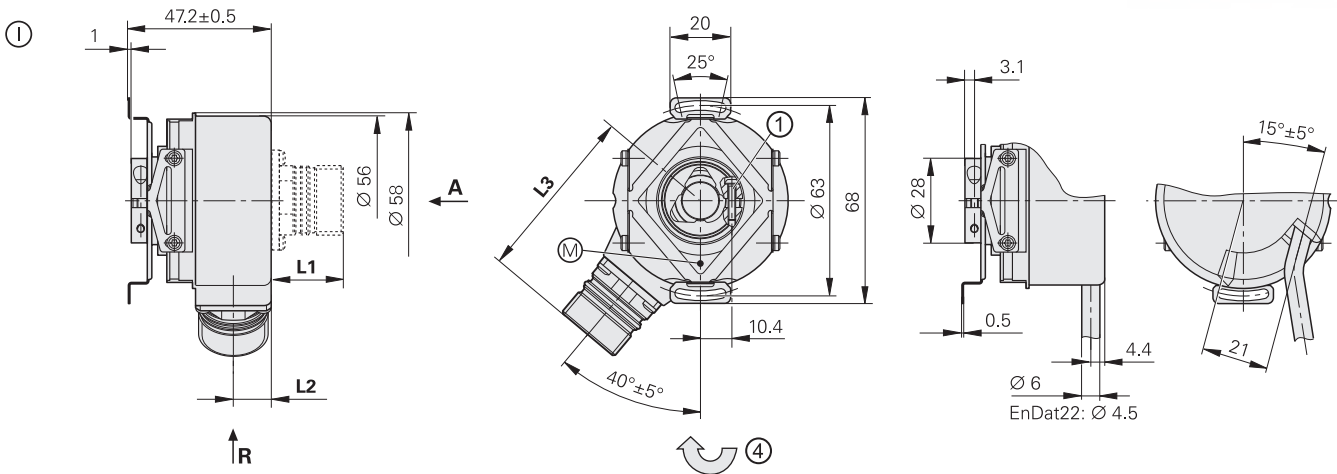


ECN/EQN/ERN 400 series

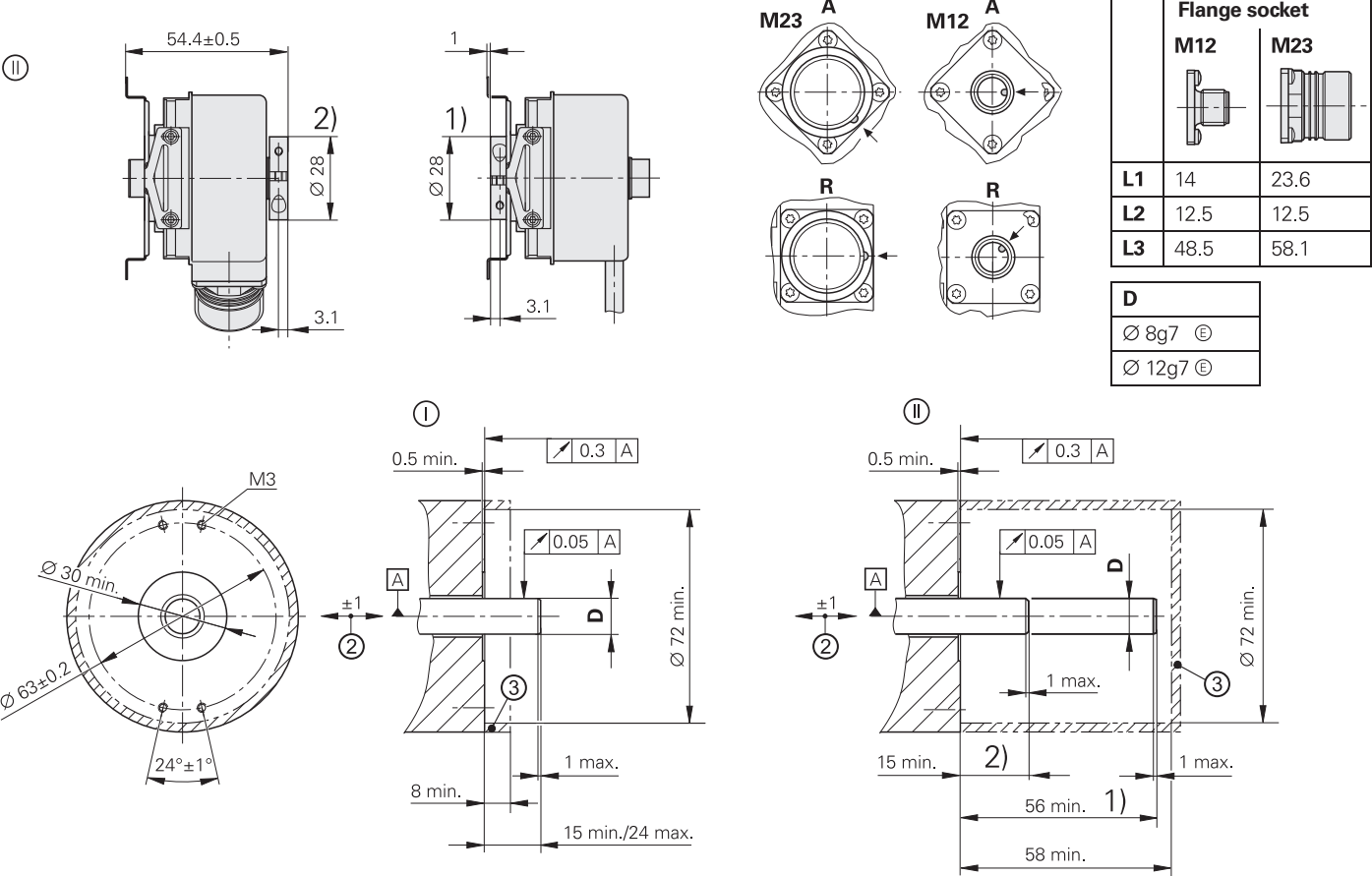
- Absolute and incremental rotary encoders
- Stator coupling for plane surface
 - Blind hollow shaft or hollow through shaft



Blind hollow shaft



Hollow through shaft



mm
Tolerancing ISO 8015
ISO 2768:1989-mH
≤ 6 mm: ±0.2 mm

- Radial cable (can also be used axially)
A = Bearing of mating shaft
M = Measuring point for operating temperature
1 = Clamping screw with X8 hexalobular socket
2 = Compensation of mounting tolerances and thermal expansion; no dynamic motion permitted
3 = Ensure protection against contact (EN 60529)
4 = Incremental rotary encoders: direction of shaft rotation for output signals as per interface description
Absolute rotary encoders: direction of shaft rotation for ascending position values
1) = Clamping ring on housing side (delivery condition)
2) = Clamping ring on coupling side (optionally mountable)

	Incremental			
	ERN 420	ERN 460	ERN 430	ERN 480
Interface	□ □ TTL		□ □ HTL	~ 1 V _{PP} ¹⁾
Line counts*	250 500			–
	1000 1024 1250 2000 2048 2500 3600 4096 5000			
Reference mark	One			
Cutoff frequency –3 dB	–			≥ 180 kHz
Output frequency	≤ 300 kHz			–
Edge separation a	≥ 0.39 µs			–
System accuracy	1/20 of grating period			
Electrical connection*	• M23 flange socket, radial and axial (with blind hollow shaft) • Cable (1 m) without connecting element			
Supply voltage	DC 5 V ±0.5 V	DC 10 V to 30 V	DC 10 V to 30 V	DC 5 V ±0.5 V
Current consumption without load	≤ 120 mA	≤ 100 mA	≤ 150 mA	≤ 120 mA
Shaft*	Blind hollow shaft or hollow through shaft (both available in Ø 8 mm or Ø 12 mm)			
Mech. permiss. speed ²⁾	≤ 6000 rpm/≤ 12 000 rpm ³⁾			
Starting torque (typical) at 20 °C	Blind hollow shaft: 0.01 Nm (with IP66: 0.05 Nm) Hollow through shaft: 0.025 Nm (with IP66: 0.075 Nm)			
Moment of inertia of rotor	≤ 4.6 · 10 ^{–6} kgm ²			
Permiss. axial motion of measured shaft	±1 mm			
Vibration: 55 Hz to 2000 Hz Shock: 6 ms	≤ 300 m/s ² ; flange socket version: 150 m/s ² (EN 60068-2-6); higher values upon request ≤ 2000 m/s ² (EN 60068-2-27)			
Max. operating temp. ²⁾	100 °C	70 °C	100 °C ⁴⁾	
Min. operating temp.	Flange socket or fixed cable: –40 °C; moving cable: –10 °C			
Protection EN 60529	At housing: IP67 (IP66 with hollow through shaft) At shaft inlet: IP64 (with Ø 12 mm: IP66 upon request)			
Mass	≈ 0.3 kg			
Valid for ID	385420-xx	385460-xx	385430-xx	385480-xx ⁵⁾

Bold: This preferred version is available on short notice.
 * Please select when ordering
 1) Limited tolerances: signal amplitude: 0.8 V_{PP} to 1.2 V_{PP}
 2) For the relationship of operating temperature to shaft speed and supply voltage, see “General mechanical information”
 3) With two shaft clampings (only with hollow through shaft)
 4) 80 °C for ERN 480 with 4096 or 5000 lines
 5) Available with mechanical fault exclusion; for deviating specifications and special mounting information, see the *Fault Exclusion* Customer Information document