

MCA6 Series Medium Motion PLC



EtherCAT

CANopen

Modbus

EtherNet/IP

OPC UA

Drive Equipment Innovation
Through Technological Innovation

New Generation MCA6 Medium Motion PLC

Product Positioning

MCA5
Standard PLC Coming soon

MCA6
Motion PLC

MCA6 Plus Coming soon
Enhanced PLC

4-core High-speed processor
Multi-network design, Flexible communications
Supports up to 64 axes by EtherCAT
Motion Control: CAM / CNC / ROBOT
Based on CODESYS , Free programming

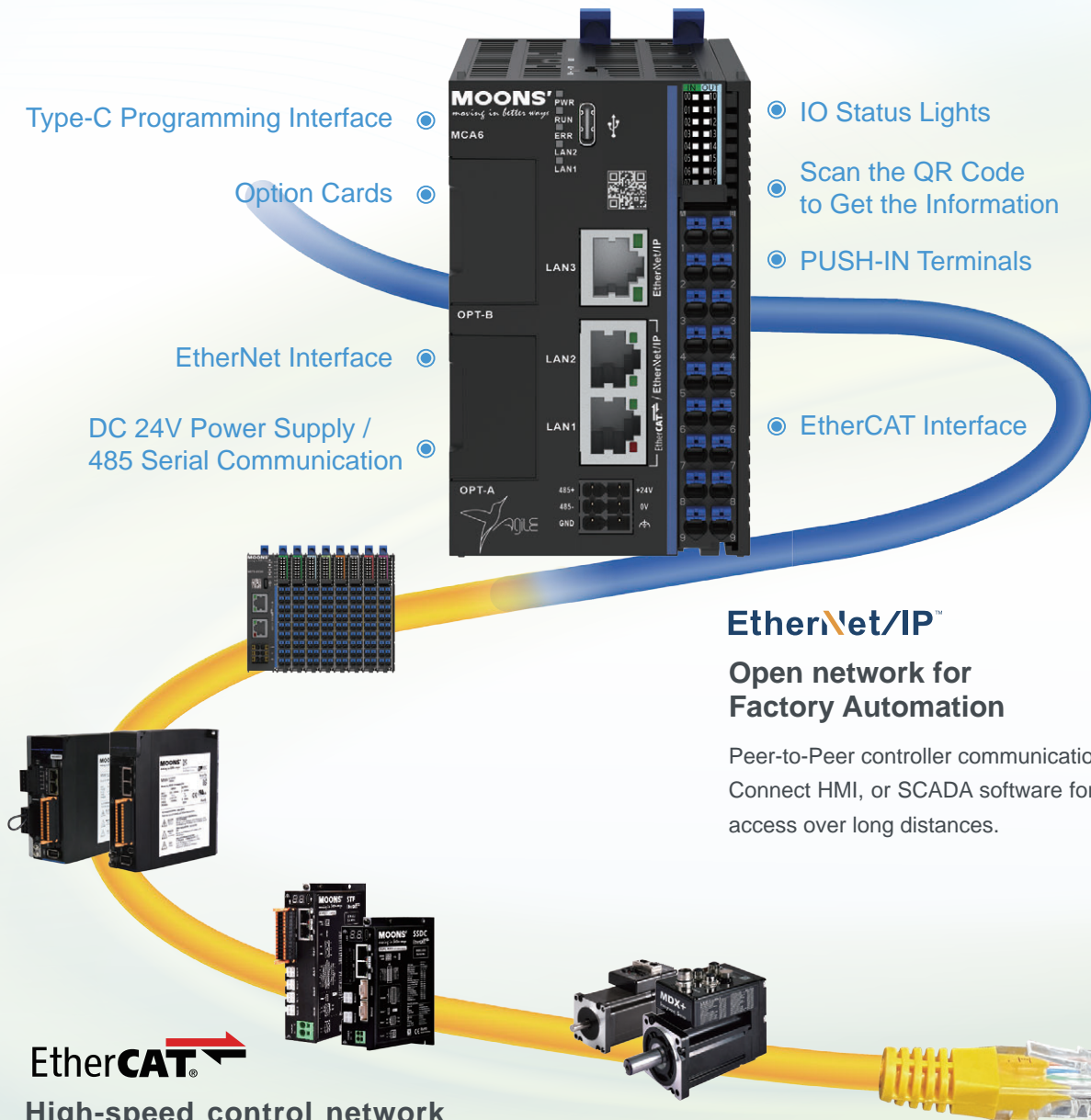
CONTENT

Product Advantages	03
Model Number	07
Specifications	08
Mechanical Dimensions.....	08
Ordering Information.....	09
MET2 Series of Ultra-thin Modules.....	10

MCA6 Medium Motion PLC

MCA series is a new generation of medium-sized PLC launched by MOONS', using an open industrial application network based on Ethernet, supporting EtherCAT, EtherNet/IP, OPC UA, Modbus TCP, TCP/IP and other global standard communication protocols can realize the seamless connection between the machine control and factory automation. It is designed and developed in full compliance with the PLC open specification and IEC-61131-3 standard, supporting LD, ST, FBD, SFC, CFC and other programming languages, programming development platform covers basic logic applications, discrete stand-alone applications to multi-axis complex applications. With its small CPU size, flexible module combination and microsecond bus cycle, it can be adapted to more application scenarios.

MCA6 series is mainly used in lithium battery, photovoltaic, 3C, food and beverage, packaging, printing, silicon, medical and other mechanical automation equipment and combined production lines to meet the needs of users for production efficiency and control accuracy improvement.



EtherNet/IP™ Open network for Factory Automation

Peer-to-Peer controller communication.
Connect HMI, or SCADA software for remote
access over long distances.

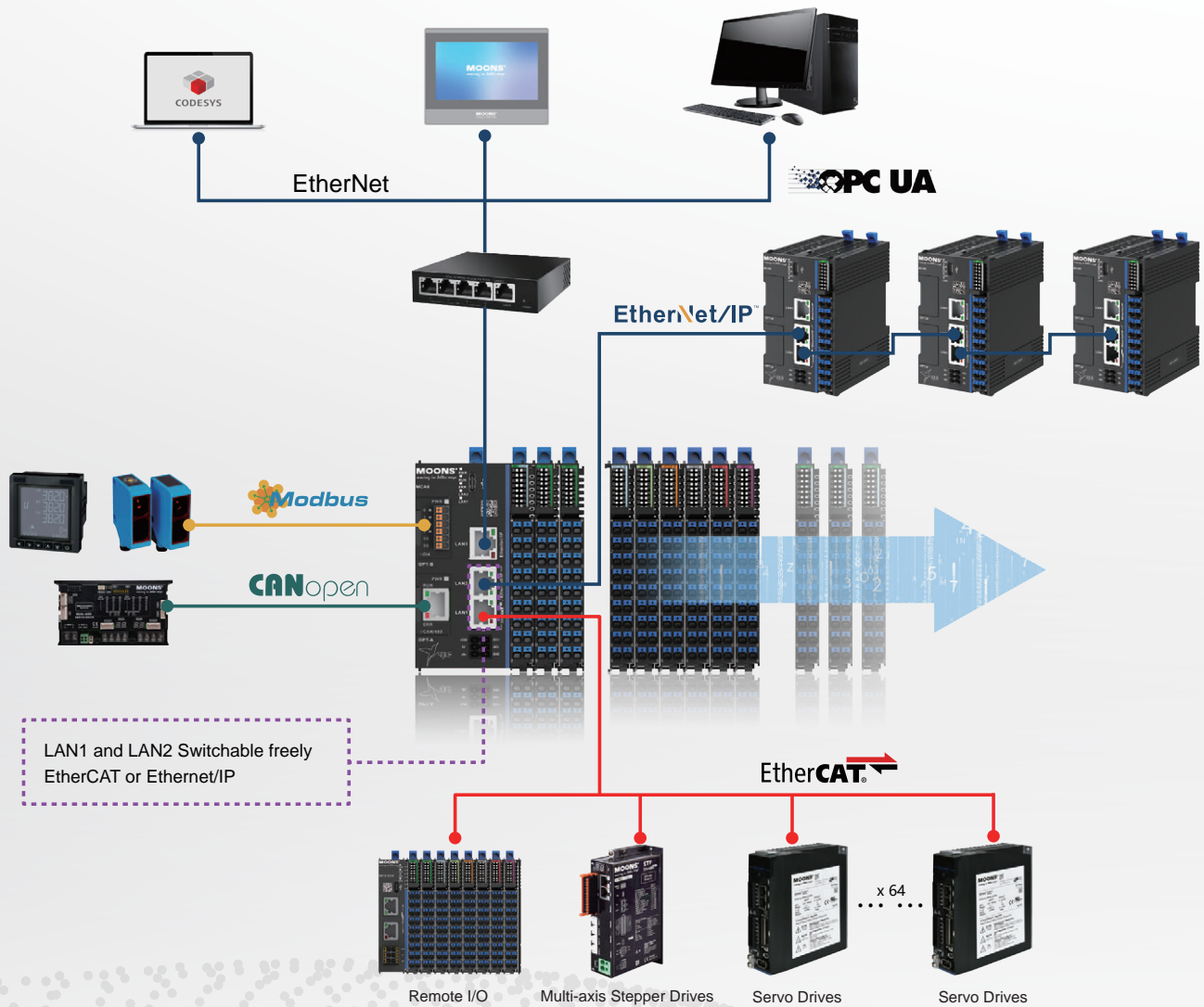
EtherCAT®

High-speed control network for machinery and equipment

Fast and high precision control network based on Ethernet
Connect, servo drive / image sensor / IO, etc.
Use standard STP Ethernet cables with RJ45 connectors .

Multi-network Integration and Interconnection

MCA6 is equipped with 3-RJ45 interfaces and 1-485 interface, supporting a variety of communication protocols, including EtherCAT, Modbus TCP, UDP, OPC UA, TCP/IP, etc. EtherNet/IP, CANopen, Modbus RTU, etc. support dual IP settings, realize the isolation of equipment between LAN and Internet, and help the digital transformation and upgrading of factories.

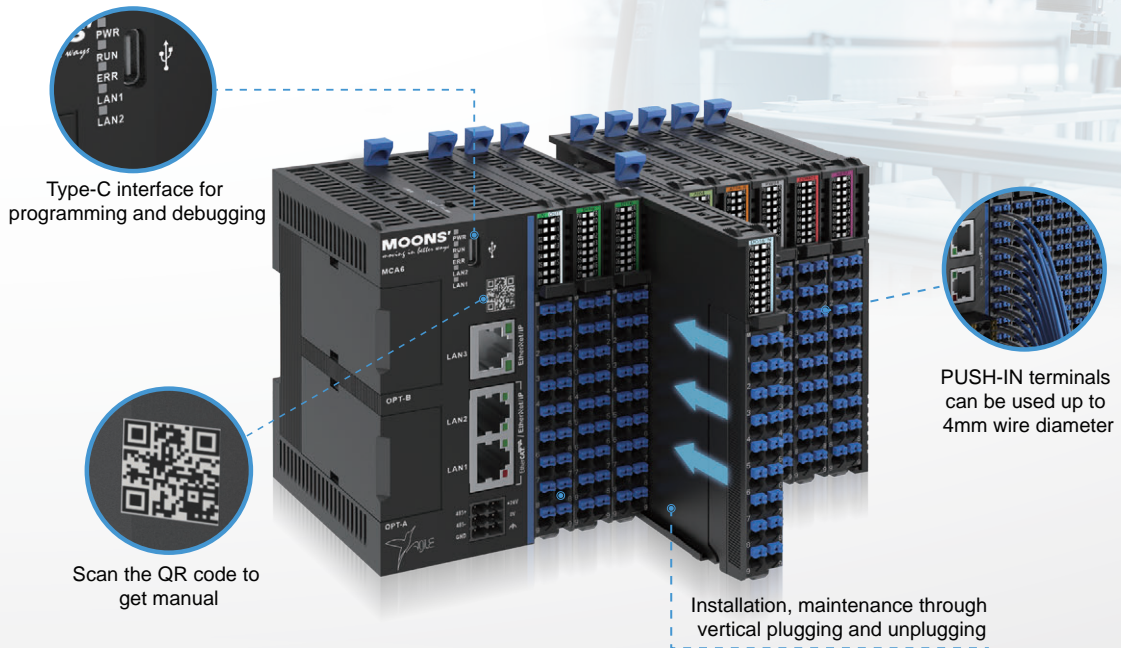


EtherNet: No need to convert multiple protocols, host computer / HMI can directly access PLC variable names through tag communication.

The PLCs can also directly access variables for data exchange via tag communication.

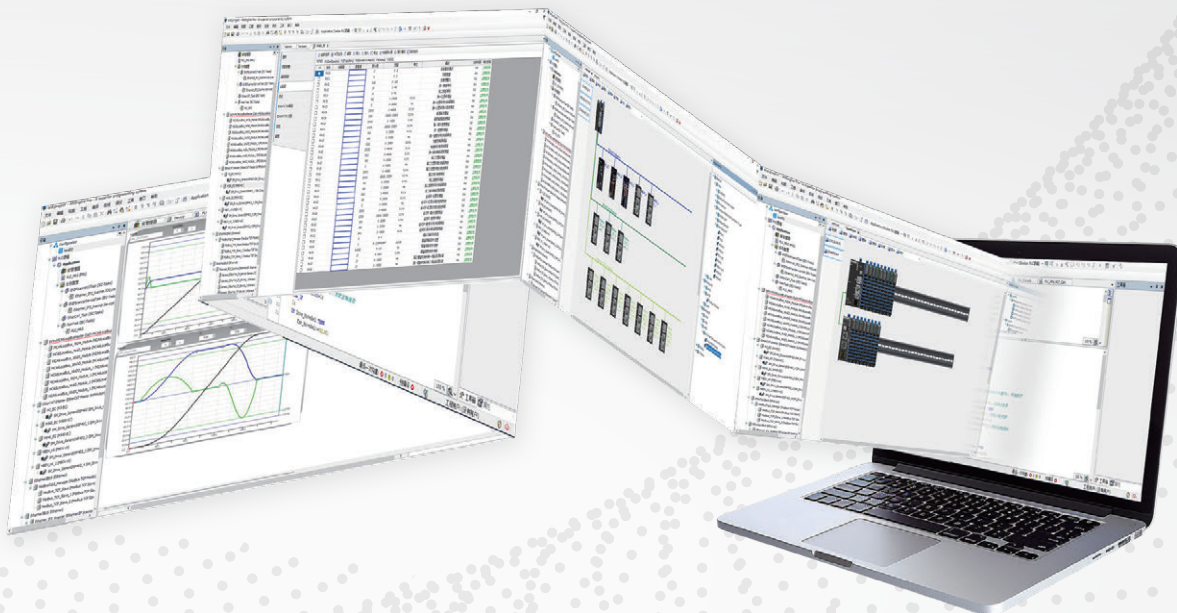
EtherCAT: Quick diagnosis for slave communication anomalies

Easy Installation and Easy Commissioning



Efficient, Open, and Free Programming

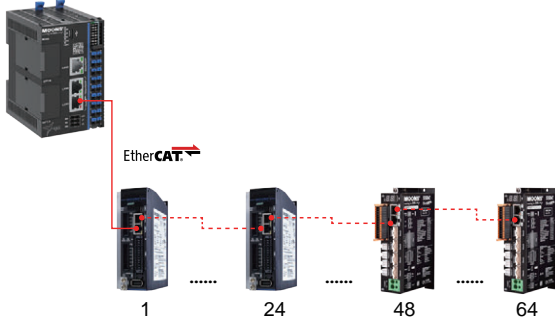
McEngine Pro is a standardized programming platform for equipment automation control based on the CODESYS platform launched by MOONS', which integrates functions such as PLC programming, visual HMI, fieldbus and motion control. The platform provides a complete configuration, programming, commissioning, and monitoring environment that can handle the powerful IEC language with flexibility and freedom. Its creation gives you full control over your automation system, and the graph-oriented configuration allows for quick setup of controllers, field devices, and networks.



Outstanding Motion Control

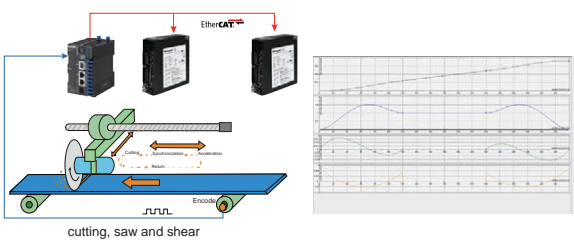
■ Bus with Shaft

Up to 64 EtherCAT bus axis, Synchronization cycle 40 axes 2ms.



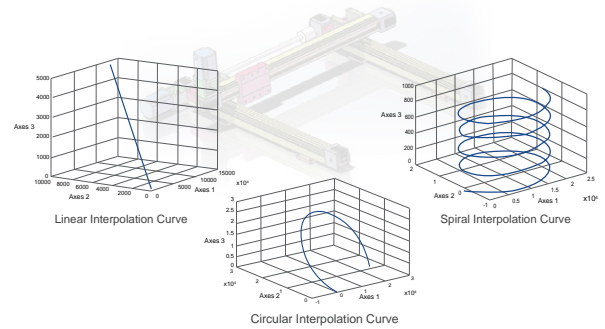
■ Electronic CAM

Instead of heavy mechanical CAM, Electronic CAM with higher processing accuracy and flexibility, can improve production efficiency, can be used in packaging and printing machine.



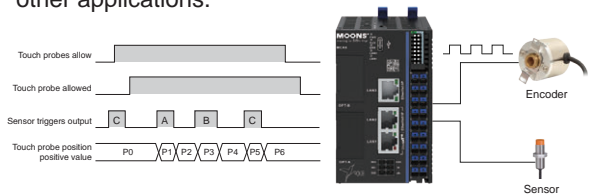
■ Multi-axis Interpolation

linear, circular and spiral interpolation.

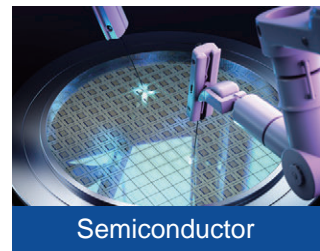


■ Probe Function

MCA6 supports 8 high-speed inputs (4 encoders) and 8 high-speed outputs (4 pulses) to realize the probe latching function, which is mainly used in packaging, food and beverage, 3C electronics and other applications.



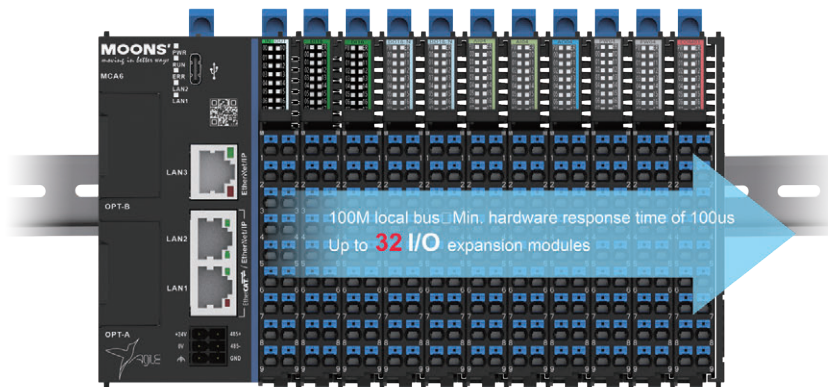
Typical Applications



Flexible Scalability

2 Expansion Card Slots

Includes 2 expansion card slots, Support communication / analog / digital, etc., accurately adapt to specific scenarios, avoid excess resources, and save cabinet space



32 Expansion Modules

Supports 32 expansion modules, via local 100M, The high-speed backplane bus can expand the function modules such as digital, analog, temperature, pressure, high-speed counting, pulse output, Flying camera and communication.

Model Number

MCA 6 - 40 - 08 08N - ***

Product Catalog	
MCA	Medium

Product Range	
6	Motion PLC

Performance Rating	
64*	Up to 64 Axes
40	Up to 40 Axes
30	Up to 30 Axes
20	Up to 20 Axes
10	Up to 10 Axes

Customization	
-xxx	Custom Code
Default	Standard

Output Channel	
08N	8-Point Digital Output (NPN)
08P*	8-Point Digital Output (PNP)

Input Channel	
08	8-Point Digital Input (NPN/PNP)

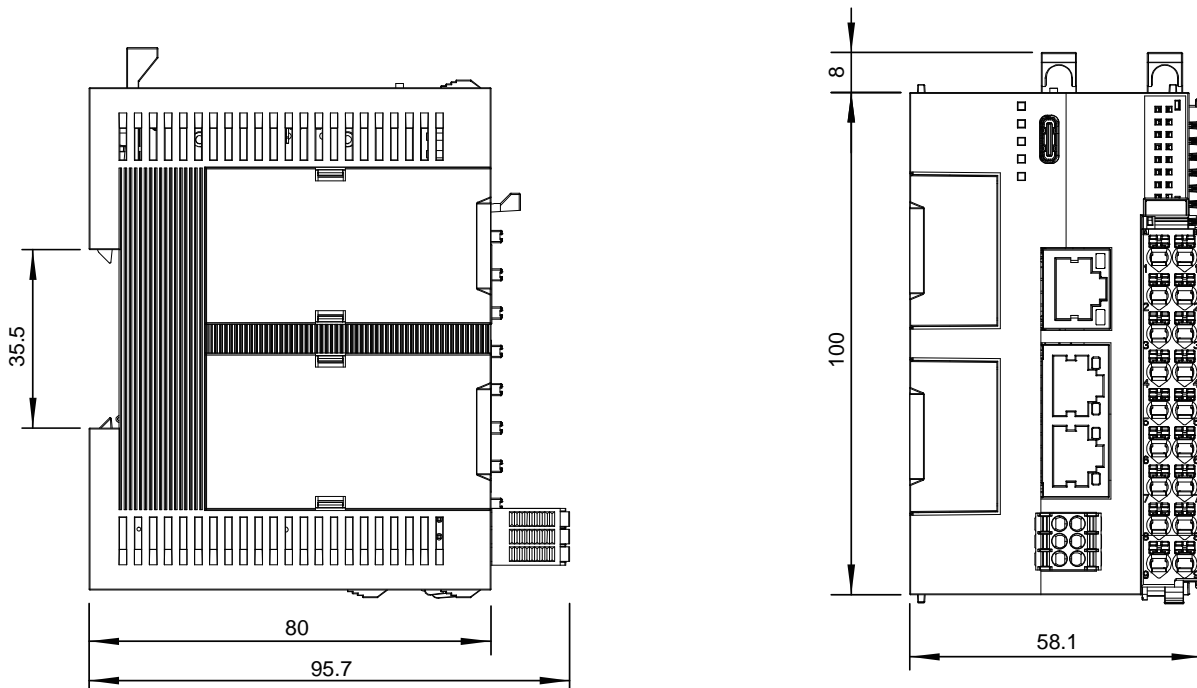
Note: * Please contact MOONS' Office for product availability

Specifications

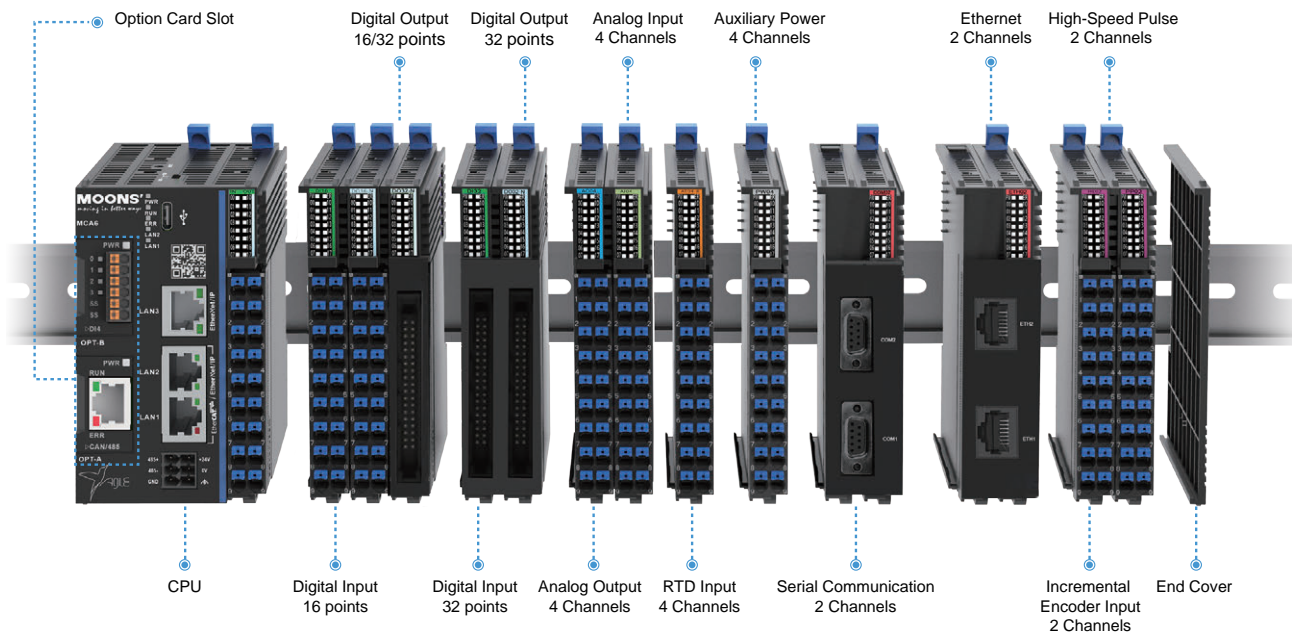
Item		Description				
Model		MCA6-10-0808N	MCA6-20-0808N	MCA6-30-0808N	MCA6-40-0808N	MCA6-64-0808N*
Power Supply		24V DC(±20%)/ 1.5A				
BUILT IN I/Os		8 inputs, 8 outputs				
Data / Program Storage Capacity		20MB Program capacity,256MB Data capacity (2MB Non- volatile)				
Instruction execution Speed	Bit Execution Instructions	Approx. 9ns				
	Word Execution instructions	Approx. 14ns				
	Four Operations on Integers (average value)	Approx. 16ns				
Communication Specifications	RJ45 Port	EtherNet	EtherNet * 3 (independent IP)			
		EtherCAT	EtherCAT * 1			
	Number of Serial Ports	RS485 * 1 (Maximum support 3 by optional)				
	CAN Correspondence	1-way expansion can be supported via expansion card				
EtherCAT	Number of EtherCAT Axis	10 axes	20 axes	30 axes	40 axes	64 axes*
	EtherCAT Slaves	Up to 128 EtherCAT slaves				
	Communication Cycle Time	2ms cycle 40 axes synchronization				
High Speed IO	High-Speed Input	4 * AB encoder, up to 500kHz				
	High-Speed Output	4 * Pulse output, up to 500kHz				
Scalability	Expansion Modules	The body can be expanded with 32 MET2 series I/O modules				
	Expansion Card	2 expansion slots for MOE expansion cards: support serial RS232/RS485, digital / analog input /output, real-time clocks , etc.				
Other Interfaces		Type-c (host power supply, program upload and download, debugging, firmware upgrade)				
Programming Software		McEngine Pro(Codesys IDE)				
Installation:		DIN-Rail				

Note: * Please contact MOONS' Office for product availability

Mechanical dimensions unit: mm



Maximum Expansion (The left side contains 2 expansion cards & right side supports 32 expansion modules.)



Ordering Information

■ MCA6 Medium PLC

Order Number	Product Model	Product Description	Dimensions (mm)
4827230000001	MCA6-40-0808N	MCA6 Series, Medium motion PLC, up to 40 Axes through EtherCAT, 8-point inputs and 8-point outputs (NPN)	100x58.1x80

■ MET2 Remote I/O Expansion Modules

Order Number	Product Model	Product Description	Dimensions (mm)
4827240000042	MET2-DI16	MET2 series, high-speed remote I/O, 16-point digital input module	100x12x80
4827240000043	MET2-DO16-N	MET2 series, high-speed remote I/O, 16-Point digital output module (NPN)	100x12x80
4827240000044	MET2-AI04	MET2 series, high-speed remote I/O, 4 analog input module (±10V/0~10V/±5V/0~5V/0~20mA/4~20mA)16bit	100x12x80
4827240000045	MET2-AO04	MET2 series, high-speed remote I/O, 4 analog output module (±10V/0~10V/±5V/0~5V/0~20mA/4~20mA)16bit	100x12x80

MET2 Series of Ultra-thin Modules

MET 2 series of Ultra-thin modules is a new generation of modules for common bus networks and can quickly and reliably acquire signals in your system. At the same time, the width as thin as 12mm, which can achieve microsecond response, It has flexible IO system configuration and more stable structural design.

MET2 series I/O modules can be used to build I/O systems by selecting signal types and performance from a wide range of product types without changing the control architecture in the automation solutions of the future. It is easy to install, with excellent continuous operation and high responsiveness.

MET2 series I/O modules are constantly improving the information in various fields through the application of different industries, and the rich number of points and categories allow you to have more customization options.

Gilding Process

The connector uses the gold plating process, which extends the product's service life and prevents the connector from corroding.

Save Space

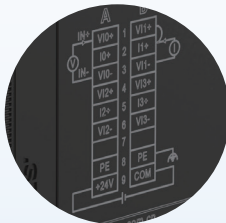
The I/O modules use a Ultra-thin design, which is the best choice for compact electrical cabinets, saving space and resources.

Stable and Reliable

With the D-BUS design, the double-sided clamped spring connector works better than the traditional one, reducing the failure rate.



Removable terminal block



Wiring diagram




D-BUS design, double-sided clamp-on spring connectors




Scan the QR code to get manual


Digital Input Module

Model	MET2-DI16
Image	
Rated voltage of bus input power supply	24V DC (20.4V DC~ 28.8V DC)
Rated current of bus input power supply	0.6A (24V typical)
Rated voltage of terminal input power supply	N/A
Rated current of terminal input power supply	N/A
Module hot swap function	Not supported
Enter the type	Digital inputs
Input type	Source/Sink
Number of input channels	16
Input voltage class	24V DC±10%(21.6V DC ~ 26.4V DC)
Input Current (Typical)	4mA (typical value at 24 V))
ON voltage	>15V DC
OFF voltage	<5V DC
Hardware response time (ON/OFF)	100us/100us
Software filter time	Supported
Input impedance	Reference value 5.3k-5.6k
Isolation	Yes
IP Rating	IP20
Certification	CE


Digital Output Module

Model	MET2-DO16-N
Image	
Rated voltage of bus input power supply	24V DC (20.4V DC ~ 28.8V DC)
Rated current of bus input power supply	0.6A (24V typical values)
Rated voltage of terminal input power supply	24V DC (20.4V DC ~ 28.8V DC)
Rated current of terminal input power supply	12mA (24V typical values)
Module hot swap function	Not supported
Output type	Digital output, transistor low-side output
Output mode	Sink type (NPN)
Number of output channels	16
Output voltage class	24V DC±10%(21.6V DC~26.4V DC)
Output load (resistive load)	0.5A/ Point, 4A/ module
Output load (inductive load)	7.2W/point, 24W/ module
Output load (lamp load)	5W/ point, 18W/ module
Hardware response time (ON/OFF)	100us/100us
Leakage current upon OFF	10uA
Switching frequency	100 Hz for resistive load, 0.5 Hz for inductive load, 10 Hz for lamp load
Isolation	Yes
Protection features	Short-circuit protection, over-current protection
IP Rating	IP20
Certification	CE

Analog Input Module

Model	MET2-AI04
Image	
Rated voltage of bus input power supply	24V DC (20.4V DC ~ 28.8V DC)
Rated current of bus input power supply	0.6A (24V typical)
Rated voltage of terminal input power supply	24V DC (20.4V DC ~ 28.8V DC)
Rated current of terminal input power supply	50mA (24V typical values)
Hot swapping function	Not supported
Input mode	Analog inputs
Input type	Voltage/Current
Number of input channels	4
Resolution	16-bit
Conversion time	60us/ channel
Voltage input range	$\pm 10V$, 0-10V, $\pm 5V$, 0-5V, 1-5V
Voltage input impedance	1M Ω
Voltage measuring error (25°C)	$\pm 0.1\%$ (relative to full scale value)
Voltage measuring error (Full temperature range)	$\pm 0.2\%$ (relative to full scale value)
Voltage input limit	$\pm 15V$
Voltage input diagnosis	Open-circuit detection not supported
Current input range	$\pm 20mA$, 0-20mA, 4-20mA
Current sampling impedance	250 Ω
Current measuring error (25°C)	$\pm 0.1\%$ (relative to full scale value)
Current measuring error (Full temperature range)	$\pm 0.2\%$ (relative to full scale value)
Current input limit	Transient: $\pm 30 mA$; Average: $\pm 24 mA$
Current input diagnosis	When configured to 4-20mA only, disconnection detection is supported
Isolation	The power supply is isolated from the interface, and the interface is isolated from the bus
IP Rating	IP20
Certification	CE

Analog Output Module

Model	MET2-AO04
Image	
Rated voltage of bus input power supply	24V DC (20.4V DC ~ 28.8V DC)
Rated current of bus input power supply	0.6A (Typical at 24V)
Rated voltage of terminal input power supply	24V DC (20.4V DC ~ 28.8V DC)
Rated current of terminal input power supply	100mA (Typical at 24V)
Hot swapping function	Not supported
Output mode	Analog output
Output type	Voltage/Current
Number of input channels	4
Resolution	16-bit
Conversion time	60us/ channel
Voltage output range	±10V, 0-10V, ±5V, 0-5V, 1-5V
Voltage output load	1kΩ
Voltage measuring error (25°C)	±0.1% (relative to full scale value)
Voltage measuring error (Full temperature range)	±0.5% (relative to full scale value)
Voltage output diagnosis	Open-circuit detection and over-temperature protection supported
Current output range	0-20mA, 4-20mA
Current output load	0-600Ω
Current measuring error (25°C)	±0.1% (relative to full scale value)
Current measuring error (Full temperature range)	±0.5% (relative to full scale value)
Current output diagnostics	Open-circuit detection and over-temperature protection supported
Isolation	The power supply is isolated from the interface, and the interface is isolated from the bus
IP Rating	IP20
Certification	CE



Customer Service Center

+86-400-820-9661

MOONS' Headquarter

Building 7, Lane 88, Minbei Road, Minhang District, Shanghai, 201107, P.R.China

MOONS' Taicang

No. 18 Yingang Rd, Fuqiao Town, Taicang City Jiangsu Province, 215434, P.R. China

Domestic Office

Beijing

Room 1206, Jing Liang Mansion, No.16 Middle Road of East,3rd Ring, Chaoyang District, Beijing 100022, P.R. China

Qingdao

Room1913,Scientific and Technological Innovation Building,Floor19, No.171, ShanDong Road,Shibei District,QingDao, Shangdong Province, 266033, P.R. China

Xi'an

Room 1006, Tower D, Wangzuo International City, No.1 Tangyan Road, Xi'an, Shanxi Province, 710065, P.R. China

Wuhan

Room 3001, World Trade Tower, No.686 Jiefang Avenue, Jiangnan District, Wuhan, Hubei Province, 430022, P.R. China

Hefei

Room 1521, Building B, CBC Tuoji Plaza, Jinggong Road, Shushan District, Hefei, Anhui Province, 230088, P.R. China

Nanjing

Room 1101-1102, Building 2, New Town Development Center, No.126 Tianyuan Road, Moling Street, Jiangning District, Jiangsu Province, China, 211106, P.R. China

Suzhou

Room 1103-1105, North Building 4, Huizu Plaza, 758 Nanhuan East Rd, Gusu District, Suzhou, Jiangsu Province, 215007, P.R. China

Ningbo

Room 309, Tower B, Taifu Plaza, 565 Jiangjia Road, Jiangdong District, Ningbo, Zhejiang Province, 315040, P.R. China

Chengdu

Room 3907, Maoye Plaza, No.19, Dongyu Street, Jinjiang District, Chengdu Sichuan Province, 610066, P.R. China

Chongqing

Room 2108, South yuanzhu Buliding 20, No.18 Fuquan Rd., Jiangbei District, Chongqing, 400000, P.R. China

Guangzhou

Room 4006, Tower B, China Shine Plaza, 9 Linhe Xi Road, Tianhe District, Guangzhou, Guangdong Province, 510610, P.R. China

Dongguan

Room 1106-1207, Building 5, Linrunzhigu, No.1 RD 5th Rd, Songshan Lake, Dongguan, Guangdong Province, 523000, P.R. China

Shenzhen

Room 3901, Building A, Zhongguan Times Square, No 4168 Liuxian Avenue, Nanshan District, Shenzhen, Guangdong Province, 518000, P.R. China

North America

USA

MOONS' INDUSTRIES (AMERICA), INC. (Chicago)
1113 North Prospect Avenue, Itasca, IL 60143, USA

MOONS' INDUSTRIES (AMERICA), INC. (Boston)
36 Cordage Park Circle, Suite 310 Plymouth, MA 02360, USA

APPLIED MOTION PRODUCTS, INC. (Morgan Hill)
18645 Madrone Parkway, Morgan Hill, CA 95037, USA

LIN ENGINEERING, Inc. (Morgan Hill)
16245 Vineyard Blvd., Morgan Hill, CA 95037, USA

Europe

Germany

AMP & MOONS' AUTOMATION (GERMANY) GMBH
Kaiserhofstr. 15
60313 Frankfurt am Main Germany

Italy

MOONS' INDUSTRIES (EUROPE) HEAD QUARTER S.R.L.
Via Torri Bianche n.1 20871 Vimercate(MB) Italy

Switzerland

TECHNOSOFT SA
Avenue des Alpes 20
CH 2000 Neuchâtel Switzerland

U.K

MOONS' INDUSTRIES (UK), LIMITED
Rooms 4&5, 1st Floor, Greenbank, London Road, Reading, UK. RG1 5AQ

Asia

Singapore

MOONS' INDUSTRIES (SOUTH-EAST ASIA) PTE. LTD.
33 Ubi Avenue 3 #08-23 Vertex Singapore 408868

Japan

MOONS' INDUSTRIES JAPAN CO., LTD.
Room 602, 6F, Shin Yokohama Koushin Building,
2-12-1, Shin-Yokohama, Kohoku-ku, Yokohama, Kanagawa,
Japan 222-0033

India

MOONS' INTELLIGENT MOTION SYSTEM INDIA PVT. LTD.
Room. 908, 9th Floor, Amar Business Park,
Tal. Haveli, Baner, Pune, India 411045

Vietnam

MOONS' VIETNAM MANUFACTURING SITE
Factory C1&D1, Lot IN3-11*A, VSIP Hai Phong Industrial Park in Dinh Vu – Cat Hai Economic Zone, Lap Le Commune, Thuy Nguyen District, Hai Phong City, Vietnam



<https://www.moonsindustries.com/>

E-mail: ama-info@moons.com.cn



- All the specifications, technical parameters of the products provided in this catalog are for reference only, subject to change without notice. For the latest details, please contact our sales department.