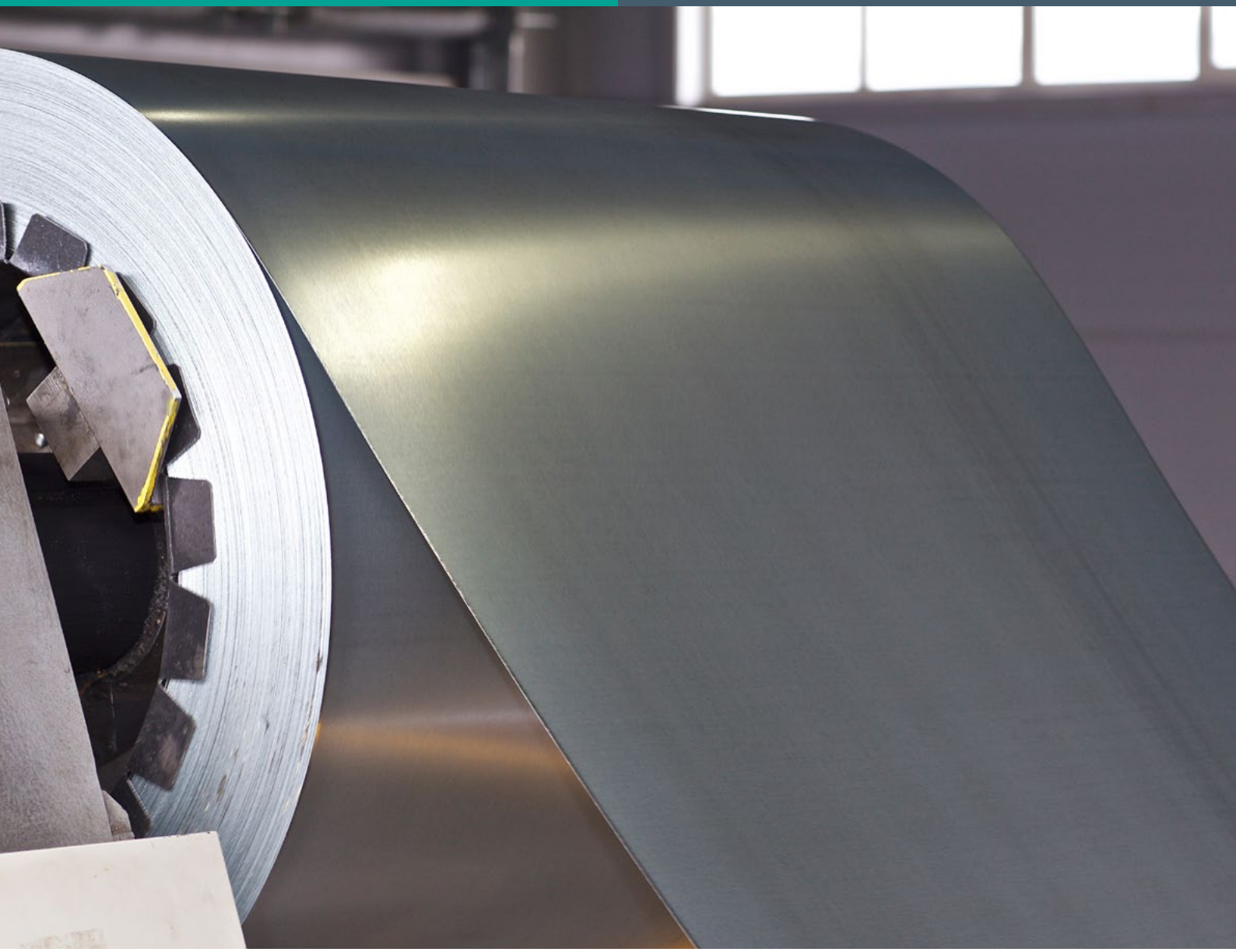
Reliable Position Detection in Pipe Manufacturing

PMI104-F90-IU V1 Positioning System Regulates the Feed Speed of Metal Sheets

At a Glance

- Reliable position detection ensures maintenance-free pipe manufacturing processes
- Noncontact, wear-free measuring system with high resolution and repeat accuracy
- Flexible connection due to the system allowing for analog current or voltage output
- Wide sensing range for optimally adapting to the application



The Application

Special machines are required to manufacture large rolled pipes for sanitary and heating installations. During the manufacturing process, these machines first insert a metal sheet from a coil into an extruder using a feed loop in order to cold form it. The sheet is then welded to form the finished pipe by using either pressure or fusion welding and cut to length at the appropriate intervals.

The Goal

The feed speed of the metal sheet needs to be regulated. The goal is to prevent the tensile forces from being both too high and too low, which could tear the sheet or interrupt the process. Both would lead to machine downtime. The sensors used must therefore ensure reliable position measurement, which guarantees maintenance-free operation in the pipe manufacturing process.

The Solution

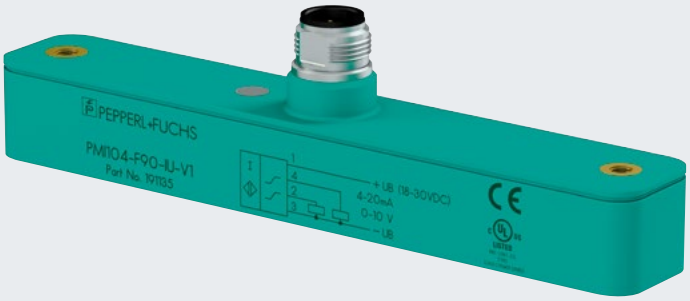
The feed speed is regulated using the innovative PMI104-F90-IU-V1 analog measuring system. When the metal sheet is inserted into the extruder, the position of the “arm” inserted into the feed loop changes. The end of the arm damps the individual coil systems of the analog measuring system differently. This produces a signal that can be used to continuously adjust the feed speed of the metal sheet.

The Benefits

The PMI104-F90-IU-V1 analog measuring system can be flexibly mounted and is perfectly suited for noncontact position detection with a high degree of accuracy and resolution. Due to the wide detection range and the variable connection as current or voltage output, the system can be optimally adapted to the application. There is no need for a reference measurement or to teach in the start or end value prior to commissioning.

Technical Features

- Measuring length: 104 mm
- Type of output: 1 current output: 4 mA ... 20 mA, and 1 voltage output: 0 V ... 10 V
- Degree of protection: IP67
- Ambient temperature: –25 °C ... 70 °C
- Versions with IO-Link are available (PMI*F90*IO*)



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