

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 – 1:2,5 – 1:5 – 1:7,5 – 1:10 – 1:12,5 – 1:15 – 1:25 – 1:30**
- 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:
 - **RD50** gearbox
 - **RD50FL** with coupling flange and extension shaft
 - **RD50S** with magnetic sensor
 - **RD50M** with permanent magnet motor
 - **RD50MS** with permanent magnet motor and magnetic sensor
 - **RD50MR** with gear motor
 - **RD50MRS** 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		1:1	1:2,5	1:5	1:7,5	1:10	1:12,5	1:15	1:25	1:30
Efficiency	%	72	74	60	61	54 ¹⁾	39 ¹⁾	45 ¹⁾	25 ¹⁾	29 ¹⁾
Input torque	Nm	13,95	5,42	3,32	2,19	1,84	2,04	1,48	1,62	1,13
Output torque	Nm	10	10	10	10	10	10	10	10	10

¹⁾ Irreversible


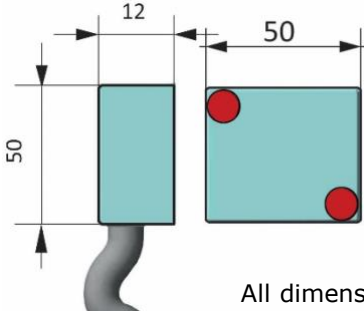
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Technical characteristics

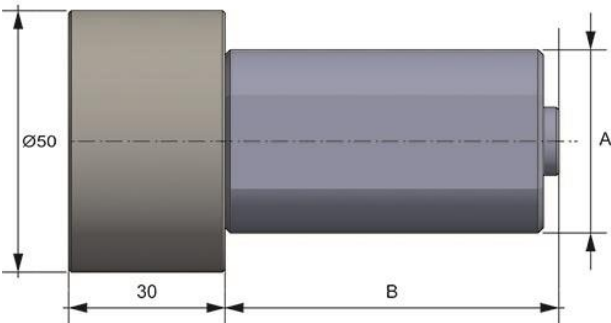

FA * = Input axial load	100 N
FR ** = Output axial load	200 N
FA * = Input radial load	1.000 N
FR ** = Output radial load	2.000 N
Backlash	max. 0,75°
Input rotation speed	max. 5.000 rpm
Transmission ratio	1:1 – 1:2,5 – 1:5 – 1:7,5 – 1:10 – 1:12,5 – 1:15 – 1:25 – 1:30
Input torque	see performance table
Output torque	10 Nm
Operating temperature	-20 ... 90 °C
Lifetime	10.000 h
Dimensions Housing Hollow shaft	50 x 50 x 74 mm Ø 8H8 (outer diameter Ø 20 mm), Ø 14H8 (outer diameter Ø 30 mm)
Material Housing Hollow- / Solid shaft	Aluminium, black anodised PR80-Pronox surface hardening
Weight	730 g
Lubrication	Klüber AG 11-462 (grease)

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Incremental encoder	
	 <p>All dimensions in mm</p>
Dimensions	12 x 50 x 50 mm
Power supply	10 ... 30 VDC $\pm 10\%$, 60 mA _{MAX}
Resolution	256 pulses/revolution
Output signals	Channels A – B Push-Pull output
Output current	20 mA _{MAX} 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 RD50 converts the rotary motion of the gearbox output shaft into two channel quadrature pulses with a resolution of 256 pulses per revolution.

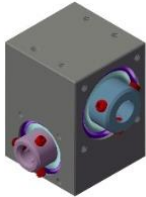



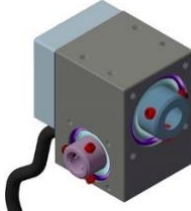
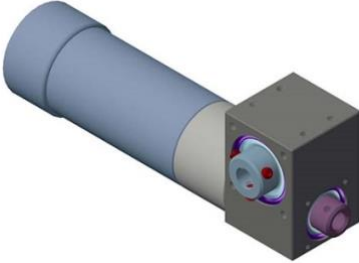
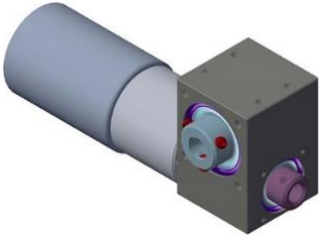
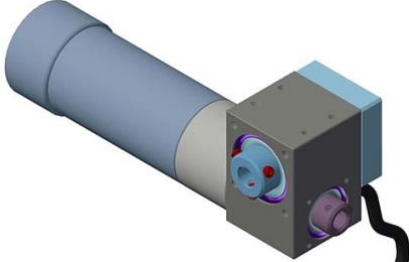
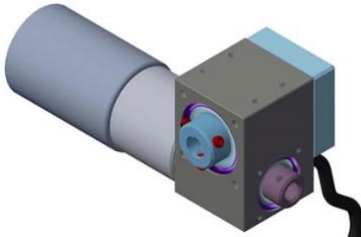
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<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Motors M with coupling ¹⁾</th> <th colspan="4">Gear motors MR with coupling ²⁾</th> </tr> <tr> <th>A</th> <th>B</th> <th>rpm*</th> <th>Torque (Nm)</th> <th>A</th> <th>B</th> <th>rpm*</th> <th>Torque (Nm)</th> </tr> </thead> <tbody> <tr> <td>35</td> <td>56</td> <td>2.200</td> <td>0,06</td> <td>30</td> <td>79</td> <td>450</td> <td>0,4</td> </tr> <tr> <td>40</td> <td>98</td> <td>5.600</td> <td>0,2</td> <td>42</td> <td>113</td> <td>420</td> <td>0,7</td> </tr> <tr> <td>36</td> <td>65</td> <td>1.1000</td> <td>0,05</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Motors M with coupling ¹⁾				Gear motors MR with coupling ²⁾				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				
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¹⁾ suitable for alternate movements

²⁾ suitable for continuous movements

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Types

<p>RD50</p>	<p>RD50FL-OP3</p>
<p>gearbox</p>	<p>with coupling flange and extension shaft for position indicator OP3</p>
	
<p>RD50FL-OP7</p>	<p>RD50FL-EP7</p>
<p>with coupling flange and extension shaft for position indicator OP7</p>	<p>with coupling flange and extension shaft for position indicator EP7</p>
	
<p>RD50S</p>	
<p>with magnetic sensor</p>	
	
<p>RD50M</p>	<p>RD50MR</p>
<p>with permanent magnet motor</p>	<p>with gear motor</p>
	
<p>RD50MS</p>	<p>RD50MRS</p>
<p>with permanent magnet motor and magnetic sensor</p>	<p>with gear motor and magnetic sensor</p>
	

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Ordering example

Type	RD50	-	1:10	-	ING
RD50	= gearbox				
RD50FL-OP3	= with coupling flange and extension shaft ¹⁾				
RD50FL-OP7	= with coupling flange and extension shaft ²⁾				
RD50FL-EP7	= with coupling flange and extension shaft ³⁾				
RD50S	= with magnetic sensor				
RD50M	= with permanent magnet motor				
RD50MS	= with permanent magnet motor and magnetic sensor				
RD50MR	= with gear motor				
RD50MRS	= with gear motor and magnetic sensor				
Transmission ratios	1:1 - 1:2,5 - 1:5 - 1:7,5 - 1:10 - 1:12,5 - 1:15 - 1:25 - 1:30				
Operating mode	ING = 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			
<p>¹⁾ Position indicator OP3</p> 	<p>²⁾ Position indicator OP7</p> 	<p>³⁾ Position indicator EP7</p> 	<p>Cardan joints GC/GCC</p> 

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.