

Correction

Correction: de Menezes et al. A Thorough Procedure to Design Surface-Mounted Permanent Magnet Synchronous Generators. *Machines* 2024, 12, 384

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Error in Equations and Table

In the original publication [1], there were mistakes in Equations (22), (23), (58) and (59) and Table 1 as published. D_{St} should be added in Equations (22) and (23), $\Delta\varphi_{PMGA}$ should be changed to $\Delta\varphi_{PMAG}$ in Equation (58), and $k_{\alpha P}$ should be deleted in Equation (59). In Table 1, the last row's suggested range and value were incorrectly filled as 0.1–0.2 and 2, whereas it should have been 0.01–0.02 and 0.02. The corrected Equations (22), (23), (58) and (59) and Table 1 appear below.

Equation (22):

$$W_{St} = D_{St} \cdot \tan \frac{\theta_{St}}{2}$$

Equation (23):

$$W_t = D_{St} \cdot \tan \frac{\alpha_S - \theta_{St}}{2}$$

Equation (58):

$$B_{Sy} = B_{PM} \cdot \frac{W_{PM}/2}{h_{Sy}} \cdot \Delta\varphi_{AGA} \cdot \Delta\varphi_{PMAG}$$

Equation (59):

$$B_{St} = B_{PM} \cdot \frac{W_{PM}}{N_S/p \cdot W_t}$$

Table 1. Imposed parameters.

Symbol	Unit	Description	Suggested Range	Value
D_{Ro}	mm	Rotor outer diameter	1	410
$k_{\alpha P}$	-	Pole pitch factor	1/2–4/5	4/5
k_{AG}	-	Air gap factor	0.01–0.015	0.01
PC	-	Permeance coefficient	3–8	5
B_{PM}	T	Operative permanent magnet flux density	2	0.98
B_{Ry}	T	Magnetic flux density in the rotor yoke	1.0–1.5 T	1.3
k_{MS}	-	Machine shape factor	1	0.212
$\Delta\varphi_{PMAG}$	-	PM-to-air-gap-leakage factor	3	0.973
N_S	slots	Number of slots	4	36
k_{Sow}	-	Slot-opening factor	0.25–1	0.702
k_{Soh}	-	Slot-opening height factor	0.25–1	0.313
k_{Sw}	-	Wedge height factor	0.25–1	0.250
k_{TS}	-	Tooth-to-slot-width factor	0.8–3	2.08



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Table 1. Cont.

Symbol	Unit	Description	Suggested Range	Value
k_{PMsy}	-	PM-width-to-stator-yoke factor	0.25–1	0.374
k_{SyS}	-	Stator-yoke-to-slot-height factor	0.25–1	0.752
k_{Ac}	-	Coil-shortening factor	2/3 or 5/6 ⁵	5/6
k_{COP}	-	Consequent pole factor	1 or 2	1
N_{Sl}	layers	Number of slot layers	1 or 2	2
$\Delta\varphi_{AGA}$	-	Air-gap-to-armature-leakage factor	³	1.00
E_{Af}	V	Induced voltage value	6	292
N_{Cp}	paths	Number of parallel paths in the armature windings	1 or 2 ⁷	1
k_{sf}	-	Slot fill factor	0.3–0.6	0.5
J_A	A/mm ²	Armature current density	4–6.5	5.75
R_{km}	Ω/km	Conductor resistance per kilometer	⁸	0.643
T_{ref}	°C	Reference temperature	⁹	20
T_{op}	°C	Operating temperature	100–140	120
ρ_{ee}	g/cm ³	Electrical steel mass density	⁹	7.75
P_F	W/kg	Foucault loss per kilogram	⁹	3.68
P_h	W/kg	Hysteresis loss per kilogram	⁹	3.68
k_{Syh}	-	Hysteresis loss factor (yoke)	2	2
k_{SyF}	-	Foucault loss factor (yoke)	1.8	1.8
k_{StH}	-	Hysteresis loss factor (teeth)	1.2	1.2
k_{StF}	-	Foucault loss factor (teeth)	2.5	2.5
k_{PM}	W/m ²	PM-specific loss factor	100–300	200
k_{Sl}	-	Stray loss factor	0.01–0.02	0.02

¹ A straightforward range of values cannot be suggested since it will depend on the intended generator output power. ² Found with the PM demagnetization curve after choosing its grade and temperature, and the permeance coefficient. ³ Obtained through magnetostatic FES. ⁴ Recommended to lead to an integer N_{Cp} . ⁵ These are conventional suggestions, but other values can be chosen. ⁶ Determined to match the calculated terminal voltage with the specifications. ⁷ Or multiples of the number of poles. ⁸ Equivalent resistance of 7 wires of AWG 14 in parallel with 9 wires of AWG 16 at 20 °C. ⁹ Mass density and losses per kilogram of the electrical steel M400-50A E170.

The authors state that the scientific conclusions are unaffected. This correction was approved by the Academic Editor. All authors have read and agreed to the published version of the manuscript. The original publication has also been updated.

Reference

1. de Menezes, G.G.; Maciejewski, N.A.R.; de Carvalho, E.S.; Bazzo, T.d.P.M. A Thorough Procedure to Design Surface-Mounted Permanent Magnet Synchronous Generators. *Machines* **2024**, *12*, 384. [[CrossRef](#)]

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