

APPLICATION NEWS



NIVELCO's ultrasonic range from the early '90s



PiloTREK radars



Present EasyTREK and EchoTREK models

PLANAR ANTENNA PiloTREK IN USE

Successful application example from Bohemia

Ultrasonic technology has been one of the most frequently used methods for level measurement of liquids and solids around the globe. The main advantages are non-contact measurement, low cost, and easy commission.

NIVELCO, a pioneer in ultrasonic measurement, started to produce its own level meters based on ultrasonic technology in 1982, arguably among the first companies to do so, and today sells every 20th ultrasonic transmitter from total sold in the world.

Despite its popularity, however, progress in technology and cost reduction have made available a technology that had been once used only in the military. That is radar. Radar technology works with electromagnetic waves, which allow the signal to penetrate through foam, gases, vapors, and dust. The construction is also able to withstand much higher temperature and pressure than ultrasonic devices. The first test of radar level measurement dates back to 1976. Since

that, a tremendous advancement has been made and today's non-contact radar level meters are almost on par with their ultrasonic counterparts.

In 2012, NIVELCO set a milestone with the introduction of its own non-contact radar transmitter **PiloTREK**.

Applicable only for liquids, 25 GHz **PiloTREK** offers great technical features, various constructions for different application areas and competitive prices, though these prices are still much higher than those of ultrasonic transmitters. Due to higher cost, **PiloTREK** has primarily been used only in applications with no other choice, but this factor has slowly faded as producers keep on making the price gap smaller and smaller. This worldwide effort lead to the introduction of new low-cost radar level meters with a goal to replace ultrasonics.

KAREL ŠEVČÍK Sales Engineer
NIVELCO Bohemia s.r.o. ksevcik@nivelco.com



Challenging environment



As a result, in May 2019, **NIVELCO** launched a new low-cost version of **PilotREK** with planar antenna.

Its features have been selected mostly for use in the water and wastewater industry beginning with integrated construction with IP68 ingress protection, 10 and 16 m range, plastic body

with small dimensions and remote programming. You can find a more detailed article about the new planar antenna **PilotREK** in the Product News section of the Magazine.

Our team in **NIVELCO Bohemia**, a subsidiary of **NIVELCO** for the Czech Republic, immediately purchased one model and put it to the test.

The test was done in a quite challenging environment of a narrow pump station as can be seen in the supplementary picture. Vertical pipe, ladder, and water outflow should theoretically have a negative effect on measuring result considering 16° beam angle though comparable to the devices of our competitors in the same category. Unstable liquid surface with a chance of foam occurrence didn't help either.

However, despite all these negative factors, **NIVELCO's** new non-contact **PilotREK** radar level transmitter with planar antenna measured correct level during the test, without detecting any false echoes.

After 14 days, **PilotREK** still works properly throughout its set measuring range and both we and our customer are satisfied with the performance of the new **PilotREK** radar level transmitter.

