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Data Sheet

August 15, 2026

DANAHER / KOLLMORGEN / MOTION ENGINEERING

Danaher / Kollmorgen / Motion Engineering 104/DSP PC/104 C-Programmable Motion Controller

The Kollmorgen 104/DSP is a PC/104 motion controller built around a 40 MHz DSP processor for real-time motion control in embedded systems. It distributes computation between the onboard DSP (real-time algorithms) and host CPU (non-real-time functions), enabling sophisticated multi-axis servo and stepper control with minimal host overhead. The card communicates with the host at up to 1.2 MB/second across the PC/104 bus and supports command buffering with on-board sequence storage to reduce host intervention. Advanced capabilities: electronic gearing, camming, circular and linear interpolation, dual-loop control, point-to-point and coordinated motion Control algorithm: second-order PID with velocity, acceleration, and friction feed-forward; optional post-PID notch filter for mechanical resonance suppression Analog & Digital I/O Encoder input: up to 5 MHz incremental feedback; SSI format



MODEL

**Danaher /
Kollmorgen /
Motion
Engineering
104/DSP**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

104/DSP

LISTING

<https://aumictechlabs.com/products/104-dsp-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

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Technical Specifications

Processing & Communication 40 MHz DSP processor (Analog Devices) PC/104 bus interface: up to 1.2 MB/second host communication Servo loop update rate: user-programmable Motion sequence buffering: up to 600 frames on-board Motion Control Axes: 4 axes (standard); 8 axes (104X/DSP extended form factor) Motor support: servo and stepper motors Motion profiles: trapezoidal, S-curve, parabolic, custom Advanced capabilities: electronic gearing, camming, circular and linear interpolation, dual-loop control, point-to-point and coordinated motion Control algorithm: second-order PID with velocity, acceleration, and friction feed-forward; optional post-PID notch filter for mechanical resonance suppression Analog & Digital I/O Servo output: $\pm 10\text{V}$ DC at 16-bit resolution Step output: 375 kHz step/direction at 16-bit pulse rate resolution Encoder input: up to 5 MHz incremental feedback; SSI format with optional daughter board adaptor User I/O: 20 lines (standard); 44 lines (104X/DSP) Dedicated axis I/O: TTL compatible, 4.0 mA drive

Key Features C-programmable via Motion Engineering, Inc. (MEI) function library (250+ motion control functions) Compiler compatibility: Microsoft, Borland, Watcom, Symantec, and others Shared execution model minimizes host CPU load for real-time applications 16-bit servo output and encoder feedback resolution High-speed step output for stepper applications

Typical Applications Industrial automation, robotics, precision positioning systems, and specialized embedded motion control requiring deterministic real-time performance.

Compatibility & Integration PC/104 standard form factor (extended variant available for 8-axis and expanded I/O). Integrates with standard C development environments and supports both incremental encoder and SSI feedback interfaces.

104DSP Characteristics / Specifications

PARAMETER	VALUE
Model	PCX/DSP
Instrument Type	ISA C-programmable multi-axis motion controller
Family	Motion Engineering MEI DSP series
Processor	Analog Devices 40 MHz DSP
Axis Count	up to 8 servo or stepper axes
Form Factor	single-slot ISA card
Servo Resolution	16-bit servo outputs
Encoder Rate	incremental encoder inputs to 5 MHz
Analog Inputs	8 channels, 12 bit
User Io	up to 44 user I/O lines
Motor Types	servos and steppers
Host Bus	ISA, fast host communication
Function Library	MEIClibraries, over 250 motion functions
Compilers	Microsoft, Borland, Watcom, Symantec
Catalog Four Axis	PCX/DSP-400, ISA, 4 axis
Catalog Six Axis	PCX/DSP-600, ISA, 6 axis
Catalog Eight Axis	PCX/DSP-800, ISA, 8 axis
Part Family	1007-0011 class (Artisan family identifier)
Control Style	C-programmable point-to-point and coordinated motion (MEI DSP series)
Sibling Pc1	104/DSP-200 (2 axis) and 104/DSP-400 (4 axis) in the same DSP series catalog
Manufacturer	Motion Engineering Inc., later Danaher / Kollmorgen
Literature	MEI PCX/DSP datasheet text as published by RSI and Artisan PCX/DSP listing
Architecture	DSP-based ISA motion controller

PARAMETER	VALUE
Slot Count	one ISA slot

104DSP Specifications

PARAMETER	VALUE
Key Features	Analog Devices 40 MHz DSP motion engine
Up to 8 servo or stepper axes in one ISA slot	16-bit servo DAC outputs
Encoder inputs to 5 MHz	Eight 12-bit analog inputs and up to 44 user I/O

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Catalog Eight Axis	PCX/DSP-800, ISA, 8 axis
Part Family	1007-0011 class (Artisan family identifier)
Control Style	C-programmable point-to-point and coordinated motion (MEI DSP series)
Sibling Pc104	104/DSP-200 (2 axis) and 104/DSP-400 (4 axis) in the same DSP series catalog
Manufacturer	Motion Engineering Inc., later Danaher / Kollmorgen
Literature	MEI PCX/DSP datasheet text as published by RSI and Artisan PCX/DSP listing
Architecture	DSP-based ISA motion controller
Slot Count	one ISA slot

Notes

From Motion Engineering PCX/DSP datasheet text (RSI MEI DSP series page and Artisan PCX/DSP listing). Servo loop update rates published on the LC/DSP sheet are not copied onto PCX/DSP.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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NIST-traceable calibration · SAM registered ·
30-day returns
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.