

Tank systems must be geared up for biofuels

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Press Release

Resonance Probe

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Level measuring using sound waves

Dieter Brenner from Schlemmer introduces the resonance method for measuring tank fill levels: "The air column above a liquid level is exposed to alternating sound frequencies. As regards the fill level, there is an increase in amplitude for a particular frequency." The principle is similar to blowing into a bottle, where the sound changes subject to the volume of liquid. Contrariwise, when using the resonance method, the signal and frequency of the amplitude imply the liquid level. There is a tank-specific frequency band, and the characteristic lines would have to be defined liquid-specific. "Each liquid, whether water, biofuel, diesel, oil or urea, causes a characteristic air column in a tank", says Brenner. Therefore, a specifically programmed sensor would be required for each tank and each liquid. The probe could be inserted by means of a flexible hose or a firm pipe or using several hoses for particularly complicated tank geometry. In all cases only one sensor would be used. "However, a siphon effect may not occur, for then the device won't work", warns Brenner. The measuring accuracy (for measuring heights of about 125mm) is a change in liquid level of 0.5mm. The impact of changes in temperature and liquid level, for example when driving up a hill, is accounted for in the system, as well as external sound impacts caused by the motor or car radio.

Brenner holds out the prospect of bringing the newly patented measuring system to the production stage in nine to twelve months.

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