	Incremental				
	ERN 1321	**ERN 1381**	**ERN 1387**	**ERN 1326**	
Incremental signals	⊓⊔TTL	∿ V_{PP} [1]		⊓⊔TTL	
Line count*/system accuracy	1024/± 64" 2048/± 32" 4096/± 16"	512/± 60" 2048/± 20" 4096/± 16"	2048/± 20"	1024/± 64" 2048/± 32" 4096/± 16"	8192/± 16" [5]
Reference mark	One				
Scanning frequency Edge separation a Cutoff frequency –3 dB	≥ 300 kHz ≥ 0.35 µs –	– ≥ 210 kHz		≥ 300 kHz ≥ 0.35 µs –	≥ 150 kHz ≥ 0.22 µs
Absolute position values	–		∿ V_{PP} [1]	⊓⊔TTL	
Position values per rev	–		Z1 track [2]	3 x ⊓⊔TTL [3]	
Power supply	5 V ± 10 %		5 V ± 5 %		
Current consumption without load	≤ 120 mA		≤ 130 mA	≤ 150 mA	
Electrical connection via PCB connector	12-pin		14-pin	16-pin	
Shaft	Taper shaft Ø 9.25 mm; taper 1:10				
Mech. permissible speed n	≤ 15000 min^{-1}				
Starting torque at 20 °C	≤ 0.01 Nm				
Moment of inertia of rotor	2.6 · 10^{-6} kgm^2				
Natural frequency of the stator coupling	≥1800 Hz				
Permissible axis motion of measured shaft	± 0.5 mm				
Vibration 55 to 2000 Hz **Shock** 6 ms	≤ 300 m/s^2 [4] (EN 60068-2-6) ≤ 2000 m/s^2 (EN 60068-2-27)				
Max. operating temp.	120 °C	120 °C *4096 lines:* 80 °C	120 °C		
Min. operating temp.	–40 °C				
Protection EN 60529	IP 40 when mounted				
Weight	Approx. 0.25 kg				

* Please select when ordering

[1] Restricted tolerances
- Signal amplitude: 0.8 to 1.2 V_{PP}
- Asymmetry: 0.05
- Amplitude ratio: 0.9 to 1.1
- Phase angle: 90° ± 5° elec.
- Signal-to-noise ratio E, F: 100 mV

[2] One sine and one cosine signal per revolution

[3] Three square-wave signals with signal periods of 90° or 120° mechanical phase shift

[4] As per standard for room temperature, the following applies for operating temperature
Up to 100 °C: ≤ 300 m/s^2
Up to 120 °C: ≤ 150 m/s^2

[5] Through integrated signal doubling