ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

VALVE ELECTRONIC

CV2868.

Specification AD/CV2868
Issue No. 8 dated 8.11.56.
To be read in conjunction with K1001, ignoring clause 5.2.

SECURITY

Specification	Valve
Unclassified	Unclassified

→ Indicates a change

TYPE OF VALVE:- Thyratron; Triode; Xenon filled.

CATHODE:- Directly heated.

ENVELOPE:- Glass.

PROTOTYPES:- E.E.V./AFX203; MIL/CIA. (See Note A)

MARKING
See K1001/4

BASE
USM4B

RATINGS
(All limiting values are absolute)

			Note
Filament Voltage	(V)	2.5	
Max.Filament Current	(A)	6.5	B
Max. PIV	(V)	340	
Max. Peak Anode Current	(A)	7.7	
→ Max. Mean Anode Current	(A)	0.64	
Normal Mean Anode Current	(A)	0.4	
Min. Grid Control Ratio		40	
Max. Arc-drop at Ia = 0.4A	(V)	11.0	
Approx.Grid Volts to cut-off Ia	(V)	-1.5	C
Ambient Temperature Range	(°C)	-55 to +70	

CONNECTIONS

PIN	ELECTRODE
1	f
2	NC
3	g
4	f
TC	a

TOP CAP
See K1001/A.1/D.5.5.

DIMENSIONS
See K1001/A.1/D.1

Dimension (mm)	Min.	Max.	
A	-	176	
B	-	57.15	←

NOTES

A. CV.2868 is electrically the same as the U.S.A. valve CIA, but it should be noted that the former can be dimensionally larger than the latter as the specified maximum permissible values of the dimensions A and B for the CIA are, respectively, 172 and 43 mm. ←

B. Filament heating time:- 20 Secs (min.)

C. Measured with respect to the centre of the filament at

Va = 75V r.m.s.

CV2868.

TESTS

To be performed in addition to those applicable in K1001.
The nominal frequency of alternating voltages shall be 50 c/s.
For all tests, Vf = 2.5 r.m.s. Filament heating time = 20 secs.

	Test Conditions		Test	Limits		No. Tested	Note
	Va (V)	Vg (V)		Min.	Max.		
a	-	-	If (A)	-	6.5	100%	
b	DC and adjusted to give Ia = 0.4A	0	DC Arc Drop (V)	-	11.0	100%	1.2
c	110 r.m.s.	+ 2.0 Then increase Vg in a negative direction until Ia is just cut off.	Cut off Vg to cut off Ia (V)	Between +1.35 and -2.75		100%	1
d	110 r.m.s. Then decrease Va until Ia is just cut off.	+ 3	Va (r.m.s.) at which Ia is just cut off. (V)	-	45	100%	1
e	135 r.m.s.	Increase from zero in a negative direction until Ia is just cut off.	Negative Vg to cut off Ia. (V)	-	5.3	100%	1
f	DC and adjusted to give Ia = 0.64A at Vg = 0	Adjusted (See Note 3)	Grid Current Ig (μA)	-	5.0	100%	1.3

NOTES

1. The anode - and grid - circuit returns shall be to the centre tap of the filament and Va and Vg shall be measured with respect to this point. Resistance in the anode circuit shall suffice to ensure that Ia does not exceed 0.64A in any test. In all tests except 'f', Rg = 1000 ohms.

2. Operate valve for 1 minute before taking the reading.

3. With Ia at 0.64A and with a grid resistance of value Rg1 = 1 Megohm, the grid supply voltage Eg shall be increased from zero in a negative direction until it just suffices to stop Ia, and its corresponding numerical value is Eg1. The grid supply voltage shall then be reduced to zero, the grid resistance reduced to zero, and the anode current again made 0.64A. Then the grid supply voltage shall again be increased in the negative direction until it just suffices to stop Ia, and its numerical value is Eg2. The grid current Ig shall be calculated from the equation:-

$$Ig = \frac{Eg1 - Eg2}{Rg1}$$, the value of Rg1 being 1 Megohm.