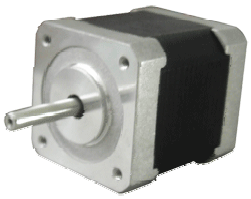
Overview

The BM17 series high torque stepper motors have a 1.8˚ step angle, NEMA17 dimensions and are available in single or dual shaft versions. They feature 4 leads but can be provided also with 6 or 8 leads upon request. Custom lead length adaptation is available.



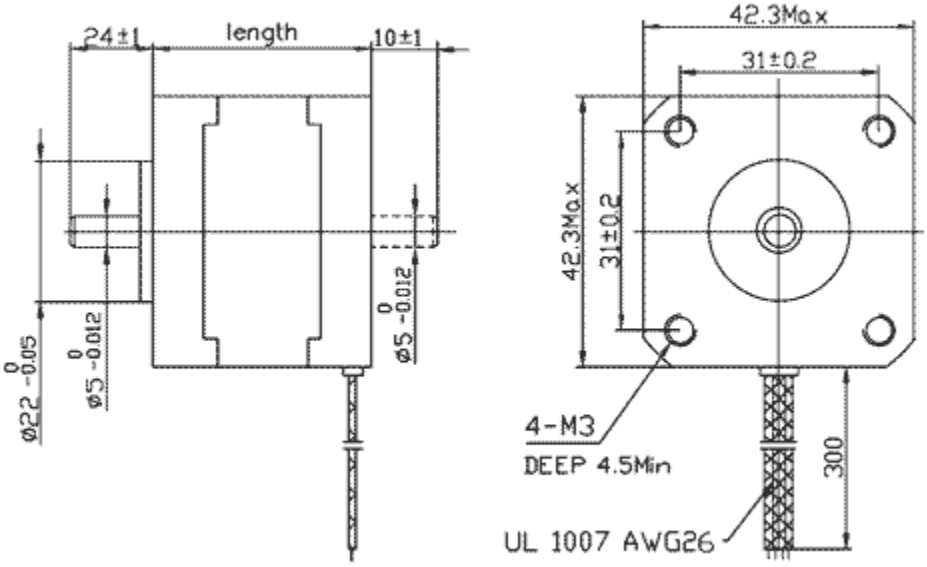
The dual shaft motors are optionally available with a differential encoder (see the last page of this data sheet for more information)

Specifications

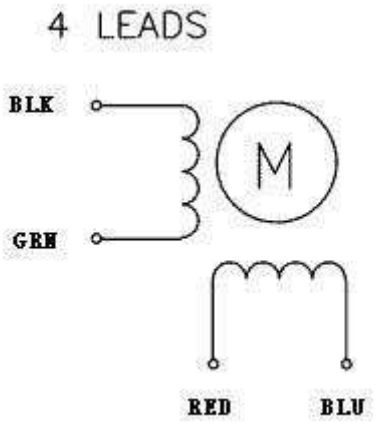
Model Number		**Current / Phase**	**Resistance / Phase**	**Inductance / Phase**	**Holding Torque**	**Rotor Inertia**	**Weight**	**Detent Torque**	**Length**
Single Shaft	Dual Shaft	A	Ω	mH	kg-cm (oz-in)	g-cm^2	kg	g-cm	mm
BM17-30-S	BM17-30-D	1.33	2.1	2.5	2.2 (30)	35	0.22	120	34
BM17-50-S	BM17-50-D	1.68	1.65	3.2	3.6 (50)	54	0.28	150	40
BM17-61-S	BM17-61-D	1.68	1.65	2.8	4.4 (61)	68	0.35	200	48

Step Angle	1.8˚
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80˚C max. (rated current, both phases on)
Ambient Temperature	-20˚C ~ +50˚C
Insulation Resistance	100MΩ min., 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02 max. (450 g load)
Shaft Axial Play	0.08 max. (450g load)
Max. Radial Force	28N (20mm from the flange)
Max. Axial Force	10N
Direction of Rotation	CW (when viewing from the front flange)

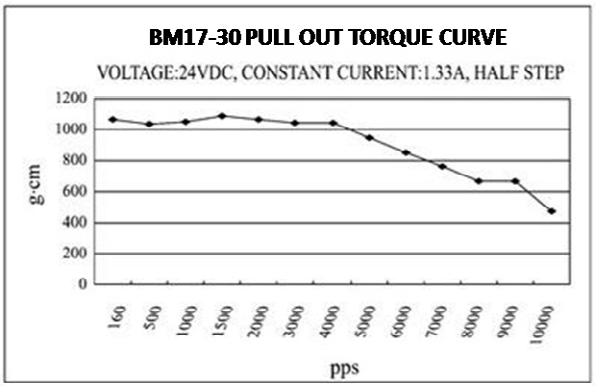
Dimensions in mm

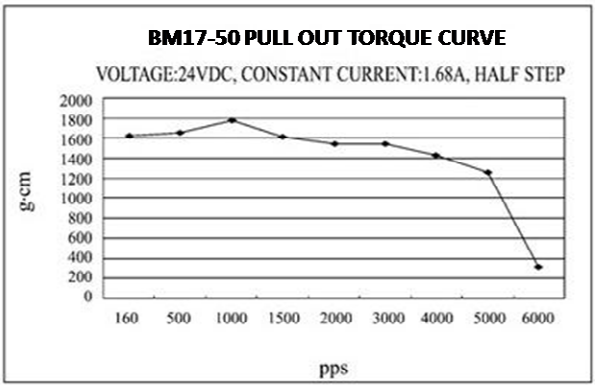


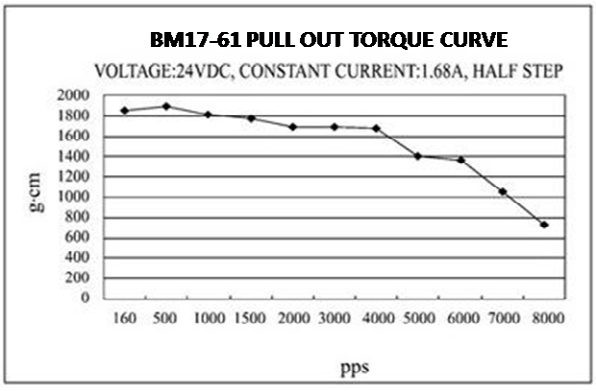
Connection



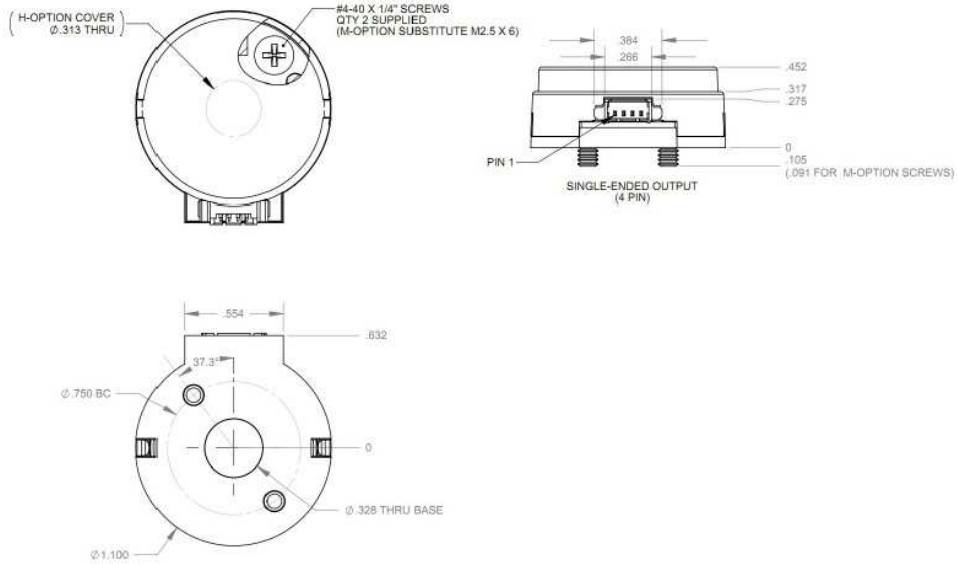
Torque Speed Curves



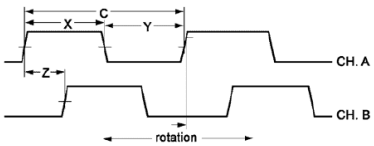




500 Line Encoder Option:



Timing Diagram



Pin-outs

4-pin Single-ended

Pin	Description
1	+5VDC power
2	A channel
3	Ground
4	B channel

CPR (N):

The number of Cycles Per Revolution.

One Shaft Rotation:

360 mechanical degrees, N cycles.

One Electrical Degree (e):

1/360th of one cycle.

One Cycle (C):

360 electrical degrees (e). Each cycle can be decoded into 1 or 4 codes, referred to as X1 or X4 resolution multiplication.

Symmetry:

A measure of the relationship between (X) and (Y) in electrical degrees, nominally 180e.

Quadrature (Z):

The phase lag or lead between channels A and B in electrical degrees, nominally 90e.