

LEVEL TRANSMITTERS • RADAR

Guided-Wave Radar Level Gauge

II-LT-001

Guided-wave radar



Full specification, variants, open points and ordering information. Contact level measurement for liquids and solid powders in complex process conditions.

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ISSUED

24 October 2026

Guided-Wave Radar Level Gauge

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

IDENTIFICATION

Product	Guided-Wave Radar Level Gauge
Indiana catalogue ID	II-LT-001
Category	Level Transmitters · Radar
Measuring principle	Guided-wave radar
Model line	70X series
Document	Specification · issued 24 October 2026

01 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

02 Output

Output signal	4–20 mA / HART
Resolution	1.6 µA
Fault signal	Current output remains unchanged; 20.5 mA; 22 mA; 3.9 mA
Four-wire load resistor	Maximum 500 Ω
Integration time	0–40 s, adjustable

03 Supply

Two-wire, standard type	16–26 V DC
Two-wire, intrinsically safe type	21.6–26.4 V DC

Maximum current consumption (two-wire)	22.5 mA
Four-wire, intrinsically safe + explosion-proof	22.8–26.4 V DC, 198–242 V AC
Maximum power consumption (four-wire)	1 VA, 1 W
Permitted ripple	<100 Hz: $U_{ss} < 1 \text{ V}$ · 100 Hz–100 kHz: $U_{ss} < 10 \text{ mV}$

04 Materials

Rod probe	Stainless steel 316L / PTFE
Cable probe	Stainless steel 316L / PTFE
Coaxial probe	Stainless steel 316L / PTFE
Sealant	Viton fluororubber, Kalrez fluororubber
Process connection	Stainless steel 316L
Shell	Aluminium, plastic or stainless steel 316L; cast aluminium with powder layer
Shell window	Polycarbonate
Ground terminal	Stainless steel 316L

05 Environment

Working, storage and transport temperature	–40 to 80 °C
Relative humidity	<95%
Maximum pressure inside tank	40 MPa
Seismic resistance	Mechanical vibration 10 m/s^2 , 10–150 Hz
Protection rating	IP66 / IP67

06 Electrical connection

Cable inlet	One M20 × 1.5 cable inlet for cables 5–9 mm diameter, plus one M20 × 1.5 blind plug
Terminal	Spring terminal for wires up to 2.5 mm ² cross-section
Cable type	Standard two-core cable, outer diameter 5–9 mm; shielded cable recommended where electromagnetic interference is present
Shielding	Both ends of the shielded cable must be grounded; the external grounding terminal on the housing must be connected to earth

07 Explosion protection

Rating	Exia IIC T6 — intrinsically safe, die-cast aluminium housing with adhesive-sealed electronics
Associated safety barrier	FBS-2 safety barrier, [Exia] IIC, operating voltage 21.6–26.4 V DC, short-circuit current 135 mA, operating current 4–20 mA
Maximum cable length to barrier	500 m, shielded cable
Distributed capacitance / inductance	$\leq 0.1 \mu\text{F/km} \cdot \leq 1 \text{ mH/km}$

08 Common to every variant

Frequency	500 MHz – 1.8 GHz
Signal output	4–20 mA / HART
On-site display	Four LCD programmable displays
Power source	Two-wire (DC 24 V) / four-wire (DC 24 V or AC 220 V)
Process connection	Thread / flange (optional)
Explosion-proof certification	Exia IIC T6 Ga / Exd ia IIC T6 Gb

09 Variants and model selection (6)

SINGLE-CABLE ANTENNA — SINGLE-CABLE PROBE

Liquids and solid powders under complex process conditions

Applicable medium	Liquids, solid powders
Measurement range	30 m
Antenna	Single-cable antenna
Process temperature	–40 to 250 °C
Process pressure	–0.1 to 4 MPa
Measurement accuracy	±10 mm

SINGLE-POLE ANTENNA — SINGLE-ROD PROBE

Liquid level; strong penetration of steam and foam

Applicable medium	Liquid
Measurement range	6 m
Antenna	Single-pole antenna
Process temperature	–40 to 250 °C
Process pressure	–0.1 to 4 MPa
Measurement accuracy	±10 mm

DUAL-CABLE ANTENNA — DUAL-CABLE PROBE

Liquids; powder in cement silos; fly-ash powder measurement

Applicable medium	Liquids, solid powders
Measurement range	30 m
Antenna	Dual-cable antenna
Process temperature	–40 to 200 °C
Process pressure	–0.1 to 4 MPa
Measurement accuracy	±10 mm
Dielectric constant	Any dielectric material ≥ 1.6

HIGH TEMPERATURE / HIGH PRESSURE — HIGH-TEMPERATURE, HIGH-PRESSURE PROBE

Sealed tanks measuring liquids under high pressure

Applicable medium	Liquids under high temperature and high pressure
Measurement range	6 m
Antenna	Single-cable or single-pole antenna
Process temperature	–40 to 400 °C
Process pressure	–0.1 to 40 MPa
Measurement accuracy	±10 mm

PTFE-SEALED PROBE — CORROSION-RESISTANT PTFE PROBE

Acids, alkalis and other corrosive media

Applicable medium	Liquids, particularly highly corrosive liquids
Measurement range	6 m
Antenna	Fully tetrafluoroethylene-sealed cable-type or rod-type antenna
Process temperature	–40 to 200 °C
Process pressure	–0.1 to 4 MPa
Measurement accuracy	±10 mm

COAXIAL TUBULAR ANTENNA — COAXIAL PROBE

Liquids with low dielectric constants — non-ionic water, deoxygenated water

Applicable medium	Liquids, particularly those with low dielectric constants
Measurement range	6 m
Antenna	Coaxial tubular antenna
Process temperature	–200 to 250 °C
Process pressure	–0.1 to 4 MPa
Measurement accuracy	±10 mm

10 Tables

MAXIMUM MEASURING DISTANCE AND PROCESS TEMPERATURE BY MODEL CODE

MODEL CODE	MAXIMUM MEASURING DISTANCE (CABLE / ROD)	PROCESS TEMPERATURE AT ANTENNA SECTION
311	30 m / 6 m	–40 to 250 °C
312	20 m / 6 m	–40 to 200 °C
313	30 m / 6 m	–40 to 150 °C
314	6 m	–40 to 250 °C
315	15 m / 6 m	–200 to 400 °C

11 Installation

- 01 Keep the cable or rod clear of internal obstacles across the whole measuring range — ladders, limit switches, heating equipment and supports — and keep it out of the feeding material flow.
- 02 Install away from discharge and inlet ports. For a hopper, install at 1/4 or 1/6 of the hopper diameter. Minimum distance from the wall is 1/10 of the measuring range.

3. 03 Minimum distance from probe to tank wall ≥ 300 mm. Bottom of the probe at least 30 mm from the tank bottom. Minimum distance to any obstacle inside the tank ≥ 200 mm.
4. 04 Threaded joints: thread length not exceeding 15 mm. For 2"–6" mounting pipes keep pipe height ≤ 100 mm. For DN200 or DN250 short pipes a special flange with a horn interface must be selected, otherwise echoes form on the pipe inner wall.
5. 05 On plastic containers the process connection surface must be metal: use a metal flange, or provide a metal plate where a threaded connection is used.
6. 06 The rod probe has a maximum length of 6 m. Beyond that, select a 4 mm cable probe. In a guided-wave tube with a cable probe the tube diameter must be ≥ 6 inches (DN150).

12 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

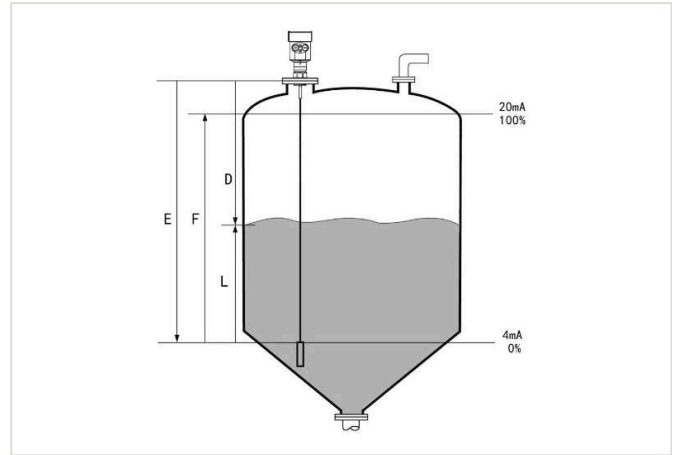
Water and wastewater

Food processing

13 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

14 Ordering

Quote reference	II-LT-001
Model / variant options	Single-cable antenna · Single-pole antenna · Dual-cable antenna · High temperature / high pressure · PTFE-sealed probe · Coaxial tubular antenna
Lead time, terms, documentation	Confirmed in the quotation

TO PREPARE A QUOTATION 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

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QUOTATION

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

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.

The datasheet lists maximum distance and process temperature against model codes 311–315. Confirm the model code for your probe configuration with the technical team before ordering.

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