1-port RS232/422/485 Modbus Gateway



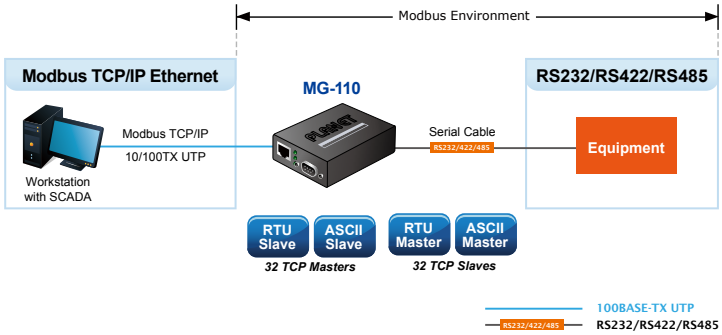
Standard Modbus TCP/RTU/ASCII Network Integration

PLANET **MG-11x** 1-port RS232/422/485 Modbus Gateway Series supports the standard Modbus Protocol, which makes it possible for converting any Modbus Protocols between Modbus TCP, Modbus RTU, and Modbus ASCII for all supported hardware interfaces. Its serial protocol can be used for industrial automation where SCADA or HMI system is in place. Moreover, its network integration can be upgraded from the SNMP network to the automated Modbus TCP network, which brings interconnection over Ethernet longer distances, thus making a network infrastructure more flexible.



A Conversion Bridge for Flexible Network Deployment

The MG-11x Series can be a conversion bridge between the equipment with the Modbus RTU/ASCII Protocol and the administrator workstations that run the Modbus TCP/IP Protocol. The RS232/422/485 serial interface of the MG-11x Series provides the Modbus RTU/ASCII operation mode and various baud rate options to meet the demand of integration between the Modbus TCP/IP Protocol, Modbus RTU Master/ Slave Protocol and Modbus ASCII Master/Slave Protocol.



Serial Interface

- One DB9 interface supports RS232, 2-wire RS485, 4-wire RS485 and RS422 standards
- Asynchronous serial data rates up to 921600bps

Ethernet Interface

- 1-port 10/100BASE-TX RJ45 or 100BASE-FX interface with auto MDI/MDI-X function
- Ethernet ports support Ethernet switch or cascading operation for easy wiring

Management Function

- Built-in IP-based Web interface and telnet interface for remote management
- Software Protocol supports Modbus TCP, Modbus RTU, Modbus ASCII, IP, ARP, DHCP and DNS
- Supports RTU Master, RTU Slave, ASCII Master, and ASCII Slave four serial operation modes via management interface
- Master mode supports 32 slave TCP connection requests
- Slave mode supports 32 TCP master connections
- PLANET Modbus Gateway utility for finding client device on the network.
- PLANET Smart Discovery utility automatically finds the client devices on the network
- Firmware upgrade/configuration backup and restore via HTTP protocol

Case and Installation

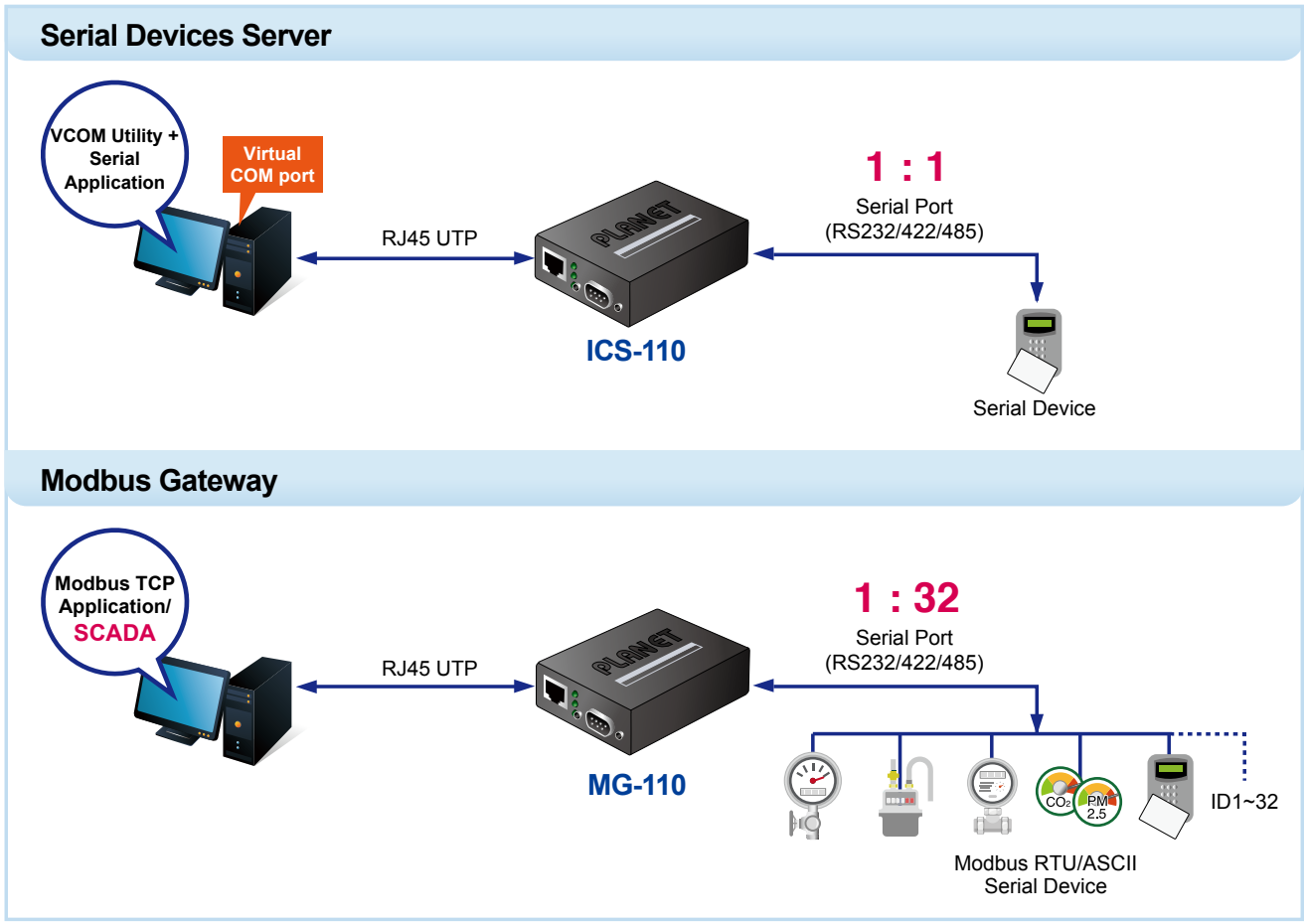
- Compact size for easy Installation:
  - Standalone - Wall mountable or DIN-rail mounting (optional accessory)
  - Co-works with PLANET media chassis **(MC-700/1500)**
- -10 to 60 degrees C operating temperature
- Reset button for resetting to factory default

The advantage of having the MG-11x Series is to assist users to build an environment between the Modbus TCP Protocol and the Modbus RTU/ASCII Protocol easily, thus offering an application solution to the control equipment without Ethernet ports, and the control equipment can only control through a PC workstation or control panel.

In addition, the effective integration solution of Modbus Ethernet devices, Modbus serial equipment or multi Modbus master / slave in an hybrid network brings the following:

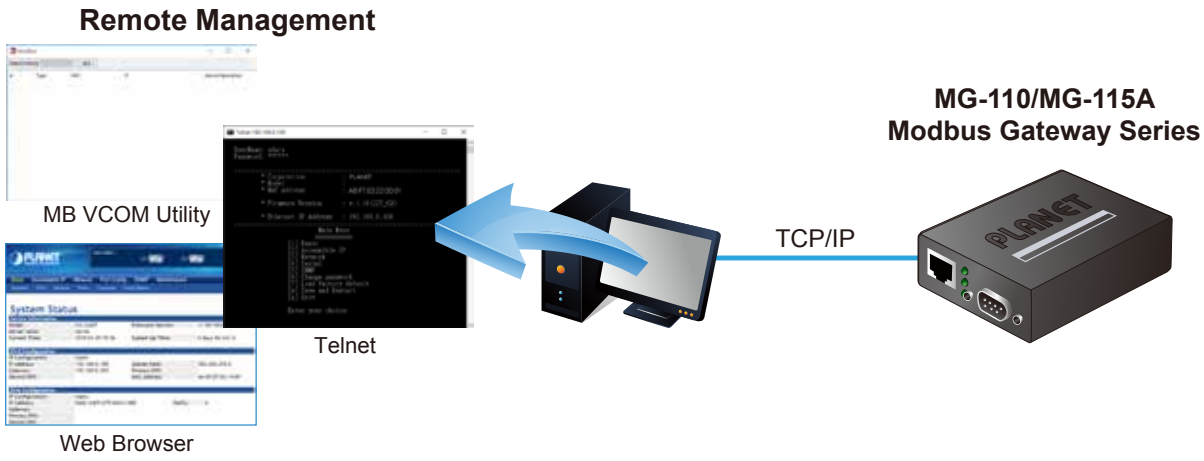
- Master mode supports up to 32 slave TCP connection requests
- Slave mode supports up to 32 TCP master connections

Differences between Serial Devices and Modbus Gateway



Remote Management

The MG-11x Series makes the connected Modbus RTU/ASCII equipment become IP-based facilities and is able to connect to the Modbus TCP/IP network via its R232/422/485 serial interface and **10/100BASE-TX RJ45** or **100BASE-FX** Ethernet port. It provides a remote web management and telnet Interface for efficient remote network management. The MG-11x Series also provides PLANET Modbus Gateway utility tool and supports PLANET Smart Discovery utility to help network administrator to easily get the current IP subnet address information or change the IP subnet address setting of the MG-11x Series.



Modbus Serial Port State Monitoring

The MG-11x Series shows the details of the total bytes transmitted and received on the RS232/422/485 serial interface, and the detailed total number of frames transmitted and received on the remote web/telnet management interface. This function allows network administrator to check the status and statistics of the MG-11x Series via the single RS232/422/485 serial interface.

Fiber-optic Link Capability Extends the Range of Network Deployment (Only MG-115A)

The maximum distance between two IP devices via Ethernet UTP cable is 100 meters. To flexibly extend the deployment range of Modbus gateway, the MG-115A's SFP slot supporting 100BASE-FX SFP modules, and more can reach a transmission distance of up to 120km.

Easy Chassis Installation

The MG-11x Series can be used as a stand-alone unit or as a slide-in module to the PLANET Media Converter Chassis (MC-700 and MC-1500 chassis series). The media chassis can assist in providing DC power to the MG-11x Series and can be DIN-rail or wall mounted for efficient use of cabinet space, without the need of replacing the existing serial equipment and software system.

Optional installation method



Media Chassis Installation



DIN-rail Installation



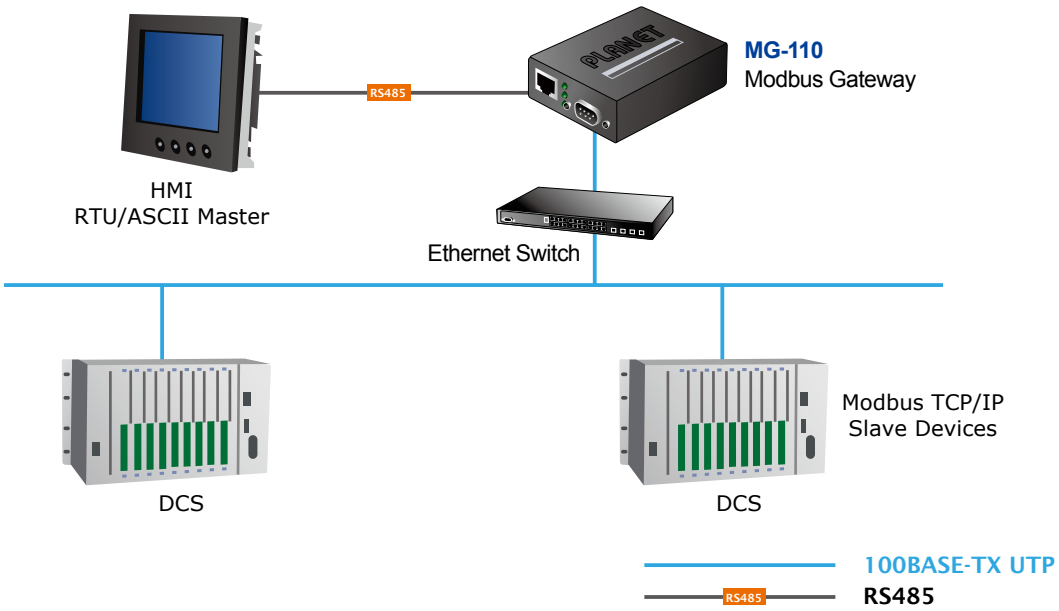
Wall-mount Installation

Applications

RTU/ASCII Master to Multi Modbus TCP/IP Slaves

The MG-11x Series can act as a bridge between the RTU/ASCII master equipment and the multi-TCP/IP slave equipment in a Modbus TCP/IP networking environment to control multi-TCP/IP slave equipment via the RTU/ASCII master equipment.

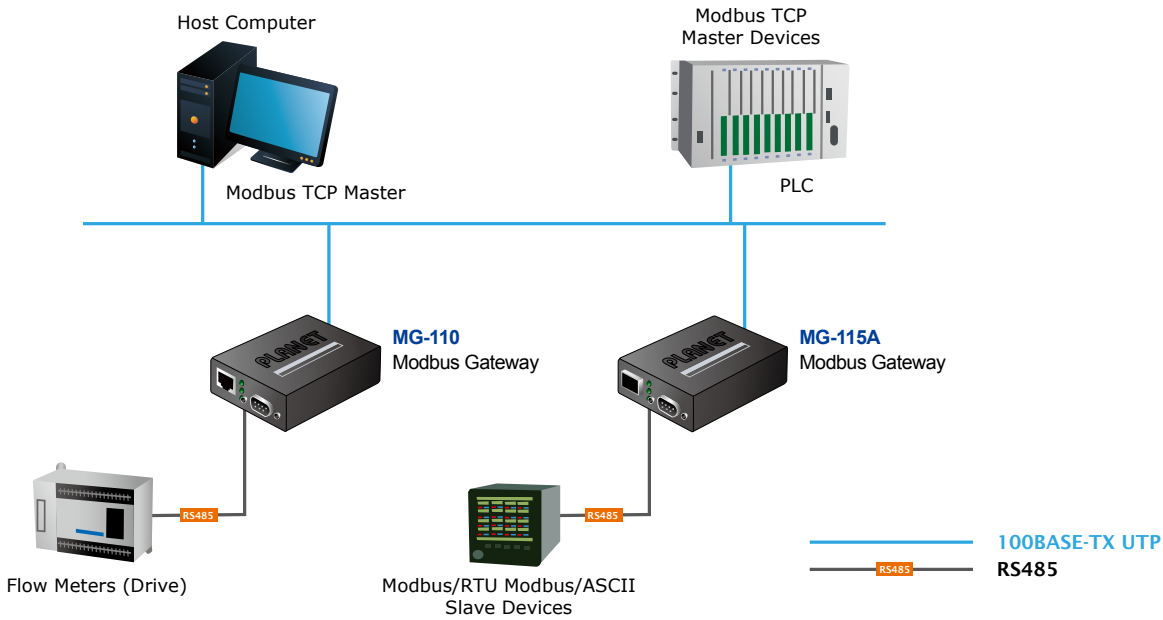
RTU/ASCII Master to Multi Modbus TCP/IP Slaves



Multi Modbus TCP/IP Master to RTU/ASCII Slaves

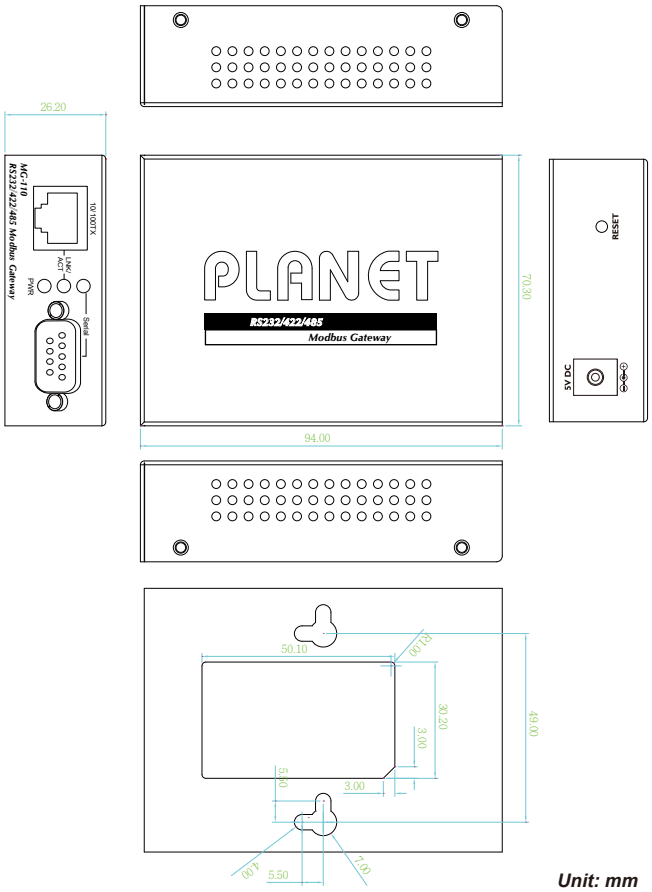
The MG-11x Series can operate as a bridge between the multi-TCP/IP master equipment and the RTU/ASCII slave equipment in a Modbus TCP/IP networking environment to control the RTU/ASCII slave equipment via the multi-TCP/IP master equipment.

Multi Modbus TCP/IP Master to RTU/ASCII Slaves



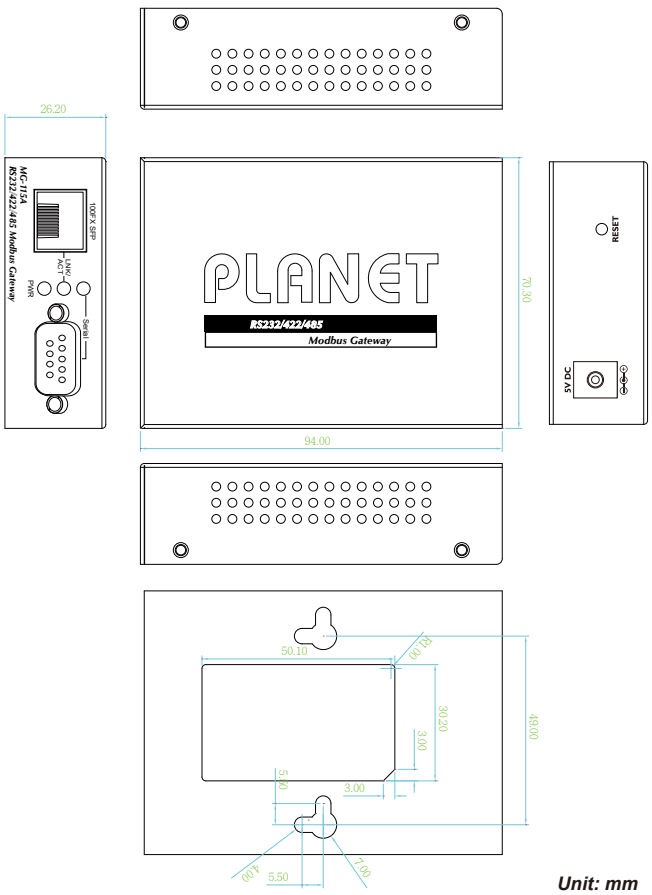
Drawing

■ MG-110



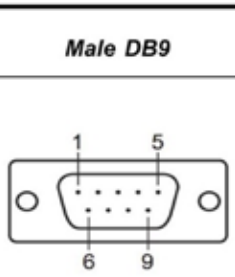
Unit: mm

■ MG-115A



Unit: mm

Specifications

Product	MG-110	MG-115A
Serial Interface		
Serial Port	1 x DB9 male	
Serial Standards	RS232 RS422 4-wire RS485 2-wire RS485	
Baud Rate (Data Rate)	50bps to 921Kbps	
Data Bits	5, 6, 7, 8	
Stop Bit	1, 1.5, 2	
Parity Type	Odd, Even, None, Space, Mark	
Flow Control	RTS/CTS and DTR/DSR (RS232 only) XON/XOFF	
Signals	RS232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND RS422: Tx+, Tx-, Rx+, Rx-, GND 4-wire RS485: Tx+, Tx-, Rx+, Rx-, GND 2-wire RS485: Data A (+), Data B (-), GND	
Pin Assignment		

Male DB9	Pin	RS232	RS422 RS485-4W	RS485-2W
	1	DCD	TxD+	--
	2	RxD	TxD-	--
	3	TxD	RxD-	Data-
	4	DTR	RxD+	Data+
	5	GND	GND	GND
	6	DSR	--	--
	7	RTS	--	--
	8	CTS	--	--
	9	--	--	--

Operation Mode	RTU Master/RTU Slave/ASCII Master/ASCII Slave Master mode: Supports up to 32 slave TCP connection requests Slave mode: Supports up to 32 master TCP connection requests	
Ethernet Interface		
Ethernet Ports	1 x RJ45	1 x SFP
Standard	10/100BASE-TX	100BASE-FX
Distance	Distance	2Km~120Km, vary on SFP modules
ESD Protection	6KV	
Hardware		
Installation	DIN-rail kit and wall-mount ear	
Dimensions (W x D x H)	97 x 70 x 26mm	97 x 70 x 26mm
Weight	184 g	185 g
LED Indicators	System: Link TP/SFP: Link/Active Serial Port: Active	
Power Requirements	External Power Adaptor 5V DC / 2A max.	
Power Consumption	5.5 watts (max)	
Mechanical	Metal	
Reset Button	< 5 sec: System reboot > 5 sec: Factory default	
Management		
Management Interfaces	Web management Telnet Console management Windows-based MB VCOM Utility management SNMPv1, v2c / SNMP Trap UNI-NMS monitoring PLANET Smart Discovery Utility	
IP Version	IPv4	
Operation Mode	RTU Master RTU Slave ASCII Master ASCII Slave	

Virtual COM Utility Platform Supports	Windows-based Only: Windows XP Windows Server 2003 Windows 7 Windows Server 2008 Windows 8 (Must install the latest version of WinPcap) Windows Server 2012 (Must install the latest version of WinPcap) Windows 10
Fault Alarm	Record: System log / SNMP trap
Time	NTP
Security	Accessible IP (white list)
SNMP	SNMP v1 and v2c
Standards Conformances	
Regulatory Compliance	FCC Part 15 Class A, CE Certification Class A
Stability Testing	IEC60068-2-32 (Free fall) IEC60068-2-27 (Shock) IEC60068-2-6 (Vibration)
Standards	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX/100BASE-FX RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 854 Telnet RFC 958 NTP RFC 1908 SNMPv2c RFC 2068 HTTP RFC 2131 DHCP Client EIA/TIA RS232/422/485
Regulatory Approval	RoHS
Compatible Media Converter Chassis	MC-700/MC-1500/MC-1500R
Note.	Reset Button on the rear panel for resetting to factory default
Environment	
Operating Temperature	-10 ~ 60 degrees C
Storage Temperature	-10 ~ 70 degrees C
Humidity	5 ~ 95% (non-condensing)

Ordering Information

MG-110	1-port RS232/422/485 Modbus Gateway (-10~60 degrees C)
MG-115A	1-port RS232/422/485 Modbus Gateway with 1-port 100BASE-FX SFP (-10~60 degrees C)

Related Products

IMG-2100T	IP30 Industrial 1-Port RS232/RS422/RS485 Modbus Gateway (1 x 10/100TX, -40~75 degrees C)
IMG-2105AT	IP30 Industrial 1-Port RS232/RS422/RS485 Modbus Gateway (1 x 100FX, -40~75 degrees C)
IMG-2200T	IP30 Industrial 2-Port RS232/RS422/RS485 Modbus Gateway (2 x 10/100TX, -40~75 degrees C, 2KV isolation)
IMG-2400T	IP30 Industrial 4-Port RS232/RS422/RS485 Modbus Gateway (2 x 10/100TX, -40~75 degrees C, 2KV isolation, 2 x DI + 2 x DO)

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