



LEVEL INSTRUMENTATION & CONTROL SOLUTIONS

WEATHERPROOF DISPLACER TYPE LEVEL SWITCH (WITH WETTED PARTS IN POLYPROPYLENE), SERIES 137 -Y (SINGLE, TWO POINT & THREE POINT)

The 137-Y is a reliable polypropylene top mounted level switch for use with DM water, waste water and liquids of density between 1 to 1.2 Kg/dm³. It is suitable for tanks with measuring range upto 20,000 mm. It is best suitable for chemical applications with corrosive environments.

- Standard model suitable for 0° to 60°C
- Use of stilling well is recommended in case of excessive turbulence in the tank.
- By using a split displacer variable hysteresis on the set point is possible. e.g. for use in pump control.

❖ SPECIFICATIONS:

- Measuring range : 300 mm (Min.)
20,000 mm (Max.).
- Operating differential : 25 ±10 mm (Max.).
- Accuracy : ± 10 mm.
- Temperature range : 0°C to 60°C
- Output : One/Two c/o @ 5A, 230 VAC (Resistive).
- Terminals : Suitable for 2.5 mm², conductor size.
- Pressure : Atmospheric.
- Material of Displacer : Polypropylene.
- Material of Rope : Polypropylene.
- Density : 1 to 1.2 Kg/dm³
- Enclosure : Weatherproof to IP-67 as per IS:13947-1993.

❖ ACCESSORIES:

STILLING WELL : To be ordered separately if required (Refer LF-137-0821 R00). Stilling Well is recommended when there is excessive turbulence in the tank.

❖ 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, entire weight of the displacer acting on the compression spring compresses the spring downwards and the coupler is out of reach of the field of attraction magnet in the carriage assembly. The rising liquid level causes weight loss in weight of displacer due to the partial or full immersion, 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 consequent operation 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.



❖ OPERATING DIAGRAM:

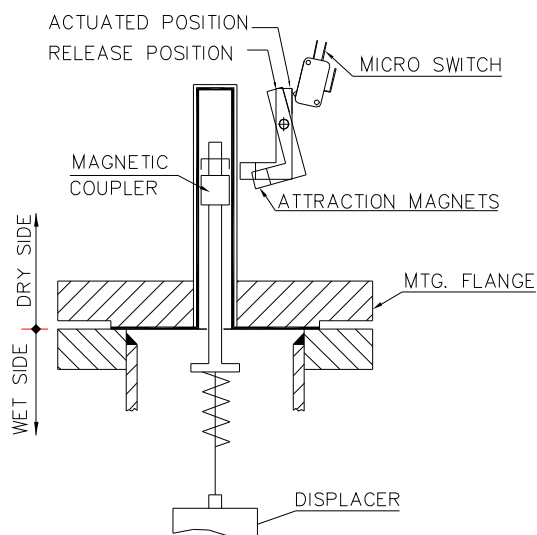
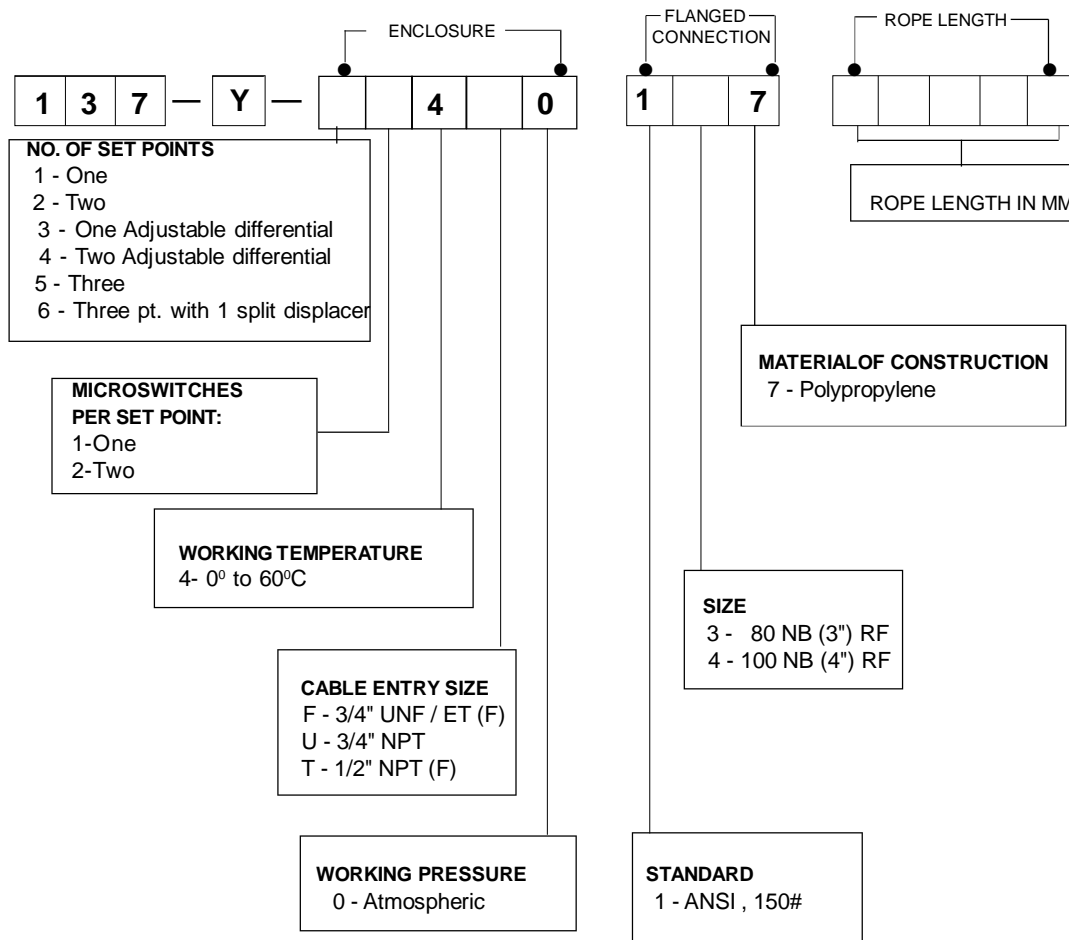


Figure 1

❖ **ORDERING CODE :**



EXAMPLE : Say typical ordering code is 137 - Y - 114T0 - 147 - 01000 ...

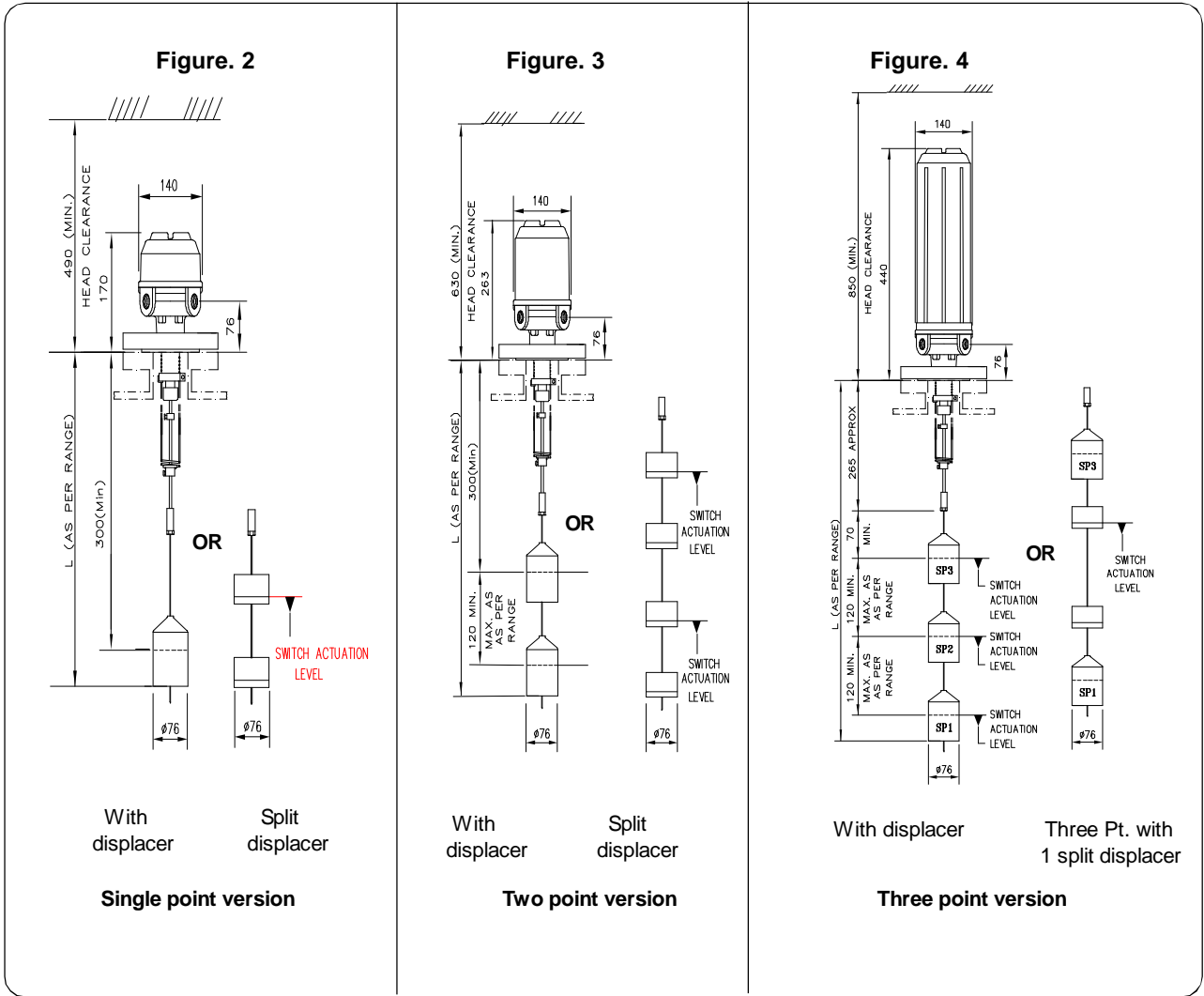
The desired switch has following specifications :

- 1 - No. of set points - one
 - 1 - Microswitches per set point - one
 - 4 - Working temperature - 0° to 60°C
 - T - Cable entry size - 1/2" NPT (F)
 - 0 - Working pressure - Atmospheric
 - 1 - Flange dimensions as per - ANSI, 150#
 - 4 - Process connection - 100NB (4")
 - 7 - Flange material - Polypropylene
- Rope length required is 1000 mm below the nozzle face.

NOTES :

- 1) Operating differential is as shown on fig. 4 for specific gravity equal to 1. Variations in operating differential will be observed with change in specific gravity . Operating differential is inversely proportional to density of liquid.
- 2) Stilling pipe is to be perforated with equispaced holes.(For general arrangement please refer fig. 6).
- 3) Minimum set point position is 300 mm from bottom of the flange.
- 4) Displacer & Rope are made of polypropylene.
- 5) The minimum difference between two consecutive set points is 150 mm .
- 6) For minimum head clearance refer fig. 2, 3 & 4..
- 7) For 3 point switch with two C/O, cable entry must be 3/4" NPT.

DIMENSIONAL DETAILS:



POSITIONS OF TRIPPING POINT WITH DISPLACER IN WATER

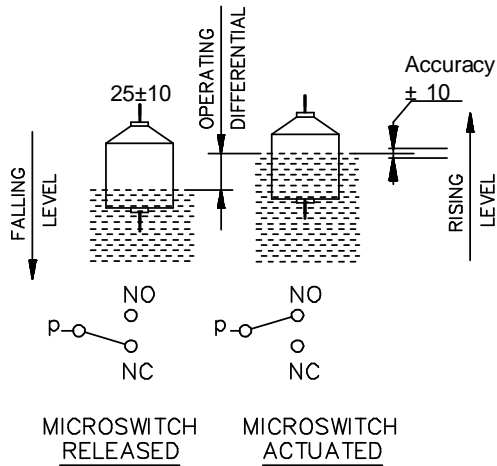


Figure 5

Schematic showing operating differential

Note : All dimensions are in mm.

❖ **APPLICATION DRAWINGS:**

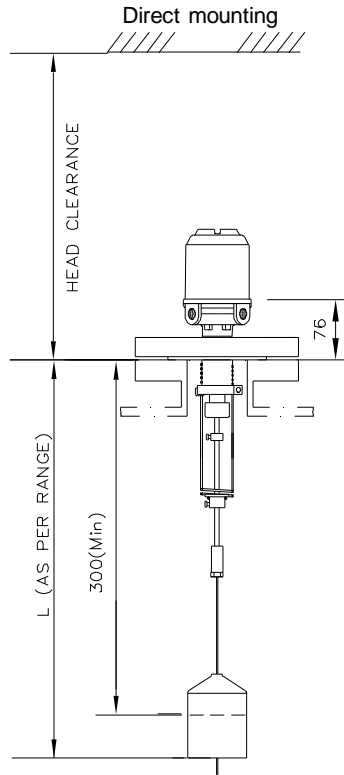


Fig. 6

With still well
3-Point used for pump control & HI or LO Alarm

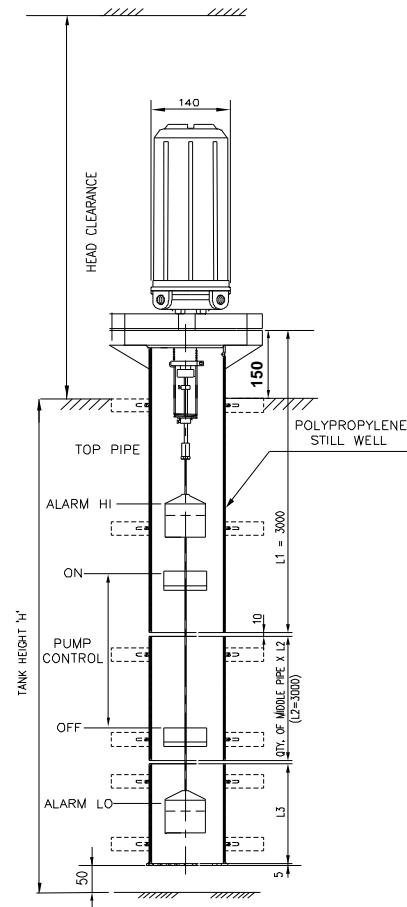


Fig. 7

For HI & LO Level Alarm & Split displacer for Pump Control

NOTES:

1. All Still Well supports are in purchaser's scope.
2. Still Wells having lengths > 3000 mm will be provided in sections.
3. Pipe sections to be aligned or welded at site by purchaser.
4. Minimum 2 supports per section recommended.

*** Continuous developments may necessitate changes without notice.

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SBEM Pvt. Ltd.

39, Electronic Co-Operative Estate, Pune-Satara Road, Pune – 411 009 (INDIA)

Tel. – 91-20-24220505, 24223375 Fax – 91-20-24215670

Email – sbemsales@sbem.co.in, ho@sbem.co.in

Works : Bibwewadi Industrial Estate, 691/A/2, Pune-Satara Road, Pune-411 037(India) Email : mfg@sbem.co.in

Office : **MUMBAI**

Tele. : 91-22-27823601, 27823603

Fax : 91-22-27823603

Email : mumbai@sbem.co.in

CHENNAI

91-44-24481235, 24481225

91-44-24486947

chennai@sbem.co.in

NEW DELHI

91-11-26560647, 26969679

91-11-26969679

newdelhi@sbem.co.in

