

## 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~80°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
- Automatic mapping of all slaves' data into memory, up to 64 connections

## 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

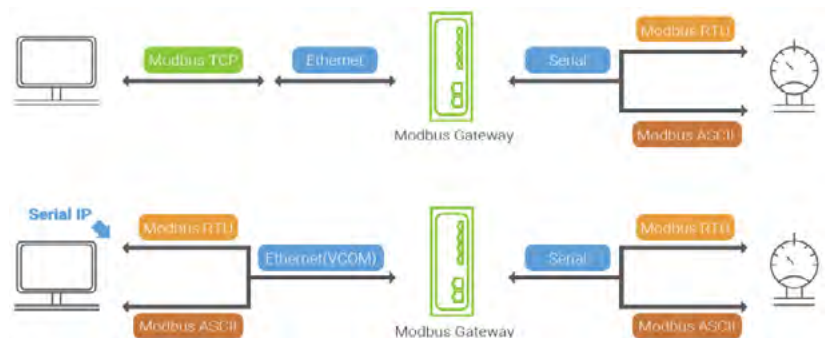
Relax. MB5908A/16A Modbus Gateway supports OpenVPN and IPsec VPN encryption, allowing you to safely use the device over the internet without worrying about malicious attacks, data sniffing or unintentional remote control of your Modbus slaves. On your LAN, RSTP protocol will provide an additional layer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

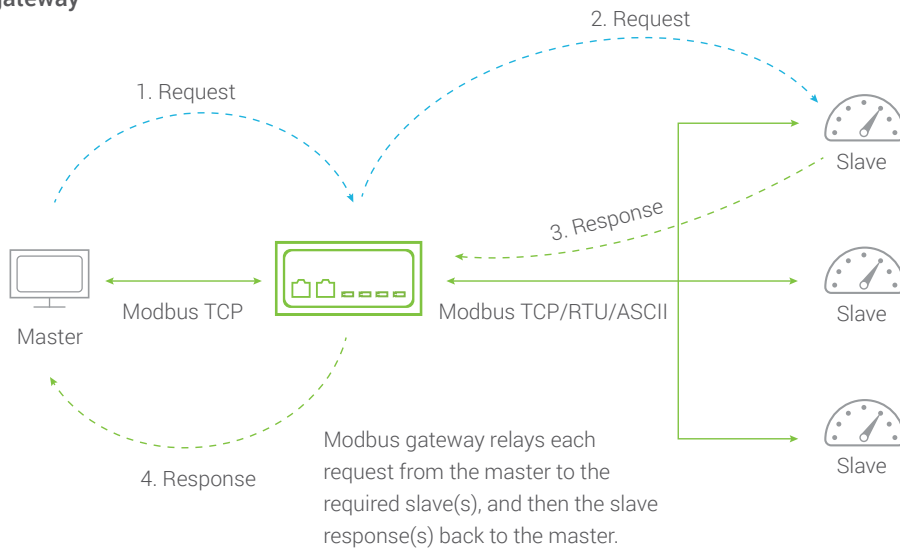


\* 3kV isolated version only supports RS-422/485

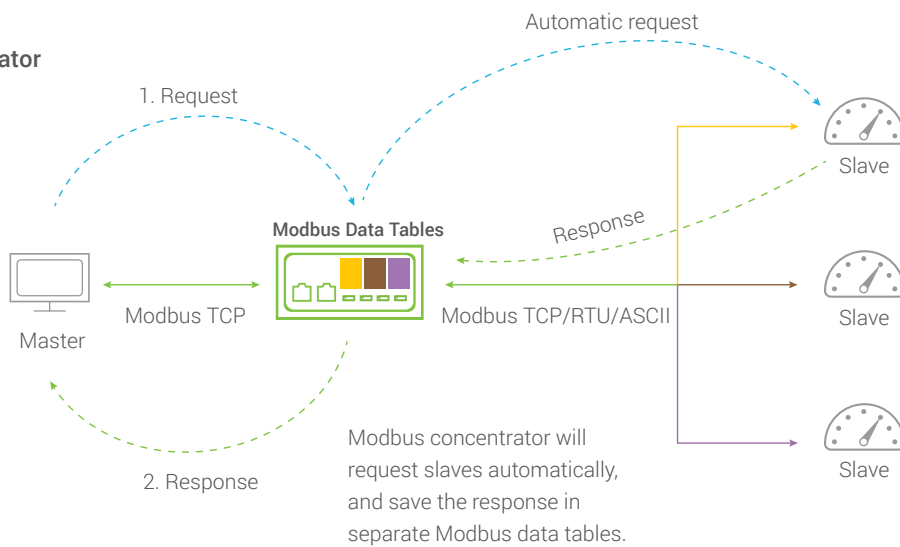
### Modbus Data Concentrator

The Modbus Data Concentrator performs pre-defined Modbus commands to read/write data from the slave devices via serial ports. It mirrors slave device data to its own memory. Therefore, requesting masters can receive response in a shorter period, achieving better overall efficiency.

#### Regular Modbus gateway



#### Modbus Concentrator

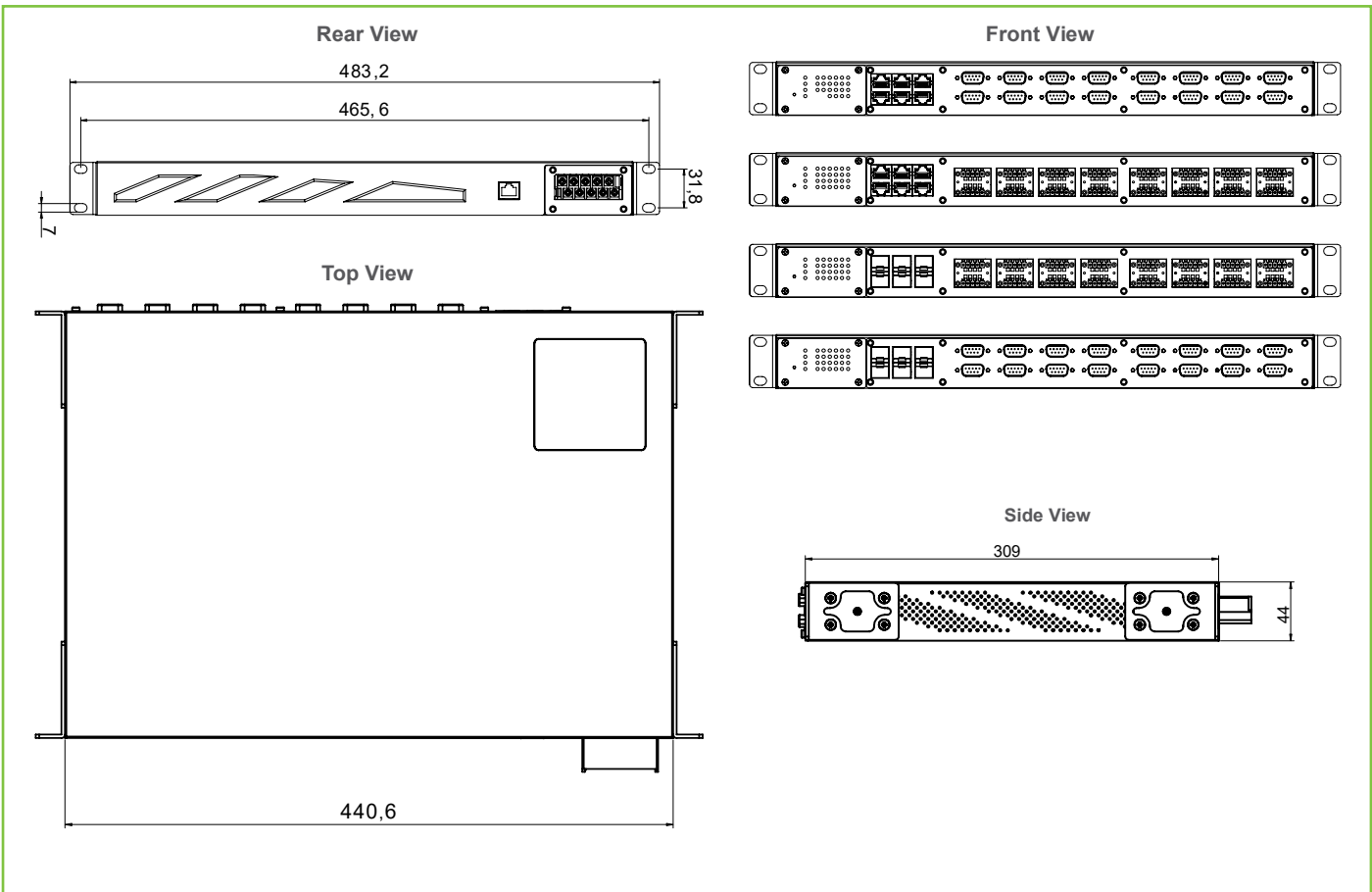


## SPECIFICATIONS

Technical Specifications	
Model Name	MB5908A-CT (8 ports); MB5916A-CT (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	IP30 SPCC housing
Dimension (W x H x D)	440.6 x 44 x 309 mm (1U Rack-mount)
Weight	4 kg
Installation	19" Rack mount (Rack-mount kit included)
Reset Button	Yes
Environmental Limits	
Operating Temperature	-40°C~80°C (-40°F~176°F)
Storage Temperature	-40°C~85°C (-40°F~185°F)
Ambient Relative Humidity	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	EN61010-1, EN 61010-2-201			
EMC	FCC Part 15, Subpart B, Class A, EN 55032, Class A, EN 61000-6-2, 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)	20 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±4.0KV	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 1000 A/m (1sec.)	5 6
IEC 61000-4-11	DIP	AC Power Port	30% reduction (Voltage Dips), 1 period 60% reduction (Voltage Dips), 50 period 100%, reduction (Voltage interruptions), 5 period 100% reduction (Voltage interruptions), 50 period	-
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	Ethernet	Serial
MB5908A CT	Contact ATOP headquarters	Industrial 8-Port Modbus Concentrator, DB9(M), RS-232/422/485, RJ45, dual pwr input	6 (RJ45)	8 (DB9)
MB5908A-TB CT		Industrial 8-Port Modbus Concentrator, Terminal Block, RS-232/422/485, RJ45, dual pwr input	6 (RJ45)	8 (TB5)

MB5908A-Sis CT	Contact ATOP headquarters	Block, RS-232/422/485, 3kV Isolation, RJ45, dual	6 (RJ45)	8 (TB5)
MB5916A CT		Industrial 16-Port Modbus Concentrator, DB9(M), RS-232/422/485, RJ45, dual pwr input	6 (RJ45)	8 (DB9)
MB5916A-TB CT		Industrial 16-Port Modbus Concentrator, Terminal Block, RS-232/422/485, RJ45, dual pwr input	6 (RJ45)	8 (TB5)
MB5916A-Sis CT		Block, RS-232/422/485, 3kV Isolation, RJ45, dual	6 (RJ45)	8 (TB5)
MB5908A-6SFP CT		Industrial 8-Port Modbus Concentrator, DB9(M), RS-232/422/485, SFP, dual pwr input	6 (SFP)	8 (DB9)
MB5908A-6SFP-TB CT		Industrial 8-Port Modbus Concentrator, Terminal Block, RS-232/422/485, SFP, dual pwr input	6 (SFP)	8 (TB5)
MB5908A-6SFP-Sis CT		Industrial 8-Port Modbus Concentrator, Terminal Block, RS-232/422/485, 3kV Isolation, SFP, dual pwr	6 (SFP)	8 (TB5)
MB5916A-6SFP CT		Industrial 16-Port Modbus Concentrator, DB9(M), RS-232/422/485, SFP, dual pwr input	6 (SFP)	8 (DB9)
MB5916A-6SFP-TB CT		Industrial 16-Port Modbus Concentrator, Terminal Block, RS-232/422/485, SFP, dual pwr input	6 (SFP)	8 (TB5)
MB5916A-6SFP-Sis CT		Industrial 16-Port Modbus Concentrator, Terminal Block, RS-232/422/485, 3kV Isolation, SFP, dual pwr	6 (SFP)	8 (TB5)
MB5908A-HV CT		Industrial 8-Port Modbus Concentrator, DB9(M), RS-232/422/485, RJ45, dual pwr input	6 (RJ45)	16(DB9)
MB5908A-TB-HV CT		Industrial 8-Port Modbus Concentrator, Terminal Block, RS-232/422/485, RJ45, dual pwr input	6 (RJ45)	16(TB5)
MB5908A-Sis-HV CT		Block, RS-232/422/485, 3kV Isolation, RJ45, dual	6 (RJ45)	16(TB5)
MB5916A-HV CT		Industrial 16-Port Modbus Concentrator, DB9(M), RS-232/422/485, RJ45, dual pwr input	6 (RJ45)	16(DB9)
MB5916A-TB-HV CT		Industrial 16-Port Modbus Concentrator, Terminal Block, RS-232/422/485, RJ45, dual pwr input	6 (RJ45)	16(TB5)
MB5916A-Sis-HV CT		Block, RS-232/422/485, 3kV Isolation, RJ45, dual	6 (RJ45)	16(TB5)
MB5908A-6SFP-HV CT		Industrial 8-Port Modbus Concentrator, DB9(M), RS-232/422/485, SFP, dual pwr input	6 (SFP)	16(DB9)
MB5908A-6SFP-TB-HV CT		Industrial 8-Port Modbus Concentrator, Terminal Block, RS-232/422/485, SFP, dual pwr input	6 (SFP)	16(TB5)
MB5908A-6SFP-Sis-HV CT		Industrial 8-Port Modbus Concentrator, Terminal Block, RS-232/422/485, 3kV Isolation, SFP, dual pwr	6 (SFP)	16(TB5)
MB5916A-6SFP-HV CT		Industrial 16-Port Modbus Concentrator, DB9(M), RS-232/422/485, SFP, dual pwr input	6 (SFP)	16(DB9)
MB5916A-6SFP-TB-HV CT	Industrial 16-Port Modbus Concentrator, Terminal Block, RS-232/422/485, SFP, dual pwr input	6 (SFP)	16(TB5)	
MB5916A-6SFP-Sis-HV CT	Industrial 16-Port Modbus Concentrator, Terminal Block, RS-232/422/485, 3kV Isolation, SFP, dual pwr	6 (SFP)	16(TB5)	

### Optional Accessories

Model Name	Part Number	Description
SDR-75-24	50500752240001G	75W/3.2A DIN-Rail 24VDC power supply with universal 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
AXFD-1314-0523	522AXFD1314001G	SFP Transceiver;155Mbps, Multi-mode;1310nm;2km;-40~85, DDMI
AXFD-1314-0553	522AXFD1314011G	SFP Transceiver;155Mbps, Single-mode;1310nm;30km;-40~85, DDMI