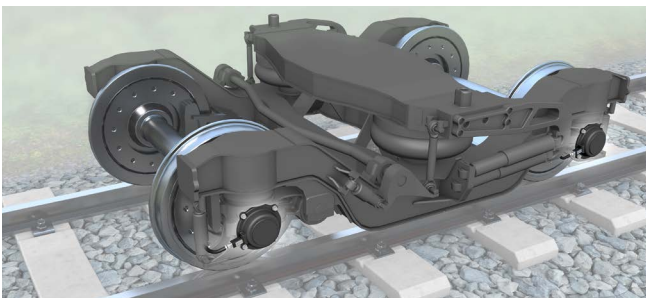


Axle speed measurement.

BPIK – High performance bearingless encoder.

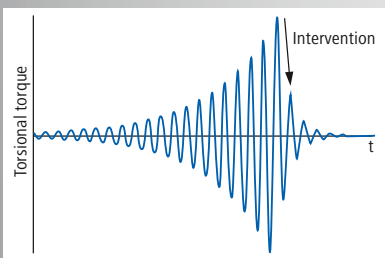
Baumer's innovative axle encoder portfolio provides reliable and proven solutions for speed measurement with additional measurement functionalities for acceleration, temperature and torsional vibration. The robust magnetic sensing technology offers superb signal quality and flexibility.

- Drastically simplified axle configuration for minimized cabling and faster installation
- Multi-unit design with up to two independent encoder units per sensor head
- Each encoder unit individually configurable to match specific requirements of any subsystem
- Incremental outputs for current and voltage can be freely combined in one sensor head
- Freely configurable number of pulses up to 1200 ppr, separately for each encoder unit
- Smart functions, such as direction of rotation, digital speed threshold, heartbeat signal
- Minimized life cycle costs and no mechanical wear due to bearingless design
- Simple mechanical attachment to existing axle box designs, as dimensioned like conventional pick-up Hall sensors
- Dynamic and accurate speed measurement at all speeds



Main application fields

- Traction control
- Torsional vibration detection
- Wheel slide protection
- Train control
- Juridical recording
- Speed indication
- Hot box detection
- Bogie hunting and derailment detection



Torsional vibration detection

Reliable, accurate and fast torsional vibration detection is key to increase traction performance, wheel set lifetime and safety. BPIK signals enable torsional vibration detection with ultimate dynamics and precision, by unsurpassed signal quality and robustness, high resolution and zero backlash. This cuts down on wear while improving traction and passenger comfort.

Product overview BPIK



	BPIK
Pulses per revolution	Max. 1200 ppr (configurable for each encoder unit)
Number of incremental signals per encoder unit	2 (A 90° B)
Number of encoder units per sensor head	Max. 2
Phase shift between incremental signals of an encoder unit	90°
Duty cycle of incremental signals	50 %
Voltage supply	10.8 ... 26.4 VDC (class S1 according EN 50155)
Current consumption per encoder unit	Typ. 40 mA at 15 VDC (push-pull, without load) Typ. 50 mA at 21 VDC (current)
Sensor output circuits - push-pull	Load max. ±30 mA UHIGH min. = +Vs - 2.5 V, ULOW max. = 2.5 V
Sensor output circuits - current	LOW: min. 5 mA, HIGH: max. 16 mA, Δ LOW-HIGH: 7 ... 8 mA TRISTATE: max. 0.1 mA, Load resistance: 230 Ω ±10 % (others on request)
Cutoff frequency	40 kHz
Reverse polarity and short circuit protection	Yes
Insulation resistance	Min. 100 MΩ at 500 VDC
Dielectric strength	1500 VAC (EN 50155)
Ambient temperature	Class OT4 (EN 50155), -40 ... +70 °C
Protection	Front surface of sensor head IP 66, rest IP 69
Shock and vibration	Category 3 (EN 61373)
Fire hazard level	HL3 (EN 45545-2)
Identification	GS1 compliant product labels with GIAI and GTIN
Safety integrity level	SIL2 (EN 50128, EN 50129)
Cable conduit type	Synthetic rubber tube, ø20.7 mm
Cable exit sensor head	Straight, side

Additional options available on request: Temperature sensor, acceleration sensor, function control signal, digital speed threshold signal, direction of rotation signal and communication interfaces

Additional information on our railway solutions:

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