

LLT100

Laser level transmitter



The new standard in non-contact industrial laser level transmitters

Measurement made easy

The ideal non-contact transmitter for industrial applications and harsh conditions

Overview

ABB brings laser level transmitters to the next level of non-contact measurements by packaging laser ranging technology with the required features for industrial applications. Using a pulsed laser for performing time of flight measurement, LLT100 provides accurate distance measurements while being powered from the 4 to 20 mA loop. Available in aluminum or stainless steel body, it comes with a variety of process interfaces. It can meet the demands of hazardous area locations, high pressure and high temperature applications.

Customer benefits

The LLT100 is specifically made for industrial applications and harsh environments. It provides continuous, non-contact level measurement capabilities for process automation and inventory management in industries such as mining, aggregates, oil & gas, chemicals, food & beverages, power, pulp & paper, pharma, and water & waste water.

Key features

- Optimize process or inventory management
 - Precise measurement of any solid or liquid
 - Independent of material properties
- Low cost of ownership
 - Fast and flexible installation
 - No maintenance
 - Single product configuration works for many applications
- Fast delivery
 - Less than 2 weeks from order to receipt
- Convenient
 - Easy setup function
 - Adjustable embedded graphical user interface
 - 2-wire powered and HART 7 communication
- Reliable
 - Dust and fog penetration capabilities
 - Accurate measurement at short and long distances
 - Explosion-proof class 1, division 1 (zone 1)

Product configurations

Base model

Ideal for measuring the level of solids at up to 100 m (328 ft) and liquids at up to 30 m (98 ft) when the process is at normal pressures. Affordable, powerful level transmitter for a wide range of applications, even in hazardous areas.

Range	0.5 to 100 m (2 to 328 ft)
Process fitting	ASME class 150, NPS 2 in. DN 50 PN 16 flat face
Operating temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Process pressure	-1 to +2 bar (29 psi)
Typical accuracy	±11 mm (0.4 in.)



High pressure model

Ideal for high-pressure applications. Same performance as the base model, but fitted with a choice of pressure rated flanges. As all models, is certified for use in hazardous area zone 1, and laser beam can be sent safely into zone 0.

Range	0.5 to 100 m (2 to 328 ft)
Process fitting	ASME class 150/300, NPS 2 in. DN 50 PN 16/40 raised face
Process temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Process pressure	-1 to +50 bar (720 psi)
Typical accuracy	±11 mm (0.4 in.)



Hygienic model

Ideal for food and beverage or pharmaceutical applications. Model fitted with a 4 in. triclover clamp interface with hygienic certifications. As all models, available with aluminum or stainless steel enclosure.

Range	0.5 to 100 m (2 to 328 ft)
Process fitting	4 in. triclover clamp
Operating temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Process pressure	-1 to +1 bar (15 psi)
Typical accuracy	±11 mm (0.4 in.)



Accessories

Configure the transmitter to a wide variety of applications:

- Dust tube
- Purge ring for dust tube
- Cooling tube (increases maximum process temperature to 280 °C (535 °F))
- Heated window (requires 4-wire power)
- Through-The-Glass HMI
- Flange adapters
- Alignment laser pointer
- External relays
- Rotating bracket, swivel flange

Specification

Measurement

Range

- 0.5 m to 30 m (2 to 100 ft.) for liquids
- 0.5 m to 100 m (2 to 328 ft.) for solids
- 0.5 m to 200 m (2 to 656 ft.) for positioning applications with reflective target

Resolution

5 mm (0.2 in.)

Typical accuracy

±11 mm (0.4 in.)

Measuring beam

Laser wavelength: 905 nm, eye-safe, Class 1

Laser beam divergence

< 0.3°

Environmental conditions

Operating temperature

- 40 °C to +60 °C
- (–40 °F to +140 °F),
- up to 280 °C (535 °F) with cooling tube

Storage temperature

- 40 °C to +85 °C (–40 °F to +185 °F)
- Survival temperature
- 40 °C to +80 °C (–40 °F to +175 °F)

Process pressure

- Base model: –1 to +2 bar
(29 psi – universal flange)
- Hygienic model: –1 to +1 bar (15 psi)
- Pressure-rated model: –1 to +49.6 bar (719 psi),
depending on flange

Output

Analog

4 to 20 mA, NAMUR compliant

Digital

HART 7 (multi-variable output)

Communication

Local HMI, EDD/DTM, handheld

Power supply

Powered from the loop

- 4 to 20 mA, 16 to 42 V DC
- (If using HART, minimum input voltage is 21 V DC)

Heated lens option

24 V DC (3W)

Mechanical

Enclosure material

- Powder coated aluminum (standard)
- 316L stainless steel (option)

Dimensions (W × H × D)

Universal – flat flange:

247 × 215 × 165 mm (9.7 × 8.5 × 6.5 in.)

Class 150 – raised flange:

240 × 242 × 154 mm (9.5 × 9.5 × 6.1 in.)

Class 300 – raised flange:

247 × 215 × 165 mm (9.7 × 8.5 × 6.5 in.)

DIN PN 16 – raised flange:

247 × 242 × 165 mm (9.7 × 9.5 × 6.5 in.)

DIN PN 40 – raised flange:

247 × 242 × 165 mm (9.7 × 9.5 × 6.5 in.)

Hygienic flange:

223 × 215 × 137 mm (8.8 × 8.5 × 5.4 in.)

Weight of standard model

- Aluminum enclosure with universal aluminum flange: 3.7 kg (8.2 lb)
- 316L stainless steel enclosure with universal stainless steel flange: 8.6 kg (19.0 lb)

Weight of pressure rated model

- Aluminum enclosure: 6.7 to 7.2 kg (14.8 to 15.9 lb) depending on flange
- 316L stainless steel enclosure: 10.0 to 10.5 kg (22.1 to 23.2 lb) depending on flange

Weight of hygienic model

- Aluminum enclosure: 5.8 kg (12.8 lb)
- 316L stainless steel enclosure: 9.1 kg (20.1 lb)

Protection class

IP66/IP67/Type 4X

Process fitting

- Flange (ASME 2 in., DN50)
- Hygienic fitting /tri-clamp 4 in. (ISO2852)

Wetted parts

- Aluminum, cemented borosilicate window (base model)
- 316L SST, cemented borosilicate window (base model, hygienic model)
- 316L SST, fused borosilicate window (high pressure models)

Operation

Display

Integrated 128 × 64 pixels LCD display with TTG (Through-The-Glass) interface

Software features

- Volume computation
- Damping
- Filtering
- Thresholds / Alarms
- User-defined display (with HMI)

Approvals

CE, ATEX, IECEx, FM, 3A, CSA, KCs

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