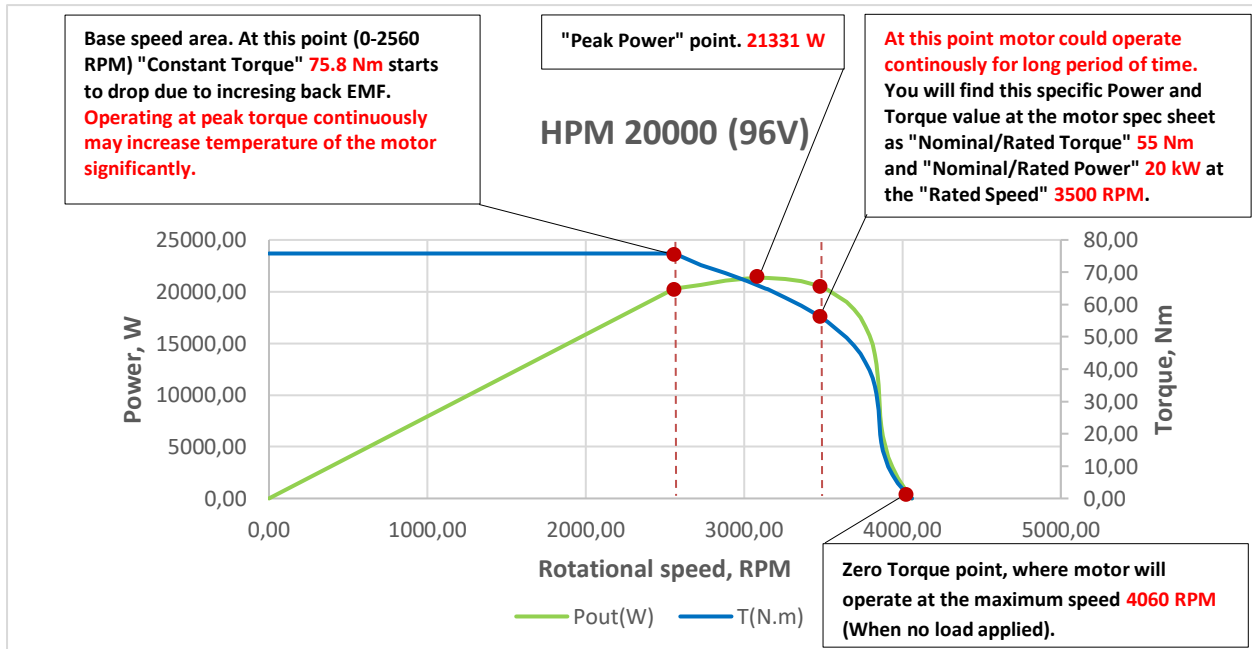


HPM 20000 (96V) Test report

Power		20KW			Rated voltage		96(V)	
Test		1			Rated current		330(A)	
Test Date		2015-7-22			Rated power		20000(W)	
					Rated speed		3500(r/m)	
No.	U(V)	I(A)	Pin(W)	T(N.m)	N(r/m)	Pout(W)	n(%)	
1	95.83	22.41	2147.5	0.00	4060	0.00	0.00	
2	95.70	30.82	2949.9	2.25	4013	944.8	32.03	
3	95.56	40.73	3892.3	4.75	3971	1973.6	50.71	
4	95.43	51.14	4880.6	7.25	3937	2986.9	61.20	
5	95.30	61.99	5907.5	9.74	3911	3990.5	67.55	
6	95.08	84.64	8047.2	14.74	3878	5985.2	74.38	
7	94.98	96.29	9145.8	17.24	3868	6981.7	76.34	
8	94.89	108.06	10253.9	19.74	3861	7979.4	77.82	
9	94.81	119.87	11364.8	22.24	3856	8978.1	79.00	
10	94.74	131.64	12471.4	24.73	3852	9976.7	80.00	
11	94.68	143.29	13566.9	27.23	3848	10972.8	80.88	
12	94.64	154.74	14644.5	29.73	3843	11963.4	81.69	
13	94.60	165.94	15697.3	32.23	3836	12944.1	82.46	
14	94.57	176.78	16718.5	34.73	3825	13909.9	83.20	
15	94.55	187.21	17701.1	37.23	3811	14854.7	83.92	
16	94.54	197.15	18638.4	39.72	3792	15771.7	84.62	
17	94.53	206.52	19523.4	42.22	3767	16653.0	85.30	
18	94.54	215.25	20349.1	44.72	3735	17490.1	85.95	
19	94.54	223.27	21108.4	47.22	3696	18273.7	86.57	
20	94.55	230.50	21794.3	49.72	3648	18993.7	87.15	
21	94.57	242.32	22917.0	54.71	3526	20199.3	88.14	
22	94.58	246.77	23339.4	57.21	3449	20661.4	88.53	
23	94.59	250.14	23659.3	59.71	3361	21012.9	88.81	
24	94.58	252.36	23869.6	62.21	3261	21240.7	88.99	
25	94.57	253.38	23963.0	64.71	3148	21330.8	89.02	
26	94.57	253.41	23965.6	64.96	3136	21331.7	89.01	
27	94.55	253.11	23932.2	67.21	3022	21269.0	88.87	
28	94.52	251.49	23770.1	69.70	2883	21040.6	88.52	
29	94.47	248.45	23469.7	72.20	2729	20630.2	87.90	
30	94.40	243.91	23024.2	75.80	2560	20309.1	86.96	



Regarding Motor Supply Voltage / RPM and Power.

For example if motor is with windings 48V, this motor can also be run at lower (or Higher) voltages, such as 36V (or 72V). The difference is that you wouldn't get as much power output since a lower voltage is associated a lower max attainable rpm. As power (W or Nm/s) is the product of angular speed (1/seconds) and torque (nm), with the same amount of torque and a lower rpm, you would have a lower power output.

You can achieve the same amount of torque at any voltage as torque is directly dependent on current. You may see something called a torque constant, such as Nm/A or ft-lbs/A. Simply multiply by the current, and you'll get the torque output before accounting for mechanical and electrical losses.

The main limiting factor on the amount of current you can pump into a motor is heat, which can melt the insulating varnish if too high.

At respectively currents **the motor torque at any supply voltage (36V or 48V or 72V) will be the same.**

Duration of max Power / Torque is defined by motor (& controller) overheating.

Therefore, if motor (& controller) cooling is very good duration time of max Power / Torque can last for longer.

