	Incremental **ROD 220**	**ROD 270**	**ROD 280**
Measuring standard	DIADUR circular scale with incremental track		
Line count	9000	18000	18000
System accuracy	± 5″		
Position error per signal period	≤ ± 1.4″	≤ ± 0.7″	
Interface	⊓⊔TTL		∿ 1 V_{PP}
Integrated interpolation Output signals/rev	2-fold 18000	10-fold 180000	– 18000
Reference mark*	One		*ROD 280:* One *ROD 280 C:* Distance-coded
Cutoff frequency –3 dB Output frequency Edge separation a	– ≤ 1 MHz ≥ 0.125 µs	– ≤ 1 MHz ≥ 0.22 µs	≥ 180 kHz – –
Electrically permissible speed	≤ 3333 min^{-1}	≤ 333 min^{-1}	–
Electrical connection*	Cable 1 m, with or without M23 coupling (male, 12-pin)		
Cable length[1)]	≤ 100 m		≤ 150 m
Voltage supply	5 V DC ± 0.5 V/≤ 150 mA (without load)		
Shaft	Solid shaft D = 10 mm		
Mech. permissible speed	≤ 10000 min^{-1}		
Starting torque	≤ 0.01 Nm at 20 °C		
Moment of inertia of rotor	20 · 10^{-6} kgm^2		
Shaft load	*Axial:* 10 N *Radial:* 10 N at shaft end		
Vibration 55 to 2000 Hz **Shock** 6 ms	≤ 100 m/s^2 (EN 60068-2-6) ≤ 200 m/s^2 (EN 60068-2-27)		
Operating temperature	*Moving cable:* –10 °C to 70 °C *Stationary cable:* –20 °C to 70 °C		
Protection EN 60 529	IP 64		
Weight	≈ 0.7 kg		

* Please select when ordering
1) With HEIDENHAIN cable