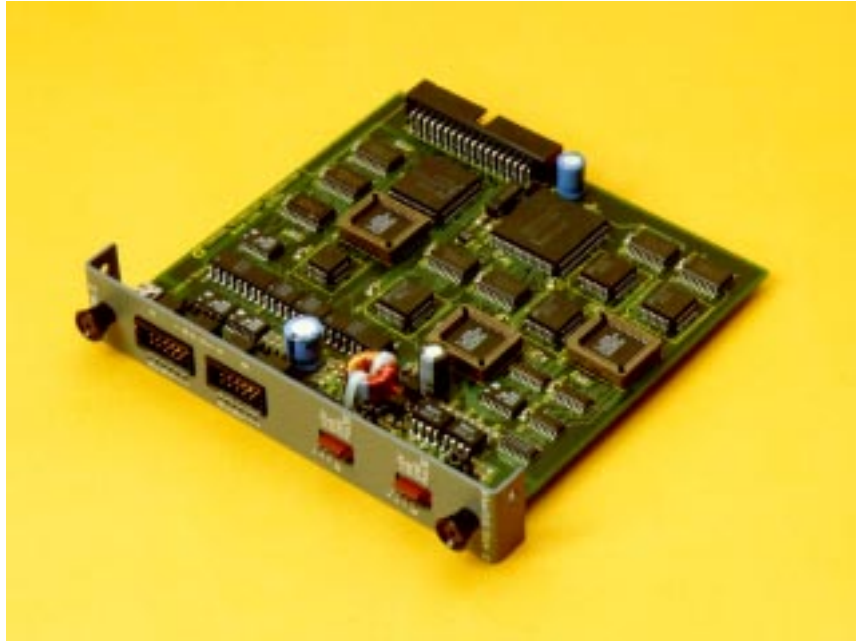


## Model 2206-1, -2 Stepping Motor Control Module

High Performance, Software-tunable Control



The model 2206 Stepping Motor Control Module is an intelligent high-speed module possessing advanced features for demanding motion control applications. It is available in both single- and dual-axis versions.

The on-board 16 bit processor is closely coupled to the controller's main CPU using biport RAM technology, allowing dynamic interaction between your program and each axis of motion. Unique digital pulse generation circuitry on the model 2206 provides a variety of benefits - this circuitry allows motion characteristics to be determined dynamically and to be changed even as the motion takes place.

### Performance and Flexibility Benefits

The high maximum step rate of the model 2206 lets you control microstepping drives as well as half and full-step drives. In addition, the model 2206 uses the more powerful "servo" command set of the Quickstep™ language. These commands allow you to execute continuous velocity-based moves in addition to absolute and relative positioning commands.

Velocity may be reprofiled "on-the-fly" and the motor's current theoretical velocity and position may be read at any time. Motion parameters can be derived from any other controller resource. This flexibility allows:

- Motor tuning in minutes, using Quickstep with its register monitoring and modification capabilities.
- Local or network-based operator controls derived from a variety of input devices, including computer programs, thumbwheels, keypads, etc., as well as automatic adjustment based on any condition the controller can sense.
- Deriving motion parameters from a data table stored with your program, with the table row being selected based on the product currently being manufactured.

### Auxiliary Inputs

There are six auxiliary inputs on the model 2206 that perform a number of useful functions: jogging (cw or ccw), home position sensing, detecting forward and reverse limits, and soft stop. The soft stop input not only decelerates the motor to a stop, but also captures the position at which the input occurred, allowing accurate synchronization of the axis to registration marks on a workpiece or machine.



The model 2206 Stepping Motor Control Module may be used with any series 2600XM controller.

For programming flexibility the 2206 uses the following Quickstep™ servo commands: Profile Servo, Turn Servo, Stop Servo, Search and Zero Servo, Zero Servo, Monitor Servo, If Servo, and Store Servo.

The 2206 also supports commands for three modes of operation: absolute positioning, relative positioning and velocity (continuous). Automatic home-seeking modes are also supported.

Each axis provides six auxiliary inputs, each with an LED indicator, performing the following functions:

**SOFT STOP** - stops motor motion.

**FWD-LIM** - inhibits motion in the forward direction.

**REV-LIM** - inhibits motion in the reverse direction.

**HOME** - establishes a home (zero) reference point for absolute positioning.

**JOG CW** and **JOG CCW** - turns the motor cw or ccw at the programmed rate

**START** - A programmable option replacing JOG CW that allows a motion to wait for this input.

### For More Information

Further detailed connection and application information may be found in the Installation Guide, publication IG2206.

Selection and applications assistance may be obtained from our staff of Systems Specialists – call the number below for further information.

### Control Technology Corporation

25 South Street  
Hopkinton, MA 01748

Telephone (508) 435-9595  
Toll Free (800) 282-5008  
FAX (508) 435-2373  
email help@control.com

See us on the World Wide Web:  
<http://www.control.com/>

### Absolute Maximum Ratings

	Min	Max	
+5 V. Supply Output Current - Note 2 (for powering external drive inputs)		96	mA
Ambient Temperature (operating)	0	50	°C

### Specifications

	Min	Typ	Max	
<b>Pulse and Direction Outputs</b>				
Low $V_{OL}$ ( $I_{OL} = 24$ mA)	0.36		0.44	VDC
High $V_{OH}$ ( $I_{OH} = 24$ mA)	4.44		5.25	VDC
<b>Pulse Width (jumper configurable)</b>				
For microstepping drives		1.3		µs
For half- and full-step drives		34		µs
<b>Auxiliary Inputs</b>				
Off Voltage ( $I_1 = 0$ mA) - Note 3		24.0	26.4	VDC
On Current ( $V_1 = 0$ V)		2.1	2.5	mA
<b>Threshold</b>				
low-to-high		8.5		VDC
high-to-low		7.5		VDC

### Performance Specifications

	Min	Typ	Max	
Maximum Velocity Setting	4		250,000	Steps/sec
Resolution of Max. Velocity Setting		3.9		Steps/sec
Accel. and Decel. Settings			130,000,000	Steps/sec <sup>2</sup>
Resolution of Accel/Decel Setting		15.3		Steps/sec <sup>2</sup>
Position Range	-2,147,483,648		2,147,483,647	Steps
Relative Motion Command Range	-2,147,483,648		2,147,483,647	Steps

### Power Requirements (from controller)

Logic Supply (5 V.)	190.0	230.0	mA
Auxiliary Supply (24 V.)	41.0	190.0	mA

#### Notes:

1. Specifications shown above are at 25° C, unless otherwise noted.
2. Powered from the controller's 24 V supply
3. Dependent on the controller's auxiliary supply voltage (24 V typ).