



# 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

- 5 x 10/100Base-TX RJ45 Ports
- 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 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-7N1005                                                                                                               | FR-7N1005P                         | FR-7N1005BT                        |
| Copper Ports            | 5x10/100BASE-TX RJ45 Auto-MDI/MDI-X (Port 1-5)                                                                          |                                    |                                    |
| Fiber Ports             | \                                                                                                                       |                                    |                                    |
| Enclosure               | IP40 aluminum case                                                                                                      |                                    |                                    |
| Installation            | DIN-Rail and Wall-mount                                                                                                 |                                    |                                    |
| Dimension               | 120 x 90 x 35 mm                                                                                                        |                                    |                                    |
| Weight                  | 380g(Bare weight), 480g(With package)                                                                                   |                                    |                                    |
| Surge Protection        | ±6kV DC, ±4kV RJ45                                                                                                      | ±6kV DC, ±6kV RJ45                 |                                    |
| Switching               |                                                                                                                         |                                    |                                    |
| Switch Architecture     | Store-and-Forward                                                                                                       |                                    |                                    |
| Switch Fabric           | 1.8Gbps/non-blocking                                                                                                    |                                    |                                    |
| Forwarding Rate         | 0.74 Mpps(64-byte packet size)                                                                                          |                                    |                                    |
| Packet Buffer Size      | 1 Mbits                                                                                                                 |                                    |                                    |
| MAX. Packet Length      | 1536 bytes                                                                                                              |                                    |                                    |
| MAC Address Table       | 2K 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<br>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       | 5 Watts Max (without PoE load)                                                                                          |                                    |                                    |
| Protection              | Reverse Polarity, Overload Current                                                                                      |                                    |                                    |
| PoE Ports               | \                                                                                                                       | Port 1 to 4 IEEE802.3 af/at        | Port 1 to 4 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        | \                                                                                                                       | 120W<br>(Depending on power input) | 120W<br>(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)                                                                                                 |                                    |                                    |
| Heat Dissipation        | 10 BTU/h (Non-PoE), 430 BTU/h (with 120W PoE load)                                                                      |                                    |                                    |
| Cooling                 | Passive Cooling                                                                                                         |                                    |                                    |
| MTBF                    | >500,000 hours @MIL-HDBK-217F GF 25°C                                                                                   |                                    |                                    |
| LED Indicators          |                                                                                                                         |                                    |                                    |
| P1 & P2                 | ON: Power is being supplied ,OFF: Power is not being supplied                                                           |                                    |                                    |
| 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 100 Mb/s, OFF: Port is operating at 10 Mb/s                                                    |                                    |                                    |

# Product Specifications

## Regulatory & Warranty

|                     |                                                                                                                                    |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Standard Compliance | IEEE 802.3 Ethernet<br>IEEE 802.3u Fast Ethernet<br>IEEE 802.3x Full-Duplex Flow Control<br>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<br>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) |

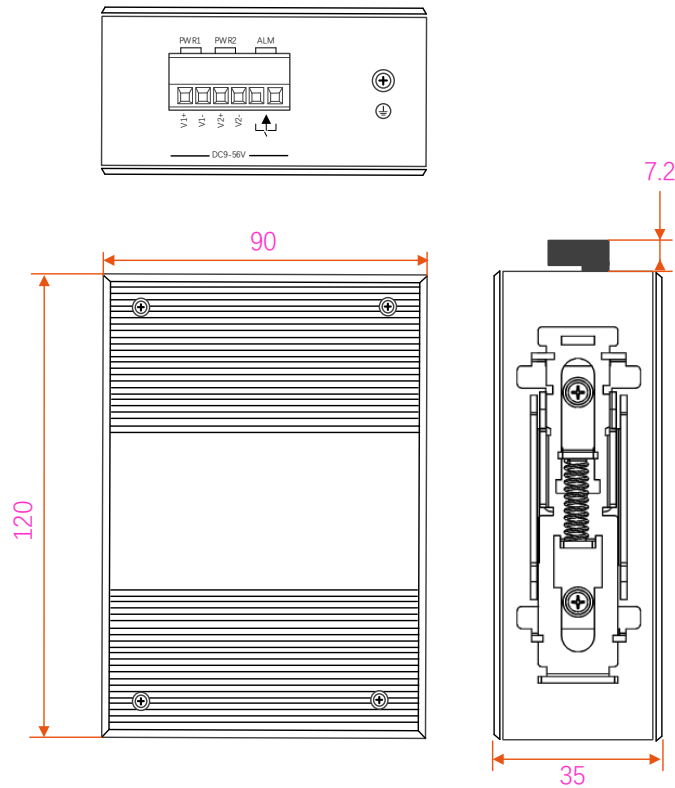
### Armored Fiber Patch Cable / LAN Cable

|             |                                                                                                 |
|-------------|-------------------------------------------------------------------------------------------------|
| 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 |

### Package Contents

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

## 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 | 10/100Base-TX RJ45 | 100/1000Base-X Port | PoE Standard            | Input Voltage | Operating Temp. |
|--------------|--------------------|---------------------|-------------------------|---------------|-----------------|
| FR-7N1005    | 5                  | \                   | \                       | 2xDC9-56V     | -40 to +75°C    |
| FR-7N1005A   | 5                  | \                   | \                       | 1xAC220V      | -40 to +75°C    |
| FR-7N1005P   | 5                  | \                   | Port 1-4 802.3 af/at    | 2xDC9-56V     | -40 to +75°C    |
| FR-7N1005BT  | 5                  | \                   | Port 1-4 802.3 af/at/bt | 2xDC9-56V     | -40 to +75°C    |

## Shipping

| Model No.                    | FR-7N1005       |  | FR-7N1005P |  | FR-7N1005BT |  |
|------------------------------|-----------------|--|------------|--|-------------|--|
| Classification Codes         | HS Code: 851762 |  |            |  |             |  |
|                              | HTS: 8517.62.00 |  |            |  |             |  |
| NDAA Compliant               | Yes             |  |            |  |             |  |
| Individual Gross Weight      | 480g            |  | 500g       |  |             |  |
| Individual Package Dimension | 175x153x43mm    |  |            |  |             |  |
| Package Quantity             | 50 Units        |  |            |  |             |  |
| Package Gross Weight         | 24kg            |  | 25.6kg     |  |             |  |
| Package Dimension            | 540x315x430mm   |  |            |  |             |  |

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## For more information

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