



HEIDENHAIN

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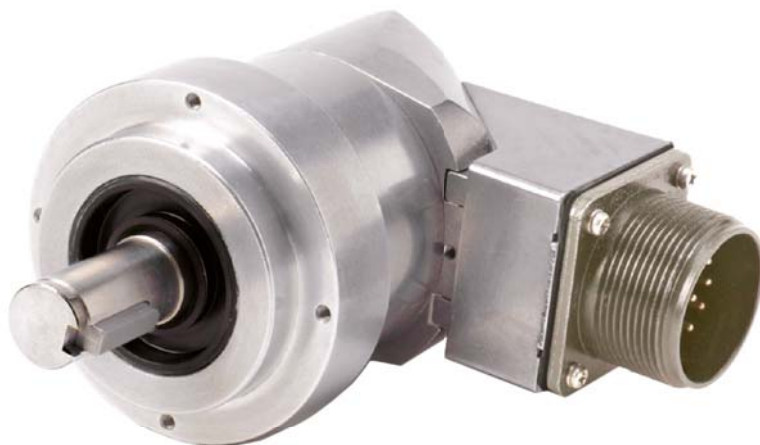
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HEIDENHAIN



Product Information

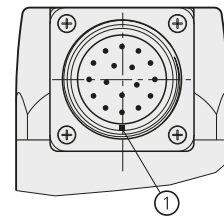
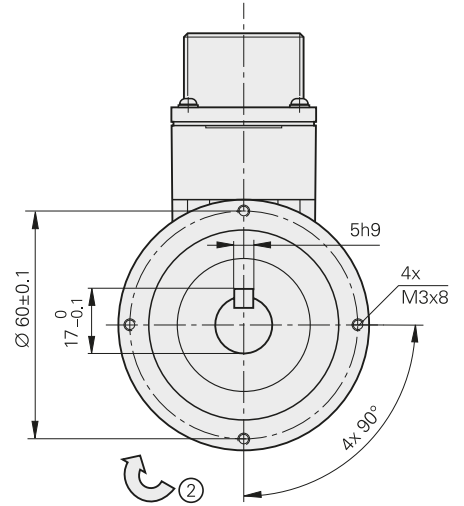
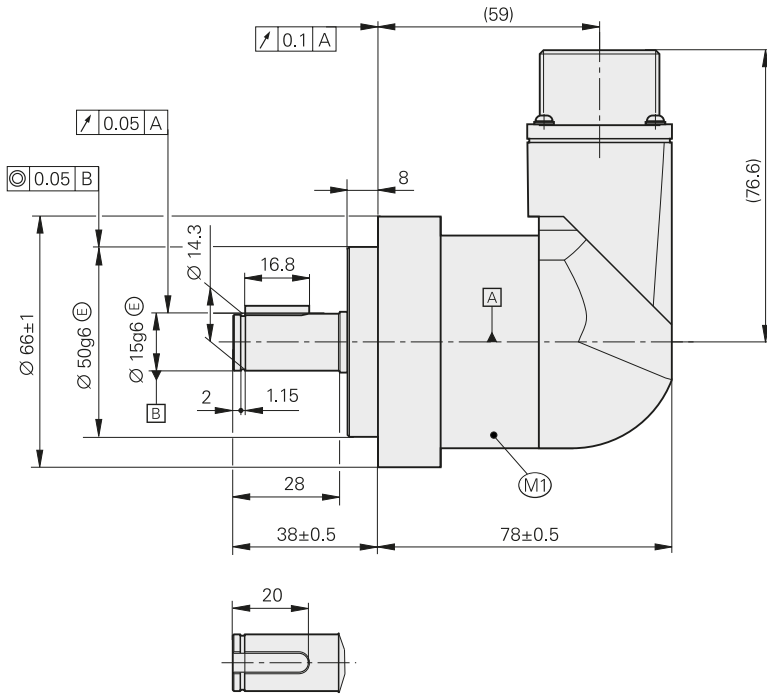
ROD 600 Series

Incremental Rotary
Encoders for High Loads

September 2016

ROD 600 series

- Incremental rotary encoder with sturdy design
- Clamping flange
- Solid shaft for separate shaft coupling



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

- ▣ = Encoder bearing
- M1 = Measuring point for operating temperature
- ① = Connector coding
- ② = Direction of shaft rotation for output signals as per the interface description

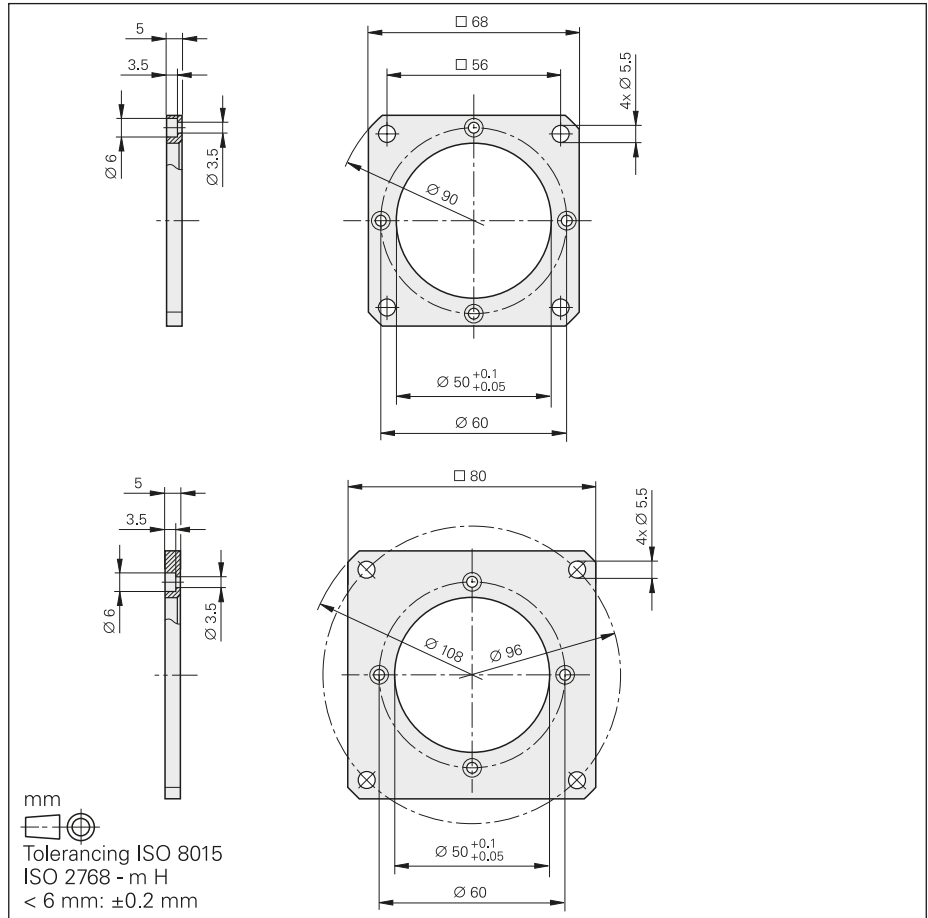
	Incremental	
	ROD 620	ROD 630
Valid for ID	1145260-xx	1145261-xx
Incremental signals	□□ TTL	□□ HTL
Line counts*	512 1000 1024 2048 5000	
Reference mark	One	
Scanning frequency Edge separation a	≤ 300 kHz ≥ 0.39 μs	
System accuracy	±1/20 of grating period	
Electrical connection	17-pin radial flange socket	
Voltage supply Current consumption without load	DC 5 V ±0.5 V ≤ 120 mA	DC 10 V to 30 V ≤ 150 mA
Shaft	Solid shaft D = 15 mm with machine key	
Mech. permitt. speed n	≤ 12000 rpm	
Starting torque	≤ 0.05 Nm (at 20 °C)	
Moment of inertia of rotor	≤ 11 · 10 ⁻⁶ kgm ²	
Shaft load	<i>Axial:</i> 75 N <i>Radial:</i> 75 N at shaft end	
Vibration 55 Hz to 2000 Hz Shock 6 ms	≤ 200 m/s ² (EN 60068-2-6) ≤ 2000 m/s ² (EN 60068-2-27)	
Max. operating temperature ¹⁾	85 °C	
Min. operating temp.	-20 °C	
Relative humidity	≤ 93 % (40 °C/4 d as per EN 60068-2-78); without condensation	
Protection EN 60 529	IP66	
Mass	≈ 0.8 kg	

* Please select when ordering

¹⁾ Self heating during encoder operation at room temperature and max. rotational speed is approx. +75 K and at 6000 rpm approx. +50 K

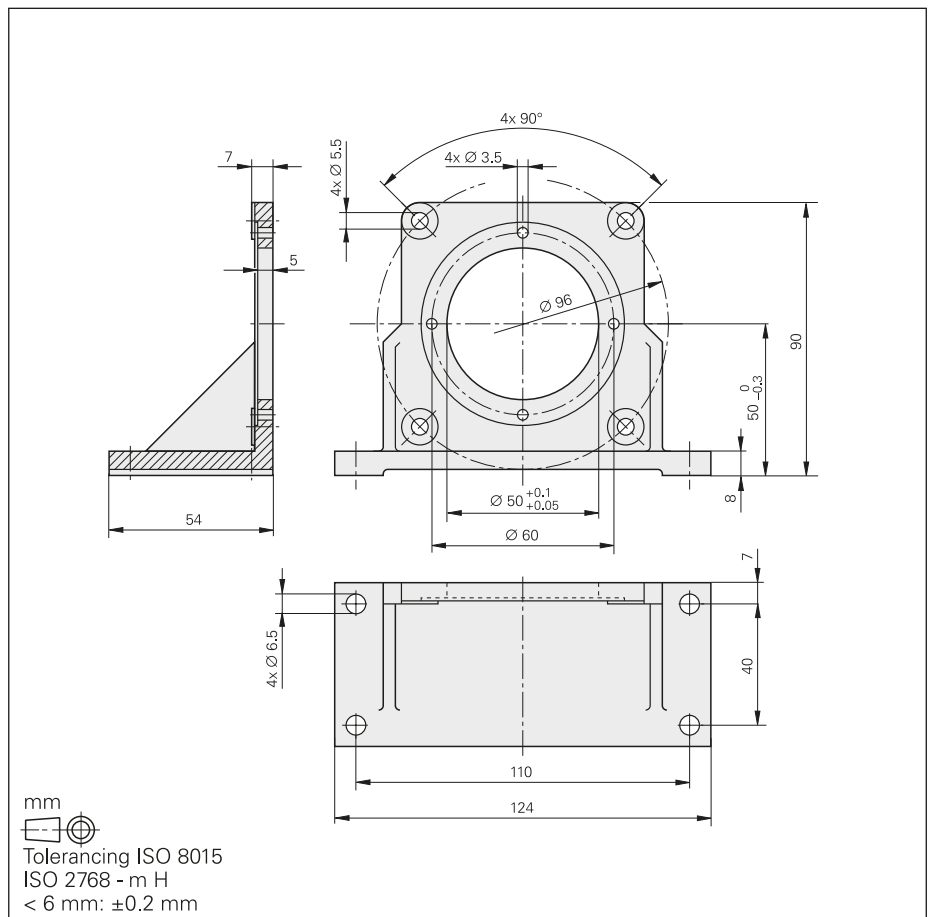
Mounting accessories

Mounting flange, small
ID 728587-01



Mounting flange, large
ID 728587-02

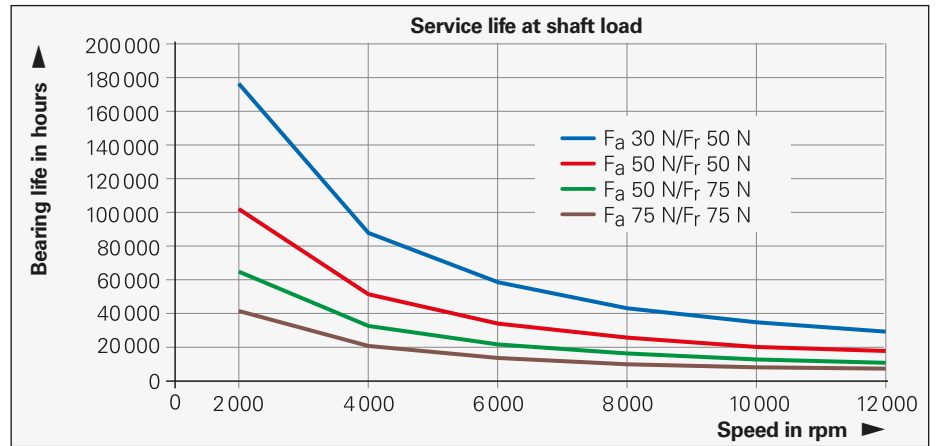
Mounting bracket
ID 728587-03



Bearing life

Bearing life

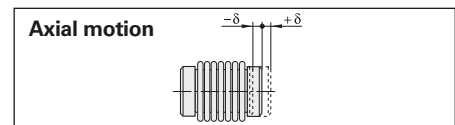
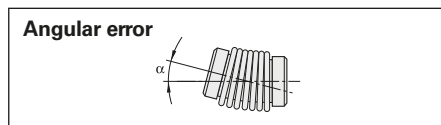
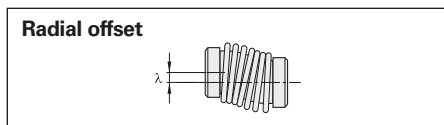
The service life to be expected of the bearings depends on the shaft load, the force application point, and the shaft speed. The maximum permissible load of the shaft at shaft end is listed in the *Specifications*. The relationship between bearing life and maximum shaft load is shown in the diagram. Rotary encoders of the ROD 600 series are designed for high bearing loads together with long service life



Shaft coupling

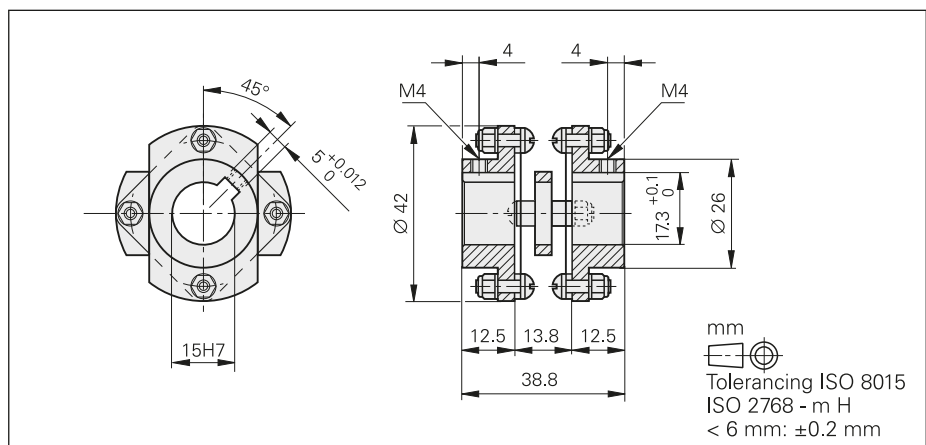
	C 19	C 212
Hub bore	15/15 mm	
Galvanic isolation	–	✓
Kinematic transfer error*	±13"	
Torsional rigidity	1700 $\frac{\text{Nm}}{\text{rad}}$	
Max. torque	≤ 3.9 Nm	≤ 5 Nm
Max. radial offset λ	≤ 0.3 mm	
Max. angular error α	≤ 1.5°	
Max. axial motion δ	≤ 1.7 mm	
Moment of inertia (approx.)	15 · 10 ⁻⁶ kgm ²	
Permissible speed	20000 rpm	6000 rpm
Tightening torque of clamping screw	≈ 1.37 Nm	
Mass	75 g	

* With radial misalignment $\lambda = 0.1$ mm, angular error $\alpha = 0.15$ mm over 100 mm $\triangleq 0.09^\circ$ to 50 °C

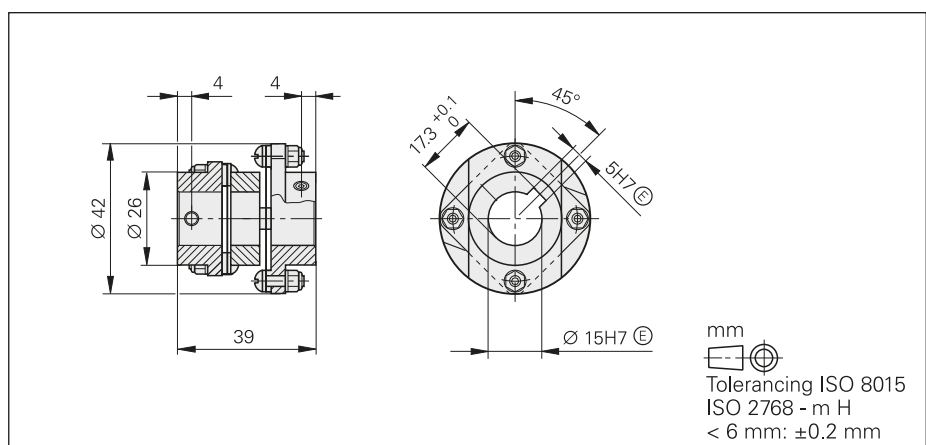


Shaft couplings for ROD 600 series

C 19 diaphragm coupling
ID 731374-01





C 212 diaphragm coupling
ID 731374-02





Electrical connection

Connecting cables

Cable without connectors \varnothing 8 mm [4 x 2 x 0.14 mm ² + 4 x 0.5 mm ²]		816317-xx
Connector (female), 17-pin (3-piece, version for soldering)		1094831-01

Pin layout

17-pin flange socket												
	Voltage supply				Incremental signals							Other signals
	H	F	K	M	A	N	C	R	B	P	S	D/E/G/J/L/T
	U_P	Sensor U _P	0V	Sensor 0V	U_{a1}	\overline{U}_{a1}	U_{a2}	\overline{U}_{a2}	U_{a0}	\overline{U}_{a0}	\overline{U}_{aS}	Vacant
	Brown/ Green	Blue	White/ Green	White	Brown	Green	Gray	Pink	Red	Black	Violet	Yellow

Shield on housing; **U_P** = Power supply
Vacant pins or wires must not be used.

HEIDENHAIN

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This Product Information supersedes all previous editions, which thereby become invalid. The basis for ordering from HEIDENHAIN is always the Product Information document edition valid when the order is made.

Related documents: Comply with the information in the following documents to ensure the correct and intended operation of the encoder:

- Catalog: *Rotary Encoders*
349529-xx
- Catalog: *Interfaces of HEIDENHAIN Encoders*

1078628-xx