



GT-800 Series Motion Controller

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GOOGOL
TECHNOLOGY

The GT-800 series motion controller is an 8-axis controller which provides more control axes and functionalities than the GT-400 series. Providing high-performance and flexibility, the GT-800 is applicable to the control of multiple-axis equipment such as PCB drilling and milling machines.



Features

- Adopt high-performance DSP and FPGA technology
- Each card can control 8 servo/step motors
- Programmable sampling rate. The minimum interpolation period of four axes is 200 μ s. The minimum control period of single-axis point-to-point motion is 25 μ s.
- Modes of motion: point-to-point motion, linear interpolation, circular interpolation, velocity control, interface to manual pulse generator, and electronic gearing
- Programmable trapezoid curve planning and S-curve planning and update parameters on-the-fly
- All the position and parameters registers are of 32 bits
- Hardware capture of home switch and index signal of encoder
- Set following-error limit, acceleration limit and output limit, to ensure safe and reliable control

Specification

Dedicated Digital Input/Output

- Dedicated opto-isolated inputs: 2 for limit switches, 1 for home switch and 1 for driver alarm signal input for each axis
- Dedicated opto-isolated outputs: 1 for driver enable signal and 1 for reset driver alarm signal for each axis
- 3 dedicated inputs for protection: abrupt stop, door stop and logical stop

Software Characteristics

- User-defined coordinate system for ease of programming
- 4-D coordinated motion
- Continuous interpolation
- Motion command buffer for increasing communication efficiency
- Programmable event interrupt: external input interrupt, event interrupt and timer interrupt
- EEPROM for updating Firmware and system parameters
- Windows98/2000/NT/XP drivers and DLL, C and C++ function library

Channels of Input/Output

- 8 channels of output, ± 10 V analog voltage with 16-bit resolution control signal
- 8 channels of quadrature incremental encoder input for the feedback of each axis
- 4 channels of quadrature incremental encoder input for the auxiliary encoder input
- Encoder sampling rate up to 8MHz
- 2 channel of D/A output
- 8 channels of encoder input with 8-bit resolution and sampling rate up to 8MHz

Output Range

- Position: 32-bit (2.15 billions of pulses)
- Velocity: Up to 8 millions of pulses/second for servo motor
- Acceleration: Up to 16 millions of pulses/second

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Uncommitted Digital Input/Output

- 37 opto-isolated digital inputs
- 2 opto-isolated digital outputs
- Serial IO port for IO expansion up to 128 digital inputs/output (optional)

Memory Size

- On-board motion command buffer up to 4K bytes (expandable to 256K bytes) and 8K bytes non-validate RAM for storing parameter

Position Capture

- 1 channel of probe input for capturing positions of 4 axes simultaneously
- 1 channel of home capture signal for each axis
- 1 channel of index capture signal for each axis

Bus Interface

- Standard ISA/PC104 bus
- Standard PCI bus
- Stand-alone through standard network control interface



(Optional)

Power Consumption

- +5V, I_{cc} = 3A, internal power supplied by PC
- ± 12 V, I_{cc} = 60mA, internal power supplied by PC
- +24V or +12V, I_{cc} = 2A, internal power provided by PC

Operating Environment

- Operating temperature: 0-60°C
- Relative humidity: 5% - 90%, non-condensing

System Software

- Windows 98/2000/NT drivers and DLL
- C/C++ function library and demo software in DOS

Basic Accessories

- GT-800-ACC1 I/O board
- GT-800-ACC2 terminal board
- GT-800-ACC3 62-pin shielded cable (x2)
- GT-800-ACC4 60-pin flat cable