

DCmind: DC direct-drive brush motors

→ Ø 63 mm - 102 W

- Silent motor
- 12 V and 24 V built in EMC filter class B
- Excellent efficiency
- Long life
- IP65
- In accordance with UL - CE - ROHS regulations



Part numbers

	12 V	24 V	48 V	90 V
Type	89830	89830	89830	89830
Voltage	12 V $\overline{---}$	24 V $\overline{---}$	48 V $\overline{---}$	90 V $\overline{---}$
References				
Option: IP65 level	89830011	89830012	89830003	89830004
Option: holding brake 0.5 Nm, 24 V $\overline{---}$	89830511	89830512	89830503	89830504
Option: 2 channels encoder 1000 pulses/revolution, 5 V $\overline{---}$	89830911	89830912	89830903	89830904
No-load characteristics				
Speed (rpm)	3830	3600	3550	3550
Absorbed current (A)	0.52	0.23	0.14	0.07
Nominal characteristics				
Speed (rpm)	2850	3000	3050	3000
Torque (mNm)	180	180	180	180
Output power (W)	54	57	57	57
Absorbed current (A)	6.5	3.1	1.54	0.83
Efficiency (%)	69	77	78	76
Maximum efficiency characteristics				
Speed (rpm)	3340	3240	3200	3200
Torque (mNm)	90	111	131	128
Output power (W)	31	38	44	43
Absorbed current (A)	3.5	1.97	1.15	0.61
Efficiency (%)	75	80	80	78
General characteristics				
Insulation conforming to IEC 60085	Class E	Class E	Class E	Class E
Noise level (dBA)	35	35	35	35
Max. output power (W)	70	102	114	109
Starting torque (mNm)	703	1080	1230	1177
Starting current (A)	24	17.2	9.7	5
Resistance (Ω)	0.5	1.4	4.9	18
Inductance (mH)	0.38	1.7	7	25
Torque constant (mNm/A)	30	64	129	237
Electrical time constant (ms)	0.8	1.2	1.4	1.4
Mechanical time constant (ms)	21	13	11	12
Inertia (g.cm ²)	380	380	380	380
Weight (g)	1200	1200	1200	1200
Commutator segments	12	12	12	12
Service life (h)	5000	5000	5000	5000
Wires length (mm)	200	200	200	200
Ball bearing	✓	✓	✓	✓
Comments				

IP65 level except for the output shaft. Encoder and brake options are IP20.

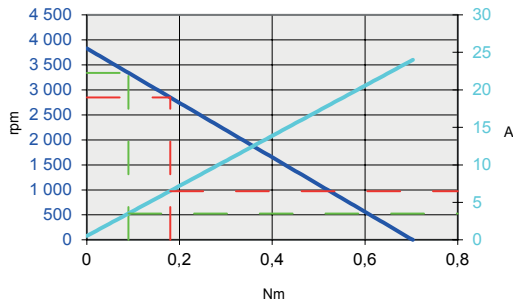
Product adaptations, contact us

- Special output shaft
- Shaft with pinion, pulley, worm gear
- Special supply voltage
- Other wire length
- Optical or Hall effect encoder - 1 or 2 channels
- Specific motor mounting flange
- Special motor connectors
- IP67, IP69K

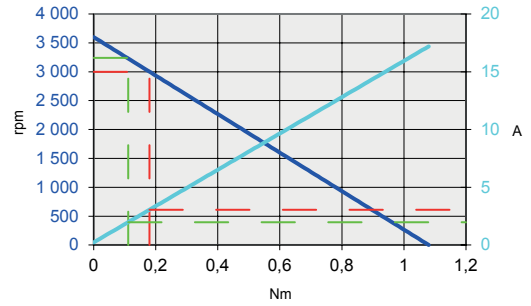


Curves

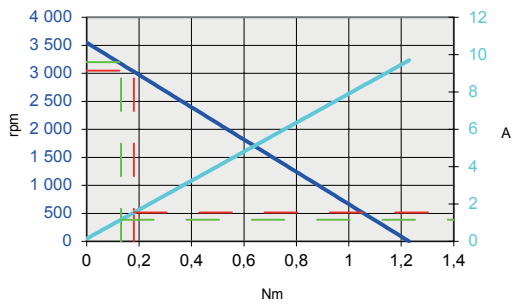
89830011 - 89830511 - 89830911



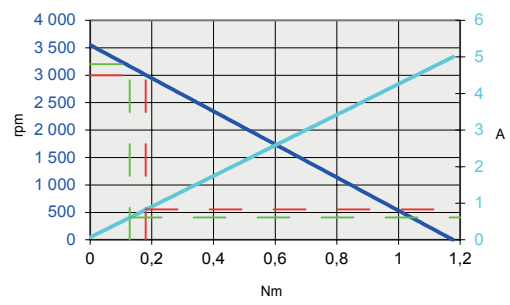
89830012 - 89830512 - 89830912



89830003 - 89830503 - 89830903

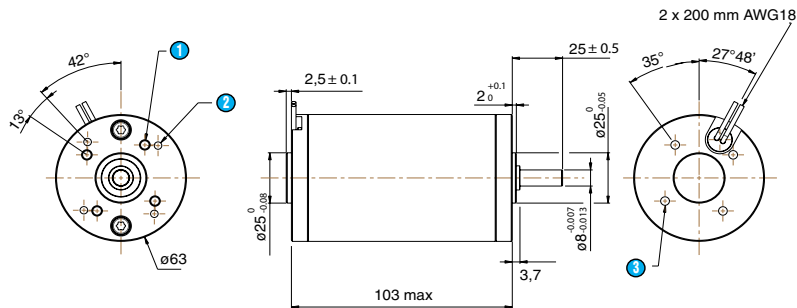


89830004 - 89830504 - 89830904



- Speed (rpm)
- Current (A)
- Torque at nominal
- Torque at maximum efficiency

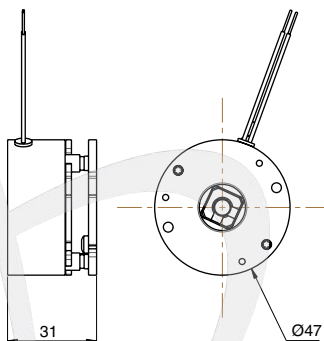
Dimensions (mm)



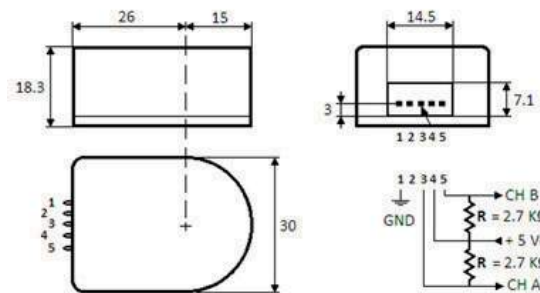
- ① 4 x M5 at 90° depth 10 over Ø 40
- ② 4 x Ø 3.65 at 90° depth 8 over Ø 48
- ③ 4 x M5 at 90° depth 7 over Ø 40

Options

Holding brake 0.5 Nm



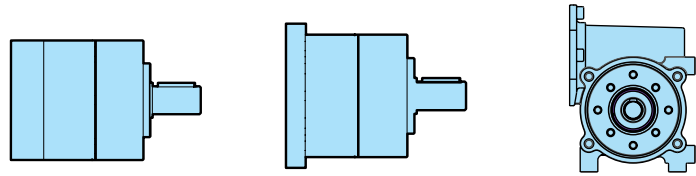
Encoder



Gearboxes for DCmind brush range

→ 3 to 25 Nm

- Planetary and worm gearboxes, very silent versions
- Shafts on ball bearings
- Long service life



Part numbers

Gearboxes	A1			B1			RAD10		
Family	A1			B1			RAD10		
Type of gearbox	Planetary ø 42			Planetary ø 52			Worm gear		
Associated motors	Gear motor reference			Gear motor reference			Gear motor reference		
89810 IP65 / Holding brake / Encoder	8981 A1 / A5 / A9								
89800 IP65 / Holding brake / Encoder	8980 A1 / A5 / A9								
89850 IP65 / Holding brake / Encoder	8985 A1 / A5 / A9								
89830 IP65 / Holding brake / Encoder				8983 B1 / B5 / B9			8983 10 / 15 / 19		
89890 IP65 / Holding brake / Encoder				8989 B1 / B5 / B9			8989 10 / 15 / 19		
General characteristics									
Number of stages	1	2	3	1	2	3	1		
Maximum permitted torque (Nm)	3	7.5	15	4	12	25	10		
Efficiency	0.8	0.75	0.7	0.8	0.75	0.7	0.6 → 0.3		
Axial dynamic load (daN)	5	8	11	6	10	15	10		
Radial dynamic load (daN)	16	23	30	20	32	45	15		
Weight (kg)	0.3	0.4	0.5	0.7	0.9	1.1	0.6		
Standard reduction ratios	9	45	302	7-9	28-45	302	5 - 10 - 20 - 30 - 50		
Other ratios possible	58 - 137 - 232 - 393			58 - 137 - 192 - 232 - 393			15 - 100		
Operating temperature	-30 → +70°C			-30 → +70°C			-10 → +75°C		
Typical noise level	45 dBA			45 dBA			45 dBA		
Comments									

Planetary gearboxes:

To maintain a very low noise level, the motor pinion is precision machined on motor shaft to obtain optimum concentricity and parallelism. The gears in the first stage are helical-cut and made from a composite material. This design significantly improves gear life by reducing wear due to misalignment, increases gearbox efficiency and ensures a very low noise level even with the gearbox under load.

Worm gearbox:

This gearbox combines a tempered steel worm gear with a hardened bronze helical wheel, a combination that ensures a long service life. The helical wheel rotates in a grease reservoir to provide an excellent slip coefficient and dissipate heat. O-rings and lip seals equipped with garter springs are used to ensure sealing the gearbox output shaft.

The gearbox casing is made of aluminium to maximize heat dissipation.

However, because of the high power rating of this gearbox and the lower efficiency inherent in ratio worm gearboxes, care must be taken not to exceed a temperature of 75°C on the gearbox casing during operation.

The output shaft configuration can be right, left, or a dual shaft (shaft output on both sides).

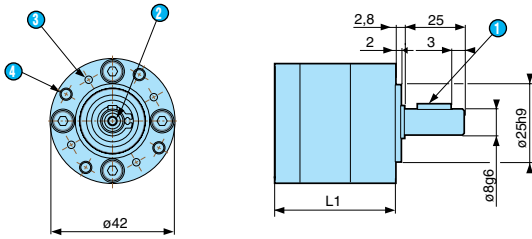
Product adaptations, contact us



- Special shafts
- Other reduction ratios
- Other fixing holes
- Special mounting flange

Dimensions (mm)

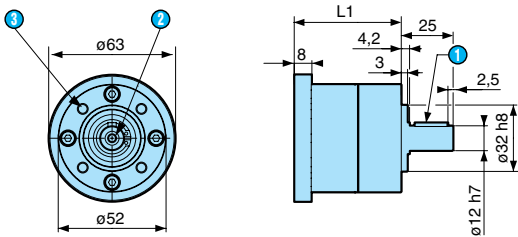
Planetary gearbox $\phi 42$ type A1



- 1 Parallel key 3 x 3 x 16 DIN6885
- 2 M3, depth 9
- 3 4 x M3 at 90°, depth 7 over $\phi 32$
- 4 4 x M4 at 90°, depth 10 over $\phi 36$

L1 1 stage: 48.5 max.
 L1 2 stages: 61.6 max.
 L1 3 stages: 74.7 max.

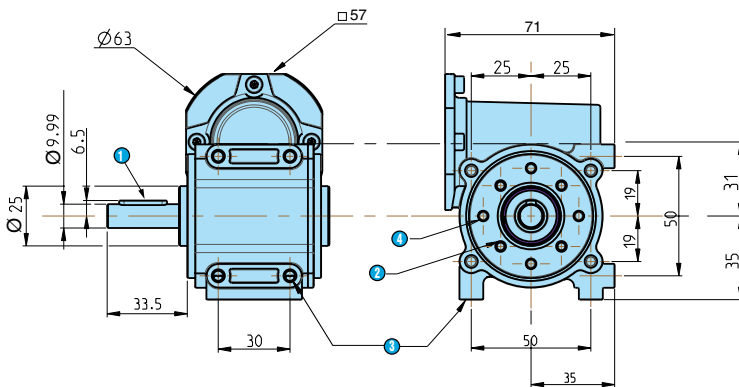
Planetary gearbox $\phi 52$ type B1



- 1 Parallel key 4 x 4 x 16 DIN6885
- 2 M4, depth 10
- 3 4 x M5 at 90°, depth 10 over $\phi 40$

L1 1 stage: 56.1 max.
 L1 2 stages: 70.3 max.
 L1 3 stages: 84.5 max.

Worm gearbox RAD10



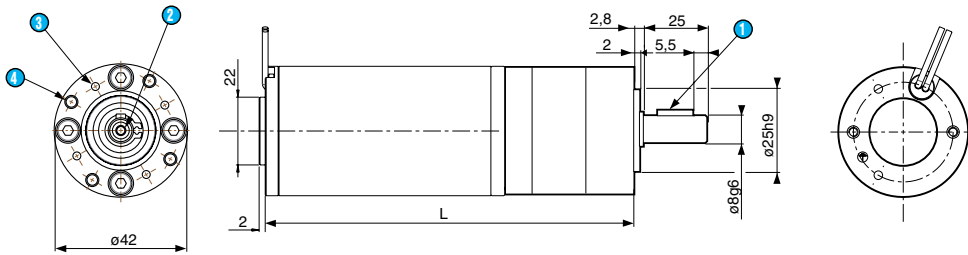
- 1 Parallel key 4 x 4 x 20 DIN6885
- 2 4 x M4, depth 8 over $\phi 36$
- 3 8 x M5, depth 8
- 4 4 x $\phi 3.8$ depth 10 over $\phi 40$

The left-hand and right-hand sides of the gearbox are identical.

DC geared DCmind brush

Dimensions (mm)

8981A1 - 8980A1 - 8985A1



8981A1

L 1 stage: 119.9 max.
L 2 stages: 133 max.
L 3 stages: 146.1 max.

8980A1

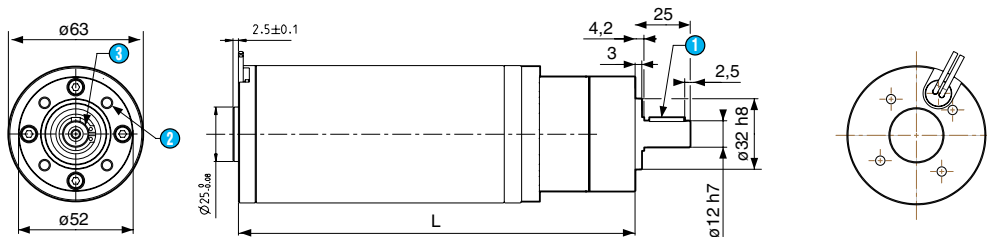
L 1 stage: 135 max.
L 2 stages: 148.1 max.
L 3 stages: 161.2 max.

8985A1

L 1 stage: 161.1 max.
L 2 stages: 174.2 max.
L 3 stages: 187.3 max.

- 1 Parallel key 3 x 3 x 16 DIN6885
- 2 M3, depth 9
- 3 4 x M3 at 90°, depth 7 over Ø 32
- 4 4 x M4 at 90°, depth 10 over Ø 36

8983B1 - 8989B1



8983B1

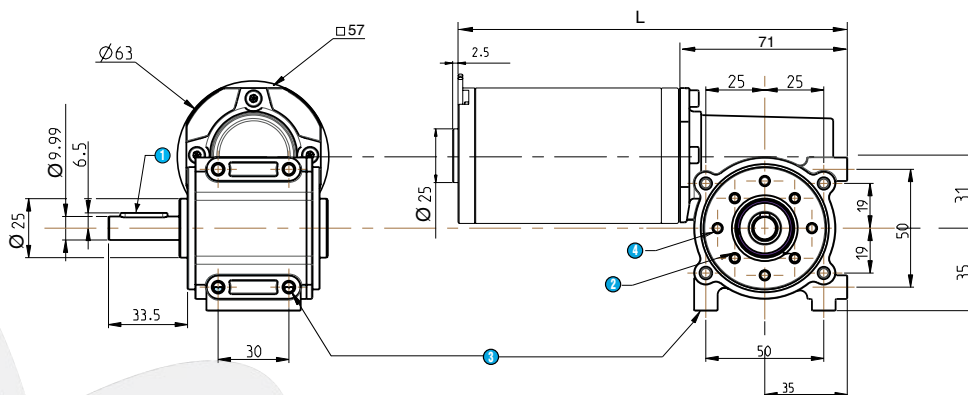
L 1 stage: 159.1 max.
L 2 stages: 173.3 max.
L 3 stages: 187.5 max.

8989B1

L 1 stage: 183.6 max.
L 2 stages: 197.8 max.
L 3 stages: 212 max.

- 1 Parallel key 4 x 4 x 16 DIN6885
- 2 4 x M5 at 90°, depth 10 over Ø 30
- 3 M4, depth 10

898310 - 898910 (left side shaft output)



898310

L: 174.2 max.

898910

L: 198.7 max.

- 1 Parallel key 4 x 4 x 20 DIN6885
- 2 4 x M4, depth 8 over Ø 36
- 3 8 x M5, depth 8
- 4 4 x 3.8, depth 10 over Ø 40