

Technical Data

6.97

11,25°

R80 ±0,20

R2,50

R45 ±0,20

R2,50

PMS

0,5 kW – 30 kW

synchro

Mobility

Energy

Consumer

Industry

MOTORS

High efficient, brushless AC-Synchronous Disc-Motors with
Patented Rotor Technology

PERM MOTOR
Member of the HEINZMANN Group

High efficient, brushless AC-Synchronous Disc-Motors with Patented Rotor Technology

Our motors are used in all applications, where low weight, compact construction, high efficiency and high dynamic features are requested. For example in electric Vehicles, NEV's, turf applications, commuters, floorcare machinery, boats, and in a wide range of industrial applications. The motors are available in a sensorless version, and several other sensor system solutions.

- Power-range from 0.5 kW up to 30 kW
air- or watercooled
- For battery Voltage 24 V – 96 V
or line powered 110 V – 400 V
- Complete drive trains with gear boxes
and brakes are available on request
- Controllers on request

Advantages:

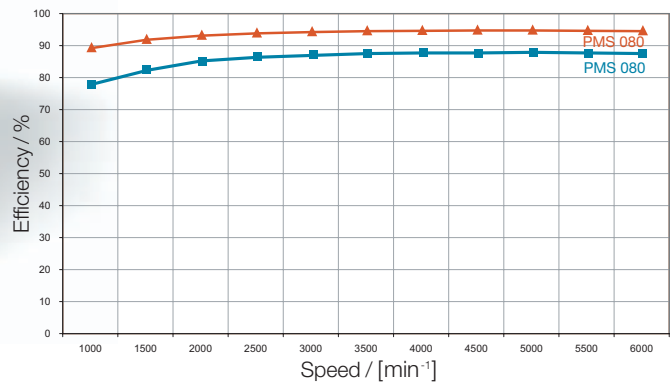
- High power-density due to double-stators
- High efficiency
- Low inertia due to special plastic rotor
- Integrated solutions as a built in motor possible
- Flat construction
- Completely closed, system of protection IP 54



PMS-Motor air-cooled

PMS-Motor water-cooled

Typical efficiency as a function of the speed for the PMS Motor Series



Technical data

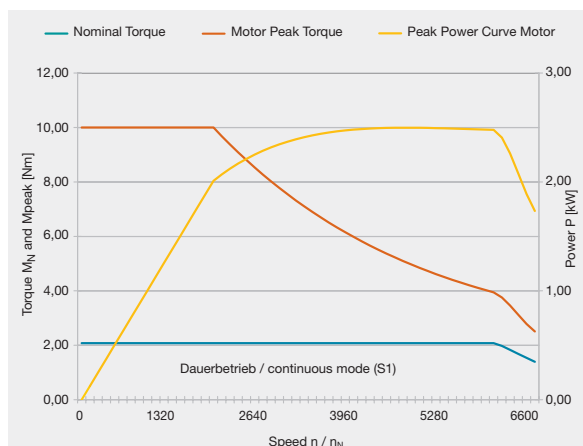
Type series 080

Rated Power: 0.4 - 1.4 kW / Depending on rpm

Motor Peak Torque	10 Nm	Permitted peak torque during pulsed operation up to ~ 30 % of rated rpm
Pulsed-operation	ca. 13 Nm	Permitted pulsed-operation for 0.5 sec. with speed < 50 rpm
Moment of Inertia	3.8 kgcm ²	Based on standard shaft-Version
Weight	ca. 3.2 kg	With sin/cos Encoder, without brake

PMS 080

Speed [min ⁻¹]	24 V DC		48 V DC		72 V DC		from 320 V DC	
	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]
1500	2.7	0.4	2.9	0.5	-		-	
3000	3.2	1.0	3.2	1.0	3.2	1.1	3.2	1.0
4500	2.3	1.1	2.8	1.3	2.8	1.3	2.8	1.3
6000	1.9	1.2	2.2	1.3	2.2	1.4	2.2	1.3



080
Type series 080

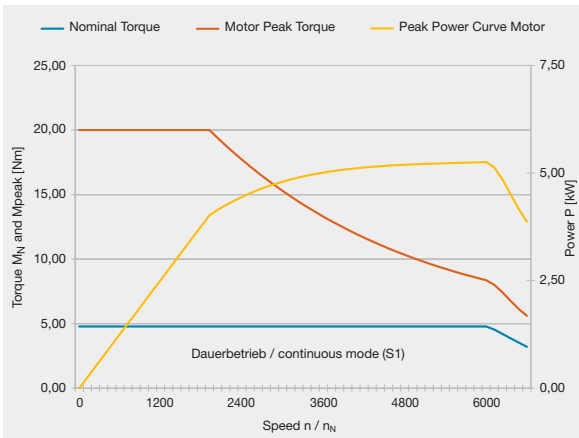
Type series 100

Rated Power: 1.2 - 3.0 kW / Depending on rpm

Motor Peak Torque	20 Nm	Permitted peak torque during pulsed operation up to ~ 30 % of rated rpm
Pulsed-operation	ca. 24 Nm	Permitted pulsed-operation for 0.5 sec. with speed < 50 rpm
Moment of Inertia	9.6 kgcm ²	Based on standard shaft-Version
Weight	ca. 5.8 kg	With sin/cos Encoder, without brake

PMS 100

Speed [min ⁻¹]	24 V DC		48 V DC		72 V DC		from 320 V DC	
	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]
1500	7.6	1.2	7.0	1.1	7.6	1.2	7.0	1.1
3000	4.8	1.5	7.6	2.4	7.6	2.4	7.6	2.4
4500	–	–	5.3	2.5	5.3	2.5	5.3	2.5
6000	–	–	4.3	2.7	4.3	2.7	4.3	2.7



100
Type series 100

Type series 120

Rated Power: 3.2 - 7.0 kW / Depending on rpm

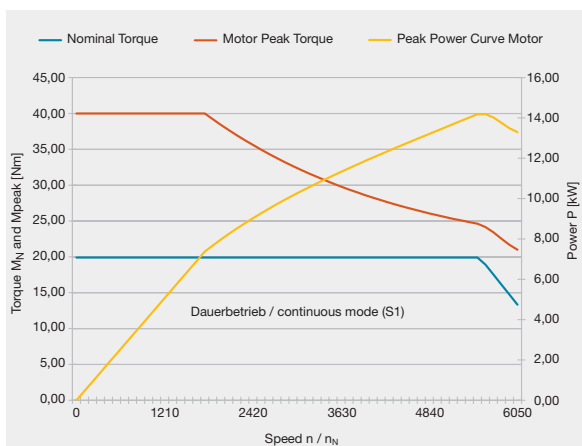
Motor Peak Torque	40 Nm	Permitted peak torque during pulsed operation up to ~ 30 % of rated rpm
Pulsed-operation	ca. 50 Nm	Permitted pulsed-operation for 0.5 sec. with speed < 50 rpm
Moment of Inertia	26.3 kgcm ²	Based on standard shaft-Version
Weight	ca. 12.3 kg – 15.1 kg	With sin/cos Encoder, without brake

PMS 120 L / air-cooled

Speed [min ⁻¹]	48 V DC		72 V DC		96 V DC		from 320 V DC	
	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]
1500	20.4	3.2	20.4	3.2	20.4	3.2	20.4	3.2
3000	18.5	5.8	19.1	6.0	19.1	6.0	19.1	6.0
4500	13.8	6.5	13.8	6.5	13.8	6.5	13.8	6.5
6000	10.4	6.5	11.1	7.0	11.1	7.0	11.1	7.0

PMS 120 W / water-cooled

Speed [min ⁻¹]	48 V DC		72 V DC		96 V DC		from 320 V DC	
	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]
1500	20.4	3.2	24.2	3.8	24.2	3.8	24.2	3.8
3000	19.1	6.0	23.9	7.5	23.9	7.5	23.9	7.5
4500	–	–	21.2	10.0	23.3	11.0	23.3	11.0
6000	–	–	–	–	19.9	12.5	19.9	12.5



120
Type series 120

Type series 150/156

Rated Power: 6.5 - 30 kW / Depending on rpm

Motor Peak Torque	80 Nm	Permitted peak torque during pulsed operation up to ~ 30 % of rated rpm
Pulsed-operation	ca. 95 Nm	Permitted pulsed-operation for 0.5 sec. with speed < 50 rpm
Moment of Inertia	58.6 kg cm ²	Based on standard shaft-Version
Weight	ca. 22.3 kg – 29.8 kg	With sin/cos Encoder, without brake

PMS 150 L / air-cooled

Speed [min ⁻¹]	48 V DC		72 V DC		96 V DC		from 320 V DC	
	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]	Torque [Nm]	Power [kW]
1500	41.4	6.5	41.4	6.5	41.4	6.5	41.4	6.5
3000	27.4	8.6	36.6	11.5	36.6	11.5	36.6	11.5
4500	–	–	27.6	13.0	27.6	13.0	28.6	13.5
6000	–	–	21.5	13.5	21.5	13.5	23.8	15.0

PMS 150 W / water-cooled

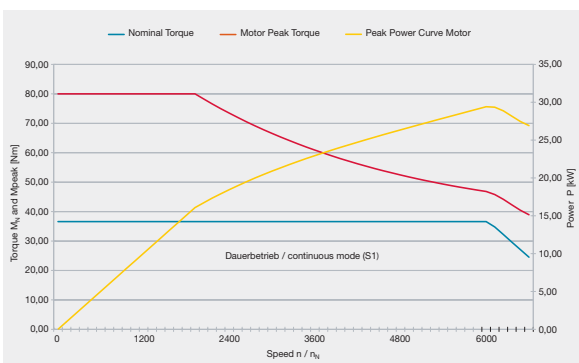
1500	47.7	7.5	50.1	8.0	50.1	8.0	50.1	8.0
3000	27.4	8.6	39.8	12.5	44.5	14.0	47.8	15.0
4500	–	–	28.7	13.5	33.9	16.0	38.2	18.0
6000	–	–	21.5	13.5	27.1	17.0	31.8	20.0

PMS 156 L / air-cooled

1500	47.7	7.5	47.7	7.5	47.7	7.5	47.8	7.5
3000	35.0	11.0	44.5	14.0	44.5	14.0	38.2	12.0
4500	–	–	29.7	14.0	29.7	14.0	29.7	14.0
6000	–	–	–	–	27.1	17.0	27.1	17.0

PMS 156 W / water-cooled

1500	–	–	–	–	–	–	63.6	11.0
3000	–	–	41.3	13.0	54.1	17.0	57.3	18.0
4500	–	–	34.0	16.0	42.5	20	48.8	23.0
6000	–	–	25.5	16.0	36.6	23.0	48.7	30.0



Other speed versions for your special application, on request.

150/156

Type series 150/156

General technical specs for the PMS Motor series

Motortype: Permanentmagnet AC-Synchronous Disc-Motor
Cooling:

- Aircooling with a min airstream of 5 m/s
- Watercooling with max. 60 °C

 Max. operating pressure 3.0 bar
 Coolant quantity min. 6 l / min
Operation mode: S1 (continuous)
Polpairs: 4
Magnet material: Neodymium-Iron-Bor
Insulation Class: Class F according VDE 0530

Electrical strength: Related to DIN EN 60034
Type of construction: Flange type according IM B14
Electrical connections: Standard version with wire length ~ 1m (connector version as an option, mating connector not included)
Protection class: IP 54
Environmental temperature: -10 °C to + 40 °C
Demagnetization temperature: KTY84 - 130 or PTC (NAT = 120° C)
Shaft: Standard shaft with key groove, other design on request

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