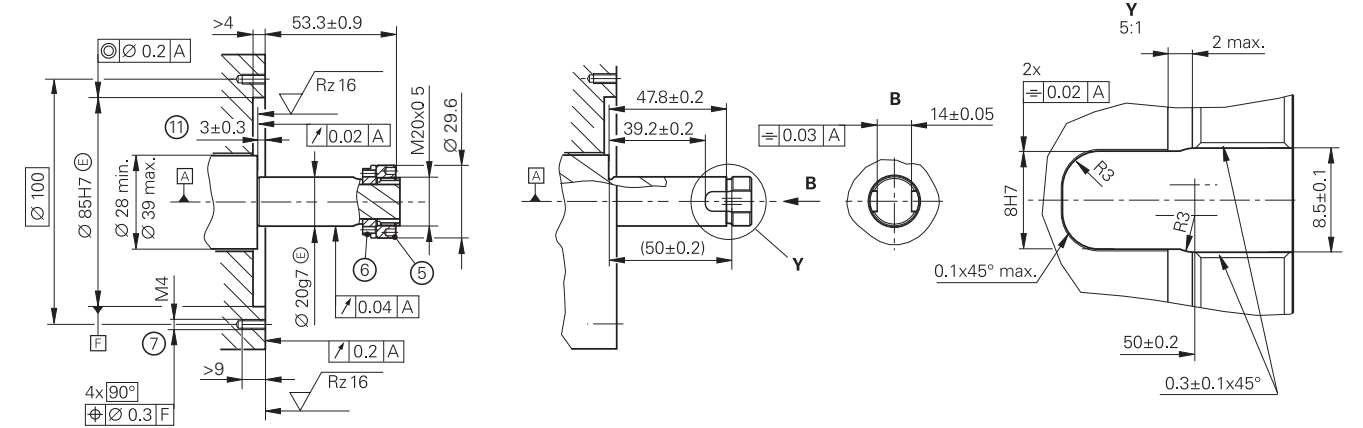| Specifications	**Absolute** **RCN 2581** **RCN 2381**	**RCN 2591 F** **RCN 2391 F**	**RCN 2591 M** **RCN 2391 M**
Measuring standard	DIADUR circular scale with absolute track and incremental track (16 384 lines)		
System accuracy	*RCN 25x1: ±2"* *RCN 23x1: ±4"*		
Position error per signal period	*RCN 2581: ≤ ±0.4"* *RCN 2381: ≤ ±0.4"*	*RCN 25x1: ≤ ±0.3"* *RCN 23x1: ≤ ±0.4"*	
Interface	EnDat 2.2	Fanuc Serial Interface αi interface[4]	Mitsubishi high speed interface
Ordering designation	EnDat02	Fanuc05	Mit03-4
Position values per rev.[4]	*RCN 25x1:* 268 435 456 (28 bits) *RCN 23x1:* 67 108 864 (26 bits)		
Electrically permissible speed	≤ 1500 rpm for continuous position values	≤ 3000 rpm for continuous position values	
Clock frequency Calculation time t_{cal}	≤ 2 MHz ≤ 8 µs	–	
Incremental signals Cutoff frequency –3 dB	⌐⌐ 1 V_{PP} ≥ 400 kHz	–	
Electrical connection	Separate adapter cable connectable to encoder via quick connector		
Cable length[1]	≤ 150 m	≤ 50 m	≤ 30 m
Supply voltage	DC 3.6 V to 14 V		
Power consumption[2] (maximum)	*3.6 V:* ≤ 1.1 W *14 V:* ≤ 1.3 W		
Current consumption (typical)	*5 V:* ≤ 140 mA (without load)		
Shaft	Hollow through shaft ∅ 20 mm		
Mech. permiss. shaft speed (at constant speed for up to 90 min)	*RCN 2x91:* ≤ 3000 rpm (at an operating temperature of 40 °C; for details, see *High permissible shaft speeds* on page 5) *RCN 2x81:* ≤ 1500 rpm		
Starting torque (at 20 °C)	Typically ≤ 0.08 Nm		
Moment of inertia	*Rotor (hollow shaft):* 180 · 10^{-6} kgm² *Stator (housing/flange):* 670 · 10^{-6} kgm²		
Permissible axial motion of measured shaft	*Axial:* ±0.3 mm[3] *Radial:* ∅ 0.2 mm for coaxiality and, during operation, 0.04 mm for radial runout (each relative to the bearing axis of the mating shaft)		
Natural frequency	≥ 1000 Hz		
Vibration 55 Hz to 2000 Hz **Shock** 6 ms	≤ 200 m/s² (EN 60068-2-6) ≤ 200 m/s² (EN 60068-2-27)		
Operating temperature	0 °C to 60 °C		
Protection EN 60529	IP64		
Mass	≈ 1.1 kg		

[1] With HEIDENHAIN cable ≤ 8 MHz
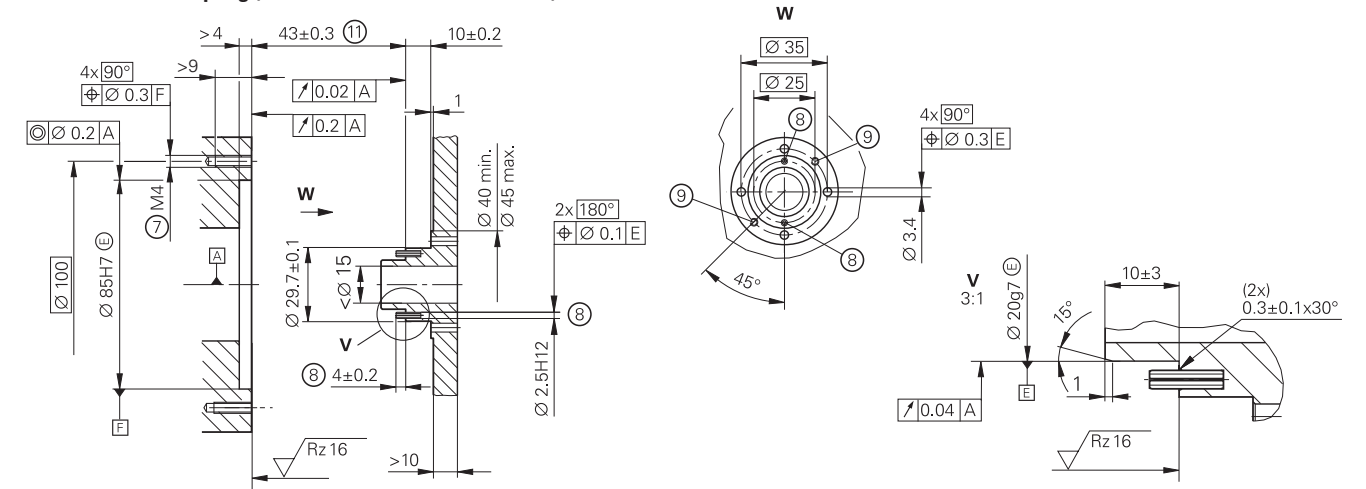[2] See *General electrical information* in the *Interfaces of HEIDENHAIN Encoders* brochure
[3] Range includes mounting tolerances and thermal expansion; no dynamic movement permitted
[4] Reduced resolution during operation with the Fanuc α Interface; *RCN 2591 F:* 134 217 728 (27 bits)
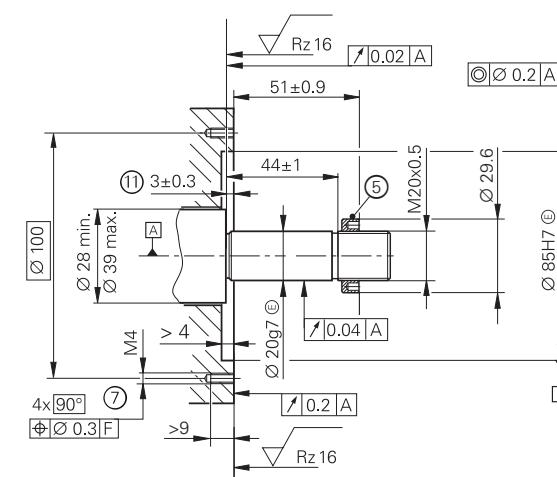   *RCN 2391 F:* 8 388 608 (23 bits)

Shaft coupling with ring nut and catch (with mechanical fault exclusion) ⊙

Front-face shaft coupling (with mechanical fault exclusion) ⊙

Shaft coupling with ring nut
(without mechanical fault exclusion) ⊙

Front-face shaft coupling
(without mechanical fault exclusion) ⊙