

Thermo Scientific RM 210 AS aluminum x-ray thickness gauge

Thermo Scientific™ RM 210 AS aluminum x-ray thickness gauge provides online, accurate, non-contact, high speed thickness measurement of aluminum and aluminum alloys. A sophisticated alloy compensation algorithm provides unrivaled performance for all aluminum grades including multi-layer clad products, making this gauge the perfect choice to optimize your mill control.

Features

- Proven alloy correction functions
- Comprehensive temperature compensation
- Compact, versatile sensors
- High-speed measurement
- Configurable analog outputs
- Mill mount or C-frame mounted configurations

Applications

- Cold mills
- Process lines (e.g. slitters, cut to length)
- Continuous casters



Consistent mechanical properties and uniform thickness are the primary hallmarks of high quality aluminum sheet. Tightly controlling the chemical composition and thermal history will provide a solid base for achieving those targets, but without a reliable, accurate thickness gauge installed in the rolling mill, the ultimate quality can fall short. The physicists at Thermo Fisher Scientific have thoroughly investigated the long-standing issues related to x-ray measurement of aluminum and its alloys and have developed a sophisticated alloy compensation algorithm. The result is an accurate, non-contact thickness measurement technology which is ideal for the high-speed production environment of aluminum cold strip.

The alloy compensation database can store thousands of alloys, as well as multi-layer clad grades. The alloy compensation function benefits from the fact that most modern mills are capable of automatically supplying the gauge with the exact chemistry of each sheet. By using this data, the system is able to provide a measurement to meet standards such as ¼ AA tolerances, helping minimize scrap and maximize on-gauge material. The x-ray source sensor package is extremely compact in design and the robust housing and special sealing gaskets allow for installation directly in the mill. This is especially advantageous for the tight spaces of the modern day foil mill.

The RM 210 AS aluminum x-ray thickness gauge has been designed to meet the environmental challenges associated with rolling aluminum alloy sheets. Both the sensor and C-frame include special sealing to prevent aggressive rolling solutions from entering. Multiple air temperature sensors are also included to compensate for thermal changes that normally occur during the sheet production.

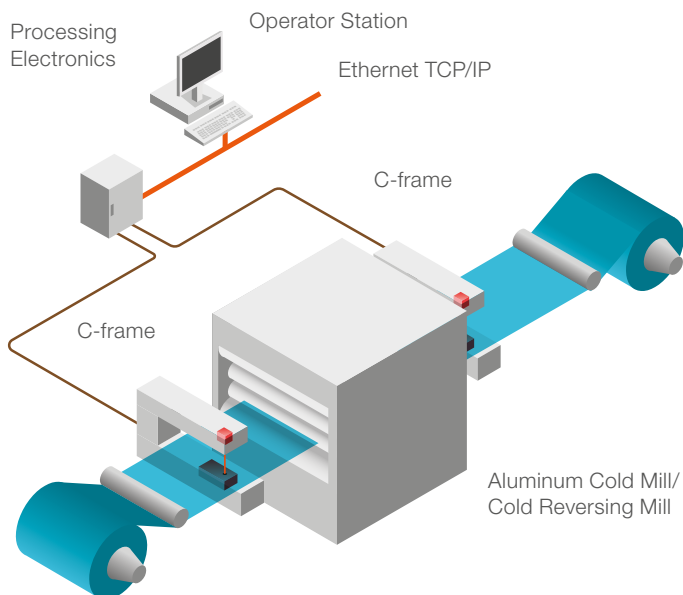
The RM 210 AS aluminum x-ray thickness gauge can be used in an exceptionally wide range of thickness applications, from the exit of a caster or hot finish mill to thin can stock products. The system has detector electronics that include a high speed serial link capable of providing measurement data every 1 ms. By converting the analog sensor signal to a digital signal inside the sensor head, the measurement is immune to electrical interference in the cable run.

The ACE (Automatic Correction of Energy) feature ensures permanent calibration using a minimum number

of internal calibration standards. This patented technique automatically measures the actual average x-ray beam energy, and adjusted internal parameters to restore the initial factory calibration accuracy. ACE eliminates the inaccuracies of conventional x-ray systems that depend only on analog feedback voltages to measure the x-ray beam energy.

The RM 210 AS aluminum x-ray thickness gauge is available in a multi-gauge configuration permitting the use of two, three or four C-frames with just one computer electronics cabinet for enhanced cost effectiveness. Additionally, the gauge software link to the mill computer is extremely flexible with communication protocols developed for all interface standards.

Typical Thermo Scientific aluminum x-ray thickness gauge system



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