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Find the *Danaher Motion / Kollmorgen MC SE02-0808-000-0300* at our website: ***Click HERE***

# SERVOSTAR® MC

## Multi Axis Controller
## Product information




Kollmorgen is proud to introduce three new configurations for the SERVO**STAR**® MC. The SERVO**STAR** MC is a high performance, multi-axis controller capable of controlling up to 16 axes of coordinated motion via the SERCOS interface fiber optic link.

In addition to the existing ISA PC card controller, a PCI PC card version and Standalone self-contained units (two versions) are now available.







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**Issued 6-23-00**
**Revision 7-26-00**

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# SERVOSTAR® MC

**Multi Axis Controller**

**Product information**

## Description

The SERVO**STAR** MC (Multi-Axis Controller) is designed for controlling up to 16 axes of coordinated motion via SERVO**STAR** SERCOS drive amplifiers. The MC is simple to install using the equivalent of two adjacent ISA / PCI bus slots in an industrial PC or as a self contained standalone unit. The SERVO**STAR** MC is supplied with the necessary Microsoft® Windows® driver and the **BASIC Moves Development Studio** software package for development, editing and debugging of the user's program. The Motion Developer's Kit allows the user to create interfaces between the MC and other programs/devices such as soft PLC's (Programmable Logic Controllers) and HMI's (Human Machine Interfaces).

Because the SERVO**STAR** MC uses SERCOS and has been designed to work with the SERVO**STAR** SERCOS drive amplifiers, there is no special knowledge required to connect the drive amplifiers to the controller. All SERVO**STAR** MC systems, regardless of axis count, require only two fiber optic connections between the drive amplifiers and the controller. Drive amplifier setup is performed over the SERCOS ring using Kollmorgen **MOTIONLINK**® software.

## Features

### Motion

- Profile - Sine acceleration + automatic/manual jerk control
- Profile - Trapezoidal velocity for rapid motions
- Point-to-point moves
- Jogging
- Multiple axis linear and circular interpolation
- Dynamic speed change
- Dynamic position change
- Gearing
- Camming
- Simulated Axes
- PLS -- Programmable Limit Switches
- Absolute, incremental moves
- Extensive stop and recovery after stop (proceed) mechanism
- Displacement & Wrap around mechanisms
- Position capture
- Homing
- Blended motions
- Software limit switches
- Time base acceleration

### Programming Capabilities:

- **D**ynamic **L**ink **L**ibriaries
- Extensive task control mechanism
- Up to 256 tasks running in 16 priority levels
- Extensive event mechanism (Software interrupts)
- Extensive error management, recovery and control
- Full-featured editor/debugger with watch and command line interpreter capabilities
- Fast data mechanism for real-time communication with the host computer through a dual port RAM

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- Extensive programming language (BASIC compatible with extensions)
- Data gathering with graphical representation for performance analysis easy debugging
- Interpreted language for reduced commands execution time
- Built-in test (BIT) self-diagnostic mechanism

## Hardware:

| | ISA | PCI | Standalone |
|---|---|---|---|
| Mechanical configuration | Half size ISA Bus PC Card | Half size PCI Bus PC Card | Self contained standalone package |
| Onboard I/Os | • 23 isolated inputs<br>• 20 isolated outputs | • 23 isolated inputs<br>• 20 isolated outputs<br>• 8 dip-switches | • 23 isolated inputs<br>• 20 isolated outputs<br>• 8 dip-switches<br>• 5 LEDs |
| Option card support | PC-104 connector (stackable) for connection of up to 2 expansion cards | PC-104 / PC-104+ connector (stackable) for connection of up to 2 expansion cards | 1. PC-104 / PC-104+ connector (stackable) for connection of up to 2 expansion cards<br>2 SST compatible fieldbus support |
| NvRAM - for rapid storage of user data. | No | Yes | Yes |
| Flash Disk | 8, 12 or 24 MB | 8, 12 or 24 MB | 8, 12 or 24 MB |
| RAM | 8 ,16 or 32MB | 16 or 32MB | 8 ,16 or 32MB |
| CPU | 5x86 133MHz | GXM 233Mhz | 5x86 133MHz or GXM 233Mhz |

## Firmware:

- Supplied on the flash disk (occupies 3 Mb of flash disk space)
- May be upgraded by the user in the field
- May be specified by the user to be a specific version at the time of order (refer to the part number field for "Firmware Version")
- Utilizes the Real-time Operating System (RTOS) VxWorks™ from Wind River Systems.
- Support for up to 16 axes of coordinated motion
- Possible to upgrade existing axis count in the field by purchase of additional axes in a new firmware file

## Software:

- **BASIC Moves Development Studio** to allow the user to easily create, edit and debug the motion control program.
  - Easy-to-use Windows® interface operates on the host PC platform running Windows NT /



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95 / 98 / 2000
- ❖ Includes wizards to simplify many common tasks
- ❖ True BASIC Language programming with motion extensions
- ❖ Multitasking environment
- ❖ Project control capability

❖ Motion Developer's Kit (MDK)
- ❖ Provides Application Programming Interface (API) for user to create interfaces to other programs or devices

❖ **MOTIONLINK®**
- ❖ Drive setup via the fiber optic SERCOS ring from the host computer
- ❖ No need to connect serially to each drive

## SERCOS:

❖ Industry Standard (IEC 1491) fully digital motion control bus
❖ Two fiber optic connections between drives and controller regardless of axes connected
❖ Virtually eliminates electrical noise between drives and controller
❖ Can add, remove or replace drives without significant rewiring
❖ All parameters are loaded into the drive on power-up

## Upgrade Options:

❖ IO expansion -- in addition to the on-board 43 isolated I/O points, the MC allows up to 2 PC-104 /PC-104+ expansion cards which may be used for expanding the number of I/O ports
❖ The standard 8 MB flash disk may be upgraded to 12 or 24 MB to provide more user program space. (can be upgraded in the field)
❖ The standard RAM may be upgraded to 16 or 32 MB to provide more space for user programs & data (can be upgraded in the field)
❖ The pre-purchased axis count may be upgraded when needed by purchase of additional axes in a new firmware file. (can be upgraded in the field)

## Communication

❖ Two RS232 ports for user input, **BASIC Moves Development Studio**, **MOTIONLINK**
❖ One Ethernet port for 10Mbit/sec, **BASIC Moves Development Studio**, **MOTIONLINK**, Ethernet I/O
❖ Fieldbus option card for remote I/O, DeviceNet (available 2001), and PROFIBUS (available 2001)
❖ Protocol - TCP/IP, SLIP



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## Connectors for the Standalone Product




*Option Card Slot requires use of extended version Standalone Unit.*
*Consult the factory for use of the USB connector.*



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## Ordering Information

**MC S I 04 - 08 16 - 000 - 0100 00**

**Series Name**
MC ServoStar MC

**Communication**
S - SERCOS

**Configuration**
I - ISA PC-Card
P - PCI PC-Card
S - Standalone
E - Extended standalone
(with option cards sockets).

**Number of**
02 - 2 Axes
03 - 3 Axes
04 - 4 Axes
05 - 5 Axes
06 - 6 Axes
08 - 8 Axes
10 - 10 Axes
12 - 12 Axes
14 - 14 Axes
16 - 16 Axes

**RAM Size**

**Upgrade 000**
08 - 8MByte
16 - 16MByte
32 - 32MByte

**Upgrade 001**
08 - Not available
16 - 16MByte
32 - 32MByte

**Flash Disk Size**
08 - 8MByte
16 - 16MByte
24 - 24MByte

**Upgrades**
000 - Standard CPU 5x86
(Not available in PCI configuration)
001 - CPU upgrade 1 GXM
(Not available in ISA configuration)

**Firmware Version**
0300 - Version 3.0
(Not specified = most recent)

**User program**
00 - Standard, no user program
(Normally not specified)

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