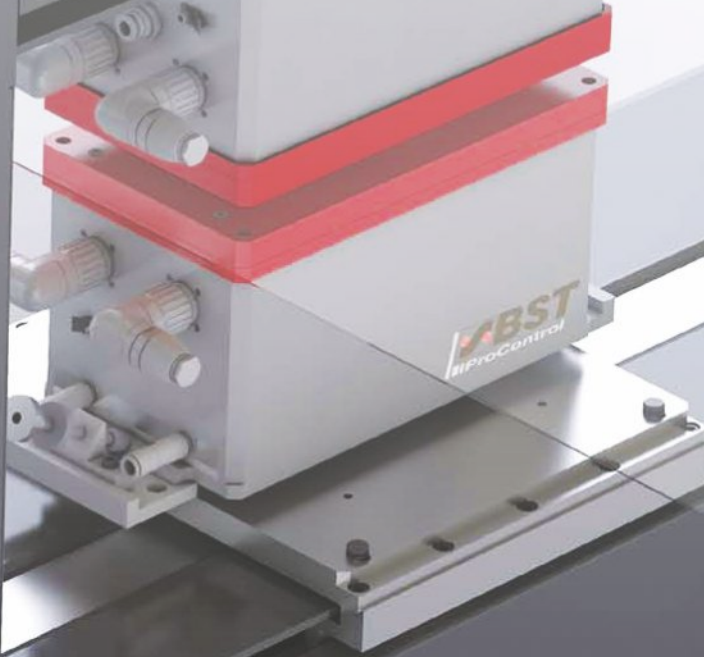


BST PROCONTROL

Looking for an all-rounder for Inline measurement & process control?

BST ProControl!

- Maximum precision.
- Fast implementation.
- 100% reliability.



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BST ProControl covers an **outstanding range of products for flat material analysis within the production process**, including plastic and metal foils, non-woven substrates, technical cloths, foamed material, floor coverings and paper. BST ProControl is fully committed to enhancing the effectiveness of your production processes, for instance by:

- Avoiding waste
- Saving resources and energy
- Increasing productivity and
- Minimizing maintenance work

Customized Inline measuring systems from one single source.

For the precise production and control of flat web material, BST ProControl offers a broad service package, ranging from planning, feasibility studies and implementation through to comprehensive after sales service.

BST ProControl products at a glance

- Sensors for:
 - Optical wave-length absorption measurement
 - Optical interference measurement
 - Radiation absorption measurement
 - Distance measurement using a Laser camera
 - Thermal imaging IR camera for automation & process control
 - Penetration measurement or radiation reflection measurement
- Scanners
- Stand-alone measuring systems
- Data analysis systems

BST ProControl services include:

- Quality control of flat web material
- Technical solutions for measurement and control
- Inline measurement within the production process for precise registration, non- contact measurement and continuous inspection for assessment of:
 - Grammage / Thickness
 - Basis Weight
 - Absolute / Selective thickness of coatings
 - Density
 - Moisture
 - Ash Content

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BST ProControl System Applications:



Optical Laser Sensor (Shadex)

Range: 0-5.000 μm or 0-10,000 μm

Applications: Coating & Converting, Plastic Films, Rubber, Laminations, Paper, Non-woven

Characteristics: Thickness measurement done by non-contact principle. Not influenced by colour / transparency. Not influenced by material composition.



Infrared Sensor

Range: 1 μm to 4 μm

Applications: Coating & Converting, Plastic Films, Paper, Laminations, Non-woven

Characteristics: Material / Coating / Adhesive to be measured has to be transparent / translucent.



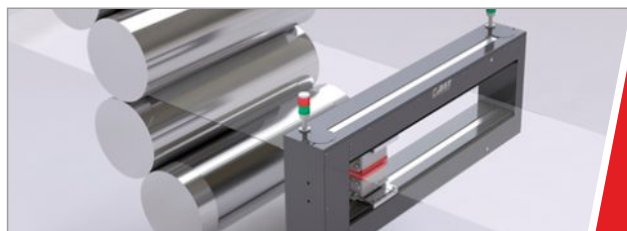
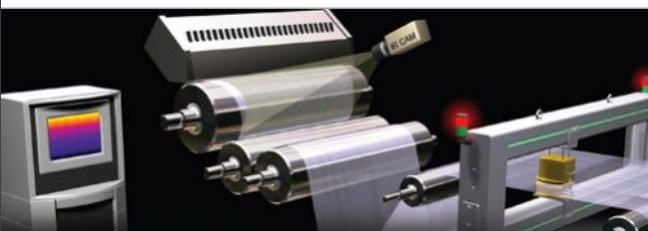
Isotope Sensor

Range: 1-65.000 g/m² with an accuracy up to 0.05 g/m²

Applications: Coating & Converting, Plastic Films, Rubber, Laminations, Paper, Non-woven

Characteristics: Grammage / Thickness measurement done by non-contact principle. Not influenced by colour / transparency. Not influenced by material composition.

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Coating and Converting:

Irrespective of whether the processing of films, paper or coatings is required - measuring the basis weight and layer thickness contributes to the high quality of the end product. Temperature sensors, x-ray sensors and radiometric solutions are able to deliver precise results for a material's basis weight. Spectrometer sensors, infrared technologies and laser beam shadowing sensors also create outstanding opportunities for precisely measuring the layer thickness of coatings and the total thickness of a broad range of different materials.

Highlights:

Neither Colour, transparency nor material composition will affect the measurements

- 100% control of the material surface
- Precision of 20 nm
- Thickness and application-thickness measurements from 2 μm

Calendering Film and Sheet Extrusion Biaxially Stretched Films

Stability and functionality often play a significant role in the processing of plastics possessing low basis weight. Temperature sensors, x-ray sensors and radiometric solutions are able to deliver precise results where a material's thickness or basis weight is concerned.

The thickness of a plastic material will also contribute to the end product's durability. Precise measurements using laser technologies, x-rays, infrared, ultrasonic, spectrometer sensors and radiometric systems deliver a broad range of possibilities for a wide variety of requirements.

Highlights:

- 100% control of the material surface
- Patented technologies
- Thickness and layer-thickness measurements from 2 μm with a precision of 20 nm

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Non-woven materials and technical textiles

Precision measurements of the basis weight in bulk stock are essential to the production of high-tech textiles and flat-sheet non-woven materials used in the hygiene, clothing, geotextile and general industries. Such measurements are often unsatisfactory when industrial filter media are produced as the captured material quantities are not representative or the measuring results have become distorted through interference.

Optimum results may, however, be achieved with the help of x-rays and radiometric sensors, which allow the basis weight to be reliably and continuously determined using non-contact methods. This helps to reduce material defects to a minimum.

Highlights:

- Continuous, precise and non-contact basis weight measurement during on-going production
- Measuring range from 0 to 65 kg/m²
- Measuring systems that do not require permits
- Precision up to 0.1%

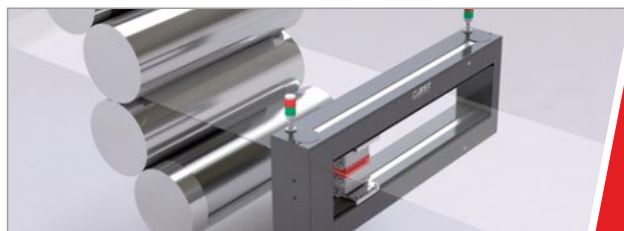
In the event of deviations from the specified target values, BST ProControl systems will immediately and automatically intervene into the production plants' control circuits to effect corrections. Continuous quality monitoring is the result. This helps to optimize production processes and reduce downtimes and rejects.

Smart Service to help you achieve the Next Level.

No matter where you use our technologies, we are here for you, providing dependable BST service. Our experts are available internationally and will be quick to help you sort out any issues. You can rely on a broad global production, sales and service network, ensuring first-class service anywhere in the world.

Being partners for top quality: To ensure you achieve maximum value, all our systems are precisely aligned to your specific conditions. You define what you need: project-based cooperation or a full BST service package. No matter what you choose, we are fully committed to making your products define new benchmarks.

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Scanners

The measuring equipment uses scanners that are tailor-made for the respective production system. The sensors measure the flat-sheet products contact-free and as independently as possible of the physical and chemical properties of the items being manufactured.

Highlights:

- Scanners up to 12 m wide
- Space-saving design for facilitating integration into production lines
- Robust coating
- Low maintenance requirements
- High scanner-speed for more values measured



Control Systems

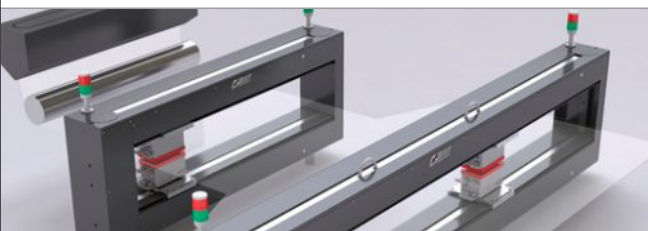
Special software components are used to control the sensor equipment, visualization and processing of the captured data. This equipment is simply operated with the help of touch screens that have been designed specifically for use in industrial environments.



Highlights:

- User-friendly measuring-system visualization
- Real-time depiction of measured values
- Best ratio between measuring precision and measuring time
- Intuitive operation by users

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Commercial Aspects:

One of the reasons why more and more customers decide to use BST ProControl systems is certainly the extraordinary technical solutions for several measuring tasks. Another aspect is their economic factor.

BST ProControl systems play an important part in:

- Lower consumption of raw materials
- Decreasing reject rates
- Increasing productivity
- Minimising maintenance times
- Saving working time

BST ProControl systems include all the relevant quality features and process capability parameters by default.

Lower Raw Materials Consumption and Lower Reject Rates

In general, reliable knowledge of the structure of a product concerning its thickness and basis weight permits production at the lower intervention threshold (UEG).

Without monitoring the production by adequate measuring methods, there will be a very wide frequency distribution around the desired value, which usually even exceeds the intervention thresholds (see figure 1).

Products with a distribution range outside of the tolerances are considered rejects and lower the profit. By using a control system with a highly accurate sensor, the production can be stabilized to keep the frequency distribution very close to the desired value, to avoid rejects and any unnecessary use of resources.

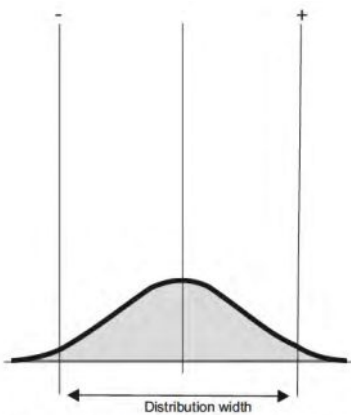


Fig. 1 Distribution width with manual adjustment

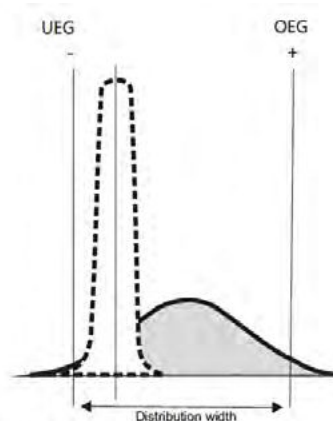


Fig. 2 Distribution width with automatic control

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BST ProControl systems are most effective when the desired value is pushed to the lower intervention threshold without any risk of producing rejects, because the distribution range is very narrow (see figure 2). Even more resources are saved (hatched area) this way.

Increasing Productivity

Using BST ProControl systems always increases productivity. Production facilities can be better used and equipment times can be lowered. Contact-free measuring systems can usually be installed directly behind the dimension controlling unit of the system.

Thus, they are extremely quick to provide important information on the results of changes made to process-relevant parameters and settings. In case of production in small batches with different specifications, the shorter equipment times can be the decisive economic advantage.

Saving Working Time

In each individual case, BST ProControl systems lead to shorter work and equipment times. No matter if settings that used to be made manually are now automated, or if checking the finished products is simply no longer necessary, the operators are relieved of part of their work and can be employed for other tasks. Furthermore, the high reliability of BST ProControl systems serves to avoid malfunctions, rework and cost-intensive interruptions of operation.

This means that using highly developed measuring technology can improve the product quality and thus its competitiveness. On the other hand, the optimized distribution width and direct control of the finished product can avoid complaints even during production.

Result:

Depending on the level of automatization & resources costs, BST ProControl systems will pay off within 6 to 12 months.

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BST eltromat India Pvt. Ltd.

801, Sri Krishna, New Link Road, Andheri (West), Mumbai- 53.

- Tel.: +91-22-66860900
- www.bsteltromat-india.com
- info@bsteltromat-india.com

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