

Type A01

Horizontally-Mounted:
Trimod Besta Square Flanged

92 x 92mm
Flange

Up to 572°F
Temperature

Stainless steel
Wetted Parts



ABOUT TYPES A01, AA01, B01, BB01 Trimod Besta Square Flanged

The characteristic of a level switch with the standard square flange is the flange in stainless steel with bolt holes on a 92mm PCD. Typical applications are shipbuilding, chemical engineering, food industry, pulp and paper, drinking water supply, sewage water, etc.

Application Examples:

- Shipbuilding
- Refrigeration
- Chemical Engineering
- Food Industry
- Pulp and Paper
- Drinking Water Supply
- Sewage Treatment

For more information about our complete line of horizontally-mounted liquid level switches, visit our web site at:
<http://www.granzow.com/liquidlevelcontrols/horizontal/>

Typical Standard Range switches to handle the majority of applications

The characteristic of a Trimod Besta level switch of the Standard Range is the square flange in stainless steel with bolt holes on a 92 mm PCD and a nominal pressure rating of PN 25.

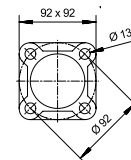
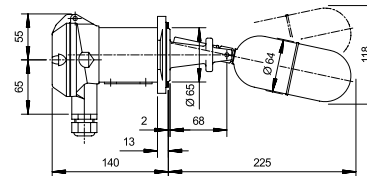
The following pages show the level switches which are most commonly used. However, countless more combinations of types are possible.

Detailed information can be found on all the modules available with the possible combinations on pages 21 to 36. For accessories, such as test actuators, counterflanges and float chambers see pages 38 to 42.

Typical applications: shipbuilding, refrigeration, chemical engineering, food industry, pulp and paper, drinking water supply, sewage treatment etc.

Type A 01 04 - For general purpose

Nominal pressure	PN 25 max. 25 bar up to 300°C
Operating temperature	0 to 300°C
Ambient temperature	0 to 70°C
Density	min. 0.7 kg/dm ³
Operating differential	fixed 12 mm
Rod extensions	see page 36
Wetside material	Stainless steel (CrNiMo)
Flange material	Stainless steel (CrNiMo)
Switch housing material	Sea water resistant die cast aluminium
Flange dimensions	92 x 92 mm (PCD 92 mm)
Counterflange	see page 38
Switch element	Microswitch SPDT silver contacts
Switch rating	250 VAC, 5 A 30 VDC, 5 A
Enclosure	IP 65
Weight	approx. 1.8 kg



Type A 01 041 - Low cost solution

This type is the same as the A 01 04 but there is no possibility for mounting a rod extension.

Type A 01 01 - For installation in limited space

The overall length of this type is 194 instead of 225 mm. Minimum liquid density: 0.8 kg/dm³. All other data as type A 01 04.

Type 5A 01 04 - For corrosive environments

As type A 01 04 except that the complete switch housing (excluding the cable gland), is manufactured in stainless steel (CrNiMo) and is therefore highly corrosion resistant.

Weight approx. 2.7 kg.

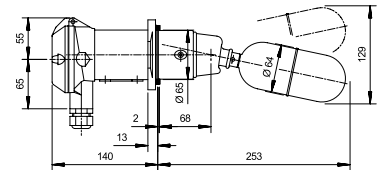
Type A 01 07 - For low density fluids

This level switch can be used for liquids with densities as low as 0.5 kg/dm³.

Weight approx. 2 kg. All other technical data as type A 01 04

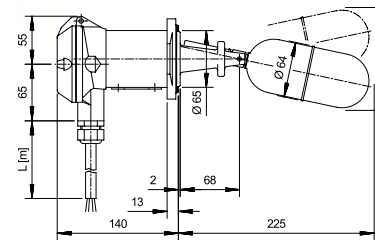
Type A 01 051 to A 01 054 - For contaminated or crystallizing media
Bellows to prevent jamming of the float mechanism.

Bellow materials	A 01 051	Perbunan/Buna
	A 01 052	Silicon
	A 01 053	FPM
	A 01 054	PTFE
Operating temperatures	A 01 051	0 to 120°C
	A 01 052	0 to 200°C
	A 01 053	10 to 200°C
	A 01 054	0 to 250°C
Mounting length	253 mm	
Weight	approx. 2 kg	
All other technical data as type A 01 04		



Type U3A 01 04 to U11A 01 04 - For submersible applications

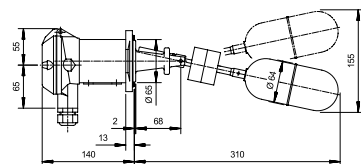
Operating temperature	-30 to 80°C	
Ambient temperature	-30 to 80°C	
Switch housing material	Sea water resistant die cast aluminium	
Enclosure	IP 68	
	switch housing is pressure tight up to 100 meters WG	
Length of encapsulated cable	U3A 01 04	3 m
	U5A 01 04	5 m
	U11A 01 04	11 m
Weight	U3A 01 04	approx. 2.5 kg
	U5A 01 04	approx. 2.8 kg
	U11A 01 04	approx. 4 kg
All other technical data as type A 01 04		



Type A 01 08T1 - For interface application

Density of heavier liquids	min. 0.8 kg/dm ³
Difference in density	min. 0.22 kg/dm ³
Operating differential	approx. 20 mm
Rod length	100 mm
Weight	approx. 2.4 kg
All other technical data as type A 01 04	

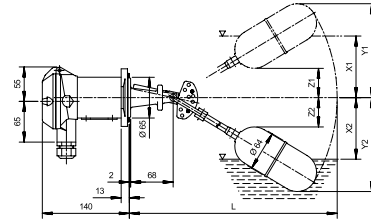
The position of the weight is calculated in reference to the densities of the media and is factory preset.



Type A 01 090 to A 01 095 - For adjustable operating differential

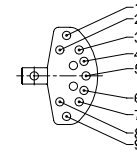
These level switches are mainly used for two-point operation, for example pump control.

Nominal pressure	PN 25, max. 25 bar up to 300°C
Operating temperature	0 to 300°C
Ambient temperature	0 to 70°C
Density of liquid	min. 0.75 kg/dm ³ (A 01 095: min. 0.9 kg/dm ³)
Operating differential S	see table
Wetside material	Stainless steel (CrNiMo)
Flange material	Stainless steel (CrNiMo)
Switch housing material	Sea water resistant die cast aluminium
Flange dimensions	92 x 92 mm (PCD 92 mm)
Counterflange	see page 38
Switch element	Microswitch SPDT silver contacts
Switch rating	250 VAC, 5 A 30 VDC, 5 A
Enclosure	IP 65
Weight	approx. 2 kg



Adjustment of switching differential

The switching differential can be set by inserting pegs in holes 1 to 9 of the adjustment block (see drawing). The resulting differentials, the positions of the switching points and the float travel can be seen in the table below. The values are in mm and are referenced to water at 20°C and density of 1.0 kg/dm³.



Typ	A 01 090					A 01 091					A 01 092					A 01 093					A 01 095				
	L 278 mm					L 361 mm					L 461 mm					L 561 mm					L 246 mm				
Pos.	X1	X2	Diff.	Y1	Y2	X1	X2	Diff.	Y1	Y2	X1	X2	Diff.	Y1	Y2	X1	X2	Diff.	Y1	Y2	X1	X2	Diff.	Y1	Y2
	S (Z2) (Z1)					S (Z2) (Z1)					S (Z2) (Z1)					S (Z2) (Z1)					S (Z2) (Z1)				
1-4	+108	+60	48	175	(10)	+157	+85	72	238	(20)	+230	+125	105	315	(50)	+292	+160	132	395	(75)	+100	+55	45	147	(10)
1-5	+108	+15	93	175	35	+157	+25	132	238	37	+230	+39	191	315	39	+292	+48	244	395	42	+100	+18	82	147	35
1-6	+108	-25	133	175	85	+157	-37	194	238	105	+230	-51	281	315	135	+292	-65	357	395	165	+100	-18	118	147	74
1-7	+108	-52	160	175	125	+157	-90	247	238	165	+230	-124	354	315	215	+292	-160	452	395	265	+100	-46	146	147	115
1-8	+108	-80	188	175	153	+157	-128	285	238	206	+230	-171	401	315	275	+292	-215	507	395	345	+100	-70	170	147	128
1-9	+108	-110	218	175	175	+157	-160	317	238	238	+230	-212	442	315	315	+292	-265	557	395	395	+100	-90	190	147	147
2-5	+98	+15	83	153	35	+122	+25	97	206	37	+181	+39	142	275	39	+230	+48	182	345	42	+79	+18	61	128	35
2-6	+98	-25	123	153	85	+122	-37	159	206	105	+181	-51	232	275	135	+230	-65	295	345	165	+79	-18	97	128	74
2-7	+98	-52	150	153	125	+122	-90	212	206	165	+181	-124	305	275	215	+230	-160	390	345	265	+79	-46	125	128	115
2-8	+98	-80	178	153	153	+122	-128	250	206	206	+181	-171	352	275	275	+230	-215	445	345	345	+79	-70	149	128	128
2-9	+98	-110	208	153	175	+122	-160	282	206	238	+181	-212	393	275	315	+230	-265	495	345	395	+79	-90	169	128	147
3-5	+58	+15	43	125	35	+81	+25	56	165	37	+122	+39	83	215	39	+145	+48	97	265	42	+52	+18	34	115	35
3-6	+58	-25	83	125	85	+81	-37	118	165	105	+122	-51	173	215	135	+145	-65	210	265	165	+52	-18	70	115	74
3-7	+58	-52	110	125	125	+81	-90	171	165	165	+122	-124	246	215	215	+145	-160	305	265	265	+52	-46	98	115	115
3-8	+58	-80	138	125	153	+81	-128	209	165	206	+122	-171	293	215	275	+145	-215	360	265	345	+52	-70	122	115	128
3-9	+58	-110	168	125	175	+81	-160	241	165	238	+122	-212	334	215	315	+145	-265	410	265	395	+52	-90	142	115	147
4-6	+25	-25	50	85	85	+31	-37	68	105	105	+48	-51	99	135	135	+63	-65	128	165	165	+23	-18	41	74	74
4-7	+25	-52	77	85	125	+31	-90	121	105	165	+48	-124	172	135	215	+63	-160	223	165	265	+23	-46	69	74	115
4-8	+25	-80	105	85	153	+31	-128	159	105	206	+48	-171	219	135	275	+63	-215	278	165	345	+23	-70	93	74	128
4-9	+25	-110	135	85	175	+31	-160	191	105	238	+48	-212	260	135	315	+63	-265	328	165	395	+23	-90	113	74	147
5-7	-15	-52	37	35	125	-33	-90	57	37	165	-40	-124	84	39	215	-50	-160	110	42	265	-12	-46	34	35	115
5-8	-15	-80	65	35	153	-33	-128	95	37	206	-40	-171	131	39	275	-50	-215	165	42	345	-12	-70	58	35	128
5-9	-15	-110	95	35	175	-33	-160	127	37	238	-40	-212	172	39	315	-50	-265	215	42	395	-12	-90	78	35	147
6-9	-55	-110	55	(10)	175	-80	-160	80	(20)	238	-105	-212	107	(50)	315	-135	-265	130	(75)	395	-45	-90	45	(10)	147

Type A 01 140 to A 01 141 - For vertical mounting

Nominal pressure	PN 16, max. 16 bar up to 300°C
Operating temperature	0 to 300°C
Ambient temperature	0 to 70°C
Density of liquid	
pump control	0.45 kg/dm ³
alarm	0.30 kg/dm ³
Operating differential S	A 01 140: 12 to 1340 mm
	A 01 141: 12 to 2840 mm
Wetside material	Stainless steel (CrNiMo)
Flange material	Stainless steel (CrNiMo)
Switch housing material	Sea water resistant die cast aluminium
Flange dimensions	92 x 92 mm (PCD 92 mm)
Counterflange	see page 38
Switch element	Microswitch SPDT, silver contacts
Switch rating	250 VAC, 5A 30 VDC, 5A
Enclosure	IP 65
Weight	A 01 140 approx. 2.5 kg
	A 01 141 approx. 2.7 kg



Setting the switching differential

1. For pump control (two switch points):

The required differential is set by fixing the two stop collars in the appropriate positions on the rod. The counterweight is adjusted to compensate for the rod weight (without float), until the cross arm is balanced. The float slides up and down the rod with the liquid level and actuates the switch at the set position of the stop collars.

The switch remains latched between the two positions, which are for applications such as pump control where the contactor coil would need to remain energised throughout the pumping cycle.

2. For alarm duty (one switch point):

Only the lower collar is fixed on the rod (below the float). Within the limit of the rod length, the height of the alarm point can be chosen as required. The counterweight has to be set to outweigh the rod (without float). The alarm switching differential is 12 mm, fixed.

Installation

Over open tanks or sumps on a bracket. On closed tanks on the manhole cover with float mounted from the inside. In the absence of a manhole, i.e. the float cannot be mounted from the inside, an intermediate flange of at least DN 125/5" should be used. If turbulence occurs, the rod should be guided loosely at the lower end. For counterweight setting, refer to data sheet LTDS02E.

Type U3A 01 140 to 141 - For vertical submersible mounting

Operating temperature	-30 to 80°C
Ambient temperature	-30 to 80°C
Enclosure	IP 68
	switch housing is pressure proof up to 100 meters WG
Length of cast-in cable	3 m
Weight	U3A 01 140 approx. 3.2 kg
	U3A 01 141 approx. 3.4 kg

All other technical data as described above

