



The IBR Certified 137-D with chamber is a reliable top mounted Single point level switch for use with water and liquids of density greater than 0.8 Kg/dm³. It is suitable for tanks having working pressure upto 30 kg/cm². It is suited for Non corrosive duties. It is best suitable for applications which demand following features.

Applications:- Boilers, Heat Exchangers.

- Standard model suitable for 0° to 150° C & higher temperature up to 350° C optional can be provided.

❖ **SPECIFICATIONS:**

- No. of set points : ONE
- Operating differential
 - Standard : 25 ±10 mm (Max.).
 - Optional : adjustable.
- Accuracy : ± 10 mm.
- Temperature range : 0°C to 150°C (Std.)
: 0°C to 350°C (Optional)
- Switch Rating : One/Two c/o @ 5A, 230 VAC (Resistive) or 0.2 A @ 220 VDC.
- Terminals : Suitable for 2.5 mm², conductor size.
- Cable entry : 3/4" UNF / 1/2" NPT
- Density : 0.9 to 1.2 Kg/dm³ (Mainly for water duty)
- Enclosure : Weatherproof to IP-67 as per IS:13947-1993.
- **Chamber** :
 - Material : CS/ASTM A105
 - pressure : 10kg/cm² / 30 Kg/cm²
 - Mounting : Side to Side
 - End Connection : 1" SW / Flanged (Please Specify)

❖ **OPERATING DIAGRAM:**

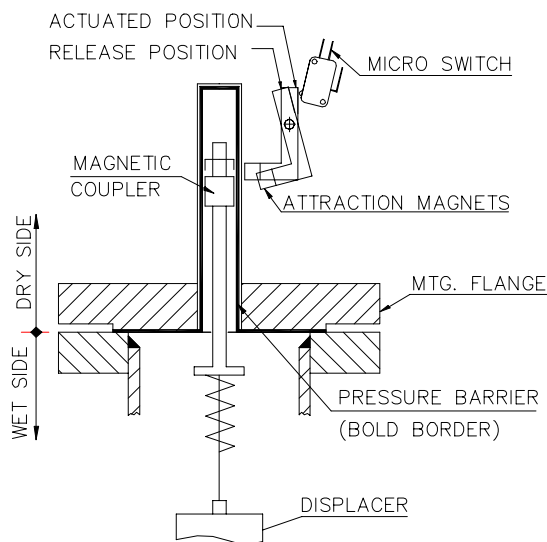


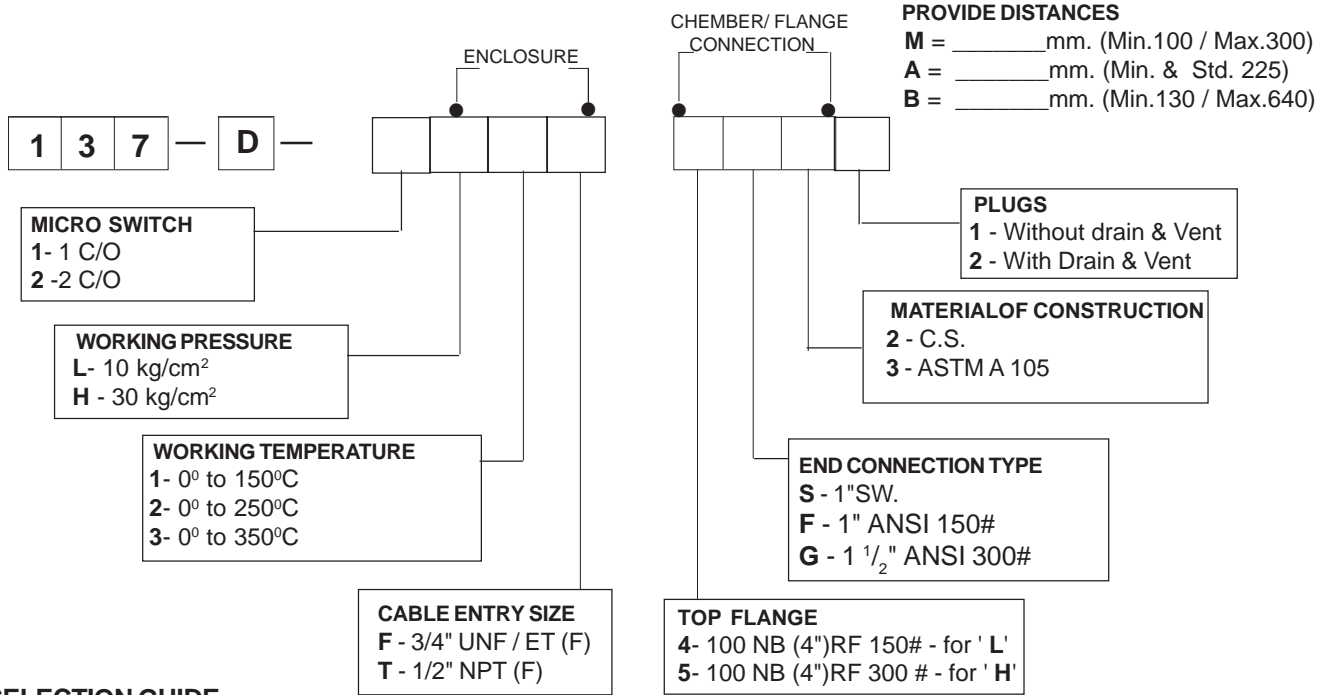
Figure 1



❖ **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, 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.

❖ **ORDERING CODE :**



SELECTION GUIDE

Sr.No.	Parameters	For low pressure	For high pressure
1	PRESSURE	10 kg/cm ²	30kg/cm ²
2	TEMPERATURE up to 350°C	Material of construction C.S./ASTM A105	Material of construction C.S./ASTM A105.
3	MATERIAL OF CONSTRUCTION	C.S./ASTMA105	ASTM A105.
4	END PIPE CONNECTIONS Flanged	1" (25 NB), 1 1/2" (40 NB) .	1" (25 NB), 1 1/2" (40 NB) .
5	EXTERNAL FINISH For C.S. chamber	Redoxoide primer on outer surface - Std.	Redoxoide primer on outer surface - Std.
6	FLANGE RATING For temperature 1. 150°C 2. 350°C	100 NB (4") RF 150 # 100 NB (4") RF 300 #	100 NB (4") RF 300# 100 NB (4") RF 300 #

EXAMPLE : Say typical ordering code is 137 - D - A1T - 4S2

The desired switch has following specifications : Cast Aluminium weatherproof IP-67 enclosure, no of setpoints one and one microswitch per set point working for Atmospheric pressure temperature variation is 0° to 150°C two 1/2" NPT cable entries, Process connection 100 NB ANSI 150 # RF forged flange, End connection type 1" Socketed. Chamber material is CS.

NOTES :

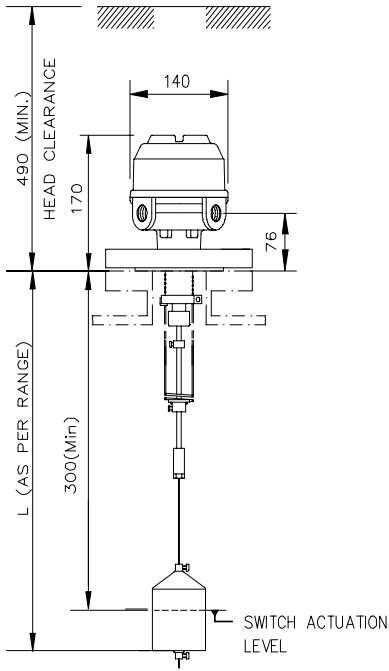
- 1) Operating differential is as shown on page 4 for specific gravity = 1: **Water**.
- 2) Minimum set point position is 300 mm from bottom of the flange.
- 3) Please specify the distances **M**, **A** and **B** for external chamber please refer fig.4 shown on page 3.

● **Test certificates ...**

- 1) Weatherproof IP67 - From ARAI, Pune.
SHL/101/02/95/230/077 dated 08/02/1995 - For Single/Two point version.
- 2) FORM-III A & III C provided.

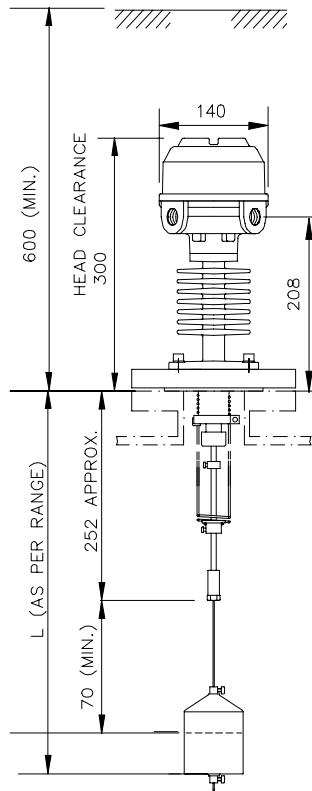
DIMENSIONAL DETAILS:

Figure. 2



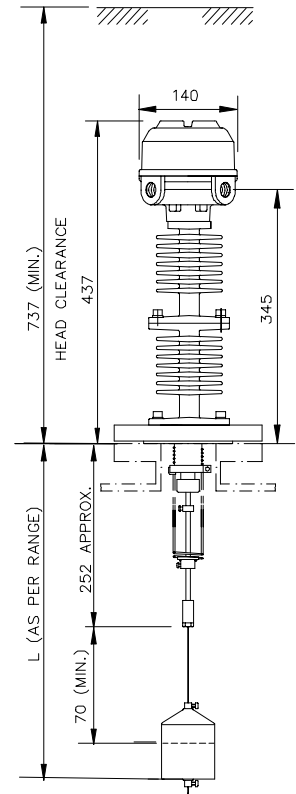
Displacer switch without HTSO for Temperature up to 0°C to 150°C

Figure. 3



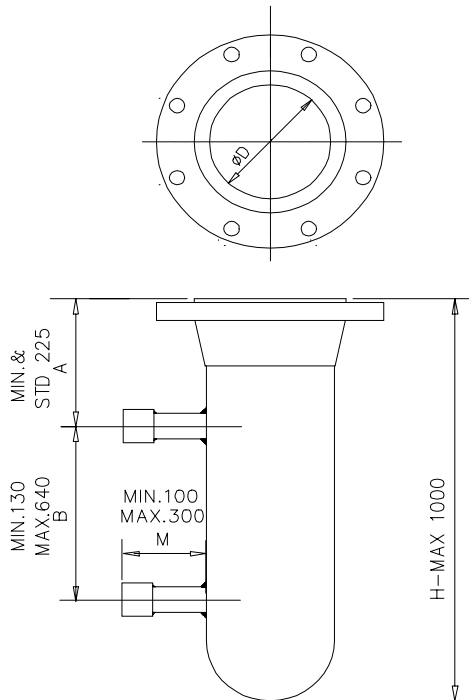
Displacer switch with single HTSO for Temperature up to 0°C to 250°C

Figure. 4



Displacer switch with double HTSO for Temperature up to 0°C to 350°C

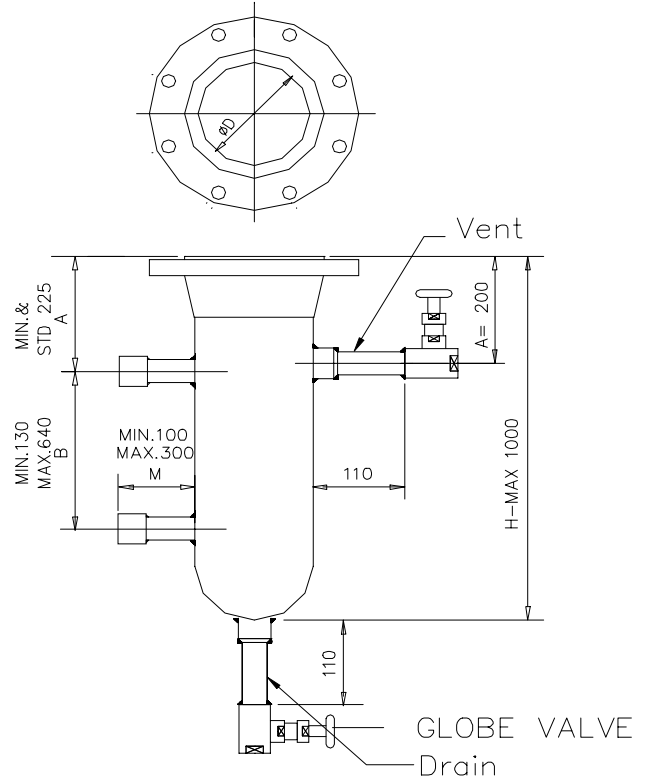
Please specify dimensions "A " "B " and "M" while ordering ...



Side to Side end connection without Drain & Vent plug. (fig. A).

Note : All dimensions are in mm.

(fig. 3)



Side to Side end connection with Drain & Vent plug. (fig. B).

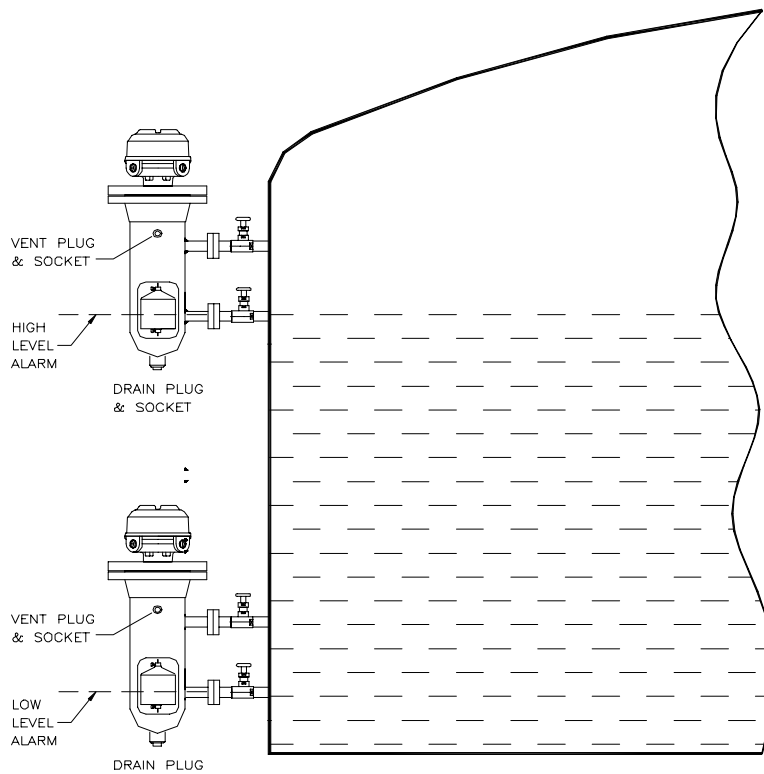
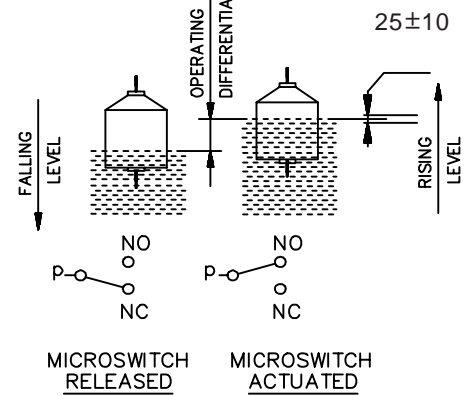
❖ **ACCESSORIES:**

Following optional accessories can be supplied on demand ...

- (1) Weldable nozzle - to suit the switch mounting flange on the vessel (Please specify nozzle length).
- (2) Drain & Vent if required will be provided with IBR configured & 1/2" Socket welded CS valve.
- (3) Weldable - suitable flange for preparation of nozzle.

❖ **APPLICATION DRAWINGS:**

Schematic showing operating differential



Application drawing showing switch arrangement for high & low level Switch.

-- 4 --

*** Continuous developments may necessitate changes without notice.

LF-137-0817 R00 07/2006



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, sbemsales@vsnl.com

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

91-44-24451235, 24412947

91-44-24412947

chennai@sbem.co.in

NEW DELHI

91-11-26560647, 26969679

91-11-26969679

newdelhi@sbem.co.in