



Dr. Brandt  
GmbH



# Dr. Brandt GmbH

## Measuring mechanical variables electrically

A Company of Group 

# The Art of Measuring in the Paper Industry

## Force Measuring Systems

Dr. Brandt GmbH has always been a forerunner in the development of innovative force measuring systems. As the inventor of the load cell, we have been continuously pioneering this field ever since our company was founded. Based on the sensors developed by us, we offer numerous measuring systems.

We know: Our measurement technology forms the basis for safe and trouble-free process control. Consequently, we are fully aware of our professional responsibility in the development and production of precise measuring systems which convince by their long service life.

The portfolio of Dr. Brandt GmbH comprises numerous products with the focus laid on the accurate measurement of tensile force, compression force, shear force and torque in a wide variety of processes. For this purpose, innovative force and pressure sensors are used as transducers and load cells. Via real-time control, the data thus obtained are directly employed for process improvement. Our measuring systems can also be retrofitted in existing plants and equipment.

## Web Tension Measurement in the Paper Industry

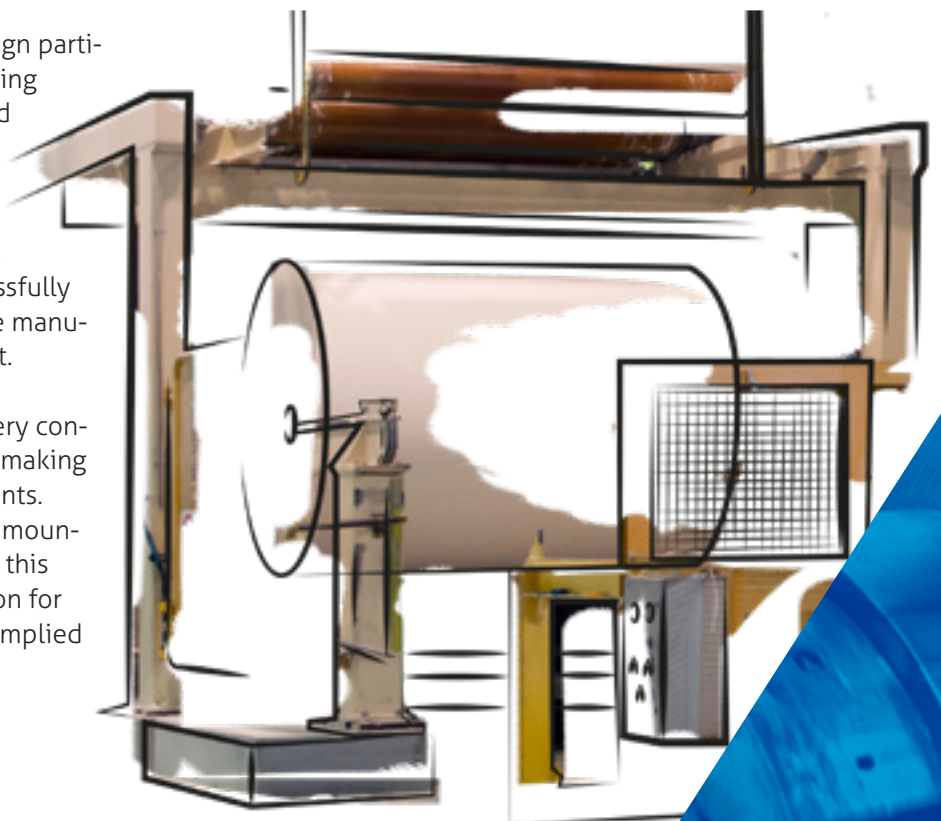
Continuous paper production processes require multipoint measurements of the web tension to enable the various individual drives to be controlled in a papermaking machine. The paper web proper cannot be directly measured due to process-specific necessities. For that reason, its tension is usually determined indirectly in such a manner that the web is deflected via a roller with the resulting bearing reaction forces being detected and converted into web tension forces using known web travel geometry parameters.

Force transducers of a specific design particularly suitable for measuring bearing reaction forces are usually arranged for this purpose between the bearing housings of the pulley or roller bearings and the foundation supports. In this context, Dr. Brandt transducers have been used successfully for years by leading paper machine manufacturers in Europe and the Far East.

Especially in papermaking machinery construction great emphasis is laid on making use of highly rigid structural elements. Web tension transducers and their mounting elements are not exempt from this requirement, either. The main reason for this stringent requirement to be complied

with in the paper industry is to protect the structural systems against natural frequency vibrations. Due to the very high web velocities combined with high roll speed rates and at the same time high roll weights, these requirements are well understandable from a technical viewpoint. To satisfy these requirements, Dr. Brandt transducers for web tension measuring have been deliberately developed to offer particularly high torsional stiffness.

Since the transducer's own mass is very low, their natural frequency is usually in the kHz range.



The cutoff frequency of the entire measuring point thus virtually depends on the transducer's torsional stiffness and on the mass of the deflector roll including supporting system.

Dr. Brandt's technology for paper web transducers is based on the principle of strain gauges (special solutions on request). These do not behave dynamically on their own and thus do not influence the frequency behavior of the entire transducer element.

### **Calibration Services Offered by Dr. Brandt Provide Increased Safety and Efficiency**

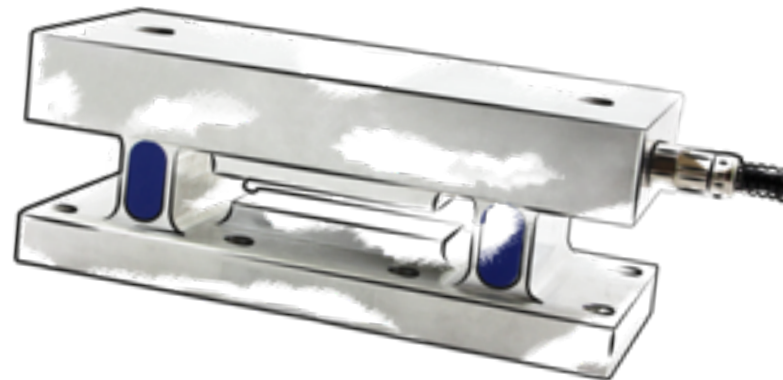
Even the slightest changes to a system require recalibration with a view to enabling the measuring sensors of your system to work perfectly.

With our mobile calibration tools, including reference force sensor, evaluation unit, and corresponding tensioning belts, we are able to carry out precise measurements for products of different manufacturers.

Regular checking, certification and, if necessary, adjustment of the current zero point and nominal force result in an optimal and smooth workflow to be obtained during operation, and ensure that your processes can be successfully audited.

### **Crane Weighers**

To enable weights to be measured or determined as accurately as possible by means of crane weighers, we equip these weighers with modern measuring systems. These include, inter alia, precisely adjusted load cells as well as inhouse developed electronic evaluation equipment, optionally with an interface to electronic data processing systems. It goes without saying that the crane weighers can be provided with digital display indicators.



## Metrological special projects on request

The Dr. Brandt GmbH is available to its customers at any time for the implementation of metrological special projects. From the development of suitable elements for the permanent monitoring of a production process to the production of individually designed measuring systems for a particular system: Our special projects provide tailor-made solutions for every need and purpose.



# Dr. Brandt GmbH

Dr. Brandt GmbH has been an established manufacturer and technology leader in the field of high-precision measuring systems for many decades. Founded in 1949, we supply force and compression measurement technology which plays a vital role in the quality assurance and process control in industry. As a globally acting pioneer in our industrial field, we are constantly working on the enhancement of our products. The leading role of our medium-sized company in the market for measuring technology can be demonstrated, among other things, through inhouse developments such as the invention of the first commercially usable load cell.

Our focus is on the development and manufacture of customized measurement technology for individual fields of application. With the quality claim „Made in Germany“, Dr. Brandt GmbH combines devices and components that meet the highest requirements. These custom-designed and manufactured measuring systems can be implemented not only for planned new installations and plants. Our company is also a leading specialist furnishing and integrating spare parts for retrofitting existing plants.

Aside from their reliable, high-precision operation, products from Dr. Brandt are also known for their particularly long service life.

Our product range includes system solutions in the following areas:

- Strip tension for steel, aluminum, non-ferrous metal
- Web tension for sheet/paper
- Rolling force measurement
- Weighing technology
- Force and load measuring technology
- Non-destructive testing of steel ropes (round and flat), mining and load lifting technology
- Special solutions to suit customer requirements e.g. power plant engineering, wind turbines, dams, hydraulic lift locks, ships, salvage cranes or similar for high temperatures or aggressive ambient conditions
- ATEX certification for safety-critical applications
- Certified to ISO 9001

## Sales Partner

**Belgium, France and Luxembourg**  
Segrif S.A.  
[www.ingrif.com](http://www.ingrif.com)

**Germany**  
Dr. Brandt GmbH  
[www.strip-tension.com](http://www.strip-tension.com)

**China**  
Shenzhen Sensmation Measurement & Control Technology Co., Ltd.  
[www.sensmation.com](http://www.sensmation.com)

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