



Heavy-Duty Incremental Rotary Encoders – Usage and Technology

Rotary encoders are used for accurate position measurement and speed feedback. Due to their universal application possibilities, rotary encoders can be found in almost all applications in automation technology, as well as in machine and plant engineering.

Functional Principle of Incremental Rotary Encoders

Incremental rotary encoders provide a defined number of pulses per shaft revolution, allowing the determination of the machine speed. Measurement of the number of pulses per unit of time provide this rotational speed.

Possible Fields of Application for Heavy-Duty Incremental Rotary Encoders

In extreme environments, heat, cold, dirt, constant vibration, powerful shocks, and electromagnetic interference are typical real-world conditions. The challenge for rotary encoders in these adverse conditions is combining high precision, robustness, durability, and a compact design. Pepperl+Fuchs meets these requirements with the EN11HD series, thereby signaling a new chapter of accomplishments in heavy-duty incremental rotary encoders.

Your automation, our passion.

Process Interfaces

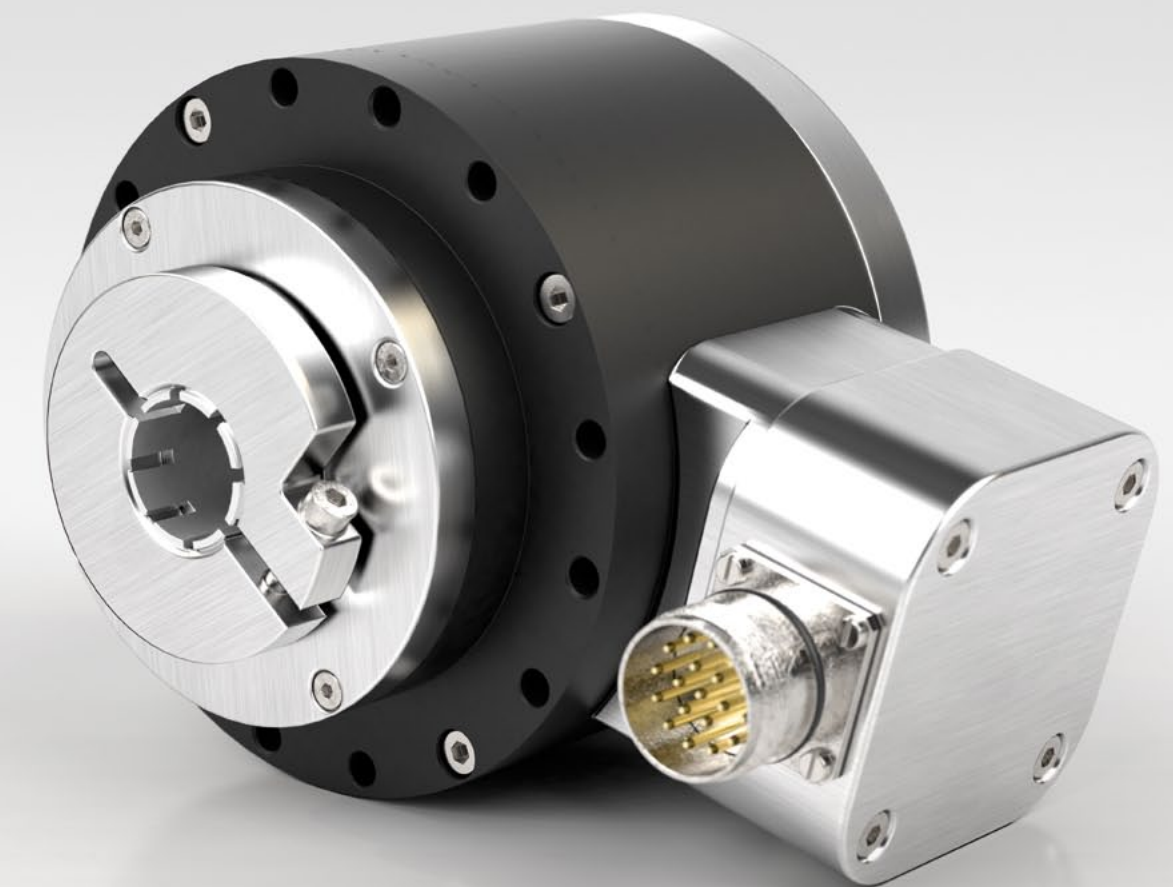
- Intrinsically Safe Barriers
- Signal Conditioners
- Fieldbus Infrastructure
- Remote I/O Systems
- HART Interface Solutions
- Wireless Solutions
- Level Measurement
- Purge and Pressurization Systems
- Industrial Monitors and HMI Solutions
- Explosion Protection Equipment
- Solutions with Process Interfaces

Industrial Sensors

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- AS-Interface
- Identification Systems
- Logic Control Units

Installing Flexibility.
Maximizing Performance.
Astonishing Durability.

EN11HD
Heavy-Duty Incremental
Rotary Encoder



Tough in Rough Conditions – the Heavy-Duty Solution for Extreme Environments

The heavy-duty incremental rotary encoder series ENI11HD provides reliable speed feedback for large asynchronous motors. Extremely robust and durable, the ENI11HD Series allows improved machine performance in the steel industry, shipbuilding, mining, and offshore drilling operations.

ENI11HD – High Performance for Demanding Applications

The ENI11HD series impresses with a number of unique performance features that include resistance to heat, cold, dirt, constant vibration, powerful shocks, and electromagnetic interference. These conditions are no match for the ENI11HD heavy-duty incremental rotary encoders. Plus, the high degree of protection makes them resistant to the most adverse environmental conditions



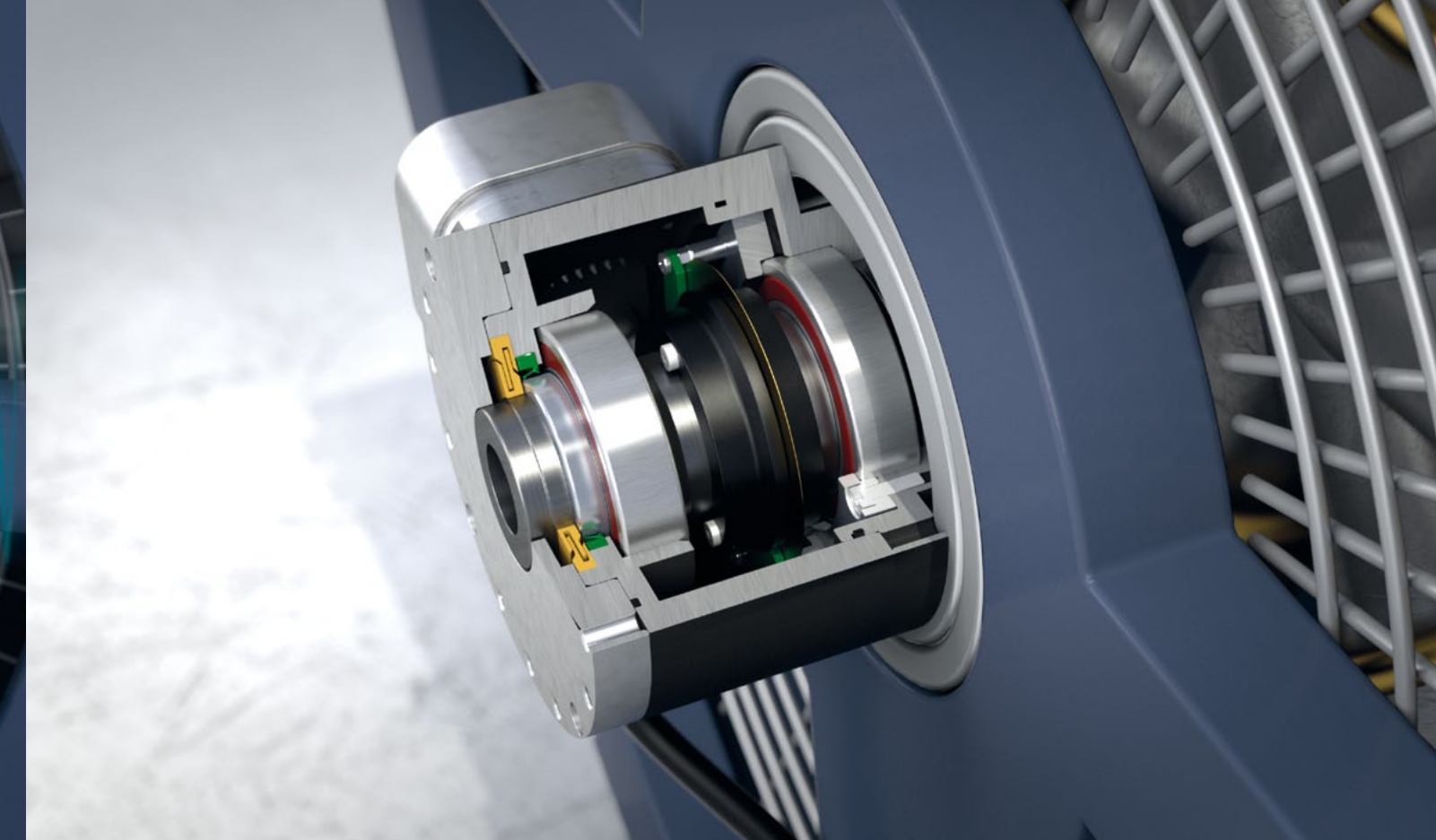
The heavy-duty incremental rotary encoder series ENI11HD

Highlights

- Resistance to shaft currents increases bearing life
- Flexible installation with four-position connection access
- Robust construction provides extreme shock and vibration resistance
- High degree of protection, IP66/IP67 and IP69K, for use in harsh applications
- Reliable operation under very high EMC conditions



Robust construction provides extreme shock and vibration resistance



Resistance to shaft currents increases bearing life

Extremely Robust for Reliable Processes

In demanding industries, such as the steel industry, shipbuilding, mining, or on offshore facilities, materials weighing hundreds of tons often need to be moved. Large asynchronous motors are used to provide the power. Highly robust rotary encoders are used for machine feedback so that the speed and the sequence of the individual process steps can be controlled.

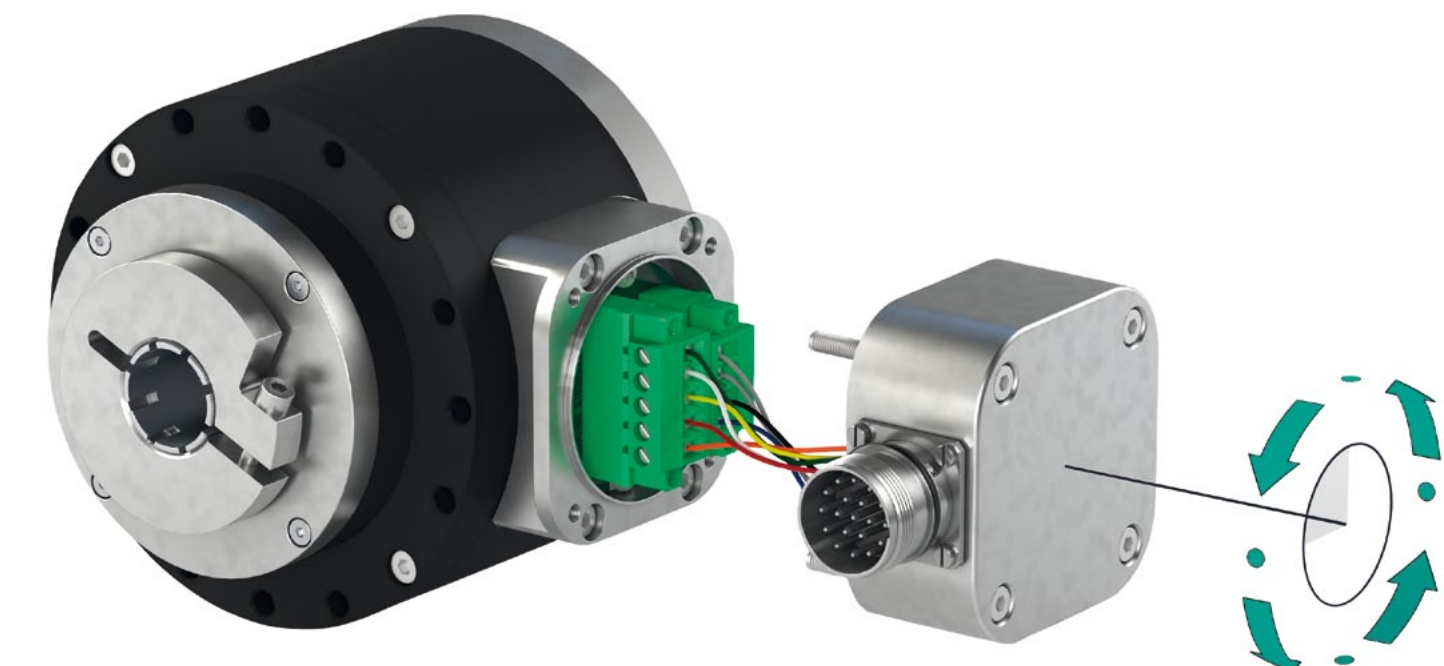
Technical Information	
Mechanical interfaces	Hollow and recessed hollow shaft up to Ø 28 mm
Shock/vibration	200 g/20 g
Shaft load, axial/radial	300 N/400 N
Degree of protection	IP66/IP67 and IP69K
Temperature	-40 to +80°C
Model number	ENI11HD

Brave the Elements

Extreme environmental conditions like constant vibration, powerful shocks, and shaft currents are strong enough to destroy the ball bearings in conventional rotary encoders – but not in the ENI11HD. These heavy-duty incremental rotary encoders are resistant to such pulsating currents. With their robust design, the rotary encoders are unaffected by the electrical currents generated by the induced voltages and the constant rotation of the motor shafts.

Reliable and Easy to Handle

The heavy-duty ENI11HD incremental rotary encoder series is very robust and combines a long service life with a high level of reliability. The cover on the junction box, which can be rotated 4x 90°, provides greater flexibility during installation. The easy cable connection saves installation time and provides freedom to use various cables in the field.



Flexible installation with four-position connection access