

Our Expertise, Your Values



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Precision-Level Measurement with FMCW Technology

BJLM-R850 Radar Tank Gauge



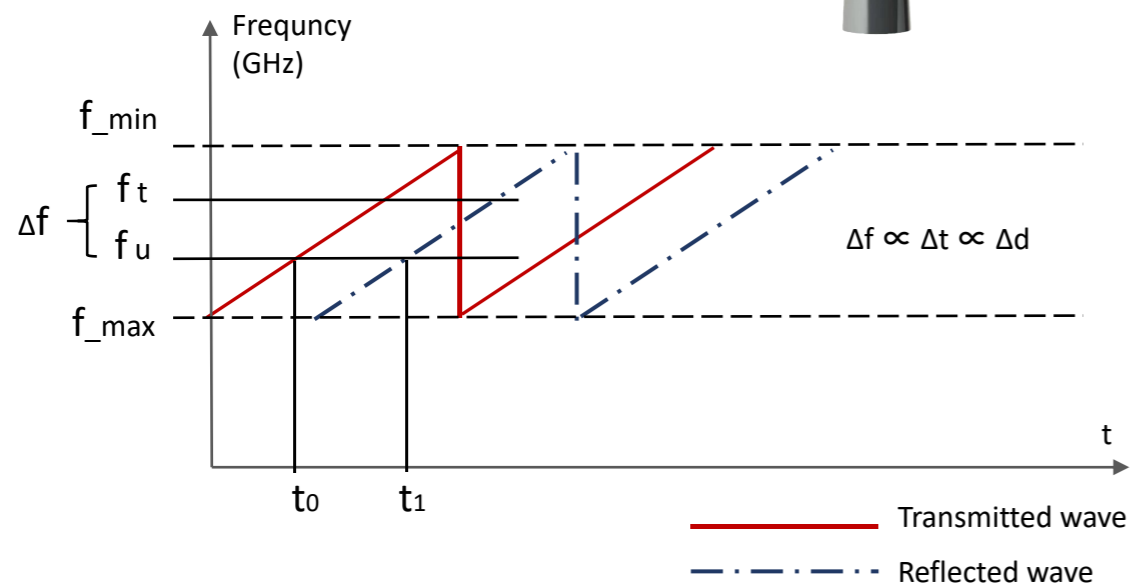
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BJLM-R850 Measurement Principle

The BJLM-R850 radar level gauge is engineered for precise continuous level measurement of liquids and solids, based on the proven principle of Frequency-Modulated Continuous Wave (FMCW) radar.

Installed atop the vessel, the instrument directs a frequency-modulated microwave signal toward the material surface. The reflected signal is received by the same antenna, and the system analyzes the frequency shift between the transmitted and echoed waveforms. This shift is directly proportional to the distance to the surface, allowing the BJLM-R850 to determine the level with high accuracy, unaffected by temperature, pressure, vapor, or foam.



Advantages of FMCW Radar Technology

- **High Resolution**

Capable of achieving superior range resolution. Since the beat frequency is directly proportional to the target distance, the target's position can be determined with high accuracy by measuring this frequency difference precisely. Furthermore, the resolution can be enhanced by increasing the frequency sweep bandwidth.

- **Low Transmit Power**

Operates using continuous-wave signals at a relatively low average power. Effective detection can be achieved with low-power components, which reduces system energy consumption while minimizing electromagnetic interference with other devices, thereby improving overall system safety and compatibility.

- **No Minimum Range Blind Zone**

Transmits and receives signals simultaneously, eliminating the minimum range limitation typical of pulse radar systems. This enables reliable detection of very close targets.

- **Strong Anti-Interference Capability**

Exhibits high resistance to environmental noise, clutter, and other interference. The continuous-wave signal structure allows for reliable target detection even in complex electromagnetic environments. This capability can be further enhanced through advanced signal processing algorithms.

- **Robust Performance in Various Environments**

Maintains stable operation under diverse and harsh conditions—including heavy rain, fog, dust, and temperature extremes—with minimal degradation in measurement performance.

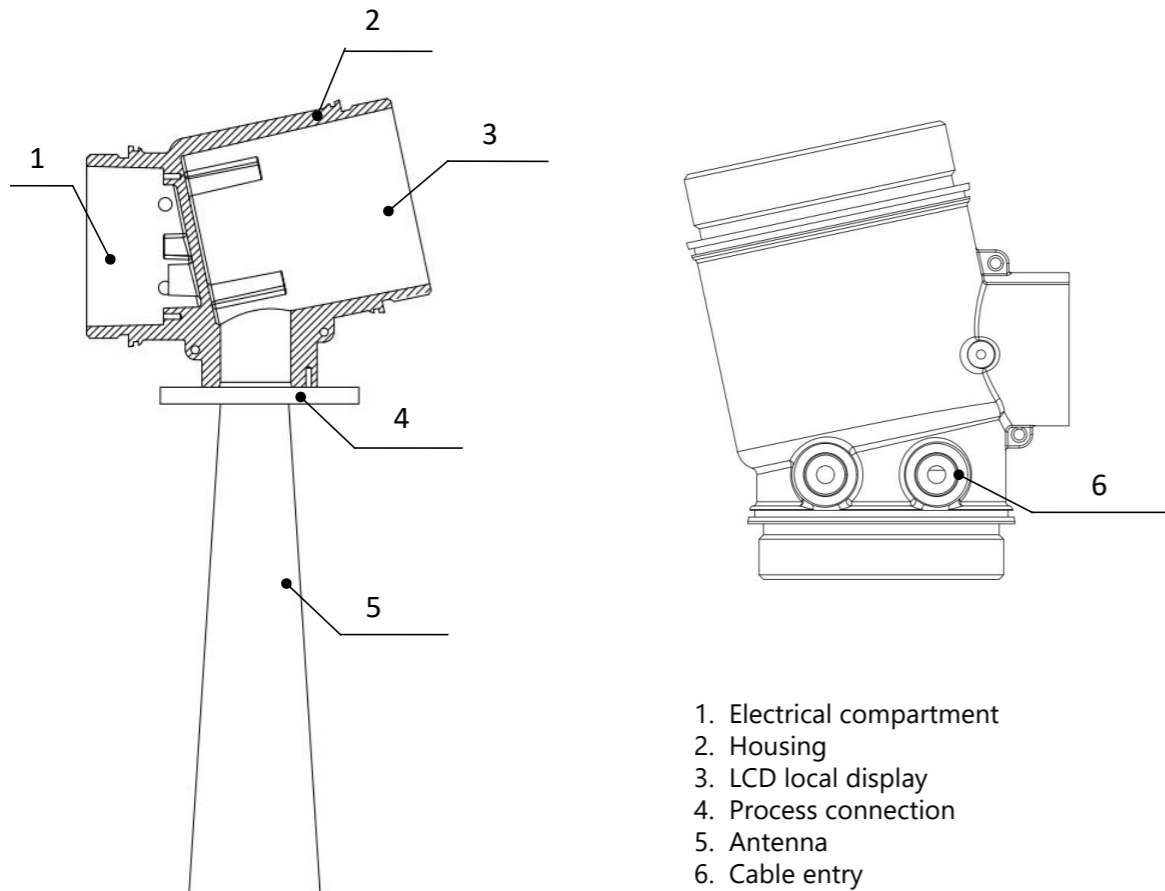
- **Ease of Miniaturization and Integration**

Compared with pulse radar, FMCW radar has a simpler architecture, which facilitates miniaturization and integration. This makes it suitable for a wide range of platforms and applications.

- **Non-Contact Measurement**

As a non-contact sensing method, its measurements are not affected by the medium's properties, enabling safe and accurate measurement of high-temperature, cryogenic, corrosive, and other challenging substances.

BJLM-R850 Structure



Features

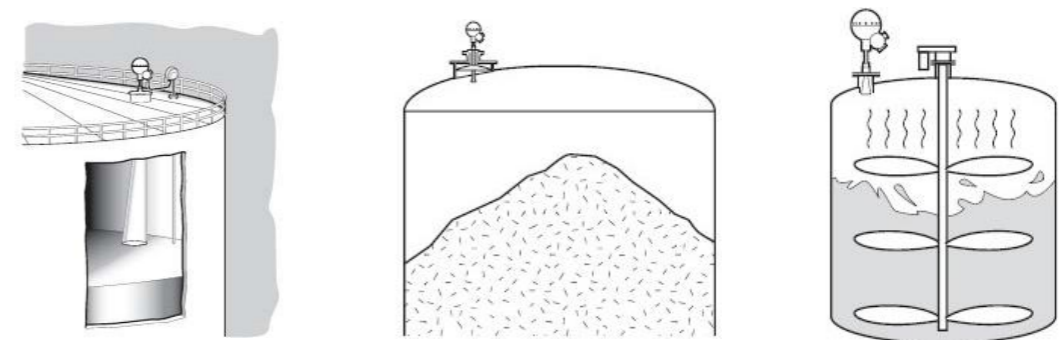
- Non-contact Measurement
- Ultra-High Reliability & Accuracy (± 1 mm)
- Quick & Easy Installation
- Advanced Signal Processing for challenging environments
- Modular Design (Detachable Radar Head/Antenna)
- Standalone or Integrated System compatible with tank farm management
- Remote Configuration, Debugging & Monitoring
- Military-Grade Hardware with proprietary IP

Application

BJLM-R850 Radar Level Transmitter :

- **Advanced Technology:** Built on military-grade microwave radar technology and high-resolution frequency analysis.
- **Superior Performance:** Delivers metrology-grade accuracy and outstanding long-term stability.
- **Wide Application:** Ideal for non-contact level measurement of liquids, slurries, and bulk solids.
- **Robust Design:** Engineered to operate reliably in harsh conditions, including extreme temperatures, high pressure, steam, and heavy vapors.

Main Application



- Refineries and tank farms
- Chemical and petrochemical industry
- Water treatment and sewage treatment industry
- Liquefied petroleum gas storage
- Pharmaceutical industry
- Hydropower generation and dams
- Power stations
- Food and beverage industry
- Cement, powder, wood chips, and other solid material applications

