



MERCURY VAPOUR RECTIFIER

AH221

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Service Types CV5 and CV1435

INTRODUCTION

The AH221 is a hot cathode Mercury Vapour Rectifier with maximum ratings of 20kV peak inverse voltage and 5A peak current. It will provide a D.C. output of 19.0kV 3.75A 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	..	..	..	..	..	..	..	11 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 (0.2 second Max duration)	..	..	..	..	..	..	..	50 A

Mechanical

Overall Length..	..	..	..	10.63 inches	(270 mm)	Max
Overall Diameter	..	..	..	2.32 inches	(59 mm)	Max
Net Weight	..	..	..	8 ounces	(230 gm)	Approx
Mounting Position	..	..	..	..	..	Vertical, base down
Base	..	..	..	..	..	Goliath Edison Screw

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)

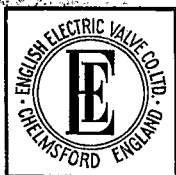
Circuit	* Dia- gram	Con- densed Mercury Temp. °C	Peak Inverse Voltage (50-60 c/s) kV	Anode Current in Amperes		Trans- former Secondary Voltage (R.M.S.) kV	Max D.C. Output	
				Peak	Mean†		kV	Amps
Single Phase Full Wave	A	20-40	20	5.0	1.25	7.0	6.3	2.5
		20-50	11	5.0	1.25	3.9	3.5	2.5
Single Phase Full Wave Bridge	B	20-40	20	5.0	1.25	14.0	12.6	2.5
		20-50	11	5.0	1.25	7.75	7.0	2.5
Three Phase Half Wave	C	20-40	20	5.0	1.25	8.1†	9.5†	3.75
		20-50	11	5.0	1.25	4.4†	5.2†	3.75
Three Phase Full Wave	D	20-40	20	5.0	1.25	8.1	19.0	3.75
		20-50	11	5.0	1.25	4.4	10.4	3.75

*For diagram 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.

→ Indicates a change.

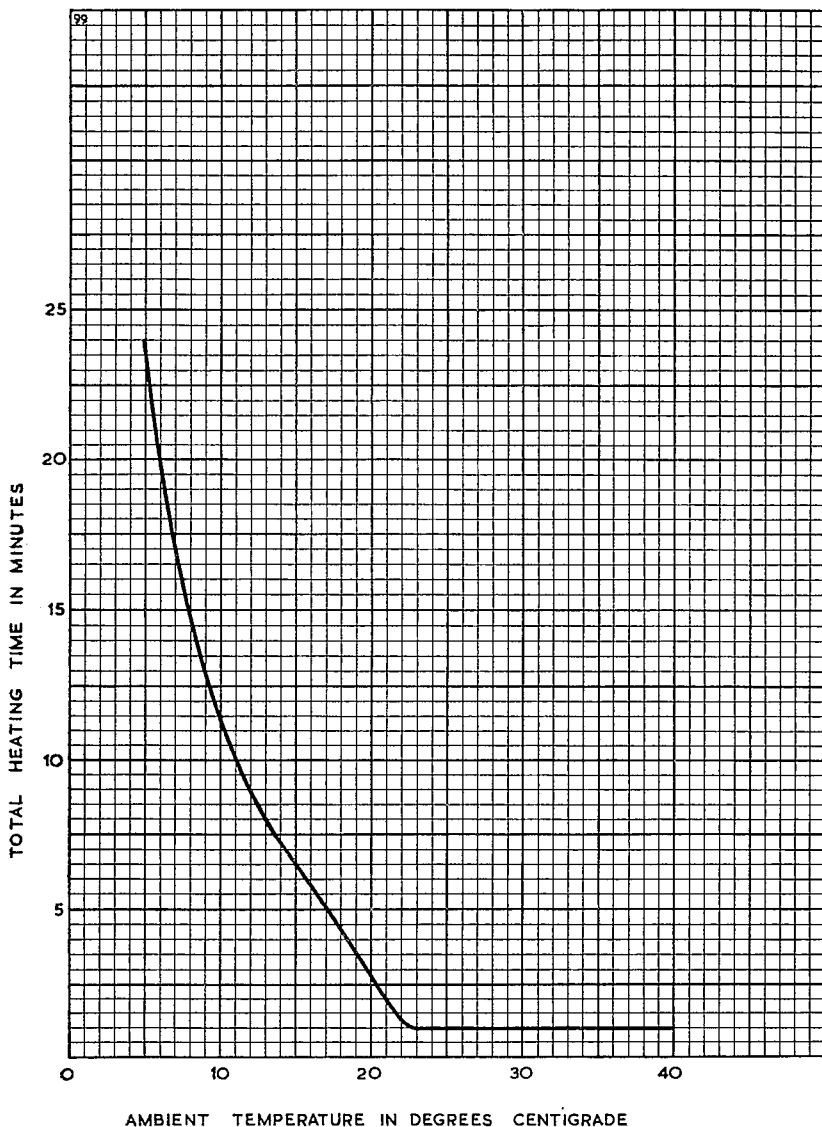


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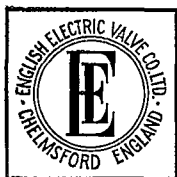
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TOTAL HEATING TIME CHARACTERISTIC



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CHELMSFORD ESSEX, ENGLAND TECHNICAL PUBLICATIONS

Printed in England

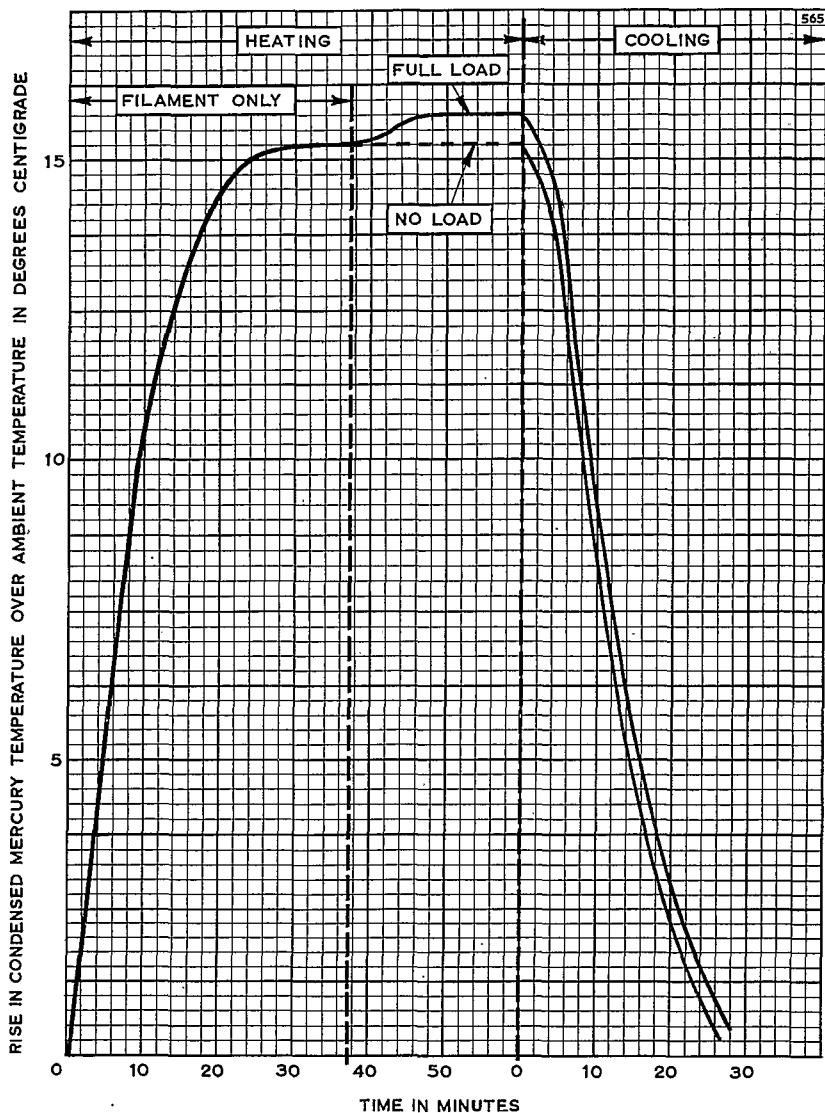


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HEATING AND COOLING CHARACTERISTIC



→ Indicates a change



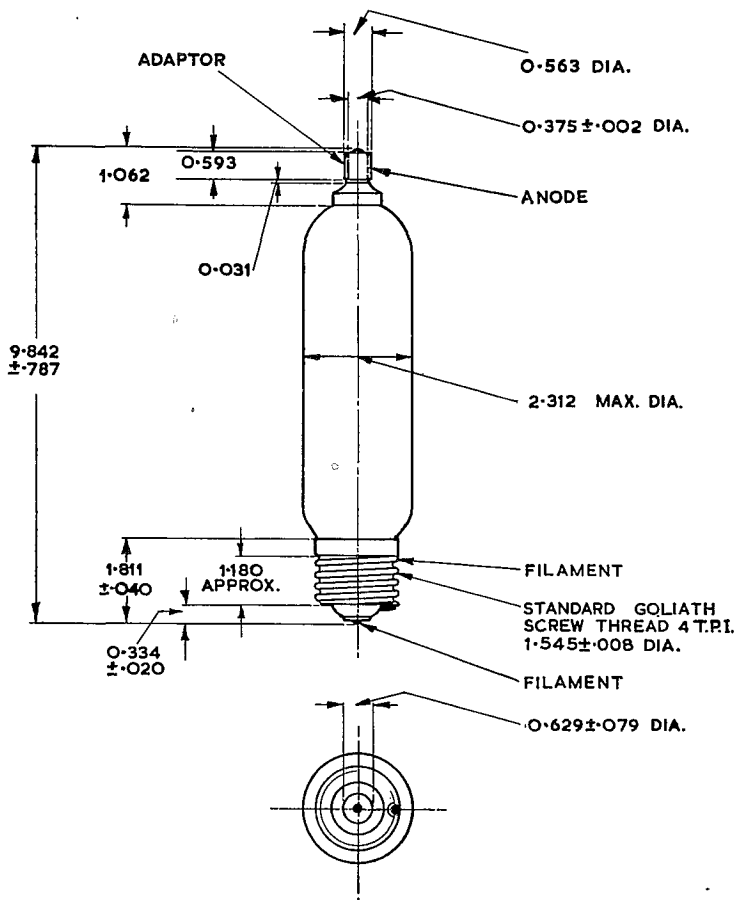
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OUTLINE

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ALL DIMENSIONS IN INCHES

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