



## FEATURE HIGHLIGHTS

- Industrial EMC protection, Opt. Serial port Isolation, -20°C~70°C operation
- 2 Fast-Ethernet ports, dual-subnet or RSTP redundancy
- 8/16 sw-selectable RS-232/485/422 (\*) RJ45 serial ports, up to 921 kbps
- 24~48 VDC Power Input or 100~240 VAC Power input (EU or US version)
- Bi-Directional Modbus TCP/RTU/ASCII conversion from Serial to Ethernet and viceversa, VirtualCOM support, advanced Modbus Options available
- Supports SNMPv1/v2c/v3, Embedded security with IPsec or OpenVPN
- Configuration via Web Browser / Serial Console / Telnet Console / Windows Utility / LCM Matrix
- Integrated RSTP redundancy

\*: RS-232/RS-485-RS-422 function is available on non-isolated versions. Isolated versions support RS-485 and RS-422 only

## PRODUCT DESCRIPTION

### Diverse Hardware Infrastructure

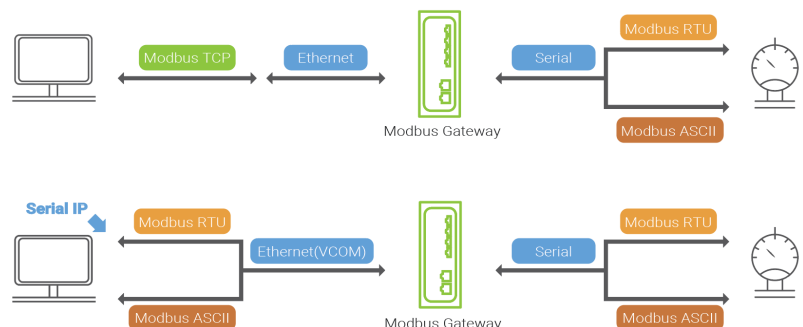
Modbus Gateway supports the four most commonly used communication standards, RS-232/485/422, and Ethernet. The ease-of-use configuration utility provided with Modbus Gateway can quickly select the hardware interface, and easily switch to the existing communication infrastructure. You could set it up via Web Browser, Serial Console, Telnet Console, Windows Utility or through the LCM display in front of the device. Industrial EMC protection makes MB5908/16 ready for every mission.

### Security and Redundancy

MB5908/MB5916 embeds OpenVPN and IPsec VPN, that allows you to tunnel your data securely through the internet and prevent unauthorized control of your Serial Devices by malicious people. The integrated Rapid Spanning Tree Protocol (RSTP), allows you to add a backup Ethernet link in the event the primary one fails.

### 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. All of this, in bi-directional mode: Ethernet and Serial ends can be selected to be either master or slave



### Modbus ID Routing

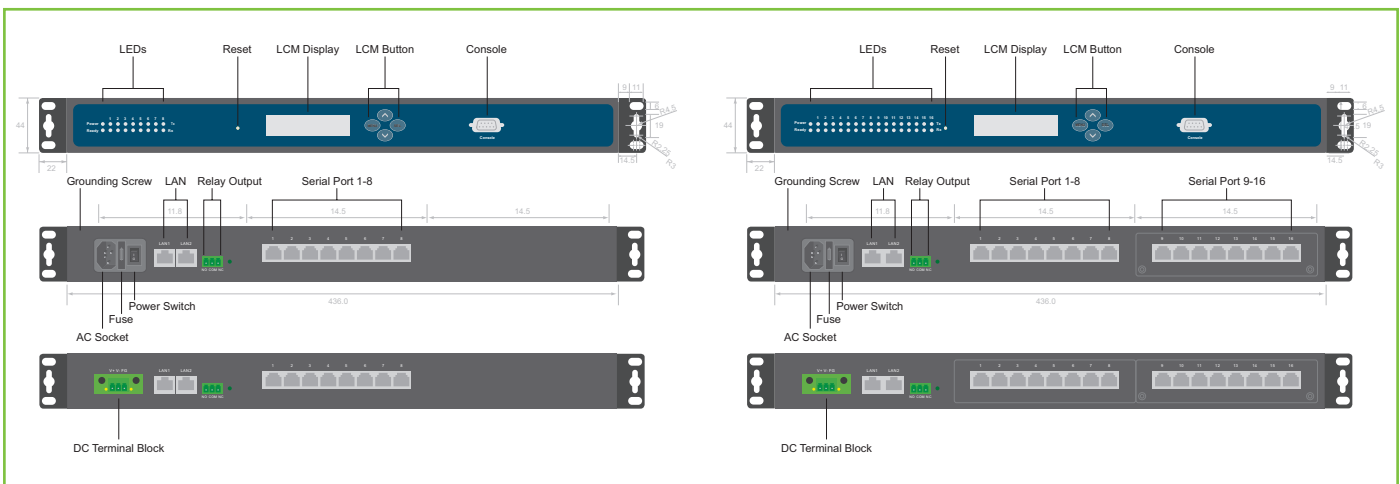
Modbus Gateway supports various types of hardware communication interfaces, Modbus protocol conversion, and Modbus ID routing. Therefore the Modbus Gateway can integrate your existing and complex Modbus hardware configuration into a simple network that can be easily managed.

## SPECIFICATIONS

| Technical Specifications   |   |
|--|---|
| Model Name   | MB5908 (8-port) / MB5916 (16-port)  |
| Network interface  |   |
| Speed  | IEEE 802.3 10BaseT<br>IEEE 802.3u 100BaseT(X)   |
| LAN Mode   | Dual Subnets or RSTP Network Redundancy   |
| Connector ports  | 2x 10/100BASE-T(X) RJ-45  |
| Serial Interface   |   |
| Connector  | RJ45 RS-232/422/485 software selectable (-N models) or<br>RJ45 Isolated RS-422/485 software selectable (-SiS models)  |
| Ports  | 8 (MB5908) or 16 (MB5916)   |
| Baud Rate  | 1,200 ~ 921,600 bps software selectable   |
| Data Bits  | 5, 6, 7, 8 software selectable  |
| Stop Bits  | 1, 2 software selectable  |
| Parity   | None, Odd, Even, Space, Mark  |
| Flow Control   | None, Xon/Xoff, RTS/CTS (RS-232 only)   |
| Isolation  | 2.5 kV (SiS versions only)  |
| Power  |   |
| Input Voltage<br>Input Current<br>Power Consumption                        | DC version: 24 - 48VDC; US-EU version: 100~240 VAC (EU or US Plug)<br>DC version: 0.54 A @24VDC; US-EU version: 0.21A@100VAC<br>Approximately 21 W (Max)  |
| Connector  | DC version: 5.08mm 3-pin Lockable Terminal Block<br>EU-US version: IEC 60320-1 C14 AC Power Inlet   |
| Power Redundancy   | No  |
| Reverse Polarity Protection  | Yes (DC version only)   |
| Relay Output   | Yes (1)   |
| Physical Characteristics   |   |
| Housing<br>Dimension (W x H x D)<br>Weight<br>Installation<br>Reset Button | IP30 SPCC housing<br>436 mm x 43.5 mm x 200 mm<br>3,000g (8-port version); 3,200 g (16-port version)<br>19" Rack-Mount (Kit included)<br>Yes  |
| Environmental Limits   |   |
| Operating Temperature<br>Storage Temperature<br>Ambient Relative Humidity  | -20°C~70°C (-4°F~158°F)<br>-40°C~85°C (-40°F~185°F)<br>5%~95% (Non-condensing)  |
| Software   |   |
| Protocols  | IPv4, ICMP, TCP, UDP, DHCP Client, SNMPv1,v2c,v3, HTTP, HTTPS, SMP/TLS,<br>Telnet, RFC2217, RSTP, Security through OpenVPN and IPsec (host-to-host or<br>host-to-side) with up to 37.9Mbps VPN throughput, and PPTP |
| Configuration  | Atop Management Utility, Web UI, Telnet, Serial Console, LCM Display  |

|                                  |   |
|----------------------------------|---|
| VirtualCOM                       | Windows/Linux redirection software  |
| <b>Modbus Features</b>           |   |
| Supported Modes                  | Ethernet: Modbus TCP Server/Client(or VCOM);<br>Serial: Modbus RTU/ASCII (master/slave) |
| Maximum number of clients/slaves | Modbus TCP: Maximum 16 clients;<br>Maximum 32 slave connections                         |

## DIMENSIONS & LAYOUT



## REGULATORY APPROVALS

| Regulatory Approvals |  |                      |                     |   |
|----------------------|--|----------------------|---------------------|---|
| Safety               | EN60950-1:2006/ IEC60950-1 LVD   |                      |                     |   |
| EMC                  | FCC Part 15, Subpart B, Class B<br>EN 55022, Class B, EN 61000-3-2, EN 61000-3-3, EN 55024 |                      |                     |   |
| Test                 | Item   | Value                | Level               |   |
| IEC 61000-4-2        | ESD  | Contact Discharge    | ±8kV                | 4 |
|                      |  | Air Discharge        | ±15kV               | 4 |
| IEC 61000-4-3        | RS   | Radiated (enclosure) | 10 V/m              | 3 |
| IEC 61000-4-4        | EFT  | AC Power Port        | ±4.0KV              | 4 |
|                      |  | DC Power Port        | ±4.0KV              | 4 |
|                      |  | Signal Port          | ±2.0KV              | 3 |
| IEC 61000-4-5        | Surge  | AC Power Port        | Line-to Line±2.0KV  | 4 |
|                      |  | AC Power Port        | Line-to Earth±4.0KV | 4 |
|                      |  | DC Power Port        | Line-to Line±1.0KV  | 3 |
|                      |  | DC Power Port        | Line-to Earth±2.0KV | 3 |
|                      |  | Signal Port          | Line-to Earth±2.0KV | 4 |
| IEC 61000-4-6        | CS   | AC Power Port        | 10 V rms            | 3 |
|                      |  | DC Power Port        | 10 V rms            | 3 |
|                      |  | Signal Port          | 10 V rms            | 3 |

|                                  |  |               |       |   |
|----------------------------------|--|---------------|-------|---|
| IEC 61000-4-8                    | PFMF   | Enclosure     | 1 A/m | 3 |
| IEC 61000-4-11                   | DIP  | AC Power Port | -     | - |
| Shock Drop (Freefall) /Vibration | IEC 60068-2-27<br>ISTA Test Procedure 2A /IEC 60068-2-64   |               |       |   |
| RoHS II                          | Yes  |               |       |   |
| MTBF (MIL-HDBK-217F)             | MB5908-SiS-DC: 19.00 years; MB5908-SiS-US/EU: 19.03 years<br>MB5916-SiS-DC: 13.38 years; MB5916-SiS-US/EU: 13.38 years |               |       |   |
| Warranty                         | 5 years  |               |       |   |

## ORDERING INFORMATION

### Ordering information

| Model name    | Part Number     | Description   | Ethernet | Serial   |
|---------------|-----------------|---|----------|----------|
| MB5908-DC     | 1P1MB590800001G | 8-Port Modbus Gateway, RJ45, RS232/422/485 DC         | 2 (RJ45) | 8 (RJ45) |
| MB5908-SiS-DC | 1P1MB590800002G | 8-Port Modbus Gateway, RJ45, Isolated RS422/485 DC    | 2 (RJ45) | 8 (RJ45) |
| MB5916-DC     | 1P1MB591600001G | 16-Port Modbus Gateway, RJ45, RS232/422/485 DC        | 2 (RJ45) | 16 RJ45  |
| MB5916-SiS-DC | 1P1MB591600002G | 16-Port Modbus Gateway, RJ45, Isolated RS422/485 DC   | 2 (RJ45) | 16 RJ45  |
| MB5908-EU     | 1P1MB590800013G | 8-Port Modbus Gateway, RJ45, RS232/422/485 EU Plug    | 2 (RJ45) | 8 (RJ45) |
| MB5908-US     | 1P1MB590800003G | 8-Port Modbus Gateway, RJ45, RS232/422/485 US Plug    | 2 (RJ45) | 8 (RJ45) |
| MB5916-EU     | 1P1MB591600013G | 16-Port Modbus Gateway, RJ45, RS232/422/485 EU Plug   | 2 (RJ45) | 16 RJ45  |
| MB5916-US     | 1P1MB591600003G | 16-Port Modbus Gateway, RJ45, RS232/422/485 US Plug   | 2 (RJ45) | 16 RJ45  |
| MB5908-SiS-EU | 1P1MB590800004G | 8-Port Modbus Gateway, RJ45, Isol. RS422/485 EU Plug  | 2 (RJ45) | 8 (RJ45) |
| MB5908-SiS-US | 1P1MB590800014G | 8-Port Modbus Gateway, RJ45, Isol. RS422/485 US Plug  | 2 (RJ45) | 8 (RJ45) |
| MB5916-SiS-EU | 1P1MB591600014G | 16-Port Modbus Gateway, RJ45, Isol. RS422/485 EU Plug | 2 (RJ45) | 16 RJ45  |
| MB5916-SiS-US | 1P1MB591600004G | 16-Port Modbus Gateway, RJ45, Isol. RS422/485 US Plug | 2 (RJ45) | 16 RJ45  |

### Optional Accessories

| Model name                | Part Number     | Description   |
|---------------------------|-----------------|---|
| SDR-75-24                 | 50500752240001G | 75W/3.2A DIN-Rail 24VDC power supply with 88~264VAC / 124~370VDC input  |
| AD17-24C (US-Y)           | 50500151240002G | Y-Type power adaptor, 100-240VAC input, 0.6A @ 24VDC output, US plug    |
| AD17-24D (EU-Y)           | 50500151240012G | Y-Type power adaptor, 100-240VAC input, 0.6A @ 24VDC output, EU plug    |
| GDC-120                   | 59906861G       | 120mm copper woven grounding cable                                      |
| CBL-RJ45(8P)-DB9(M)-90    | 50891781G       | RJ45 to DB9 Male Cable, 90cm  |
| CBL-RJ45(8P)-DB9(M)-200   | 50891951G       | RJ45 to DB9 Male Cable, 200cm   |
| CBL-RJ45(8P)-DB9(F)-90    | 50891791G       | RJ45 to DB9 Female Cable, 90cm  |
| CBL-RJ45(8P)-DB9(F)-90-C  | 50891971G       | RJ45 to DB9 Female Cross Over Cable, 90cm                               |
| CBL-RJ45(8P)-DB9(F)-200-C | 50891961G       | RJ45 to DB9 Female Cross Over Cable, 200cm                              |
| RMK-718-Black             | 70100000000040G | Rack Mount Mounting-Kit, Black  |
| Power Cable (US)          | 50801041G       | 6 feet Power Cable, US  |
| Power Cable (EU)          | 50801051G       | 6 feet Power Cable, EU  |
| Fuse                      | 50709441G       | SFP Transceiver, 1250Mbps, 1310nmDFB, Single-mode, 30km, 3.3V, -40~85°C |