

# Datasheet



Highly compact gearbox (worm wheel gearbox) for various industrial applications, in particular for automation and robotics; applicable for motorized or manually adjustable rotary movements.

- Housing made of anodized aluminium, shafts made of steel PR80-Pronox with surface hardening treatment (high wear and corrosion resistance).
- Transmission ratios: **1:1 – 1:2 – 1:4 – 1:7,5 – 1:10 – 1:15 – 1:20 – 1:30 – 1:40**
- Hollow shafts in various designs offer a wide range of mounting options.
- Flanges for direct connection to machine, motors, and display with position indicators.
- Available types:
  - **RD40** gearbox
  - **RD40FL** with coupling flange and extension shaft
  - **RD40S** with magnetic sensor
  - **RD40M** with permanent magnet motor
  - **RD40MS** with permanent magnet motor and magnetic sensor
  - **RD40MR** with gear motor
  - **RD40MRS** with gear motor and magnetic sensor.



For continuous use, contract our technical service: In this type of application, a grease nipple is fitted which must be refilled according to the operating conditions.

## Performance table

Transmission ratio		<b>1:1</b>	<b>1:2</b>	<b>1:4</b>	<b>1:7,5</b>	<b>1:10</b>	<b>1:15</b>	<b>1:20</b>	<b>1:30</b>	<b>1:40</b>
Efficiency	%	<b>72</b>	<b>71</b>	<b>67</b>	<b>66</b>	<b>44 <sup>1)</sup></b>	<b>34 <sup>1)</sup></b>	<b>44 <sup>1)</sup></b>	<b>21 <sup>1)</sup></b>	<b>29 <sup>1)</sup></b>
Input torque	Nm	8,26	4,20	2,24	1,21	1,38	1,16	0,68	0,95	0,52
Output torque	Nm	6	6	6	6	6	6	6	6	6

<sup>1)</sup> Irreversible

# Datasheet

## Technical characteristics

<b>FA *</b> = Input axial load	50 N
<b>FR **</b> = Output axial load	100 N
<b>FA *</b> = Input radial load	500 N
<b>FR **</b> = Output radial load	1.000 N
Backlash	max. 0,75°
Input rotation speed	max. 5.000 rpm
Transmission ratio	1:1 – 1:2 – 1:4 – 1:7,5 – 1:10 – 1:15 – 1:20 – 1:30 – 1:40
Input torque	see performance table
Output torque	6 Nm
Operating temperature	-20 ... 90 °C
Lifetime	10.000 h
Dimensions Housing Hollow shaft	40 x 40 x 56 mm ∅ 8H8 (outer diameter ∅ 15 mm), ∅ 10H8 (outer diameter ∅ 20 mm)
Material Housing Hollow- / Solid shaft	Aluminium, black anodised PR80-Pronox surface hardening
Weight	360 g
Lubrication	Klüber AG 11-462 (grease)

# Datasheet


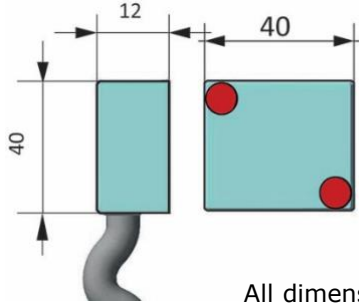
## Dimensions

RD40	Transmission ratio
<p>Technical drawings of the RD40 gearbox. The top view shows a square housing with a central input shaft hole of diameter <math>\varnothing 8</math> H8. The overall width is 56 mm, and the height is 40 mm. It features 3 M5 set screws at 120° intervals. The side view shows a total length of 40 mm and a mounting flange with a diameter of <math>\varnothing 15</math> and a hole diameter of <math>\varnothing 8</math> H8. The rear view shows a total width of 40 mm and a central output shaft hole of diameter <math>\varnothing 10</math> H8. The bottom view shows a total length of 40 mm and a mounting flange with a diameter of <math>\varnothing 10</math> H8. The drawings also indicate 3 M4 set screws at 120° intervals for the output shaft.</p>	<p>3D model of the RD40 gearbox showing the input and output shafts. The input shaft is labeled 'a.' and the output shaft is labeled 'b.'. The output shaft is also labeled 'c.'.</p> <ul style="list-style-type: none"> <li><b>a.</b> Input shaft: fast shaft</li> <li><b>b.</b> Output shaft: slow shaft</li> <li><b>c.</b> Output shaft: slow shaft</li> </ul>
RD40FL-OP3	
<p>Technical drawings of the RD40FL-OP3 gearbox. The front view shows a square housing with a central input shaft hole of diameter <math>\varnothing 8</math> H8. The overall width is 40 mm, and the height is 32 mm. The side view shows a total length of 46 mm and a mounting flange with a diameter of <math>\varnothing 15</math> and a hole diameter of <math>\varnothing 8</math> H8. The bottom view shows a total width of 40 mm and a central output shaft hole of diameter <math>\varnothing 10</math> H8. The drawings also indicate 3 M4 set screws at 120° intervals for the output shaft.</p>	<p>3D model of the RD40FL-OP3 gearbox with an orange motor housing. The motor housing is labeled 'OP3' and 'SEW'.</p>

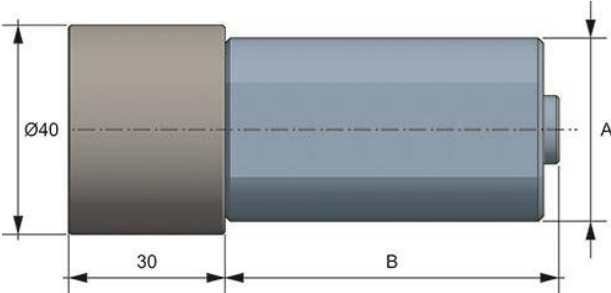

All dimensions in mm

# Datasheet

## Accessories

Incremental encoder	
	
Dimensions	12 x 40 x 40 mm
Power supply	10 ... 30 VDC $\pm 10\%$ , 60 mA <sub>MAX</sub>
Resolution	256 pulses/revolution
Output signals	Channels A – B Push-Pull output
Output current	20 mA <sub>MAX</sub> per channel
IP-rating	IP66
Material	
Housing	Aluminium, black anodised
Operating temperature	-10 ... 70 °C
Relative humidity	10 ... 90%
Output	Cable shielded, Cable length 0,5 – 1 – 2 – 5 – 10 m *
Electromagnetic compatibility EMC	2004/108/CE

**i** The incremental encoder for RD40 converts the rotary motion of the gearbox output shaft into two channel quadrature pulses with a resolution of 256 pulses per revolution.

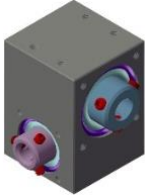

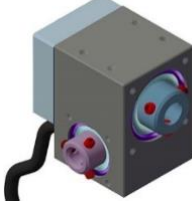
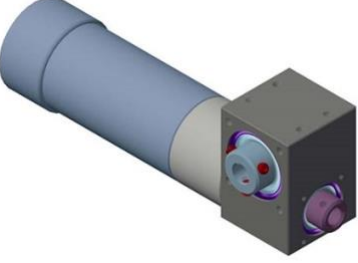
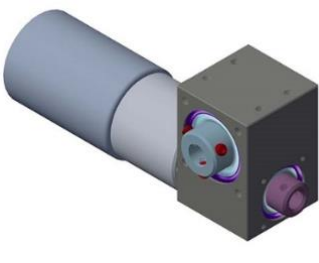
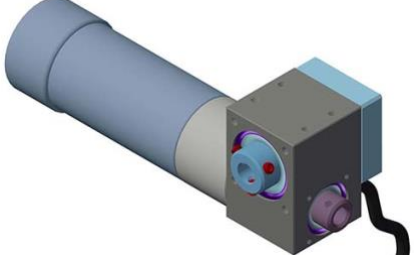
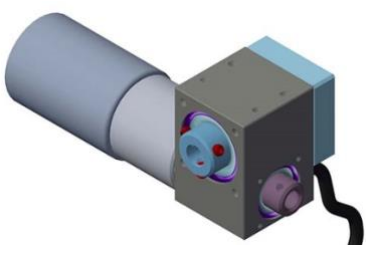
Motors							
							
All dimensions in mm							
Motors <b>M</b> with coupling <sup>1)</sup>				Gear motors <b>MR</b> with coupling <sup>2)</sup>			
A	B	rpm*	Torque (Nm)	A	B	rpm*	Torque (Nm)
35	56	2.200	0,06	30	79	450	0,4
40	98	5.600	0,2	42	113	420	0,7
36	65	1.1000	0,05				

<sup>1)</sup> suitable for alternate movements

<sup>2)</sup> suitable for continuous movements

# Datasheet

## Types

<b>RD40</b>	<b>RD40FL-OP3</b>
gearbox	with coupling flange and extension shaft for position indicator OP3
	
<b>RD40S</b>	
with magnetic sensor	
	
<b>RD40M</b>	<b>RD40MR</b>
with permanent magnet motor	with gear motor
	
<b>RD40MS</b>	<b>RD40MRS</b>
with permanent magnet motor and magnetic sensor	with gear motor and magnetic sensor
	

# Datasheet

## Ordering example

<b>Type</b>	<b>RD40</b>	-	<b>1:10</b>	-	<b>ING</b>
<b>RD40</b>	= gearbox				
RD40FL-OP3	= with coupling flange and extension shaft <sup>1)</sup>				
RD40S	= with magnetic sensor				
RD40M	= with permanent magnet motor				
RD40MS	= with permanent magnet motor and magnetic sensor				
RD40MR	= with gear motor				
RD40MRS	= with gear motor and magnetic sensor				
<b>Transmission ratios</b>					
1:1 - 1:2 - 1:4 - 1:7,5 - <b>1:10</b> - 1:15 - 1:20 - 1:30 - 1:40					
<b>Operating mode</b>					
<b>ING</b>	= continuous use (optional), with grease nipple				

**i** For the magnetic sensor, specify the cable length, see table: **Technical characteristics \***  
 For the motors and gear motors, specify the rotation speed (rpm), see table: **Motors \***  
**Please order accessories separately.**  
 Other versions that cannot be generated from the order code may be available as special versions on request available as special versions on request.

System components / Accessories			
<sup>1)</sup> Position indicator OP3 	Cardan joints GC/GCC 		

Manufacturer: **FIAMA**  
since 1913

The manufacturer reserves the right to make changes to the products that it deems necessary for their improvement without prior notice.