

SOFTMC

Compact 6-Axis Motion Controller

The softMC 3 is an extremely compact multi-axis motion controller that supports 1 to 6 interpolated axes, coordinated motion



Product Overview

Designed for Compactness

- The softMC 3 Motion Controller has one of the smallest footprints in its class.
- Dimensions: H99 x W32 x D74 mm
- The softMC 3 Motion Controller is designed for efficient control of mechanical systems with 1 to 6 interpolated axis
- Flange and DIN-rail mounting options

Designed for Flexibility

- Programming using the MC-BASIC full-featured programming language allows you to create any motion you need
- Intuitive instruction set
- EtherCAT or CANopen motion bus
- Standard Ethernet TCP/IP interface for host communications
- Supports Modbus HMI with an easy-to-use configuration tool
- Supports OPC UA Server
- Enable code IEC 61131 CODESYS

Designed for Performance

- Real-time Linux operating system ensures precise coordinated motion
- Built-in robot control capabilities
- EtherCAT motion bus for true deterministic motion control, and suitable for applications requiring very short cycle times and tight synchronization

Designed for the Perfect System

- Create the motion system you need, using Servotronics 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 or CANopen servo drives for high-performance and high-power servo systems
- Use stepIM CANopen integrated closed-loop stepper motors for cost-effective servo performance at the price level of a stepper system

Key benefits

- Ideal solution for controlling mechanical stages, gantry tables, delta SCARA, Puma Robots and more
- Extremely compact package
- Ethernet machine interface
- EtherCAT or CANopen motion buses
- Extensive capabilities for both standard and non-standard robot kinematics
- Same software core as in other products in the softMC motion controller family
- Powered from industry-standard 24VDC

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)
- Profiles (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
- 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

Interfaces

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

Ordering 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							
08, 16, 32		8, 16, 32 axes – softMC 7							
		<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							
703		softMC 7 – Atom, for 8 to 32 axes							
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, diagnostics

Hardware

- CPU: ARM iMX6 processor
- RAM: 512 MB 800 MHz DDR3
- Storage: 1GB Micro SD
- Ethernet: RJ45 connector
- EtherCAT or CANopen: RJ45 connector
- Customization capabilities

Customization capabilities

- softMC software embedded in other industrial PC platforms
- Customized software solution designed per customer's hardware

