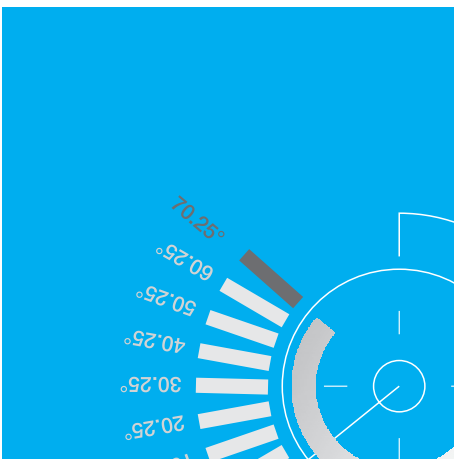
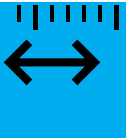


BALLUFF

sensors worldwide

BSI Inclination Sensors

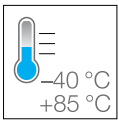
No angles missed



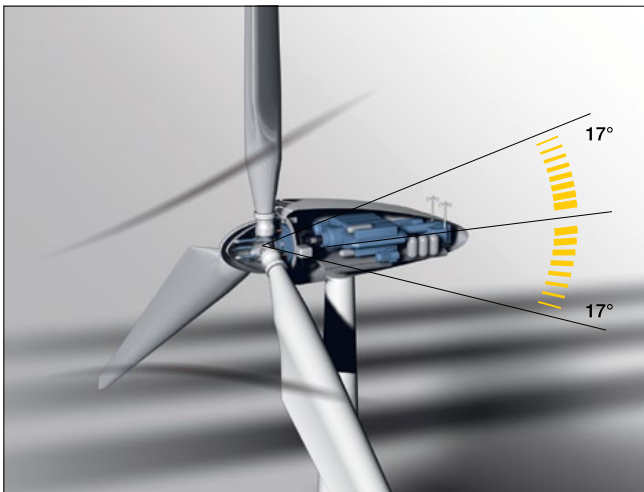
High precision over 360°

- Non-contact absolute measuring principle
- High repeat accuracy and precision
- Low temperature drift

The precise position control and continuous positioning of rotational movements are critical in many applications. Balluff inclination sensors measure the deviation on a horizontal axis of up to 360°. Balluff inclination sensors can operate in temperatures down to -40 °C and require very little space for mounting.



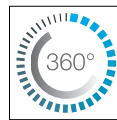
Wind energy systems



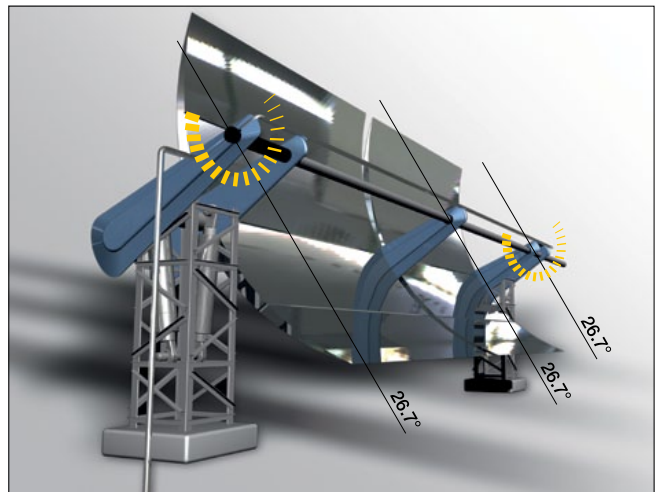
Monitoring tower tilt

Constantly changing wind conditions cause abrupt load changes in wind turbines. Particularly during strong gusts of wind, storms or a wind energy system's start-up phase, towers can tilt so much that the overall system lifetime is affected. An inclination sensor can reduce this stress on the system by reliably measuring the absolute angle of inclination and ensuring that limit values are not exceeded.

- Small form factor
- Temperature range of -40 to +85 °C
- Rugged metal housing



Solar-thermal power plants



Positioning parabolic troughs

Parabolic trough systems can provide power continuously for 24 hours a day. During the hot midday period, electricity is produced and a salt storage tank is heated, which sustains the water-steam circuit during the night. The highest possible temperatures have to be present in the solar field for this. These temperatures have to be achieved by optimally aligning the parabolic troughs to the position of the sun. Absolute inclination sensors ensure this precise positioning and thus increase the efficiency of the solar energy system.

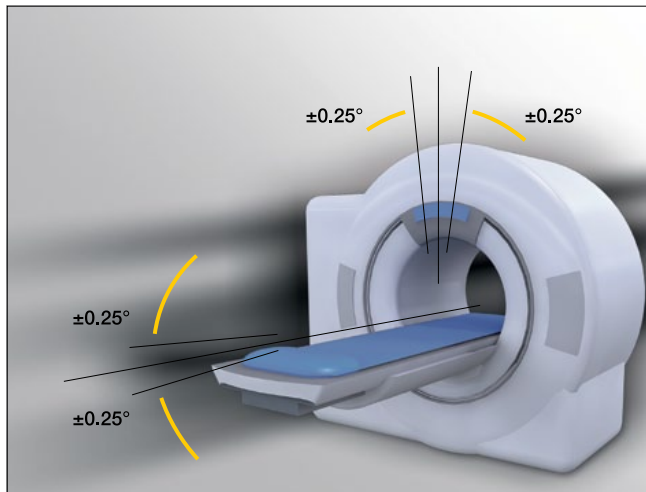
- Compact, robust metal housing eases installation
- Analog output signal for continuous position detection
- Precise measurement throughout a 360° range

The benefits to you

- Compact, robust metal housing
- High accuracy of 0.1° for precisely controlling processes
- Extended temperature range of – 40 to +85 °C is suitable for outdoor applications



Medical technology



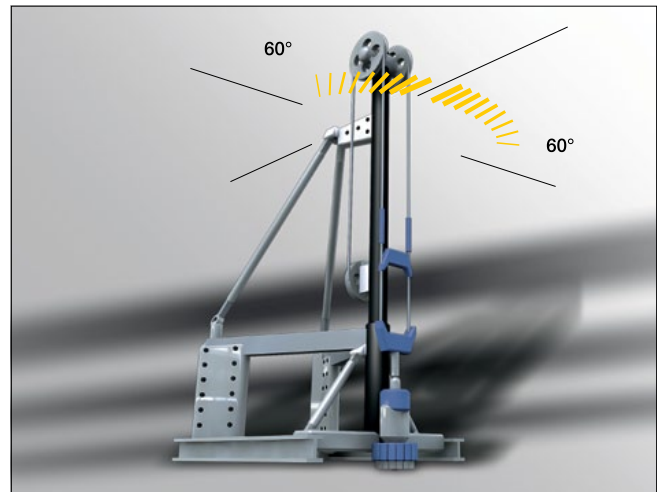
Positioning radiation treatment tables

Treatment tables have to be positioned precisely to make radiation therapy as safe as possible. Capacitive inclination sensors are exceptionally outstanding here, because of their impressive accuracy and their excellent resolution without failure. Capacitive inclination sensors thus create the best conditions for properly positioning a patient.

- High precision
- Excellent resolution
- Compact, for easy installation even in places where space is limited



Oil and gas extraction



Setting up oil pumps over a borehole

Oil pumps have to be placed precisely over the borehole. This is easy to achieve with Balluff inclination sensors, because they are made for rough outdoor environments. Thanks to their analog angle values, inclination sensors position pumps so precisely that they minimize loads and wear.

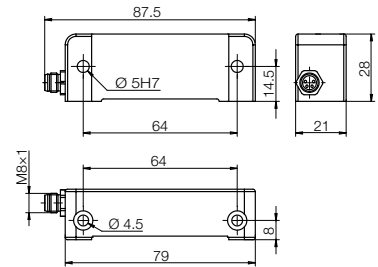
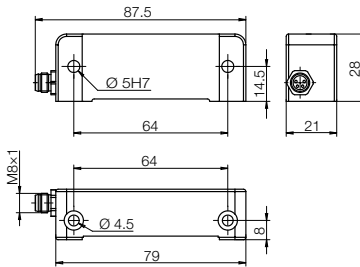
- IP 67 protection class
- Precise, absolute angle measurement
- Compact housing

BSI Inclination Sensors

No angles missed



Size		79×28×20 mm	79×28×20 mm
Interface		4...20 mA	Modbus RTU RS-485
Measuring range 0...360°	Ordering code	BSI0004	BSI0003
	Part number	BSI R11A0-XB-CXP360-S75G	BSI R11A0-XXR-CXP360-S75G
Measuring range ±45°	Ordering code	BSI0002	
	Part number	BSI R11A0-XB-CXS045-S75G	
Supply voltage U _B		10...30 V DC	10...30 V DC
Current draw		< 31 mA	< 20 mA
Resolution max.		±0.01°	±0.01°
Characteristic deviation max.		±0.1% (min. 0.1°)	±0.1° at 10...40 °C, ±0.15° in any other temperature range
Temperature drift		±0.01%/10 K	
Sampling rate		< 150 ms	< 150 ms
Settling time		< 1 s	< 1 s
Polarity reversal/short-circuit protected		yes/yes	yes/yes
Degree of protection as per IEC 60529		IP 67	IP 67
Ambient temperature range T _a		-40...+85 °C	-40...+85 °C
Weight		Approx. 80 g	Approx. 80 g
Housing material		Aluminum	Aluminum
Calibration, measurement protocol		Optional	Optional
Connection		M8 connector, 4-pin	M8 connector, 4-pin



Suitable connector:
(please order separately)

For standard connectors

Size	Design	Cable	Length	Order code
M8, 4-pin	straight	PUR, yellow	5 m	BCC0540
M8, 4-pin	angled	PUR, yellow	5 m	BCC059T



For optional shielded connectors

Size	Design	Cable	Length	Order code
M8, 4-pin	straight	PUR, black	5 m	BCC02N6
M8, 4-pin	angled	PUR, black	5 m	BCC02NJ



More electrical accessories: You can find a large selection of plug connectors and connector cables in a wide variety of cable materials, colors and lengths in our catalog **Industrial Networking and Connectivity**.

Doc. No. 893249/Mat. No. 228118 E; Edition 1211;
Product specifications, availability, and pricing are
subject to change without notice.

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