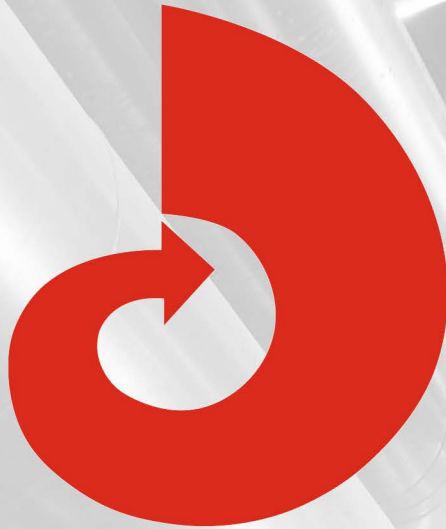


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Fine Controls (UK) LTD, Bassendale Road, Croft Business Park,
Bromborough, Wirral, CH62 3QL UK
Tel: 0151 343 9966
Email: sales@finecontrols.com

The Siemens logo is displayed in a teal, sans-serif font within a white rectangular box at the top left of the page.

Not a drop of beer lost

Successful practical test of radar level transmitter from Siemens

Level measurement



Innovation in level measurement

Up to now, sectors like the brewing industry have mainly used ultrasound sensors with direct product contact to determine the contents in pressure tanks, fermentation tanks and storage tanks. For around a year now, Siemens has offered the Si-trans LR250 HEA (Hygienic Encapsulated Antenna), a radar level transmitter that determines the contents of the tank without coming into contact with the product. It has therefore become the first radar level transmitter to be certified as aseptic in accordance with the strict rules of the EHEDG (European Hygienic Engineering & Design Group). Prior to market introduction, a host of tests were carried out at the research brewery of the Technical

University of Munich in Weihenstephan, Bavaria.

The brewing industry faces a host of challenges today. On the one hand, the number of different beer styles, and thus also bottle types, is increasing more and more. On the other hand, fierce competition is ratcheting up cost pressures. Added to this are the strict conditions of the EHEDG Aseptic, which controls hygiene measures in the manufacture and packaging of foodstuffs. This includes precise determination of the contents of pressure tanks before bottling, as well as the contents of fermentation and storage tanks.

[siemens.com/sitranslr250](https://www.siemens.com/sitranslr250)

Putting the new system through its paces, the three fermentation and storage tanks at the research brewery at the Technical University of Munich in Weihenstephan were each equipped with a Sitrans LR250 HEA with different process connections.



Previously, this would have been done primarily using ultrasound sensors with direct product contact, or by means of differential pressure measurement. Siemens has offered the Sitrans LR250 HEA, a system for pressure measurement without product contact, based on the technology of the cross-sector Sitrans LR250 radar level transmitter.

"In further developing our field-proven radar level transmitter, we were aware of the specific requirements of the brewing industry, so we placed particular value on the hygienic enclosure of the antenna, and on the variety of process connections. It was also important to us that the new sensor should be especially easy to maintain and to repair, if it should come to that," explains Robert Gray, Project Head at Siemens Process Automation in Peterborough/Canada. The Sitrans LR250 HEA is thus much more cost-effective than comparable ultrasound-based systems, and it also has an electrical system that can be replaced without opening the tank.

Test run under actual conditions

Putting the new system through its paces, Siemens subjected the Sitrans LR250 HEA to a host of tests at the Technical University of Munich in Weihenstephan. Three fermentation and storage tanks at the research brewery were each equipped with a Sitrans LR250 HEA with different process connections. "In the past months, we have used the tanks to brew all possible styles of beer, from bottom-fermented beers (...) all the way to special beers with dry hopping or wood aromatization," relates Dr. Florian Schüll,

Head of the Weihenstephan Research Brewery. Thanks to the dynamic envelope-curve algorithm with which all Siemens radar and ultrasound level transmitters are equipped, the sensors were able to supply precise measurements even in the presence of layers of foam.

During the entire test period, there were no microbiological abnormalities or accretions. The reason for this is that the sensors in the upper area of the tanks were attached without contacting the product. In addition, the polytetrafluoroethylene (PTFE) used for the fully encapsulated antenna has a surface roughness of less than 0.8 μ , making the surface of the antenna especially smooth. On the basis of these results, the Sitrans LR250 HEA became the first radar level transmitter to acquire Aseptic certification in accordance with the strict rules of EHEDG.

Siemens AG
Process Industries and Drives
Östliche Rheinbrückenstraße 50
76187 Karlsruhe
Germany

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