

Product Range



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## Stepper Motors



Nanotec **stepper motors** offer reliable and economic drive solutions with a long service life.

- High step angle precision
- High step precision
- Many different sizes and models
- Optional encoder, brake, gear



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## Stepper Motors IP



**Protection class IP65** motors were developed for harsh environments and offer high electromagnetic tolerance.

- NEMA11 (28 mm) up to NEMA 34 (86 mm)
- IP protection through terminal box and connector, additional sealing as well as special paint
- Optional encoder and/or integrated safety brake
- Customer-specific models in large quantities



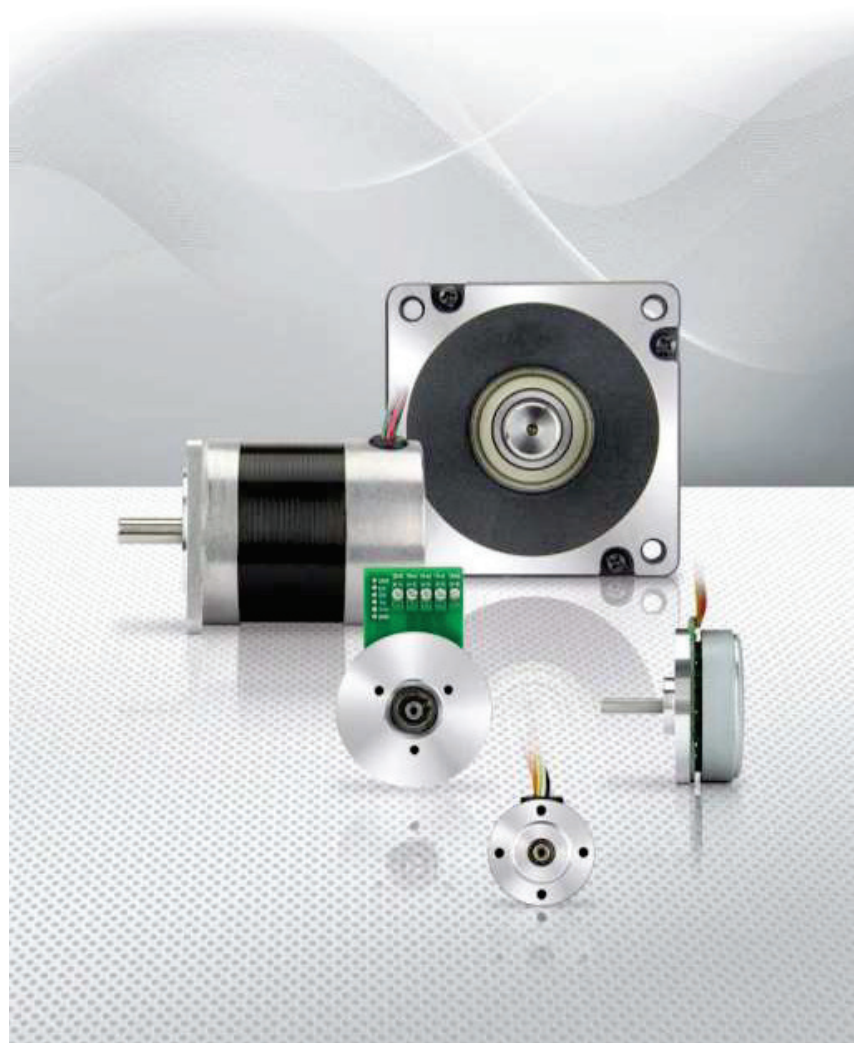
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## BLDC Motors



Electronically commutated 3-phase brushless motors are especially suited for applications that require smooth running and a long service life.

- High efficiency
- High speed
- Slotless and slotted motors, internal or external rotor
- Optional encoder



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## BLDC Motors IP

Protection class **IP65 BLDC motors** from Nanotec have housings that are sealed against damp and dust. The magnetic incremental encoder with 1,024 pulses per revolution is integrated in the housing and does not require additional hall sensors.

- High efficiency
- Strong acceleration
- Precise positioning
- High reliability



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## Linear Actuators



Nanotec offers three types of linear actuators:

- Linear actuators non-captive
- Linear actuators with linear slide (captive)
- Linear positioning drive

By means of specially developed test equipment, we conduct fatigue tests for various screw and load combinations in order to determine the life expectancy for certain applications.



## Motor Controllers



- All controllers and integrated motors are based on the same firmware
- CANopen as internal standard
- External communication via USB, Ethernet, Ethercat, Modbus, Ethernet/IP
- Programmable (Soft SPS functionality) with NanoJ V2
- One controller for BLDC and stepper motors
- Customer-specific OEM solutions



## Plug & Drive Motors



Integrated **Plug & Drive Motors** with closed-loop control are ideally suited for dynamic and precise positioning.

Both stepper and BLDC motors are controlled via the encoder as a function of the load applied and differ only in their number of poles.

- Integrated controller
- Reliable torque, speed and position control
- Programmable with NanoJ V2 for decentralized and multi-axis applications
- Controlled via CANopen
- Optional M12 connector



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## Communicating with P&D Motors and Controllers



Like all Nanotec **controllers, Plug & Drive motors** support several communication methods which can be selected via dip switch, configuration file or software.

- Clock/Direction
- Digital and analog outputs
- Various fieldbusses
- Flow control via NanoJ V2



**NanoJ V2**

**CANopen**

**EtherCAT**



**ClosedLoop**

**Modbus**

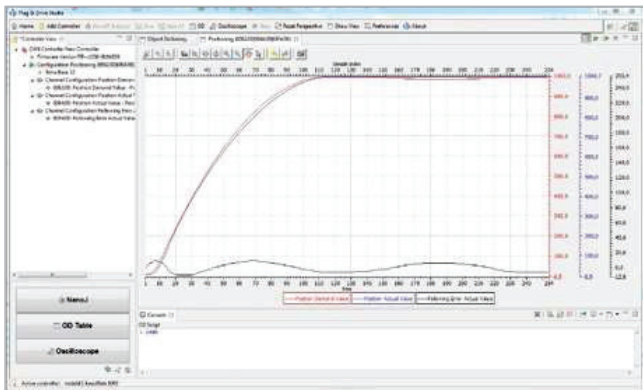
## Plug & Drive Studio



For programming our motor controllers, Nanotec offers a new software called the **Plug & Drive Studio**.

The controller can be accessed from a PC via field bus (CANopen, Ethernet, Modbus).

To tune the controller parameters, an integrated oscilloscope displays up to eight objects simultaneously.



## Closed-Loop Technology



### Closed-loop stepper motor without encoder!

- No step losses
- No resonances
- No overheating



#### Sensorless commutation

The new sensorless control for stepper motors calculates a virtual encoder signal that enables servo operation of the motor beginning at just a few rotations per second. This way closed-loop control without an encoder is possible.

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## High-tech solutions for your optimum drive



Nanotec offers a broad range of advanced standard products as well as customer-specific drive solutions.

From the development to the production of prototypes and the final product, we manage every aspect of our products' life cycle.

Well-trained staff and high-quality production facilities guarantee stable manufacturing processes and outstanding production depth.

Nanotec products are available directly from us or from our worldwide network of distributors and resellers. Our complete range of products can be found at [www.nanotec.de](http://www.nanotec.de)

