Thermo Scientific RM 210 CM

X-Ray Strip Thickness Gauge

The Thermo Scientific™ RM 210 CM X-ray thickness gauge allows customized sensor configuration for your metal strip application. Its low-noise analog output allows rolling to tighter tolerances, improving overall product quality. Users benefit from increased productivity with superior accuracy.

Features

- High-speed measurement
- Compact C-frame
- Real-time diagnostics
- Flexible gauge interface to mill computer (Ethernet, Serial, Profibus, CAN-bus, OPC, BCD available)
- Expandable architecture for two- or three-sensor C-frames per cabinet

Applications

- Pickling line/tandem mill
- Reversing cold mill
- Tandem cold mill
- Continuous galvanizing line
- Electrolytic tinning line
- Slitting line
- Recoiling line

The Thermo Scientific™ RM 210 CM noncontact X-ray thickness gauge provides the most accurate, high-speed measurement available for metal strip applications. It can be used for manual, AGC or adaptive control of the mill.

The RM 210 CM is custom-configured with the most suitable sensors for your application. The C-frame is designed to fit a variety of X-ray source energy and detector types. With 1 ms sampling time for high-speed cold rolling mills, the system is capable of higher frequency analysis of mill events. The flexible system architecture can be adapted to suit your specified requirements.

Operator Interface

The open platform of the main user interface provides a wide range of functionality to the mill operator. With its expandable design, you have the flexibility to control separate operator stations throughout the mill.

The display can be configured to many local languages including Chinese and Russian. A large amount of data is available and can be controlled through a user manager feature. This includes a password protection feature for built-in maintenance and diagnostic tools.

The RM 210 CM communication link interfaces to numerous control systems. The statistical data available for each strip is an invaluable asset for many applications.

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Main Electronics Console

The electronics console, typically located away from the mill environment, contains the main electrical and electronic circuits.

The system software is stored on compact flash memory for maximum data integrity and the various I/O modules are all rail-mounted, providing ease of maintenance and trouble-free expandability. Modular electronics design allows for additional analog and digital connections making it the ideal choice when upgrading existing systems with older, one-of-a-kind wiring.

The optional maintenance computer allows complete flexibility for system configuration and access to the online diagnostics facility. All gauge functions, modes of operation, selection of measured parameters and ranges, etc. can be selected and set up through the maintenance computer.

Diagnostic Features

Real-time diagnostic features are built into the gauge control computer with numeric messages displayed and a brief error description in the local language. Extensive diagnostic facilities are available to the technician through the operator screen. Additionally, the system can be supplied with modem and remote diagnostics software for troubleshooting and software updating from terminals located in our manufacturing facility.

System Control

The RM 210 CM system includes an Ethernet link to permit remote gauge setup from a mill host computer without operator intervention. However, the operator can have overall control of the gauging system via a single color TFT monitor and hard-wired push buttons supplied on a separate panel.

The ergonomic display has been designed to operate within the Windows®-based environment and allows the operator to easily navigate through the various menus. The menu buttons and shortcut icons allow convenient access to all of the gauge features from a central, user-friendly control screen.

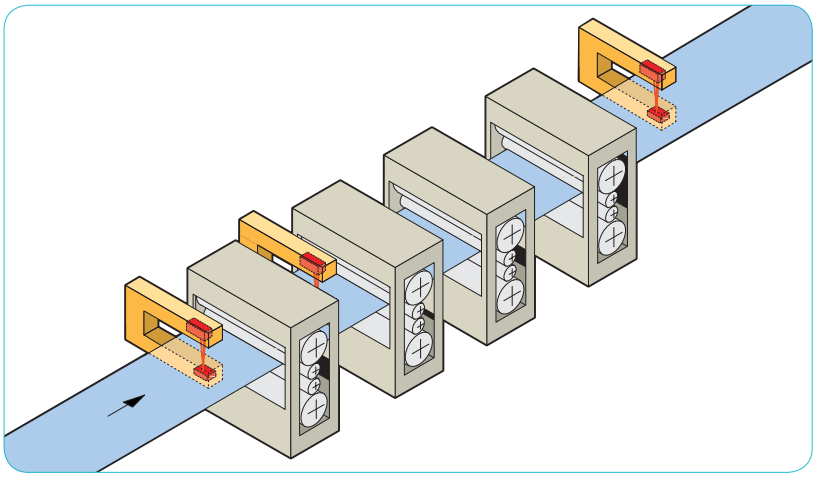
Alloy Compensation

To optimize the accuracy of the RM 210 CM system when measuring materials with different composition of alloys, the system offers a range of standard alloy compensation functions. These functions can be selected individually according to customer needs.

Additional Optional Compensations

- Strip angle
- Air gap temperature
- Coating compensation
- Passline height

Configuration for multi-stand cold mill applications



General Specifications	
Application	Processing Lines: Entry/exit of HDGL; electrogalv, electrolytic tin and other metal coating lines, slitting lines, pickling lines and other re-roll lines Cold rolling mills: Single stand, reversing mills, tandem mills, and Z mills
Number of measuring heads	Depends on application, typically 1 (single point measurement) but up to three sensor frames per electronics cabinet
Source(s)	X-Ray, typically 55 kV ... 120 kV (kV customized to suit the application)
Thickness measuring range	Typically 0.1 mm to 25 mm (0.003 in to 0.984 in) depends on kV Examples: up to 2.5 mm (0.098 in) with 55 kV or up to 6.5 mm (0.225 in) with 80 kV
Sampling time	Typically 1 ms
C-frame air gap	Typically 200 mm (7.87 in), alternatively 100 mm (3.93 in) and 300 mm (11.81 in)
C- frame throat depth	Typically 1200 mm (47.24 in) for centerline C-frame
Maximum strip width	Typically 2000 mm (78.74 in) for centerline C-frame

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