



CORPORATE STANDARD

AA 731 40 01

Rev. No. 02

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PRESSURE SWITCH IN WEATHER PROOF ENCLOSURE WITH FIXED DIFFERENTIAL (MICROSWITCH FOR A.C/D.C)

1.0 SCOPE:

This standard specifies the requirements of pressure switch with fixed differential in weather proof enclosure with 2SPDT micro-switch having contact ratings 5A at 240 A.C. or 0.5 A at 240V D.C for use in fertilizer, petrochemical, refinery industries and power plants.

2.0 DESIGNATION:

A pressure switch with sub-code 073 of Table-1 of this standard shall be designated as follows:

2.1 Pressure switch in weather proof enclosure, range 0.2 to 4 kgf/cm², switching differential 0.10 kgf/cm², standard AA 731 40 01.

2.2 On Enquiries and Purchase orders:

In addition to incorporating the above details, a copy of this standard shall be enclosed.

3.0 TECHNICAL REQUIREMENTS:

3.1 General:

The pressure switch shall be suitable for ambient of Ammonia and ambient temperature of 0 to 60°C. Copper and copper alloys shall be avoided for all the parts exposed to atmosphere. The pressure switch shall be tropicalised.

3.2 Housing:

Weather proof and dust tight housing made of die cast aluminium alloy, to IP 55 of IS:13947, part 1, or equivalent. The external surface of the housing shall be finished with light grey epoxy enamel.

3.3 Pressure element:

The pressure element shall be seamless hydraulically formed bellows in stainless steel for low pressure application and stainless steel bourdon for high pressure application.

3.4 Differential: Fixed.

3.5 Pressure connection:

The pressure connection shall be at the bottom of size ¼" NPT female made of stainless steel.

3.6 Set point adjuster:

The set point adjuster and switch terminal block shall be inside the housing. The set point adjuster shall be adjustable against a calibrated scale throughout the range of the instrument.

Revisions :

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APPROVED :

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3.7 Electrical entry: ½” NPT – Cable gland

3.8 Accuracy:

- a) **Scale setting accuracy:** $\pm 5\%$ of scale range for pressures up to 15 kgf/cm² and $\pm 2\%$ for pressure over 15 kgf/cm².
- b) **Repeatability:** $\pm 1\%$ of full scale range.
- c) **IP 55:** As per IS:13947, part – 1.

3.9 Switching data:

Microswitch for A.C/D.C two numbers of single pole double throw 5A at 240V A.C and 0.5A at 240 V D.C.

3.10 Over pressure:

The pressure switch shall meet the accuracy test as per clause 3.8 above after subjecting it to over pressure as per Table- 1 or as mentioned in enquiry/order.

4.0 TEST CERTIFICATES:

Three copies of the test certificates shall be supplied for each item of the consignment quoting BHEL standard and order number.

In addition, the supplier shall ensure to enclose one copy of the test certificate along with their dispatch documents to facilitate quick clearance of the material.

The test certificate shall bear the following details:

- a) Calibration certificate
- b) Certificate for weather proof and dust tight housing
- c) Calibration certificate shall indicate traceability of reference standard instruments used.

5.0 GUARANTEE CERTIFICATE:

A guarantee certificate for 24 months of trouble free performance from the date of shipment or 12 months from the date of commissioning whichever is earlier shall be furnished.

6.0 DOCUMENTS:

The descriptive leaflets/catalogues giving full sectional details of the instruments shall be furnished with the offer and also with the consignment. One copy of the final operating, trouble shooting and maintenance manuals shall be supplied within 4 weeks after placement of order.

7.0 PACKING:

The packing shall be seaworthy. The process and electrical connections shall be protected by a suitable cap. Each instrument shall be wrapped individually in a bubbled polythene sheet and packed in a thermocole box. Such boxes shall be placed in a carton or case with adequate cushioning material to withstand transit risks.



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8.0 MARKING:

8.1 The manufacturer's identification serial number shall be marked in a suitable location and the same shall be mentioned in test certificates pertaining to it.

8.2 BHEL tag number and service details shall also be marked on the case.

8.3 A tag bearing the relevant 12 digit material code of BHEL shall be attached for each instrument.

8.4 The following details shall be marked on each packing case.

- a) Manufacturer's name or trade mark.
- b) BHEL order No.
- c) BHEL standard NO. AA 731 40 01.

9.0 REFERRED STANDARDS (Latest Publications Including Amendments):

- 1) IS: 13947, part 1

**TABLE-1**

RANGE kgf/cm ²	SWITCHING DIFFERENTIAL kgf/cm ²	OVER PRESSURE kgf/cm ²	SUB CODE
0 to - 1	30mm Hg	4.0	014
- 1 to 1.4	0.1	4.0	022
0.003 to 0.025	38 mm H ₂ O	4.0	030
0.2 to 1.0	0.03	4.0	049
0.1 to 1.4	0.04	4.0	057
0.2 to 2.5	0.07	4.0	065
0.2 to 4	0.10	8.0	073
0.2 to 7	0.10	8.0	081
0.2 to 10	0.17	15.0	090*
0.3 to 14	0.2	25.0	103
0 to 21	0.3	35.0	111
0 to 28	0.4	35.0	120*
0 to 35	0.5	80.0	138
0 to 52	0.6	80.0	146
0 to 70	0.98	80.0	154
0 to 105	2.2	125.0	162
0 to 140	2.8	184.0	170
0 to 210	4.2	287.0	189
0 to 350	7.0	460.0	197
0 to 525	14.0	690.0	200

NOTE:

1. To obtain 12 digit code, suffix sub-code to the standard number.
2. Specific requirements of the plants shall be covered by plant Annexure to this standard.