

Technische specificaties

De belangrijkste kenmerken van de DC-Wormwielmotoren zijn:

- Voeding 12, 24VDC (andere optioneel)
- Gegoten aluminium behuizing
- Wormwielkast wordt permanent gesmeerd met synthetische olie, hierdoor is montage in iedere positie mogelijk.
- Geschikt voor encoder montage (AA versie)

Selectie

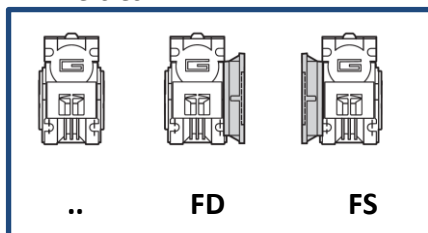
Artikel sleutel					
898x0	xxVDC	AA	ZW0xx	i	
Motor type	Voltage	Achter as	Vertraging type	Uitgaande flens type	Overzetverhouding
89830	12VDC	- : none	ZW026	.. : none	...:1
89890	24VDC	AA : achter as*		FD	
	48VDC			FS	
	90VDC				
	120VDC				

Comments

48, 90 and 120VDC zijn leverbaar op bestelling. Schakel ons in bij uw innovatie en ervaar onze meerwaarde.

* IP65 behoudens de uitgaande as, deze is IP54. De achteras opties (encoder en rem) zijn IP20

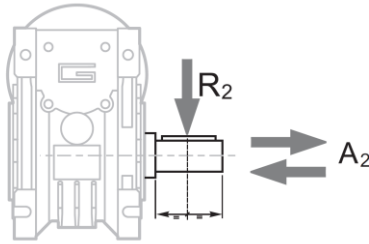
* Versies



Definities

V	(VDC)	Voltage	i	Overzetverhouding
A₂	(N)	Max. axiale belasting	Rd	Rendement
R₂	(N)	Max. radiale belasting	IP	Dichtheidsklasse
P_n	(W)	Nominale vermogen	IC	Isolatieklasse
M_n	(Nm)	Nominaal koppel	Kg	Gewicht
M₂	(Nm)	Uitgaand koppel (bij S1 gebruik)		
n₁	(min ⁻¹)	Motor toerental		
n₂	(min ⁻¹)	Uitgaand toerental		

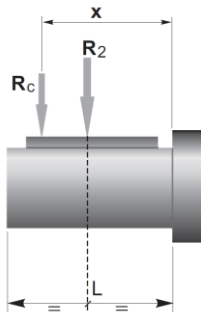
Asbelasting



$A_2 = R_2 \times 0.2$

n ₂ (min-1)	R ₂ (N)
	ZW 026
187	400
140	490
93	580
70	610
56	610
47	610
35	610
28	610
23	610
18	610
14	610

Wanneer de radiale asbelasting niet wordt toegepast in het midden van de as, kunt u de effectieve belasting berekenen met de volgende formule:



$$R_c = \frac{R_2 \cdot a}{(b+x)} \leq R_{2MAX}$$

$$R \leq R_c$$

a, b waarden volgens de tabel

	ZW
	026
a	56
b	43
R ₂ max	610

Vertanding

	Wormwiel Data	Overzetverhouding								
		5	7.5	10	15	20	30	40	50	60
ZW 026	Z	6	4	3	2	2	1	1	1	1
	β	34° 35'	24° 41'	19° 1'	12° 57'	10° 30'	6° 33'	5° 17'	4° 26'	3° 49'

Efficiëntie

	n ₁ (min-1)	Efficiëntie	Overzetverhouding								
			5	7.5	10	15	20	30	40	50	60
ZW 026	2800	Rd	0,89	0,87	0,85	0,83	0,8	0,73	0,68	0,64	0,6
		Rs	0,72	0,71	0,68	0,61	0,56	0,46	0,41	0,36	0,34

Specificaties

Motor serie: 89830		Wormwielvertraging: ZW026								
Overzetverhouding (...:1)		5	7,5	10	15	20	30	40	50	60
12VDC	Nominale snelheid (rpm)	570	380	285	190	143	95	71	57	48
	Nominale koppel (Nm)	0,8	1,2	1,5	2,2	2,9	4	5	6	6
24VDC	Nominale snelheid (rpm)	600	400	300	200	150	100	75	60	50
	Nominale koppel (Nm)	0,8	1,2	1,5	2,2	2,9	4	5	6	6

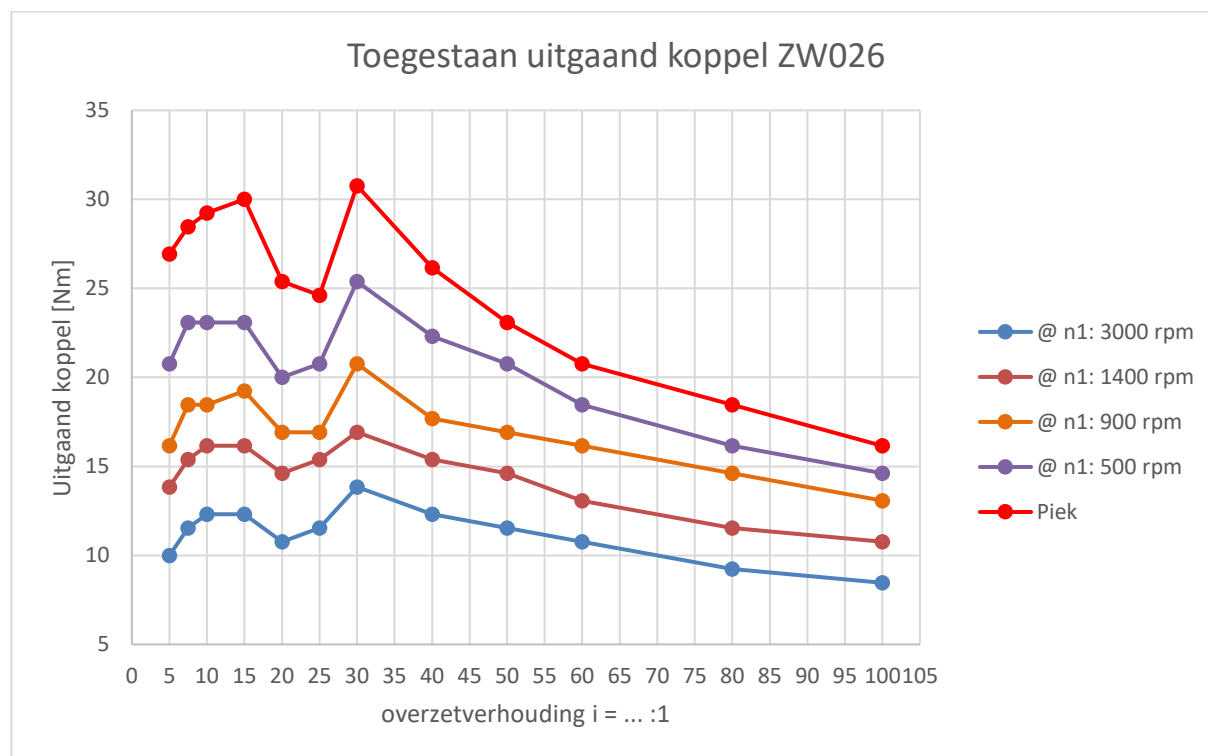
Motor serie: 89890		Wormwielvertraging: ZW026								
Overzetverhouding (...:1)		5	7,5	10	15	20	30	40	50	60
24VDC	Nominale snelheid (rpm)	686	457	343	229	172	114	86	69	57
	Nominale koppel (Nm)	1,3	1,9	2,5	3,6	4,6	6	8	9	10

In **ROOD**: Max. belasting, zie de belastinggrafiek vertraging

Type	Inschakelduur	Pn (W)	V (VDC)	I (A)	IC	Mn (Nm)	n ₁ (min ⁻¹)	IP	kg
89830-12VDC	S1	54	12	6,5	E	0,18	2850	65*	1,2
89830-24VDC	S1	57	24	3,1	E	0,18	3000	65*	1,2
89890-24VDC	S1	104	24	5,4	E	0,29	3430	65*	1,6

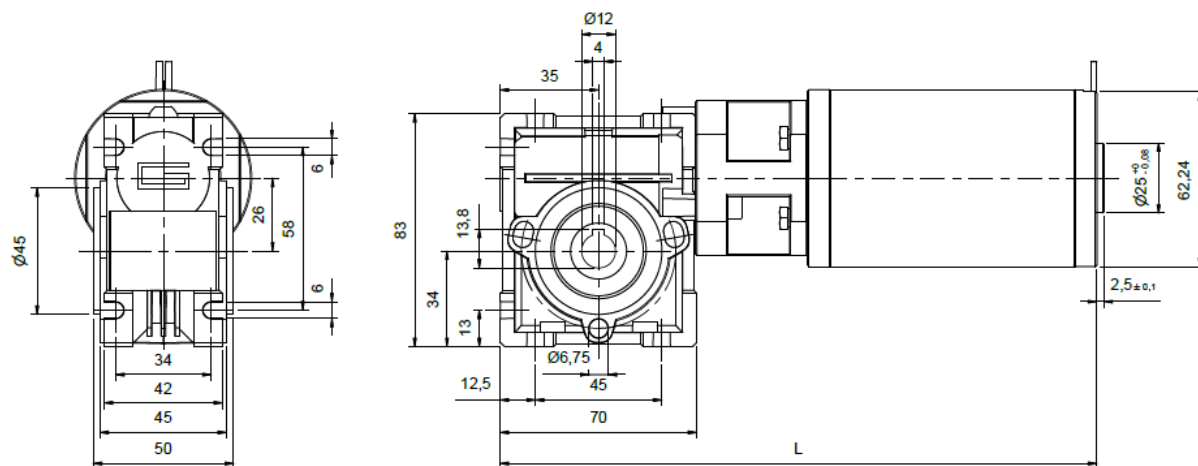
*exclusief de uitgaande as. Encoder en rem uitvoering is IP20.

Belastinggrafiek vertraging



Afmetingen

898x0_ZW026

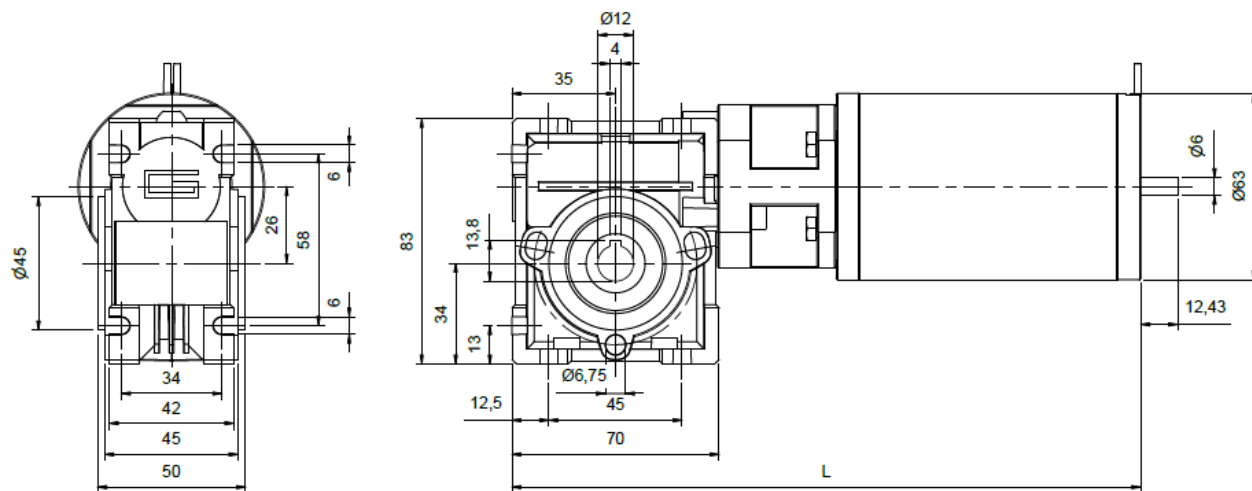

89830_ZW026

L: 212,5mm

89890_ZW026

L: 236,6mm

898x0_AA_ZW026


89830-AA_ZW026

L: 212,5mm

89890-AA_ZW026

L: 236,6mm

2D & 3D tekeningen van deze combinaties staan op onze website.

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.

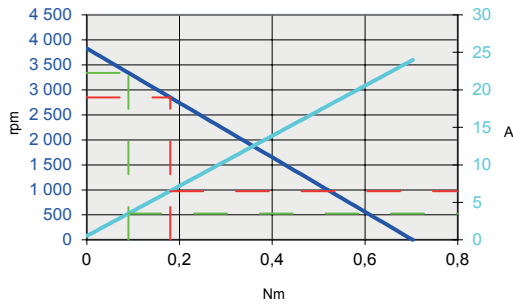
Product adaptations, contact us

- 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

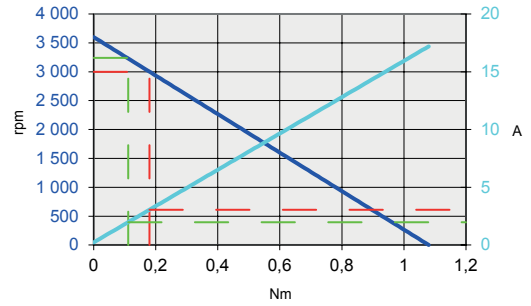


Curves

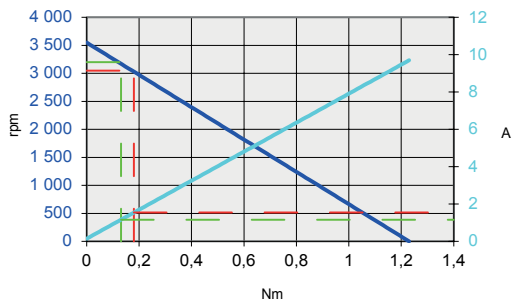
89830011 - 89830511 - 89830911



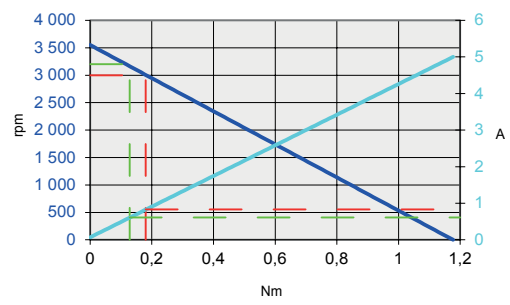
89830012 - 89830512 - 89830912



89830003 - 89830503 - 89830903

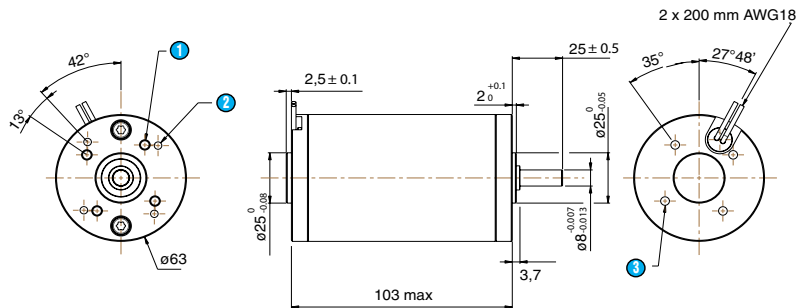


89830004 - 89830504 - 89830904



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

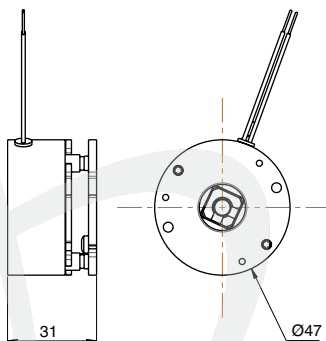
Dimensions (mm)



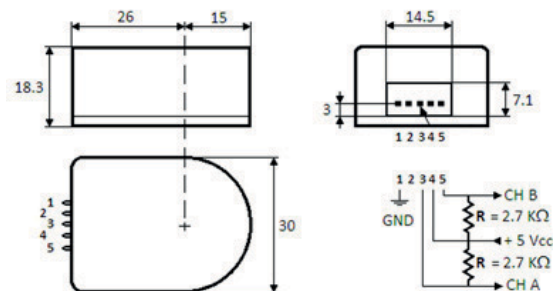
- ① 4 x M5 at 90° depth 10 over Ø 40
- ② 4 x Ø 3.65 at 90° depth 8 over Ø 48
- ③ 4 x M5 at 90° depth 7 over Ø 40

Options

Holding brake 0.5 Nm



Encoder



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.

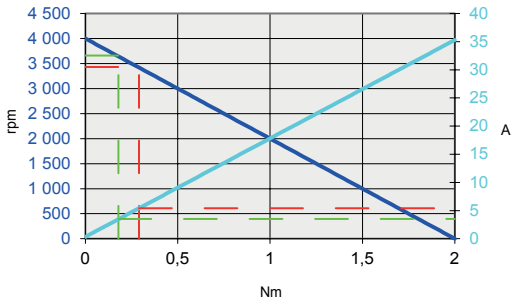
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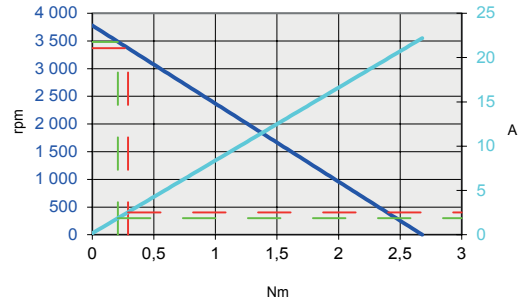


Curves

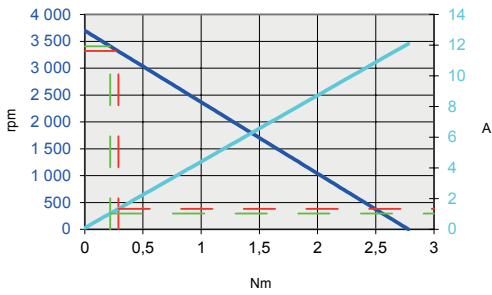
89890011 - 89890511 - 89890911



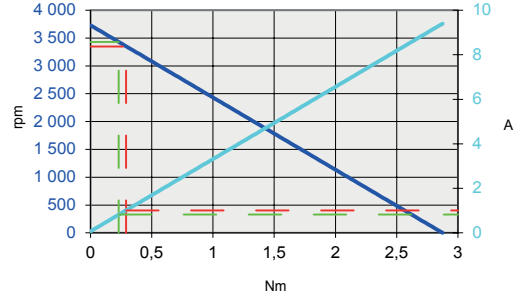
89890003 - 89890503 - 89890903



89890004 - 89890504 - 89890904

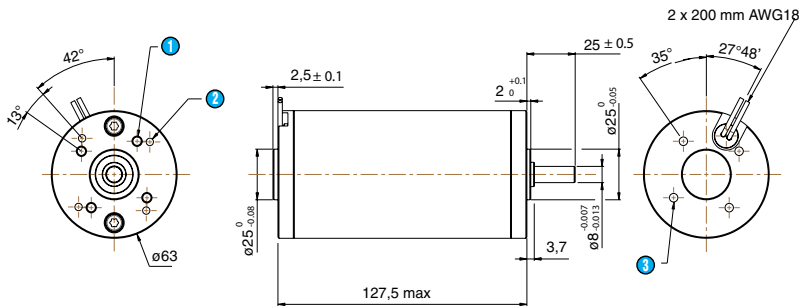


89890005 - 89890505 - 89890905



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

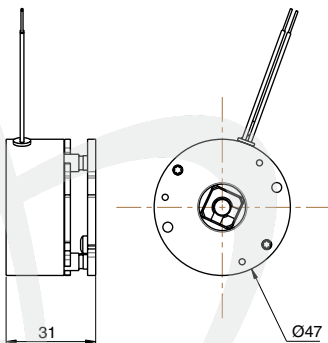
Dimensions (mm)



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

Options

Holding brake 0.5 Nm



Encoder

