Precision Motion Controls

HVS Series
Microstepping Drive

HVS series drives have a self contained power supply which can be plugged into a 120 or 240 VAC outlet, although best performance is obtained from a 240 VAC. This 12 amp drive incorporates a rugged bipolar IGBT H bridge construction and a recirculate current drive topology to achieve maximum motor performance.

The drive has industry-standard Step and Direction signals, as well as additional remote disable and error output signals. All the I/O are optically isolated. The standard system has switch selectable resolutions from 25600 to 400 steps per revolution. Motor current is programmable from 5 to 12 amps in 8 increments from a user accessible dip switch. Wave shape correction for 3rd harmonic distortion provides compensation for a wide range of motors.

This high power drive accommodates NEMA 42 to 65 size motors, which produce torque from 1000 oz-in to 8000 oz-in and deliver more than 2 horse power.

Features

- **95- 260 VAC, 50/60 Hz power**
- **Switch selectable auto standby mode**
- **Motor interlock signal**
- **Fan -cooled enclosure**
- **Built-in energy absorber during deceleration**
- **Overtemperature, overcurrent, undervoltage protections**
- **Full phase to phase and phase to ground protection.**
- **Indicators for error conditions**
- **Input pulse rate to 2 MHz**

Drive Specifications

Performance (unloaded motor)

Repeatability:	±5 arc-seconds (unidirectional)
Accuracy:	±5 arc-minutes (bidirectional)
Step-to-Step Accuracy:	±20 arc-seconds (unidirectional)
Hysteresis:	±3 arc-minutes

Inputs, Output (optically isolated)

Step:	Negative-going pulse, 250 nanosecond minimum pulsewidth, 10 ma.
Direction:	3.5 to 6.0 VDC, 10 ma.
Shutdown:	3.5 to 6.0 VDC, 10 ma.
Fault:	35 V, 5 ma. maximum.

Power 95 to 260 VAC, 50/60 Hz, 8 A

Environmental – Operating

Driver:	0 to 60 °C measured at the heat sink
Motor:	100 °C measured at the motor case
Ambient:	10 to 40 °C, 0 to 95% humidity, non-condensing

Environmental – Storage

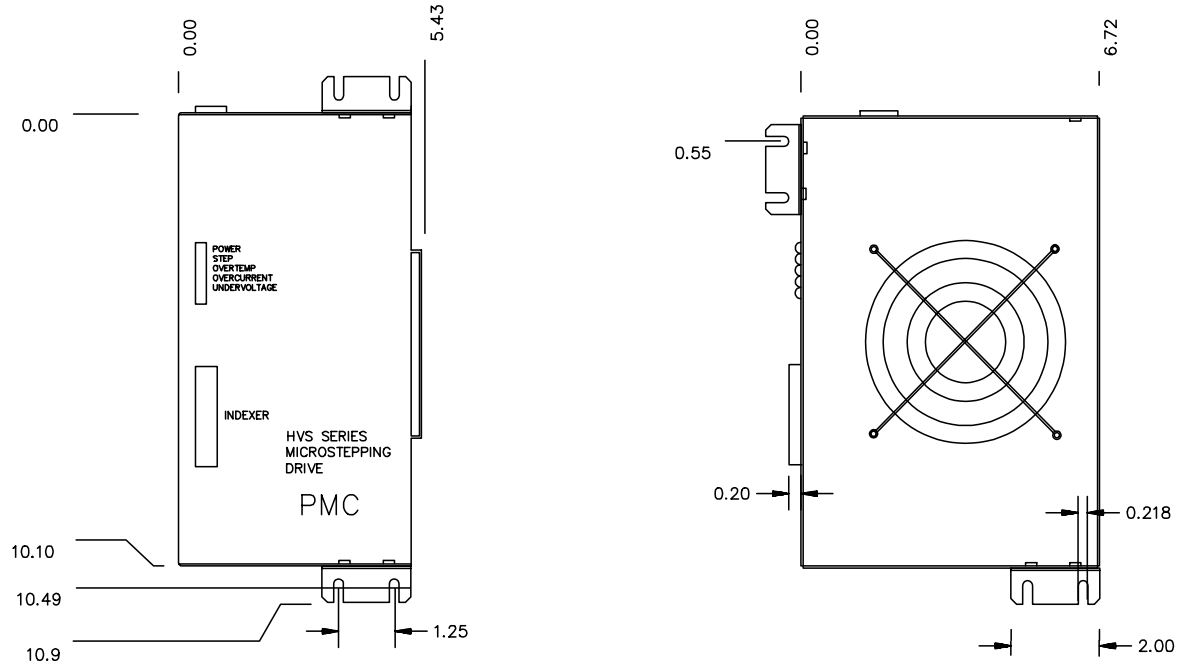
Motor + Driver: -40 to +80 °C, 0 to 95% humidity, non-condensing

Weight 12 pounds

Motor Specifications

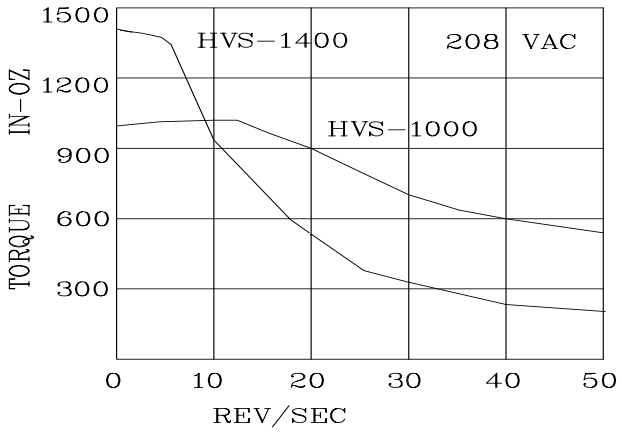
Model	**HVS-1000**	**HVS-2000**	**HVS-4000**	**HVS-8000**
NEMA Size	42-2	42-3	65-2	65-3
Static Torque (oz-in):	1000	2000	4000	8000
Rotor Inertia (oz-in^2):	49	63	300	464
Bearing Thrust Load (lb):	50	50	135	135
Bearing Radial Load (lb):	25	25	25	150
End Play for 1 lb Load (in):	0.005	0.005	0.005	0.005
Radial Play for 0.5 lb Load (in):	0.0008	0.0008	0.0008	0.0008
Weight Motor (lb):	19.5	26.5	70	85

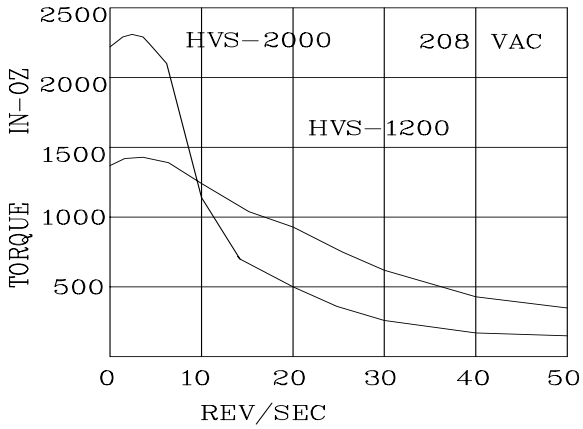
Mounting Dimensions



Speed versus Torque Curves

NEMA 42 Series Motors





NEMA 65 Series Motors

Consult factory for more detail information

Dip switch function

1-3	Step size selection. Step/rev are 25600, 12800, 6400, 400, 25000, 10000, 2000.
4-5	0%, +-2% 3rd harmonic, test mode.
6-8	Current selection.
9	Autostandby.
10	Spare.

LED Status

Power	The drive receives power.
Step	The drive receives step's signal.
Overtemp	Heat sink temperature exceeds 80 degree C.
Overcurrent	The current in the motor exceeds 35 amp.
Undervoltage	The AC voltage is below 95 volt.

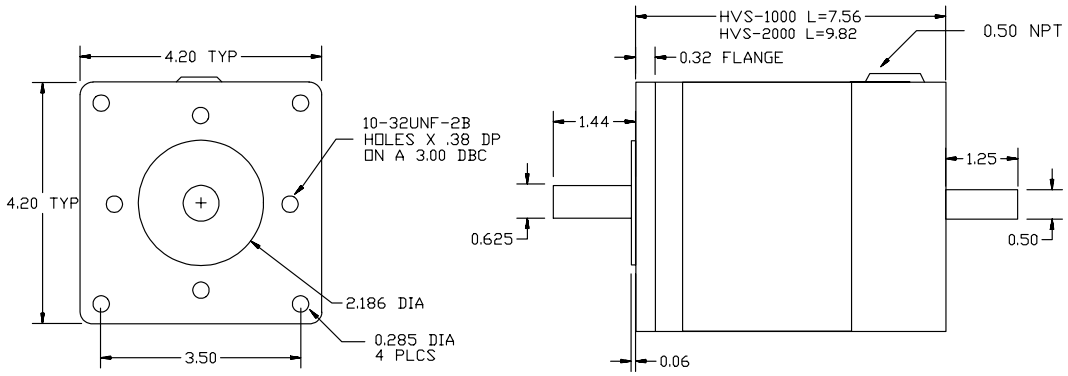
Indexer connector: 25 pin D

1. Step+
2. Direction+
9. Fault+
14. Step-
15. Direction-
16. Shutdown+
17. Shutdown-
21. Fault-

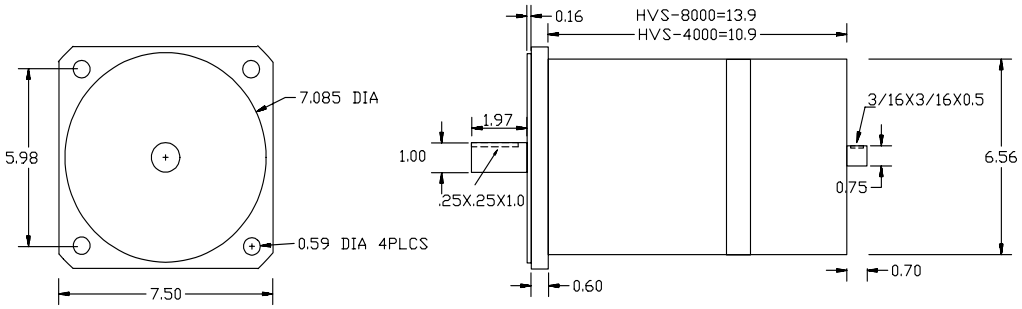
Motor connector: 7 pin terminal block

T+	Interlock+
A+	Motor winding A
A-	
Motor Shield	
B+	Motor winding B
B-	
T-	Interlock-

NEMA 42 Series Motors



NEMA 65 Series Motors



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