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# HALF-WAVE MERCURY-VAPOR RECTIFIER

## GENERAL DATA

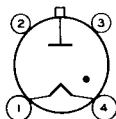
### Electrical:

Filament, Coated:	Min.	Av.	Max.	
Voltage . . . . .	2.25	2.5	2.75	ac volts
Current at 2.5 volts . . . . .	-	2	2.2	amp
Heating time at rated voltage . . . . .	10	-	-	sec
Peak Tube Voltage Drop (Approx.) . . . . .	-	15	-	volts

### Mechanical:

Operating Position . . . . .	Vertical, base down			
Maximum Overall Length . . . . .	4-11/16"			
Seated Length . . . . .	3-15/16" ± 1/8"			
Maximum Diameter . . . . .	1-9/16"			
Weight (Approx.) . . . . .	1 oz			
Bulb . . . . .	ST12			
Cap. . . . .	Small (JETEC No.C1-1)			
Socket . . . . .	Johnson No.122-224, or equivalent			
Base . . . . .	Small-Shell Small 4-Pin (JETEC No.A4-5)			
Basing Designation for BOTTOM VIEW . . . . .	4P			

- Pin 1 - Filament
- Pin 2 - No Connection
- Pin 3 - No Connection



- Pin 4 - Filament, Cathode Shield Cap - Anode

### Temperature Control:

**Heating**—When the ambient temperature is so low that the normal rise of condensed-mercury temperature above the ambient temperature will not bring the condensed-mercury temperature up to the minimum value of the operating ranges specified under *Maximum Ratings*, some form of heat-conserving enclosure or auxiliary heater will be required.

**Cooling**—When the operating conditions are such that the maximum value of the operating condensed-mercury-temperature range is exceeded, provision should be made for forced-air cooling sufficient to prevent exceeding the maximum value.

### Temperature Rise of Condensed Mercury to Equilibrium Above Ambient Temperature (Approx.):

No load . . . . .	22	°C
Full load . . . . .	26	°C

←Indicates a change.



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Maximum Ratings, Absolute Values: For supply frequency of 60 cps

Operating Condensed-Mercury-  
Temperature Range  
20° to 60° C

PEAK INVERSE ANODE VOLTAGE . . . . .	7500 max.	volts
ANODE CURRENT:		
Peak . . . . .	500 max.	ma
Average* . . . . .	125 max.	ma
Fault, for duration of 0.1 second maximum . . . . .	5 max.	amp

\* Averaged over any interval of 30 seconds maximum.

## OPERATING CONSIDERATIONS

*Shields and rf filter circuits* should be provided for the 816 if it is subjected to extraneous high-frequency fields during operation. These fields tend to produce breakdown effects in mercury vapor and are detrimental to tube life and performance. When shields are used, special attention must be given to providing adequate ventilation and to maintaining normal condensed-mercury temperature. Rf filters are employed to prevent damage caused by rf currents which might otherwise be fed back into the rectifier tubes.

→ Indicates a change.



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For Circuit Figures, see Front of this Section

CIRCUIT	MAX. TRANS. SEC. VOLTS (RMS) E	APPROX. DC OUTPUT VOLTS TO FILTER E <sub>av</sub>	MAX. DC OUTPUT AMPERES I <sub>av</sub>	MAX. DC OUTPUT KW TO FILTER P <sub>dc</sub>		
Fig. 1 Half-Wave Single-Phase In-Phase Operation	5300 <sup>□</sup>	2400	0.125	0.3		
Fig. 2 Full-Wave Single-Phase In-Phase Operation	2600 <sup>□</sup>	2400	0.25	0.6		
Fig. 3 Series Single-Phase In-Phase Operation	5300 <sup>□</sup>	4800	0.25	1.2		
Fig. 4 Half-Wave Three-Phase In-Phase Operation	3000 <sup>□</sup>	3600	0.75	2.7		
Fig. 5 Parallel Three-Phase Quadrature Operation	3000 <sup>□</sup>	3600	1.5	5.4		
Fig. 6 Series Three-Phase Quadrature Operation	3000 <sup>□</sup>	7200	0.75	5.4		
Fig. 7 Half-Wave Four-Phase Quadrature Operation	2600 <sup>□</sup>	3500	Resis- tive Load 0.45	Induc- tive Load 0.5	Resis- tive Load 1.55	Induc- tive Load 1.75
Fig. 8 Half-Wave Six-Phase Quadrature Operation	2600 <sup>□</sup>	3600	Resis- tive Load 0.47	Induc- tive Load 0.5	Resis- tive Load 1.7	Induc- tive Load 1.8

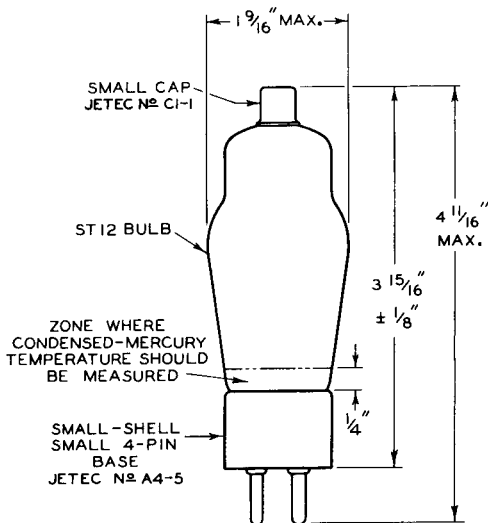
<sup>□</sup> For maximum peak inverse anode voltage of 7500 volts and condensed-mercury-temperature range of 20° to 60° C.

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92CM-6277R4