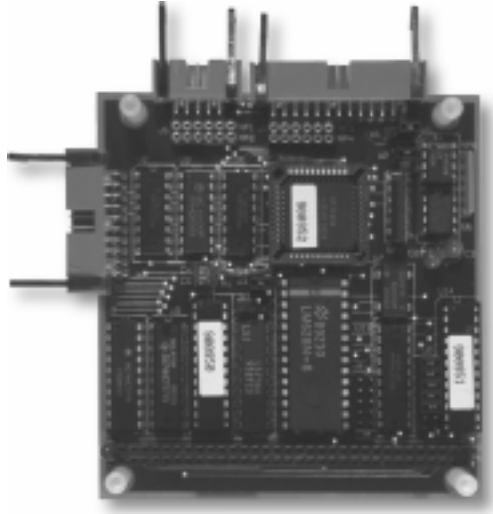




Model 5928/29

PC/104 1 1/2 Axis

Servo Controller

Technology 80's Models 5928/5929 IP Servo Controllers provide low-cost servo control for embedded systems. The compact 3.6" x 3.8" board offers one axis of servo motion control with an additional auxiliary encoder input for master/slave functions or user input control. The PC/104 open architecture of Model 5928/29 is ideally suited to support the demands of embedded control applications.

The board's digital signal processor performs the intensive real-time computational tasks for high-performance motion control activities such as the trajectory and PID calculations. To ensure that there is no degradation in performance of multi-axis systems, the DSP is utilized for each axis.

The software driver library available for the Model 5928/29 consists of routines written in "C" and assembly language for optimum speed. These driver address functions such as initialization, low-level routines, motion routines, data reporting routines, motor control and limit routines. The libraries may be called from a variety of languages by adding an include statement and linking after compiling or assembling. The libraries are written to be operating system independent. Interrupt support is included. The Model 5928/29 software library is compatible with many C, C++ versions, Visual BASIC and includes DLL's for Windows.

The 5928/5929 reflects Tech 80's commitment to open architecture design philosophy, with its industry standard bus and language support. Programming is far easier than proprietary languages, and throughput isn't slowed by lengthy ASCII command transfers. Motion specific function calls enhance standard languages, which enable ease of programming.

12-Bit Analog Command Signal Output (5928)

8-Bit PWM Command Signal Output (5929)

Electronic Gearing Capabilities

18 General Purpose I/O

1.0 MHz Encoder Input

32-Bit Position, Velocity & Acceleration Registers

PID Servo Control Filter

Auxiliary Encoder Input

Low Cost Servo Control

SPECIFICATIONS

Hardware Compatability

- PC / 104
- Incremental Encoders
 - Single-ended or Differential
- TTL or CMOS Signal Sources

Software Compatability

16 Bit:

- DOS
- Win 3.1
- Win 95-16
- C, Microsoft Basic, Pascal

32 Bit:

- Win 95
- C++, Visual Basic
- Contact Tech 80 for more information

Servo Loop/Trajectory Update Rate:

- 256 μ sec or 3906 Hz.

Connectors

- J3 servo signals, 26 pin, 100 Mil I.D.C. flat cable
- J4 I/O signals, 20 pin, 100 Mil I.D.C. flat cable
- J5 aux encoder signals, 100 Mil I.D.C. flat cable

Controller Chipset

- 5928 National Semiconduct LM628
- 5929 National Semiconduct LM629

Motion Profiles

- Trap
- Velocity

Motor Command Outputs

- 5928 +/- 10V Single ended Analog
- 5929 PWM Magnitude and Direction 5V Pulse

Motion Ranges

- Position Range: -1,073,741,824 to 1,073,741,823 counts, 31 bits
- Velocity Range: 0 to 1,073,741,823/2¹⁶ counts/sample; ie, 0 to 16,383 counts/sample, with a resolution of 1/2¹⁶ counts/sample, 31 bits
- Acceleration Range:: 0 to 1,073,741,823/2¹⁶ counts/sample/s sample; ie, 0 to 16,383 counts/sample/sample, with a resolution of 1/2¹⁶ counts/sample/sample, 31 bits

Dedicated I/O per Axis

Inputs: (most on J4)

- 8 G.P. Inputs, "IN0 - IN7"
- 1 IRQ Input - G.P. "IRQIN" (J3)
- 2 Limits - Dedicated to Servo "PLIM & NLIM" (J3)

Outputs: (most on J4)

- 1 Drive Enable, "MOFF" (J3) Open Collector
- 1 G.P. Output from LM628 "GPO" (J3) Open Collector
- 8 G.P. Outputs, "OUT0 - OUT7" 74HCT574

Programmable Interrupt Sources

- Time and Position Breakpoints
- Trajectory Complete
- Excess Following Error
- Index Capture
- Position Counter Wrap Around
- Command Error

Power Requirements (no external load)

- + 5.0 VDC, $\pm$ 5% @ 0.6A, plus encoder requirements

Recommended Operating Enviroment

- 0 - 70° C Ambient Temperature
- Storage Temperatrue
- Relative Humidity (noncondensing):

Physical Dimensions

- Overall: 3.6" x 3.8" x 0.9"
(91 x 97 x 23mm)

Ordering Information

5928	(Analog)
5929	(PWM)
5928/29 DEV	
5928/29 MAN	Hardware & Software Manuals
CAB5928-29-36	Interface Cable (36")
TB50N-S	50-Pin Terminal Board
CABDIO-36	Digital I/O Interface Cable (36")
TB20N-S	20-Pin DIgital I/O Terminal Board

* The Developement Kit Includes all manuals, software drivers/demos, CAB5912-4-36 ribbon cable, TB50N-S terminal board, Packet Jumpers, Motion Simulator, VisSim and *Designing with Motion* handbook.

Warranty

This product is warranted according to the Terms and Conditions of Sale and is effective for **TWO YEARS AFTER SHIPMENT** from Technology 80 Inc. For further warranty information, please consult the hardware manual.

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