

	Absolute										
	Singletum					Multitum					
	ROC 425		ROC 413		RIC 418	ROQ 437		ROQ 425		RIQ 430	
Absolute position values*	EnDat 2.2	EnDat 2.2	SSI	PROFIBUS DP	EnDat 2.1	EnDat 2.2	EnDat 2.2	SSI	PROFIBUS DP	EnDat 2.1	
Ordering designation	EnDat 22	EnDat 01	39r1		EnDat 01	EnDat 22	EnDat 01	41r1		EnDat 01	
Positions per revolution	33554432 (25 bits)	8192 (13 bits)		8192 (13 bits) ³⁾	262144 (18 bits)	33554432 (25 bits)	8192 (13 bits)	8192 (13 bits)	8192 (13 bits) ³⁾	262144 (18 bits)	
Revolutions	–					4096			4096 ³⁾		4096
Code	Pure binary		Gray	Pure binary		Pure binary		Gray	Pure binary		
Elec. permissible speed Deviations ¹⁾	≤ 12000 min ⁻¹ for continuous position value	512 lines: ≤ 5000/12000 min ⁻¹ ± 1 LSB/± 100 LSB 2048 lines: ≤ 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	≤ 12000 min ⁻¹ for continuous position value	512 lines: ≤ 5000/10000 min ⁻¹ ± 1 LSB/± 100 LSB 2048 lines: ≤ 1500/10000 min ⁻¹ ± 1 LSB/± 50 LSB	10000 min ⁻¹ ± 12 LSB	≤ 5000/10000 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	≤ 5 μs		≤ 0.5 μs ⁶⁾	–	≤ 8 μs	
Incremental signals	None	~ 1 V _{pp} ²⁾		None	~ 1 V _{pp}	None	~ 1 V _{pp} ²⁾		None	~ 1 V _{pp}	
Line counts*	–	512 2048	512	–	16	–	512 2048	512	–	16	
Cutoff frequency –3 dB	–	512 lines: ≥ 130 kHz; 2048 lines: ≥ 400 kHz		–	≥ 6 kHz	–	512 lines: ≥ 130 kHz; 2048 lines: ≥ 400 kHz		–	≥ 6 kHz	
System accuracy	± 20"	512 lines: ± 60"; 2048 lines: ± 20"		± 60"	± 480"	± 20"	512 lines: ± 60"; 2048 lines: ± 20"		–	± 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%	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	≤ 140 mA ⁸⁾	≤ 140 mA ⁸⁾	≤ 130 mA or ≤ 55 mA	≤ 150 mA at 24 V	≤ 190 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	• 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 load⁵⁾	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	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	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

⁴⁾ IP 66 upon request

⁵⁾ Also see *Mechanical Design and Installation*

⁶⁾ The position value is updated internally every 5 μs

⁷⁾ For the correlation between the operating temperature and shaft speed or power supply, see *General Mechanical Information*

⁸⁾ Depends on the power supply; see *General Electrical Information*