

// Overview Sensors



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SENSORS

The right scanning system for each type of material

Ultrasonic sensors (US)

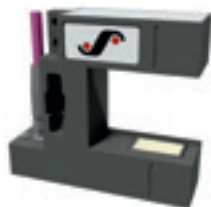
The scanning of the web edge is carried out contactless by ultrasonic waves.

Properties of BST eltromat 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:

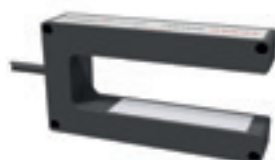
- Materials with dust or fluff-like deposits
- Films with a variable level of transparency
- Light-sensitive materials
- Large proportional measuring ranges (* US SEN 3xx) allow the control without mechanical adjustment of the sensors – even with relatively large web width variations



US 2010



IR 2011



US SEN 3xx & IR SEN 4xx



RS 20–30

Optical sensors (IR/RS)

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

Properties of optical BST eltromat sensors:

- optical sensing 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 (IR 2011)
- Large proportional scanning band permits web center-line guiding even for relatively large web width variations (*IR SEN 4xx, RS 150)

Field of application:

- Transparent and non-transparent materials
- Thick materials

	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 eltromat CAN-Bus
IR 2011	Gap 40 mm, 70 mm	analog: 16 mm digital: 24 (IR 2011/40) 20 (IR 2011/70)	typical 0,05 mm	–	0 - 10 V	BST eltromat CAN-Bus
US SEN 3xx	Gap 38 mm, 101 mm	30 – 467	typical 0,05 mm	–	–	BST eltromat CAN-Bus
IR SEN 4xx	Gap 38 mm, 101 mm	30 – 284	typical 0,05 mm	–	–	BST eltromat 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 eltromat CAN-Bus
CCD CAM 100	Camera	variable	1/60.000	300 – 900	–	BST eltromat CAN-Bus/ ethernet ProT



CCD CAM 100



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 Cam 100 can scan up to eight contrast transfers.

CCD CAM 100

- Resolution of up to 60,000 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

- 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	Eco
1	ultrasonic	IP 54		✓	✓	✓
1	LED, red	IP 54		✓	✓	✓
2	ultrasonic	IP 40	dynamic compensation	✓	✗	✗
2	infrared	IP 40	dynamic compensation	✓	✗	✗
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		✓	✓	✓

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 (narrow) webs.

	Guiding	Function	Special function	required web guider
FVGPro 1/K	edge	automatic edge seeking		Advanced
FVGPro 1/MK	two edges with fixed web centre	automatic edge seeking	• Web width measuring	Advanced
FVGPro 2/MK	two edges with web centre	automatic edge seeking and guiding to edge 1, edge 2, centre (independently)	• Web width measuring • Shifting of centre-line	Advanced
SP	edge/centre	motorized positioning of the edge sensors without edge seeking		



Sensor positioning device FVGPro



Sensor positioning device FVGPro MK

Your local contact

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BST eltromat International

Heidsieker Heide 53 • 33739 Bielefeld • Germany

Tel.: +49 5206 999-0 • Fax: +49 5206 999-999 • info@bst-international.com

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