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Find the *Velmex VXM-1* at our website: ***Click HERE***



VXM™ Motor Controller



Precise Positioning Control







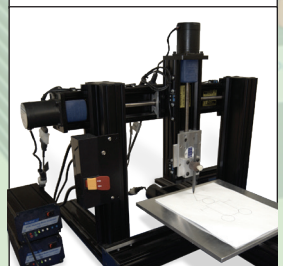
Motorized Stages

VXM™

Controller for Velmex Positioning Systems







Control motion on multiple axis

VELMEX, INC.™

Positioning Systems for Science and Industry

Velmex Versatility

Velmex positioning products provide a variety of precise, yet simple, modular configurations to satisfy a broad range of applications where high precision and value are essential. Velmex applications are limited only by your imagination. For example:

- Measurement
- Antenna Alignment
- Automation
- Camera Positioning
- Film and Animation Work
- Inspection and QA/QC
- Medical And Biological Analysis
- Moving Probes, Sensors, Components
- Optical Focusing
- Photonics
- Pick and Place
- Prototyping
- Research and Testing
- Workhold Fixturing and Light Industrial
- And thousands of other uses.

You are not limited to off-the-shelf items. Every Velmex product is built to order. We can customize your device to meet your exact requirements with:

- Rapid, standard or fine motion
- Locks
- Counters and Scales
- Position Encoders
- Special Finishes
- Prep for Special Environments
- Framing
- Plates and Brackets

Velmex's very broad range of positioning equipment for science and industry delivers quality, precision, selection and value.

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VXM™ Stepper Motor Controller



Velmex VXM Controllers can control motion on multiple axes. Pictured: a VXM with single axis BiSlide®.



Velmex VXM Controller connected to a Velmex XSlide™.

Velmex VXM Controller Systems are components of the power systems that drive motorized Velmex products including UniSlides®, BiSlides®, XSlides™ and Velmex Rotary Tables. The VXM's advance design delivers high, consistent performance and insures they are very efficient, reliable and easy to program.

Velmex pioneered the development of a microprocessor-based indexer/driver controlling two, three up to four axes in a single system. This 2-phase, unipolar stepper motor controller has the capability to drive and control precise movements, multi-axis and velocity. Velmex's VXM Controller System is capable of controlling to 4 motors, 1 motor at a time. Also two motors can be controlled simultaneously for coordinated motion.

Velmex has five VXM models that can control one to four motors plus one enhanced jog and auto-reverse single motor, single axis model that does not require a computer. All are simple to operate. Use the Velmex VXM Controller in conjunction with the stepper motors Velmex offers, along with Velmex's motorized slides and assemblies.

Features - VXM Controller

Host Computer Indicator *– The Velmex VXM System can be used interactively with a PC, Tablet, Laptop or PLC or can run standalone. The LED indicates whether a host computer is controlling the movement or if the VXM is in control.*

Motor 1 Control *– Control buttons direct Motor 1 movement clockwise (right button) or counter-clock wise (left-button). When not connected on-line, the buttons allow the motor (slide) to be jogged a step.*

MCU *– Single chip micro-controller (MCU) digitally controls the motor phase switching and all other interface functions. Noise sensitive step and direction translation circuitry are eliminated. (Internal)*

Power Supply *– Regulated power supply (standard) with a 100 to 240VAC input range assures consistent motor output torque. Low voltage 24VDC operation for efficient energy savings. Is UL, CE, CSA and TUV safety agency compliant.*

Coordinated motion *– with two VXMs connected via the VXM bus, two axis movement can be controlled at the same time. Motion created can be arcs, angles and circles. Plug and Play operation makes the 1st VXM the "master" for 3 and 4 motors.*



Stop/Start Buttons *– Easy to activate buttons stop/interrupt the program or start the program internal to the VXM.*

LED Indicators *– At-a-glance status indicators monitor power (on) and host computer control connection.*

Motor 2 Control *– Control buttons direct Motor 2 movement clockwise (right button) or counter-clock wise (left-button).*

Motor Cables *– Easily controls two motorized Velmex slides or tables, one motor at a time. Connecting a second VXM through the bus allows control of up to four motors*

Limit Switch Connections *– Easily read the limit switches on the slide and subsequently program accordingly.*



External Power Supply *– Low voltage 24VDC operation. Saves energy – automatically powers down motors at a standstill, consuming only 1.4 watts*

RS-232 *– Entire programs can be transferred to the VXM over the RS-232 interface. The VXM will retain the downloaded program(s) in memory until cleared. The VXM is also USB compatible via a RS-232 to USB connection.*

Auxiliary Inputs and Outputs *– Easily use the convenience of a joystick or other control or sensor. 10 bit analog input for external sensor, setting speed or an analog joystick.*

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Additional VXM™ Features:

- Powerful, yet small and compact, delivering value at a low cost.
- Easy to use command structure. Intuitive, comprehensive command instruction set, makes it easy to program.
- Higher rated motor drives for long life and overload tolerance.
- Resonance-free motor torque from modulated current control. Has less low speed vibration than typical 400 step/rev controllers.
- Nonvolatile memory for storing five user-created programs.

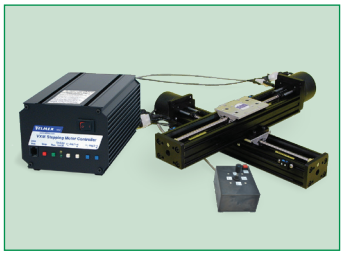
Velmex VXM Systems enable the step motor to operate more efficiently by utilizing pulse width modulation current control with an automatic motor power-down for lower power consumption. The system's microprocessor is in total control of the voltage level on each phase of the motor drive which eliminates the noise interference.

The Velmex VXM System can be used with a PC, Tablet, Laptop or PLC and can run standalone. It is also compatible with Velmex legacy NF90 and VP9000 Step Motor controllers.

VXM™ Configurations



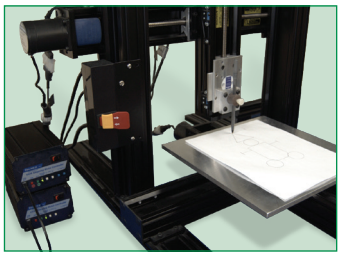
Standard VXM-1 controls a stepper motor. Pictured here with a BiSlide®.



VXM-2 controlling two motors on a XY axis BiSlide®.



Two VXM's bussed together for either the VXM-3 or VXM-4.



VXM-4 controlling 4 axes.

VXM-4 rack mounted.



VXM-1 (standard)	Programmable control and driver for one motor
VXM-2	Controller for two motors, one at a time
VXM-3	Controller System for three motors
VXM-4	Controller System for four motors
VXM 1-1	Controller System for two motors, simultaneous motion
+ "R"	Rack mounted versions of above
VXM-1J	Enhanced jog and auto-reverse single motor controller – 1 axis only. Programmable front panel – no computer needed.



All control functions (speed, direction, teach, momentary/ continuous) are at the front panel of the VXM-1J and can be accessed through remote signaling via inputs on the back.

Velmex has designed a simple, variable speed and teachable two-move version of the popular VXM™ Stepper Motor Controller – the VXM-1J. The VXM-1J is the ideal controller for directing motion between two points on a single axis. This jog and auto-reverse stepping motor controller is not programmed with a computer. Speed is adjusted with a potentiometer.

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VXM™ Specifications

Dimensions:	
Weight (with power supply)	
- VXM -1	3.6 lbs. (1.63 kg.)
- VXM-2	3.9 lbs. (1.77 kg.)
- VXM-3	7.5 lbs. (3.4 kg.)
- VXM-4	7.8 lbs. (3.54 kg.)
Height x Width x Length	3.27” X 4.37” X 6.89” (83 mm X 111 mm X 175 mm)
Electrical Requirements	
AC Power Supply	100-240VAC 2A 50-60Hz UL, CE, CSA, and TUV compliant
VXM Controller	24VDC 2.5A
Operating Temperature	35 -95 F (2 -3 5 C)
Relative Humidity	10% - 90% (non-condensing)
Motor Compatibility	NEMA 17 to NEMA 34 Runs 6 or 8 lead permanent magnet step motors rated from 0.4 to 4.7 amps
Function	
VXM-1	1 motor version
VXM-2	2 motor version, one motor operates at a time
Software	COSMOS™ (Computer Optimized Step Motor Operating System)
Number of axis	1, 2 or 3, 4
Motor Compatibility	Size 17 to size 34 (1.2 to 4.7 amp)
Steps per revolution	400
Program Storage (memory type)	5 (RAM/ FLASH)
Interface	RS-232 (serial port)
Aux. inputs/outputs	4 in/2 out
Speed Range (steps/sec)	1 to 6000
Default Baud Rate	9600
Maximum Baud Rate	38,400
Program language	ASCII Characters

VXM-1 with a Velmex Rotary Table.



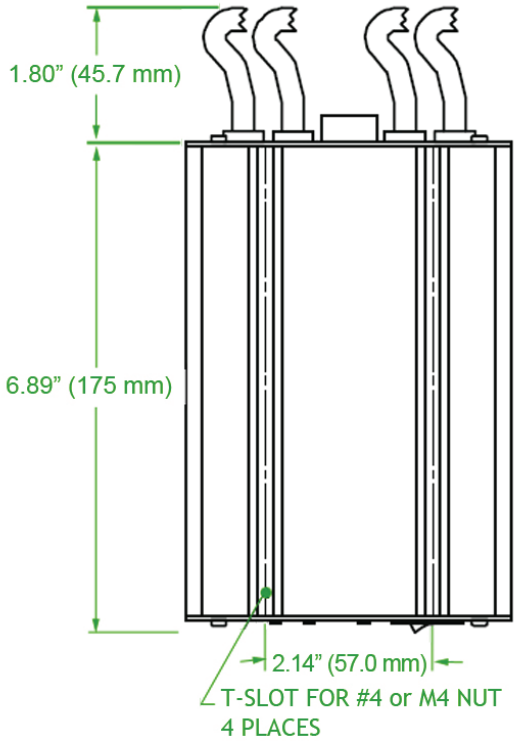
Most Velmex VXM Motor Controller versions work with motorized UniSlide®, BiSlide® and XSlide™ Linear Slides; Elevating Tables and Rotary Tables. (The VXM-1J Jog and Reverse is not recommended for use with Velmex Rotary Tables.)

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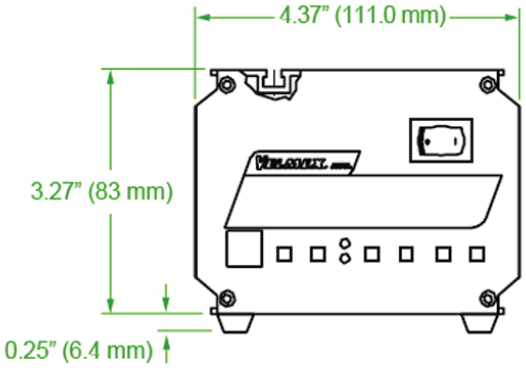
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VXM™ Dimensional Drawings

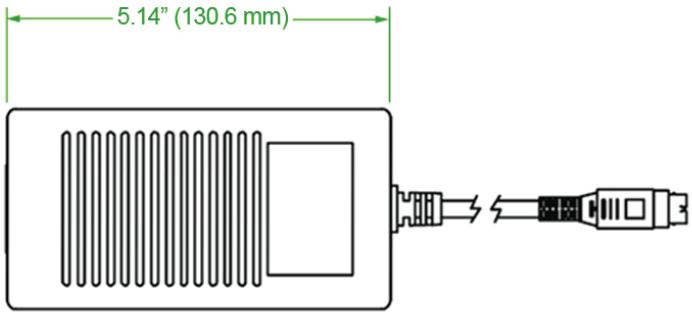
VXM™ (Top down view)



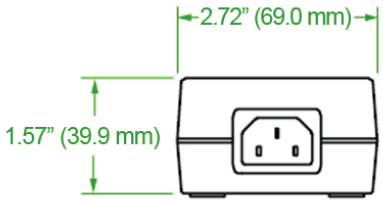
VXM™ (Front view)



Power Supply (Top down view)



Power Supply (End view)



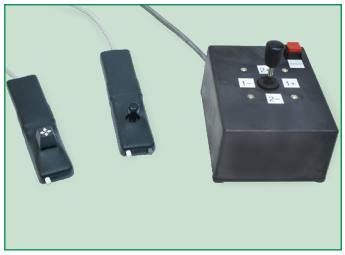
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Options and Accessories for VXM™ Step Motor Controller



Power cords *– to address numerous international requirements.*



Joysticks *– to control one- or two-axis systems.*



Bussing Cable *– to connect two VXM Controllers together*



Cables for Motors and Limit Switches *– VXM Controller includes the cables to connect the motors and limit switches the VXM will control.*



Thumbwheel *– Program selector switch.*



USB Adapter Cable *– for communication with the computer and programming of the VXM.*

COSMOS™ Interface



Each VXM programmable controller comes complete with Velmex exclusive software package – COSMOS™. It's easy to configure and control the system – complete with code creation tools, quick-moves, and troubleshooting tools. The simple to use interface reduces project turn-around time to a minimum. It features "in-window" instructions and a status window.

COSMOS™ can:

- Test serial port for communications
- Retrieve and update setup information
- Display status and error messages
- Can run system diagnostics
- Move motor(s) exact distances without programming or without learning any commands
- Enter commands directly in to the VXM

- COSMOS is Velmex, Inc. proprietary software.

- Auxiliary I/O Breakout Module is a convenient method to interface to the VXMs auxiliary I/O.
- I/O Relay module w/available AC or DC relays.
- The I/O Splitter allows both a joystick and the Auxiliary I/O Breakout Module to be connected to the VXM at the same time.
- Joysticks
  - Digital Joystick allows remote jog control of a one or two axis VXM controller.
  - Analog Joystick derives speed (velocity) and direction from joystick position.
  - Heavy duty 2-axis digital joystick
- Foot pedal - similar control to joystick
- USB adapter cable (USB to RS232)
- Thumb wheel program selector switch.
- Universal VXM Power supply
- Input terminal for data entry
- Additional user outputs
- Half enclosure for OEM embedded applications
- Rack mounting kits
- Cables and connectors

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More Positioning Solutions from Velmex

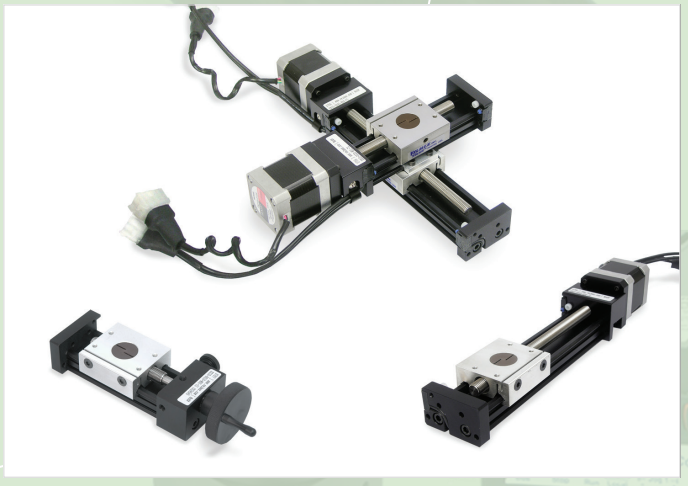
Velmex manufactures standard and custom linear and rotary motion-control positioning equipment for scientific, research, machining and industrial applications. Velmex produces UniSlide®, BiSlide® and XSlide™ manual and motor-driven assemblies; manual and motor-driven XY tables, rotary tables, elevating tables and turntables; VXM™ motor controls and VRO™ digital readouts. Products include slides, stages and actuators in a variety of configurations and a broad range of sizes and payload capacities.



Velmex UniSlide® Assemblies are available in a variety of configurations, models and sizes including Linear Slide Assemblies, Elevating Tables and XY Tables.



Velmex BiSlide® Assemblies offer durable, easy-to-configure, low cost and modular design for a highly effective and very versatile positioning device.



Velmex XSlide™ Assemblies are compact positioning stages, highly suitable for high performance scanning of smaller loads. They are very effective in limited space applicaitons.

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Visit the Velmex web site at www.velmex.com for more details and specifications on all the Velmex stages; along with motors, controllers, encoders and readouts. The site includes CAD files, numerous examples , news and updates.

Velmex is leader in delivering rugged, reliable, precision positioning systems at a reasonable cost. We have helped thousands of companies and organizations with solutions to the application challenges. If you need help in designing a positioning system, please contact us and to talk with one of our Application Engineers.

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