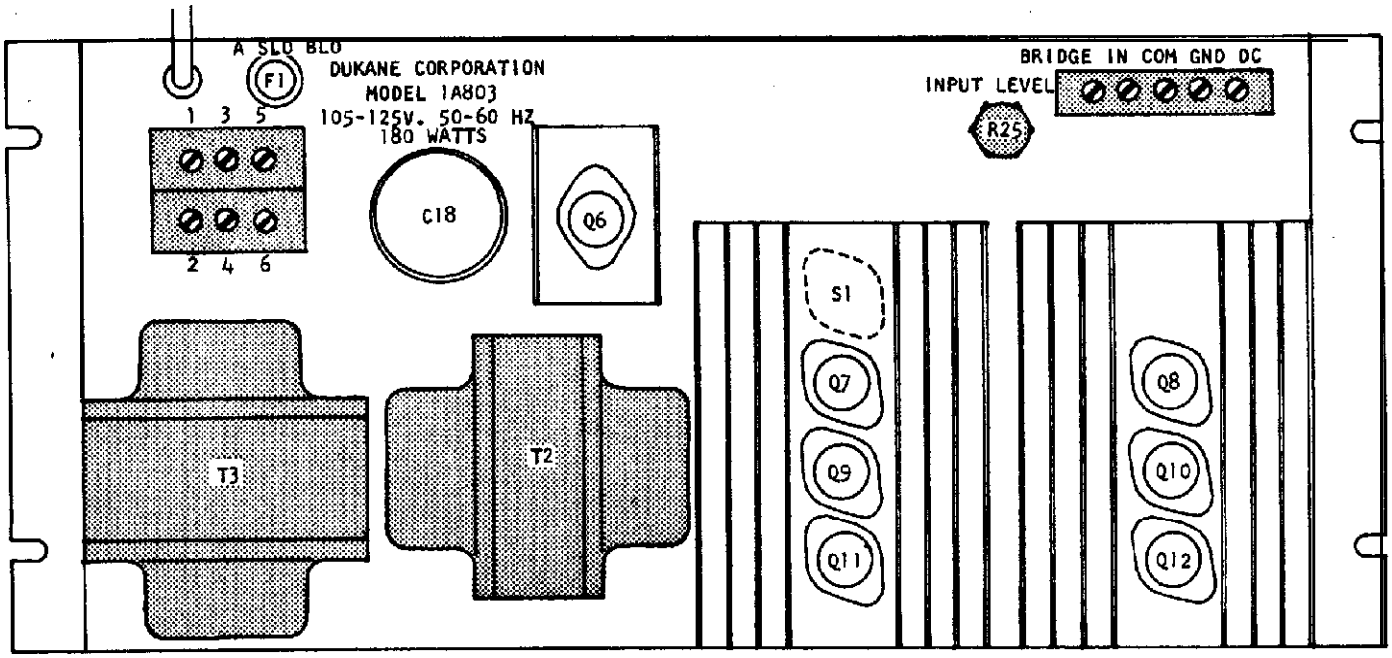
EXTERNAL CONNECTIONS
DUKANE MODEL 1A803 100-WATT POWER AMPLIFIER



FUSE (AND THERMOSTAT) -

One 4-ampere slow-blow fuse protects the primary AC power circuit for this amplifier. In addition there is a temperature-controlled (thermostat) switch (S1) in the AC power circuit and which is fastened to one of the large transistor heatsinks; any over-heating of the output transistors will open th primary power circuit, and the power circuit is close d automatically as the thermostat temperatur comes down.

INSTALLATION NOTES -

The DuKane Model 1A803 100-Watt Power Amplifier provides full-rated output with 0.4 volt input, single-ended See paragraph titled "INPUT LEVEL" on next page.

Amplifier Ground - It is good practice to ground the amplifier chassis to the rack or console metalware which is, in turn, connected to conduit and electrical system ground (or coldwater pipe). To be sure grounding exists between the amplifier and the metal-' ware, place an outside-toothed lockwasher under the head of one of the mounting screws.

Clas s I wiring is permissible for 25-volt o 70-volt rlevel output (speaker line) AC . power wiring must be Clas I wiring ONLY.

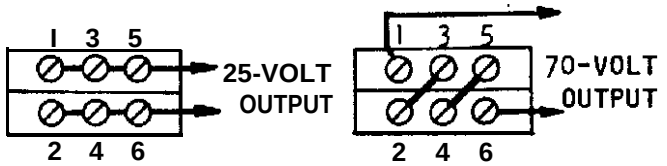
EXTERNAL CONNECTION -

Make ALL external connections to screw terminals on rear of amplifier Connect AC. power to this amplifier AFTER external connections have been made and are checked to be free of any short circuits.

A conventional speaker system of up to 100 watts including appropriate speaker-to-line matching transformers can be connected to this amplifier See chart at top of next page.

OUTPUT CONNECTION -

Connect jumper wires between screw terminals and connect speaker line as shown at right

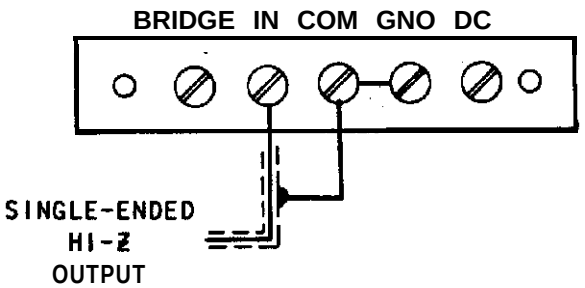


70-VOLT SPEAKER LINE		25-VOLT SPEAKER LINE	
SPEAKER POWER LEVEL	DUKANE TRANSFORMER PART NO.	SPEAKER POWER LEVEL	DUKANE TRANSFORMER PART NO.
15 to 50 watts 5 to 30 watts 1/2 to 4 watts 1/16 to 1/2 watt	710-3070 710-3071 710-3076 710-3078	5 to 20 watts 1/2 to 2 watts	710-3077 710-3075

INPUT LEVEL - Not more than 0.4 volt rms (sine wave) input is required to obtain full 100 watts of output power with this amplifier. However, it is recommended that, in order to accommodate the complex wave form of program material the input should be lowered 8 dB (to 0 VU) for actual amplifier installation and operation. Set INPUT LEVEL potentiometer for 0 level indicated on VU meter (on 25-volt line. 10 volts rms sine wave - on 70-volt line, 28 volts rms).

Input connections are made at screw terminals labeled "IN" and "COM", shield to "COM".

COM to GND - In some instances, it will be found desirable to disconnect the jumper between "COM" and "GND" on the input terminal strip - amplifier common connected through shield to preamplifier ground instead - to reduce any hum pick-up. ALSO see paragraph on the front of this sheet titled "Amplifier Ground".



HIGH-IMPEDANCE INPUT CONNECTIONS.

BRIDGING - An appropriate resisto may be connected between the screw terminals labeled "BRIDGE" and "IN" in instances where input level is too high to be easily reduced by INPUT LEVEL potentiometer. A 100,000-ohm, 1/2-watt resistor will reduce input level by 6 dB; a 1-megohm resistor would be inserted where input might exceed 10 volts.

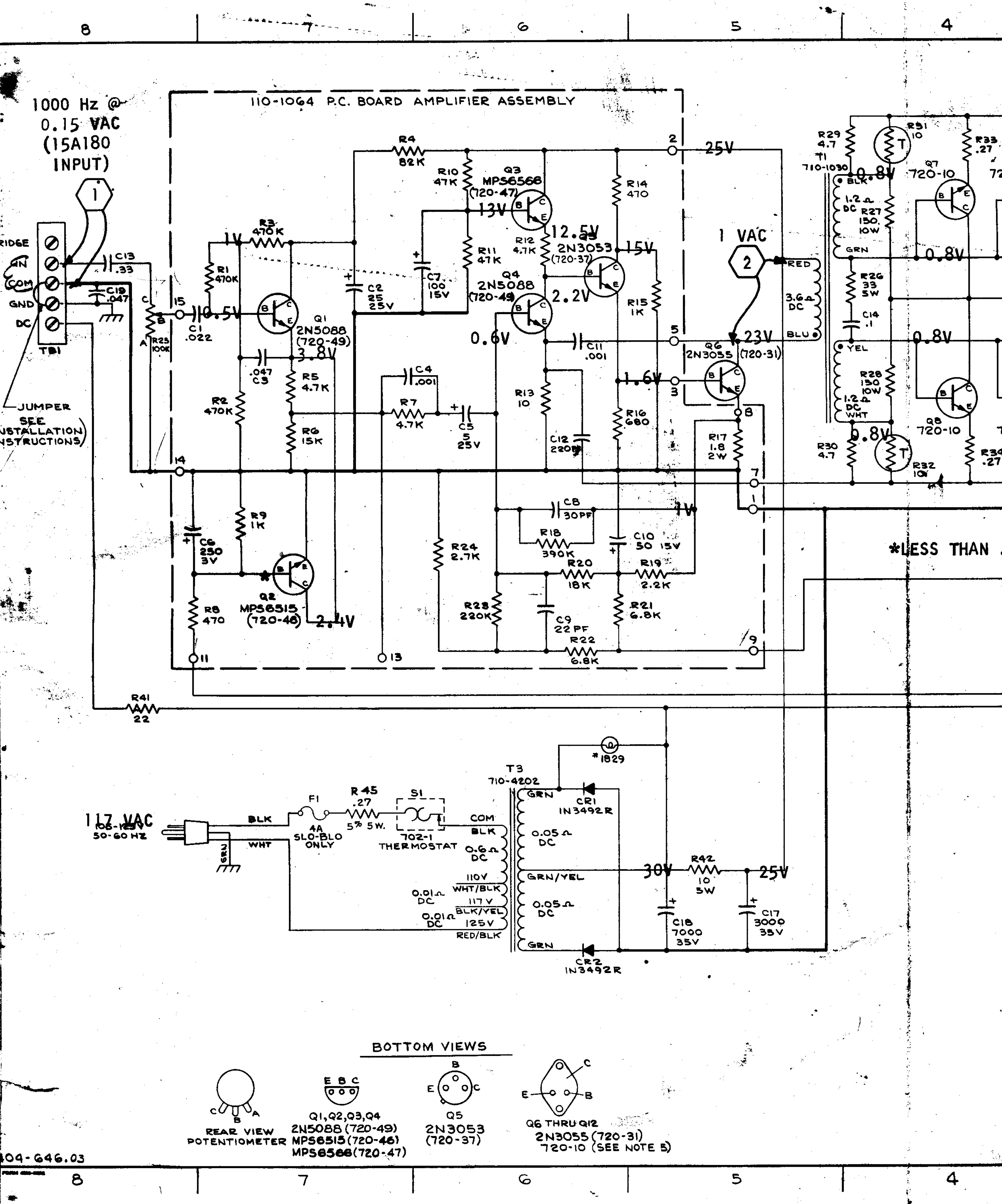
AC POWER CONNECTIONS -

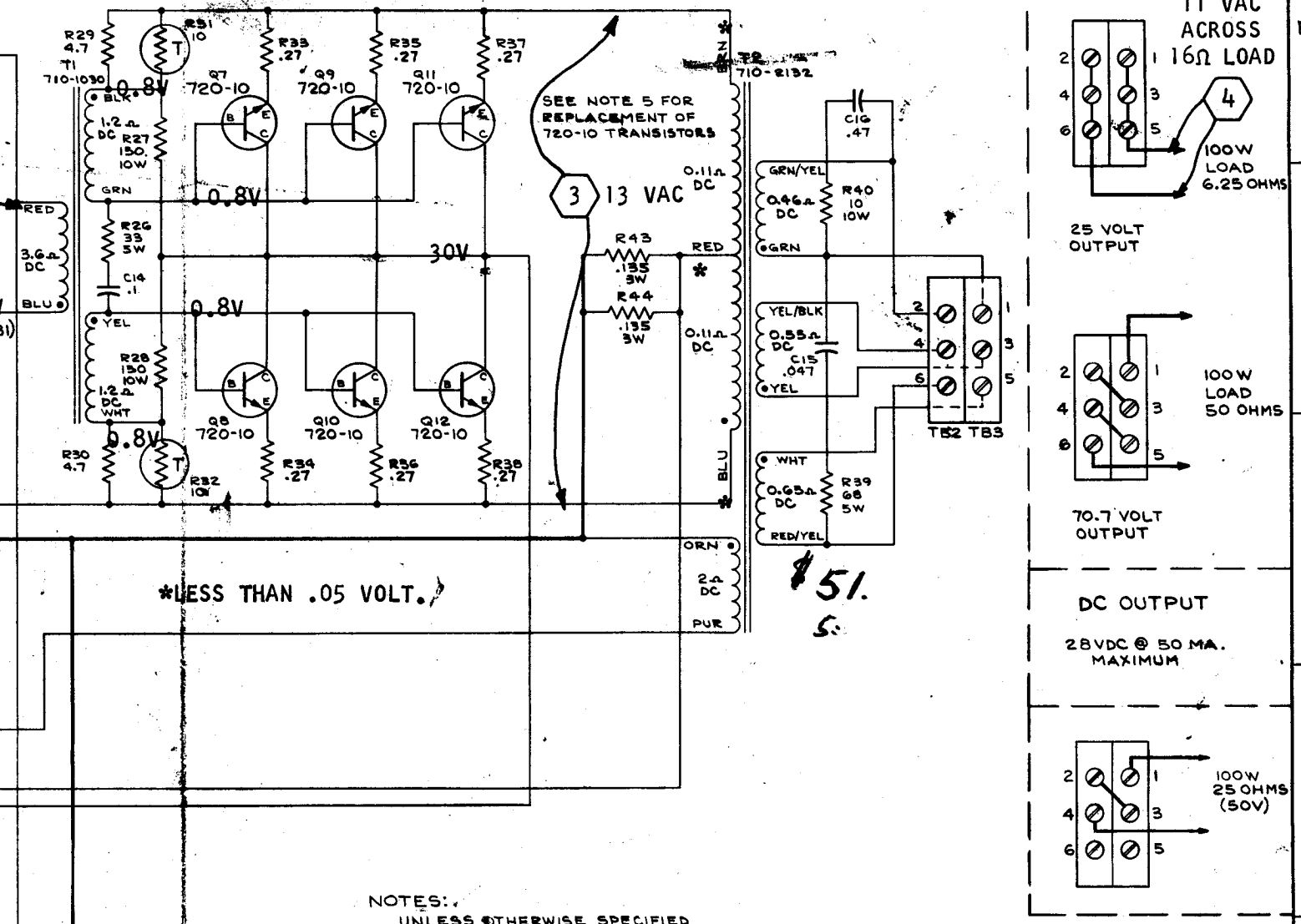
IMPORTANT - Before connecting AC power to this amplifier, BE SURE that correct output load (speakers correctly matched to speaker line) and input connections are properly made to terminals on this amplifier.

AC power wiring mus be Class wiring ONLY. Power transformer in this amplifier has primary taps for 110-volt line, 117-volt line and 125-volt line. As supplied. the 117-volt tap is connected. However, if line voltage is more than 120 volts, disconnect the circuit breaker white wire connected at terminal lug for yellow-black transformer tap, and connect circuit breaker wire to lug for red-black transformer tap. If line voltage is less than 115 volts, connect circuit breaker wire to white-black transformer tap.

DC TERMINAL - Auxiliary power is available for external preamplifier, of 28 volts DC at 50 milliamperes.

a


8
7
6
5
4
1000 Hz @
0.15 VAC
(15A180
INPUT)
1
110-1064 P.C. BOARD AMPLIFIER ASSEMBLY
TB1
GND
DC
COM
JUMPER
SEE
INSTALLATION
INSTRUCTIONS
C13
.33
C19
.047
R25
100K
C1
.022
R1
470K
R3
470K
1V
0.5V
Q1
2N5088
(720-49)
3.8V
.047
C3
R2
470K
R5
4.7K
R6
15K
R4
82K
C2
25
25V
R10
47K
Q3
MPS6566
(720-47)
13V
C7
100
15V
R11
47K
C4
.001
R7
4.7K
C5
5
25V
R12
4.7K
12.5V
2N3053
(720-37)
15V
Q4
2N5088
(720-49)
2.2V
0.6V
R14
470
R15
1K
C11
.001
R13
10
C12
220PF
R16
680
1.6V
Q6
2N3055
(720-31)
23V
R17
1.8
2W
25V
1 VAC
2
RED
3.6Ω
DC
BLU
R29
4.7
T1
710-1030
R31
10
0.8V
BLK
1.2Ω
DC
R27
150
10W
GRN
Q7
720-10
R33
.27
R26
33
5W
C14
.1
YEL
R28
150
10W
1.2Ω
DC
WHT
Q8
720-10
R30
4.7
R32
10
R34
.27
*LESS THAN
14
15
C6
250
3V
R9
1K
Q2
MPS6515
(720-46)
2.4V
R8
470
11
13
R24
2.7K
C8
30PF
R18
390K
C10
50 15V
1V
R20
18K
R19
2.2K
R23
220K
C9
22 PF
R21
6.8K
R22
6.8K
9
R41
22
T3
710-4202
*1829
CR1
IN3492R
117 VAC
105-125V
50-60 HZ
BLK
WHT
GRN
F1
4A
SLO-BLO
ONLY
R45
.27
5% 5W.
S1
702-1
THERMOSTAT
COM
BLK
0.6Ω
DC
110V
WHT/BLK
0.01Ω
DC
117V
BLK/YEL
0.01Ω
DC
125V
RED/BLK
GRN
0.05Ω
DC
GRN/YEL
0.05Ω
DC
GRN
30V
R42
10
5W
25V
C18
7000
35V
C17
3000
35V
CR2
IN3492R
BOTTOM VIEWS
REAR VIEW
POTENTIOMETER
Q1,Q2,Q3,Q4
2N5088 (720-49)
MPS6515 (720-46)
MPS6566 (720-47)
Q5
2N3053
(720-37)
Q6 THRU Q12
2N3055 (720-31)
720-10 (SEE NOTE 5)
404-646.03
8
7
6
5
4



OUTPUT CONNECTIONS

NOTES:
UNLESS OTHERWISE SPECIFIED

1. ALL RESISTORS ARE 1/2 WATT.
2. TOLERANCES ON ALL RESISTORS ±10%.
3. RESISTANCE VALUES IN OHMS. K=1000 OHMS MEG = 1,000,000 OHMS.
4. CAPACITANCE VALUES IN MICROFARADS.
5. 720-10 TRANSISTORS MUST ALL BE OF THE SAME GAIN GROUP. WHEN REPLACEMENT IS REQUIRED, BE SURE TO REPLACE ONLY WITH 720-10 OF SAME GAIN GROUP AS OTHER OUTPUT TRANSISTORS.
6. VOLTAGES MEASURED WITH 20,000 Ω/V VOM.
7. DC VOLTAGES MEASURED WITH R25 SET TO 0.
8. AC VOLTAGES SHOWN ARE LESS THAN FULL-RATED OUTPUT AND ARE FOR TEST PURPOSES ONLY.
9. VOLTAGES MAY VARY ±10%.

ISSUE	WAS	DATE	APPR.
07	R-45 ADDED.27Ω	11-4-71	
06	PRI. T3 CONNECTION WAS 11 V BLK/YEL ADDED ONLY TO F1 RELOCATED S1	10-1-69	
05	R33, 34, 36, 36, 37, 38 .27 OHM WAS .91 OHM	6-12-69	
04	Q6, Q7, Q8 & Q9 WERE ALL 2N5655A (720-20) — ALSO ADDED C19	4-1-69	
03	CORRECTED TERM. 15 ON 110-1064	2-19-69	
02	4A WAS 3.2A (F1)	12-20-68	
01	REVERSED POLARITY OF C8 ADDED 720 NO'S TO Q1 - Q6	11-22-68	

NO. REQ'D.	USED ON	DuKane Corporation ESTABLISHED 1922 ST. CHARLES, ILLINOIS U.S.A.	SCHEMATIC DIAGRAM MODEL 1A803 100-WATT AMPLIFIER

SCALE — DATE 9-5-68
DRAWN — APPD.
CHECKED — ENGR.
NO. 190-1656-07