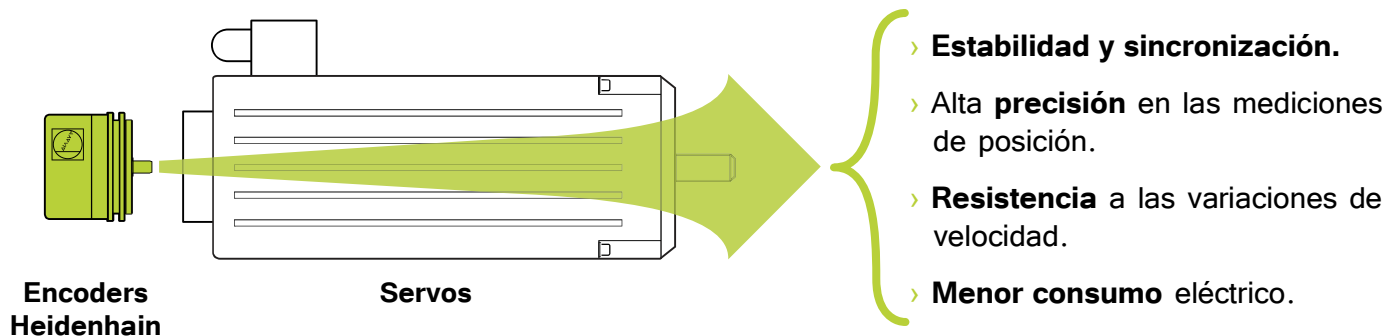


ENCODERS PARA SERVOS HEIDENHAIN



» RENDIMIENTO Y PRECISIÓN PARA SUS MOTORES



› MODELOS: ECN/EQN 1300, ERN 1300, ERO 1200 / 1400.

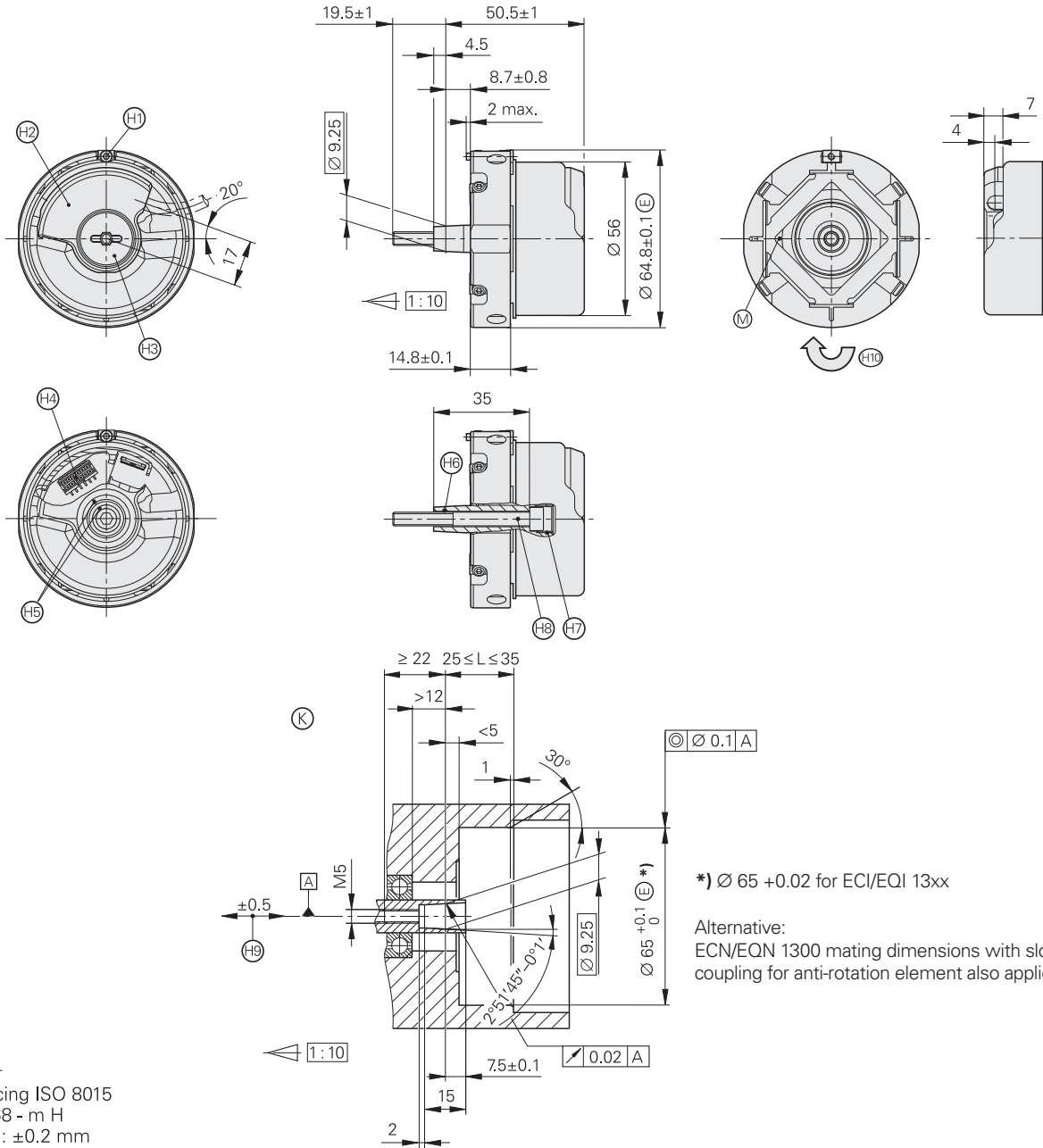
- › **Resistentes** a altos grados de temperatura (+100°C).
- › Amplio rango de **protección** (Ej. IP64).
- › **Montaje sencillo.**
- › **Alto grado de precisión** en la generación de impulsos por vuelta.
- › Aptos para **motores trifásicos (AC/DC).**
- › Señales **incrementales y absolutas.**
- › 1 año de **garantía.**



ERN 1300 Series

Rotary encoders with integral bearing for integration in motors


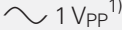



- Mounted stator coupling
- Installation diameter 65 mm
- Taper shaft



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

*) Ø 65 +0.02 for EC1/EQ1 13xx
 Alternative:
 ECN/EQN 1300 mating dimensions with slot for stator coupling for anti-rotation element also applicable.

- ▣ = 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
- Ⓜ = M10 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	
Incremental signals		 1 V _{PP} ¹⁾			
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				
Scanning frequency	≤ 300 kHz	–	–	≤ 300 kHz	≤ 150 kHz
Edge separation a	≥ 0.35 μs	–	–	≥ 0.35 μs	≥ 0.22 μs
Cutoff frequency –3 dB	–	≥ 210 kHz	–	–	–
Absolute position values	–		 1 V _{PP} ¹⁾		
Commutation signals*	–		Z1 track ²⁾	3 x 120°; 4 x 90° ³⁾	
Power supply	5 V DC ± 10 %		5 V DC ± 5 %	5 V DC ± 10 %	
Current consumption (w/o 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. permitt. speed n	≤ 15 000 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	≥ 1 800 Hz				
Permissible axial motion of measured shaft	± 0.5 mm				
Vibration 55 Hz to 2 000 Hz	≤ 300 m/s ² ⁴⁾ (EN 60 068-2-6)				
Shock 6 ms	≤ 2 000 m/s ² (EN 60 068-2-27)				
Max. operating temp.	120 °C	120 °C 4 096 lines: 80 °C	120 °C		
Min. operating temp.	–40 °C				
Protection EN 60 529	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; see *Commutation Signals for Block Commutation*

⁴⁾ As per standard for room temperature, the following applies for operating temperature
Up to 100 °C: ≤ 300 m/s²
Up to 120 °C: ≤ 150 m/s²

⁵⁾ Through integrated signal doubling

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