	VEDANTA LIMITED – VALUE ADDED BUSINESS	Document No:	VL/IMS/PID1/INST/WI/16
	INTEGRATED MANAGEMENT SYSTEM	Revision Date:	05/01/2022
	Work Instruction for checking of Flow, Pressure Transmitters, TC, RTD & Pressure Gauge Mounted on Gas Line	Revision No:	05
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## CHECKING OF FLOW, PRESSURE TRANSMITTERS, TC, RTD & PRESSURE GAUGE MOUNTED ON GAS LINE

**Objective:** To check the healthiness of Flow, Press Transmitters, RTD, TC & Pressure Gauge mounted on gas line.

**Scope:** This procedure is applicable to Flow, Press Transmitters, RTD, TC & Pressure Gauge mounted on Gas Line.

**Standard used:**

- 1) Pressure calibrator: FLUKE 729-300G
- 2) Pressure calibrator: FLUKE 719PRO-30G
- 3) Multi-Function Calibrator: FLUKE 725

**Reference:** Limit Switch & Proximity switches Manual

**Performance Criteria:** Accuracy of transmitters, RTD, TC & Pressure Gauge Mounted on Gas Line.

**Aspect for the Activity :** Waste generation, Gas leakage

**Identification of Hazards:**

**Physical:** Exposure to high pressure, Exposure to high temperature

**Mechanical:** Trip & Fall

**Chemical:** CO Gas poisoning, Dust, Graphite

**Hazard due to Human Behaviour/Human error:** Not adhering to WI/ PPE, Alcoholism, starting job without informing control room, Carrying job impatiently, improper communication, Use on non-certified tools/equipment.


**Refer: RISK/INST/12 & RISK/INST/14, WI/INST/26, WI/INST/19, RISK/INST/17**

**Responsibility:** Sr. Engineer Instrumentation/Associate/ Inst Technician

**Procedure:** All engineers/technicians should follow this procedure whilst isolating and removing instrument for calibration, re-installation and commissioning. Care must be taken while removing and refixing to avoid contact with hot areas, gas & steam leakages

### **A. CHECKING/CALIBRATION OF DP & PRESSURE TX**


- ❖ **Caution :** Do not pressurize individual H.P/L.P chamber leaving the other chamber Open to atmosphere [D.P across the D.P cell should not exceed max. rating].
- ❖ **Caution :** Never purge compressed air/O2 etc. gas in gas line, use N2 in case purging is required.
- ❖ **Caution :** Check the wind direction and stand opposite to wind direction

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1. Inform in to control room & take permission from process or take permit if required, if any interlock is there, related process should be controlled in manual till the time job is to be carried out on instrument.
2. Follow WI/INST/11 while working in co concentrated areas
3. Close the isolation valve on process tapping. In case of differential pressure Transmitter open equalizing valve on manifold & close both HP & LP side isolation valves.
4. Disconnect the impulse tubing or remove the Transmitter & take it to lab if required, open vent ports to release the accumulated pressure, moisture, air bubble in case of steam line.
5. Retighten the venting port properly.
6. Now connect the pressure calibrator to pressure Transmitter and apply zero pressure, in case of differential pressure Transmitter connect calibrator to HP side & leave LP side open to atmosphere.
7. Check zero indication on pressure transmitter and measure 4 mA on standard multimeter or adjust zero if required.
8. Increase the pressure in step of 25 % of span up to full range and note the corresponding ascending readings.
9. At 100 % of span reading should indicate 20 mA or adjust span if required.
10. In same way note down the descending readings by decreasing pressure in step of 25 % of full range up to zero.
11. Prepare the report as per calibration format in ascending & descending measurement and file the record.
12. Install the Transmitter connect the impulse tubing and open the isolation valves on process tapings.
13. Give the Transmitter inline for measurement by opening the valves on manifold, in case of differential pressure Transmitter open the HP & LP side valve of manifold simultaneously & close the equalizing valve.  
Inform in to control room & process or close the permit if it was taken.

## **B. CHECKING OF RTD & THERMOCOUPLE**

1. Inform in to control room & take permission from process or take permit if required, if any interlock is there, related process should be controlled in manual till the time job is to be carried out on instrument.
2. Follow WI/INST/11 while working in co concentrated areas.
3. Measure the mV for Thermocouple and resistance for RTD and verify the scada reading with Standard Temperature Chart.
4. Incase the RTD/Thermocouple found Faulty, check first if it is installed with Thermowell. Once confirm disconnect the cable and replace the spare RTD/Thermocouple.
5. Give RTD/Thermocouple inline for measurement and Inform Control Room & Process or close the permit if it was taken.

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### **C. CHECKING OF PRESSURE GAUGE**

1. Inform in to control room & take permission from process or take permit if required, if any interlock is there, related process should be controlled in manual till the time job is to be carried out on instrument.
2. Follow WI/INST/11 while working in co concentrated areas.
3. Now connect the pressure calibrator to pressure gauge and apply zero pressure
4. Check zero indication on pressure Gauge
5. Increase the pressure in step of 25 % of span up to full range and note the corresponding ascending readings.
6. At 100 % of span reading should indicate Full Scale and adjust span if required.
7. In same way note down the descending readings by decreasing pressure in step of 25 % of full range up to zero.
8. Install the Pressure Gauge and open the isolation valves on process tapings.
9. Give the Pressure gauge inline for measurement by opening the Isolation valves
10. Inform in to control room & process or close the permit if it was taken

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<b>Date: 05/01/2022</b>	<b>Date: 05/01/2022</b>	<b>Date: 05/01/2022</b>