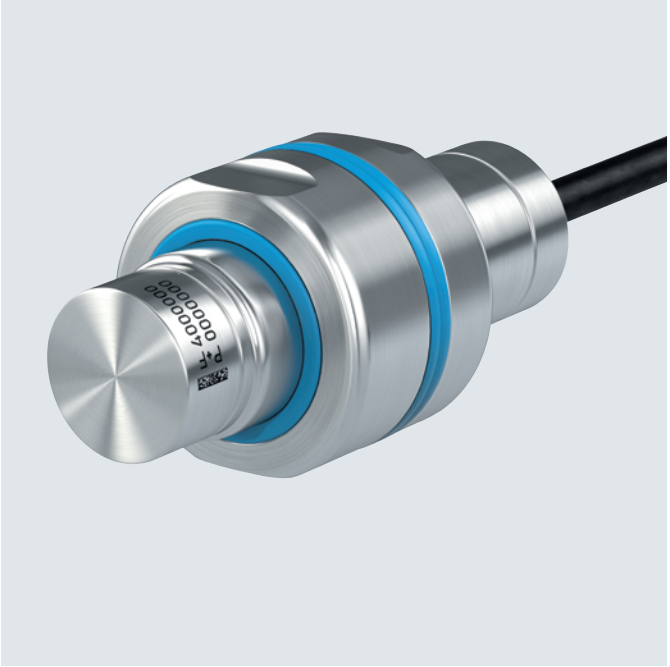
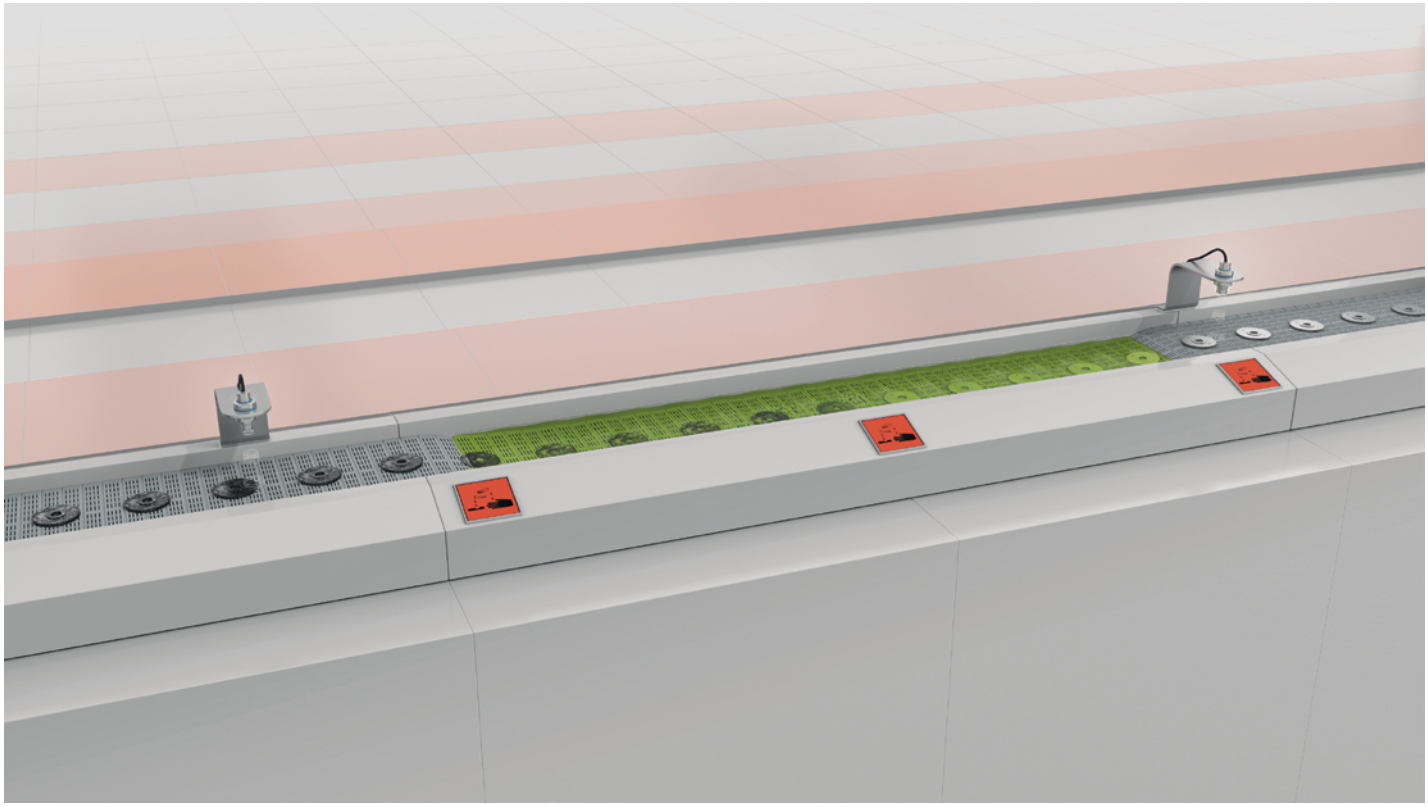
# Robust Sensors in Aggressive Environments

## Level Measurement and Presence Detection in Acid Immersion Baths





### The Application

In the chemical industry, the most extreme conditions prevail. Aggressive vapors, corrosive gas emissions, and high humidity place severe demands on automation components. Before metal parts can be coated or painted, processing surface residues containing oil and grease must be removed – a process that takes place in an acid immersion bath. To ensure a safe process flow, the fill level must be continuously monitored. Furthermore, the transport of the cleaned parts on the conveyor belt must be scanned, so no component is left behind.

## The Goal

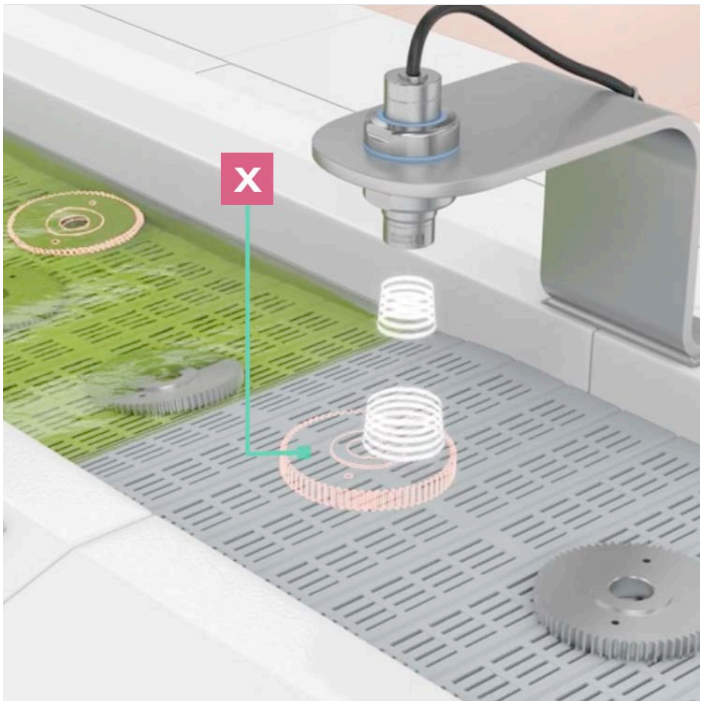
To meet specific requirements for robustness and cleanability and to guarantee an uninterrupted degreasing process, reliable fill level monitoring in the dip tank must be ensured, as well as safe presence detection of the metal parts. Sensors utilized in these applications must be highly resistant to direct contact with chemically aggressive media and should be designed to withstand harsh environmental conditions.

## The Solution

The ultrasonic sensor UMB800 is, due to its hermetically sealed design, completely resistant to direct contact with chemically aggressive media. With its analog output, the sensor continuously controls the level in the immersion bath. Based on its precise measurements, the system starts refilling upon reaching the minimum fill level, up to the desired maximum. The transport of the metal parts is monitored by UMB800 series sensors. The detection is independent of the part's color, material, or reflective properties. Since the operating distance can be adjusted very precisely, even with low-profile work pieces, a reliable presence check is guaranteed. If a part is left behind, the process can be stopped immediately.

## The Benefits

The complete encapsulation and the high-grade stainless steel barrel make the UMB800 ultrasonic sensor ideally suited to the toughest applications. Due to its large measuring range, tool-free mounting flange, and compact design, the diffuse mode sensor creates new opportunities for corrosive area automation. Additionally, the sensor is easy to integrate as part of a machine modification or retrofit. Regardless of whether it is used for level measurement or part detection – the UMB800 guarantees the highest process safety.




**At a Glance:**

- Ultracompact all stainless steel ultrasonic sensor
- Resistant against aggressive chemicals and detergents
- Safe fill level monitoring
- Reliable part detection
- Shorter cleaning cycles for increased machine availability

Additional information is available at:
**www.pepperl-fuchs.com/umb800**