

BENEFITS



High Precision

IXARC rotary encoders provide a resolution of up to 16-bit for both magnetic and optical types. TILTIX inclinometers offer a static accuracy level of 0.1° over a wide temperature range.

- > Encoders with 16 Bit Resolution
- > Inclinometers with 0.1° Accuracy and 0.01° Resolution

Functional Safety

POSITAL also offers diverse redundant encoders with a variety of mechanical options. These encoders use a combined measurement design consisting of one optical and one magnetic system. IXARC redundant encoders, when combined with functional safety PLCs, these devices are suitable for applications that are required to conform to Performance Level/ PL d, Cat. 3. To be on the safe side, POSITAL makes use of a combination of magnetic and optical sensor technology – the key words are diverse redundancy.

- > Redundant Encoder Designs
- > Wide Range of Electrical Interfaces

Tough Sensors for Tough Jobs

Both encoders and inclinometers are available in heavy duty designs with a protection class of up to IP69K. Stainless steel versions are also available. Encoders can withstand shaft loads of up to 300N and offer a shock resistance of up to 300g. Most products cover a temperature range from -40°C to +85°C.

- > High Protection up to IP69K
- > Up to 300N Load and up to 300g Shock

Explosion Proof Encoders and Inclinometers

POSITAL explosion proof sensors are designed to operate safely in environments with potentially dangerous levels of explosive gases or dust. IXARC ATEX encoders have been certified in compliance with IECEx and ATEX directives and can be installed in zones 1 and 21.

- > Certified in Compliance with IECEx and ATEX Directives for Different Applications and Zones
- > Wide Range of Electrical Interfaces



OVER 50 YEARS EXPERIENCE WITH POSITION SENSORS



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 industrial rotary encoders for over 50 years and has expanded its business to include tilt and linear motion sensors. FRABA group is also an innovator in product design and manufacturing processes and a pioneer of Industry 4.0.

History

FRABA Group dates back to 1918, when its predecessor, Franz Baumgartner elektrische Apparate GmbH, was established in Cologne/Germany to manufacture relays. In 1973, FRABA introduced one of the first non-contact, absolute Multiturn encoders. Since then, the company has played a trend-setting role in the development of rotary encoders and other sensor products.

Service and Production

POSITAL has a global reach with subsidiaries in Europe, North America and Asia – and sales and distribution partners around the world. 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.

Stand Alone Encoder Business

POSITAL's unique online product finder provides access to a huge variety of solutions without the need for specialized knowledge. Thousands of easy-to-browse datasheets are available in 11 languages. The traditional practice of customization has been replaced by this new approach. Even with one million unique configurations, standard products are ready to ship within 5 working days.



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The One Stop Encoder Shop

PRODUCTS



High Precision IXARC Rotary Encoders

Motion control applications – ranging from factory automation to agricultural machines – require accurate and real-time information about the location of mechanical components. The IXARC line of rotary encoders provide accurate and reliable measurement of speed variations for joints, transmission shafts, pulleys, etc. a range of electronic connections, from simple analog connections or incremental outputs to sophisticated fieldbus and industrial Ethernet interfaces are available.

- Thousands of Absolute and Incremental Encoders with up to 16 Bit Resolution
- Large Variety of Electrical Interfaces

Precise Industrial TILTIX Inclinometers

The accurate measurement of tilt or inclination is very important for motion control and safety systems. Relying on 3D MEMS technology and gravity for their measurement, these sensors have no exposed moving parts, resulting in easy installation and a high level of environmental protection.

- High Accuracy of 0.1° and Resolution of 0.01°
- Measurement Range ±90° (Dual Axis) or 360° (Single Axis)

Save Time and Costs with TILTIX Inclinometers

For dynamic movements with rapid acceleration, POSITAL's dynamic TILTIX inclinometers should be used. They are based on a 3D MEMS accelerometer and a 3D MEMS gyroscope. A smart algorithm combines the signal of the accelerometer and gyroscope to eliminate the effect of acceleration (e.g., due to rapid motion of the equipment), vibration and shock.

- Accuracy: Dynamic 0.5°, Static 0.3° and Resolution of 0.01°
- Measurement Range ±90° (Dual Axis) or 360° (Single Axis)

Versatile Linear Measurement with LINARIX Sensors

Many applications require linear motion to be monitored for system control or to ensure safety. With lengths ranging from 1 to 15 m (3' to 45'), LINARIX draw wire sensors are available in many configurations to meet application requirements. Options include a wide variety of outputs (including analog, Fieldbus and Ethernet variants), heavy duty housing and compact designs.

- Absolute Position Measurement with Resolutions up to 2µm and Range up to 15m



APPLICATIONS



Mobile Planter and Seeder

POSITAL's line of absolute and incremental encoders have multiple applications for agricultural machines. Specifically, angle confirmation and velocity are two critical data points necessary in Agri-applications. POSITAL encoders provide high resolution position feedback to ensure autonomous and semi-autonomous harvesting. Furthermore, the hollow shaft and anti-rotation clamp spring of the encoders allows for increased speed and reliability of the machines. These features are useful for measuring speed in planters and seeders. Other applications include sprayers that have controllers with Field-IQ variable rate, for pre-selection of modes and areas of agricultural machines or implementations.

- IP67 Sensors, High Pressure and Temperature Resistant Sensors for High Levels of Shock & Vibration
- Easy Communication with Field-IQ or ISOBUS Controller



IXARC Rotary Encoders for Position and Speed Control

- Shaft Load Up to 200 N
- Saltwater Resistant / IP69K
- Stainless Steel Versions Available
- CANopen Absolute Encoder
- Communication to Field-IQ Controller



APPLICATIONS



Planter and Sprayer Boom Height Control

To improve productivity, precision and safety, inclinometers are mounted on the boom, dipper arm, rotating platform, and bucket to monitor the position during the operation. They are well protected in a robust metal housing with IP69K protection class, can withstand high shock and vibration and can be operated over a very wide temperature range.

- Dynamic and Precise Static Inclinometers
- CANopen, J1939 and Analog Interfaces
- Up to IP69K
- Operating Temperature: -40°C to +75°C (-40°F to +167°F)



TILTIX Inclinometers

Conventional static inclinometers provide a higher accuracy level while dynamic inclinometers provide a stabilized output with slightly lower accuracy under very dynamic operational conditions. A combination of the two can be used to harness the advantages of both types.

ANALOG CANopen SAE J1939

Dynamic Vs Conventional Inclinometers

The diagram compares the performance of a dynamic inclinometer, including integrated gyroscope, with the output from a conventional static inclinometer, when subjected to dynamic movements on an excavator.

