

Installation Guide for FRM220-FXO/FXS & FRM220-FXO/FXS-S

FXO/FXS POTS Over Fiber Optic Slide-in-Module Media Converter

Description

CTC Union's FRM220-FXO/FXS POTS & FRM220-FXO/FXS-S over fiber media converter connect central-office voice grade signal to distant POTS (Plain Old Telephone Service) equipment using standard telephone signaling. It can extend, over fiber, the distance between two voice path communication devices by up to 120km using single mode fiber.

The FRM220-FXO/FXS & FRM220-FXO/FXS-S provide audio transmission, caller ID, ringing at the distant end and automatic ring down. Two units are required to implement an end to end system. The RJ-11 connector provides the electrical interface between the media converter and the telephone device or PSTN.

The FRM220-FXO/FXS & FRM220-FXO/FXS-S are designed to be installed in FRM220-CH20 (20 slots Chassis) for CO side or installed in FRM220-CH01 (1 slot Chassis) for CPE stand-alone.

General Specifications

Environment

- Operating Temperature: 0 ~ 50°C
- Storage Temperature: -10 ~ 70°C
- Humidity: 10 ~ 90% non condensing

Power

- DC +12V / 800mA input
- Power Consumption: < 6W

Technical Specifications

FXO Mode

- Impedance: 600 ohm
- Coding: 16 bits linear
- Loop Current: 10 ~ 100mA
- Ring Frequency: Acceptable 20 ~ 50Hz
- Insertion Loss: 0.0± 1.0dB at 1000Hz

FXS Mode

- Impedance: 600 ohm
- Coding: 16 bits linear
- Dial: DTMF and Pulse Dial
- Battery Source: 48VDC ± 4V
- Ringing Waveform: Sine wave
- Ringing Supply: 60Vrms± 10%
- Ring Frequency: 20/25/30/35/40/45/50/55 Hz selectable
- Ring Cadence: FXS to FXS : On / 1 second, Off / 2 second
- FXO to FXS : Reproduces the cadence of FXO
- Insertion Loss: 0.0± 1.0 dB at 1000Hz
- REN: 4.0B (Ring Equivalence Number)

Dimension (Card Only)

- 155mm (D) x 20.8mm (W) x 88mm (H)

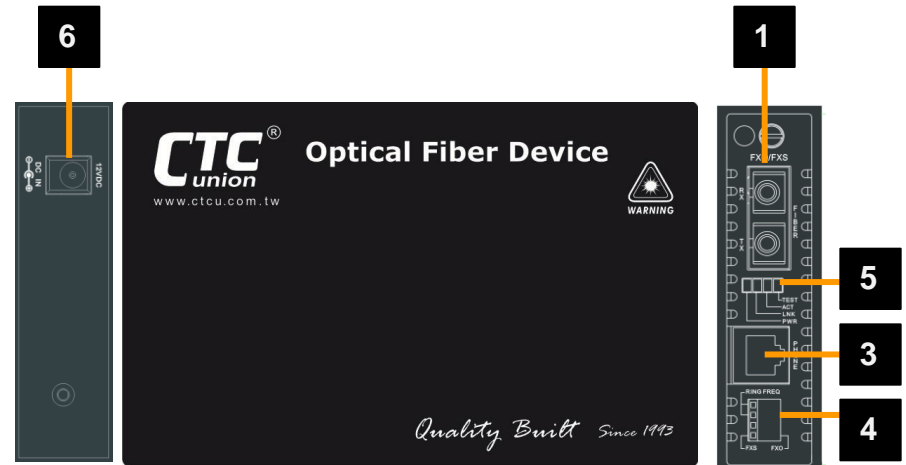
Weight

- Card Only: 120g

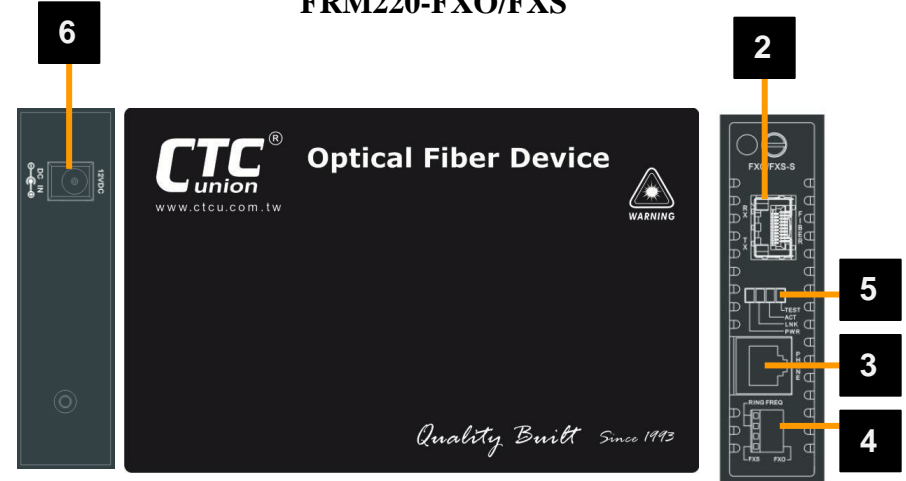
Copper Connector

- FXO/FXS: Selectable
- Phone Connector: RJ-11C

Panels



FRM220-FXO/FXS



FRM220-FXO/FXS-S

- | | | | |
|----------|-------------------------|----------|-----------------------|
| 1 | Fixed fiber connections | 4 | External DIP switches |
| 2 | SFP slot | 5 | LED indicators |
| 3 | RJ-11C connections | 6 | DC power jack |

Fiber Connections

For FRM220-FXO/FXS, two connectors are provided for fiber optic cable connection. One is labeled "TX" for transmission of optical data, the other is labeled "RX" for reception of optical data.

For FRM220-FXO/FXS-S, a SFP slot is provided on the panel. You need to prepare a SFP transceiver that comply with specifications of this device so as to establish fiber connections.

DIP Switch Setting (for firmware version 3.03)

DIP SW State		Main Mode setting	DIP SW State		Sub-function
-1	-2		-3	-4	
OFF	OFF	FXS Mode 20~35Hz	OFF	OFF	Ring frequency, 20Hz
			ON	OFF	Ring frequency, 25Hz
			OFF	ON	Ring frequency, 30Hz
			ON	ON	Ring frequency, 35Hz
ON	ON	FXS Mode 40~55Hz	OFF	OFF	Ring frequency, 40Hz
			ON	OFF	Ring frequency, 45Hz
			OFF	ON	Ring frequency, 50Hz
			ON	ON	Ring frequency, 55Hz
ON	OFF	FXO Mode	OFF	OFF	Ring frequency, 20/25Hz
			ON	OFF	Ring frequency, 30/35Hz
			OFF	ON	Ring frequency, 40/45Hz
			ON	ON	Ring frequency, 50/55Hz

When installing with NMC in CH20, the NMC-R2 version must be 3.26 or above to manage these settings. As with all FRM220 series products, once installed in the managed chassis, the DIP settings have no effect. All setting is then performed via the Network Management Controller (NMC) of the chassis.

LED Indicators



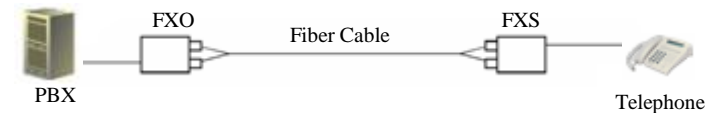
LED	Function	State	Status
PWR	Power Indicator	Green Off	Converter has power. Converter has no power.
LNK	Fiber Link	Green Off	The fiber link is ok. No link or the link is faulty.
ACT	Phone Status	Green Off Flash	Activity. Idle. Ringing.
TEST	Test Status	Red	When in any loop back mode .

Installation

Connect the RJ-11 cable to the FRM220-FXO/FXS or FRM220-FXO/FXS-S. The converter should be setup to operate in FXO or FXS mode and the fiber link will be indicated on the LED. Follow the connection examples below. Install the fiber converter with the DC power adapter provided (+12VDC, 800mA) and connect the adapter to an AC outlet.

Connections

The following example illustrates the connection scheme when connecting PBX or PSTN to telephone through the fiber converter.



The following example illustrates the Automatic Ring-Down connection scheme (Hot Line) when connecting telephone to telephone through the fiber converter.

