

New Power for New Ideas

- ♦ AC-synchronous disc motors with permanent-magnets
- ♦ AC-synchronous disc generators with permanent-magnets





AC-Synchronous Disc Motors



Cooling: surface cooling with 5 m/s
Protection: IP 54 insulation class acc. EN 60034

Type	speed (min - 1)	torque (Nm)	max. torque/ current (%)	power (kw)	efficiency (%)
PMS 080	1500	3,70	244	0,582	83,0
	3000	3,56	254	1,117	87,6
	4500	3,34	270	1,573	88,3
	6000	3,01	300	1,890	87,8
PMS 100	1500	7,41	244	1,163	88,4
	3000	7,11	254	2,235	91,6
	4500	6,67	270	3,145	92,1
	6000	6,02	300	3,781	91,6
PMS 106	1500	10,19	177	1,600	88,8
	3000	9,78	185	3,073	91,6
	4500	9,18	197	4,324	91,9
	6000	8,27	218	5,199	91,3
PMS 120	1500	16,20	244	2,545	89,2
	3000	15,56	254	4,888	91,9
	4500	14,6	270	6,88	92,1
	6000	13,16	300	8,271	91,5
PMS 150	1500	30,56	244	4,799	91,4
	3000	29,34	254	9,218	93,5
	4500	27,53	270	12,973	93,7
	6000	24,82	300	15,596	93,1
PMS 156	1500	41,67	177	6,544	92,1
	3000	40,01	185	12,570	93,8
	4500	37,54	197	17,691	93,8
	6000	33,85	218	21,267	93,2

Brushless AC-Disc Motors, with patented rotor technology and high efficiency

Power range from 0,5 kw up to 30 kw
air-or water-cooled
for battery voltage 24 V - 96 V DC
or line powered 110 V - 400 V AC

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**

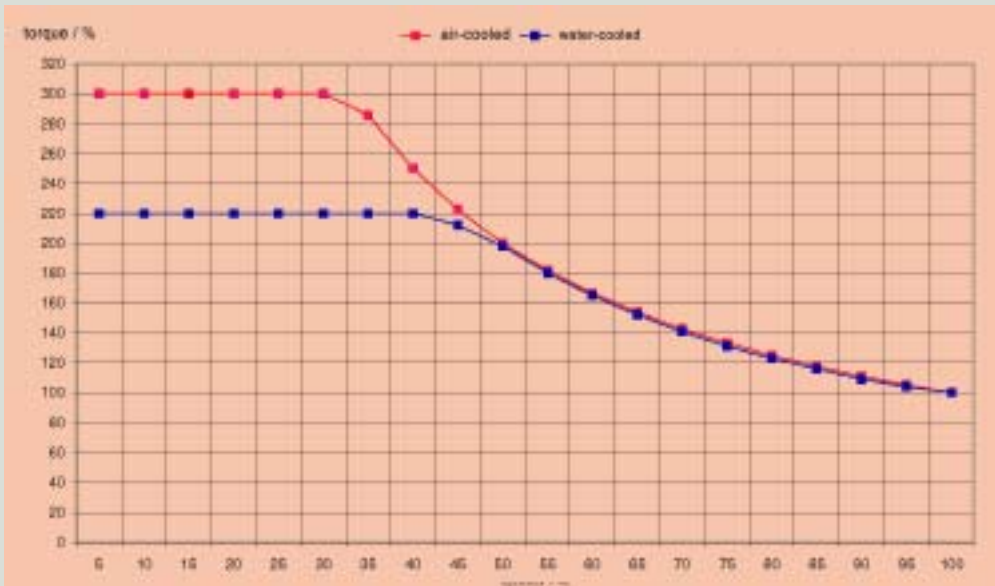
These motors can be used in all applications, where low weight, compact construction, high efficiency and high dynamic features are requested. The motors are available as sensorless version, with hall sensors, or fixed transmitter solutions.

- complete drive trains with gear boxes and brakes are also available
- controllers on request

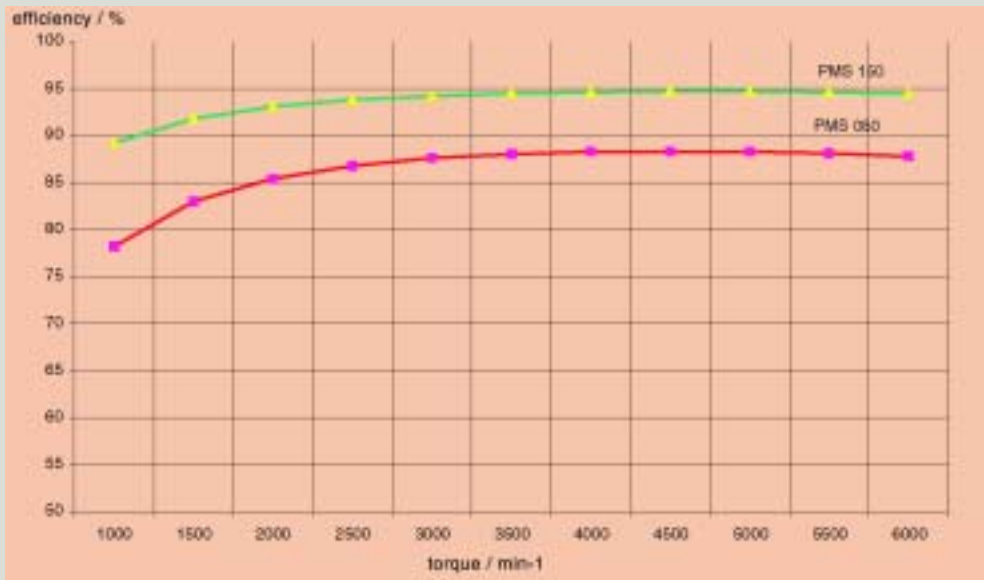
Cooling: water cooling at A- and B-side ; water with 60°C inlet temperature
Protection: IP 54 insulation class acc. EN 60034

Type	speed (min - 1)	torque (Nm)	max. torque/ current (%)	power (kw)	efficiency (%)
PMS 080 W	1500	4,81	188	0,756	78,7
	3000	4,62	196	1,453	86,2
	4500	4,34	208	2,044	88,5
	6000	3,91	231	2,458	89,1
PMS 100 W	1500	10,42	173	1,636	85,4
	3000	10,00	181	3,143	90,4
	4500	9,39	192	4,423	91,8
	6000	8,46	214	5,317	92,0
PMS 106 W	1500	14,07	128	2,211	88,4
	3000	13,52	134	4,246	92,2
	4500	12,68	142	5,976	93,1
	6000	11,43	158	7,184	93,0
PMS 120 W	1500	23,15	171	3,636	86,9
	3000	22,23	178	6,983	91,3
	4500	20,86	189	9,828	92,4
	6000	18,81	210	11,815	92,5
PMS 150 W	1500	41,67	179	6,544	89,9
	3000	40,01	186	12,570	93,2
	4500	37,54	198	17,691	93,9
	6000	33,85	220	21,267	93,9
PMS 156 W	1500	62,50	119	9,817	91,8
	3000	60,02	124	18,855	94,2
	4500	56,32	132	26,537	94,7
	6000	50,78	147	31,901	94,5

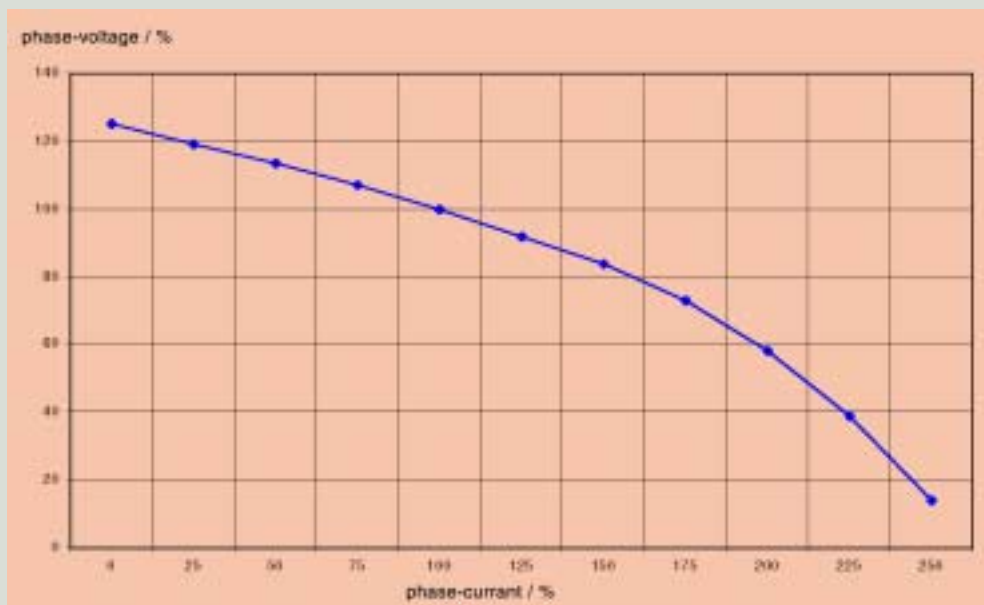
Speed / Torque Behaviour of PMS Motors

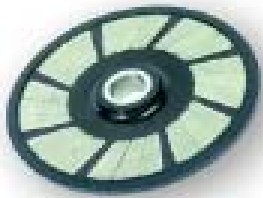


Synchronous Disc Motors, Type PMS efficiency as a function of the speed



Synchronous Disc Generators, Type PGS general generator characteristics





AC-Synchronous Disc Generators



Cooling: surface cooling with 5 m/s
Protection: IP 54 insulation class acc. EN 60034

Type	speed (min - 1)	no load voltage (% rated voltage)	short circuit current (% rated current)	power (kw)	efficiency (%)
PGS 080	1500	115,00	325	0,582	83,0
	3000	114,00	338	1,117	87,6
	4500	113,00	360	1,573	88,3
	6000	112,00	400	1,890	87,8
PGS 100	1500	115,00	330	1,163	88,4
	3000	114,00	330	2,235	91,6
	4500	113,00	335	3,145	92,1
	6000	112,00	370	3,781	91,6
PGS 106	1500	130,00	233	1,600	88,8
	3000	128,00	233	3,073	91,6
	4500	126,00	237	4,324	91,9
	6000	124,00	262	5,199	91,3
PGS 120	1500	120,00	280	2,545	89,2
	3000	119,00	292	4,888	91,9
	4500	118,00	310	6,880	92,1
	6000	117,00	345	8,271	91,5
PGS 150	1500	123,00	244	4,799	91,4
	3000	121,00	254	9,218	93,5
	4500	120,00	270	12,973	93,7
	6000	119,00	300	15,596	93,1
PGS 156	1500	139,00	179	6,544	92,1
	3000	137,00	186	12,570	93,8
	4500	135,00	198	17,691	93,8
	6000	132,00	220	21,267	93,2

Brushless AC-Disc Generators, with patented rotor technology and high efficiency

Power range from 0,5kw up to 21kw

air- or water cooled

voltage range up to 500V AC

Advantages:

- high power-density due to double-stators
- high efficiency
- flat construction
- completely closed, system of protection IP 54

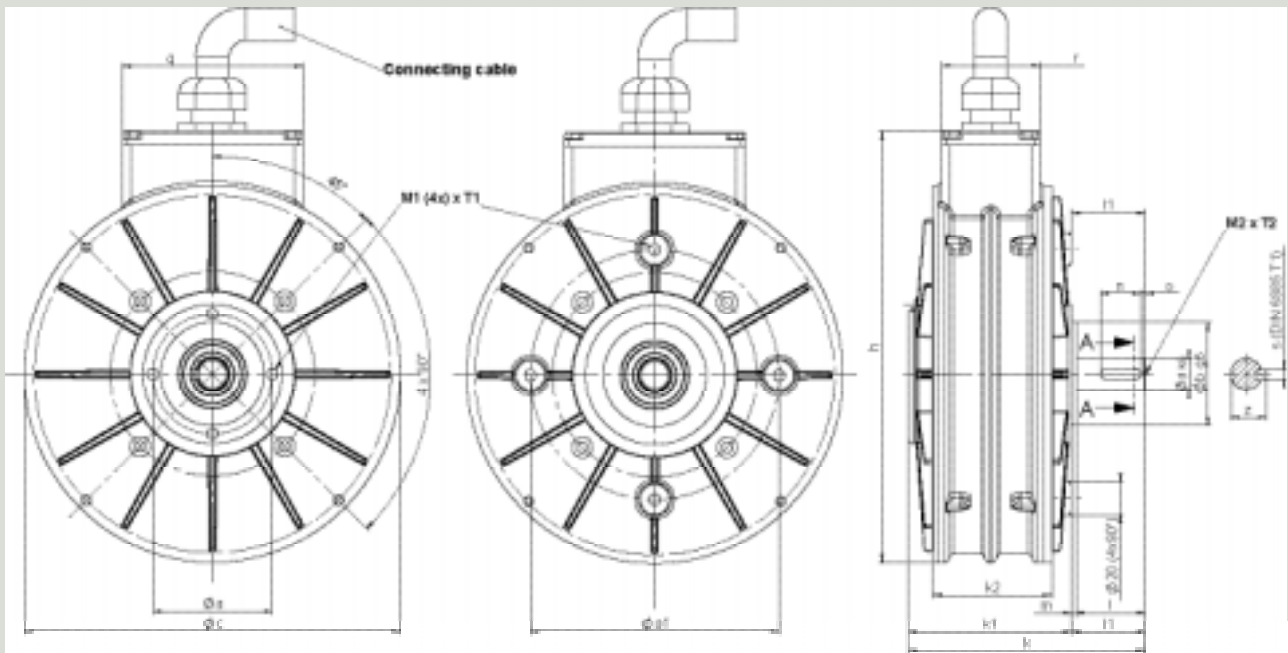
especially suitable for:

- Sterling motors
- Wind power installations
- Hybrid drives
- Thermal power stations
- Auxiliary power units

Cooling: surface cooling with 5 m/s
Protection: IP 54 insulation class acc. EN 60034

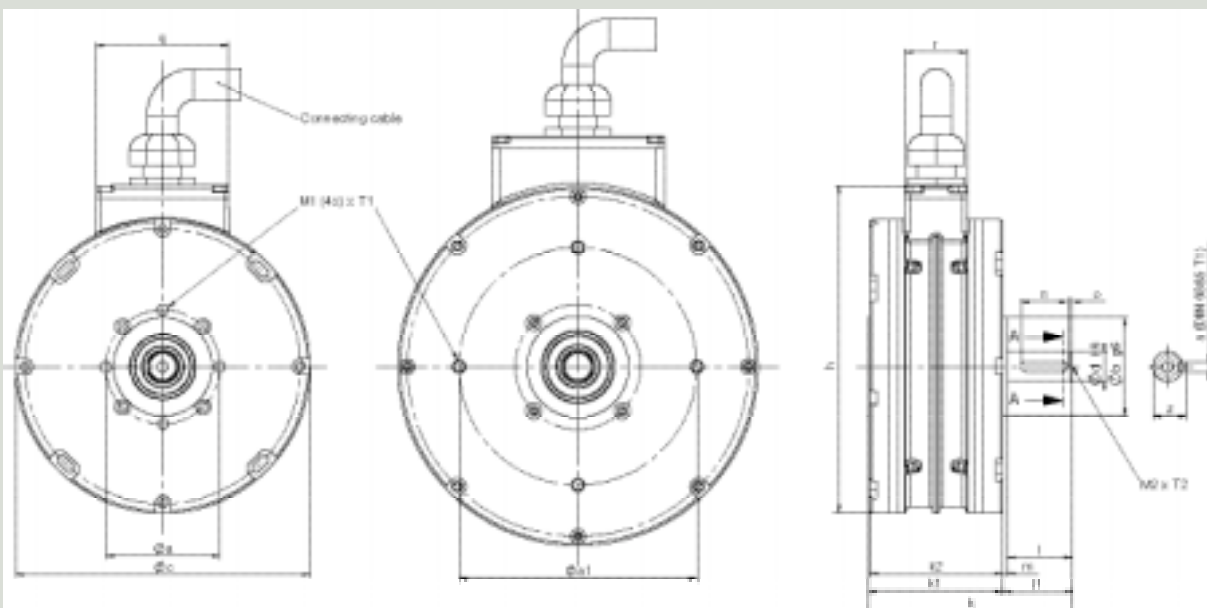
Type	speed (min - 1)	no load voltage (% rated voltage)	short circuit current (% rated current)	power (kw)	efficiency (%)
PGS 080 W	1500	129,00	250	0,756	78,7
	3000	127,00	260	1,453	86,2
	4500	125,00	276	2,044	88,5
	6000	123,00	308	2,458	89,1
PGS 100 W	1500	128,00	233	1,500	85,4
	3000	128,00	233	3,000	90,4
	4500	127,00	238	4,423	91,8
	6000	125,00	263	5,317	92,0
PGS 106 W	1500	128,00	233	1,500	88,4
	3000	128,00	233	3,000	92,2
	4500	128,00	233	4,500	93,1
	6000	128,00	233	6,000	93,0
PGS 120 W	1500	134,00	199	3,636	86,9
	3000	132,00	207	6,983	91,3
	4500	130,00	220	9,828	92,4
	6000	127,00	244	11,815	92,5
PGS 150 W	1500	139,00	179	6,544	89,9
	3000	138,00	186	12,570	93,2
	4500	135,00	198	17,691	93,9
	6000	132,00	220	21,267	93,9

air-cooled

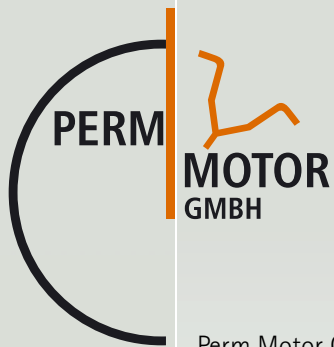


Type	$\varnothing a$	$\varnothing a1$	M1 x T1	$\varnothing b$	$\varnothing c$	k	k1	k2	h	l1	$\varnothing dxl/m$	S x Z	q x r	n/o	M2 x T2	Weight	Inertia
PMS 080	60 \pm 0,1		M8 x 10	50 g8	155	108,00	78	51,5	172,5	35	14 x 30 / 3	5 x 16,3	85 x 40	20 / 2,5	M 6 x 20	2,86 kg	0,00031 kgm
PMS 100	73 \pm 0,1		M8 x 13	63 g8	188	126,50	82	59	196	44,50	19 x 41,5 / 3	6 x 21,8	85 x 40	25 / 2,5	M 8 x 20	5,50 kg	0,00085 kgm
PMS 106	73 \pm 0,1		M8 x 13	63 g8	188	146,50	102	78	196	44,50	19 x 41,5 / 3	6 x 21,8	85 x 60	25 / 2,5	M 8 x 20	7,70 kg	0,00085 kgm
PMS 120	152 \pm 0,1		M8 x 15	65 g8	230	146,50	100,5	73,5	263	45,00	19 x 42,0 / 3	6 x 21,8	100 x 60	25 / 3,0	M 8 x 20	10,70 kg	0,00230 kgm
PMS 150	152 \pm 0,1		M8 x 15	65 g8	274	168,00	127	96	300	45,00	24 x 42,0 / 3	8 x 27,3	100 x 78	30 / 5,0	M 8 x 25	18,70 kg	0,00520 kgm
PMS 156	152 \pm 0,1		M8 x 15	65 g8	274	197,00	152	121	300	45,00	24 x 42,0 / 3	8 x 27,3	100 x 78	30 / 5,0	M 8 x 25	26,40 kg	0,00520 kgm

water-cooled



Type	$\varnothing a$	$\varnothing a1$	M1 x T1	$\varnothing b$	$\varnothing c$	k	k1	k2	h	l1	$\varnothing dxl/m$	S x Z	q x r	n/o	M2 x T2	Weight	Inertia
PMS 080	60 \pm 0,1		M8 x 10	50 g8	155	110,00	79,00	78,00	172,5	33,00	14 x 30,0 / 3	5 x 16,0	85 x 40	20 / 2,5	M 6 x 20	3,29 kg	0,00031 kgm
PMS 100	73 \pm 0,1		M8 x 13	63 g8	188	130,50	86,00	85,00	210	45,00	19 x 41,5 / 3	6 x 21,5	85 x 40	25 / 2,5	M 8 x 20	6,33 kg	0,00085 kgm
PMS 106	73 \pm 0,1		M8 x 13	63 g8	188	150,50	100,00	105,00	210	45,00	19 x 41,5 / 3	6 x 21,5	85 x 60	25 / 2,5	M 8 x 20	8,86 kg	0,00085 kgm
PMS 120	152 \pm 0,1		M8 x 15	65 g8	230	147,50	102,50	102,50	263	45,00	19 x 42,0 / 3	6 x 21,5	100 x 60	25 / 3,0	M 8 x 20	11,77 kg	0,00230 kgm
PMS 150	152 \pm 0,1		M8 x 15	65 g8	274	180,00	132,00	128,00	300	46,00	24 x 42,0 / 3	8 x 27,0	100 x 78	30 / 5,0	M 8 x 25	20,55 kg	0,00520 kgm
PMS 156	152 \pm 0,1		M8 x 15	65 g8	274	205,00	157,00	151,50	300	46,00	24 x 42,0 / 3	8 x 27,0	100 x 78	30 / 5,0	M 8 x 25	28,50 kg	0,00520 kgm



Perm Motor GmbH

Kesslerstrasse 1-3
D - 79206 Breisach

Telefon +49 (0)7667 / 90 63-0
Telefax +49 (0)7667 / 90 63-29

e-mail: info@perm-motor.de
www.perm-motor.de