MERCURY VAPOUR RECTIFIER

AH200

INTRODUCTION

The AH200 is a hot cathode Mercury Vapour Rectifier with maximum ratings of 20kV peak inverse voltage and 10A peak current. It is similar to the AH213, differing only in filament rating and in terminal sizes.

GENERAL DATA

(See also Preamble to Rectifier Section of this Catalogue)

Electrical

Filament	Oxide Coated	
Filament Voltage	2·5	V
Filament Current	40	A
Filament Heating Time	1	Minute
Condensed Mercury Temperature	*(See page 2)*	
Max Peak Inverse Voltage	*(See page 2)*	
Max Anode Current:		
Peak	*(See page 2)*	
Mean‡	*(See page 2)*	
Under fault conditions (0·1 seconds Max duration)	100	A

Mechanical

Overall Length	18·0 inches	(457 mm)	Max
Overall Diameter	5·25 inches	(133 mm)	Max
Net Weight	1·75 pounds	(800 gm)	Approx
Mounting Position	Vertical, base down		
Base	*(See outline drawing)*		

CONTROL OF CONDENSED MERCURY TEMPERATURE

On the following pages two curves are given showing:

1. Total heating time for any value of ambient temperature. This is for use when the valve is being switched on from cold.
2. Rise of condensed mercury temperature above ambient plotted against heating and cooling time. This can be used as indicated by the example in the preamble to this section of the catalogue.

MAXIMUM OPERATING CONDITIONS
(absolute values—see Preamble)

Circuit	* Diagram	Condensed Mercury Temp. °C	Peak Inverse Voltage (50-60 c/s) kV	Anode current in Amperes		Transformer Secondary Voltage (R.M.S.) kV	Max D.C. Output	
				Peak	Mean‡		kV	Amps
Single Phase Full Wave	A	30–40	20	10	2·5	7·0	6·3	5·0
		30–50	15	10	2·5	5·3	4·7	5·0
		30–60	10	10	2·5	3·5	3·1	5·0
Single Phase Full Wave Bridge	B	30–40	20	10	2·5	14·0	12·6	5·0
		30–50	15	10	2·5	10·6	9·5	5·0
		30–60	10	10	2·5	7·0	6·3	5·0
Three Phase Half Wave	C	30–40	20	10	2·5	8·1†	9·5†	7·5
		30–50	15	10	2·5	6·1†	7·1†	7·5
		30–60	10	10	2·5	4·1†	4·7†	7·5
Three Phase Full Wave	D§	30–40	20	10	2·5	8·1	19·1	7·5
		30–50	15	20	5	6·1	14·2	15·0
		30–60	10	20	5	4·1	9·5	15·0

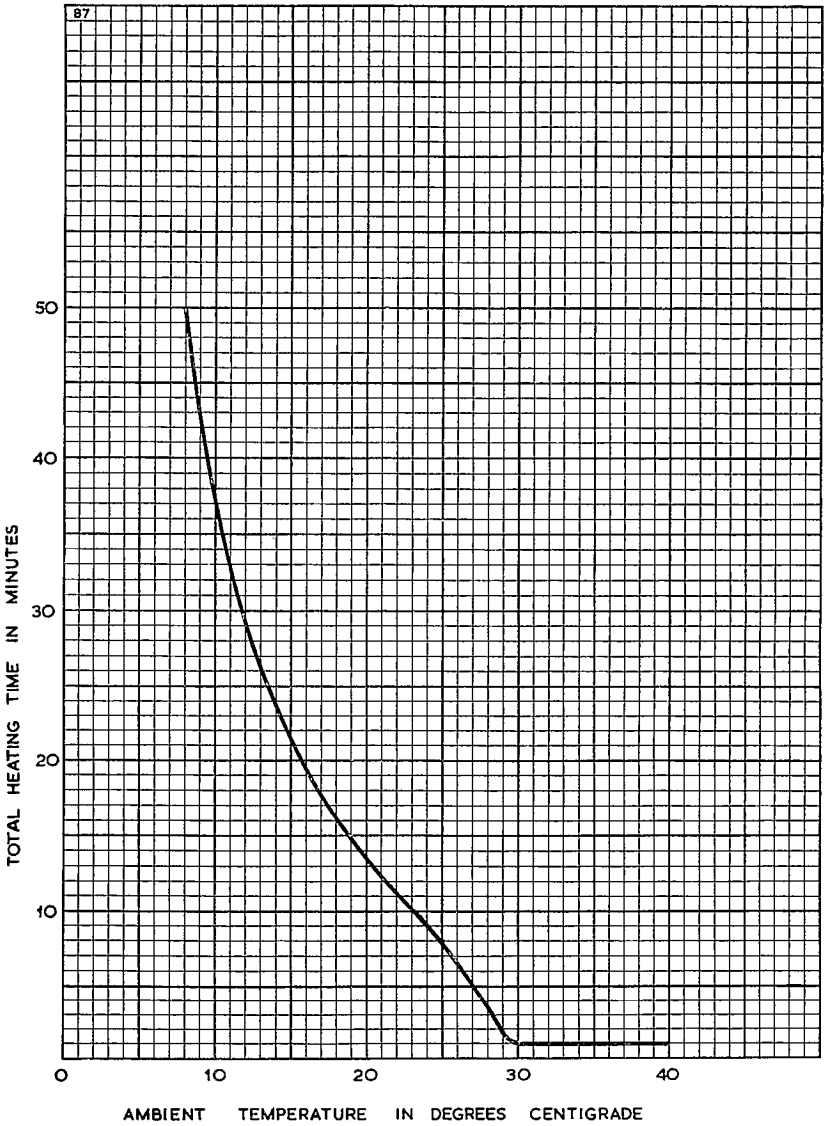
*For diagrams see Typical Rectifier Circuits for Choke Input Filters in the preamble to this section of the catalogue.

†For operation with constant full load. If the load resistance is increased the secondary voltage should be decreased (to avoid excessive peak inverse voltage) until at no load the reduction is 14%. The D.C. output voltage will be correspondingly decreased.

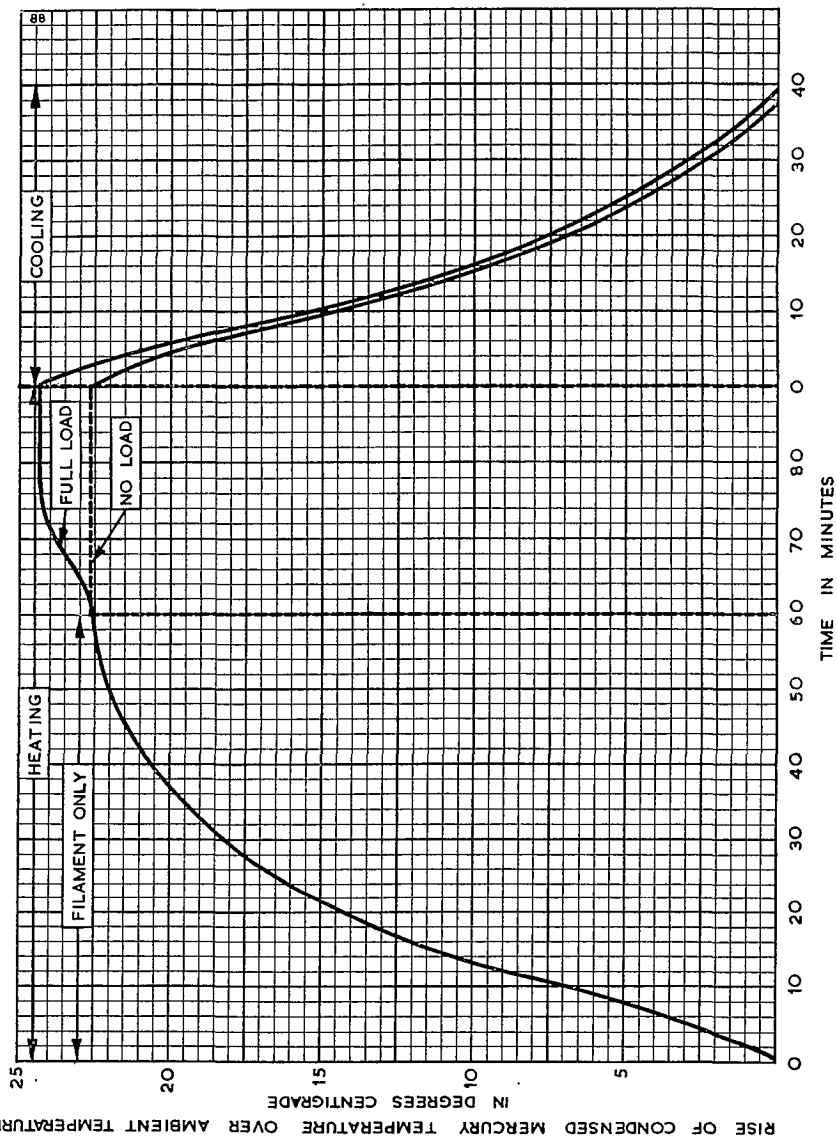
‡Mean anode currents are averaged over any period of 30 seconds maximum.

§With filament and anode supplies out of phase (60°–120°).

TOTAL HEATING TIME CHARACTERISTIC

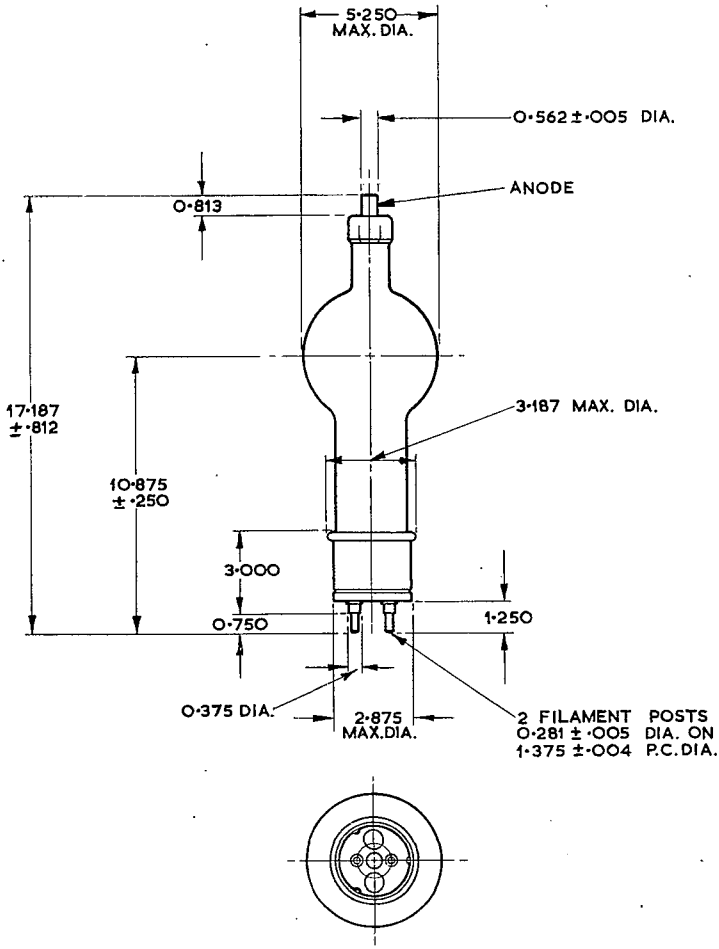


HEATING AND COOLING CHARACTERISTIC



OUTLINE

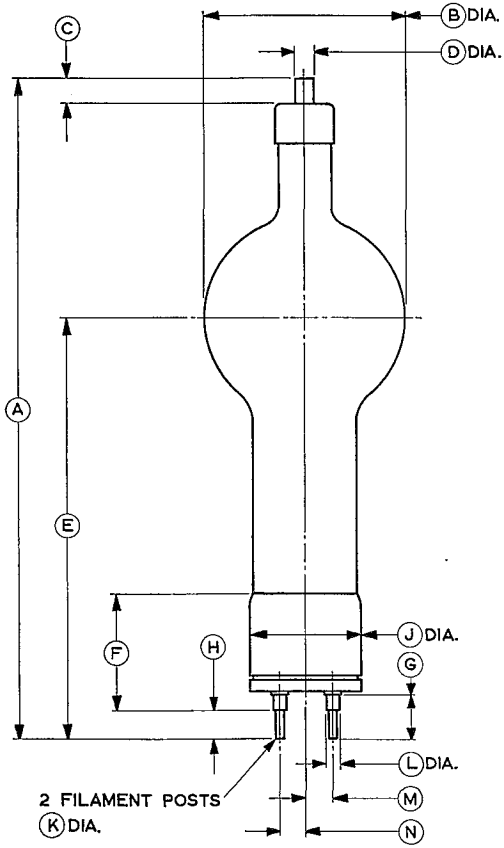
89



ALL DIMENSIONS IN INCHES

OUTLINE

89A



Ref.	Inches	Millimetres	Ref.	Inches	Millimetres
A	17·187 ± 0·812	436·5 ± 20·62	H	0·750	19·05
B	5·250 Max	133·4 Max	J	2·875	73·03
C	0·812	20·62	K	0·281 ± 0·005	7·14 ± 0·13
D	0·562 ± 0·005	14·27 ± 0·13	L	0·375	9·53
E	10·875 ± 0·250	276·2 ± 6·35	M	0·687	17·45
F	3·000	76·20	N	0·687	17·45
G	1·125	28·58			

Millimetre dimensions have been derived from inches.