

TRAJEXIA-PLC

Total freedom in motion control



» Trajexia in compact format

» You decide

» Freedom to design

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Trajexia motion controller integrated with your PLC

Trajexia, the family of advanced motion controllers that put you in control, now has a compact and integrated version.

Meet Trajexia-PLC, the motion controller that has all the flexibility and modularity of Omron PLCs, plus the outstanding motion-control features of the Trajexia platform.

If you want to add advanced motion control into your control system, Trajexia-PLC will help you to meet the most demanding requirements whilst minimizing space, saving on wiring, optimizing design and allowing easy integration with your HMI.

In fact, it's just what you asked for... and with all the familiarity and performance you require!



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Advanced control in one compact solution

Trajexia-PLC was specifically created with your application in mind. By focussing on compactness and simplicity, it will help you to create the next generation of market-leading machines quicker than ever.

Integration of your application could not be made easier. Besides a built-in MECHATROLINK-II port providing precise control of up to 30 axes, it takes advantage of the wide range of CJ1 interface

board options to communicate to other Fieldbus systems such as Ethernet, Profibus or DeviceNet, and naturally you have the widest choice of best-in-class servos and inverters.

The Trajexia motion controller and the PLC exchange information through shared memory areas, helping you to simplify programming and data access, making your machine design quicker and easier.

Deliver higher performance in less space...

Saving vital rack space in your machines and time spent on wiring is only part of the overall package. Because in addition to major space-saving and economic benefits, the new Trajexia for PLC is a solution that offers all the familiar and outstanding features of Trajexia Standalone, and with the same look and feel. You don't have to invest time in re-learning to get started.

...made possible with

Data exchange is performed via the PLC bus, simplifying design, saving space and enabling easy integration with other devices.

Control of 30 axes

Coordinated over fast MECHATROLINK-II motion bus with selectable cycle time from 0.5 ms to 4 ms.

Encoder interface

Allows connection of an external encoder to the system. Supports incremental, absolute encoder and pulse train output as well.

Digital I/Os

The motion controller has embedded and configurable I/Os.

MECHATROLINK-II master port

Controls up to 30 servos or inverters.

Drives

Full connectivity to the same range of servo drives and inverters as other Trajexia controllers.

Advanced programming tools

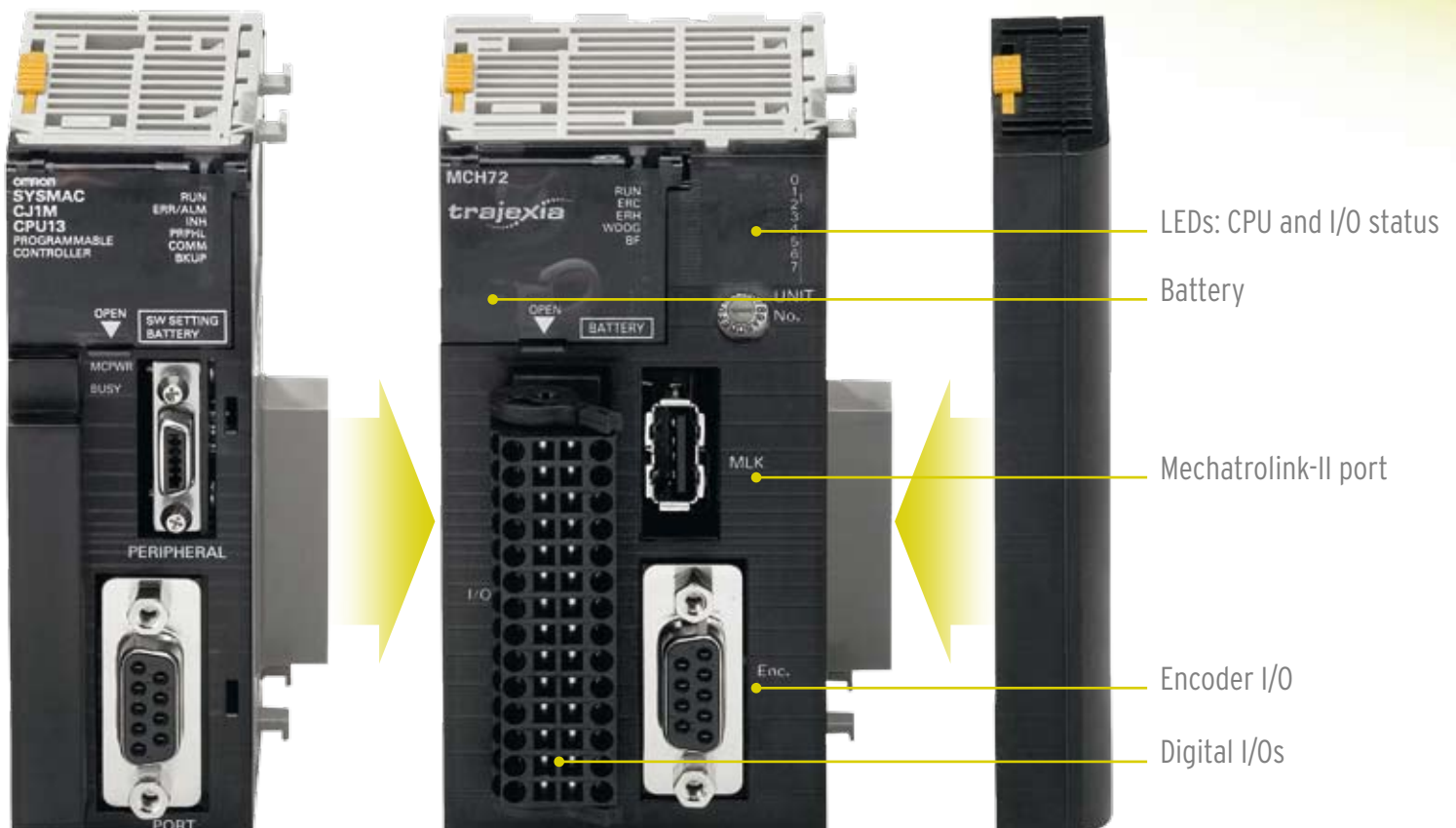
The CJ1-MCH72 motion CPU uses the same advanced programming language as the Trajexia standalone CPUs and the new monitoring and debugging tool, Trajexia Studio.



Intuitive and easy to use programming tools

New Trajexia Studio tool offers an easy and intuitive software environment, helping to program and debug your applications using advanced tools.

- Improved user graphical interface
- Multi device support
- Drag & drop functionality
- Offline programming and advanced download
- Program compare tool
- Axis configuration wizard
- Advance editor features



CJ1W-MCH72 - MECHATROLINK-II

Motion control unit

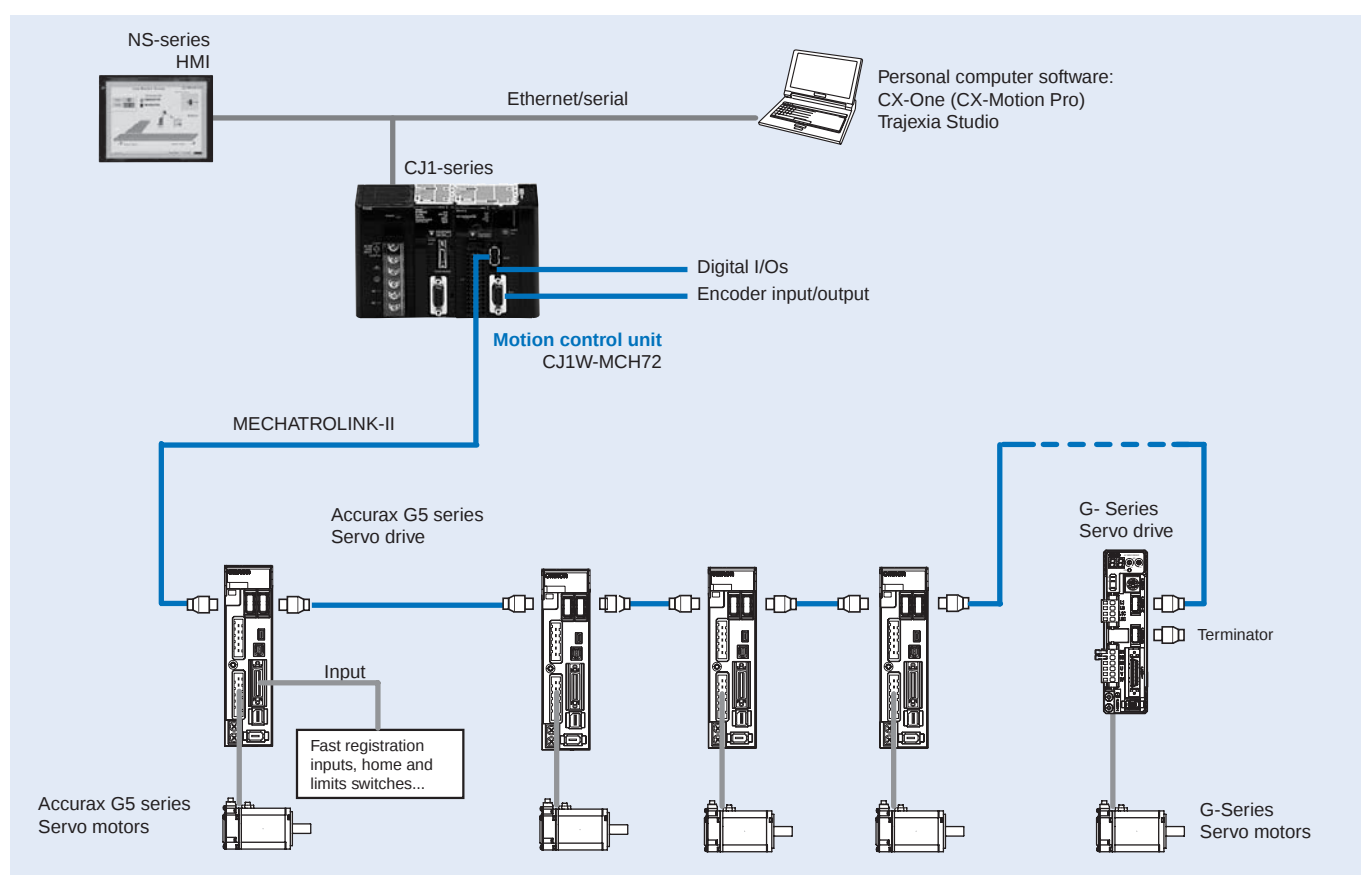


Advanced multi-axes motion controller unit over MECHATROLINK-II motion bus

- Control of up to 30 physical axes
- Selectable cycle time from 0.5 ms to 4 ms
- Control of servos and inverters over a single motion network
- Supports position, speed and torque control
- Advanced motion control such as CAM control, registration control, interpolation and axes synchronization via simple motion commands
- Serial port for external encoder
- Embedded digital I/Os
- I/O data exchange with the PLC CPU



System configuration



Specifications

General specifications

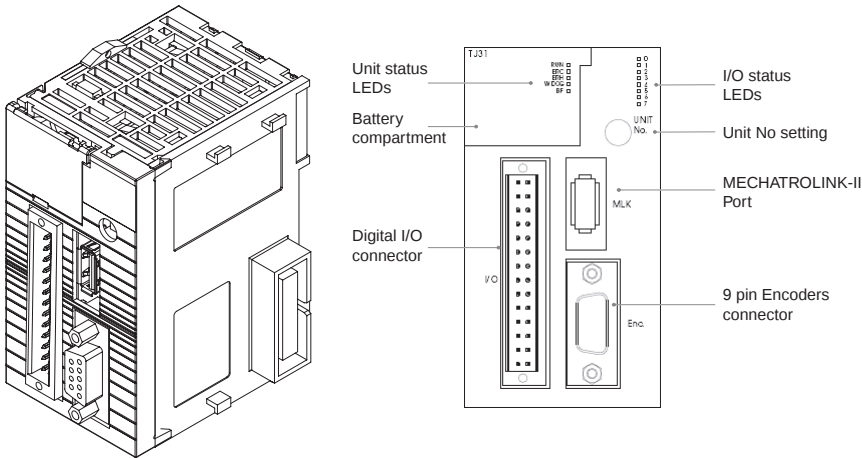
Item	Details
Model	CJ1W-MCH72
Ambient operating temperature	0 to 55°C
Storage temperature	-20° to 70°C
Ambient operating humidity	10% to 90% RH
Storage humidity	90% max. (without condensation)
Atmosphere	No corrosive gases
Vibration resistance	10 to 57 Hz (0.075 mm amplitude) 57 to 100 Hz, Acceleration: 9.8 m/s ² , in X Y and Z directions for 80 minutes
Shock resistance	143 m/s ² , 3 times each X, Y, Z directions
Insulation resistance	20 MOhm
Dielectric strength	500 V
Protective structure	IP20
International standards	CE, IEC61131-2, IEC61000-6-2, IEC61000-6-4 cULus: UL508C (Industrial Control Equipment) Lloyds; RoHS compliant
Weight	180 g

Trajexia Motion Control Unit

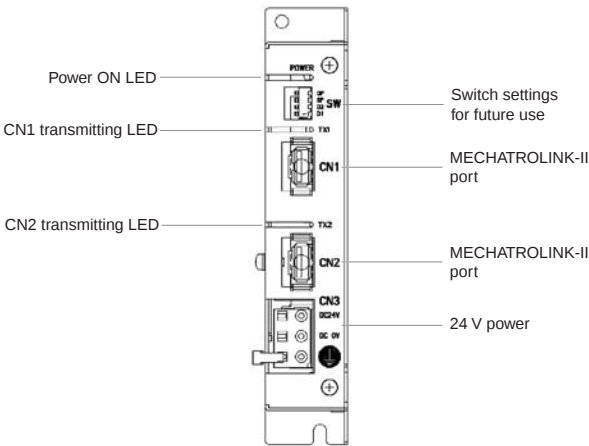
Item		Details
Classification		CJ-series CPU bus unit
Applicable PLCs		CJ-series
Number of axes		30 (31 total with virtual axis)
Number of inverters		8 maximum (Inverters in speed or torque mode)
Cycle time		Selectable 0.5 ms, 1 ms , 2 ms or 4 ms
Programming language		BASIC-like motion language
Multi-tasking		Up to 14 tasks running simultaneously
Built-in digital I/O		16 inputs, 2 with registration functionality. 8 outputs, 1 with hardware position switch functionality
Measurement units		User definable
Available memory for user programs		500 KB
Data storage capacity		Up to 2 MB flash data storage
Saving program data, motion controller unit		SRAM with battery backup and Flash-ROM
Saving program data, personal computer		Via CX-Motion Pro/Trajexia Studio software
Firmware update		
Encoder interface	Control method	Line driver AB output, Stepper pulse output
	Encoder protocols	Abs SSI 200 kHz, Abs EnDat 1 MHz and Incremental Line driver AB
	Encoder Input max frequency	6 MHz
	Encoder/Pulse output max frequency	2 MHz
MECHATROLINK-II master port	Controlled devices	Accurax G5 and G-Series servo drives
	Electrical characteristics	Conforms to MECHATROLINK standard
	Transmission speed	10 Mbps
	Stations Slave types	Servo drives and frequency inverters
	Transmission distance	Max. 50 meters without using repeater
Data exchange with PLC		CJ1W-MCH72 exchanges data with memory areas in the PLC. Mapping for cyclic data exchange in the PLC CPU to memory areas in the motion unit can be freely configured.

Nomenclature

CJ1W-MCH72 - Trajexia motion control unit



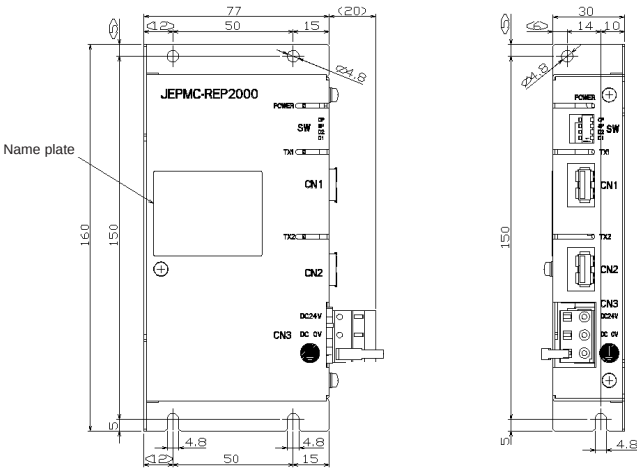
JEPMC-REP2000 - MECHATROLINK-II repeater

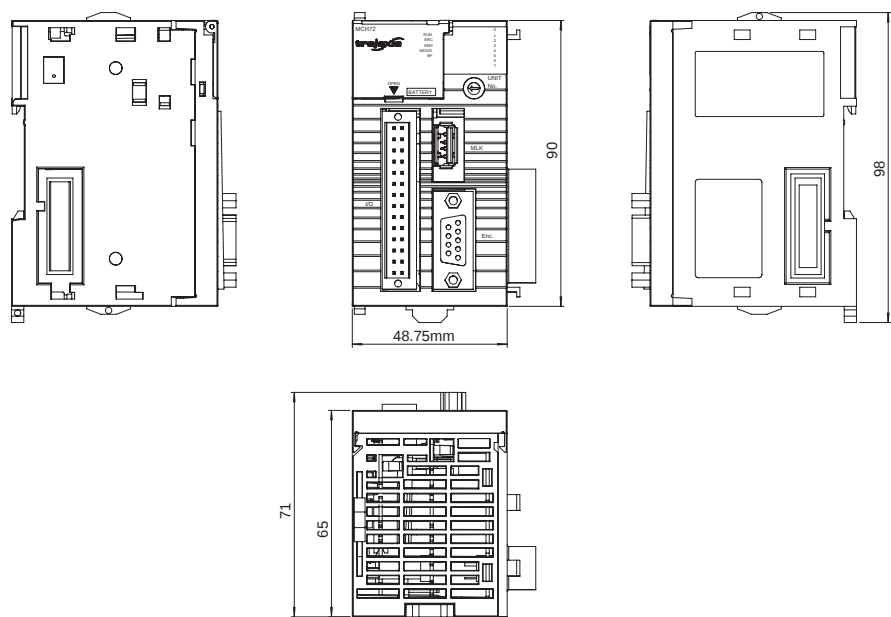


Dimensions

CJ1W-MCH72 - Trajexia motion control unit

JEPMC-REP2000 - MECHATROLINK-II repeater





Ordering information

Motion controller

Name	Model
Trajexia motion control unit - MECHATROLINK-II	CJ1W-MCH72

MECHATROLINK-II - related devices

Servo system

Name	Model
Accurax G5 servo drive ML-II built-in	R88D-KN□□□-ML2
G-Series servo drive ML-II built-in	R88D-GN□□□H-ML2

Note: Refer to servo systems section for detailed specs and ordering information

MECHATROLINK-II cables

Name	Remarks	Model
MECHATROLINK-II cables	0.5 meter	JEPMC-W6003-A5
	1 meter	JEPMC-W6003-01
	3 meters	JEPMC-W6003-03
	5 meters	JEPMC-W6003-05
	10 meters	JEPMC-W6003-10
	20 meters	JEPMC-W6003-20
	30 meters	JEPMC-W6003-30
MECHATROLINK-II terminator	Terminating resistor	JEPMC-W6022
MECHATROLINK-II repeater	Network repeater	JEPMC-REP2000

Computer software

Specifications	Model
CX-Motion Pro V1.2 or higher	CX-One
Trajexia Studio ^{*1} V1.2 or higher	TJ1-Studio

^{*1}. When the Trajexia Studio software is included in CX-One, then it is called CX-Motion Pro.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.