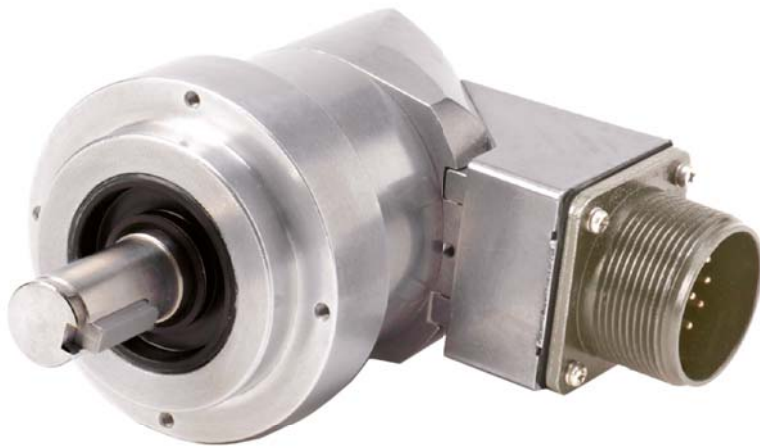




# HEIDENHAIN



Product Information

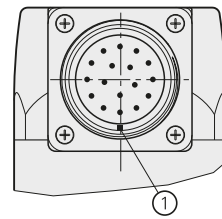
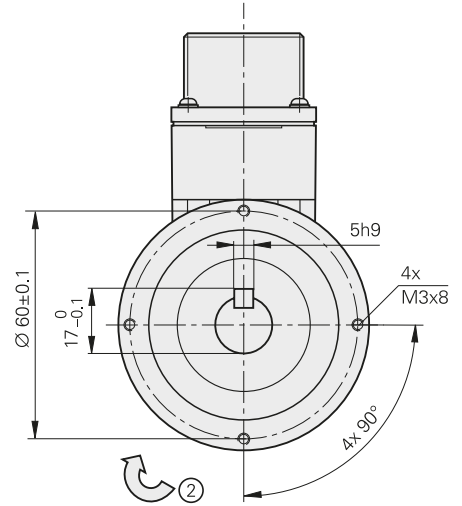
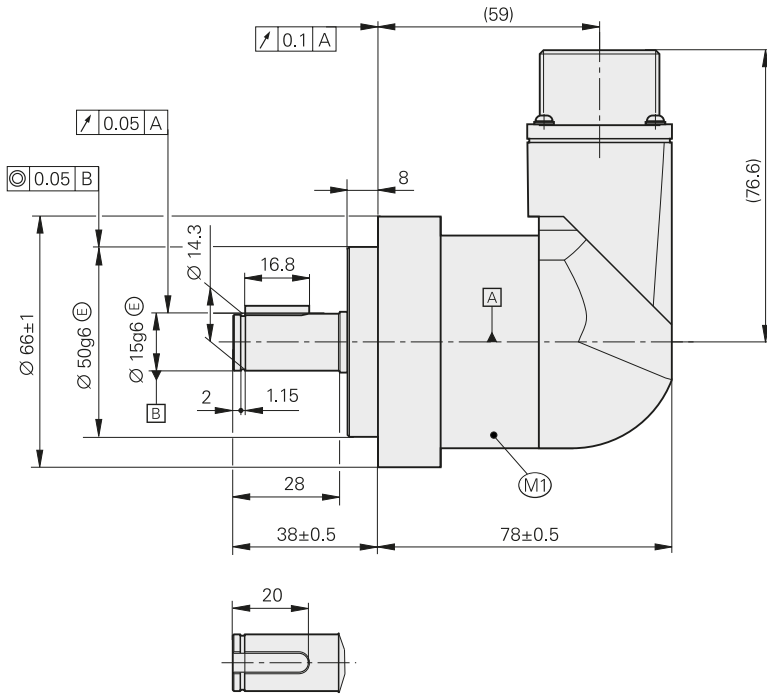
## **ROD 600 Series**


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
-  = Connector coding
-  = Direction of shaft rotation for output signals as per the interface description

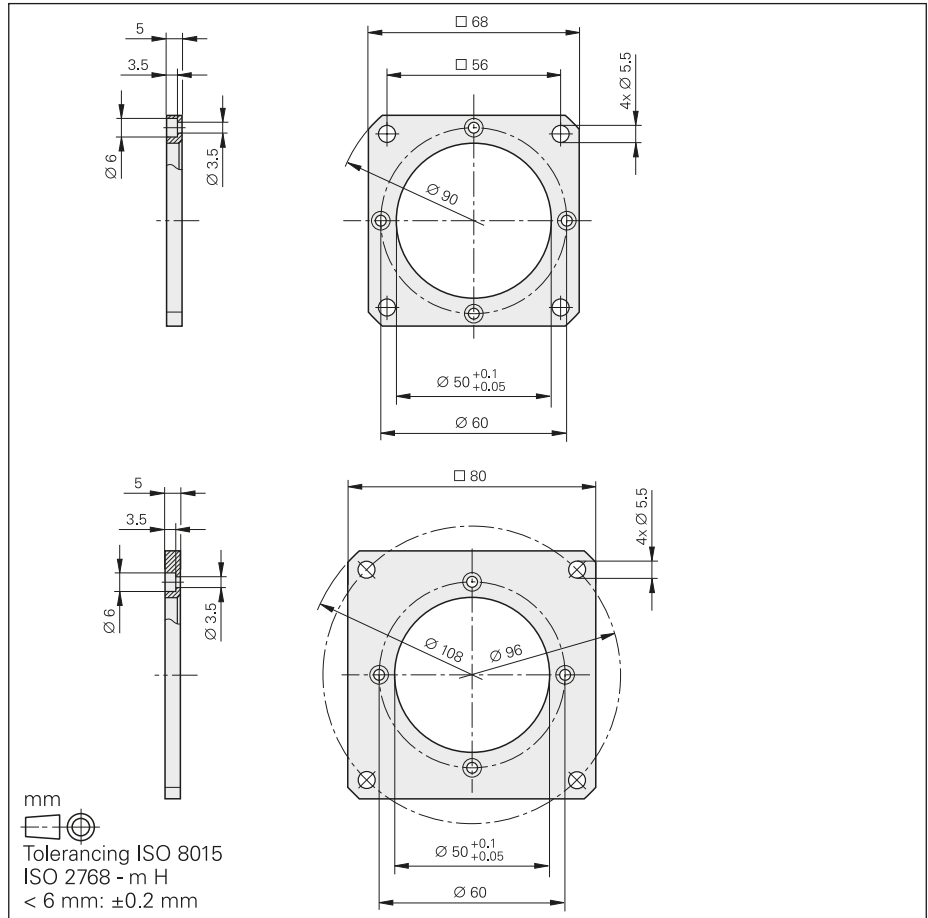
	Incremental	
	ROD 620	ROD 630
<b>Valid for ID</b>	1145260-xx	1145261-xx
<b>Incremental signals</b>	□□ TTL	□□ HTL
Line counts*	512 1000 1024 2048 5000	
Reference mark	One	
Scanning frequency Edge separation a	≤ 300 kHz ≥ 0.39 μs	
<b>System accuracy</b>	±1/20 of grating period	
<b>Electrical connection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

\* Please select when ordering

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

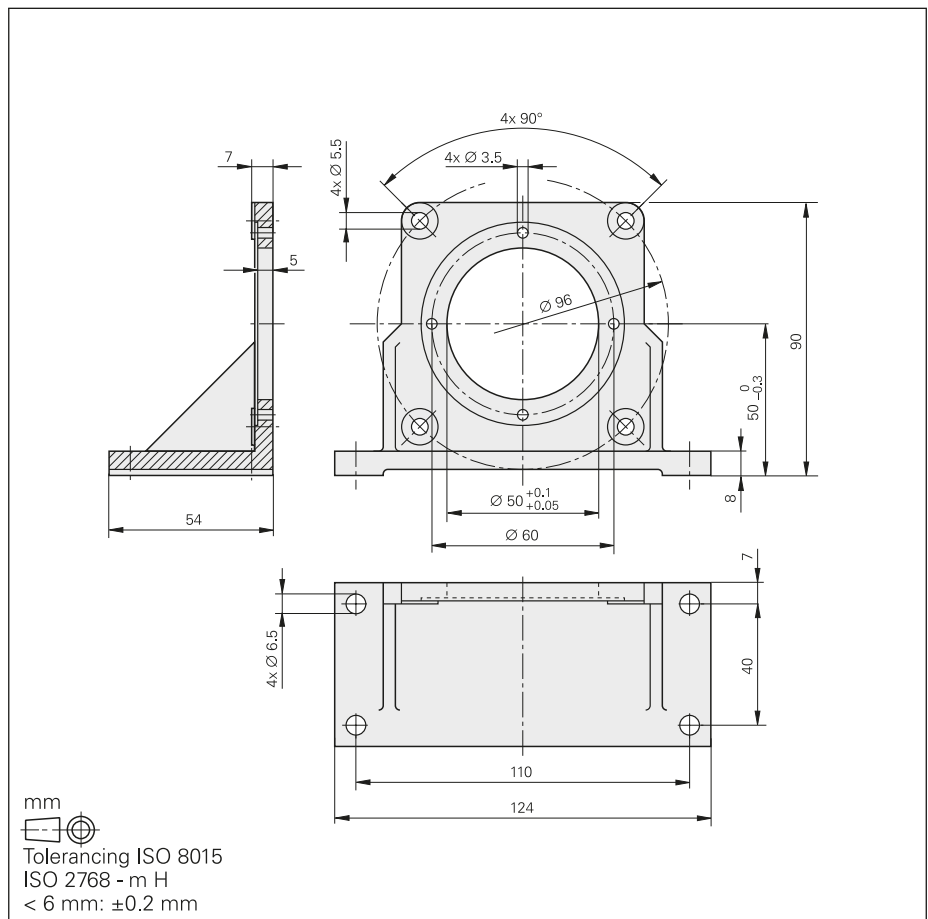
# Mounting accessories

**Mounting flange, small**  
ID 728587-01



**Mounting flange, large**  
ID 728587-02

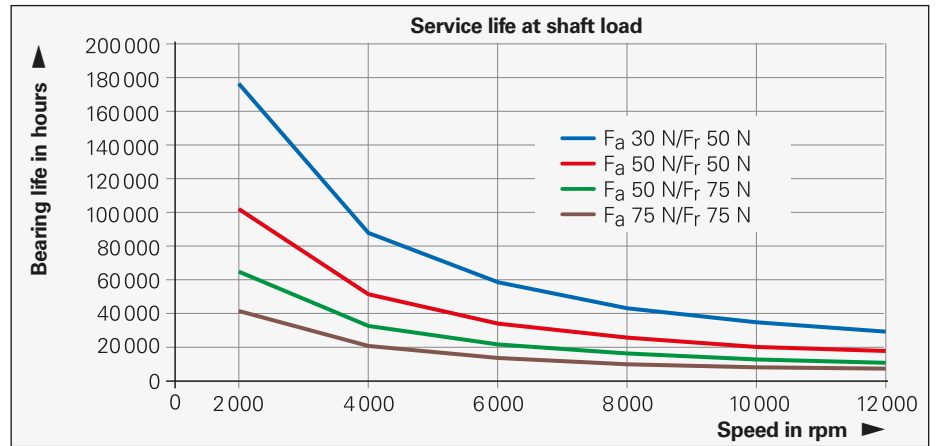
**Mounting bracket**  
ID 728587-03



# Bearing life

## Bearing life

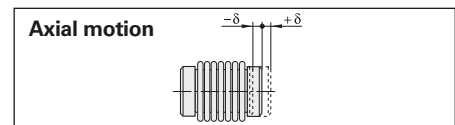
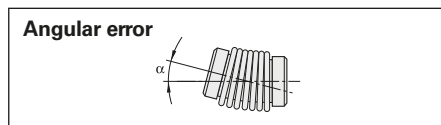
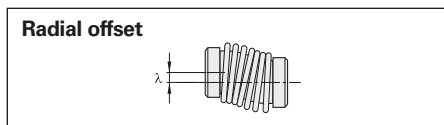
The service life to be expected of the bearings depends on the shaft load, the force application point, and the shaft speed. The maximum permissible load of the shaft at shaft end is listed in the *Specifications*. The relationship between bearing life and maximum shaft load is shown in the diagram.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



# Shaft coupling

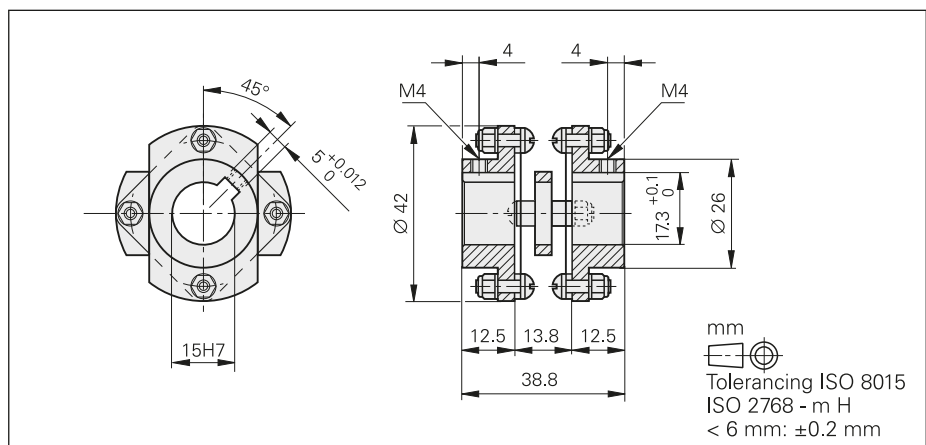
	C 19	C 212
Hub bore	15/15 mm	
Galvanic isolation	–	✓
Kinematic transfer error*	±13"	
Torsional rigidity	1700 $\frac{\text{Nm}}{\text{rad}}$	
Max. torque	≤ 3.9 Nm	≤ 5 Nm
Max. radial offset $\lambda$	≤ 0.3 mm	
Max. angular error $\alpha$	≤ 1.5°	
Max. axial motion $\delta$	≤ 1.7 mm	
Moment of inertia (approx.)	15 · 10 <sup>-6</sup> kgm <sup>2</sup>	
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

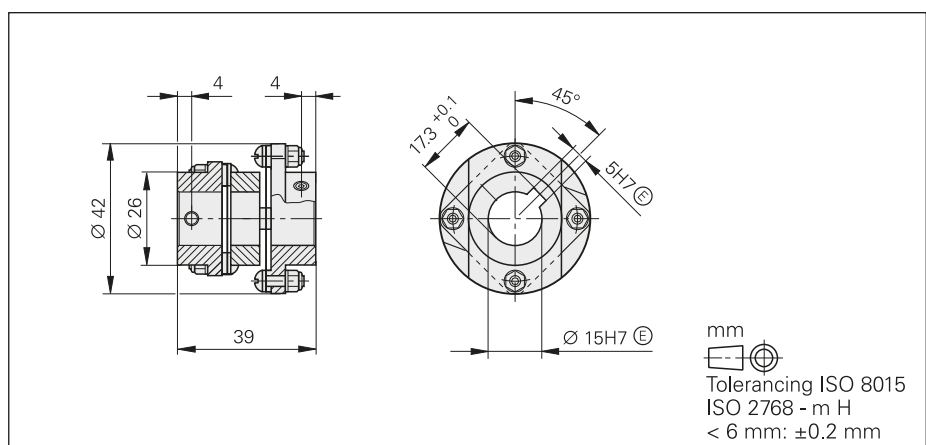


## Shaft couplings for ROD 600 series

C 19 diaphragm coupling  
ID 731374-01





C 212 diaphragm coupling  
ID 731374-02







# Electrical connection

## Connecting cables

<b>Cable without connectors</b> Ø 8 mm [4 x 2 x 0.14 mm <sup>2</sup> + 4 x 0.5 mm <sup>2</sup> ]		816317-xx
<b>Connector</b> (female), 17-pin (3-piece, version for soldering)		1094831-01

## Pin layout

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

**Shield** on housing; **U<sub>P</sub>** = 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