



SF6 GAS DENSITY MONITOR OF EHV GIS

1. General:

SF6 Gas Density Monitor with output signal for continuous monitoring: both the mechanical gas density monitor and the electronic gas density sensor in a compact all-in-one apparatus.

Gas density monitor shall have alarm signal and trip / lock out at pre-defined switching threshold. The analogous and digital transmitters shall provide continuous signals for evaluation in SCADA control room.

2. Application:

This instrument shall be employed for measuring and continuous monitoring of SF6 gas density in GIS compartments.

3. SF6 Gas Density Monitor variants :

Item No.	Material Code	Rated pressure	1 st Alarm (@ Bar)	2 nd Alarm (@ Bar)	Tripping/ Lock out (@ Bar)	Full Scale Pressure (@ Bar)
1	BP9039474850	8.0 (g)	7.8 (g)	7.65 (g)	7.5(g)	20.0 (g)
2	BP9039474869	4.5 (g)	4.4 (g)	4.2 (g)	4.0(g)	12.0 (g)

4. Characteristic feature of the instruments:

The instrument must have following features:

Sl. No.	Parameter/ Feature	Vendor's confirmation / documents required
4.1	Hybrid gas monitoring system: -Mechanical monitoring: Absolute measuring range as per cl.3 - Electronic Monitoring : Absolute measuring range: suitable as per Cl. 3	Vendor shall provide relevant page of catalogue
4.2	Three Stage gas monitor Two alarms and a tripping at pressure set at factory as mentioned at Cl. No.3	Vendor to confirm
4.3	Galvanically isolated micro switch.	Vendor to confirm
4.4	Device Connection.	Dimensional Drawing to be furnished by supplier. Dimension of suitable coupling unit shall also be provided.

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REV.		PRINTS TO:-	APPROVED –		
ALTD.			H R Patel		
APPD.			PREPARED	ISSUED	DATE
DATE.			Sonali	VKD	20.09.2016



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4.5	Accuracy of mechanical monitoring: 100 mili Bar at 20 degree C Accuracy of electronic monitoring: +/- of 1.0% FS Type Response time for electronic sensor: < 20 msec	Test Report
4.6	EMC-cable gland M25x1.5, ø8...16 [mm]	Dimensional drawing
4.7	Temperature range: -30...70°C	Test report
4.8	Any position installation shall be applicable.	Confirmation by vendor
4.9	Degree of Ingress Protection: IP 55 Sensor shall be welded construction of AISI-316L/AISI-316 material which is checked by helium leak detector.	Test Report
4.10	Output signal 4-20 mA current loop Earthing: via gas connection of sensor Supply voltage	Confirmation by vendor
4.11	Electromagnetic compatibility Electromagnetic immunity IEC 61000-4-2 (ESD): test level 4 (8 kV) (EMI) / RFI IEC 61000-4-3 (Field): test level 3 (10 V/m) IEC 61000-4-4 (Burst): test level X (+/-4 kV) IEC 61000-4-5 (Surge): test level 2 (+/-1 kV) IEC 61000-4-6 (Conducted RFI): test level 3 (10 V)	Test Report
4.12	Calibration certificate of each instrument shall be provided.	Calibration report with unique serial number required at the time of delivery.
4.13	Complete system shall be manufactured by OEM only	Vendor shall confirm
4.14	Instrument shall be hermetically sealed and temperature-compensated. Measured value fluctuations and erroneous alarms caused by changes in either ambient temperature or air pressure shall be prevented.	Either test reports or relevant catalogue pages shall be attached.



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5. Packing and Marking :

Instruments shall be packed suitably to avoid transit damage. Each package shall be legibly and indelibly marked with the following:

- a) BHEL Purchase Order No.
- b) Component name ,
- c) Manufacturer's /Suppliers Name
- d) Batch/Lot No. & Quantity supplied
- e) Net & Gross Weight

6. Acceptance criteria:

- a) Test certificate/ supporting documents as per clause 4
- b) Packing and Marking as per clause 5

7. Warranty Certificate:

The equipment shall be warranted for trouble free performance and against any defect in the material, workmanship, design and also any abnormal behavior for a period of 12 months from the date of commissioning or 18 months from date of receipt whichever is earlier.

8. Rejection and Replacement:

In the event of the material proving defective in the course of manufacture, such material shall be rejected notwithstanding any previous certification of satisfactory testing and/or inspection.

The supplier shall undertake to replace the material. Repairing of material is not acceptable.