VALVE ELECTRONIC

MINISTRY OF SUPPLY (R.R.E./L.S./D.I.A.)

Specification M.O.S./CV2638 Issue 2, Dated 20.10.53. To be read in conjunction with K1001	SECURITY Specification: Unclassified Valve: Unclassified

TYPE OF VALVE:- Thyratron (Mercury-Argon)
CATHODE:- Directly heated
ENVELOPE:- Glass, unmetallised
PROTOTYPE:- JAN 393A

RATING			Note
Filament voltage	(V)	2.5	A
Filament current	(A)	7.0	
Max. peak inverse anode voltage	(V)	1250	
Max. peak forward anode voltage	(V)	1250	
Max. peak anode current	(A)	6	
Mean anode current	(A)	1.5	
Max. instantaneous control grid current	(mA)	50	
Min. cathode heating time	(secs)	15	
Max. operating frequency	(c/s)	150	B
Min. temp. of mercury	(°C)	-55	C

MARKING
See K1001/4

PACKAGING
See K1005

BASE
Medium Shell International Octal

CONNECTIONS

Pin	Electrode
1	Filament
2	Filament
3	No pin
4	Control Grid
5	No pin
6	No pin
7	Filament
8	Filament
T.C.	Anode

TOP CAP
As K1001/A1/D5.1 with ceramic shroud

DIMENSIONS
See K1001/A1/D1

Dimension	Min.	Max.
A (mm)		168
B (mm)		53

NOTES

A. Range of Vf = 2.5 ± 5% volts.
B. This is the maximum frequency at which maximum ratings apply.
C. Starting condition only. For equilibrium operation, minimum mercury temperature 20°C.
D. The valves must be mounted in a vertical position with the base down.

To be performed in addition to those applicable in K1001

	Test Conditions						Test	Limits		No. Tested	Note
	Vf (V)	Vg (V)	Va (V)	Ia (A)	Resistor Grid (ohms)	Resistor Anode (ohms)		Min.	Max.		
a	2.5	-	-	-	-	-	If (A)	6.25	7.75	100%	
b	2.5	Adjust	500 D.C.		1K	5K	Vg for (V) conduction	-2	-5.5	100%	1
c	2.5	0	Adjust		1K	5K	Va for (V) conduction	10	35	100%	1
d	0	0	Adjust		1K	1.5 Meg.	Cold gas (kV) conduction	2	10	100%	2
e	2.75	Adjust	220 A.C. ± 10%	1.5	1.0 Meg.	Adjust	Ig (μA)		5	5%	1, 3 & 4
f	2.5			8.0			Anode-cathode voltage drop (V)		16	100%	1,5
g	2.5	Adjust	1500 peak		100K	5K	Vg for (V) conduction	-4	-12	100%	1
h	2.5		220 A.C. ± 10%	1.5 Average	10K	80	Life Test (hrs)	500		1%	6
j	2.5	Adjust	1500 peak		100K	5K	Vg for (V) conduction	-4.0	-12.0	T.A.	1, 7
k	2.5	Adjust	1500 peak		100K	5K	Vg for (V) conduction	-4.0	-12.0	D.A.	1, 8

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TESTS (Cont'd)

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NOTES

1. Voltage reference point is centre tap of filament transformer.

2. The anode voltage is to be applied between anode and control grid, the grid being at approximately earth potential. No connection is to be made to the filament and the temperature of all parts of the valve shall be between 15°C and 50°C. The frequency of the anode voltage supply shall be less than 150 c/s. At or below the minimum limit specified for the anode supply, not more than two flash discharges of any nature should occur. Between the minimum and maximum limits specified for the anode voltage the valve should conduct three or more flashes of current.

3. The valve should be operated for five minutes immediately before the test.

4. The grid voltage shall be increased in the negative direction to a value α at which the valve cuts off. With the grid voltage adjusted to zero and the grid resistor short circuited except for 1000 ohms, the anode current is then readjusted to the value specified. The grid voltage is again increased in the negative direction to the value β at which the valve cuts off. The grid current is then given by the value:-

$$Ig\ (\mu A) = \frac{\alpha - \beta}{Rg}$$ Where α, β are in volts and Rg is in Megohms.

5. This test is made under pulse conditions with the anode and grid strapped. There should be no sign of either sparking of the filament or flash-over during the test.

6. The end-of-life point is when the voltage drop as per test (f) is outside the range 4 to 25 volts.

7. Type Approval Test
Starting condition mercury temperature -55°C to 80°C

8. Design Approval Test
Mercury Temperature 78°C to 82°C.