



# UNMANAGED INDUSTRIAL ETHERNET SWITCH

Product Data Sheet



# 7N Series Unmanaged Industrial Ethernet Switch

The Fiberroad 7N Series Unmanaged Industrial Ethernet Switch stands out as a robust and budget-friendly solution specifically designed for the demanding environments of outdoor space CCTV cameras and diverse industrial networking requirements. Engineered to withstand harsh weather conditions, this unmanaged industrial Ethernet switch offers seamless connectivity, ensuring that surveillance systems operate flawlessly even in challenging settings. Its optional support for IEEE 802.3 af/at/bt Power Over Ethernet Standard further enhances its versatility by allowing power delivery along with data transmission through the same cable, simplifying installations and reducing clutter. With multiple ports available for quick integration into existing networks, this unmanaged industrial Ethernet switch provides reliable performance while keeping operational costs low—a perfect match for industries looking to enhance their network infrastructure without compromising on quality or efficiency.

## Main Features

- 24 x 10/100/1000Base-T RJ45 Ports
- 2 x 1000BASE-X SFP Slots
- Optionally support IEEE 802.3 af/at/bt Power Over Ethernet Standard
- Supports IEEE 802.3x flow control for Full Duplex mode and backpressure for Half Duplex mode
- Non-blocking switching architecture that forwards and filters packets at full wire-speed for maximum throughput
- Auto-MDI/MDIX eliminates the need for crossover cables
- Supports MAC address auto-learning and auto-aging
- Auto-negotiation ports provide smart integration between 10Mbps, 100Mbps and 1000Mbps hardware.
- IEEE 802.1Q VLAN Transparency
- Plug and Play design simplifies installation.

## Industrial Case and Installation

- IP40 Aluminium case, Fanless design
- 9-56V DC redundant power with reverse polarity protection
- DIN-rail and wall mount installation
- -40 to +75°C operating temperature



# Product Specifications

Hardware Specifications			
Product	FR-7N3224	FR-7N3224P	FR-7N3224BT
Copper Ports	24x10/100/1000BASE-T RJ45 Auto-MDI/MDI-X (Port 1-24)		
Fiber Ports	2x1000BASE-X SFP Slot (Port 25 -26)		
Enclosure	IP40 aluminum case		
Installation	DIN-Rail and Wall-mount		
Dimension	155x128x88mm		
Weight	1500g(Bare weight), 1800g(With package)		
Surge Protection	± 6kV DC, ± 4kV RJ45	± 6kV DC, ± 6kV RJ45	
Switching			
Switch Architecture	Store-and-Forward		
Switch Fabric	52Gbps/non-blocking		
Forwarding Rate	38.69 Mpps(64-byte packet size)		
Packet Buffer Size	4Mbits		
MAX. Packet Length	1500 bytes		
MAC Address Table	8K entries, automatic source address learning and aging		
Flow Control	IEEE 802.3x pause frame for full duplex, Back pressure for half duplex		
Power Supply and PoE			
Power Input	2		
Power 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(As required)		
Operating Voltage	DC9-56V	DC48-56V	DC52-56V
Power Consumption	12 Watts Max (without PoE load)		
Protection	Reverse Polarity, Overload Current		
PoE Ports	\	Port 1 to 24 IEEE802.3 af/at	Port 1 to 24 IEEE802.3 af/at/bt
PoE Power Supply Type	\	End-span	End-span
Power Supply Pin	\	1/2(+), 3/6(-)	1/2(+), 3/6(-) or 4/5(+), 7/8(-)
Max Power Per Port	\	30W	90W
PoE Power Budget	\	240W (Depending on power input)	240W (Depending on power input)
Environmental			
Operating Temperature	-40°C to +75°C (-40 to 167 °F)		
Storage Temperature	-40°C to +85°C (-40 to 185 °F)		
Operating Humidity	5%~95% (non-condensing)		
Cooling	Passive Cooling		
MTBF	>500,000 hours @Telcordia SR-332 GB 50° C		
LED Indicators			
P1 & P2	ON: Power is being supplied ,OFF: Power is not being supplied		
Fiber Port	ON: Port connection is active, Blinking: Data transmitted, OFF: Port connection is not active		
RJ45 Port Amber LEDs	ON: Port connection is active, Blinking: Data transmitted, OFF: Port connection is not active		
RJ45 Port Green LEDs	ON: Port is operating at 1000 Mb/s, OFF: Port is operating at 10/100 Mb/s		

# Product Specifications

DIP Switch	Name	Status	Description
#1	AI VLAN	OFF	Disable
		ON	Enable
#2	AI Extend	OFF	Disable
		ON	Enable
#3	AI QoS	OFF	Disable
		ON	Enable
#4	AI PoE	OFF	Disable
		ON	Enable

- ❖ AI PoE: The AI PoE feature allows the switch to check the ports for activity periodically. If a port is not passing traffic for a certain amount of time, the switch will reset power on that specific port.
- ❖ AI QoS: When AI QoS is enabled on the 4 and 8 port models, all ports will prioritise Video and VoIP traffic flows over others.
- ❖ AI VLAN: AI VLAN is essentially port isolation on each of the RJ45 ports. All ports are only able to communicate with the SFP Port when this option is enabled.
- ❖ AI Extend: AI extend is a common ethernet switch feature designed to extend LAN transmission distance up to 250m. The downside is that port speeds will be limited to only 10Mbps.

## Package Contents

Device	1 x Industrial Ethernet Switch
Installation Kit	1 x DIN-Rail Clip
Documentation	1 x Quick installation guide 1 x Warranty card

## Regulatory & Warranty

Standard Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3ab Gigabit Ethernet IEEE 802.3x Full-Duplex Flow Control IEEE 802.3az Energy Efficient Ethernet
ISO	Manufactured in ISO-9001 facility
Safety	IEC62368-1:2020+A11:2020
EMI	FCC Part 15B Class A, IEC 61000-3-2
EMS	IEC61000-4-2 ESD: Contact:±8kV, Air:±15kV IEC61000-4-5 Surge: Power: ±6kV; RJ45:±4kV/±6kV(PoE)
Shock	IEC 60068-2-27
Free Fall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Environmental	RoHS 2011/65/EU Annex II(EU)
Warranty	5 Years, Details See: <a href="https://fiberroad.com/warranty">https://fiberroad.com/warranty</a>

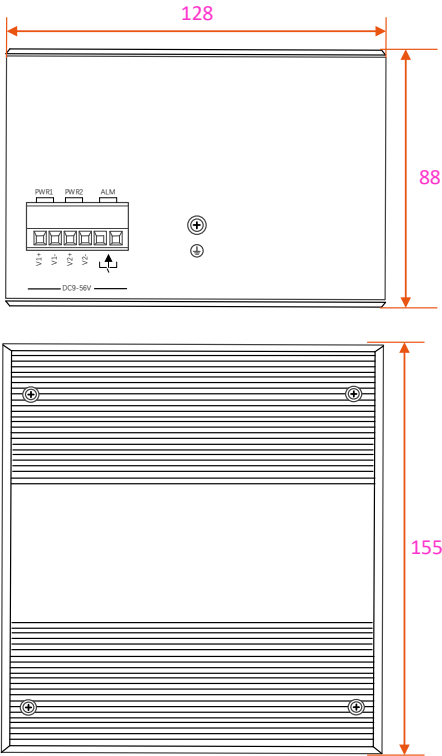
Accessories(Sold Separately)

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

Dimensions      Unit: mm



## 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 RJ45	1000Base-X SFP Port	PoE Standard	Input Voltage	Operating Temp.
FR-7M3224	24	2	\	2xDC9-56V	-40 to +75°C
FR-7M3224A	24	2	\	1xAC220V	-40 to +75°C
FR-7M3224P	24	2	Port 1-24 802.3af/at	2xDC9-56V	-40 to +75°C
FR-7M3224BT	24	2	Port 1-24 802.3af/at/bt	2xDC9-56V	-40 to +75°C

## Shipping

Model No.	FR-7N3224	FR-7N3224P	FR-7N3224BT
Classification Codes	HS Code: 851762		
	HTS: 8517.62.00		
NDA Compliant	Yes		
Individual Gross Weight	1500g	1800g	
Individual Package Dimension	225x200x110mm		
Package Quantity	14 Units		
Package Gross Weight	22kg	26.2kg	
Package Dimension	535x345x470mm		

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

## For more information

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