

**MIEN6208 Series**

**Management Industrial Ethernet Switch**

**User Manual**  
(Edition: V3.1)

Wuhan Maiwe Communication Co., Ltd.

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**Clarification**

The user manual is applicable to MIEN6208 series of din-rail managed industrial 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	2016.09	Create files
V2.0	2016.10	Product update
V3.0	2017.05	Product update
V3.1	2018.07	Files update
V1.0	2016.09	Create files

## 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.

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# 1. Introduction

## 1.1. Product description

Wuhan Maiwe industrial ethernet switch is specially designed for industrial high speed communications network. The management switch provide the advanced industrial ethernet solution,which makes the industrial communications more fluent,dependable and fast.

To satisfy different request,the Maiwe management switch series can be used for both simple hot-plug function and complicated Web-management function.

The product provides 2 fiber 6 copper ports , 4 fiber 4 copper ports and 8 copper port models for users to choose, among which the fiber port is 100Base-FX

Single-mode or multi-mode optical fiber interface, the copper port is 10Base-T/100Base-TX Ethernet RJ45 port, each RJ45 port has self-adaptive function, which can automatically configure to 10Base-T or 100Base-TX state and full-duplex or half-duplex operation mode,

It can automatically connect MDI/MDI-X. All ports support fast ring network redundancy function, and the ring network is redundant when the system fails.

The remaining switching time is less than 20mS.

The **Mwring** technique is designed and developed for industrial application by Wuhan Maiwe. It can resume the ethernet communication network in 20ms after the interregnum. By this technique the MIEN6208 switch can construct the ring network by any optic or RJ45 port to provide faster restoration speed and communication bandwidth.

## 1.2. Product characteristic

### 1.2.1. Industrial network performance

- Ring technology based on Mwring self-recovery technology link redundancy
- Embedded Web server, through remote management and configuration of the browser
- Trunk port aggregation
- Real-time monitoring of broadcast storm control
- Online firmware update
- Multicast capabilities to support dynamic IGMP Snooping, multicast traffic filtering
- Optional 100Base-FX different distances, different types of optical interface

- Store and forward mechanism, backplane bandwidth is 8.8Gbps
- Fast port 10/100M adaptive, full / half duplex, MDI / MDIX adaptive mode
- Full-duplex flow control and half duplex back pressure flow control
- Port VLAN and IEEE 802.1Q VLAN
- QoS, IEEE802.1P and ToS / DiffServe support, improve the communication quality
- SNMP V1/V2C different levels of network management support
- Redundant dual power input, to meet the high availability requirements
- Environment to meet the strong electromagnetic interference requirements between failures
- RMON and private MIB table support, an effective remote data monitoring and management capabilities

### **1.2.2. Industrial application design**

- Redundant dual power input design
- Rack mounting installation
- Bandwidth management, network problems to prevent unpredictable
- Backup and restore system configuration parameters
- Graphical interface, one key to restore factory default
- Port mirroring for online debugging
- Effective network diagnostic tool
- Power-down alarm relay
- fast recovery for cable change
- Real-time network time synchronization
- Restrict access IP, switches in the network security management

### **1.2.3. Remote management configuration**

- Use the Web page, console applications or Windows applications to manage configuration
- Standard SNMP management protocol support

### **1.2.4. Industrial grade power supply design**

A variety of power solutions are available:

The standard DC power input is DC24V, and DC12V and DC48V are optional.

AC power input DC110V~370V and AC85V~264V.

DC power supply models support dual power supply redundant input, AC power supply models only support single power supply input

The power supply has reliable over-current, over-voltage protection and EMC protection

Relay alarm output function, can be connected with other sound and light

alarm equipment

### 1.3. Packing List

Item	QTY
MIEN6208 Industrial Ethernet switch	1
User manual	1
CD	1
RS232 cable	1
Certificate card	1

### 1.4. Products Selections

Available models	Ports				Power range
	100M copper port	100M fiber port (SC/ST/FC)			
Standard models			Single mode	Single mode single fiber	Multi mode
MIEN6208-2S	6	2			1. DC power supply: DC12~48V 2. AC power supply: DC110V~370V and AC85V~264V adaptive
MIEN6208-2TS	6		2		
MIEN6208-2M	6			2	
MIEN6208	8				
MIEN6208-4S	4	4			
MIEN6208-4TS	4		4		



MIEN6208-4M	4			4	
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Note: Each model can be powered by the above one types of power supplies.

## 2. Technique parameters:

Technical specifications	
Ethernet Standard	IEEE802.3-10BaseT IEEE802.3u-100BaseTX/100Base-FX IEEE802.3x-Flow Control IEEE802.3z-1000BaseLX IEEE802.3ab-1000BaseTX IEEE802.1ab IEEE802.1D-SpanningTree Protocol IEEE802.1w-Rapid Spanning Tree Protoco IEEE802.1Q -VLAN Tagging IEEE802.1p -Class of Service IEEE802.1X-Port Based Network Access Control
Switch properties	
Priority queue	4
VLAN ID	1-4096
IGMP Groups	256
MAC table	4k
Switch Bandwidth	1.6Gbps
Switch Latency	<5 $\mu$ s
Interface	
10/100Base port	Port numbers:8
	Connector: 9 fixed F(x)(Single/multi-mode or SC/FC/ST port available) or RJ45
	Baud rate: 100Base-FX(fiber port), 10/100M auto-negotiation
Console port	RS232/RJ45
Terminal block for power input	5.08mm terminal block
Terminal block for relay alarm	5.08mm terminal block, 1A@24VDC
Communication distance	
Twisted-pair	100m(CAT5/CAT5e cable)
Multi-mode fiber	10/100Base multi-mode: 1310nm 2km
Single mode fiber	10/100Base single mode: 1310nm 20/40km; 1550nm 60/80km
LED indicator lights	
Front panel LED	Port light: LINK/ACT, SPEED
	Running light: RUN

	Power LED: PWR1/PWR2
Power Requirements	
Power input	DC110~220V(DC110~370V range) or AC100~240V(AC85~264V range) DC12V/DC24V/DC48V available
Full-load consumption	<8W
Overload protection	support
Inversed protection	support
Redundancy protection	support
Working Environment	
Operating Temperature	-40°C~85°C
Storage temperature	-40°C~85°C
Ambient Humidity	5%~95%( non-condensing)
Physical Characteristics	
Shell	IP40 protection, aluminum alloy shell
Installation	35mm din rail-mounted installation
Dimension	54mmx144mmx110mm
Industry standard	
EMC	EN61000-4-2(ESD), Level 4 EN61000-4-3(RS), Level 4 EN61000-4-4(EFT), Level 4 EN61000-4-5(Surge), Level 4 EN61000-4-6(CS), Level 4 EN61000-4-8, Level 5
Impact	IEC60068-2-27
Falling	IEC60068-2-32
Shock	IEC60068-2-6

## 3. Hardware Installation & Test

### 3.1. Hardware structure

#### 3.1.1. System structure

The chassis of the MIEN6208 series switch is a DIN rail structure, the whole machine adopts a six-sided fully enclosed structure, and its overall dimensions(Not including DIN rail size): 144mm×54mm×110mm.

#### 3.1.2. Front panel and side panel

The MIEN6208 series switches have three structures: 2 fiber +6 copper configuration, 2x100Base-FX fiber ports and 6x10Base-T/100Base-TX Ethernet RJ45 port; 4 fiber+ 4 copper ports configuration 4 x100Base-FX optical fiber and 4x10Base-T/100Base-TX Ethernet RJ45 port; the front panel of the 8copper port model is equipped with 8 x10Base-T/100Base-TX Ethernet RJ45 port,

Model:MIEN6208-2S: 2fiber+6 copper.



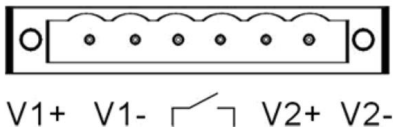
MIEN6208-4S : 4 fiber+4 copper.



MIEN6208: 8 copper ports.



The side panel of MIEN6208 series switches is equipped with a 6-position lock terminal with 5.08mm pitch as below:



### Power input

The DC power supply models of MIEN6208 series switches support DC12V-44V power supply by default, and users can DC48V, support dual power input, the two power sources are mutually backup.

The AC power supply models of MIEN6208 series switches support DC110V~370V and AC85V~264V power supply.

For AC models, V can only be input from V1+ and V1-, V1+ connects to live wire L, and V1- to neutral wire N. Do not connect from V2+, V2- and pay attention to safety to prevent electric shock.

### Power failure alarm output

MIEN6208 series switches support alarm function and have normally closed nodes. When the switch is working normally, the normally closed node is disconnected.

When the system is powered off, the port is offline, or the network storm alarms, the normally closed node is closed. The recommended switching load capacity of the relay is 1A(24VDC). The user can use the relay contact output to connect other sound and light alarm devices.

### Serial port network management port (CONSOLE)

The network management port is an RJ45 interface. Please use the serial port extension cable provided by our company to connect to the PC's serial port.

The letter standard is 3-wire RS-232.

The communication parameters of the serial port are as follows: baud rate: 9600, data bit: 8, parity bit: none, stop bit: 1, flow control: none.

### Indication lights:

LED	Conditions	Status
System status LED		
PWR1/ PWR2	on	The power is connected and working properly
	off	The power is unconnected or working abnormal
RUN	blinking	The system is running normally
	off	The system is running abnormal
	off	Ring close
Fiber port status LED		
LINK	On	The port has established an active network connection
	blinking	Port has network activity
	off	The port does not have a valid network connection
Ethernet RJ45 port status LED		
Each Ethernet RJ45 port has two indicators, a yellow light for the port rate indicator and a green light for the port connection status indicator.		
10/100M (Yellow light)	On	100M (100Base-TX)
	off	10M working status (10Base-T)
LINK/ACT (Green light)	on	The port has established an active network connection
	blinking	Port has network activity
	off	The port does not have a valid network connection

## 3.2. Hardware Installation

### 3.2.1. Din-rail installation

This series equipment back panel have fixed well DIN rail-way connection seat. If need installation, please check DIN rail way condition . Main including 2 terms :

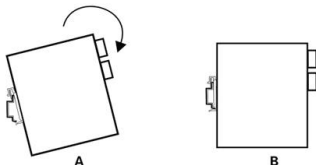
- Checking DIN-Rail is fixed firm, DIN-rail is installed on other equipment, whether there is enough space .

- Checking DIN-Rail whether suitable for power input.

- Please selected the correct position. As below behind picture shows:

- Insert DIN-Rail into DIN-Rail slot and as schematics 2-1 shows turning equipment.

As below shows, insert DIN-rail into DIN-Rail slot and confirm the MIEN6208 reliable equipment installed on the DIN-rail.



### 3.2.2. Cable connection

After installation, could prepare for cable connection as below:

- Working interface connection

This Ethernet switch supplied terminal device interface is 10Base-T/100Base-TX RJ45 port, use the direct cable connect with terminal equipment, use cross wire connect with network equipment

- CONSOLE connection

This products CONSOLE port could connect with serial interface which control PC.

- Power connection

When all cable connect well, could connect with Ethernet switch' standard power.

### 3.2.3. Fiber connection

This series Ethernet switch provide 0/2/4 100Base-FX single mode or multi-mode fiber optic ports. The interface type can be selected according to requirements of SC / ST / FC.

#### Attention :

This switch uses lasers to transmit signals over fiber cable. Laser Class 1 laser/LED products can cause serious damage on the eyes harmless. When the equipment is power on, please do not stare directly into the laser beam.

**Connection fiber cable ,please use following steps:**

- When use fiber cable port, remove SC/FC/ST port cover; When it finish work, please put the plastic cover to protect the fiber optic head, keep clean.
- Check the fiber optic cable head whether it clean or not. If it not clean, will effect port and communication quality.
- One fiber optic head connect with Ethernet switch optic port, the other fiber head connect with another equipment fiber optic interface equipment.
- After connection, please check switch the front interface's LNK/ACT LED lights. If lights on, connection is available.

**Attention:**

This switch uses a laser to transmit signals over fiber optic cables. The laser meets the requirements of Class 1 laser products, and normal operation is harmless to the eyes. However, when powering up the unit, do not look directly at the optical transmission port and the fiber optic terminator end face.

The steps to connect the pluggable fiber optic module are as follows , please use following steps:

- When use fiber cable port, remove SC/FC/ST port cover; When it finish work, please put the plastic cover to protect the fiber optic head, keep clean.
- Check the fiber optic cable head whether it clean or not. If it not clean, will effect port and communication quality.
- One fiber optic head connect with Ethernet switch optic port, the other fiber head connect with another equipment fiber optic interface equipment.
- After connection, please check switch the front interface's LNK/ACT LED lights. If lights on, connection is available.

### 3.3. Testing guide

#### 3.3.1. Self-examination

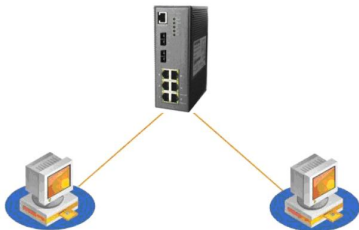
When connection equipment, the front panel power supply indicator light will blinking once, it means working well. After a while Power supply indicator light is on. Run indicator light (system status LED) will blink interval 1s.

#### 3.3.2. Copper port testing

As below picture. Powering on the switch, connect any two copper ports to the network ports of the two test computers through the direct connection network cable, and send ping commands to each other. Both parties can correctly ping each other without losing packets. At the same time, the yellow light on the corresponding port should be always on (the computer network card works in the 100M state) or often off (the computer network card works in the 10M state), and the green light on the corresponding port should flash. The hardware of the two electrical ports tested is working properly. The following

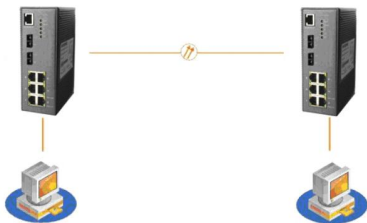


test diagram takes the 8-port product of the MIEN6208 series switch as an example.



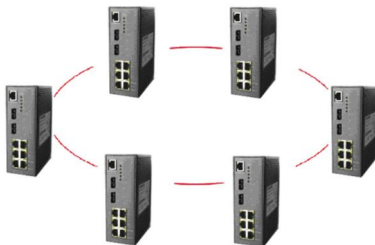
### 3.3.3. Fiber ports testing

The device with the fiber interface is composed of the fiber chain network shown in Figure 3-5 (TX is connected to another RX, and RX is connected to another TX). Each of the copper interfaces of each device is connected to the test computer through a direct-connected network cable and sends ping commands to each other. Both parties can correctly ping each other without losing packets. At the same time, the LINK lamp corresponding to the optical port should flash, indicating that the two optical ports tested are working properly. Figure in below shows the optical port test of the MIEN6208 series switch.



### 3.4. Network topology

Normally, this equipment requires three or more switches of this series to be connected to form a ring. The most typical application example of ring network technology is in below:



## 4. Maintenance and Service

5 years warranty from the date of shipment, if there is any failure or functional product fails within the warranty time, repair or replace is free. However, these commitments do not include 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

While using the product, you can connect with our technical support office for any queries, professional technical engineers are available to answer your questions.

### 4.3. The product repair or replacement

Product repair, replacement or return, please contact our sales staff.

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