MICROMATIC-9

Multi-Axis Digital Servo Control

- Single enclosure leads to reduced hardware
- Simple Installation and reduced panel space
- Universal motion controller and amplifier package
- Suitable for multi-axis systems using 3-phase servo motors
- Operates Directly off the power mains 115-240 VAC

Control Description

MICROMATIC-9 is available as a multi-axis integrated digital servo controller and drive amplifier. This is completely integrated control system featuring USB and Ethernet interfaces to a user supplied, host PC or other system controller. Micromatic-9 is a true stand-alone motion controller. The device includes its own motion control microprocessor and flash storage enabling motion system operation independent of a host computer. This device includes a home routine and all servo parameters. Micromatic-9 delivered in a package intended for panel mount. Control electronics includes the following items; all interconnect cables, servo tune, testing and burn-in.

Position Synchronized I/O

The Micromatic-9 addresses Position Synchronized I/O for Precision Laser Shuttering and other applications. Using the standard, I/O, the Micromatic-9 has high-speed position compare outputs allowing for output control triggered by actual position. The circuit will fire within 100 nsec of reaching the desired position. The position compare output port is enabled by fast CMOS drive technology. Position Compare is programmed deterministically, or non-deterministically in a background process PLC. GUI programmers can read/write from shared RAM for ever changing path and control requirements. No additional hardware is required

Analog Input

The Micromatic-9 offers an Analog I/O option to add two 16-bit ±10V A/D converters as well as one differential 12-bit filtered PWM analog ±10V output. Use the A/D for joystick interface, for analog data sampling or data logging. Use the PWM output for PRF triggered control or alike.

Software Support

The MICROMATIC-9 supports the following software. Program uses familiar RS274D, or G-Code commonly used for NC or CNC machine tools. Optional software support Com Library is available for C++, C# and VB development environments, Interface provided Ansi C type functions to Matlab or LabVIEW.

MICROMATIC-9 Specifications and Other Features

- Motorola DSP 56k digital signal processor
- USB2.0 and Ethernet optional TCP/IP ModBus /TCP, 100 base T
- Linear and circular interpolation & 256 motion program capacity
- 64 asynchronous PLC program capability
- Cubic Trajectory calculations, splines, S-curve acceleration, Advanced PID servo motion algorithms
- Standard Quadrature encoder feedback or SSI and One quadrature secondary encoder input per axis
- Eight or sixteen digital inputs, 24 VDC & six digital outputs, 0.5A @ 24V, sinking or sourcing
- Four input flags per axis at 12-24VDC levels
- Optional two Hi-Res (16-bit) analog inputs and one 12-bit filtered PWM analog output
- Standard Output Ratings from 5A continuous to 10A peak. Higher current available as option (up to 15/30 on two Axes)
- Configurations designed for UL and CE Certifications
- Integrated bus power supply including shunt regulator and soft & 7 segment amplifier status displayed

MICROMATIC-9 Specifications	**1- or 2- Axis**		**4-Axis**		**6-Axis**	
Main Input Power	5/10A	10/20A	5/10A	6/16A	5/10A	8/16A
Nominal Input Voltage (VAC)	110					
Rated Input Voltage (VAC)	97-265					
Rated Continuous Input Current (A ACRMS)	3.3	6.6	13	21	13	21
Frequency (Hz)	50/60					
Phase Requirements	1 ϕ or 3 ϕ					
Main Bus Capacities (µf)	3380					
Output Power						
Rated Output Voltage (V)	138					
Rated Cont. Output Current per Axis	5	10	5	8	5	8
Peak Output Current (A) for 2 seconds	10	10	10	16	10	16
Rated Output Power per Axis (Watts)	1195	1195	1247	1995	1247	1995
Bus Protection						
Nominal DC Bus (VDC)	340					
Over-voltage Trip Level (VDC)	420					
Under-voltage Lockout Level (VDC)	10					
Shunt Regulator Ratings						
Turn -On Voltage (VDC)	392					
Turn-Off Voltage (VDC)	372					
Control Logic Power						
Input Voltage (VDC)	20-27					
Input Current (A)	2		2		3	
Transistor Control						
Recommended PWM Frequency (kHZ) @rated current	12					
Minimum Dead time (µs)	1					
Charge Pump Time (% of PWM period)	5					

Notes:
1) MM9 is configured for 110VAC. 220VAC is optional and MUST be specified at time of order.
2) 05/10 AMP 3 phase, for single phase input derate peak current 20%
3) 8/16 & 10/20 AMP 3 phase, for single phase input derate peak current 30%