

MACHINEMATE PC-BASED CNC

The **MACHINEMATE** CNC family is the recognized leader in PC-based CNC technology. The use of

- Microsoft® Windows®,
- a standard PC motherboard,
- standard PC components,
- an interface to SERCOS or Analog drives,
- an IEC-1131-3 conformant integrated soft PLC and
- the capability of Ethernet and standard field bus systems

give this system the utmost flexibility and openness available today.

MACHINEMATE is a modern (fourth generation) open-architecture CNC that fulfils all the technical requirements from standard to high-tech applications for the mill, lathe, grinder and cutting industries. Special software functionality is available for laser, plasma, water jet, grinding, gear hobber, 5-axes transformations, punch press nibbling, dial index machine, transfer line, etc.

This PC-based CNC offer the features and performance available from a conventional, proprietary architecture CNC but at a much lower cost.

SINGLE SOURCE SOLUTION

MACHINEMATE, INC offers solutions for industrial automation from one state-of-the-art source. The CNC is a complete package (hardware and software). There are several different operator front panel configurations (IP-65 rated) for the remotely located industrial PC (in a CE-rated stainless steel enclosure for shop floor applications).

MACHINEMATE, INC also provides many accessories like a machine tool builder's panel, an auxiliary push button panel, a handheld operator station with handwheel, cables, cable to terminal strip breakouts, servo motors and amplifiers, spindle motors and drives, encoders, power supplies and other system components that expedite the integration. We can also provide a conversational CAM software package.

We provide the best support available for PC-based CNC control technology.

Please call or email us with your questions and/or interests or visit our web site (www.machinemate.com) for more information.

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EASY PACKAGE CONFIGURATIONS

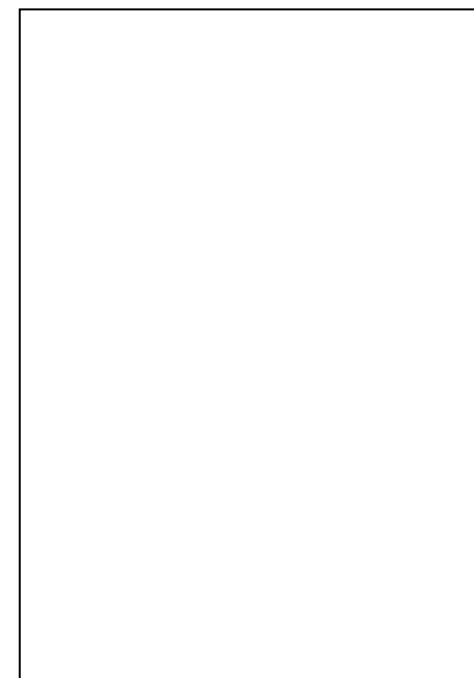
MACHINEMATE, INC offers a solution to be easily configured for your particular application. The CNC has most common features standard in the software.

MACHINEMATE can help you decide on the CNC model, the front panel layout and whether any accessories are required.

- 1 Pick the CNC model
 - A) Drive interface: analog or SERCOS
 - B) Application: mill, turn, grinding, punch, beam cutting, water jet, router, etc.
 - C) IO requirements: 24V discrete IO, 10V analog IO, relays, etc.
 - D) Any special CNC features
 - E) Number of simultaneous programs
- 2 Pick the front panel
 - A) Screen size: 6.4", 12.1" or 15"
 - B) Touch screen
 - C) Industrial keypad
- 3 Pick any required accessories
 - A) Using new or existing drives
 - B) Machine tool builder's panel
 - C) Handheld operator pendant
 - D) Power supplies
 - E) Cable requirements and lengths

MACHINEMATE, INC is ready to help you select the best model for your application. Please give us a call or send an email.

Your **MACHINEMATE** supplier



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MACHINEMATE®

THE TOTAL SOLUTION
WITH PC-BASED CNC

*Open Architecture CNC
Products in a Complete,
Economical Industrial Package*



CNC PRODUCTS

CNC models

LW – Economical but powerful

- The industrial PC (IPC) includes built-in I/O modules (24VDC: 48 inputs / 32 outputs; analog drive interface: 4 D/A, 4 encoders).
- All the software required to complete the control integration (i.e., Windows, CNC software, integrated soft IEC1131 PLC, CNC utilities).

- Expandable up to 8 axes, 792 inputs / 528 outputs

L2 – Analog or Digital drives

- A larger IPC, with more spare PCI slots than LW and a built-in floppy disk drive
- Analog drive interface and/or digital SERCOS drive interface
- Supports same front panel options; all CNC software is compatible with other models

- Expandable up to 16 axes, 792 inputs / 528 outputs

eCNC – Extremely powerful

- IPC has Pentium 4 CPU with more spare PCI slots than LW and a built-in floppy drive
- Analog drive interface and/or digital SERCOS drive interface
- Supports same front panel options; all CNC software is compatible with other models

- Expandable up to 64 axes, 792 inputs / 528 outputs

The LW and L2 models use a high-speed Celeron processor capable of handling most applications. Either can support one or two independent part program paths.

An eCNC is for those industrial applications that demand higher CNC performance (such as high speed, high accuracy machining for mold and die work) or for high end CNC features such as a large number of drives (up to 64) or several heads with multiple simultaneous part programs (up to 8).

All models support additional axes and external IO modules for more 24V IO points, relay outputs or more 10V analog IO channels.

CNC PRODUCTS

Operator Front Panels

6.4” display panel

- The IP65 front panel includes 6.4” TFT color display and membrane operator keypad
- Standard VGA connection (to all panels)
- Supports external PC keyboard (PS2)

12.1” display panel

- The IP65 front panel includes 12.1” TFT color display and membrane operator keypad
- Touch screen is optional
- Supports external PC keyboard (USB)
- USB plug on front panel is optional

LW package with 12.1” TFT shown below:



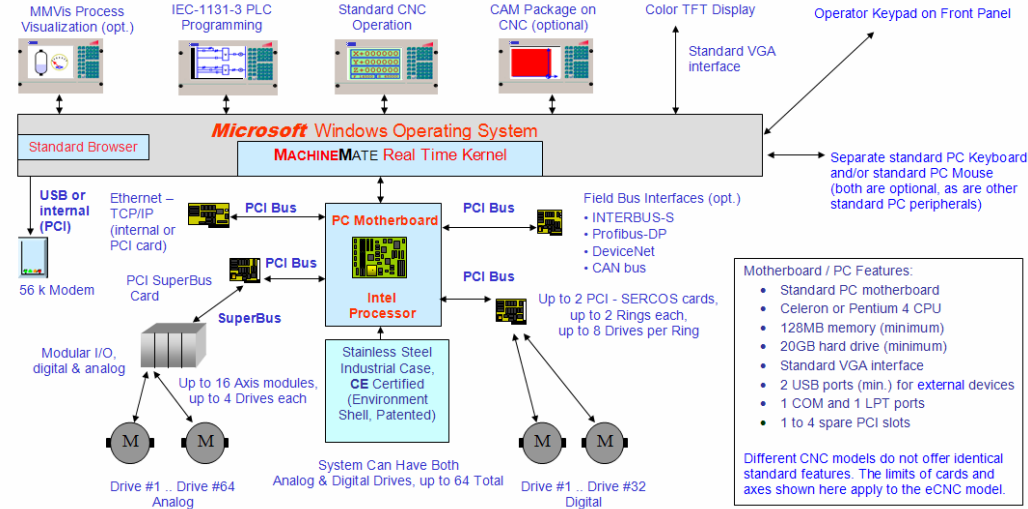
15” display panel

- The IP65 front panel includes 15” TFT color display and touch screen

Complete operator panel

- The IP65 front panel includes 15” TFT color display, touch screen, handwheel (5V or 24V) and most common operator switches (cycle start/stop buttons, emergency stop, feed/speed overrides, machine start button, 12 general purpose buttons (each with LED) that can have custom legend engraved)
- USB plug on front panel is optional
- Panel is shown on the front of this brochure.

MACHINEMATE - Open PC Based CNC - Using International Standards



Standard **MACHINEMATE** CNC provides:

- Standard RS274 NC part programming (i.e., G-codes and M-codes; macros)
- Standard CNC data tables like tool diameter & length, part zero offsets, tools, parameters
- Many standard features including tool path graphics, fault history log, logic analyzer, PLC real-time data monitoring
- High level functions like helical interpolation or part coordinate scaling and rotation
- High speed algorithms like adaptive reactive technology (axis feed-forward)
- Drilling cycles, turning cycles or cylindrical grinding cycles; user defined work cycles
- Nearly unlimited part program length and capacity (i.e., the PC hard drive)
- With SERCOS drives: utility to assist in the set up, maintenance, trouble shooting activities for SERCOS ring(s) & drives
- Configurable browser-based operator interface

CNC options include features like:

- Distance or gap control
- Gantry axes
- Tangential rotary axis control
- Punching and/or nibbling control
- Probing logic
- In-process gauging systems (grinders)
- Field bus (a PCI card for either CAN-Bus, DeviceNet, InterBus, Profibus)
- Nesting / cutting software (for laser, plasma, water jet)
- Pocket milling or hole pattern cycles
- Non-servo axes
- 5-axes transformation of the part coordinate system
- NC compatibility with other CNC controls (with same NC block syntax and/or with NC file conversion).

ACCESSORIES

MTBP

A Machine Tool Builder's Panel (MTBP) provides the minimum operator switches and lights for most industrial automation applications. The 19” MTBP model (see below) matches the width of the typical operator front panel. The slim line model suits a narrower panel layout.



The MTBP low-profile push button labels can be custom engraved by **MACHINEMATE, INC** for a nominal charge.



Handheld Operator Station

This rugged pendant is the simple solution to the requirement for remote operator activities. It includes handwheel (5V or 24V), two rotary switches, E-Stop push button, two generic push buttons, long coiled cord and bulkhead connector.



Cables, Misc.

Adapters, cables, power supplies (5V or 24V), handwheels, push buttons, override gray-code switches, CAM packages (Cadem for milling and turning or Most2D for cutting) and other miscellaneous items are also available.

Drives, Motors, Feedback Systems

The CNC will work with the drives and motors from a variety of vendors. For a complete automation solution, quality high-performance drives and motors can also be purchased with the control at reasonable prices. Two NEMA size 11 rotary encoder models and a line of Newall IP67 linear feedback systems are also available.