Modular real-time Linux-based software
• Servotronix multi-axis control algorithms

Scalable programming options for enhanced user experience
• Powerful, open, real-time programming language enables preemptive multitasking at user program level
• C/C++ user-written module integration
• Enable code IEC 61131 CODESYS
• Supports ROS

Extensive motion and robotics functionalities
• Up to 64 interpolated axes
• Additional axes supported upon special request
• Single axis and synchronized axes motion
• Supports standard robot types such as DELTA, PUMA, SCARA, as well as other non-standard robotic kinematics such as traverse, scissors etc.

ControlStudio™ program development environment
ControlStudio™ is a free Windows-based integrated development environment used for editing and debugging of the MC-BASIC program.
A variety of machine and motion features are available, such as: task handling, text files editing, record graphs display, watch window, online tracking, etc.

Designed for the Perfect System
• Create the motion system you need, using Servotronix servo HMI Teach Pendant drives and motors
• Use softMI Human Machine Interface for machine controlling
• Use softTP Robot Teach Pendant for operational and programming tasks
• Use CDHD EtherCAT servo drives for high-performance and high-power servo systems
• Use StepIM EtherCAT integrated closed-loop stepper motors for cost-effective servo performance at the price level of a stepper system

Key benefits
• Open, modular, and modern machine control environment
• Ethernet machine interface
• EtherCAT® motion bus
• Controls up to 64 interpolated axes
• Extensive capabilities for both standard and non-standard robotic kinematics
• Software core has been implemented in motion and robotic applications for over 30 years
• Customized software solution can be embedded into the hardware

Complete Motion Solution
softMI Human Machine Interface
softTP Tablet Teach Pendant
CDHD servo drives with PRO2 rotary brushless servo motors
StepIM integrated closed-loop stepper motor
Motion
• Single-axis motion (move, jog)
• Group interpolation (move, circle)
• Blended motions
• Master-slave (camming, gearing)
• Pro les (sine acceleration, trapezoidal, customized)
• Simulated motions (off-line program validation)
• Advanced stop and proceed mechanisms
• User selectable units (meters, inches, mm/s and rpm)
• On-the- fly motion control (immediate, velocity-override)
• 3D compensation table for correcting mechanical inaccuracies
• Conveyor tracking (pick-and-place from linear and rotary conveyers)
• Robotic kinematics for standard and non-standard types
• Advanced spatial interpolation for all kinematics
• Dynamic model (identification, online inverse dynamic)
• Real-time robot impact detection
• Multiple robots controlled by single controller
• Multi robot synchronization

System
• Real-time Linux operating system
• Preemptive multitasking at user program level
• Integration with C/C++ user modules
• Position-based event generation using programmable limit switches, with microsecond resolution
• softMC-Basic language: Global and local libraries, user data structure, file system, error handling
• Integrated development environment: programming, software program management, diagnostic

Hardware
• CPU: 1.33 GHz Intel® Atom Bay-Trail-I E3825 dual-core processor
• RAM: DDR3L SDRAM 2GB Memory
• Storage: mSATA 2GB (internal)
• LAN: RJ45 port for host communications
• EtherCAT®: RJ45 port for real-time motion control
• AUX Ethernet: RJ45 port for teach pendant HMI and others
• 2 RS485 Serial ports

Interfaces
• Machine: Serial, Ethernet TCP/IP, Modbus TCP/IP, OPC UA®
• Fieldbus: EtherCAT®

Order Information

<table>
<thead>
<tr>
<th>SoftMC Motion Controller</th>
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<tbody>
<tr>
<td>Fieldbus</td>
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<tr>
<td>E xx 301 EtherCAT + softMC 301</td>
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<tr>
<td>E xx 703 EtherCAT + softMC 703 – New. Available</td>
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<tr>
<td>E xx 705 EtherCAT + softMC 705 – Available upon request</td>
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<tr>
<td>C xx 301 CANopen + softMC 301</td>
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<tr>
<td>B xx 702 Multi-bus (EtherCAT and CANopen) + softMC 702 – Legacy</td>
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<tr>
<td>B xx 704 Multi-bus (EtherCAT and CANopen) + softMC 704 – New. Available upon request</td>
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Number of Axes
- 04, 06: 4, 6 axes – softMC 3
- 08, 16, 32: 8, 16, 32 axes – softMC 7
- Other number of axes available upon request

Hardware Options
- 301 softMC 3 – ARM, for 4 to 6 axes
- 702 softMC 7 – Atom, for 8 to 32 axes
- 703 softMC 7 – Atom, for 8 to 32 axes
- 704 softMC 7 – CORE i5, for 8 to 32 axes

Options
- 0100 IEC 61131 CODESYS
- 0200 IEC 61131 CODESYS + WebVisu
- 2100 softTP Web Server

Software Add-On

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<tr>
<th>Part Number</th>
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<tbody>
<tr>
<td>FW-MC03-CODESYS</td>
<td>IEC 61131 CODESYS for softMC 3</td>
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<tr>
<td>FW-MC07-CODESYS</td>
<td>IEC 61131 CODESYS for softMC 7</td>
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<tr>
<td>FW-MC03-TPH0701</td>
<td>softTP Web Server for softMC 3</td>
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