Cambridge Technology

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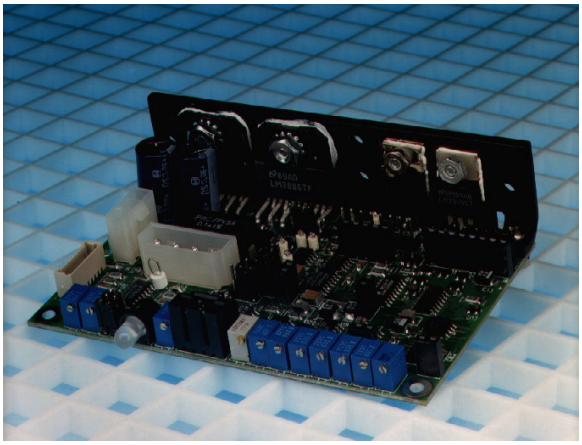
The MicroMax® Model 671XX

Board Level Single Axis Driver Electronics

Architecture and Benefits

- ***Micro*radian Level Accuracy And *Max*imum Frequency Response**
- **Flexible For Use With All Cambridge Technology Scanners**
- **Compact Size for Easy Integration**
- **Position, Error, and Velocity Output Signals**
- **Input Scale And Offset Adjustment**
- **Analog or Digital Input**
- **System Conditioning and Status Monitoring**



Cambridge Technology's MicroMax® Model 671XX driver provides an extremely compact, high performance and fully featured servo package at a very attractive price. Our advanced servo topology offers high bandwidth, high performance output amplification, advanced notch filter modules and power supply configurations to provide the ultimate in closed loop galvanometer system bandwidth and step response times. The 671XXHP (High Power Option) supports peak current of up to 20 amps allowing movement of large loads and angles at the highest level of speed in servo technology.

Designed with flexibility in mind, the MicroMax Model 671XX can be configured to drive most of Cambridge Technology's extensive line of precision, closed loop, galvanometer based optical scanners. Featuring automatic gain control (AGC), low noise system damping, linearity compensation and high stability components, the 671XX servo provides extremely accurate positioning for applications that demand the best repeatability, linearity and stability. Integral mounting hardware, low profile connectors, convenient placement of system tuning and setup adjustments, as well as overall servo size allow for compact system designs and ease of integration. This combination of size, performance and flexibility make the MicroMax Model 671XX the ideal choice where the highest levels of accuracy and speed are required in a compact scanning system application.

The fully featured MicroMax 671XX Servo, when used with Cambridge Technology's patented position detection galvanometer technology, provides excellent time and temperature stability - without the need for thermal compensation. System monitoring of galvanometer position, error and velocity output signals make the integration of the MicroMax 671XX easy and accurate in complex scanning system applications.

Status monitoring and system conditioning during power up, power down and all angle moves ensure complete and reliable system control to guard against potential system damage. Several error states can be detected including over-position, excess RMS power, loss of position detector signal, and loss of power. In the event that a fault is detected, the electronics will immediately signal a fault condition and shutdown the positioning system in a controlled manner throughout integration and operation. An active and fault LED is also included as an additional measure of verifying system status. Input scale and offset adjustments provide an additional level of performance customization and integration. Differential analog inputs, digital input options, flexible output amplifier and power supply configurations from +/- 15 to +/- 28 volts allow for optimization of system positioning, accuracy and speed - while keeping costs at a minimum.

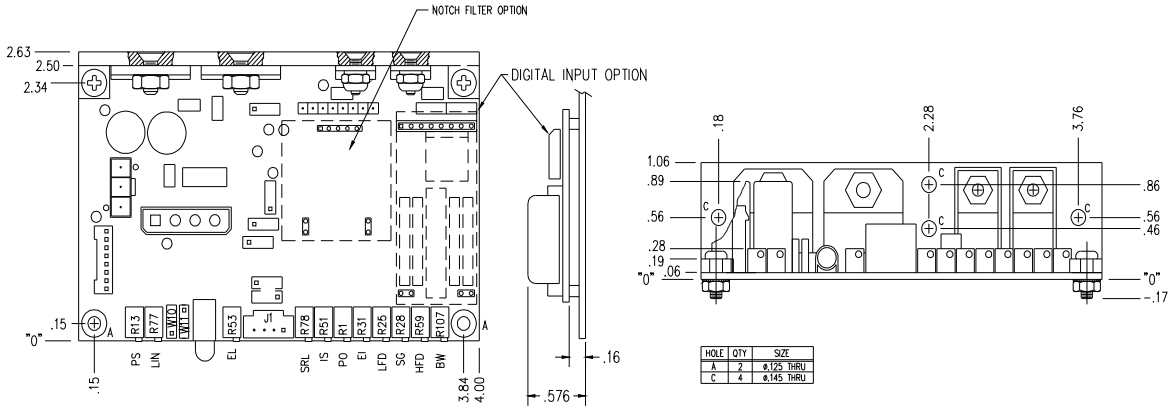
At Cambridge Technology, we take great pride in the performance of our products. Our high standards in research and development, manufacturing and customer satisfaction guarantee the performance consistency that you need to design the high quality systems demanded in today's competitive marketplace. Call us today to discuss your scanner and electronics requirements.

The MicroMax Model 671XX

General Specifications

All angles are in mechanical degrees. All specifications apply after a 1 minute warm up period.

Analog Input Impedance	200K +/- 1% ohms (Differential) 100K +/- 1% ohms (Single Ended)
Analog Output Impedance	1K +/- 1% ohms (for all other observation outputs)
Position Input Scale Factor	0.5 volt/mechanical degree (2 degrees/volt), other configurations available
Position Input Range	+/- 10 volts, maximum
Position Offset Range	+/- 2 volts
Digital Position Input Range	2^{16} dac counts
Non-Linearity of 16 Bit Digital Input	0.006% of full scale, maximum
Position Output Scale Factor	0.5 volt/degree
Error Output Scale Factor	0.5 volt/degree
Velocity Output Scale Factor	Analog output (scaled by position differentiator gain)
Fault Output	Open collector: 1K ohm output impedance (pulls down to -15V), with 10mA sink capability
Temperature Stability of Electronics:	20PPM per degree C
Power Supply Requirements	+/- 15 to +/- 28VDC configurations available, +/-24 to +/-28 VDC default
Maximum Drive Current Limit	10 amps peak 5 amps rms (power supply and load dependent)
Operating Temperature Range	0 - 50 ^{o}C
Size	4.00" x 2.5" (2.63 with heatsink bracket) x 1.07" 10.16 cm x 6.35 (6.68) cm x 2.69 cm



To specify configuration in ordering use servo base numerical model # followed by he central two digits of scanner model #.

Example: A MicroMax 671XX driver configured for use with a 6210 would be specified as 67121
A MicroMax 671XX driver configured for use with a 6220 would be specified as 67122