

GW1104 Series

Modbus Gateway user manual

【Summarize】

GW1104 series products are industrial Ethernet gateway device. The series products include GW1104-4D (RS-232) and GW1104-4DI (RS-485) two models, which are used as a connection between Modbus TCP and Modbus RTU/ASCII devices. The series products provided 4 port RS232 (RJ45 connector) or RS485/422 (4 bit terminal block) and 1 port 10/100M Ethernet.

Modbus TCP, Modbus RTU and Modbus ASCII protocol are integrated in the series of products, users can easily realize the seamless integration of Modbus Ethernet devices and Modbus serial devices and even multi master and slave hybrid networks. At the same time, the user can be set up by Web or Telnet. The simple design can not only realize the fast application, but also guarantee the application of the entire real industrial environment.

The series of products using EMC protection design. Power has over current, over voltage protection, and can work in rugged environment. The design supports 2 kinds of wall mounting installation, easy to use for your projects.

【Packing list】

Please check the packaging and accessories by your first using.

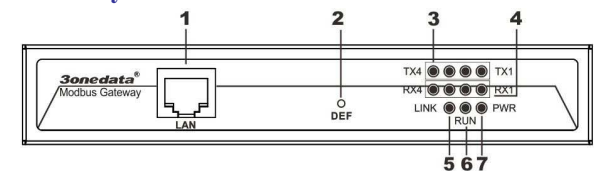
- Modbus gateway × 1
- User manual × 1
- CD × 1
- Certificate of quality × 1
- Warranty card × 1
- Power adaptor × 1

Please inform us or our distributor if your equipments have been damaged or lost any accessories, we will try our best to satisfy you.

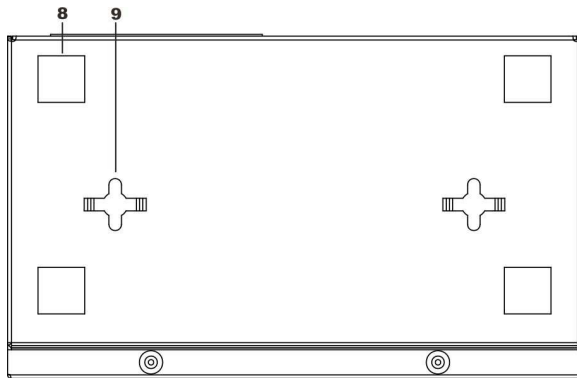
【Feature】

- Support 4 port RS232 (RJ45 connector) or RS485/422 (4 bit terminal block)
- Support 1 10/100M adaptive Ethernet interface
- 300bps~115200bps baud rate and nonblocking communication
- Support Modbus TCP, Modbus RTU, Modbus ASCII, IP, ARP, DHCP, DNS protocol
- Slave mode support 16 TCP master connections
- Master mode support 32 slave TCP connection requests
- Support RTU Slave, RTU Master, ASCII Slave, ASCII Master four operating modes
- Support Response Timeout and Interval Timeout setting
- Support ID mapping function, to achieve the management of the host ID
- Support Telnet and Web
- Support IP address and MAC address filtering function
- Support gateway, cross route communication
- IP30 grade protection, metal shell, wall mounted installation
- Working temperature is -40~75°C

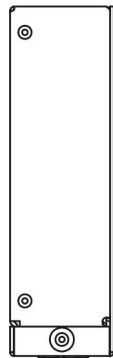
【Panel layout】



Front view



Lower view

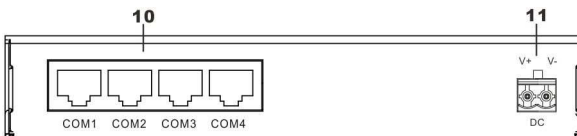


Left view



Right view

GW1104-4D (RS-232)-P(9~48VDC)

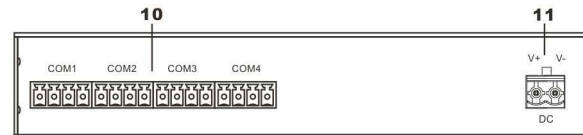


Back view

1. 10Base-T /100Base-TX Ethernet port
2. Factory default button (DEF)
3. COM1~COM4 transmit data indicator
4. COM1~COM4 receive data indicator
5. Ethernet port LED indicator
6. Running statuses indicator
7. Power LED indicator

8. Installation aligning plug
9. Foot mat position
10. RS-232 Serial (COM1~COM4)
11. Power input 9~48VDC

GW1104-4DI (RS-485) -P (9~48VDC)

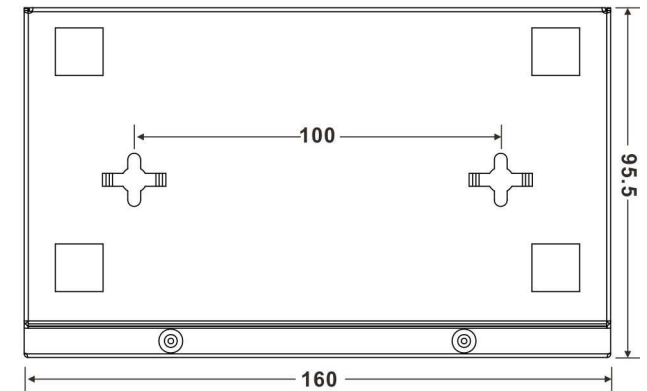
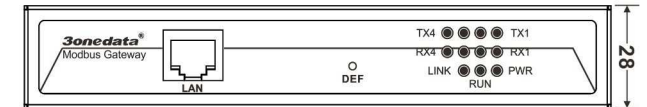


Back view

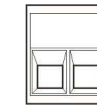
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8. Installation aligning plug
9. Foot mat position
10. RS-485/422 Serial (COM1~COM4)
11. Power input 9~48VDC

【Appearance and dimension】

Unit (mm)



【Power supply input】



Front View



Top View

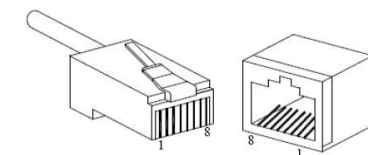
GW1104 series provide DC power input, voltage input is the two terminal form, plug type 2 core spacing of 5.08mm terminals, wherein the power input range of 9 ~ 48VDC. (V+, V-)

【Communication connector】

The series products support 1 Ethernet ports and 4 serial ports (RJ45 or 4 bit terminal interface).

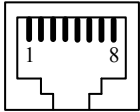
10/100BaseT(X) Ethernet port

The pinout of RJ45 port display as below, connect by UTP or STP. The connect distance is no more than 100m. 100Mbps is used 120Ω of UTP 5; 10Mbps is used 120Ω of UTP 3, 4, 5.



RJ 45 port support automatic MDI/MDI-X operation. Can

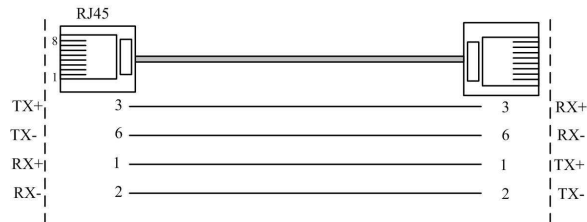
connect the PC, Server, Converter and HUB .Pin 1,2,3,6
Corresponding connections in MDI. 1→3, 2→6, 3→1, 6→2 are used as cross wiring in the MDI-X port of Converter and HUB. 10Base-T/100Base-TX are used in MDI/MDI-X, the define of Pin in the table as below.



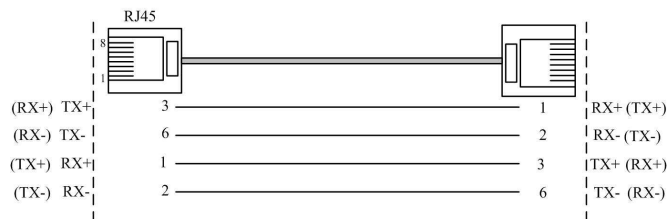
NO.	MDI signal	MDI-X signal
1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
6	RX-	TX-
4, 5, 7, 8	—	—

Note: “TX±”Transmit Data±, “RX±”Receive Data±, “—”Not Use.

MDI (straight-through cable)



MDI-X (Cross over cable)

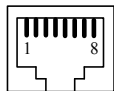


MDI/MDI-X auto connection makes switch easy to use for customers without considering the type of network cable.

Serial port connection

RS232 adopts RJ45 connector, the PIN defines is as follows:

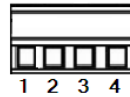
RS-232 port:



PIN	PIN define	Description
1	TXD	Transmit data
2	RXD	Received Data
3	RTS	Request to send
4	CTS	Clear to send
5	DSR	Data set ready
6	GND	Signal ground
7	DTR	Data terminal ready
8	DCD	Data carrier detect

RS-485/422 provides separation distance 3.81mm, 4 bit industrial terminal block. The PIN defines is as follows:

RS-485/422 port:



PIN	RS-485 PIN define	RS-422 PIN define
1	D+(A)	T+
2	D-(B)	T-
3	/	R+
4	/	R-

【LED Indicator】

The LED indicator on the front panel of Modbus gateway series can indicate the running system and the operation status, which makes it easy to find and solve problems, the specific meaning of indicator are shown in the table.

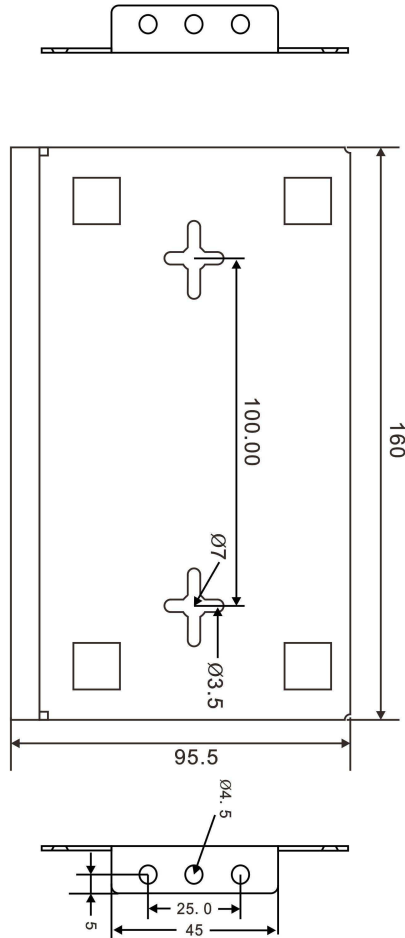
System statue LED		
LED	Indicate	Description
PWR	ON	Power is connected/Function natural
	OFF	Power is disconnected or function nu-natural
LINK	ON	Ethernet port connect successfully
	Flashing	Ethernet port has data transmission
	OFF	Ethernet port connect unsuccessfully

RUN	Flashing	System Running steadily, Initial Delay normal
	OFF	System did not run or running un-steadily
	ON	System Running un-steadily
RX1~4	OFF	None data receive
	Flashing	In receiving data
TX1~4	OFF	None data transmit
	Flashing	In transmitting data

【Installation】

Before installation, confirm that the work environment meet the installation require, including the power needs and abundant space. Whether it is close to the connection equipment and other equipments are prepared or not.

1. Avoid in the sunshine, keep away from the heat fountainhead or the area where in intense EMI.
2. Examine the cables and plugs that installation requirements.
3. Examine whether the cables be seemly or not (less than 100m) according to reasonable scheme.
4. Screws, nuts, tools need to be prepared in advance of your own.
5. Power: 9~48VDC power input
6. Environment: working temperature -40~75°C
Storage Temperature: -40~85°C
Relative humidity 5%~95%



Wiring Requirements

Cable laying need to meet the following requirements:

1. It is needed to check whether the type, quantity and specification of cable match the requirement before cable laying;
2. It is needed to check the cable is damaged or not, factory records and quality assurance booklet before cable laying;
3. The required cable specification, quantity, direction and laying position need to match construction requirements, and cable length depends on actual position;

4. All the cable cannot have break-down and terminal in the middle;
5. Cables should be straight in the hallways and turning;
6. Cable should be straight in the groove, and cannot beyond the groove in case of holding back the inlet and outlet holes. Cables should be banded and fixed when they are out of the groove;
7. User cable should be separated from the power lines. Cables, power lines and grounding lines cannot be overlapped and mixed when they are in the same groove road. When cable is too long, it cannot hold down other cable, but structure in the middle of alignment rack;
8. Pigtail cannot be tied and swerved as less as possible. Swerving radius cannot be too small (small swerving causes terrible loss of link). Its banding should be moderate, not too tight, and should be separated from other cables;
9. It should have corresponding simple signal at both sides of the cable for maintaining.

【Specification】

Ethernet port

Standard: 10Base-T, 100Base-TX

Protocol: Support Modbus TCP, Modbus RTU, Modbus ASCII, IP, APR, ICMP, DNS and DHCP

Signal: Rx+, Rx-, Tx+, Tx-

Speed: 10/100Mbps

Working: Full-duplex and half duplex

Transfer distance: 100m

Connector: RJ45

Serial port

Serial port number: 4 ports RS-232 or 4 ports RS-485/422

RS-232 signal: DCD, RXD, TXD, DTR, GND, DSR, RTS, CTS

RS-485 signal: D+(A), D-(B)

RS-422 signal: T+, T-, R+, R-

Parity bit: None, Even, Odd, Space, Mark

Data bit: 7bit, 8bit

Stop bit: 1bit, 2bit

Baud rate: 300bps~115200bps

RS-232 Transfer distance: no more than 15m

RS-232 connector: RJ45

RS-485/422 transfer distance: 1200m

RS-485/422 connector: 4 bits terminal block

Protection: class 3 static, RS-485/422 side, 2KV isolation

Work mode: RTU Slave, RTU Master, ASCII Slave, and ASCII Master

Multiple master and multi slave connection:

Master mode: maximum 32 TCP slave

Slave mode: 16 TCP master (each master allows 32 commands)

LED Indicator

Power (PWR)

Device start delay and running status indicator: RUN

Ethernet port connect statue (Link)

Serial port data indicator: TX1~TX4, RX1~RX4;

Power requirements

Input voltage: 9~48VDC

◇ GW1104-4D(RS-232)

No-load consumption: 0.86W@12VDC

Full-load consumption: 1.2W@12VDC

◇ Gw1104-4DI(RS-485)

No-load consumption: 1.77W@12VDC

Full-load consumption: 1.9W@12VDC

Mechanical

Shell: IP30 protection, metal shell

Installation: Wall mounting

◇ GW1104-4D(RS-232)

Weight: 0.46kg

◇ GW1104-4DI(RS-485)

Weight: 0.45kg

Size (L×W×H): 160mm×95.5mm×28mm

Environment limits

Working temperature: -40~75°C

Storage temperature: -40~85°C

Relative humidity: 5%~95% (non-condensing)

Standard

EMI: EN 55022 Class A, FCC Part 15 Subpart B Class A

EMS: EN 61000-4-2 (ESD), Level 3

EN61000-4-4 (EFT), Level 2

Shock: IEC 60068-2-27

Free fall: IEC 60068-2-32

Vibration: IEC 60068-2-6

Warranty

Warranty time: 3 years

Certificates

CE, FCC, RoHS, UL508 (pending)