MERCURY VAPOUR RECTIFIER

AH238

Service Type CV1629

INTRODUCTION

The AH238 is a hot cathode Mercury Vapour Rectifier with maximum ratings of 13kV peak inverse voltage and 5·0A peak current. It will provide a d.c. output of 12kV 3·7A in a three phase full wave circuit.

GENERAL DATA

(See also Preamble to Rectifier Section of this catalogue)

Electrical

Filament	Oxide Coated	
Filament Voltage	4·0	V
Filament Current	7·0	A
Filament Heating Time	1	Minute
Condensed Mercury Temperature	*(See page 2)*	
Max Peak Inverse Voltage	*(See page 2)*	
Max Anode Current:		
Peak	5·0	A
Mean‡	1·25	A
Under fault conditions (0·1 second Max duration)	100	A

Mechanical

Overall Length	9·488 inches	(241mm)	Max←
Overall Diameter	2·312 inches	(58·7mm)	Max←
Net Weight	7 ounces	(200gm)	Approx
Mounting Position		Vertical, base down	
Base		Goliath Edison Screw	
Top Cap		B.S.448/CT9 fitted with screw terminal adaptor	←

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.

← Indicates a change

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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	A
Single Phase Full Wave	A	25–55	13	5	1·25	4·5	4·1	2·5
		25–60	10	5	1·25	3·5	3·1	2·5
		25–65	8	5	1·25	2·8	2·5	2·5
Single Phase Full Wave Bridge	B	25–55	13	5	1·25	9·1	8·2	2·5
		25–60	10	5	1·25	7·0	6·3	2·5
		25–65	8	5	1·25	5·6	5·0	2·5
Three Phase Half Wave	C	25–55	13	5	1·25	5·3†	6·2†	3·75
		25–60	10	5	1·25	4·1†	4·7†	3·75
		25–65	8	5	1·25	3·2†	3·7†	3·75
Three Phase Full Wave	D	25–55	13	5	1·25	5·3	12·4	3·75
		25–60	10	5	1·25	4·1	9·5	3·75
		25–65	8	5	1·25	3·2	7·5	3·75

*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 15 seconds maximum.

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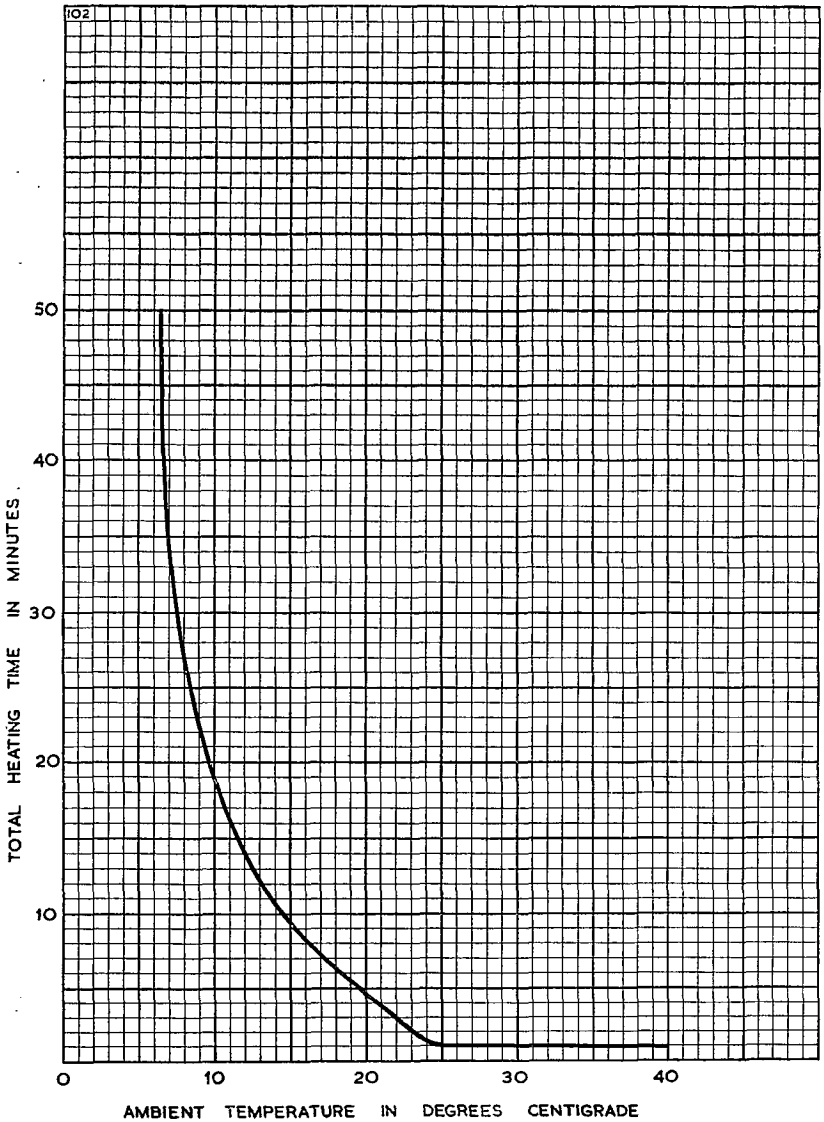
TOTAL HEATING TIME CHARACTERISTIC



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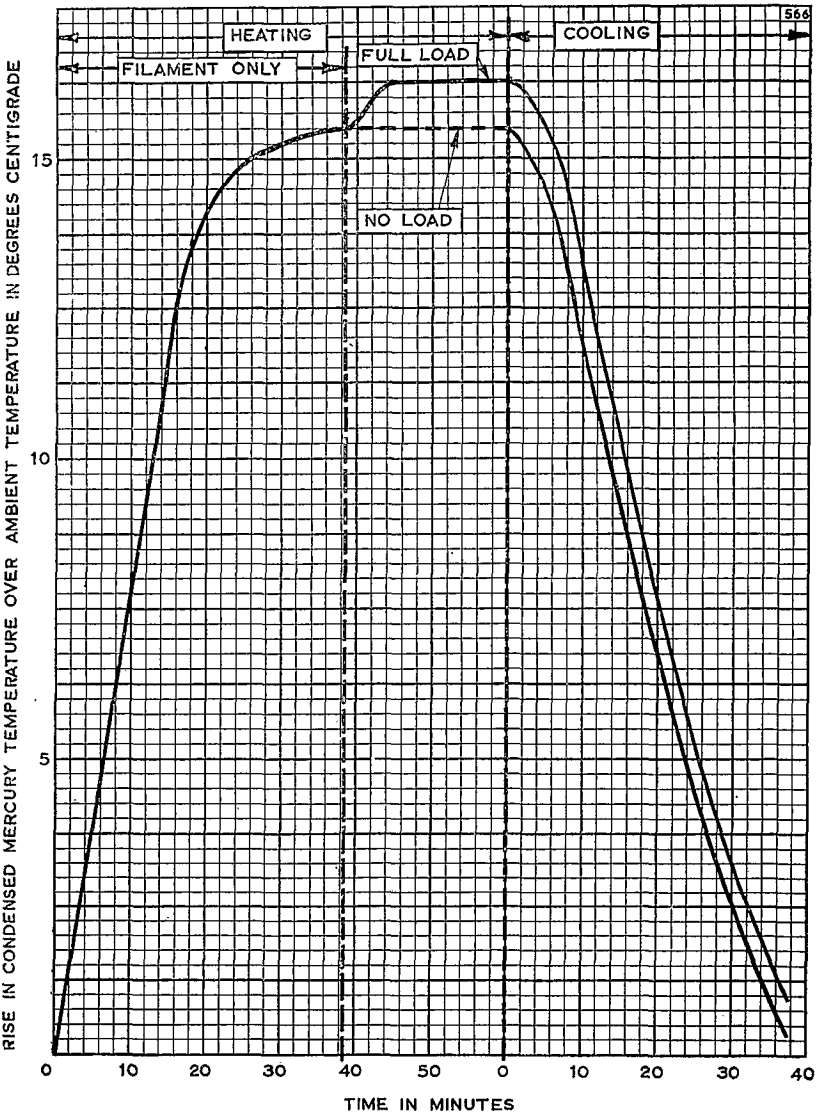
HEATING AND COOLING CHARACTERISTIC



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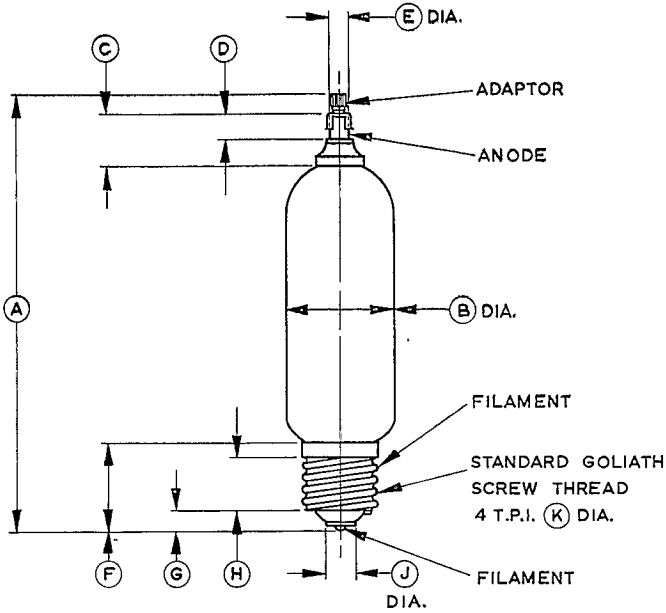
OUTLINE

104C



Ref.	Inches	Millimetres
A	9·488 Max	241 Max
B	2·312 Max	58·72 Max
C	1·062	26·97
D	0·593	15·06
E	0·375 ± 0·002	9·525 ± 0·051
F	1·811 ± 0·040	46·00 ± 1·02
G	0·355 ± 0·040	9·02 ± 1·02
H	1·180	29·97
J	0·630 ± 0·079	16·00 ± 2·01
K	1·546 ± 0·009	39·27 ± 0·23

Millimetre dimensions have been derived from inches.