

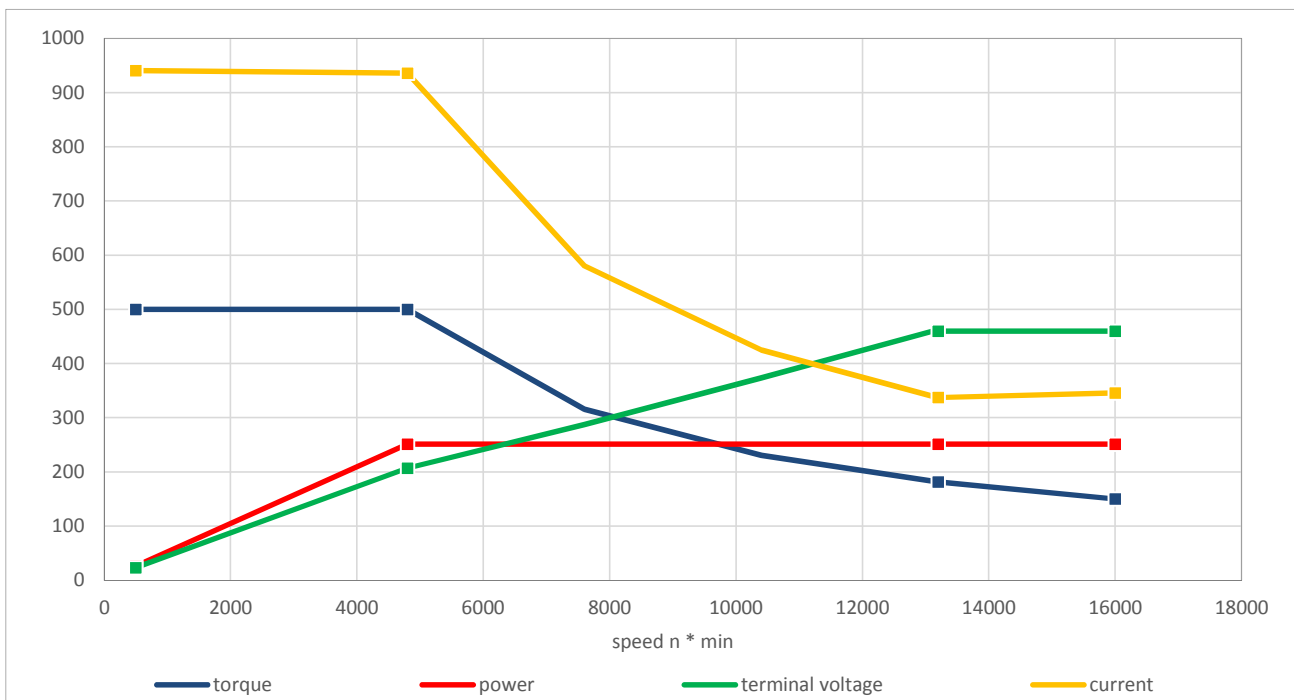


**Motor datasheet PMW132L5P2\_500Nm4800rpm/16000rpm\_Rev.01 - preliminary**

**Operating data - nominal load**

operating data at winding temperature: 120 °C; magnets temperature: 100 °C;  
 temperature coefficient of synchronous generated voltage: -11 % / 100 K.

notice: at 0 Hz the continuous torque has to be reduced to 70 % of the rated value;  
 between 0 Hz and 1 Hz the continuous torque is linear increasing to the nominal value;



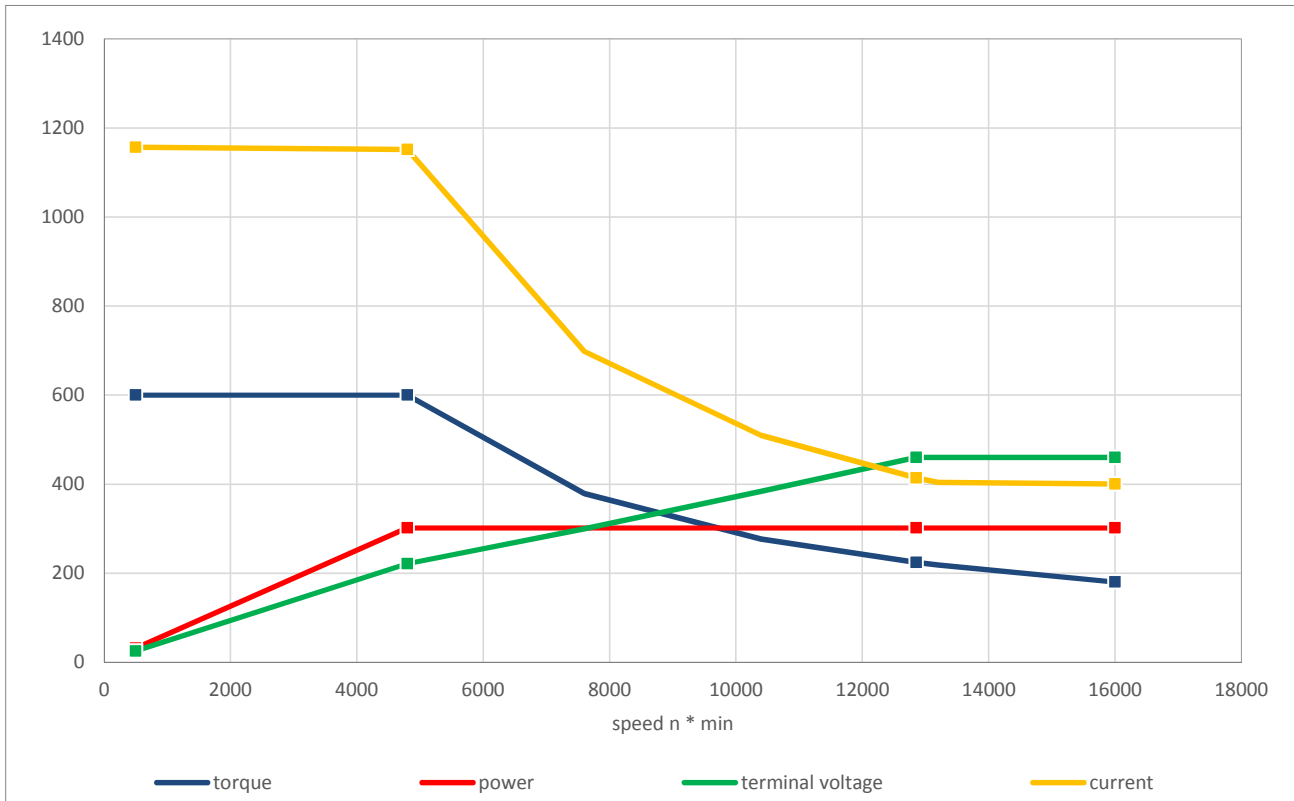
operating point	1	2	3	4	dimension	tolerance
speed	500	4800	13200	16000	1/min	
torque	500,0	500,0	181,8	150,0	N*m	
power	26,2	251,3	251,3	251,3	kW	
terminal voltage	23,5	206,7	459,9	459,8	V	± 8 %
synchronous generated voltage	16,3	156,4	441,8	538,1	V	± 6 %
current	940,4	935,7	337,2	345,5	A	± 6 %
frequency	16,7	160,0	440,0	533,3	Hz	
cos phi	0,809	0,771	0,964	0,944		± 8 %
efficiency	84,6	97,2	97,1	96,8	%	± 2 %
phase resistance	1,65	1,92	2,60	2,87	mΩ	± 15 %
phase-ind. Lq	80,9	80,8	81,7	83,7	μH	± 15 %
phase-ind. Ld	67,0	66,2	79,7	84,1	μH	± 15 %
phi_ip	0,0	0,0	1,2	37,0	°	± 8 %

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### Operating data - overload

operating data at winding temperature: 120 °C; magnets temperature: 100 °C;  
temperature coefficient of synchronous generated voltage: -11 % / 100 K.



operating point	1	2	3	4	dimension	tolerance
speed	500	4800	12854	16000	1/min	
torque	600,0	600,0	224,1	180,0	N*m	
power	31,4	301,6	301,6	301,6	kW	
terminal voltage	25,3	221,6	459,9	459,8	V	± 8 %
synchronous generated voltage	15,9	152,6	429,8	538,1	V	± 6 %
current	1156,7	1151,5	414,1	400,4	A	± 6 %
frequency	16,7	160,0	428,5	533,3	Hz	
cos phi	0,759	0,706	0,939	0,973		± 8 %
efficiency	81,5	96,7	97,4	97,2	%	± 2 %
phase resistance	1,65	1,92	2,57	2,87	mΩ	± 15 %
phase-ind. Lq	78,6	78,3	82,2	84,2	μH	± 15 %
phase-ind. Ld	62,2	61,6	79,1	84,3	μH	± 15 %
phi_ip	0,0	0,0	0,0	34,5	°	± 8 %

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## Specification

permanent magnet synchronous motor

voltage rise in accordance with VDE0530-Bbl2-A1-figure 6-curve A

operation mode: IEC 60034-1: S8 - 60 s +20 % every 600 s

rotor moment of inertia:  $J_{rot} = 0,067 \text{ kgm}^2 \pm 10 \%$  (excluding adapter-flange)

number of pole pairs  $p= 2$ ; frame size: 132 mm; overall mass about 400 kg; mounting IMB3;

housing: steel; degree of protection: IP44

earth return brush for rotor earthing

cooling: water jacket, 25 l/min - 25 °C and internal closed loop air cooling

isolated bearings; thrust bearing on the D-side; initial tensioning on the N-side;

vibration velocity, free suspension:      DIN EN 60034-14 (VDE0530-14)  
  Vibration grade A (120 - 15000 rpm); 2,8 mm/s (15000 rpm - 16000 rpm)

detent torque:  $< \pm 0,2\%$  of nominal torque

alternating of load torque:  $< \pm 1,0\%$  of actual torque

encoder: Heidenhain ERM 280 and LTN RE-21-1-B76

temperature sensors:      6x winding (PT100), 2x bearing (PT100)  
  1x rotor (thermoelement type K amplifier fixed in connection box);

terminal box and blower box on top

synchronous gener. voltage (20 °C, 16000 rpm, unloaded, rectified voltage): 829 V

maximum permissible mechanical speed: 16000 rpm

minimum recommended switching frequency: 7 kHz

operation requires an additional inductor (approx. 20 $\mu$ H) provided by customer

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