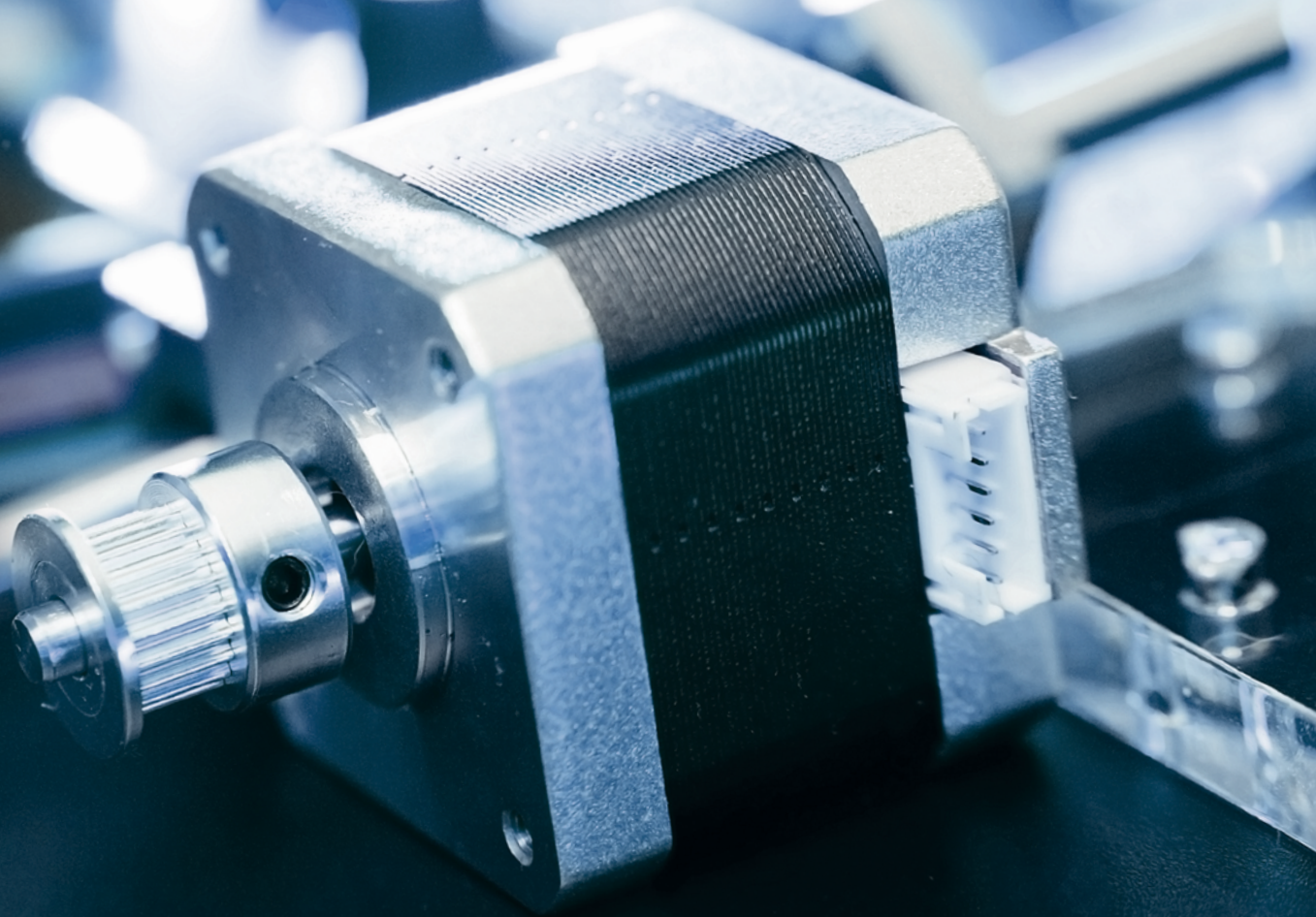


# MOTION CONTROL

Hybrid Stepper Motors



**MOONS'**  
*moving in better ways*



ELEKTRONIK SERVICE GMBH

MEV Elektronik Service GmbH | Nordel 5a | D- 49176 Hilter a.T.W.  
Tel.: +49 (0) 5424 2340-0 | [info@mev-elektronik.com](mailto:info@mev-elektronik.com)

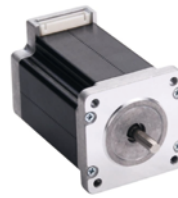
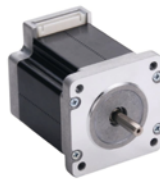
[www.mev-elektronik.com](http://www.mev-elektronik.com)



HYBRID STEPPER MOTORS	MS11	
	HS1P4100	HS5P4100
NEMA Size	11	
Flange Size	28x28 mm	
Motor Phases	2	
Step Angle	1,8°	
Steps / Revolution	200	
Step Accuracy	± 5%	
Rated Phase Current	1 A	
Holding Torque (typ.)	0,09 Nm	0,17 Nm
Rated Voltage	2,7 V	1,65 V
Phase Resistance (20°C)	2,7 Ω	1,65 Ω
Phase Inductance	2,5 mH	1,48 mH
Detent Torque	5 mNm	8 mNm
Rotor Inertia	9 g cm <sup>2</sup>	18 g cm <sup>2</sup>
Motor Weight	0,1 kg	0,2 kg
Motor Length (max.)	31 mm	51 mm
Shaft Diameter	5 mm	
Shaft Type	Single	
Shaft Format	D-Cut	
Shaft Load* Axial (Push)	15 N	
Shaft Load* Axial (Pull)	25 N	
Shaft Load* Radial (@ Flat Center)	30 N	
IP Rating	IP 40	
Operating Temp.	-20° C to +50° C	
Insulation Class	B, 130° C	
Insulation Resistance	100 M Ω	
Approvals	RoHS	
Related Wire Harness	Wire Harness 300 mm for MS11HSxP4 4634140204190	

MS17			
HD5P4100-000	HD4P4100-000	HD2P4100-000	HD6P4100-000
17			
42x42 mm			
2			
1,8°			
200			
± 5%			
1 A			
0,21 Nm	0,33 Nm	0,48 Nm	0,63 Nm
2,7 V	4,2 V	3,9 V	4,9 V
2,7 Ω	4,2 Ω	3,9 Ω	4,9 Ω
4,3 mH	7,5 mH	8,9 mH	11,5 mH
5 mNm	12 mNm	15 mNm	5 mNm
20 g cm <sup>2</sup>	38 g cm <sup>2</sup>	57 g cm <sup>2</sup>	82 g cm <sup>2</sup>
0,15 kg	0,21 kg	0,28 kg	0,36 kg
25,3 mm	34,3 mm	39,8 mm	48,3 mm
5 mm			
Single			
D-Cut			
25 N			
65 N			
29 N			
IP 40			
-20° C to +50° C			
B, 130° C			
100 M Ω			
RoHS UL Recognized File E465363			
Wire Harness 300 mm for MS17HDxP4 4634140200723			

\*20.000 Hours at 1000 RPM



<b>ML23 HS0P4220 -000</b>		<b>ML23 HS4P4210 -000</b>		<b>ML23 HS8P4220 -000</b>	
23					
57x57 mm					
2					
1,8°					
200					
± 5%					
2,2A	2,1A	2,2A			
0,84 Nm	1,2 Nm	1,5 Nm			
3,1V	3,4V	3,5V			
1,39 Ω	1,62 Ω	1,6 Ω			
3,5 mH	4,8 mH	6,9 mH			
24 mNm	28 mNm	45 mNm			
121,5 g cm <sup>2</sup>	155 g cm <sup>2</sup>	221 g cm <sup>2</sup>			
0,42 kg	0,48 kg	0,6 kg			
39 mm	45 mm	55 mm			
6,35 mm					
Single					
D-Cut					
40 N					
130 N					
70 N					
IP 40					
-20° C to +50° C					
B, 130° C					
100 M Ω					
RoHS UL Recognized File E465363					
Wire Harness 300 mm for ML23HSxP4 4634140201891					

<b>MS24 HS3P4300 -000</b>		<b>MS24 HS5P4300 -000</b>		<b>HYBRID STEPPER MOTORS</b>	
24				NEMA Size	
60 x 60 mm				Flange Size	
2				Motor Phases	
1,8°				Step Angle	
200				Steps / Revolution	
± 5%				Step Accuracy	
3 A				Rated Phase Current	
2,4 Nm	3,3 Nm			Holding Torque (typ.)	
3,3V	3,6V			Rated Voltage	
1,1 Ω	1,21 Ω			Phase Resistance (20° C)	
3 mH	4,1 mH			Phase Inductance	
95 mNm	100 mNm			Detent Torque	
560 g cm <sup>2</sup>	900 g cm <sup>2</sup>			Rotor Inertia	
1,05 kg	1,4 kg			Motor Weight	
67 mm	87 mm			Motor Length (max.)	
8 mm				Shaft Diameter	
Single				Shaft Type	
D-Cut				Shaft Format	
40 N				Shaft Load* Axial (Push)	
130 N				Shaft Load* Axial (Pull)	
70 N				Shaft Load* Radial (@ Flat Center)	
IP 40				IP Rating	
-20° C to +50° C				Operating Temp.	
B, 130° C				Insulation Class	
100 M Ω				Insulation Resistance	
RoHS UL Recognized File E465363				Approvals	
Wire Harness 300 mm for MS24HSxP4 4634140201393				Related Wire Harness	

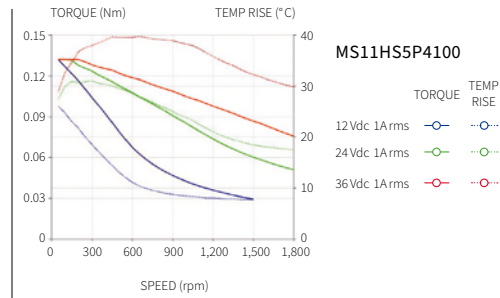
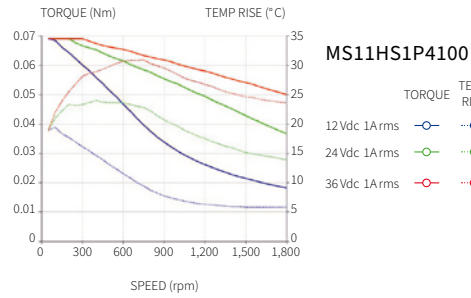
[ HYBRID STEPPER MOTORS ]



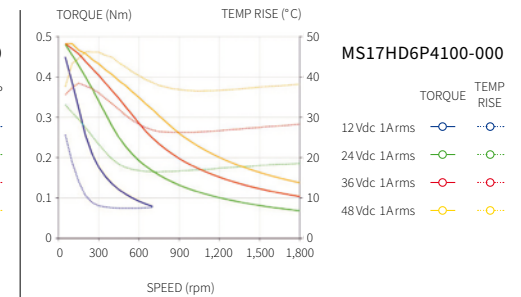
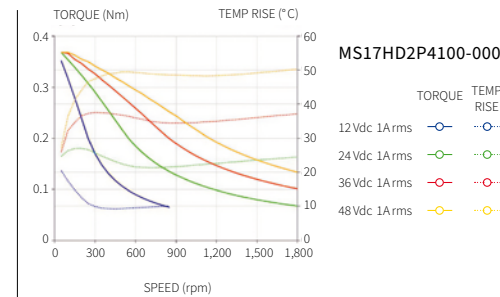
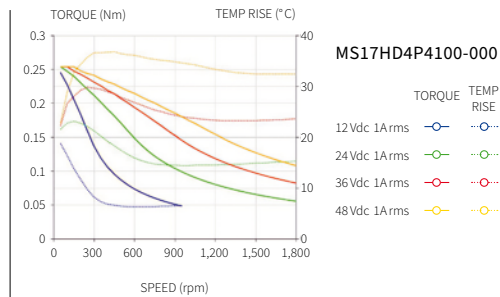
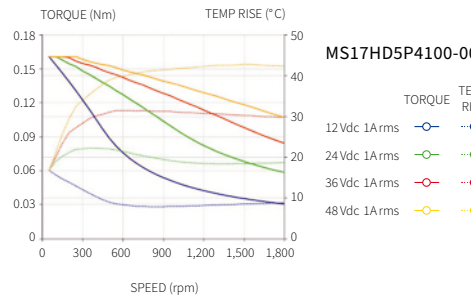
\*20.000 Hours at 1000 RPM

# TORQUE GRAPHS

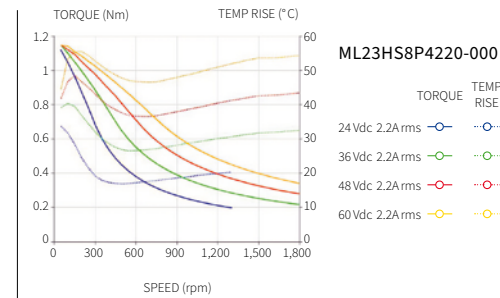
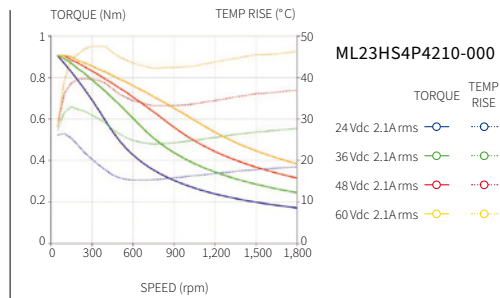
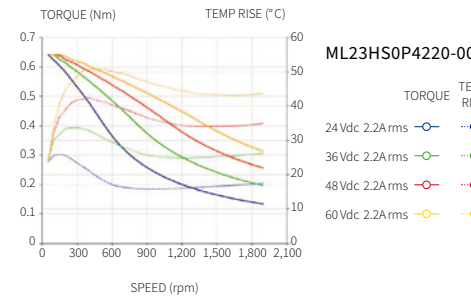
MS11



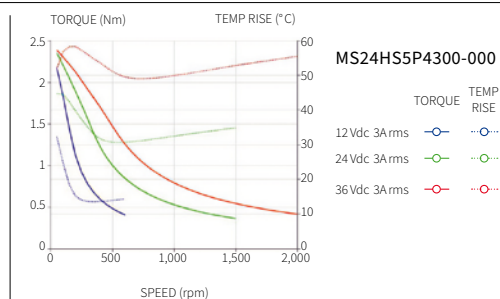
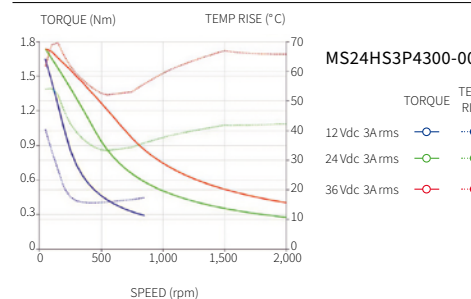
MS17



ML23



MS24



ELEKTRONIK SERVICE GMBH

[www.mev-elektronik.com](http://www.mev-elektronik.com)