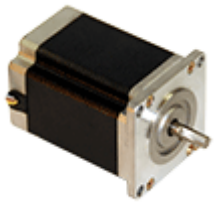
HYBRID STEPPER MOTOR FAMILY

Series H23S Hybrid Stepper Motor



Mounting Flange:	NEMA 23
Step angle:	1.8°
Steps per Revolution:	200
Positional Accuracy:	+ 5% max.
Number of Phases:	4 (unipolar)*
Temperature Rise:	80°C max
Insulation Resistance:	100M ohms at 500VDC for 1 minute
Dielectric Strength:	800VAC for 1 minute
Insulation Class:	Class B
Number of lead wires:	6 *
Lead wire:	UL3265 or UL1007 AWG#22
Operation Ambient Temp:	-10°C ~ +50°C
Radial Play:	0.03 mm max at 0.5 kg load
Axial Play:	0.08 mm max at 0.7 kg load
* Contact Hurst for other lead or phase configurations	

Unipolar Drives
Motor phase winding current is switched in only one direction (typically to ground).

- Simple low cost drive circuit
- Requires center tap winding
- Low Output Torque
- 6 & 8 lead motors

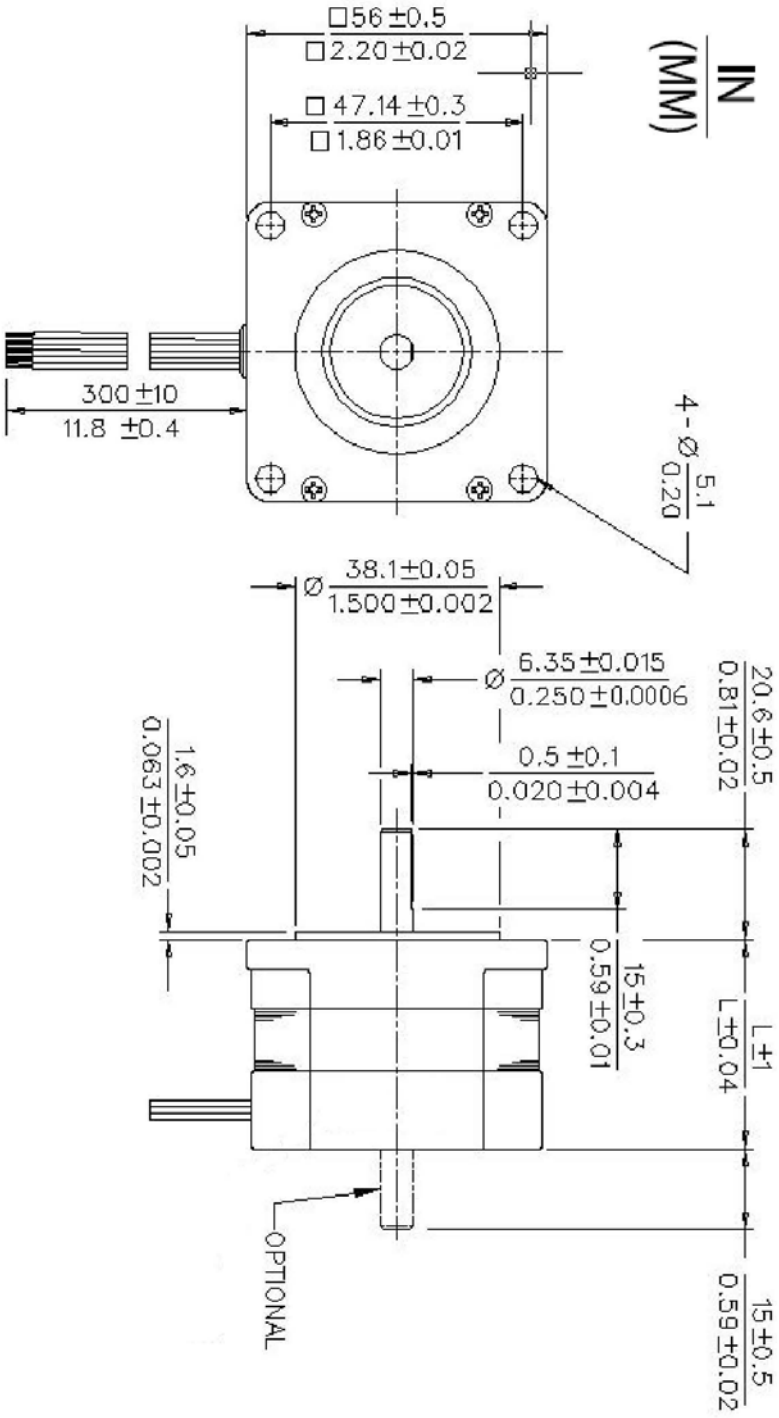
Bipolar Drives
Motor phase winding current is switched in both directions.

- Higher cost drive circuit
- Higher Output Torque
  - Approximately 1.4 X Unipolar Drive
  - 4, 6, & 8 lead motors
  - 8 Lead Motors are more efficient when used with a bipolar drive.

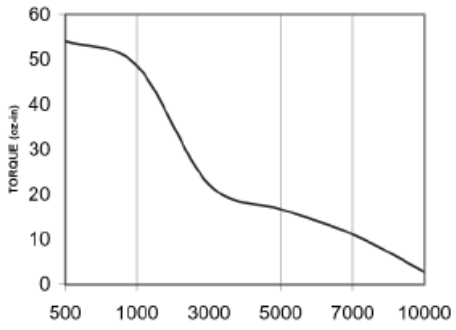
Example:	H	23S	050	4	42

	Motor Family	Frame Size	Phase Voltage	Phase	Length
Options	Hybrid Stepper	23S=23mm (Square Motor)	013=1.3VDC 021=2.1VDC 025=2.5VDC 030=3.0VDC 035=3.5VDC 045=4.5VDC 050=5.0VDC 073=7.3VDC 085=8.5VDC	4=4 Phase Unipolar 2=2 Phase Bi-polar	42=42mm 54=54mm 76=76mm

Model	Part Number	Step Angle (deg.)	Holding Torque (oz-in)	Holding Torque (mN-m)	Detent Torque (oz-in)	Detent Torque (mN-m)	Input Power (watts)	Nominal Voltage (Vdc)	Winding Res. (ohms)	Rated Inductance (mH)	Rotor Inertia ($oz\text{-}in^2$)	Rotor Inertia ($g\text{-}cm^2$)	Case Length (in)	Case Length (mm)	Weight (oz)	Weight (g)
H23S	H23S013442	1.8	55.55	392.3	2.1	14.8	7.8	1.3	0.45	0.5	0.492	90	1.654	42	16	453.6
H23S	H23S021454	1.8	111.2	785.2	3.5	24.7	12.6	2.1	0.7	1.3	1.26	230.5	2.125	54	23	652
H23S	H23S025442	1.8	55.55	392.3	2.1	14.8	10	2.5	1.3	1.5	0.492	90	1.654	42	16	453.6
H23S	H23S030476	1.8	187.6	1324.7	5.6	39.5	18	3	1	1.7	2.02	369.5	2.992	76	35	992.2
H23S	H23S035454	1.8	111.2	785.2	3.5	24.7	14	3.5	1.75	2.6	1.26	230.5	2.125	54	23	652
H23S	H23S045476	1.8	187.6	1324.7	5.6	39.5	18	4.5	2.3	4.3	2.02	369.5	2.992	76	35	992.2
H23S	H23S050442	1.8	55.55	392.3	2.1	14.8	10	5	5	6.9	0.492	90	1.654	42	16	453.6
H23S	H23S073454	1.8	111.2	785.2	3.5	24.7	14.6	7.3	7.3	14	1.26	230.5	2.125	54	23	652
H23S	H23S085476	1.8	187.6	1324.7	5.6	39.5	17	8.5	8.5	18	2.02	369.5	2.992	76	35	992.2

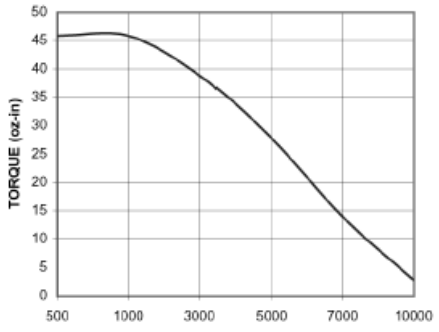

□56 ±0.5
□2.20 ±0.02
□47.14 ±0.3
□1.86 ±0.01
IN
(MM)
300 ±10
11.8 ±0.4
4 - Ø 5.1
0.20
Ø 38.1±0.05
1.500 ±0.002
Ø 6.35 ±0.015
0.250 ±0.0006
0.5 ±0.1
0.020 ±0.004
1.6 ±0.05
0.063 ±0.002
20.6 ±0.5
0.81 ±0.02
15 ±0.3
0.59 ±0.01
L ±1
L ±0.04
OPTIONAL
15 ±0.5
0.59 ±0.02

H23S050442



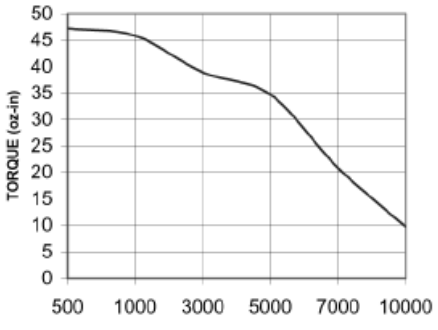
Constant Current Driver, Current: 1.0A/PH(2Phase ON),
Input Power: 24VDC

H23S025442



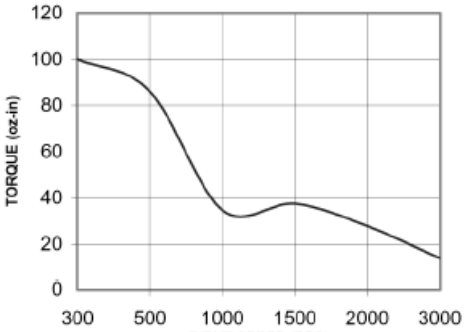
Constant Current Driver, Current: 2.0A/PH(2Phase ON)
Input Power: 24VDC

H23S013442



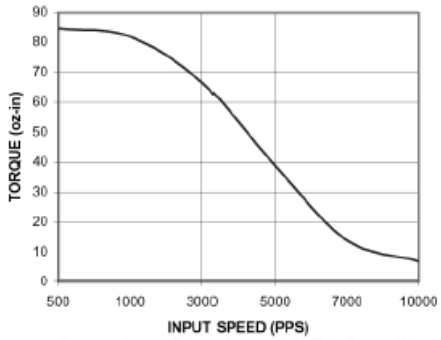
Constant Current Driver, Current: 3.0A/PH(2Phase ON)
Input Power: 24VDC

H23S073454



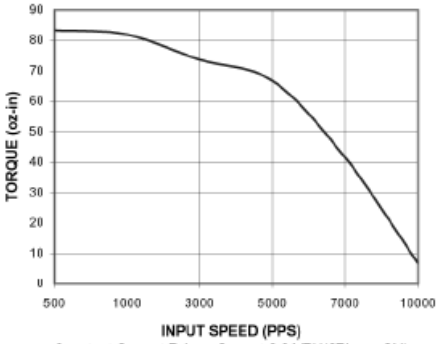
Constant Current Driver, Current:1.0A/PH(2Phase ON)
Input Power: 24VDC

H23S035454



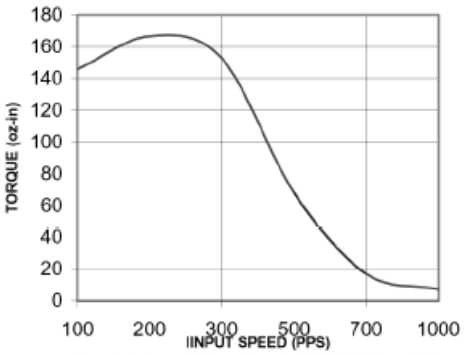
Constant Current Driver, Current: 2.0A/PH(2Phase ON)
Input Power: 24VDC

H23S021454



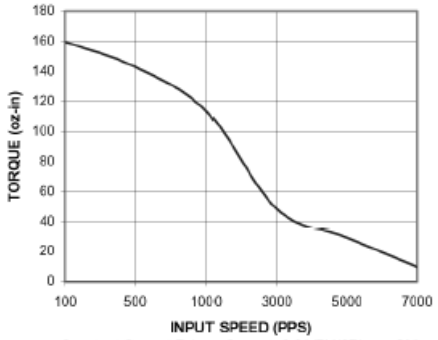
Constant Current Driver, Current:3.0A/PH(2Phase ON)
Input Power: 24VDC

H23S085476



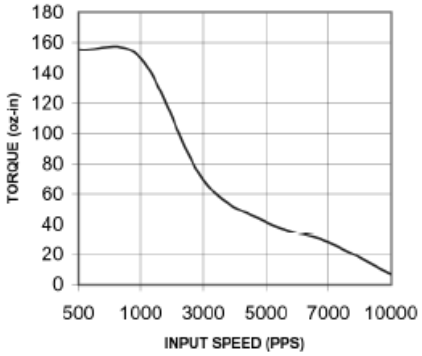
Constant Current Driver, Current: 1.0A/PH(2Phase ON)
Input Driver: 24VDC

H23S045476



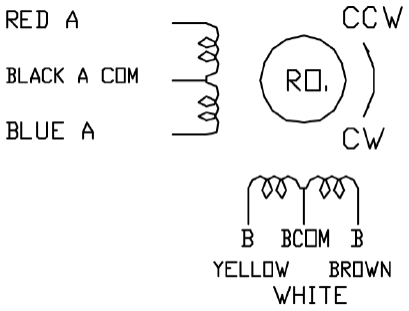
Constant Current Driver, Current: 2.0A/PH(2Phase ON)
Input Power: 24VDC

H23S030476



Constant Current Driver, Current: 3.0A/PH(2Phase ON)
Input Power: 24VDC

*Note: Typical Performance Data generated using full step, uni-polar controller with parallel connection



Full Step (2 Phase) CW Rotation viewing Mounting End				
Step	A (Red)	B (Yellow)	/A (Blue)	/B (Brown)
0	On	On		
1		On	On	
2			On	On
3	On			On
4	On	On		