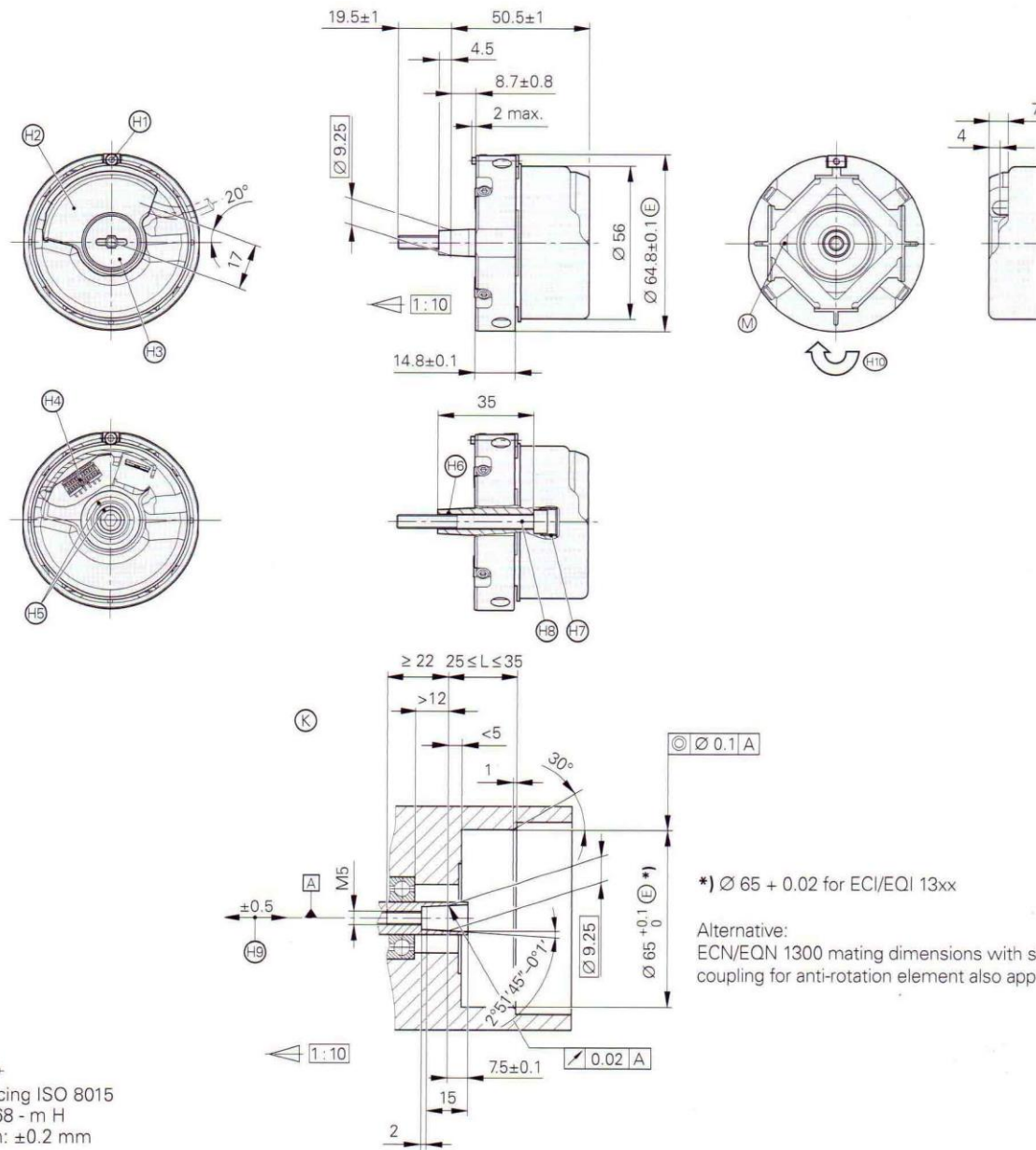


ERN 1300 series

Incremental rotary encoders






- Stator coupling 06 for axis mounting
- Taper shaft 65B



mm

 Tolerancing ISO 8015
 ISO 2768 - m H
 < 6 mm: ±0.2 mm

- ⊠ = Bearing of mating shaft
- ⊙ = Required mating dimensions
- ⊙ = Measuring point for operating temperature
- ⊙ = Clamping screw for coupling ring, width A/F 2. Tightening torque: 1.25 – 0.2 Nm
- ⊙ = Die-cast cover
- ⊙ = Screw plug, width A/F 3 and 4. Tightening torque: 5 + 0.5 Nm
- ⊙ = PCB connector
- ⊙ = Reference mark position indicated on shaft and cap
- ⊙ = M10 back-off thread
- ⊙ = M6 back-off thread
- ⊙ = Self-tightening screw, M5 x 50, DIN 6912, width A/F 4. Tightening torque: 5 + 0.5 Nm
- ⊙ = Compensation of mounting tolerances and thermal expansion, no dynamic motion permitted
- ⊙ = Direction of shaft rotation for output signals as per the interface description

	Incremental				
	ERN 1321	ERN 1381	ERN 1387	ERN 1326	
Interface	 TTL	 1 V _{PP} ¹⁾		 TTL	
Line count*/ System accuracy	1 024/± 64" 2 048/± 32" 4 096/± 16"	512/± 60" 2 048/± 20" 4 096/± 16"	2 048/± 20"	1 024/± 64" 2 048/± 32" 4 096/± 16"	8 192/± 16" ⁵⁾
Reference mark	One				
Output 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
Commutation signals	-		 1 V _{PP} ¹⁾	 TTL	
Width*	-		Z1 track ²⁾	3 x 120°; 4 x 90° ³⁾	
Electrical connection	Via 12-pin PCB connector		Via 14-pin PCB connector	Via 16-pin PCB connector	
Voltage supply	5 V ± 0.5 V DC		5 V ± 0.25 V DC	5 V ± 0.5 V DC	
Current consumption (without load)	≤ 120 mA		≤ 130 mA	≤ 150 mA	
Shaft	Taper shaft Ø 9.25 mm; taper 1:10				
Mech. permiss. speed n	≤ 15 000 min ⁻¹				
Starting torque	≤ 0.01 Nm (at 20 °C)				
Moment of inertia of rotor	2.6 · 10 ⁻⁶ kgm ²				
Natural frequency of the stator coupling	≥ 1 800 Hz				
Permissible axial 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 4 096 lines: 80 °C	120 °C		
Min. operating temp.	-40 °C				
Protection EN 60529	IP 40 when mounted				
Weight	≈ 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; see the brochure *Interfaces of HEIDENHAIN Encoders*

³⁾ Three square-wave signals with signal periods of 90° or 120° mechanical phase shift; see the brochure *Interfaces of HEIDENHAIN Encoders*

⁴⁾ As per standard for room temperature; for operating temperature. Up to 100 °C: ≤ 300 m/s²
Up to 120 °C: ≤ 150 m/s²

⁵⁾ Through integrated signal doubling