



# Hot Cathode Mercury Vapour Thyatron

## 3V/420B

### CATHODE.

Indirectly-heated oxide-coated

Voltage	5	V
Nominal current	5.5	A

### DIMENSIONS.

Maximum overall length	225	mm.
Maximum bulb diameter	64	mm.
Base	Standard British 5-pin	
Net weight	167	gm.

### MAXIMUM RATINGS.

Maximum peak inverse voltage	1,500	V
Maximum peak anode current at 25 c/s and above	12.5	A
Maximum average anode current	2.5	A
Maximum peak grid current	0.1	A
Condensed mercury temperature range	25°C. to 50°C.	

The above ratings apply to operation with a choke-input filter and a supply frequency of 50 c/s.

### MAXIMUM PEAK INVERSE VOLTAGE RATINGS.

Natural Ventilation	up to 35°C.	35°C. to 40°C.
Peak inverse voltage	1,500V	1,000V

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## TYPICAL OPERATING CONDITIONS.

	No. of Valves	Maximum D.C. Output voltage	Maximum D.C. Output current
Bi-phase half wave	2	500V	5.0 A
Full wave	4	1000V	5.0 A

## THYRATRON OPERATION.

With a condensed mercury temperature of 35°C. the minimum value of grid blocking voltage required to prevent ignition will be :

Anode voltage	Grid voltage (approx.)
200 V	—10
500 V	—12

For positive operation it is recommended that for a given anode voltage the grid should be biased back beyond the value required to prevent ignition and a pulse of 20 to 30 volts positive applied.

The pulse should have a leading edge as near vertical as possible and the pulse-circuit should be of high impedance in order to limit the grid current.

The control of the output may be effected by varying the phase of the grid pulse relative to the phase of the applied anode voltage.

## CATHODE HEATING TIME.

Minimum cathode heating time 5 minutes. After shipment or transit the valve must be pre-heated for not less than 30 minutes before any anode voltage is applied so that the mercury may be distributed correctly.



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