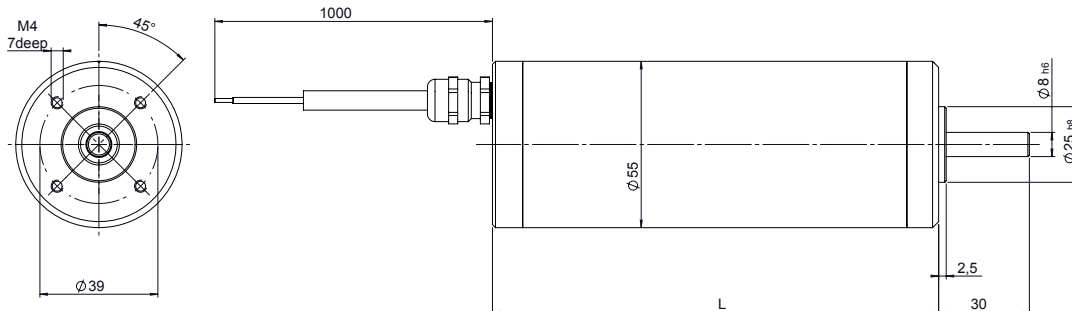


## VGM 31

DC  
Motors  
with permanent magnet field

Motor series GNM 31  
up to 90 Watts output power



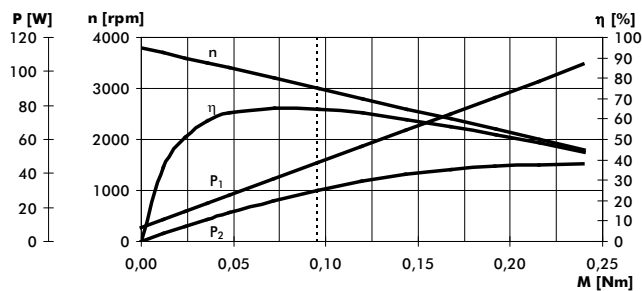
Type	Dimension L
VGM 3125	97
VGM 3150	122
VGM 3175	148

### Operation characteristics:

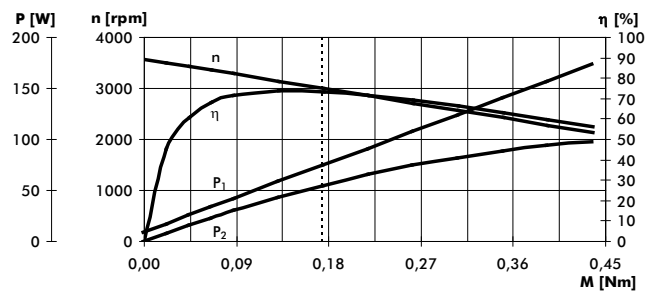
n - Speed  
 $\eta$  - Efficiency

P<sub>1</sub> - Input power  
P<sub>2</sub> - Output power

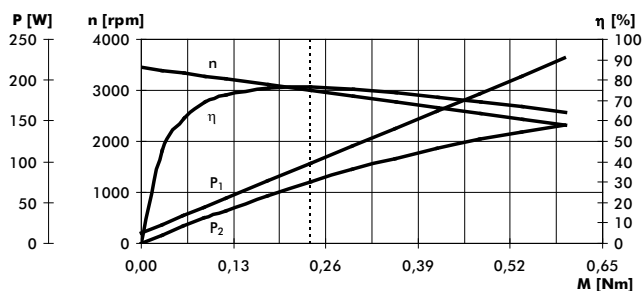
VGM3125, 24V, 3000rpm



VGM3150, 24V, 3000rpm



VGM3175, 24V, 3000rpm



### Motor design:

The standard DC Motors series VGM 31 are equipped with plain shaft and round output flange in design B14. Due to lifetime optimisation of the carbon brushes it was possible to eliminate the brush holder opening.

The cable comes to the outside via cable gland.

Flange mounting with 4 threads, see drawing.

Rotating direction:

The rotating direction can be changed by inverting the connections.

Order example

Motor

VGM 3175

24 V, 3000 rpm

Other voltages, speeds, radial cable outlet and special designs on request.

### Features:

- High acceleration because of small moments of inertia
- Long brush lifetime because of optimisation of the brush holder
- Robust mechanical structure with steel tube housing and aluminium end plates with tension rod fixing

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**VGM 31**

<b>type</b>		<b>VGM 3125</b>	<b>VGM 3150</b>	<b>VGM 3175</b>
series		-	-	-
nominal speed	rpm	3000	3000	3000
nominal voltage	V	24	24	24
nominal current	A	2	3,1	4,1
nominal power	W	30	55	75
operation acc. to VDE 0530		S1	S1	S1
protection acc. to VDE 0530		IP 54 (IP 65 on request)		
connection		light plastic-sheathed cable		
rotating direction		reversible		
design		B 14		
<b>mechanical data:</b>				
mass moment of inertia	kgm <sup>2</sup>	0,0177*10 <sup>-3</sup>	0,0296*10 <sup>-3</sup>	0,0421*10 <sup>-3</sup>
nominal torque	Nm	0,096	0,175	0,239
starting torque	Nm	0,4	0,96	1,5
max. continuous torque at stall	Nm	0,105	0,2	0,27
speed regulation constant	N <sup>-1</sup> cm <sup>-1</sup> rpm	83	33	19
mechanical time constant	ms	15,4	10,1	8,4
friction torque	Nm	0,02	0,025	0,035
rotor weight	kg	0,19	0,3	0,42
motor weight	kg	0,77	1,15	1,5
ball bearings		608/608		
F <sub>R</sub> (allowable radial shaft load)		100		
F <sub>A</sub> (allowable axial shaft load)		40		
<b>electrical data:</b>				
armature resistance	Ω	2,6	1,05	0,69
armature inductance	mH	3	1,4	0,94
terminal resistance	Ω	3,13	1,4	0,9
voltage constant	V/1000 rpm	6,27	6,69	7,06
torque constant	Nm/A	0,06	0,064	0,067
starting current	A	7,7	17,1	26
max. peak current <sup>1)</sup>	A	16	31	43
electrical time constant	ms	0,96	1	1,04
<b>thermal data:</b>				
max. ambient temperature	°C	40	40	40
insulation class acc. to VDE 0530		F	F	F
thermal time constant	min	32	32	32
temperature-rise without cooling	K/W	4,7	3,9	3,3

Tolerances acc. to standard VDE 0530. ± 10% is valid for not VDE mentioned tolerances.

The values mentioned in the table are valid for supply with DC voltage with allowable harmonic contingent up to 5%  
For undulatory current with increased harmonic contingent the rated motor values must be multiplied by 0,7.

<sup>1)</sup> The values are valid for operation in temperature-ranges from 0 up to 40°C and it is not allowed to excess them, even not for a short-time, to avoid magnet-weakening.