

Your Company Name / Logo	RADAR LEVEL TRANSMITTER COMMISSIONING SOP	Doc no: SOP COM 004	Rev: 0
Department: Instrumentation	Standard operating procedure	Date:	Page: see footer

1. Purpose

To configure and prove radar level transmitters so they measure the true level over the full range.

2. Scope

Non contact (free space) and guided wave radar level transmitters on tanks and vessels.

3. References

- Transmitter manual and configuration software
- Tank drawing (height, nozzle, internals)
- Instrument data sheet

4. Responsibilities

- Instrument technician: carries out the work and records results.
- Instrument engineer or supervisor: reviews and approves the records.
- Operations: grants the permit, isolates the process and returns the equipment to service.

5. Safety precautions

- Work only under a valid permit to work and follow the site isolation (lockout tagout) procedure.
- Wear the PPE required for the area: safety helmet, glasses, gloves and safety shoes as a minimum.
- In hazardous areas use certified or intrinsically safe test equipment, or obtain a gas free certificate and hot work permit.
- Inform the control room before starting, and before returning the instrument to service.
- Tank roof work needs fall protection and, for some fluids, gas testing.

6. Tools and equipment

- Configuration tool (HART, display or software) able to show the echo curve
- Dip tape or reference level gauge
- mA meter

7. Prerequisites

- Transmitter installed according to the manual (nozzle size and length, distance from wall and inlet).

8. Procedure

8.1 Basic configuration

- 8.1.1 Enter the tank height (reference point to tank bottom), the empty and full calibration distances, and the measuring units.
- 8.1.2 Set the blocking (near zone) distance and the medium properties (dielectric constant range, surface conditions).

8.2 False echo suppression

- 8.2.1 With the tank as empty as practical, record a false echo map so that echoes from internals and nozzles are ignored.
- 8.2.2 Check the echo curve: the level echo must be clearly above the threshold.

8.3 Output and verification

- 8.3.1 Set damping (typically a few seconds) and the failure current (NAMUR NE 43).
- 8.3.2 Compare the reading with a manual dip at two or more levels.
- 8.3.3 Check the mA output and DCS reading.

9. Acceptance criteria

- Reading agrees with the manual dip within the specified tolerance.
- Clear, stable level echo over the operating range.
- Correct output and alarms in the DCS.

10. Records

- HART configuration record (free template: instrumentationblog.in/downloads/templates/hart-transmitter-configuration-record/)
- Loop check sheet (free template: instrumentationblog.in/downloads/templates/loop-check-sheet/)

11. Approval

	Prepared by	Reviewed by	Approved by
Name			
Signature			
Date			

This procedure is a generic template. Adapt it to your site permit system, the manufacturer instructions and your quality system before use.