MIEN2208 Series

Unmanaged Industrial Ethernet Switch

User Manual
(Edition: V3.1)

Wuhan Maiwe Communication Co., Ltd.

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Clarification

The user manual is applicable to MIEN2208 series of industrial unmanaged ethernet switch.

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Statement

Due to continuous update and improvement of products and technology, the contents of this document may not be completely consistent with the actual products, appreciate for your understanding. If necessary to inquiry the updates of the product, please check our official website or contact our representative directly.

Revision history:

Version	Date	Reason
V1.0	2011.08	Create files
V2.0	2016.10	Product update
V3.0	2017.06	Product update

Safe Use Instruction

This product performance is excellent and reliable in the designed range of use, **but it's necessary to avoid man-made damage or destroy for the equipment**.

●Read the manual carefully and keep this manual for reference if need afterwards.
●Do not put the device close to the water sources or damp places.
●Do not put anything on the power cable, it should be placed out of reach.
●To avoid causing fire, do not knot or wrap the cable.
●Power connector and other device connectors should be firmly connected with each other, frequently inspection is needed.
●Please keep the fiber socket and plug clean. Do not look directly at the fiber section when the equipment is working.
●Please keep the equipment clean and wipe it with a soft cotton cloth if necessary.
●Please do not repair the equipment by yourself, unless there is clear instructions in the manual.

Under the following circumstances, please cut off power immediately and contact us.
●Equipment water damage.
●The equipment is broken or the casing is broken.
●The equipment works abnormally or the performance has completely changed.
●The equipment produces odor, smoke or noise.

Statement: Information requiring explanation in use of the managed software.
Attention: Matters requiring specific attention in the use of the managed software.

Catalogue

1. Product Overview

1.1. Product Introduction

    The MIEN2208 series products produced by Maiwe are high-performance industrial Ethernet switches. The products provide industrial din-rail installation methods, which can adapt to various harsh working environments and have stable communication performance.

    The product provides 1 fiber 7 copper ports, 2 fiber 6 copper ports, 4 fiber 4 copper and 8 copper ports models for users to choose from, among which the optical port is 100Base-FX single mode or multimode fiber interface, and the electrical port is 10Base-T/100Base-TX Ethernet RJ45 port, each RJ45 port has an adaptive function, can be automatically configured to 10Base-T or 100Base-TX state and full-duplex or half-duplex operation mode, and can automatically perform MDI / MDI-X connection.

1.2. Features

1.2.1. Industrial network performance

- Support 8-channel 100M Ethernet interface
- Support 1 configurable alarm output
- Store and forward mechanism, the switching bandwidth is 1.6Gbps (2.0Gbps for 4 optical and 4 copper products)
- 100Mbps electrical port 10 / 100M self-adaptive, full / half duplex, MDI / MDIX self-adaptive mode
- Meet the requirements of trouble-free work under strong electromagnetic interference environment.

1.2.2. Industrial application design

- Storm suppression (only 4 fiber 4 copper ports support)
- Din-rail installation

1.2.3. Industrial power supply design

- Various power supply options are available:
- DC power supply standard input DC12 ~ 48V, optional DC48V (36 ~ 72V)
- AC power input DC110 ~ 370V and AC85 ~ 264V
- DC power supply models support dual power supply redundant input, AC power supply models support only single power supply input
- Power supply has reliable overcurrent, overvoltage protection and EMC protection
- Relay alarm output function, can be connected with other sound and light alarm equipment

1.2.4. Rugged design

● Single-ribbed aluminum chassis heat dissipation surface design, fanless efficient heat dissipation, the system can reliably work in the environment of -40 ~ +85 ℃ (AC power model working range is -25 ~ 70 ℃)

● High-strength closed aluminum shell, so that the system can work reliably in harsh and dangerous industrial environment

● Standard DIN rail type installation, and can also provide accessories for other installation methods

1.3. Packing List

The package of MIEN2208 series products contains the following items. If any of the following items are lost or destroyed, please contact the agent or the customer service center of Maiwe, who will assist you in replacing or making up.

Packing list

Item	Number
MIEN2208 series switch	1
User manual	1

1.4. Product Selection

Available models	Port				Voltage rage
Standard models	100M copper port	100M Fiber port(SC/ST/FC)			
		Single mode	Single mode fiber	Muti mode	
MIEN2208	8				1. DC power supply: DC12 ~ 48V, DC48V (36 ~ 72V). 2.AC power supply: DC110 ~ 370V or AC85
MIEN2208-S	7	1			
MIEN2208-TS	7		1		
MIEN2208-M	7			1	
MIEN2208-2S	6	2			
MIEN2208-2TS	6		2		
MIEN2208-2M	6			2	
MIEN2208-4S	4	4			
MIEN2208-4TS	4		4		
MIEN2208-4M	4			4	
MIEN2208GE	8				

					~ 264V adaptive

Attention

> Among the above models, MIEN2208GE supports DC12 ~ 48V power supply, other models can choose one of the three power supplies according to demand.

2. Technical Index

System indicators	MIEN2208
RJ45 port	10Base-T/100Base-TX
Fiber port	100Base-FX
System parameters	Support standards: IEEE 802.3i, IEEE 802.3u Switching bandwidth: 1.6Gbps (2.0Gbps for 4 fiber and 4 copper products) Packet forwarding rate: 1.19Mpps (4fiber 4 copper is 1.488Mpps) MAC address table: 1K (4fiber ports+4 copper ports are 2K) Exchange method: store and forward Broadcast storm suppression (supported by 4 optical models only)
Copper port parameters	Physical interface: RJ45 with shield RJ-45port:10Base-T/100Base-TX,support auto-negotiation function Interface standard: comply with IEEE802.3 standard Transmission distance: 100 meters
Fiber port parameters	Luminous power:> -12dBm (single mode)> -17dBm (multimode) Receiver sensitivity: <-38dBm (single mode) <-35dBm (multimode) Wavelength: 1310nm (single mode) 1550nm (single mode) 1310nm (multimode) Transmission distance: 20 - 80Km optional (single mode) <5Km (multimode) Connector type: SC / FC / ST Transmission rate: 155Mbps
Power parameters	Input voltage: DC power input range: DC12 ~ 48V and DC48V (36 ~ 72V) (support dual power redundant input) AC power input range: AD220V (AC85 ~ 264V / DC110 ~ 370V) (single power supply) Input power consumption: <5W @ 24VDC (of which MIEN2208 and MIEN2208GE power consumption is less than 2W) Overcurrent protection: built-in

| Working environment	Working temperature: -25~ +70 ℃ (AC power supply model) -40~ +85 ℃ (DC power supply model) Storage temperature: -40~ +85 ℃ Humidity: 5~ 95% (no condensation)

3. Hardware Installation and Testing

3.1. Hardware Structure

3.1.1. Machine mechanism

The chassis of MIEN2208 series switches is DIN rail structure, and the whole machine adopts a six-sided fully enclosed structure. Among them, the dimensions of MIEN2208 (excluding DIN rail) are: 144mm x 33mm x97mm (H xW x D, and the dimensions of MIEN2208GE The dimensions of DIN rails are not included): 95mm x43mm x90.5mm (H xW x D), the overall dimensions of MIEN2208-S / 2S / 4S are 138mm x54mm x 110mm (height x width xdepth).

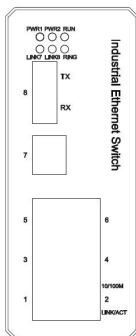### 3.1.2. Front Panel and Side Panel

There are three types of front panel structure types for MIEN2208 series switches: MIEN2208, MIEN2208GE and MIEN2208-S / 2S / 4S, as shown in below:
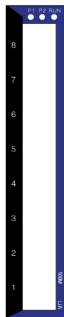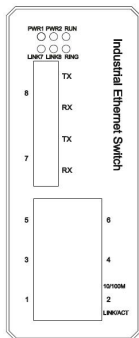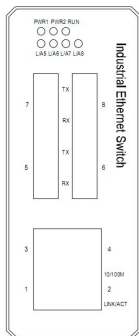

MIEN2208 front panel

MIEN2208GE front panel

MIEN2208-S front panel

MIEN2208-2Sfront panel

MIEN2208-4S front panel

MIEN2208 and MIEN2208GE switches are equipped with a 6-position 5.08mm pitch terminal on the side panel, as shown in below:

V1+ V1- ⌐↑⌐ V2+ V2-

MIEN2208 series MIEN2208-S / 2S / 4S type switch side panel is equipped with a 5-position lock 5.08mm pitch terminal

V1+ V1- ⏚ V2+ V2-   ⌐↓⌐↑⌐

MIEN2208-S / 2S / 4S model power supply and relay terminal schematic power input

The DC power supply models of MIEN2208 series switches support DC12 ~ 48V power supply by default, users can choose DC48V, support dual power input, and two power supplies are mutually backup.

The AC power models of MIEN2208 series switches support DC110 ~ 370V and AC85 ~ 264V. When using AC models, V can only be input from V1 + and V1-, V1 + is connected to the live wire L, and V1- is connected to the neutral wire N. Connect V2 + and V2-, and pay attention to safety to prevent electric shock.

Power-down alarm output

MIEN2208 series switches support alarm function. MIEN2208 and MIEN2208GE models have normally closed nodes, and MIEN2208-S / 2S / 4S models support normally closed nodes and normally open nodes. When the switch works normally, the normally closed node is opened and the normally open node is closed. When the system is powered off, the normally closed node is closed and the normally open node is opened. The recommended switch load capacity of the relay is 1A (24VDC). Users can use relay contact

output to connect other sound and light alarm devices.

3.1.3. LED indicator

The LED indicators on the front panel of MIEN2208 series switches can show the system operation and the status of ports, which is convenient for finding and solving faults.

Description of LED indicator

| LED	Conditions	State
System status LED		
PWR1/ PWR2	On	Power connected and operating normally
	Off	power unconnected or the system is abnormal
RUN	Blinking	The system is operating normally (some models are always on to indicate normal)
	Off	The system is abnormal
Fiber port status LED		
LINK	On	The port has established a valid network connection
	Blinking	Network activity on the port
	off	No valid network connection
Ethernet RJ45 port status LED		
Each Ethernet RJ45 port has two indicators. The yellow indicator is the port rate indicator and the green indicator is the port connection status indicator.		
10/100M （Yellow）	On	100M working state (100Base-TX)
	Off	10M working state (10Base-T)
LINK/ACT （Green）	On	The port has established a valid network connection

	Blinking	Network activity on the port
	Off	The port doesn't establish a valid network connection

3.2. Hardware Installation

3.2.1. Din-rail installation

●For most industrial applications, it is very convenient to install with 35mm standard DIN rail. When you remove the device from the packing box, the DIN rail connection seat should be fixed on the rear panel of the MIEN2208 series switch. If MIEN2208 series switches need to be mounted on DIN rail, you should check the installation of DIN rail before installation. It includes the following two contents:

●Whether the DIN rail is fixed and strong, whether other equipment is installed on the DIN rail, and whether there is enough space for installing the switch.

●Weather Is there any power supply suitable for the work of this switch on the DIN rail.

●After selecting the installation location of the switch, install the switch on the DIN rail as follows:

●Insert the upper part of the DIN rail into the snap groove of the upper part of the DIN rail connection seat with a snap spring. Push down slightly on the top panel of the switch and rotate the device as shown in below

A   B
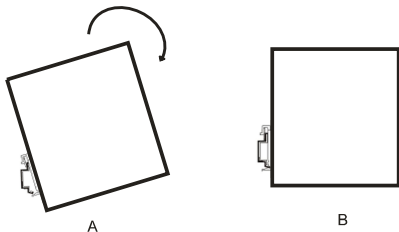
Install MIEN2208 series switches to Dil-rail

●cable connection

After the MIEN2208 series switches are correctly installed, the cables can be installed and connected, mainly including the cable connections of the following interfaces.

●RJ45 interface

The terminal equipment interface provided by MIEN2208 series switches

is a 10Base-T / 100Base-TX Ethernet RJ45 interface, which uses a DC network cable to connect to the terminal equipment and a crossover network cable to connect to the network equipment.

●Connecting Power

MIEN2208 series switches use power according to the instructions on the product label. When all other cables are connected, the power can be connected

3.2.2. Fiber connecting

The1- fiber , 2-fiber and 4-fiber models of MIEN2208 series switches provide 100Base-FX full-duplex single-mode or multimode fiber interfaces. The type of optical fiber interface can choose SC / ST / FC according to demand.

Attention

> This switch uses a laser to transmit signals on fiber optic cables. The laser meets the requirements of Class 1 laser products, and normal operation is not harmful to the eyes. However, when the device is powered on, do not look directly at the optical transmission port and the end face of the fiber terminator.

The steps to connect pluggable fiber optic modules are as follows:

●Remove and keep the rubber sleeve of the SC / ST / FC port. When not in use, put on a rubber sleeve to protect the fiber optic terminator

●Check whether the fiber terminator is clean. Lightly moisten a clean paper towel or cotton ball and gently wipe the cable plug. A dirty fiber terminator will reduce the quality of the optical transmission and affect the port performance

●Connect one end of the optical cable to the optical fiber interface and the other end to the optical fiber interface of another device

●After the connection is completed, please check the LINK / ACT indicator of the corresponding optical port on the front panel.

3.3. Simple Test

3.3.1. System self-check

When the device is powered on, all service port indicators on the front panel flash one at a time, indicating that the switch has been powered on. When the RUN indicator flashes, the switch starts to work normally.

3.3.2. Copper port test

As below picture,Power on the switch, connect any two copper ports to the network ports of the two test computers through a directly connected network cable, and send Ping commands to each other. Both parties can correctly ping

each other without packet loss. At the same time, the yellow light on the corresponding port should be always on (the computer network card works in 100M state) or off (the computer network card works in 10M state), and the green light on the corresponding port should flash. It means that the hardware of the tested two copper ports is working normally. The following test diagram takes the 8 copper port products of MIEN2208 series switches as an example.
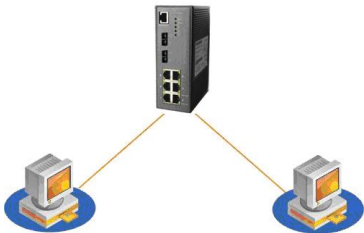
3.3.3. Fiber port testing

The equipment with optical fiber interface is formed into the optical fiber chain network as shown in below (TX connects to another RX, RX connects to another TX). Each copper port of each device is connected to the test computer through a directly connected network cable, and sends Ping commands to each other, so that both parties can correctly ping each other without packet loss. At the same time, the LINK light corresponding to the optical port should flash, indicating that the hardware of the two optical ports under test is working properly. Below is a schematic diagram of the optical port test using the 2 fiber 6 copper switch in MIEN2208 series switches as an example.
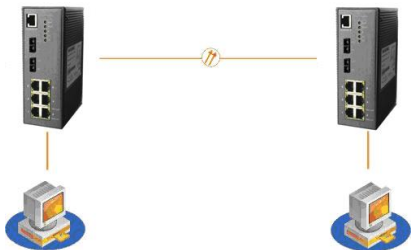
4. Maintenance and Service

Since the date of product shipped, it provides five years warranty. In the warranty period, if there is any failure or functional product fails, it will repair or replace free of charge for users of the product. However, these commitments do not cover improper use, accidents, natural disasters, improper operation or improper installation caused the damage.

To ensure that consumers benefit of products, through the following ways to get help and problem solving:

- Internet services.
- Call the technical support office.
- Product repair or replacement.

4.1. INTERNET Service

Through the website of Wuhan Technical Support section, you can get more useful information and tips.

4.2. Technical Support Phone Services

By using the product user manual, you can connect with our technical support office, we have professional technical engineers to answer your questions, help you the first time resolve your product or issue.

4.3. The product Repair or Replacement

Product repair, replacement or refund, should first connect with our technical staff to confirm, and then sales staff to contact and get the problem handled.Above shall technical staff and sales staff through consultations, to complete the product maintenance, replacement or return.