PHASE METER

USER MANUAL

Geachte klant,

Wij danken u hartelijk voor uw keuze en het vertrouwen dat u in ons produkt stelt.
U deed een goede keus, dit produkt is ontworpen door en voor professionele gebruikers.

Er is gebruik gemaakt van onze enorme "know how" in mengtafel en signaal processor technieken en dit gekombineerd met hoogwaardige komponenten geeft u de zekerheid van een lange gebruiksduur.

Bovenstaande eigenschappen resulteren in een zeer betrouwbaar en bedrijfszeker eindprodukt.

Deze gebruiksaanwijzing helpt u in het optimaal benutten van alle mogelijkheden die dit produkt in zich heeft.

Wij excuseren ons voor het feit dat deze gebruiksaanwijzing uitsluitend in het engels verkrijgbaar is. Dit is een gevolg van het feit dat 99% van onze produkten geexporteerd worden en het engels de algemeen aanvaarde internationale voertaal is.

Mocht u nog vragen hebben dan kunt u zich altijd tot onze dealers wenden.

Dear client,

Thank you for choosing this product.

This product is designed by specialists in the field of professional audio and is intended to be used as a professional tool.

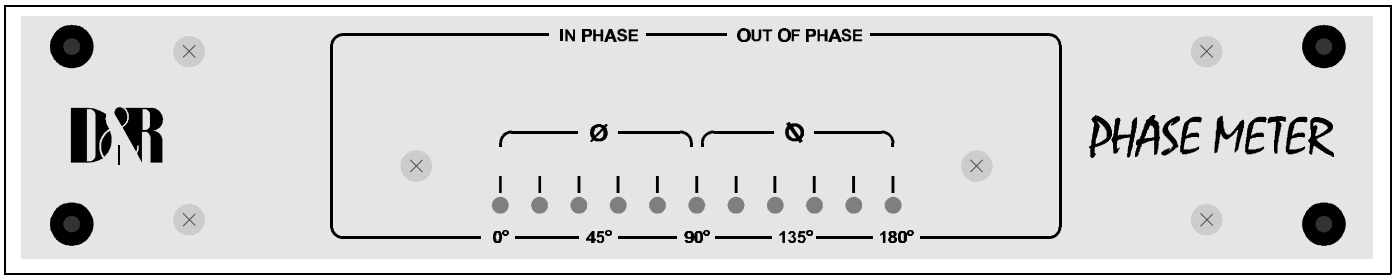
We are confident that you will be using this product for many years to come, and wish you much success.

We always value suggestions from our clients, and we would therefore be grateful if you could complete and return the questionnaire included at the back of this manual, once you have become familiar with this product. We will certainly learn from your comments, and very much appreciate your time doing this.

With kind regards,

Duco de Rijk
President

D&R ELECTRONICA WEESP B.V.
Rijnkade 15B
1382 GS WEESP-HOLLAND
The Netherlands
Phone: 0294-418 014
Fax: 0294-416 987
Website: http://www.d-r.nl
E-mail:
info@d-r.nl



PHASE METER MANUAL

DESCRIPTION

D&R 's phase meter is a measuring device that indicates the phase relation between two input signals.
A scale of 11 LED's indicate a phase relation between 0 degrees and 180 degrees.
The first 6 LED's are green and the second 5 LED's are red. The green area indicates acceptable phase errors for mono compatibility, an in/phase sign is printed above the green area.
The red area is the indication that serious phase errors are present between the two input signals. An out of phase sign is printed above the red area.

To avoid misreading special circuitry is designed to cancel any reading when one of the input signals is 20dB below the other input signal. If only one signal is fed into the unit no reading will be displayed.

A simple test to check your phase meter is to feed two identical signals in to the left and right inputs of the Phase meter. No reading will be displayed indicating no phase errors. As soon as you reverse the phase of one of the signals by 180 degrees, (reversed wiring) a full 180 degrees indication will be displayed.

INSTALLATION

The phase meter is designed to read the phase relation between signals between -20dB and +20dB. A good point of wiring is the main output of a mixing console or the input of a recording device.
For ease of wiring both inputs are paralleled, the inputs are unbalanced with signal on the tip and both ring and sleeve wired to ground. The Phase meter can be wired in series with the signal leads that need to be measured.

POWERING

The unit is normally factory set to be connected to your local mains voltage.
This could be either 115 volt or 230 volt, or a voltage close to these values.
The units has a three wire mains cord for proper grounding of the device.

Please read the following safety instructions for your and your environments safety.

We hope that this device gives you the information to create transparent recordings without any hidden problems in the final mix.

D&R Electronica Weesp b.v., rijnkade 15B, 1382 GS Weesp-The Netherlands

SPECIFICATIONS

Attack:	300mSec (Vu type of reading)
Release:	300mSec (Vu type of reading)
Reading:	Between -20dB and +20dB (Only when both input signals are present) (There is no reading with one input signal present)
Power:	115/230volt 50/60Hz

DECLARATION OF CONFORMITY

Manufacturers Name: D&R Electronica Weesp b.v.

Manufacturers Address: Rijnkade 15B,
1382 GS Weesp,
The Netherlands

declares that the product

PHASE METER

conforms to the following product specifications:

EMC: **EN 55022: 1987**
CISPR 22 (1993) class B

EN 500082-1 (1992)

Supplementary Information:

The products herewith complies with the requirements of the EMC Directive 89/336/EEC (1989) as amended by the CE Marking Directive 93/68/EEC (1993).

D&R Electronica Weesp b.v.
Rijnkade 15 B
1382 GS WEESP
The Netherlands
President of Engineering

PRODUCT SAFETY

This product is manufactured with the highest standards and is double checked in our quality control department for reliability in the "HIGH VOLTAGE" section.

CAUTION

Never remove any panels, or open this equipment. No user servicable parts inside.
Equipment power supply must be grounded at all times.
Only use this product as described, in user manual or brochure.
Do not operate this equipment in high humidity or expose it to water or other liquids.
Check the AC power supply cable to assure secure contact.
Have your equipment checked yearly by a qualified dealer service center.
Hazardous electrical shock can be avoided by carefully following the above rules.

EXTRA CAUTION FOR LIVE SOUND

Ground all equipment using the ground pin in the AC power supply cable.
Never remove this pin. Ground loops should be eliminated only by use of isolation transformers for all inputs and outputs. Replace any blown fuse with the same type and rating only after equipment has been disconnected from AC power.
If problem persists, return equipment to qualified service technician

PLEASE READ THE FOLLOWING INFORMATION

Especially in sound equipment on stage the following information is essential to know.
An electrical shock is caused by voltage and current, actually it is the current that causes the shock.
In practise the higher the voltage the higher the current will be and the higher the shock.
But there is another thing to consider and it is resistance.
When the resistance in Ohms is high between two poles, the current will be low and vica versa.
All three of these; voltage, current. and resistance are important in determining the effect of an electrical shock.
However, the severity of a shock primarily determined by the amount of current flowing through a person.
A person can feel a shock because the muscles in a body respond to electrical current and because the heart is a muscle it can affect, when the current is high enough.
Current can also be fatal when it causes the chest muscles to contract and stop breathing. At what potential is current dangereous.
Well the first feeling of current is a tingle at 0.001 Amp of current.
The current between 0.1 Amp and 0.2 Amp is fatal.
Imagine that your home fuses of 20 Amp can handle 200 times more current than is necessary to kill. How does resistance affect the shock a person feels.
A typical resistance between one hand to the other in "dry" condition could well over 100,000 Ohm.

If you are playing on stage your body is perspiring extensively and your body resistance is lowered by more than 50%. This is a situation in which current can easily flow.

Current will flow when there is a difference in ground potential between equipment on stage and in the P.A. system. Please do check if there is any potential between the housing of the mikes and the guitarsynth amps, which will be linked by your body on stage. Imagine, a guitar in your hand and your lips close to the mike! A ground potential difference of above 10 volts is not unusual, in improperly wired buildings it can possibly be as high as 240 volts.

Allthough removing the ground wire sometimes cures a system hum, it will create a very hazardeous situation for the performing musician.
Always earth all your equipment by the grounding pin in your mains plug.
Hum loops should be only cured by proper wiring and isolation input/output transformers.

Replace fuses always with the same type and rating after the equipment has been turned off and unplugged.
If the fuse blows again you have an equipment failure, do not use it again and return it to your dealer for repair.

And last but not least be carefull not to touch a person being shocked as you, yourself could also be shocked.
Once removed from the shock, have someone send for medical help inmediately

Always keep the above mentioned information in mind when using electrically powered equipment.