

FIBERROAD

# LAYER 2+ MANAGED INDUSTRIAL ETHERNET SWITCH

Product Data Sheet

Ver. 2.0

Fiberroad Technology Co., Limited



Fiberroad Low Voltage PoE Switches are a game-changer in the world of networking technology. With the ability to deliver both power and data over Ethernet cables, these switches eliminate the hassle of dealing with separate power sources for devices such as IP cameras, VoIP phones, and wireless access points. This not only streamlines the networking infrastructure but also reduces clutter and complexity in installation projects. The 12-36VDC capability of Fiberroad Low Voltage PoE Switches ensures reliable performance while maintaining energy efficiency. By harnessing the power of existing Ethernet cabling, these switches pave the way for cost-effective and efficient network setups that can adapt to various technological demands. Whether it's in a commercial setting or a residential environment, Fiberroad Low Voltage PoE Switches offer a versatile solution for enhancing connectivity and productivity across different applications.

## Main Features

- All-aluminum Case, Compact and Fanless Design
- -40 to 75°C temperature maintains performance in extreme conditions
- DIN Rail and wall mountable – quick to install and remove for maintenance
- Full gigabit L2+ management, easy to manage the industrial network by CLI/WebGUI/NMS.
- Build up a redundant network with STP/RSTP/MSTP/ERPSv2.
- RADIUS, IEEE 802.1X, SNMPv3, HTTPs and SSH to enhance network security.
- Bandwidth management prevents unpredictable network status with "Lock Port" to restrict access to authorized MAC addresses.
- QoS, Priority mode based on 802.1P, Port & DSCP, queue scheduling algorithm including SP, WRR&SP+WRR



With dual power input design, Fiberroad Managed Industrial Ethernet Switch can offer redundant mechanisms for critical applications that need always-on connections. It can also operate either at an industrial standard operating temperature range -40 to 75°C. Housed in rugged DIN rail or wall mountable IP40 enclosures, these switches are perfect choices for harsh environments, such as industrial networking, Smart Bus System and are also suitable for many militaries and utility markets applications where environmental conditions exceed commercial product specifications.

Hardware Specifications		
Model	FR-7M3008P-24V	FR-7M3208P-24V
Ports	8x10/100/1000Base-T(X) RJ45 Ports	8x10/100/1000Base-T(X) RJ45 Ports 2x100/1000BASE-X SFP Slots
Port Mode(Tx)	Auto Negotiation Speed Full/Half Duplex Mode Auto MDI/MDI-X Connection	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseSX/LX/LHX/ZX	
Console	1x RJ45-to-RS232 Serial Port(115200)	
Packet Buffer Size	4 Mbits	
Maximum Packet Length	Up to 10K	
MAC Address Table	8K	
Transmission Mode	Store and Forward (full/half duplex mode)	
Exchange Property	Delay time: < 7 $\mu$ s Backplane bandwidth: 24Gbps	
IGMP GroupS	2048	
Max. No. of VLAN	64	
VLAN ID Range	VID 1 to 4094	

### PoE & Power Supply

Model	FR-7M3008P-24V / FR-7M3208P	
PoE Ports	Port 1 to 8 IEEE802.3af/at @PoE+	
Power Supply Pin	Default: 1/2(+), 3/6(-)	
Max Power Per Port	30W	
Total PWR /Input Voltage	90W(12VDC) 120W(24VDC) 240W(48VDC)	
Power Consumption	10 Watts Max(without PoE load)	
Power Inputs	2	
Input Voltage	12/24/48VDC,Redundant dual inputs	
Operating Voltage	Non-PoE Mode: 9-56VDC 30W PoE Mode: 12/24/48VDC	
Connector	1 removable 6-contact terminal blocks Pin 1/2 for Power 1, Pin 3/4 for Power 2, Pin 5/6 for fault alarm	
Protection	Overload Current Protection, Reverse Polarity Protection	

<b>Software Features</b>	
Redundancy Protocols	Support STP/RSTP/MSTP/ERPSv2(Sub-50ms), Link Aggregation
Multicast Support	Support IGMP Snooping V1/V2/V3 · support GMRP, GVMP,802.1Q
VLAN	Support IEEE 802.1Q 4K VLAN · support QINQ, Double VLAN,
Time Management	SNTP
QOS	Flow-based redirection Flow-based rate limiting Flow-based packet filtering 8*Output queues of each port 802.1p/DSCP priority mapping Diff-Serv QoS, Priority Mark/Remark Queue Scheduling Algorithm (SP, WRR, SP+WRR)
ACL	Port-based Issuing ACL ACL based on port and VLAN L2 to L4 packet filtering, matching first 80 bytes message. Provide ACL based on MAC, Destination MAC address, IP Source, Destination IP, IP Protocol Type, TCP/UDP Port, TCP/UDP Port Range, and VLAN, etc
POE Management	Total power limit of PoE power supply PoE output power allocation PoE output priority configuration PoE working status Scheduling of PoE operation
Diagnostic Maintenance	Support port mirroring, Syslog, Ping
Management Function	Support CLI · WEB · SNMPv1/v2/v3 · Telnet server for management, EEE, LLDP, DHCP Server/Client(IPv4/IPv6), Cloud/MQTT
Alarm Management	Support 1 way relay alarm output, RMON, TRAP
Security	Broadcast Storm Protection, HTTPS/SSLv3, AAA & RADIUS, SSH2.0 Support DHCP Snooping, Option 82 · 802.1X security access, Support user hierarchical management, ACL access control list, Support DDOS · port-based MAC filtering / binding, MAC black holes, IP source protection, Port isolation, ARP message speed limit
Advance Layer 2+ Features	IPv4/IPv6 Management Static Route

<b>Physical Characteristics</b>	
Housing	Aluminum case
IP Rating	IP40
Dimensions	138mm x 108mm x 49mm (L x W x H)
Installation	DIN Rail/Wall Mount
Weight	680g
<b>Environmental</b>	
Operating Temperature	-40°C~75°C (-40 to 167 °F)
Operating Humidity	5%~95% (non-condensing)
Storage Temperature	-40°C~85°C (-40 to 185 °F)
MTBF	907,476 hours @ Telcordia SR-332 Standard
Heat Dissipation	34 BTU/h (non-PoE mode) 853 BTU/h (with 240W PoE load)
Cooling	Passive Cooling, Fanless Design
Noise Level	0 dBA

LED	State	Description
PWR (P1&P2)	ON	Power is being supplied
	OFF	Power is not being Supplied.
RUN	Blinking	The system is running well
Link/ACT (1-8)	ON	Port connection is active
	Blinking	Data transmitted
	OFF	Port connection is not active.
ALM	ON	Has alarm information
	OFF	No alarm information

DIP Switch	State	Description
#1	ON	RSTP Disabled
	OFF	RSTP Enable(Default)
#2	ON	Port VLAN Enable
	OFF	Port VLAN Disable(Default)
#3	ON	SFP Port is 100M
	OFF	SFP Port 100/1000M(Default)
#4		Function Reserve

**NOTE:** 1. RSTP switches to the ON position, which indicates RSTP is in disabled status.  
 2. VLAN switches to the ON position, indicating VLAN is enabled. All LAN ports can only communicate with the SFP uplinks when this option is enabled.  
 3. To take effect the DIP Switch function while the ethernet switch is in operation, there is a need to reboot the Ethernet switch after tuning the DIP switch.

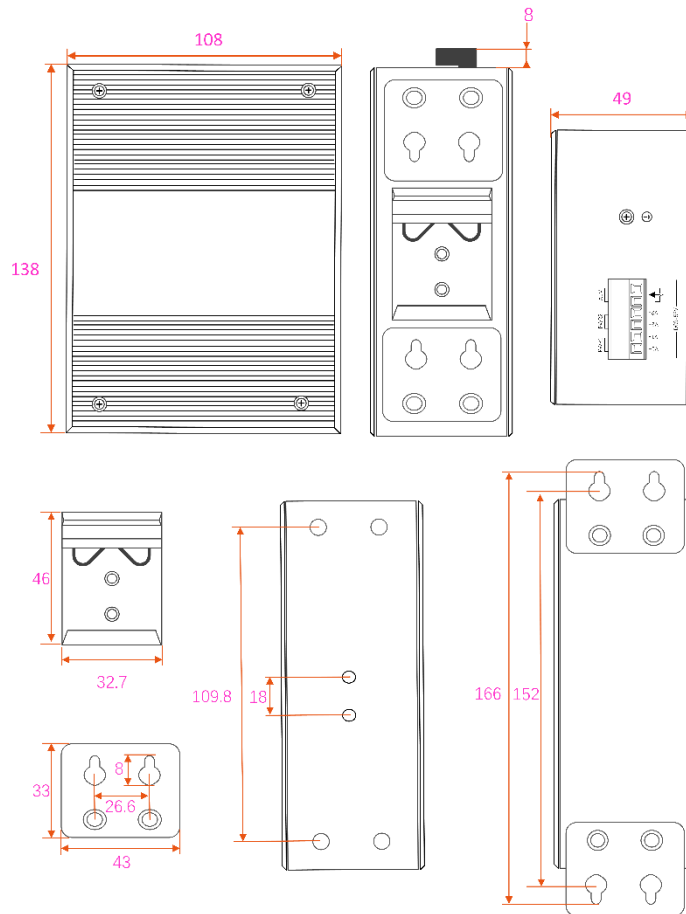
## Regulatory & Warranty

Safety	IEC/EN 62368-1
EMI	EN55032 Class A, CISPR 32 FCC Part 15B Class A
EMS	EN61000-4-2 (ESD) EN61000-4-3 (RS) EN61000-4-4 (EFT) EN61000-4-5 (Surge) EN61000-4-6 (CS) EN61000-4-8 (PFMF)
Shock	IEC 60068-2-27
Free Fall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Environmental	RoHS
Warranty	5 Years, Details See: <a href="http://www.fiberroad.com">www.fiberroad.com</a>

## Package Contents

Device	1x Industrial Ethernet Switch
Cable	1xDB9 female to RJ45
Installation Kit	1x DIN-Rail Clip 2x Wall-Mount Kits
Documentation	1 x Quick installation guide 1 x Warranty card 1x Product notice

## Dimensions Unit: mm



## Accessories(Sold Separately)

### Power Supply

FR-I-60-24	DIN-rail 24 VDC power supply with 60W/0.6A, 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature
FR-I-120-48	DIN-rail 48-58V VDC power supply with 120W/1.2A, , 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature
FR-I-240W-48	DIN-rail 48-55V VDC power supply with 240W/2A, , 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature
FR-I-480W-48	DIN-rail 48-55V VDC power supply with 480W/4A, , 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature

### SFP Optical Transceiver

FRSX-1L311C-I	1.25Gb/s 1310nm 10km SFP, wide operation temperature range of -40°C-85°C ( -40°F - 185°F )
FRSX-1L341C-I	1.25Gb/s 1310nm 40km SFP · wide operation temperature range of -40°C-85°C ( -40°F - 185°F )
FRSX-1L5X1C-I	1.25Gb/s 1550nm 80/100km SFP · wide operation temperature range of -40°C-85°C ( -40°F - 185°F )
FRSX-1L3523/5323C-I	1.25Gb/s 1310nm/1550nm 20km BiDi SFP · wide operation temperature range of -40°C-85°C ( -40°F - 185°F )

### Armored Fiber Patch Cable / LAN Cable

FRPC-A-LC	Armored LSZH LC UPC to LC UPC Duplex OS2 single mode 7.0mm for Outdoor Application , 1-50m
FRLC-A-CAT6	Armored Cat6 Snagless shielded(SFTP) Ethernet Network Patch Cable, 26AWG, 1000Base-T, 0.5m – 3m

## Precautions

To avoid damage to the equipment and personal injury caused by improper use, please observe the following precautions:

- ❖ Keep the power off during installation, wear an anti-static wrist, and ensure that the anti-static wrist is in good contact with the skin to avoid potential safety hazards.
- ❖ The switch can work normally under the correct power supply. Please confirm that the power supply voltage matches the voltage indicated by the switch.
- ❖ Before powering on the switch, please make sure that the power circuit is not overloaded, so as not to affect the normal operation of the switch and even cause unnecessary damage.
- ❖ To avoid the risk of electric shock, do not open the case while the switch is working, even if it is not charged, do not open it yourself.
- ❖ Before cleaning the switch, pull out the power plug of the switch. Do not wipe with a wet cloth. Do not use liquid to clean it.
- ❖ The equipment installed in the rack is generally from bottom to top to avoid overload installation.
- ❖ Avoid placing other heavy objects on the surface of the switch to avoid accidents.

## Order Information

Model Number	10/100/1000Base-T(X), RJ45	100/1000Base-X SFP Slot	PoE Standard	Input Voltage	Operating Temp.
FR-7M3008P-24V	8	—	IEEE802.3af/at	DC12/24V	-40 to +75°C
FR-7M3208P-24V	8	2	IEEE802.3af/at	DC12/24V	-40 to +75°C

The information in this document is subject to change without notice. Fiberroad Technology Co., Limited has made all effects to ensure the accuracy of the information, but all information in this document does not constitute any kind of warranty. Visit our website for the most up-to-date product information

## For more information

For more information about Fiberroad Managed Industrial Ethernet series products, Visit <https://www.fiberroad.com> or contact your local account representative.