

Press Release

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Integrated drive technology for dynamic, human-like movements

FAULHABER BXI: Made for the Next Generation of Robotics

Into the future of drive technology with new dimensions and features for robotics: The new BXI is the most powerful integrated drive system in the FAULHABER portfolio thus far and was developed to meet new requirements of modern robotic applications.

Human-like movements place extremely high demands on precision, force and dynamics—from delicate grip movements to powerful, coordinated joint movements. This is where the FAULHABER BXI steps in. The internal rotor motor of the 9317 BXI G series combines robustness and exceptional compactness and defines new standards for integrated drive systems in robotics. With a maximum torque of up to 20 Nm, it enables dynamic movements, fast reaction times and a highly precise movement control. The motor covers a voltage range of up to 50 V and, thanks to the available interfaces and an installation length of just 34 mm, is easy to integrate in existing system architectures. The BXI is thereby especially well suited for applications in which every millimeter, every gram and—above all—high power density are decisive, e.g., as a compact joint drive in humanoid robots.

Maximum performance with minimum space requirements

The drive system forms a functional unit made up of motor, integrated stepped planetary gearhead and high-resolution encoder. Its special strength lies in the systematic integration: maximum performance with minimum space requirements. The flat aluminum housing offers corrosion resistance and also supports optimized thermal dissipation. The internal rotor construction with 21 pole pairs, grooved stator and iron-core winding ensures a low cogging torque and a high torque density. The integrated absolute encoder with 15-bit SSI, line driver and compensation algorithm performs the precise positioning, is resistant to interference and makes a significant contribution to the reliability and accuracy of the entire system.

Perfectly matched to the overall system

In combination with the FAULHABER MC5010 Motion Controller, an optimally matched overall system is created for torque-sensitive and highly precise positioning tasks. At the same time, motor and drive are reliably protected, while commissioning is particularly simple and efficient thanks to the Motion Manager software. The FAULHABER BXI thus offers a high-performance, future-oriented solution for

demanding robotic applications in which innovation, application and new technology interact seamlessly.

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