

## Gear motors RD50/70/85-PG

Compact drive units with industry-leading power density and a wide range of applications



The planetary motor gear units RD-PG provide a standardized drive solution with the powerful gearheads from Neugart. Depending on the number of stages the transmission ratio varies in a range of 1:3 up to 1:512.

The gear units have a minimal, inherent backlash. The RoboDrive technology allows by selecting appropriate motors to exploit the performance features of the gearheads in both: speed and torque.

On request alternative voltage levels, increased speeds and optional integrated safety breaks can be realized. We also integrate the planetary gearheads from other renowned manufacturers like Gysin or Maxon.

### Key features:

- Industry-leading power density
- Compact design
- Absolute SinCos encoder up to 12bits
- Integrated safety brake optional
- Wide range of transmission ratios:  $i=1:3, \dots, 512$
- Low backlash
- High output torque
- Flexible mounting on gear or housing flange

### Basic data

Gear motor with single stage PLE-gear  $i = 1:8$

	RD50x08-PG	RD50x14-PG	RD70x10-PG	RD70x18-PG	RD85x13-PG	RD85x26-PG
Power P [W]	155	180	270	275	430	410
Rated output torque $T_r$ [Nm]	2,1	3,9	5,7	9,7	11,1	20,2
Peak output torque $T_{max}$ [Nm]	7,0	10,0	17,8	29,0	34,9	64,0
Output speed $n_{max}$ at $U_r^*$ [rpm]	690	440	440	260	360	190
Gear ratio **	1:8	1:8	1:8	1:8	1:8	1:8
Diameter D [mm]	61	61	80	80	96	96
Total length w/o brake [mm]	87,3	93,7	101,5	109,4	118,8	132,2
with brake [mm]	103,1	109,5	119,4	127,3	136,7	150,1
Weight m w/o brake [g]	645	710	1.385	1.510	2.495	2.825
with brake [g]	810	875	1.665	1.895	2.895	3.235

\* Theoretical no-load rotation speeds at  $U_r = 48$  V. Variations can arise from operation with different inverters.

Higher rotation speeds or change of the voltage level can be achieved by changing the connection scheme.

\*\* Other gear ratios on request. For gearbox selection, see: <http://www.neugart.de/index.php/us/Produkte/Standardgetriebe>

## Electrical data

	RD50x08-PG	RD50x14-PG	RD70x10-PG	RD70x18-PG	RD85x13-PG	RD85x26-PG
Rated voltage $U_r$ [V]	48	48	48	48	48	48
Rated current $I_r$ [A]	4,8	5,0	7,0	7,0	11,0	11,0
Torque constant $k_T$ [Nm/A]	0,057	0,098	0,106	0,180	0,130	0,244
Terminal resistance $R_{TT}$ [mΩ]	552	800	470	655	210	323
Terminal inductance $L_{TT}$ [μH]	720	820	800	1350	470	920
Number of pole pairs	10	10	10	10	10	10
Sensor type	Magnetic encoder, differential Sin-Cos-signal, signal amplitude $1 V_{pp}$ ; signal offset $U_{dd}/2$ ; position accuracy interpolatable up to 12 bit, 4.096 inc/rev, accuracy $\pm 0,5^\circ$ ; supply voltage $U_{dd} = 5 V$					

All data relate to star-serial connection at  $U_r = 48 V$ . The voltage level can be altered on customer request.

## Safety brake data

	RD50x08-PG	RD50x14-PG	RD70x10-PG	RD70x18-PG	RD85x13-PG	RD85x26-PG
Braking torque $M_{B,r}/M_{B,max}$ [Nm]	0,30/0,55	0,60/1,10	0,84/1,54	1,44/2,64	1,68/3,08	3,12/5,72
Thermal losses @ $U_{B,r}$ [W]	2,6	2,6	3,7	3,7	5,0	5,0

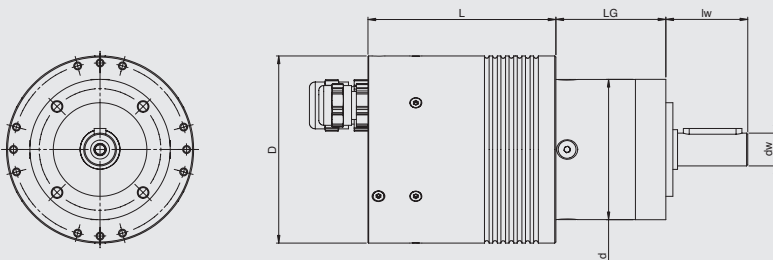
All brakes are operated with a rated voltage,  $U_{B,r} = 10 V$ , to open the brake, an over-excitation voltage of 30 V is required.

## Gear Data

	RD50x08-PG/RD50x14-PG	RD70x10-PG/RD70x18-PG	RD85x13-PG/RD85x26-PG
Type	PLE040	PLE060	PLE080
Torsional stiffness [Nm/arcmin]	1,0	2,3	5,8
Backlash [arcmin] 1/2/3 stages	< 15/< 19/< 22	< 10/< 12/< 15	< 7/< 9/< 11

## Dimensions

	RD50x08-PG	RD50x14-PG	RD70x10-PG	RD70x18-PG	RD85x13-PG	RD85x26-PG
Diameter D [mm]	61	61	80	80	96	96
Motor length L [mm] brakeless with brake	48,3 64,1	54,7 70,5	54,5 72,4	62,4 80,3	58,8 76,7	72,2 90,1
Gearbox diameter d [mm]	40	40	60	60	80	80
Gearbox length LG [mm] 1/2/3 stages	39/52/64,5	39/52/64,5	47/59,5/72	47/59,5/72	60/77,5/95	60/77,5/95
Shaft diameter dw [mm]	10 h7	10 h7	14 h7	14 h7	20 h7	20 h7
Shaft length lw [mm]	26	26	35	35	40	40



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