



## FEATURE HIGHLIGHTS

- Industrial EMC protection, Opt. Serial port Isolation, -20 to +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
- Automatic mapping of all slaves' data into memory, up to 64 connections

\*: 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

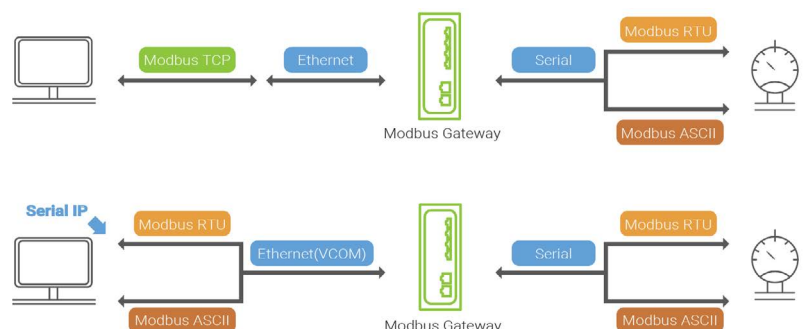
Modbus Gateway supports the four most commonly used communication standards, RS-232/485/422, and Ethernet. The ease-of-use configuration utility provided with Modbus Gateway can quickly select the hardware interface, and easily switch to the existing communication infrastructure. You could set it up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



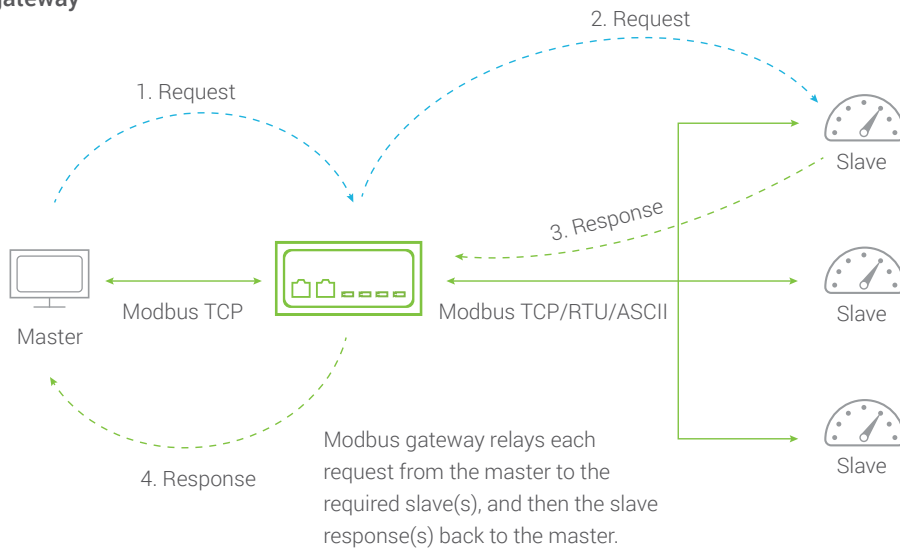
### Modbus ID Routing

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.

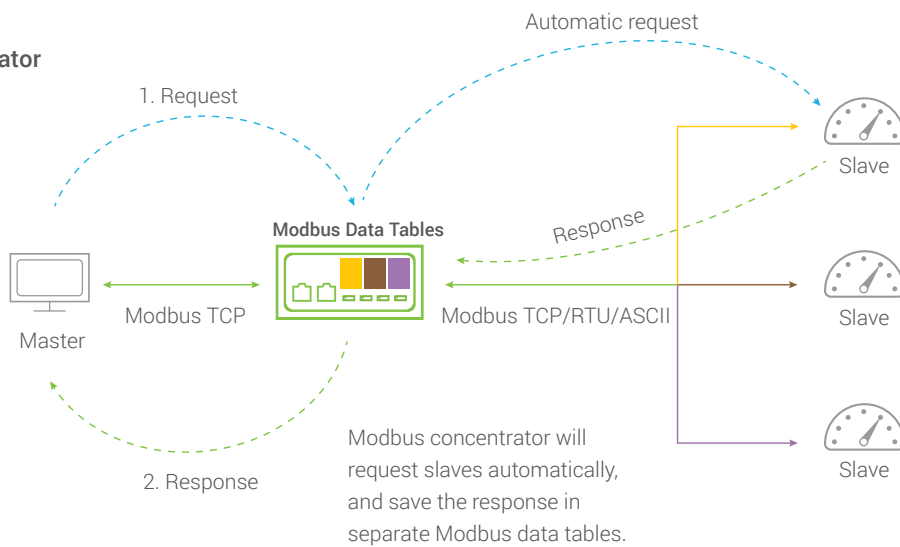
### Modbus Data Concentrator

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



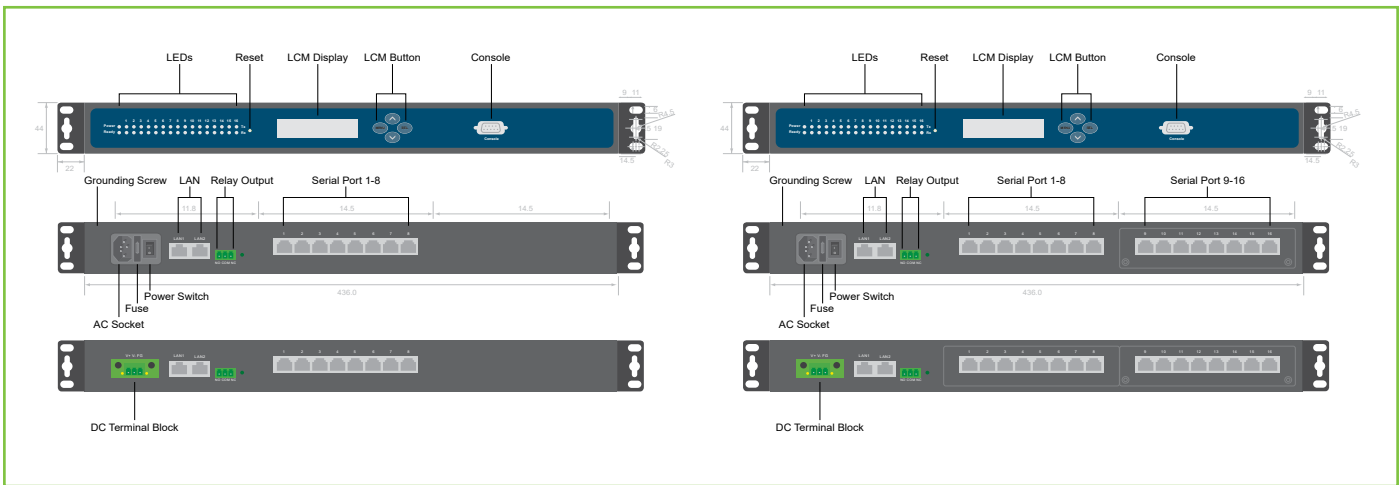
## SPECIFICATIONS

Technical Specifications	
Model Name	MB5908-CT(8-port) / MB5916-CT (16-port)
Network interface	
Speed	IEEE 802.3 10BaseT, 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 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 Input Current Power Consumption	DC version: 24 - 48VDC; US-EU version: 100~240 VAC (EU or US Plug) DC version: 0.54 A @24VDC; US-EU version: 0.21A@100VAC Approximately 21 W (Max)
Connector	DC version: 5.08mm 3-pin Lockable Terminal Block 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 Dimension (W x H x D) Weight Installation Reset Button	IP30 SPCC housing 436 mm x 43.5 mm x 200 mm 3,000g (8-port version); 3,200 g (16-port version) 19" Rack-Mount (Kit included) Yes
Environmental Limits	
Operating Temperature Storage Temperature Ambient Relative Humidity	-20°C to +70°C (-4°F to +158°F) -40°C to +85°C (-40°F to +185°F) 5% to 95% (Non-condensing)
Software	
Protocols	IPv4, ICMP, TCP, UDP, DHCP Client, SNMPv1,v2c,v3, HTTP, HTTPS, SMP/TLS, Telnet, RFC2217, RSTP, Security through OpenVPN and IPsec (host-to-host or 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

### 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 32 slave connections

## DIMENSIONS & LAYOUT



## REGULATORY APPROVALS

### Regulatory Approvals

Safety	EN60950-1:2006; EN62368-1			
EMC	FCC Part 15, Subpart B, Class A EN55032, Class B, EN 61000-3-2, EN 61000-3-3, EN 55024			
Test	Item	Value	Level	
IEC 61000-4-2	ESD	Contact Discharge	±8kV (For AC Version)	4
		Air Discharge	±15kV (For AC Version)	4
		Contact Discharge	±6kV (For DC Version)	3
		Air Discharge	±8kV (For DC Version)	3
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 DC Power Port Signal Port	10 V rms 10 V rms 10 V rms	3 3 3
IEC 61000-4-8	PFMF	Enclosure	1 A/m	3
IEC 61000-4-11	DIP	AC Power Port	30% Reduction (Voltage Dips), 25/30 Cycle >95% Reduction(Voltage Dips), 0.5 period 100% Reduction (Voltage Interruption) : 250/300 Cycle	-
Shock Drop (Freefall) /Vibration	MIL-STD-810G Method 516.7 MIL-STD-810G Method 516.7 / MIL-STD-810G Method 514.7			
RoHS II	Yes			
MTBF (MIL-HDBK-217F)	MB5908-DC: 22.74 years; MB5916-US/EU: 13.95 years; MB5908-SiS-DC: 19.00 years; MB5908-SiS-US/EU: 19.03 years 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 CT	Contact ATOP headquarters	8-Port Modbus Concentrator, RJ45 serial, RS- 232/422/485, 24-48 VDC power input	2 (RJ45)	8 (RJ45)
MB5916-DC CT		16-Port Modbus Concentrator, RJ45 serial, RS- 232/422/485, 24-48 VDC power input	2 (RJ45)	16 (RJ45)
MB5908-EU CT		8-Port Modbus Concentrator, RJ45 serial, RS- 232/422/485, 100~240 VAC power input, EU plug	2 (RJ45)	8 (RJ45)
MB5908-US CT		8-Port Modbus Concentrator, RJ45 serial, RS- 232/422/485, 100~240 VAC power input, US Plug	2 (RJ45)	8 (RJ45)
MB5916-EU CT		16-Port Modbus Concentrator, RJ45 serial, RS- 232/422/485, 100~240 VAC power input, EU Plug	2 (RJ45)	16 (RJ45)
MB5916-US CT		16-Port Modbus Concentrator, RJ45 serial, RS- 232/422/485, 100~240 VAC power input, US Plug	2 (RJ45)	16 (RJ45)
MB5908-SiS-DC CT		8-Port Modbus Concentrator, RJ45 serial, RS- 422/485, 2.5KV Isolation, 24-48 VDC power input	2 (RJ45)	8 (RJ45)
MB5916-SiS-DC CT		16-Port Modbus Concentrator, RJ45 serial, RS- 422/485, 2.5KV Isolation, 24-48 VDC power input	2 (RJ45)	16 (RJ45)
MB5908-SiS-EU CT		8-Port Modbus Concentrator, RJ45 serial, RS-232, 2.5KV isol., 100~240 VAC pwr, EU plug	2 (RJ45)	8 (RJ45)
MB5908-SiS-US CT		8-Port Modbus Concentrator, RJ45 serial, RS-232, 2.5KV isol., 100~240 VAC pwr, US plug	2 (RJ45)	8 (RJ45)
MB5916-SiS-EU CT		16-Port Modbus Concentrator, RJ45 serial, RS-232, 2.5KV isol., 100~240 VAC pwr, EU plug	2 (RJ45)	16 (RJ45)
MB5916-SiS-US CT		16-Port Modbus Concentrator, RJ45 serial, RS-232, 2.5KV isol., 100~240 VAC pwr, 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(8)-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	Fuse