

FEATURES:

- Available as 2- or 3-axes CNC Controller
- Remote START/STOP/RESET
- Bidirectional serial communication at up to 19200 baud
- 32K of on-board memory, capable of holding over 1200 3-axes motion
- Built-in forced air ventilation for continuous duty
- Screw terminal connectors on rear panel for easy I/O hook-up
- LED status display on front panel
- Commands can be executed as a "batch program" or each command can be executed in a command-by-command basis
- All power supplies are built-in & wired up
 - Motor: 70V / 6A for each axis
 - Logic: 5V / 1.5A
 - I/O: 12V / 1A, 24V / 1A
- Comes fully assembled & **READY TO USE**
- Optional battery-backed memory

READY TO USE OUT OF THE BOX

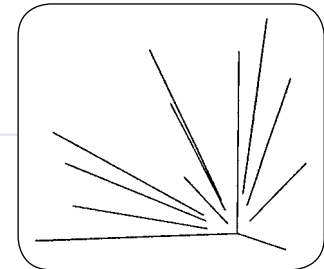


NOTE: This controller is **CE** compliant.

Motion Capabilities

Linear Interpolation

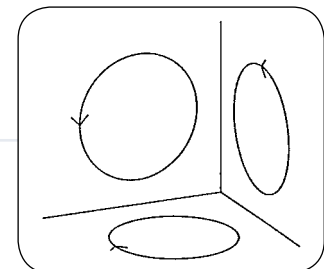
- True step-by-step linear interpolation during acceleration, deceleration & all points in between
- Interpolation on any of 1- through 3-axes at rates up to 10K/sec.
- Motions up to $\pm 8,000,000$ steps
- Switch-selectable acceleration / deceleration
- Can be programmed in both incremental & absolute coordinates



Linear Interpolation

Circular Interpolation

- True step-by-step circular interpolation during acceleration, deceleration and all points in between
- Maximum error of ± 1 step from a true circle for any radius up to 2,000,000 steps
- Continuous arcs without stopping at axis boundaries
- Interpolation on any 2- of 3-axes at pulse rates up to 8K/sec.



Circular Interpolation

Inputs / Outputs

- 8 optically isolated inputs at up to 24V
- 16 open collector outputs at up to 24V / 0.3A

Stepper Amplifiers

- Each Stepper Motor Amplifier (model HL1100M313302) can produce up to 6A at 70V
- Total fault protection against:
 - Short circuit across phases
 - Short circuit to ground
 - Over/under voltage
 - Overtemperature

Applications

This system is recommended for full production systems on any machine in our catalog. It is suitable for continuous duty production systems.

The C142 Machine Controller Includes:

- One C142 enclosure
- Two or three stepper drivers, HL1100M313302
- One interface card 5.0 I/O, HL1200M325550
- One serial computer cable, HL1700M2784
- Two or three motor cables, HL1700M392713500

Catalog Number	Part Description	Dimensions in (mm)	Weight lb (kg)
HL1300MC142	C142 3-Axes Controller	18.7 x 7.3 x 16.1 (475 x 186 x 410)	45
HL1300MC142-2	C142 2-Axes Controller		43

Accessories

Catalog Number	Part Description
H25Z61-DS1235AB	Battery-backed Memory
HL1600M440114	32K Memory Card

For a description of the memory options or other accessories, see page 119.

Software / Programming

- Direct control through simple ASCII codes.
- Can be programmed via many third-party software packages.



Back panel shown

Eurocard DIN Components

FEATURES:

- Built-in power supply runs directly from 110V / 60Hz AC lines
- Input signals & power are supplied through screw terminal connectors on the rear panel
- Thermal & short circuit protection
- Motor output signals are supplied through a 9-pin D connector on the front panel
- Accepts pulse and direction from external controller

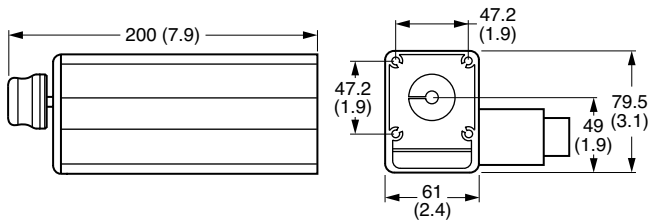


SPECIFICATIONS	Catalog Number
Nominal Output Current	HL1100M313122 2A
Motor Supply Voltage	24 - 36V DC
Mechanical Format	Enclosure
Dimensions	110 x 165 x 56 mm (4.3 x 6.5 x 2.2 in)
Maximum Stepping Rates	8 kHz (full step), 10 kHz (half step)
Suitable Motor Types	4, 6 or 8 lead (5 lead not suitable)
Input Logic Level	+5V DC
Operating Temperature Range	0°C to 35°C (32°F to 95°F)
Maximum Heat Sink Temperature	70°C (158°F)
Input Voltage	110V / 60Hz

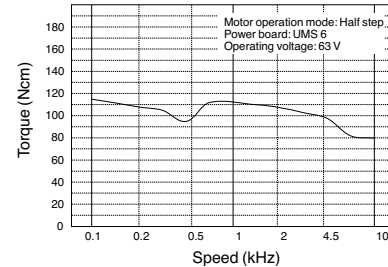
Stepper Motor Module, Format 3

(Heavy-Duty 2 and Narrow Profile 2 Slides)

- Complete assembly with 1/4" - 8 mm shaft coupling



SPECIFICATIONS	Catalog Number
L (Length)	200 (7.9)
Weight	1.81 kg (4.0 lb)
Holding Torque:	Unipolar 1.3 N·m (11.50 lbf·in) Bipolar 1.6 N·m (14.16 lbf·in)
Current per Phase:	Unipolar 2.85A Bipolar 4.1A
Coil Voltage per Phase	1.7V
Inductance per Phase	2.2mH
Step Angle	1.8°
Max. Operating Temp.	+130°C (+266°F)
Rotor Inertia	350 g·cm ² (.12 lb·in ²)
Max. Radial Shaft Load	33N (7.42 lb)
Motor Leads	8
Resistance	1.2Ω

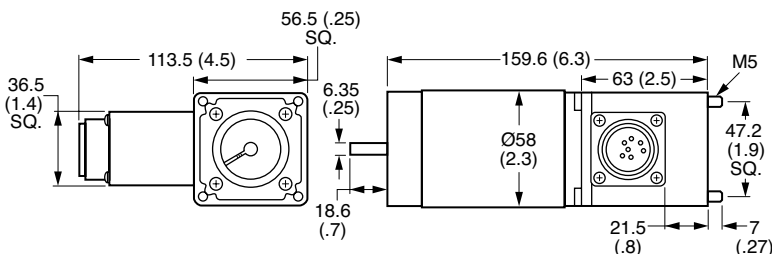


HL2600M3989001

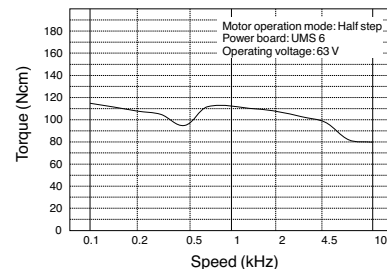
Stepper Motor Module, Format 4

(Blueline 1)

- Complete assembly with 1/4" - 8 mm shaft coupling



NOTE: Dimensions in () are inch

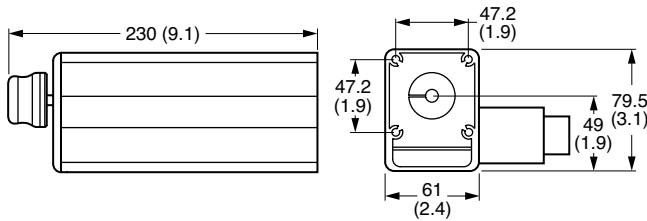


HL2600M210022

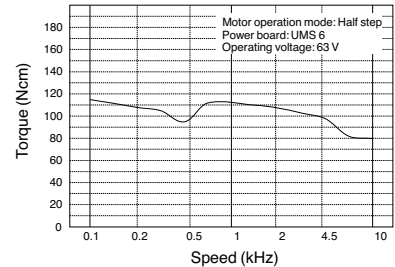
Stepper Motor Module, Format 3 with Brake

(Heavy-Duty 2 and Narrow Profile 2 Slides)

- Complete assembly with 1/4" - 8 mm shaft coupling



SPECIFICATIONS	Catalog Number
	HL2600M398020
L (Length)	230 (9.1)
Weight	2.04 kg (4.5 lb)
Holding Torque:	Unipolar 1.3 N·m (11.50 lbf·in)
	Bipolar 1.6 N·m (14.16 lbf·in)
Current per Phase:	Unipolar 2.85A
	Bipolar 4.1A
Coil Voltage per Phase	1.7V
Inductance per Phase	2.2mH
Step Angle	1.8°
Max. Operating Temp.	+130°C (+266°F)
Rotor Inertia	350 g·cm ² (.12 lb·in ²)
Max. Radial Shaft Load	33N (7.42 lb)
Motor Leads	8
Resistance	1.2Ω

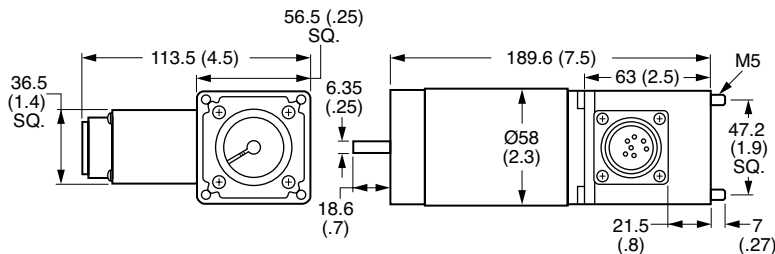


HL2600M398020

Stepper Motor Module, Format 4 with Brake

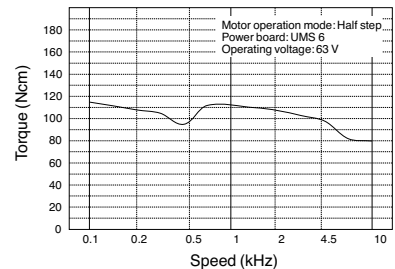
(Blueline 1)

- Complete assembly with 1/4" - 8 mm shaft coupling



NOTE: Dimensions in () are inch

SPECIFICATIONS	Catalog Number
	HL2600M210022B
L (Length)	215.2 (8.47)
Weight	1.81 kg (4.0 lb)
Holding Torque:	Unipolar 1.3 N·m (11.50 lbf·in)
	Bipolar 1.6 N·m (14.16 lbf·in)
Current per Phase:	Unipolar 2.85A
	Bipolar 4.1A
Coil Voltage per Phase	1.7V
Inductance per Phase	2.2mH
Step Angle	1.8°
Max. Operating Temp.	+130°C (+266°F)
Rotor Inertia	350 g·cm ² (.12 lb·in ²)
Max. Radial Shaft Load	33N (7.42 lb)
Motor Leads	8
Resistance	1.2Ω

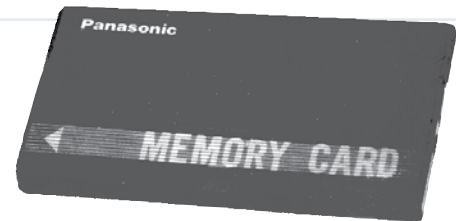


HL2600M210022B

MEMORY CARD (Data storage card for Interface Card I/O)

- Permanent storage of motion control programs
- Inserts in the memory slot on interface cards 4.0 I/O and 5.0 I/O (C116 or C142 controllers)
- Automatically download programs by pushing a switch on the program selector box
- Especially useful in rapidly loading previously stored motion control programs without a host computer

Memory Capacity 32k **HL1600M440114**



MOTOR CABLES, SERVO SYSTEM

Each axis requires two cables, which are both included in this cable set

- Motor Cable, shielded, 4-pin circular connector
- Encoder Cable, shielded, 15-pin D connectors
 - 10 feet **HX1700M1015**
 - 16 feet **HX1700M1016**
 - 25 feet **HX1700M1025**



MOTOR CABLES, STEPPER SYSTEM

Each axis requires one cable

- Motor Cable, 9-pin D connector to circular connector
 - 10 feet **HX1700M6143**
 - 25 feet **HX1700M2025**
- Motor Cable, circular connector to circular connector
 - 5 meter **HL1700M392713500**
- Motor Cable, 9-pin D connector to 9-pin D connector
 - 10 feet **HX1700M6149**
 - 25 feet **HX1700M2029**



MATING CONNECTOR KITS

When motor cables are not purchased, the following kits are required to mate to all Techno slides:

- Servo: one circular connector and one 15-pin D connector **HX1700MSRVKIT1**
- Stepper: one circular connector, female **HX1700MSTPKIT1**

NOTE: All kits include pins. Requires crimping tool.

- Stepper: one circular connector, male **HX1700MSTPKIT2**



RELAY BOX

- The Relay Box will turn spindles, router, or engraving heads on / off from I/O signal from the MAC or C142 controller
- Switch up to 240V AC at 15A
- Activate on 12V or 24V I/O controller signal
- Accepts 3-prong 120V AC plug
- 12V version typically used with MAC200 system (stepper)
- 24V version typically used with SRV400 system (servo)
 - 12V version **H26T60-RELAYBOX**
 - 24V version **H26T60-SRVRELAY**



BATTERY-BACKED MEMORY

- This chip provides 32K of battery-backed memory
- It can be used in all the "C" series of controllers as well as the MAC series and PCMAC system **H25Z61-DS1235AB**

