



DISPLACER TYPE LEVEL SWITCH 137-P
SINGLE POINT / TWO POINT

The 137-P is a reliable top mounted flameproof single or two point level switch for use with liquids of density 0.7 to 1.2 Kg/dm³. It is suitable for demanding applications like Level alarm for Water & Low density liquids like Petrol, Diesel, Naptha, Kerosene, ATF etc.

This is specially designed for Hazardous area classification as per CCOE / PESO norms.

❖ SPECIFICATIONS:

- ❑ No. of set points : Single or Two
- ❑ Temperature range : 0°C to 150°C
- ❑ Output : One/Two c/o per set point
- ❑ Switch rating : 5A @ 230 VAC (Resistive).
- ❑ Terminals : Suitable for 2.5 mm², conductor size.
- ❑ Working pressure : 10 to 40 Kg/cm²
- ❑ All wetted parts : SS 316.
- ❑ Density : 0.7 to 1.2 Kg/dm³
- ❑ Enclosure : Weatherproof to IP-67 as per IS/IEC 60529:2001
Flameproof enclosure as per IS/IEC 60079-1:2007
Suitable for Gr IIA, IIB, IIC
- FLP Certification : From KLPL, Boisar & from CCOE / PESO Nagpur
- ❑ Range : 20,000 mm.(Max.)

❖ OPERATING DIAGRAM

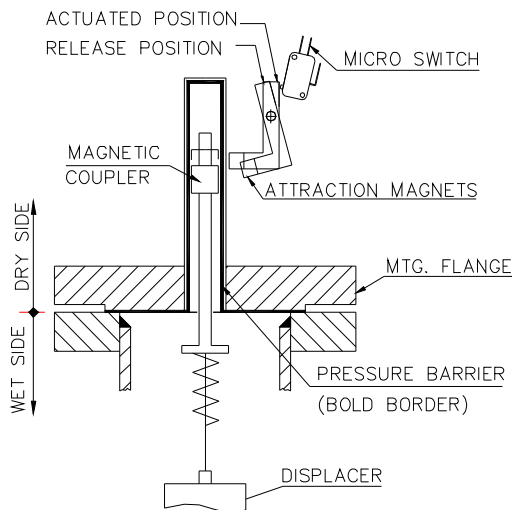


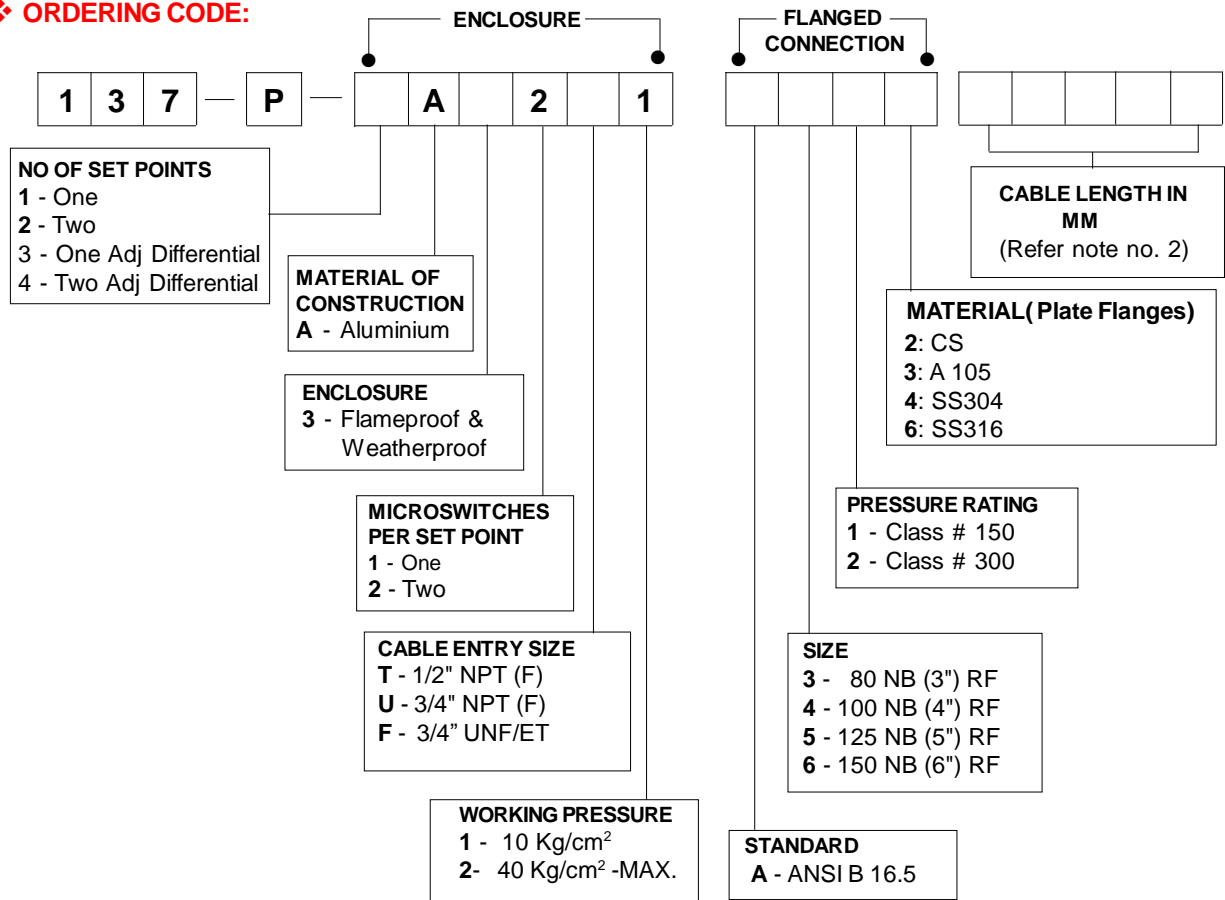
Figure 1



❖ PRINCIPLE OF OPERATION

The displacer is attached to a coupler by a cable inside the sealing pipe which also acts as a pressure barrier. The coupler rests on the compression spring housed at the bottom of the sealing pipe. With displacer in air, its weight compresses the spring downwards and the coupler is out of reach of the field of attraction magnet in the carriage assembly. When level rises, immersion and consequent weight loss of displacer causes the bell coupler to enter into the magnetic field. The attraction of magnet towards the coupler initiates the snap action and consequently operating microswitches. The level sensing mechanism employs attraction and repulsion properties of magnetic circuit. The attraction property senses the level change and repulsion property actuates the microswitch. This prevents contact chattering.

❖ ORDERING CODE:



IMPORTANT : WHILE ORDERING PURCHASER TO CONFIRM PRODUCT DENSITY.

SR.NO.	LEVEL SWITCH TYPE	PRODUCT DENSITY & RESPECTIVE DIAMETER OF DISPLACER	
		Density from 0.7 To < 0.9 Kg/dm ³	Density ≥ 0.9 To 1.2 Kg/dm ³
1.	1 POINT FIXED OPERATING DIFFERENTIAL	Dia.70 mm.	Dia.76 mm.
2.	1 POINT ADJUSTABLE OPERATING DIFFERENTIAL.	Dia.70 mm.	Dia.76 mm.
3.	2 SET POINT FIXED OPERATING DIFFERENTIAL.	Dia.70 mm.	Dia.76 mm.
4.	2 SET POINT ADJUSTABLE OPERATING DIFFERENTIAL	Dia.60 mm.	Dia.76 mm.

NOTES:

1. Stilling pipe is to be perforated with equispaced holes.
2. Set point position is the distance of lower set point from the nozzle face (Refer figures on page no 3). The length of the cable is computed from this.
3. All wetted parts are made of SS316.
4. For mounting the switch in the external cage, minimum flange size required is 100 NB (4"). Please note that for direct mounting 80 NB (3") flange is generally not recommended
5. The minimum gap between two consecutive set points is 150 mm (equal to height of the displacer).

EXAMPLE :

Say typical ordering code is 137 - P - 2A32T1 A412 L=00400

The desired switch has following specifications : Cast Aluminium flameproof and weatherproof IP-67 enclosure, Two setpoints with total 2 changeover contacts, viz. 2 microswitch per set point, two 1/2" NPT cable entries, For working pressure 10 Kg/cm² , Process connection 100 NB ANSI 150 # RF CS flange. Effective length 400 mm.

TEST CERTIFICATE...

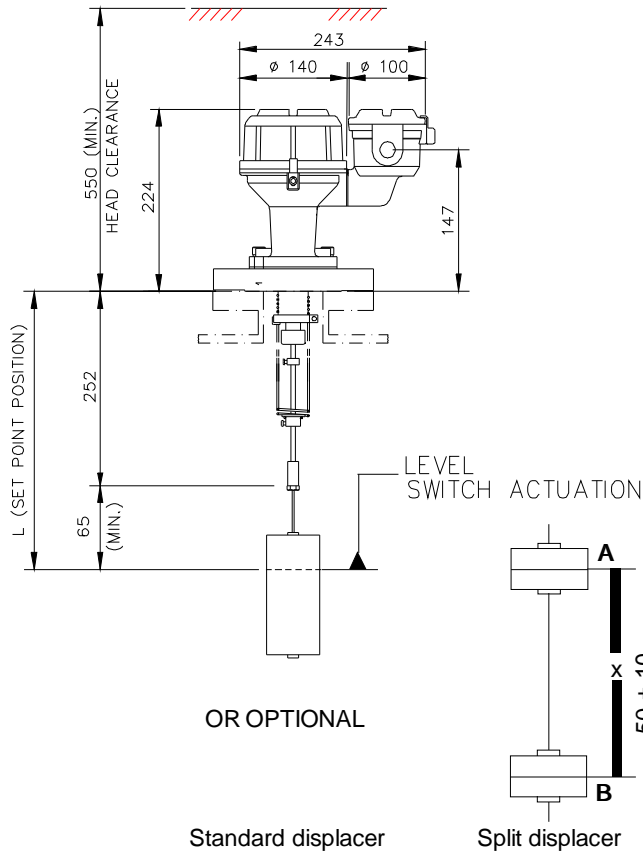
Flameproof - From KLPL,Boisar.

KLPL/ Ex / R / 12-018 Dated :- 20/06/2012

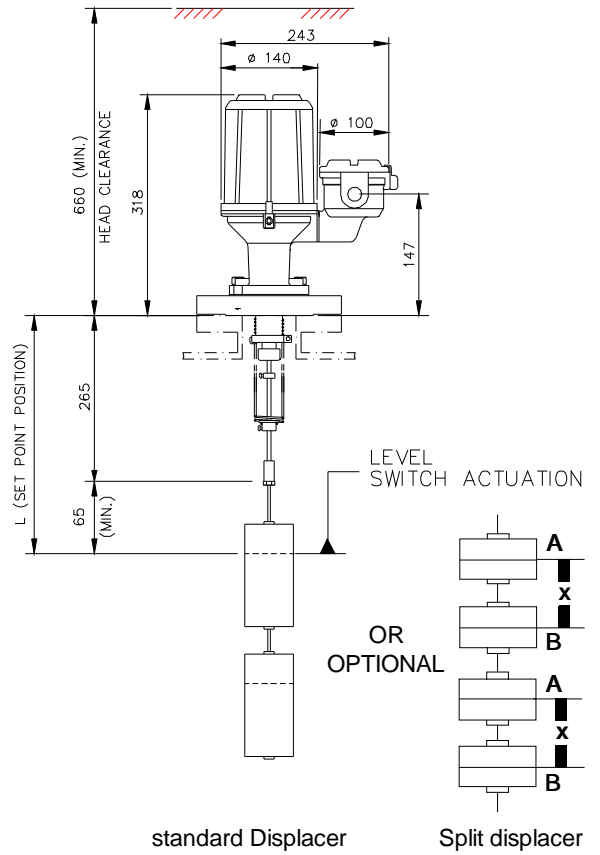
From CCOE / PESO, Nagpur .

A/P/HQ/MH/104/3210 (P327641/1) Dated :- 27/11/2013

❖ DIMENSIONS :



Single Point Switch

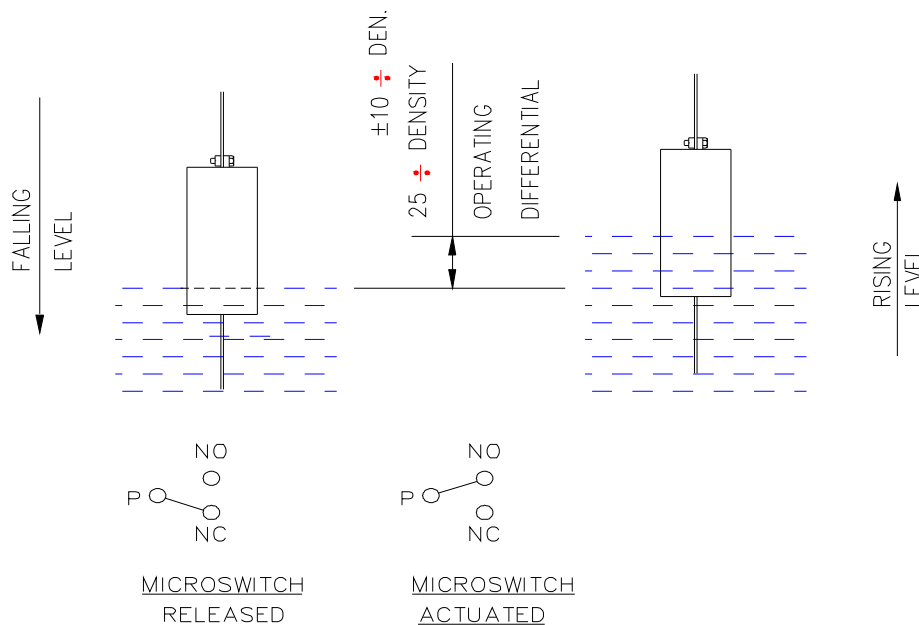


Two Point switch

Sr.No.	No. of set points	Operating differential
1	Single	25 ± 10
2	Two	25 ± 10

* For liquid density = 1 kg/dm³

Note : For Split displacer Min. operating differential 50± 10 mm.



Schematic showing operating differential

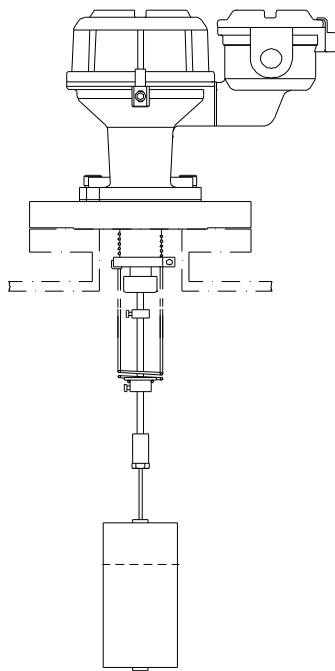
Note : All dimensions are in mm.

❖ ACCESSORIES:

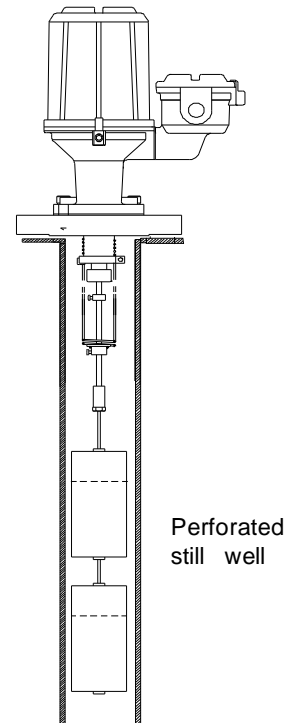
Following optional accessories can be supplied on demand ...

- (1) External cage - Type ` A ' & ` B '. The installation in these external cages is as shown in applications drawings.
- (2) Weldable nozzle - to suit the switch mounting flange on the vessel (Please specify nozzle length).
- (3) Weldable flange - suitable flange for preparation of nozzle.

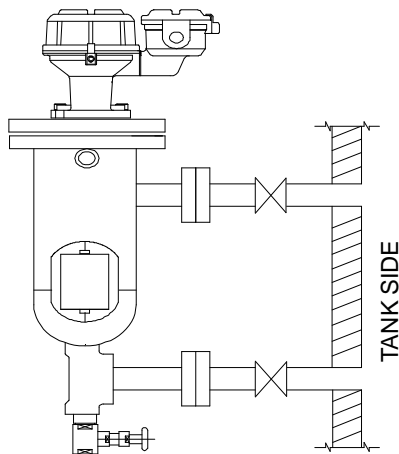
❖ APPLICATION DRAWINGS:



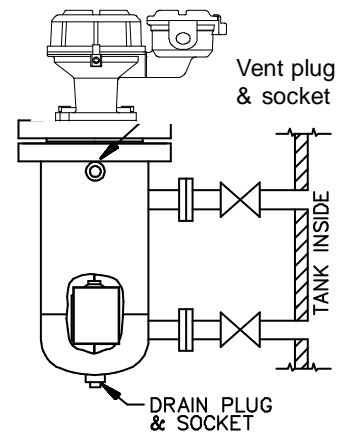
Direct mounting



With still well



Mounting in external cage type " B "



Mounting in external cage type " A "

*** Continuous developments may necessitate changes without notice.

LF-137-0816 Rev.02 06/2015



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