Measurement & Analytics | Measurement made easy

LLT100, LM80, and LM200

Lasers for level: Now everything is possible

Expertise in technology from more than a century of experience

To operate any process efficiently, it is essential to measure, actuate, record and control. In selecting ABB you are choosing a partner who is offering the best measurement solution for your needs, enabling maximum return on your investment. When investing in ABB measurement products and solutions you are receiving the best technology, reliability and service in the business.

Research and development is a vital source of ABB's technology leadership. ABB constantly builds on the foundation of existing technologies for new applications, and continues to develop the breakthrough technologies needed to meet the challenges of the future. ABB and its heritage companies have been leaders in innovation and technology for more than 100 years.

Comprehensive measurement solutions serving any industry

ABB measurement products provide worldclass measurement solutions for any industry, utility or municipality for more than a century.

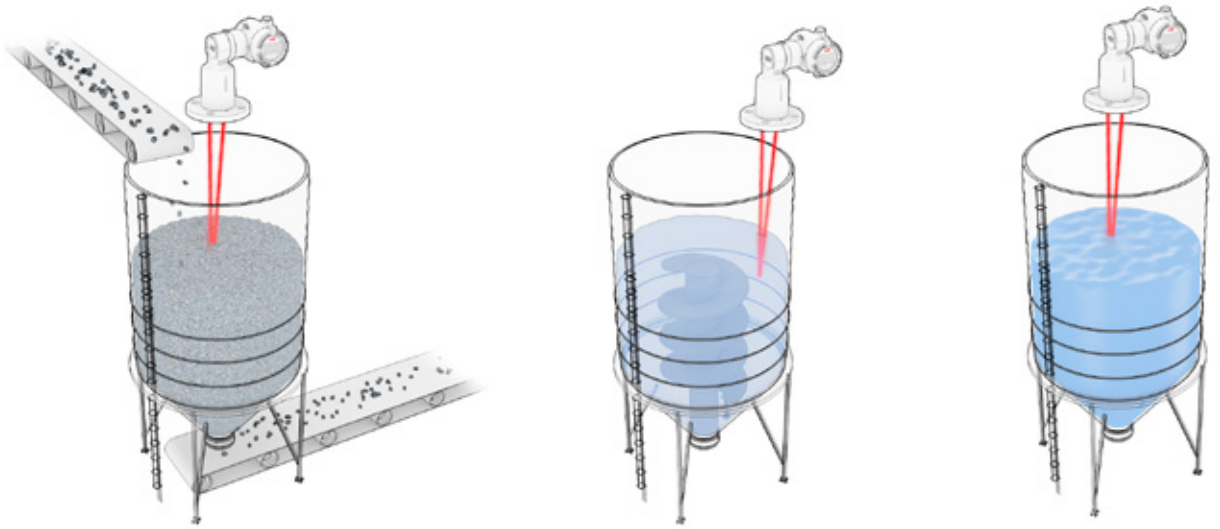
Latest innovations deliver technological solutions to make it easier for you to run your plant. ABB measurement products are based on common technology, providing a common look and feel and method of operation.

This results in products that are easy to configure, to integrate, and to maintain.

ABB measurement products portfolio:

- Analytical measurements
- Flow measurement
- Natural gas measurement
- Valve automation
- Pressure measurement
- Temperature measurement
- Recorders and controllers
- Level measurement
- Device management
- Force measurement
- Service

Non-contact level measurement solution



The ABB family of non-contact laser level transmitters provides easy solutions for accurate and reliable level measurement. Laser level measurement revolutionizes the level measurement industry. It is designed for all industrial applications and replaces open-path radar and other level transmitters. It will change the way you perform level measurement. It is measurement made easy.

Industries served:

- Mining and construction
- Aggregates
- Fertilizers
- Chemicals
- Pulp and paper processing
- Oil & gas
- Power generation
- Food and beverage
- Water and wastewater

Customer benefits:

- Non-contact
- Maintenance free
- Narrow beam not affected by surrounding structures
- No echo mapping required
- Very flexible installation, can be aimed at an angle
- Range up to 200 m
- Very accurate
- Rapid response

Level measurement with laser technology

Using a time-of-flight calculation, the LLT100, LM80, and LM200 can accurately measure the distance to the target surface.

These level transmitters use invisible, eye-safe, infrared laser pulses to measure the distance to the surface. The on-board microprocessor calculates the distance by multiplying the known speed of light by the laser pulse travel time from the transmitter to the surface and back.

The laser beams have very little divergence (<0.3°) so that accurate targeting is easy even in silos or vessels that have internal structures. Moreover, the narrow beam doesn't interact with local structures or build-up on vessel walls, making the measurement very reliable even when the environment changes. This means no reconfiguration, no down-time, and reduced lifetime costs.

Made for industrial applications:

- Measures through dust and fog
- Approved for hazardous areas
- Certified for high pressures

LM80 and LM200
Intermediate and long range laser level and position transmitter

LM80
The LM80 is a non-contact, laser level measurement transmitter designed for any solid materials and opaque liquids. Based on pulsed laser technology, the LM80 embodies speed and accuracy in a single, easy to use and install product.

The characteristic narrow beam divergence of the laser permits direct aiming to the target surface without interference from structure or falling material.

With both continuous 4-20 mA and single point relay outputs, the LM80 can operate as a process control sensor while simultaneously providing high and low alarms.

Whether measuring a few meters into the confined space of a crusher, or to the bottom of the tallest silo, the LM80 with its laser pointer is the plug-and-play solution to level measurement.

Options
- Many mounting options
- Configuration device (LCD2)
- Dust tube
- Non-condensing optics (heated lens)
- Stainless steel housing

LM200
The LM200 laser level measurement transmitter is dedicated to long range applications. It measures solids at distances up to 200 m / 656 ft. and up to 45 m / 148 ft. on opaque liquids. It finds many applications such as ore pass level monitoring in mining, for instance.

The LM200 is also ideal for long distance positioning applications up to 400 meters, with the use of a reflector on the targeted object. For instance, this can be used for tripper car positioning, providing a maintenance-free solution as the sensor will not wear because it is never in contact with the moving car.

Options
- Many mounting options
- Configuration device (LCD2)
- Dust tube
- Non-condensing optics (heated lens)
- Reflector panel for positioning application (available for all laser level tran

LLT100
The new standard in industrial laser level transmitters

The LLT100 is the latest generation of laser level measurement transmitters. Building upon the success of the LM80, it incorporates a multitude of innovative technologies in order to specifically tailor laser time-offlight measurement to the demands of industrial applications.

The LLT100 is therefore capable of measuring any solids or liquids, even transparent liquids, by using precise timing circuits, laser pulse control, and powerful signal processing. The level of solids can be measured at up to 100 m (330 ft.) and liquids at up to 30 m (100 ft.). All of this available in a 2-wire powered device!

The LLT100 is available with a variety of process interfaces common in the industry:
- Standard aluminum or stainless steel flange;
- High pressure flange;
- Hygienic triclover flange.

Being certified for use in gas and dust hazardous areas
Specifically made for harsh industrial environments, the LLT100 provides continuous, non-contact level measurement capabilities for process automation and inventory management in industries such as chemicals, aggregates, oil & gas, mining, food & beverages, power, pulp & paper, pharma, and water & waste water.

Customer benefits
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 reconfiguration when the environment changes
- Single product configuration works for many applications

Convenient
- Easy setup menu
- Orientable embedded graphical user interface
- 2-wire powered and HART 7 communication

Reliable
- Dust and fog penetration capabilities
- Accurate measurement at distances up to 100 m (330 ft.)
- Approved for use in hazardous area class 1, division 1 (zone 1)

Multiple accessories

Dust tube

Swivel flange

Cooling tube

A wide variety of accessories are available to fit with the laser level transmitters LLT100, LM80 and LM200 allowing to address different applications and specific environments. Common accessories are:

Dust tube
– Avoids dirt or splashing liquids on the window

Heated window
– Prevents condensation on window

Rotating (pivot) bracket
– Ideal for aiming the laser beam

Swivel flange
– Provides precise aiming of the laser beam and especially useful in liquid applications

Cooling tube
– Increases maximum process temperature to 280°C/535°F

Purge ring
– Allows air purging the LL100 dust tube

LLT100 Laser pointer tool
– Used to visually align the position of a bracket before installing the LLT100

Heated window

Rotating (pivot) bracket

LLT100 Laser pointer tool

Purge ring

The solutions meeting your industry needs

	LM80 	LM200 	LLT100 
Product category	Non-contact level measurement		
Range	Level up to 100 m (330 ft.)	Level up to 190 m (623 ft.)	Level up to 100 m (330 ft.)
	Positioning up to 150 m (500 ft.)	Positioning up to 400 m (1312 ft.)	Positioning up to 200 m (655 ft.)
Laser	Measuring 905 nm Infrared Laser Class 1M		Measuring 905 nm Infrared Laser Class 1
	Pointer 635 nm red Laser Class 3R		
Resolution	± 10 mm (0.4 in.)		± 5 mm (0.2 in.)
Accuracy	± 30 mm	± 40 mm	± 20 mm
Temperature	-40°C to +60°C (-40F to +140F)		
Power	24 VDC (3 wires)		24 VDC (2 wires)
			24 VDC (4 wires) when using heated window option
Outputs	Analog output 4-20 mA		
	2 relays		HART v7
	RS232 for configuration		
Enclosure type	Aluminum	Aluminum	Aluminum
	Stainless steel		Stainless steel
Process pressure	Atmospheric		-1 to 50 bars depending on process flange
Enclosure rating	IP66/Nema4X		IP67/Nema4X
Certifications	CE	CE	CE
	ATEX	ATEX	ATEX
	IECEx	IECEx	IECEx
	cCSAus	cCSAus	FM
	FM	FM	3-A
			CRN

Contact us

ABB Inc.
Industrial Automation
Level measurement Products
E-mail: lasers@ca.abb.com

www.abb.com/laserlevel
www.youtube.com/ABBMeasurementExpert

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Sales

Service

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