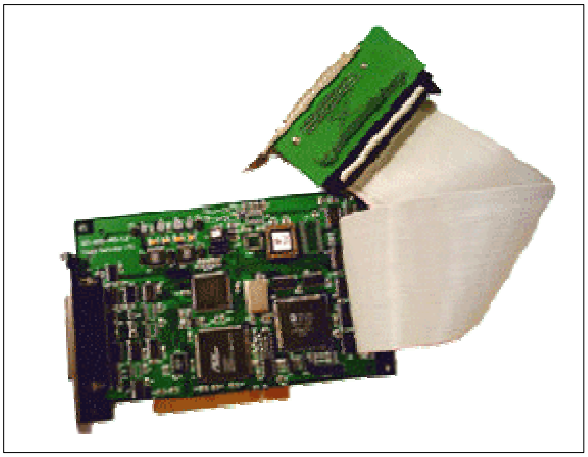
# GE-300 Series Motion Controller

*Googol Technology (HK) Limited*



The GE-300 series motion controllers, developed by Googol Technology, are economical 3-axis DSP-based motion controllers designed for motion control systems that adopt a continuous trajectory motion mode. The velocity invariableness and transition smoothness between any two-trajectory segments during the continuous trajectory motion provide remarkable advantage and result in greatly improved machining precision. The series include the GE-300-SV and GE-300-SG, being widely used in highly complicated profile motion control systems, such as engraving machines, laser cutting machines, laser welding machines, rapid prototyping machines, ultrasonic welding machines, water jet cutters, PCB milling machines, and wafer cutting machines.

**Features**

- Adopt high-performance DSP and FPGA technology.
- Coordinated motion up to 3 axes, Continuous interpolation function.
- Control period is 200us.
- Modes of motion: linear interpolation, circular interpolation, and manual pulse generator function.
- Pulse output frequency for interpolation steadily up to 256KHZ.
- Radial error of circular interpolation less than 0.5pulse.
- Programmable management for alarm signal and limit switch signal
- On-board memory buffer (up to 8k).
- Programmable coordination offset.
- PID (Proportion-Integral-Differential) digital filter with velocity and acceleration feed forward, and with integral limit and bias compensation and low-pass filter (Only for SV card).
- Look-ahead function.
- Programmable start velocity and maximum velocity.
- Programmable velocity override during motion.
- Network communication port (Ethernet, Profibus-DP, RS232, RS422/485) (Optional function).

**Specification**

Axis Channels

- 3 channels of 16-bit analog voltage output signal (Only for SV card) or pulse signal with a frequency up to 256KHz, 4 channels of quadrate incremental encoder input (3 channels for axis feedback signal input, 1 channel for the auxiliary encoder input)
- Encoder signal counting rate up to 4MHz
- Flexible combination of analog voltage output and pulse output mode (Only for SV card)

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

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 three encoder and auxiliary encoder simultaneously
- 1 channel of home hardware capture signal for each axis and 1 channel Index hardware capture signal for each axis

Bus Type:

- Standard PCI/ISA/PC104 bus
- GE motion controller + PC
- GE motion controller + embedded system.
- Stand-alone through standard network interface (Optional)

System Software:

- Demo software of engraving machine
- Demo software in Windows environment
- Windows 98/2000/NT equipment drivers, extended DLL
- C/C++ function library and Example source code in DOS.

Power Consumption:

- +5V, Icc=2A, power supplied from PC
- ±12V, Icc=60mA, power supplied from PC
- +24V or +12V, Icc=2A, external power provided by user

Environment:

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

Mechanical Dimension:

- 122mm x 185mm

Basic Accessories:

- GE-300-ACC1 interconnect board
- GE-300-ACC2 terminal board
- GE-300-ACC3 62-pin shielded cable (x2)
- GE-300-ACC4 60-pin flat cable

**Ordering Guide**

| Model | No. of Control Axes | Motor Type | Control Mode | PC Bus Type |
|---|---|---|---|---|
| GE-300-SV | 3 | Servo/Step Motor | Closed loop /analog and pulse output | ISA/PC104 or PCI |
| GE-300-SG | 3 | Serve/Step Motor | Open loop/encoder input /pulse output | ISA/PC104 or PCI |
| GE-300-PV | 3 | Serve/Step Motor | Closed loop / analog and pulse output | ISA/PC104 or PCI |



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