ITT ELECTRON TECHNOLOGY
P.O. Box 100
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Telephone 215 252-7331

F-862A
POWER TRIODE

DESCRIPTION:

The F-862A is a three-electrode tube engineered for use as a radio-frequency amplifier, oscillator, or as a Class B modulator. The water-cooled anode is capable of dissipating 100 kilowatts. The cathode is a pure tungsten filament. Maximum ratings apply up to 1.6 megacycles.

GENERAL CHARACTERISTICS:

Electrical

Filament Voltage	33	volts
Filament Current	207	amperes
Filament Starting Current	400	amperes maximum
Filament Cold Resistance	0.014	ohms
Amplification Factor, at I_b = 3 amps, E_c = 100 volts	45	
Interelectrode Capacitances		
Grid-Plate	64	µµf
Grid-Filament	56	µµf
Plate-Filament	4.7	µµf

Mechanical

Mounting Position	Vertical, anode down
Type of Cooling	Water and Forced Air
Minimum Water Flow on Anode	20 gpm
Maximum Outgoing Water Temperature	70° Centigrade
Air Flow (to bulb and seals)	15 cfm
Maximum Glass Temperature	150° Centigrade
Net Weight (Approximate)	37 Pounds

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Audio-Frequency Power Amplifier and Modulator - Class B

Maximum Ratings, Absolute Value

DC Plate Voltage	15,000	volts
Max. Signal DC Plate Current	7.5	amperes
Max. Signal Plate Input*	100	kilowatts
Plate Dissipation*	50	kilowatts

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

Typical Operation

(Unless otherwise specified, values are for two tubes)

DC Plate Voltage	12,000	Volts
DC Grid Voltage	0	Volts
Peak A-F Grid-to-Grid Voltage	2,000	Volts
Zero Signal DC Plate Current	3	amperes
Max. Signal DC Plate Current	13	amperes
Effective Load Resistance (plate-to-plate)	1,800	ohms
Max. Signal Driving Power (Approximate)	450	watts
Max. Signal Power Output (Approximate)	90	kilowatts

Radio-Frequency Power Amplifier - Class B

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

Maximum Ratings, Absolute Values

DC Plate Voltage	20,000	volts
DC Plate Current	5.0	amperes
Plate Input	100	kilowatts
Plate Dissipation	75	kilowatts

Typical Operation

DC Plate Voltage	18,000	volts
DC Grid Voltage	-200	volts
Peak R-F Grid Voltage	750	volts
DC Plate Current	4.2	amperes
Driving Power (Approximate)**	1.1	kilowatts
Power Output (Approximate)	25	kilowatts

** At crest of audio-frequency cycle with modulation factor of 1.0

Plate-Modulated Radio-Frequency Power Amplifier - Class C Telephony

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

Maximum Ratings, Absolute Values

DC Plate Voltage	12,000	volts
DC Grid Voltage	-3,000	volts
DC Plate Current	5.0	amperes
DC Grid Current	1.25	amperes
Plate Input	60	kilowatts
Plate Dissipation	50	kilowatts

Typical Operation

DC Plate Voltage	12,000	volts
DC Grid Voltage	-800	volts
Peak R-F Grid Voltage	2,000	volts
DC Plate Current	5	amperes
DC Grid Current (Approximate)	1	ampere
Driving Power (Approximate)	2	kilowatts
Power Output (Approximate)	45	kilowatts

Radio-Frequency Power Amplifier and Oscillator - Class C Telegraphy

(Key-down conditions per tube without amplitude Modulation)***

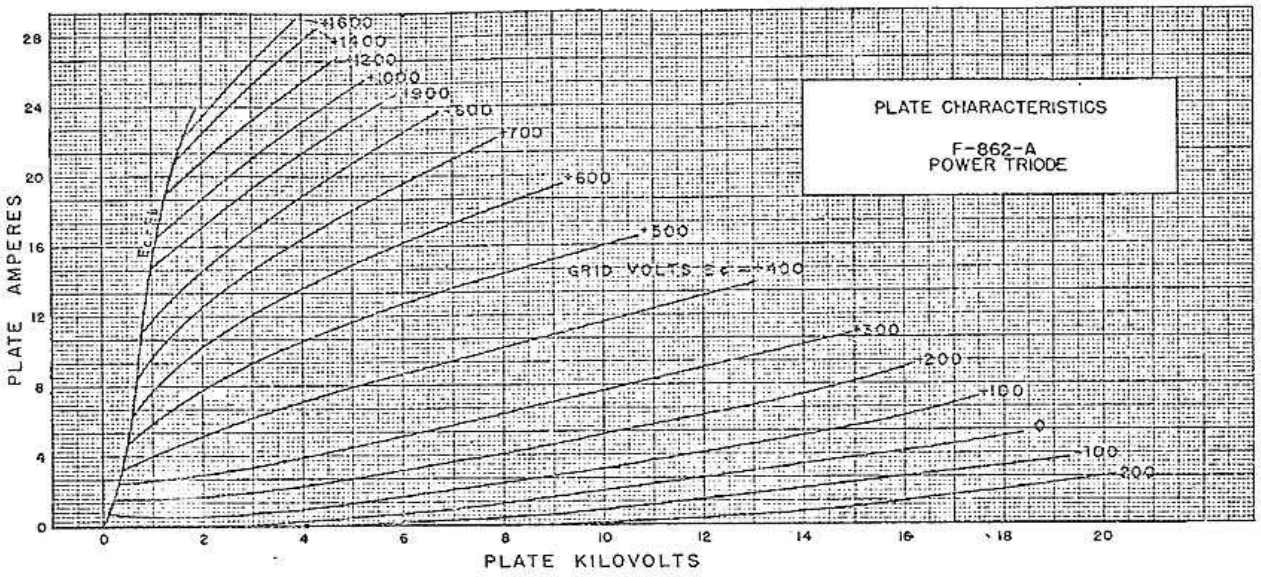
Maximum Ratings, Absolute Values

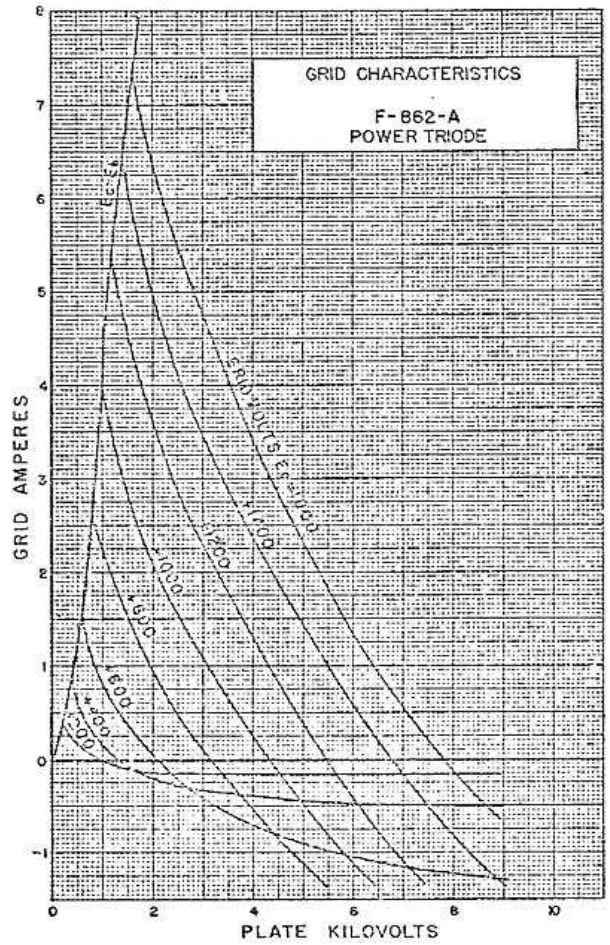
DC Plate Voltage	20,000	volts
DC Grid Voltage	-3,000	volts
DC Plate Current	10	amperes
DC Grid Current	1.0	amperes
Plate Input	200	kilowatts
Plate Dissipation	100	kilowatts

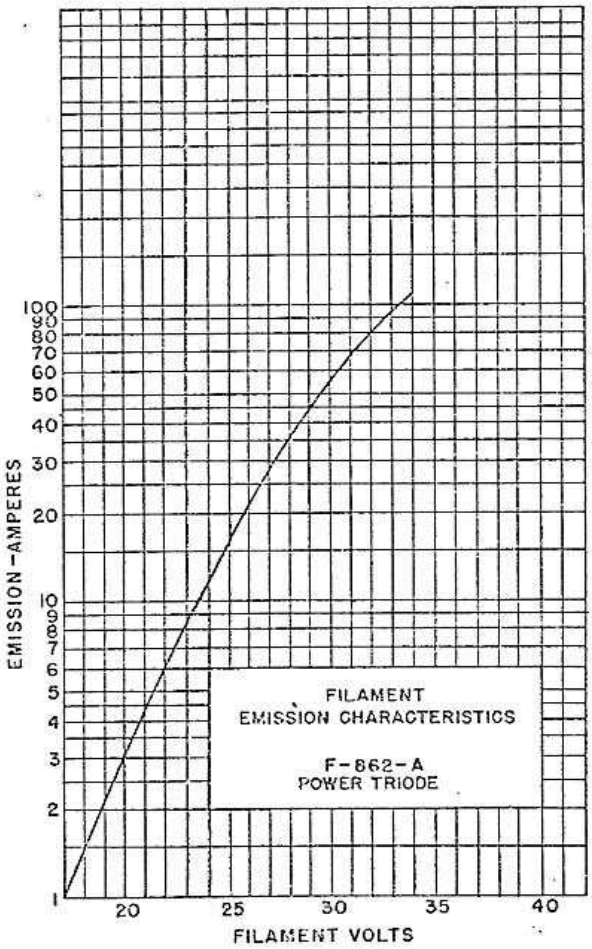
*** Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115% of carrier conditions.

Typical Operation

DC Plate Voltage	18,000	volts
DC Grid Voltage	-1,000	volts
Peak R-F Grid Voltage	2,550	volts
DC Plate Current	88.33	amperes
DC Grid Current (Approximate)	0.9	ampere
Driving Power (Approximate)	2.4	kilowatts
Power Output (Approximate)	100	kilowatts







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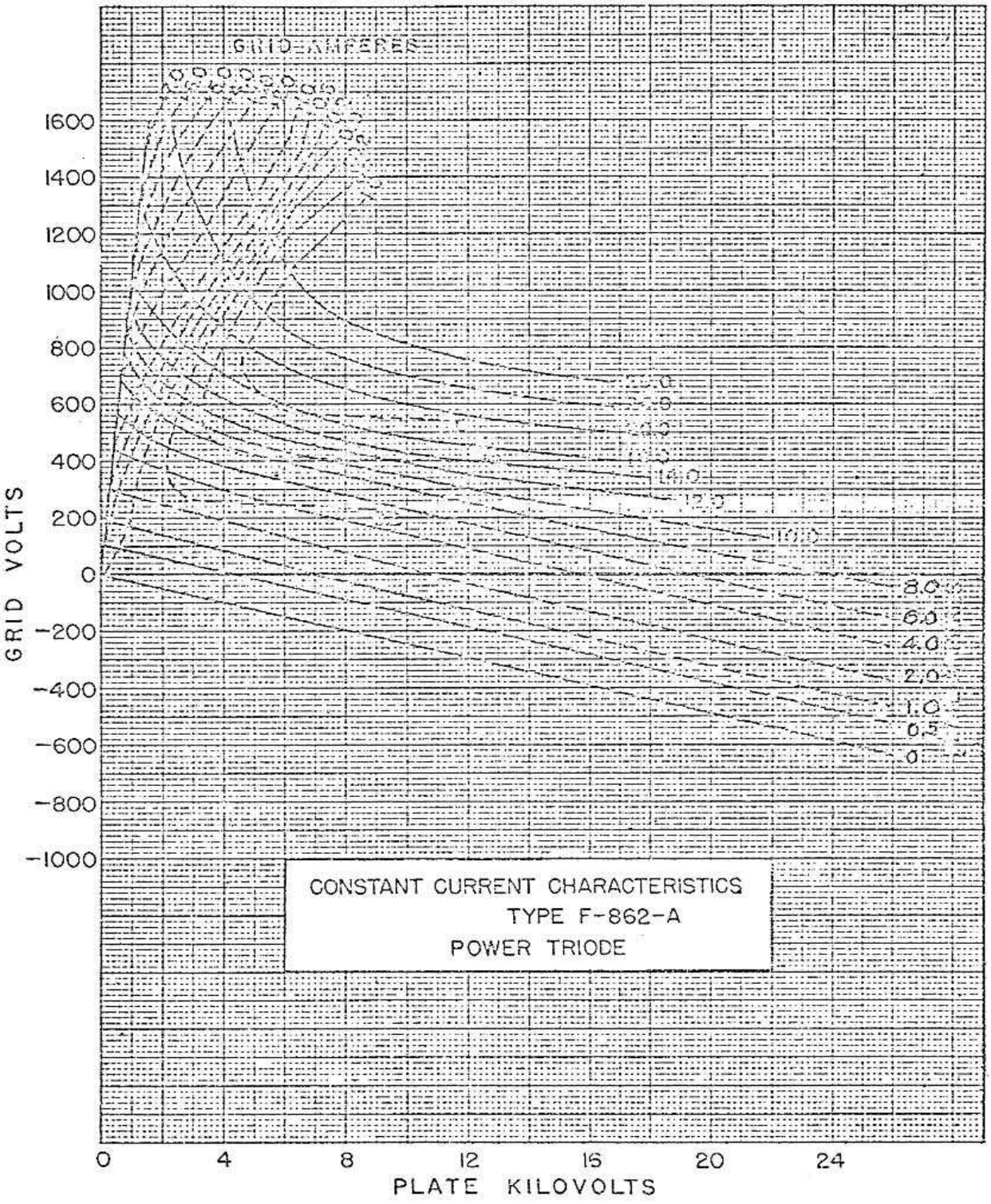

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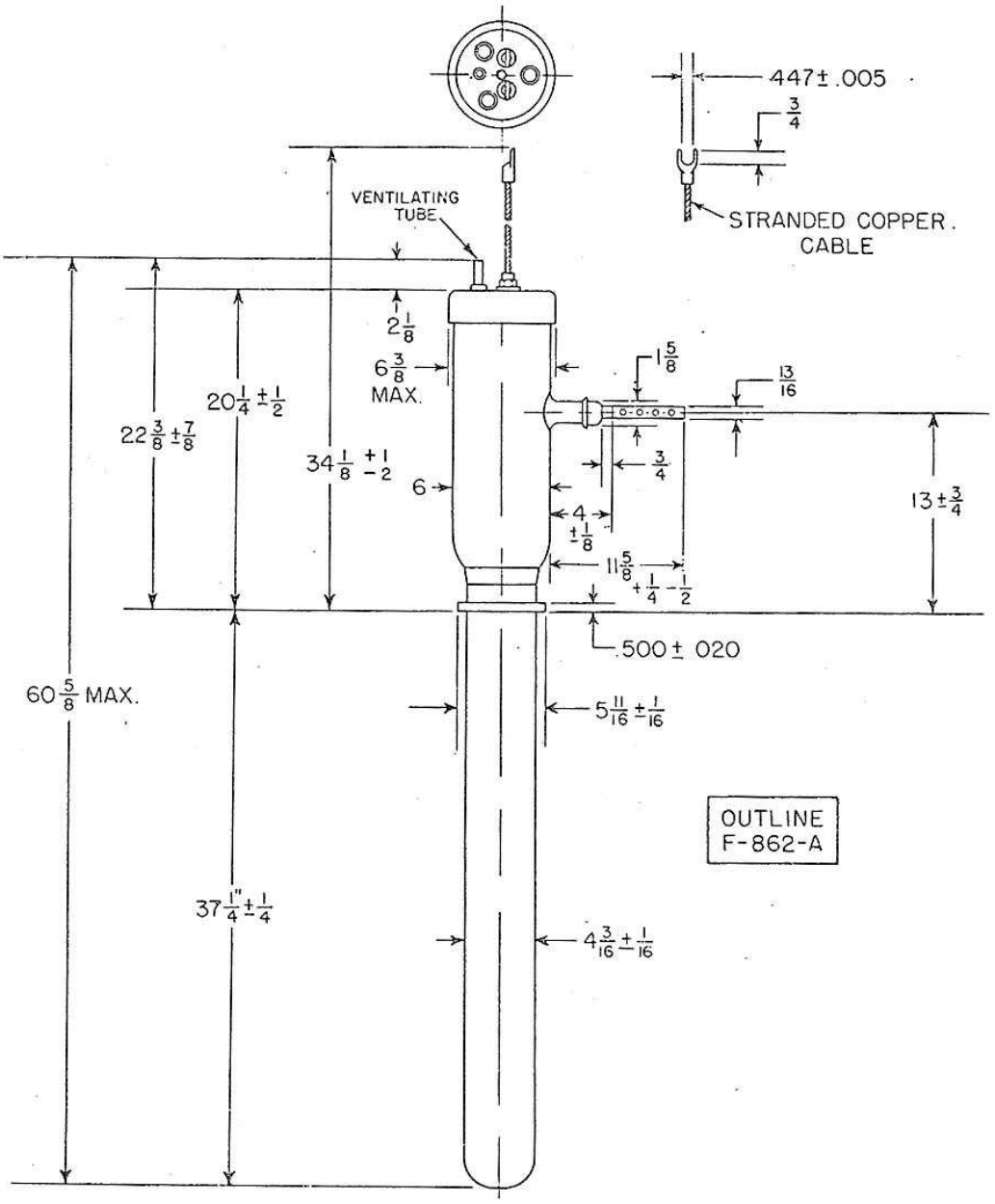

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