OMRON

trajexia

Advanced Motion Control for Omron CJ-series PLCs

All the capabilities of the Standalone Trajexia now can be integrated with the PLC controller

G-series servo drives and G-series servomotors complete a smart machine control solution

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 while 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!

Advanced control in one compact solution

Trajexia-PLC was specifically created with your application in mind. By focusing 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 trajexia

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.

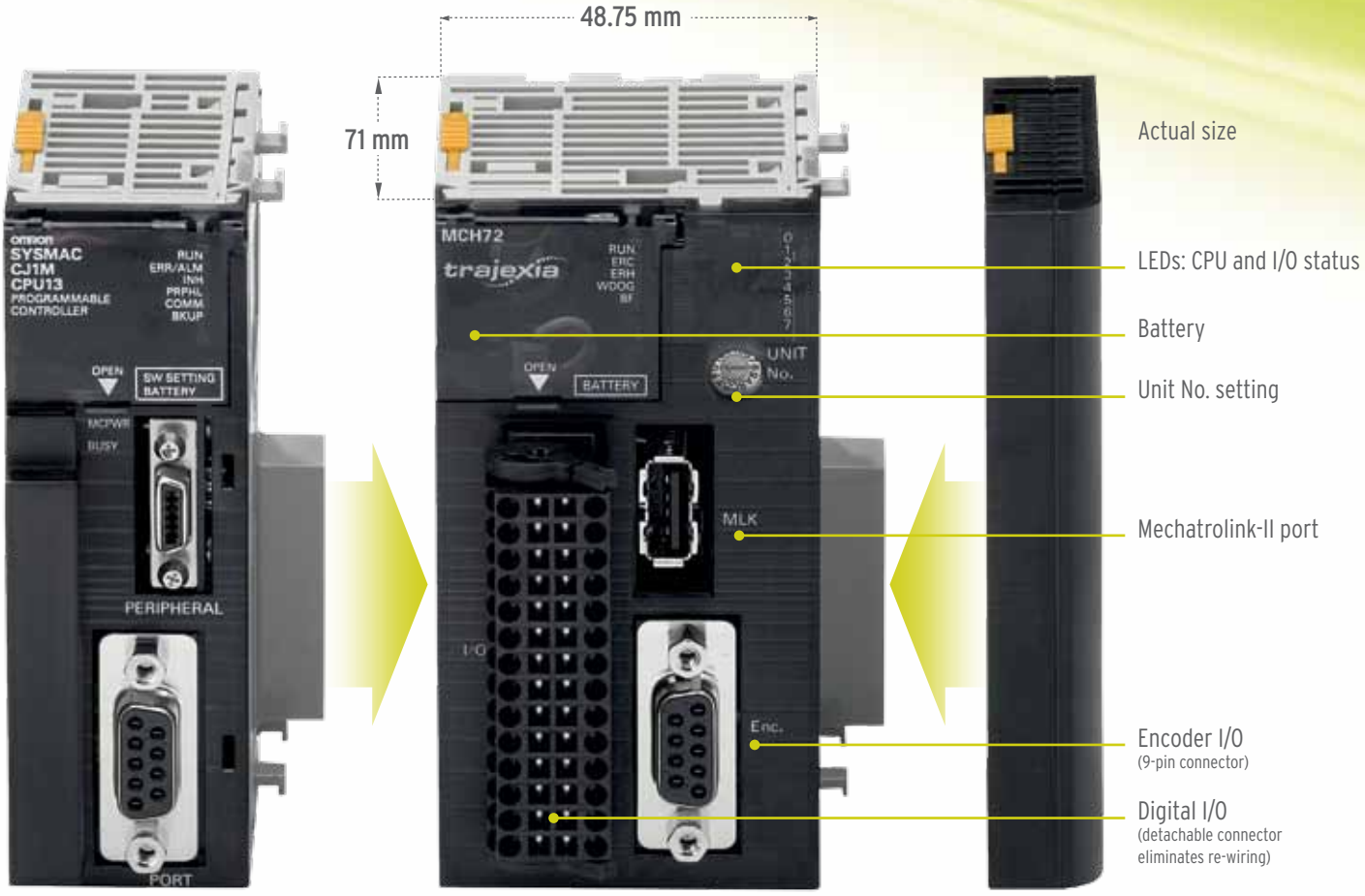
Advanced programming tools
The CJ1W-MCH72 motion unit's CPU uses the same advanced programming language as the Trajexia standalone CPUs and the new monitoring and debugging tool, Trajexia Studio.

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 graphical user interface
- Multi-device support
- Drag & drop functionality
- Offline programming and advanced downloading
- Program compare tool
- Axis configuration wizard
- Advanced editing features

trajexia studio



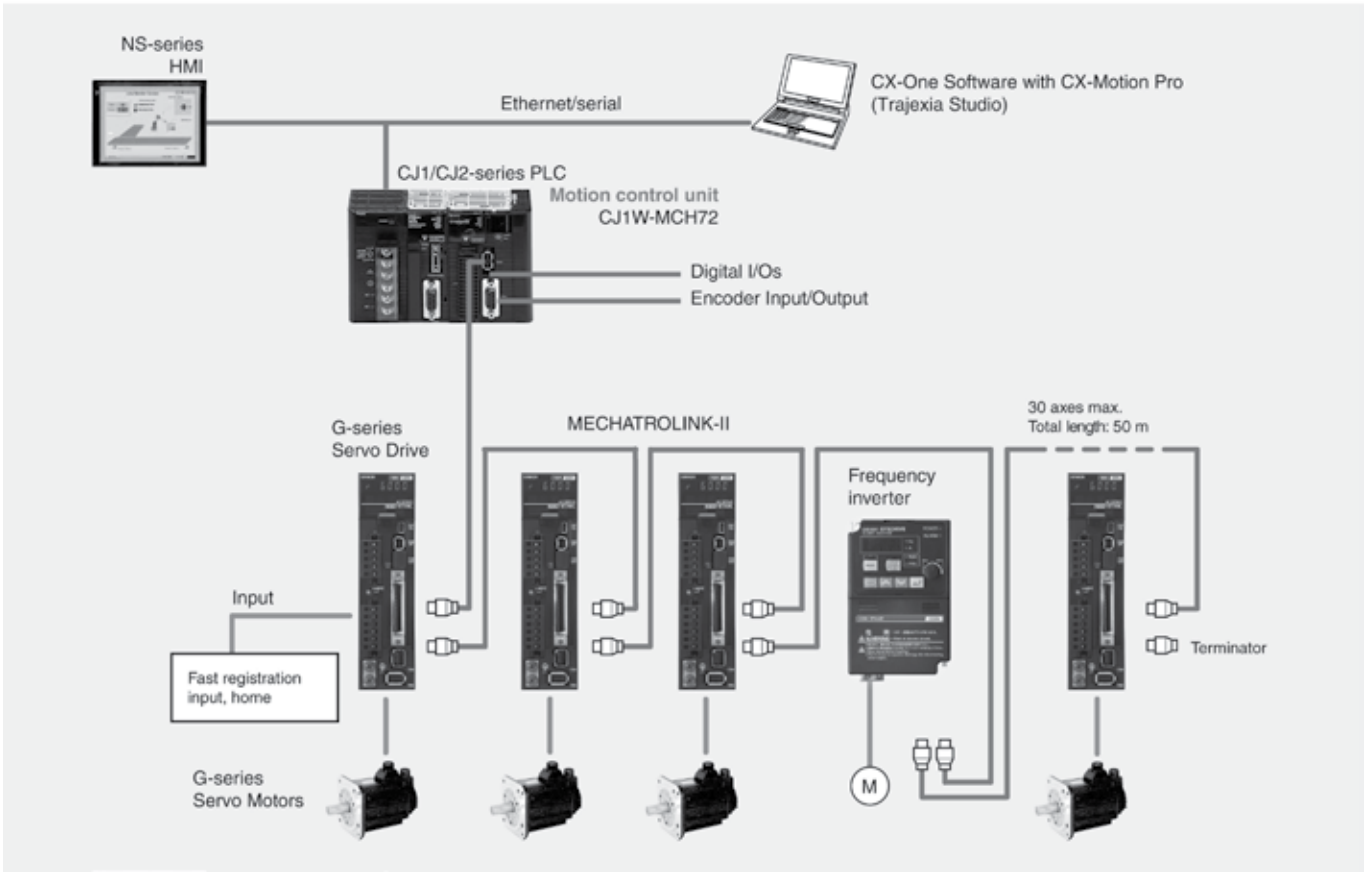
CJ1W-MCH72 - MECHATROLINK-II

Motion control unit

PLC Advanced Motion Controller Using MECHATROLINK-II Motion Bus

- 30 physical axes advanced motion coordination over a robust and fast motion link: MECHATROLINK-II
- Supports position, speed and torque control
- Each axis can run complex interpolated moves, e-cams and e-gearboxes
- Advanced debugging tools including trace and oscilloscope functions
- Hardware registration input for each servo axis
- Control of servos and inverters over a single motion network
- Built-in Digital I/Os and master Encoder.

System configuration



Specifications

General Specifications

Item	Details
Model	CJ1W-MCH72
Ambient operating temperature	0 to 55°C
Ambient operating humidity	90%RH (without condensation)
Storage temperature	-20º to 70º C
Atmosphere	No corrosive gases
Vibration resistance	10 to 57 Hz (0.075 mm amplitude) 57 to 100 Hz, Acceleration: 9,8 m/s², in X Y and Z directions for 80 minutes
Shock resistance	143 m/s² , 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

Motion Control Unit

Item		Details
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. Same function range as Trajexia TJ1-MC16
		Note: MCH72 Trajexia uses an advanced instruction set; MCH71 BASIC applications have to be re-designed to be used in the new controller.
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		500KB
Data storage capacity		Up to 2 MB flash data storage
Saving program data, motion controller		SRAM with battery backup and Flash-ROM
Saving program data, personal computer		Via Trajexia Studio Software
Firmware update		Via Trajexia Studio Software
Encoder I/O	Position/Speed Feedback	Incremental and Absolute encoder
	Absolute encoder standard	Supports SSI 200kHz, EnDat 1MHz
	Encoder Input max frequency	6 MHz
	Encoder/Pulse output max frequency	2 MHz
MECHATROLINK-II master port	Controlled devices	Omron G- and G5-series servo drives and 3G3MX2 frequency inverters
	Electrical characteristics	Conforms to MECHATROLINK standard
	Transmission speed	10Mbps
	Stations Slave types	Axes or servodrives 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.

Ordering Information

Motion Controller

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

MECHATROLINK-II – Related Devices

Name	Remarks	Model
MECHATROLINK-II cables	0.5 meter	FNY-W6003-A5
	1 meter	FNY-W6003-01
	3 meters	FNY-W6003-03
	5 meters	FNY-W6003-05
	10 meters	FNY-W6003-10
	20 meters	FNY-W6003-20
	30 meters	FNY-W6003-30
MECHATROLINK-II repeater	Required when 17 or more axes are connected to the network	FNY-W6003-REP2000

Servo Systems and Frequency Inverters

Contact your Omron representative for information about G5- and G-Series servo drives and motors, and 3G3MX2 series frequency inverters (AC drives).

Computer Software

Specifications	Model
CX-Motion Pro (Trajexia Studio V1.0 or higher) included with CX-One software license	CXONE-AL01C-V□

Note: The box next to V indicates the current version of software (2, 3, 4, etc.)

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