Precise Positioning of Transport Units in Electroplating Plants

R1000 Distance Sensor for Accurate Distance Measurement

At a Glance

- Non-contact position detection of transport units in harsh environments
- Rugged, compact housing for confined installation spaces
- Large detection range and high repeat accuracy, including in challenging conditions
- Maintenance-free continuous operation—ideal for automatic plant cycles



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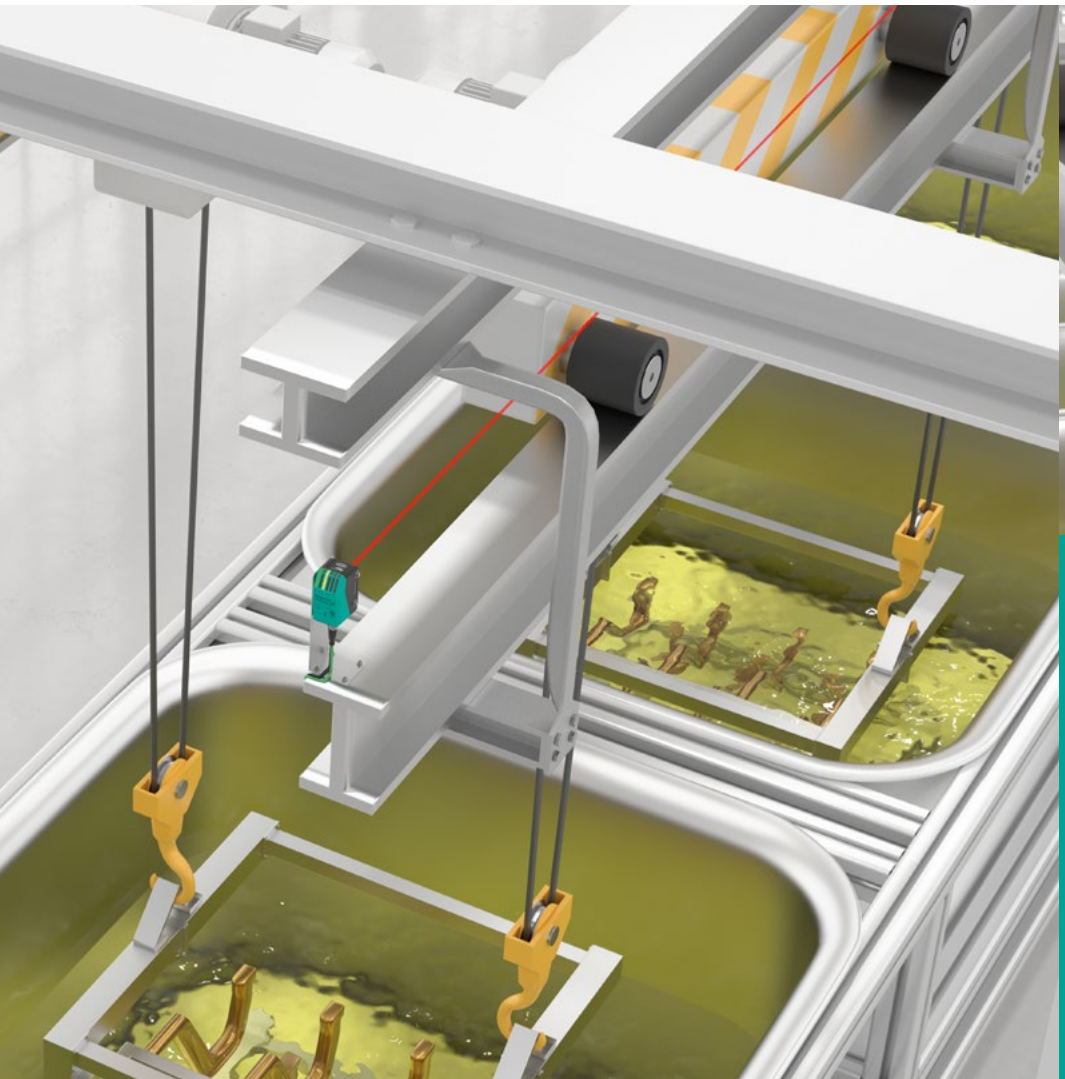
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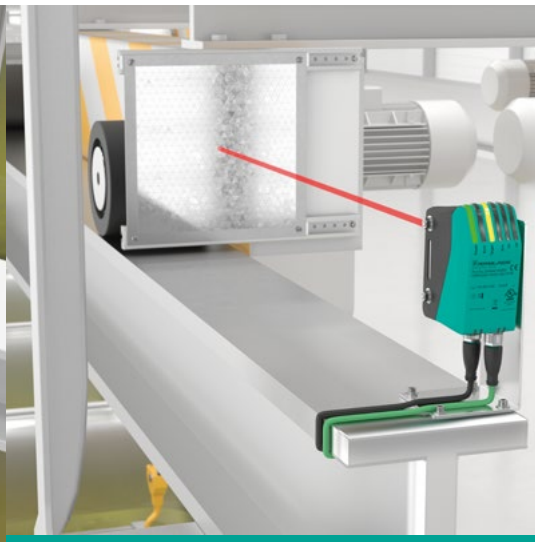
The Application

In electroplating plants, overhead conveyor systems transport workpieces horizontally along process lines through various electrochemical baths. These plant conditions are characterized by high humidity, aggressive chemicals, and limited space. The transport units must be positioned precisely for the automated process.

The Goal

The aim is to implement a rugged sensor system for precise horizontal positioning of the transport units. The solution must ensure continuous, reliable operation in damp environments with chemical exposure. To prevent signal interference, the sensors must be designed to suppress crosstalk in applications with multiple transport units operating in parallel.





The Solution

The R1000 distance sensor with Pulse Ranging Technology (PRT) from Pepperl+Fuchs ensures high-precision, non-contact distance measurement along the route. The light spot geometry of the R1000 enables simultaneous operation of several sensors in the same plant segment without interference. The rugged housing has a high degree of protection and withstands the special conditions of this application, such as high humidity. The compact design simplifies integration even in limited installation space. This ensures continuous and reliable position feedback along the axis.

The Benefits

The R1000 enables automated conveying with high accuracy. The system delivers stable measurement results in extreme conditions, such as intense moisture levels and splashing water. Multiple sensors can be operated in parallel without signal loss, which increases flexibility. The compact size enables quick commissioning, while the wear-free design reduces maintenance costs in the long term and ensures reliable performance.

Technical Features

- Pulse Ranging Technology (PRT) with <1 mm repeat accuracy
- Detection ranges of up to 300 m for linear movement axes
- High degree of protection (IP67) for harsh plant environments
- Parallel operation of multiple sensors
- Insensitive to ambient light and reflections
- Mechanically rugged design with direct mounting option



For more information, visit: **pepperl-fuchs.com/px-r1000**