

Overview Sensors



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SENSORS

The right scanning system for each type of material

Ultrasonic sensors (US)

The scanning of the web edge is carried out contactless by ultrasonic waves.

Properties of BST ultrasonic sensors:

- Insensitive to dirt and changes in the transparency of the material
- No changes to the measured values through flutter of the web in the sensor scanning area
- Compensation for any interference which may be caused by external sound sources or other environmental influences

Field of application:

- Materials with dust or fluff-like deposits
- Films with a variable level of transparency
- Light-sensitive materials

Optical sensors (IR)

Non-contact scanning of the web edge is carried out by light.

Properties of optical BST sensors:

- Pulsed infrared light (insensitive to external light sources)
- No influence on the measurements by flutter of the web within the light path
- Optional connection for air sweep protects the lens against contamination from paper, dust or other contaminants
- Large proportional scanning band permits web center-line guiding even for relatively large web width variations

Field of application:

- Transparent and non-transparent materials
- Thick materials



BST ultrasonic sensor
US2010



optical BST sensor
IR 2011



BST sensor
RS 20-30

| | Shape | Measuring range [mm] | Resolution | Measuring distance [mm] | Analog output | Digital output |
|--|-----------------------|---|-----------------|-------------------------|---------------|----------------|
| US 2010 | Gap 40 mm, 70 mm | 12 | typical 0,05 mm | | 0 - 10 V | BST CAN-Bus |
| IR 2011 | Gap 40 mm, 70 mm | analog: 12 digital: 24 (IR 2011/40) 20 (IR 2011/70) | typical 0,05 mm | | 0 - 10 V | BST CAN-Bus |
| RS 20 | Sensor with reflector | 20 | 0,03 mm | 25 +/-5 | 0 - 20 mA | - |
| RS 30 | Sensor with reflector | 30 | 0,05 mm | 100 +/-10 | 0 - 20 mA | - |
| RS 150 | Sensor with reflector | 150 | ≤ 0,15 mm | 200 | 0 - 20 mA | - |
| CLS Pro 600 | Camera | 25 | 0,005 mm | 25 | 0 - 10 V | BST CAN-Bus |
| CCD Pro 5000/28 CCD Pro 5000/50 | Camera | variable | 1/5.000 | 300 - 900 | - | BST CAN-Bus |
| CCD Pro 30.000/28 CCD Pro 30.000/50 | Camera | variable | 1/30.000 | 300 - 900 | - | BST CAN-Bus |



BST sensor
CCD Pro



BST sensor
CLS Pro 600

Digital sensors

The non-contact scanning of the web of material is carried out by detecting contrasts in light conditions. A CCD Pro camera can scan up to eight contrast transfers.

CCD Pro sensors

- Resolution of up to 30,000 pixels by a microprocessor controlled CCD chip
- Adaptation of the viewing range to the specific application by selecting from a range of different lenses
- Camera parameters adjustable for change of material while machine is running (no change-over time required)
- Quick set-up and camera alignment via an integrated graphic display
- Simple operation using various automatic functions (for example, the removal of interfering contrasts, compensation for contamination, white balance, and storage of the set-up values)
- The production and adjustment parameters can be transmitted more quickly and more securely by networking via the BST bus system

Field of application:

- Digital scanning of web edges, printed edges or printed lines
- Web center-line guiding, web width measurement
- Control of tools or other machines (tracing of cutting knives, etc.)

CLS Pro 600 sensors

- Precise scanning of lines, print edges or web edges using a color sensor
- Optimum lighting thanks to automatically controlled LEDs
- Outstanding dependability even at the highest web speeds
- Clear color display
- Intuitive user guidance and convenient operation
- Laser guided positioning
- Convenient selection of printed line, print edge or web edge using a color display of contrast transfers

Field of application:

- Contrast edge controlling
- Web edge or printed line

| Edges | Measuring media | Enclosure rating | Special Function | Controller configuration | |
|-------|-----------------|------------------|---|--------------------------|----------|
| | | | | Basic | Advanced |
| 1 | ultrasonic | IP 54 | | ✓ | ✓ |
| 1 | LED, red | IP 54 | | ✓ | ✓ |
| 1 | LED, white | IP 67 | | ✓ | ✓ |
| 1 | LED, white | IP 67 | | ✓ | ✓ |
| 1 | infrared | IP 67 | | ✓ | ✓ |
| 2 | LED, white | IP 54 | Color display, line/edge detection, interrupted line/edge detection | ✓ | ✓ |
| 8 | external | IP 54 | | ✗ | ✓ |
| 8 | external | IP 54 | | ✗ | ✓ |

Electric-motor-driven sensor positioning

If the position of the sensor is difficult to reach or if the sensing position has to be changed frequently due to varying web widths, a sensor positioning device (FVG) will take over the adjustment of the sensor position. Different automatic electric-motor-driven systems are available, depending on the requirements.

Sensor positioning device FVGPro 1/K; SP/K-1

The basic version of the motorized sensor positioning device enables easy positioning of one sensor. It is used for web edge guiding.

Sensor positioning device FVGPro 1/MK; SP/MK-1

This type allows the simultaneous positioning of two sensors. It is used for web center-line guiding with a fixed web center-line. The position of the sensors is adjusted by one common drive. The sensors are moved in a reverse motion symmetrically to the center of the web.

Sensor positioning device FVGPro 2/MK; SP/MK-2

This sensor positioning device has two sensor attachments and two separate drives. In this way both sensors can be adjusted independently of each other. This unit is suitable for both web edge guiding and web center-line guiding. Web movement over the entire range is possible using synchronous drive control. Use is also recommended for eccentric (half) webs.

| | Guiding | Function | Special function | web guider |
|-------------|---------------------------------|--|--|------------------|
| FVGPro 1/K | edge | automatic edge seeking | | Advanced |
| FVGPro 1/MK | two edges with fixed web centre | automatic edge seeking | <ul style="list-style-type: none"> • Web width measuring • Web width adjustment | Advanced |
| FVGPro 2/MK | two edges with web centre | automatic edge seeking and guiding to edge 1, edge 2, centre (independently) | <ul style="list-style-type: none"> • Web width measuring • Shifting of centre-line • Web width adjustment | Advanced |
| SP | edge/centre | motorized positioning of the edge sensors without edge seeking | | Basic & Advanced |



Sensor positioning device FVGPro



Sensor positioning device FVGPro MK

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