

INSTRUCTION MANUAL

SANITARY LEVEL SWITCH - FLX



Manufactured by:

 **KLAY-INSTRUMENTS**
www.klay-instruments.com

Nijverheidsweg 5
7991 CZ DWINGELOO
The Netherlands

Tel: +31-521-591550
E-mail: info@klay.nl

APPLICATION:

The Sanitary, Electronic Level Switch is used for level indication in all liquids with conductivity from infinite to 25 µS. Possible applications are:

- Overfill protection of tanks/vessels
- High and low level signal in tanks
- Automatic filling and emptying control in tanks
- Registration of conductivity changes in liquids
- Foam detection

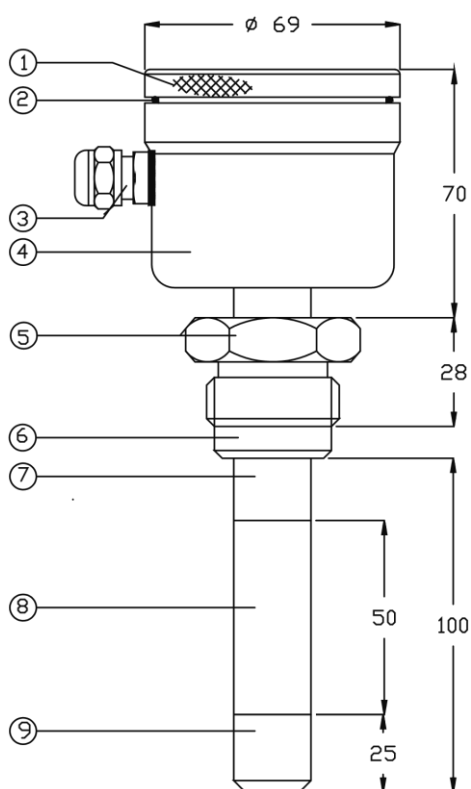
LIMITATIONS:

- High-viscous liquids which causes a film (coating) on the sensor.
- In case of very high concentrations of chemical vapours.

DESCRIPTION:

The FLX is based on the well proven technology of measuring the conductivity between the electrode tip and the reference part of the electrode, or tank wall. The level switch is built-into the tank/vessel so that the electrode point is flush with the level to be registered. A weak current is applied between the electrode point and the conductive tank/vessel wall. In non-conductive tanks/vessels a small current is applied between the electrode point and the reference part of the electrode.

As long as the electrode point does not touch the conductive fluid, there will be no current. When the liquid reaches the electrode a weak current is applied. The FLX is available with a PNP output, electronic module SMC-9 and a built in selector switch.

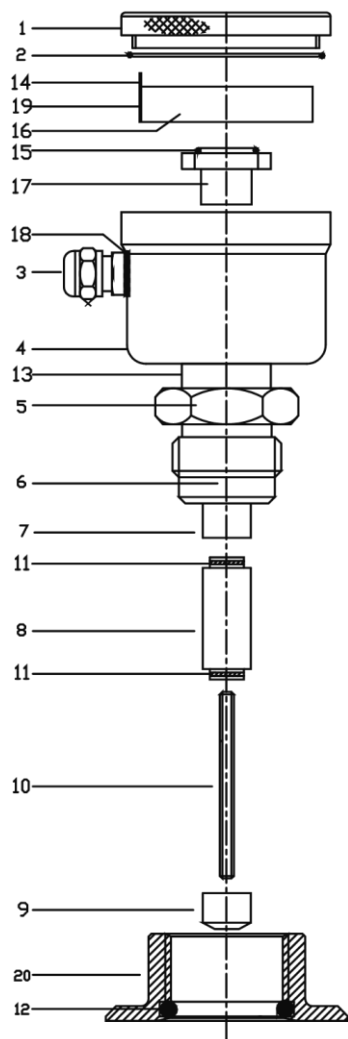
DIMENSIONAL DRAWING:**PARTS DESCRIPTION**

1. Cover
2. O-ring
3. PG9 Cable Gland
4. Electronic Housing
5. 1" BSP Nipple, SW 41
6. Sanitary process part
7. Sensor ($\varnothing 19$ mm)
8. Insulation part ($\varnothing 19$ mm)
9. Sensor tip ($\varnothing 19$ mm)

MATERIAL

AISI 304
EPDM

AISI 304
AISI 316
AISI 316
AISI 316
PEEK
AISI 316



No.	PARTS DESCRIPTION	PART No
1	Cover	10241
2	O-ring	11029
3	PG9 Cable Gland	10138
4	Electronic Housing	10234
5	1" BSP Nipple, SW 41	10272
6	Sanitary process part	10243
7	Sensor (Ø19 mm)	10235
8	Insulation part (Ø19 mm)	20040
9	Sensor tip (Ø19 mm)	10239
10	Treaded Joint	10249
11	O-ring (2x)	11041
12	O-ring (FKM-Viton/EPDM)	11027/11008
13	Connecting Piece	10244
14	Earth Connection	10251
15	O-ring	11042
16	Electronics	192
17	Nut of Synthetic material	20037
18	Seal	20035
19	Type sticker	20523
20	Weld-on nipple (1" BSP)	10197

CONTROL UNIT – SMC-9

TECHNICAL DATA

Design	Ø 44.50mm
Operating Voltage	24V(DC)+-20% (18V...30V)
Power Requirements	<30mA
	-10°C till +70°C
Storage temperature	-20°C till +85°C
Humidity	0 till 90% (without condensation)
Inputs	1 Electrode
Sensitivity	0,2KOhm; 10KOhm; 9,9KOhm...999KOhm arbitrary
Output	1x Electronic output; 30mA ; PNP invertible short-circuit-proof
Time-delay	0,0 up to 99,9sec ; arbitrary
Start-delay	<0,3s
Response-time	<0,07s (10KOhm) <0,15s (1MOhm)

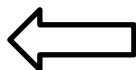
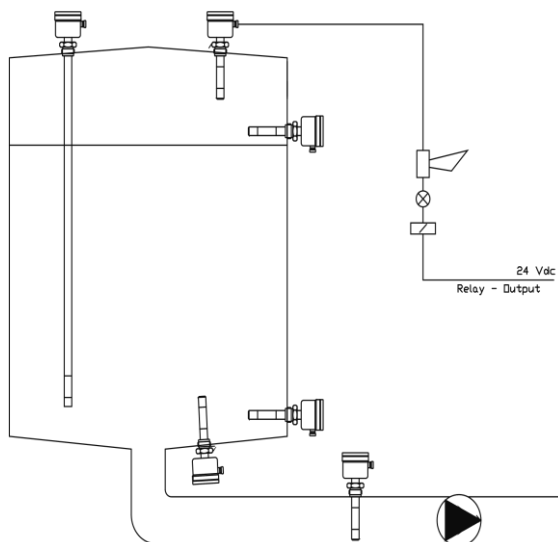
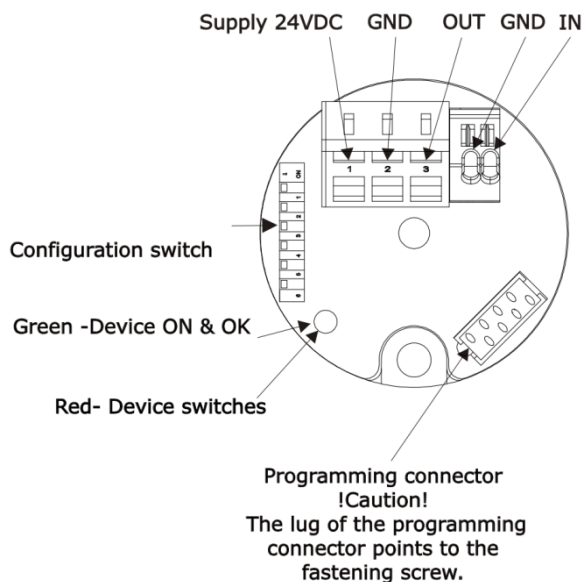
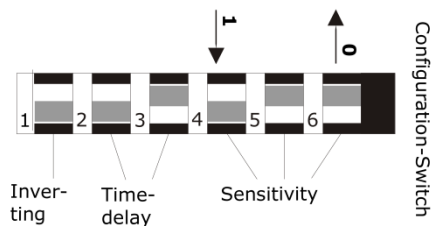


CONFIGURATION

Switch				
6	5	4	ON	OFF
0	0	0	Adjustable by SMCsoft (Default 2KOhm)	
0	0	1	3KOhm	2.5KOhm
0	1	0	5KOhm	4.5KOhm
0	1	1	6KOhm	5.5KOhm
1	0	0	8KOhm	7.5KOhm
1	0	1	100KOhm	70KOhm
1	1	0	250KOhm	220KOhm
1	1	1	500KOhm	470KOhm

DELAYS

Switch	Delay in sec.	
3	2	
0	0	(0 sec) adjustable via SMCsoft
0	1	2 sec
1	0	4 sec
1	1	8 sec



Installation options FLX.

!Caution!

When installing or using the device it must be protected from electrostatic discharge. An incorrect installation or parameters which are adjusted incorrectly can interfere with the correct function of your application or can cause damages. Therefore independent safety equipment should be available at any time. Adjustments must only be conducted by qualified personnel. All necessary adjustments are to be made by the configuration switches or the SMC software. If there are difficulties during the start-up, please do not manipulate the device in any incorrect way. Otherwise the warranty expires. If the dewpoint is reached, condensation may destroy the module.