

BLH / Nobel Weighing Systems
Brands of Vishay Precision Group

Web Tension Measurements in a Hot Dip Galvanizing System

Application: Motion and Force Control

Industry Sector(s): Steel and Other Metals

The Customer

A leading manufacturer for steel strips in Germany



Figure 1: PST web tension measuring unit

Customer Inquiry

In our highly modern hot-dip galvanizing system, steel is treated in the low- and high- temperature ranges with rapid cooling and over-aging. This allows the hot-dip galvanizing process to reach a completely new quality standard at a very high speed. To achieve the process speed of 150 m/min maximum, it is essential to **precisely monitor** and **control the web tension**. This application was implemented at several locations within this system.



Figure 2: Surface finishing - hot dip galvanizing system 2

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Solutions and Equipment

Vishay Precision Group (VPG) delivered the solution for monitoring and control of a total of three roll units. The measurement equipment consists of our proven and tested PST web tension units, each with four installed load cells (KIS-2), in combination with customized AST-3P force measuring amplifiers. The measured forces are transmitted digitally to the existing process control system so corrections to the force and direction can be monitored and controlled. This protects the product (steel strips) from tear in the system.



Figure 3: A PST web tension unit installed in a web tension measuring station, including the corresponding measuring amplifier

Advantages of the PST Web Tension Measuring Unit:

- Very high precision >0.1%
- Not sensitive to thermal expansions
- 100% shear load stability (as per nominal load)
- 100% capture of the resulting force
- Simple adjustment using nominal parameters for the force transducers

Customer Comments

"We cannot afford production downtime caused by tearing of the steel strips. The web tension units delivered by VPG have worked perfectly over the years and provide a decisive advantage for uninterrupted operation of the system."

Click here to open the web version: <http://www.vishaypg.com/process-weighing/case-study/41060/>
(Web version offers links to product datasheets and related documents including manuals, brochures, and any available videos)

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