HIGH PRECISION SENSORS FOR SOLAR TRACKERS

POSITAL in Solar Energy
Always on the Sunny Side

With rising energy prices and the prospect of dwindling resources, solar energy is one of the most popular alternatives. However, to get the most benefit from a solar system, solar tracker designers and operators must pay careful attention to the accuracy and the component costs that make up the system, their maintenance requirements and their ability to operate and reliably under hot, dusty and windy conditions.

POSITAL encoders and inclinometers are designed to provide highly accurate absolute measurement under extreme environmental conditions. They can be installed in the solar tracking system of photovoltaic elements, heliostats or parabolic trough systems in single or dual axis systems and precisely position the drive of the panels or reflectors.
Programmable Inclinometer for Elevation Control
- Compact Housing
- Inclination range: ±80° (2 Axes) or 360° (1 Axis)
- Accuracy: 0.1° / resolution 0.01°
- Operating Temperature: -40 °C to +85 °C
- IP Rating: IP67, IP68, IP69K

Efficient Positioning in Solar Power Plants
Due to their cost efficient and long-lasting design the POSITAL products are ideal for such large applications. The high accuracy that both the encoders and inclinometers offer, make them even more attractive for solar power plants.

Robust Encoder for Azimuth Control
- Aluminum or Stainless Steel Housing
- Up to 16 bit (0.005°) Resolution per Revolution
- Gearing and Battery-Free Multiturn Technology
- Operating Temperature: -40 °C to +85 °C
- Highest IP Rating: Up to IP69K

Optimizing Orientation of Solar Collectors
For elevation control both an encoder and an inclinometer can provide accurate angular positioning. For azimuth control a POSITAL encoder can be used to provide the absolute rotational position of the vertical axis.

Cost Efficient Encoder for Elevation Control
- Compact Design
- 12 bit (0.088°) Resolution per Revolution
- Gearing and Battery-Free Multiturn Technology
- Operating Temperature: -40 °C to +85 °C
- IP Rating: Up to IP65

Optimizing Angular Position of Parabolic Collectors
Depending on the design and the available space on a parabolic trough system, both an encoder and an inclinometer can be used to control the angular positioning.

Efficient Positioning in Solar Power Plants

Programmable Inclinometer for Elevation Control
- Compact Housing
- Inclination Range: ±80° (2 Axes) or 360° (1 Axis)
- Accuracy: 0.1° / Resolution 0.01°
- Operating Temperature: -40 °C to +85 °C
- IP Rating: IP67, IP68, IP69K

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FRABA Group
FRABA is a group of enterprises focused on providing advanced products for the motion control and industrial automation markets. POSITAL has been a leading manufacturer of absolute rotary encoders for over 50 years and recently has expanded its business to inclination and linear sensors. Other FRABA Group subsidiaries include VITECTOR which focuses on protection sensors to guard doors and production machine covers.

History
FRABA was founded by Franz Baumgartner in 1918. Until the 1960s, FRABA’s main product was mechanical relays. In 1963 FRABA started selling “brush” absolute encoders and in 1973 one the first non-contact, optical absolute rotary encoders was manufactured in the offices of FRABA in Cologne. Today, FRABA companies specialize in innovative products that use advanced technologies to deliver exceptional performance and value.

Service
Absolute rotary encoders and absolute inclinometers are sophisticated devices that can help solve a wide range of technical problems. However, realizing the full potential of these products may require specialized knowledge when selecting the device configuration and programming the operating parameters. To ensure that customers get what they need, POSITAL’s development engineers in Germany, the US and Asia have direct responsibility for customer support. In addition, a growing global network of sales partners is providing expert guidance with knowledge about the local requirements.

Production
POSITAL products are manufactured in advanced production facilities. The computer-guided semi-automated production system tracks each device from order, through assembly and testing, to final delivery. Even with thousands of unique configurations available, standard products are ready to ship within five working days of receiving an order.