



PHASE CORRELATOR

User Manual

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CORRELATOR (phase meter) MANUAL

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The D&R phase meter is a device which is capable of indicating the phase relationship between 2 signals.

The 2 jack sockets have to be connected to the 2 signals concerned.

The level has to be between -20dB and +20dB. Beyond -20dB the circuit will shut off any indication so avoiding misreadings.

It is normally accepted that a phase error below 90 degrees is acceptable for mono compatibility, therefore these are green leds.

Above 90 degrees these leds are red and phase errors are present in the signal.

Calibration (if not factory set) can be set as below.

Feed a signal of 1 kHz 0 dBu to the tip of one jack and the same signal reversed in phase by a transformer to the tip of the other jack (the transformer has to be a 1:1 type).

Now adjust the ledbar to full scale deflection (180 degrees).

The "fall down" time of the reading can be set to personal taste.

POWERING

The unit can be powered from 110v as well as 220 volts by setting the mains switch on the back of the unit (on 9.5" units only). Some units may be set already at the factory to 110/220 volts with a fuse outside instead of the voltage selector.

READ SAFETY INSTRUCTIONS VERY CAREFULLY ON THE BACK PAGE!



PHASE CORRELATOR

Service Manual

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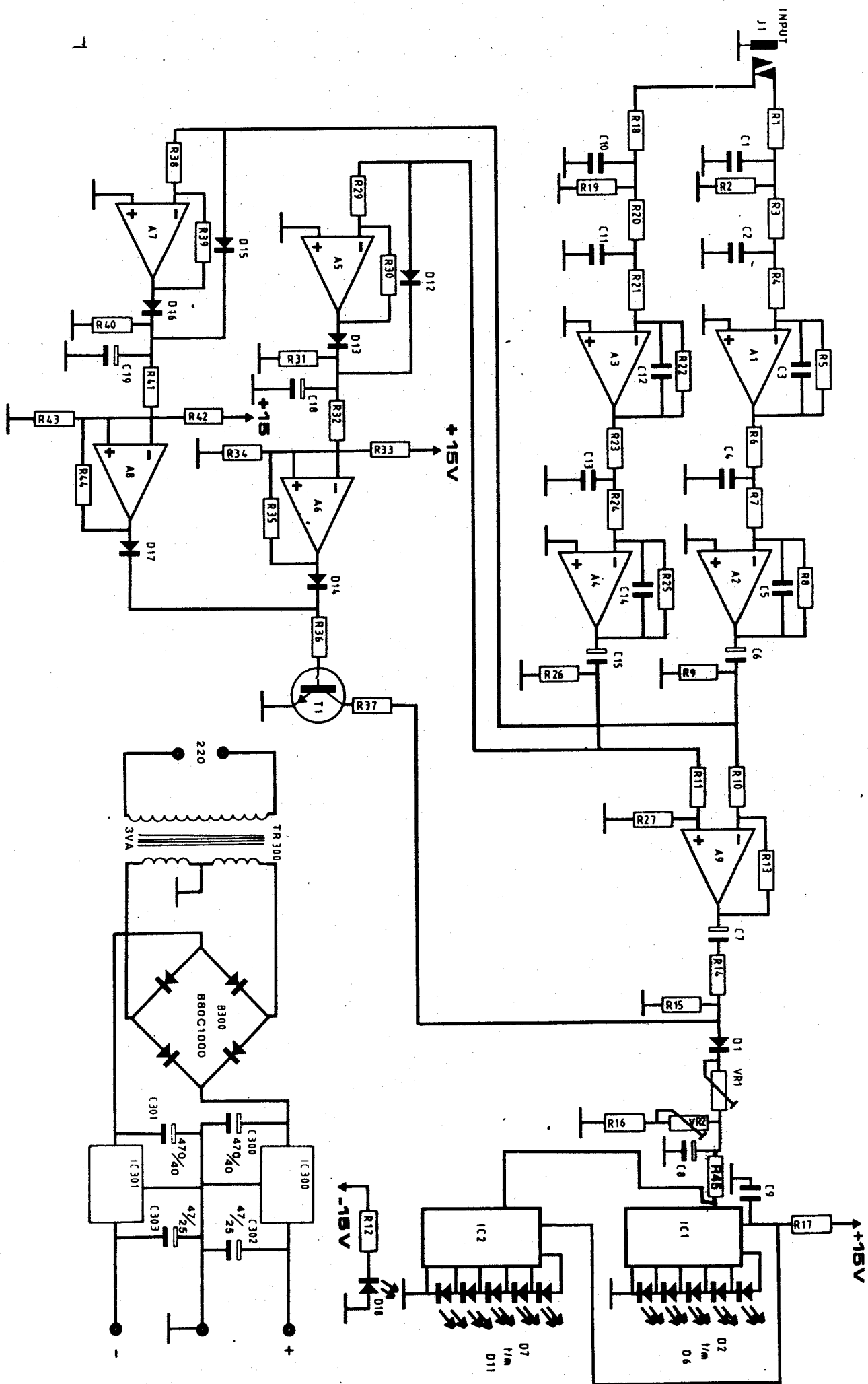
R & D department

PARTLIST : PHASE CORRELATOR 9.5''

PCB-index : 1

PartNr	Value	Notes	ArtNr
R1	1 k 0	5%	0729
R2	100 k	5%	0753
R3	3 k 9	5%	0736
R4	1 k 2	5%	0730
R5	220 k	5%	0757
R6	3 k 9	5%	0736
R7	2 k 2	5%	0733
R8	39 k	5%	0748
R9	47 k	5%	0749
R10	10 k 0	1%	0848
R11	10 k 0	1%	0848
R12	1 k 0	5%	0729
R13	10 k 0	1%	0848
R14	4 k 7	5%	0737
R15	4 k 7	5%	0737
R16	4 k 7	5%	0737
R17	10 E	5%	0705
R18	1 k 0	5%	0729
R19	100 k	5%	0753
R20	3 k 9	5%	0736
R21	1 k 2	5%	0730
R22	220 k	5%	0757
R23	3 k 9	5%	0736
R24	2 k 2	5%	0733
R25	39 k	5%	0748
R26	47 k	5%	0749
R27	10 k 0	1%	0848
R28	----		
R29	10 k	5%	0741
R30	10 k	5%	0741
R31	100 k	5%	0753
R32	100 k	5%	0753
R33	3 k 01	1%	0842
R34	10 k 0	1%	0848
R35	22 k 1	1%	0858
R36	47 k	5%	0749
R37	100 E	5%	0717
R38	10 k	5%	0741
R39	10 k	5%	0741
R40	100 k	5%	0753
R41	100 k	5%	0753
R42	3 k 01	1%	0842
R43	10 k 0	1%	0848
R44	22 k 1	1%	0858
R45	4 k 7	5%	0737

C1	4700 p	poly	0250
C2	0.068	poly	0260
C3	10 p	ker	0213
C4	0.068	poly	0260
C5	100 p	ker	0225
C6	47/25	nad	0287
C7	47/25	nad	0287
C8	22/40	nad	0285
C9	0.1/63	ker	0241
C10	4700 p	poly	0250
C11	0.068	poly	0260
C12	10 p	ker	0213
C13	0.068	poly	0260
C14	100 p	ker	0225
C15	47/25	nad	0287
C16	----		
C17	----		
C18	1/63	nad	0279
C19	1/63	nad	0279
C300	470/40	ax	0295
C301	470/40	ax	0295
C302	47/25	nad	0287
C303	47/25	nad	0287
D1	1N4148	sgn	0342
D2	LED green	5x2mm	0389
D3	LED green	5x2mm	0389
D4	LED green	5x2mm	0389
D5	LED green	5x2mm	0389
D6	LED green	5x2mm	0389
D7	LED red	5x2mm	0390
D8	LED red	5x2mm	0390
D9	LED red	5x2mm	0390
D10	LED red	5x2mm	0390
D11	LED red	5x2mm	0390
D12	1N4148	sgn	0342
D13	1N4148	sgn	0342
D14	1N4148	sgn	0342
D15	1N4148	sgn	0342
D16	1N4148	sgn	0342
D17	1N4148	sgn	0342
D18	LED green	5x2mm	0389
T1	BC 546	NPN	0328
A1-4	4741	Opamp	0302
A5-8	TL074	biFET	0305
A9	TL071	biFET	0303
IC300	7815	pos.reg.	0320
IC301	7915	pos.reg.	0321
IC1	U237	lin.5segm	0309
IC2	U247	lin.5segm	0310
VR1	220 k	trim-pot	0157
VR2	47 k	trim-pot	0156
J1	Jack break	CLIFF	0432
J2	Jack break	CLIFF	0432
B300	B80C1000	bridge rect	0345
TR300	trafo 2x15V	print 3VA	0581



LED-
Phasemeter

4-4-85

0571

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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 VERY CAREFULLY.

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 vice 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 dangerous.

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.

Although removing the ground wire sometimes cures a system hum, it will create a very hazardous 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 propr 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 immediately

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

D&R ELECTRONICA B.V. WEESP