



Fredenstein
Professional Audio

F200
Dual Mic-Pre
and Compressor

Operating Manual

Fredenstein F200 Dual Mic-Pre and Compressor

The F200 is a two channel microphone preamplifier and a two channel FET compressor with Stereo link capability. The mic-pre and compressor are connected in series. The output mixer allows the user to select only the mic-pre or the compressor . In addition, a wet/dry (compressed/uncompressed) mix can be performed.

The mic-pre section features a switchable 20db pad, a low-cut filter, phase reversal and P48 phantom power. The maximum gain of the mic-pre is +60 dB, the minimum gain with pad activated is 0 dB. In case the unit is used as a compressor only, the input is able to handle +20dB signals and is fully compatible with line level signals. At a mic-pre output level of greater than + 24dbu a clip indicator will light up. The high impedance Direct Input (DI) is compatible with balanced and unbalanced signals.

The compressor section features rotary controls for Attack Time, Release Time and Compression Ratio as well as a Stereo link switch. The VU meter is switchable, either the compressor gain reduction or the output level can be displayed. All switches have dedicated LED indicators.

For easy touring and recording around the world, the F200 has a built-in universal power supply ranging from 90Vac to 240Vac, 50 -60 Hz.

As all Fredenstein products, the F200 is designed by a German-American team and manufactured in Taiwan.

Installation:

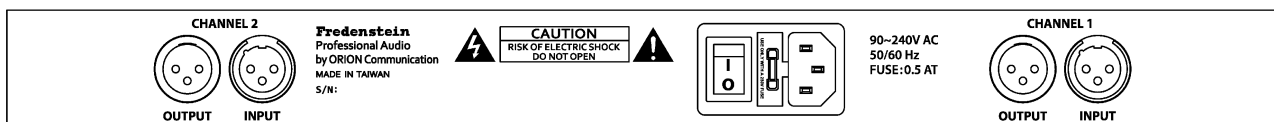
Electrical Safety Warnings:

Do not open the enclosure, hazardous voltages are present inside!

There are no user serviceable parts inside.

If you need to replace the mains fuse, make sure the replacement has the same rating (0.5AT 250V).

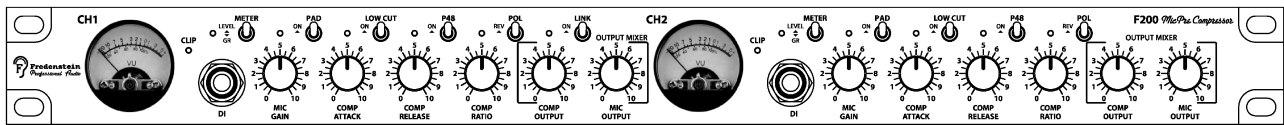
Rear View:



Please connect your audio inputs and outputs first to the XLR connectors located on the back panel. Then connect the mains cable to the F200 and then to a grounded mains outlet. The power ON/OFF switch is located on the back panel near the power cable connector (IEC). After the unit is powered on, the two VU meters on the front panel will be illuminated.

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Front View:



Controls per Channel:

Rotary Controls:

- MIC GAIN : Sets the microphone or line level gain
Range from 0 to 60dB
- COMP ATTACK : Sets the attack time of the compressor
Range from 200us to 50ms, middle position 5ms
- COMP RELEASE : Sets the release time of the compressor
Range from 70ms to 2.4s, middle position 240ms.
- COMP RATIO : Sets the compression ratio
Range from 2:1 to 20:1, middle position 5:1.
- COMP OUTPUT : Output level control of the compressor
Range from off to +19 dB, middle position 0 dB
- MIC OUTPUT : Output level of the microphone or line signal (uncompressed)
Range from off to 0 dB, middle position -20 dB

Switches:

- METER : Selects either the gain reduction of the compressor or the output level to be display on the VU meter. 0VU equals an output level of +4 dBu.
- PAD : -20dB attenuator at the input of the mic-pre to allow line level signals
- LOW CUT : To reduce unwanted low frequencies the low cut can be activated
- P48 : Standard P48 phantom power for compatible microphones
- POL : Polarity reversal
- LINK : Compressor CH1 and CH2 Stereo synchronization. Both channels will have identical gain reduction to avoid shifting in Stereo balance.

Connectors:

- DI : TRS High Impedance Direct Input accepting balanced and unbalanced signals, normally used for instruments.

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Detailed Description:

Microphone Preamplifier:

Gain Control:

Microphone Preamplifier Gain Control from 0dB (with PAD) to +60dB (without PAD)
A clip indicator LED turns on, if the microphone preamplifier output level is greater than +24 dBu.

PAD – Input Attenuator:

when turned on (LED lit), a 20dB attenuator at the input allows line level signals to pass through the preamplifier.

Low Cut – High Pass Filter:

when turned on (LED lit), the 60 Hz High Pass Filter is activated to suppress unwanted low frequencies.

P48 Phantom Power:

Most FET condenser microphones as well as some other microphones with built-in amplifiers require +48V Phantom Power. Setting the P48 switch to the “ON” upper position enables +48V through the balanced microphone line, but not through the DI input. Please check your microphone documentation, if you are not 100% sure. Enabling P48 on microphones not designed for P48 might cause severe damage to the microphone.

POL – Polarity Control:

Setting the signal polarity, when turned on (LED lit) the signal is inverted. As an example, the bottom microphone on a snare drum needs polarity reversal.

DI – Direct Input:

The most common use for the DI input is to connect instruments like guitars directly to the F200. The input impedance is greater than 100 KOhm to insure compatibility with most instrument pickups. After inserting a balanced (TRS, Tip-Ring-Sleeve) or an unbalanced (TS, Tip-Sleeve) plug, the XLR microphone input on the back panel is automatically disabled.

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Compressor:

Like most FET compressors, the Fredenstein F200 features a fixed threshold. The compression depth is controlled by changing the input gain. Increasing the input gain will cause the compressor to apply an increased gain reduction. The compressor output level control is used to make up for the gain reduction. The maximum compressor output gain is +19 dB.

The ATTACK TIME and RELEASE TIME controls define how fast the compressor reacts and how fast it falls back after the signal is lower than the threshold. The perfect values are depending on the instrument and the sound you want to achieve.

The COMP RATIO control sets the relationship between input and output level for signals above the threshold and can be varied from 2:1 to 20:1. A ratio of 20:1 is considered a limiter.

A special feature of the F200 is its integrated output mixer which dramatically boosts the versatility of the device. If you put the COMP LEVEL fully counter clockwise to zero and the MIC LEVEL fully clockwise to 10, you are using the F200 as a straight microphone preamplifier. In the opposite case, putting MIC LEVEL to zero and set COMP LEVEL in the middle position (0 dB gain) or add make-up gain by turning the knob clockwise up to a maximum of 19 dB.

You can apply a line level signal to the input and activate the PAD , you are in a straight compressor mode. Or you can use a microphone input signal and you have a mic-pre and compressor working in series.

As an additional mode, so call dry/wet mixes can be performed. The dry signal (uncompressed) and the wet signal (compressed) can be mix together in any relationship to achieve special sounds.

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Technical Data:

Frequency Response :	20 Hz – 20,000 Hz, +/- 0.5dB
Max. Gain :	+ 60 dB
Make-up Gain :	+ 19 dB
Distortion :	< 0.1%
Input Noise (Pre) :	< -129 dB
Input Impedance :	> 4 KOhm
Max. Input Level :	+ 12 dBu
Output Impedance :	50 Ohms
Max. Output Level :	+ 26 dBu
Clip Indicator :	+ 24 dBu
Input Attenuator :	- 20 dB
High Pass Filter :	60 Hz (switchable)
Attack Time :	200 us to 50 ms
Release Time :	70ms to 2.4s
Compression Ratio :	2:1 to 20:1

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