

Embedded Motion Controller *CEM (Plus) Combo*



- 4/8 Axis Controller with PC
- Powerful Motion Engine
- PMAC2 DSP56311 300MIPS
- Embedded Computer Inside
- Precision Motion Controls
- Easy & Compact Interface
- Low Price, High Performance

FEATURES

PMAC2A-PC104 Based High Speed Motion and IO(PLC) Controller (4/8 Axes)

**Embedded PC Included (Intel® Celeron 650Mhz, 256/512 MB RAM, 60GB HDD)
Port : Ethernet, 2xUSB1.1, Serial, Audio, Keyboard/Mouse, CompactFlash**

**4/8 Axis Control : 12-bit filtered PWM +/-10V Output for Servo Control
Pulse/Direction Output for Stepper Control
Optional 18bit Dual DAC for analog servo control (Sinusoidal Commutation)**

Additional 2 Ch. Pulse Outputs or 2 Ch. Encoder (handwheel) Inputs

**Fully Compatible with Powerful PMAC2 Software Functions
(Optional TURBO PMAC CPU for Advanced Controls)**

Dsub Connectors for Servo Signal Connection

Identical Servo Control Performance with Turbo PMAC (UMAC)

Built-In 32/32 IO & 16 bits High speed General IO (Expandable IO up to 2048 IO)

**ADC Input : 2+2 ch. 12bit ADC (On-board Option)
4/8 ch. 16-bit High precision ADC (Off-board Optional)**

Embedded Windows® XP based

Size : 289 (w) x 95 (h) x 257 (d) mm

Input Power : DC 5V, +/-12V, 24V



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Embedded Motion Controller *CEM (Plus) Combo*

CEM (Plus) Combo is the pack type of PMAC2 Controller based on Embedded Window® XP Industrial Computer, controllable 4 or 8 axes servo or stepper motors.

Built-in optional 16bit dual DAC output performs excellent servo control, equivalent with Turbo PMAC(UMAC). CEM Combo series are the most economical controllers having superior power and flexibility.

Motion Power

- Motorola® DSP56311 (40~160Mhz, 300 MIPS)
- 48-bit floating point and integer calculation
- 8 axes and 8 coordinate system
- Sub-count 1/T interpolation (smooth motion at very low speed)
- Multiple motion program and PLC program capability
- 6.25 usec servo update time (max.) per axis
- 40Mhz encoder input frequency (max.)
- 24-bit hardware position capture and compare (real-time position registration and event signal sync.) (laser controls and vision triggering on wafer/FPD processing)
- 2D/3D Coordinate translation and rotation
- 2D/3D Position compensation table (leadscrew and backlash)
- True S-curve acceleration and jerk-free motion
- Advanced position Gear and CAM function
- Multi-block look-ahead (automatic acceleration control) (milling and plasma cutting machine, machine tools)
- Reverse & retrace capability (welding, cutting, EDM)
- Inverse-kinematics solution (robotics application)
- Hardware data acquisition : real-time motion and IO data recording
- MLDT Interface : hydraulic application (servo valve)

Flexibility

- Basic-like Motion & PLC program
- Host programs : VC++, VB, Delphi, C-builder, RTOS support
- Rotary buffer for large motion program (machine tools)
- Identical programming with other PMAC family
- Gantry control algorithms (inc. cross-coupled algorithm)
- Linear, circular, helical, cylindrical, spline, PVT, .. interpolation
- G/M/T/D code support for machine tool applications
- Cascaded servo loops: chip bonding & mounting applications (simultaneous position& force(tension) controls)
- Touch panel interface thro. RS232 or Ethernet
- Dual loop feedback
- Absolute encoder interface (opt.)

Applications

- Semiconductor Manufacturing : Wafer processing (cutting, inspection)
- FPD Industries : Glass cutting / inspection / repair
- Machine Tools : Milling, Lathe, Grinder, Water Jet, EDM, Laser Cut
- General Automation : Transfer unit, Packaging, Textile, Conveyor
- Robotics : Pick & Place, Scalar, AGV, Welding robot, Medical surgery
- Aerospace, Defense, Telescope, Hydraulic, Winding applications



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