

LEVEL TRANSMITTERS • RADAR

Guided-Wave Radar Level Gauge

II-LT-001

Guided-wave radar



Contact level measurement for liquids and solid powders in complex process conditions.

ENQUIRIESinfo@indianainstrutech.com

+91 75033 02545

+91 92893 62447

ISSUED

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Indiana catalogue ID **II-LT-001** Level Transmitters

Contact level measurement for liquids and solid powders in complex process conditions.

RANGE	ACCURACY	OUTPUT
Up to 30 m	±10 mm	4–20 mA / HART

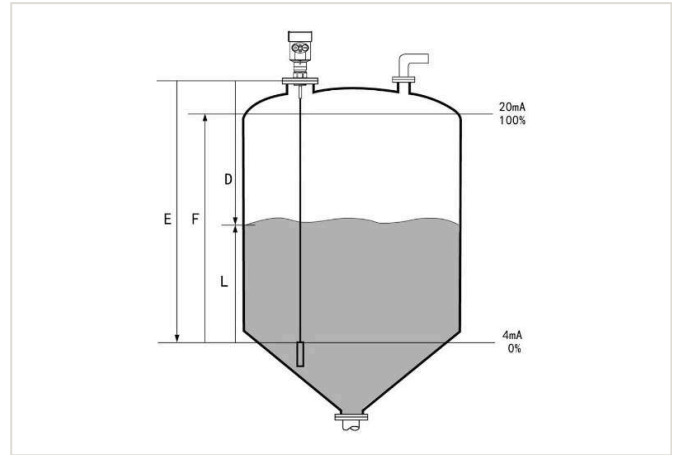
01 Overview

High-frequency microwave pulses travel along a cable or rod probe. Where the probe meets the measured medium the change in dielectric constant reflects part of the pulse back, and the interval between the transmitted and reflected pulse is proportional to the distance to the surface. Six probe configurations cover liquids, powders, high temperature and pressure, corrosive media and low dielectric constants.

02 Views



PRIMARY VIEW Guided-wave radar level gauge with coiled cable probe and blue housing
Product photograph



TECHNICAL Outline drawing from the product documentation
Product photograph



ALTERNATE VIEW Guided-wave radar level gauge with cable probe
Product photograph



APPLICATION Row of tall concrete storage silos — illustrative environment, not an installation of this product
Illustrative scene

03 Principal data

MEASUREMENT	
Measurement accuracy	±10 mm
Resolution	1 mm
Measurement interval	Approximately 1 s, depending on parameter settings
Adjust time	Approximately 1 s, depending on parameter settings
Frequency	500 MHz – 1.8 GHz
Minimum dielectric constant	≥1.8 for rod probes; ≥1.6 using dual-cable measurement; ≥1.3 inside a guided-wave tube

Viscosity

Generally ≤500 cSt

The full set of stated values, variants and open points is in the specification document for this product.

04 Operating principle

1. **01** The probe emits high-frequency pulses that propagate along a cable-type or rod-type probe. When the pulses reach the material surface they are reflected and received by the instrument, which converts the distance signal into a level signal.
2. **02** The distance D to the material surface is proportional to the pulse travel time T: $D = C \times T / 2$, where C is the speed of light. Because the empty-tank distance E is known, the level L is $L = E - D$.
3. **03** Entering the empty-tank height E (zero point) and full-tank height F (full range) with the application parameters lets the instrument adjust itself; the measurement corresponds to a 4–20 mA output.
4. **04** EchoDiscovery echo processing with the instrument microprocessor identifies the echo generated at the material surface so the gauge can be deployed in complex operating conditions.

05 Applications and industries

APPLICATIONS

- Liquid level in storage, reaction and separation tanks
- Powder level in cement silos
- Fly-ash powder measurement
- Acids, alkalis and other corrosive media
- Non-ionic and deoxygenated water with low dielectric constants
- Sealed tanks holding liquids under high pressure

INDUSTRIES

Power generation

Cement

Chemical and petrochemical

Water and wastewater

Food processing

TO QUOTE THIS WE NEED

- Explosion-protection licence required
- Tank type, material, height and diameter
- Tank roof and bottom form
- Installation method — top, side, bypass pipe or waveguide pipe
- Tank-top nozzle height and tube diameter
- Medium name and state — liquid, solid or mixed
- Medium temperature and dielectric constant
- Process connection — thread G1½" / 1½" NPT, or flange DN / ANSI
- Power — 24 V DC two-wire, 24 V DC four-wire or 220 V AC four-wire

— Output — 4–20 mA or HART

CONFIRM BEFORE ORDERING

- The product introduction pages and the model-code table in the datasheet state different maximum ranges and process temperatures for some configurations. Confirm the exact model code, probe length and process temperature for your application before ordering.

TELEPHONE

+91 75033 02545
+91 92893 62447

EMAIL

info@indianainstrutech.com

QUOTATION

List the product, ID and quantity; add process conditions. We reply with a quotation.

INDIANA INSTRUTECH · Guided-Wave Radar Level Gauge — operating instruction Figures are reproduced from the source documentation; where a source states two different values both are shown. Nothing on this sheet is a certification, and no hazardous-area approval is implied unless a certificate is supplied with the quotation. INDIANA SALES (INDIANA INSTRUTECH) · info@indianainstrutech.com · issued 24 October 2026.