



## Compact Media Converters

FR-2201-XX Series • FR-2203-XX Series • FR-2000-AA

- Mini-Type 10/100Base-TX to 100Base-FX Ethernet Media Converter
- Mini-Type 10/100/1000Base-TX to 1000Base-FX Ethernet Media Converter
- 19" Rack for Mini-type Products with Redundant AC Power Inputs

Product Data Sheet



# FR-2201-XX Series • FR-2203-XX Series • FR-2000-AA



## Main Features

- Ideal for confined spaces, and provides highly cost-effective solutions
- Auto-Negotiation – automatically determines the best connection speed
- Wall mountable using the integrated mounting holes
- Rack mountable using the optional 19 inch 1U rack
- Fast or Gigabit ethernet, 1X9 transceiver supports single-mode and multimode
- Supports up to 10K Bytes Jumbo Frame
- Build-in DIP switch supported including link fault pass-through, auto laser shutdown, port speed setting, etc.

## Overview

The Mini Type Ethernet Media Converter provides flexible solutions for extending Ethernet communication over fiber through SFP interfaces. It supports 100Mbps and Gigabit Ethernet transmission and includes intelligent features such as link fault pass-through, auto laser shutdown, and port speed configuration for stable network operation.

### Advantages of Mini Media Converter

#### LAN Extension

Extend LAN connections beyond the 100-meter limitation of CATx copper cabling by converting copper links to fiber, enabling transmission distances of up to 80 km depending on the optical module used.

#### EMI Immunity

Fiber optic transmission is immune to electromagnetic interference (EMI), ensuring stable and reliable data communication.

#### Infrastructure Protection

Allows migration from copper to fiber networks while maintaining compatibility with existing Ethernet infrastructure.

#### Reliable Data Transmission

Optical transmission improves communication stability and reduces the risk of connection loss in extended networks.

| Physical Port |                                                       |                                                          |
|---------------|-------------------------------------------------------|----------------------------------------------------------|
| Model         | FR-2201                                               | FR-2203                                                  |
| Copper Port   | 1x 10/100Base-TX                                      | 1x 10/100/1000Base-TX                                    |
| Optical Slot  | 1x 100Base-FX<br>1x9 Transceiver SC (ST as an option) | 1x 1000Base-FX<br>1x9 Transceiver SC (ST as an option)   |
| Standard      | IEEE802.3i IEEE802.3u IEEE 802.3x                     | IEEE802.3i IEEE802.3u IEEE802.3ab IEEE802.3z IEEE 802.3x |
| Jumbo Frame   | 12K                                                   |                                                          |
| LEDs          | TP/LNK, SPD, FX/LNK, PWR                              | TP/LNK, 1000M, FX/LNK, PWR                               |

### Power Supply

|                   |                                                |
|-------------------|------------------------------------------------|
| Power Input       | 1                                              |
| Operating Voltage | 5-12VDC                                        |
| Power Consumption | 3W Max(100Mb & 1Gb Models) 5W Max(10Gb Models) |

### Mechanical

|              |                                                           |
|--------------|-----------------------------------------------------------|
| Housing      | Metal                                                     |
| Dimensions   | 90mm×60mm×20mm(W x D x H)                                 |
| IP Rating    | IP30                                                      |
| Weight       | 0.12kg/0.26lb(Bare Hardware)                              |
| Installation | Desktop, Wall Mount, Rack(*require optional rack chassis) |

### Environmental

|                  |                                                                            |
|------------------|----------------------------------------------------------------------------|
| Temperature      | Operating: 0 to 60°C (32 to 140°F)<br>Storage: -20 to +70°C (-4 to +158°F) |
| Humidity         | 5 to 95% noncondensing                                                     |
| Altitude         | <3000m(<10000 ft.)                                                         |
| MTBF             | 100,819 Hours                                                              |
| MTBF Standard    | Telcordia SR-332 GB 25°C                                                   |
| Heat Dissipation | 10 BTU/h (100M/1G Models No SFP)<br>17 BTU/h (10Gb Models No SFP+)         |
| Cooling          | Passive Cooling                                                            |
| Noise Level      | 0 dBA                                                                      |

## Packaging

|                 |                                               |
|-----------------|-----------------------------------------------|
| Shipping Weight | 0.35kg / 0.77lb                               |
| Dimensions      | 133x82x80mm (W x D x H) 5.16 x 3.23 x 3.15 in |

## Package Contents

|               |                                                 |
|---------------|-------------------------------------------------|
| Device        | Mini Fiber Media Converter                      |
| Power Supply  | 5-12VDC Power Supply(with region specific plug) |
| Documentation | User Manual                                     |

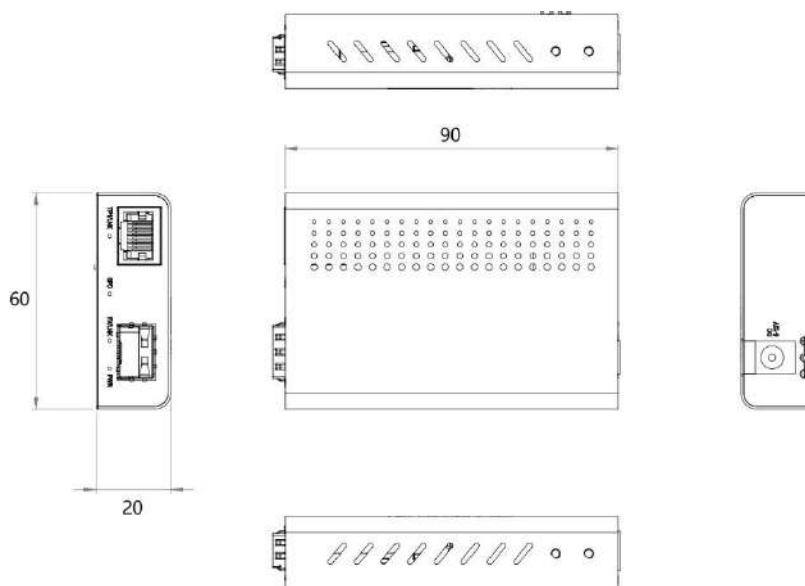
## DIP Switch (FR-2201 AND FR-2203)

| DIP Switch | Name         | Status | Description      |
|------------|--------------|--------|------------------|
| #1         | LFP          | OFF    | LFP Disable      |
|            |              | ON     | LFP Enable       |
| #2         | ALS          | OFF    | ALS Disable      |
|            |              | ON     | ALS Enable       |
| #3         | FX Reset     | OFF    | FX Reset Disable |
|            |              | ON     | FX Reset Enable  |
| #4         | FX Speed Set | OFF    | Disable          |
|            |              | ON     | FX 100M(FR-2203) |

### Notes:

1. LFP: Link fault pass through, When enabled, the UTP receiver is passed to the fibre transmitter to make the media converter appear transparent to the connected end devices. It uses link fault pass-through to indicate when far-end fault issues occur. If a fault occurs, the end device indicates a failure for troubleshooting.
2. ALS: Automatic laser shutdown is a procedure to automatically shut down the laser when there is no input light and stop emitting optical signals
3. FX: Optical Fiber Port
4. FX Reset: When enabled, the PoE will restart if there is no data input to the UTP receiver.
5. Loop: When enabled, run a loop back test to check the interconnection between two media converter devices.

## Dimensions Unit: mm



## Ordering Information

| Available Model | Description                                                                                                                    | Input Voltage | Operating Temp. |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|
| FR-2201-AA      | Mini-Type 10/100Base-TX to 100Base-FX Ethernet Media Converter, Multimode / 2-fiber / SC / 1310nm / 2km                        | DC5-12V       | -10 to +60°C    |
| FR-2201-BB      | Mini-Type 10/100Base-TX to 100Base-FX Ethernet Media Converter, Singlemode / 2-fiber / SC / 1310nm / 20km                      | DC5-12V       | -10 to +60°C    |
| FR-2201-CD      | Mini-Type 10/100Base-TX to 100Base-FX Ethernet Media Converter, Multimode / 1-fiber / SC / TX: 1310 / RX: 1550nm / 2km         | DC5-12V       | -10 to +60°C    |
| FR-2201-DC      | Mini-Type 10/100Base-TX to 100Base-FX Ethernet Media Converter, Multimode / 1-fiber / SC / TX: 1550 / RX: 1310nm / 2km         | DC5-12V       | -10 to +60°C    |
| FR-2201-EF      | Mini-Type 10/100Base-TX to 100Base-FX Ethernet Media Converter, Singlemode / 1-fiber / SC / TX: 1310 / RX: 1550nm / 20km       | DC5-12V       | -10 to +60°C    |
| FR-2201-FE      | Mini-Type 10/100Base-TX to 100Base-FX Ethernet Media Converter, Singlemode / 1-fiber / SC / TX: 1550 / RX: 1310nm / 20km       | DC5-12V       | -10 to +60°C    |
| FR-2203-AA      | Mini-Type 10/100/1000Base-TX to 1000Base-FX Ethernet Media Converter, Multimode / 2-fiber / SC / 1310nm / 2km                  | DC5-12V       | -10 to +60°C    |
| FR-2203-BB      | Mini-Type 10/100/1000Base-TX to 1000Base-FX Ethernet Media Converter, Singlemode / 2-fiber / SC / 1310nm / 20km                | DC5-12V       | -10 to +60°C    |
| FR-2203-CD      | Mini-Type 10/100/1000Base-TX to 1000Base-FX Ethernet Media Converter, Multimode / 1-fiber / SC / TX: 1310 / RX: 1550nm / 2km   | DC5-12V       | -10 to +60°C    |
| FR-2203-DC      | Mini-Type 10/100/1000Base-TX to 1000Base-FX Ethernet Media Converter, Multimode / 1-fiber / SC / TX: 1550 / RX: 1310nm / 2km   | DC5-12V       | -10 to +60°C    |
| FR-2203-EF      | Mini-Type 10/100/1000Base-TX to 1000Base-FX Ethernet Media Converter, Singlemode / 1-fiber / SC / TX: 1310 / RX: 1550nm / 20km | DC5-12V       | -10 to +60°C    |
| FR-2203-FE      | Mini-Type 10/100/1000Base-TX to 1000Base-FX Ethernet Media Converter, Singlemode / 1-fiber / SC / TX: 1550 / RX: 1310nm / 20km | DC5-12V       | -10 to +60°C    |

## Optional Accessories (to be purchased separately)

| 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   |
| FRLC-A-CAT6A                          | Armored Cat6a Snagless shielded(SFTP) Ethernet Network Patch Cable, 26AWG, 10GBase-T, 10.7m(35ft) |

# FR-2000-AA

## Overview



The chassis-based media converter system includes standalone media converters and a chassis capable of accommodating up to **12 fiber media converter modules**. Each converter module can be easily installed or removed by sliding the converter board into the chassis.

When mounted in an equipment rack, the chassis allows multiple media converters to be integrated with other network devices, helping save rack space and maintain organized cabling.

The chassis is powered by an **AC power supply by default** and supports an **optional redundant power module** to ensure continuous power availability and improved system reliability.

## Product Specifications

| Parameters            |                                                         |
|-----------------------|---------------------------------------------------------|
| Product Type          | 1RU 12 Slots Fiber Media Converter Rack Chassis         |
| Number of Slots       | 12                                                      |
| Input Power           | AC 100V~240V, 1.5~3.0A, 50/60Hz, Redundant Power Supply |
| Output Power          | DC 12V Per Slot, 5A                                     |
| Power Consumption     | 36W Max                                                 |
| Dimensions (HxWxD)    | 44.5x485x270mm                                          |
| Weight                | 3.2kg                                                   |
| Operating Temperature | 0 °C to 60 °C                                           |
| Storage Temperature   | -20°C to 70°C                                           |
| Humidity              | 90% Max, Non-condensing                                 |
| Cooling               | Brushless DC Fan                                        |
| Compliance            | FCC, CE, RoHS                                           |
| Warranty              | 3 Years                                                 |

## Ordering Information

| Available Model | Description                                                    | Input Voltage | Operating Temp. |
|-----------------|----------------------------------------------------------------|---------------|-----------------|
| FR-2000-AA      | 19" Rack for Mini-type Products with Redundant AC Power Inputs | AC100-240V    | 0 to +50°C      |

## 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.

Specifications are subject to change without notice. Fiberroad Technology Co., Ltd. makes no warranties, either expressed or implied, regarding the information contained herein. Please contact us for the latest product information.