2	2 slot initiators type B; 3mA/8VDC			
						B3	3 slot initiators type B; 3mA/8VDC			
						B4	4 slot initiators type B; 3mA/8VDC			
						C1	1 electr. switch type C; SPDT; 0,25A/250VDC; 5A/250VAC			
						C2	2 electr. switches type C; SPDT; 0,25A/250VDC; 5A/250VAC			
						C3	3 electr. switches type C; SPDT; 0,25A/250VDC; 5A/250VAC			
						C4	4 electr. switches type C; SPDT; 0,25A/250VDC; 5A/250VAC			
						Y6	other			
							7. Float			
							A	∅ 235x94mm; 316TI; min. 0,5 kg/dm³; max. 3,5 bar (50 psi); max. 250 °C (480 °F)		
							B	∅ 140x178mm; 316TI; min. 0,7 kg/dm³; max. 5 bar (150 psi); max. 250 °C (480 °F)		
							B1	∅ 140x178mm; Hast. C4; min. 0,7 kg/dm³; max. 5 bar (150 psi); max. 250 °C (480 °F)		
							C1	∅ 190x184mm; 316TI; min. 0,75 kg/dm³; max. 25 bar (350 psi); max. 250 °C (480 °F)		
							C2	∅ 229x206mm; 316TI; min. 0,58 kg/dm³; max. 18 bar (250 psi); max. 250 °C (480 °F)		
							C3	∅ 267x254mm; 316TI; min. 0,35 kg/dm³; max. 8,5 bar (120 psi); max. 250 °C (480 °F)		
							F1	∅ 133x140mm; PP; min. 0,65 kg/dm³; max. 7 bar (100 psi); max. 60 °C (140 °F)		
							F2	∅ 133x140mm; PVC; min. 0,8 kg/dm³; max. 7 bar (100 psi); max. 60 °C (140 °F)		
							G	∅ 150x175mm; Glas; min. 0,6 kg/dm³; max. 3,2 bar (45 psi); max. 250 °C (480 °F)		
							T	∅ 94x240mm; 3.7035 (Titan); min. 0,58 kg/dm³; max. 18 bar (250 psi); max. 250 °C (480 °F)		
							Y7	other		
								8. Interface ***[min. difference of densities: 0,2 kg/dm³ (0,4 kg/dm³ for glas)]***		
								0	no interface mesurement	
								E	interface measurement	
								Y8	other	
									9. Coating of float (not for type G)	
									0	without
									H	coating with Halar (ECTFE)
									P	coating with PVDF
									Y9	other

6.1 Maglink Series 5300 (non-ex-version) (Continuation)

10. Guide tube length *(in mm)*

RM	guide tube, Ø32x2mm, length **<= *3000 mm***
RZ	guide tube, 1" Sch40, length **> *3000 mm***
RZ5	guide tube, 1" Sch40, length >=5500mm (several parts)

11. Material of guide tube

S	316TI (Standard)
P	PP (Alu reinforced)
Q	PVC (Alu reinforced)
L	PVDF (Alu reinforced)
H	Hast. C4 (only RZ/ RZ5)
Y11	other

12. Distance between head and tank mounting flange

B0	standard, B=102mm
BG	indicator extension
Y12	other

13. Tank mounting flange, same material as guide tube

SM	flange in acc. to DIN
SA	flange in acc. to ANSI
Y13	other

14. Flange surface

1	flange surface in acc. to DIN
2	ANSI RF
3	ANSI RF SF (smooth finish)
5	ANSI FF
Y14	other

15. Nominal pressure, material, nominal diameter of guidetube flange for tank-mounting

CC1	PN16 / 150 lbs	material: Carbon Steel	DN50 / 2"
CC2	PN40 / 300 lbs	material: Carbon Steel	DN50 / 2"
C01	PN16 / 150 lbs	material: 316TI	DN50 / 2"
C02	PN40 / 300 lbs	material: 316TI	DN50 / 2"
C80	PN16 / 150 lbs	material: PP	DN50 / 2"
C90	PN16 / 150 lbs	material: PVC	DN50 / 2"
CX1	PN16 / 150 lbs	material: 316TI/PVDF	DN50 / 2"
CX2	PN40 / 300 lbs	material: 316TI/PVDF	DN50 / 2"
EC1	PN16 / 150 lbs	material: Carbon Steel	DN80 / 3"
EC2	PN40 / 300 lbs	material: Carbon Steel	DN80 / 3"
E01	PN16 / 150 lbs	material: 316TI	DN80 / 3"
E02	PN40 / 300 lbs	material: 316TI	DN80 / 3"
E80	PN16 / 150 lbs	material: PP	DN80 / 3"
E90	PN16 / 150 lbs	material: PVC	DN80 / 3"
EX1	PN16 / 150 lbs	material: 316TI/PVDF	DN80 / 3"
EX2	PN40 / 300 lbs	material: 316TI/PVDF	DN80 / 3"
FC1	PN16 / 150 lbs	material: Carbon Steel	DN100 / 4"
FC2	PN40 / 300 lbs	material: Carbon Steel	DN100 / 4"
F01	PN16 / 150 lbs	material: 316TI	DN100 / 4"
F02	PN40 / 300 lbs	material: 316TI	DN100 / 4"
F80	PN16 / 150 lbs	material: PP	DN100 / 4"
F90	PN16 / 150 lbs	material: PVC	DN100 / 4"
FX1	PN16 / 150 lbs	material: 316TI/PVDF	DN100 / 4"
FX2	PN40 / 300 lbs	material: 316TI/PVDF	DN100 / 4"

6.1 Maglink Series 5300 (non-ex-version) (Continuation)

53			-															

GC1	PN16 / 150 lbs	material: Carbon Steel	DN150 / 6"
GC2	PN40 / 300 lbs	material: Carbon Steel	DN150 / 6"
G01	PN16 / 150 lbs	material: 316TI	DN150 / 6"
G02	PN40 / 300 lbs	material: 316TI	DN150 / 6"
G80	PN16 / 150 lbs	material: PP	DN150 / 6"
G90	PN16 / 150 lbs	material: PVC	DN150 / 6"
GX1	PN16 / 150 lbs	material: 316TI/PVDF	DN150 / 6"
GX2	PN40 / 300 lbs	material: 316TI/PVDF	DN150 / 6"
HC1	PN16 / 150 lbs	material: Carbon Steel	DN200 / 8"
HC2	PN40 / 300 lbs	material: Carbon Steel	DN200 / 8"
H01	PN16 / 150 lbs	material: 316TI	DN200 / 8"
H02	PN40 / 300 lbs	material: 316TI	DN200 / 8"
H80	PN16 / 150 lbs	material: PP	DN200 / 8"
H90	PN16 / 150 lbs	material: PVC	DN200 / 8"
HX1	PN16 / 150 lbs	material: 316TI/PVDF	DN200 / 8"
HX2	PN40 / 300 lbs	material: 316TI/PVDF	DN200 / 8"
JC1	PN16 / 150 lbs	material: Carbon Steel	DN250 / 10"
JC2	PN40 / 300 lbs	material: Carbon Steel	DN250 / 10"
J01	PN16 / 150 lbs	material: 316TI	DN250 / 10"
J02	PN40 / 300 lbs	material: 316TI	DN250 / 10"
J80	PN16 / 150 lbs	material: PP	DN250 / 10"
J90	PN16 / 150 lbs	material: PVC	DN250 / 10"
JX1	PN16 / 150 lbs	material: 316TI/PVDF	DN250 / 10"
JX2	PN40 / 300 lbs	material: 316TI/PVDF	DN250 / 10"
Y15	other		

16. Bottom support for guide tube length >3000mm

0	without
C	bottom support, material: Carbon steel/PTFE
S	bottom support; material: 316TI/PTFE
Y16	other

17. Eye-level-mounting (tube material: C-steel, painted; deflection material: Alu, painted)

0	without
SA	eye-level-mounting

18. Distance border of tank(G)/ top of tank up to eye-level (H) *(in mm)*

0	without
G/H	please advise!

6.2 Maglink Series 5400

1. Maglinktype	
54	standard, with ATEX-Approval; guide tube/float suitable for use in zone 0 in acc. PTB 04 ATEX 1102
2. Maglink head	
1	only local indicator
4	local indicator, max. 4 electr. switches or max. 3 slot initiators
8	local indicator, max. 1 electr. transmitter, max. 3 electr. switches or max. 3 slot-initiators
9	local indicator, max. 1 electr. transmitter
3. Scale	
1	0.. 5,4m
2	0..10,8m
3	0..18 feet
4	0..36 feet
5	single-pointer execution (f.e.: in inches, %, liter)
-	
4. Certificates	
0	without electrical installation; guide tube zone 0; indicator zone 1
D	Ex II 1/2 G EEx ed IIC T4; PTB 04 ATEX 1102; - only in conjunction with type 544.. - *suitable for Class I, Div. 1, Group A, T4 "flame proofed"*
I	Ex II 1/2 G EEx ia IIC T4; PTB 04 ATEX 1102; - only in conjunction with type 544../ 548../549.. - *suitable for Class I, Div. 1, Group A, T4 "intrinsically safe"*
GL	German Lloyd Approval for cargo, storage and service tanks on ships offshore installations
Y4	other
5. transmitter *(depends on certificate)*	
0	without
E	1 electr. transmitter; output: (0)4...20 mA; [Ex II 2 G EEx ia IIC T4]
	power supply: 12...30 V; -20...70 °C; accurracy: <= 1,5%
Y5	other
6. switch (depends on certificate)	
00	without
B1	1 slot-initiator type B; [Ex II 2 G EEx ia IIC T6]; 3mA/8VDC
B2	2 slot-initiators type B; [Ex II 2 G EEx ia IIC T6]; 3mA/8VDC
B3	3 slot-initiators type B; [Ex II 2 G EEx ia IIC T6]; 3mA/8VDC
B4	4 slot-initiators type B; [Ex II 2 G EEx ia IIC T6]; 3mA/8VDC
C1	1 electr. switch type C; [Ex II 2 G EEx de II C resp. EEx d IIC]; SPDT; 0,25A/250VDC; 5A/250VAC
C2	2 electr. switches type C; [Ex II 2 G EEx de II C resp. EEx d IIC]; SPDT; 0,25A/250VDC; 5A/250VAC
C3	3 electr. switches type C; [Ex II 2 G EEx de II C resp. EEx d IIC]; SPDT; 0,25A/250VDC; 5A/250VAC
C4	4 electr. switches type C; [Ex II 2 G EEx de II C resp. EEx d IIC]; SPDT; 0,25A/250VDC; 5A/250VAC
Y6	other
7. Float	
A	∅ 235x94mm; 316TI; min. 0,5 kg/dm³; max. 3,5 bar (50 psi); max. 250 °C (480 °F)
B	∅ 140x178mm; 316TI; min. 0,7 kg/dm³; max. 5 bar (150 psi); max. 250 °C (480 °F)
B1	∅ 140x178mm; Hast. C4; min. 0,7 kg/dm³; max. 5 bar (150 psi); max. 250 °C (480 °F)
C1	∅ 190x184mm; 316TI; min. 0,75 kg/dm³; max. 25 bar (350 psi); max. 250 °C (480 °F)
C2	∅ 229x206mm; 316TI; min. 0,58 kg/dm³; max. 18 bar (250 psi); max. 250 °C (480 °F)
C3	∅ 267x254mm; 316TI; min. 0,35 kg/dm³; max. 8,5 bar (120 psi); max. 250 °C (480 °F)
F1	∅ 133x140mm; PP; min. 0,65 kg/dm³; max. 7 bar (100 psi); max. 60 °C (140 °F)
F2	∅ 133x140mm; PVC; min. 0,8 kg/dm³; max. 7 bar (100 psi); max. 60 °C (140 °F)
G	∅ 150x175mm; Glas; min. 0,6 kg/dm³; max. 3,2 bar (45 psi); max. 250 °C (480 °F)
T	∅ 94x240mm; 3.7035 (Titan); min. 0,58 kg/dm³; max. 18 bar (250 psi); max. 250 °C (480 °F)
Y7	other
8. Interface [min. difference of densities: 0,2 kg/dm³ (0,4 kg/dm³ for glas)]	
0	no interface mesurement
E	interface measurement
Y8	other
9. Coating of float (not for type G)	
0	without
H	coating with Halar (ECTFE)
P	coating with PVDF
Y9	other
10. Guide tube length *(in mm)*	***max. 15000 mm!***
RM	guide tube, Ø32x2mm, length ***<= 3000 mm***
RZ	guide tube, 1" Sch40, length ***> 3000 mm***
RZ5	guide tube, 1" Sch40, length >=5500mm (several parts)

6.2 Maglink Series 5400 (Continuation)

11. Material of guide tube	
S	316TI (Standard)
P	PP (Alu reinforced)
Q	PVC (Alu reinforced)
L	PVDF (Alu reinforced)
H	Hast. C4 (only RZ/ RZ5)
Y11	andere

12. Distance between head and tank mounting flange	
B0	standard, B=102mm
BG	indicator extension
Y12	other

13. Tank mounting flange, same material as guide tube	
SM	flange in acc. to DIN
SA	flanges in acc. to ANSI
Y13	other

14. Flange surface	
1	flange surface in acc. to DIN
2	ANSI RF
3	ANSI RF SF (smooth finish)
5	ANSI FF
Y14	other

15. Nominal pressure, material and nominal diameter of guidetube flange for tank-mounting			
CC1	PN16 / 150 lbs	material: Carbon Steel	DN50 / 2"
CC2	PN40 / 300 lbs	material: Carbon Steel	DN50 / 2"
C01	PN16 / 150 lbs	material: 316TI	DN50 / 2"
C02	PN40 / 300 lbs	material: 316TI	DN50 / 2"
C80	PN16 / 150 lbs	material: PP	DN50 / 2"
C90	PN16 / 150 lbs	material: PVC	DN50 / 2"
CX1	PN16 / 150 lbs	material: 316TI/PVDF	DN50 / 2"
CX2	PN40 / 300 lbs	material: 316TI/PVDF	DN50 / 2"
EC1	PN16 / 150 lbs	material: Carbon Steel	DN80 / 3"
EC2	PN40 / 300 lbs	material: Carbon Steel	DN80 / 3"
E01	PN16 / 150 lbs	material: 316TI	DN80 / 3"
E02	PN40 / 300 lbs	material: 316TI	DN80 / 3"
E80	PN16 / 150 lbs	material: PP	DN80 / 3"
E90	PN16 / 150 lbs	material: PVC	DN80 / 3"
EX1	PN16 / 150 lbs	material: 316TI/PVDF	DN80 / 3"
EX2	PN40 / 300 lbs	material: 316TI/PVDF	DN80 / 3"
FC1	PN16 / 150 lbs	material: Carbon Steel	DN100 / 4"
FC2	PN40 / 300 lbs	material: Carbon Steel	DN100 / 4"
F01	PN16 / 150 lbs	material: 316TI	DN100 / 4"
F02	PN40 / 300 lbs	material: 316TI	DN100 / 4"
F80	PN16 / 150 lbs	material: PP	DN100 / 4"
F90	PN16 / 150 lbs	material: PVC	DN100 / 4"
FX1	PN16 / 150 lbs	material: 316TI/PVDF	DN100 / 4"
FX2	PN40 / 300 lbs	material: 316TI/PVDF	DN100 / 4"
GC1	PN16 / 150 lbs	material: Carbon Steel	DN150 / 6"
GC2	PN40 / 300 lbs	material: Carbon Steel	DN150 / 6"
G01	PN16 / 150 lbs	material: 316TI	DN150 / 6"
G02	PN40 / 300 lbs	material: 316TI	DN150 / 6"
G80	PN16 / 150 lbs	material: PP	DN150 / 6"
G90	PN16 / 150 lbs	material: PVC	DN150 / 6"
GX1	PN16 / 150 lbs	material: 316TI/PVDF	DN150 / 6"
GX2	PN40 / 300 lbs	material: 316TI/PVDF	DN150 / 6"
HC1	PN16 / 150 lbs	material: Carbon Steel	DN200 / 8"
HC2	PN40 / 300 lbs	material: Carbon Steel	DN200 / 8"
H01	PN16 / 150 lbs	material: 316TI	DN200 / 8"
H02	PN40 / 300 lbs	material: 316TI	DN200 / 8"
H80	PN16 / 150 lbs	material: PP	DN200 / 8"
H90	PN16 / 150 lbs	material: PVC	DN200 / 8"
HX1	PN16 / 150 lbs	material: 316TI/PVDF	DN200 / 8"
HX2	PN40 / 300 lbs	material: 316TI/PVDF	DN200 / 8"

6.2 Maglink Series 5400 (Continuation)

54			-																

15. Nominal pressure, material and nominal diameter of guidetube flange for tank-mounting (Contiuation)

JC1	PN16 / 150 lbs	material: Carbon Steel	DN250 / 10"
JC2	PN40 / 300 lbs	material: Carbon Steel	DN250 / 10"
J01	PN16 / 150 lbs	material: 316TI	DN250 / 10"
J02	PN40 / 300 lbs	material: 316TI	DN250 / 10"
J80	PN16 / 150 lbs	material: PP	DN250 / 10"
J90	PN16 / 150 lbs	material: PVC	DN250 / 10"
JX1	PN16 / 150 lbs	material: 316TI/PVDF	DN250 / 10"
JX2	PN40 / 300 lbs	material: 316TI/PVDF	DN250 / 10"
Y15	other		

16. Bottom support for guide tube length >3000mm

0	without
C	bottom support, material: Carbon steel/PTFE
S	bottom support; material: 316TI/PTFE
Y16	other

17. Eye-level-mounting (tube material: C-steel, painted; deflection material: Alu, painted)

0	without
SA	eye-level-mounting

18. Distance border of tank(G)/ top of tank up to eye-level (H) *(in mm)*

0	without
G/H	please advise

7. Specification sheet for Maglink

General Information:

Client	:	
Ref. No.	:	
TAG-No.	:	

Tank Data:

Tank height (inside)	:	
Tank form	:	
Tank connection	:	☐ DIN flange ☐ ANSI flange
Nominal diameter	:	
Nominal pressure	:	
Material	:	

Medium data:

Fluid	:	
Concentration	:	
Temperature	:	
Pressure	:	

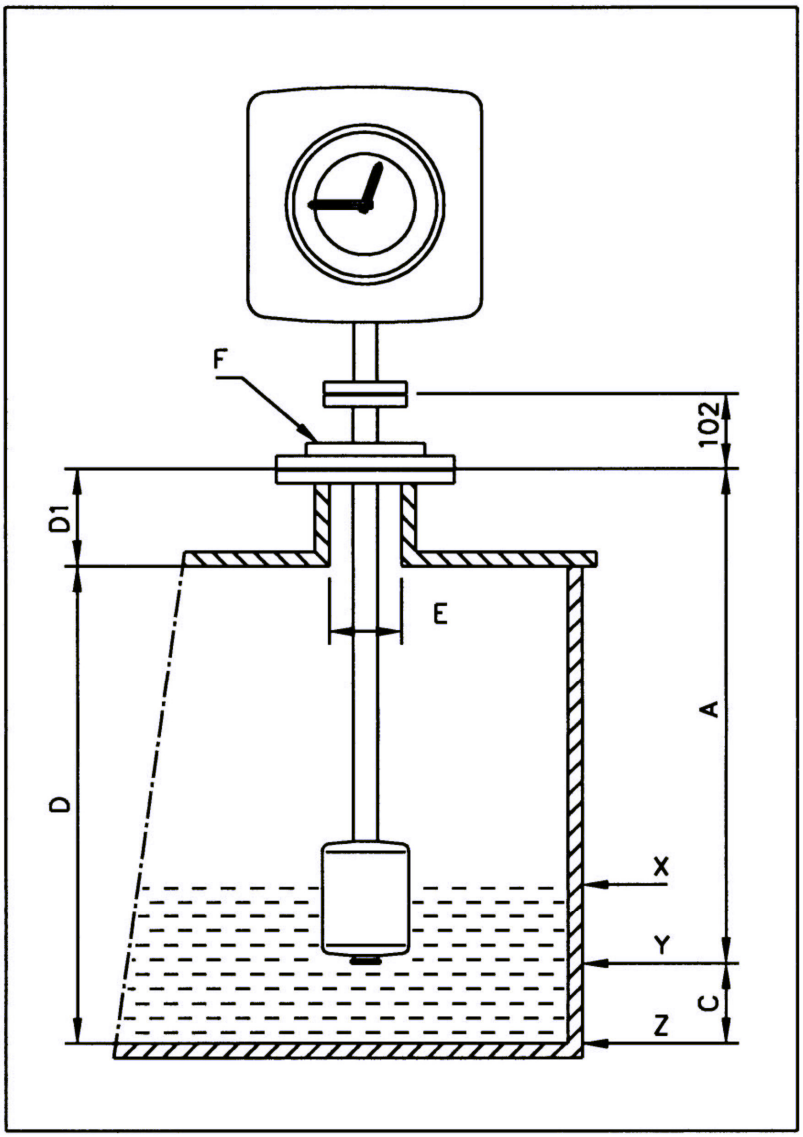
Desired version:

☐ Standard ☐ EEx i ☐ EEx d ☐ GL

☐ Indication ☐ + switches (quantity) ☐ + 1x transmitter

7. Specification sheet for Maglink (Mounting options / dimensions)

A: Standard mounting on tank nipple



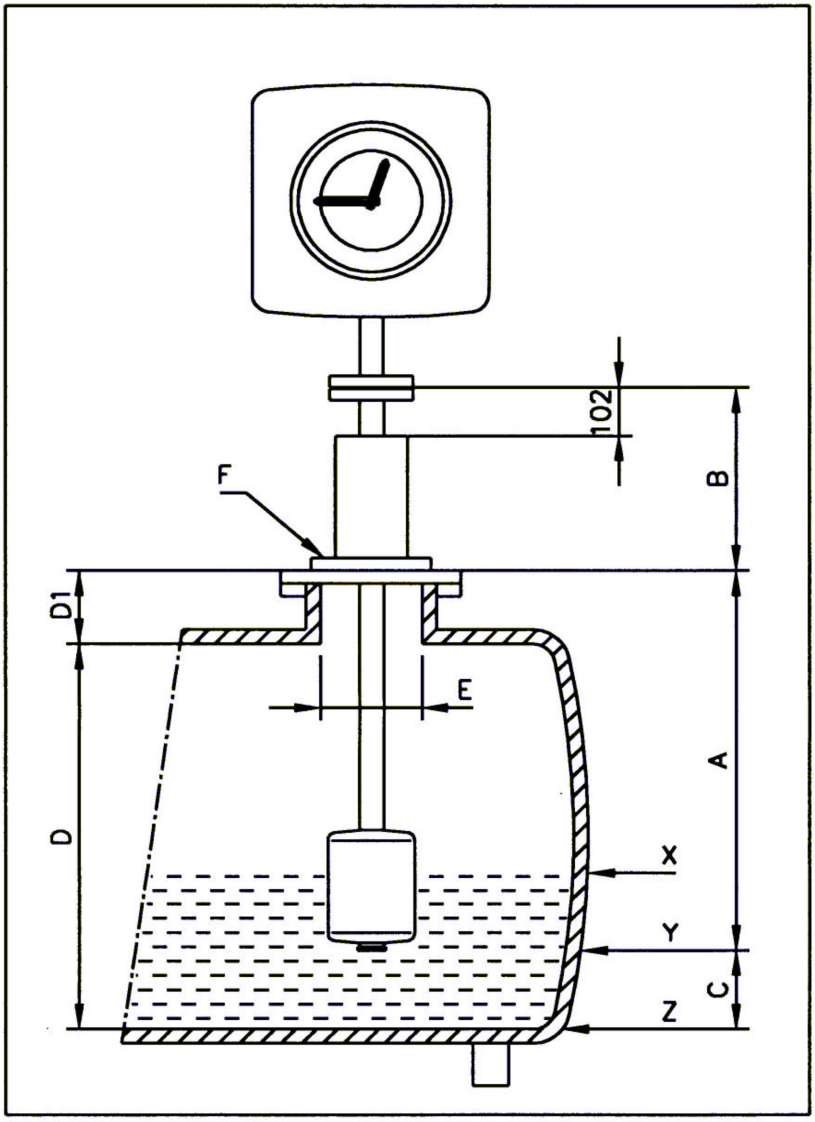
Dimensions:

Dim.	Description	Value	Unit
A	Guiding tube length		mm
C	Distance guiding tube / tank bottom		mm
D	Tank height (inside)		mm
D1	Height manhole pit		mm
E	Bore of manhole pit		mm
F	Flange size / pressure rating		

Scale zero point at:

X	Immersion depth of float	
Y	End of guide tube	
Z	Tank bottom	

B: Mounting on manhole cover with reinforcement:



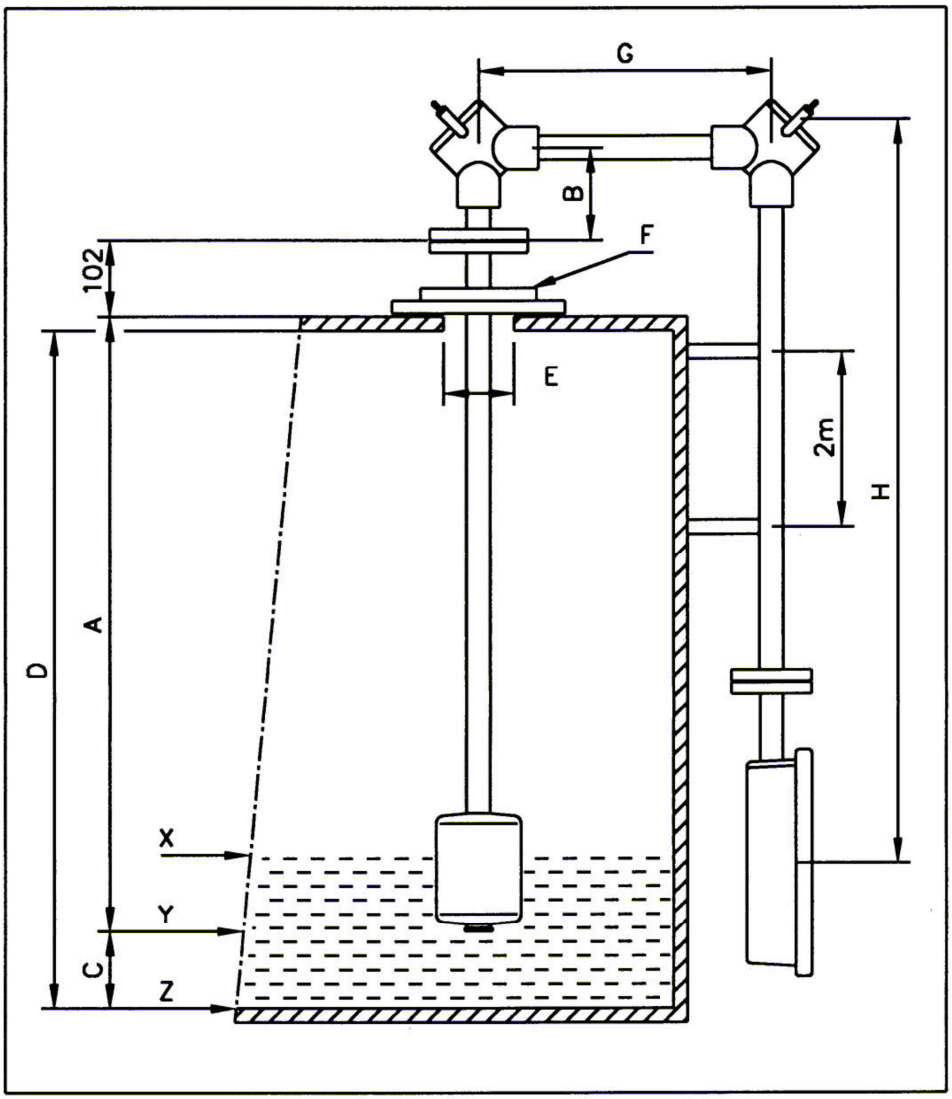
Dimensions:

Dim.	Description	Value	Unit
A	Guiding tube length		mm
C	Distance guiding tube / tank bottom		mm
D	Tank height (inside)		mm
D1	Height manhole pit		mm
E	Bore of manhole pit		mm
F	Flange size / pressure rating		

Scale zero point at:

X	Immersion depth of float	
Y	End of guide tube	
Z	Tank bottom	

C: Mounting on side of tank with lowered display:



Dimensions:

Dim.	Description	Value	Unit
A	Guiding tube length		mm
B	Distance bend loss from tank cover		mm
C	Distance guiding tube / tank bottom		mm
D	Tank height (inside)		mm
E	Bore of manhole pit		mm
F	Flange size / pressure rating		
G	Distance tank flange / tank wall		mm
H	Length of Indication lowering		mm

Scale zero point at:

X	Immersion depth of float	
Y	End of guide tube	
Z	Tank bottom	

Besides the products covered by this brochure, Intra-Automation GmbH also manufactures other high-quality and high precision instruments for industrial measurement tasks. For more information, please contact us (contact details on the backside of this brochure).

Flow measurement

Itabar®-Flow Sensor

IntraSonic IS210 Ultrasonic Flow Meter

Level measurement

ITA-mag. Level Gauge

MAGLINK Level Indicator

Other Measurement Tasks:

DigiFlow Flow and Level Computers

IntraCon Digital Controllers

IntraDigit Digital Indicators / Meters


INTRA-AUTOMATION GmbH