The LWT300 series guided wave radar level transmitter, with LevelExpert technology, emphasizes measurement made easy.

**Measurement made easy**

**Overview**

Unlike traditional guided wave radars that use device parameters requiring multiple adjustments, the LWT300 series of instruments does it for you. The instrument uses LevelExpert™, a built-in intelligence to differentiate between the actual level and other false signals. It also keeps monitoring all these false signals while maintaining a reliable level reading. It is like having a level expert in each device.

The LevelExpert concentrates 20 years of industrial level measurement experience into an intelligent algorithm made to accurately detect the level even in the most demanding conditions. Forget baseline mapping and echo selection, LevelExpert knows how to find the right level through the clutter. The expert is now inside your guided wave radar.

**Customer benefits**

ABB’s LWT300 series transmitters are equipped with on-board diagnostics that can be used for safety monitoring, improved reliability, downtime reduction, and performance verification. Standard on-board diagnostics monitor minimum and maximum electronics temperature, input voltage, probe loss or breakage, buildup detection and leakage of the primary process seal.

These diagnostic features assist you in troubleshooting common problems without extensive testing and allow device health monitoring without requiring removal from the process or taking the device offline, thus saving valuable time and improving uptime.
Key features
The LWT300 series addresses several industries such as oil and gas, petrochemical, chemical, power generation, water and wastewater, pulp and paper, and marine. To meet these challenging applications, this series of instruments offers a wide range of configurations.

- Temperature range: up to 200 °C (392 °F)
- Maximum process pressure: 200 bar (2900 psi)
- LevelExpert software for easy configuration, reliable surface detection and easy troubleshooting
- 2-wire powered and HART 7 communication
- SIL2
- Certified for potentially explosive atmospheres

Applications

LWT310 (Liquids)
The LWT300 series is comprised of the LWT310 and LWT320. The LWT310 fits in a 19 mm (3/4 in) NPT interface and is offered in a flanged version.

<table>
<thead>
<tr>
<th>Specification</th>
<th>LWT310</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPT interface</td>
<td>19 mm (3/4 in)</td>
</tr>
<tr>
<td>Cable probe diameter</td>
<td>4.8 mm (5/32 in)</td>
</tr>
<tr>
<td>Rod probe diameter</td>
<td>9.5 mm (3/16 in)</td>
</tr>
<tr>
<td>Coaxial cable diameter</td>
<td>22 mm (7/8 in)</td>
</tr>
<tr>
<td>Pull force</td>
<td>450 kg (1000 lb)</td>
</tr>
</tbody>
</table>

LWT320 (Solids)
The LWT320 fits in a 38 mm (1 ½ in) NPT interface and is offered in a flanged version.

For solids applications, the LWT320 is recommended since it can withstand a higher pull force. The LWT320 is also useful for applications having a 38 mm (1 ½ in) NPT interface.

<table>
<thead>
<tr>
<th>Specification</th>
<th>LWT320</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPT interface</td>
<td>38 mm (1 ½ in)</td>
</tr>
<tr>
<td>Cable probe diameter</td>
<td>6.4 mm (¼ in)</td>
</tr>
<tr>
<td>Rod probe diameter</td>
<td>12.7 mm (½ in)</td>
</tr>
<tr>
<td>Coaxial cable diameter</td>
<td>22 mm (7/8 in)</td>
</tr>
<tr>
<td>Pull force</td>
<td>635 kg (1400 lb)</td>
</tr>
</tbody>
</table>
Specification

Accuracy
2 mm (5/64 in) or 0.03 %

Resolution
1 mm (5/64 in)

Temperature drift (digital)
0.001 %/°C

Range
60 m (197 ft)

Update rate
5 Hz

Temperatures
Ambient operating
-40 to 80 °C (–104 to 176 °F)
Process
-50 to 204 °C (–122 to 400 °F)
Storage
-40 to 85 °C (–104 to 185 °F)

Process pressure
- 207 bar at 38 °C (3000 psi at 100 °F)
- 83 bar at 204 °C (1200 psi at 400 °F)

Dielectric constant
1.4 (minimum)

Process viscosity
Coaxial probe: 500 cp
Single probe: 10,000 cp

Power supply
15.5 to 42 V

Power consumption
56 mW (@ 15.5 V, 3.6 mA)
325 mW (@ 15.5 V, 21 mA)

Line resistance
1740 Ω (maximum @ 36 V, 21 mA)

Enclosure material
Powder coated aluminum or 316 L stainless steel

Protection class
IP68/NEMA 6P

Process connections
Threaded
¾ in (LWT310) or 1 ½ in (LWT320)
Flanged
ASME flanges from 1 ½ in to 8 in, class 150 to 900
DN flanges from DN 20 to DN 200, PN25 to PN160

Wetted materials
SS316L, SS304L, Alloy C-276, Duplex 2205 SS, Super Duplex 2507 SS.
Contact ABB for other materials.

Display
Integrated 128 × 64 pixels liquid crystal display (LCD) with through-the-glass (TTG) interface

Approvals
CE
FM/ATEX/IECEx hazardous area, flameproof, intrinsically safe methods of protection
SIL 2 (no redundancy), SIL 3 (redundant configuration)
CRN