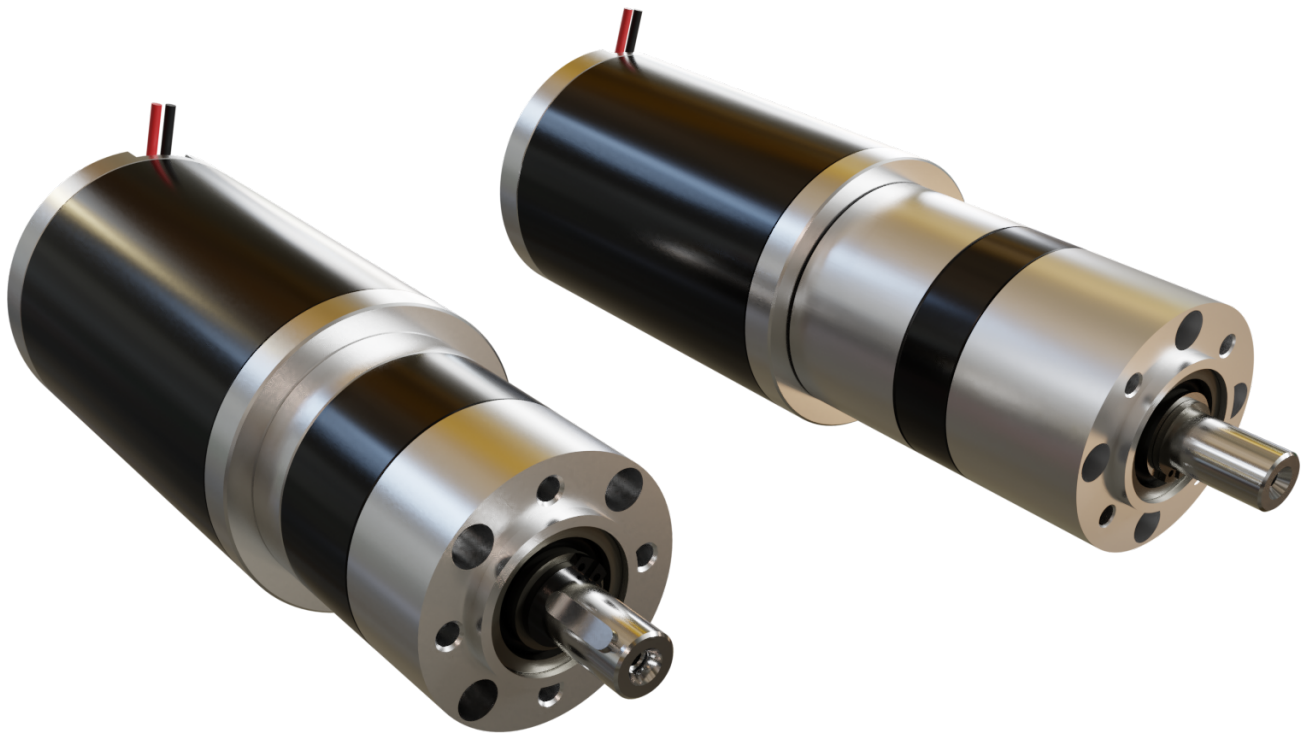


Crouzet DC geared DCmind brush motors

89830 / 89890 + PM52LN / PM62LN



Gearboxes for DCmind brush range

→ output until 50 Nm

- DC brush motor with planetary gearbox very silent versions
- Shafts on ball bearings
- Long service life

Article key						
898x0	xxVDC	AA	PMxxLN	1	LF	i
Motor type	Voltage	Rearshaft	Gear type	Number of stages	Flange type	Reduction ratio
89830	12VDC	- : none	PM52LN	1 : 1 stage	LF : Large	...:1
89890	24VDC	AA : rearshaft*	PM62LN	2 : 2 stages	SF : Small**	
	48VDC			3 : 3 stages		
	90VDC					
	120VDC					

Comments

48, 90 and 120VDC available on order. Please involve us in your innovation, to experience the possibilities.

* IP65 level except for the output shaft, this is IP54. Encoder and brake options are IP20

** Only possible by the PM52LN range depending on the ratio, see overview page 3

General specifications	PM52LN			PM62LN		
Number of stages	1	2	3	1	2	3
Maximum permitted torque (Nm)	4	12	25	8	25	50
Efficiency	0,8	0,75	0,7	0,8	0,75	0,7
Max. backlash in DEG (°)	1,1	0,75	0,8	0,95	0,7	0,75
Radial dynamic load* (N)	200	320	450	240	360	520
Axial dynamic load (N)	60	100	150	70	100	150
Operating temperature	-30 °C ~ +120 °C			-30 °C ~ +120 °C		

Comments

*Mid output shaft

To maintain a very low noise level, the gears in the first stage are helical-cut and made from a plastic material.

Optional: the gears in the first stage made out of steel, helical-cut.

Product adaptations, contact us



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

Configurations for DCmind brush range

Motor series: 89830		Planetary gearbox series: PM52LN																			
Number of stages		1			2			3													
Reduction ratios i rounded (...:1)		4	7	9	14	19	28	37	45	50	58	81	91	98	128	137	166	176	232	302	393
12VDC	Rated speed (rpm)	781	435	330	211	151	102	76	64	57	49	35	31	29	22	21	17	16	12	9	7
	Rated torque (Nm)	0,5	0,9	1,2	1,8	2,6	3,8	5,1	6	6,3	7,3	10,2	11,5	12,4	16,1	17,3	21	22,1	29,2	38	49,5
24VDC	Rated speed (rpm)	822	458	348	222	159	107	80	67	60	52	37	33	31	23	22	18	17	13	10	8
	Rated torque (Nm)	0,5	0,9	1,2	1,8	2,6	3,8	5,1	6	6,3	7,3	10,2	11,5	12,4	16,1	17,3	21	22,1	29,2	38	49,5
Flange types		LF	LF	SF/LF	LF	LF	LF	SF/LF	SF/LF	LF	LF	LF	LF	LF	LF	SF/LF	LF	LF	LF	SF/LF	LF

Motor series: 89890		Planetary gearbox series: PM52LN																			
Number of stages		1			2			3													
Reduction ratios i rounded (...:1)		4	7	9	14	19	28	37	45	50	58	81	91	98	128	137	166	176	232	302	393
24VDC	Rated speed (rpm)	877	489	371	237	169	114	85	72	64	55	39	35	33	25	23	19	18	14	11	8
	Rated torque (Nm)	0,8	1,5	2	2,9	4,1	6,1	8,1	9,7	10,2	11,8	16,5	18,5	19,9	25,9	27,8	33,8	35,7	47,0	61,2	79,8
Flange types		LF	LF	SF/LF	LF	LF	LF	SF/LF	SF/LF	LF	LF	LF	LF	LF	LF	SF/LF	LF	LF	LF	SF/LF	LF

Motor series: 89830		Planetary gearbox series: PM62LN																			
Number of stages		1			2			3													
Reduction ratios i rounded (...:1)		4	7	9	14	19	28	37	45	50	58	81	91	98	128	137	166	176	232	302	393
12VDC	Rated speed (rpm)	781	435	330	211	151	102	76	64	57	49	35	31	29	22	21	17	16	12	9	7
	Rated torque (Nm)	0,5	0,9	1,2	1,8	2,6	3,8	5,1	6	6,3	7,3	10,2	11,5	12,4	16,1	17,3	21	22,1	29,2	38	49,5
24VDC	Rated speed (rpm)	822	458	348	222	159	107	80	67	60	52	37	33	31	23	22	18	17	13	10	8
	Rated torque (Nm)	0,5	0,9	1,2	1,8	2,6	3,8	5,1	6	6,3	7,3	10,2	11,5	12,4	16,1	17,3	21	22,1	29,2	38	49,5
Flange type		LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF

Motor series: 89890		Planetary gearbox series: PM62LN																			
Number of stages		1			2			3													
Reduction ratios i rounded (...:1)		4	7	9	14	19	28	37	45	50	58	81	91	98	128	137	166	176	232	302	393
24VDC	Rated speed (rpm)	877	489	371	237	169	114	85	72	64	55	39	35	33	25	23	19	18	14	11	8
	Rated torque (Nm)	0,8	1,5	2	2,9	4,1	6,1	8,1	9,7	10,2	11,8	16,5	18,5	19,9	25,9	27,8	33,8	35,7	47	61,2	79,8
Flange type		LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Comments																					

Not highlighted: standard stock program

Highlighted in GREY: available on order (±6-8 weeks). Please involve us in your innovation, to experience the possibilities.

Highlighted in RED: please note max. continues torque. Motor should be limited on torque (current).

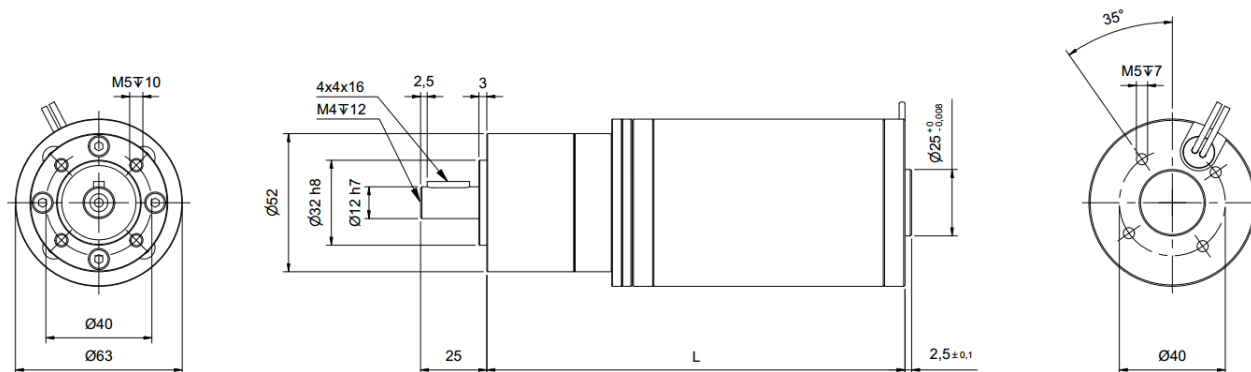
In addition to the listed ratios, the following are also available on order: 5, 16, 17, 23, 25, 34, 67, 70, 102, 106, 115, 123, 128, 145, 176, 192:1



Configurations for DCmind brush range

Dimensions

898x0_PM52LN -x-SF



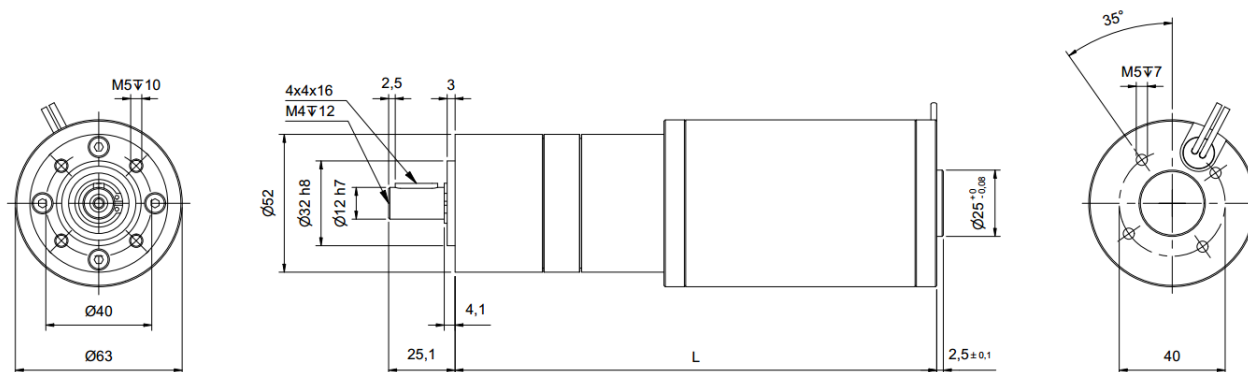
89830_PM52LN -x-SF (8983B1)

L 1 stage:	159,1 mm
L 2 stage:	173,3 mm
L 3 stage:	187,5 mm

89890_PM52LN -x-SF (8989B1)

L 1 stage:	183,6 mm
L 2 stage:	197,8 mm
L 3 stage:	212,0 mm

898x0_PM52LN -x-LF



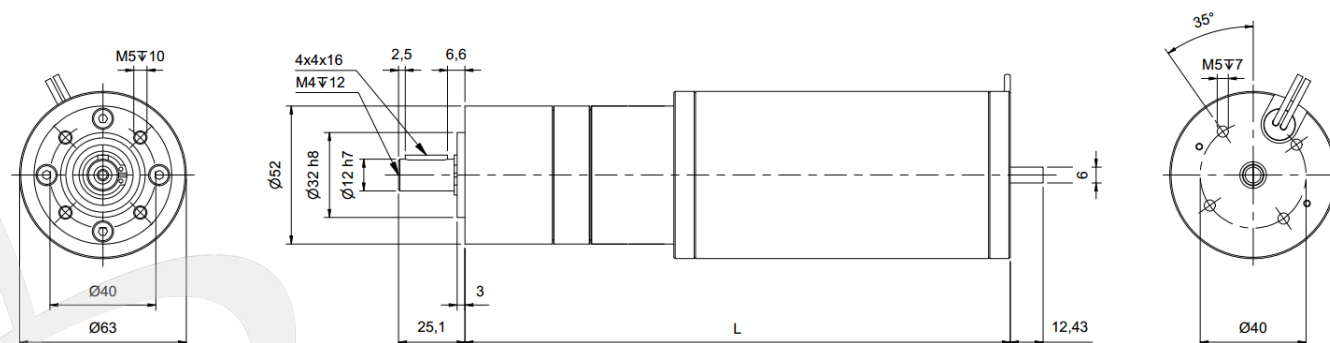
89830_PM52LN -x-LF

L 1 stage:	181,9 mm
L 2 stage:	196,1 mm
L 3 stage:	210,2 mm

89890_PM52LN -x-LF

L 1 stage:	205,9 mm
L 2 stage:	220,1 mm
L 3 stage:	234,2 mm

898x0-AA_PM52LN -x-LF



89830-AA_PM52LN -x-LF

L 1 stage:	181,9 mm
L 2 stage:	196,1 mm
L 3 stage:	210,2 mm

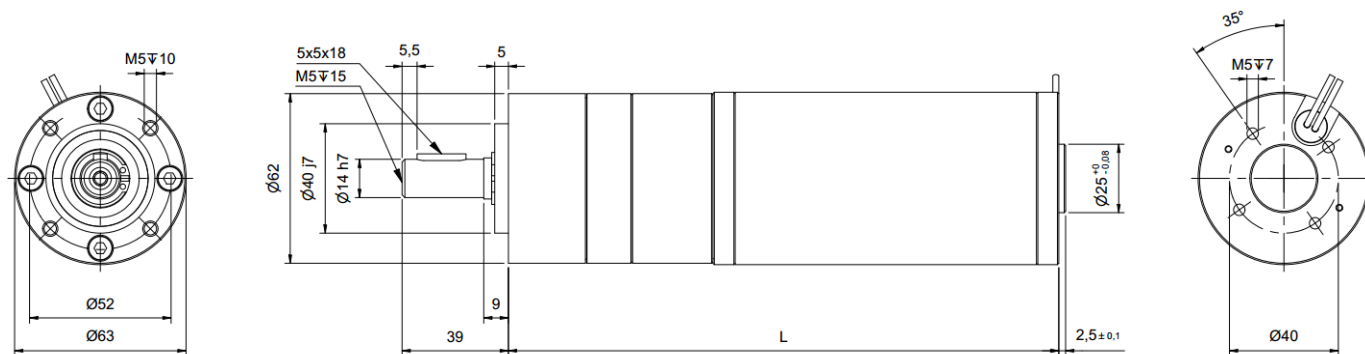
89890-AA_PM52LN -x-LF

L 1 stage:	205,9 mm
L 2 stage:	220,1 mm
L 3 stage:	234,2 mm

Configurations for DCmind brush range

Dimensions

898x0_PM62LN -x-LF



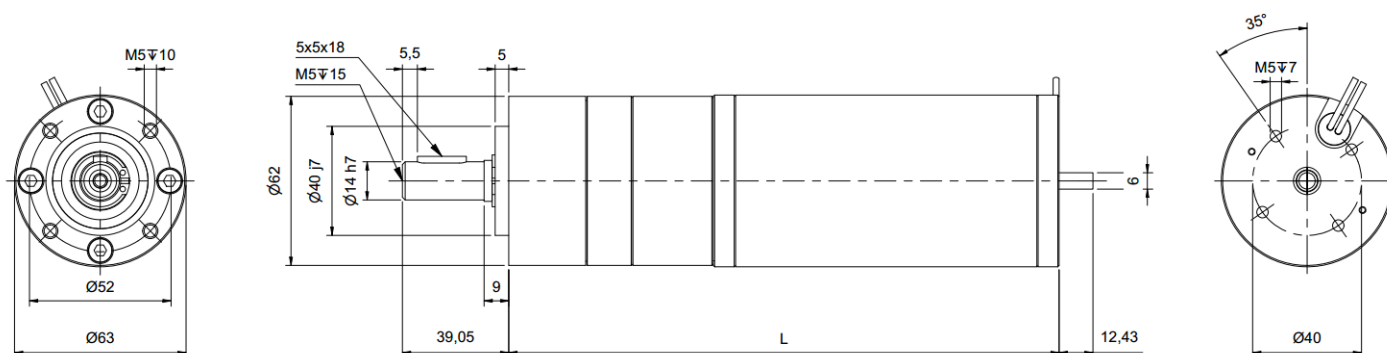
89830_PM62LN -x-LF

L 1 stage:	178,2 mm
L 2 stage:	195,0 mm
L 3 stage:	211,9 mm

89890_PM62LN -x-LF

L 1 stage:	202,2 mm
L 2 stage:	219,0 mm
L 3 stage:	235,9 mm

898x0-AA_PM62LN -x-LF



89830-AA_PM62LN -x-LF

L 1 stage:	178,2 mm
L 2 stage:	195,0 mm
L 3 stage:	211,9 mm

89890-AA_PM62LN -x-LF

L 1 stage:	202,2 mm
L 2 stage:	219,0 mm
L 3 stage:	235,9 mm

2D and 3D files can be downloaded from our website: product.zilvertron.com

Please involve us in your innovation, to experience the possibilities!

+31 (0)182-305045 or sales@zilvertron.com



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 ⁻⁻⁻	24 V ⁻⁻⁻	48 V ⁻⁻⁻	90 V ⁻⁻⁻
References				
Option: IP65 level	89830011	89830012	89830003	89830004
Option: holding brake 0.5 Nm, 24 V ⁻⁻⁻	89830511	89830512	89830503	89830504
Option: 2 channels encoder 1000 pulses/revolution, 5 V ⁻⁻⁻	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.

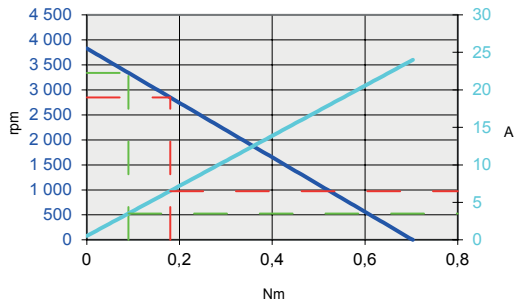
Product adaptations, contact us

- 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

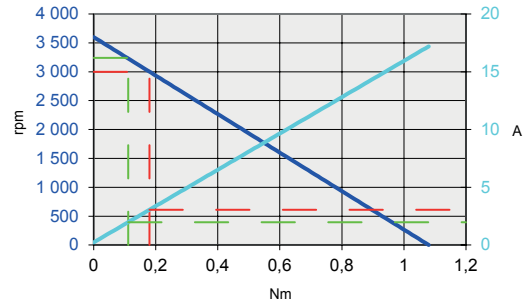


Curves

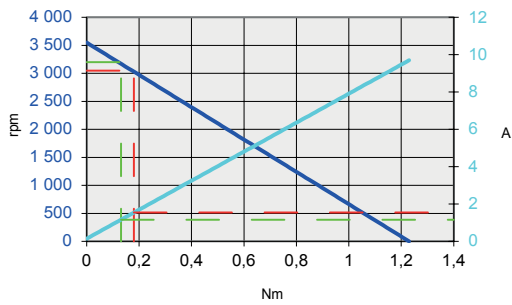
89830011 - 89830511 - 89830911



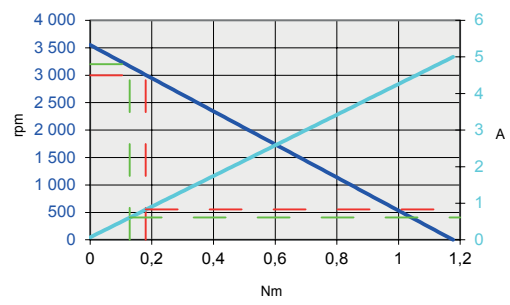
89830012 - 89830512 - 89830912



89830003 - 89830503 - 89830903

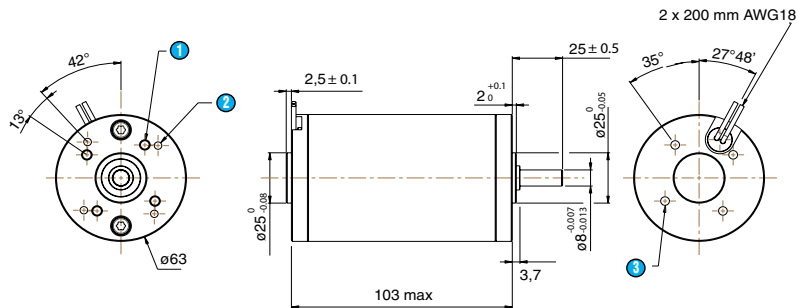


89830004 - 89830504 - 89830904



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

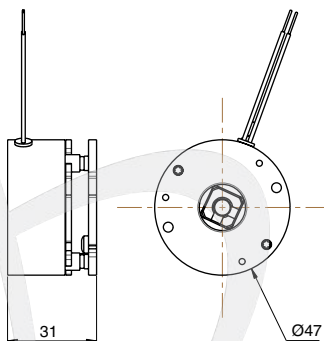
Dimensions (mm)



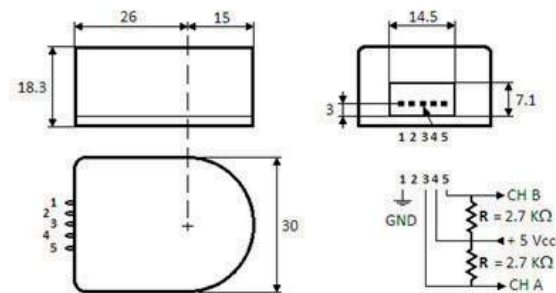
- ① 4 x M5 at 90° depth 10 over Ø 40
- ② 4 x Ø 3.65 at 90° depth 8 over Ø 48
- ③ 4 x M5 at 90° depth 7 over Ø 40

Options

Holding brake 0.5 Nm



Encoder



DCmind: DC direct-drive brush motors

→ Ø 63 mm - 209 W

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



Part numbers

	24 V	48 V	90 V	120 V
Type	89890	89890	89890	89890
Voltage	24 V $\overline{---}$	48 V $\overline{---}$	90 V $\overline{---}$	120 V $\overline{---}$
References				
Option: IP65 level	89890011	89890003	89890004	89890005
Option: holding brake 0.5 Nm, 24 V $\overline{---}$	89890511	89890503	89890504	89890505
Option: 2 channels encoder 1000 pulses/revolution, 5 V $\overline{---}$	89890911	89890903	89890904	89890905
No-load characteristics				
Speed (rpm)	4000	3780	3700	3730
Absorbed current (A)	0.34	0.16	0.09	0.07
Nominal characteristics				
Speed (rpm)	3430	3370	3320	3350
Torque (mNm)	290	290	290	290
Output power (W)	104	102	101	102
Absorbed current (A)	5.4	2.53	1.34	1.01
Efficiency (%)	80	84	84	84
Maximum efficiency characteristics				
Speed (rpm)	3660	3480	3410	3430
Torque (mNm)	179	207	218	230
Output power (W)	69	75	78	83
Absorbed current (A)	3.5	1.9	1	0.82
Efficiency (%)	82	84	84	84
General characteristics				
Insulation conforming to IEC60085	Class E	Class E	Class E	Class E
Noise level (dBA)	35	35	35	35
Max. output power (W)	209	265	269	281
Starting torque (mNm)	2000	2680	2780	2875
Starting current (A)	35.3	22.2	12.1	9.4
Resistance (Ω)	0.7	2.2	7.4	12.8
Inductance (mH)	0.73	3.3	12	21
Torque constant (mNm/A)	57	122	232	308
Electrical time constant (ms)	1.1	1.5	1.6	1.6
Mechanical time constant (ms)	13	9	9	9
Inertia (g.cm ²)	650	650	650	650
Weight (g)	1600	1600	1600	1600
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.

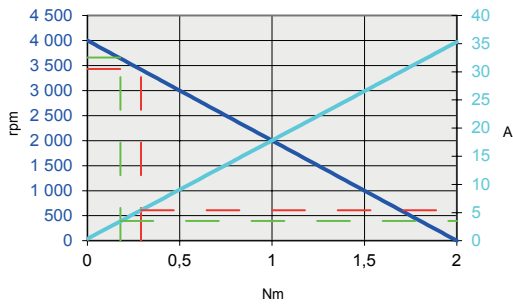
Product adaptations, contact us

- 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

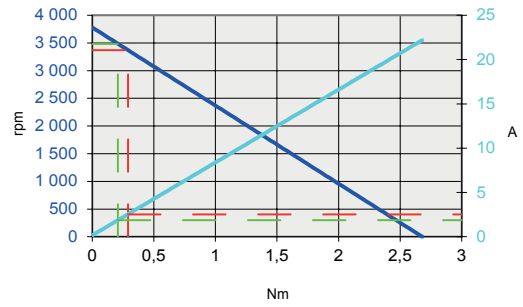


Curves

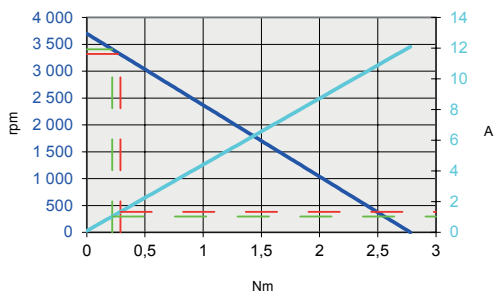
89890011 - 89890511 - 89890911



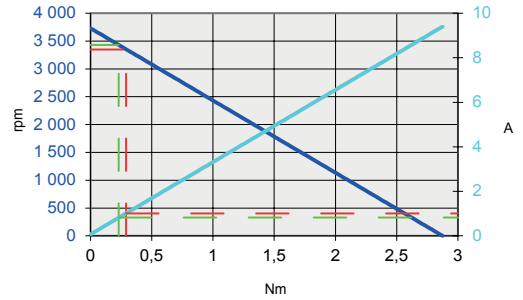
89890003 - 89890503 - 89890903



89890004 - 89890504 - 89890904

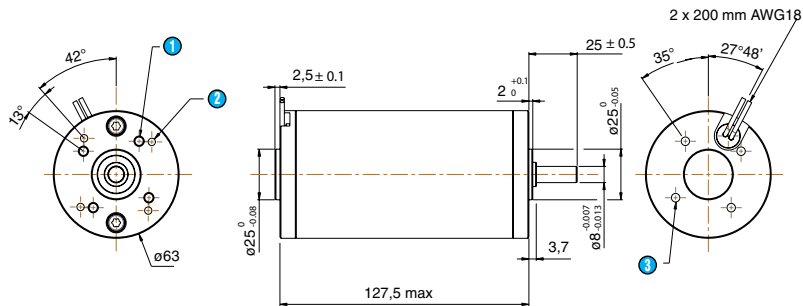


89890005 - 89890505 - 89890905



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

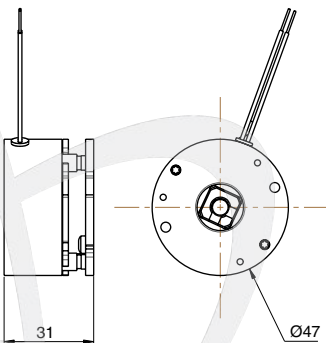
Dimensions (mm)



- 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

