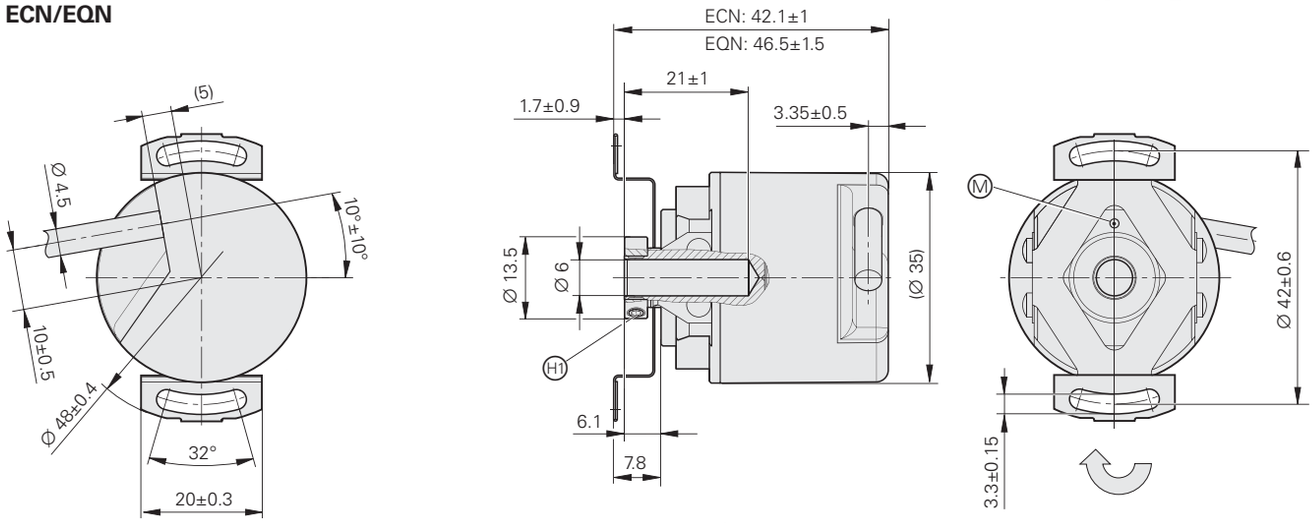
ECN, EQN, ERN 1000 Series

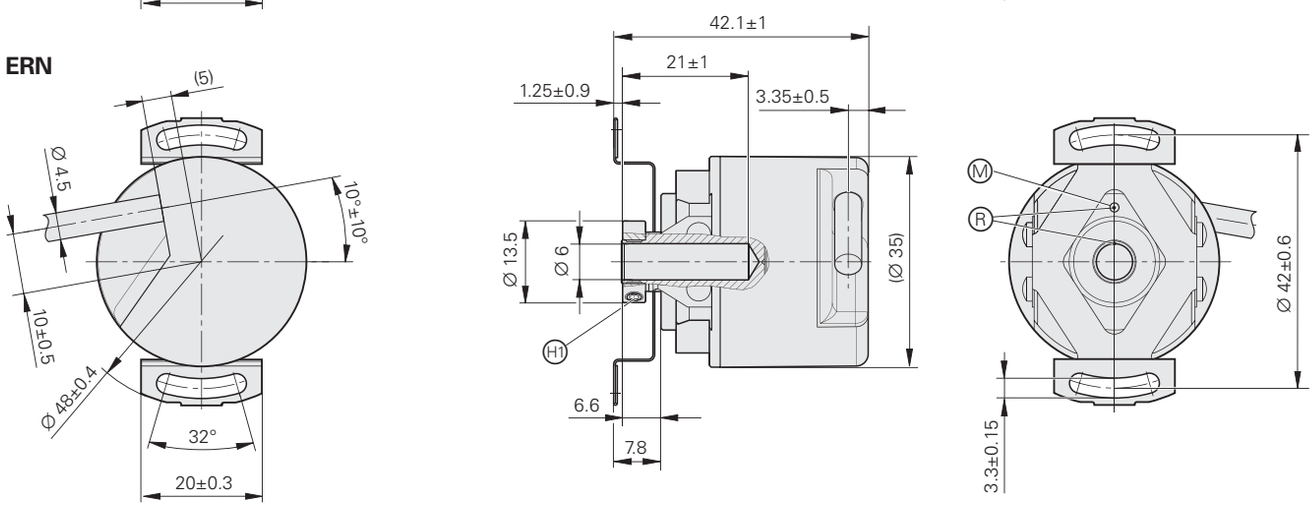


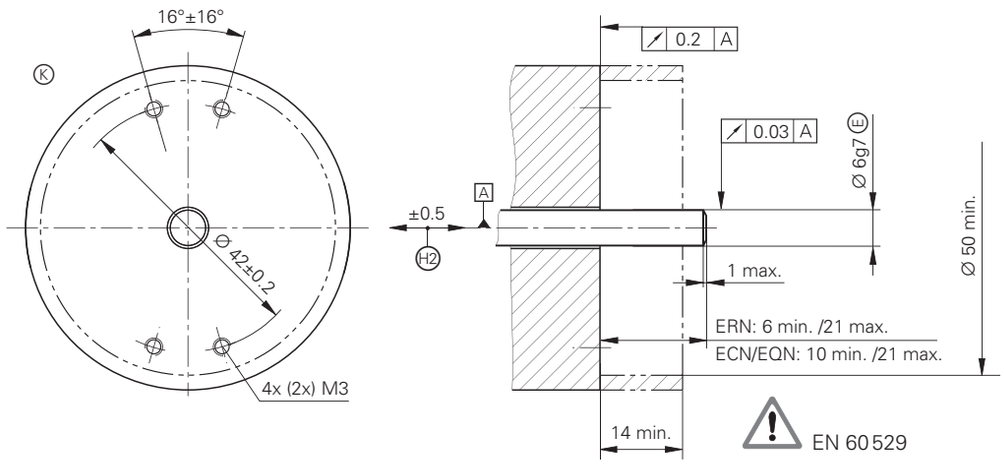
- **Rotary encoders with mounted stator coupling**
- **Compact dimensions**
- **Blind hollow shaft Ø 6 mm**
- **Functional Safety for ECN 1023/EQN 1035 upon request**

ECN/EQN



ERN





Dimensions in mm

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

A = Bearing of mating shaft
K = Required mating dimensions
M = Measuring point for operating temperature
R = Reference mark position ± 20°
H1 = 2 screws in clamping ring. Tightening torque 0.6±0.1 Nm, width across flats 1.5
H2 = Compensation of mounting tolerances and thermal expansion, no dynamic motion
Direction of shaft rotation for output signals as per the interface description

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	Incremental			
	ERN 1020	**ERN 1030**	**ERN 1080**	**ERN 1070**
Incremental signals	⊓⊔ TTL	⊓⊔ HTL	∿ 1 V_{PP} [1]	⊓⊔ TTL
Line counts*	100 200 **250** 360 400 **500** 720 900 **1000** **1024** 1250 1500 2000 **2048** **2500** **3600**			**1000** **2500** **3600**
Integrated interpolation*	–			5-fold / 10-fold
Cutoff frequency –3 dB Scanning frequency Edge separation a	– ≤ 300 kHz ≥ 0.39 µs	– ≤ 160 kHz ≥ 0.76 µs	≥ 180 kHz – –	– ≤ 100 kHz ≥ 0.47 µs / – ≤ 100 kHz ≥ 0.22 µs
Power supply **Current consumption** without load	5 V ± 10 % ≤ 120 mA	10 to 30 V ≤ 150 mA	5 V ± 10 % ≤ 120 mA	5 V ± 5 % ≤ 155 mA
Electrical connection*	**Cable 1 m**/5 m, with or **without coupling** M23			**Cable 5 m without** M23 **coupling**
Shaft	Blind hollow shaft D = 6 mm			
Mech. permissible speed n	≤ 12000 min^{-1}			
Starting torque	≤ 0.001 Nm (at 20 °C)			
Moment of inertia of rotor	≤ 0.5 · 10^{-6} kgm^2			
Permissible axial motion of measured shaft	± 0.5 mm			
Vibration 55 to 2000 Hz **Shock** 6 ms	≤ 100 m/s^2 (EN 60068-2-6) ≤ 1000 m/s^2 (EN 60068-2-27)			
Max. operating temp.[2]	100 °C	70 °C	100 °C	70 °C
Min. operating temp.	*For fixed cable:* –30 °C *For frequent flexing:* –10 °C			
Protection EN 60529	IP 64			
Weight	Approx. 0.1 kg			

Bold: These preferred versions are available on short notice

***** Please select when ordering

1) Restricted tolerances: Signal amplitude 0.8 to 1.2 V_{PP}

2) For the correlation between the operating temperature and the shaft speed or supply voltage, see *General Mechanical Information*

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