

FIBERROAD®

UNMANAGED INDUSTRIAL ETHERNET SWITCH

Product Data Sheet



Unmanaged Industrial Ethernet Switch

The Rack Mount Unmanaged Industrial Ethernet Switch delivers robust, plug-and-play connectivity for harsh environments, operating reliably in extreme temperatures from -40°C to +75°C. Available in both non-PoE and PoE versions, this rugged switch supports the latest high-power PoE devices (up to IEEE 802.3bt) while ensuring stable performance in industrial settings like factories, outdoor surveillance, and transportation systems. Its durable metal housing, wide voltage input (9-56V DC), and Gigabit Ethernet ports make it ideal for demanding applications where reliability and simplicity are critical. With easy rack-mount installation and zero configuration required, this switch provides seamless, high-speed networking in even the toughest conditions.

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-9N3224	FR-9N3224P	FR-9N3224BT
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	400x300x45mm		
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, Reverse Polarity and Overload Current Protection		
Power Connector	1 removable 5-contact terminal blocks Pin 1/2 for Power 1, Pin 4/5 for Power 2		
Operating Voltage	DC9-56V	DC48-56V	DC52-56V
Power Consumption	12 Watts Max (without PoE load)		
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	240W

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
FAIL(Only For PoE)	ON: PoE Status is abnormal, OFF: PoE Status is normal
MAX(Only For PoE)	ON: Total PoE Power out of maximum power budget, OFF: Total PoE Power under maximum power budget

Product Specifications

Package Contents

Device	1 x Industrial Ethernet Switch
Installation Kit	2 x Rack Mount Ears
Documentation	1 x Quick installation guide 1 x Warranty card 1 x Product notice

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: https://fiberroad.com/warranty

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

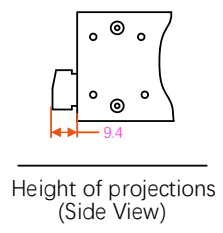
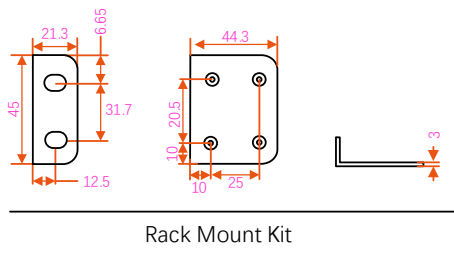
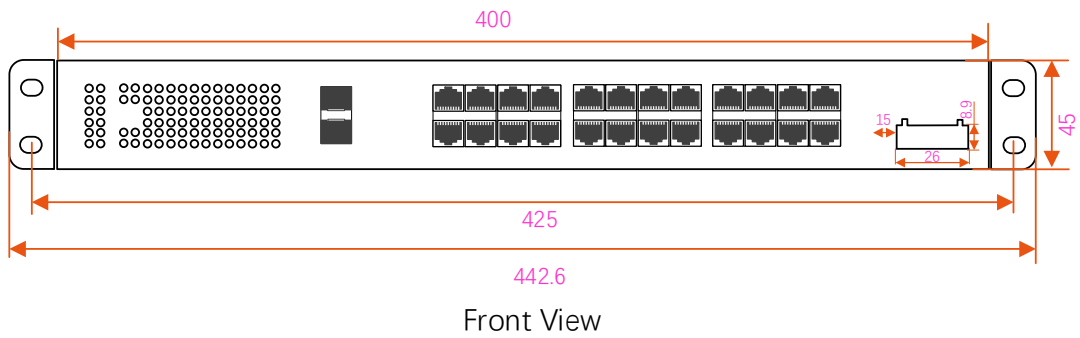
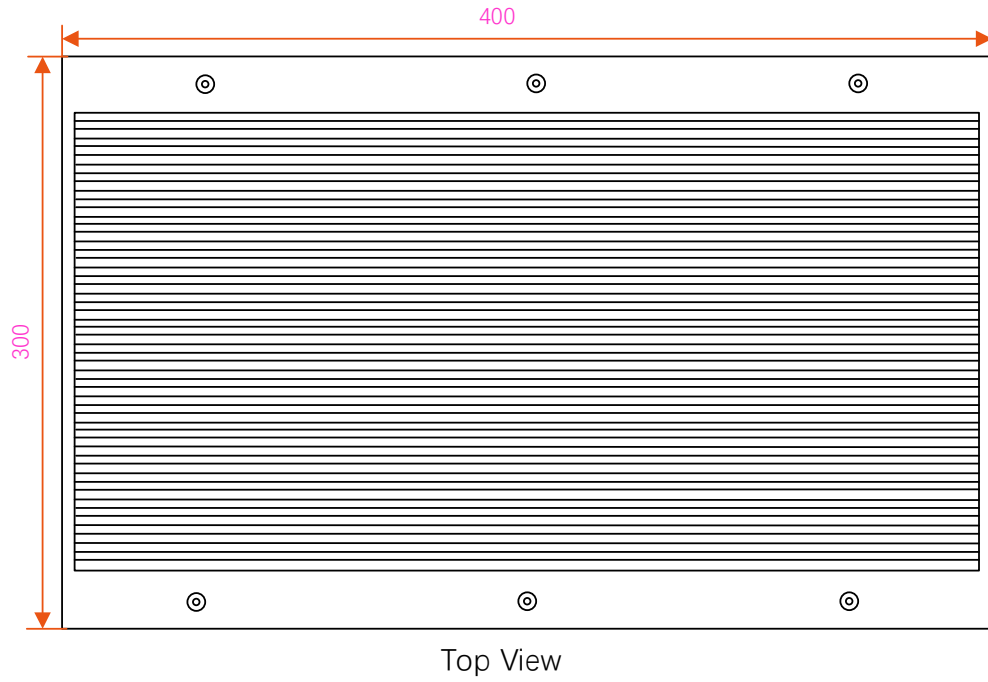
SFP Optical Transceiver

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(X), RJ45	100/1000Base-X Port	Optical Port Connector Option	PoE Standard	Input Voltage	Operating Temp.
FR-9N3224	24	2	LC	—	DC9-56V	-40 to +75°C
FR-9N3224P	24	2	LC	IEEE802.3af/at	DC9-56V	-40 to +75°C
FR-9N3224BT	24	2	LC	IEEE802.3af/at/bt	DC9-56V	-40 to +75°C

Shipping

Model No.	FR-9N3224	FR-9N3224P	FR-9N3224BT
Classification Codes	HS Code: 851762		
	HTS: 8517.62.00		
NDA Compliant	Yes		
Individual Gross Weight	2.9kg	3.5kg	
Individual Package Dimension	495x393x80mm		
Package Quantity	4 Units		
Package Gross Weight	12.7kg	13.75kg	
Package Dimension	520x345x418mm		

The information in this document is subject to change without notice. Fiberroad has made all efforts 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 Industrial Ethernet series products, Visit <https://www.fiberroad.com> or contact your local account representative.