

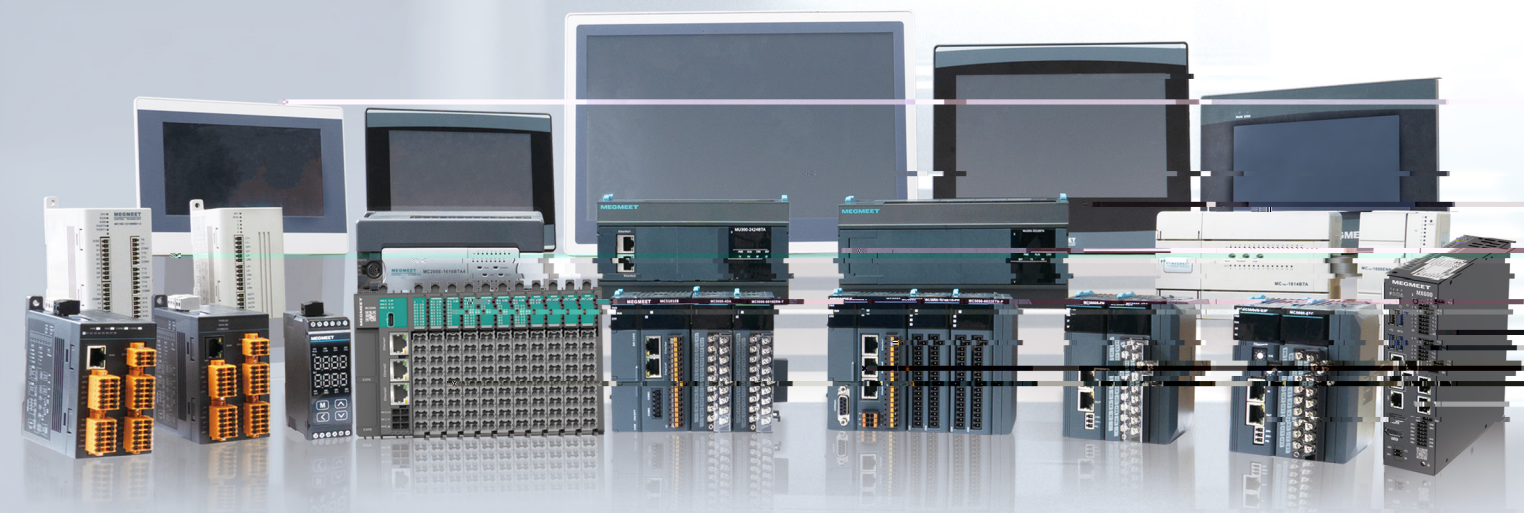


# CONTROL SYSTEM SELECTION BROCHURE

## PLC

Thermostat.

HML







2800+ 7800+

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# Contents

## Medium PLC

- MX600 Series
- MC8000 Series\*
- MC6000 Series
- MC5000 Series

## Small PLC

- MU400 Series
- MU300 Series
- MU200 Series
- MC700 Series
- MC280/MC200E Series
- MC200 Series
- MC100 Series

## Remote I/O Module

- MR400 Series
- MC5000S Series

## Temperature Controller

- MQT Series
- MTC/MTCW/MTCV Series
- MTCE Series
- MCAS Series
- MDT Series

## Cable List

- Cable List

## HMI

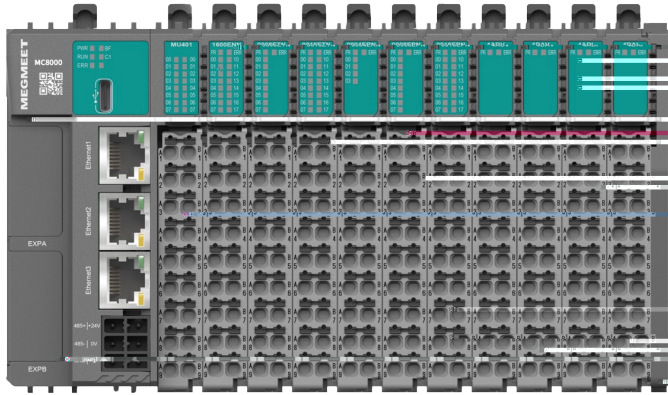
- MZ800 Series

MX600 series intelligent controller breaks through the 256-axis  $\mu$ s-level synchronous control, supports EtherCAT, EtherNET / IP, ProfiNet and other bus protocols, and the redundant architecture ensures 99.999 % extreme condition stability. It covers high-precision scenarios such as lithium battery winding, semiconductor, photovoltaic, etc., and synchronously meets the ms-level sequential control requirements of 3C assembly, five-axis machining and high-speed packaging.

Product Feature

- Support 16-axis/250us, 64-axis/500us and 256-axis/2ms sync cycles, and 20us jitter to ensure high-precision control.

MC8000 series product is a new generation of high-performance and cost-effective medium PLC based on the mOPAX platform of MEGMEET. It is fully compatible with the IEC61131-3 programming specification and supports LD, ST, SFC, CFC, FBD, and IL programming languages; adopts the blade-type module design, and supports multi-core processor. Based on multi-bus protocols such as EtherCAT and Profinet, a multi-axis motion control system is constructed, to meet the high-speed response requirements of intelligent devices.



Product Feature

Strong expansion & networking

- Expand up to 32 modules, support the expansion of digital, analog, CAN, RS485, RS232, etc.
- Full protocol compatibility, support Modbus/ EtherCAT/EtherNet IP/Profinet and others.

Reliably excellent performance

- Four-core A55 processor, communication, logic and algorithm are completely independent.
- 8\*200K high-speed input, 8\*200K pulse output (single pulse, pulse + direction, AB phase, FWD+REV, etc.)

Precise Multi-axis control

- 1ms/16-axis sync, support 16/32/64-axis EtherCAT control

Flexible & convenient operation

- 12mm machine body, saving space
- PUSH In terminal, easily wiring and replacing without tools

Ultra-large capacity

- Support 10M program capacity, 20M data capacity, 512KB retention, for complex logic and data processing



**MEGMEET**

[illegible]

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E-gear and other control function, to achieve high-speed operation and efficient communication, flexible configuration and



Product Features

- High-speed operation and efficient communication
- Flexible configuration and control function

Technical Specifications

- significantly improved based on ARM+FPGA
- Support 8-channel 200K high-speed pulse output and single-phase pulse count, or 4-channel 100K AB-phase, CW/CCW, pulse+direction
- 



MU200 new generation of small PLC uses ARM+FPGA dual-core processor for the powerful processing function,



Product Features

- High-speed operation and efficient communication
- Flexible configuration and control function

Technical Specifications

- significantly improved based on ARM+FPGA
- Support up to 12-channel 200K high-speed pulse output
- 

Product Features

- High-speed operation and efficient communication
- Flexible configuration and control function

Technical Specifications

- Convenient hardware configuration
- 
- 
- 
-





※MC280-specific function





General Specifications

- Program capacity: 12K
- Input voltage: 100-240VAC

Protection Functions

- Overvoltage protection (OVP)
- Input filter protection and power loss protection
- Overcurrent protection (OCP)

Output Specifications

- Output voltage: 0-30V

Input Specifications

- Input current: 10A
- Input power: 2400W
- Input frequency: 50/60Hz

Output Specifications

- Output current: 10A
- Output power: 2400W
- Output voltage regulation:  $\pm 0.1\%$



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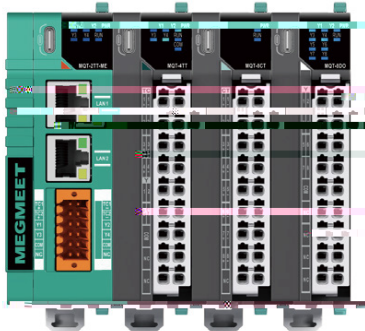
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modules flexibly and integrating internal intelligent PID algorithm; it has the advantages of cascade, high precision,



- High precision:
- High performance:
- Strong function:
- Simple installation:
- Complete module:



| Item                | Description                                                                                              |                                                                                            |
|---------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Power supply        | 24VDC -15% ~ 20%                                                                                         |                                                                                            |
| Signal input        | Input type                                                                                               | Thermocouple K J E N T R B For all channel                                                 |
|                     |                                                                                                          | Thermal resistance Pt100 JPt100 Cu100 Ni120 For all channel                                |
|                     | Precision                                                                                                | Thermocouple 0.15% Full scale + cold compensation                                          |
|                     |                                                                                                          | Thermal resistance 0.3% Full scale                                                         |
|                     | Sampling cycle                                                                                           | 25ms/channel 100ms/8 channels 100ms/4 channels                                             |
| Control output      | Output form                                                                                              | Transistor output (SSR drive output), relay output, current output, voltage output         |
|                     | Control action                                                                                           | Manual, ON / OFF, single PID, heating & cooling PID, position proportional PID             |
| Alarm output        | Alarm form                                                                                               | 14 alarms, such as upper and lower limit alarm, deviation alarm and so on.                 |
|                     | Output form                                                                                              | Transistor and relay output (output state can be directly controlled by writing registers) |
|                     | Output channel                                                                                           | 8 channels                                                                                 |
| Digital input       | Input form                                                                                               | Transistor input                                                                           |
|                     | Input channel                                                                                            | 4 channels                                                                                 |
| Control cycle       | 0.1s - 10s or 1s - 100s                                                                                  |                                                                                            |
| Acquisition channel | 4 channels and 8 channels                                                                                |                                                                                            |
| Isolation           | Exist between power and communication, power and channel, communication and channel, channel and channel |                                                                                            |
| Communication port  | RS485/Modbus-TCP/EtherNet/EtherCAT/Profinet                                                              |                                                                                            |
| Generals            | Ambient temperature                                                                                      | Working: -20 ~ 60 °C, storage: -40 ~ 70 °C                                                 |
|                     | Ambient humidity                                                                                         | Working: 10 ~ 90 % RH (no condensation), keeping: 5 ~ 95 % RH (no condensation)            |
|                     | Altitude                                                                                                 | Below 2000m                                                                                |
|                     | Protection level                                                                                         | IP20                                                                                       |
| C & S               | Conform to IEC/EN 61326-1 For use in industrial locations CE                                             |                                                                                            |

| Model                      | Acquisition channel | Temperature control output                        | Alarm output     | Input type          |
|----------------------------|---------------------|---------------------------------------------------|------------------|---------------------|
| Communication module       |                     |                                                   |                  |                     |
| MQT-2TT-ME                 | 2-CH                | Modbus TCP/IP/Ethernet                            | Transistor(4-CH) | TC                  |
| MQT-2RT-ME                 | 2-CH                | Modbus TCP/IP/Ethernet                            | Transistor(4-CH) | RTD                 |
| MQT-2TT-ET                 | 2-CH                | EtherCAT                                          | Transistor(4-CH) | TC                  |
| MQT-2RT-ET                 | 2-CH                | EtherCAT                                          | Transistor(4-CH) | RTD                 |
| MQT-2TT-RS                 | 2-CH                | Modbus RS485                                      | Transistor(4-CH) | TC                  |
| MQT-2RT-RS                 | 2-CH                | Modbus RS485                                      | Transistor(4-CH) | RTD                 |
| MQT-2TT-PN                 | 2-CH                | Profinet                                          | Transistor(4-CH) | TC                  |
| MQT-2RT-PN                 | 2-CH                | Profinet                                          | Transistor(4-CH) | RTD                 |
| Temperature control module |                     |                                                   |                  |                     |
| MQT-4TT                    | 4-CH                | Modbus RS485                                      | Transistor(4-CH) | TC                  |
| MQT-4TA                    | 4-CH                | Modbus RS485                                      | Analog(4-CH)     | TC                  |
| MQT-4TR                    | 4-CH                | Modbus RS485                                      | Relay(4-CH)      | TC                  |
| MQT-4RT                    | 4-CH                | Modbus RS485                                      | Transistor(4-CH) | RTD                 |
| MQT-4RA                    | 4-CH                | Modbus RS485                                      | Analog(4-CH)     | RTD                 |
| MQT-4RR                    | 4-CH                | Modbus RS485                                      | Relay(4-CH)      | RTD                 |
| Expansion module           |                     |                                                   |                  |                     |
| MQT-8DI                    | 8-CH                | 8-channel digital input                           | -                | Digital (8-CH)      |
| MQT-8DO                    | 8-CH                | 8-channel digital output                          | Digital (8-CH)   | -                   |
| MQT-8CT                    | 8-CH                | 8-channel current detection                       | -                | Transformer current |
| MQT-8DM                    | 8-CH                | 4-channel digital input, 4-channel digital output | Digital (4-CH)   | Digital (4-CH)      |
| MQT-8AI                    | 8-CH                | 8-channel analog current input                    | -                | Analog (8-CH)       |
| MQT-8AV                    | 8-CH                | 8-channel analog voltage input                    | -                | Analog (8-CH)       |
| MQT-8AO                    | 8-CH                | 8-channel analog output                           | Analog (8-CH)    | -                   |

MTC/MTCW/MTCV series products are multi-channel and high-precision temperature controllers, which are suitable for various occasions of temperature control. Its main feature is compatible with TC and RTD, high measure accuracy; high integration (one module supports up to 12 channels of temperature control and 16 channels of measurement), space saving, easy data exchange, remote monitoring, and high cost performance.

Dedicated software:

Provide special software - MtcCompanion

Dual-PID function:

Heating&cooling dual-PID control function, 14 alarms like upper and lower limits, deviation, etc

High precision

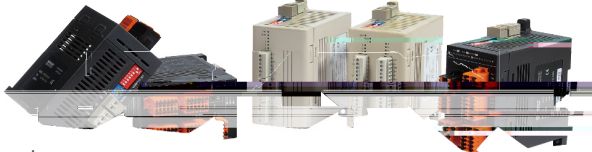
Intelligent self-tuning and multi-stage temperature setting functions to achieve high-precision temperature control

Multi-way control

Integrated multi-channel temperature control to centralize data management

Easy exchange

Data exchange easily between thermostat and PLC, thermostat and HMI, thermostat and computer through Ethernet and serial port



| Item                | Description                                                                                                                                                                                          |                                                                                            |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Power supply        | 24VDC -15% ~ 20%                                                                                                                                                                                     |                                                                                            |
| Signal input        | Input type                                                                                                                                                                                           | Thermocouple K J E N T R B For all channel                                                 |
|                     |                                                                                                                                                                                                      | Thermal resistance Pt100 JPt100 Cu100 Ni120 For all channel                                |
|                     | Precision                                                                                                                                                                                            | Thermocouple 0.2% Full scale + cold compensation Thermal resistance 0.3% Full scale)       |
|                     | Sampling cycle                                                                                                                                                                                       | 25ms/channel 100ms/8 channels 100ms/4 channels                                             |
|                     | Output form                                                                                                                                                                                          | Transistor output (SSR drive output), relay output, current output, voltage output         |
| Control output      | Control action                                                                                                                                                                                       | Manual, ON / OFF, single PID, heating & cooling PID, position proportional PID             |
|                     | Alarm form                                                                                                                                                                                           | 14 alarms, such as upper and lower limit alarm, deviation alarm and so on.                 |
| Alarm output        | Output form                                                                                                                                                                                          | Transistor and relay output (output state can be directly controlled by writing registers) |
|                     | Output channel                                                                                                                                                                                       | 8 channels                                                                                 |
| IO input            | Input form                                                                                                                                                                                           | Transistor input                                                                           |
|                     | Input channel                                                                                                                                                                                        | 4 channels                                                                                 |
| Control cycle       | 0.1s - 10s or 1s - 100s                                                                                                                                                                              |                                                                                            |
| Acquisition channel | 4 channels and 8 channels                                                                                                                                                                            |                                                                                            |
| Isolation           | Exist between power and communication, power and channel, communication and channel, (MTCV)channel and channel                                                                                       |                                                                                            |
| Communication port  | MTC/MTCV: One isolated RS485 serial port; support MODBUS slave and MCBUS slave protocol<br>MTCW: One isolated + one non-isolated RS485 serial port, one Ethernet port; support MODBUS slave protocol |                                                                                            |
| Generals            | Ambient temperature                                                                                                                                                                                  | Working: -20 ~ 60 °C, storage: -40 ~ 70 °C                                                 |
|                     | Ambient humidity                                                                                                                                                                                     | Working: 10 ~ 90 % RH (no condensation), keeping: 5 ~ 95 % RH (no condensation)            |
|                     | Altitude                                                                                                                                                                                             | Below 2000m                                                                                |
|                     | Protection level                                                                                                                                                                                     | IP20                                                                                       |
| C & S               | Conform to IEC/EN 61326-1 For use in industrial locations UL61010-1 CE UL                                                                                                                            |                                                                                            |

MTC series

| Model      | Acquisition channel | Tee u q = l'                                                                                 | о. v ~ ~ n о u             | n ř     |
|------------|---------------------|----------------------------------------------------------------------------------------------|----------------------------|---------|
| MTC-04-NT  | 4-CH                | Transistor (4-CH)                                                                            | Flag bit                   | TC, RTD |
| MTC-08-NT  | 8-CH                | Transistor (8-CH)                                                                            | Flag bit                   | TC, RTD |
| MTC-04-NTT | 4-CH                | Transistor (4-CH)                                                                            | Transistor(8-CH), flag bit | TC, RTD |
| MTC-04-NTR | 4-CH                | Transistor (4-CH) Relay (8-CH)                                                               | Relay(8-CH), flag bit      | TC, RTD |
| MTC-04-NVT | 4-CH                | Transistor (4-CH)<br>Current(8-CH 0-20mA or 4-20mA)<br>Voltage(8-CH 0-1V 0-5V 0-10V or 1-5V) | Transistor (4-CH)          | TC, RTD |

MTCW series (Ethernet 2\*RS485)

|             |       |                                         |                             |                                       |
|-------------|-------|-----------------------------------------|-----------------------------|---------------------------------------|
| MTCW-04-NTT | 4-CH  | Transistor (4-CH)                       | Transistor (4-CH), flag bit | TC, RTD                               |
| MTCW-04-NI  | 4-CH  | Current (4-CH 0-20mA or 4-20mA)         | Flag bit                    | TC, RTD                               |
| MTCW-04-NV  | 4-CH  | Voltage (4-CH 0-1V 0-5V 0-10V or 1-5V)  | Flag bit                    | TC, RTD                               |
| MTCW-08-NN  | 8-CH  | -                                       | Flag bit                    | TC, RTD                               |
| MTCW-08-NI  | 8-CH  | Current (8-CH 0-20mA or 4-20mA)         | Flag bit                    | TC, RTD                               |
| MTCW-08-NV  | 8-CH  | Voltage(8-CH 0-1V 0-5V 0-10V or 1-5V)   | Flag bit                    | TC, RTD                               |
| MTCW-08-NTT | 8-CH  | Transistor (8-CH)                       | Transistor (8-CH), flag bit | TC, RTD                               |
| MTCW-12-NT  | 12-CH | Transistor (12-CH)                      | Flag bit                    | TC, RTD                               |
| MTCW-16-NN  | 16-CH | -                                       | Flag bit                    | TC, RTD                               |
| MTCW-08-CT  | 8-CH  | Transistor (8-CH)                       | Flag bit                    | Current transformer (8-CH)<br>TC, RTD |
| MTCW-08-NTD | 8-CH  | Transistor (8-CH heating, 8-CH cooling) | -                           | TC, RTD                               |

MTCV series (Channel isolation RS485

|            |       |                    |          |         |
|------------|-------|--------------------|----------|---------|
| MTCV-16-NT | 16-CH | Transistor (16-CH) | Flag bit | TC, RTD |
| MTCV-08-NT | 8-CH  | Transistor (8-CH)  | Flag bit | TC, RTD |



MTCE series product, as a multi-channel high-precision EtherCAT temperature controller, are adapted to various mainstream master stations. Its main feature is compatible with thermocouples and thermal resistors, high measurement accuracy, feature-rich, user-friendly. It has the characteristics of high integration, space saving, easy data exchange, remote monitoring, and high cost performance.

Networking capacity

EtherCAT

High precision

Measure accuracy: full scale of  $\pm 0.15\%$  ; control accuracy:  $\pm 0.2^{\circ}\text{C}$

High performance

0.1s sampling cycle, and 1ms synchronization cycle; a single module can operate PID control and simple logic operation, and monitor analog value

| Item                | Description                                                                                              |                                                                                 |
|---------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Power supply        | 24VDC -15% ~ 20%                                                                                         |                                                                                 |
| Signal input        | Input type                                                                                               | Thermocouple K J E N T R B For all channel                                      |
|                     |                                                                                                          | Thermal resistance Pt100 JPt100 Cu100 Ni120 For all channel                     |
|                     | Precision                                                                                                | Thermocouple 0.15% Full scale + cold compensation                               |
|                     |                                                                                                          | Thermal resistance 0.3% Full scale                                              |
|                     | Sampling cycle                                                                                           | 25ms/channel 100ms/8 channels 100ms/4 channels                                  |
| Control output      | Output form                                                                                              | Transistor output (SSR drive output)                                            |
|                     | Output channel                                                                                           | 10 channels                                                                     |
|                     | Control action                                                                                           | Manual, ON / OFF, single PID, heating & cooling PID, position proportional PID  |
| Alarm output        | Alarm form                                                                                               | 14 alarms, such as upper and lower limit alarm, deviation alarm and so on.      |
|                     | Output form                                                                                              | Transistor output (SSR drive output)                                            |
|                     | Output channel                                                                                           | 10 channels                                                                     |
| Control cycle       | 0.1s - 10s or 1s - 100s                                                                                  |                                                                                 |
| Acquisition channel | 10 channels                                                                                              |                                                                                 |
| Isolation           | Exist between power and communication, power and channel, communication and channel, channel and channel |                                                                                 |
| Communication port  | EtherCAT                                                                                                 |                                                                                 |
| Generals            | Ambient temperature                                                                                      | Working: -20 ~ 60 °C, storage: -40 ~ 70 °C                                      |
|                     | Ambient humidity                                                                                         | Working: 10 ~ 90 % RH (no condensation), keeping: 5 ~ 95 % RH (no condensation) |
|                     | Altitude                                                                                                 | Below 2000m                                                                     |
|                     | Protection level                                                                                         | IP20                                                                            |
| C & S               | Conform to IEC/EN 61326-1 For use in industrial locations CE                                             |                                                                                 |

| Model       | Acquisition channel | Temperature control output | Alarm output | Input type |
|-------------|---------------------|----------------------------|--------------|------------|
| MTCE-10T-NT | 10-CH               | Transistor                 | Flag bit     | TC         |
| MTCE-10R-NT | 10-CH               | Transistor                 | Flag bit     | RTD        |

MCAS series temperature controller takes the lead in realizing the self-tuning PID and calibration parameters of cascade control in the industry based on the advanced self-tuning and self-learning control algorithm, which greatly simplifies the debugging of complex cascade control.

Cascade control

A single module supports 4-channel cascade temperature control

High performance

0.1s sampling cycle

High precision

Measure accuracy: full scale of  $\pm 0.15\%$  ; cascade control accuracy:  $\pm 0.5$

| Item                | Description                                                                                              |                                                                                 |
|---------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Power supply        | 24VDC -15% ~ 20%                                                                                         |                                                                                 |
| Signal input        | Input type                                                                                               | Thermocouple K J E N T R B For all channel                                      |
|                     |                                                                                                          | Thermal resistance Pt100 JPt100 Cu100 Ni120 For all channel                     |
|                     | Precision                                                                                                | TC 0.15% Full scale + cold compensation RTD 0.3% Full scale                     |
|                     | Sampling cycle                                                                                           | 25ms/channel 100ms/8 channels 100ms/4 channels                                  |
| Control output      | Output form                                                                                              | Transistor output (SSR drive output)                                            |
|                     | Output channel                                                                                           | 4/8 channels                                                                    |
|                     | Control action                                                                                           | Manual, ON / OFF, single PID, heating & cooling PID, position proportional PID  |
| Alarm output        | Alarm form                                                                                               | 14 alarms, such as upper and lower limit alarm, deviation alarm and so on.      |
|                     | Output form                                                                                              | Transistor output (SSR drive output)                                            |
|                     | Output channel                                                                                           | 4/8 channels (Transistor)                                                       |
| Control cycle       | 0.1s - 10s or 1s - 100s                                                                                  |                                                                                 |
| Acquisition channel | 6/8 channels                                                                                             |                                                                                 |
| Isolation           | Exist between power and communication, power and channel, communication and channel, channel and channel |                                                                                 |
| Communication port  | One isolated + one non-isolated RS485 serial port, one Ethernet port; support MODBUS slave protocol      |                                                                                 |
| Generals            | Ambient temperature                                                                                      | Working: -20 ~ 60 °C, storage: -40 ~ 70 °C                                      |
|                     | Ambient humidity                                                                                         | Working: 10 ~ 90 % RH (no condensation), keeping: 5 ~ 95 % RH (no condensation) |
|                     | Altitude                                                                                                 | Below 2000m                                                                     |
|                     | Protection level                                                                                         | IP20                                                                            |
| C & S               | Conform to IEC/EN 61326-1 For use in industrial locations UL61010-1 CE UL                                |                                                                                 |

| Model       | Acquisition channel | Temperature control output             | Alarm output                | Input type |
|-------------|---------------------|----------------------------------------|-----------------------------|------------|
| MCAS-06-NI  | 6-CH                | Current (6-CH 0-20mA or 4-20mA)        | Flag bit                    | TC, RTD    |
| MCAS-06-NV  | 6-CH                | Voltage (6-CH 0-1V 0-5V 0-10V or 1-5V) | Flag bit                    | TC, RTD    |
| MCAS-08-NI  | 8-CH                | Current (6-CH 0-20mA or 4-20mA)        | Flag bit                    | TC, RTD    |
| MCAS-08-NV  | 8-CH                | Voltage (8-CH 0-1V 0-5V 0-10V or 1-5V) | Flag bit                    | TC, RTD    |
| MCAS-08-NTT | 8-CH                | Transistor (8-CH)                      | Transistor (8-CH), flag bit | TC, RTD    |



