HEIDENHAIN


# EnDat

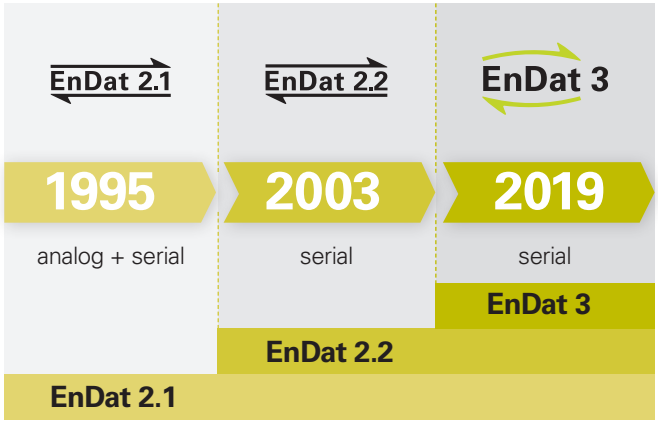
## Proven Interface Technology Continuously Further Developed

EnDat is not only fast, high-output, and safe, but also universally deployable. That's why EnDat has long been a well-established interface in the **automation**, **machine tool**, and **electronics** industries. EnDat lets you expand the capabilities within your application to create true added value. Find out more about EnDat at www.endat.de.


EnDat is a digital, bidirectional interface between the encoder and the subsequent electronics. Along with position values, EnDat can transmit additional data for a variety of uses, including evaluation of an encoder's function reserve through online diagnostics. EnDat also gives you access to the encoder's internal memory for reading the electronic ID label, storing operating-status data, and more.

With EnDat, you benefit from a proven and scalable interface technology:

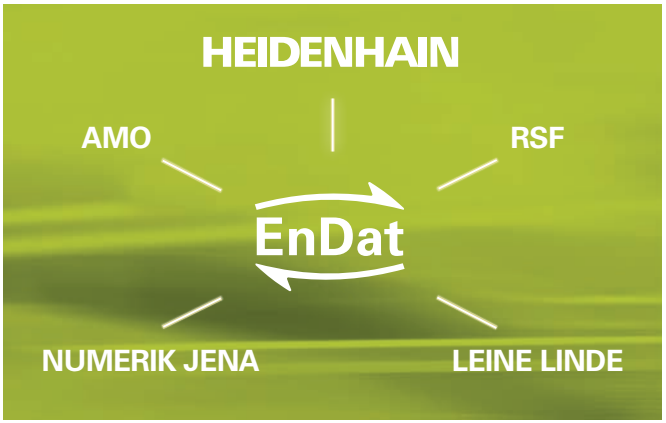
- Fast data transmission between the encoder and subsequent electronics
- High transmission reliability and noise immunity
- A proven track record of over 20 years in diverse applications
- Continual further development




## Added value for your application

## Innovation based on continuity

**Product portfolio**
EnDat lets you use a wide range of encoders from various manufacturers.




**Universal**
- Broad selection of encoders from various manufacturers
- Easy cabling and integration of additional sensors

**High-performance**
- Short cycle times
- High bandwidth

**Communicative**
- Transmission of position values and sensor data
- Extensive system monitoring for Industry 4.0

**Diagnostics-capable**
- Electronic ID label for automatic system installation
- Online encoder diagnostics
- Storage of operating status data

**Safe**
- For safety-related applications up to SIL 3


## Wide range of encoders

## Flexible within the application

**EnDat 3**
Introduction at SPS 2019

## EnDat 3

**Hybrid cable**
- Purely serial, two-wire transmission with the HMC 2 hybrid cable
- Standard cable and connectors

**Functional safety**
- Up to SIL 3
- Black-channel communication

**Sensor integration**
- Simple integration of an external motor temperature sensor (KTY 84, PT 1000)

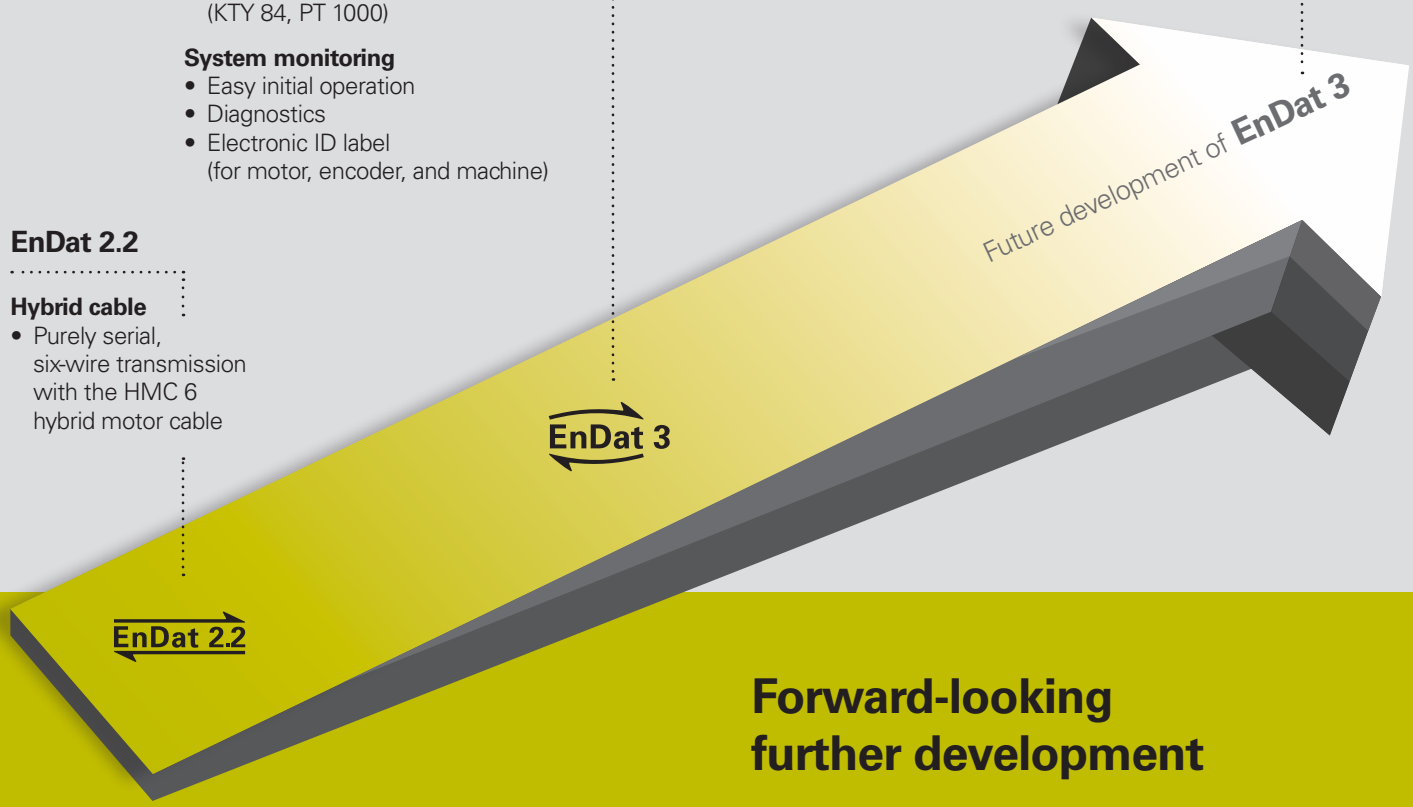
**System monitoring**
- Easy initial operation
- Diagnostics
- Electronic ID label (for motor, encoder, and machine)

## EnDat 3 further development

- Bus operation (e.g., for six axes with 50 µs cycle time)
- Operating status data acquisition through the encoder
- Support for other external sensors
- Transmission of additional position data for multidimensional measurement technology

## EnDat 2.2

**Hybrid cable**
- Purely serial, six-wire transmission with the HMC 6 hybrid motor cable




# Forward-looking further development

DR. JOHANNES HEIDENHAIN GmbH develops and manufactures linear encoders, angle encoders, rotary encoders, digital readouts, touch probes, and numerical controls. With its products, HEIDENHAIN supplies machine tool manufacturers and producers of automated equipment and machines, especially for the semiconductor and electronics manufacturing industries.

HEIDENHAIN is represented in all industrialized countries—primarily through wholly owned subsidiaries. Sales engineers and service technicians support the user on-site with advisory services and servicing.

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