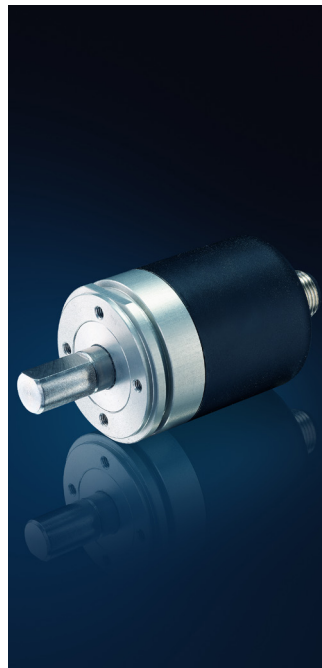


**NOVOTURN
Multi-turn Sensors
Overview**



The new Generation of Multi-turn Sensors

Precise, flexible and efficient

NOVOTURN
Turn with Confidence
Ultra-compact Second-generation Multit-turn Sensors

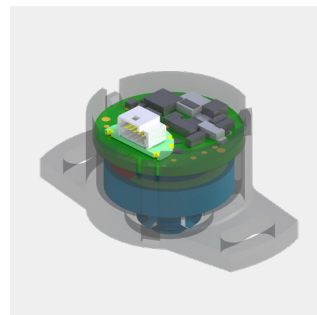
Our new NOVOTURN multi-turn sensors set new standards in magnetic revolution counting. With the second generation of multi-turn sensors, Novotechnik enables an increased effective angle of 44 turns with the True-Power-On system. Offering different product designs, various customer requirements can be met, from extremely small installation spaces to heavy-duty applications.

Our solution for your application



Series MC1-2800

Housing diameter 30 mm, either with plug-in coupling or indexed shaft



Kit-Solution

Customized **Kit Solutions** for cost-effective integration into the customer application.



Series MZ1-2200

Housing diameter 22 mm and central mounting for easy installation

Special features



- Non-contacting, magnetic
- Long life
- Measuring range 15840° (44 turns)
- True-Power-On system: counts turns even when not powered. Non-volatile technology does not require gears or batteries
- Resolution up to 16 bits per revolution
- Optimized for use in mobile applications with highest EMC requirements
- Smart sensor functions for condition monitoring: Statistical data on temperature, operating time, supply voltage and running-performance
- Interfaces: ratiometric, IO-Link, CANopen, CAN J1939, SPI, SENT



Series MB1-3600

Housing diameter 36 mm, with double ball bearing for demanding environmental conditions

Compact and Cost-Efficient Solution for many Applications

Today's multi-turn sensors may be associated with some application-specific disadvantages: Cost-efficient multi-turn potentiometers often do not meet the requirements regarding to resolution and reliability.

Optical encoders are too costly and too large for many applications, while geared solutions are prone to wear and tear. Our new generation of multi-turn sensors solves these issues using the GMR effect.

A NOVOTURN multi-turn angle sensor provides absolute position data over several revolutions at high resolution, in the form of a linear signal. Its non-contacting principle of operation eliminates wear and tear as well as the need for a buffer battery. As a "True-power-on" system, it provides the measurement immediately upon startup. Any rotation occurring within the measuring range is detected even when no power is applied.

This rotary sensor offers a highly compact solution, in many instances eliminating the need for convoluted, unreliable, or high-maintenance solutions, thus helping to lower the bottom line.

Our solution for your application

- Mobile machinery
- Actuators
- Printing and paper processing machines
- Drive or steering systems
- Lift platforms
- Door and gate drives
- Robotics
- Wire-actuated encoders
- Motor sports
- Replacements for wirewound potentiometers or encoders

GMR Technology

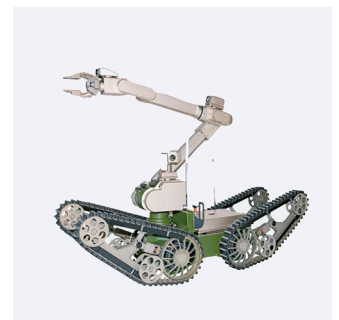
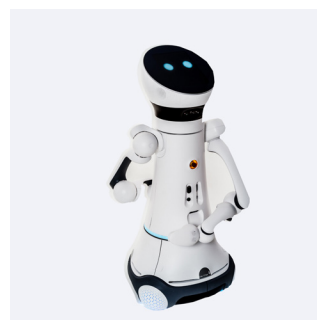
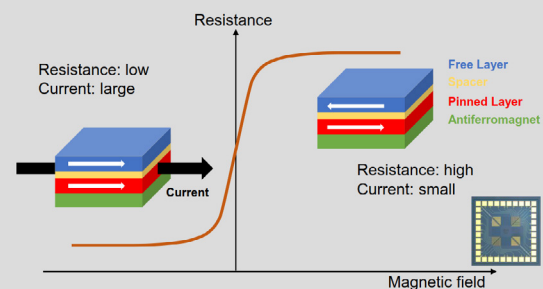
Revolution detection and storage do not require an electrical power source, since the device relies on the micro-magnetically-based GMR effect (Giant Magneto Resistance Effect).

Owed to this effect, the electrical resistance of a GMR sensor's layered structure is determined by the mutual magnetic orientation of the individual layers.

From the GMR Effect to the Multi-turn Rotary Sensor

Attached to the sensor's rotating shaft is a magnet. During the rotation, it changes the magnetization of a specially-designed GMR sensor element.

Each individual magnetization state is measured for electrical resistance and associated with a unique rotational position with the help of a suitable algorithm. When combined with a 360° measuring sensor, it is possible to measure the absolute rotational position over several revolutions.





Representatives worldwide

Novotechnik is represented in all of the world's major markets with our own subsidiaries or by approved dealers and representatives.

Thanks to this tightly knit network we can ensure that wherever our customers may be located we can provide first-class service and customer care.

Your contacts can be found:
<https://www.novotechnik.de/nc/en/service/representatives/>

Technical consulting

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