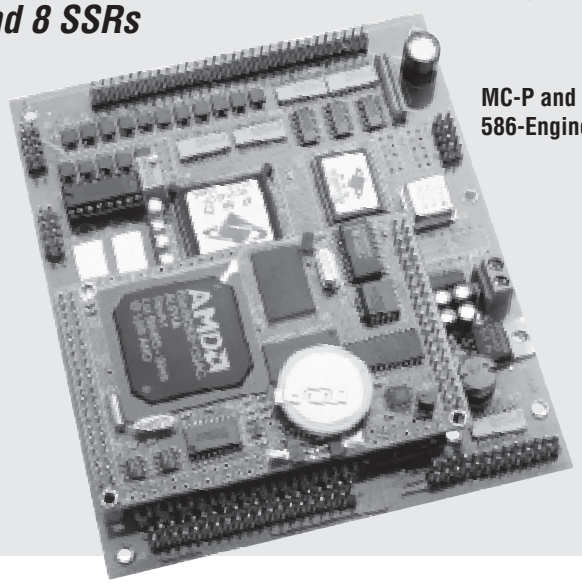
MotionC-P™ (MCP)

DSP motion controller with OPTOs and SSR

NEW!

C/C++ programmable standalone 4-axis motion controller with 80+ I/Os, 32 Optos and 8 SSRs



MC-P and a 586-Engine™

Features:

- 4.55x5.3", 200 mA at 12V, –40˚ to 80C
- C/C++ programmable, driven by **AE, I386E, or 586-Engine**
- **MCP2540:** 4 axis stepping control with pulse, direction
- **MCP2140:** 4 axis closed-loop servo control
- 7 solenoid drivers, 40+ TTL I/Os, 2 RS232, 1 RS485
- 32 Opto-couplers for home, limit, capture, and fault switches
- 8 opto isolated Solid State Relays (SSR) for AC or DC loads
- 32-bit registers for position, velocity, acceleration, and jerk
- S-curve, trapezoidal, velocity-contour, and electronic gearing
- 5 MHz pulse rate, 100 µs loop rate, and 8 ADCs

The ***MotionC-P™ (MCP)*** is a low-cost, high-performance, standalone, C/C++ programmable industrial controller for up to 4-axis motion control. The ***MCP*** includes a DSP motion chipset (**MC2140/2120/2540/2520**, PMD) with build in sophisticated field proven control firmware. The ***MCP*** is driven by a host C/C++ programmable TERN controller. User only needs to define parameters for PID algorithm and trajectory profile. The DSP calculates velocity, position and stabilizes the motor output, while the host controller interfacing with user PC, monitoring I/Os, reads ADCs, computing or pre-loading a new set of parameters.

The host controller interfaces to the DSP chipset via high-speed data bus. User can easily develop application C/C++ program on a PC, download, and debug via serial link. The host writes pre-defined motion commands to the DSP, and the DSP can interrupt the host at any time.

The ***MCP*** provides a total of 32 opto-couplers for home switches, limit switches, fault switches and other user inputs. Seven solenoid drivers are capable of sinking up to 350 mA at 50 V. Eight opto-isolated Solid State Relays (SSR) can switch 100 mA AC or DC loads upto 230V. Two PPI (82C55) chips provide 48 I/O lines. Two RS-232 and one RS-485 drivers can be installed. Expansion headers are available for 8 10-bit ADC inputs, PWM output, step pulses and direction signals.

Additional I/Os, memory, ADC, and DAC can be provided by the host **AE/IE/586-Engine**.

MCP2140 supports up to 4-axis closed-loop digital servo control for a variety of servo motors. It uses incremental quadrature encoders for position feedback, and high speed 12-bit DACs for ±10V servo control voltage output. Each axis contains sophisticated trajectory profile and digital servo capabilities, allowing very low position and velocity tracking errors. It provides electronic gearing, PID/PI control, a choice of S-curve, trapezoidal, or contoured velocity profile modes, 1/T counter for stable low-velocity motion, automatic motor error shutdown, monitoring limit, home, capture, and fault switches. **MCP2120** is a 2-axis version.

MCP2540 is for multi-axis open-loop stepping motor control. It supports sophisticated trajectory generation and synchronization features, allowing the creation of complex motion sequences. It provides up to 3 MHz pulse and direction signals for driving step motor systems.

The ***MCP*** must be driven by one of TERN "Engine" controllers: **586-Engine, AE, AE86, IE, RE, FN, RA or RD.**

TERN provides complete C/C++ programming tool kit, including C/C++ compiler, remote debugger, C libraries, and samples.

Ordering Information

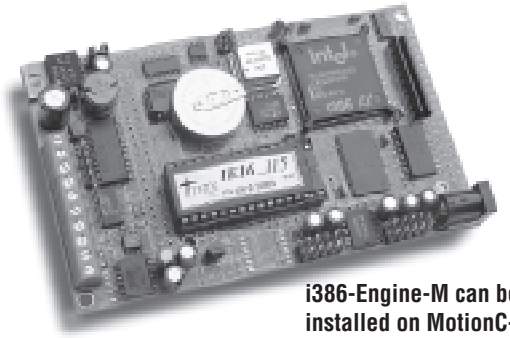
MCP2120	**$399**	**Qty 1**
MCP2140	**$649**	**Qty 1**
MCP2520	**$399**	**Qty 1**
MCP2540	**$649**	**Qty 1**

Includes DSP chipset, solenoid drivers, 48 I/Os, 32 optos, and 8 SSRs, 2 RS-232, DAC. **AE/IE/5E** is NOT included.

Typical Order Example:

MCP2140 + 586-Engine

MCP2140 +5E = $649 + $249 = $898



i386-Engine-M can be installed on MotionC-P

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