

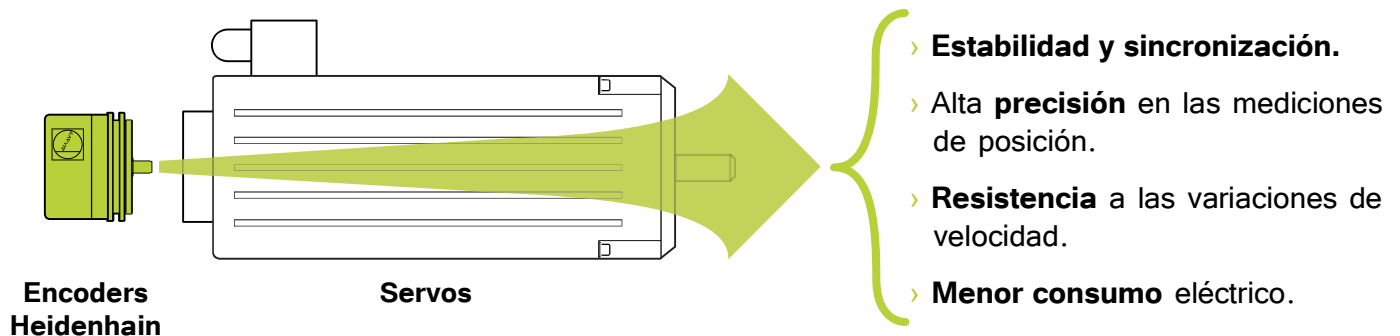
# ENCODERS PARA SERVOS



# 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.**

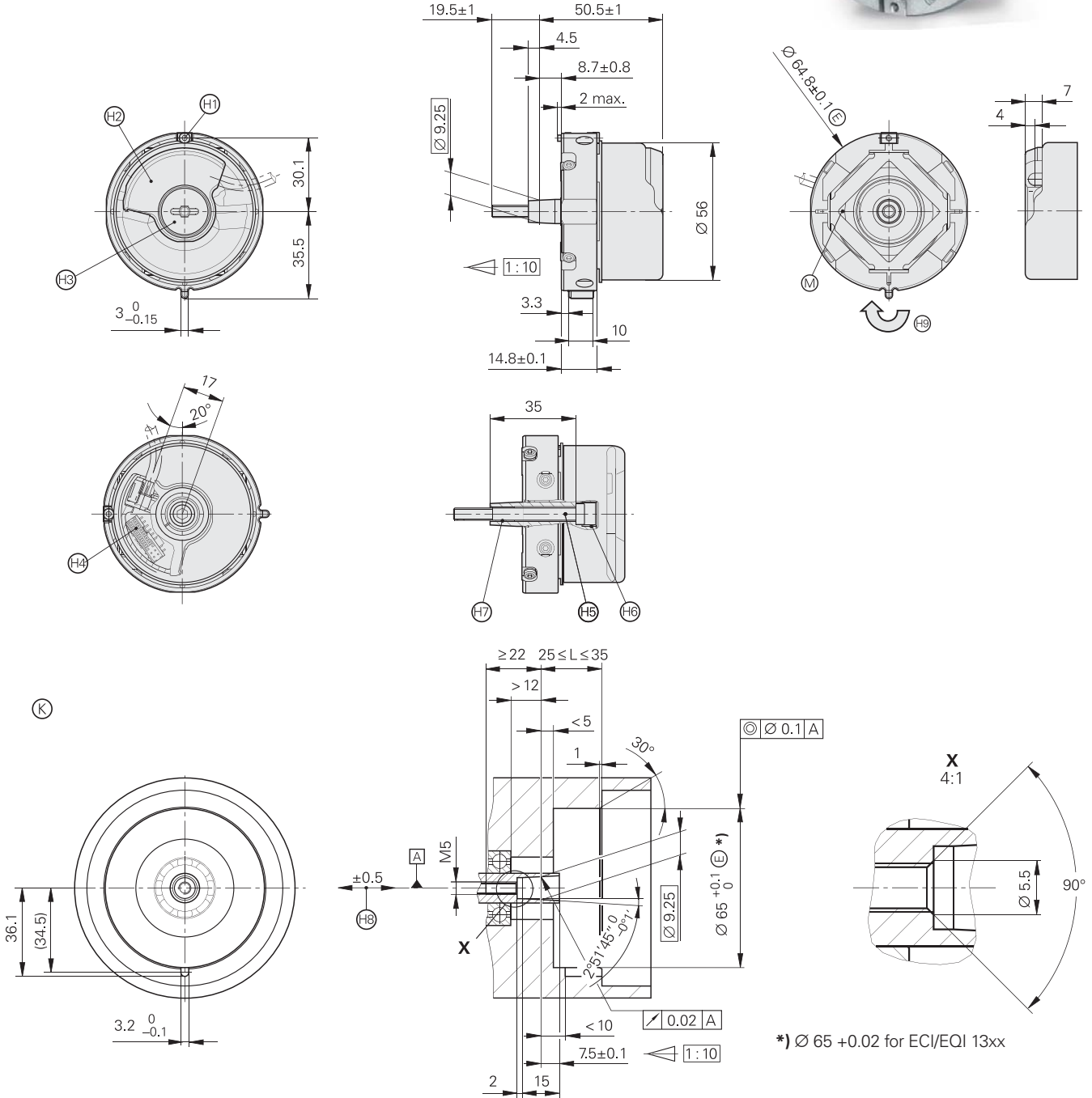


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# ECN/EQN 1300 Series



Rotary encoders with integral bearing for integration in motors

- Mounted stator coupling with anti-rotation element for fault exclusion
- Installation diameter 65 mm
- Taper shaft



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, widths A/F 3 and 4, tightening torque 5+0.5 Nm
- Ⓤ = PCB connector
- Ⓦ = Screw M5 x 50 DIN 6912 width A/F 4 with materially bonding anti-rot. lock, tightening torque 5+0.5 Nm
- Ⓧ = M10 back-off thread
- Ⓨ = M6 back-off thread
- Ⓩ = Compensation of mounting tolerances and thermal expansion, no dynamic motion permitted
- ⓐ = Direction of shaft rotation for output signals as per the interface description

	<b>Absolute</b>			
	<b>ECN 1313</b>	<b>ECN 1325</b> 	<b>EQN 1325</b>	<b>EQN 1337</b> 
<b>Incremental signals</b>	$\sim 1 V_{PP}^{1)}$	–	$\sim 1 V_{PP}^{1)}$	–
Line count *	512 2048	2048	512 2048	2048
Cutoff frequency –3 dB	2048 lines: $\geq 400$ kHz 512 lines: $\geq 130$ kHz	–	2048 lines: $\geq 400$ kHz 512 lines: $\geq 130$ kHz	–
<b>Absolute position values</b>	EnDat 2.2			
Ordering designation	EnDat 01	EnDat 22	EnDat 01	EnDat 22
Position values/rev	8192 (13 bits)	33554432 (25 bits)	8192 (13 bits)	33554432 (25 bits)
Revolutions	–		4096 (12 bits)	
Elec. permissible speed/ Deviation <sup>2)</sup>	512 lines: 5000 min <sup>-1</sup> /± 1 LSB 12000 min <sup>-1</sup> /± 100 LSB 2048 lines: 1500 min <sup>-1</sup> /± 1 LSB 12000 min <sup>-1</sup> /± 50 LSB	15000 min <sup>-1</sup> (for continuous position value)	512 lines: 5000 min <sup>-1</sup> /± 1 LSB 12000 min <sup>-1</sup> /± 100 LSB 2048 lines: 1500 min <sup>-1</sup> /± 1 LSB 12000 min <sup>-1</sup> /± 50 LSB	15000 min <sup>-1</sup> (for continuous position value)
Calculation time $t_{cal}$	$\leq 9 \mu s$	$\leq 7 \mu s$	$\leq 9 \mu s$	$\leq 7 \mu s$
<b>System accuracy</b>	512 lines: $\pm 60''$ ; 2048 lines: $\pm 20''$			
<b>Power supply</b>	3.6 to 14 V DC			
Power consumption (maximum)	3.6 V: $\leq 600$ mW 14 V: $\leq 700$ mW		3.6 V: $\leq 700$ mW 14 V: $\leq 800$ mW	
Current consumption (typical)	5 V: 85 mA (without load)		5 V: 105 mA (without load)	
<b>Electrical connection</b> Via PCB connector	12-pin	Rotary encoder: 12-pin Thermistor <sup>3)</sup> : 4-pin	12-pin	Rotary encoder: 12-pin Thermistor <sup>3)</sup> : 4-pin
<b>Shaft</b>	Taper shaft $\varnothing 9.25$ mm; taper 1:10			
<b>Mech. permiss. speed n</b>	$\leq 15000$ min <sup>-1</sup>		$\leq 12000$ min <sup>-1</sup>	
<b>Starting torque</b> At 20 °C	$\leq 0.01$ Nm			
<b>Moment of inertia</b> of rotor	$2.6 \cdot 10^{-6}$ kgm <sup>2</sup>			
<b>Natural frequency of the stator coupling</b>	$\geq 1800$ Hz			
<b>Permissible axial motion of measured shaft</b>	$\pm 0.5$ mm			
<b>Vibration</b> 55 Hz to 2000 Hz <b>Shock</b> 6 ms	$\leq 300$ m/s <sup>2</sup> <sup>4)</sup> (EN 60068-2-6) $\leq 2000$ m/s <sup>2</sup> (EN 60068-2-27)			
<b>Max. operating temp.</b>	115 °C			
<b>Min. operating temp.</b>	–40 °C			
<b>Protection</b> EN 60529	IP 40 when mounted			
<b>Weight</b>	Approx. 0.25 kg			

\* Please select when ordering

<sup>1)</sup> Restricted tolerances  
Signal amplitude: 0.8 to 1.2  $V_{PP}$   
Asymmetry: 0.05  
Amplitude ratio: 0.9 to 1.1  
Phase angle:  $90^\circ \pm 5^\circ$  elec.  
Signal-to-noise ratio E, F:  $\geq 100$  mV

<sup>2)</sup> Velocity-dependent deviations between the absolute and incremental signals

<sup>3)</sup> Evaluation optimized for KTY 84-130

<sup>4)</sup> Valid as per standard at room temperature; Valid at operating temperatures up to 100 °C:  $\leq 300$  m/s<sup>2</sup>;  
up to 115 °C:  $\leq 150$  m/s<sup>2</sup>

**Functional Safety** for ECN 1325 and EQN 1337 upon request  
For dimensions and specification see the Product Information document

Representante oficial de:



**HEIDENHAIN**

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