

# OSW - Kollmorgen AKM52M-ANCNC-00

U <sub>N</sub>	Data	Symbol [Unit]	52M	53G
<b>Electrical data</b>				
75VDC	Standstill torque*	M <sub>0</sub> [Nm]**	8.60	11.4
	Standstill current	I <sub>0rms</sub> [A]**	13.1	4.77
	max. Mains voltage	U <sub>N</sub> [VAC]	—	—
	Rated speed	n <sub>n</sub> [rpm]	—	—
115V	Rated torque*	M <sub>n</sub> [Nm]	—	—
	Rated power	P <sub>n</sub> [kW]	—	—
	Rated speed	n <sub>n</sub> [rpm]	—	—
230V	Rated torque*	M <sub>n</sub> [Nm]	5.20	10.7
	Rated power	P <sub>n</sub> [kW]	2.45	1.12
	Rated speed	n <sub>n</sub> [rpm]	4500	1000
	Rated torque*	M <sub>n</sub> [Nm]	—	—
400V	Rated torque*	M <sub>n</sub> [Nm]	—	9.85
	Rated power	P <sub>n</sub> [kW]	—	2.06
	Rated speed	n <sub>n</sub> [rpm]	—	2400
480V	Rated torque*	M <sub>n</sub> [Nm]	—	9.50
	Rated power	P <sub>n</sub> [kW]	—	2.39
	Peak current	I <sub>0max</sub> [A]	39.4	14.3
	Peak torque	M <sub>0max</sub> [Nm]	21.9	29.7
	Torque constant	K <sub>Trms</sub> [Nm/A]	0.66	2.39
	Voltage constant	K <sub>Erms</sub> [mV/min]	42.4	154
	Winding resistance p-p	R <sub>25</sub> [Ω]	0.49	3.97
	Winding inductance p-p	L [mH]	2.50	21.3

ACTUAL MOTOR LABEL



Calculations: To achieve motor Peak Torque	AKM52M	AKM53G	IONI PRO HC (25A MAX)
Peak Torque/Torque Constant = Current (A)			
21.9/0.66 = 33.2 A	33.2 A	12.4 A	25 A
Current*Winding Resistance = Voltage (V)			
33.2*0.49 = 16.2 V	16.2 V	49.2 V	12.25 V
Voltage*Current = Power (W)			
16.2*33.2 = 538 W	538 W	610 W	306 W
Drive Voltage/Mains Voltage*Rated Speed = RPM			
16.2/230*4500	317 rpm	214 rpm	240 rpm
Torque Constant*Current = Peak Torque	21.9 Nm	29.7 Nm	16.5 Nm

## SimuCube + Ioni Drive Pro HC

Motor output current | AC/BLDC/Stepping/Linear motors (current specified as peak of sine): IONI 0-15 A IONI Pro 0-18 A IONI Pro HC 0-25 A

Given the Ioni Pro HC can only output a max 25 A to the Motor, the Peak Torque for the AKM52M = 16.5 Nm ??

### Questions:

What is the Vs 320 VDC on the motor label mean? (The table only has values for 230VDC)

Is this motor suitable for an OSW build?

What spec power supply is required to get the best performance from this motor?

### Resources:

<https://www.kollmorgen.com/en-us/products/motors/servo/akm-series/akm-series-ac-synchronous-motors/ac-synchronous-servo-motors/#tab5>

<http://kamanautomation.com/product/kollmorgen-akm52m-240-v/>

[https://granitedevices.com/wiki/SimuCUBE\\_technical\\_specifications](https://granitedevices.com/wiki/SimuCUBE_technical_specifications)

[https://granitedevices.com/wiki/IONI\\_specifications](https://granitedevices.com/wiki/IONI_specifications)

<http://www.isrtv.com/forums/topic/23904-looking-to-build-an-osw-setup-with-simucube-and-kollmorgen-akm-motor-could-use-some-help/>