Kollmorgen is proud to introduce three new configurations for the SERVOSTAR® MC. The SERVOSTAR 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.
Description

The SERVOSTAR MC (Multi-Axis Controller) is designed for controlling up to 16 axes of coordinated motion via SERVOSTAR 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 SERVOSTAR 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 SERVOSTAR MC uses SERCOS and has been designed to work with the SERVOSTAR SERCOS drive amplifiers, there is no special knowledge required to connect the drive amplifiers to the controller. All SERVOSTAR 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:

- Dynamic Link Libraries
- 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
SERVOSTAR® MC
Multi Axis Controller
Product information

- 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:**

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

**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 /
SERVOSTAR® MC

Product information

- 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
Connectors for the Standalone Product

Option Card Slot requires use of extended version Standalone Unit. Consult the factory for use of the USB connector.
SERVOSTAR® MC
Multi Axis Controller
Product information

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

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

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

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

RAM Size
Upgrade 000
Upgrade 001
08 - 8MByte
08 - Not available
16 - 16MByte
16 - 16MByte
32 - 32MByte
32 - 32MByte

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

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

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