FORCED-AIR COOLED

Radio Frequency Power Amplifier: Class B Modulator

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

A.F. Power Amplifier and Modulator—Class B

	Maximum Rating per Tube	Typical Operation Two Tubes	
A.C. Filament Voltage*	..	21	22
D.C. Plate Voltage	12500	6000	10000
D.C. Grid Voltage	..	−25	−120
Load Resistance (per tube) (ohms)	..	1050	2100
Effective Load Resistance (plate to plate) (ohms)	..	4200	8400
Zero Signal Plate Current (amps)	..	0.4	0.5
Peak A.F. Grid to Grid Voltage	..	1200	1400
Max. Signal Plate Current (amps)**	2	2.5	2.5
Max. Signal Plate Input (kw.)**	12.5	15	25
Plate Dissipation (kw.)**	4	7†	8†
Minimum Grid Input Resistance (approx.) (ohms)	..	400	300
Max. Signal Driving Power (approx.) (watts)	..	150	300
Max. Signal Power Output (kw.)	..	8	17
Radiator Temperature (Centigrade)***	160°	125°	160°

R.F. Power Amplifier—Class B—Telephony

Carrier conditions for use with a maximum modulation factor of 1.0

	Maximum Rating per Tube	Typical Operation One Tube	
D.C. Filament Voltage*	..	21	22
D.C. Plate Voltage	12500	6000	8000
D.C. Grid Voltage	..	−60	−80
Plate Load Resistance (ohms)	..	3300	2700
Peak R.F. Grid Voltage	..	310	380
D.C. Plate Current (amps)	1.1	0.5	0.75
Plate Input	6	3	6
Plate Dissipation	4	2	4
D.C. Grid Current (approx)	..	38	20
Driving Power (approx) (watts)‡	..	96	30
Power Output	..	1	2
Frequency Limit for Above Operation	1.5	20	7.5
Radiator Temperature (Centigrade)***	160°	120°	160°

Plate Modulated R.F. Power Amplifier Class C—Telephony

Carrier conditions for use with modulation factors up to 1.0

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	..	22	22
D.C. Plate Voltage	10000	6000	8000
D.C. Grid Voltage	−3000	−1000	−1250
Plate Load Resistance (ohms)	..	3500	3740
Peak R.F. Grid Voltage	..	1650	2000
D.C. Plate Current (amps)	1	0.77	0.96
Plate Input (kw.)	10	4.62	7.68
Plate Dissipation (kw.)	2.5	1.12	1.68

GENERAL CHARACTERISTICS

Filament—Two unit type, for single-phase or two-phase A.C. or D.C. operation:	
Voltage per Unit	11
Current per Unit (amps)	60
Amplification Factor	50
Grid to Plate Transconductance at a plate current of 0.75 ampere	7000 micromhos
Direct Interelectrode Capacitances:	
Grid to Plate	32 $\mu\mu$f
Grid to Filament	17 $\mu\mu$f
Plate to Filament	2 $\mu\mu$f
Dimensions:	
Maximum Overall Length	22″
Maximum Radius	6½″
Radiator	See Diagram

Plate Modulated R.F. Power Amplifier Class C—Telephony

Carrier conditions for use with modulation factors up to 1.0

(Continued)

	Maximum Rating per Tube	Typical Operation One Tube	
D.C. Grid Current (approx.) (ma)	250	160	156
Driving Power (approx.) (watts)	..	250	310
Power Output (kw.)	..	3.5	6
Frequency Limit for Above Operation (mc.)	1.5	15	3
F.C.C. Broadcast Rating (kw.)	5	..	5
Radiator Temperature (Centigrade)***	160°	85°	90°

R.F. Power Amplifier and Oscillator—Class C Telegraphy

Key-down conditions without modulation

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage*	..	22	22
D.C. Plate Voltage	12500	8000	10000
D.C. Grid Voltage	−3000	−1000	−1300
Plate Load Resistance (ohms)	..	3000	3200
Peak R.F. Grid Voltage	..	1800	2200
D.C. Plate Current (amps)	2	1.2	1.4
Plate Input (kw.)	18	9.6	14
Plate Dissipation (kw.)	4	2.5	3.5
D.C. Grid Current (approx.) (ma.)	250	165	160
Driving Power (approx.) (watts)	..	280	340
Plate Power Output (kw.)	..	7.1	10.5
Frequency Limit for Above Operation (mc.)	1.5	20	7.5
Radiator Temperature (Centigrade)	160°	120°	150°

*Two filament units in series.

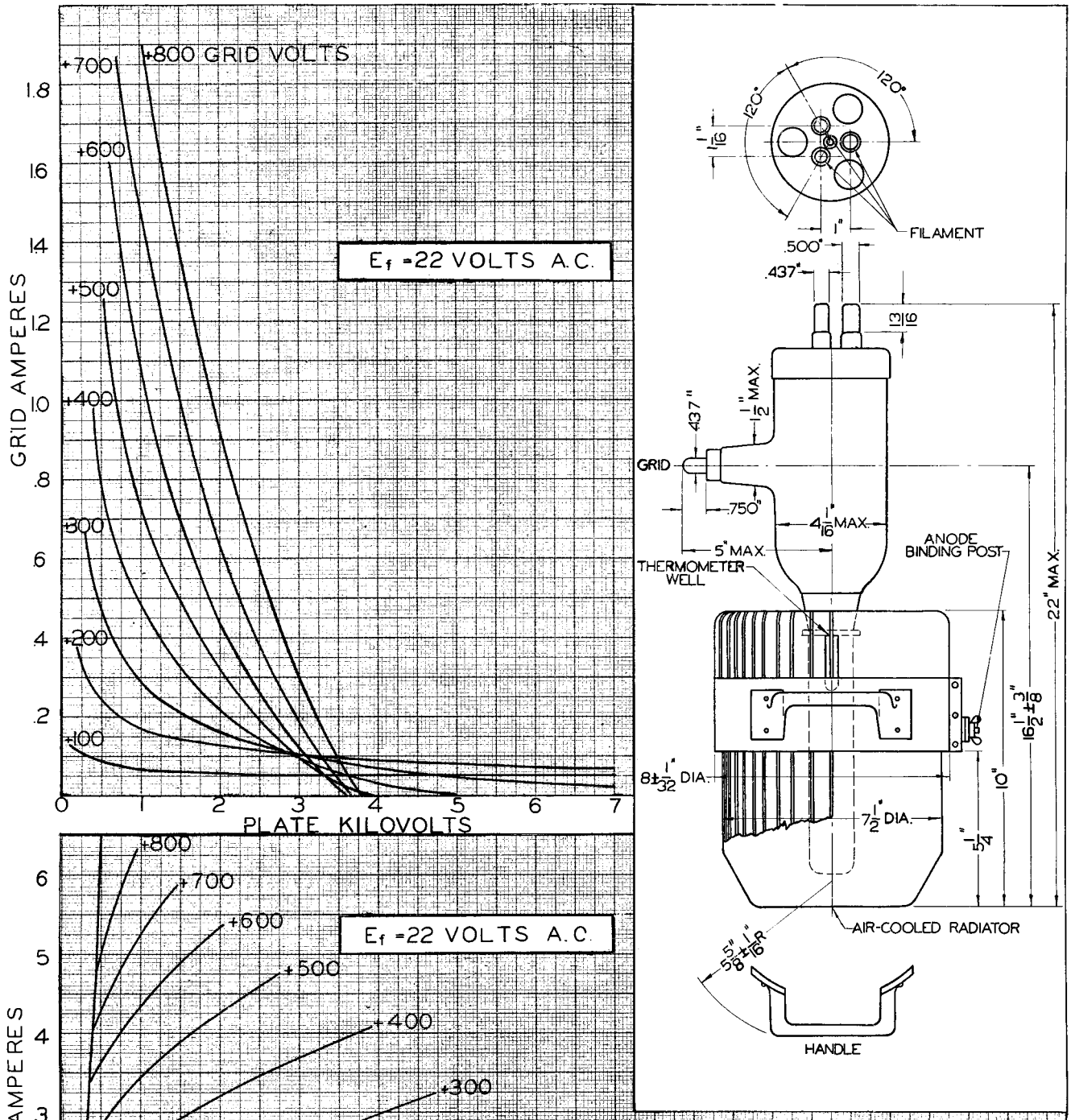
**Averaged over any audio-frequency cycle of sine-wave form.

***This temperature holds for a rate of flow between 500 to 600 C.F.M. at intake temperatures up to 25°C. For intake temperatures from 25°C. to 45°C. the minimum flow should be 600 cubic feet per minute.

†Averaged over an audio-frequency cycle of sine-wave form under maximum signal conditions.

‡At crest of audio frequency cycle with modulation factor of 1.0.

892-R — AMPEREX TRANSMITTING TUBE



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