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Owner's Manual

Firstly, let us congratulate you on your purchase of the DRS-2 Microphone Pre-Amplifier. We know you will be as pleased with it's sonic qualities as we are.

You are now the proud owner of a mic-pre/DI that has the advantages of more than 25 years experience in audio engineering, today's component and manufacturing technology, but still retaining "that sound" uniquely achievable through Class A design.

As you can tell, Phoenix Audio is dedicated to the development of Class A discrete technology used within high build-quality equipment.

The DRS-2 Mic-Pre/DI uses our well proven and loved Class A output stage (DSOP2), but also has our latest breakthrough in transformer-less Class A, Discrete Mic Input Technology which gives a "valve-like" sound. It also incorporates our high input impedance DI circuitry.

You CAN hear the difference!!!

DRS-2 Specifications

1U rack space unit: With 240V/110V mains voltage input selector switch

Class A (DSOP2) Output specs. Frequency response: 20Hz to 20kHz +- 0.5dB, Maximum Output = +26dBu @ 1kHz, Noise = -90dB @ 20Hz to 20kHz.

Output connections: XLR's and TSR 1/4" Jack on rear

Phoenix Audio's unique Class A, transformerless, True balanced Mic input stage.

Microphone inputs: XLR's on Front and Rear Panels

Individual Earth Lift: Push-button Switches

Gain Range (Mic input): -30 to -70 in 5dB steps With 10dB more available on the fader.

Gain reduction: -30dB pad push-button Mic/Line switch (Mic input)

High Input Impedance DI: Mono 1/4" Jack on front panel

Gain Meter: LED Metering. (Green = 0dB, Yellow = +8dB, corresponding to "4" and "6" on a PPM Meter).

Phantom Power: Switchable phantom on Push-button Switch

High Pass Filter: on Push-button Switch

Phase Reverse: on Push-button Switch

Frequency Response Mic Input Stage: -0.4dB @ 40Hz, -0.3dB @ 25kHz

Frequency Response: DI Input Stage: -0.3dB @ 40Hz, - 0.5dB @ 25kHz

Typical Headroom: +24dB on Mic-Pre stage

DI Stage gain: Maximum of 20dB

DRS-2 SETUP INSTRUCTIONS

The DRS-2 has two LED's to indicate level. These LED's are connected to the OUTPUT of the unit, NOT the mic-pre section. This makes the LED's indication much more useful for setting up levels on the Mic-Pre and the DI, and to give you a clear view of what level is being sent to external equipment.

The LED's are marked 0 (Green) and +8 (Yellow). These are set to illuminate at 0dB and +8dB (4 and 6 on a PPM Meter).

The Yellow LED has some hysteresis so that the signal peaks can be seen.

The Mic GAIN Knob and the OUTPUT level knob work independently of each other. The mic GAIN knob has no effect on the DI input.

The simplest method of setup is to plug a microphone into the Mic input, turn the Mic GAIN knob to it's minimum position (-30dB) and set the OUTPUT level knob to around the 2 'O' Clock position.

While a constant sound source is applied to the microphone, turn the Mic GAIN knob one click at a time, until the 0dB (Green) Led is just illuminated.

The Mic gain is now set to optimum, but with PLENTY of headroom available, and the output will be around 0dB.

The OUTPUT level knob is provided to allow OUTPUT level adjustment. If you prefer to have a "hotter" output, turn the OUTPUT knob up to suit. You can turn the OUTPUT knob fully up without any distortion as there is plenty of headroom on the output stage.

Also, if you prefer to have a LOWER level on the output (I.E.: for semi-pro outboard gear which requires around -10dB input), simply turn the OUTPUT knob down to taste.

When using the DI input, plug the external signal source into the mono jack on the front panel, and adjust the OUTPUT Level so that the Green Led is just illuminated. This will give an output Level of 0dB and can be adjusted to taste.

Additional Setup Information

Firstly, unlike a lot of mic-pre's, the Yellow LED is not a warning that the output of the unit is clipping. It is purely there to indicate +8dB output level.

The DRS units were originally fitted with a Green LED (0dB) and a Red LED (+8dB), but we found that the Red LED was making users believe that the unit was clipping (Red = danger = clipping) which was NOT the case, so this was changed to a Yellow LED in later models so that users tended to not regard it as a "Clipping" LED.

You can turn the output knob all the way up to maximum and still be sure the output of the unit will not clip. The amount of headroom on both the input AND output stage is HUGE!!! There will never be a time when you can't get a hot enough output, only occasionally too hot an input (then you just simply turn down the input gain knob (in Mic mode).

The best thing to do is ignore the Yellow LED if you want a very hot output, and set the unit up as follows:

When the DRS is switched into DI mode, the Mic-Sensitivity switch becomes disconnected and not in use in DI mode..

For Microphone Input:

1: Set the output knob to about the 2 'O' Clock position. (or just over half-way)
2: Set the mic input level so that the green LED is just beginning to come on solidly. (this indicates 0dB OUTPUT level)
3: If the Yellow LED is coming on (+8dB OUTPUT level) and you think the unit is clipping it is NOT
the output stage, just step the input gain knob back one click.
4: Turn the output knob up to the level you would like (If you wanted a very hot output level, ignore the Yellow LED.

I'll try to explain a little more.....The LED's on the front panel are there to give you an indication of output level only (0dB and +8dB, corresponding to 4 and 6 on a PPM Meter),
this is because most semi-pro (and indeed, a lot of Professional!) equipment cannot handle the full output of the DRS-2, and the LED's give you a good indication of output level so that you can determine where in the audio chain you may be getting clipping. They do NOT indicate that the DRS-2 is clipping.

The only place you might get clipping on the DRS-2 is in the INPUT stage (although the headroom on the INPUT stage is very high!)..... So if you believe the DRS-2 IS clipping, just turn the INPUT down, but the OUTPUT can be turned up to maximum if you wanted.

The DRS-2 is capable of handling a huge input range,
from -70dB right up to 0dB, and STILL have 10dB of headroom. The output stage can easily deliver +25dB!!! Please don't automatically believe the DRS-2 is clipping!

For DI input:

Simply insert the input signal into the DI jack, and turn up the level using the Output knob only, (remember, the Mic-sensitivity switch is not operable in the DI mode).

If the Green LED is Just lit, then the unit will be sending a level of 0dB to the output XLR, and if the Yellow LED is lit, then it is sending +8dB to the output XLR. this is NOT the maximum levels the unit will output, but is purely and indication" of level. If you want a much "Hotter" output, then simply turn up the output level knob to whatever you need. You can turn the output level knob to almost maximum without any fear of distortion in the output stage.(This still leaves +10dB of headroom).

INPUT and OUTPUT connections:

The DRS is fitted with an XLR input on both the front and rear panels. These XLR's are wired in parallel and both inputs are permanently active. (one does not disconnect if the other is being used). The XLR's are industry-standard Pin 1 - Ground, Pin 2 - Hot, Pin 3 - Cold.

Both XLR's can be used at the same time (Microphone plugged into both inputs), this will not cause damage to the unit. but the user MUST be aware of the following:

If both inputs are used together the two microphones will mutually load each other. This will likely change the characteristics of both microphones.

If the +48V phantom power is button is engaged it will apply +48V to BOTH XLR's.

The DI input is a standard 1/4" (6.35mm) mono jack socket (wired Standard - Tip-hot, Sleeve-Ground)

The Outputs of the units are on the rear of the unit and is available on both a 3 Pin XLR (wired as the input XLR), and a Stereo 1/4" (6.35mm) Jack socket (wired Tip-Hot, Ring-Cold, Sleeve-Ground).

Both output connections are wired in parallel and both can be used at the same time (for instance, the XLR connected to external recorder, the Jack to monitor).

Also, "Y" cables and splitters can be used to send the output signal to various destinations at one time.

Users should be aware that using both outputs together will mutually load the output transformer of the DRS, and loading should not exceed a total of 200R.