

# Motion Controller GM1

with EtherCAT / RTEX communication support



**IN Your  
Innovation**

# All in one - Motion control, PLC, and I/Os combined in one unit

## Synchronous control

Complex multi-axis systems like systems with 2- and 3-axis interpolation

## Motion program with

- > Function block guidance
- > Electrical cam editable by GUI
- > Simulation and debug function

## Motion, network, I/O

- > Less devices
- > Space-saving
- > Easy maintenance
- > Reduction of time and system costs

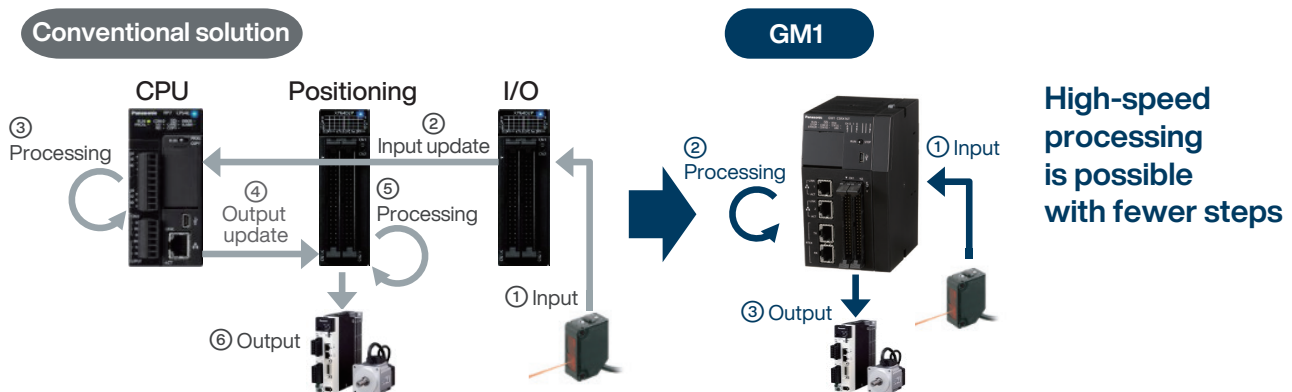
## High-speed response

For fast data exchange and networking

## Programming with CODESYS

Standard programming language according to international standard IEC 61131

## The all-in-one unit is faster and more accurate



## With all the necessary main functions for complex motion control applications

### Motion control

- > Real axes: 32 (EtherCAT type)
- > Real axes: 16 (RTEX type)

### RS 232C

- > Modbus-RTU
- > General-purpose communication

### General-purpose I/O: 16 inputs and 16 outputs

- > NPN/PNP transistor outputs
- > Expansion unit (64 I/O)
- > Up to 15 units possible

### Ethernet: 2 ports

- > EtherNet/IP\* (1 port)
- > Modbus-TCP
- > General-purpose communication
- > FTP server / client
- > OPC UA server

### Selectable network

**EtherCAT**  
High-speed network for servo drive

**RTEX**  
Realtime Express

### High-speed counter input: 2 channels

- > 4-fold evaluation by 16MHz
- > Shortest command cycle: 0.5ms

### Slot for SD card

### PWM output: 4 channels

- > Up to 100kHz

\*EtherNet/IP is a trademark of ODVA, Inc.

# System configuration



## GM Programmer

- > PLC programming
- > Motion programming
- > Various expansion units available



## Digital I/O, PWM, High-speed counter



PLC

## Motion Controller GM1



EtherCAT®



## AC servo motor MINAS A6B

Max. 32 axes

\* EtherCAT is a registered trademark of patented technology licensed from Beckhoff Automation GmbH in Germany.



High-speed network for servo drives

**RTEX**  
Realtime Express



## AC servo motor MINAS A6N

Max. 16 axes

\* Realtime Express and RTEX are registered trademarks of Panasonic Corporation. Realtime Express is a high-speed and synchronous motion network exclusively developed by our company.

# Configuration software

## Complies with IEC 61131-3 standard

### GM Programmer



## 6 programming languages

- > LD (Ladder Diagram)
- > FBD (Function Block Diagram)
- > ST (Structured Text)
- > SFC (Sequential Function Chart)
- > CFC (Continuous Function Chart)
- > IL (Instruction List)\*

\* Selectable by changing the software settings.

## Function block guidance

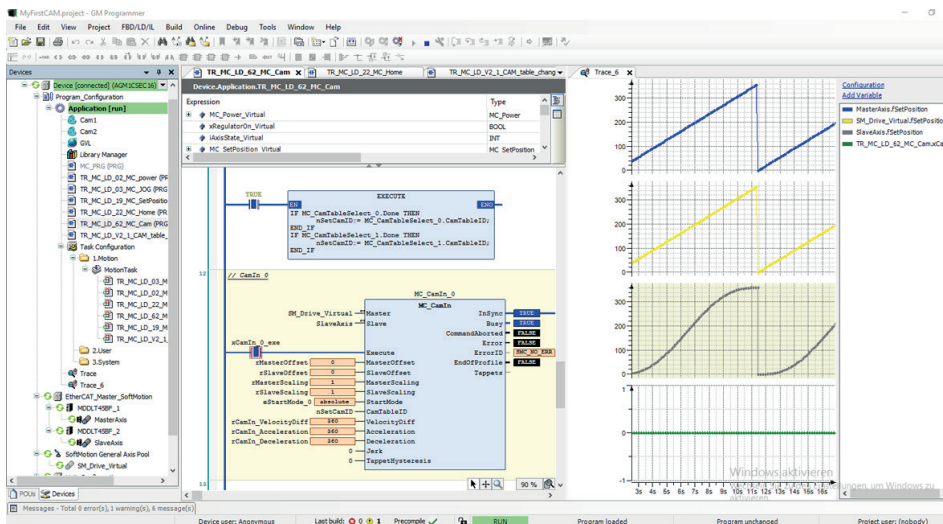
Programming is easy with the help of the pre-installed standard library with function blocks for motion control. Select a function block to see details about its parameters.

## Cam editor

Intuitive graphical user interface which allows you to configure the cam curves easily.

## Convenient debugging functions

Debugging is made easier by offline simulation of motion tracing, timing adjustment and other functions. This helps to reduce the time and effort needed for designing the system.



## Applications



Robots & handling systems



Machine tools



Automated machinery



Printing machines



Conveyors




Packaging machinery




Semiconductor production equipment

## Product types



### Controller \*

Product name	Number of axes	Network	Number of I/O	High-speed counter	Rated voltage	Output specifications	Part No.
	16 axes	RTEX	16 inputs 16 outputs	2 ch	24V DC	Transistor output sink type (NPN)	<b>AGM1CSRX16T</b>
	32 axes	EtherCAT				Transistor output source type (PNP)	<b>AGM1CSEC16P</b>


### Input / output unit \*

Product name	Type	Number of I/O	Specifications	Part No.
	DC input	64 inputs	24V DC, 32 inputs/1 common	<b>AGM1X64D2</b>
	Transistor output source type (PNP)	64 outputs	Maximum load current: 0.3A (20.4 to 26.4V DC), 30mA (4.75V DC); 3.2A / common, 32 outputs/1 common	<b>AGM1Y64P</b>
	DC input Transistor output source type (PNP)	32 inputs 32 outputs	Input: 24V DC, 32 inputs/1 common Output: Maximum load current: 0.3A (20.4 to 26.4V DC), 30mA (4.75V DC); 3.2A / common, 32 outputs/1 common	<b>AGM1XY64D2P</b>

### Analog input / output unit \*

Product name	Specifications	Number of channels	Part No.
Analog input unit 	Conversion speed 50 $\mu$ s / ch Resolution 16bit (maximum) Accuracy max. $\pm$ 0.2% F.S. (at +25°C)	8 ch	<b>AGM1AD8</b>
Analog output unit 	Conversion speed 50 $\mu$ s / 4 ch Resolution 16 bit (maximum) Accuracy max. $\pm$ 0.2% F.S. (at +25°C)	4 ch	<b>AGM1DA4</b>

### Pulse output unit \*

Product name	Output type	Number of control axes	Speed command	Part No.
	Transistor	4 axes	Max. 500kpps	<b>AGM1PG04T</b>
	Line driver		Max. 4Mpps	<b>AGM1PG04L</b>

### Accessories

Product name	Part No.
Discrete-wire connector set	<b>AFP2801</b>
Flat cable connector set	<b>AFP2802</b>
Spring force plug set	<b>AFP2808</b>
Power cable	<b>AFPG805</b>

\* Connectors are not included with the controller or expansion unit. Please ensure you have the necessary connectors. The controller is delivered with a power cable.

# Panasonic

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