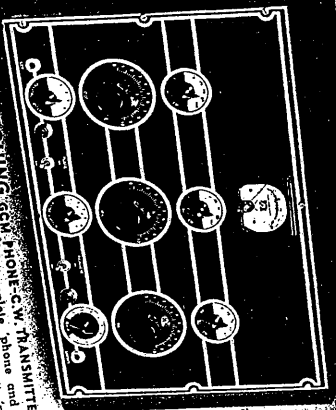


NEW 100 Watt Kits



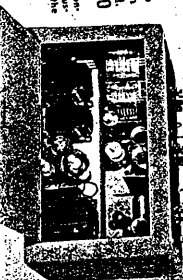
800 BAND SWITCHING GCM PHONE C.W. TRANSMITTER KIT
The GCM 800 band switching kit is a complete phone and C.W. transmitter kit. It is capable of a carrier output of 30 watts phone, 10 watts C.W. (10-60 meters) switch for four bands.

[illegible]

Amateur net price
Same as above, but designed to
use standard air wound plug-in
as Barker & Williamson or Bud.
\$57.00

Less crystal tubes and coils such as

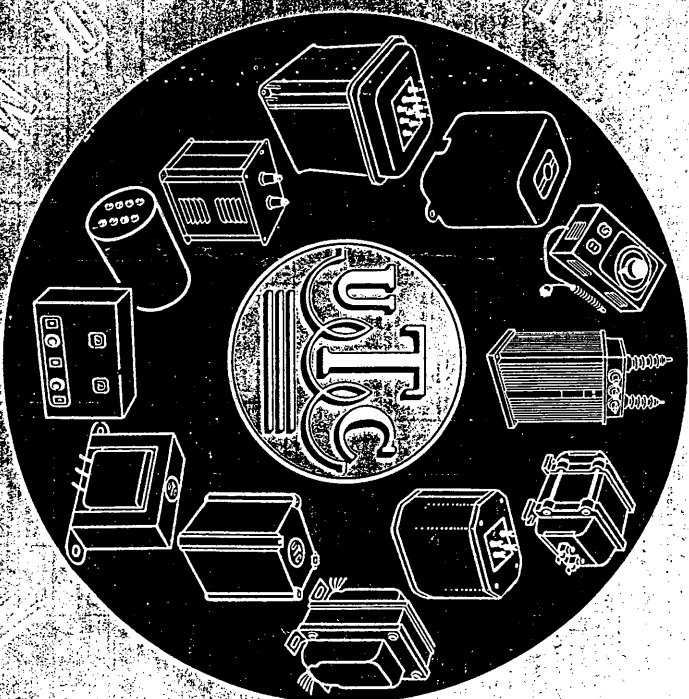
* ACTUAL CARLITZ OUTPUT. Two ratings are common. The first is the maximum output into a resistive load, not the actual output into a C.W. tube. The second is the average output into a C.W. tube. For example, a 100 watt average class C input of these units is 160 watts.



UNITED TRANSFORMER CORP.
 WAIVE: COMMUNICATIONS DIV. ★ 150 VARICK ST. ★ NEW YORK, N. Y.
 EXTERNAL DIVISION: 110 VARICK STREET NEW YORK, N. Y. CABLES: ARLAT

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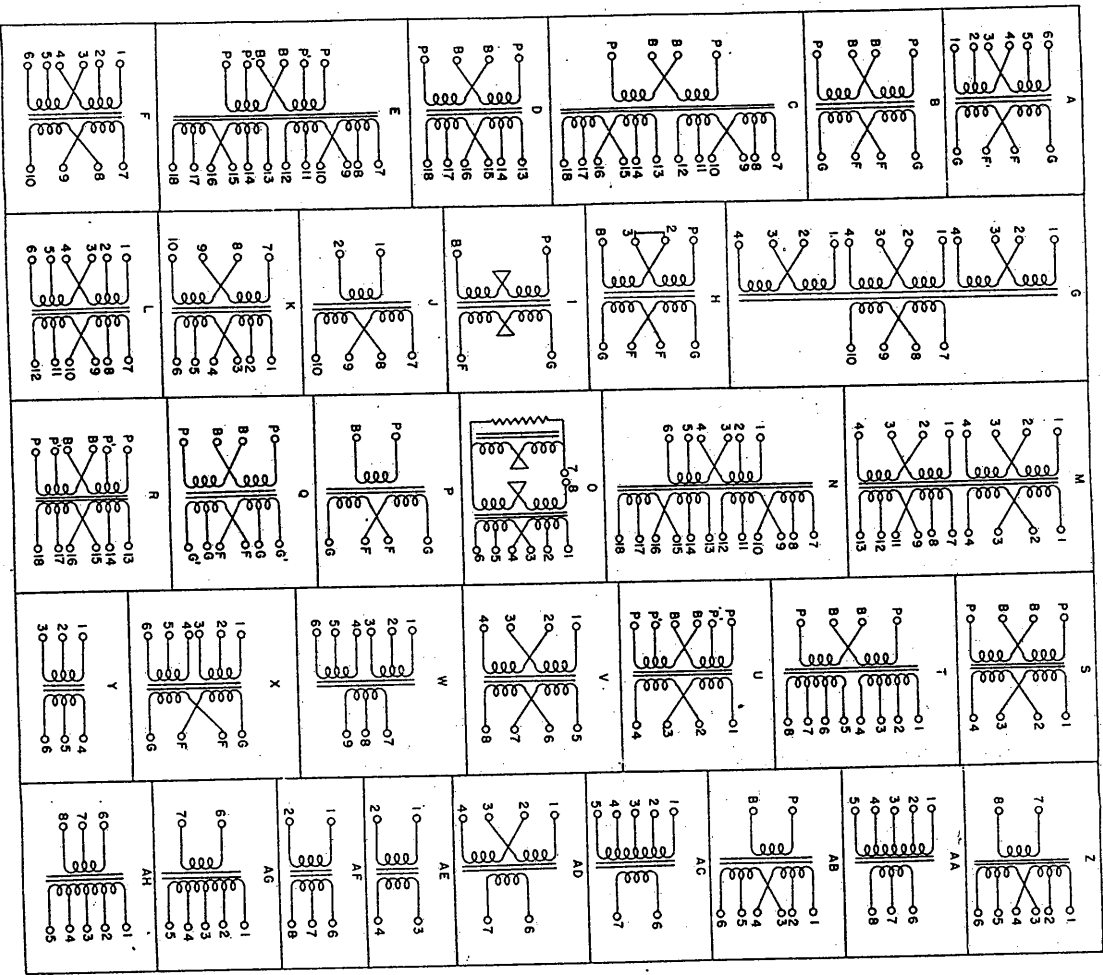
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Quality

BULLETIN P8-404

AUDIO TRANSFORMER SCHEMATICS



UNITED TRANSFORMER COMPANY • 150 VARICK ST., NEW YORK 13, N. Y.



TERMINAL ARRANGEMENTS

This terminal arrangement listing is a ready reference for all units in the Linear Standard, Hipermelody, Ultra Compact, Currier, and Plug In lines of UTC transformer components.

To use this reference, look up the type number of the unit in the first column. The number in the corresponding second column, when a tap is desired, will indicate the primary terminal connections. The number in the third column, when a tap is desired, will indicate the secondary terminal connections. The number in the fourth column, when a tap is desired, will indicate the schematic diagram, showing the actual winding-terminal arrangement.

Where no type number or no pin and socket numbers are shown, the transformer terminal board markings are self-explanatory; transformer terminals marked $\equiv$ are grounded to case.

TYPE	PRI.	SEC.	SCHEM.	TYPE	PRI.	SEC.	SCHEM.
A-0	6	31	F	LS-38	25	6	O
A-1	6	31	F	LS-39	28	6	P
A-12	5	31	F	LS-40	—	—	R
A-14	5	31	F	LS-41	—	—	S
A-18	—	—	—	LS-48	—	—	T
A-19	—	—	—	LS-49	28	6	U
A-20	10	11	Y	LS-50	33	6	V
A-21	28	11	Y	LS-51	—	—	W
A-24	—	—	—	LS-52	—	—	X
A-25	33	6	K	LS-54	—	—	Y
A-26	28	6	K	LS-55	—	—	Z
A-27	9	6	K	LS-56	—	—	AA
A-30	—	—	—	LS-57	—	—	AB
HA-100	—	—	—	LS-58	—	—	AC
HA-101	—	—	—	LS-59	—	—	AD
HA-102	—	—	—	LS-60	—	—	AE
HA-103	—	—	—	LS-61	—	—	AF
HA-104	—	—	—	LS-62	—	—	AG
HA-105	—	—	—	LS-63	—	—	AH
HA-106	—	—	—	LS-64	—	—	AI
HA-107	—	—	—	LS-65	—	—	AJ
HA-108	—	—	—	LS-66	—	—	AK
HA-109	—	—	—	LS-67	—	—	AL
HA-110	—	—	—	LS-68	—	—	AM
HA-111	—	—	—	LS-69	—	—	AN
HA-112	—	—	—	LS-70	—	—	AO
HA-113	—	—	—	LS-71	—	—	AP
HA-114	—	—	—	LS-72	—	—	AQ
HA-115	—	—	—	LS-73	—	—	AR
HA-116	—	—	—	LS-74	—	—	AS
HA-117	—	—	—	LS-75	—	—	AT
HA-118	—	—	—	LS-76	—	—	AU
HA-119	—	—	—	LS-77	—	—	AV
HA-120	—	—	—	LS-78	—	—	AW
HA-121	—	—	—	LS-79	—	—	AX
HA-122	—	—	—	LS-80	—	—	AY
HA-123	—	—	—	LS-81	—	—	AZ
HC-115	—	—	—	LS-82	—	—	BA
HC-116	—	—	—	LS-83	—	—	BB
HC-117	—	—	—	LS-84	—	—	BC
HC-118	—	—	—	LS-85	—	—	BD
HC-119	—	—	—	LS-86	—	—	BE
HC-120	—	—	—	LS-87	—	—	BF
HC-121	—	—	—	LS-88	—	—	BG
HC-122	—	—	—	LS-89	—	—	BH
HC-123	—	—	—	LS-90	—	—	BI
LS-5	—	—	—	LS-91	—	—	BJ
LS-6	—	—	—	LS-92	—	—	BK
LS-7	—	—	—	LS-93	—	—	BL
LS-8	—	—	—	LS-94	—	—	BM
LS-9	—	—	—	LS-95	—	—	BN
LS-10	—	—	—	LS-96	—	—	BO
LS-11	—	—	—	LS-97	—	—	BP
LS-12	—	—	—	LS-98	—	—	BQ
LS-13	—	—	—	LS-99	—	—	BR
LS-14	—	—	—	LS-100	—	—	BS
LS-15	—	—	—	LS-101	—	—	BT
LS-16	—	—	—	LS-102	—	—	BU
LS-17	—	—	—	LS-103	—	—	BV
LS-18	—	—	—	LS-104	—	—	BW
LS-19	—	—	—	LS-105	—	—	BX
LS-20	—	—	—	LS-106	—	—	BY
LS-21	—	—	—	LS-107	—	—	BZ
LS-22	—	—	—	LS-108	—	—	CA
LS-23	—	—	—	LS-109	—	—	CB
LS-24	—	—	—	LS-110	—	—	CC
LS-25	—	—	—	LS-111	—	—	CD
LS-26	—	—	—	LS-112	—	—	CE
LS-27	—	—	—	LS-113	—	—	CF
LS-28	—	—	—	LS-114	—	—	CG
LS-29	—	—	—	LS-115	—	—	CH
LS-30	—	—	—	LS-116	—	—	CI
LS-31	—	—	—	LS-117	—	—	CJ
LS-32	—	—	—	LS-118	—	—	CK
LS-33	—	—	—	LS-119	—	—	CL
LS-34	—	—	—	LS-120	—	—	CM

P-1 through P-15 same as O-1, etc.

*LS 555 fixed bias
was 3000 ohms overall*

INPUT COMBINATIONS

TYPE LS, HA, MC and A, TRANSFORMERS

- LS-54, LS-109, LS-10X, LS-122, LS-12X, LS-18, LS-24, LS-30, LS-30X, LS-33, LS-34, HA-100, HA-100X, HA-101, HA-101X, HA-108X, A-10, A-12, A-20.
- 500 ohms connect to 1 and 6, join 3 to 4
- 333 ohms connect to 1 and 5, join 3 to 4
- 250 ohms connect to 1 and 6, join 2 to 3 (approx.)
- 200 ohms connect to 2 and 5, join 3 to 4
- 125 ohms connect to 1 and 4, join 1 to 3 and 4 to 6
- 50 ohms connect to 2 and 4, join 2 to 3 and 4 to 5
- LS-14, LS-14X, LS-32, HA-103A.
- For 60 ohms join 3 to 4, connect to 1 and 6
- For 38 ohms join 3 to 4, connect to 2 and 6
- For 30 ohms join 1 to 6, connect to 4 and 5
- For 22 ohms join 3 to 4, connect to 2 and 5
- For 15 ohms join 1 to 3 and 4 to 6, connect to 1 and 4
- For 10 ohms join 1 to 6, connect to 2 and 5
- For 5.5 ohms join 2 to 3 and 4 to 5, connect to 2 and 4
- For 2.5 ohms join 1 to 5 and 2 to 6, connect to 1 and 2
- LS-50, HA-113, A-24, LS-27, HA-133.
- For single plate (15,000 ohms), join 8 to 9, connect 7 to plate, and 10 to plate return.
- LS-51, HA-114, A-26.
- For pushpull plates, (30,000 ohms over all), join 8 and 9 for plate return, connect 7 and 10 to plates.
- LS-37, HA-111, HA-111E, A-27.
- Connect X-C to crystal device.
- LS-39, HA-112.
- Connect PEC to photocell or grid of tube.
- LS-15, LS-15X, LS-31, LS-31-X, HA-130, HA-130X, MC
- Three separate and distinct primaries 30 or 50 ohms connect to 1 and 4; join 1 to 2, 3 to 4, 200 or 250 ohms connect to land 4; join 2 to 3.
- LS-52, LS-54.
- 8000 ohms overall:
- For pushpull 245's or 250's connect plates to P and P, connect B+ to B and B.
- For single 89 pentode, 205D, 211, 842, or 843, connect plate to P, connect B+ to other P and join B-8.
- 2000 ohms overall:
- For single 48, connect plates to P, connect B+ to other P and join adjacent P and B terminals.
- LS-55, LS-56, LS-57.
- 5000 ohms overall:
- For self bias 2A3's or pushpull 275A's, connect plates to 1 and 6, join 3 and 4 for B+.
- For single 71A, 2B6, or 59 triode, connect plate to 1, B+ to 6, join 3 and 4.
- 3000 ohms overall:
- For fixed bias 2A3's, connect plates to 2 and 5, join 3 and 4 for B+.
- For single 52A, connect plate to 2, B+ to 5, join 3 and 4.
- LS-58.
- 2500 ohms overall:
- For pushpull parallel 2A3's self bias, connect plates to 1 and 6, join 3 and 4 for B+.
- 1500 ohms overall:
- For pushpull parallel 2A3's fixed bias or pushpull parallel 48's, connect plates to 2 and 5, join 3 and 4 for B+.
- LS-61, LS-63.
- 10000 ohms overall:
- For pushpull 59 triodes, 2B6's, 71A's, or class B 53, 79, 49's, 89's, connect plates to 1 and 6, join 3 and 4 for B+.
- For single 210, 41, or 268A, connect plate to 1, B+ to 6, join 3 and 4.
- 6000 ohms overall:
- For pushpull 52A's or class B 46's or 59's, connect plates to 2 and 5, join 3 and 4 for B+.
- For single 20, 31, 46, or 59 pentode, connect plate to 2, B+ to 5, join 3 and 4.
- 2500 ohms overall:
- For single 2A3 self biased, connect plate to 1, B+ to 6, join 1 to 3 and 4 to 6.
- LS-67.
- For 838's connect plates to P-P.
- For 203A's connect plates to P-P.
- LS-2451.
- 6000 ohms overall:
- For self bias A, prime 45's, Class A WE 252A's, Class B46's or 59's, connect plates to 1 and 6, join 3 and 4 for B+.
- 3500 ohms overall:
- For fixed bias A, prime 45's, connect plates to 2 and 5, join 3 and 4 for B+.
- LS-800A.
- 12,500 ohms, connect plates to 1 and 6; join 3 and 4 for B+.
- 8000 ohms, connect plates to 2 and 5; join 3 and 4 for B+.

TERMINAL CONNECTIONS TYPE PA TRANSFORMERS

MULTIPLE LINE TERMINATIONS.

- PA-134, PA-135, PA-137, PA-140, PA-141, PA-512.
- 1. For 200 ohm lines connect to 1 and 3.
- 2. For double button microphone connect to 1 and 3, center tap 2.
- 3. For 50 ohm line or dynamic microphone connect to 2 and 5; join 2 to 4 and 3 to 5.
- 4. For 500 ohm line connect to 1 and 5; join 3 to 4.
- 5. For three 500 ohm lines used simultaneously, connect lines to 1-2, 2-3, 4-5.
- 6. For one 500 and one 200 ohm line used simultaneously, connect to 1 and 3 for 500 ohms; and 4 and 5 for 200 ohms.
- 7. For three 200 ohm lines use same connections as 5. above.

VOICE COIL COMBINATIONS.

- PA-15, PA-16, PA-19, PA-138, PA-139, PA-245, PA-710.
- PA-216, PA-416, PA-516.
- 16 ohms connect to A and D
- 8 ohms connect to A and C
- 5 ohms connect to B and D
- 3 ohms connect to A and B-
- 1.5 ohms connect to C and D
- PA-51AX:
- Pri. 46, 6A6, 49, 37, 76, 6C6, 6C5; 30; 89
- Sec. 46's, 59's, 49's, 19's, 79's, connect to G-F-F-G
- Pri. 45, 59, 2A3, 6L6, 2A5, 42, 45
- Sec. Class B 46's, 59's, A, 45's, 2A5's, 42's connect to G-F-F-G

- PA-52AX
- Pri. P, P, 45, 59, 2A3, 6L6
- Sec. 2-46's, 4-46's, 59's, connect to G-F-F-G
- Pri. 2A3's
- Sec. 841's, 825, 756, RK30, 800, connect to G-F-F-G

- PA-416: PRIMARY P-P-B-P-P.
- P-B-P, 3800 ohms, P-B-P, 3300 ohms

TERMINAL CONNECTIONS TYPE PA TRANSFORMERS

PA-53AX

- Pri. P, P, 42, 45, 50, 59, 2A3, 6L6
- Sec. 805, 808, 203A, 838, 35T's, HE100, HD203A, RK18; RK31, 210's connect to G-F-F-G
- For 50T, HK354, T55, 211A's, 242A's, 830B's, 800's, 801's, connect to G-F-F-G

PA-59AX

- Pri. For 500 ohms join 3 to 4, connect to 1 and 5
- For 200 ohms join 3 to 4, connect to 2 and 5
- For 50 ohms join 4 to 1, 5 to 2, connect to 4 and 5
- Sec. For 805's, 838's, 203A's, connect to G-F-F-G
- For 830B's, 800's, RK-18's, 801's, 210's, connect to G-F-F-G

PA-15:

- For pushpull 245's or 250's connect plates to P and P.
- For single 89, pentode, 205D, 211, 842, or 843, connect plate to one P and B plus to other P terminal.

PA-16:

- For pushpull self bias 2A3's or WE 275A's connect plates to P-P.
- For pushpull fixed bias 2A3's connect plates to P-P.
- For single 59 triode or 71A connect plate to one P and B plus to other P terminal.
- For single WE 52A connect plate to one P and B plus to other P terminal.

PA-245:

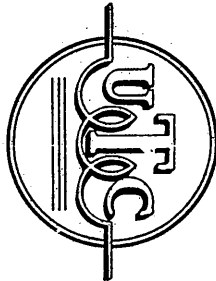
- For pushpull self bias connect P-P.
- For pushpull fixed bias connect P-P.

PA-216: PRIMARY P-B-P.

- P-P 6600 ohms.

PA-416: PRIMARY P-P-B-P-P.

- P-B-P, 3800 ohms, P-B-P, 3300 ohms



TERMINAL ARRANGEMENTS

UNITED TRANSFORMER COMPANY
150 Varick Street, New York 13, N. Y.

L5

TERMINAL CONNECTIONS TYPE PA TRANSFORMERS

PA-5L6:

P-B-P 3300 ohms, P'-B-P' 1900 ohms.

PA-19:

For pushpull 59 triodes, 71A's, 286's, Class B up, 49, 53, 79, 89 connect plates to P-P'.

For pushpull 52A's, class B 46's, 59's connect plates to P-P'.

For single 210, 41, 268A connect plate to one P and B plus to other P.

For single 31, 46, 59 pentode connect plate to one P' and B plus to other P'.

PA-44S:

Four 45's in pushpull parallel, fixed bias connect plates to P-P'.

Four 45's in pushpull parallel, self bias connect plates to P-P'.

PA-710:

For pushpull 210's Class A connect plates to P and P'. For pushpull 47's, 2A5's, 42's used as pentodes connect plates to P-P'.

PA-238AX

Pri. Push Pull Parallel 2A3's, 45's, 50's, 59's, 6L6's connect to P-B-P'.

Sec. For 822's, HF200's, 4-805's, 4-838's, connect to G-F-F-G.

For 150T's, HK354's, HF300's, 204A's, HD203A's, connect to G-F-F-G.

Pri. P, P, 845's, 50T's, 211A's, connect to P-B-P'.

PA-136:

HI — Single Plate 8000 ohms—15000 ohms
LO — Mike or Line 50 ohms—50 ohms or 200 ohms overall

G-F-F-G'—1 or 2 grids

PRIMARY CONNECTIONS PA PLATE and FILAMENT TRANSFORMERS

BIAS TRANSFORMER CONNECTIONS

PA-315, PA-316.

Secondary Terminal	Primary Terminal	PA-315	PA-316
50/60 cycles	115 V.	A.C. Volt each side	A.C. Volt each side
8-10-11-13	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100	100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720 740 760 780 800 820 840 860 880 900 920 940 960 980 1000	100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720 740 760 780 800 820 840 860 880 900 920 940 960 980 1000
8-9-12-13	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100	100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720 740 760 780 800 820 840 860 880 900 920 940 960 980 1000	100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720 740 760 780 800 820 840 860 880 900 920 940 960 980 1000
8-10-11-12	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100	100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720 740 760 780 800 820 840 860 880 900 920 940 960 980 1000	100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720 740 760 780 800 820 840 860 880 900 920 940 960 980 1000

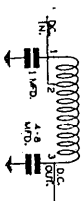
FILAMENT CONNECTIONS

PA-126:
For 14 volts connect to 1 and 7.
For 11 volts connect to 2 and 6.
For 10 volts connect to 3 and 5.
Center Tap No. 4.

FILTER CHOKE

PA-100, PA-102, PA-104, PA-106, PA-108, PA-1-S.

UNITED TRANSFORMER CORPORATION
150 Varick Street, New York 13, N. Y.



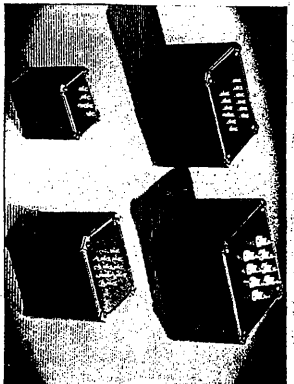


LINEAR STANDARD TRANSFORMERS

UTC LINEAR STANDARD Component transformers are designed to provide maximum efficiency, low distortion, high efficiency, thermal shielding and uniform temperature from the standpoint of uniform reflection of impedance. They are available in a wide range of sizes, from 100 to 10,000 ohms, and are designed to handle a wide range of power levels, from 100 to 10,000 watts. They are designed to be used in a wide range of applications, from audio to radio frequency.

LINEAR STANDARD UNITS FEATURE:

- True Hum Balancing Coil Structure . . .
- Maximum neutralization of stray fields.
- Balanced Variable Impedance Line . . . no line impedance change with frequency.
- Precision Winding . . . top of a universal unit . . . no line impedance change with frequency.
- Reversible Mounting . . . permits above chassis or sub-chassis mounting.
- Electrostatic Shielding . . . brought out to separate terminal.
- Alloy Shields . . . maximum shielding from inductive pickup.
- Multiple Coil, Semi-Toroidal Coil Structure . . . minimum distortion.
- Precision Winding . . . top of a universal unit . . . no line impedance change with frequency.
- High Fidelity . . . UTC Linear Standard transformers are the only audio units with a guaranteed uniform response, from 20 to 20,000 cycles ± 1 db.



PLATE, CRYSTAL, PHOTOCELL AND BRIDGING TO LINE TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	Shielding	Case
LS-1	Plate	10,000 ohms	10,000 ohms	Shielded	LS-1
LS-2	Crystal	10,000 ohms	10,000 ohms	Shielded	LS-2
LS-3	Photocell	10,000 ohms	10,000 ohms	Shielded	LS-3
LS-4	Bridging	10,000 ohms	10,000 ohms	Shielded	LS-4
LS-5	Line	10,000 ohms	10,000 ohms	Shielded	LS-5

LOW IMPEDANCE TO GRID TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	Shielding	Case
LS-10	Plate	10,000 ohms	10,000 ohms	Shielded	LS-10
LS-11	Crystal	10,000 ohms	10,000 ohms	Shielded	LS-11
LS-12	Photocell	10,000 ohms	10,000 ohms	Shielded	LS-12
LS-13	Bridging	10,000 ohms	10,000 ohms	Shielded	LS-13
LS-14	Line	10,000 ohms	10,000 ohms	Shielded	LS-14

MIXING TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	Shielding	Case
LS-20	Mixing	10,000 ohms	10,000 ohms	Shielded	LS-20
LS-21	Mixing	10,000 ohms	10,000 ohms	Shielded	LS-21
LS-22	Mixing	10,000 ohms	10,000 ohms	Shielded	LS-22
LS-23	Mixing	10,000 ohms	10,000 ohms	Shielded	LS-23
LS-24	Mixing	10,000 ohms	10,000 ohms	Shielded	LS-24

INTERSTAGE AUDIO TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	Shielding	Case
LS-15	Interstage	10,000 ohms	10,000 ohms	Shielded	LS-15
LS-16	Interstage	10,000 ohms	10,000 ohms	Shielded	LS-16
LS-17	Interstage	10,000 ohms	10,000 ohms	Shielded	LS-17
LS-18	Interstage	10,000 ohms	10,000 ohms	Shielded	LS-18
LS-19	Interstage	10,000 ohms	10,000 ohms	Shielded	LS-19

DRIVER TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	Shielding	Case
LS-25	Driver	10,000 ohms	10,000 ohms	Shielded	LS-25
LS-26	Driver	10,000 ohms	10,000 ohms	Shielded	LS-26
LS-27	Driver	10,000 ohms	10,000 ohms	Shielded	LS-27
LS-28	Driver	10,000 ohms	10,000 ohms	Shielded	LS-28
LS-29	Driver	10,000 ohms	10,000 ohms	Shielded	LS-29

HIGH LEVEL

MATCHING TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	Shielding	Case
LS-30	Matching	10,000 ohms	10,000 ohms	Shielded	LS-30
LS-31	Matching	10,000 ohms	10,000 ohms	Shielded	LS-31
LS-32	Matching	10,000 ohms	10,000 ohms	Shielded	LS-32
LS-33	Matching	10,000 ohms	10,000 ohms	Shielded	LS-33
LS-34	Matching	10,000 ohms	10,000 ohms	Shielded	LS-34



OUTPUT TRANSFORMERS TO LINE AND VOICE COIL

Type No.	Application	Primary Impedance	Secondary Impedance	Shielding	Case
LS-35	Output	10,000 ohms	10,000 ohms	Shielded	LS-35
LS-36	Output	10,000 ohms	10,000 ohms	Shielded	LS-36
LS-37	Output	10,000 ohms	10,000 ohms	Shielded	LS-37
LS-38	Output	10,000 ohms	10,000 ohms	Shielded	LS-38
LS-39	Output	10,000 ohms	10,000 ohms	Shielded	LS-39

OUTPUT TRANSFORMERS TO HIGH IMPEDANCE (RF) LOAD

Type No.	Application	Primary Impedance	Secondary Impedance	Shielding	Case
LS-40	Output	10,000 ohms	10,000 ohms	Shielded	LS-40
LS-41	Output	10,000 ohms	10,000 ohms	Shielded	LS-41
LS-42	Output	10,000 ohms	10,000 ohms	Shielded	LS-42
LS-43	Output	10,000 ohms	10,000 ohms	Shielded	LS-43
LS-44	Output	10,000 ohms	10,000 ohms	Shielded	LS-44

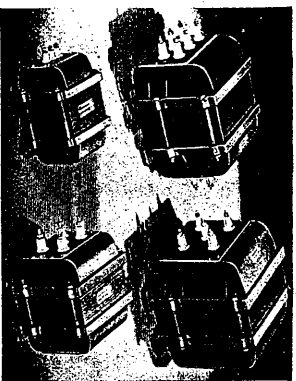


PLATE TRANSFORMERS

Type	Primary Voltage 60/60/60	High Voltage	DC Current	RAM
L5-181	200, 110, 250 250, 110, 250	1500-1250-0-1250	200 μ A	\$16.00
L5-182	250, 110, 250 250, 130, 250	1500-250-0-1500	300 μ A	60.00
L5-183	200, 110, 180 250, 130, 240	1750-1500-0-1500	400 μ A	75.00
L5-184	200, 110, 180 250, 180, 240	2500-3000-0-3000-0	500 μ A	110.00
L5-185	200, 110, 250 250, 110, 250	2500-3000-5000-0	1.2 amp.	250.00

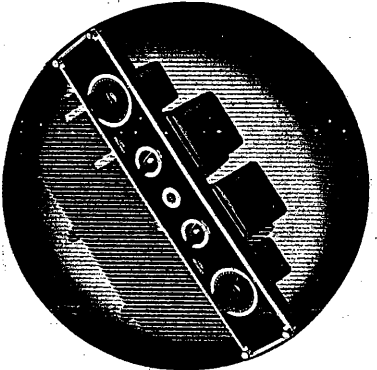
FILAMENT TRANSFORMERS

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FILTER, SWINGING, AND AUDIO CHOKES

Type No.	Application	Inductance	DC Current	DC Resistance mH	Core Size
L.S.-80	Filter chokes with 1000 ohm bucking EAP	Series-40 H Parallel-2.2 H	160 MA 100 MA	1.78 ohms 31.60 ohms	L.S.-2 L.S.-3
L.S.-91	Filter chokes with 1000 ohm bucking EAP	Series-13 H Parallel-1.7 H	250 MA 250 MA	280 ohms 60 ohms	L.S.-3
L.S.-92	Filter chokes with 1000 ohm bucking EAP	Series-10 H Parallel-1.5 H	375 MA 250 MA	20 ohms 50 ohms	L.S.-3
L.S.-93	Filter chokes with 1000 ohm bucking EAP	Series-20 H Parallel-3.2 H	200 MA 100 MA	112 ohms 35 ohms	L.S.-4
L.S.-94	Parallel filter chokes and filter chokes	Series-230 H Parallel-30 H	3 MA 3 MA	8400 ohms 1600 ohms	L.S.-1 L.S.-1
L.S.-95	Parallel filter chokes and filter chokes	Series-100 H Parallel-25 H	16 MA 16 MA	1000 ohms 250 ohms	L.S.-2 L.S.-2
L.S.-96	Filter chokes with 1000 ohm bucking EAP	Series-20 H Parallel-3 H	600 MA 1 amp.	75 MA 22 ohms	GC-1 L.S.-3
L.S.-97	Filter chokes with 1000 ohm bucking EAP	Series-40 H	200 MA	100 ohms	L.S.-3
L.S.-98	Filter chokes with 1000 ohm bucking EAP	Series-15 H Parallel-5.6 H	400 MA 800 MA	80 ohms 22 ohms	L.S.-4 L.S.-4
L.S.-99	Filter chokes with 1000 ohm bucking EAP	Series-20 H Parallel-3 H	400 MA 2 amp.	80 ohms 10 ohms	L.S.-4 L.S.-4
L.S.-100	Filter chokes with 1000 ohm bucking EAP	Series-20 H Parallel-3 H	400 MA 2 amp.	80 ohms 10 ohms	L.S.-4 L.S.-4
L.S.-101	Filter chokes with 1000 ohm bucking EAP	Series-20 H Parallel-3 H	400 MA 2 amp.	80 ohms 10 ohms	L.S.-4 L.S.-4
L.S.-102	Filter chokes with 1000 ohm bucking EAP	Series-20 H Parallel-3 H	400 MA 2 amp.	80 ohms 10 ohms	L.S.-4 L.S.-4
L.S.-103	Filter chokes with 1000 ohm bucking EAP	Series-20 H Parallel-3 H	400 MA 2 amp.	80 ohms 10 ohms	L.S.-4 L.S.-4
L.S.-104	Filter chokes with 1000 ohm bucking EAP	Series-20 H Parallel-3 H	400 MA 2 amp.	80 ohms 10 ohms	L.S.-4 L.S.-4

For Higher Fidelity
PHONO AND RADIO FILTERS
(500 ohm impedance)



MODEL 3A UNIVERSAL EQUALIZER

The use of several characteristics of the UHF 3-A equalizer was needed if the most important item for broadcast and recording equalization. This unique unit, with which most communication engineers are already familiar is an accurately calibrated, quickly adjustable combined low and high frequency equalizer. Four controls are provided on the panel. The low frequency controls include a switch for adjusting the maximum equalization frequency to 20, 50 or 100 cycles and a control of equalization. The high frequency portion of this unit includes a switch to obtain resonance at 4000, 6000, 8000 or 10,000 cycles, and a similar calibrated control reading directly in dB. It is ideal for equalizing lines, pickup and recording equipment, due to its flexible nature. Dimensions of panel 3-1/2" x 19" x 19".

The new model 3-A is a production model. SHIELDING, PICKUP AND RECORDING SHIELDING, PICKUP WITH AUTO TRIALLOY SHIELDING, SET

price to broadcast stations or recording studios \$85

MODEL 3D UNIVERSAL ATTENUATOR

The U7C model 3D attenuator is similar to the 3A equalizer, but is designed for ATTENUATE the low or high frequencies, the low frequency control has a range of 100, 175 or 250 cycles and the high frequency control has a range of 100, 175 or 250 cycles and calibrated off-sets to adjust the slope of the attenuation curve. The high frequency portion is tapped at 4000, 6000, 8000 and 10000 cycles with a similar attenuation control. This type of equalizer finds many applications in recording, dialogue equalization, and P.A. theatre applications.

Net price to broadcast stations **\$75**

MODEL 4B SOUND EFFECTS FILTER

The UTC model 4B filter is an improved design based on the sound effects filter developed by UTC for the Columbia Broadcasting System. The low pass control has cutoff frequencies of 500, 1000, 2000, and 3000 cycles and incorporates a pad control to govern the rapidity of attenuation. The high pass section has a switch for cutoff frequencies of 500, 1000, 2000 and 4000 cycles, with a calibrated attenuator. Net price to broadcast stations... **\$70**

Fidelity PHONO AND RADIO FILTERS (500 ohm impedance)

● 2E PLAYBACK EQUALIZER

In hill and dale recordings, as well as some lateral recordings, the high frequencies are brought up when recordings are made. Stimuli to effect a high ratio of signal level to surface noise. Simultaneously, the low frequencies are attenuated so that the high amplitude will not overrun the track. The EE equalizer compensates for both of these effects in playback. H-3 cases

● **2F LOW PASS FILTER**
In practice all high

In practically all high fidelity sound sources such as phonograph and similar service, a substantial amount of scratch or other parasitic noise is encountered. Since this noise is in the upper range of the audio spectrum, it indicates the greater portion of it. For highest fidelity, however, this filter should have little effect on frequencies below the cutoff point. The 2P filter is ideal in this respect and all broadcast work. Frequency of cutoff is 6000 cycles.

H-3 case, Net \$40
 2G LOW PASS FILTER

Same as above, but cutoff frequency is 4500

H-3 case, Net\$40

● **2H SCRATCH FILTER**
This low pass filter is similar in purpose to the

22G but has not as sharp cutoff characteristics:

22

Case, Net \$15

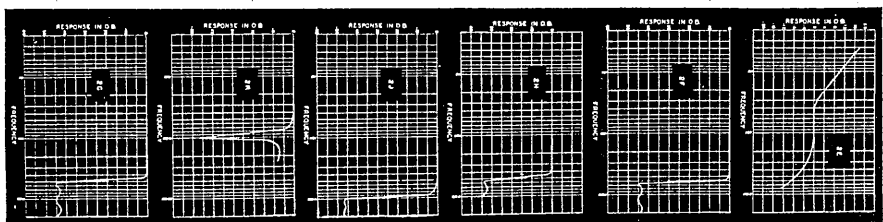
**● 2J LOW PASS
STATION FILTER.**
This filter has a 9000

cycle cutoff, attenuating all frequencies beyond

this point to eliminate the possibility of the broadcast station over-

running its sidebands.

H-3 case, Net \$40
● 2K INTERSTATION
BEAT FILTER



UTC HIPERM ALLOY TRANSFORMERS

The UTC Hiperm Alloy audio and power transformers are specifically designed for portability and ruggedness. They are made from 30 to 20,000 cycles. The outer case is of high conductivity alloy finished in high polish black anodic. Through the use of tapered metal inserts, these transformers are held together in a unit which is used on all units up to heavy minimum pickup. The electronic shields are brought out to separate terminals on the terminal strip.

The 100 ohm unit is 1 1/2" x 3 1/2" x 2 1/2" high with 2 x 3/4" terminals.

The 200 ohm unit is 2 1/2" x 3 1/2" x 2 1/2" high with 2 x 3/4" terminals.

LOW IMPEDANCE TO GRID AND MIXING TRANSFORMERS

Type	Application	Primary Impedance	Secondary Impedance	Case No.
H-100	Low impedance multiple line to grid	50, 125, 250 ohms	60,000 ohms	H-100
H-100X	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-100
H-101	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-101
H-101X	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-101
H-102	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-102
H-102X	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-102
H-103	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-103
H-103X	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-103
H-104	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-104
H-104X	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-104
H-105	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-105
H-105X	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-105
H-106	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-106
H-106X	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-106
H-107	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-107
H-107X	Single plate to grid	50, 125, 250 ohms	60,000 ohms	H-107

PLATE, CRYSTAL AND PHOTOCELL TO LINE TRANSFORMERS

Type	Application	Primary Impedance	Secondary Impedance	Case No.
H-110	Plate to line	100,000 ohms	50, 125, 250 ohms	H-110
H-111	Plate to line	100,000 ohms	50, 125, 250 ohms	H-111
H-112	Plate to line	100,000 ohms	50, 125, 250 ohms	H-112
H-113	Plate to line	100,000 ohms	50, 125, 250 ohms	H-113
H-114	Plate to line	100,000 ohms	50, 125, 250 ohms	H-114

UTC ULTRA COMPACT AUDIO UNITS

The UTC Ultra Compact audio units are designed for portability and ruggedness. They are made from 30 to 20,000 cycles. The outer case is of high conductivity alloy finished in high polish black anodic. Through the use of tapered metal inserts, these transformers are held together in a unit which is used on all units up to heavy minimum pickup. The electronic shields are brought out to separate terminals on the terminal strip.

The 100 ohm unit is 1 1/2" x 3 1/2" x 2 1/2" high with 2 x 3/4" terminals.

The 200 ohm unit is 2 1/2" x 3 1/2" x 2 1/2" high with 2 x 3/4" terminals.



Type	Application	Primary Impedance	Secondary Impedance	Case No.
A-10	Low impedance multiple line to grid	50, 125, 250 ohms	60,000 ohms	A-10
A-11	Single plate to grid	50, 125, 250 ohms	60,000 ohms	A-11
A-12	Single plate to grid	50, 125, 250 ohms	60,000 ohms	A-12
A-13	Single plate to grid	50, 125, 250 ohms	60,000 ohms	A-13
A-14	Single plate to grid	50, 125, 250 ohms	60,000 ohms	A-14
A-15	Single plate to grid	50, 125, 250 ohms	60,000 ohms	A-15
A-16	Single plate to grid	50, 125, 250 ohms	60,000 ohms	A-16
A-17	Single plate to grid	50, 125, 250 ohms	60,000 ohms	A-17
A-18	Single plate to grid	50, 125, 250 ohms	60,000 ohms	A-18



INTERSTAGE AUDIO TRANSFORMERS

Type	Application	Primary Impedance	Secondary Impedance	Case No.
I-10	Single plate to grid	50, 125, 250 ohms	60,000 ohms	I-10
I-11	Single plate to grid	50, 125, 250 ohms	60,000 ohms	I-11
I-12	Single plate to grid	50, 125, 250 ohms	60,000 ohms	I-12
I-13	Single plate to grid	50, 125, 250 ohms	60,000 ohms	I-13
I-14	Single plate to grid	50, 125, 250 ohms	60,000 ohms	I-14
I-15	Single plate to grid	50, 125, 250 ohms	60,000 ohms	I-15
I-16	Single plate to grid	50, 125, 250 ohms	60,000 ohms	I-16
I-17	Single plate to grid	50, 125, 250 ohms	60,000 ohms	I-17
I-18	Single plate to grid	50, 125, 250 ohms	60,000 ohms	I-18
I-19	Single plate to grid	50, 125, 250 ohms	60,000 ohms	I-19
I-20	Single plate to grid	50, 125, 250 ohms	60,000 ohms	I-20

POWER TRANSFORMERS

Type	Application	Primary Impedance	Secondary Impedance	Case No.
P-10	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-10
P-11	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-11
P-12	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-12
P-13	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-13
P-14	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-14
P-15	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-15
P-16	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-16
P-17	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-17
P-18	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-18
P-19	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-19
P-20	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-20

FILTER AND AUDIO CHOKES

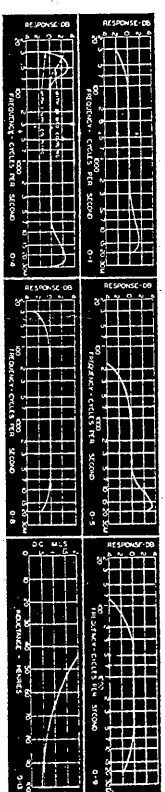
Type	Application	Primary Impedance	Secondary Impedance	Case No.
F-10	Single plate to grid	50, 125, 250 ohms	60,000 ohms	F-10
F-11	Single plate to grid	50, 125, 250 ohms	60,000 ohms	F-11
F-12	Single plate to grid	50, 125, 250 ohms	60,000 ohms	F-12
F-13	Single plate to grid	50, 125, 250 ohms	60,000 ohms	F-13
F-14	Single plate to grid	50, 125, 250 ohms	60,000 ohms	F-14
F-15	Single plate to grid	50, 125, 250 ohms	60,000 ohms	F-15
F-16	Single plate to grid	50, 125, 250 ohms	60,000 ohms	F-16
F-17	Single plate to grid	50, 125, 250 ohms	60,000 ohms	F-17
F-18	Single plate to grid	50, 125, 250 ohms	60,000 ohms	F-18
F-19	Single plate to grid	50, 125, 250 ohms	60,000 ohms	F-19
F-20	Single plate to grid	50, 125, 250 ohms	60,000 ohms	F-20

OUNCER HIGH FIDELITY AUDIO UNITS

The new UTC OUNCER series represents the same in compact quality transformer practice. These units are ideal for hearing aid, portable, concealed service, and similar applications. The overall dimensions are 1 1/2" x 3 1/2" x 2 1/2" height, including base. Mounting is effected by two screws, opposite the terminal board side, spaced 1 1/2" apart. Weight approximately one ounce. Units not carrying D.C. have high fidelity characteristics being uniform from 40 to 15,000 cycles. Items with D.C. in pri. and O-14 and O-15 are for voice frequencies from 150 to 4,000 cycles.



Type	Application	Pri. Imp.	Sec. Imp.	Case No.
O-1	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-1
O-2	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-2
O-3	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-3
O-4	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-4
O-5	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-5
O-6	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-6
O-7	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-7
O-8	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-8
O-9	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-9
O-10	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-10
O-11	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-11
O-12	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-12
O-13	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-13
O-14	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-14
O-15	Single plate to grid	50, 125, 250 ohms	60,000 ohms	O-15

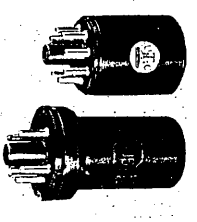


PLUG-IN HIGH FIDELITY AUDIO UNITS

UTC has been producing plug-in transformers for audio service for the past three years. The new 'P' series is the final culmination of this development. These units have identical characteristics and fidelity characteristics, being uniform from 40 to 15,000 cycles. Items with D.C. in pri. and O-14 and O-15 are for voice frequencies from 150 to 4,000 cycles. Items without D.C. have high fidelity characteristics being uniform from 40 to 15,000 cycles. The low weight and over-all compact make it impossible to displace these units from their sockets, even when used upside down in portable equipment. Overall dimensions are 1 1/2" x 3 1/2" x 2 1/2" height exclusive of terminals — 1 1/2".

PLUG-IN HIGH FIDELITY AUDIO UNITS (MAX. LEVEL 0 DB)

Type	Application	Pri. Imp.	Sec. Imp.	Case No.
P-1	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-1
P-2	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-2
P-3	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-3
P-4	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-4
P-5	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-5
P-6	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-6
P-7	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-7
P-8	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-8
P-9	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-9
P-10	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-10
P-11	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-11
P-12	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-12
P-13	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-13
P-14	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-14
P-15	Single plate to grid	50, 125, 250 ohms	60,000 ohms	P-15



UTC MICROPHONE CABLE TRANSFORMERS

The UTC microphone cable transformers are designed to be inserted in the cable circuit, and are ruggedly constructed to withstand mechanical abuse. The cable connections (supplied less cable) are made through the spring strain relief to terminal boards inside the end caps. These units may be located any place on the cable within twenty-five feet of the amplifier. 1 1/2" diameter . . . 2 1/2" long . . . 1 lb.



Type MC-1—primary tapped 30/60 and 200/250 ohms, secondary to grid.	Unit \$7.50
Type MC-2—primary tapped 30/60 and 200/250 ohms, secondary to grid.	Unit 10.00
Type MC-3—crystal microphone to 60/250 ohm line.	Unit 10.00



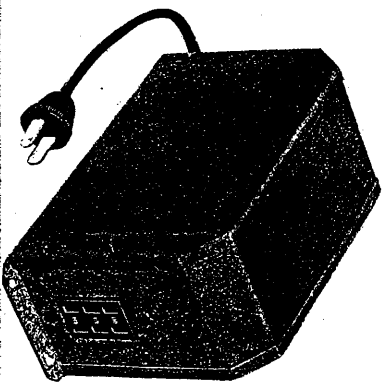
AUTOMATIC VOLTAGE REGULATORS

95, 130 Volts Input . . . 110, 115, 120 Volts output; 1% accuracy

The UTC automatic voltage regulator is new. It involves no moving parts and effects instantaneous correction for either transient or chronic line voltage fluctuations. This unit has innumerable applications in broad cost apparatus, laboratory equipment, etc. Automatically stabilized line voltage takes all the kinks out of duplicating results at different occasions, whether used on a radio production line or for correct colour in colour photography.

FEATURES

- **CONSTANT OUTPUT VOLTAGE** Independent of transients or continuous variations in line voltage.
- **ACCURACY 1%** In output voltage for an input range of 95 to 130 volts.
- **INDEPENDENT OF LOAD** Negligible variation in output voltage from no load to full load.
- **NO MOVING PARTS** This new UTC design (patent pending) requires no maintenance . . . assures permanent dependability.
- **110-115-120 VOLT OUTPUT** Available at the triple outlet receptacle.
- **HIGH EFFICIENCY** Comparable to a standard non-regulating transformer.
- **HIGH POWER FACTOR** Better than 90% on typical unit.
- **LOW DISTORTION** Distortion is unusually low in these units . . . less than 20% for all harmonics in typical unit.
- **NEGLECTABLE TIME CONSTANT**
- **LOW TEMPERATURE RISE** 55° C. on typical unit.



AUTOMATIC VOLTAGE REGULATORS Provide Constant Output Voltage For:

- LABORATORY APPARATUS
- PHOTOGRAPHY LIGHTING
- EXCITER LAMPS
- AUDIO AMPLIFIERS
- COLOR MATCHING UNITS
- POWER SUPPLIES
- COLOR PHOTOGRAPHY
- CONSTANT SPEED MOTORS
- METER CALIBRATION
- PRODUCTION TESTING ELECTRONIC INSTRUMENTS
- TELEVISION EQUIPMENT
- RECORDING UNITS
- PHOTO ENGRAVING
- TELEPHONE SYSTEMS
- INDUSTRIAL RESEARCH
- TEMPERATURE CONTROL
- RADIO TRANSMITTERS

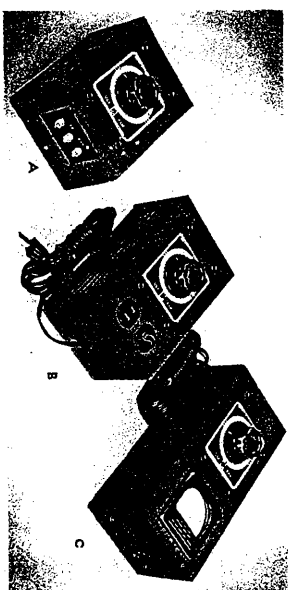
Type No.	Capacity VA	Primary Volts 60 Cycles	Secondary Volts $\pm 1\%$	Approx. Wgt. Lbs.	Net Price
AR-1	15	95-130	110, 115, 120	8	\$12.00
AR-2	30	95-130	110, 115, 120	10	15.00
AR-3	60	95-130	110, 115, 120	12	21.00
AR-4	120	95-130	110, 115, 120	18	28.00
AR-5	250	95-130	110, 115, 120	22	46.00
AR-6	500	95-130	110, 115, 120	38	67.00
AR-7	1000	95-130	110, 115, 120	60	110.00
AR-8	2000	95-130	110, 115, 120	120	200.00

Design for 220 volt service available at 25% increase in price, for 50 cycle unit; increase price 25% for 42 cycles, 35% increase for 35 cycles, increase price 100%. Special secondary voltages available to customers' specifications at small increase in price.

8

UTC VARITRAN CONTROL UNITS

For controlling: Rectifier output . . . motors . . . heaters . . . lights . . . line voltage



VARITRAN RATINGS

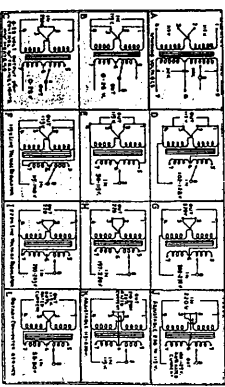
Standard Varitrans are designed for 115 or 230 volt service. The respective output voltages are 0-130 and 0-260 volts. The Varitran autotransformer current and wattage rating is based at 115 volts. As the voltage is reduced, the wattage output is reduced correspondingly. The maximum current can be taken at any point from 0 to 20 volts and from 95 to 130 volts. Between 20 and 95 volts the current capacity tapers off from the two ends to approximately 50% of the rated maximum current at the 55 volt point. The mounting facilities are at both top and bottom of each unit to assure ease of mounting on panel, chassis or for laboratory bench service.

Type	Input Voltage	Output Voltage	Watts	Maximum Amps.	Figure	Approx. Dimensions	Approx. Wt., Lbs.	Net Price
V-0	115 volts	0-130	230	2	A	4 1/2 x 8 1/2 x 4 1/2	8	\$7.50
V-0-B	230 volts	0-260	460	1	A	4 1/2 x 8 1/2 x 4 1/2	10	9.50
V-1	115 volts	0-130	570	5	B	5 x 8 1/2 x 4 1/2	11	10.00
V-1-M	115 volts	0-130	570	5	C	5 x 10 1/2 x 4 1/2	12	15.00
V-2	115 volts	0-130	570	5	A	5 x 7 x 4 1/2	11	9.00
V-2-B	230 volts	0-260	570	2.5	A	5 x 7 x 4 1/2	14	11.50
V-3	115 volts	0-130	630	7.5	A	5 x 7 x 4 1/2	14	14.00
V-3-B	230 volts	0-260	630	3.75	A	5 x 7 x 4 1/2	18	18.00
V-4	115 volts	0-130	1250	11	A	6 1/2 x 11 x 4 1/2	32	22.00
V-4-B	230 volts	0-260	1250	5.5	A	6 1/2 x 11 x 4 1/2	38	25.00
V-5	115 volts	0-130	1550	17	A	6 1/2 x 11 x 4 1/2	45	32.00
V-5-B	230 volts	0-260	1550	8.5	A	6 1/2 x 11 x 4 1/2	56	37.00
V-6	115 volts	0-130	3500	30	A	9 x 18 x 8	90	60.00
V-6-B	230 volts	0-260	3500	15	A	9 x 18 x 8	90	70.00
V-7	115 volts	0-130	5000	44	A	9 x 20 x 8	120	87.00
V-7-B	230 volts	0-260	5000	22	A	9 x 20 x 8	120	95.00

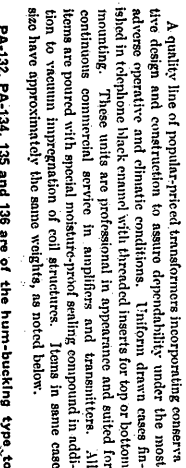
UNIVERSAL VARITRANS

These varitrans have a 115/230 V. primary winding and a smoothly variable secondary from 0-28 volts. Line voltage control can be effected for 102/140 V. or 197/243 volts to 115 V. or 220 volts respectively. The 28 volt secondary can also be used for low voltage lights, heaters, tools, rectifiers, etc. The primary and secondary windings can be arranged to effect variable 220/115 or 115/220 volt arrangements. Appearance as in Fig. A above.

Type	Max. Approx. Output	Approx. Dimensions	Approx. Weight, Lbs.	Net Price
VL-0	15	4 1/2 x 8 1/2 x 4 1/2	5	5.50
VL-1	35	4 1/2 x 8 1/2 x 4 1/2	7	6.50
VL-2	6	4 1/2 x 8 1/2 x 4 1/2	10	8.00
VL-3	11	5 x 7 x 4 1/2	15	13.00



9



PA-132, PA-134, 135 and 136 are of the hum-bucking type, to assure low hum pick-up. All audio components are linear, $\pm 1\frac{1}{2}$ DB from 60 to 8,500 cycles. 200 ohm windings on input transformers are balanced and may be used for 250 ohm circuits.

5

The TVARION® is a revolutionary, multi-decade inspanning a transmitter and frequency response corrective network. Using the VARIO® tone correction can be effected for defects in acoustical conditions or overall audio response from microphones, pickups, loudspeakers, etc. It is also possible to produce new (real) effects from phonograph recordings or radio reception, bringing back "lost" timbres and tonal qualities. Due to the high amplification available, the practical stage of amplification is sometimes necessary, although an additional stage of amplification is not required. The TVARION® can be used at maximum setting. The V7-1 and V7-2 require an external 30,000 ohm potentiometer as the control device.

The VTG VARIANTE is a revolutionary audio device incorporating a transposition and frequency response corrective network. Using the VARIANTE, tone correction can be effected for defects in acoustical conditions or overall music response from microphones, pick-ups, loudspeakers, etc. It is also possible to produce new tonal effects from phonograph recordings or radio reception. Varying the level of the tone would be practically just imitation. Due to the high amplification of the tone combiner, it is to be used at maximum setting. The VT-1 and VT-2

low end.	Price
	\$8.50

WT-1	High impactive noise or high impactive
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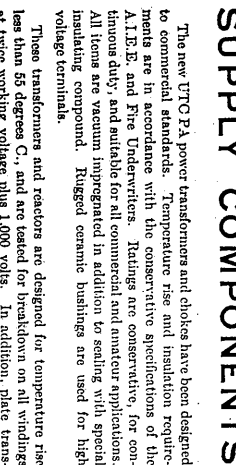
3A	10.
4A VCT- 3A VCT- 2A VCT-	PA

PA-431	525-600	3-A	3 A VCT-	15.6	CA	22.1	P ₂
525-600	500	5V-3A	5V-2A	0.3 VCT-	0.3 VCT-	3N	
500	100						
PA-432	300-4-300	10V	5V-2A	0.3V-2A			P ₂
300-4-300							

AND PRIMERS

5. Medium format transformer types PA-322, PA-435 and PA-436						
PA-type	Type	Model	WV	Ph. 1	Ph. 2	Ph. 3
		3A.				
PA-432	432-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-435	435-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-436	436-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-437	437-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-438	438-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-439	439-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-440	440-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-441	441-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-442	442-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-443	443-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-444	444-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-445	445-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-446	446-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-447	447-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-448	448-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-449	449-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-450	450-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-451	451-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-452	452-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-453	453-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-454	454-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-455	455-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-456	456-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-457	457-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-458	458-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-459	459-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-460	460-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-461	461-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-462	462-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-463	463-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-464	464-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-465	465-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-466	466-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-467	467-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-468	468-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-469	469-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-470	470-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-471	471-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-472	472-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-473	473-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-474	474-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-475	475-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-476	476-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-477	477-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-478	478-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-479	479-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-480	480-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-481	481-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-482	482-300-0	125	3V-2A	3V-2A	3V-2A	3V-2A
PA-483	483-300-0	125	3V-2A	3V-2A	3V-2A	3V-2

CRITICAL TYPE POWER SUPPLY COMPONENTS



voltage using a 500 cycle supply. In view of the conservative rubings and manufacturing procedure, these units are

Primaries for 105, 115, 220, 230 volts, 50/60 cycles. For reduced power secondary voltages can be reduced to half by using 220V. Pri. on 110 volts. These transformers may be used on 25 to 43 cycles if 220V. Pri. is used on 110 volts.

[illegible]

WINNERS

Primary 115 V., 50/60 cycles. No filament windings

Type No.	D.C. Voltage	D.C. Int. Price	Case No.
PA-316	Tapped for any voltage from 15 to 100 V. within 6 %	250	PA-2 \$2.50
PA-318	Tapped for any voltage from 75 to 400 V. within 6 %	250	PA-4 15.00

DATE	DESCRIPTION	AMOUNT	BALANCE
1/1/20	Opening Balance		100.00
1/15/20	Payment Received	25.00	125.00
2/1/20	Payment Received	15.00	140.00
2/15/20	Payment Received	10.00	150.00
3/1/20	Payment Received	20.00	170.00
3/15/20	Payment Received	15.00	185.00
4/1/20	Payment Received	10.00	195.00
4/15/20	Payment Received	15.00	210.00
5/1/20	Payment Received	10.00	220.00
5/15/20	Payment Received	15.00	235.00
6/1/20	Payment Received	10.00	245.00
6/15/20	Payment Received	15.00	260.00
7/1/20	Payment Received	10.00	270.00
7/15/20	Payment Received	15.00	285.00
8/1/20	Payment Received	10.00	295.00
8/15/20	Payment Received	15.00	310.00
9/1/20	Payment Received	10.00	320.00
9/15/20	Payment Received	15.00	335.00
10/1/20	Payment Received	10.00	345.00
10/15/20	Payment Received	15.00	360.00
11/1/20	Payment Received	10.00	370.00
11/15/20	Payment Received	15.00	385.00
12/1/20	Payment Received	10.00	395.00
12/15/20	Payment Received	15.00	410.00
1/1/21	Payment Received	10.00	420.00
1/15/21	Payment Received	15.00	435.00
2/1/21	Payment Received	10.00	445.00
2/15/21	Payment Received	15.00	460.00
3/1/21	Payment Received	10.00	470.00
3/15/21	Payment Received	15.00	485.00
4/1/21	Payment Received	10.00	495.00
4/15/21	Payment Received	15.00	510.00
5/1/21	Payment Received	10.00	520.00
5/15/21	Payment Received	15.00	535.00
6/1/21	Payment Received	10.00	545.00
6/15/21	Payment Received	15.00	560.00
7/1/21	Payment Received	10.00	570.00
7/15/21	Payment Received	15.00	585.00
8/1/21	Payment Received	10.00	595.00
8/15/21	Payment Received	15.00	610.00
9/1/21	Payment Received	10.00	620.00
9/15/21	Payment Received	15.00	635.00
10/1/21	Payment Received	10.00	645.00
10/15/21	Payment Received	15.00	660.00
11/1/21	Payment Received	10.00	670.00
11/15/21	Payment Received	15.00	685.00
12/1/21	Payment Received	10.00	695.00
12/15/21	Payment Received	15.00	710.00
1/1/22	Payment Received	10.00	720.00
1/15/22	Payment Received	15.00	735.00
2/1/22	Payment Received	10.00	745.00
2/15/22	Payment Received	15.00	760.00
3/1/22	Payment Received	10.00	770.00
3/15/22	Payment Received	15.00	785.00
4/1/22	Payment Received	10.00	795.00
4/15/22	Payment Received	15.00	810.00
5/1/22	Payment Received	10.00	820.00
5/15/22	Payment Received	15.00	835.00
6/1/22	Payment Received	10.00	845.00
6/15/22	Payment Received	15.00	860.00
7/1/22	Payment Received	10.00	870.00
7/15/22	Payment Received	15.00	885.00
8/1/22	Payment Received	10.00	895.00
8/15/22	Payment Received	15.00	910.00
9/1/22	Payment Received	10.00	920.00
9/15/22	Payment Received	15.00	935.00
10/1/22	Payment Received	10.00	945.00
10/15/22	Payment Received	15.00	960.00
11/1/22	Payment Received	10.00	970.00
11/15/22	Payment Received	15.00	985.00
12/1/22	Payment Received	10.00	995.00
12/15/22	Payment Received	15.00	1010.00
1/1/23	Payment Received	10.00	1020.00
1/15/23	Payment Received	15.00	1035.00
2/1/23	Payment Received	10.00	1045.00
2/15/23	Payment Received	15.00	1060.00
3/1/23	Payment Received	10.00	1070.00
3/15/23	Payment Received	15.00	1085.00
4/1/23	Payment Received	10.00	1095.00
4/15/23	Payment Received	15.00	

Designed for line voltage control, filament voltage control and reduced power operation. Output voltages from 1 to 130 volts, 50/60 cycles. Vapourproof units permit 2½% of filament voltage at the tube socket to within 2½% of desired value simultaneously, with line voltage control and plate voltage control. Can be used to reduce or increase voltages on filament transformers. Taps at 25, 55, 75, 85, 100, 105, 110, 115, 120, 125 and 130 volts permit output voltages from 0 to 130 volts in 5 volt steps.

Type No.	Waive Outing	Dimensions	Weight Lbs.	List price
VA-1	150	4' x 3' x 3'	6	\$5.00
VA-2	250	4' x 3' x 3'	9	7.50
VA-3	500	6' x 4' x 4'	11	12.00
VA-4	1000	8' x 4' x 4'	16	18.00
VA-5	2000	9' x 6' x 6'	25	20.00

Type No.	Indurane Hours	D.C. m.A.	D.C. rate, Hours	Case No.	Flat plates
PA-40	10	200	110	PA-5	\$4.50
PA-41	4-28	200	100	PA-2	4.50
PA-44	30	100 max.	375	PA-3	4.50
PA-45	250	15 max.	4500	PA-4	4.50
PA-46C	100	50 mm.	2500	PA-1	4.50

Tapped for humbucking circuit. Commercial safety factors. In distance rating at max. DC.

No.	Indicative Theory	D.C. M.A.	D.C. res. Ginn	Care Co.	1st rate
PA-00	12	160	115	PA-2	55.00
PA-01	12	200	105	PA-3	8.00
PA-02	12	300	90	PA-4	12.00
PA-04	12	600	60	CA-1	20.00
PA-08	10	500	50	CA-1	35.00
PA-15	10	1000	50	CA-1	35.00

Type No.	Inductance Hrs.	D.C. M.A.	D.C. res. Ohms	Qee No.	110v price
PA-101	5-25	150	115	PA-2	\$5.00
PA-102	5-25	200	105	PA-3	8.00
PA-105	5-25	300	100	PA-4	12.00
PA-109	5-25	300	40	CA-1	20.00
PA-1C	5-25	1000	50		35.00

Primary for 105, 115, 220, 230 volts, 50/60 cycles. These transformers may be used on 25 to 43 cycles if 220 volt primary is used or 110 volts. Secondary voltage is simultaneously reduced to half.

*Two Windings.					
Tap No.	Tap Volts	Reg. Amps.	Variable Voltage	Load No.	Line Volts
PA-21	2 1/2	10	2500	6000	PA-1 \$1.55
PA-22	3 1/2	10	5000	10000	PA-2 1.60
PA-23	5	22	5000	10000	PA-3 1.65
PA-24	7 1/2	20	5000	10000	PA-4 1.65
PA-25	10	22	1000	4000	PA-5 11.0
PA-26	15	10	1500	4000	PA-6 11.0
PA-27	20	10	1500	4000	PA-7 11.0
PA-28	25	10	1500	4000	PA-8 11.0
PA-29	30	10	1500	4000	PA-9 11.0
PA-30	35	10	1500	4000	PA-10 11.0

VARIIMATCH UNITS FOR PA SERVICE

Universal units designed to match any tubes within the rated output power, to line or voice coil. Output impedance 500, 200, 60, 15, 8, 6, 3, 1.5 ohms.

come obsolete. All units carry class C current.

**VARIMATCH
DRIVER TRANSFORMERS**

PA-#	Typical Output Tube	Case
PA-14X	18, 30, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 660, 670, 680, 690, 700, 710, 720, 730, 740, 750, 760, 770, 780, 790, 800, 810, 820, 830, 840, 850, 860, 870, 880, 890, 900, 910, 920, 930, 940, 950, 960, 970, 980, 990, 1000, 1010, 1020, 1030, 1040, 1050, 1060, 1070, 1080, 1090, 1100, 1110, 1120, 1130, 1140, 1150, 1160, 1170, 1180, 1190, 1200, 1210, 1220, 1230, 1240, 1250, 1260, 1270, 1280, 1290, 1300, 1310, 1320, 1330, 1340, 1350, 1360, 1370, 1380, 1390, 1400, 1410, 1420, 1430, 1440, 1450, 1460, 1470, 1480, 1490, 1500, 1510, 1520, 1530, 1540, 1550, 1560, 1570, 1580, 1590, 1600, 1610, 1620, 1630, 1640, 1650, 1660, 1670, 1680, 1690, 1700, 1710, 1720, 1730, 1740, 1750, 1760, 1770, 1780, 1790, 1800, 1810, 1820, 1830, 1840, 1850, 1860, 1870, 1880, 1890, 1900, 1910, 1920, 1930, 1940, 1950, 1960, 1970, 1980, 1990, 2000, 2010, 2020, 2030, 2040, 2050, 2060, 2070, 2080, 2090, 2100, 2110, 2120, 2130, 2140, 2150, 2160, 2170, 2180, 2190, 2200, 2210, 2220, 2230, 2240, 2250, 2260, 2270, 2280, 2290, 2300, 2310, 2320, 2330, 2340, 2350, 2360, 2370, 2380, 2390, 2400, 2410, 2420, 2430, 2440, 2450, 2460, 2470, 2480, 2490, 2500, 2510, 2520, 2530, 2540, 2550, 2560, 2570, 2580, 2590, 2600, 2610, 2620, 2630, 2640, 2650, 2660, 2670, 2680, 2690, 2700, 2710, 2720, 2730, 2740, 2750, 2760, 2770, 2780, 2790, 2800, 2810, 2820, 2830, 2840, 2850, 2860, 2870, 2880, 2890, 2900, 2910, 2920, 2930, 2940, 2950, 2960, 2970, 2980, 2990, 3000, 3010, 3020, 3030, 3040, 3050, 3060, 3070, 3080, 3090, 3100, 3110, 3120, 3130, 3140, 3150, 3160, 3170, 3180, 3190, 3200, 3210, 3220, 3230, 3240, 3250, 3260, 3270, 3280, 3290, 3300, 3310, 3320, 3330, 3340, 3350, 3360, 3370, 3380, 3390, 3400, 3410, 3420, 3430, 3440, 3450, 3460, 3470, 3480, 3490, 3500, 3510, 3520, 3530, 3540, 3550, 3560, 3570, 3580, 3590, 3600, 3610, 3620, 3630, 3640, 3650, 3660, 3670, 3680, 3690, 3700, 3710, 3720, 3730, 3740, 3750, 3760, 3770, 3780, 3790, 3800, 3810, 3820, 3830, 3840, 3850, 3860, 3870, 3880, 3890, 3900, 3910, 3920, 3930, 3940, 3950, 3960, 3970, 3980, 3990, 4000, 4010, 4020, 4030, 4040, 4050, 4060, 4070, 4080, 4090, 4100, 4110, 4120, 4130, 4140, 4150, 4160, 4170, 4180, 4190, 4200, 4210, 4220, 4230, 4240, 4250, 4260, 4270, 4280, 4290, 4300, 4310, 4320, 4330, 4340, 4350, 4360, 4370, 4380, 4390, 4400, 4410, 4420, 4430, 4440, 4450, 4460, 4470, 4480, 4490, 4500, 4510, 4520, 4530, 4540, 4550, 4560, 4570, 4580, 4590, 4600, 4610, 4620, 4630, 4640, 4650, 4660, 4670, 4680, 4690, 4700, 4710, 4720, 4730, 4740, 4750, 4760, 4770, 4780, 4790, 4800, 4810, 4820, 4830, 4840, 4850, 4860, 4870, 4880, 4890, 4900, 4910, 4920, 4930, 4940, 4950, 4960, 4970, 4980, 4990, 5000, 5010, 5020, 5030, 5040, 5050, 5060, 5070, 5080, 5090, 5100, 5110, 5120, 5130, 5140, 5150, 5160, 5170, 5180, 5190, 5200, 5210, 5220, 5230, 5240, 5250, 5260, 5270, 5280, 5290, 5300, 5310, 5320, 5330, 5340, 5350, 5360, 5370, 5380, 5390, 5400, 5410, 5420, 5430, 5440, 5450, 5460, 5470, 5480, 5490, 5500, 5510, 5520, 5530, 5540, 5550, 5560, 5570, 5580, 5590, 5600, 5610, 5620, 5630, 5640, 5650, 5660, 5670, 5680, 5690, 5700, 5710, 5720, 5730, 5740, 5750, 5760, 5770, 5780, 5790, 5800, 5810, 5820, 5830, 5840, 5850, 5860, 5870, 5880, 5890, 5900, 5910, 5920, 5930, 5940, 5950, 5960, 5970, 5980, 5990, 6000, 6010, 6020, 6030, 6040, 6050, 6060, 6070, 6080, 6090, 6100, 6110, 6120, 6130, 6140, 6150, 6160, 6170, 6180, 6190, 6200, 6210, 6220, 6230, 6240, 6250, 6260, 6270, 6280, 6290, 6300, 6310, 6320, 6330, 6340, 6350, 6360, 6370, 6380, 6390, 6400, 6410, 6420, 6430, 6440, 6450, 6460, 6470, 6480, 6490, 6500, 6510, 6520, 6530, 6540, 6550, 6560, 6570, 6580, 6590, 6600, 6610, 6620, 6630, 6640, 6650, 6660, 6670, 6680, 6690, 6700, 6710, 6720, 6730, 6740, 6750, 6760, 6770, 6780, 6790, 6800, 6810, 6820, 6830, 6840, 6850, 6860, 6870, 6880, 6890, 6900, 6910, 6920,	

PA VARIMATCH TRANSFORMERS

UTC PA Verinmatch transformers are designed with universal tapped primaries which will match practically any PA output tubes. The available connections for the FVM 1, 2 and 3 are as follows:

Pr. Impedance	Join	Connect to
14,000 ohms	3 to 4	1-59 (P-B-P)
10,000 ohms	2 to 4 or 1 to 6	1-59 (P-B-P)
7,000 ohms	1 to 4	4-56 (P-B-P)
2,000 ohms	1 to 4	2-6 (P-B)
6,000 ohms	1 to 4, 6 to 8	2-5,8 (P-B-P)
5,000 ohms	2 to 4, 6 to 8	3-5,7 (P-B-P)
3,000 ohms	1 to 4, 6 to 8	3-5,7 (P-B-P)

Connect to	See Impedance
A & D	16 ohms
A & C	8 ohms
B & D	3 ohms
A & B	1.5 ohms
C & D	1.5 ohms

Typical tube combinations that are taken care of by these primary impedances are:

14,000 ohms—Pushpull 47E, 2A5's, 42's, and other similar pentodes

10,000 ohms—Pushpull 59 triodes, 71A's, 6B5's, 6F6 pentodes, and Class C 6A6's, 19, 53, 43, 79, 89

7,000 ohms—Pushpull 250's, 2A5's, 43's, 2A5 triodes, 41 triodes, etc.

6,000 ohms—Single 2A5 pentode, 42 pentode, 31 triode, 33 pentode, 47 pentode, 69 pentode

5,000 ohms—Class B pushpull 46's, 58's, 6F6's fixed bias

5,000 ohms—Pushpull self bias 2A5's, 6A3's, 6B5's at 250 volts 46's at 300 volts

3,000 ohms—Pushpull fixed bias 2A5's, 6A3's

UTC Line Variomach Transformers are designed to match voice coil impedances to a 500 ohm line, where the speakers are located at some distance from the audio amplifier. The voice coil impedances available on these units range from 1 to 30 ohms, so that any speaker or group of speakers can be matched (see chart). Where speakers are to be connected in groups to one transformer, it is always preferable that parallel connection be used to eliminate the possibility of multiple resonance. It is also important to remember that if two speakers of different impedances are connected in parallel, the lower impedance speaker will develop greater heat.



PA VARIMATCH OUTPUTS

Universal units designed to match any tubes within the rated output power, to line or voice coil. Output impedance 500, 200, 60, 15, 8, 6, 3, 1.5 ohms.

Type No.	Typical Tubes	Case No.	Est. Price
PWM-1	42, 43, 46, 47, 7A3, 6A6, 6P7, 21L5	PA-1	\$5.00
PWM-2	44, 45, 2A3, 6B6, 6V6, 6D5	PA-2	\$10.00
PWM-3	44A, 500, 200A, 6D5, 801, 807	PA-3	\$2.50
PWM-4	800A, 801A, 807A, 4-61A, 8A5A	PA-4	\$2.00
PWM-5	211, 252A, 203A, 635A, 4-61A, 8A5A	CA-1	\$2.50

LINE VARMATCH TRANSFORMERS

UFC Line Variomatch Transformers are designed to match voice coil impedances to a 500 ohm line, where the speakers are located at some distance from the audio amplifier. The voice coil impedances from the audio amplifier. The voice coil impedances, available on these units range from 1 to 30 ohms, so that any speaker or group of speakers can be matched (see chart). Where speakers are to be connected in groups to one transformer, it is always preferable that parallel connection be used to eliminate the possibility of multiple resonance. It is important to remember that if two speakers of different impedances are connected in parallel, the lower impedance speaker will develop greater power. If connected in series, the higher impedance speaker will develop greater power.

VARIMATCH LINE TO VOICE COIL TRANSFORMERS

The UTC VARIMATCH line-to-voice coil transformers will match any voice coil or group of voice coils to a 500 ohm line. More than one voice coil combination can be obtained from the LVN-3, LVNM-3, LVN-3, and the actual impedances are as follows:

Type No.	Audio Wavet	Primary Impedance	Secondary Impedance	Coef. No.	Int. Error
LVM-1	15	500 ohms	2 to 75 ohms	P-1	14.65
LVM-2	40	500 ohms	2 to 75 ohms	P-2	7.65
LVM-3	75	500 ohms	2 to 75 ohms	P-3	10.65

VARIMATCH LINE AUTOFORMERS

UTC Variatch Line Autotransformers will match one to ten 500 ohms or LVN-500 ohm windings to the 500 ohm output of an autotransformer. The LVN-10 to LVN-14 autotransformers have impedances of 500, 250, 167, 125, 100, 83, 71, 62, 50.

Type No.	Audio Waits	One No.	Line Type
LVM-10	15	PA-1	54.50
LVM-11	20	PA-2	7.00
LVM-12	60	PA-3	10.00
LVM-13	125	PA-4	18.00
LVM-14	300	CA-1	26.00

TUBE COMBINATIONS

VM-0

[illegible]

VM-1

	Mediator	Mediator	AF	Class C
	PhaVsYln	PhaVsYln	Doublet	Doublet
	With	With	Intact	Intact
Mediator T-chain				
2.3.5 AB	3000 ohms	300 V.	68 V.	15 W.
2.4.5 AB	3200 ohms	275 V.	- 69 V.	20 W.
1.62 ^a				
1.62 ^a	8000 ohms	42.5 V.	- 50 V.	23 W.
53 or 64.6				
2.5.5 or 64.6 ^a	10000 ohms	300 V.	25 W.	50 W.
4.5 ^a	5000 ohms	300 V.	10 W.	20 W.
4.5 ^a	5000 ohms	0	20 W.	40 W.
2.5.5 or 64.6 ^a	5000 ohms	450 V.	0	25 V.
2.5.5 ^a Class AB ¹	6500 ohms	400 V.	- 23 V.	50 W.
4.1	7000 ohms	42.5 V.	- 5 V.	28 W.
				56 W.

VIM-2

Mediator Tubes	Land Replicate	Plant Vials	Yield	AF Percent Biomass
2.5% or 6.6%	5000 ohms	300 V.	20 W.	40 W.
2.46%	5000 ohms	450 V.	0	23 W.
1.46%	5000 ohms	450 V.	0	30 W.
2.5% Class AB ₂	5000 ohms	400 V.	0	50 W.
1.65% or 21%	8000 ohms	425 V.	-23 V.	60 W.
801%	10000 ohms	600 V.	-50 V.	25 W.
2.5% AB ₂	3800 ohms	400 V.	-75 V.	45 W.
4.5% AB ₁	3300 ohms	400 V.	-23 V.	60 W.
	6100 ohms	500 V.	0	80 W.
	2220	40 W.	120 W.	

VM-3

	Mediator's Tasks	Task Frequency	Task Importance	Task Value	AF of Task Importance	AF of Task Value
4.6*	3000 others	450 V.	-20 V.	50 V.	120 W.	120 W.
2.615*, A ₂	3800 others	400 V.	-23 V.	60 V.	120 W.	120 W.
4.615*, A ₃	1900 others	400 V.	-23 V.	120 W.	240 W.	240 W.
RE 30% or 80*	1250 others	1000 V.	-55 V.	120 W.	240 W.	240 W.
RE 30% or 80*	6400 others	750 V.	-40 V.	90 V.	180 W.	180 W.
35 T*	10000 others	1000 V.	-28 V.	125 V.	250 W.	250 W.
RE 18*	6000 others	750 V.	-40 V.	65 V.	180 W.	180 W.
RE 18*	10000 others	750 V.	-40 V.	65 V.	180 W.	180 W.
RE 31*	12000 others	1000 V.	-50 V.	100 W.	200 W.	200 W.
845* AB	13600 others	1000 V.	0	110 W.	220 W.	220 W.
RE 31*	4600 others	1000 V.	-75 V.	75 V.	180 W.	180 W.
845* AB	8800 others	1250 V.	-125 V.	105 W.	210 W.	210 W.
845* AB	8000 others	850 V.	-68 V.	80 V.	180 W.	180 W.
845* AB	8800 others	850 V.	-68 V.	80 V.	180 W.	180 W.
845* AB	8800 others	860 V.	-70 V.	70 V.	180 W.	180 W.
845* AB	8800 others	860 V.	-70 V.	70 V.	180 W.	180 W.
845* AB	12000 others	800 V.	-40 V.	70 W.	140 W.	140 W.
809*	5300 others	500 V.	0	69 W.	120 W.	120 W.
809*	8400 others	750 V.	3 V.	100 W.	200 W.	200 W.
7230	8600 others	750 V.	0	70 W.	140 W.	140 W.
7230	16000 others	750 V.	0	100 W.	210 W.	210 W.

VM-4

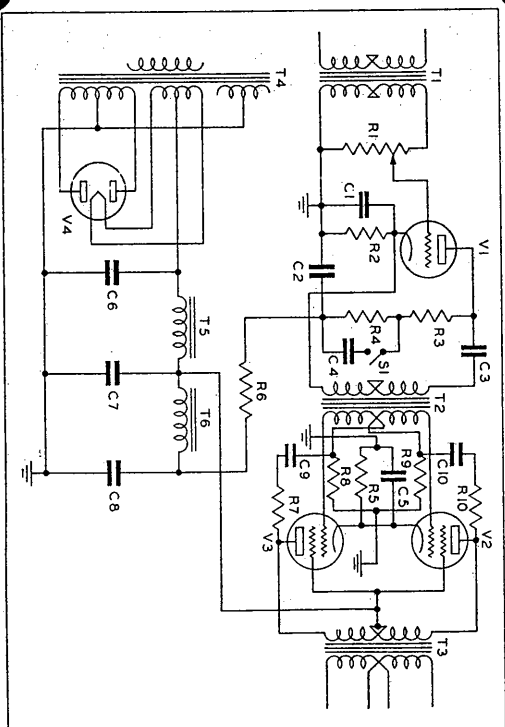
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VM-1

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HIGH FIDELITY FOR PHONO-RADIO SERVICE

AN IDEAL F-M AMPLIFIER

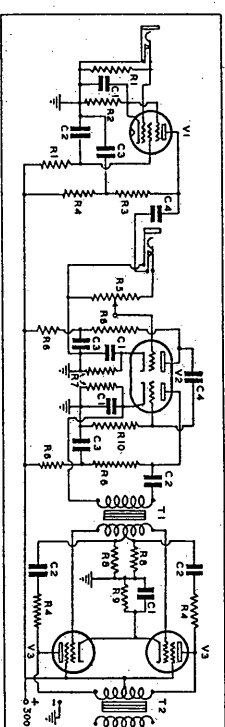


Medium power output and gain requirements are found in home use. The circuit shown is designed specifically for such service and affords an absolute minimum of harmonic distortion and noise with wide frequency response.

The undistorted power output of this amplifier is 12 watts and the gain is approximately 50 DB. A low impedance pickup is connected to the grid of the first tube can be used if a crystal pickup is employed. Input transformer or direct connection to the grid of the first tube can be used if a crystal pickup is employed. Input transformer or direct connection to the grid of the first tube can be used if a crystal pickup is employed.

The circuit is simple, using a simple 6C5 triode driving push pull 6L5s in pure class A operation. Feedback is employed to reduce the effective plate resistance and harmonic distortion. Two stage filtering, plus a tri-dioley shielded input transformer assure extremely low hum level. Switch S1, when closed, effects a 6 DB rise at the low frequency end to compensate for the low frequency cutoff of disc records.

MOBILE AMPLIFIER



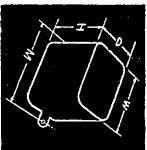
COMPONENTS

V1	PA-13
V2	PA-13
V3	PA-13
	10 Mid
	25 Mid
	1 Mid
	21 Mid
	2 Mid
	2500 ohms
	2500 ohms
	25 Meg
	1 Meg
	5 Meg
	2500 ohms
	2000 ohms
	10000 ohms
	175 ohms, 25 W
	5 Meg
	6175
	6FG
	6LGG

The circuit shown illustrates a typical amplifier designed for mobile service. 6 volt DC is used for the filaments and a McJury vibropack of 300 volt—150 mA output for power supply. The circuit effects a gain of 120 DB and a power output of 12 watts. Wherever it is desired to use this unit for modular service instead of PA service, a VM-0 or VM-1 should be used as the output transformer.

UL7 Special-Use transformers represent unrepresented value. These items are specifically designed for amateur and professional PA service. For commercial equipment the PA or LS series of units are recommended. The Special Series units are installed in a rich, commercial type gray, chrome enamel. Small units are paired with humidity-proof, weather-resistant cabinets. Larger units are available in rugged, heavy-duty steel cabinets. A recessed terminal strip is provided permitting above chassis or breadboard wiring component in modern drive cases. A recessed terminal strip is provided permitting above chassis or breadboard wiring in addition to standard chassis type wiring. The universal windings provided on input, matching and output transformers assure a maximum of flexibility. Modulator output units will carry the DC output in the class C stage and will match practically any audio tubes from any RF band within the power rating of the transformer. Large components are located in formed cases with top or bottom mounting and leaves for good ventilation.

PULTE Special-Use transformers represent unrepresented value. These items are specifically designed for amateur and professional PA service. For commercial equipment the PA or LS series of units are recommended. The Special-Series units are installed in a rich, commercial type gray, chrome enamel. Small units are paired with humidity-proof, cooling component in modern dance cases. A recessed terminal strip is provided permitting above chassis or breadboard wiring in addition to standard chassis type wiring. The universal windings provided on input, matching and output transformers assure a maximum of flexibility. Modulator output units will carry the DC ground in the class C stage and will match practically any audio tubes from any RF band within the power rating of the transformer. Large components are located in formed cases with top or bottom mounting and leaves for good ventilation.



CLASS A INPUT TRANSFORMERS

CLASS A INPUT TRANSFORMERS				
Type No.	Application	Ratio	Core	Net Price
S-1	1 plate to 1 grid	3½ : 1	G-2	\$1.55
S-2	1 plate to 2 grids	2 : 1	G-2	\$1.55
S-3	1 plate to 2 grids	2 : 1	G-3	1.10
S-4	1 plate to 2 grids wide range response	1 : 1	G-1	2.10
S-5	Shaper for double but- tonged ham-bucking type	16 : 1	G-2	1.80
S-6	Shaper for double but- tonged ham-bucking type	16 : 1	G-1	1.20
S-7	Single plate and single grid to one or two grids	3 : 1 16 : 1	G-2	2.10

MATCHING TRANSFORMERS					
Type No.	Application	Pri. Ohms	Sec. Ohms	Case	Net Price
S-11	Single 5 ϕ , 6C6 tube 6C5 or similar tube to line.	10,000	220/500	G-2	\$1.00
S-12	Line to speaker 15 watts.	300, 2000, 4000	2, 4, 8, 15	G-2	2.10
S-13	Line to speaker 30 watts.	500, 2000, 4000	2, 4, 8, 15	G-4	2.70

MATCHING TRANSFORMERS					
Type No.	Application	Pri. Ohms	Sec. Ohms	Case	Net Price
S-11	Single 5 ϕ , 6C6 tube 6C5 or similar tube to line.	10,000	220/500	G-2	\$1.00
S-12	Line to speaker 15 watts.	300, 2000, 4000	2, 4, 8, 15	G-2	2.10
S-13	Line to speaker 30 watts.	500, 2000, 4000	2, 4, 8, 15	G-4	2.70

[illegible][illegible][illegible][illegible]

UNIVERSAL DRIVER TRANSFORMERS
(See Modulator chart for tube types)

Type No.	Application	Case	Net Price
S-8	Single driver plate to pushpull grids	G-3	\$1.85
S-3	Pushpull driver plate to grids	G-4	2.15
S-10	Pushpull 5E 6C6 triode, 6C5 or similar plates to 45V, 2A3's or 6L6's, self or fixed bias.	G-3	2.10

Any modulator tubes to any RF load. (See chart)

UNIVERSAL OUTPUT TRANSFORMERS			
Any modulator tubes to any RF load. (See chart)			
Type No.	Audio Power	Case	Net Price
S-18	12 watts	G-3	\$2.11
S-19	30 watts	G-4	2.88
S-20	55 watts	G-5	3.99
S-21	110 watts	G-7	5.49
S-22	250 watts	G-9	8.49

S-18 — 12 WATTS MAX.

S-18 — 12 WATTS MAX.
DRIVER TUBES: In the combinations shown below, typical suitable driver tubes are: 27, 30, 37, 49, 53, 56, 76, 79, 89, 6A6, 6C5, 6C6 triode, 6E6, 6N7.

DRIVER	Tonnels 1956-57	P.M. 1958-59	MODULAR STAGE		Ride Value 1956-57
			W.M. 1958-59	P.P. Load	
S-2 G-G	65	1.6	14,000	250	27
S-4 G-G	19, 116G	2.1	10,000	335	0
S-4 G-G	30	2.5	10,000	180	10
S-4 G-G	49	3.5	12,000	180	0
S-4 G-G	26G	3.5	10,000	180	0
S-4 G-G	26G	4.2	10,000	180	0
S-4 G-G	26G	4.2	12,000	180	7.5
S-4 G-G	67G	7	4,000	335	13.5
S-4 G-G	79, 67G	8	14,000	250	0
S-4 G-G	64G, 63G	8	10,000	250	0
S-4 G-G	53, 64G	10	10,000	300	0
S-2 G-G	23, 24.5	10	5,000	325	750 ohms
S-2 G-G	64G, 63G	10	5,000	300	0
S-4 G-G	65	10	5,000	330	0
S-4 G-G	45	10	3,000	275	770 ohms
SINGLE STAGE					74. Load
	43, 45, 59, 71A, 12A5, 23A5, 22A7		4,000 ohms		0
	35, 42, 46, 47, 49, 83, 74.5, 87.5, 835		10,000 ohms		0
	35, 89, 92, 92.5		8,000 ohms		0
	10, 41, 47, 63G, 635		10,000 ohms		0
	38, 12A7		14,000 ohms		0

rhode, 5N7, may be substituted

MODIFICATION TABLE									
DRIVER		SPEC.		P.P. TUBES		WELLS		PLATE	
Tube of Tubes	Treat.	Q-G	Forma	Q-G	Q-G	Q-G	Q-G	Q-G	Q-G
6C5	S-10	Q-G	Forma	676	13	6,000	300	20	20
6C5	S-8	Q-G	Forma	693	13.5	6,000	300	20	20
6C5	S-10	Q-G	Forma	723, 660	15	3,000	325	68	68
6C5	S-10	Q-G	Forma	725, 742	10	10,000	375	340	340
2A5	S-8	Q-G	Forma	725, 742	18	6,000	350	38	38
89	S-8	Q-G	Forma	725, 742	19	5,000	300	0	0
45	S-8	Q-G	Forma	656, 685	25	8,000	425	150	150
45	S-8	Q-G	Forma	656, 685	25	8,000	425	0	0
45	S-8	Q-G	Forma	656, 685	28	7,000	425	5	5
6C5	S-10	Q-G	Forma	656, 685	30	6,500	400	23	23

	MODULATOR
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[illegible]

1

P.P. 3-22		MODULATION STAGE									
P.P. 3-22 A-5 Terminal Sec. Term.	P.P. 3-22 Rubber	Watts Output	P.P. 3-22 Load	Plate Vols	Plate Treat.	Bias Vols	Bias Treat.				
2-2	72-50	70	12000	800	S-46	0	S-51				
3-1	72-50	70	12000	800	S-46	40	S-51				
3-2	72-50	70	12000	800	S-46	40	S-51				
3-3	72-50	70	12000	800	S-46	40	S-51				
3-4	72-50	70	12000	800	S-46	40	S-51				
3-5	72-50	70	12000	800	S-46	40	S-51				
1-1	807	80	6560	600	S-47	0	S-51				
1-2	807	80	6560	600	S-47	40	S-51				
1-3	807	80	6560	600	S-47	40	S-51				
1-4	807	80	6560	600	S-47	40	S-51				
1-5	807	80	6560	600	S-47	40	S-51				
1-6	807	80	6560	600	S-47	40	S-51				
1-7	807	80	6560	600	S-47	40	S-51				
1-8	807	80	6560	600	S-47	40	S-51				
1-9	807	80	6560	600	S-47	40	S-51				
1-10	807	80	6560	600	S-47	40	S-51				
1-11	807	80	6560	600	S-47	40	S-51				
1-12	807	80	6560	600	S-47	40	S-51				
1-13	807	80	6560	600	S-47	40	S-51				
1-14	807	80	6560	600	S-47	40	S-51				
1-15	807	80	6560	600	S-47	40	S-51				
1-16	807	80	6560	600	S-47	40	S-51				
1-17	807	80	6560	600	S-47	40	S-51				
1-18	807	80	6560	600	S-47	40	S-51				
1-19	807	80	6560	600	S-47	40	S-51				
1-20	807	80	6560	600	S-47	40	S-51				
1-21	807	80	6560	600	S-47	40	S-51				
1-22	807	80	6560	600	S-47	40	S-51				
1-23	807	80	6560	600	S-47	40	S-51				
1-24	807	80	6560	600	S-47	40	S-51				
1-25	807	80	6560	600	S-47	40	S-51				
1-26	807	80	6560	600	S-47	40	S-51				
1-27	807	80	6560	600	S-47	40	S-51				
1-28	807	80	6560	600	S-47	40	S-51				
1-29	807	80	6560	600	S-47	40	S-51				
1-30	807	80	6560	600	S-47	40	S-51				
1-31	807	80	6560	600	S-47	40	S-51				
1-32	807	80	6560	600	S-47	40	S-51				
1-33	807	80	6560	600	S-47	40	S-51				
1-34	807	80	6560	600	S-47	40	S-51				
1-35	807	80	6560	600	S-47	40	S-51				
1-36	807	80	6560	600	S-47	40	S-51				
1-37	807	80	6560	600	S-47	40	S-51				
1-38	807	80	6560	600	S-47	40	S-51				
1-39	807	80	6560	600	S-47	40	S-51				
1-40	807	80	6560	600	S-47	40	S-51				
1-41	807	80	6560	600	S-47	40	S-51				
1-42	807	80	6560	600	S-47	40	S-51				
1-43	807	80	6560	600	S-47	40	S-51				
1-44	807	80	6560	600							

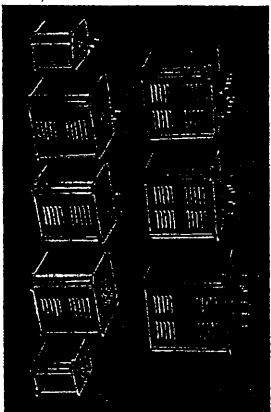
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S-22 — 250 WATTS MAX.									
P.P. 212 Tubes	Watts Output	P.P. Load	Plate V.	Grid V.	Plate V.	Plate V.	Plate V.	Plate V.	Plate V.
3-3	RK-21	17000	1250	S-47	0	5.5	5.5	5.5	5.5
*	507	135	12000	1250	S-47	110	S-52	110	S-52
*	507	200	20000	2000	S-50	180	S-52	180	S-52
2-2	72-40	175	6800	1000	S-47	0	5.5	5.5	5.5
1-1	135	200	9000	1250	S-47	50	S-51	50	S-51
2-2	100 H-100	250	12000	1500	S-47	50	S-51	50	S-51
2-2	100 H-100	250	5000	5000	S-47	0	5.5	5.5	5.5
2-2	100 H-100	250	7200	1250	S-47	0	5.5	5.5	5.5
1-1	100 L-1	170	5000	1000	S-47	90	S-51	90	S-51
2-2	100 L-1	200	7200	1250	S-47	112	S-52	112	S-52
2-2	25-120	150	4800	750	S-45	0	5.5	5.5	5.5
2-2	25-120	200	6800	1000	S-47	0	5.5	5.5	5.5
2-2	25-120	200	9000	1250	S-47	0	5.5	5.5	5.5
2-2	25-120	200	11000	1500	S-47	210	S-52	210	S-52
1-1	205	200	8500	1000	S-47	35	S-51	35	S-51
1-1	205	200	9000	1250	S-47	45	S-51	45	S-51
2-2	203	250	6900	1000	S-47	0	5.5	5.5	5.5
2-2	203	250	6700	1100	S-47	0	5.5	5.5	5.5
1-1	211	250	6900	1000	S-47	7	5.51	7	5.51
1-1	211	250	9000	1250	S-47	100	S-51	100	S-51
1-1	HK-354	220	15000	1500	S-49	100	S-51	100	S-51
2-2	608	195	12700	1250	S-47	15	S-51	15	S-51
2-2	608	195	7800	1000	S-47	35	S-51	35	S-51
2-2	608	200	9000	1250	S-47	0	5.5	5.5	5.5
2-2	638	250	6900	1000	S-47	0	5.5	5.5	5.5
2-2	638	250	1250	S-47	0	5.5	5.5	5.5	5.5

Reverse S-52, using 1-2 for plates and P-1 for grids.

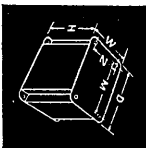
SPECIAL SERIES POWER EQUIPMENT

UTC Special Series power supply components are designed specifically for use in the construction of portable and mobile equipment. They are based on such applications and recommended for intermediate service. For commercial applications, 1A or 1S grade components should be employed. A rugged and accurate on-line power transformer to be used with many circuits and types of tubes.



CASE SIZES

Type	H	W	D	M	N
G-5	3 1/2	3 1/2	4 1/2	3 1/2	2 1/2
G-6	4 1/2	3 1/2	5 1/2	4 1/2	3 1/2
G-7	5 1/2	4 1/2	6 1/2	5 1/2	4 1/2
G-8	6 1/2	5 1/2	7 1/2	6 1/2	5 1/2
G-9	7 1/2	6 1/2	8 1/2	7 1/2	6 1/2
G-10	8 1/2	7 1/2	9 1/2	8 1/2	7 1/2
G-11	9 1/2	8 1/2	10 1/2	9 1/2	8 1/2
S-50	11 1/2	7 1/2	9 1/2	8 1/2	6 1/2



FLITER, SWINGING, AND AUDIO CHOSES

Type	Induct-	Current	Resistance	Case	Net
S-21	Audio	500 Hy.	5 Mc.	G-2	1.15
S-22	P.P.	30 Hy.	3 Mc.	G-2	1.30
S-23	Audio	30 Hy.	3 Mc.	G-2	1.30
S-24	Audio	30 Hy.	3 Mc.	G-2	1.30
S-25	Audio	30 Hy.	3 Mc.	G-2	1.30
S-26	Audio	30 Hy.	3 Mc.	G-2	1.30
S-27	Audio	30 Hy.	3 Mc.	G-2	1.30
S-28	Audio	30 Hy.	3 Mc.	G-2	1.30
S-29	Audio	30 Hy.	3 Mc.	G-2	1.30
S-30	Audio	30 Hy.	3 Mc.	G-2	1.30
S-31	Audio	30 Hy.	3 Mc.	G-2	1.30
S-32	Audio	30 Hy.	3 Mc.	G-2	1.30
S-33	Audio	30 Hy.	3 Mc.	G-2	1.30
S-34	Audio	30 Hy.	3 Mc.	G-2	1.30
S-35	Audio	30 Hy.	3 Mc.	G-2	1.30
S-36	Audio	30 Hy.	3 Mc.	G-2	1.30
S-37	Audio	30 Hy.	3 Mc.	G-2	1.30
S-38	Audio	30 Hy.	3 Mc.	G-2	1.30
S-39	Audio	30 Hy.	3 Mc.	G-2	1.30
S-40	Audio	30 Hy.	3 Mc.	G-2	1.30

UNIVERSAL BIAS TRANSFORMERS

Type	Application	D.C.	Case	Net
S-41	With any any bias voltage from 15 to 100	200 Ma.	G-5	1.15
S-42	With any any bias voltage from 15 to 100	200 Ma.	G-5	1.15
S-43	With any any bias voltage from 15 to 100	200 Ma.	G-5	1.15
S-44	With any any bias voltage from 15 to 100	200 Ma.	G-5	1.15
S-45	With any any bias voltage from 15 to 100	200 Ma.	G-5	1.15
S-46	With any any bias voltage from 15 to 100	200 Ma.	G-5	1.15
S-47	With any any bias voltage from 15 to 100	200 Ma.	G-5	1.15
S-48	With any any bias voltage from 15 to 100	200 Ma.	G-5	1.15
S-49	With any any bias voltage from 15 to 100	200 Ma.	G-5	1.15
S-50	With any any bias voltage from 15 to 100	200 Ma.	G-5	1.15

COMBINED PLATE AND FILAMENT TRANSFORMERS

Type	High Voltage	D.C. Volts	Rectifier	Fil. #1	Fil. #2	Case	Net
S-38	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-39	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-40	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-41	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-42	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-43	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-44	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-45	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-46	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-47	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-48	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-49	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-50	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40

PLATE TRANSFORMERS

Type	High Voltage	D.C. Volts	Rectifier	Fil. #1	Fil. #2	Case	Net
S-41	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-42	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-43	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-44	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-45	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-46	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-47	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-48	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-49	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40
S-50	400-400-0	400/210	SV-2A	2.5V C.T.	2.5V C.T.	G-6	1.40

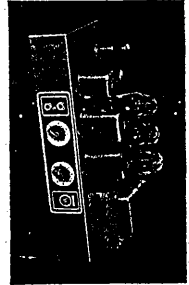
SINGLE SECONDARY FILAMENT TRANSFORMERS

Type	Secondary	Current	Insulation	Case	Net
S-41	2.5 VCT	10 A.	1500 V.	G-3	1.15
S-42	2.5 VCT	10 A.	1500 V.	G-3	1.15
S-43	2.5 VCT	10 A.	1500 V.	G-3	1.15
S-44	2.5 VCT	10 A.	1500 V.	G-3	1.15
S-45	2.5 VCT	10 A.	1500 V.	G-3	1.15
S-46	2.5 VCT	10 A.	1500 V.	G-3	1.15
S-47	2.5 VCT	10 A.	1500 V.	G-3	1.15
S-48	2.5 VCT	10 A.	1500 V.	G-3	1.15
S-49	2.5 VCT	10 A.	1500 V.	G-3	1.15
S-50	2.5 VCT	10 A.	1500 V.	G-3	1.15

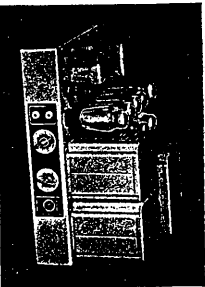
MULTIPLE SECONDARY FILAMENT WINDINGS

Type	Fil. 1	Fil. 2	Fil. 3	Fil. 4	Fil. 5	Case	Net
S-41	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	G-3	1.15
S-42	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	G-3	1.15
S-43	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	G-3	1.15
S-44	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	G-3	1.15
S-45	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	G-3	1.15
S-46	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	G-3	1.15
S-47	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	G-3	1.15
S-48	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	G-3	1.15
S-49	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	G-3	1.15
S-50	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	2.5 VCT-5A	G-3	1.15

SPECIAL SERIES Amplifier Kits for Grid Cathode Modulation and PA.



S-26



S-110

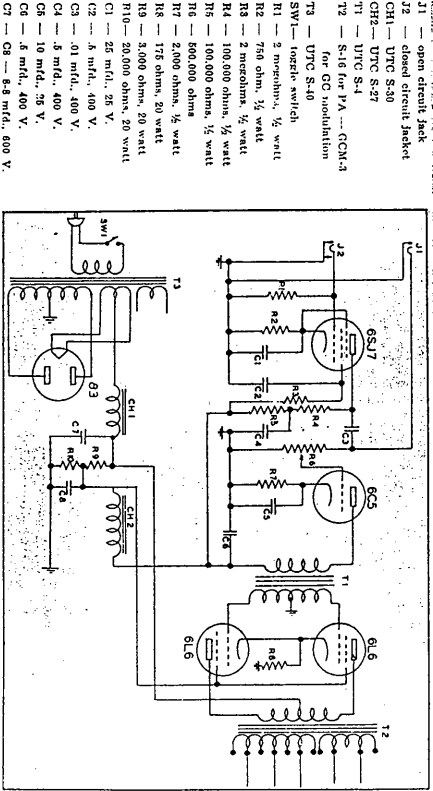
The S-26 audio amplifier has been designed specifically for the high power modulator field. This unit employs 6L6 tubes in the output stage to obtain 25 watts of undistorted power, sufficient for modulating up to 500 watts RF input. The circuit is simple but highly efficient, effecting sufficient gain in three stages to operate from crystal or similar microphones. The tone and volume controls are mounted with the dual high impedance, high and low gain input jacks on one etched panel. A universal output plug is provided on the back of the chassis. The power supply is unusually rugged and employs a two-section filter for optimum regulation and hum reduction. Supplied with New GCM Type Modulation Transformer. The tubes required are one 6L7, one 6CS, two 6L6's and one 83. The S-26 kit is supplied completely mounted, ready to drive, less tubes, including all components, accessories, dust cover, etched plate, etc. Size 17" long x 7" wide x 9 1/4" high. Weight 82 pounds. Net Price \$320.00

S-25A—Same as above but for PA service with a universal line and voice coil output transformer. Net \$30.00

S-110 — Same as above but with universal output transformer for plate modulation. Net \$52.50

S-100A—Same as above but for PA service. Supplied with a universal line and voice coil output transformer. Net \$55.00

TYPICAL SPECIAL SERIES AMPLIFIER FOR PA OR MODULATION TRANSFORMER FOR PLATE MODULATION. 20 WATTS OUTPUT. DUAL INPUT. GAIN FOR CRYSTAL MIKE



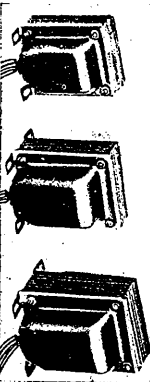


RADIO SET REPLACEMENT TRANSFORMERS



The new UTC replacement type transformers represent the culmination of years of development in this field. All units are vacuum sealed against humidity with special impregnating materials to prevent corrosion and electrolysis. Shells and brackets are finished in attractive high lustre black enamel.

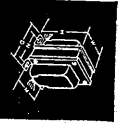
The new UTC shields and universal brackets employed make possible a latitude in mounting dimensions never approached heretofore. Using VariTap coil construction a minimum number of transformers have been developed to cover any requirement in the replacement field.



Through unique construction the five UTC VariTap Duplicate replacement transformers will service as many types of radio receivers as the 15 or 20 units more customarily employed for each service. The universal shield may be used for upright or horizontal mounting, or simply mated for flush mounting.



UTC vertical power transformers are unusually attractive in appearance, having smooth drawn cases finished in high lustre black enamel. The VariTap coil structure assures flexibility of application in any type of receiver designed to take the place of 5 to 8 units customarily employed for equivalent service.



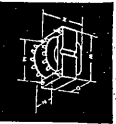
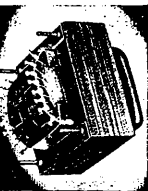
VARI-TAP, DUPLICATE, REPLACEMENT POWER TRANSFORMERS

VERTICAL SHIELDED POWER TRANSFORMERS FOR RECEIVERS AND AMPLIFIERS

Type No.	High Volt. Pri.	Ph. 1	Ph. 2	W	D	H	N	N	Wt. Lbs.	Vol. Lts.
R-1	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25
R-2	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25
R-3	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25
R-4	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25
R-5	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25

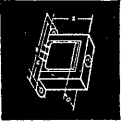
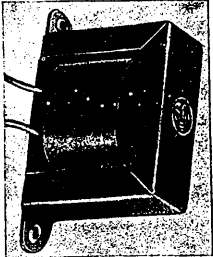
Type No.	High Volt. Pri.	Ph. 1	Ph. 2	W	D	H	N	N	Wt. Lbs.	Vol. Lts.
R-1	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25
R-2	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25
R-3	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25
R-4	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25
R-5	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25

VARI-TAP FLUSH TYPE POWER TRANSFORMERS



The UTC flush type transformers are bulky units designed for low temperature rise and good regulation. By employing a variety universal coil structure, through out to sturdy types the five units described take the place of 12 to 15 units normally found in a flush type series.

Type No.	High Volt. Pri.	Ph. 1	Ph. 2	W	D	H	N	N	Wt. Lbs.	Vol. Lts.
R-1	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25
R-2	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25
R-3	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25
R-4	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25
R-5	350-0	6V-3A	0.3 VCT	3	3 1/2	2 1/2	1 1/2	1 1/2	1.25	1.25



UTC filter chokes are vacuum sealed against humidity with special impregnating materials to prevent corrosion and electrolysis. Standard black enamel mounting brackets and universal shields are completely interchangeable with any type of receiver designed to take the place of 5 to 8 units customarily employed for equivalent service.

FILTER AND AUDIO CHOKES

Type No.	High Volt. Pri.	Current	W	D	H	N	N	Wt. Lbs.	Vol. Lts.
R-1	350-0	6V-3A	300	2 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-2	350-0	6V-3A	300	2 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-3	350-0	6V-3A	300	2 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-4	350-0	6V-3A	300	2 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-5	350-0	6V-3A	300	2 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25



The VariTap Duplicate audio units represent the same in replacement of the customarily employed units. They are vacuum sealed against humidity with special impregnating materials to prevent corrosion and electrolysis. Standard black enamel mounting brackets and universal shields are completely interchangeable with any type of receiver designed to take the place of 5 to 8 units customarily employed for equivalent service.

VARI-TAP, DUPLICATE AUDIO TRANSFORMERS AND FILTER CHOKES

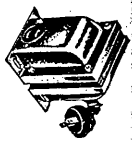
Type No.	Application	Description	Ph. 1	Ph. 2	W	D	H	N	N	Wt. Lbs.	Vol. Lts.
R-1	1 plate to 1 grid	35:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-2	1 plate to 2 grids	21:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-3	2 plates to 2 grids	10:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-4	1 plate to 1 grid	35:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-5	1 plate to 1 grid	35:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25

UTC CHANNEL FRAME AUDIO TRANSFORMERS

Type No.	Application	Description	Ph. 1	Ph. 2	W	D	H	N	N	Wt. Lbs.	Vol. Lts.
R-1	1 plate to 1 grid	4:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-2	1 plate to 2 grids	2:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-3	2 plates to 2 grids	1:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-4	1 plate to 1 grid	4:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-5	1 plate to 1 grid	4:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25

CHANNEL FRAME FILAMENT TRANSFORMERS

Type No.	Application	Description	Ph. 1	Ph. 2	W	D	H	N	N	Wt. Lbs.	Vol. Lts.
R-1	3.5 V. C. T-2A	2:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-2	6.3 V. C. T-2A	2:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-3	6.3 V. C. T-2A	2:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-4	6.3 V. C. T-2A	2:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-5	6.3 V. C. T-2A	2:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25



EXPORT VOLTAGE ADAPTERS

Type No.	Application	Description	Ph. 1	Ph. 2	W	D	H	N	N	Wt. Lbs.	Vol. Lts.
R-1	100 volts	1:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-2	220 volts	2:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-3	250 volts	2.5:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-4	250 volts	2.5:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-5	250 volts	2.5:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25

LINE VOLTAGE CORRECTORS

Type No.	Application	Description	Ph. 1	Ph. 2	W	D	H	N	N	Wt. Lbs.	Vol. Lts.
R-1	100 volts	1:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-2	220 volts	2:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-3	250 volts	2.5:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-4	250 volts	2.5:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25
R-5	250 volts	2.5:1 ratio	A	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1.25	1.25

PLATE AND FILAMENT TRANSFORMERS



INPUT, INTERSTAGE, MIXING AND LOW LEVEL OUTPUT TRANSFORMERS



PRIMARY CONNECTIONS FOR: CG33, 120, 121, 122, 124, 125, 126
CG300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312

PRV VOLTAGE	CONNECT TO TERMINALS	JOIN TERMINALS
105	1, 2	1, 6, 4, 2, 5, 5
115	1, 3	1, 6, 4, 3, 6, 6
210	1, 4, 5	2, 5, 4
220	1, 5	3, 5, 4
230	1, 6	3, 5, 4

SECONDARY CONNECTIONS
through CG312 have secondary
taps marked on Terminal Board

TERMINAL	CG33	CG120	CG121	CG122	CG124	CG125	CG126	CG300	CG301	CG302	CG303
7	3-4A	25V10A	5V25A	7.5V10A	10V10A	10V10A	14V10A	525V	580V	950V	1500V
8	3-4A	CT	CT	CT	CT	CT	CT	535V	580V	750V	1235V
9	25V10A	5V25A	CT	CT	10V10A	CT	CT	CT	CT	CT	CT
10				6.3V10A	10V10A	CT	CT	515V	580V	750V	1235V
11				7.5V10A	CT	CT	CT	515V	580V	750V	1235V
12					CT	CT	CT	515V	580V	750V	1235V
13					CT	CT	CT	515V	580V	750V	1235V
14					CT	CT	CT	515V	580V	750V	1235V
15					CT	CT	CT	515V	580V	750V	1235V
16					CT	CT	CT	515V	580V	750V	1235V
17					CT	CT	CT	515V	580V	750V	1235V
18					CT	CT	CT	515V	580V	750V	1235V
19					CT	CT	CT	515V	580V	750V	1235V
20					CT	CT	CT	515V	580V	750V	1235V

PRIMARY VOLTAGE

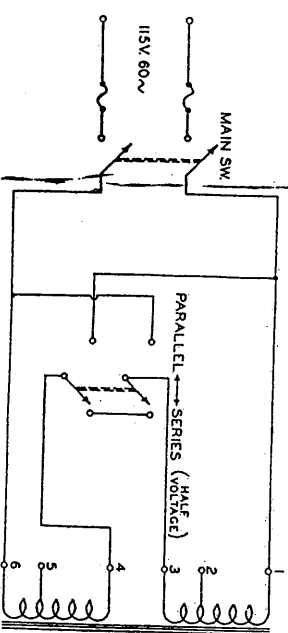
CONNECT TO	TERMINAL
105	2, 6, 3
115	1, 6, 3
220	2, 6, 4
230	1, 6, 4

SECONDARY

TERMINAL
5
6
7

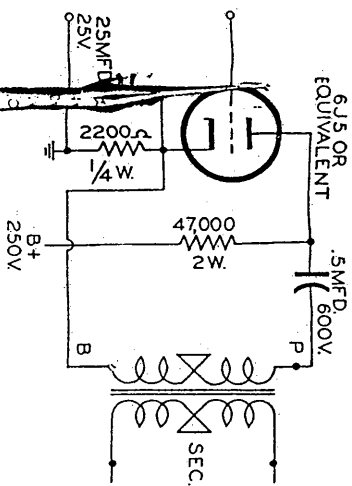
HIGH-LOW VOLTAGE CONTROL

ough use of an auxiliary double-pole
throw switch, CG series plate trans-
formers can be arranged to deliver full
voltage or full rated voltage, with instant
changeover, when operated from 115 volt
line. Typical applications are transmitter
line-up, low power operation, etc.



Printed in U.S.A.

RECOMMENDED SHUNT-RED CIRCUIT
FOR CG-131, CG-132, CG-136.



TYPE No. APPLICATION

CG-131	Triode Plate to Single Grid	Connections Marked On Terminal Board	31
CG-132	Triode Plate to P.P. Grids	Connections Marked On Terminal Board	31
CG-133	P.P. Plates to P.P. Grids	Connections Marked On Terminal Board	1, 6, 1
CG-134	Line to Single Grid	Connections Marked On Terminal Board	12, 7, 1
CG-135	Line to P.P. Grids	Connections Marked On Terminal Board	15, 5, 1
CG-136	Triode Plate and Low Impedance Mixe or Line to 1 or 2 Grids	Connections Marked On Terminal Board	2, 3, 1
CG-137	Mixing	Connections Marked On Terminal Board	1, 3, 1
CG-140	Triode Plate to Line	Connections Marked On Terminal Board	1, 6, 1
CG-141	P.P. Triode Plate to Line	Connections Marked On Terminal Board	1, 6, 1
CG-233	P.P. Triodes to P.P. 2A3, P.P. 6L6, etc.	Connections Marked On Terminal Board	0, 9, 1
CG-235	Line to 1 or 2 Grids; Special Alloy Shield	Connections Marked On Terminal Board	12, 7, 1
CG-333	P.P. Triodes to P.P. 6L6 Fixed Bias	Connections Marked On Terminal Board	0, 5, 1
CG-433	P.P. 6L6 or 2A3 to 2 or 4 6L6, Fixed Bias	Connections Marked On Terminal Board	0, 5, 1

Printed in U.S.A.

500 OHMS
200 OHMS
70 OHMS
16 OHMS
8 OHMS
5 OHMS
3 OHMS
1.5 OHMS

INJECT TO:

P ₀	OIC
P ₀	OIII
B ⁺	OI2
P ₀	OA
	OB
	OC
	OD

C&D

MAX.
WATTS

CG-216	9,000 OHMS
CG-416	3,800 OHMS
CG-416	4,500 OHMS
CG-415	8,000 OHMS
CG-16	3,000 OHMS
CG-16	5,000 OHMS
CG-19	6,000 OHMS
CG-19	10,000 OHMS
CG-710	14,000 OHMS
CG-710	20,000 OHMS

2-6L6 AB,
2-6L6 AB,
4-6L6 AB,
2-4L5, 6N7
2-2A3, 2-6 1G, AB,
2-2A3 class A, 2-6L6 class A
Triode 6N7, AB, Fixed Bias
2-6V6, 2-6 2-6N6-C
2-4L7, 2-6K1 2-7B5

[illegible]

CG-20

PRIMARY 1, 3, 5 (3 C.T.), 4% SCREEN TAPS 2 and 4
SECONDARY 4 OHMS — 6, 7 8 OHMS — 5, 8
16 OHMS — 6, 9 70 VOLT LINE — 6, 10

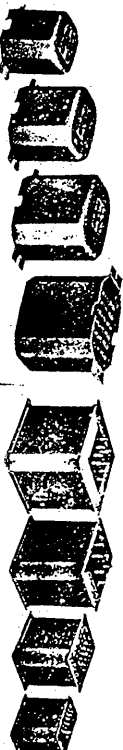
BIAS TRANSFORMERS

Terminal	CG-422	CG-428	CG-429	CG-431	Primary Terminal 115 V, 50/60 cycles	CG-315	CG-316
					A.C. Volts each side	D.C. Volts each side	A.C. Volts D.C. Volts each side
1	PRI	PRI	PRI	PRI	155	100	490
2	PRI	PRI	FRI	PRI	141	87	445
3	435	500 V	600 V	400 V	119	76	326
4	365	C.T.	525 V	400 V	129	67	376
5	365	C.T.	500 V	400 V	119	67	376
6	80 V	80 V	600 V	500 V	125	72	275
7	125	80 V	500 V	500 V	111	55	328
8	125	80 V	500 V	500 V	111	55	328
9	C.T.	500 V	500 V	500 V	111	55	328
10	125	500 V	500 V	500 V	111	55	328
11	500 V	500 V	500 V	500 V	111	55	328
12	500 V	500 V	500 V	500 V	111	55	328
13	500 V	500 V	500 V	500 V	111	55	328
14	500 V	500 V	500 V	500 V	111	55	328
15	500 V	500 V	500 V	500 V	111	55	328
16	500 V	500 V	500 V	500 V	111	55	328
17	500 V	500 V	500 V	500 V	111	55	328
18	500 V	500 V	500 V	500 V	111	55	328
19	500 V	500 V	500 V	500 V	111	55	328
20	500 V	500 V	500 V	500 V	111	55	328
21	500 V	500 V	500 V	500 V	111	55	328
22	500 V	500 V	500 V	500 V	111	55	328



TERMINAL ARRANGEMENTS

TYPE CG TRANSFORMERS



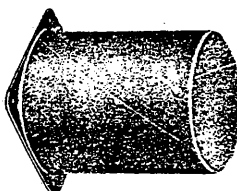
UNITED TRANSFORMER CORPORATION
150 VARICK STREET NEW YORK 13, N. Y.
EXPORT DIVISION: 13 EAST 40th STREET, NEW YORK 16, N. Y.
CABLE: "ARLAB"

NEW YORK, N. Y.

UTC PA Variatch transformers are designed with universal tapped primaries which will match practically any PA output tubes. The available connections for the PVM 1, 2 and 3 are as follows:

The commercial grade series of transformers incorporate extremely active design and rugged construction to assure long life and reliable operation under continuous service operation. These units are mounted in transformer enclosures casted in light grey enamel, and interlocked grade commutator cases finished in light grey enamel, and installed in steel cabinets. All items are painted with special sealing compound in addition to vacuum impregnation of coil structures for corrosion resistance. Type numbers are identical with the PA units except for the prefix "CG".

CG-134, pick-up, and 136 are of the hum-bucking type; CG-135, hum-pick-up, and 138 are of the hum-balancing type. The output ratings are 10, 15, 20, 25, 30, 40, 50, 75, 100, 150, 200, 250, 300, 400, 500, 750, 1000, 1500, 2000, 3000, 4000, 5000, 7500, 10000, 15000, 20000, 30000, 40000, 50000 ohms and 25 mV; 200 ohm windings on input transformers with 50000 ohms and 25 mV; 200 ohm windings on input transformers with 50000 ohms and may be used for 150 to 250 ohm impedances.



No.	Drug, (dos.)	Meaning	Cost
			Unit/Unit
RC-20	1-37/16	2.5	1.5
RC-21	1-37/16	1.5	1.5
RC-23	1-13/16	2.5	1.5
RC-24	2-3/16	2-3/22	2-3/22
RC-29	2	2.5	2.5
RC-31	2-3/16	2-3/22	2-3/22
RC-32	2	2.5	2.5
RC-33	2-3/16	2-3/22	2-3/22
RC-34	2	2.5	2.5
RC-35	2	2.5	2.5
RC-36	2	2.5	2.5
RC-37	2	2.5	2.5
RC-38	2	2.5	2.5
RC-39	2	2.5	2.5
RC-40	2	2.5	2.5
RC-41	2	2.5	2.5
RC-42	2	2.5	2.5
RC-43	2	2.5	2.5
RC-44	2	2.5	2.5
RC-45	2	2.5	2.5
RC-46	2	2.5	2.5
RC-47	2	2.5	2.5
RC-48	2	2.5	2.5
RC-49	2	2.5	2.5
RC-50	2	2.5	2.5
RC-51	2	2.5	2.5
RC-52	2	2.5	2.5
RC-53	2	2.5	2.5
RC-54	2	2.5	2.5
RC-55	2	2.5	2.5
RC-56	2	2.5	2.5
RC-57	2	2.5	2.5
RC-58	2	2.5	2.5
RC-59	2	2.5	2.5
RC-60	2	2.5	2.5
RC-61	2	2.5	2.5
RC-62	2	2.5	2.5
RC-63	2	2.5	2.5
RC-64	2	2.5	2.5
RC-65	2	2.5	2.5
RC-66	2	2.5	2.5
RC-67	2	2.5	2.5
RC-68	2	2.5	2.5
RC-69	2	2.5	2.5
RC-70	2	2.5	2.5
RC-71	2	2.5	2.5
RC-72	2	2.5	2.5
RC-73	2	2.5	2.5
RC-74	2	2.5	2.5
RC-75	2	2.5	2.5
RC-76	2	2.5	2.5
RC-77	2	2.5	2.5
RC-78	2	2.5	2.5
RC-79	2	2.5	2.5
RC-80	2	2.5	2.5
RC-81	2	2.5	2.5
RC-82	2	2.5	2.5
RC-83	2	2.5	2.5
RC-84	2	2.5	2.5
RC-85	2	2.5	2.5
RC-86	2	2.5	2.5
RC-87	2	2.5	2.5
RC-88	2	2.5	2.5
RC-89	2	2.5	2.5
RC-90	2	2.5	2.5
RC-91	2	2.5	2.5
RC-92	2	2.5	2.5
RC-93	2	2.5	2.5
RC-94	2	2.5	2.5
RC-95	2	2.5	2.5
RC-96	2	2.5	2.5
RC-97	2	2.5	2.5
RC-98	2	2.5	2.5
RC-99	2	2.5	2.5
RC-100	2	2.5	2.5

No.	Drug, (dos.)	Meaning	Cost
			Unit/Unit
RC-20	1-37/16	2.5	1.5
RC-21	1-37/16	1.5	1.5
RC-23	1-13/16	2.5	1.5
RC-24	2-3/16	2.5	1.5
RC-29	2	2.5	2.5
RC-31	2-11/16	2.5	1.5
RC-32	2	2.5	1.5
RC-33	2	2.5	1.5
RC-34	2	2.5	1.5
RC-35	2	2.5	1.5
RC-36	2	2.5	1.5
RC-37	2	2.5	1.5
RC-38	2	2.5	1.5
RC-39	2	2.5	1.5
RC-40	2	2.5	1.5
RC-41	2	2.5	1.5
RC-42	2	2.5	1.5
RC-43	2	2.5	1.5
RC-44	2	2.5	1.5
RC-45	2	2.5	1.5
RC-46	2	2.5	1.5
RC-47	2	2.5	1.5
RC-48	2	2.5	1.5
RC-49	2	2.5	1.5
RC-50	2	2.5	1.5
RC-51	2	2.5	1.5
RC-52	2	2.5	1.5
RC-53	2	2.5	1.5
RC-54	2	2.5	1.5
RC-55	2	2.5	1.5
RC-56	2	2.5	1.5
RC-57	2	2.5	1.5
RC-58	2	2.5	1.5
RC-59	2	2.5	1.5
RC-60	2	2.5	1.5
RC-61	2	2.5	1.5
RC-62	2	2.5	1.5
RC-63	2	2.5	1.5
RC-64	2	2.5	1.5
RC-65	2	2.5	1.5
RC-66	2	2.5	1.5
RC-67	2	2.5	1.5
RC-68	2	2.5	1.5
RC-69	2	2.5	1.5
RC-70	2	2.5	1.5
RC-71	2	2.5	1.5
RC-72	2	2.5	1.5
RC-73	2	2.5	1.5
RC-74	2	2.5	1.5
RC-75	2	2.5	1.5
RC-76	2	2.5	1.5
RC-77	2	2.5	1.5
RC-78	2	2.5	1.5
RC-79	2	2.5	1.5
RC-80	2	2.5	1.5
RC-81	2	2.5	1.5
RC-82	2	2.5	1.5
RC-83	2	2.5	1.5
RC-84	2	2.5	1.5
RC-85	2	2.5	1.5
RC-86	2	2.5	1.5
RC-87	2	2.5	1.5
RC-88	2	2.5	1.5
RC-89	2	2.5	1.5
RC-90	2	2.5	1.5
RC-91	2	2.5	1.5
RC-92	2	2.5	1.5
RC-93	2	2.5	1.5
RC-94	2	2.5	1.5
RC-95	2	2.5	1.5
RC-96	2	2.5	1.5
RC-97	2	2.5	1.5
RC-98	2	2.5	1.5
RC-99	2	2.5	1.5
RC-100	2	2.5	1.5

Type	Imped. P.P.	Total Tonn.	Man. Mails	Cms
No.	Impd. Overall			
Ct-15	8,200	15, 48, 61, 100	20	100
Ct-16	5,000/5,000	24, 64, 65, 61, 1	20	100
Ct-17	6,000/10,000	18, 61, 62, 10, 61, 2	20	100
Ct-18	1,000/10,000	01, 04, 61, 62, 10, 61, 2	20	100
Ct-19	1,000/5,000	41, 42, 43, 44, 45, 110	20	100
Ct-20	9,000	01, 6, 111	20	100
Ct-21	3,800/4,500	5, 6, 10, 11, 112, 42, 43, 44, 45, 111	20	100

Type	Imped. P.P.	Total Tonn.	Man. Mails	Cms
No.	Impd. Overall			
Ct-15	8,200	15, 48, 61, 100	20	100
Ct-16	5,000/5,000	24, 64, 65, 61, 1	20	100
Ct-17	6,000/10,000	18, 61, 62, 10, 61, 2	20	100
Ct-18	1,000/10,000	01, 04, 61, 62, 10, 61, 2	20	100
Ct-19	1,000/5,000	41, 42, 43, 44, 45, 110	20	100
Ct-20	9,000	01, 6, 111	20	100
Ct-21	3,800/4,500	5, 6, 10, 11, 112, 43, 44, 45, 111	20	100

Uniaxial units designed to match any tubes within the field of 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100.	Primary impedance 3000, 5000, 6500, 7000, 8400, 10,000, 11,000 or 12,000.	Type	Triaxial Tubes	Size
CV-1	11	42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100	PC-100	
CV-2	20	42, 44, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100	PC-75	
CV-3	30	46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100	PC-50	
CV-4	300	500R, 600R, 700R, 800R, 900R, 1,000R, 1,100R, 1,200R, 1,300R, 1,400R, 1,500R, 1,600R, 1,700R, 1,800R, 1,900R, 2,000R, 2,100R, 2,200R, 2,300R, 2,400R, 2,500R, 2,600R, 2,700R, 2,800R, 2,900R, 3,000R, 3,100R, 3,200R, 3,300R, 3,400R, 3,500R, 3,600R, 3,700R, 3,800R, 3,900R, 4,000R, 4,100R, 4,200R, 4,300R, 4,400R, 4,500R, 4,600R, 4,700R, 4,800R, 4,900R, 5,000R, 5,100R, 5,200R, 5,300R, 5,400R, 5,500R, 5,600R, 5,700R, 5,800R, 5,900R, 6,000R, 6,100R, 6,200R, 6,300R, 6,400R, 6,500R, 6,600R, 6,700R, 6,800R, 6,900R, 7,000R, 7,100R, 7,200R, 7,300R, 7,400R, 7,500R, 7,600R, 7,700R, 7,800R, 7,900R, 8,000R, 8,100R, 8,200R, 8,300R, 8,400R, 8,500R, 8,600R, 8,700R, 8,800R, 8,900R, 9,000R, 9,100R, 9,200R, 9,300R, 9,400R, 9,500R, 9,600R, 9,700R, 9,800R, 9,900R, 10,000R, 10,100R, 10,200R, 10,300R, 10,400R, 10,500R, 10,600R, 10,700R, 10,800R, 10,900R, 11,000R, 11,100R, 11,200R, 11,300R, 11,400R, 11,500R, 11,600R, 11,700R, 11,800R, 11,900R, 12,000R, 12,100R, 12,200R, 12,300R, 12,400R, 12,500R, 12,600R, 12,700R, 12,800R, 12,900R, 13,000R, 13,100R, 13,200R, 13,300R, 13,400R, 13,500R, 13,600R, 13,700R, 13,800R, 13,900R, 14,000R, 14,100R, 14,200R, 14,300R, 14,400R, 14,500R, 14,600R, 14,700R, 14,800R, 14,900R, 15,000R, 15,100R, 15,200R, 15,300R, 15,400R, 15,500R, 15,600R, 15,700R, 15,800R, 15,900R, 16,000R, 16,100R, 16,200R, 16,300R, 16,400R, 16,500R, 16,600R, 16,700R, 16,800R, 16,900R, 17,000R, 17,100R, 17,200R, 17,300R, 17,400R, 17,500R, 17,600R, 17,700R, 17,800R, 17,900R, 18,000R, 18,100R, 18,200R, 18,300R, 18,400R, 18,500R, 18,600R, 18,700R, 18,800R, 18,900R, 19,000R, 19,100R, 19,200R, 19,300R, 19,400R, 19,500R, 19,600R, 19,700R, 19,800R, 19,900R, 20,000R, 20,100R, 20,200R, 20,300R, 20,400R, 20,500R, 20,600R, 20,700R, 20,800R, 20,900R, 21,000R, 21,100R, 21,200R, 21,300R, 21,400R, 21,500R, 21,600R, 21,700R, 21,800R, 21,900R, 22,000R, 22,100R, 22,200R, 22,300R, 22,400R, 22,500R, 22,600R, 22,700R, 22,800R, 22,900R, 23,000R, 23,100R, 23,200R, 23,300R, 23,400R, 23,500R, 23,600R, 23,700R, 23,800R, 23,900R, 24,000R, 24,100R, 24,200R, 24,300R, 24,400R, 24,500R, 24,600R, 24,700R, 24,800R, 24,900R, 25,000R, 25,100R, 25,200R, 25,300R, 25,400R, 25,500R, 25,600R, 25,700R, 25,800R, 25,900R, 26,000R, 26,100R, 26,200R, 26,300R, 26,400R, 26,500R, 26,600R, 26,700R, 26,800R, 26,900R, 27,000R, 27,100R, 27,200R, 27,300R, 27,400R, 27,500R, 27,600R, 27,700R, 27,800R, 27,900R, 28,000R, 28,100R, 28,200R, 28,300R, 28,400R, 28,500R, 28,600R, 28,700R, 28,800R, 28,900R, 29,000R, 29,100R, 29,200R, 29,300R, 29,400R, 29,500R, 29,600R, 29,700R, 29,800R, 29,900R, 30,000R, 30,100R, 30,200R, 30,300R, 30,400R, 30,500R, 30,600R, 30,700R, 30,800R, 30,900R, 31,000R, 31,100R, 31,200R, 31,300R, 31,400R, 31,500R, 31,600R, 31,700R, 31,800R, 31,900R, 32,000R, 32,100R, 32,200R, 32,300R, 32,400R, 32,500R, 32,600R, 32,700R, 32,800R, 32,900R, 33,000R, 33,100R, 33,200R, 33,300R, 33,400R, 33,500R, 33,600R, 33,700R, 33,800R, 33,900R, 34,000R, 34,100R, 34,200R, 34,300R, 34,400R, 34,500R, 34,600R, 34,700R, 34,800R, 34,900R, 35,000R, 35,100R, 35,200R, 35,300R, 35,400R, 35,500R, 35,600R, 35,700R, 35,800R, 35,900R, 36,000R, 36,100R, 36,200R, 36,300R, 36,400R, 36,500R, 36,600R, 36,700R, 36,800R, 36,900R, 37,000R, 37,100R, 37,200R, 37,300R, 37,400R, 37,500R, 37,600R, 37,700R, 37,800R, 37,900R, 38,000R, 38,100R, 38,200R, 38,300R, 38,400R, 38,500R,		

Unilateral units designed to match any tubes within the 16, 18, 20, 22, 25, 28, 30, 32, 35, 37, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 125, 150, 175, 200, 225, 250, 275, 300, 325, 350, 375, 400, 450, 500, 550, 600, 650, 7000, 7500, 8000, 8500, 10,000, 11,000, 12,000, 13,000, 14,000, 15,000, 16,000, 17,000, 18,000, 19,000, 20,000, 22,000, 24,000, 26,000, 28,000, 30,000, 32,000, 34,000, 36,000, 38,000, 40,000, 42,000, 44,000, 46,000, 48,000, 50,000, 52,000, 54,000, 56,000, 58,000, 60,000, 62,000, 64,000, 66,000, 68,000, 70,000, 72,000, 74,000, 76,000, 78,000, 80,000, 82,000, 84,000, 86,000, 88,000, 90,000, 92,000, 94,000, 96,000, 98,000, 100,000, 105,000, 110,000, 115,000, 120,000, 125,000, 130,000, 135,000, 140,000, 145,000, 150,000, 155,000, 160,000, 165,000, 170,000, 175,000, 180,000, 185,000, 190,000, 195,000, 200,000, 205,000, 210,000, 215,000, 220,000, 225,000, 230,000, 235,000, 240,000, 245,000, 250,000, 255,000, 260,000, 265,000, 270,000, 275,000, 280,000, 285,000, 290,000, 295,000, 300,000, 305,000, 310,000, 315,000, 320,000, 325,000, 330,000, 335,000, 340,000, 345,000, 350,000, 355,000, 360,000, 365,000, 370,000, 375,000, 380,000, 385,000, 390,000, 395,000, 400,000, 405,000, 410,000, 415,000, 420,000, 425,000, 430,000, 435,000, 440,000, 445,000, 450,000, 455,000, 460,000, 465,000, 470,000, 475,000, 480,000, 485,000, 490,000, 495,000, 500,000, 505,000, 510,000, 515,000, 520,000, 525,000, 530,000, 535,000, 540,000, 545,000, 550,000, 555,000, 560,000, 565,000, 570,000, 575,000, 580,000, 585,000, 590,000, 595,000, 600,000, 605,000, 610,000, 615,000, 620,000, 625,000, 630,000, 635,000, 640,000, 645,000, 650,000, 655,000, 660,000, 665,000, 670,000, 675,000, 680,000, 685,000, 690,000, 695,000, 700,000, 705,000, 710,000, 715,000, 720,000, 725,000, 730,000, 735,000, 740,000, 745,000, 750,000, 755,000, 760,000, 765,000, 770,000, 775,000, 780,000, 785,000, 790,000, 795,000, 800,000, 805,000, 810,000, 815,000, 820,000, 825,000, 830,000, 835,000, 840,000, 845,000, 850,000, 855,000, 860,000, 865,000, 870,000, 875,000, 880,000, 885,000, 890,000, 895,000, 900,000, 905,000, 910,000, 915,000, 920,000, 925,000, 930,000, 935,000, 940,000, 945,000, 950,000, 955,000, 960,000, 965,000, 970,000, 975,000, 980,000, 985,000, 990,000, 995,000, 1000,000, 1005,000, 1010,000, 1015,000, 1020,000, 1025,000, 1030,000, 1035,000, 1040,000, 1045,000, 1050,000, 1055,000, 1060,000, 1065,000, 1070,000, 1075,000, 1080,000, 1085,000, 1090,000, 1095,000, 1100,000, 1105,000, 1110,000, 1115,000, 1120,000, 1125,000, 1130,000, 1135,000, 1140,000, 1145,000, 1150,000, 1155,000, 1160,000, 1165,000, 1170,000, 1175,000, 1180,000, 1185,000, 1190,000, 1195,000, 1200,000, 1205,000, 1210,000, 1215,000, 1220,000, 1225,000, 1230,000, 1235,000, 1240,000, 1245,000, 1250,000, 1255,000, 1260,000, 1265,000, 1270,000, 1275,000, 1280,000, 1285,000, 1290,000, 1295,000, 1300,000, 1305,000, 1310,000, 1315,000, 1320,000, 1325,000, 1330,000, 1335,000, 1340,000, 1345,000, 1350,000, 1355,000, 1360,000, 1365,000, 1370,000, 1375,000, 1380,000, 1385,000, 1390,000, 1395,000, 1400,000, 1405,000, 1410,000, 1415,000, 1420,000, 1425,000, 1430,000, 1435,000, 1440,000, 1445,000, 1450,000, 1455,000, 1460,000, 1465,000, 1470,000, 1475,000, 1480,000, 1485,000, 1490,000, 1495,000, 1500,000, 1505,000, 1510,000, 1515,000, 1520,000, 1525,000, 1530,000, 1535,000, 1540,000, 1545,000, 1550,000, 1555,000, 1560,000, 1565,000, 1570,000, 1575,000, 1580,000, 1585,000, 1590,000, 1595,000, 1600,000, 1605,000, 1610,000, 1615,000, 1620,000, 1625,000, 1630,000, 1635,000, 1640,000, 1645,000, 1650,000, 1655,000, 1660,000, 1665,000, 1670,000, 1675,000, 1680,000, 1685,000, 1690,000, 1695,000, 1700,000, 1705,000, 1710,000, 1715,000, 1720,000, 1725,000, 1730,000, 1735,000, 1740,000, 1745,000, 1750,000, 1755,000, 1760,000, 1765,000, 1770,000, 1775,000, 1780,000, 1785,000, 1790,000, 1795,000, 1800,000, 1805,000, 1810,000, 1815,000, 1820,000, 1825,000, 1830,000, 1835,000, 1840,000, 1845,000, 1850,000, 1855,000, 1860,000, 1865,000, 1870,000, 1875,000, 1880,000, 1885,000, 1890,000, 1895,000, 1900,000, 1905,000, 1910,000, 1915,000, 1920

The UTC VARIMATCH line to voice coil transformers will match any voice coil or group of voice coils to a 500 ohm line. More than 50 voice coil combinations can be obtained. us follows.

2, 4, 5, 6, 6.25, 6.6, 7, 7.5, 8, 9, 10, 11, 12, 14, 15
16, 18, 20, 25, 28, 30, 31, 40, 47, 50, 67, 69, 75

speakers are to be connected in groups to one transducer that parallel connection be used to eliminate the resonance. If two speakers of different impedances are

the lower impedance speaker will develop greater pressure than the higher impedance speaker will develop in series, the higher impedance speaker will develop

Case No.	Primary impedance	Secondary impedance	Audie Watts
RC-17	2 to 75 ohms	500 ohms	15

40	300 ohms	.2 to .25 ohms	RC-13
75	500 ohms	.2 to .75 ohms	

СГ ВКЛМАТЦИ ИИД АУТОФОН

Varianatch Line Autotransformer will match one to ten 500 ohm windings to the 500 ohm output of an audio amplifier. Autotransformers have impedances of 500, 250, 167, 125, 100

Case No. RC-87
Audio Writs 1

[illegible][illegible]

incorporates two accurate High Q coils (8 hy and 2.4 hy.) for use in dynamic noise suppression circuits. Excellent circuit accompanies units.

TYPE CG-50 **RC-75 Case**

CG VMMB:TC 1175 AUTOFORMER

[illegible]

UTC PA Variatch transformers are designed with universal tapped primaries which will match practically any PA output tubes. The available connections for the PVM 1, 2 and 3 are as follows:

[illegible][illegible]

Typical tube combinations that are taken care of by these primary impedances are:

14,000 ohms --	Pushpull 471's, 2A6's, 42's, and other similar pentodes
10,000 ohms --	Pushpull 59 triodes, 71A's, 6B5's 6F6 pentodes, and Class B 6A6, 19's, 55, 49, 79, 89
8,000 ohms --	Pushpull 250's, 2A5's, 43's, 2A5 triodes, 42 triodes, etc.
7,000 ohms --	Single 2A6 pentode, 42 pentode, 31 triode, 35 pentode, 47 pentode, 89 pentode
6,000 ohms --	Class B pushpull 46's, 50's, 6F6's fixed bias, 6L6's AB, single 31, 46, 59 pentode
5,000 ohms --	Pushpull self bias 2A3's, 6A3's, 6L6's at 250 volts, 46's at 300 volts
3,000 ohms --	Pushpull fixed bias 2A3's, 6A3's

Impedances differing somewhat from the impedances noted above can be accommodated by the primary winding. A corresponding change is obtained in the secondary output impedance. In other words, if pushpull 6L6's were used at the 400 volt operating condition, the matching impedance is 6600 ohms. The 6000 ohm connections would be used for this application with the result that all secondary impedances would be increased 10%. In other words, the 5 ohm connection would be 5.5 ohms; the 200 ohm connection 220 ohms, etc. In a similar manner, the secondary impedances can be changed up to 20% from the normal value with a corresponding change in the primary impedance. For example, if a 6 ohm voice coil were connected across the 5 ohm taps, then the primary impedance shown would be multiplied by $\frac{5}{6}$. In other words the 5000 ohm plate to plate connection would become 6000 ohms.

Four black and white photographs of a rectangular cake, likely for a wedding. The cake is decorated with white frosting and dark, possibly chocolate, patterns. The top view shows a dark border around the perimeter. The side views show a dark band around the middle. The bottom view shows a dark border around the perimeter.

Application

[illegible]

See Modulator chart for tube types

Type No.	Application	Case
S-8	Single driver plate to pushpull grids	G-3
S-9	Pushpull driver plate to grids of class H tubes up to 400 watts output	G-4
S-10	Pushpull 56, 6C6 triodes, 6C5, or similar plates to 40 W, 2A3's, or 6L6's, and/or fixed bias	G-5

1101

5-11	Sheet 56, 6CS (triple, 6:5 or smaller tube to fill.	15,000	200/500	G-2
5-12	Line to speaker 18 watts.	500, 2000, 4000	3, 4, 7, 15	G-2
5-13	Line to speaker 30 watts.	500, 2000, 4000	3, 4, 8, 15	G-4

Secondary impurities: 0.00, 1.0, 5.0, 2.0 mm

[illegible]

Secondary carries class C current
modulator tubes to any RF load. (See chart)

Type No.	Audio Power	ES36
S-18	12 watts	G-3
S-19	10 watts	G-3
S-20	0.5 watts	G-3
S-21	1.0 watts	G-3
S-22	2.0 watts	G-3

OTC Special Series transformers are specifically designed for use in a wide range of applications. The Special units are constructed in a rich, corrosion-resistant, vacuum-injected, pressure-treated terminal strip is provided permitting above chassis or below chassis mounting. The Special units are available in predrilled wiring in addition to standard chassis type, wiring terminals. The Special units are available in a wide range of transformer sizes as a maximum of flexible matching and output transformer sizes are available. The Special units are available in units will carry the DC current of the class C stage for any of the impedances available and will match practically any audiotape or other load. Large components are available for the former, bottom mounting. All units are vacuum impregnated—completely sealed.

5-10-71 12 WALLS MAJ

DRIVER TUBES. In the combinations shown below, typical suitable driver tubes are: 27, 30, 37, 49, 53, 56, 76, 79, 89, 6A6, 6CS, 6C6 triode, 6E6, 6N7.

DRIVER'S	TRANS.	TRAIL	TRAIL	P.P.	MODULATOR	STAGE	BIAS
				TRAIL	TRAIL	TRAIL	TRAIL
5.2	0-0	0-0	0-0	1.0	14.000	250	71
5.3	0-0	0-0	0-0	1.0	10.000	150	0
5.4	0-0	0-0	0-0	1.0	10.000	250	0
5.5	0-0	0-0	0-0	1.0	10.000	250	0
5.6	0-0	0-0	0-0	1.0	10.000	250	0
5.7	0-0	0-0	0-0	1.0	10.000	250	0
5.8	0-0	0-0	0-0	1.0	10.000	250	0
5.9	0-0	0-0	0-0	1.0	10.000	250	0
5.10	0-0	0-0	0-0	1.0	10.000	250	0
5.11	0-0	0-0	0-0	1.0	10.000	250	0
5.12	0-0	0-0	0-0	1.0	10.000	250	0
5.13	0-0	0-0	0-0	1.0	10.000	250	0
5.14	0-0	0-0	0-0	1.0	10.000	250	0
5.15	0-0	0-0	0-0	1.0	10.000	250	0
5.16	0-0	0-0	0-0	1.0	10.000	250	0
5.17	0-0	0-0	0-0	1.0	10.000	250	0
5.18	0-0	0-0	0-0	1.0	10.000	250	0
5.19	0-0	0-0	0-0	1.0	10.000	250	0
5.20	0-0	0-0	0-0	1.0	10.000	250	0
5.21	0-0	0-0	0-0	1.0	10.000	250	0
5.22	0-0	0-0	0-0	1.0	10.000	250	0
5.23	0-0	0-0	0-0	1.0	10.000	250	0
5.24	0-0	0-0	0-0	1.0	10.000	250	0
5.25	0-0	0-0	0-0	1.0	10.000	250	0
5.26	0-0	0-0	0-0	1.0	10.000	250	0
5.27	0-0	0-0	0-0	1.0	10.000	250	0
5.28	0-0	0-0	0-0	1.0	10.000	250	0
5.29	0-0	0-0	0-0	1.0	10.000	250	0
5.30	0-0	0-0	0-0	1.0	10.000	250	0
5.31	0-0	0-0	0-0	1.0	10.000	250	0
5.32	0-0	0-0	0-0	1.0	10.000	250	0
5.33	0-0	0-0	0-0	1.0	10.000	250	0
5.34	0-0	0-0	0-0	1.0	10.000	250	0
5.35	0-0	0-0	0-0	1.0	10.000	250	0
5.36	0-0	0-0	0-0	1.0	10.000	250	0
5.37	0-0	0-0	0-0	1.0	10.000	250	0
5.38	0-0	0-0	0-0	1.0	10.000	250	0
5.39	0-0	0-0	0-0	1.0	10.000	250	0
5.40	0-0	0-0	0-0	1.0	10.000	250	0
5.41	0-0	0-0	0-0	1.0	10.000	250	0
5.42	0-0	0-0	0-0	1.0	10.000	250	0
5.43	0-0	0-0	0-0	1.0	10.000	250	0
5.44	0-0	0-0	0-0	1.0	10.000	250	0
5.45	0-0	0-0	0-0	1.0	10.000	250	0
5.46	0-0	0-0	0-0	1.0	10.000	250	0
5.47	0-0	0-0	0-0	1.0	10.000	250	0
5.48	0-0	0-0	0-0	1.0	10.000	250	0
5.49	0-0	0-0	0-0	1.0	10.000	250	0
5.50	0-0	0-0	0-0	1.0	10.000	250	0
5.51	0-0	0-0	0-0	1.0	10.000	250	0
5.52	0-0	0-0	0-0	1.0	10.000	250	0
5.53	0-0	0-0	0-0	1.0	10.000	250	0
5.54	0-0	0-0	0-0	1.0	10.000	250	0
5.55	0-0	0-0	0-0	1.0	10.000	250	0
5.56	0-0	0-0	0-0	1.0	10.0		

S-19 — 30 WATTS MAX.

(33, 36, 6C6 mode, 5N7, may be substituted for 6C5 tubes

[illegible]

S-20 — 55 WATTS MA

DRIVEN **MODULATOR STAG**

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2
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05. 115. 226. 230 voir: 50/100 cycles 101 1000

[illegible]

01111213141516171819202122232425262728293031323334353637383940414243444546474849505152535455565758596061626364656667686970717273747576777879808182838485868788899091929394959697989910010110210310410510610710810911011111211311411511611711811912012112212312412512612712812913013113213313413513613713813914014114214314414514614714814915015115215315415515615715815916016116216316416516616716816917017117217317417517617717817918018118218318418518618718818919019119219319419519619719819920020120220320420520620720820921021121221321421521621721821922022122222322422522622722822923023123223323423523623723823924024124224324424524624724824925025125225325425525625725825926026126226326426526626726826927027127227327427527627727827928028128228328428528628728828929029129229329429529629729829930030130230330430530630730830931031131231331431531631731831932032132232332432532632732832933033133233333433533633733833934034134234334434534634734834935035135235335435535635735835936036136236336436536636736836937037137237337437537637737837938038138238338438538638738838939039139239339439539639739839940040140240340440540640740840941041141241341441541641741841942042142242342442542642742842943043143243343443543643743843944044144244344444544644744844945045145245345445545645745845946046146246346446546646746846947047147247347447547647747847948048148248348448548648748848949049149249349449549649749849950050150250350450550650750850951051151251351451551651751851952052152252352452552652752852953053153253353453553653753853954054154254354454554654754854955055155255355455555655755855956056156256356456556656756856957057157257357457557657757857958058158258358458558658758858959059159259359459559659759859960060160260360460560660760860961061161261361461561661761861962062162262362462562662762862963063163263363463563663763863964064164264364464564664764864965065165265365465565665765865966066166266366466566666766866967067167267367467567667767867968068168268368468568668768868969069169269369469569669769869970070170270370470570670770870971071171271371471571671771871972072172272372472572672772872973073173273373473573673773873974074174274374474574674774874975075175275375475575675775875976076176276376476576676776876977077177277377477577677777877978078178278378478578678778878979079179279379479579679779879980080180280380480580680780880981081181281381481581681781881982082182282382482582682782882983083183283383483583683783883984084184284384484584684784884985085185285385485585685785885986086186286386486586686786886987087187287387487587687787887988088188288388488588688788888989089189289389489589689789889990090190290390490590690790890991091191291391491591691791891992092192292392492592692792892993093193293393493593693793893994094194294394494594694794894995095195295395495595695795895996096196296396496596696796896997097197297397497597697797897998098198298398498598698798898999099199299399499599699799899910001001100210031004100510061007100810091010101110121013101410151016101710181019102010211022102310241025102610271028102910301031103210331034103510361037103810391040104110421043104410451046104710481049105010511052105310541055105610571058105910601061106210631064106510661067106810691070107110721073107410751076107710781079108010811082108310841085108610871088108910901091109210931094109510961097109810991100110111021103110411051106110711081109111011111112111311141115111611171118111911201121112211231124112511261127112811291130113111321133113411351136113711381139114011411142114311441145114611471148114911501151115211531154115511561157115811591160116111621163116411651166116711681169117011711172117311741175117611771178117911801181118211831184118511861187118811891190119111921193119411951196119711981199120012011202120312041205120612071208120912101211121212131214121512161217121812191220122112221223122412251226122712281229123012311232123312341235123612371238123912401241124212431244124512461247124812491250125112521253125412551256125712581259126012611262126312641265126612671268126912701271127212731274127512761277127812791280128112821283128412851286128712881289129012911292129312941295129612971298129913001301130213

Sample	Type No.	High Voltage	Low Voltage	MC	Case No.
CC-300	72.5-131.5-151.5-152.5	500/100	200	MC-140	
CC-301	72.5-131.5-151.5-152.5	500/100	200	MC-140	
CC-302	580-520-200-1200-220-5400	740/100	320	MC-132	
CC-303	580-520-200-1200-220-5400	740/100	320	MC-132	
CC-304	1800-1232-1200-1232-1200	1250/1000	1250	MC-175	

TYPE LC CASE UNIT
DC DC

Tree No.	Height	Volume	M ³ /L	N ³ /M ³	W ³ /M ³	W ³ /N ³
CE-30	135-150m	2000/1500	30m	10%	4%	100
CE-31	120-130m	2000/1500	30m	10%	4%	50
CE-32	120-130m	2000/1500	30m	10%	4%	100
CE-33	120-130m	2000/1500	30m	10%	4%	100
CE-34	120-130m	2000/1500	30m	10%	4%	100
CE-35	120-130m	2000/1500	30m	10%	4%	100
CE-36	120-130m	2000/1500	30m	10%	4%	100
CE-37	120-130m	2000/1500	30m	10%	4%	100
CE-38	120-130m	2000/1500	30m	10%	4%	100
CE-39	120-130m	2000/1500	30m	10%	4%	100
CE-40	120-130m	2000/1500	30m	10%	4%	100
CE-41	120-130m	2000/1500	30m	10%	4%	100
CE-42	120-130m	2000/1500	30m	10%	4%	100
CE-43	120-130m	2000/1500	30m	10%	4%	100
CE-44	120-130m	2000/1500	30m	10%	4%	100
CE-45	120-130m	2000/1500	30m	10%	4%	100
CE-46	120-130m	2000/1500	30m	10%	4%	100
CE-47	120-130m	2000/1500	30m	10%	4%	100
CE-48	120-130m	2000/1500	30m	10%	4%	100
CE-49	120-130m	2000/1500	30m	10%	4%	100
CE-50	120-130m	2000/1500	30m	10%	4%	100

INDUCTANCE SHOWN IS AT RATED DC MA

	DC Res.	Test Volts	Cable
Resistance	DC		
Impedance	MA		
Frequency	Ohms		

INDUCTANCE BROWN IS FROM 100% TO 0% OF RATED DC MA

2019 No.	Inductance	DC Res.	DC Pwr.	Test Value	Case No.
6E-01	4.50	110	1150		6E-0119
6E-02	4.50	110	1150		6E-0120
6E-03	5.25	150	1500		6E-0121
6E-04	5.25	150	1500		6E-0122
6E-05	5.25	150	1500		6E-0123
6E-06	5.25	150	1500		6E-0124
6E-07	5.25	150	1500		6E-0125
6E-08	5.25	150	1500		6E-0126
6E-09	5.25	150	1500		6E-0127
6E-10	5.25	150	1500		6E-0128
6E-11	5.25	150	1500		6E-0129
6E-12	5.25	150	1500		6E-0130
6E-13	5.25	150	1500		6E-0131
6E-14	5.25	150	1500		6E-0132
6E-15	5.25	150	1500		6E-0133
6E-16	5.25	150	1500		6E-0134
6E-17	5.25	150	1500		6E-0135
6E-18	5.25	150	1500		6E-0136
6E-19	5.25	150	1500		6E-0137
6E-20	5.25	150	1500		6E-0138
6E-21	5.25	150	1500		6E-0139
6E-22	5.25	150	1500		6E-0140
6E-23	5.25	150	1500		6E-0141
6E-24	5.25	150	1500		6E-0142
6E-25	5.25	150	1500		6E-0143
6E-26	5.25	150	1500		6E-0144
6E-27	5.25	150	1500		6E-0145
6E-28	5.25	150	1500		6E-0146
6E-29	5.25	150	1500		6E-0147
6E-30	5.25	150	1500		6E-0148
6E-31	5.25	150	1500		6E-0149
6E-32	5.25	15			6E-0150

05, 115, 220, 230 volts, 50/60 cycles. These w

be used on 25 to 45 cycles if 220 volt primary is used on 110 volts. Secondary voltage is simultaneously reduced to half.

Primary 115 volts 50/60 cycles
nc
High

No.	Volume	MA, F.H.	F.H. 2	F.H. 3	F.H. 4	Care No.
EC-132	200-300-0	125	25 V-2A	5A	2.5 V-2A	EC-130
EC-133	200-300-0	25	3A V-3A	4A V-2A	6A V-2A	EC-135
EC-134	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-136
EC-135	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-137
EC-136	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-138
EC-137	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-139
EC-138	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-140
EC-139	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-141
EC-140	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-142
EC-141	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-143
EC-142	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-144
EC-143	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-145
EC-144	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-146
EC-145	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-147
EC-146	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-148
EC-147	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-149
EC-148	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-150
EC-149	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-151
EC-150	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-152
EC-151	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-153
EC-152	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-154
EC-153	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-155
EC-154	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-156
EC-155	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-157
EC-156	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-158
EC-157	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-159
EC-158	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-160
EC-159	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-161
EC-160	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-162
EC-161	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-163
EC-162	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-164
EC-163	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-165
EC-164	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-166
EC-165	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-167
EC-166	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-168
EC-167	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-169
EC-168	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-170
EC-169	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-171
EC-170	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-172
EC-171	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-173
EC-172	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-174
EC-173	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-175
EC-174	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-176
EC-175	200-300-0	100	3A V-3A	3A V-2A	2.5 V-2A	EC-177
EC-176	200-300-0	100	3A V-3A	3A V-2A		

[illegible]

Primary 115 volts 50/60 cycles

No.	Volume	MA, F.H.	F.H. 2	F.H. 3	F.H. 4	Care No.
EC-132	200-300-0	125	25 V-2A	5A	2.5 V-2A	EC-130
EC-133	200-300-0	25	3A V-3A	4A V-2A	6A V-2A	EC-135
EC-134	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-136
EC-135	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-137
EC-136	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-138
EC-137	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-139
EC-138	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-140
EC-139	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-141
EC-140	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-142
EC-141	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-143
EC-142	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-144
EC-143	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-145
EC-144	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-146
EC-145	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-147
EC-146	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-148
EC-147	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-149
EC-148	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-150
EC-149	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-151
EC-150	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-152
EC-151	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-153
EC-152	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-154
EC-153	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-155
EC-154	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-156
EC-155	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-157
EC-156	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-158
EC-157	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-159
EC-158	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-160
EC-159	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-161
EC-160	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-162
EC-161	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-163
EC-162	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-164
EC-163	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-165
EC-164	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-166
EC-165	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-167
EC-166	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-168
EC-167	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-169
EC-168	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-170
EC-169	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-171
EC-170	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-172
EC-171	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-173
EC-172	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-174
EC-173	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-175
EC-174	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-176
EC-175	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-177
EC-176	200-300-0	100	3A V-3A	4A V-2A	6A V-2A	EC-178
EC-177</						

25	1000	45	9000	111
25	500	55	5000	RC

Year	1990	2000
6.75		

1929-1930	1930-31	1931-32	1932-33	1933-34	1934-35	1935-36	1936-37	1937-38	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44	1944-45	1945-46	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	2042-43	2043-44	2044-45	2045-46	2046-47	2047-48	2048-49	2049-50	2050-51	2051-52	2052-53	2053-54	2054-55	2055-56	2056-57	2057-58	2058-59	2059-60	2060-61	2061-62	2062-63	2063-64	2064-65	2065-66	2066-67	2067-68	2068-69	2069-70	2070-71	2071-72	2072-73	2073-74	2074-75	2075-76	2076-77	2077-78	2078-79	2079-80	2080-81	2081-82	2082-83	2083-84	2084-85	2085-86	2086-87	2087-88	2088-89	2089-90	2090-91	2091-92	2092-93	2093-94	2094-95	2095-96	2096-97	2097-98	2098-99	2099-00	2100-01	2101-02	2102-03	2103-04	2104-05	2105-06	2106-07	2107-08	2108-09	2109-10	2110-11	2111-12	2112-13	2113-14	2114-15	2115-16	2116-17	2117-18	2118-19	2119-20	2120-21	2121-22	2122-23	2123-24	2124-25	2125-26	2126-27	2127-28	2128-29	2129-30	2130-31	2131-32	2132-33	2133-34	2134-35	2135-36	2136-37	2137-38	2138-39	2139-40	2140-41	2141-42	2142-43	2143-44	2144-45	2145-46	2146-47	2147-48	2148-49	2149-50	2150-51	2151-52	2152-53	2153-54	2154-55	2155-56	2156-57	2157-58	2158-59	2159-60	2160-61	2161-62	2162-63	2163-64	2164-65	2165-66	2166-67	2167-68	2168-69	2169-70	2170-71	2171-72	2172-73	2173-74	2174-75	2175-76	2176-77	2177-78	2178-79	2179-80	2180-81	2181-82	2182-83	2183-84	2184-85	2185-86	2186-87	2187-88	2188-89	2189-90	2190-91	2191-92	2192-93	2193-94	2194-95	2195-96	2196-97	2197-98	2198-99	2199-00	2200-01	2201-02	2202-03	2203-04	2204-05	2205-06	2206-07	2207-08	2208-09	2209-10	2210-11	2211-12	2212-13	2213-14	2214-15	2215-16	2216-17	2217-18	2218-19	2219-20	2220-21	2221-22	2222-23	2223-24	2224-25	2225-26	2226-27	2227-28	2228-29	2229-30	2230-31	2231-32	2232-33	2233-34	2234-35	2235-36	2236-37	2237-38	2238-39	2239-40	2240-41	2241-42	2242-43
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