

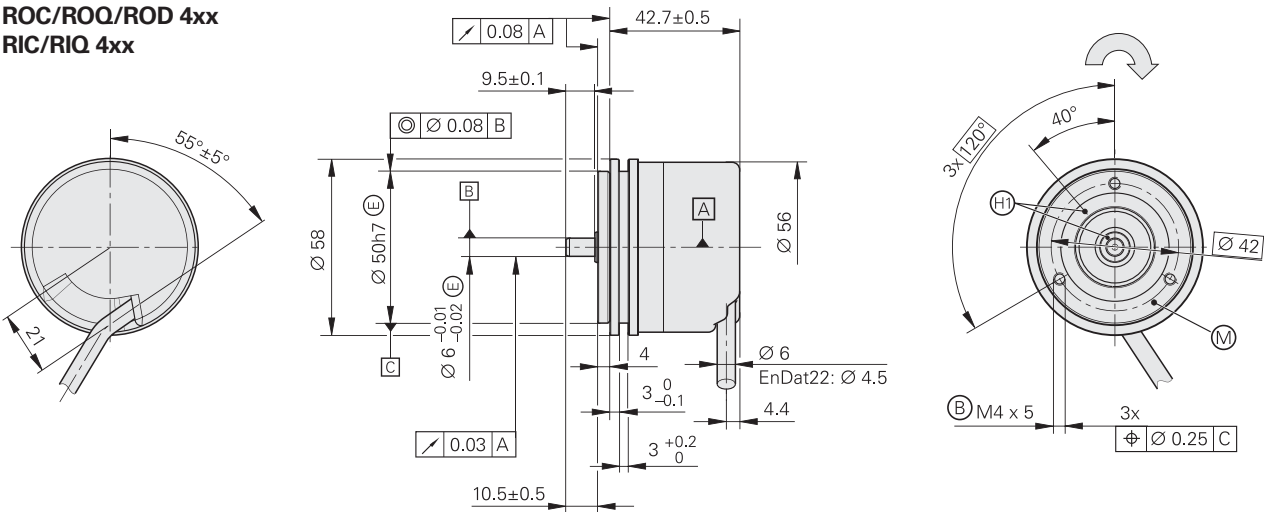
For ROC/ROQ/ROD 400 and RIC/RIQ 400 series

With Synchro Flange

Rotary encoders for separate shaft coupling

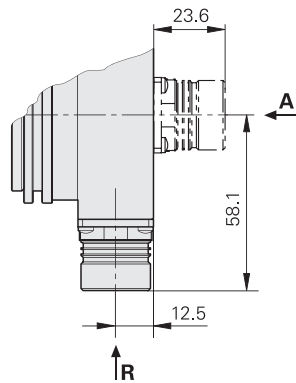
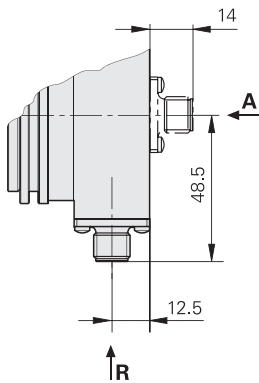
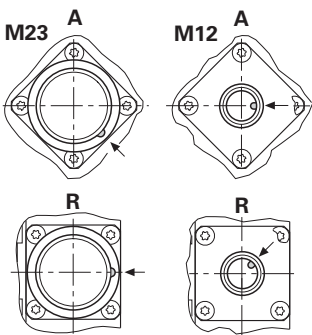


ROC/ROQ/ROD 4xx
RIC/RIQ 4xx

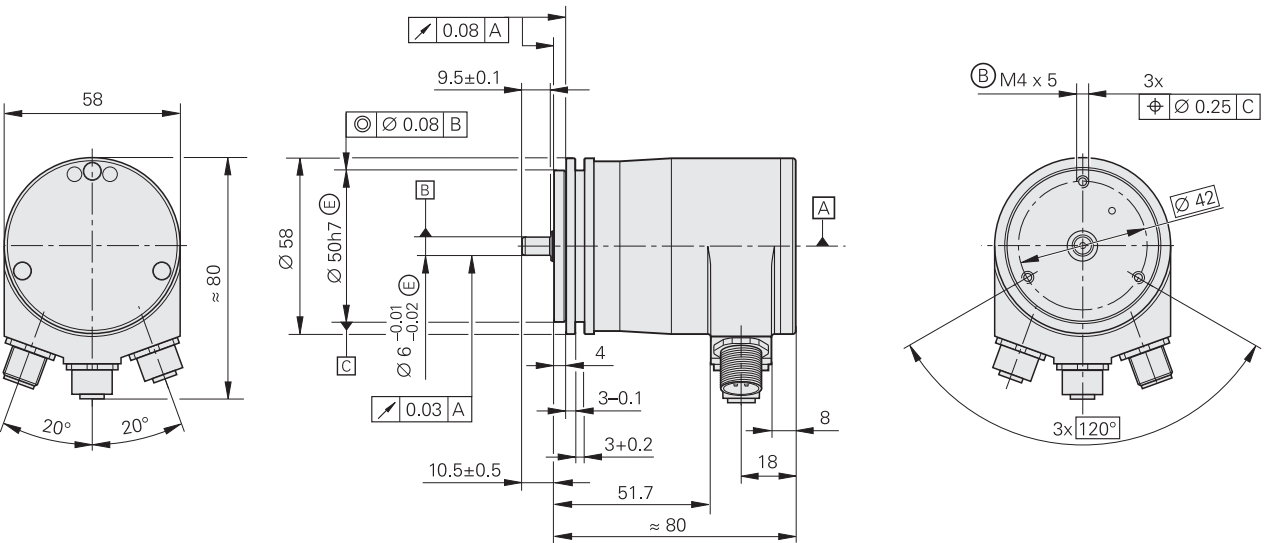


Connector coding

A = axial, R = radial



ROC 413/ROQ 425 with PROFIBUS DP



Dimensions in mm



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

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Cable radial, also usable axially

▣ = Bearing

⊕ = Threaded mounting hole

Ⓜ = Measuring point for operating temperature

⊕ = ROD reference mark position on shaft and flange ±30°

↻ = Direction of shaft rotation for output signals as per the interface description



Absolute

Singleturn

ROC 425

ROC 413

RIC 418

Absolute position values*	EnDat 2.2	EnDat 2.2	SSI	PROFIBUS DP	EnDat 2.1
Ordering designation	EnDat 22	EnDat 01	39r1		EnDat 01
Positions per revolution	33554432 (25 bits)	8192 (13 bits)		8192 (13 bits) ³⁾	262144 (18 bits)
Revolutions	–				
Code	Pure binary		Gray	Pure binary	
Elec. permissible speed Deviations ¹⁾	≤ 12000 min ^{–1} for continuous position value	<i>512 lines:</i> ≤ 5000/12000 min ^{–1} ± 1 LSB/± 100 LSB <i>2048 lines:</i> ≤ 1500/12000 min ^{–1} ± 1 LSB/± 50 LSB	12000 min ^{–1} ± 12 LSB	≤ 5000/12000 min ^{–1} ± 1 LSB/± 100 LSB	≤ 4000/15000 min ^{–1} ± 400 LSB/± 800 LSB
Calculation time t _{cal}	≤ 5 μs		≤ 0.5 μs ⁶⁾	–	≤ 8 μs
Incremental signals	None	∼ 1 V _{PP} ²⁾		None	∼ 1 V _{PP}
Line counts*	–	512 2048	512	–	16
Cutoff frequency –3 dB	–	<i>512 lines:</i> ≥ 130 kHz; <i>2048 lines:</i> ≥ 400 kHz		–	≥ 6 kHz
System accuracy	± 20″	<i>512 lines:</i> ± 60″; <i>2048 lines:</i> ± 20″		± 60″	± 480″
Power supply*	3.6 to 14 V	3.6 to 14 V	5 V ± 5 % or 10 to 30 V	9 to 36 V	5 V ± 5 %
Current consumption without load	≤ 110 mA ⁸⁾	≤ 110 mA ⁸⁾	≤ 100 mA or ≤ 45 mA	≤ 150 mA at 24 V	≤ 160 mA
Electrical connection*	• Flange socket M12, radial • Cable 1 m, with M12 coupling	• Flange socket M23, axial or radial • Cable 1 m/5 m, with or without M23 coupling		Three flange sockets , M12 radial	• Flange socket M23, radial • Cable 1 m, with M23 coupling
Shaft	Solid shaft D = 6 mm				
Mech. permissible speed n	≤ 12000 min ^{–1}				
Starting torque	≤ 0.01 Nm (at 20 °C)				
Moment of inertia of rotor	≤ 2.7 · 10 ^{–6} kgm ²				
Shaft load ⁵⁾	Axial 10 N/radial 20 N at shaft end				
Vibration 55 to 2000 Hz Shock 6 ms/2 ms	≤ 300 m/s ² ; PROFIBUS-DP: ≤ 100 m/s ² (EN 60068-2-6) ≤ 1000 m/s ² /≤ 2000 m/s ² (EN 60068-2-27)				
Max. operating temp. ⁷⁾	100 °C			70 °C	100 °C
Min. operating temp.	Flange socket or fixed cable: –40 °C For frequent flexing: –10 °C			–40 °C	Flange socket or fixed cable: –40 °C For frequent flexing: –10 °C
Protection EN 60529	IP 67 at housing; IP 64 at shaft end ⁴⁾				
Weight	Approx. 0.35 kg				

Bold: These preferred versions are available on short notice

* Please select when ordering

¹⁾ Velocity-dependent deviations between the absolute value and incremental signal

²⁾ Restricted tolerances: Signal amplitude 0.8 to 1.2 V_{PP}

³⁾ These functions are programmable

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