# +++ Press Release +++

**POSITAL-FRABA Multi-turn Hollow Shaft Kit Encoders Selected as Rockwell Encompass Complementary Products**

**Hamilton, New Jersey, November 11, 2019 -** POSTIAL-FRABA’s newly introduced Hollow Shaft Kit encoders have been selected as a complementary product in Rockwell Automation’s PartnerNetwork Encompass™ program.

These new products mark a significant innovation for industrial motion control. Until now, almost all through- or hollow-shaft encoders have been limited to a single-turn measurement range, largely because fully satisfactory multi-turn technology has been not been available. POSITAL has overcome this limitation with its new capacitive Hollow Shaft Kit encoders. They feature an integrated rotation counter that records each revolution the instrument experiences, even if these occur when no external power is available. Power for the counter circuitry is supplied by POSITAL’s well-proven, maintenance-free Wiegand energy harvesting system. There is no need for troublesome backup batteries or complex mechanical solutions.

The new Hollow Shaft Kit encoders are especially well suited to robots and cobots. Weighing in at just 110 g, with an outer diameter of 80 mm, they can be integrated directly into the joints of the robot arms. Their open-center form factor leaves room for designers to route mechanical components, cables or pneumatic/hydraulic lines through the center of the joint. Their slim design (only 17.8 mm deep) and large central opening (30 or 50 mm) make them ideal for space-critical applications, including servomotors and drives. Installation and commissioning are straightforward: a few simple steps and the measuring system is ready for use, without complicated calibration procedures.

While POSITAL earlier championed the switch from optical to magnetic measurement technologies in encoders, the new Hollow Shaft series represents a deliberate break with the past. Magnetic systems typically require that key components be placed on the centerline of the device, making it difficult to adapt to hollow center configurations. The capacitive measurement technique enables a ring-shaped configuration, while also offering reliability and precision (18-bit electronic resolution and an accuracy of ± 0.02 degrees) at a moderate cost.

Capacitive encoders have two key components, a rotor and a stator, which function as plates in a capacitive system. Capacitive coupling between the plates changes as the rotor turns relative to the stator, varying the modulation of electrical signals transmitted through the system. A sophisticated signal processing system analyzes changes in signal strength and phase angle to precisely determine the angular position of the rotor relative to the stator. Capacitive effects are integrated around the full circumference of the ring-shaped components, so that measurements are largely insensitive to dust, moisture of minor misalignments.

At the heart of the self-powered multi-turn system is POSITAL’s Wiegand energy harvesting technology. To accommodate the open-center layout, a new arrangement for the magnets (on the rotor) and Wiegand wire assembly had to be developed. Through experimentation and extensive magnetic field simulation, a reliable solution was developed that included four diametrical-oriented magnets placed evenly around the rotor. These four magnets provide a stable magnetic field that triggers polarity reversals in the Wiegand sensor installed in the stator. With each 360-degree rotation of the rotor, the Wiegand assembly generates a current pulse that energizes the counting electronics. This counter has a 43-bit memory for a measurement range of almost nine trillion revolutions. "These are values ​​that put us right on trend for our target market," says POSITAL-FRABA CEO Christian Leeser.

**About FRABA**

The FRABA Group is headquartered in Heerlen/The Netherlands. Its history dates back to 1918, when the company’s predecessor, **Fr**anz **Ba**umgartner Elektrische Apparate GmbH, was established in Cologne, Germany to manufacture relays. Since then, the company has played a trendsetting role in the development of industrial sensor products for motion control and safety sensors for industrial doors and other moving equipment. FRABA has a global reach with subsidiaries in Europe, North America and Asia – and sales and distribution partners around the world.

**About Rockwell Automation**

Rockwell Automation, Inc. (NYSE: ROK), the world’s largest company dedicated to industrial automation and information, makes its customers more productive and the world more sustainable. Headquartered in Milwaukee, Wis., Rockwell Automation employs about 20,000 people serving customers in more than 80 countries.

**About the Rockwell Automation Partnership**

FRABA Inc. is part of the Rockwell Automation PartnerNetwork™ program, which includes business enterprise, sales and solutions, and product and technology partners. Through collaboration with Rockwell Automation, FRABA Inc. helps its customers improve time to market, lower total cost of ownership, better manage assets and lower manufacturing business risk. For more information, visit [www.rockwellautomation.com/partners/](http://www.rockwellautomation.com/partners/)

**Press Photo –** POSITAL-FRABA Multi-Turn Hollow Shaft Kit Encoder – now Encompass listed!

See us at **Rockwell Automation Fair 2019 –** held Nov 20/21 in Chicago**, Booth #1757**

###### **Further Information**

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