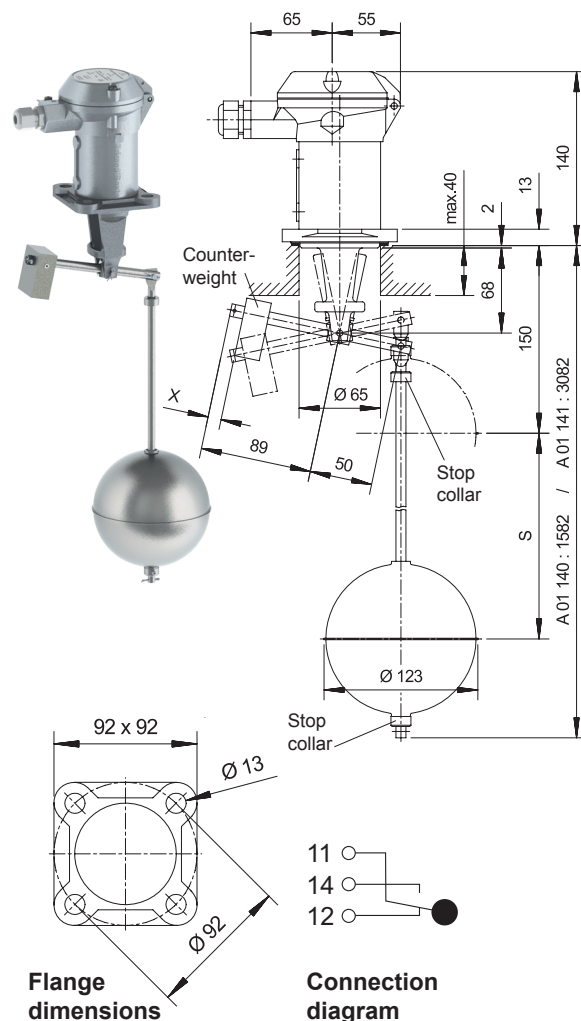


### Top mounted level switches for level alarm or pump control applications

Type	A 01 140 (SIL 1) A 01 141 (SIL 1)
Function	2-point control (pump) or 1 switching point (alarm)
Nominal pressure	PN 16 acc. to EN/DIN
Operating temperature	0 to 300°C
Ambient temperature	0 to 70°C
Density of the liquid	
> Pump control	min. 0.45 kg/dm <sup>3</sup>
> Alarm	min. 0.30 kg/dm <sup>3</sup>
Operating differential	A 01 140: 12 to 1340 mm, A 01 141: 12 to 2840 mm
Wetside material	stainless steel (CrNiMo)
Housing material	seawater resistant die cast aluminium
Flange dimensions	square 92 x 92 mm, PCD 92 mm
Switch element	Microswitch SPDT with silver contacts
Switch rating	250 VAC, 5 A / 30 VDC, 5 A
Enclosure	IP65
Weight	A 01 140: approx. 2,5 kg, A 01 141: approx. 2,7 kg
Approvals	ABS, BV, DNV, GL, LRS, RINA, RMRS



### Setting the switching differential

#### 1. For pump control (2 switch points)

The required differential is set by fixing the two stop collars in the appropriate positions on the rod. The counterweight has to be 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 energized throughout the pumping cycle.

#### 2. For alarm operation (1 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.

#### Adjustment at factory

The level switches are factory set for pump control. Distance X = 32 mm (Type 140), = 29 mm (Type 141). If the rods have to be shortened or the switch has to be used for alarm purposes, the position of the of the counter-weight has to be adjusted, as described on the back page.

### Installation

Over open tanks or sumps on a bracket. On closed tanks on the manhole cover with the float mounted from the inside. In the absence of a manhole, i.e. the float can not be mounted from the inside, an inter-mediate flange with an inside diameter of min. 125 mm of flange modules acc. to EN/DIN DN125 or ANSI DN5" should be used. If turbulence occurs, the rod should be guided loosely at the lower end.

### Certificates

- Material certificates acc. to EN 10204-2.2 and EN 10204 3.1
- Test records of hydraulic pressure- and functional tests
- Test records of material tests

### Distance X for counterweight (see drawing on the front page)

#### Switch types ...140

rod length L (mm)	pump control X (mm)	alarm P X (mm)	alarm E X (mm)
1500	32*)	14	19
1400	35	17	22
1300	38	20	25
1200	41	23	28
1100	44	26	32
1000	47	30	35
900	51	32	38
800	54	36	41
700	57	39	44
600	--	42	47
500	--	45	50

P: Switch with pneumatic module

E: Switch with electrical module

\*) Factory setting

#### Switch types ...141

rod length L (mm)	pump control X (mm)	alarm P X (mm)	alarm E X (mm)
3000	29 *)	20	23
2900	31	22	24
2800	33	23	26
2700	34	25	28
2600	36	27	29
2500	38	28	31
2400	39	30	33
2300	41	31	34
2200	43	33	36
2100	44	35	38
2000	46	36	39
1900	48	38	41
1800	49	40	43
1700	51	41	44
1600	53	43	45
1500	54	45	48

### Options

- Dual SPDT microswitches (SIL 2)
- Microswitches with gold plated contacts
- Self checking proximity switches acc. to NAMUR
- Enclosure IP67, or IP68 for submersible applications  
5A/380 VAC 0.3A/440 VDC (type: AE26)
- Explosion proof switches, PTB-approved

- Pneumatic switches ON/OFF
- High and low temperature versions
- Cable entry with 3/4" NPT internal thread
- Switch housing: chromated, stainless steel (316 equiv.), epoxy painted
- Flange modules: acc. to ANSI, EN/DIN, BS and JIS

### Counterflanges

The simplest method of installing the Trimod Besta level switch types A 01 140 and A 01 141 is to use the Besta standard weld-on counterflanges. These are available in carbon steel (P250GH) and in stainless steel (1.4401).

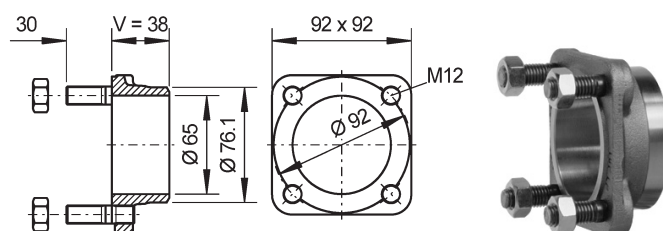
If the float can be mounted from the inside, the counterflange can be welded directly to the tank. Otherwise the counterflange has to be welded to an intermediate flange (I.D. min. 125 mm).

#### Temperature range:

Material P250GH -10 to 300°C

Material 1.4401: -196 to 400°C

Type	Specification	Flange-material	Stud-material
2829.1	Counterflange	P250GH	5.8
2831.3	Counterflange	1.4401	A2



### Marine approvals and registrations of Trimod Besta level switches



### Quality Assurance

Besta AG is certified acc. to ISO 9001.

