ADMIRALTY SURFACE WEAPONS ESTABLISHMENT

VALVE ELECTRONIC

CV6133

Specification AD/CV6133

Issue 1 dated 15.11.63

To be read in conjunction with K1001 and K1006

SECURITY	
Specification	Tube
Unclassified	Unclassified

TYPE Counter Tube, Geiger-Muller, gamma.

ENVELOPE Glass

EFFECTIVE ANODE LENGTH 29 mm

PROTOTYPE E2960

MARKING

As in K1001/4 See also Note C

PACKING

As in K1005

RATING

		Note
Starting Voltage V_S (average at 20°C) (V)	300	A
Operating Voltage V_W (V)	V_S + 70	
Plateau length (average) (V)	110	
Shielded background counts (average) (counts/min)	7.4	
Useful life (counts)	10^9	
Operating range of temperature °C	-40 to +70	
Count rate for 5 Milli-roentgens/hour radium 226 source (counts/sec)	20	B

CONNECTIONS

See Drawing on Page 4

White lead - Anode

Black lead - Cathode

DIMENSIONS

See Drawing on Page 4

NOTES

A. All measurements made with a lead resistance of 2.2 Megohms shunted by a 5.6 micro-microfarad capacitor in the anode lead adjacent to the valve.

B. With valve in a light-proof container with weight of wall not exceeding 500 mg/cm^2.

C. The operating voltage is to be marked on a label securely fixed to the valve.

Joint Services Catalogue Number is 5960-99-037-3633.

TESTS

To be performed in addition to those applicable in K1001, at least three months after manufacture. Test conditions, unless otherwise stated, are to be:-

Ambient temperature 15° to 25°C.
A resistance of 2.2 Megohms shunted with a 5.6 pfd capacitor to be used in the anode lead adjacent to the valve.
Valve to be enclosed in a light-proof container of wall density such that the weight per square cm does not exceed 500 mg.
Valve to be subjected to a gamma radiation dose rate of 5 milli-roentgens per hour derived from a Radium 226 source.
Counting equipment to have time resolution not worse than 200 microseconds and to respond to pulses of 0.25 volts.

	Test	Test Conditions	AQL %	Insp. Level	Sym-bol	Limits Min.	Limits Max.	Units
(a)	Starting voltage			100%	V_S	270	330	V
(b)	Plateau slope	Voltage range V_S+30V to V_S+110V		100%		-	0.4	%/V
(c)	Shielded background count	See K1001/5.E.7.2. Voltage V_S+70V Average over 10 minutes		100%		-	15	No/min
(d)	Sensitivity	Average over 10 mins. Voltage V_S+70V		100%		17	23	No/sec
(e)	Insulation Resistance between Leads.	Voltage 100V d.c. No radiation		100%		10^9	-	ohms
(f)	Change of Sensitivity with Temperature	As in test (d) Measure change from result of test (d) at (i) Temperature -32°C (ii) Temperature +70°C		QA		- -	5 5	% %
(g)	Variable Frequency Vibration	See K1006/4.19.1.3.1. Frequency Range 1-30 c/s Amplitude ± 0.02 inch Note 1.		QA				

TESTS (Cont'd)

	Test	Test Conditions	AQL %	Insp. Level	Sym-bol	Limits Min.	Limits Max.	Units
(h)	Life	See K1001/5.E.8. Voltage V_S+70V Any valve of batch tested. Average of batch tested.		Note 2		$5x10^8$ 10^9	- -	counts counts
(j)	Data Sheet Note 3.							

NOTES

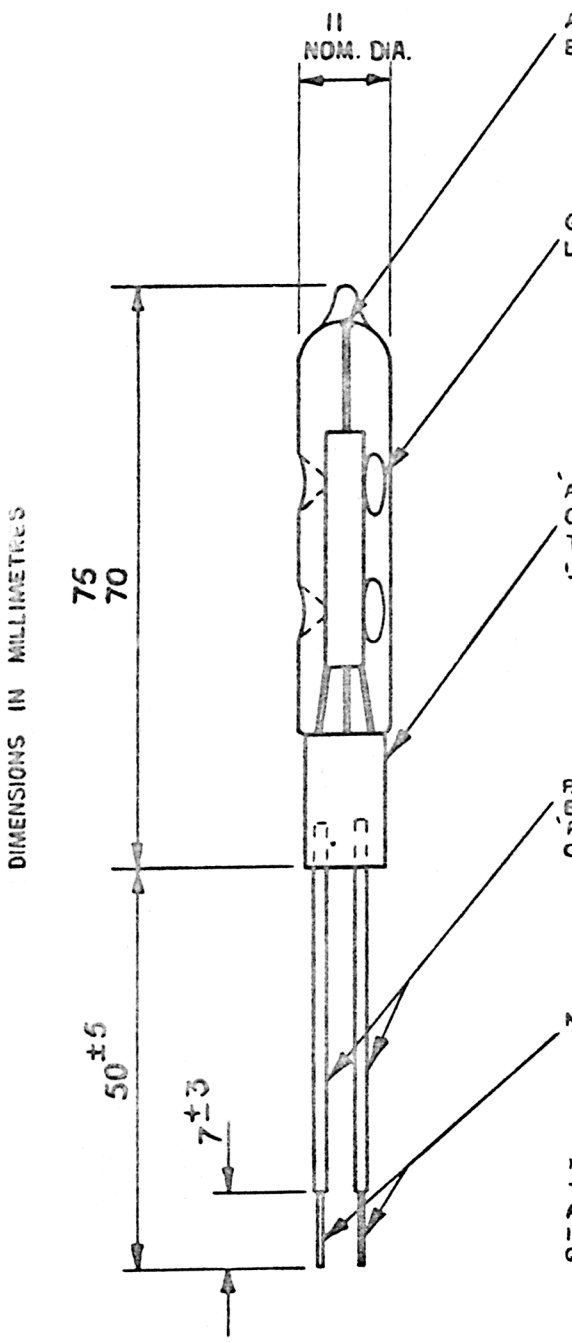
1. On completion of test (g) the valve is to be undamaged and shall pass tests (a) to (e) inclusive.

2. For Qualification Approval six valves shall be tested. During manufacture 4 of each 40 valves completed shall be put on life test after one month of the holding period has elapsed. If these valves fail to meet the life test requirement the remainder of the 40 valves shall be rejected. The valves subjected to life test are not to be supplied as part of delivery to a contract.

3. A Data Sheet quoting the following data and test results is to be packed with each valve:-

Type and Serial No.
Working Voltage .....Volts
Background.....c.p.m.
Plateau slope .....% per Volt.
Sensitivity at 5 mR/hr .....c.p.s.
Insulation Resistance.....Megohms
Plateau Length .....Volts

Any marking required by K1001/4 which cannot be conveniently shown on the valve may be added to the data sheet.


11
NOM. DIA.
ANODE WIRE SUPPORTED BY ENVELOPE
GLASS ENVELOPE DIMPLED TO LOCATE CATHODE.
'ARALDITE' EPOXY RESIN CAP CARRYING A LABEL ON WHICH TYPE & SERIAL No'S ARE TO BE LEGIBLY & INDELIBLY MARKED
P.V.C. SLEEVING 1·2 O/D TO B.S. 2848, TYPE 3 CAST INTO 'ARALDITE' CAP ANODE LEAD - WHITE CATHODE LEAD - BLACK
NICKEL WIRE LEAD 0·5DIA.
NOTE.
THE TUBE MUST PASS THROUGH A TUBULAR GAUGE, 75mm LONG 12mm DIA. & MUST NOT ENTER A GAUGE 10·5 mm DIA.
75
70
50±5
7±3
DIMENSIONS IN MILLIMETRES

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION AD/CV6133, ISSUE 1 DATED

15TH NOVEMBER, 1963

AMENDMENT NO. 1

Page 1 MARKING Add "See also Note C".

NOTES Add note as follows:-

C. The operating voltage is to be marked on a label securely fixed to the valve.

October, 1967.

T.V.C.
for
A.S.W.E.

6/1/68