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Development of “High Precision Magnetic Angle Sensor” enabling advanced control of motors

“Magnetic angle sensor” used for drive motors of electric or hybrid vehicles and power steering motors etc. has been developed.

Rotational angle of the rotary shaft is detected in high accuracy by combining bearing integrating magnetic encoder and magnetic sensor. Magnetic poles are formed on two rows of inner and outer sides of magnetic encoder. Magnetic patterns are misaligned by difference of number of magnets on inner and outer sides, and position angle is calculated from amount of the misalignment. High resolution magnetic sensor technology jointly developed with SNR is applied to the magnetic sensor.



Resolver, a general angle sensor, requires a signal processing circuit since it detects angles using electromagnetic induction between coiled stator and rotor. However the magnetic angle sensor does not require the circuit and the installation space is about a half of that and space-saving is possible ensuring similar detection accuracy.

For further information on this new product, access the following URL:

http://www.ntn.co.jp/english/news/news_files/new_products/news201000026.html

◆ We heard from Takahashi Manager and Ueno of Mechatronics Research Dept., New Product Development R&D Center in charge of the development.

The development initiated to improve SNR's high resolution magnetic sensor.

Investigating sensor performances thoroughly, we studied angle computing circuits to squeeze up into an only few mm squared IC and strived to develop an achieving tool of new magnetic encoder.



Takahashi Manager (back) and Ueno conducting an experiment

We had face to face meetings with SNR engineers as well as TV conferences. Through extensive opinion exchanges in English, which both parties were not so good at, we achieved to combine sensing technology and magnetization technology, these are respective specialty areas.

We will strive for new product developments aiming to satisfy customers, maintaining a closer cooperation between both companies.