# FIBERROAD®

Compact Media Converters

# FR-2701 • FR-2703

- Industrial Microtype 10/100Base-TX to 100Base-SFP Ethernet Media Converter
- Industrial Microtype 10/100/1000Base-TX to 1000Base-SFP Ethernet Media Converter

## Product Data Sheet

# FR-2701 • FR-2703

## Main Features

- Converts 10/100Base-TX to 100Base-SFP, or 10/100/1000Base-TX to 1000Base-SFP
- Compliant with IEEE 802.3u/802.3z/802.3ab
- Full/Half Duplex, Auto-Negotiation and Auto-MDI/MDIX
- All SFP ports are multi-rate 100Mb/Gigabit – support single and multimode, single or dual fiber options up to 120Km
- Robust IP40 Aluminum Metal Enclosure for Harsh Environments
- Sleek Microtype design, fits within most camera housing
- Supports DIP-switch Ethernet OAM
- Environmentally hardened -40°C to 75°C (-40°F to 167°F) operating temperature

## Overview

The FR-2701 and FR-2703 are designed to provide reliable media conversion between Fast/Gigabit Ethernet and optical signal in industrial networking environments. Its design allows straightforward deployment without complex configuration requirements, supporting simple plug-and-play installation within existing network infrastructures.

With a compact form factor, the converter is suitable for installations where space is limited, such as control cabinets or equipment enclosures. Engineered for industrial applications, it operates within a wide temperature range of –40°C to 75°C and features an IP40-rated metal housing for protection against dust and debris.

The Compact Media Converters are well suited for use in factories, transportation facilities, and outdoor installations where stable performance and environmental durability are required.

## Product Specifications

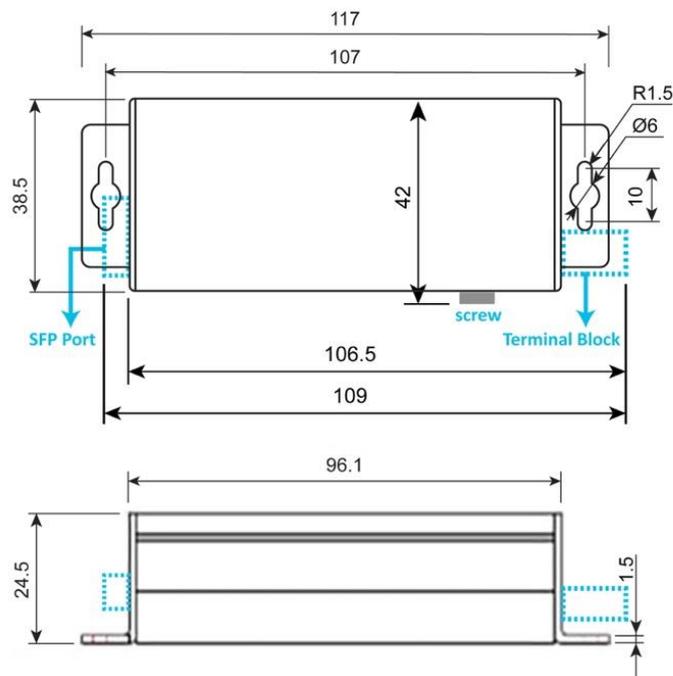| Hardware Specifications | | |
|---|---|---|
| Model | FR-2701 | FR-2703 |
| Ports | 1x10/100Base-TX RJ45<br>1x100Base-X SFP | 1x10/100/1000Base-T RJ45<br>1x1000Base-X SFP |
| Port Mode(Tx) | Auto Negotiation Speed<br>Full/Half Duplex Mode<br>Auto MDI/MDI-X Connection | |
| Maximum Packet Length | Up to 10K | |

**Hardware Specifications**

| | |
|---|---|
| Forward Filter Rate | 14,880pps(10Mbps)<br>148,800pps(100Mbps)<br>1,488,000pps(1000Mbps) |
| Transmission Mode | Store and Forward (full/half duplex mode) |
| **Transmission Distance** | |
| Optical Fiber Port | Depends on optical module(0-160km) |
| Copper RJ45 Port | 100m（using standard CAT5/CAT5e cable） |
| **Power** | |
| Input Power | DC12V or DC24V or AC24V |
| Power Consumption | 2.4W Max. 0.2A@12VDC |
| **Physical Characteristics** | |
| Housing | Aluminum case |
| IP Rating | IP40 |
| Dimensions | 36.2mm*117mm*24.5mm |
| Weight | 100g(Bare weight), 250g(With package) |
| Installation | Wall Mount and Desktop |
| **Environmental** | |
| Operating Temperature | -40℃ to +75℃ |
| Operating Humidity | 5%~90% (non-condensing) |
| Storage Temperature | -30℃ to +85℃ (-30 to 185 ℉) |
| MTBF | ＞500,000 hours @MIL-HDBK-217F GF 25°C |
| Heat Dissipation | 7 BTU/h |
| Cooling | Passive Cooling |
| Noise Level | 0 dBA |
| **Package Contents** | |
| Device | 1x Industrial Media Converter |
| Installation Kit | 1x 1.25A 12VDC Power Adapter |
| Documentation | 1x Quick installation guide,1x Warranty card,1x Product notice |
| **Regulatory & Warranty** | |
| Standard Compliance | IEEE 802.3 Ethernet<br>IEEE 802.3u Fast Ethernet<br>IEEE 802.3ab Gigabit 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: ±4kV; RJ45:±2kV |
| 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 | 3 Years, Details See: https://fiberroad.com/warranty |

| DIP Switch | | | |
|---|---|---|---|
| No. | Function | State | Description |
| 1 | LFP | OFF | Disable |
| | | ON | Enable |
| 2 | ALS | OFF | Disable |
| | | ON | Enable |
| 3 | FX Reset | OFF | Disable |
| | | ON | Enable |
| 4 | FX Speed(Effect on FR-2703) | OFF | FX Speed 1000M |
| | | ON | FX Speed 100M/1000M |

Note: 1. LFP: Link Fault Pass Through
2. ALS: Automatic Laser Shutdown Function
3. FX Reset : If it is enabled, when the FX link is down, the power
will shut down. A few seconds later, the power will restart automatically.

| LEDs | States | Description |
|---|---|---|
| PWR | On | The device is powered on |
| LINK/ACT | On | The twisted pair is connected well, but there is no data transmission. |
| | Blinking | The port is sending or receiving data |
| SPD | On | The port is operating at 100Mbps(RJ45) (FR-2701)<br>The port is operating at 1000Mbps(RJ45) (FR-2703) |
| | Off | The port is operating at 10Mbps(RJ45) (FR-2701)<br>The port is operating at 10/100Mbps(RJ45) (FR-2703) |
| FX/SPD<br>(Effect on FR-2703) | On | The optical fiber port is operating at 1000M |
| | Off | The optical fiber port is operating at 100M |
| FX/LNK | On | The optical fiber cable is connected well, but there is no data transmission |
| | Blinking | The port is sending or receiving data |

## Dimensions   Unit: mm

## Ordering Information

| Available Model | Description | Input Voltage | Operating Temp. |
|---|---|---|---|
| FR-2701 | Industrial Microtype 10/100Base-TX to 100Base-SFP Ethernet Media Converter | DC12V or DC24V or AC24V | -40 to +75℃ |
| FR-2703 | Industrial Microtype 10/100/1000Base-TX to 1000Base-SFP Ethernet Media Converter | | -40 to +75℃ |

## Optional Accessories (to be purchased separately)

| Power Adapter | |
|---|---|
| **1AA-120-0100-A** | Input: AC100-240V, Output: DC12V-1A |

| SFP Optical Transceiver | |
|---|---|
| (S)=SFP Option | Please select your SFP on our SFP Modules page for details. |

| 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 |

## Shipping

| Model No. | FR-2701 | FR-2703 |
|---|---|---|
| Classification Codes | HS Code: 851762 | |
| | HTS: 8517.62.00 | |
| NDAA Compliant | Yes | |
| Individual Gross Weight | 250g | |
| Individual Package Dimension | 165x150x50mm | |
| Package Quantity | 60Units | |
| Package Gross Weight | 16kg | |
| Package Dimension | 535x345x470mm | |

### Precautions

To prevent equipment damage or personal injury caused by improper operation, please observe the following precautions:

❖ Turn off the power before installation. Wear an anti-static wrist strap and ensure proper skin contact to prevent electrostatic discharge (ESD) damage.
❖ Ensure the power supply voltage matches the voltage specified on the switch.
❖ Before powering on the switch, verify that the power circuit is not overloaded to avoid abnormal operation or equipment damage.
❖ Do not open the chassis while the switch is operating. To avoid the risk of electric shock, do not disassemble the device.
❖ Disconnect the power before cleaning. Do not use a wet cloth or liquid cleaners.
❖ When installing in a rack, mount equipment from bottom to top to prevent overloading.
❖ Do not place heavy objects on the switch.