

Laser Level DATASHEET

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Tel: (+351) 21 843 64 00
Fax: (+351) 21 843 64 09
geral@bhb.pt www.bhb.pt

LLT100

Laser level transmitter

The new standard in industrial laser level transmitters

Measurement made easy



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.

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

Main features

ABB brings laser level transmitters to the next level of noncontact 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.

Convenient

- Easy setup function
- Orientable 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)

LLT100

Laser level transmitter

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 m to 100 m (2 ft. to 330 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)
Accuracy	±2 cm (0.8 in.)



High pressure models

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 m to 100 m (2 ft. to 330 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)
Accuracy	±2 cm (0.8 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 m to 100 m (2 ft. to 330 ft.)
Process fitting	4 in. triclover clamp
Operating temperature	−40°C to +60°C (−40°F to +140°F)
Process pressure	−1 bar to +1 bar (15 psi)
Accuracy	±2 cm (0.8 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 ft. to 100 ft.) for liquids
- 0.5 m to 100 m (2 ft. to 330 ft.) for solids
- 0.5 m to 200 m (2 ft. to 660 ft.) for positioning applications with reflective target

Resolution

- 5 mm (0.2 in.)

Accuracy

- ±20 mm (0.8 in.)

Measuring beam

- Laser wave length: 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)
- 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

Heated lens option

- 24 V DC (3W)

Mechanical

Enclosure material

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

Dimensions

- Universal – flat flange W 247 x H 215 x D 165 mm (9.7 x 8.5 x 6.5 in.)
- Class 150 – raised flange W 240 x H 242 x D 154 mm (9.5 x 9.5 x 6.1 in.)
- Class 300 – raised flange W 247 x H 242 x D 165 mm (9.7 x 9.5 x 6.5 in.)
- DIN PN 16 – raised flange W 247 x H 242 x D 165 mm (9.7 x 9.5 x 6.5 in.)
- DIN PN 40 – raised flange W 247 x H 242 x D 165 mm (9.7 x 9.5 x 6.5 in.)
- Hygienic flange W 223 x H 215 x D 137 mm (8.8 x 8.5 x 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 / NEMA 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)

...Specification

Operation

Display

Integrated 128 x 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



www.abb.com/level

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Contactos/Contacts:

Comercial/Commercial:

Fernando Mena Costa
e-mail: fcosta@bhb.pt
Tel: (+351) 21 843 64 00
Fax: (+351) 21 843 64 09

Assistência/Service:

Patricia Costa
e-mail: ppcosta@bhb.pt
Tel: (+351) 21 843 64 00

