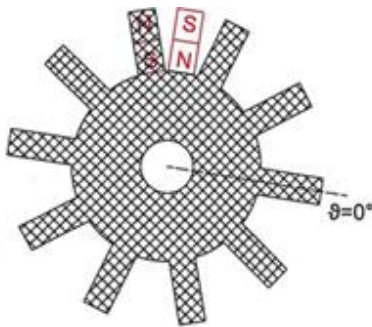


Wiegand position encoder

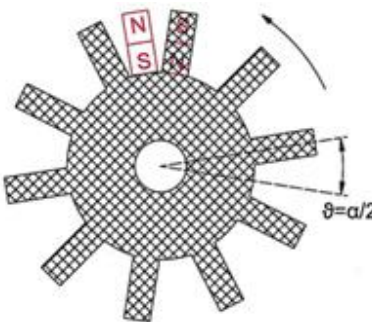
Smart measurement of rotation angle and speed

Invention

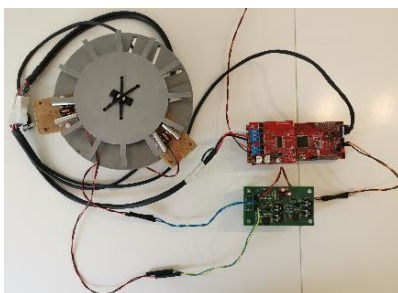
When rotation angle, change in rotation angle, speed, or distance is being measured, industrial measurement technology often includes incremental encoders, also called rotary encoders. A new invention from the Aachen University of Applied Sciences uses the Wiegand effect to measure rotation angle or speed: A Wiegand sensor with evaluation electronics can do it at low cost. The Wiegand sensor is fixed near a gear so that its magnetic field is reversed by each of the teeth as they pass. This generates a voltage pulse. The pulses can be used to calculate a position value or a rotation speed.



Rotor figure a)



Rotor figure b)



Laboratory sample

Commercial Opportunities

Rotary encoders are used in all industrial areas – especially in the processing industry in such applications as metalwork, turning and milling machines, CNC machines, and motors. The areas of application include measuring and testing technology, consumer electronics, small motors used in robot technology, and other mechanical devices. The new Aachen University of Applied Sciences process is cheap and scalable and can be designed as a relative sensor or an energy-self-sufficient absolute sensor.

Current Status

A prototype was created, and initial test series verified process functionality. The process has been registered with the German Patent and Trade Mark Office. It can be registered in other countries in the priority year or upon later PCT registration. We are offering interested companies the opportunity to license and refine the technology in collaboration with the inventors and the Aachen University of Applied Sciences.

Relevant Publications

Some publications are planned.

An invention of the Aachen University of Applied Sciences.

Competitive Advantages

- Allows simple, low-cost rotor manufacture
- Scalable resolution
- Can be designed as a relative or an absolute sensor
- Suitable for high speeds
- Can be energy self-sufficient in operation

Technology Readiness Level

123456789

Technology validated in lab

Industries

- Electrical engineering
- Measurement technology
- Sensors

Ref. No.

6361

Contact

Martin van Ackeren

E-Mail: ma@provendis.info

Phone: +49(0)208-94105-34

