HIWIN MIKROSYSTEM

HIMC

Multi-Axis Motion Controller

Multi-axis motion control master with versatile programming capabilities for demanding industrial applications

Product Features

- Control up to 16 fully synchronized axes and connect to 32 slave devices
- 250 μs minimum of controller cycle time
- 10/100/1000 Mbps TCP/IP host communication
- Support CANopen over EtherCAT (CoE) Fieldbus communication
- Multi-task HMPL programming with maximum 64 user tasks
- API library supported for C, C++, C#, Python, and LabVIEW host programming
- Support Modbus TCP, and ASCII TCP communication
- CE/UL approvals

Product Introduction

HIMC, HIWIN Mikrosystem motion controller, is the real-time multi-axis motion controller to meet specific requirements in industry automation. It can synchronize up to 16 axes and connect to 32 slave devices through EtherCAT Fieldbus communication. The protocol of EtherCAT Fieldbus communication adopts distributed clocks and enable 250 μs minimum of refresh cycle time for all motors and I/O devices. The real-time digital control architecture renders your machine fast and high-responsive for a variety of demanding applications.

You can use HMPL (HIWIN Motion Programming Language) to write user task for motion control or use controller device to control communication through API library, Modbus TCP, ASCII TCP, and HIMC. For sophisticated motion requirements, HIMC provides synchronized single and multi-axis trajectories, including point-to-point, jogging, and 2D/3D linear and circular interpolation. Furthermore, the built-in dynamic geometric compensation algorithm enhances the positioning accuracy of your machine.

HIMC is complemented by iA Studio, a software package. By coping with the function of HMPL programming and relative status monitoring, data acquisition and offline simulation, etc., HIMC provides a smooth and interactive experience in configuring and deploying your own industrial applications.

Specifications

Number of motion axes

- Support 16-axis synchronized motion

Number of slaves

- Support up to 32 slaves. (Including motor drives and I/O devices)

Motion types

- Single axis motion: point-to-point, jog
- Group interpolation: multi-axis linear and circular interpolation
- Trapezoidal motion profile with smooth factor from 0 to 500 milli-second

Dynamic error compensation

- 1D/2D/3D geometric compensation for increasing positioning accuracy

Programming

- HMPL (HIWIN Motion Programming Language) High-level multi-tasking environment
- Up to 64 simultaneously running user tasks
- Up to 512,000 double precision user defined variables
- User program size: 10 MB of source code

Software Library

- library for C/C++, C#, python, and LabVIEW

Communication

- Ethernet port :10/100/1000 Base-T Ethernet with TCP/IP x2
- Cycle time: 250 μs/500μs/1000us/2000us/4000us
- Support CiA 401/CiA 402/ETG.5001 Standard

Supported slave devices

- All HIWIN CoE compatible motor drives and I/O devices

Computational capability

- Processor: Intel® Celeron® Bay Trial J1900
- Memory: 2GB DDR3L 1333 MHz SDRAM
- Storage: mSATA SSD 32G

Built-in I/O

- General Purpose Input: 8 Opto-isolated 24V (Delay time within 1ms)
- General Purpose Output: 8x Opto-isolated 24V (Delay time within 1ms)
- GPIO current: 100 mA. (max. 0.8 A per bank of 8)

Power

- Main power Input: DC 24V/0.6A
- Power consumption: max. 14.4W
- LED status indicator

Mechanical characteristics

- Size (Width x Height x Depth): 57 x 180 x 140 mm^3
- Weight: approx.1200g
- Mounting: DIN rail

Chassis construction

- Extruded aluminum alloy for fan-less support

Environment

- Protection class: IP30
- Operating temperature: 0°C to 50°C
- Storage temperature: -20°C to 85°C
- Operating altitude: up to 2000 M.
- Ventilation: fan-less convection cooling
- Humidity: 5% - 95%, non-condensing
- Vibration: Random: 5-500Hz, 2G. Sine: 10-500Hz
- 5G Shock: duration: 11ms

Certifications

- EMC: EN61000-6-2, EN61000-6-4
- Safety: UL61010-1, UL61010-2-201, EN61010-1, EN61010-2-201, ISO 14971

Ordering Information

Model: MC - XX - XX - XX - XX

1. 2. 3. 4.

Options:

1. Maximum number of axes

16: Up to 16 synchronized axes

2. Hardware options

01: Intel® Celeron® Bay Trial J1900

3. Communication

01: CoE Fieldbus communication

4. Optional

00: General function

Mar. 15th, 2023