

# Flow Measurement of Liquefied Natural Gas at -260°F

Reliable non-invasive measurement. Maintenance free, not subject to wear and tear. Installation without process interruption.

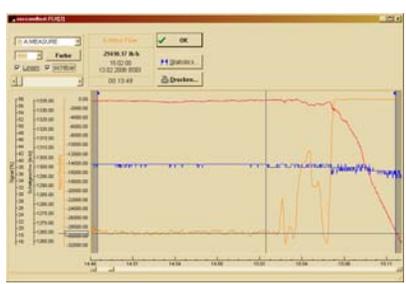
Measuring task		Method		Medium	
	Flow measurement		Ultrasound		Liquefied natural gas

## Features Measuring Task..... ?

- Medium: liquefied natural gas
- Pipe Ø: 89 mm (3.5 inch)
- Material: stainless steel
- Temperature in: -162°C (-260°F)
- Pressure: ambient



Reliable measurement even under extreme conditions with FLEXIM's patented WavelInjector®.



The PC software FluxData allows for the transmission and visualization of all relevant parameters such as volume and/or mass flow, temperature, sound speed and others.

When natural gas is cooled to -259 °F (-161 °C), it becomes a clear, colorless, odorless liquid: liquefied natural gas, or LNG. Natural gas in its liquid form takes up to 600 times less space than in its gaseous state. It can thus be transported over long distances.

LNG peak-shaving facilities are used for storing surplus natural gas needed to meet the requirements of peak consumption during winter or summer. For the correct operation of the facility, reliable information about the flow of the LNG in the regasification unit is required. For this purpose, conventional measurement technologies such as rotameters are often used. These invasive devices are subject to wear and tear and thus losing precision and reliability.

## Solution..... !

Non-invasive flow measurement with ultrasound is an elegant alternative to classical invasive measurement techniques. As the clamp-on transducers are simply fixed on the outside of the pipe, no pipework and thus no process interruption is necessary for installation. With FLEXIM's patented WavelInjector®, reliable non-invasive flow measurement is possible even under extreme conditions: from very low up to very high temperatures.

The WavelInjector® separates the transducers thermally from the extreme temperatures and simultaneously guarantees their perfect acoustic coupling. FLEXIM's patented WavelInjector® technology thus allows the upgrade of existing plants without any need to interrupt the process.

## Advantages..... +

- Reliable non-invasive measurement even under extreme conditions
- No extra costs due to special materials
- No process interruption
- Maximum flexibility: The measuring system can easily be re-used at other measuring points
- Safe equipment since non-invasive; only Div 2 is required
- Maintenance free measurement due to permanent couplings between transducer and WavelInjector® and between WavelInjector® and pipe

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