# FIBERROAD

# UNMANAGED INDUSTRIAL ETHERNET SWITCH

Product Data Sheet
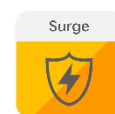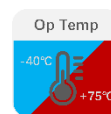
The Unmanaged Industrial Ethernet Switch is designed for small business industrial network applications. It provides an easy way to make the access point to Fast or Gigabit Ethernet. With a robust design, this switch is ideal for industrial or outdoor surveillance, withstanding the harshest conditions. The Industrial switch is Plug-and-Play, allowing for easy and quick deployment. It can optionally be mounted on a DIN-Rail or Wall Mount, making it suitable for various installation methods. An LED monitor displays information from Ethernet-connected devices such as IP cameras, wireless access points, or PC/laptops.

## Main Features

❖ All-aluminum Case, Compact and Fanless Design

❖ Full/Half-duplex self-adaptation

❖ MDI/MDIX automatic recognition

❖ Optionally support IEEE 802.3af/at/bt PoE Standard, without damaging not-PoE devices.

❖ Operating Temperature from -40 to 75℃

❖ Dual Redundant DC9~56V power input

❖ Support power input polarity protection; no worries about the reverse connection

❖ Aluminium shell, fanless design

❖ Free fall, shock-proof and vibration-proof for industries

❖ Plug and play; no software configuration is needed

❖ Either DIN rail or Wall Mount installation

The industrial switch is designed for reliability and easy maintenance, with features like a fanless design and low power consumption. The Industrial Ethernet Switch uses mature technology and open network standards and can adapt to both low and high temperatures. It is also resistant to electric interference, salt fog, vibration, and shocks. Additionally, it is equipped with a redundant dual power supply, providing additional reliability for critical applications that need always-on connections.

## Ethernet Interface

| Model | FR-7N1104/FR-7N1104P/1104BT | FR-7N3104/FR-7N3104P/3104BT |
|---|---|---|
| Ports | 4x10/100Base-TX Port(RJ45)<br>1x100Base-X(SFP/1x9) | 4x10/100/1000Base-TX Port(RJ45)<br>1x1000Base-X(SFP/1x9) |
| Port Mode(Tx) | Auto Negotiation Speed<br>Full/Half Duplex Mode<br>Auto MDI/MDI-X Connection | |
| Standards | IEEE 802.3 for Ethernet<br>IEEE 802.3u for Fast Ethernet<br>IEEE 802.3x for flow control and back pressure<br>IEEE802.3az for Energy Efficient Ethernet(EEE) | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for Fast Ethernet<br>IEEE 802.3ab Gigabit Ethernet<br>IEEE 802.3x for flow control and back pressure<br>IEEE802.3az for Energy Efficient Ethernet(EEE) |
| Packet Buffer Size | 512K | 1M |
| Maximum Packet Length | 9K | 10K |
| MAC Address Table | 4K | 4K |
| Transmission Mode | Store and Forward (full/half duplex mode) | |
| Exchange Property | Delay time: < 7μs<br>Backplane bandwidth: 1.25G | Delay time: < 7μs<br>Backplane bandwidth: 12G |

## PoE & Power Supply

| Model | FR-7N1104P/3104P | FR-7N1104BT/3104BT |
|---|---|---|
| PoE Ports | Port 1 to 4 IEEE802.3af/at @PoE+ | Port 1 to 4 IEEE802.3af/at/bt @PoE++ |
| Power Supply Pin | Default: 1/2(+), 3/6(-) | Default: 1/2(+), 3/6(-) or 4/5(+), 7/8(-) |
| Max Power Per Port | 30W | 90W |
| Total PWR /Input Voltage | 120W(DC48-56V) (Model dependent) | 360W(DC52-56V) (Model dependent) |
| Power Consumption | 3 Watts Max(without PoE load) | |
| Power Inputs | 2 | |
| Input Voltage | 9-56VDC,Redundant dual inputs | |
| Operating Voltage | Non-PoE Mode: 9-56VDC<br>30W PoE Mode: 48-56VDC<br>90W PoE Mode: 52-56VDC(IEEE802.3bt model) | |
| Connector | 1 removable 6-contact terminal blocks<br>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 | |

| LED | State | Description |
|---|---|---|
| PWR<br>(P1&P2) | ON | Power is being supplied |
| | OFF | Power is not being Supplied. |
| Link/ACT<br>(1-5) | ON | Port connection is active |
| | Blinking | Data transmitted |
| | OFF | Port connection is not active. |

# Product Specifications

| Physical Characteristics | |
|---|---|
| Housing | Aluminium case |
| IP Rating | IP40 |
| ESD Protection | 6kV |
| EFT Protection | 6kV |
| Dimensions | 120mm x 90mm x35mm (L x W x H) |
| Installation Mode | DIN Rail/Wall Mount |
| Weight | 400g(without PoE) |
| **Working Environment** | |
| Operating Temperature | -40℃~75℃ (-40 to 167 ℉) |
| Operating Humidity | 5%~90% (non-condensing) |
| Storage Temperature | -40℃~85℃ (-40 to 185 ℉) |
| Heat Dissipation | 10 BTU/h (Non-PoE)<br>420 BTU/h (30W PoE)<br>1260 BTU/h (90W PoE) |
| Cooling | Passive Cooling |
| Noise Level | 0 dBA |

| Warranty | |
|---|---|
| MTBF | > 500,000 Hours, Standard: Telcordia(Bellcore), GB |
| Defects Liability Period | 5 years warranty, lifetime technical support<br>See www.fiberroad.com |

| Certification Standard | |
|---|---|
| EMC/EMI/EMS | FCC Part15 Class A<br>CE-EMC/LVD<br>RoHS<br>EN61000-4-2 (ESD):LEVEL 4<br>IEC 6100-4-2 (EFT):LEVEL 4<br>IEC 6100-4-2 (Surge): LEVEL 4<br>IEC 6100-4-2 (CS)：LEVEL 3<br>IEC 61000-4-2(PFMP) : LEVEL 5<br>EN61000-4-3 (RS):LEVEL 4 |
| Shock | IEC60068-2-27 |
| Vibration | IEC60068-2-6 |
| Freefall | IEC60068-2-31 |
| Safety | EN 60950-1, UL 60950-1, CSA C22.2 No.60950-1, UL 508 |

| Package Contents | |
|---|---|
| Device | 1x Industrial Ethernet Switch |
| Installation Kit | 1x DIN-Rail Clip<br>2x Wall-Mount Kits |
| Documentation | 1 x Quick installation guide<br>1 x Warranty card<br>1x Product notice |

## Dimensions     Unit: mm
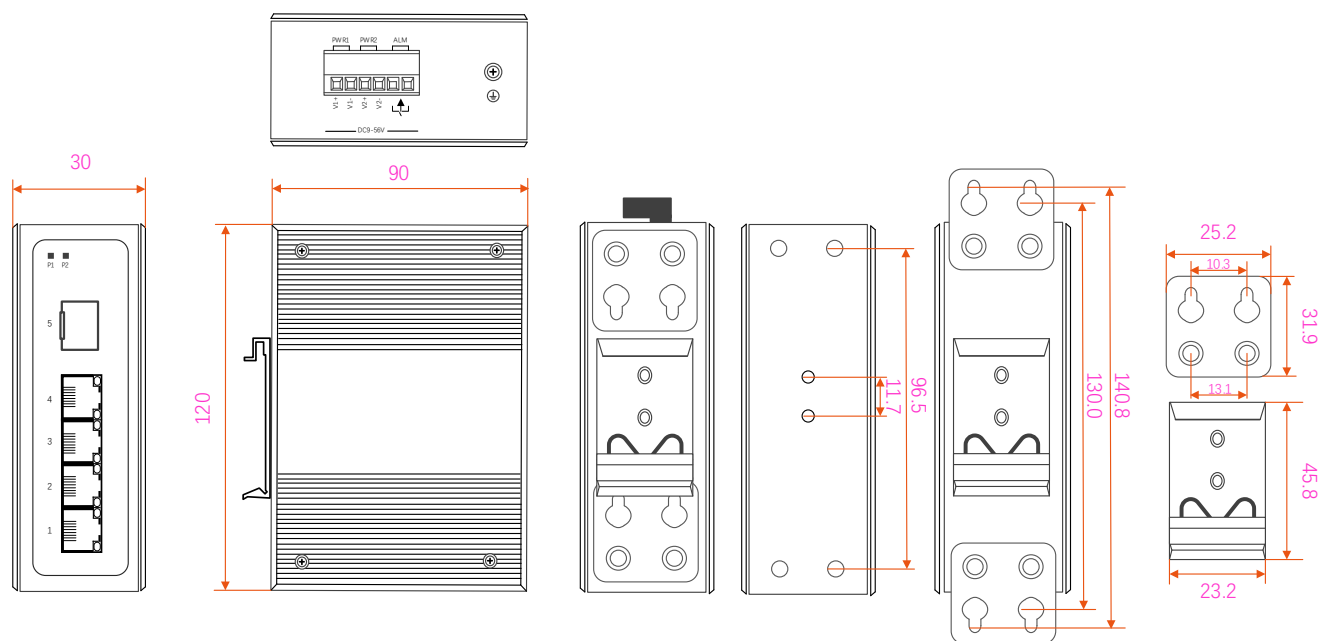


## Accessories(Sold Separately)

### 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℃-85℃（-40℉ - 185℉） |
| FRSX-1L341C-I | 1.25Gb/s 1310nm 40km SFP，wide operation temperature range of -40℃-85℃（-40℉ - 185℉） |
| FRSX-1L5X1C-I | 1.25Gb/s 1550nm 80/100km SFP，wide operation temperature range of -40℃-85℃（-40℉ - 185℉） |
| FRSX-1L3523/5323C-I | 1.25Gb/s 1310nm/1550nm 20km BiDi SFP，wide operation temperature range of -40℃-85℃（-40℉ - 185℉） |

### Armored Fiber Patch Cable / LAN Cable

| | |
|---|---|
| FRPC-A-LC | Armored LSZH LC UPC to LC UPC Duplex OS2 single mode 7.0mm for Ourdoor 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 | 10/100Base-T(X), RJ45 | 10/100/1000Base-T(X), RJ45 | 100Base-X Port | 1000Base-X Port | Optical Port Connector Option | PoE Standard | Input Voltage | Operating Temp. |
|---|---|---|---|---|---|---|---|---|
| FR-7N1104 | 4 | — | 1 | — | LC/SC/ST/FC | — | DC9-56V | -40 to +75℃ |
| FR-7N1104P | 4 | — | 1 | — | LC/SC/ST/FC | IEEE802.3af/at | DC9-56V | -40 to +75℃ |
| FR-7N1104BT | 4 | — | 1 | — | LC/SC/ST/FC | IEEE802.3af/at/bt | DC9-56V | -40 to +75℃ |
| FR-7N3104 | — | 4 | — | 1 | LC/SC/ST/FC | — | DC9-56V | -40 to +75℃ |
| FR-7N3104P | — | 4 | — | 1 | LC/SC/ST/FC | IEEE802.3af/at | DC9-56V | -40 to +75℃ |
| FR-7N3104BT | — | 4 | — | 1 | LC/SC/ST/FC | IEEE802.3af/at/bt | DC9-56V | -40 to +75℃ |

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