

Feature: Sensors

Sensor maker Fraba takes flexible design route

By James Tulk

The Fraba group of companies is supplying the automation industry with sensor and encoder products using a unique, flexible manufacturing system that serves small and large volume customers equally well and equally quickly. North American orders, small or large, are made to the customer's specifications and can be turned around within less than two weeks at competitive prices.

Fraba knows that when building complex systems, plant engineers often need many special items – or perhaps just a few – in a hurry. Its business strategy is to beat the competition by offering a wide range of customizable products, while maintaining the highest quality standard and short turnaround times.

Fraba believes it offers what the automation industry craves, because the more special characteristics a buyer requires in a sensor or encoder, the more it can lengthen the time between ordering and receiving the finished product. Items such as rotary encoders can have customer-defined requirements like mechanical and electrical interfaces, enclosure materials and/or environmental protection.

Germany-based Fraba, which established a North American subsidiary in Princeton Junction, NJ, in 2000, offers three lines of products for the industrial automation market: 'Posital' brand absolute rotary encoders and inclinometers; 'Intacton' optical velocity and position sensors; and 'Vitector' contact sensing 'safety edges', used to reduce the danger of collisions between automation equipment and other objects. All products are manufactured using a just-in-time production and delivery concept. For Christian Fell, Fraba VP in charge of the encoder business in North America, the key is the highly flexible and responsible manufacturing process. "We currently have lead times of 10 business days for orders originating in Canada or the U.S., com-

pared to up to six weeks for some of our competitors."

Fraba's made-to-order strategy is built on two key pillars. First, the sensors are based on a highly modular design. For example, all models in the Optocode family of absolute rotary encoders employ an optical rotation measurement system that can sense angular displacements as small as 1 part in 65,536. If required, a rotation counter with a range of 8192 turns can be added. This combination of resolution and range can meet the needs of most industrial automation applications. Thanks to the modular design of the encoders, measurement components can be combined with a variety of electrical interface modules: Bit-parallel, SSI, Profibus-DP, CANopen, DeviceNet or



Fraba Posital: Absolute rotary encoders and inclinometers against the background of a new manufacturing site.

Industrial Ethernet are all supported, as well as a variety of connector types and mechanical interfaces.

For applications where smaller components are needed, 'Magnetocode' rotary encoders are a mere 36.5 mm in diameter. "Overall, the 'Posital' portfolio offers over 1000 different encoder configurations, with thousands of other combinations available for the asking," explained Fell. A range of accessories are also available, including wire draw adapters, couplings and heavy-duty housings.

The second pillar of Fraba's strategy is flexible manufacturing, exemplified by the company's new manufacturing facility in Slubice, Poland on the German border



Assembly workstation in Fraba's plant.

– less than an hour's drive from Berlin. This facility is housed in a striking new building that resembles a large aluminum disk lying flat on the ground (inset photo above). The interior layout is highly functional, with support and storage areas located around the circumference of the building, while the production areas are grouped near the centre. This means that the assembly workstations have quick and convenient access to supplies and resources while the workstations themselves can be rapidly reconfigured to meet changes in the production schedule. Workstations are equipped with computer terminals, barcode readers and test equipment that support a data-driven

production system. Specifications for new orders are routed directly to the workstation computer terminals. As new items are assembled, a full history of the process – from batch numbers of sub-components to the final test results – is recorded in a central database. This supports both rapid order fulfillment and end-to-end quality assurance through a virtually paperless process. Careful attention to electro-static discharge control and 100% testing of finished products helps ensure product quality.

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