

INTERNATIONAL LIMITED WARRANTY

ARX Systems (ARX) warrants to the first purchaser of any ARX equipment that it is free from defects in materials and workmanship under normal use and service. ARX's sole obligation under this warranty shall be to provide, without charge, parts and labour necessary to remedy defects, if any, which appear within twelve (12) months from date of purchase, and for a further twelve (12) months supply parts only.

This is our only warranty. It does not cover finish or appearance items, or if the equipment has been, in ARX's sole judgement:

- Subjected to misuse, abuse, negligence or accident;
- Repaired, worked on, or altered by persons not authorized by ARX;
- Connected, installed, adjusted or used for a purpose other than that for which it was designed.

This warranty gives you and us specific legal rights and you may also have other rights which may apply.

Warranty Service Procedure

Should it become necessary to have your equipment serviced under the terms of the warranty, please follow these steps:

1. Call your ARX distributor for a Return Authorization (RA) number;
2. **Carefully** repack the unit, in its original packaging where possible, including a note with a description of the problem, and a copy of the receipt showing date of purchase. Attach these to the actual unit itself. Don't forget to write your name and address clearly, and include a phone number where you can be contacted during normal business hours. Make it easy for our service technicians to contact you if they have a question. Also, use **plenty** of packing material - better to be safe than sorry.
3. Send the unit freight prepaid to ARX Systems, at the address given you with your RA number. We will pay the return freight when the serviced unit is returned to you.
4. We strongly recommend you insure the package. We can't fix it if it gets lost! Send it by UPS, Fedex, or any similar service that can track the package. Parcel Post is *not* recommended

If Warranty Registration Card is missing, please write to ARX in the country of purchase, stating model and where purchased, or to ARX, PO Box 15, Cheltenham, Victoria 3192, Australia.

Or you can Email us at: info@arx.com.au

DDP-1 Dual Channel Dynamics Processor

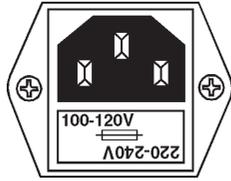
OWNER'S MANUAL



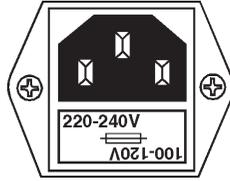
ARX Systems Pty Ltd, PO Box 15,
Cheltenham, Victoria 3192, Australia
Phone: 03 - 9555 7859 Fax: 03 - 9555 6747
International Fax: +61-3 -9555 6747
On the Web: <http://www.arx.com.au>
Email: info@arx.com.au

! IMPORTANT - PLEASE READ THIS FIRST !

This is a dual voltage unit. It is essential that you check that the voltage on the fuseholder cover below the AC connector on the rear of the chassis is set correctly before connecting it to AC power.



THIS IS SET FOR
100 V AC TO 120 V
AC OPERATION



THIS IS SET FOR
220 V AC TO 240 V
AC OPERATION

To change, pull fuseholder out and rotate 180°, then push in again. Do not insert power cable into unit until voltage has been correctly set. Do not plug power cable into AC power until voltage has been correctly set

WARNING SYMBOLS USED ON THIS EQUIPMENT

- This symbol is intended to alert you to the presence of important operating instructions contained in this owner's manual
- This symbol is intended to alert you to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.
- This symbol indicates that a Slow Blow fuse is used in this equipment. Replace with same type and value only

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE COVER OR BACK OF UNIT
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED PERSONNEL

WARNING

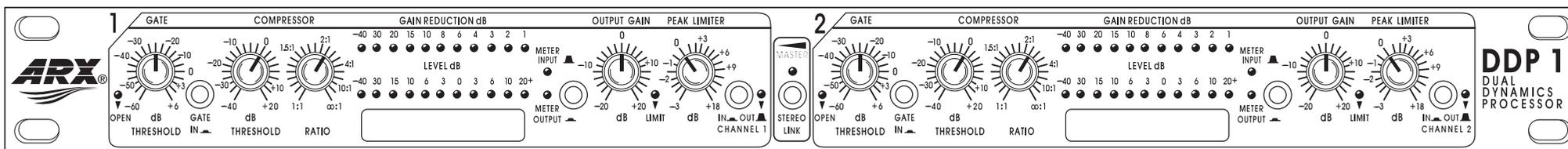
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

ATTENTION
RISQUE DE CHOC ÉLECTRIQUE - NE PAS OUVRIR

Complies with 89/336/EEC Electromagnetic Compatibility Directive, amended by 92/31/EEC and 93/68/EEC and meets the following standards: EN 55013 : 1990, Sections 3.2 and 3.5 EN 55020 : 1988, Sections 4.3, 5.4, 6.2, 7.0, 8.0.

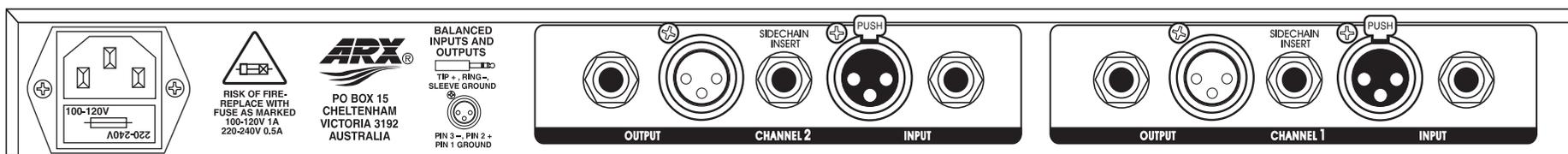
Specifications

Input Impedance	Balanced 20 Kohms Unbalanced 10 Kohms
Input Headroom	+22 dB
CMRR	>60 dB, 20 Hz - 20KHz
Output Impedance	Balanced 300 ohms Unbalanced 150 ohms
Output Level (Max)	+ 22 dB
Frequency Response	20 Hz to 20 KHz ± .4 dB. Note: RFI filter -6 dB @ 100 KHz
Signal to Noise ratio	-85 dB Unweighted -89 dB 'A' weighted
Distortion	.02% THD @ 1 KHz, @ 0 dB
Dynamic Range	107 dB
<i>Gate:</i>	
Attack and Release Time	Program dependent
Threshold	Variable: -60 dB to +6 dB
Attenuation	Preset: -70 dB
<i>Compressor:</i>	
Attack and Release Times	Program dependent
Threshold	Variable: -40 dB to +20 dB
Ratio	Variable: 1:1 to infinity:1
<i>Peak Limiter</i>	
Ratio	Fixed: infinity:1
Threshold	Variable: -3 dB to + 18 dB
Output Gain	Variable: -20 dB to +20 dB
Power Requirements	220 V AC 50 - 60 Hz, 8 watts (8 VA)
Weight	5 lb/2.2 Kg
Dimensions	19"W x 1¾"H x 6"D 482 x 44 x 155mm
Input Connector type	Jack and XLR
Output Connector type	Jack and XLR
Sidechain Insert Connector	Jack (TRS)



Front Panel Controls

- Gate Threshold control, IN/OUT switch and Gate Closed LED indicator
- Compressor Threshold and Ratio controls
- Input/Output and Gain Reduction LED meter displays
- Numbered marker panel for labelling DDP-1 assigns
- Input/Output metering switch and LED Indicators
- Output Gain and Peak Limiter controls and LED
- Channel Bypass switch and LED indicator
- Channels 1 and 2 compressor Stereo Link switch and indicator LED.



Rear Panel Connectors

- Balanced TRS Input socket. Tip HOT, Ring COLD, Sleeve GROUND
- Balanced XLR Input socket. Pin 2 HOT, Pin 3 COLD, Pin 3 GROUND
- Sidechain Insert TRS socket. Tip IN, Ring OUT, Sleeve GROUND
- Balanced TRS Output socket (same wiring as Input)
- Balanced XLR type Output socket (same wiring as Input)
- AC power lead and switch. Please refer to voltage details on Page 2

Bypass switch, and both compressors can be linked for true Master/Slave operation using the Stereo Link switch.

Technical Specifications

Input Stage

Balanced (Electronic) input featuring high CMRR input stage with >60dB common mode rejection (20K ohm balanced - 10K each leg unbalanced) on both XLR and jack Inputs. The high common mode rejection ratio of the DDP 1 ensures rejection of any hum or other electrical interference induced in the input leads to the DDP 1 because of long cable runs or noisy electrical environments.

The passive RFI filter prior to any active electronic circuitry eliminates

Radio Frequency Interference from entering the input stage of the DDP 1. This prevents damaging ultrasonic interference from reaching your Power Amplifiers or delicate high frequency loudspeakers.

Compression section & RMS converter

The compressor VCA operates in a sliding bias mode - ie. at a low signal levels (below +4dB), the VCA operates in the class AB mode. At higher levels (above +4dB) the VCA operates in the class A mode. This mode of operation ensures minimal noise and distortion levels at all signal levels.

The RMS AC/DC converter ensures correct rectification of the control signal which as a DC voltage is then applied to the Threshold and Ratio control section of the DDP 1.

Noise Gate

The attack time of the DDP 1's noise gate is program dependent - ie. program signals with a fast rise time cause the gate to open quickly, and those with a slow rise time slowly. The gate takes its control signal from before the compressor to provide threshold levels independent of the operating status of the other sections. This arrangement is known as feed forward sensing and for predictive processing like noise gates is the ideal mode of operation.

Peak Limiter

The DDP 1's Peak Limiter control circuitry operates in the feedback mode to ensure freedom from output amplitude error. The control signal is full wave rectified and the control voltage time constants are set extremely short to prevent passing of transients above the peak limiter's threshold.

Using the DDP-1

The DDP-1 gives you 2 independent channels of Gate, Compressor and Peak Limiter, each of which can be inserted virtually anywhere in the line level signal chain of the audio system. Some common applications are:

- As a channel insert on mixing consoles
- As a group insert on mixing consoles
- Pre or Post Graphic EQ
- Pre System crossovers

However, it is *not* designed to have a microphone or an instrument plugged directly into it. If you need dynamics control at this point, use the DDP-1 in the channel Insert point of the console.

A popular DDP-1 application is across the Left and Right console sends.

For example, the Noise Gate section would be set up to shut off the signal when there is no sound coming off stage; the Compressor section could be set up on say a 3:1 ratio to reduce the difference between soft and loud signals, and thus pull the mix together; and the Peak Limiter could be set up as an absolute stop to prevent system failure (in Live Sound) tape distortion (in Studio use) or transmitter overload (in Broadcast use).

No matter what area of pro audio you use it in, we think you'll find the DDP-1 an invaluable tool.

Introduction

Thank you for choosing this DDP 1 Dual Channel Multi Mode Dynamics Processor. As with all ARX equipment, it has undergone extensive calibration and 'burn in' before shipping. To ensure continued trouble free use, please familiarise yourself with the contents of this manual before using the DDP 1.

About the DDP-1

Total Control of Program Dynamics is essential for today's sophisticated standards of Audio production, whether it's in the studio, Broadcast or on the road.

Recognising this fact, ARX design engineers have developed the DDP 1, a dual channel multi mode dynamics processor. Each channel features a Noise Gate, variable ratio Compressor and a Peak Limiter.

LED indicators give full visual indication of all controls and features, with a switchable Input/Output level display, and a separate Gain Reduction display. Each channel has its own hardwire Bypass, as well as a Stereo Link switch for true compressor Master/Slave operation. In addition to this, as on all ARX single rack unit equipment, there is a numbered marker panel that you can write on for easy confirmation of the DDP 1 assigns.

The rear panel has true differential Balanced Inputs and Outputs on both XLR and jack connectors, and each channel has a Sidechain access insert point.

Noise Gate

Each channel of the DDP 1 has an easy to use noise gate, to attenuate noise, instrument leakage and other unwanted sound when there is no signal present. It has a Program Dependent attack time, to capture all the initial transients of a sound, and a wide ranging user variable Threshold.

Compressor

The DDP 1 has a variable ratio Compressor with ARX 'Auto Soft™' circuitry, which gives a soft knee at low compression ratios, and a hard knee at high (limiting) ratios.

Peak Limiter

The Peak Limiter in each channel of the DDP 1 sets an absolute limit on peak output levels, to prevent over modulation of a signal that may cause distortion, or as a protective device for PA systems. It follows after the Output Gain control as the last point in the DDP 1's signal chain.

Each channel of the DDP 1 can be bypassed using the hardwire Channel