

(WATER COOLED†)

## Radio Frequency Power Oscillator, Amplifier, Class B Modulator

### MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

#### A.F. Power Amplifier and Modulator—Class B

D.C. Plate Voltage	8500
D.C. Plate Current, Max.-Signal (amps)*	2.0
Plate Input, Max.-Signal (watts)*	12000
Plate Dissipation (watts)*	5000

#### Typical Operation:

Unless otherwise specified, values are for 2 tubes

D.C. Plate Voltage	5000	6000	7500
D.C. Plate Current, Zero-Signal (amps)	0.4	0.4	0.4
D.C. Plate Current, Max.-Signal (amps)	3.2	3.6	3.2
Plate Input, Max.-Signal (watts)	16000	21600	24000
D.C. Grid Voltage	-180	-230	-300
Grid-to-Grid Voltage, Peak A.F.	1460	1680	1700
Load Resistance (ohms) (per tube)	630	920	1250
Effective Load (ohms) (Pl-pl)	2520	3680	5000
Max.-Signal Drive (watts)	170	180	150
Max.-Signal Power Output (watts)	8800	12000	15000

#### R.F. Power Amplifier—Class B

Carrier conditions per tube for use with a maximum modulation factor of 1.0

D.C. Plate Voltage	8500
D.C. Plate Current (amps)	1.0
Plate Input (watts)	7500
Plate Dissipation (watts)	5000
Plate Volts and Input Max. % for 50MC	100%
Plate Volts and Input Max. % for 75MC	90%
Plate Volts and Input Max. % for 100MC	83%
Plate Volts and Input Max. % for 150MC	72%

#### Typical Operation:

D.C. Plate Voltage	6000	7500
D.C. Plate Current (amps)	0.9	0.9
D.C. Grid Voltage	-250	-300
Grid Voltage, Peak R.F.	920	1000
Driving Power (watts)**	95	80
Power Output (watts)	1500	2000

#### Plate Modulated R.F. Power Amplifier Class C

Carrier conditions per tube for use with a maximum modulation factor of 1.0

D.C. Plate Voltage	6000
D.C. Plate Current (amps)	1.0
Plate Input (watts)	6000
Plate Dissipation (watts)	3000
Plate Volts and Input Max. % for 50MC	100%
Plate Volts and Input Max. % for 75MC	85%
Plate Volts and Input Max. % for 100MC	75%
Plate Volts and Input Max. % for 150MC	60%

### GENERAL CHARACTERISTICS

Filament Voltage‡	11
Filament Current (amps)	125
Amplification Factor	21
Direct Interelectrode Capacitances:	
Grid to Plate	17.8 $\mu\mu\text{i}$
Grid to Filament	19.5 $\mu\mu\text{i}$
Plate to Filament	2.5 $\mu\mu\text{i}$

#### Plate Modulated R.F. Power Amplifier Class C

Carrier conditions per tube for use with a maximum modulation factor of 1.0

(Continued)

D.C. Grid Volts	-1000
D.C. Grid Current (amps)	0.25

#### Typical Operation:

D.C. Plate Voltage	5000	6000
D.C. Plate Current (amps)	0.9	1.0
D.C. Grid Voltage	-800	-900
Grid Voltage, Peak R.F.	1300	1420
D.C. Grid Current (amps)	0.12	0.10
Driving Power (watts)	155	140
Power Output (watts)	2750	4000

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

Key-down conditions per tube without modulation§

D.C. Plate Voltage	8500	
D.C. Plate Current (amps)	2.0	
Plate Input (watts)	16000	
Plate Dissipation (watts)	5000	
	Volts	Watts
Plate Volts and Input, Watts, Max. % for 50MC	100%	100%
Plate Volts and Input, Watts, Max. % for 75MC	87%	85%
Plate Volts and Input, Watts, Max. % for 100MC	78%	70%
Plate Volts and Input, Watts, Max. % for 150MC	65%	50%
D.C. Grid Volts	-1000	
D.C. Grid Current (amps)	0.25	

#### Typical Operation:

D.C. Plate Voltage	5000	6000	7500
D.C. Plate Current (amps)	1.5	1.8	2.0
D.C. Grid Voltage	-500	-600	-800
Grid Voltage, Peak R.F.	1200	1460	1830
D.C. Grid Current (amps)	0.19	0.21	0.24
Driving Power (watts)	220	290	400
Power Output (watts)	5000	7000	10000

\*Averaged over any audio-frequency cycle.

\*\*At crest of A.F. cycle with modulation factor of 1.0.

†Water flow of 3 to 6 gallons per minute must start before application of any voltages and continue for at least 5 minutes after removal of voltages. Water temperature must not exceed 70°C. under any conditions of operation. An air flow is required of 15 cubic feet per minute from a three-inch nozzle, directed toward the top portion of the bulb.

‡This tube can usually be operated with reduced filament voltage when the load conditions are lower than maximum.

§Modulation, essentially negative, may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.



# AMPEREX

# 8 8 9

# 889-AMPEREX TRANSMITTING TUBE

