

# Industrial 1-port RS232/422/485 Modbus Gateway





#### Standard Industrial Modbus TCP/RTU/ASCII Network Integration

PLANET has added the Industrial Modbus TCP/IP Protocol to its easily-integrated industrial management level products that come with SCADA/HMI system and other data acquisition systems on factory floors. Moreover, the industrial IT SNMP network is upgraded to the Industrial automation Modbus TCP/IP network. PLANET industrial management level products with the Modbus TCP/IP Protocol offer flexible network connectivity solutions for the industrial automation environment.

To complete the industrial automation environment application solution, PLANET has announced a first industrial level 1-port RS232/422/485 Modbus Gateway, IMG-210XT, a bridge that converts between Modbus TCP/IP Protocol and Modbus RTU/ASCII Protocol. It features a wide operating temperature range from -40 to 75 degrees C and a compact but rugged IP30 metal housing.



### A Conversion Bridge for Flexible Network Deployment

The IMG-210xT 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 IMG-210xT 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 that supports RS232
- One terminal block interface that supports 2-wire RS485 and 4-wire RS422/RS485 operation
- · Asynchronous serial data rates up to 921600bps

#### **Ethernet Interface**

 1-port 10/100BASE-TX RJ45 with auto MDI/MDI-X function or 100BASE-FX SFP interface

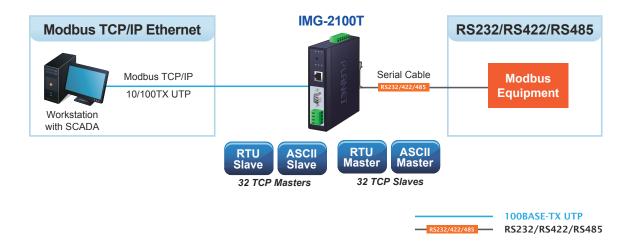
### Management Function

- 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 TCP slave 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

### Industrial Case and Installation

- IP30 metal case
- · DIN-rail and wall-mount designs
- · Redundant power design
  - 9 to 48V DC / 24V AC, redundant power with reverse polarity protection
- Supports 6000 VDC Ethernet ESD protection
- · Free fall, shock-proof and vibration-proof for industries
- Supports extensive LED indicators for network diagnosis
- -40 to 75 degrees C operating temperature
- · Reset button for reset to factory default





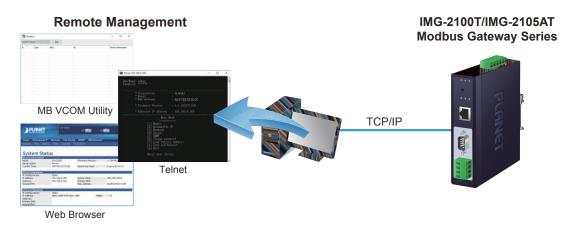
The advantage of having the IMG-210XT is to assist users to build an industrial environment between the Modbus TCP/IP Protocol and the Modbus RTU/ASCII Protocol easily, thus offering an application solution to the industrial control equipment without Ethernet ports and the industrial control equipment can only control through an industrial PC workstation or industrial control panel.

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

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

### Remote Management

The IMG-210XT makes the connected industrial Modbus RTU/ASCII equipment become IP-based facilities and is able to connect to the Modbus TCP/IP network via its RS232/422/485 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 IMG-210XT 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 IMG-210XT.



### Modbus Serial Port State Monitoring

The IMG-210XT 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 IMG-210XT via the single RS232/422/485 serial interface.

#### Stable Performance in Hardened Environment Design

The IMG-210XT provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb-side traffic control cabinets. Its operating temperature ranging from -40 to 75 degrees C allows the IMG-210XT to be placed in almost any difficult environment

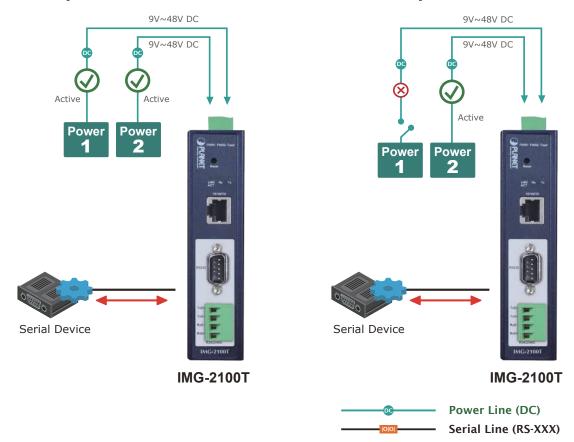


The IMG-210XT is equipped with a compact IP30-rated metal case that allows wall mounting for efficient use of cabinet space. The IMG-210XT also provides an integrated power supply source with wide-ranging voltages (9 to 48V DC / 24V AC) ideally suitable for worldwide operation with high availability applications.

### Dual Power Input for High Availability Network System

The IMG-210xT series features a strong dual power input system with wide-ranging voltages (9V~48V DC / 24V AC) incorporated into customer's automation network to enhance system reliability and uptime. In the example below, when Power Supply 1 fails to work, the hardware failover function will be activated automatically to keep powering the IMG-210xT series via Power Supply 2 without any break of operation.

### Non-stop Ethernet Service with Dual Power Input & Auto Failover



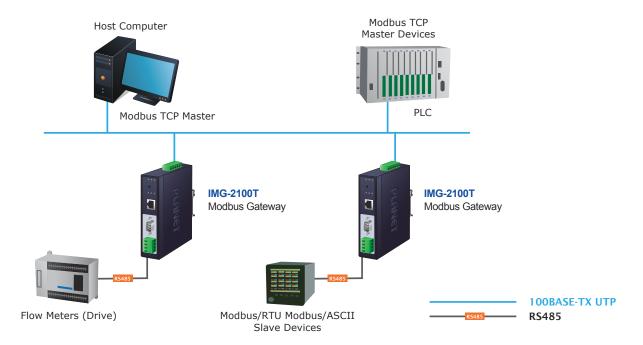


## **Applications**

### RTU/ASCII Master to Multi Modbus TCP/IP Slaves

The IMG-210XT can act as a bridge between the industrial RTU/ASCII master equipment and the multi-industrial TCP/IP slave equipment in a Modbus TCP/IP networking environment to control multi-industrial TCP/IP slave equipment via the industrial RTU/ASCII master equipment.

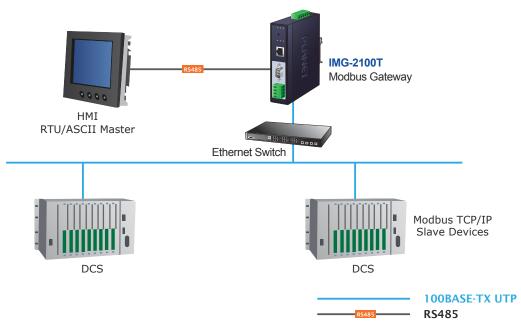
### Multi Modbus TCP/IP Master to RTU/ASCII Slaves



### Multi Modbus TCP/IP Master to RTU/ASCII Slaves

The IMG-210XT can operate as a bridge between the multi-industrial TCP/IP master equipment and the industrial RTU/ASCII slave equipment in a Modbus TCP/IP networking environment to control the industrial RTU/ASCII slave equipment via the multi-industrial TCP/IP master equipment.

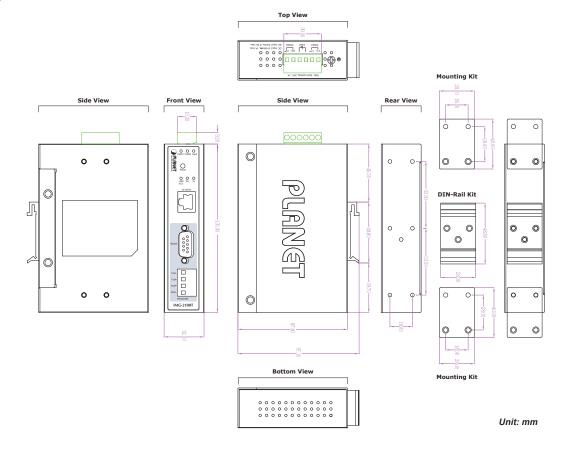
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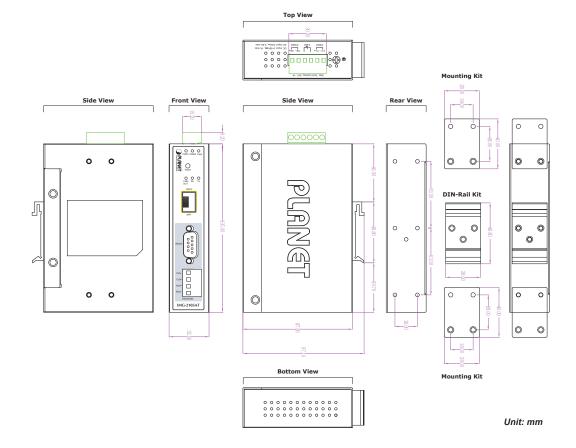


## Drawing

■ IMG-2100T



■ IMG-2105AT





## **Specifications**

Product	IMG-2100T			IMG-2105	5AT	
Serial Interface						
rial Ports	1 x DB9 male for RS232 1 x 4-Pin Terminal block for RS	8422 / RS	485			
rial Standards	RS232 / 4-wire RS422 or RS485 / 2-wire RS485					
ud Rate (Data Rate)	50bps to 921Kbps					
ta Bits	5, 6, 7, 8					
ity Type	1, 1.5, 2					
Bit	Odd, Even, None, Space, Marl					
рыс	RTS/CTS and DTR/DSR (RS2					
w Control	XON/XOFF	32 Offiy)				
Signals	RS232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND					
	RS422: Tx+, Tx-, Rx+, Rx-, GND					
	4-wire RS485: Tx+, Tx-, Rx+, F					
	2-wire RS485: Data A (+), Data B (-), GND					
	Male DB9	Pin	RS232	RS422 RS485-4W	RS485-2W	
		1	DCD	TxD+		
		2	RxD	TxD-		
A i	1 5	3	TxD	RxD-	Data-	
Assignment		4	DTR	RxD+	Data+	
	اه (بنین) ۱	6	GND	GND	GND 	
		7	RTS			
	6 9	8	CTS		1	
		9				
eration Mode	Master mode: Supports up to 32			•		
ernet Ports	1 x RJ45			1 x SFP		
dard	10/100BASE-TX			100BASE-I	= V	
nce						
Protection	100m 2km to 120km, vary on SFP modules					
	6KV 2KV					
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	DIN-rail kit and wall-mount ear					
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IP Version	IPv4 and IPv6
	RTU Master
Operation Mode	RTU Slave
	ASCII Master
	ASCII Slave
	Windows-based only:
	Windows XP
	Windows Server 2003
Virtual COM Utility	Windows 7
Platform Supports	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	Allow max. 4 accessible IP address hosts/ranges
	RFC1213 MIB-II
SNMP MIBs	RFC1317 RS232-like MIB
Standards Conformances	
Regulatory Compliance	FCC Part 15 Class A,
Regulatory Compliance	CE Certification Class A
	IEC60068-2-32 (Free fall)
Stability Testing	IEC60068-2-27 (Shock)
	IEC60068-2-6 (Vibration)
	IEEE 802.3 10BASE-T
	IEEE 802.3u 100BASE-TX/100BASE-FX
	RFC 768 UDP
	RFC 793 TFTP
Standards	RFC 791 IP RFC 792 ICMP
	RFC 854 Telnet
	RFC 958 NTP
	RFC 1591 DNS (client only)
	RFC 1908 SNMPv2c
	RFC 2068 HTTP
	RFC 2131 DHCP Client
	RFC 2732 Format for Literal IPv6 Addresses in URL's
	RFC 3315 DHCPv6 Client
	RFC 3513 IPv6 Addressing Architecture
	RFC 3596 DNSv6
	RFC 4443 ICMPv6
	EIA/TIA RS232/422/485
Regulatory Approval	RoHS
Environment	40 75 days 20
Operating Temperature	-40 ~ 75 degrees C
Storage Temperature	-40 ~ 85 degrees C 5 ~ 95% (non-condensing)
Humidity	5 ~ 95 % (non-condensing)

# Ordering Information

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)



### **Related Products**

IMG-2200T	IP30 Industrial 2-Port RS232/RS422/RS485 Modbus Gateway (2 x 10/100TX, -40~75 degrees C, 2KV isolation)
IMG-2400T	IP40 Industrial 4-Port RS232/RS422/RS485 Modbus Gateway (2 x 10/100TX, -40~75 degrees C, 2KV isolation, 2 x DI + 2 x DO)
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)
IMG-110T	Industrial 1-port RS422/485 Modbus Gateway (9~48VDC, -40~75 degrees C)
IMG-120T	Industrial 2-port RS422/485 Modbus Gateway (9~48VDC, -40~75 degrees C)

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