

Press Release

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A technology that removes cabling constraints

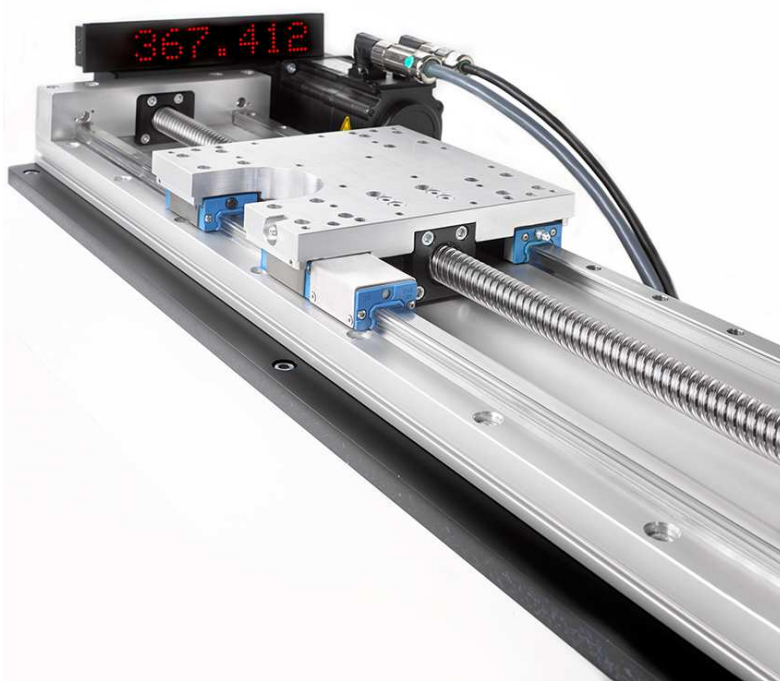
NTN-SNR have developed a wireless position-measuring system for their linear modules

NTN-SNR have developed a linear module featuring a wireless position-measuring sensor built into the linear guidance system. Its compactness, ease of implementation and lack of wires make it a particularly suitable solution for large machines and for equipment in the electronics sector, where wires are a source of constraints. Applications for industrial 3D printers that use linear rails on x, y and z axes are also being considered. This mechanism is the fruit of a joint research programme with the German company Sensitec, specialists in magnetic measurement, and the Institute of Production Techniques and Machine Tools (IFW) of Leibniz University in Hanover. NTN-SNR are currently in contact with different partners and seeking new ones to extend the scope of industrial applications for this innovation.

An effective built-in wireless system

NTN-SNR have developed their built-in wireless measuring system with the University of Hanover, which has developed wireless energy transmission, and German company Sensitec, specialists in magnetic measurement. The device comprises a wireless-measuring and position box that is fixed to the linear guidance system for speeds of up to 5 m/s. It uses innovative and very high-resolution magnetic measurement technology that reads a magnetic tape built into the rail that serves as a measuring rule. A fibre-optic data transmission system that fully meets high-speed and low-latency measurement requirements completes the system. The sensor detects a homing reference point on initialization and can then deliver up to 150,000 positions per second with an accuracy of 10 to 15 microns and with excellent repeatability. NTN-SNR is already planning an enhancement that will deliver an absolute position measurement directly on powering up, thereby removing the need for a reference point.

The system thus offers reduced volume and resolves the issues of vulnerability, space requirements, cable fatigue and even pollution generated by their movements. It also eliminates the tracking of electrostatic discharges between the moving and fixed parts of the machine.



Some examples of applications to develop with partners

Cutting devices and large gantries

Thanks to its precision and speed, this module can be adapted for numerous applications. NTN-SNR is already in contact with several industrialists to offer a complete system for application in the field. For instance, water-jet or laser-cutting machines are real-world cases that can fully benefit from the removal of the raceway. The current 4-metre range of the rigged linear module can also address applications on large gantries: In this respect, NTN-SNR is in talks with port industry operators in Germany, who have expressed their interest in this solution.

3D printers and printed circuits

Direct wireless measurement and the need to work at high speed in a clean environment make the NTN-SNR system very attractive for the printed circuits industry. The absence of cables eliminates any possibility of electrostatic discharges that could damage components being mounted, thereby ensuring safe and reliable production of printed circuit boards.



The system's precision and compactness can also find applications in industrial 3D printing, in which the machine superimposes layers of material 30 to 50 microns thick.

Applications for machine tools are also being considered, in particular for machining centres and related devices.

Partners to develop industrial solutions

NTN-SNR is in contact with several industrialists for all these applications in the sectors concerned to develop systems best suited to their real-world operating conditions. This is an ongoing market development process and NTN-SNR is seeking new pilot customers eager to use this new technology to simplify the design of their machines and boost the productivity of their facilities.

NTN-SNR ROULEMENTS, with a head office at Annecy (Haute-Savoie, France), belongs to the Japanese group NTN Corporation, one of the world leaders in bearings. NTN-SNR ensures the management and development of all NTN activities for the EMEA region and Brazil. A major player as a designer, developer and manufacturer of bearings and sub-assemblies for automotive, industry and aeronautics, NTN-SNR offers a comprehensive range by also developing maintenance services and solutions. NTN-SNR employs 4,225 people at 9 production sites, including 6 in France, as well as 18 business representations.

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