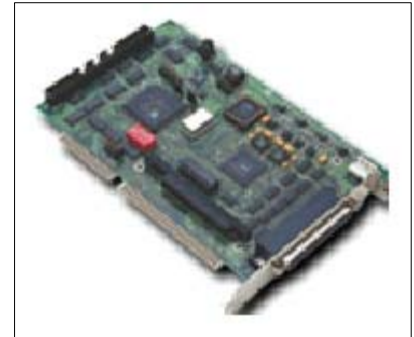




GT-400 Series Motion Controller

Googol Technology (HK) Limited

The GT-400 series motion controller is a universal controller developed by Googol Technology. The series has several product versions, including the GT-400-SV, GT-400-SG, GT-400-SP, GT-400-SE and GT-400-SD, widely used in applications ranging from simple point-to-point motion control equipment to highly complicated profile motion control equipment, such as measuring machines, engraving machines, NC lathes, machining centers and robots.



Features

- Adopts high-performance DSP and FPGA technology
- Each card can control 4 servo/step motors
- Programmable sampling rate. The minimum interpolation period of four axes is 200us. The minimum control period of single-axis point-to-point motion is 25us
- 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 registers for computational parameters and trajectory planning parameters are 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
- PID (Proportional-Integral-Derivative) digital filter with velocity and acceleration feedforward, and with integral limit and bias compensation (for SV card).
- Network communication port (Ethernet, Profibus-DP, RS232, RS422/485) (Optional).
- User-defined coordinate system for ease of programming
- Coordinated motion up to 4 axes, linear interpolation of two to four axes, and circular interpolation of any two axes
- Continuous interpolation function
- On-board memory buffer to improve communication efficiency.
- Programmable event interrupt: external input interrupt, event interrupt and time interrupt.
- On-board EEPROM to update firmware and parameters.
- Drivers and DLL for Windows98/2000/NT, C and C++ function library.

Specifications

Axis Channels

- 4 channels of 16-bit analog voltage output signal or pulse output signal with a frequency up to 1MHz
- 6 channels of quadrature incremental encoder input, 4 channels used for feedback signal input of each axis, 2 channels are used for the auxiliary encoder input
- Encoder sampling rate up to 8MHz
- Flexible combination of analog voltage output and pulse output mode

Analog Input (Optional)

- 8 channels of independent 12-bit±10V analog input

Uncommitted Digital Input/Output

- 16 channels of uncommitted opto-isolated digital input
- 16 channels of uncommitted opto-isolated digital output with

Dedicated Digital Input/Output

- Dedicated opto-isolated input per axis, 2 channels for limit switch signal, 1 channel for home signal, and 1 channel for drive alarm signal input.
- Dedicated opto-isolated output per axis, 1 channel for drive activation signal and 1 channel for drive alarm signal reset.

Position Capture

- 1 channel of probe input can capture the positions of four axes simultaneously, 1 channel of home capture signal for each axis and 1 channel Index capture signal.

Bus Type

- Standard ISA/PCI104 bus.
- Standard PCI bus.
- Stand-alone through standard network interface (Optional).

System Software

- Demo software in Windows environment.
- Windows 98/2000/NT equipment drivers.
- C/C++ function library and demo software in DOS.

Power Consumption

- +5V, I_{cc} = 2A, power supplied from PC.
- ±12V, I_{cc} = 60mA, power supplied from PC.
- +24V or +12V, I_{cc} = 2A, external power provided by user.

Environment

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

Mechanical Dimension

- 122mm x 185mm

Standard Accessories

- GT-400-ACC1: interconnect board
- GT-400-ACC2: terminal board.
- GT-400-ACC3: 62-pin shielded cable (x2)
- GT-400-ACC4: 60-pin flat cable.

Model	Number of Control Axes	Motor Type	Control Mode	PC Bus Type
GT-400-SV	4	Servo/Step Motor	Closed loop/Open loop	ISA/PC104 or PCI
GT-400-SG	4	Step Motor	Open loop	ISA/PC104 or PCI
GT-400-SP	4	Step Motor	Open loop, with encoder counter	ISA/PC104 or PCI
GT-400-SE	4	Step Motor	Open loop, special design for engraving machine	ISA/PC104 or PCI
GT-400-SD	4	Step Motor	Open loop. Programmable width of output pulse of the fourth axis. Suitable to control laser output	ISA/PC104 or PCI