

# GUC-ECAT Motion Controller



## Overview

GUC-EtherCAT series embedded multi-axis motion controller is an embedded motion controller based on EtherCAT bus, which integrates the EtherCAT master solution and can control up to 64 axes. It also supports gLink-I IO module and EtherCAT IO module expansion, providing users with low-cost control solutions with multiple axes and multiple IO points. GUC-EtherCAT series embedded motion controller supports point position and continuous trajectory, executes multi-axis synchronization, linear, arc, helical, spatial linear

interpolation and other motion modes, and can freely set acceleration and deceleration, S-curve smoothing and other parameters.

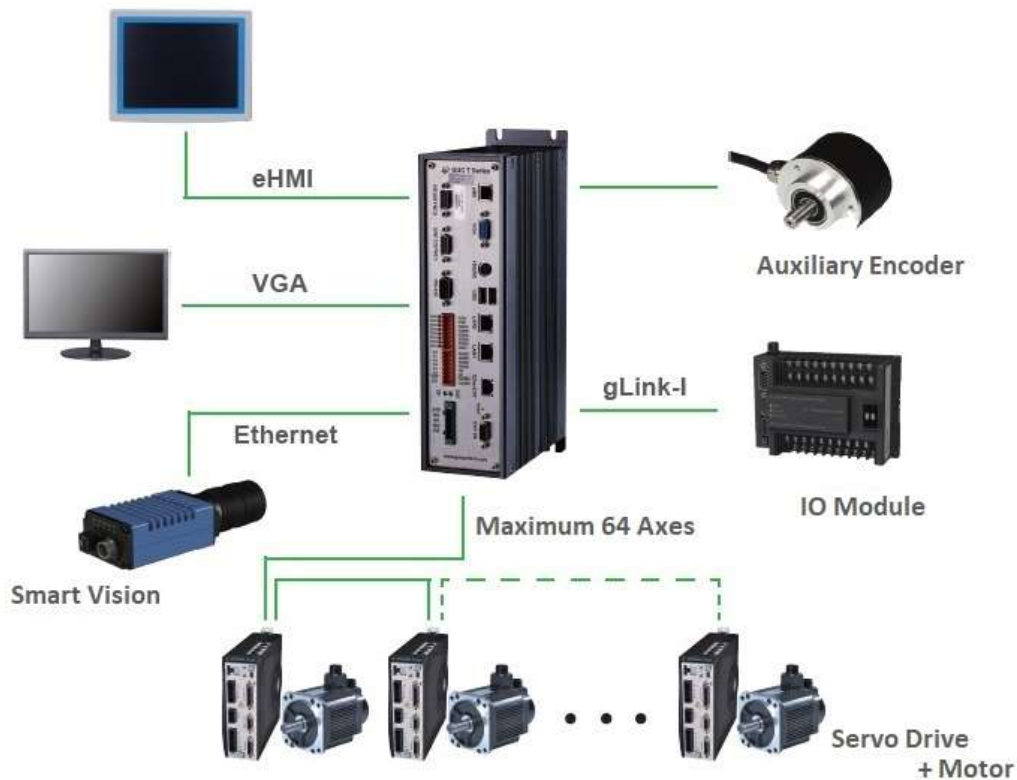
GUC-EtherCAT series embedded motion controllers use the OtoStudio development environment and support the IEC61131-3 programming standard. It provides computer software engineers and PLC software engineers with a friendly development method. Users can easily program the controller and build an automated control system.

GUC-EtherCAT series embedded motion controllers can be used in robots, CNC machine tools, 3C equipment, lithium battery equipment, printing equipment, assembly line control, etc.

## Main Features

- 8/12/32/64 axis motion control.
- FPGA precise latch pulse counting, multi-axis synchronous control.
- Support point position (Trap), speed (Jog), electronic gear (Gear), electronic cam (Follow), position time (PT), position velocity and time (PVT).
- Support linear interpolation and arc interpolation for any 2 axis. Support linear interpolation and spatial helical interpolation for any 3 axis and 4 axis.
- The embedded computer is connected with the motion controller to improve the reliability and stability of the user control system.
- The IEC61131-3 standard development environment integrates motion control (MC), Programmable logic Controller (PLC), and human-computer interaction (HMI).

## System Structure



## Specifications

Motion Control	
No. of Controlled Axes	8 Axis/12 Axis/32 Axis/64 Axis
Control Method	EtherCAT bus
Control Cycle	250us/500us/1ms
Filtering Algorithm	PID + Speed feedforward + Acceleration feedforward
Development Environment	OtoStudio
Hardware	
CPU	1.66GHz
DOM	1G/4G/8G/16G
RAM	2GB
Motion Control Interface	Positive and negative limit, origin signal, driver alarm, driver reset, arrival signal (photocoupler isolation)
PC Interface	VGA * 1, eHMI * 1, USB 2.0 * 2, KB&MS * 1, RS232 * 1, RJ45 * 2 (10/100/1000Mbps)
Hardware Capture	Home, Index, Probe

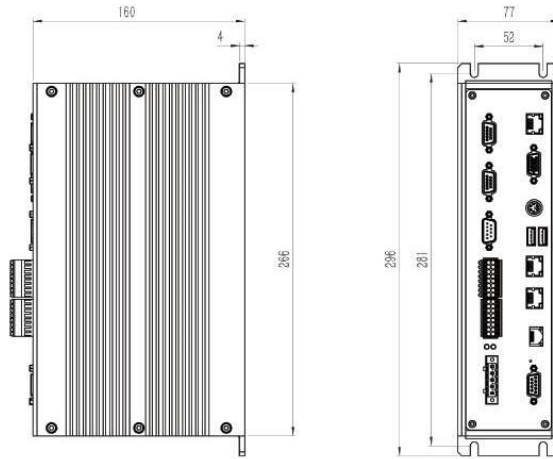
## Specifications

Hardware	
General I/O	8AI/2AO (12-bit), 8 channels DIO (Can be configured as input or output)
Auxiliary Encoder	2 Channels
Fieldbus	gLink-I extended remote I/O
Other	
Operating System	WinCE, Windows, Linux
Power Supply	24V DC $\pm$ 10%, I <sub>cc</sub> = 3A Min
Operating Temperature	0-55°C
Operating Humidity	5%-90%, Non-condensing
Dimension	77 x 296 x 160 mm
Protection	IP30

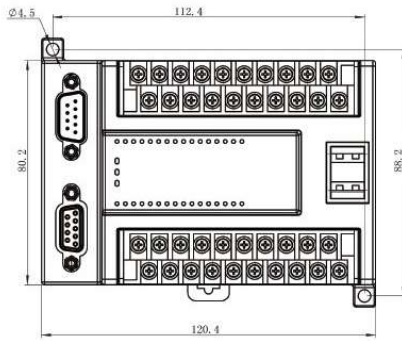
## Ordering Guide

Type	Function	Ordering Number	Description
Required	Controller	CPAC-OtoBox-UCTN2-ECAT-008-M23	8-Axis EtherCAT motion control
		CPAC-OtoBox-UCTN2-ECAT-012-M23	12-Axis EtherCAT motion control
		CPAC-OtoBox-UCTN2-ECAT-032-M23	32-Axis EtherCAT motion control
		CPAC-OtoBox-UCTN2-ECAT-064-M23	64-Axis EtherCAT motion control
Optional	Extended IO Module	HCB5 -1616-DTD01	16DI/16DO, input active low, sink output
		HCB5 -1616-DTS01	16DI/16DO, input active high/low selectable, source output
		HCB5 -0606-A1201	6AI/6AO, IO resolution 12-bit
	Extended IO Connection Cable	DB9P F/M L=0.3m	One cable per extended IO module, 0.3m
		DB9P F/M L=1.5m	One cable per extended IO module, 1.5m

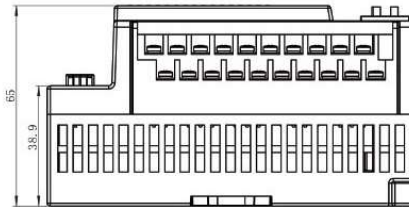
# Dimension



**Controller**



**Expansion IO Module**



\*All models have the same installation size for expansion IO.



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