



LNG

Fuel Tank Monitoring System



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Musasino LNG Fuel Tank Monitoring System

Stricter environmental regulations are driving demand for LNG-fueled ships. As Japan's only manufacturer of high-precision and high-performance liquid level gauges, Musasino's radar type level gauge for LNG builds on our experience with LNG CTS and our unique technology.

Easy-to-Maintain All-in-One Structure

The all-in-one structure combines level sensors, temperature sensors, pressure sensors, and an independent level alarm in a compact housing. Each module is independent, and can be easily maintained under closed-tank conditions. The radar guide pipe is only 1-inch, keeping the weight and the amount of space needed within the tank to a minimum, making it applicable to both membrane and C-type tanks.

Self-Correction Function for Long-Term Operation

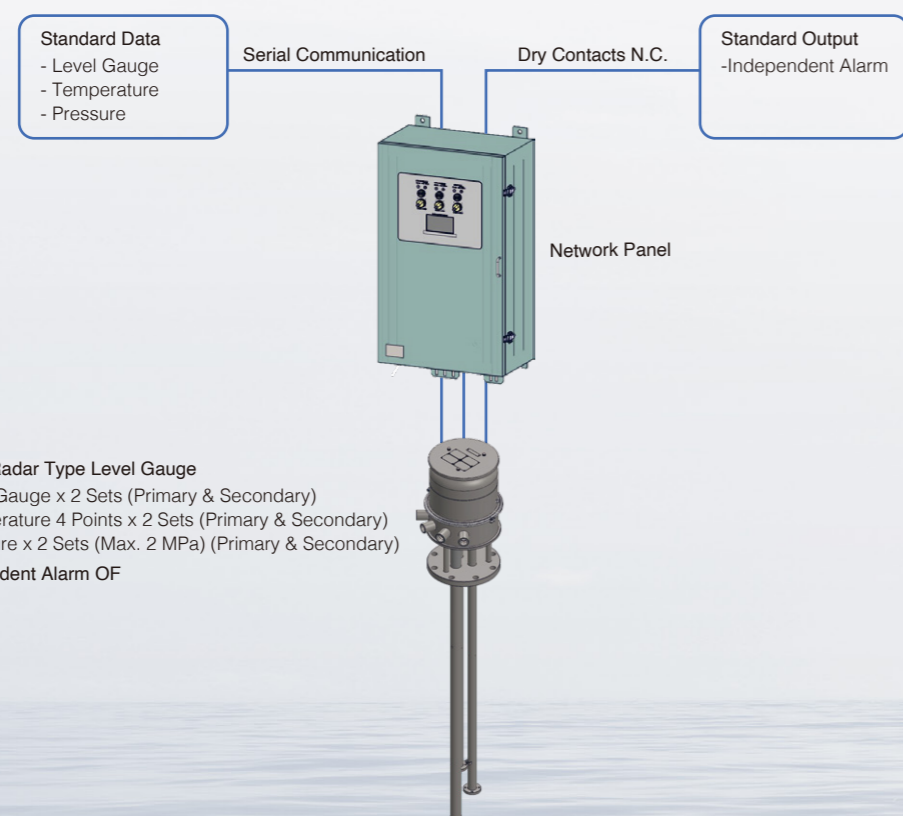
Each radar type level sensor has a built-in self-correction function, which allows for accurate, stable measurements over years of continuous operation.

Volume Calculation (Option)

Adding a high-precision electronic inclinometer and software to the system, the volume of LNG in the tank can be calculated from the level measurements, compensating for the inclination of the hull.

Density Monitoring (Option)

Musasino is able to provide software which monitors changes in density, which can help prevent LNG rollover.



Level Gauge

| | |
|-----------------------------|--|
| Application | : LNG |
| Measurement Method | : Frequency Modulated Continuous Wave (FMCW) Radar |
| Measurement Range | : 0 m ~ 25 m |
| Accuracy | : ±5 mm |
| Intrinsically Safe Standard | : Intrinsically Safe Explosion-proof Type Ex ia IIC T5 |
| Protection Class | : IP66 |

Temperature Sensor

| | |
|--------------------|---|
| Measurement Method | : PT-100 |
| Measurement Range | : -200 ~ 100°C |
| Accuracy | : ±0.2°C (-165°C ~ -145°C) ±1.5°C (-145°C ~ +40°C) |

Pressure Sensor

| | |
|--------------------|--|
| Measurement Method | : Strain Gauge Type Diaphragm Pressure Gauge |
| Measurement Range | : 0 bar to 20 bar |
| Accuracy | : ±0.5% FS |



Inclinometer (Option)

| | |
|--------------------|--------------------------|
| Measurement Method | : Capacitive MEMS Sensor |
| Measurement Range | : ±5° |
| Accuracy | : ±0.05° |