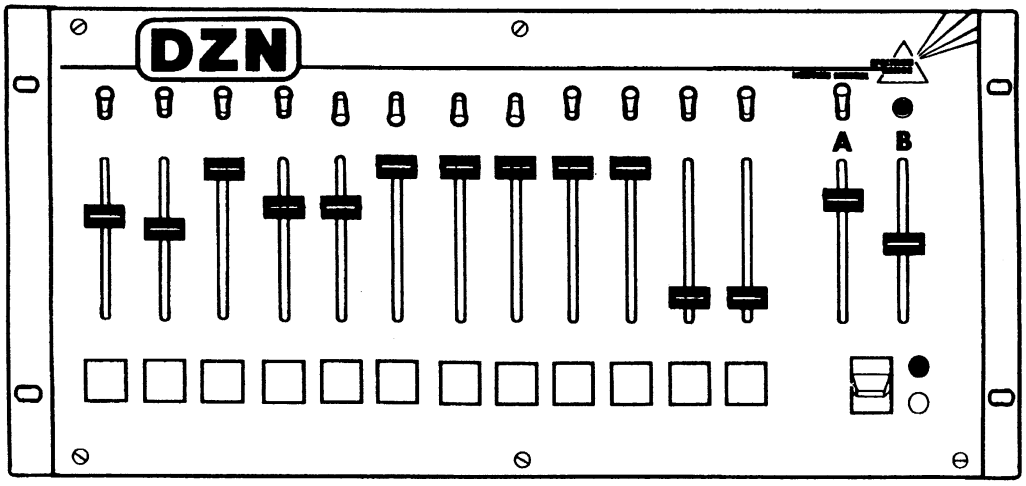
SPECTRUM
DESIGN & DEVELOPMENT, INC.

INSTRUCTION MANUAL

FOR THE

DZN SERIES LIGHTING CONTROLLER

Models 1 & 2



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DESCRIPTION

The DZN lighting controller is a 12-channel single scene controller. It is a professional device designed to provide professional results. It offers all of the features necessary for the operator to effectively and efficiently create the moods and effects for every type of performance. Packaged in a light but tough rack mountable cabinet, it is ideal for use by road bands and touring groups as well as being applicable for permanent installations in clubs and theatres. The DZN's expandability feature makes it ideal for anyone who wants to be prepared for future needs.

The DZN is offered in two versions - Model 1 and Model 2. Both models are, from the operator's point of view, functionally the same. The differences are as follows: Model 1 is designed for use with Spectrum's four channel QEP power modules and has three Control Out connectors on the rear panel. Model 2 is designed for Spectrum's OX-12 and OX-24 six channel power modules and has only two control connectors. In addition, the two models have inverted control voltages (i.e., on Model 1 a high control setting is a low control voltage output. On Model 2 a high control setting is a high control voltage output.).

SET UP

Place the DZN at the location desired. Plug in the applicable control cables. For Model 1 up to three QECC style cables may be required, grouped as channels 1-4, 5-8, and 9-12. For Model 2 up to two OXC style cables will be necessary grouped as channels 1-6 and 7-12. Run these cables to your power packs and connect as desired.

OPERATION

The DZN is a 12 channel single scene controller with A and B masters, individual faders, flashers and master assign switches, and a blackout switch. The functions of these controls are as follows:

A & B Masters: control the channels that have been assigned to them via the master assign switches. Will fade all channels, proportionally between their "on" setting and the preset minimum intensity.

Master Assign Switch:	assigns either the A or B master to a specific channel.
Individual Fader:	controls the output of a specific channel between full intensity and the preset minimum intensity.
Flash Button:	provides instant full intensity output for a specific channel when pressed and resumes normal fader settings when released.
Blackout Switch:	forces all outputs to the preset minimum intensity when down. Returns normal operation when up.
Trim:	Adjusts "minimum" or "off-state" output across the board.
Master - Ind/Slave Switch:	puts DZN in slave mode for multiple board set-ups.

Actual operation of the DZN is straightforward. The faders will dim your lights and the flashers flash them. The A & B asign switches can assign groups of channels that can be mastered together for pans, scene change effects, etc. By setting one of the masters low and the other high, the master assign switches will function like "on-off" switches. They can also be set at other relative values for different effects.

The flash buttons are great for fast paced and hard, drastic effects. Keep in mind that their function is more effective if used sparingly and in contrast to smooth fades. The Blackout Switch is self-explanatory.

Obviously, there are many different ways to operate the DZN. Remember, practice makes perfect. The best way to become good with it is to use it.

EXPANSION

If you want to add more channels to your system, another DZN can be connected to your present one via the Master In and Master Out connectors and a DZNX cable. This will expand your system to 24 channels. To do this set up both DZN's and connect them to their respective power packs. Then connect one end of the DZNX cord into the Master Out connnector of one DZN and the other end into the Master In connector on the other DZN. Now put the Mas-Ind/Slave switch on this second DZN into the Slave position. That's all there is to it. Now the slave DZN will function normally but its A & B masters will become submasters of the A & B masters on the Master DZN.

If you need more channels (36, 48, etc.) additional DZN's can be added in either of two fashions. The first is where each additional DZN will be mastered by the one "upstream" of it. To do this simply jump from the Mas Out connector to the Mas In connector from board to board on down the line. Place the Mas-Ind/Slave Switch into the slave position on all the boards except the first one (the one with no connection to its Master In connector). The other method is where all the slave boards are mastered equally by only the Master DZN and do not affect one another. To do this you simply connect the Mas Out connector of the Master DZN to the Mas In connector of all the DZN slaves. Put the Mas-Ind/Slave switch in the Slave position on all but the Master DZN. Also, you will need DZNXY "Y" cords to do this.

SERVICE AND LIMITED WARRANTY

1. WARRANTY - Subject to the terms of this paragraph, the supplier warrants its title to the products sold by it and warrants to the Purchaser that its products are free of defects in workmanship or material and are in conformity with applicable specifications and descriptions set out herein. No claim shall be maintained hereunder unless the facts giving rise to it are discovered within 90 days of shipment and written notice thereof given to the supplier within 30 days of discovery. The sole and exclusive liability of the supplier, for breach of warranty shall be to frfund the purchase price of, or at its option to replace or repair, the product or part concerned f.o.b. its factory or such other place as it may sesignate. The warranties stated in this paragraph are exclusive of all other warranties, written or oral, statutory, expressed or implied, none of which shall apply to the sale of the supplier's products hereunder. Products, used on rentals, nodified electrically or mechanically, physically abused or cables are not covered by this warranty.

2. LIMITATION OF LIABILITY - In no event shall the supplier be liable for consequencial or special damages and the supplier liability on any claims for loss or liability arising out of or connected with this contract of the sale, resale, use or incorrect application of any product covered by this contract (including, but not limited to, loss or liability arising from negligence or breach of contract) shall in no case exceed the selling price of such product or part thereof involved in the claim.

3. RETURNED GOODS - No products are to be returned without written authorization and then only in accordance with the supplier's instruction and terms.

SPECIFICATIONS

Mechanical

Housing - 19" EIA Standar Rack Mounting
5 U High (8.75")
Size - 2.50D x 8.75H x 19.00W
Weight - 6 lbs.

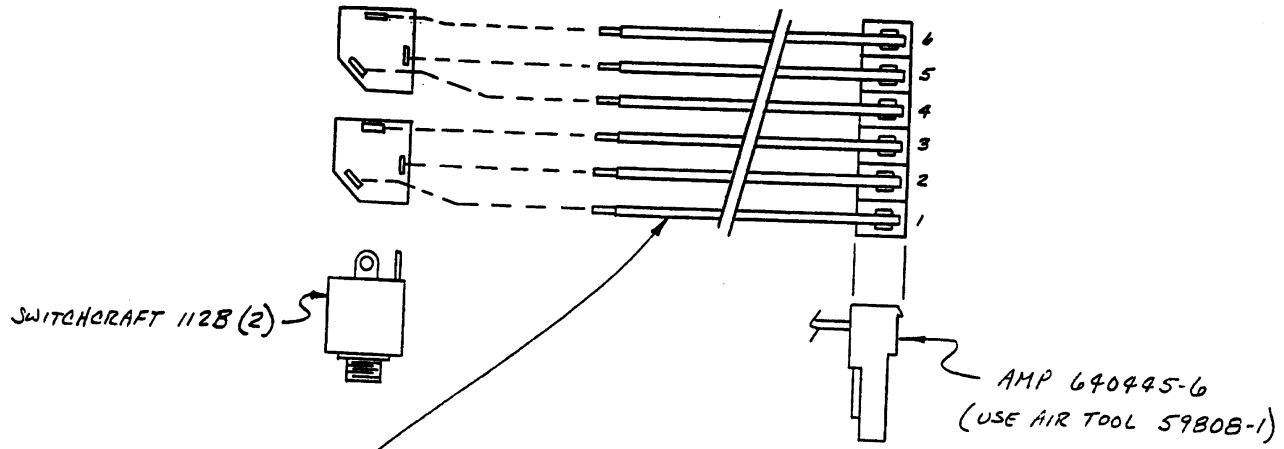
Electrical

Power Required: 10-15 VDC power must be supplied through control cables

Control Voltage Output: 2 VDC to 10 VDC, Factory Set (Adj. from 1 VDC to 1 VDC les than power supply voltage)

Note: On Model 1 a high intensity setting produces a low control voltage output. On Model 2 a high intensity setting produces a high control voltage output.

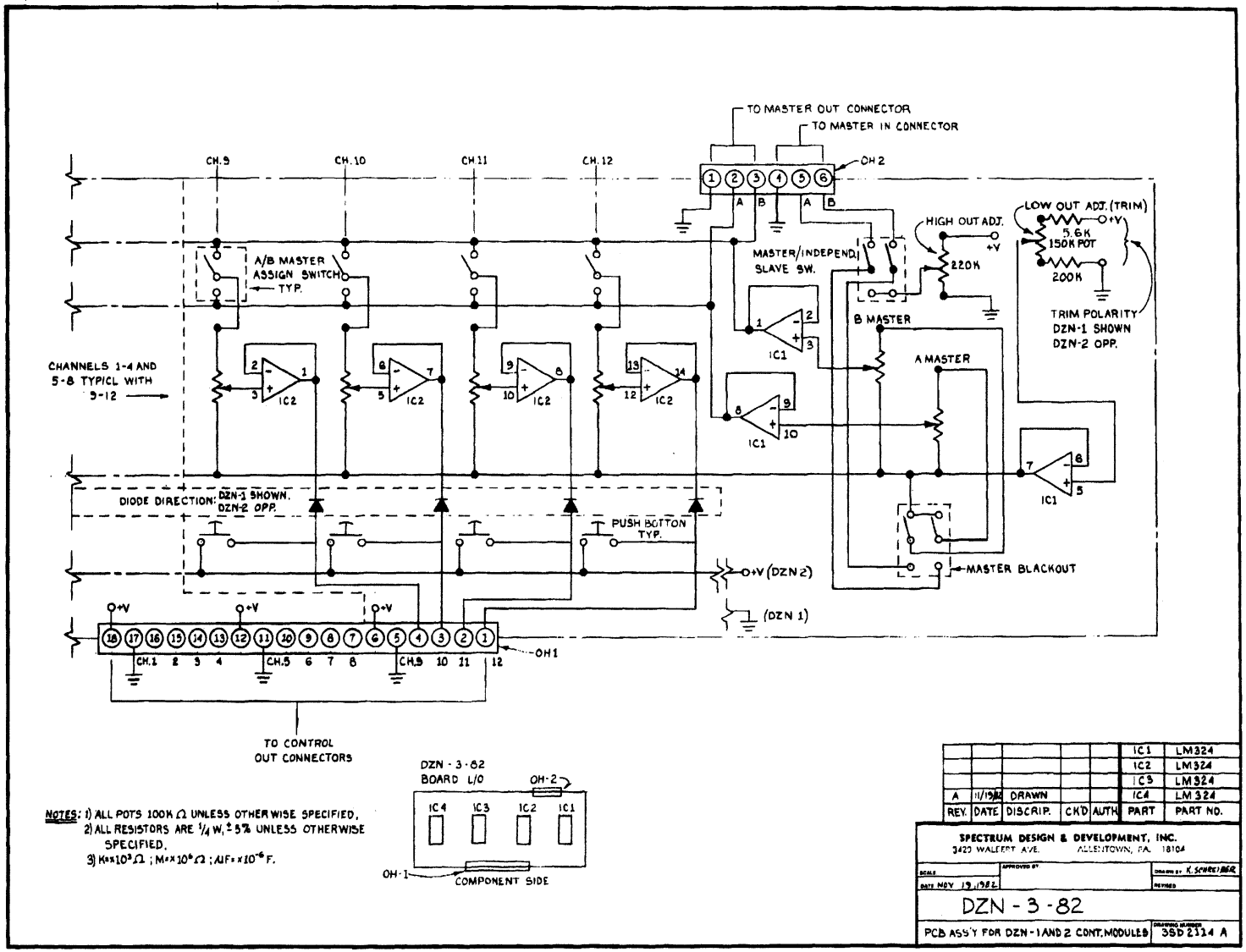
Control Connectors:	Model 1	Model 2
Style	Beau P-3306-DB	AMP CPC 11-8
Quantity	3	2
Channel Arrangement:	1-4, 5-8, 9-12	1-6, 7-12
Pin Out	1 - GRD 2 - CHAN. 1 3 - " 2 4 - " 3 5 - " 4 6 - +V	1 - GRD 2 - CHAN. 1 3 - " 2 4 - " 3 5 - " 4 6 - " 5 7 - " 6 8 - +V



CONNECTOR 640445-6	WIRE SPEC. CODE
Pos. 1	G24,7,8,0
" 2	R24,7,8,0
" 3	K24,7,8,0
" 4	G24,7,8,0
" 5	024,7,8,0
" 6	L24,7,8,0

MANUFACTURING DRWG. FOR
MASTER I/O CONN. HARNESS
FOR DEN-2

46	1-31-62	ISD 2063 REV. A



NOTES: 1) ALL POTS 100K Ω UNLESS OTHERWISE SPECIFIED,
2) ALL RESISTORS ARE 1/4 W, ± 5% UNLESS OTHERWISE SPECIFIED.
3) K=×10³ Ω ; M=×10⁶ Ω ; μF=×10⁻⁶ F.

REV.	DATE	DISCRIP.	CK'D	AUTH.
A	11/19/82	DRAWN		

PART	PART NO.
IC1	LM324
IC2	LM324
IC3	LM324
IC4	LM324

SPECTRUM DESIGN & DEVELOPMENT, INC.
3420 WALBERT AVE. ALLENTOWN, PA. 18104

SCALE
DATE NOV 19, 1982
APPROVED BY
DRAWN BY K. SCHREIBER
REVISED

DZN - 3 - 82

PCB ASS'Y FOR DZN-1 AND 2 CONT. MODULES

DRAWING NUMBER SSD 2114 A