

Application

The TDR performs continuous level measurement of powdery to granular bulk solids e.g. plastic granulate and liquids, also liquids as water, oil etc.,

Probes are available with threaded process connections from 1/2".

- Rope probes, above all for measurement, Measuring range up to 35 m
- Rod probes, above all for liquids, measuring range up to 7m

The following interfaces are available for system Integration:

- HART (standard),
- RS485 or RS232 (Modbus RTU)
- 4-20mA/20-4mA output
- Accuracy Grade: $\pm 0.1\% \pm 0.25\%$
- Resolution: $\pm 3\text{mm}$
- Environment temperature: $-40 \sim 140 \text{ }^\circ\text{F}$ ($-40 \sim 60 \text{ }^\circ\text{C}$)
- Operating temperature: $-40 \sim 482 \text{ }^\circ\text{F}$ ($-40 \sim 60 \text{ }^\circ\text{C}$)
- Power is 16~38VDC 9W
- Two wire
- Frequency mode is pulse
- Material of enclosure is standard aluminium or stainless steel as 316SS
- Material of antenna is stainless steel as 316SS
- Calibration can made through the control panel or software in the measurement range
- There is FCC15 low power communicator;
- FM explosion proof, ULCAN/CSA
- Grade of Protection is NEMA4X (IP65)



Rope Probe

Rod Probe

Installation

General installation instructions

Probe selection

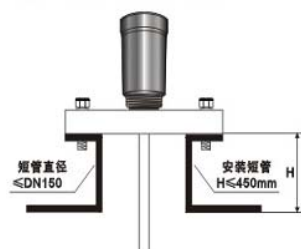
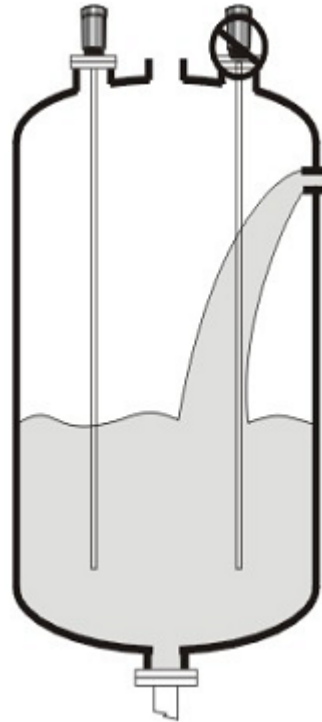
- Normally, rope probes should be used for bulk solids;
rod probes are only suitable for short measuring ranges
- Normally use rod probes for liquids. Rope probes are used in liquids for measuring ranges > 4m and with restricted ceiling clearance which does not allow the installation of rigid probes.
- In the case of large silos, the lateral pressure on the rope can be so high that a rope with plastic jacketing must be used. We recommend PA-coated ropes be used for cereal products wheat, flour etc...

Mounting location

- Do not mount rod or rope probes in the feed inlet or outlet
- Mount rod and rope probes away from the bin wall

Mount at such a distance as 1/4 of bin's diameter

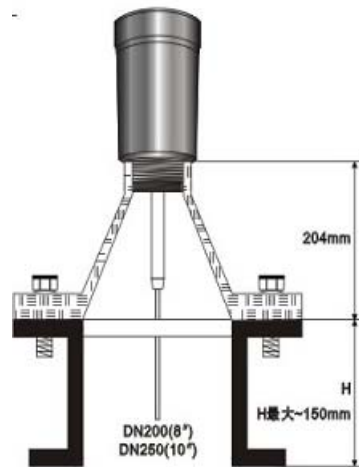
- The minimum distance from bin wall to rod or rope probes should be more than 50cm
- Distance of obstacle in the bin from the rod and rope probes should be $\geq 300\text{mm}$
- When installing rod and rope probes in plastic containers, keep the probe away from container wall in the whole measuring process, when installed in a metallic container, don't install the sensor at the center of the container.
- Minimum distance of probe end to the container floor is around 30mm
- When installing outdoors, it is recommended that you use a protective cover (1) see "Accessories" on
- If container's bottom shape is conical, the sensor can be installed in the top center of the container. The below Figure is the mounting of radar with rod probe, mainly for liquid level measurement.



Installation in the nozzle stub as DN200/8" and DN250/10"

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If the sensor is installed in the stub with dia > 200mm/8" , the echo produced by stub inside wall would cause measurement error under low dielectric constant condition. Therefore, a special flange with horn interface should be provided for the installation. Avoid installing in the stub with dia > 250/10" . If bend happens to the rope probe, we recommend selecting an extension rod to fix the middle ring.



Optimization options

- Interference echo suppression: measurement can be optimised by electronically tuning out Interference echoes.