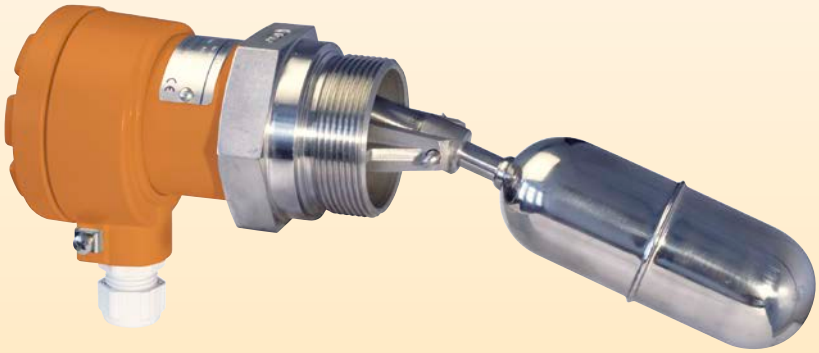
Zertifiziertes QM-System
DIN EN ISO 9001
Zertifikat-Nr. 01017

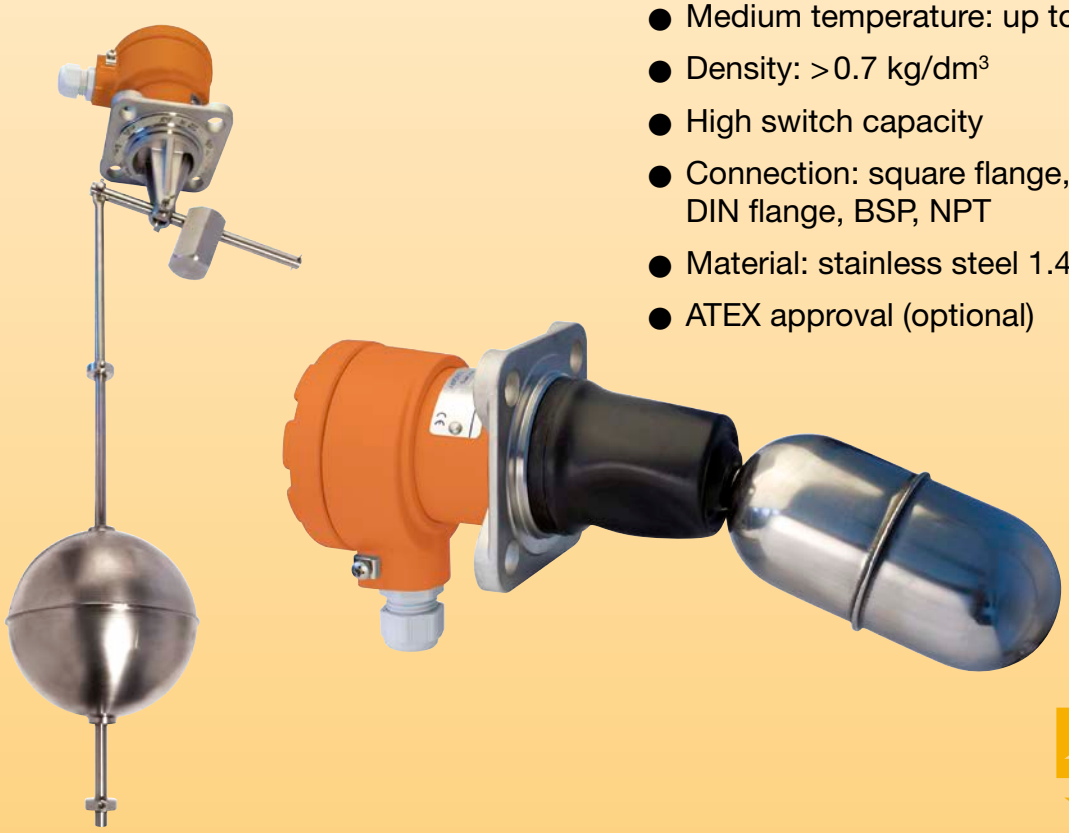
Dual-Magnet Float Switch

measuring • monitoring • analysing

NGS



- Pressure: up to 25 bar
- Medium temperature: up to 250 °C
- Density: >0.7 kg/dm³
- High switch capacity
- Connection: square flange, DIN flange, BSP, NPT
- Material: stainless steel 1.4571
- ATEX approval (optional)



N1

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Method of Operation

As the level rises and falls the inclination of the float is changed causing a permanent magnet in the float to be deflected which in turn repels a rotatable opposing magnet. This forced snap-action-contact effect operates a microswitch with a plunger. Even very small changes in level can be detected in this way.

Special Advantages

- Secure and wear-free sensitive switching by repelling magnets
- High switch capacity up to 10 A with microswitch
- Very rugged for tough environments
- No regular maintenance necessary
- Medium temperature up to 250 °C
- Wetted parts made of high-quality stainless steel
- No auxiliary power necessary

Application

Control and monitoring liquid levels in open and closed vessels, especially:

- Min. or Max. monitoring of liquid levels
- Monitoring and controlling a continuous liquid level
- When only side installation is possible due to lack of space or considerations of cost
- When a very rugged monitoring device is needed for tough environments

Technical Details

NGS-_1, horizontal mounting, fixed differential

Nominal pressure:	25 bar
Installation position:	from side
Differential:	fixed, see diagram

NGS-_2, horizontal mounting, adjustable differential

Nominal pressure:	25 bar
Installation position:	from side
Differential:	adjustable

NGS-23, top mounting, adjustable differential

Nominal pressure:	16 bar
Installation position:	from above
Differential:	adjustable

General

Medium temperature:

Model	Medium temperature
NGS-2	-40 ... +250 °C
NGS-4	-20 ... +80 °C
NGS-5	0 ... +100 °C
NGS-6	0 ... +200 °C
NGS-7	0 ... +80 °C
NGS-8	0 ... +80 °C

(See temperature diagram for EX version on next page)

Ambient temperature:	-20 °C ... +80 °C (EX version, see table below)
Min. medium density:	> 0.7 kg/dm³ (see density table below)
Wetted parts:	stainless steel 1.4571 (NGS-5...: rubber, NGS-6...: silicone rubber)
Housing material:	aluminium, colour coated
Flat gasket:	Klingerit
Process connection:	square flange, DIN flange, 2" BSP or NPT
Switching element:	1 microswitch with 1 closing and 1 opening contact (NO and NC)
Switch rating:	250 V_{AC}, 10 A, 220 V_{DC}, 0.6 A Ex: 250 V_{AC}/2.5 A; 220 V_{DC}/0.3 A
Electrical connection:	M20x1,5 for NGS-2, NGS-5, NGS-6 integrated cable for NGS-4, NGS-7, NGS-8
Protection:	standard version: NGS-2, NGS-5, NGS-6: IP65 submersible version: NGS-4, NGS-7, NGS-8: IP68 (max. 20 m WC)
Weight:	approx. 2.5 kg
ATEX approval:	⟨Ex⟩ II 1/2 G Ex de mb IIC T6...T2 Ga/Gb

Density table

Minimum liquid density (kg/dm³)				
Arm length [mm]	0 ... 100	200	300	1000 ... 3000
Float [mm]				
52	0.7	0.8	0.85	-
64	0.7	0.8	0.8	-
124	-	-	-	0.7

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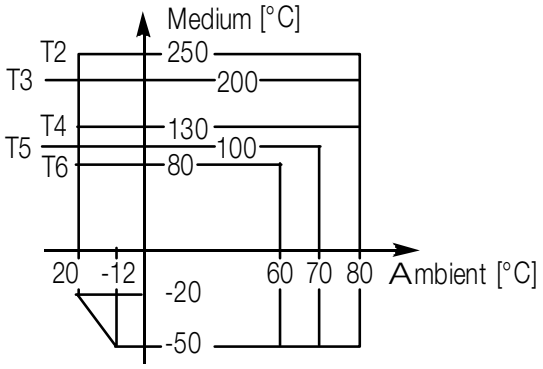
Temperature diagram for ATEX version

Class	T6	T5	T4	T3	T2
Max. process temperature	80 °C	95 °C	130 °C	200 °C	250 °C
Ambient temperature	-20 ... +60 °C	-20 ... +70 °C	-20 ... +80 °C	-20 ... +80 °C	-20 ... +80 °C

Except: NGS-51 T_{medium}: 0 ... +100 °C
NGS-61 T_{medium}: 0 ... +200 °C



The applicable medium temperature range limited by this diagram.

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Order Details (Example: **NGS-2 1 0 0**)

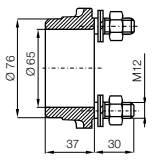
Model	Version	Switch hysteresis/characteristics	Process connection	Arm length	Certification
NGS-	**2** = standard, side or top mounting **4**[1] = submersible, side or top mounting **5** = standard with rubber protection sleeve, side or top mounting **6** = standard with silicone protection rubber sleeve, side or top mounting **7**[1] = submersible with rubber protection sleeve, side or top mounting **8**[1] = submersible with silicone protection sleeve, side or top mounting	**1** = fix	**0** = 92 mm square flange PN 25 **B**[2] = BSP 2" **N**[2] = 2" NPT **1**[4] = flange DN 80, PN 40, carbon steel **2**[4] = flange DN 100, PN 40, carbon steel **5**[4] = flange DN 80, PN 40, st. steel 1.4571 **6**[4] = flange DN 100, PN 40, st. steel 1.4571	**0** = 0 mm **5** = 100 mm **6** = 200 mm **7** = 300 mm **8**[3] = L- or Z-arm	**without** = none **Ex** = ATEX
	2 = standard, side mounting **4**[1] = submersible, side mounting	**2** = adjustable (side mounting)	**0** = 92 mm square flange PN 25 **1**[4] = flange DN 80, PN 40, carbon steel **2**[4] = flange DN 100, PN 40, carbon steel **5**[4] = flange DN 80, PN 40, st. steel 1.4571 **6**[4] = flange DN 100, PN 40, st. steel 1.4571	**0** = 0 mm **5** = 100 mm **6** = 200 mm **7** = 300 mm	
	2 = standard, mounting from top only	**3** = adjustable (top mounting)	**0** = 92 mm square flange PN 25	**5** = 1000 mm **6** = 2000 mm **7** = 3000 mm	

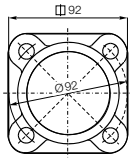
[1] Please mention cable length in clear text
[2] Only for NGS-21 and NGS-41
[3] Please mention switching point in clear text
[4] Only for NGS-21, NGS-22 and NGS-4

Accessory: Counter Flange

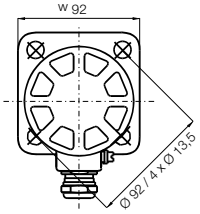
Model	Material
NGS-MFF1	Counter flange, steel 1.7218
NGS-MFF2	Stainless steel 1.4404

Counter flange NGS-MFF_



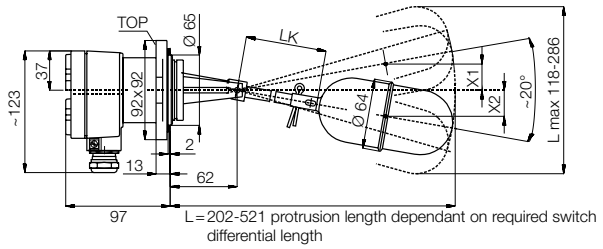


Square flange



Dimensions [mm]

Fixed switch hysteresis, side installation

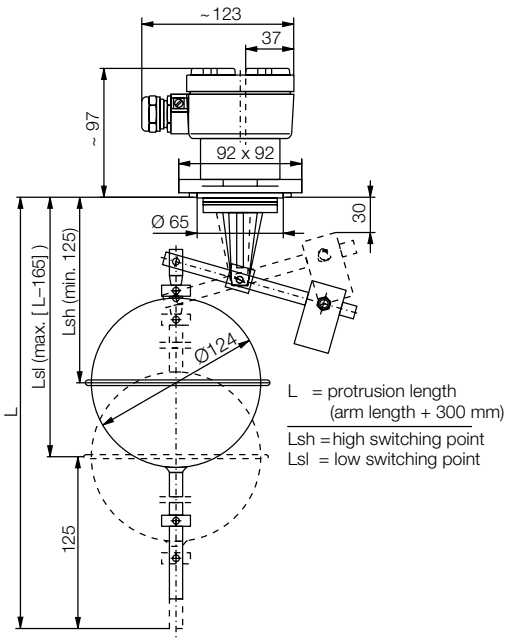


Switching data model NGS-21...

LK = linkage length	0	100	200	300
L = protrusion length	202	321	421	521
L_{max} = total swing	118	180	234	286
X1 = high switch point	12	30	46	62
X2 = low switch point	12	30	46	62

Note: *The data apply to water at 20 °C, tolerance ±5 mm*

Adjustable hysteresis, installation from above (NGS-23)



The hysteresis can be adjusted by positioning the rings on the rod. By positioning the counterweight the different rod lengths can be compensated.

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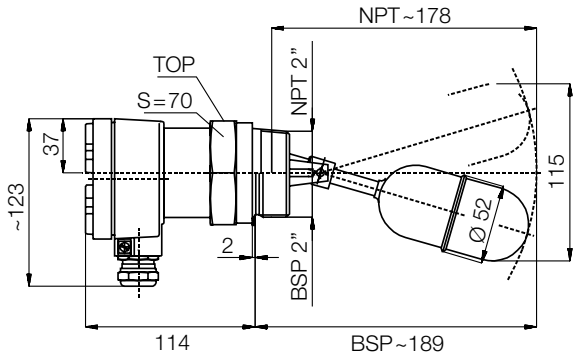
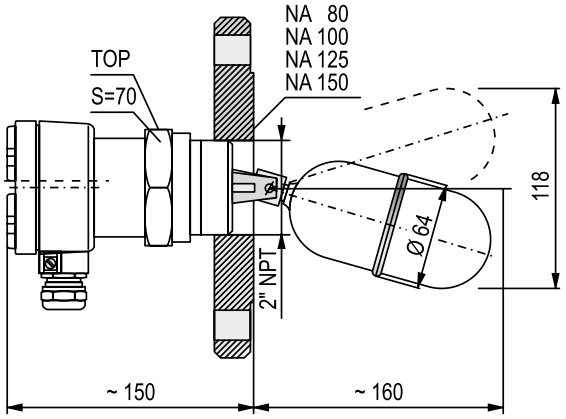
Dimensions [mm] (continued)

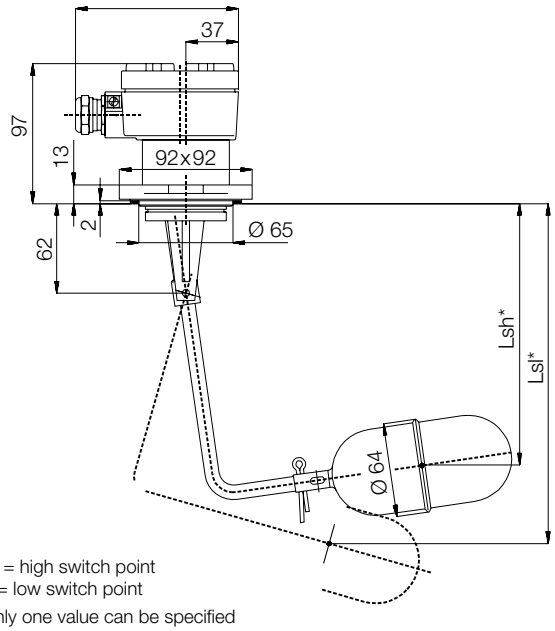
Process connection: threaded



Process connection: flanged



L-arm, installation from above



Lsh = high switch point
Lsl = low switch point
* Only one value can be specified

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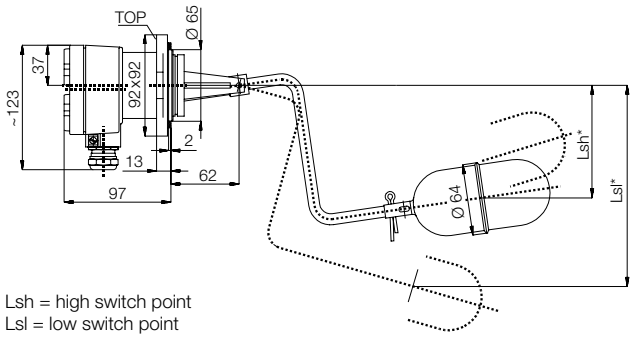
Dimensions [mm] (continued)

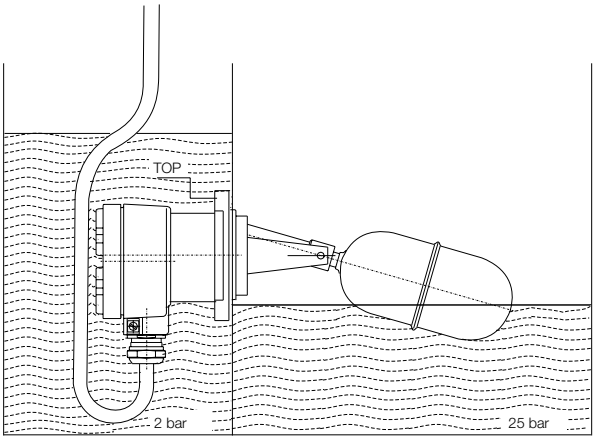
Z-arm, side installation



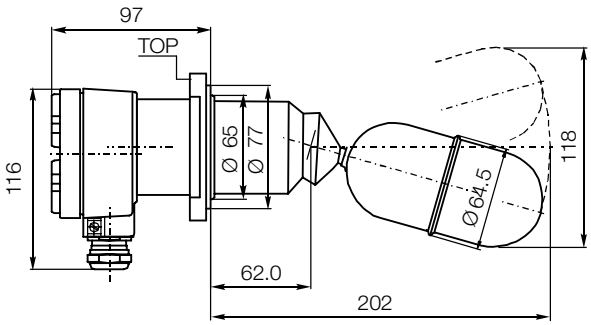
Lsh = high switch point
Lsl = low switch point

* Only one value can be specified

Submersible version (NGS-41)



Fixed switch hysteresis, with protection sleeve



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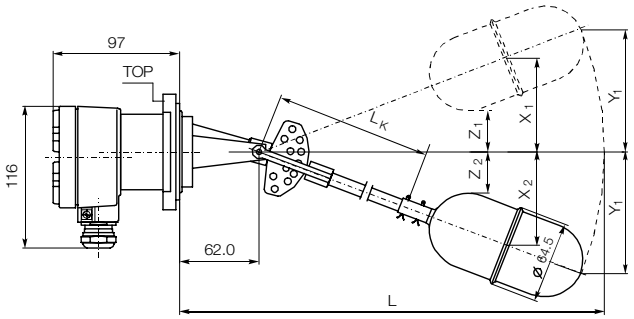
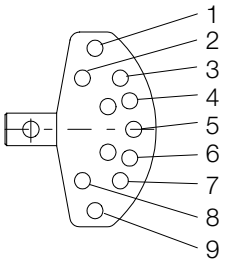
Dimensions [mm] (continued)

Adjustable switch hysteresis, side installation (NGS-22)





NGS-2200 NGS-2200Ex						NGS-2205 NGS-2205Ex					NGS-2206 NGS-2206Ex					NGS-2207 NGS-2207Ex				
L_k = 0						L_k = 100					L_k = 200					L_k = 300				
L = 268						L = 350					L = 450					L = 550				
Pos.	**X1**	**X2**	**Diff. S**	**Y1 (Z1)**	**Y2 (Z2)**	**X1**	**X2**	**Diff. S**	**Y1 (Z2)**	**Y2 (Z2)**	**X1**	**X2**	**Diff. S**	**Y1 (Z3)**	**Y2 (Z2)**	**X1**	**X2**	**Diff. S**	**Y1 (Z4)**	**Y2 (Z2)**
1-4	+87	+20	67	131	(13)	+129	+30	99	194	(19)	+171	+40	131	256	(25)	213	+50	163	319	(51)
1-5	+87	+12	75	131	44	+129	+18	111	194	87	+171	+24	147	256	36	213	+30	183	319	45
1-6	+87	-20	97	131	53	+129	-30	159	194	44	+171	-40	201	256	58	213	-50	263	319	72
1-7	+87	-42	129	131	84	+129	-62	191	194	92	+171	-82	253	256	121	213	-102	315	319	151
1-8	+87	-65	152	131	123	+129	-96	225	194	142	+171	-127	298	256	187	213	-158	371	319	233
1-9	+87	-89	176	131	131	+129	-132	261	194	194	+171	-175	316	256	256	213	-218	431	319	319
2-5	+80	+12	68	123	44	+118	+18	100	182	27	+156	+24	132	240	36	194	+30	164	299	45
2-6	+80	-20	100	123	53	+118	-30	148	182	44	+156	-40	196	240	58	194	-50	244	299	72
2-7	+80	-42	122	123	84	+118	-62	180	182	92	+156	-82	238	240	121	194	-102	296	299	151
2-8	+80	-65	145	123	123	+118	-96	214	182	142	+156	+127	283	240	187	194	-158	352	299	233
2-9	+80	-89	169	123	131	+118	-132	250	182	194	+156	-175	339	240	256	194	-218	402	299	319
3-5	+47	+12	35	84	44	+70	+18	52	104	27	+93	+24	69	137	36	+116	+30	86	171	45
3-6	+47	-20	67	84	53	+70	-30	100	104	44	+93	-40	133	137	58	+116	-50	66	171	72
3-7	+47	-42	89	84	84	+70	-62	132	104	92	+93	-82	175	137	121	+116	-102	218	171	151
3-8	+47	-65	112	84	123	+70	-96	166	104	142	+93	-127	220	137	187	+116	-158	274	171	233
3-9	+47	-83	136	84	131	+70	-132	201	104	194	+93	-175	268	137	256	+116	-218	334	171	319
4-6	+20	-20	40	53	53	+30	-30	60	78	44	+40	-40	80	103	58	+50	-50	100	128	72
4-7	+20	-42	62	53	84	+30	-62	92	78	92	+40	-82	122	103	121	+50	-102	152	128	151
4-8	+20	-65	85	53	123	+30	-96	126	78	142	+40	-127	167	103	187	+50	-158	208	128	233
4-9	+20	-89	109	53	131	+30	-132	162	78	194	+40	-175	215	103	256	+50	-218	268	128	319
5-7	-12	-42	30	44	84	-18	-62	44	65	92	-24	-82	106	86	121	-30	-102	72	107	151
5-8	-12	-65	53	44	123	-18	-96	78	65	142	-24	-127	151	86	187	-30	-158	128	107	233
5-9	-12	-89	72	44	131	-18	-132	115	65	194	-24	-175	189	86	256	-30	-218	188	107	319
6-9	-20	-89	69	13	131	-30	-132	102	13	194	-40	-175	215	23	256	-50	-218	168	31	319

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