

Using methanol safely and efficiently

Everllence relies on smart measurement technology from Endress+Hauser

Everllence

"Endress+Hauser offered the best overall concept. We wanted to source all our sensors from a single manufacturer and have had good experiences with them in the past. The wireless functions and ease of use in particular make our work much easier."

Erik Umann, Project Manager at Everllence



Erik Umann, Project Manager



Methanol test engine in Everllence's test facility in Augsburg © Stefan Hobmeier

To make shipping more climate-friendly, Everllence is focusing on the development of innovative engines that can be powered by methanol. To this end, a new methanol tank facility has been built that meets the highest standards of safety, precision, and automation.

Endress+Hauser supplies the appropriate measurement technology for all relevant measuring points – from filling and storage to distribution. High-precision sensors for pressure, temperature, level, and flow are used, which are optimally adapted to the safety-critical conditions of the plant thanks to their SIL certification, Heartbeat Technology, Bluetooth functionality, and ATEX approval.

The solution not only supports safe and efficient automatic operation,

but also significantly simplifies operation and maintenance considerably – a decisive contribution to the successful implementation of this forward-looking project in marine engine development.

The Challenge Plant and function

The new methanol tank facility at Everllence in Augsburg went into operation in 2024 and has been in continuous operation ever since. It supplies the state-of-the-art test benches with methanol – a synthetic, climate-friendly fuel that can replace diesel or heavy fuel oil.

The plant receives, stores, distributes, and ultimately uses methanol for testing methanol-powered engines. The entire plant is designed for unmanned automatic operation, which means continuous, reliable monitoring is essential.

Challenges at the measuring points

Methanol places high demands on safety and precision. The measuring points are distributed throughout the entire plant:

- **Filling:** Pressure transmitters, temperature and flow sensors, and level sensors
- **Storage containers:** Radar sensors, Liquiphants, multipoint thermometers, pressure sensors in the nitrogen supply and tank inertion
- **Supply line to test bench:** Temperature and pressure sensors
- **Tank leakage:** Continuous radar measurement and overflow protection
- **Pendant line to truck:** Pressure sensor for monitoring



Methanol filling system with various Endress+Hauser measuring devices for reliable monitoring and control

Each of these measuring points must operate under ATEX conditions, deliver maximum accuracy, and at the same time contribute to functional safety. Particularly critical: level monitoring in the double-walled tank, precise temperature measurement for early fire detection, and permanent inerting with nitrogen to prevent explosive atmospheres.

Our solution

Smart sensor technology for maximum safety

Endress+Hauser developed a comprehensive measurement technology concept that meets all safety-related requirements and also significantly simplifies the operation and maintenance of the plant.

- **Safety at the highest level:** All sensors used are SIL certified and meet the requirements of IEC 61508. The devices feature Heartbeat Technology for self-monitoring and enable easy verification – ideal for WHG and SIL testing.
- **Safety:** Level measurement in the tank is carried out using radar sensors for operational measurement and Liquiphants for shutdown.
- **Precise temperature monitoring:** The multipoint thermometer measures at three levels in the tank (1.5 m, 7.5 m, 14.5 m) – with only one process connection. This means that in the event of a malfunction, it is possible to immediately identify where critical temperatures are developing.
- **Bluetooth access:** All sensors can be read, configured, and checked wirelessly – without entering the hazardous area. This saves time, increases safety, and makes maintenance much easier.
- **Uniform operating concept:** All measuring devices—whether for pressure, temperature, level, or flow—follow a uniform operating concept. This ensures intuitive handling and reduces training requirements.

Fast, effective, and reliable cooperation

The cooperation between Everllence and Endress+Hauser was characterized by high efficiency, reliability, and professional competence. Despite the ambitious schedule, all the necessary measuring devices were delivered on time and put into operation thanks to Endress+Hauser's rapid response and excellent delivery performance.

From the initial task assignment to the planning of the overall concept and final implementation, Everllence was supported by an experienced team from Endress+Hauser. The experts not only provided support in selecting the optimal measurement technology, but also in safety-related aspects such as SIL calculations and the integration of 24/7 data access. This close, solution-oriented collaboration was a key success factor for the smooth commissioning of the methanol tank facility.

Components

10x PMP71B



5x FTL325P



2x TM151 metric
(TM152 imperial)



1x Promass F 300



1x FMP51



1x Multipoint TMS31



5x FTL51B



1x FMR62B



5x RIA15



1x SIL calculation

Result

Automated, safe, efficient

The new methanol tank facility at Everllence's Augsburg site is now fully automated – manual intervention in the potentially explosive area is no longer necessary. The combination of Heartbeat technology and Bluetooth access has significantly reduced testing times and simplified maintenance processes. The measurement technology used meets the highest safety requirements: redundant measurements and SIL-certified devices ensure maximum operational safety.



Endress+Hauser measuring equipment for checking various measurement tasks on the methanol storage tank

At the same time, continuous self-monitoring of the sensor technology ensures consistently high plant availability. Thanks to the uniform operating concept across all measurement functions, the devices are intuitive and efficient to use. Despite the complex requirements and a tight schedule, implementation was completed on time and without a hitch – proof of Endress+Hauser's high delivery reliability and project expertise.

Benefits at a glance

- **Maximum safety:** SIL-certified sensors with TÜV-tested functional safety
- **Efficient operation:** Automated, unmanned plant operation through continuous monitoring
- **Easy operation:** Bluetooth access to all sensors – no need to enter hazardous areas and remote operation of hard-to-reach measuring equipment via app
- **Future-proof:** Uniform operating concept, heartbeat technology, and WHG-compliant solutions
- **Fast project completion:** On-time delivery despite tight schedule
- **Competent advice:** Holistic concept from a single source – from planning and design to commissioning

Reference

Everllence (formerly MAN Energy Solutions) is a leading provider of propulsion, decarbonization, and efficiency solutions for shipping, energy, and industry. True to its motto, „Moving Big Things to Zero,“ the company supports key global industries in reducing hard-to-avoid emissions. Its innovative technologies have a measurable impact on the success of the global energy transition. Everllence is headquartered in Germany and employs around 15,000 people at more than 140 locations worldwide. Customers also benefit from the global service center network of the after-sales brand, Everllence PrimeServ.

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