	VEDANTA LIMITED – VALUE ADDED BUSINESS	Document No:	VL/IMS/PID1/INST/WI/02
	INTEGRATED MANAGEMENT SYSTEM	Revision Date:	05/01/2022
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CALIBRATION OF LEVEL, PRESSURE & DP TRANSMITTER

Objective : To check transmitter for accuracy of measurement.

Scope : This procedure is applicable for all differential pressure Transmitters / pressure transmitters and Level Transmitters.

Reference : Operating manual for transmitters.

Standard used:

- 1) Pressure calibrator: FLUKE 729-300G
- 2) Pressure calibrator: FLUKE 719PRO-30G
- 3) Multi-Function Calibrator: FLUKE 725
- 4) Tex Device Communicator: EMERSON TREX-CHPNAWS1S

Performance Criteria : Accuracy of measurement of transmitter as mentioned in MMTE

Reference: RISK /INST/17

Aspect for the Activity : Waste generation

Identification of Hazards:

Physical: Pressure, Temperature, Fire, Explosion, Honeybee/snake bite, Noise

Mechanical: Trip & Fall

Chemical: CO Gas poisoning, Vapor, Steam, Dust, Graphite, Hot Water

Ergonomics: Insufficient work practices

Hazard due to Human Behavior/Human error: Not adhering to WI/ PPE, Alcoholism , Use on non-certified tools/equipment.


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].

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. 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.
3. 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.

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4. Retighten the venting port properly.
5. 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.
6. Check zero indication on pressure transmitter and measure 4 mA on standard multimeter or adjust zero if required.
7. Increase the pressure in step of 25 % of span up to full range and note the corresponding ascending readings.
8. At 100 % of span reading should indicate 20 mA or adjust span if required.
9. In same way note down the descending readings by decreasing pressure in step of 25 % of full range up to zero.
10. Prepare the report as per calibration format in ascending & descending measurement and file the record.
11. Install the Transmitter connect the impulse tubing and open the isolation valves on process tapings.
12. 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 /CALIBRATION OF LEVEL TX

Caution : Do not edit fast level change & damping in TX setting, by default the fast level change will be set as Yes and damping as 6 s.

1. Inform in to control room & take permission form 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. Measure Physically and note down the tank range and blanking Distance, verify the readings with TX setting. If readings are not matching as per the physical measurement correction to be done accordingly in TX.
3. Measure the Tank actual level with measuring tape and compare the TX level reading.
4. Give the level Transmitter inline for measurement
5. Inform in to control room & process or close the permit if it was taken.

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Signature:	Signature:	Signature:
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