

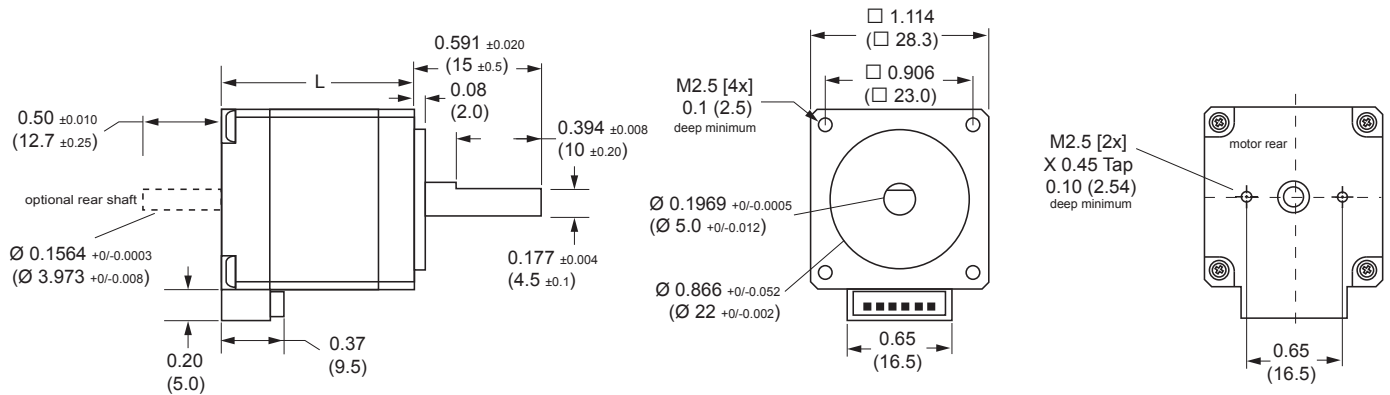
# NEMA11 stepper motors

## 1.8° 2-phase stepper motors



### Dimensions — NEMA11

Dimensions in inches (mm)



#### L

M-1112-1.0•	1.26 (32)
M-1116-1.4•	1.57 (41)
M-1120-1.5•	2.01 (51)

### Ambient conditions

Ambient temperature	°C	-25 ... +40
Max. installation height over m.s.l. without power loss	m	< 1000
Transport and storage temperature	°C	-25 ... +70
Relative humidity	%	15 ... 85, no condensation allowed
Thermal class		130 (B)

### Electrical and mechanical data

NEMA11		M-1112-1.0•	M-1116-1.4•	M-1120-1.5•
Stack length		single	double	triple
Phase current	amps	1.0	1.4	1.5
Holding torque	oz-in	12.9	17.8	24.1
	N-cm	9.1	12.6	17.0
Rotor inertia	oz-in-sec <sup>2</sup>	0.00012745	0.00017	0.0002549
	kg-cm <sup>2</sup>	0.00000918	0.00001224	0.0000184
Phase inductance	mH	2.5	1.56	1.48
Phase resistance	$\Omega$	2.7	1.77	1.65
Weight	oz	3.5	5.29	7.0
	grams	100	150	200

### References

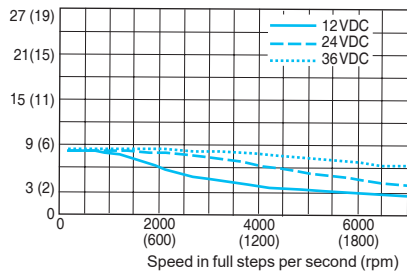
<b>Example:</b>	<b>M - 1 1 1 2 - 1.0 S</b>
<b>Motor type</b> M = stepper motor	M - 1 1 1 2 - 1.0 S
<b>Flange size</b> 11 = NEMA11 (28 mm)	M - 1 1 1 2 - 1.0 S
<b>Motor length - phase current</b> 12-1.0 = single stack with 1.0 Amps phase current 16-1.4 = double stack with 1.4 Amps phase current 20-1.5 = triple stack with 1.5 Amps phase current	M - 1 1 1 2 - 1.0 S
<b>Shaft</b> S = single shaft D = double shaft	S

Motor interface cable	Length feet (cm)	Part number
Pre-wired motor cable with mating connector	1.0 (30.5)	PD04-11-FL.3

### Speed-torque curves

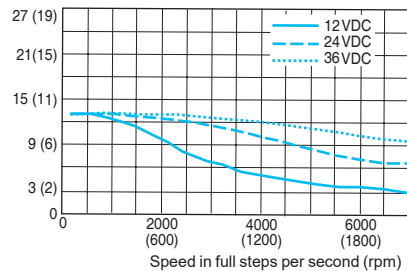
**M-1112-1.0•**

Torque in Oz-In (N-cm)



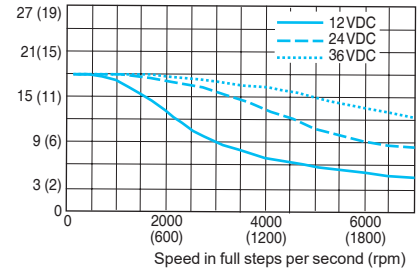
**M-1116-1.4•**


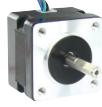



Torque in Oz-In (N-cm)



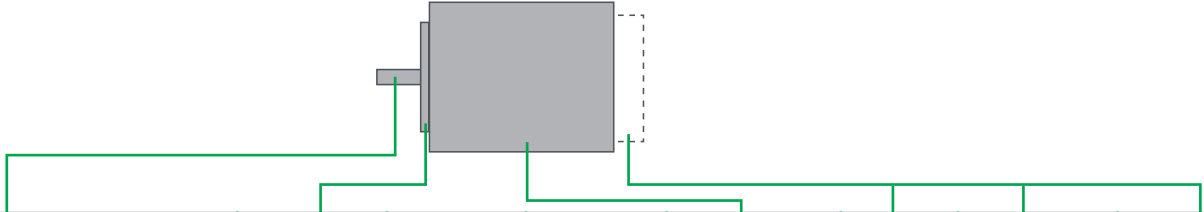
**M-1120-1.5•**

Torque in Oz-In (N-cm)



Complete product offer		M-11•	M-14•	M-17•	M-22•	M-34•
2-phase stepper motors						
Size	NEMA	11	14	17	23	34
Holding torque	oz-in	13 ... 24	10	32 ... 75	90 ... 239	408 ... 1090
	N-cm	9 ... 17	7	23 ... 53	64 ... 169	288 ... 770
Number of full steps per revolution		200				
Step angle $\alpha$		1.8				
Motor connection		pluggable connector		4 flying leads		

### Motor types



Shaft version	Centering collar		Flange size		Lengths without shaft		Winding	Motor connection	Optional rear shaft (1)	Optional encoder		
	inches	mm	inches	mm	inches	mm						
<b>M-11•</b>												
Round shaft with single flat feature	Ø 0.197	Ø 5.0	Ø 0.866	Ø 22	0.65	16.5	1.22 1.57 2.01	31 40 51	2-phase full coil for bi-polar operation	pluggable connector	Round shaft	na
<b>M-14•</b>												
Round shaft with single flat feature	Ø 0.197	Ø 5.0	Ø 0.866	Ø 22	1.39	35.3	1.02	26	2-phase full coil for bi-polar operation	4 flying leads	Round shaft	Single-end or differential
<b>M-17•</b>												
Round shaft with single flat feature	Ø 0.197	Ø 5.0	Ø 0.866	Ø 22	1.67	42.3	1.34 1.57 1.89	34 40 48	2-phase full coil for bi-polar operation	4 flying leads	Flat feature extending to rear end bell	Single-end or differential
<b>M-22•</b>												
Round shaft with single flat feature	Ø 0.25	Ø 6.35	Ø 1.50	Ø 38	2.22	56.4	1.77 2.13 2.99	45 54 76	2-phase full coil for bi-polar operation	4 flying leads	Flat feature extending to rear end bell (2)	Single-end or differential
<b>M-34•</b>												
Round shaft with single flat feature	Ø 0.554	Ø 14.0	Ø 2.874	Ø 73	3.386	86.0	2.48 3.15 4.72	63 80 120	2-phase full coil for bi-polar operation	4 flying leads	Flat feature on round shaft	Single-end or differential

(1) Optional rear shaft available except for NEMA23 2.4amp motors.  
 (2) Optional rear shaft on NEMA23 6.0amp motors is round without a flat feature.

**Schneider Electric Motion USA**  
 370 North Main Street  
 Marlborough, CT 06447 – U.S.A.

motion.schneider-electric.com

© Schneider Electric Motion USA All Rights Reserved. REV121919  
 Product Disclaimer and most recent product information online.

Schneider Electric Motion

