



Making your processes measure up



At the heart of ABB technology is the

understanding that flatness, tension, pressure, torque, position and dimension can be sensed accurately, reliably and repeatedly on a continuous basis. The data generated by such sensing devices can then be used to control external equipment in such a way that process parameters are kept constant. And as a result, operators can increase productivity and achieve higher levels of consistency in product quality. Our products not only measure the forces within a process, they help make sure that production measures up to expectations.

Using state-of-the-art technology, ABB provides purpose built solutions for your force and dimension measurement needs. Making it possible for your production output to accurately match the most varying and demanding requirements.

We are helping thousands of clients all over the world to boost their productivity and yield

Challenge the hidden potential

within your application.

Pressductor® Technology

ABB's well-known Pressductor® Technology is a measurement principle based on the magnetoelastic effect – the magnetic properties of a metal are influenced by the mechanical force applied to it. Because the signals produced are not reliant upon physical movement or deformation, the load cells combine sensitivity with extraordinary tolerance to overloads and virtually no built-in limit to the number of load cycles.

ABB's Pressductor® transducer stands for unbeatable load cell performance, thanks to its unique combination of accuracy, overload capacity and ability to withstand harsh environments. By using this technology you will achieve higher quality and reliability, especially under demanding conditions.

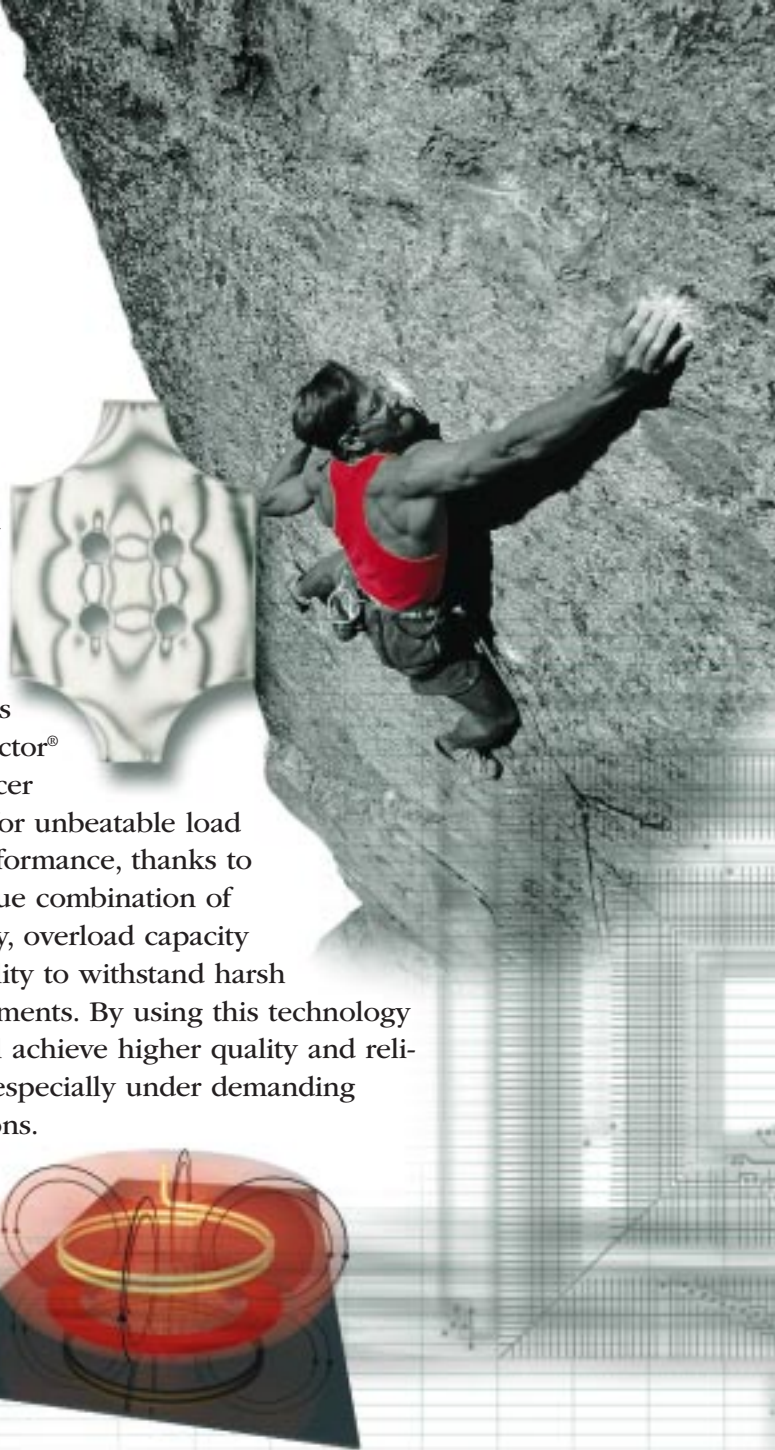
Pulsed Eddy Current Technology

ABB has developed a completely new way of performing measurements with eddy current technology. It is a method that makes it possible to measure, in real time and in line, dimensions and other attributes with exceptional accuracy.

The new ABB technology is based on measurements of the voltage pulse induced in the coil when the current is

suddenly interrupted. By measuring this value at three different times three parameters can be derived; the distance, the electrical resistivity and the thickness.

Since this is a non-contact technology it eliminates the drawbacks of common systems based on X-ray, isotope contact measurement.





Flatness Measurement & Control.

Based upon our experience

from more than 500 installations of flatness

measurements and flatness control systems worldwide we

continuously develop new generations of the market

leading flatness system – the Stressometer® System.



Stressometer® System FSA

This system will not only make your mill more competitive today, it will also provide you with tools and methods to ensure that you keep in front of your competition in the future.

Using JAVA technology gives you a non-proprietary platform-independent way of expanding the system functionality and the CPU power when your needs are growing. Your rolling knowledge and experience can be stored anywhere on the network and the sys-

tem will make full use of it. In doing so the Stressometer system will bring you economical benefits to a as yet unsurpassed extent:

- Improved yield out of each coil
- Improved strip quality
- Shorter production cycles
- Reduction of number of strip breaks
- Reduction of cost for process development
- Reduction of cost for maintenance



Lab accuracy in the mill

The Millmate Thickness Gauging Systems (MTG), utilizing the Pulsed Eddy Current Technology, open up a new dimension in metal strip gauging with superior features:

- Contact-free and yet material independent gauging for non-ferrous metals
- Robust and completely insensitive for conditions in the measuring gap, such as oil, water, coolants, steam, etc.
- Accuracy to a level of 0.1%
- Poses none of the risks associated with X-ray or isotope gauges
- Measures as accurately in production as in the laboratory

Millmate Thickness Gauging Systems



A non-contact, non-optical measurement system. The Millmate

Strip Scanner System determines the edge position of a metal strip in a rolling mill down to millimeter resolution.

High, consistent quality is always the aim when producing steel, aluminium or copper strip. This is equally true in rolling mills and process lines.

Modern rolling mills often use a variety of measurement and control facilities. One of the most important parameters is the position of the strip. If this is not correctly measured, there

is a great risk of rolling the strip under incorrect presumptions. This leads to poor flatness, especially at the edges, and to a final product of inferior quality or even strip breakage. In addition to this, the strip width must be kept within the specified tolerances – essential for good economy of production.



Millmate Strip Scanner Systems



Our Millmate Roll Force System

has long set the industry standard for measurement of rapid changes in roll separation forces in hot and cold rolling mills.



Rock-solid load cells

The Millmate Roll Force load cells act as integral parts of the mill stand. The rock-solid Pressductor load cell design in combination with the intelligent, reliable communication functions are crucial keys to true roll force measurement.

The Millmate Roll Force System consists of a Millmate Controller and two load cells with matching units. The various types and the wide range of Millmate Roll Force load cells cover practically all conceivable roll force measurement applications.

The ABB equipment is easy to install and operate. We offer installation support as well as long-term after sales supply and support. Due to ABB's extensive experience in the rolling mill industry, we can offer outstanding application know-how in this particular field.






ABB provides tension measurement systems whose standard design and custom configurations address the requirements of every conceivable industry application and environment. Rapid, accurate and continuous tension measurement are essential to keep tension constant in every process.

Total solution

In order to achieve true accurate measurement also in very severe conditions, it is not enough to buy only high-quality products. The surroundings and the total installation, too, have to be designed in a correct way.

With ABB's extensive experience and a large installed base we can support installation proposals for your specific needs and mill geometry. We also offer total solutions including mechanical accessories, such as bearing housings, adapter plates, etc., for PillowBlock load cells.



ABB has the perfect measurement solution for practically every process line



Bringing quality and reliability to the measurement of web tension.

Changing process requirements

Today, web machinery is being equipped with more process automation than ever before, including closed-loop controls and recipe management. A wider range of materials must be processed at higher operating speeds – without sacrificing product quality or risking downtime.

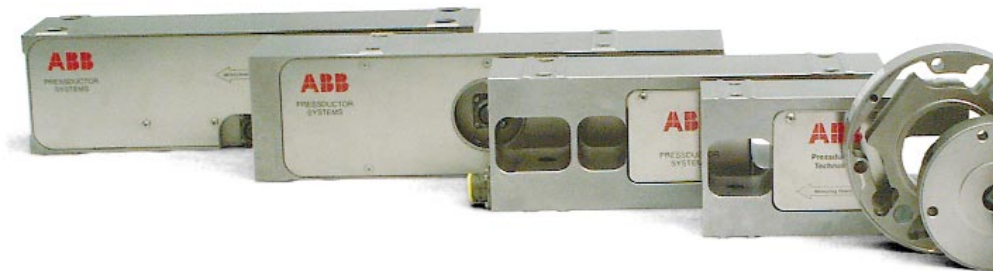


In most machinery applications, it has now become a fundamental requirement for successful operations to know what the web tension actually is at various points of the processing line. Particularly in paper machinery, where we have a very large installed base of PillowBlock Load Cells.



PillowBlock

The result is that the quality of tension measurement is showing up more quickly than before in both the product being processed and the operating efficiency of the line.





Quality tension measurement

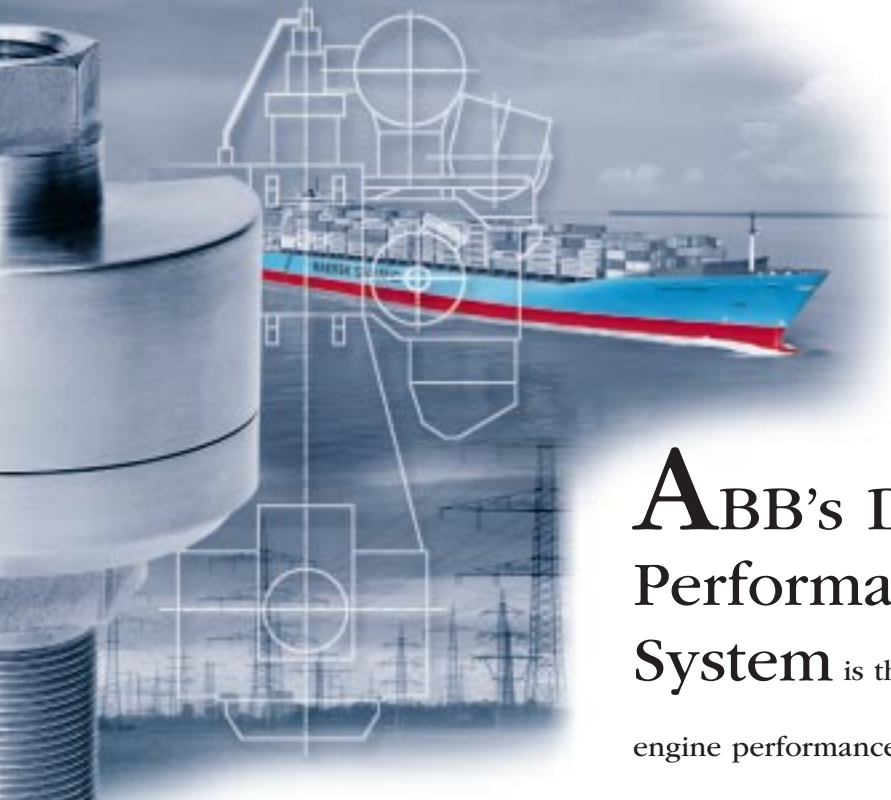
In converting operations or on plastic film lines, on web printing presses or textile finishing machinery, recalibrating and replacing load cells that drift or malfunction can be a major preoccupation for maintenance departments.

ABB's load cells, based on the Pressductor® Technology, turn this situation around. Rugged enough to stand up to real world production environments, these high quality load cells deliver all the benefits of reliable web tension measurement. They also allow enough latitude in measurement range to handle a wide variety of applications, and have proven their superior performance in heavy duty applications in paper and metal industries for more than 40 years.



Web tension measurement evolves with Pressductor® Technology





ABB's Diesel Engine Performance Monitoring System

is the most advanced system for continuous engine performance monitoring.



We can take the pressure – continuously

A unique combination of measurements of cylinder pressure, crankshaft position and advanced mathematical modelling of the engine provides very accurate, real-time data for monitoring and diagnostic analysis. The quality of the data ensures very significant benefits from improved reliability and reduction of operating costs and increased safety.

Knowledge is the key to success...

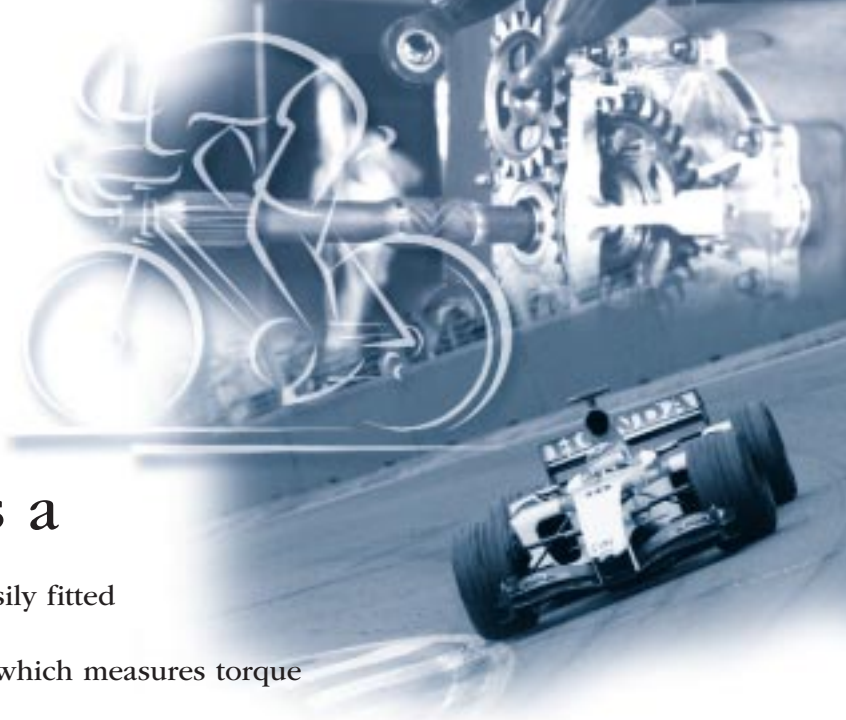
ABB's intelligent engine monitoring system, a strong tool for condition-based maintenance, raises the quality of performance data and analysis to a completely new level.

- Increased operational safety
- Better maintenance planning
- Ease of technical reporting
- Longer life of components
- Early detection of faults
- Higher fuel efficiency

...now and in the future

ABB believes that knowledge will become ever more important. Therefore the Cylmate® System is designed to provide the information required by closed-loop engine control systems of the future.

Diesel Engine Performance Monitoring Systems



The Torductor[®]-S is a compact,

rugged, non-contact, easily fitted torque sensor suitable for mass production which measures torque

in applications where it used to be difficult or impossible to do so.

The development of this modern and unique torque sensor is based on forty years of experience and technological leadership with magneto-elastic sensors

The solution to your torque measuring needs



In order to assist customers,

the Force Measurement products and systems are supported throughout their life cycle by a

Customer Support Program.

- Service – *world wide located service personnel*
- Spare Parts – *fast delivery*
- Training
- Consultant Service – *application and process services*
- Repairs – *Inspection & Test, Fast Repair Program/Revamps, Exchange units*
- Support Line – *phone support and remote diagnostics*
- Technical Support
- Upgrades – *electronics and load cells*
- Support and Service Contracts

Long-term competitive
After Sales Service Program





ABB (www.abb.com) is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs about 105,000 people

The Automation Technologies division serves the automotive, building, chemicals, consumer, electronics, life sciences, manufacturing, marine, metals, minerals, paper, petroleum, transportation, turbocharging and utility industries. Key technologies include control, drives, enterprise software, instrumentation, low-voltage products, motors, robots and turbochargers. These offerings are supported by field maintenance and asset management services, and are sold both directly and through channel partners.

ABB Force Measurement is a business unit within ABB Automation Technologies. It provides equipment for accurate, reliable measurement and control in a broad range of applications from steelmaking to paper converting industries.



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