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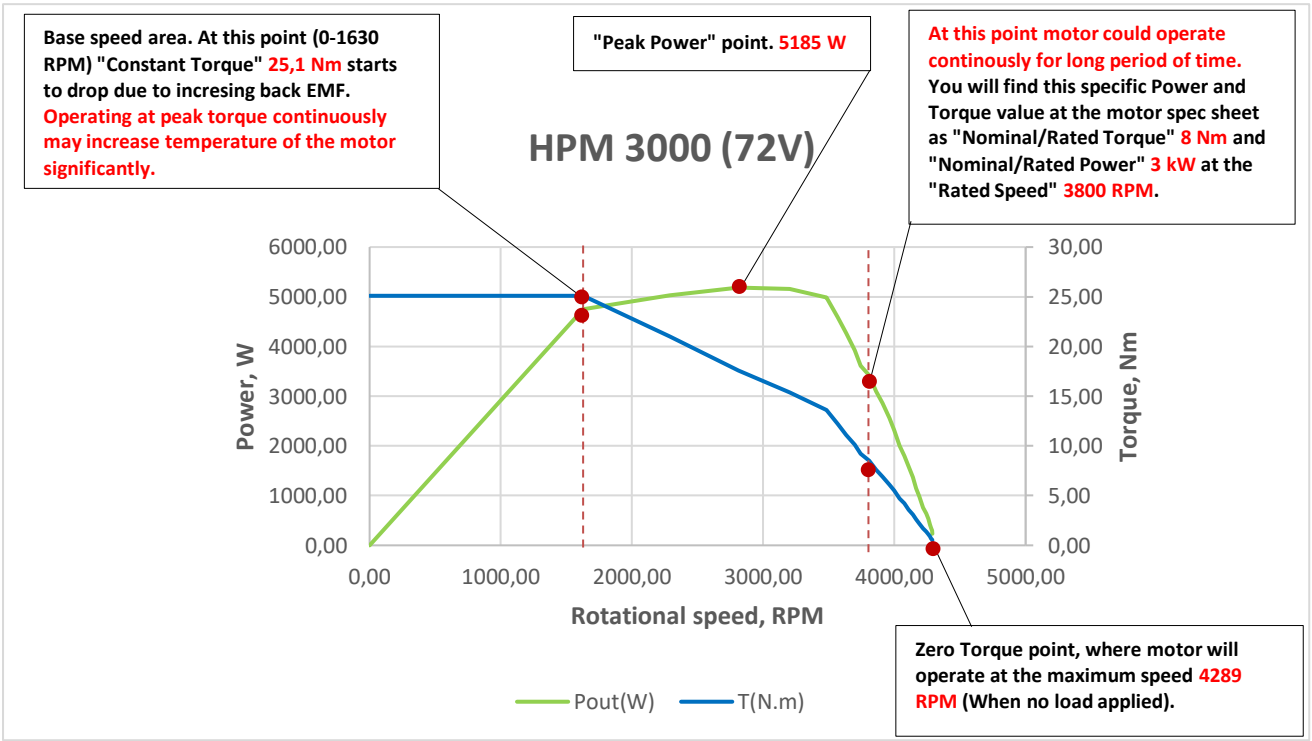
HPM 3000 (72V) Test report

Power	3KW			**Rated voltage**		72(V)	
				Rated current		55(A)	
Test	1			**Rated power**		3000(W)	
Test Date	2014-12-31			**Rated speed**		3800(r/m)	
No.	U(V)	I(A)	Pin(W)	T(N.m)	N(r/m)	Pout(W)	n(%)
001	72.0	10.12	730.1	0.5	4289	236.0	32.3
002	72.0	10.24	738.5	0.6	4288	295.0	39.9
003	72.1	10.51	757.9	0.6	4287	295.0	38.9
004	72.0	11.15	804.1	0.7	4280	354.0	44.0
005	72.0	11.99	864.8	0.9	4271	412.0	47.6
006	72.0	13.09	944.0	1.1	4258	528.0	55.9
007	72.0	14.60	1052	1.4	4241	643.0	61.1
008	72.0	16.86	1215	1.7	4220	757.0	62.3
009	72.0	19.36	1395	2.2	4191	982.0	70.4
010	72.0	21.99	1585	2.6	4166	1148	72.4
011	72.0	24.33	1754	3.1	4141	1370	78.1
012	72.0	27.33	1970	3.6	4108	1588	80.6
013	72.0	30.53	2201	4.2	4076	1800	81.8
014	72.0	33.70	2429	4.7	4039	2004	82.5
015	72.0	37.19	2680	5.5	3999	2315	86.4
016	72.0	41.06	2959	6.1	3961	2566	86.7
017	72.0	44.80	3228	6.9	3908	2862	88.7
018	72.0	48.79	3516	7.6	3859	3093	88.0
019	72.0	53.65	3865	8.5	3806	3420	88.5
020	72.0	58.28	4199	9.2	3744	3613	86.0
021	72.0	62.52	4504	10.1	3697	3924	87.1
022	72.0	67.25	4844	11.1	3633	4266	88.1
023	72.0	72.74	5240	12.2	3567	4591	87.6
024	72.0	78.81	5677	13.6	3481	4991	87.9
025	72.0	79.52	5725	15.4	3202	5163	90.2
026	71.9	79.81	5743	17.6	2813	5185	90.2
027	71.9	79.25	5698	21.0	2285	5025	88.2
028	71.9	79.20	5695	25.1	1630	4750	83.4



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.