

SHEET INDEX

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5	CAD 1

CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	ONE PER
	1 1/3	-48 SIG *	CKT

<u>BATTERY SYMBOL</u>	<u>VOLTAGE RANGE</u>
-48	42.5 - 52.5V

* THE FUSE FOR THE 48V SIG. BAT. SHALL BE MOUNTED ON A BUS BAR FED BY A LEAD WHICH DOES NOT FEED SIGNAL BAT. TO ANY OTHER CKT.

FEATURE OR OPTION		APP FIG.		QUANTITY
TONE GENERATOR CKT		1, 2, 3	Z	1 PER CKT
FOR OTHER THAN ESS APPLICATIONS				
FOR ESS APPLICATION (SEE NOTE 105)				
GROUNDED ALARM INDICATION			X	
800-OHM BATTERY ALARM INDICATION			Y	

NETWORK VALUES		
NETWORK NO.	RESISTANCE IN OHMS	CAPACITANCE IN UF

RECORD OF APP FIGURES, WIRING AND APPARATUS CHANGES						
CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT		
				STD	ASM	MD
7B	V OR W	W	102	V		W
10B	U	NONE		U		
11B	T	U		T		U
15B	P	Q		P		Q
16D			10B			U

105. Z WIRING IS FURNISHED WITH UNIT AS MANUFACTURED. REMOVE Z WIRING FOR ESS APPLICATION (2F6).

SD-99303-01

CIRCUIT NOTES:(CONT)

CIRCUIT TITLE	SYSTEM	OPTION	LEAD DESIGNATIONS					NOTES
			ALM1	ALM2	ALM3	ALM4	ALM5	
FLOOR ALARM BOARD MISC & AUX ALARM (SD-21203-01)	BCO PANEL	X	AG			G		
MISC ALARMS (SD-20341-01)	GCO PANEL	X	AG			G		
AUDIBLE ALARM CKT (SD-21819-01)	BCO & GCO PANEL	X				G		
AISLE PILOT CKT (SD-25087-01)	NO. 1 XBAR	X	F			G	MG	
ALARM CKT (SD-25671-01)	NO. 5 XBAR	Y	MN					
AUDIBLE AND VISUAL ALARM (SD-96188-01)	COM	X	F			G		
PILOT LAMP CKT (SD-31548-01)	NO. 1 SXS	X	AM			C		
TONE CKT-INT CONTR. & DIST (SD-81652-01)	ESS			ALM2	ALM3			
MISC ALM CKT (SD-32192-01)	355A SXS	X	AM			C		
PILOT LAMP CKT (SD-31573-01)	350A SXS	X	AM			C		
AUX PSN TRK CKT (SD-99329-01)	COM			ALM2	ALM3			

107. THE CHANGE CLASSIFICATION "B" FOR ISSUE 13 WAS REVISED TO ISSUE 14A, WITHOUT CIRCUIT CHANGES. ALL REFERENCES TO OPTIONS R AND S THAT APPEARED ON ISSUE 13B, ARE REMOVED FROM THE DRAWING.

108. ON ISSUE 12A OPTION U WAS RERATED FROM MANUFACTURE DISCONTINUED TO STANDARD.

EQUIPMENT NOTES:

201. THE 400A TONE GENERATOR REQUIRES 2 X 23 INCHES OF MOUNTING PLATE SPACE.
202. A KS-19221, L1 AMPLIFIER (COVERED BY SD-99725-01) IS INCLUDED AS PART OF THE 400A TONE GENERATOR.
203. TERMINALS 11, 12, 13, 14, 15, 24, 25, 31, 32, AND 34 OF TB1 ARE FOR TEST PURPOSES. SEE FS 1.

INFORMATION NOTES:

301. UNLESS OTHERWISE SPECIFIED:
RESISTANCE VALUES ARE IN OHMS,
CAPACITANCE VALUES ARE IN MICROFARADS,
VALUES PRECEDED BY THE SYMBOL + (PLUS)
OR - (MINUS) ARE IN VOLTS.
302. REDUCTION IN GENERATOR OUTPUT WITH LOW RESISTANCE
- | LOAD RESISTANCE | REDUCTION IN OUTPUT |
|-----------------|---------------------|
| 100 OHMS | 1/2 DB |
| 50 OHMS | 1 DB |
| 30 OHMS | 1-1/2 DB |
| 20 OHMS | 2 DB |
303. P-42E811 PULSE GENERATORS WHICH INCLUDED P-42E810 SERIES 1 AND SERIES 2 PRINTED WIRING BOARD SHOULD NOT BE USED. THESE BOARDS CONTAIN A DESIGN DEFECT WHICH RESULTS IN MALOPERATION OF THE TONE ALARM CIRCUIT, RELAY (A) SHOULD EITHER BE MODIFIED OR RETURNED TO THE WESTERN ELECTRIC CO. FOR MODIFICATION.
304. PRIOR TO ISSUE 8D THE 400A TONE GENERATOR WAS CODED APPARATUS.

SUPPORTING INFORMATION

CATEGORY	NO.
EQUIPMENT DRAWING	J99327A

OPTION INDEX

APP OR WIRING	LOCATION
Z	2F6
Y	APP FIG. 1
X	268
W	268
V	APP FIG. 1
U	APP FIG. 1
T	APP FIG. 1
Q	APP FIG. 3
P	APP FIG. 3

WORKING LIMITS

MAX. LOOP RESISTANCE FOR T AND R LEADS IS 20 OHMS.

NOTICE

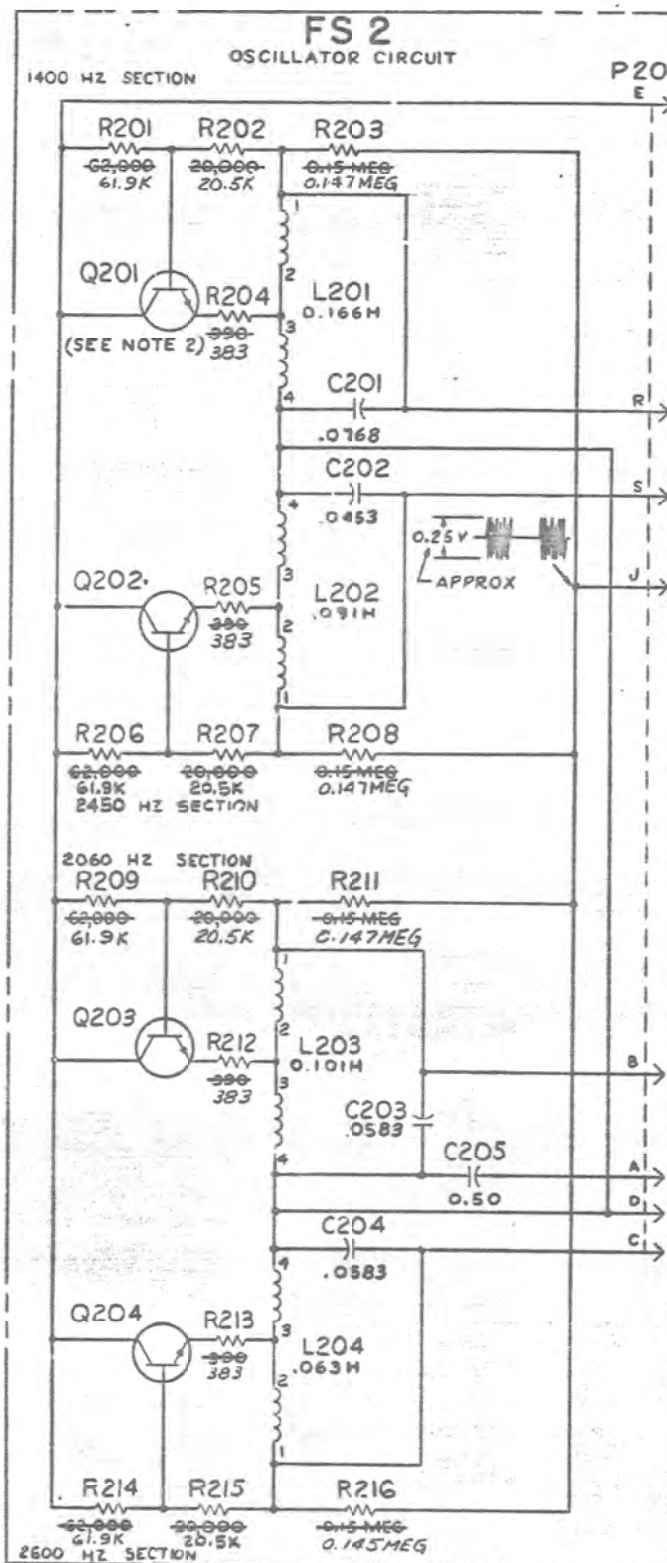
NOT FOR USE OR
REUSE OUTSIDE
THE BELL SYSTEM
EXCEPT UNDER
WRITTEN AGREEMENT

ISSUE
18D

SD-99303-01	IN99	AT&TCO STANDARD
COMMON SYSTEMS 400A TONE GENERATOR CIRCUIT		SD-99303-01-1
400A TONE GEN		5 SHEETS
BELL TELEPHONE LABORATORIES INCORPORATED	6S	PRINTED BY D.B.A.

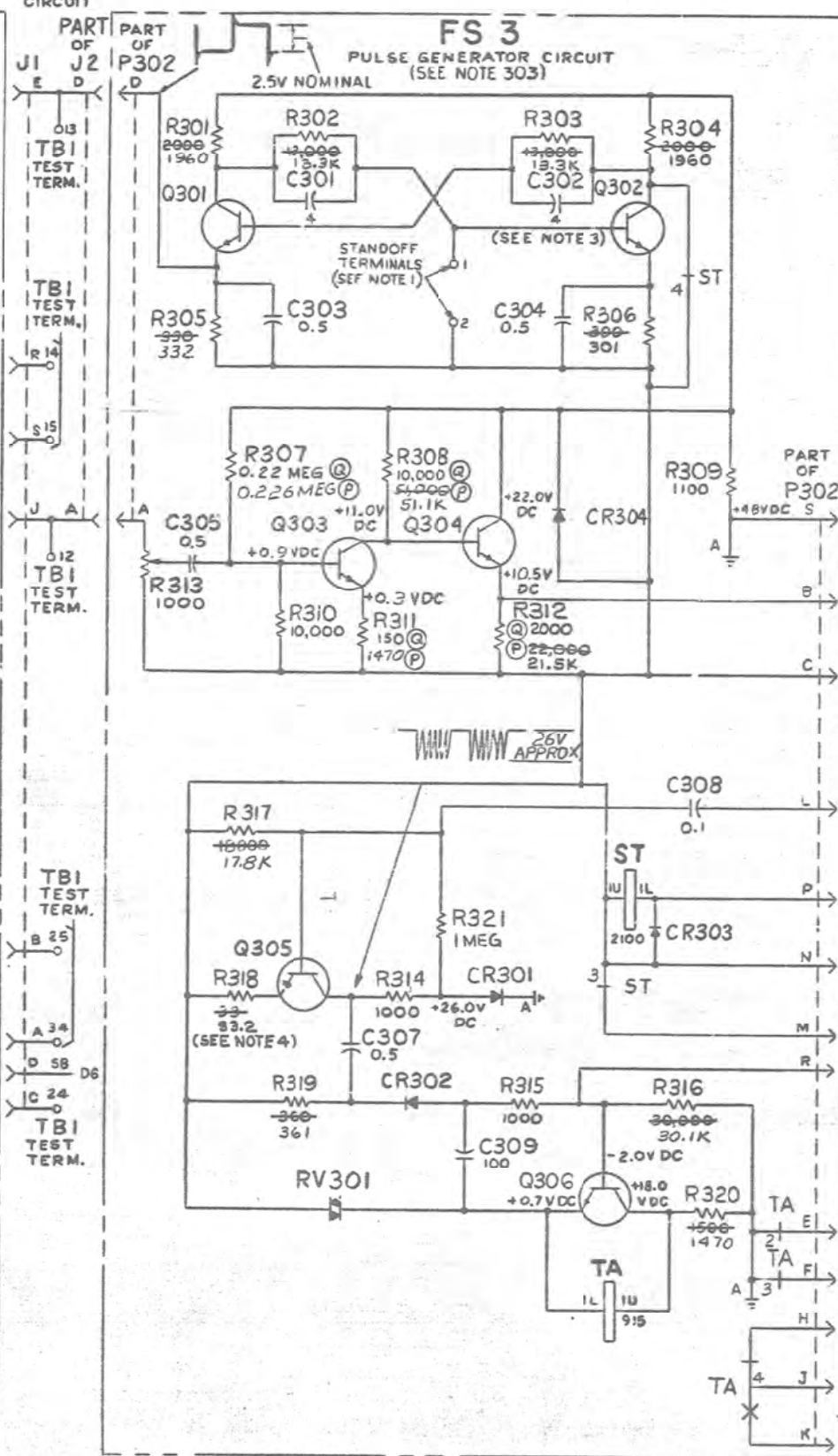
PART OF
FSI
CONTROL
CIRCUIT

—PART OF FS 1
CONTROL CIRCUIT



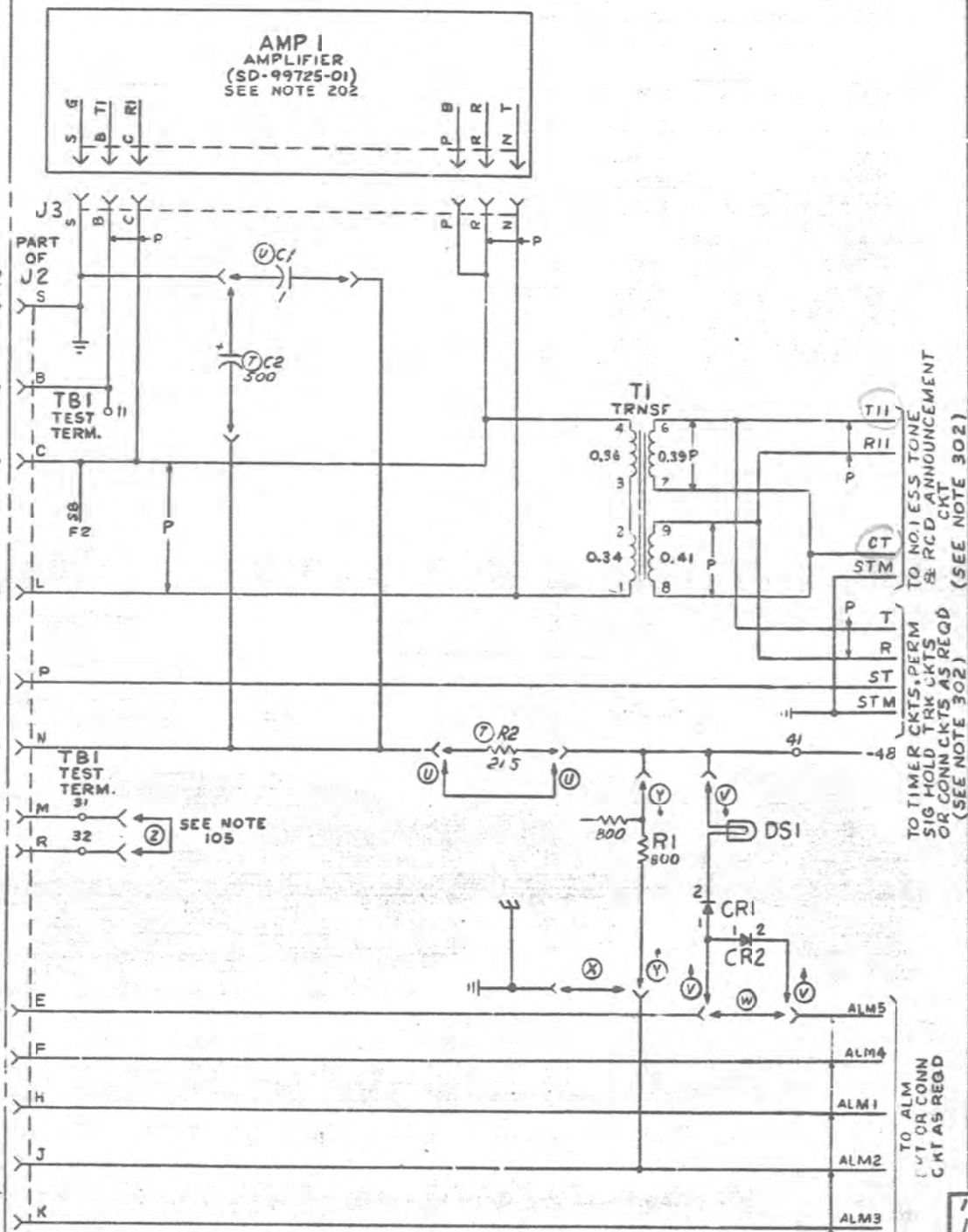
SHEET NOTES:

1. STANDOFF TERMINALS ARE FOR TEST PURPOSES ONLY.
2. VOLTAGES MEASURED AT TRANSISTOR Q201,2,3 AND 4:
 - (A) COLLECTOR - PULSATING +1.6V DC PEAK DEFLECTION.
 - (B) BASE - PULSATING +0.2V DC PEAK DEFLECTION.
 - (C) EMITTER - PULSATING +0.1V DC PEAK DEFLECTION.
3. VOLTAGES MEASURED AT TRANSISTORS Q301,2:
 - (A) COLLECTOR - PULSATING +12.0V DC PEAK DEFLECTION.
 - (B) BASE - PULSATING +10V DC PEAK DEFLECTION.
 - (C) EMITTER - PULSATING +1.7V DC PEAK DEFLECTION.



SHEET NOTES: (CONT)

4. VOLTAGES MEASURED AT TRANSISTOR Q305:
(A) COLLECTOR - PULSATING +7.5V DC PEAK DEFLECTION.
(B) BASE - PULSATING +0.35V DC PEAK DEFLECTION.
(C) EMITTER - PULSATING 0.65V DC PEAK DEFLECTION.
5. ALL DC VOLTAGES ARE APPROXIMATE AND TAKEN WITH RESPECT TO -48V DC (TERMINAL 41 OF T81) USING A DC VTVM WITH 11 MEGOHM INPUT RESISTANCE (MINIMUM).



TO TIMER CKTS, PERM
SIG HOLD TRK CKTS
OR CONN CKTS AS REQD
(SEE NOTE 302)

TO ALM
UT OR CONN
KT AS REGD

SEE NOTE 106 NOTICE

400A TONE GENERATOR CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

SD-99303-Q1-2

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APP FIG. 1

AMPLIFIER			CONNECTOR			DIGIT			TRANSFORMER		
DESIG	LOC	CODE	DESIG	J1	J2	DESIG	LOC	CODE	DESIG	LOC	CODE
AMP 1	2B7	KS-19221, L1		KS-16345, L2	KS-16345, L2	CR1	2F8	446F, 533F	T1	2D8	2552H
				SOCKET	SOCKET	CR2	2G8	446F, 533F			
CAPACITOR			OPTION			LAMP					
DESIG	LOC	CODE	TERM.	LOC	LOC	DESIG	LOC	CODE			
U C1	2C6	542D	S	2C2	2C6	DS1	2F9	M1			
T C2	2D6	KS-19658, L37, 500	R	2C2	2F6						
			P		2E6						
			N		2F6						
			M		2F6						
			L		2E6						
			K		2H6						
			J	2C2	2H6						
			H		2G6						
			F		2G6						
			E	2A2	2G6						
			D	2F2	2A2						
			C	2F2	2D6						
			B	2E2	2D6						
			A	2F2	2C2						

APP FIG. 2

ED-99654-30 OSCILLATOR (PRINTED WIRING BOARD ASSEMBLY) (SEE NOTE 1)

CAPACITOR			CONNECTOR			INDUCTOR			RESISTOR		
DESIG	LOC	CODE	DESIG	P201	CODE	DESIG	LOC	CODE	DESIG	LOC	CODE
C201	2C1	577D, .0768		KS-16345, L1		L201	2B1	1592B, 0.1E6H	R201	2A0	KS-13490L1, 62, 000R, KS-20810 L1A, 61.9KΩ
C202	2C1	577D, .0453		PLUG		L202	2C1	1592B, .091H	R202	2A0	KS-13490L1, 20, 000R, KS-20810 L1A, 20.5KΩ
C203	2F1	577D, .0583		OPTION		L203	2E1	1592B, 0.101H	R203	2A1	KS-13490L1, 0.15 MEG, KS-20810 L1A, 0.147MEG
C204	2F1	577D, .0583		TERM.		L204	2G1	1592B, .063H	R204	2B0	KS-13490L1, 390R, KS-20810 L1A, 383Ω
C205	2F1	542A		S	2C2				R205	2C0	KS-13490L1, 390R, KS-20810 L1A, 383Ω
				R	2C2				R206	2D0	KS-13490L1, 62, 000R, KS-20810 L1A, 61.9KΩ
				P					R207	2D0	KS-13490L1, 20, 000R, KS-20810 L1A, 20.5KΩ
				N					R208	2D1	KS-13490L1, 0.15 MEG, KS-20810 L1A, 0.147MEG
				M					R209	2E0	KS-13490L1, 62, 000R, KS-20810 L1A, 61.9KΩ
				L					R210	2E0	KS-13490L1, 20, 000R, KS-20810 L1A, 20.5KΩ
				K					R211	2E1	KS-13490L1, 0.15 MEG, KS-20810 L1A, 0.147MEG
				J	2C2				R212	2E0	KS-13490L1, 390R, KS-20810 L1A, 383Ω
				H					R213	2G0	KS-13490L1, 390R, KS-20810 L1A, 383Ω
				F					R214	2G0	KS-13490L1, 62, 000R, KS-20810 L1A, 61.9KΩ
				E	2A2				R215	2G0	KS-13490L1, 20, 000R, KS-20810 L1A, 20.5KΩ
				D	2F2				R216	2G1	KS-13490L1, 0.15 MEG, KS-20810 L1A, 0.147MEG
				C	2F2						
				B	2E2						
				A	2F2						

NOTES:

1. PRIOR TO ISSUE 80 THE ED-99654-30 OSCILLATOR WAS THE P-42EB17 OSCILLATOR.

DRAWING	ISSUE
1	1
2A	2A
3A	3A
4A	4A
5B	5B
6B	6B
7B	7B
8D	8D
9D	9D
10B	10B
11B	11B

SD-99303-01-3

NOTICE
NOT FOR USE ON
ENCLOSURE OUTSIDE
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ISSUE 18D

400A TONE GENERATOR CIRCUIT

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SD-99303-01-3

6S

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VARISTOR		
DESIG	LOC	CODE
RV301	263	100A

1. PRIOR TO ISSUE 80 THE ED-99657-30 PULSE GENERATOR WAS THE P-42EB11 PULSE GENERATOR.
2. PRIOR TO ISSUE 118 THE ED-99657-31 PULSE GENERATOR WAS THE ED-99657-30 PULSE GENERATOR.

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ISSUE
181

400A TONE GENERATOR CIRCUIT

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SD-99303-01-4

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