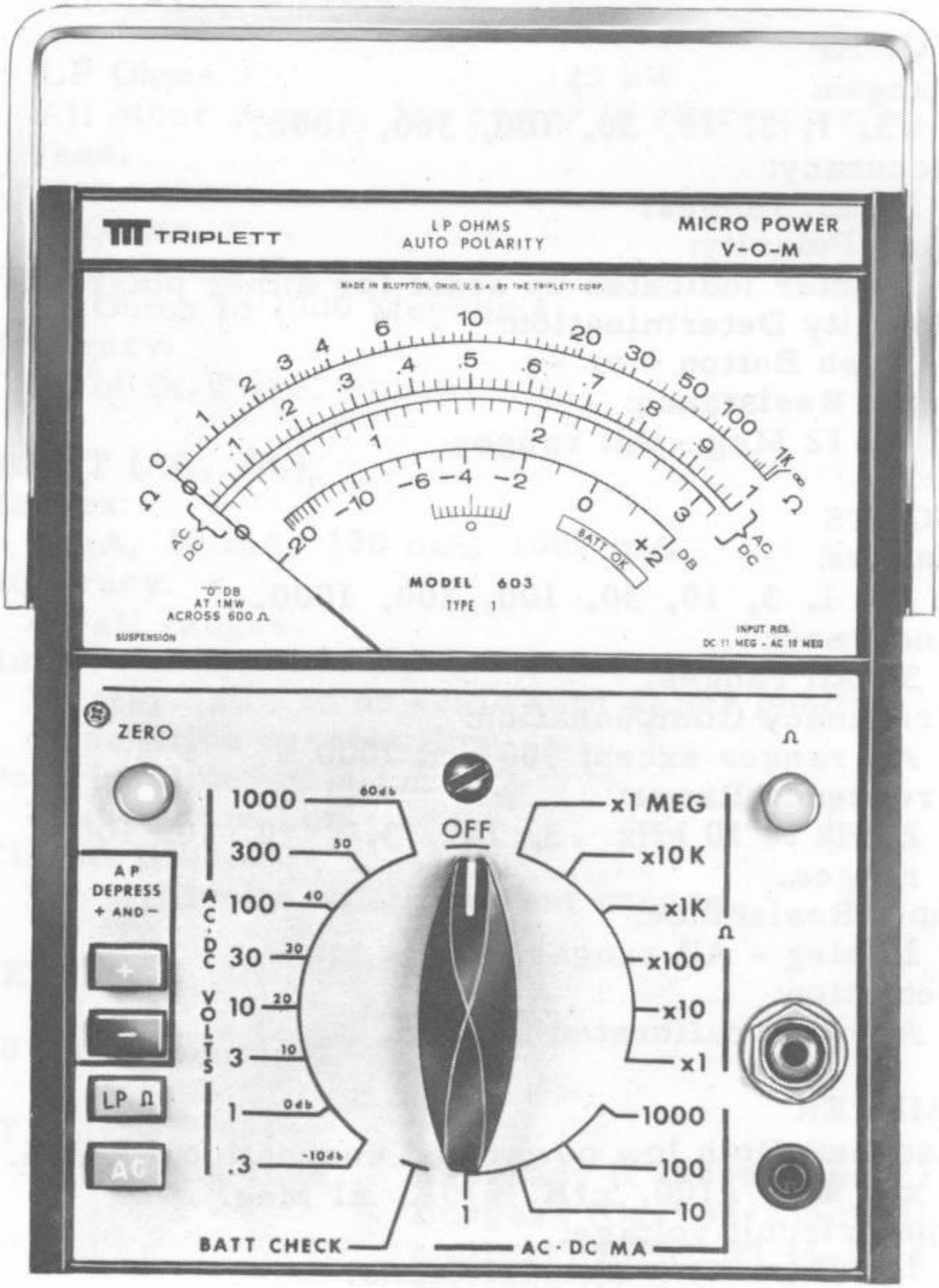
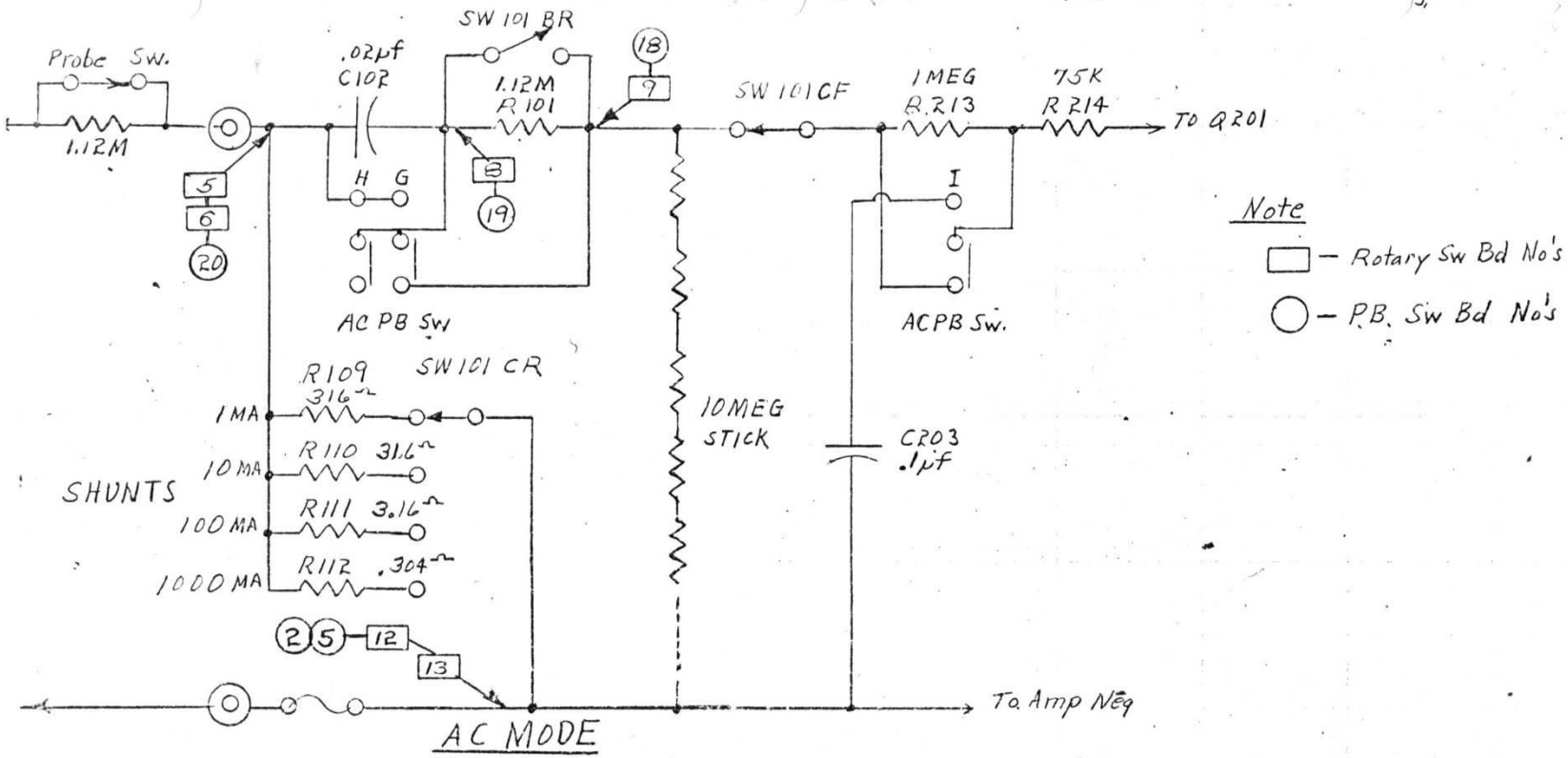

TRIPLETT
LP OHMS
AUTO POLARITY
MICRO POWER
V-O-M
MADE IN BLUFFTON, OHIO, U.S.A. BY THE TRIPLETT CORP.
MODEL 603
TYPE 1
"0" DB
AT 1MW
ACROSS 600 Ω
SUSPENSION
INPUT RES.
DC 11 MEG - AC 10 MEG
BATT OK
DB
AC
DC
ZERO
Ω
AP
DEPRESS
+ AND −
LP Ω
AC
OFF
1000
300
100
30
10
3
1
.3
60db
50
40
30
20
10
0db
-10db
AC-DC VOLTS
x1 MEG
x10 K
x1K
x100
x10
x1
1000
100
10
Ω
BATT CHECK
AC-DC MA

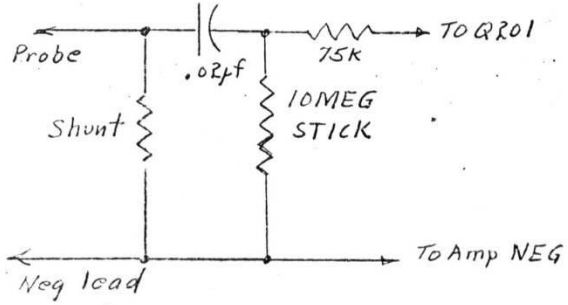
603 CURRENT AC and DC

9-21-72
J.

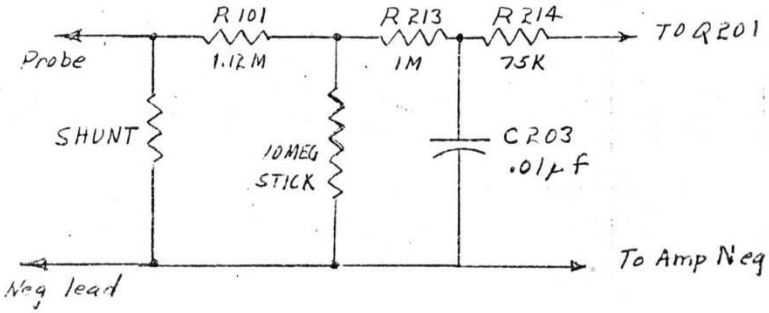


AC MODE

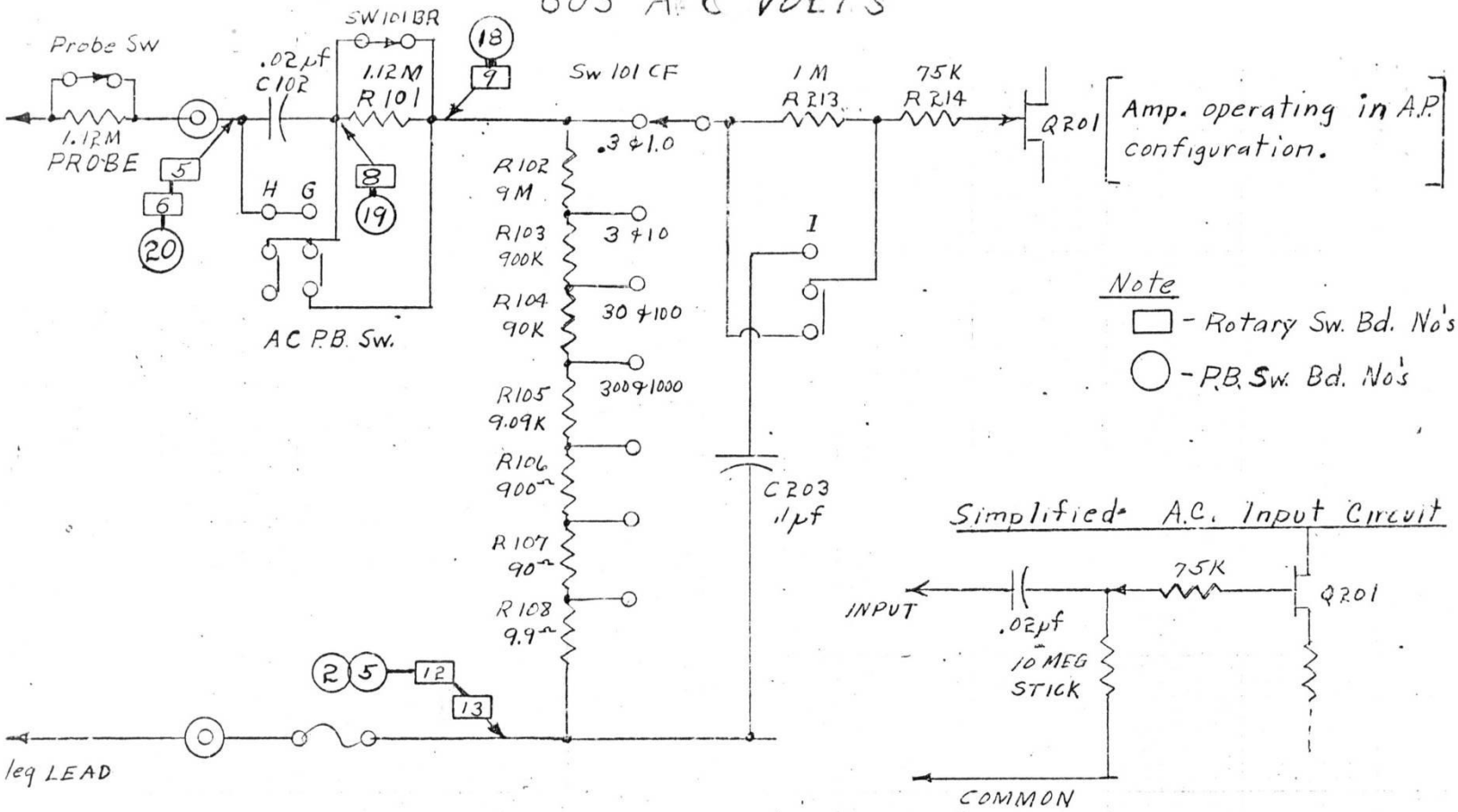
Simplified A.C.



Simplified D.C.

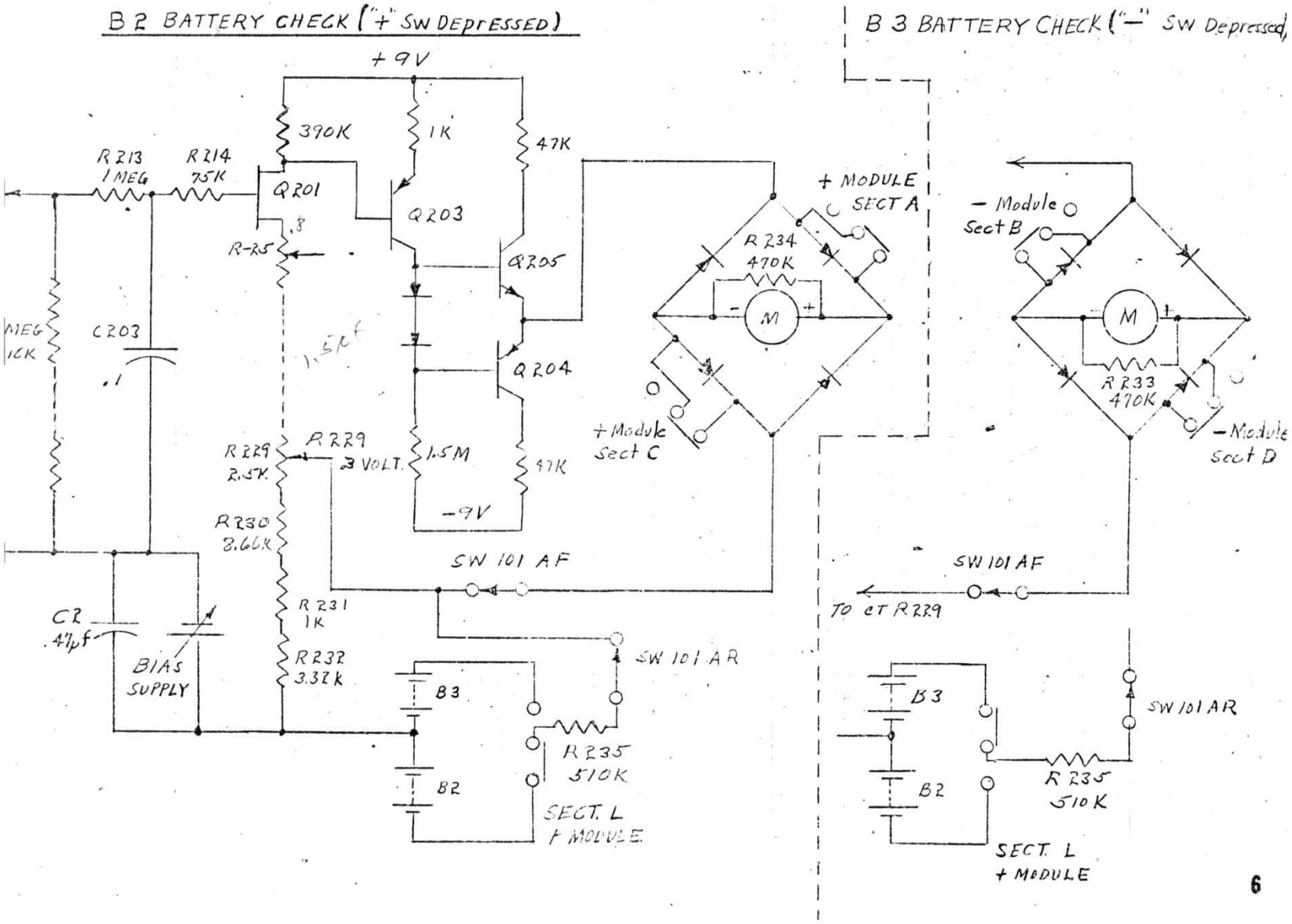


603 A.C. VOLTS


Probe Sw
1.12M
PROBE
.02µf
C102
SW101BR
1.12M
R101
18
9
Sw 101 CF
.3 & 1.0
1M
R213
75K
R214
Q201
Amp. operating in A.P. configuration.
5
6
20
H G
8
19
AC P.B. Sw.
R102
9M
R103
900K
R104
90K
R105
9.09K
R106
900Ω
R107
90Ω
R108
9.9Ω
3 & 10
30 & 100
300 & 1000
1
C203
.1µf
2
5
12
13
leg LEAD
Note
- Rotary Sw. Bd. No's
- P.B. Sw. Bd. No's
Simplified A.C. Input Circuit
INPUT
.02µf
10 MEG
STICK
75K
Q201
COMMON

603 BATTERY CHECK

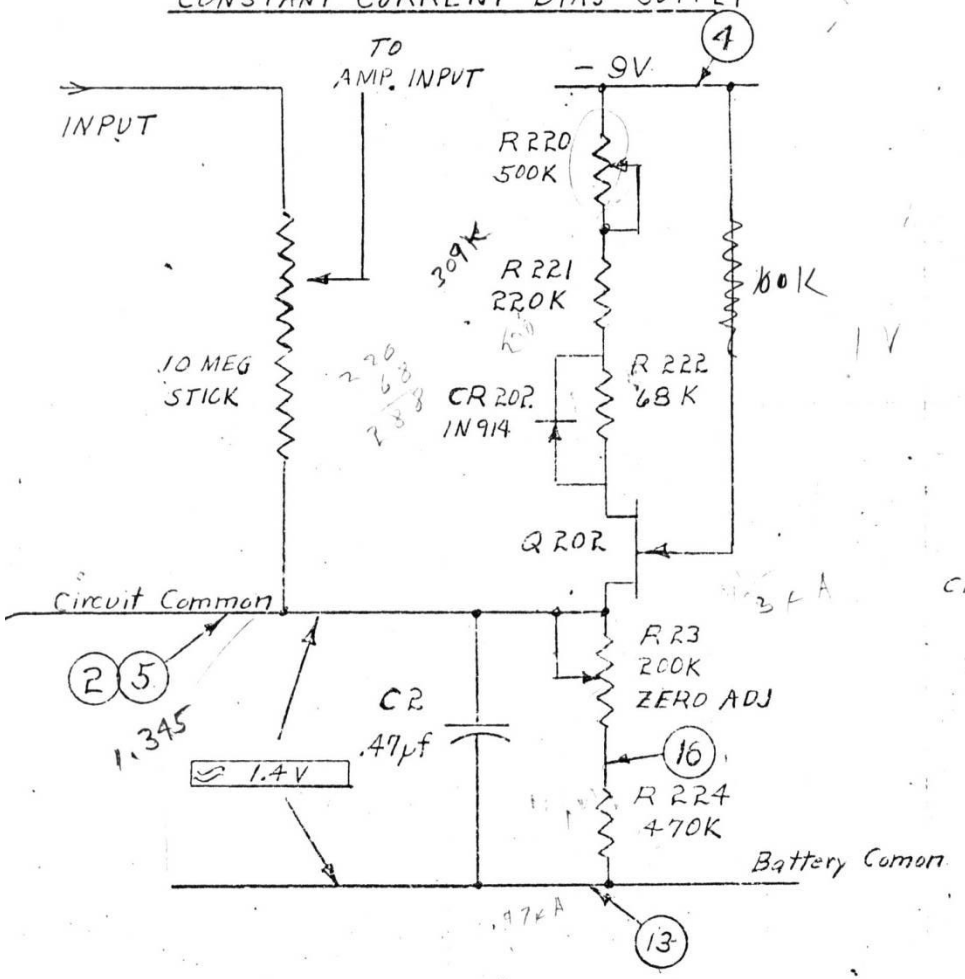
9-25-72
A.S.



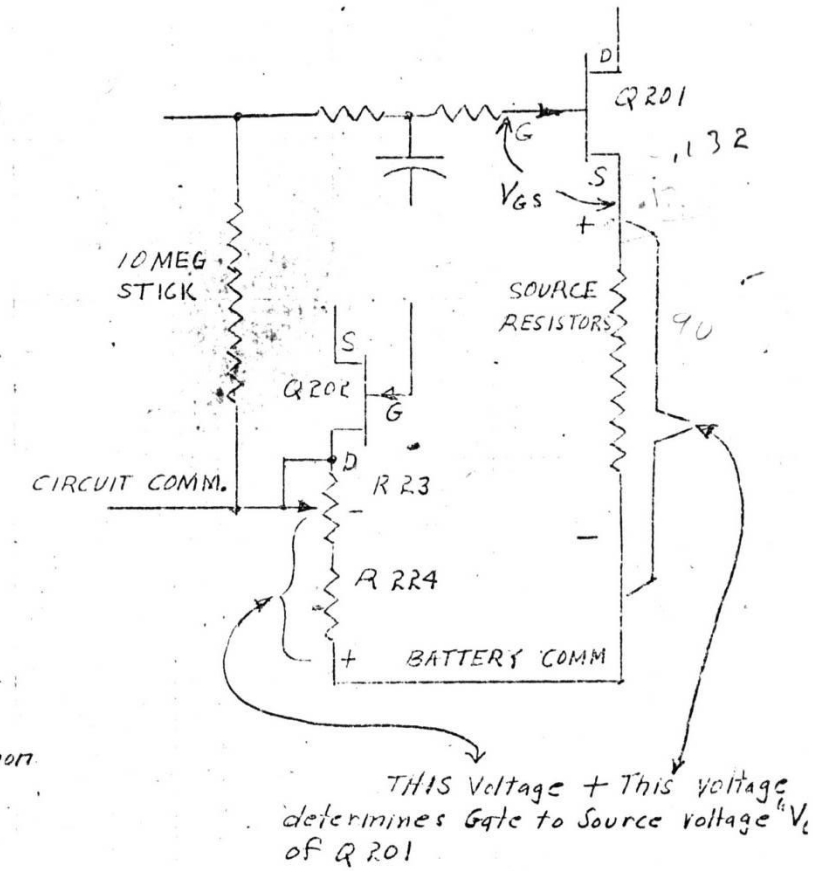
603 BIAS SUPPLY

9-21-72

CONSTANT CURRENT BIAS SUPPLY



Simplified Bias Circuit



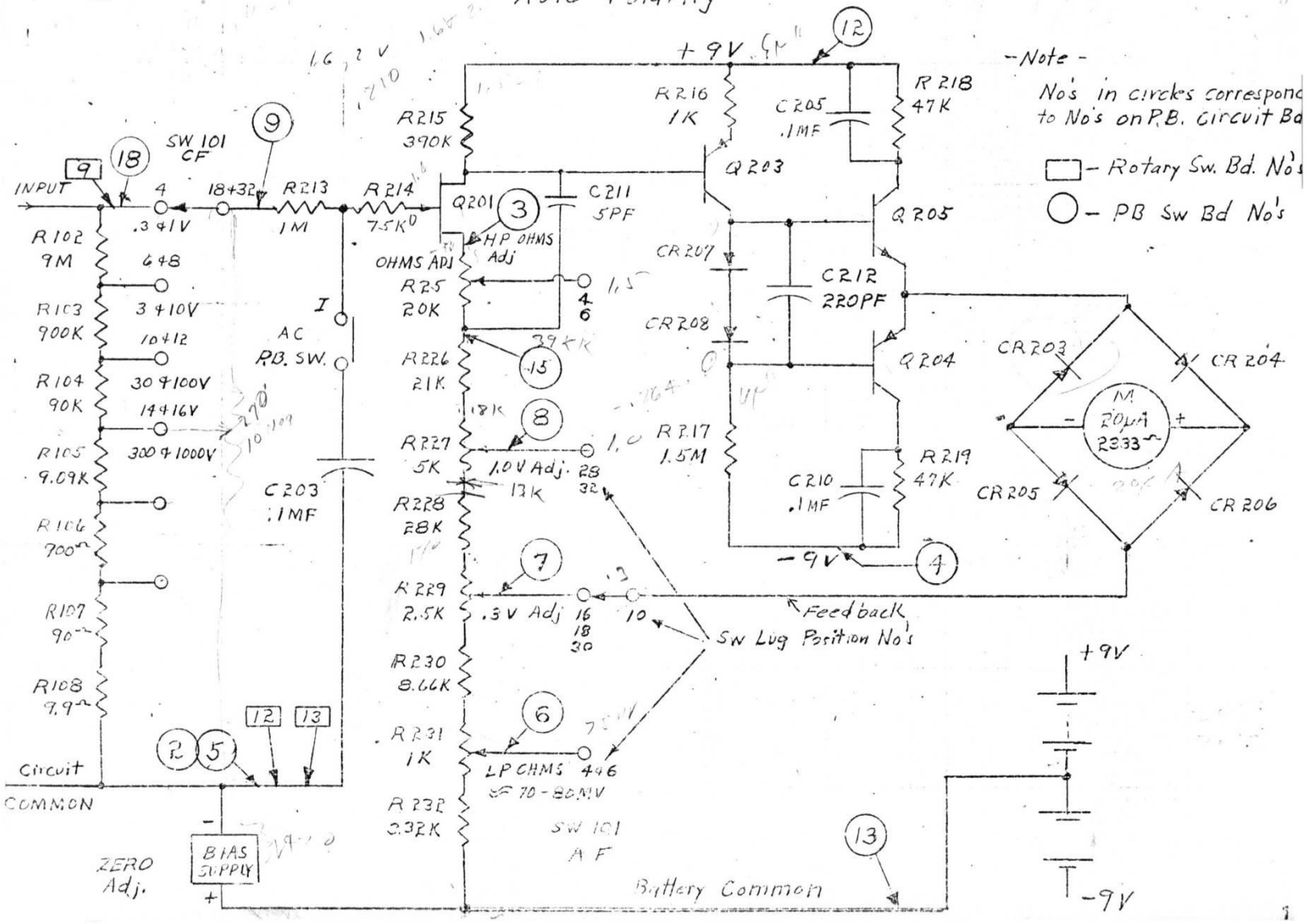
- Notes -

Q 201 and Q 202 are N-channel Junction Fets, Pinch off 1.6-2.0 V. @ 10nA drain Current in Constant Current Circuit Approx. 2-3μA

Current in Q 201 for Zero indication on Tester Meter ≈ 1.5μA

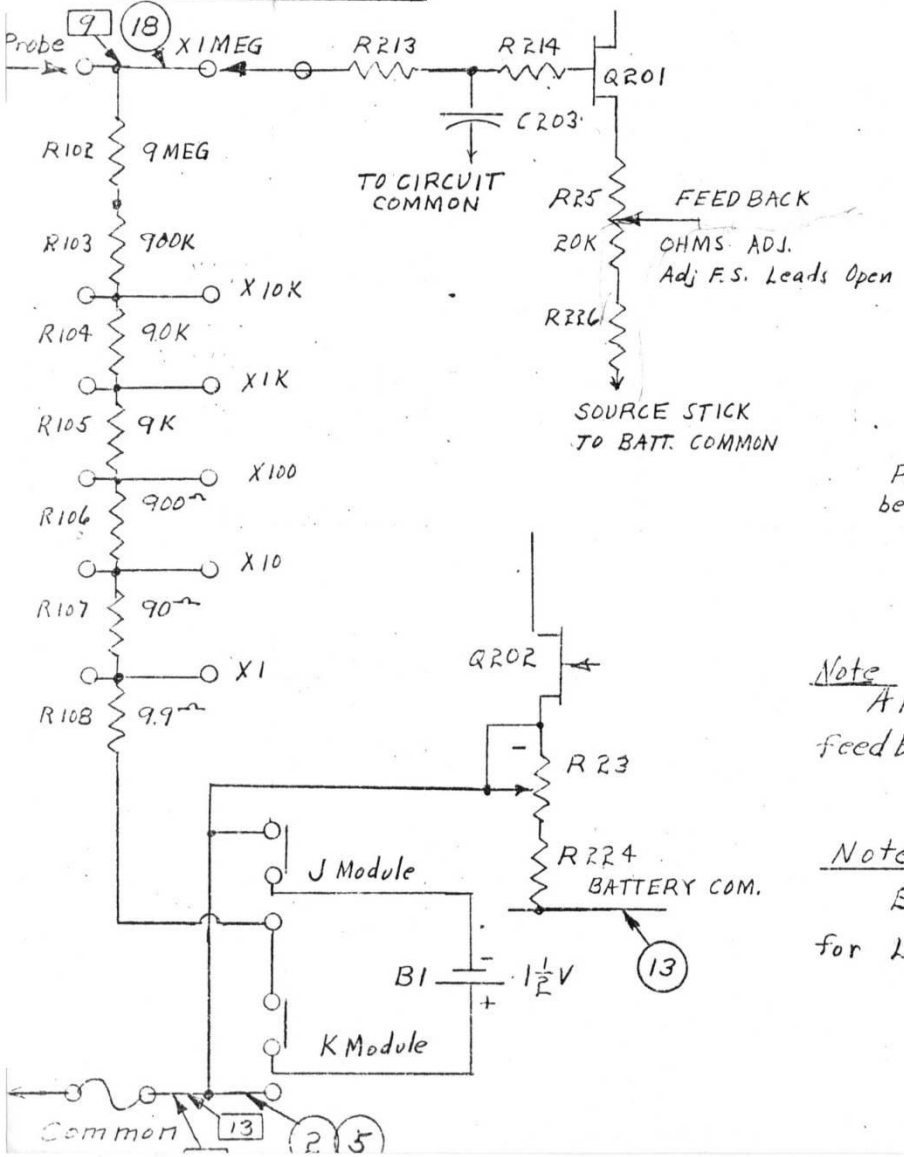
1.320
1.322
1.452
1.

603 D.C. VOLTS
Auto Polarity



603 OHMS

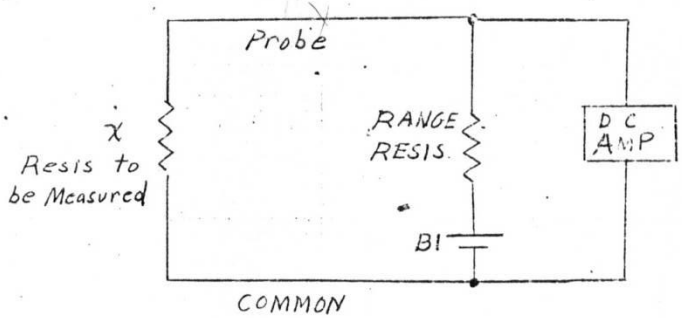
High Power Ohms



□ - Rotary Sw. Bd No's

○ - P.B. Sw. Bd. No's

Simplified measurement Circuit



Note

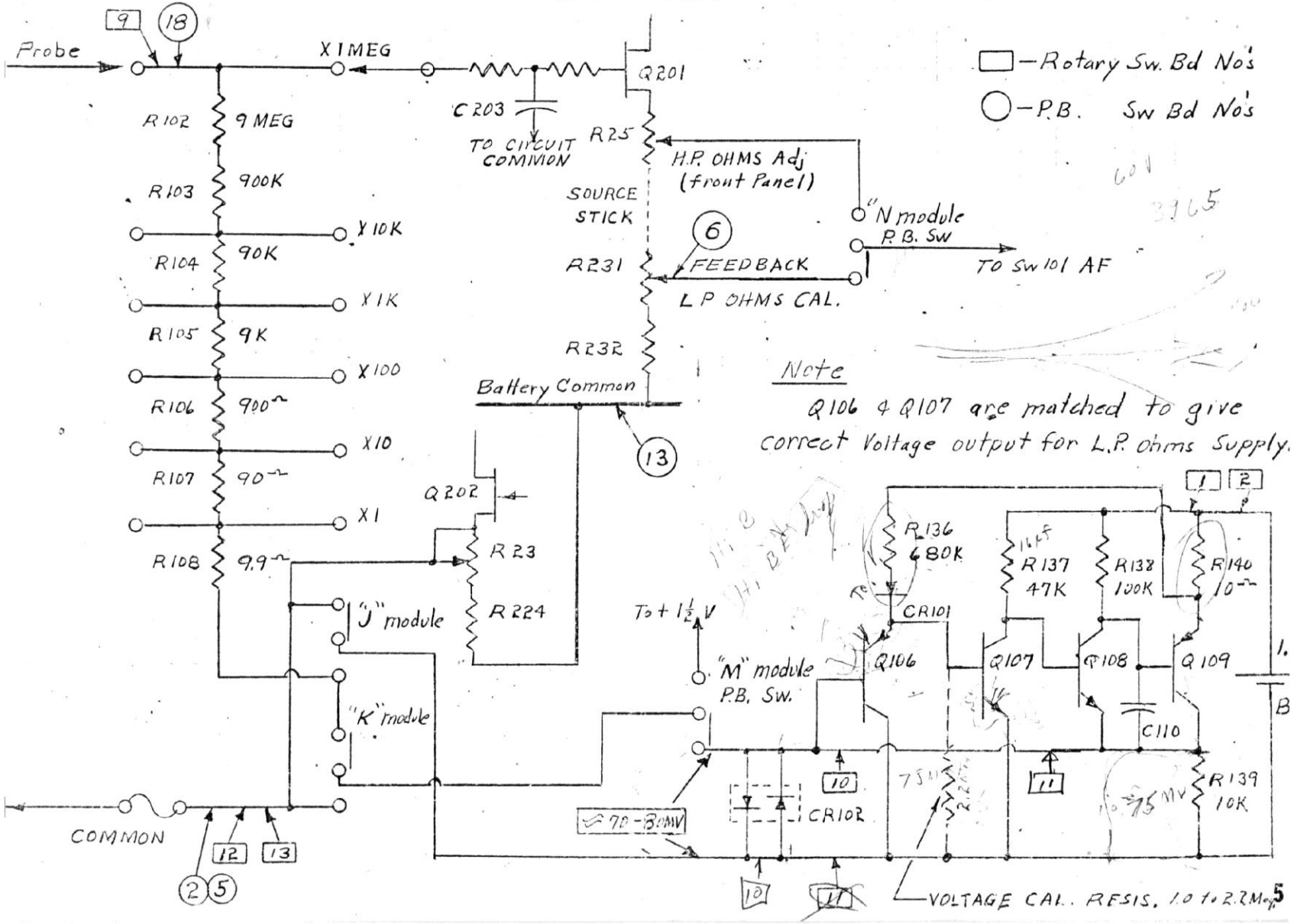
Amplifier is de-sensitised to 1.5V by switching feedback to R25 "Ohms Adj Control".

Note

B1 is replaced by LP ohms power supply for LP ohms in the above simplified circuit.

9-21-72
A.J.

603 L P OHMS



□ — Rotary Sw. Bd No's

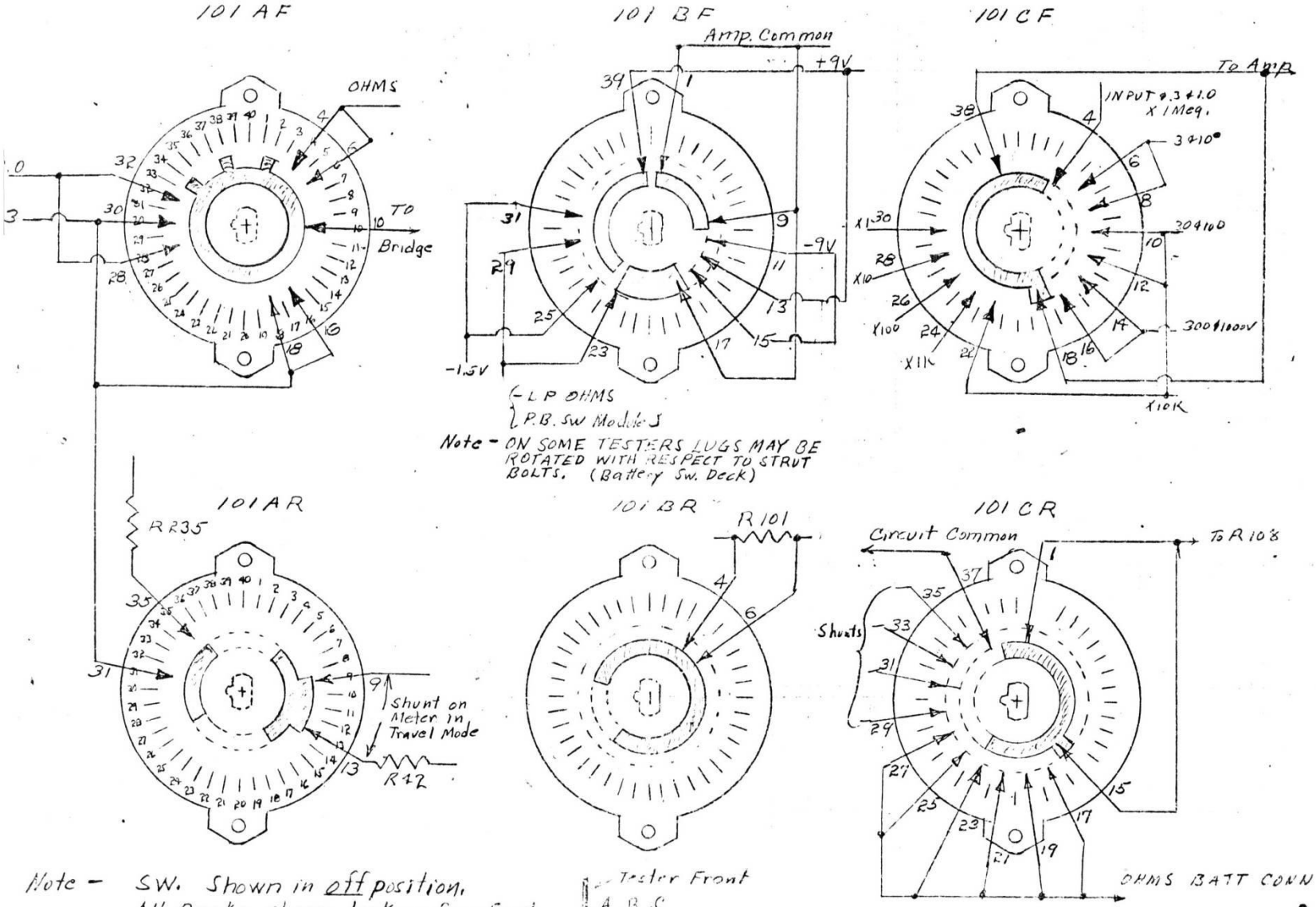
○ — P.B. Sw Bd No's

Note

Q106 & Q107 are matched to give correct Voltage output for L.P. ohms Supply.

603 Switch

9 2-72
R.S.

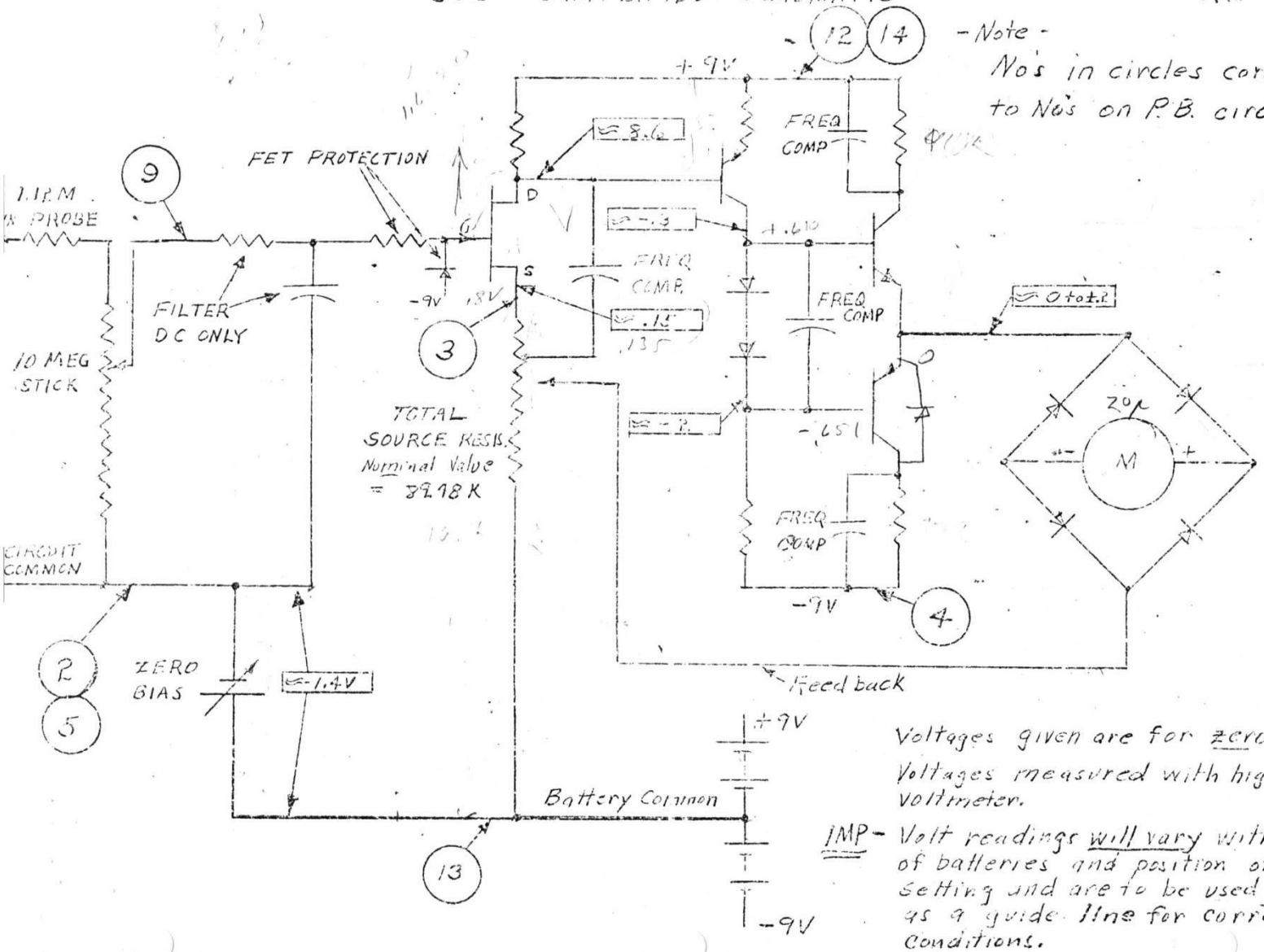


Note - ON SOME TESTERS LUGS MAY BE ROTATED WITH RESPECT TO STRUT BOLTS. (Battery Sw. Deck)

Note - SW. Shown in off position.
All Decks shown looking from front of Tester.

603 SIMPLIFIED SCHEMATIC

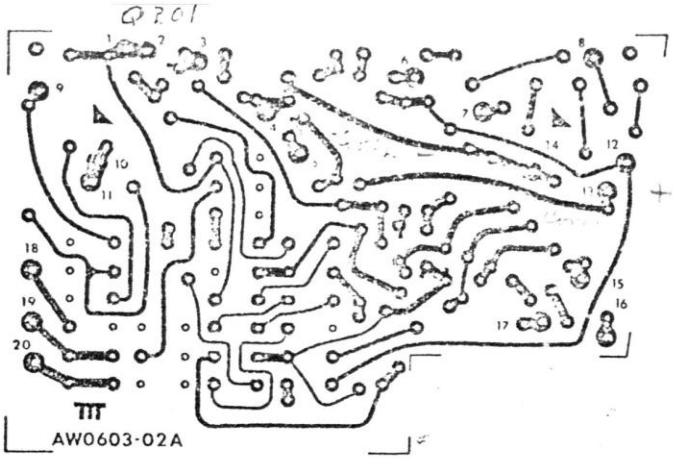
9-21-72
K.I

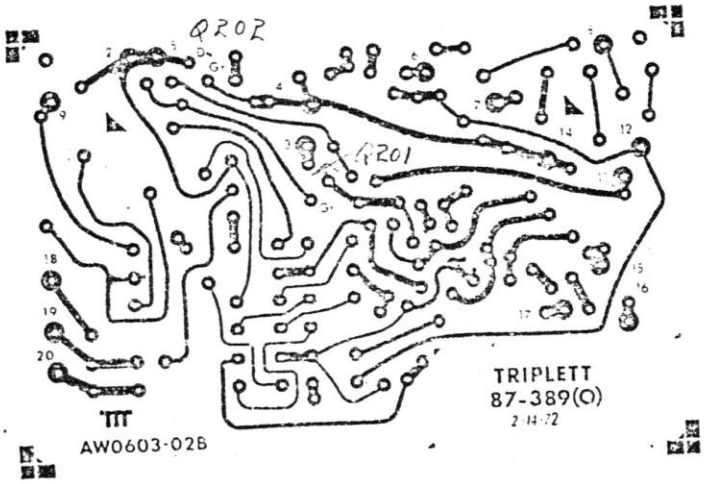


Voltages given are for zero INPUT

Voltages measured with high imp. voltmeter.

IMP - Volt readings will vary with conditio of batteries and position of zero setting and are to be used only as a guide line for correct Amp conditions.

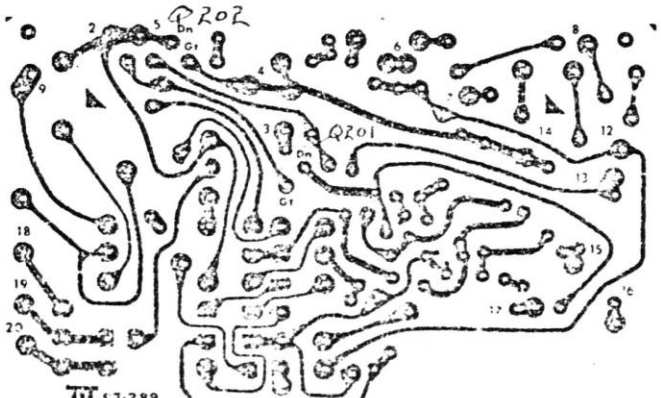




Note - Boards A, B & C are the same electrically and are interchangeable.

Board A differs from B & C in the physical location of the input FET and the constant current FET.

Test Point No's are the same.



SUBJECT: 603 LP OHMS SUPPLY

DESCRIPTION

The power supply is a direct coupled amplifier with 100% voltage feedback.

The function of the amplifier is to produce a constant voltage the load resistor R-139 (10K). This voltage is determined by the difference in base-emitter voltage drops of Q106 and Q107, which in the 603 should be between 70 to 80 MV. To the ohms circuit and outside world, for all conditions encountered from shorted probes to open circuit, this looks like a constant voltage source with zero impedance.

SELECTION OF TRANSISTORS

The base-emitter voltage drops of Q106 and Q107 is a function of the transistor construction and the current thru the junction. The current thru the junction is the only parameter over which we have control and this is related to the Beta. Selection is thus made on the basis of Beta.

Selection is made in plant by insertion of the transistors into the actual circuit and measuring the actual output voltage.

An alternate method is to select by Beta which works almost as well. When using this method a collector to emitter voltage of 1.5V is used and a base drive of .1 µA to 1µA.

Q106	Beta of 400 and above
Q107	Beta of 400 or below

Both transistors are temperature sensitive and compensate for each other in the actual circuit, however, they should be allowed to stabilize after handling during the selection process -

Q106	2N5087	Selected
Q107	2N5089	Selected

R141 is a calibration resistor and may be 1.0 Meg to 2.2 Meg or may not be in the circuit. The lower the value of R141 the higher the voltage, but the regulation of the amplifier may suffer if too low a value is used.

5-1-74

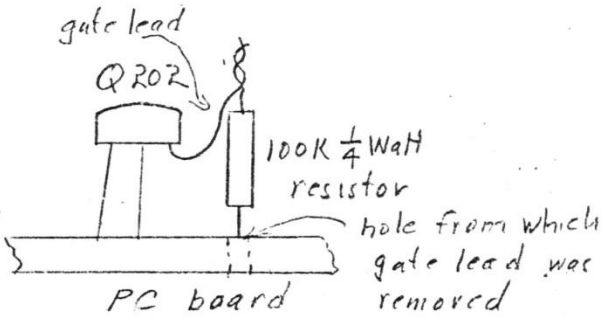
Subject: 603 Modification

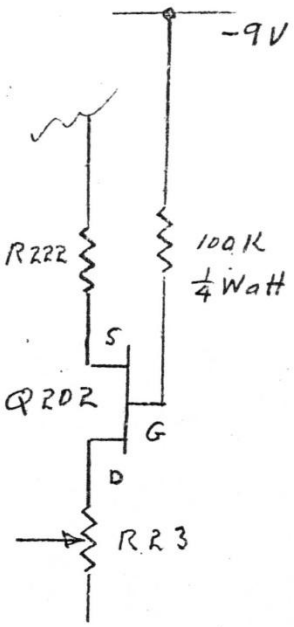
Purpose: Gate protection of Q202, Pt No 127-26 FET

Method: 1. Unsolder and lift gate lead of Q202.

2. Insert and solder one end of 100K $\frac{1}{4}$ Watt resistor in hole from which gate lead was removed.

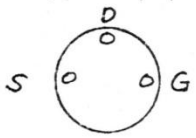
3. Solder other end of resistor to the gate lead.





All Later production Runs have this Mod. incorporated in them.

127-26
TO-106 Case



Viewed from lead end

ENGR. FORM 71-102 K&E 10 5156 11-67• A E G EE LL WW

MODEL 601 TYPE I

USING 127-53 AS MATERIAL,
SORT AT TRIPLETT FOR:

1. PINCH OFF VOLTAGE OF 0.8 V MIN TO 2.4 V MAX.
2. MAX LEAKAGE OF .15 NANO AMPERES @ 35°C.

127-26

NO.	REVISION

OBSOLETE
ECN 3802
4 NOV 70

TRANSISTOR

MODEL 601 TYPE I

THE TRIPLETT ELECTRICAL INSTRUMENT CO.
BLUFFTON, OHIO U.S.A.

DATE	DR.	
19 OCT 68	JJM	127-26
CK. LE 22 OCT 68	ENGR. 11 OCT 68	

The 2N5089 Transistor, Triplett Part No. 127-37 is material for the following units and must be tested before being used in the Model 5000 Digital Panel Meter.

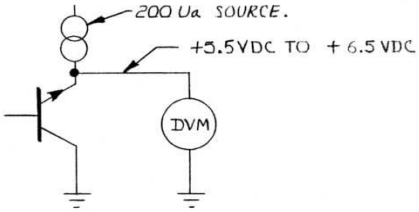
To get the highest yield, the selection must be made in the order indicated below.

Three groupings must be made:
1. Units that can be used as 6 volt Zener Diodes (127-54).
2. Units that have no leakage---------- (127-57).
3. Units that have leakage---------- (127-56).

Before any testing is done, paint the top of each unit with white epoxy paint.

127-54

1. With a 200 Ua current source connected to the 127-37 under test as shown below, select units which fall between 5.5 volts and 6.5 volts. These units will then be temperature tested.



2. Record the exact voltage of each Zener at 25°C.
3. The Zener voltage then must be measured at 50°C (Let soak in oven at 50°C for 15 minutes).
4. Record the voltage obtained at 50°C beside the voltage value at 25°C.
5. Select only the units which are within 0.01 volt from 25°C. to 50°C.
6. This unit shall be identified with a brown dot and becomes Part Number shown at left.

127-74

1. With A 100UA current source connected to the 127-37 Part as shown above select units which fall between 4.5 volts and 5.5 volts. These units are not temperature tested. These units are identified with a yellow dot.

127-57

To check for leakage use the Triplett Model 3490A Transistor Analyzer.

1. Set the collector voltage to +12 volts. (Use the 12V range on the collector volts switch).
2. Set the input switch to open.
3. Place A 1 Meg Resistor from Base to Emitter.
4. The Transistor should not have more than 50 Nanoamperes of leakage. ($\frac{1}{2}$ of 1 division of the 6 Ua Range).
5. Segregate the leaky and non leaky Transistors.
6. The non leaky unit shall be identified with a green dot and it becomes part number shown at left.

127-56

7. The leaky unit shall be identified with a red dot and it becomes Part Number shown at left.

127-75

1. Similar to 127-54 but item one is to read: With a 200UA current source connected to the 127-37 (2N5089) under test as shown, select units which fall between 5.75 volts and 6.25 volts. These units will then be tested to requirments 2;3;4 and 5 of 127-54.
2. This unit shall be identified with a blue dot.

Ⓐ 127-86

1. Similar to 127-54 except item 1 is 4.5-5.0 Volts, item 3 to read ±4 counts from 1500
2. This unit shall be identified with a Violet Dot.

Ⓐ 127-87

1. Similar to 127-54 except item 1 is 5.0-5.5 Volts, item 3 to read ±4 counts from 1500
2. This unit to be identified with a White Dot.

Ⓑ 127-101

1. Similar to 127-54 except item 1 is 6 to 6.5 volts, item 3 to read ±4 counts from 1500
2. This unit to be identified with an orange dot.

BOTTOM VIEW

DELETE
ECN 7066, 11-5-70
TS

REV.	ECN No		REL	ENG	CK	DR
A	3723	A-BASED 127-99 ADDED 127-101	JJM	DJK	WF	JJM
B	4007					

NO.	REVISION			
1	Revised Per ECN # 3059	JJM	JJM	15 AUG 69
2	ADDED 127-75 ECN 3153	JJM	JJM	17 OCT 69

MODEL 5000

73-2192

ENGR. FORM 71-103 K&E 10 5156 11-63

A E G I J AF CC

OPERATION PROCEDURE
COMPONENT SELECTION
MODEL 5000

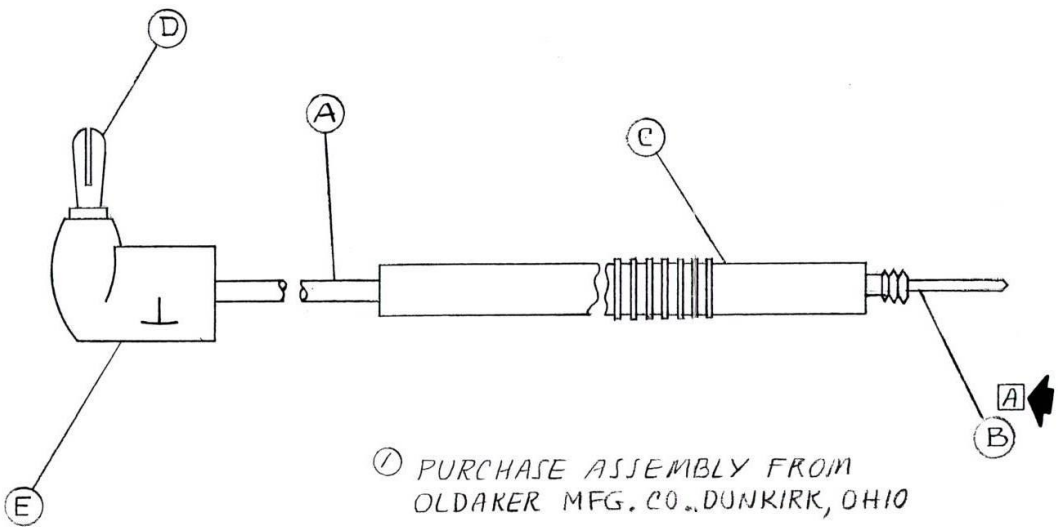
THE TRIPLETT ELECTRICAL INSTRUMENT CO.
BLUFFTON, OHIO U.S.A.

DATE 16 JUN 69 | DR. JJM | ENGR. KJ | CK.

73-2192B

ENGR. FORM 71-102 K&E 10 5156 11-65• A E G K ~~EE~~ WW

PART NO.	QTY.	DESCRIPTION	SYM	① OLDAKER MFG. NO.
26-262	48"	WIRE, BLACK	A	AP62-183 (P2)
[A] 2567-75	1	TIP, THREADED	B	~~AP61-106~~
[A] 31-357	1	INSULATOR, BLACK	C	~~AP61-104 (P2)~~
2455-253	1	PLUG, BANANA	D	AP61-107
2455-256	1	PLUG MOLDED, BLACK	E	AP61-120 (P2)



① PURCHASE ASSEMBLY FROM OLDAKER MFG. CO., DUNKIRK, OHIO

79-261

NO.	REVISION		
1	REVISED PER ECN 2897	JJM	30 APR 69
2	ADDED "BLUNT" PER ECN 3391	Le	3-23-70

REV	ECN NO.	CHANGE	REL.	ENG.	CK.	DR.
A	8310	AS NOTED	9/17/78	DS	9/19/78 JJM	9-18-78 GAD

OBSOLETE
PER ECN 15392
8-24-87

OLDAKER ASSEMBLY NO.
BH 62-176 (P2)

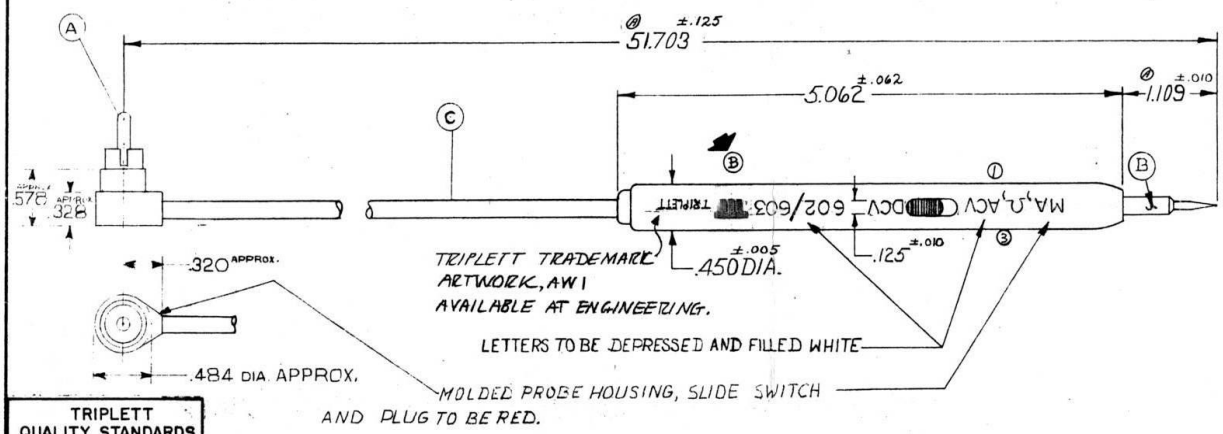
LEAD ASSEMBLY, BLACK, BANANA TIP, BLUNT②

THE TRIPLETT ELECTRICAL INSTRUMENT CO.
BLUFFTON, OHIO U.S.A.

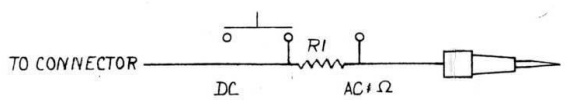
DATE	DR.		REV.
30 JUNE 66	HC	79-261	A
CK. Le 2 MAY 69	ENGR. 22 JUL 66	SHEET 1 OF 1	

ENGR. FORM 71-103 K&E 10 8188 11-65 A E H K EE CC MODEL 602, 603 79-288

PART NO.	QTY.	DESCRIPTION	REF.
2455-277	1	PHONO PLUG	A
15K-1124TA2	1	RESISTOR, 1.12M OHMS	R1
2567-58	1	TIP, LEAD, THREADED	B
	AS REQ.	CABLE, BELDEN NO. 8421 COLOR- GREY	C



TRIPLETT QUALITY STANDARDS		
SYMBOL	CLASS	A.Q.L.
■	CRITCAL	0%
◪	MAJOR	2.5%
□	MINOR	6.5%
SYMBOL	DIMENSION	DESCRIPTION
■	1600 VAC.	TEST



PROBE WIRING SCHEMATIC

NOTES:
④ ■ – LEAD ASSEMBLY TO WITHSTAND 1600 VAC FOR 1 TO 2 SECONDS WITHOUT ELECTRICAL BREAKDOWN.
– PURCHASE ASSEMBLY FROM OLDAKER MFG. CO. DUNKIRK, OHIO.

NO.	REVISION				
0	Release Per ECN # 3059	SS JB	15 AUG 69
1	REVISED PER ECN 3132	CJ JB	24 SEPT 69
2	REVISED PER ECN #	SS JB	1 FEB 74
REV.	ECN NO.	CHANGE	REL	ENG	CK	DR
A	4034	TIP				
B	4183	LETTERS		JB	JJM	

OBSOLETE
PER ECN 8143
6-15-1978 C.G.
Use 79-363
J.K.

OLDAKER NO.
BH69-354H

LEAD ASSEMBLY, MODEL 602, 603 PROBE

THE TRIPLETT ELECTRICAL INSTRUMENT CO.
BLUFFTON, OHIO U.S.A.

DATE 12 AUG. 69	DR. SS	79-288	REV B
CK. JB	ENGR. HB		