

# SOFTMC 703

Multi-axis motion control software and hardware package, offering extensive programming capabilities for a variety of automation and robotics applications.

### Modular real-time Linux-based software

- Servotronic multi-axis control algorithms

### Scalable programming options for enhanced user exibility

- 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

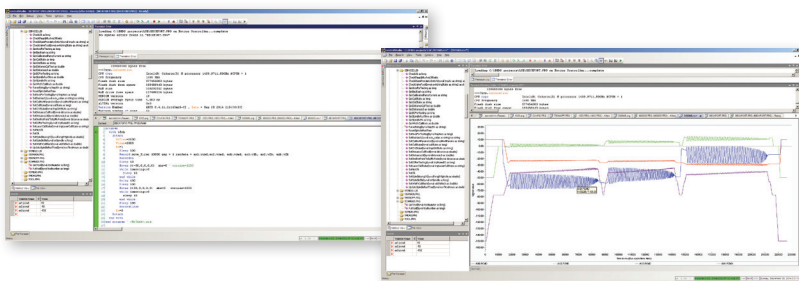
### Extensive motion and robotics functionalities

- 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 Servotronic 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



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

## Interfaces

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

## Order Information

		MC	-	E	08	-	703	-	0000
softMC Motion Controller									
Fieldbus									
E xx 301	EtherCAT + softMC 301								
E xx 703	EtherCAT + softMC 703 – <i>New. Available</i>								
E xx 705	EtherCAT + softMC 705 – <i>Available upon request</i>								
C xx 301	CANopen + softMC 301								
B xx 702	Multi-bus (EtherCAT and CANopen) + softMC 702 – <i>Legacy</i>								
B xx 704	Multi-bus (EtherCAT and CANopen) + softMC 704 – <i>New. Available upon request</i>								
Number of Axes									
04, 06	4, 6 axes – softMC 3								
<b>08, 16, 32</b>	<b>8, 16, 32 axes – softMC 7</b>								
<i>Other number of axes available upon request</i>									
Hardware Options									
301	softMC 3 – ARM, for 4 to 6 axes								
702	softMC 7 – Atom, for 8 to 32 axes								
<b>703</b>	<b>softMC 7 – Atom, for 8 to 32 axes</b>								
704	softMC 7 – Atom, for 8 to 32 axes								
705	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	
Part Number	Item
FW-MC03-CODESYS	IEC 61131 CODESYS for softMC 3
FW-MC07-CODESYS	IEC 61131 CODESYS for softMC 7
FW-MC03-TPH0701	softTP Web Server for softMC 3
FW-MC07-TPH0701	softTP Web Server for softMC 7

## 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



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