Assistance in the search for leaks

80 GHz enables new applications in the wastewater sector

Although flow measurement is quite common in the wastewater sector, measuring 'foreign' water ingress is still a very involved process. As sewers are basically partially filled pipes, the use of typical magnetic-inductive sensors is hardly possible. That's why ultrasonic Doppler systems are often used here, but these still require a minimum coverage and can quickly become soiled in the wastewater. Venturi flow measurement is based on level readings and mathematical algorithms in conjunction with a Venturi channel. The advantage of aVenturi channel is that it cleans itself and creates very little backwater. It is quite easy to handle and ideal for partially filled systems.

Realizing this, the managing director of the engineering company UMS came up with the idea of developing a venturi channel for quick installation with a special clamping device and they are having it patented.

Thanks to an integrated clamping device, installation is extremely simple. Additionally, the cross section of a channel is only slightly reduced.

The advantage: The UMS channel can be integrated very quickly into existing sewer systems without special tools or structural alterations. Since the usual characteristic curves of standard channels cannot be used for these small, compact designs, UMS creates special characteristic curves for the different channel versions. This makes it possible to achieve high accuracy even under unfavourable conditions.

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And the final design engineering of the UMS channel would not have been possible without the latest developments in radar level measurement technology. To determine the filling levels, a radar sensor was needed that is small and, above all, measures all the way to the bottom of the channel. Until recently there was no instrument suitable for this task. Due to its very compact design, VEGAPULS 64 fitted perfectly into the system. And when it comes to water resistance, the sensor has a high rating: IP 68. Thanks to its light weight, the Venturi channel is easy to position, clamp in place, and make ready for immediate use. There are no problems such as backwater, as is common in magnetic-inductive flow measurement, or leakage through sealing pads.
The measurement flumes can be installed very quickly, which facilitates work tremendously when measuring foreign water ingress. UMS therefore decided to acquire multiple systems at the same time in order to detect foreign water ingress in a systematic manner.

VEGAPULS 64

The UMS channel is available for different diameters. The conception and development of the channel was only possible thanks to the very compact design of the VEGAPULS 64 sensor.

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80 GHz in the wastewater industry

The advantages of 80 GHz are particularly evident when the sensors are installed in very confined spaces. Typical applications are narrow pump shafts with numerous internals or heavy buildup on the shaft walls. VEGAPULS 64 with its encapsulated plastic antenna is extremely easy to install. Several flood-proof versions are available:

More application examples from the wastewater sector

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