



FEATURE HIGHLIGHTS

- Industrial EMC protection, wide temperature operation, -40°C~85°C
- 2 Fast-Ethernet ports or 100/1000 SFP slots
- 4 Software-selectable RS-232/RS-485/RS-422 serial ports, up to 921kbps
- Bi-Directional Modbus TCP/RTU/ASCII conversion from Serial to Ethernet and viceversa, VirtualCOM support, advanced Modbus Options available
- Isolated Redundant 12~48 VDC Power Inputs or powered (PoE models) through through the Ethernet cable (802.3af)
- Embedded security with PPTP, IPsec or OpenVPN (client/server)
- Configuration via Web Browser/ Serial Console/ Telnet Console/ Utility
- Rugged metal case with wall or DIN-Rail mount
- Automatic mapping of all slaves' data into memory, up to 64 connections

PRODUCT DESCRIPTION

Diverse Hardware Infrastructure

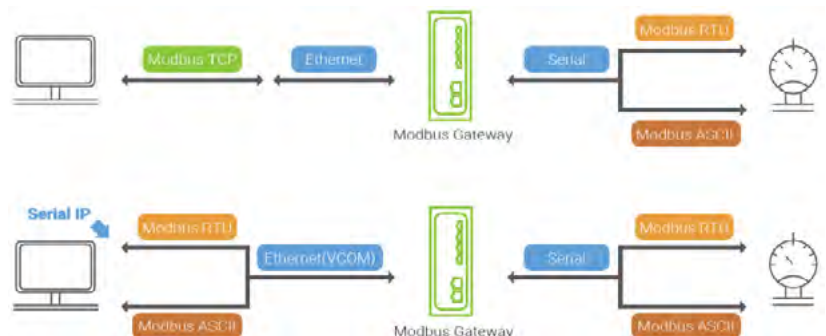
Modbus Gateway supports the four most commonly used communication standards, RS-232/485/422, and Ethernet. The ease-of-use configuration utility provided with Modbus Gateway can quickly select the hardware interface, and easily switch to the existing communication infrastructure. Industrial EMC protection and wide temperature operation capability make MB5904D ready for every mission. And if cabling is an issue, the PoE-powered version can allow MB5904D to be powered through PoE.

Embedded Security and advanced features

Relax. MB5904D 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 selected to be either master or slave



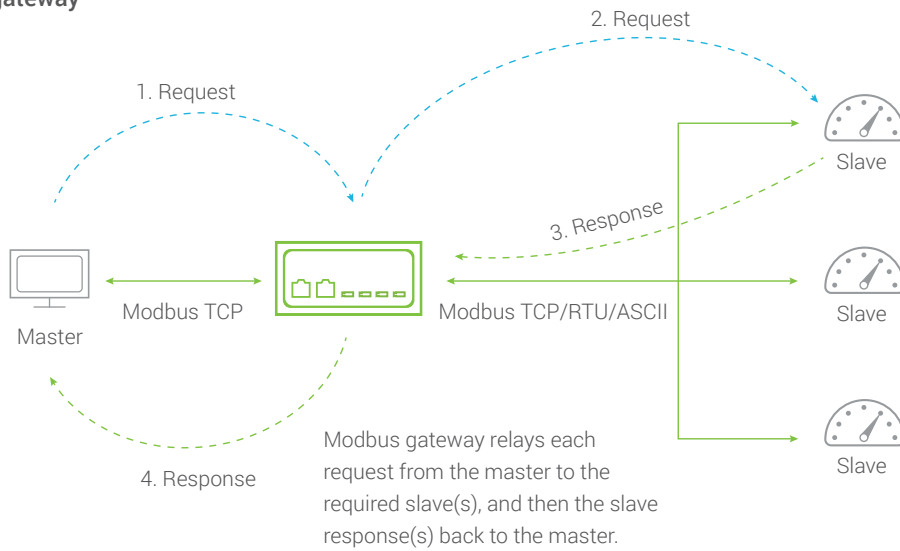
Modbus ID Routing

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.

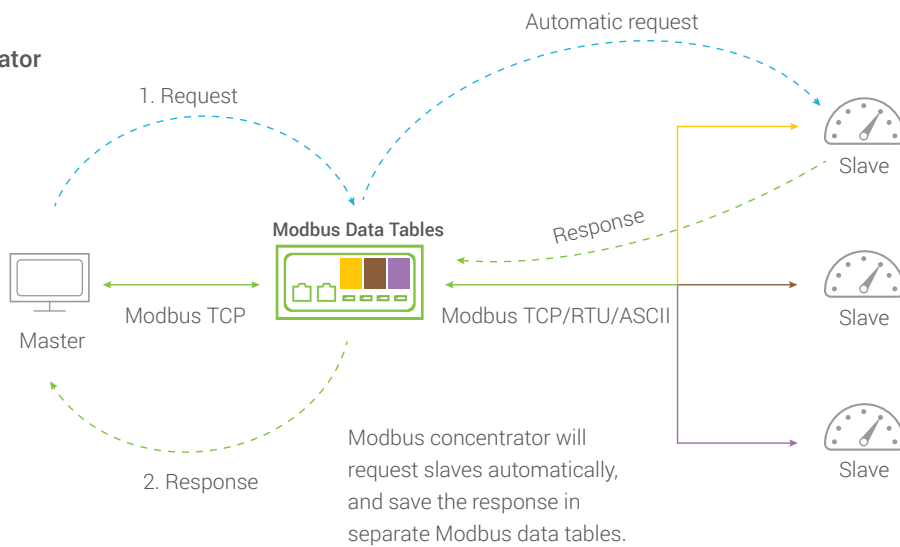
Modbus Data Concentrator

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

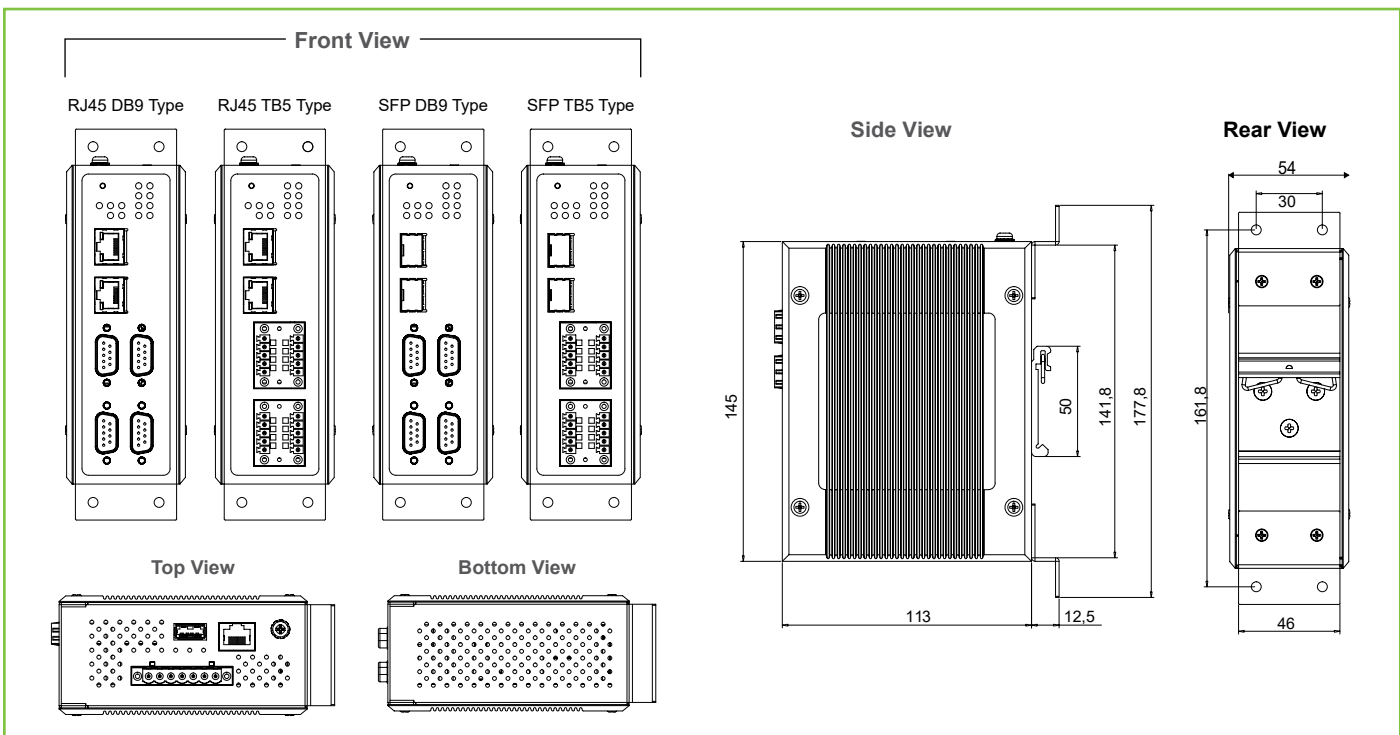


SPECIFICATIONS

Technical Specifications	
Model Name	MB5904D-CT
Network interface	
Supported Standards	IEEE 802.3 10BaseT IEEE 802.3u 100BaseT(X) IEEE 802.3u for 100Base-X IEEE 802.3z for 1000Base-X (SFP version only)
Power over Ethernet	IEEE 802.3af for Power over Ethernet (PD) - PoE version only
LAN Mode	Dual Subnets or RSTP Redundancy
Connector ports	2x 10/100BASE-T(X) RJ-45 or 2x 100/1000 Base-X SFP Slots (SFP version)
Serial Interface	
Connector	4x D-Sub9 RS-232/422/485 software selectable (DB models) or 4x 5.08mm 5-Pin Terminal block RS-232/422/485 sw selectable (TB models)
Baud Rate	1,200 ~ 921,600 bps software selectable
Data Bits	7, 8 software selectable
Stop Bits	1, 2 software selectable
Flow Control	None, Xon/Xoff, RTS/CTS
Isolation	3 kV (Sis versions only)
USB interface	
Universal Serial Bus	1x USB A Type connector (USB 2.0)
Power	
Input Voltage Input Current (@ 12VDC) Power Consumption Power Redundancy Reverse Polarity Protection	Dual 12 - 48VDC (non-PoE Models); or through Ethernet Cable (PoE versions) 0.65 A Approximately 8 W (Max) Yes Yes
Connector	7-Pin 5.08mm Lockable Terminal Block
Relay Output	1A @ 30 VDC (normal open)
Physical Characteristics	
Housing Dimension (W x H x D) Weight Installation Reset Button	IP30 SPCC housing 55 x 145 x 113 mm 1000 g DIN-Rail, Wall mount (optional kit) 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, RSTP, Security via PPTP, OpenVPN Client/Server or IPsec (peer-to-peer or peer-to-side) with up to 37.9Mbps VPN throughput,SMTP/TLS
Configuration	ATOP Management Utility, Web UI, Telnet
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	IEC/EN 61010-1,UL61010-1,IEC/EN 61010-2-201,UL61010-2-201, EN62368-1
EMC	FCC Part 15, Subpart B, Class A EN 55032, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-4,

Test	Item		Value	Level
IEC 61000-4-2	ESD	Contact Discharge	±6kV	3
		Air Discharge	±8kV	3
IEC 61000-4-3	RS	Radiated (enclosure)	10 V/m	3
IEC 61000-4-4	EFT	DC Power Port	±2.0KV	3
		Signal Port	±1.0KV	3
IEC 61000-4-5	Surge	DC Power Port	Line-to Line±1.0KV	3
		DC Power Port	Line-to Earth±1.0KV	2
		Signal Port	Line-to Earth±2.0KV	3
IEC 61000-4-6	CS	Conducted (enclosure)	10 V rms	3
IEC 61000-4-8	PFMF	Enclosure	30 A/m	4
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	14.56 Years (according to MIL-HDBK-217F)			
Warranty	5 years			

ORDERING INFORMATION

Ordering information				
Model name	Part Number	Description	Ethernet	Serial
MB5904D-4P-DB CT	Contact ATOP headquarters	Ind. 4-Port Modbus Gateway, 10/100BASET(X), DB9	2 (RJ45)	4 (DB9)
MB5904D-4P-TB CT		Ind. 4-Port Modbus Gateway, 10/100BASET(X), TB5	2 (RJ45)	4 (TB)
MB5904D-4P-Sis CT		Ind. 4-Port Modbus Gw,10/100BASET(X),3kV Isolated	2 (RJ45)	4 (TB)
MB5904D-4P-PoE-DB CT		Ind. 4-Port Modbus Gw,10/100BASET(X)with PoE, DB9	2 (RJ45)	4 (DB9)
MB5904D-4P-PoE-TB CT		Ind. 4-Port Modbus Gw, 10/100BASET(X)with PoE, TB5	2 (RJ45)	4 (TB)
MB5904D-4P-PoE-Sis CT		Ind. 4-Port Modbus Gw, RJ45, PoE, 3kV Isolated	2 (RJ45)	4 (TB)
MB5904D-4P-G-DB-SFP CT		Ind. 4-Port Modbus Gw, 100/1000BASEX SFP Slot, DB9	2 (SFP)	4 (DB9)
MB5904D-4P-G-TB-SFP CT		Ind. 4-Port Modbus Gw, 100/1000BASEX SFP Slot, TB5	2 (SFP)	4 (TB)
MB5904D-4P-G-Sis-SFP CT		Ind. 4-Port Modbus Gw,100/1000 SFP Slot,3kV Isolated	2 (SFP)	4 (TB)

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
CBL-RJ45(8P)-DB9(F)-90-C	50891971G	8-pin RJ45-DB9 debug cable, 90cm
GDC-120	59906861G	120mm copper woven grounding cable
ADP-DB9(F)-TB5	59906231G	Female DB9 to Female 3.81mm TB5 Converter
WMK-450-Black	70100000000052G	Aluminum wall mount kit
AXGD-5854-0513	522AXGD5854001G	SFP Transceiver, 1250Mbps, 850nm, Multi-mode, 550m, 3.3V, -40~85°C, DDMI
AXGD-1354-0523	522AXGD1354001G	SFP Transceiver, 1250Mbps, 1310nm, Multi-mode, 2km, 3.3V, -40~85°C, DDMI
AXGD-1354-0533	522AXGD1354011G	SFP Transceiver, 1250Mbps, 1310nm, Single-mode, 10km, 3.3V, -40~85°C, DDMI
AXGD-3354-0593	522AXGD3354001G	SFP Transceiver, 1250Mbps, 1310nm, Single-mode, 40km, 3.3V, -40~85°C, DDMI