

Press release

Satellite technology for radar level measurement

VEGA Grieshaber KG introduces a new antenna system for level measurement with radar sensors.

To reliably measure levels with radar sensors, an antenna is required that accurately focuses the signals onto the product surface. Because focussing and signal strength essentially depend on the antenna surface, the antenna system should be as large as possible.

The previously used horn antennas for this measuring principle quickly reach their physical limits: the larger the antenna diameter, the longer the antenna must be. A horn antenna with a diameter of 200 mm, operating at the emitting frequency of approx. 26 GHz, should have a length of almost one meter. This is, however, not practicable for most applications.

To meet the heavy demands of industrial applications exact on the electronics and mechanical components,



New antenna system for level measurement with radar sensors in liquids and solids

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VEGA has optimised the parabolic mirror (known from satellite technology) for level measurement applications.

The new parabolic antennas have a diameter of 245 mm and are well suited for flange sizes DN 250 or 10" used on large tanks and silos. The temperature range of the antenna systems is between -40 and 200°C at pressures between vacuum and 3 bar.

During development, special emphasis was placed on easy handling and rugged design. The parabolic mirror is made of 1.5 mm thick V4A stainless steel. The sensitive feed system, necessary to "illuminate" the reflector, is completely integrated in the mirror and optimally protected against mechanical damage and contamination. The complete antenna system can be separated from the process fitting by means of a lock fitting. Simple mounting on adapter flanges is thus possible even via a 1½" thread.

Due to the optimal signal focussing, the new parabolic antenna is especially suitable for liquids with poor reflection characteristics, such as mineral oil products or solvents, and also has enough reserve power for large measuring ranges. Even in case of different solid profiles a sufficient reflection signal is guaranteed. This offers sufficient capacity for measuring ranges up to 70 m on products with bad reflection characteristics.

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