

# Modbus Gateways



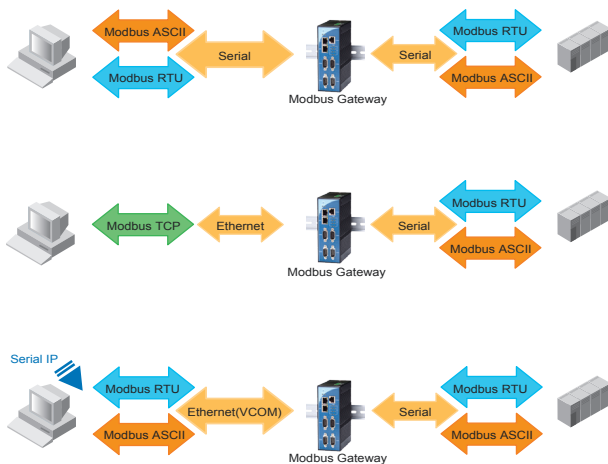
■ ■ **8/16-port Modbus Gateway**  
**MB5408A / MB5408A2-N / MB5416A / MB5416A2-N**



■ ■ **4-port Modbus Gateway**  
**MB5404D-X / MB5404D-Sis-X**

Modbus is an industry adopted communication protocol based on RTU, ASCII, and TCP protocols for various applications; these three protocols are commonly used by various equipments in the industry, such as DCS, PLC, HMI, power meters, various sensor and measuring instruments.

The Modbus Gateway is capable of implementing the Modbus protocol conversion between different hardware interfaces, thereby streamlining the process of management and application.



## Diverse Hardware Infrastructure

Modbus Gateway supports the four most commonly used communication standards, RS-232/485/422, and Ethernet. The ease-of-use configuration utility provided with Modbus Gateway can quickly select the hardware interface, and easily switch to the existing communication infrastructure.

## Switching between Modbus Protocols

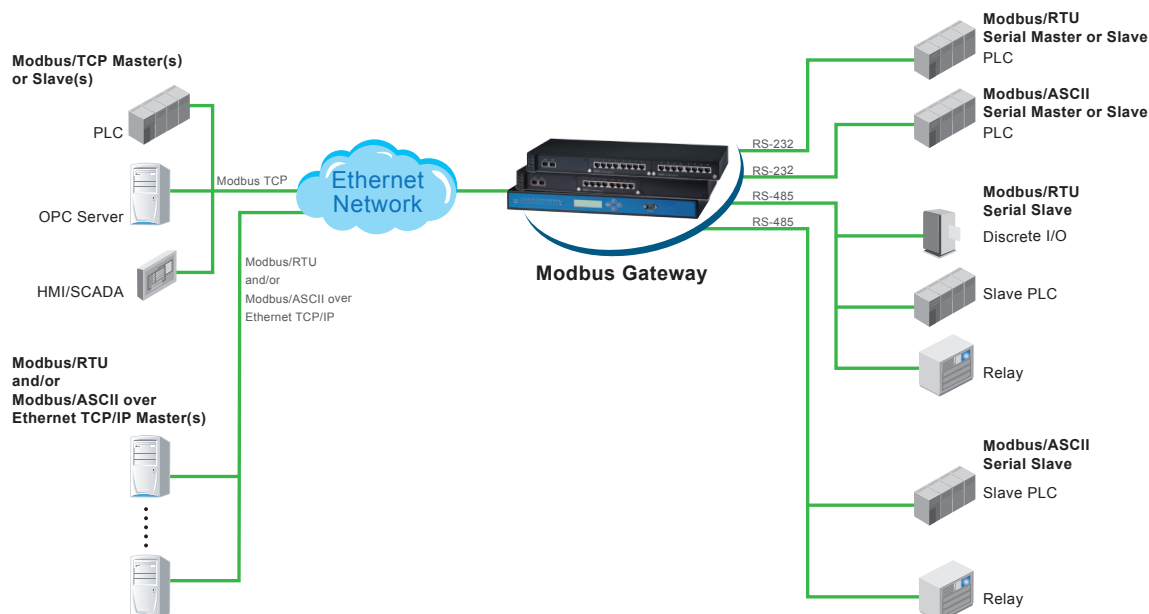
Modbus Gateway supports the standard Modbus protocol and is capable of converting any Modbus protocols between Modbus TCP, Modbus RTU, and Modbus ASCII for all supported hardware interfaces.

## Modbus ID Routing




Modbus Gateway is not only capable of hardware and protocol conversions, and when a Modbus ID conflict occurs, the Modbus Gateway also supports ID routing to the existing Modbus hardware.

## Simple Integration for Complex Configurations

Modbus Gateway supports various types of hardware communication interfaces, Modbus protocol conversion, and Modbus ID routing. Therefore the Modbus Gateway can integrate your existing and complex Modbus hardware configuration into a simple network that can be easily managed.



**Note:**  
 A total of up to 254 slave devices can be supported.

| Specifications             |  |  |   |
|----------------------------|--|--|---|
| Model Name                 | MB5404D-X / MB5404D-Sis-X  | MB5408A / MB5408A2-N   | MB5416A / MB5416A2-N  |
|                            |   |  |  |
| Ethernet (RJ-45 Connector) | Dual 10/100M Fast-Ethernet Auto-detection  |  |   |
| Network Protocol           | Modbus TCP/ASCII/RTU, IPv4, ARP, ICMP, TCP, DHCP Client, SNMP, HTTP, Telnet, RFC2217, NTP, DNS, SMTP, Syslog             |  |   |
| Watch Dog Timer            | Hardware watch dog, auto-reset   |  |   |
| Real-Time Clock            | External   |  |   |
| Serial Port                | 4-Port<br>9-Pin D-Sub connectors(MB5404D-X)<br>5-Pin lockable Terminal Blocks(MB5404D-Sis-X)                             | 8-Port<br>RJ-45 connectors   | 16-Port<br>RJ-45 connectors   |
| Serial Interface           | RS-232/422/485, software selectable. For the different modes supported in each model, refer to the ordering information. |  |   |
| Date Rate                  | 300 ~ 921,600bps (MB5404D-X),<br>300~230,400bps (MB5404D-X-Sis)  | 300 ~ 921,600bps   |   |
| Data Bits                  | 5, 6, 7, 8   |  |   |
| Parity Check               | None, Even, Odd, Space, Mark   |  |   |
| Stop Bits                  | 1, 2   |  |   |
| Flow Control               | None, XON/XOFF, RTS/CTS  |  |   |
| Power Input                | DC 9 - 48V, 7-pin TB   | AC 100 ~ 240V (AC Models) / 24 - 48 VDC (DC Models)                                |   |
| Operation Temperature      | -40°C ~ 80°C   | -20°C ~ 70°C   |   |
| Storage Temperature        | -40°C ~ 85°C   |  |   |
| Humidity                   | 5%~95% non-condensing  |  |   |
| Mounting                   | DIN-Rail   | Rack mount (1U)  |   |
| Dimension (W x H x D) mm   | 53.4 x 145.7 x 119.9   | 436 x 43.5 x 200   |   |
| Configuration              | Web Browser, Windows-based Utility   |  |   |
| Weight                     | 900g   | 3,000g   | 3,200g  |
| MTBF                       | 188251 hours / 21.5 years  | TBD  | TBD   |

| Optional Accessories |   |  |                            |                       |                       |
|----------------------|---|--|----------------------------|-----------------------|-----------------------|
| Category             | Model No.                                 | Specification  | MB5404D-X<br>MB5404D-Sis-X | MB5408A<br>MB5408A2-N | MB5416A<br>MB5416A2-N |
| Power adapter        | US315-12(US-Y)<br>P/N:50500151120009G     | Y-Type (5.08 mm) power adaptor, 100-240VAC input,<br>1.25A @ 12VDC output, US plug                     | ✓                          |                       |                       |
|                      | USE315-12(EU-Y)<br>P/N:50500151120019G    | Y-Type (5.08 mm) power adaptor, 100-240VAC input,<br>1.25A @ 12VDC output, EU plug                     | ✓                          |                       |                       |
|                      | UV315-12(US-LDC)<br>P/N:50500151120108G   | Lockable DC jack (5.5/1.35/9.5 mm) power adaptor, 100-240VAC input,<br>1.25 A @ 12 VDC output, US plug | ✓                          |                       |                       |
|                      | UVE315-12(EU-LDC)<br>P/N:50500151120118G  | Lockable DC jack (5.5/1.35/9.5 mm) power adaptor, 100-240VAC input,<br>1.25 A @ 12 VDC output, EU plug | ✓                          |                       |                       |
| Terminal Block       | 2ESDPM-07P<br>P/N:50707871G               | 7-pin 5.08mm Screw Terminal Block with 180° Angle  | ✓                          |                       |                       |
|                      | 2ESDVM-07P<br>P/N:50707741G               | 7-pin 5.08mm Screw Terminal Block with 90° Angle   | ✓                          |                       |                       |
| Mounting Kit         | WMK-B-459<br>P/N:202EH731000003G          | Black metal Wall Mount Kit   | ✓                          |                       |                       |
|                      | CDK-S-459<br>P/N:201EH731000005G          | Conductive silver metal DIN-Rail Kit   | ✓                          |                       |                       |
|                      | RMK-B-718<br>P/N:202SE641600005G          | Rack Mount Kit   |                            | ✓                     | ✓                     |
| Serial Cable         | CBL-RJ45(8P)-DB9(M)-90<br>P/N:50891781G   | 8-pin RJ45-DB9 Male Cable, 90cm  |                            | ✓                     | ✓                     |
|                      | CBL-RJ45(8P)-DB9(F)-90-C<br>P/N:50891971G | 8-pin RJ45-DB9 Female Cross Over Cable, 90cm   | ✓<br>(Console)             | ✓                     | ✓                     |
| Grounding Cable      | GDC-120<br>P/N:59906861G                  | 120mm copper woven grounding cable   | ✓                          |                       |                       |
| DB9 to TB5 Converter | ADP-DB9(F)-TB5<br>P/N:59906231G           | Female DB9 to Female 3.81mm TB5 Converter  | ✓<br>(MB5404D-X)           | ✓                     | ✓                     |

**Ordering Information**

|               | Model Name           | P/N             | Description   |
|---------------|----------------------|-----------------|---|
| Isolation     | <b>MB5416A</b>       | 1P1MB5416A0001G | 16-Port Industrial Modbus Gateway, RJ-45, 2.5kV Isolation, AC 100~240V, Supporting RS232, US Plug   |
|               | <b>MB5416A-DC</b>    | 1P1MB5416A0002G | 16-Port Industrial Modbus Gateway, RJ-45, 2.5kV Isolation, DC 24-48V, Supporting RS232  |
|               | <b>MB5416A-S5</b>    | 1P1MB5416A0003G | 16-Port Industrial Modbus Gateway, RJ-45, 2.5kV Isolation, AC 100~240V, Supporting RS422/485, US Plug                                     |
|               | <b>MB5416A-S5-DC</b> | 1P1MB5416A0004G | 16-Port Industrial Modbus Gateway, RJ-45, 2.5kV Isolation, DC 24-48V, Supporting RS422/485  |
|               | <b>MB5416A-EU</b>    | 1P1MB5416A0011G | 16-Port Industrial Modbus Gateway, RJ-45, 2.5kV Isolation, AC 100~240V, Supporting RS232, EU Plug   |
|               | <b>MB5416A-S5-EU</b> | 1P1MB5416A0013G | 16-Port Industrial Modbus Gateway, RJ-45, 2.5kV Isolation, AC 100~240V, Supporting RS422/485, EU Plug                                     |
|               | <b>MB5408A</b>       | 1P1MB5408A0001G | 8-Port Industrial Modbus Gateway, RJ-45, 2.5kV Isolation, AC 100~240V, Supporting RS232, US Plug  |
|               | <b>MB5408A-DC</b>    | 1P1MB5408A0002G | 8-Port Industrial Modbus Gateway, RJ-45, 2.5kV Isolation, DC 24-48V, Supporting RS232   |
|               | <b>MB5408A-S5</b>    | 1P1MB5408A0003G | 8-Port Industrial Modbus Gateway, RJ-45, 2.5kV Isolation, AC 100~240V, Supporting RS422/485, US Plug                                      |
|               | <b>MB5408A-S5-DC</b> | 1P1MB5408A0004G | 8-Port Industrial Modbus Gateway, RJ-45, 2.5kV Isolation, DC 24-48V, Supporting RS422/485   |
|               | <b>MB5408A-EU</b>    | 1P1MB5408A0011G | 8-Port Industrial Modbus Gateway, RJ-45, 2.5kV Isolation, AC 100~240V, Supporting RS232, EU Plug  |
|               | <b>MB5408A-S5-EU</b> | 1P1MB5408A0013G | 8-Port Industrial Modbus Gateway, RJ-45, 2.5kV Isolation, AC 100~240V, Supporting RS422/485, EU Plug                                      |
|               | <b>MB5404D-Sis-X</b> | 1P1MB5404DX001G | 4-Port Industrial Modbus Gateway, Terminal Block (TB5) lockable connectors, 2kV Isolation, DC 9-48V, Supporting RS-422/485, DIN-Rail Type |
| Non-Isolation | <b>MB5416A2-N-DC</b> | 1P1MB5416A200CG | 16-Port Industrial Modbus Gateway, RJ-45, DC 24-48V, Supporting RS232/422/485 Software Selectable   |
|               | <b>MB5416A2-N-US</b> | 1P1MB5416A200BG | 16-Port Industrial Modbus Gateway, RJ-45, AC 100~240V, Supporting RS232/422/485 Software Selectable, US Plug                              |
|               | <b>MB5416A2-N-EU</b> | 1P1MB5416A201BG | 16-Port Industrial Modbus Gateway, RJ-45, AC 100~240V, Supporting RS232/422/485 Software Selectable, EU Plug                              |
|               | <b>MB5408A2-N-DC</b> | 1P1MB5408A2006G | 8-Port Industrial Modbus Gateway, RJ-45, DC 24-48V, Supporting RS232/422/485 Software Selectable  |
|               | <b>MB5408A2-N-US</b> | 1P1MB5408A2005G | 8-Port Industrial Modbus Gateway, RJ-45, AC 100~240V, Supporting RS232/422/485 Software Selectable, US Plug                               |
|               | <b>MB5408A2-N-EU</b> | 1P1MB5408A2015G | 8-Port Industrial Modbus Gateway, RJ-45, AC 100~240V, Supporting RS232/422/485 Software Selectable, EU Plug                               |
|               | <b>MB5404D-X</b>     | 1P1MB5404DX002G | 4-Port Industrial Modbus Gateway, D-Sub(M) (DB9) connectors, DC 9-48V, Supporting RS-232/422/485 Software Selectable, DIN-Rail Type       |

**Regulatory Approvals for MB5408A/MB5416A/MB5408A2-N/MB5416A2-N**

|                  |   |                   |                                    |              |                 |
|------------------|---|-------------------|------------------------------------|--------------|-----------------|
| <b>EMI</b>       | EN 55022: 2010, EN 55024: 2010, FCC Part 15B, Class A |                   |                                    |              |                 |
| <b>EMS</b>       |   |                   |                                    |              |                 |
| <b>Test</b>      | <b>Item</b>   |                   | <b>Value</b>                       | <b>Level</b> | <b>Criteria</b> |
| IEC 61000-4-2    | ESD   | Enclosure Contact | 8 kV                               | 4            | B               |
|                  |   | Enclosure Air     | 15 kV                              |              | B               |
| IEC 61000-4-3    | RS  | Enclosure Ports   | 10 V/m                             | 3            | A               |
| IEC 61000-4-4    | EFT   | Signal Ports      | 2 kV                               | 4            | B               |
|                  |   | DC Power Ports    | 2 kV                               | 3            | B               |
|                  |   | AC Power Ports    | 4 kV                               | 4            | B               |
| IEC 61000-4-5    | Surge   | Signal Ports      | 2 kV line-to-earth                 | 3            | B               |
|                  |   | Signal Ports      | 2 kV line-to-earth                 | 3            | B               |
|                  |   | DC Power Ports    | 1 kV line-to-earth, 1 kV line-line | 2            | A               |
|                  |   | AC Power Ports    | 4 kV line-to-earth, 2 kV line-line | 4            | A               |
| IEC 61000-4-6    | CS  | Signal Ports      | 10 V                               | 3            | A               |
|                  |   | DC Power Ports    |                                    |              |                 |
|                  |   | AC Power Ports    |                                    |              |                 |
| IEC 61000-4-8    | PFMF  | Enclosure Ports   | 10 A/m continuous                  | 3            | A               |
| IEC 61000-4-11   | Dip   | AC Power Ports    | Dips: >95% dip, 30% reduction      | -            | A               |
|                  |   |                   | Interruptions: >95%                | -            | B               |
| <b>Safety</b>    | EN60950-1   |                   |                                    |              |                 |
| <b>Shock</b>     | IEC 60068-2-27  |                   |                                    |              |                 |
| <b>Freefall</b>  | IEC 60068-2-32  |                   |                                    |              |                 |
| <b>Vibration</b> | IEC 60068-2-64  |                   |                                    |              |                 |
| <b>RoHS II</b>   | Yes   |                   |                                    |              |                 |

**Regulatory Approvals for MB5404D-X /MB5404D-Sis-X**

|                  |   |                   |                      |              |                 |
|------------------|---|-------------------|----------------------|--------------|-----------------|
| <b>EMI</b>       | EN55022:2006+A1:2007, EN55024:1998+A1:2001+A2:2003, FCC Part 15B, Class A |                   |                      |              |                 |
| <b>EMS</b>       |   |                   |                      |              |                 |
| <b>Test</b>      | <b>Item</b>   |                   | <b>Value</b>         | <b>Level</b> | <b>Criteria</b> |
| IEC 61000-4-2    | ESD   | Enclosure Contact | 6 kV                 | 3            | A               |
|                  |   | Enclosure Air     | 8 kV                 | 3            | A               |
| IEC 61000-4-3    | RS  | Enclosure Ports   | 10 V/m               | 3            | A               |
| IEC 61000-4-4    | EFT   | Signal Ports      | 1 kV                 | 3            | A               |
|                  |   | Power Ports       | 2 kV                 | 3            | A               |
| IEC 61000-4-5    | Surge   | Signal Ports      | 2 kV line-to-earth   | 3            | A               |
|                  |   | Power Ports       | 0.5 kV line-to-earth | 2            | A               |
| IEC 61000-4-6    | CS  | Signal Ports      | 10 V                 | 3            | A               |
|                  |   | Power Ports       | 10 V                 | 3            | A               |
| IEC 61000-4-8    | PFMF  | Enclosure Ports   | 1 A/m continuous     | 1            | A               |
| <b>Safety</b>    | EN60950-1   |                   |                      |              |                 |
| <b>Shock</b>     | IEC 60068-2-27  |                   |                      |              |                 |
| <b>Freefall</b>  | IEC 60068-2-32  |                   |                      |              |                 |
| <b>Vibration</b> | IEC 60068-2-64  |                   |                      |              |                 |
| <b>RoHS II</b>   | Yes   |                   |                      |              |                 |

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