

**MB5908A Series
MB5916A Series**

**8 or 16-Port IEC61850-3 Certified
Industrial Rack-Mount Secure Modbus Gateway**

FEATURE HIGHLIGHTS



- Remotely access Modbus RTU/ASCII devices, convert to Modbus TCP
- Supporting advanced Modbus Features. Configuration via Web Browser
- IEC61850-3 certified, can be easily set up into IEC61850-3 substations
- Industrial EMC protection, wide temperature operation, -40°C~85°C
- Redundant Power Input for fault protection, either 24~48 VDC or High-Voltage AC/DC (100~240VAC or 100~370VDC)
- 6 Fast-Ethernet interfaces, either RJ45 or SFP slot
- 8 or 16 RS-232/RS-485/RS-422 Serial ports, with or without isolation
- Supporting VirtualCOM and RSTP, security with IPsec or OpenVPN C/S
- Configuration via Web Browser/ Serial Console / Telnet/ Windows Utility

PRODUCT DESCRIPTION

Diverse Hardware Infrastructure

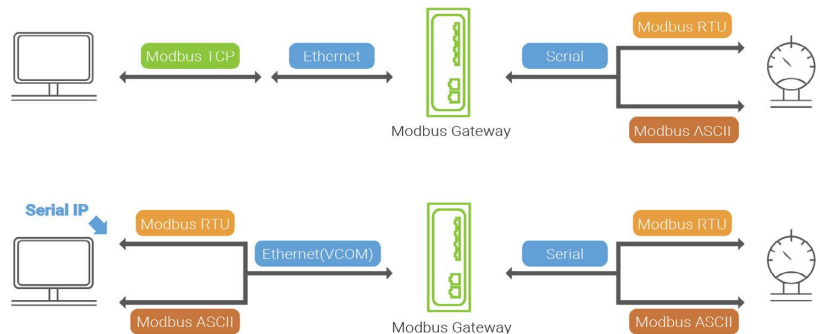
Modbus Gateway supports the four most commonly used communication standards, RS-232/485/422(*), and Ethernet. The ease-of-use configuration utility provided with Modbus Gateway can quickly select the hardware interface, and easily switch to the existing communication infrastructure. Industrial EMC protection, IEC61850-3 compliance, and wide temperature operation capability render MB5908A/16A ready for every mission.

Embedded Security and advanced features

Relax. MB5908A/16A Modbus Gateway supports OpenVPN and IPsec VPN encryption, allowing you to safely use the device over the internet without worrying about malicious attacks, data sniffing or unintentional remote control of your Modbus slaves. On your LAN, RSTP protocol will provide an additional layer of security in case of link losses.

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.

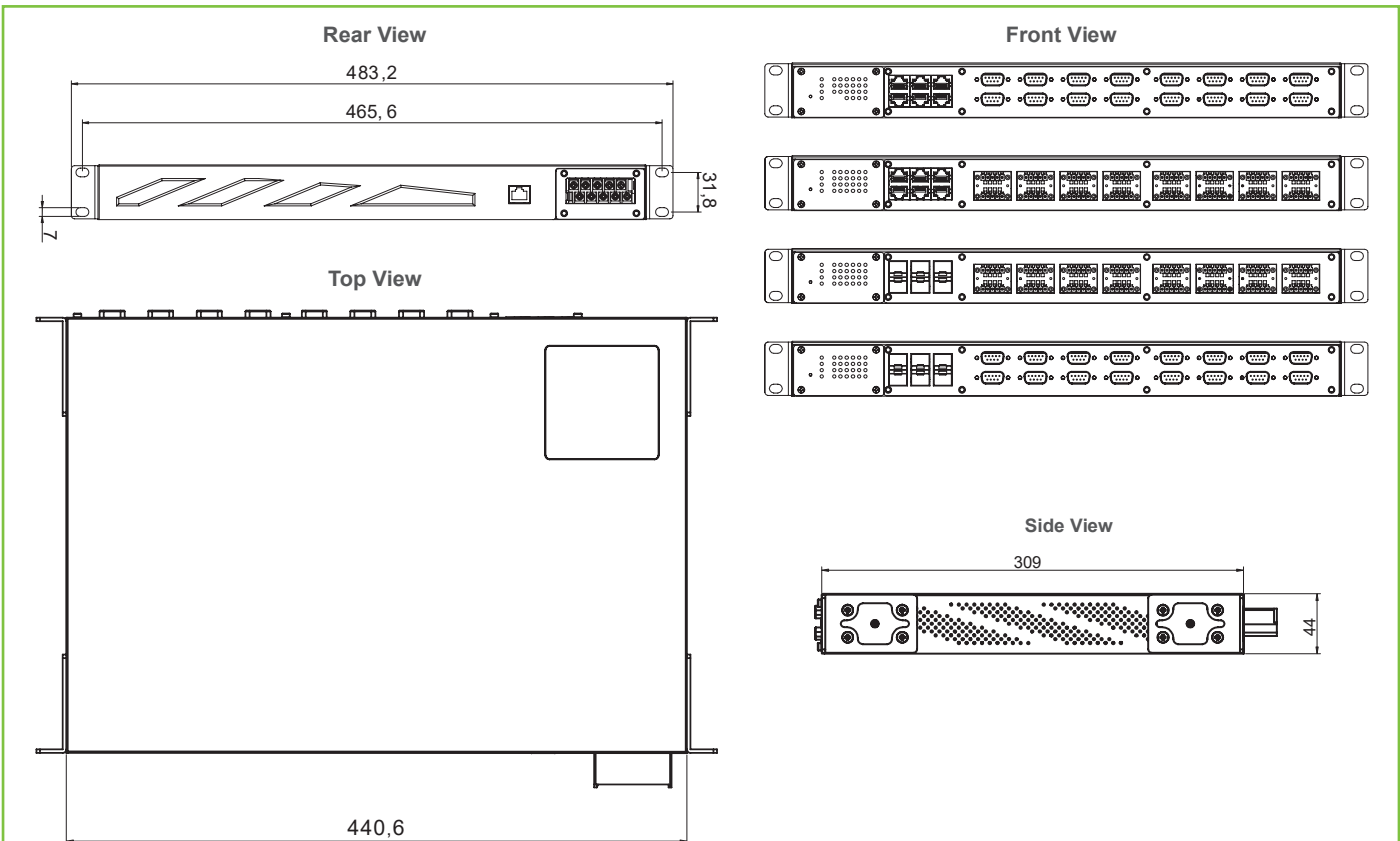
* 3kV isolated version only supports RS-422/485

SPECIFICATIONS

Technical Specifications	
Model Name	MB5908A (8 ports); MB5916A (16-ports)
Network interface	
Speed	IEEE 802.3 10BaseT IEEE 802.3u 100BaseT(X) - RJ45 version IEEE 802.3u 100Base-FX - SFP version
Connector ports	RJ45 x 6 (RJ45 version) SFP x 6 (SFP version)
Serial Interface	
Connector	D-Sub9 (DB models, supporting only 5-pin RS-232 mode) or 5.08mm 5-Pin Terminal block (TB Models)
Ports	8 (SE5908A) or 16 (SE5916A)
Mode	RS-232/422/485 Software selectable
Serial port isolation	3 kV isolation (SiS version only)
Baud Rate	1,200 ~ 921,600 bps software selectable
Parity	None, Odd, Even, Mark, Space
Data Bits	5, 6, 7, 8 software selectable
Stop Bits	1, 2 software selectable
Flow Control	None, Xon/Xoff, RTS/CTS (RS-232 only)
Power	
Input Voltage	Redundant 24-48 VDC or Redundant 100-240 VAC/ 100-370 VDC (HV Series)
Input Current	0.73 A @ 24 VDC 0.35 A @ 100 VAC 0.20 A @ 100 VDC
Power Consumption	Approximately 20 W
Power Redundancy	Yes
Connector	10-Pin Terminal Block
Reverse Polarity Protection	Yes
Physical Characteristics	
Housing Dimension (W x H x D) Weight Installation Reset Button	IP30 SPCC housing 440.6 x 44 x 309 mm (1U Rack-mount) 4 kg 19" Rack mount (Rack-mount kit included) Yes
Environmental Limits	
Operating Temperature Storage Temperature Ambient Relative Humidity	-40°C~85°C (-40°F~185°F) -40°C~85°C (-40°F~185°F) 5%~95%, 55°C (Non-condensing)

Software	
Protocols	IPv4, ICMP, TCP, UDP, DHCP Client, SNMPv1,v2c,v3, HTTP, HTTPS, Telnet, RFC2217, 802.1D-2004 RSTP, Security through OpenVPN Client/Server or IPsec VPN (peer-to-peer or peer-to-side) with up to 37.9Mbps VPN throughput, PPTP, and SMTP/TLS
Configuration	ATOP Management Utility, Web UI, Telnet, Console
VirtualCOM	Windows/Linux redirection software
Modbus Features	
Supported Modes	Ethernet: Modbus TCP Server/Client(or VCOM); Serial: Modbus RTU/ASCII (master/slave)
Maximum number of clients/slaves	Modbus TCP: Maximum 16 clients; Maximum 247 slaves

DIMENSIONS & LAYOUT



REGULATORY APPROVALS

Regulatory Approvals				
Safety	EN 61010-2-201			
EMC	FCC Part 15, Subpart B, Class B, EN 55032, Class B, EN 61000-6-2 Class B, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61000-6-4, IEC 61850-3 / IEEE 1613			
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	±4.0KV	4
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		
		Signal Port		
IEC 61000-4-8	PFMF	Enclosure	100 A/m	5
IEC 61000-4-10	Damped Oscillatory Magnetic Field	Enclosure	100 A/m	5
IEC 61000-4-11	DIP	AC Power Port	-	-
IEC 61000-4-12	Damped Oscillatory	AC Power Port	2.5 KV common, 1 KV differential	3
		Signal Port	2.5 KV common, 1 KV differential	3
Shock Drop (Freefall) Vibration	MIL-STD-810F Method 516.5 MIL-STD-810F Method 516.5 MIL-STD-810F Method 514.5 C1 & C2			
RoHS II	Yes			
MTBF	MB5916A-6SFP-Sis-HV: 9.18 years; MB5916A-6SFP-Sis: 8.63 years			
Warranty	5 years			

ORDERING INFORMATION

Ordering information					
Model name	Part Number	Description	Power	Ethernet	Serial
MB5916A-6SFP	1P1MB5916A0001G	Ind. 16 Port MB Gw, 100BASE-FX SFP slot, DB9	24~48 VDC	6 (SFP)	16 (DB9)
MB5916A-6SFP-TB	1P1MB5916A0002G	Ind. 16 Port MB Gw, 100BASE-FX SFP slot, TB5			16 (TB)
MB5916A-6SFP-Sis	1P1MB5916A0003G	Ind. 16 Port MB Gw, 100BASE-FX SFP slot, Isolated			16 (TB)
MB5908A-6SFP	1P1MB5908A0001G	Ind. 8 Port MB Gw, 100BASE-FX SFP slot, DB9			8 (DB9)
MB5908A-6SFP-TB	1P1MB5908A0002G	Ind. 8 Port MB Gw, 100BASE-FX SFP slot, TB5			8 (TB)
MB5908A-6SFP-Sis	1P1MB5908A0003G	Ind. 8 Port MB Gw, 100BASE-FX SFP slot, Isolated			8 (TB)
MB5916A-6SFP-HV	1P1MB5916A0004G	Ind. 16 Port MB Gw, 100BASE-FX SFP slot, DB9	100/240 VAC or 100/370 VDC		16 (DB9)
MB5916A-6SFP-TB-HV	1P1MB5916A0005G	Ind. 16 Port MB Gw, 100BASE-FX SFP slot, TB5			16 (TB)
MB5916A-6SFP-Sis-HV	1P1MB5916A0006G	Ind. 16 Port MB Gw, 100BASE-FX SFP slot, Isolated			16 (TB)
MB5908A-6SFP-HV	1P1MB5908A0004G	Ind. 8 Port MB Gw, 100BASE-FX SFP slot, DB9			8 (DB9)
MB5908A-6SFP-TB-HV	1P1MB5908A0005G	Ind. 8 Port MB Gw, 100BASE-FX SFP slot, TB5			8 (TB)
MB5908A-6SFP-Sis-HV	1P1MB5908A0006G	Ind. 8 Port MB Gw, 100BASE-FX SFP slot, Isolated			8 (TB)
MB5916A	1P1MB5916A0007G	Ind. 16 Port MB Gw, 10/100BASE-T(X) RJ45, DB9	24~48 VDC	6 (RJ45)	16 (DB9)
MB5916A-TB	1P1MB5916A0008G	Ind. 16 Port MB Gw, 10/100BASE-T(X) RJ45, TB5			16 (TB)
MB5916A-Sis	1P1MB5916A0009G	Ind. 16 Port MB Gw, 10/100BASE-T(X) RJ45, Isolated			16 (TB)
MB5908A	1P1MB5908A0007G	Ind. 8 Port MB Gw, 10/100BASE-T(X) RJ45, DB9			8 (DB9)
MB5908A-TB	1P1MB5908A0008G	Ind. 8 Port MB Gw, 10/100BASE-T(X) RJ45, TB5			8 (TB)
MB5908A-Sis	1P1MB5908A0009G	Ind. 8 Port MB Gw, 10/100BASE-T(X) RJ45, Isolated			8 (TB)
MB5916A-HV	1P1MB5916A000AG	Ind. 16 Port MB Gw, 10/100BASE-T(X) RJ45, DB9	100/240 VAC or 100/370 VDC		16 (DB9)
MB5916A-TB-HV	1P1MB5916A000BG	Ind. 16 Port MB Gw, 10/100BASE-T(X) RJ45, TB5			16 (TB)
MB5916A-Sis-HV	1P1MB5916A000CG	Ind. 16 Port MB Gw, 10/100BASE-T(X) RJ45, Isolated			16 (TB)
MB5908A-HV	1P1MB5908A000AG	Ind. 8 Port MB Gw, 10/100BASE-T(X) RJ45, DB9			8 (DB9)
MB5908A-TB-HV	1P1MB5908A000BG	Ind. 8 Port MB Gw, 10/100BASE-T(X) RJ45, TB5			8 (TB)
MB5908A-Sis-HV	1P1MB5908A000CG	Ind. 8 Port MB Gw, 10/100BASE-T(X) RJ45, Isolated			8 (TB)

Optional Accessories		
Model name	Part Number	Description
SDR-75-24	50500752240001G	75W/3.2A DIN-Rail 24VDC power supply 88~264VAC / 124-370VDC input
GDC-120	59906861G	120mm copper woven grounding cable
ADP-DB9(F)-TB5	59906231G	Female DB9 to Female 3.81mm TB5 Converter
LM38-A3S-TI-N	50708051G	SFP Transceiver, 155Mbps, 1310nmLED, Multi-mode, 2km, 3.3V, -40~85C
LS38-A3S-TI-N	50709431G	SFP Transceiver, 155Mbps, 1310nmFP, Single-mode, 30km, 3.3V, -40~85C

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