

Specification MOS/CV 4047	<u>SECURITY</u>
Issue 3. Dated 17th April, 1957.	<u>Specification</u>
To be read in conjunction with K1001	UNCLASSIFIED
	<u>Valve</u>
	UNCLASSIFIED

→ indicates a change

TYPE OF VALVE - Reliable Gas-filled Voltage Stabilisor with flexible leads			<u>MARKING</u>  See K1001/4		
CATHODE - Cold					
ENVELOPE - Glass					
PROTOTYPE - VX7127					
<u>RATING</u>			<u>BASE</u>  B7G/F		
Max. Striking Voltage	(V)	400	<u>Note</u>  C		
Nom. Stabilised Voltage	(V)	306			
Max. Cathode Current	(mA)	4.0			
Min. Cathode Current	(mA)	2.0			
Voltage stability over current range	(V)	10 <sup>+0.5</sup> -2 -2.5			
Max. Shock (short duration)	(g)	500			
Max. Acceleration (continuous operation)	(g)	2.5			
			<u>CONNECTIONS</u>		
			<u>Lead</u>	<u>Electrode</u>	
			1	Internally connected	
			2	Cathode	
			3	Internally connected	
			4	Anode	
			5	Internally connected	
			6	Primary Anode	
			7	Internally connected	
			<u>DIMENSIONS</u>  See K1001/A1/D11		
			<u>Dimension (mm)</u>	<u>Min.</u>	<u>Max.</u>
			A. Overall length	-	54.5
			B. Diameter	16.0	19.0
			L. Seated height	-	47.5
			D. Lead length	38	-
			<u>MOUNTING POSITION</u>  Any		

NOTES

- A. All limiting values are absolute.
- B. The valve shall be operated with lead 4 and lead 6 connected together externally.
- C. The nominal stabilised voltage tends to rise towards 200V during life

To be performed in addition to those applicable in K1C01

Test Conditions - unless otherwise specified.

- Note 1. A D.C. voltage not exceeding 300 volts shall be applied between anode and cathode and shall be increased steadily at a rate not exceeding 25 volts per second until the valve strikes. The ripple content of the D.C. supply shall not exceed 0.5%. A protective resistor of at least 5000 ohms shall be included in the circuit for all electrical tests.
2. For the measurement of maintaining voltages the applied voltage, see Note 1, shall be adjusted until the cathode current reaches the test figure. It shall remain at the test figure for not less than 3 minutes before the measurement is made.
3. Regulation shall be measured as the difference between the two appropriate maintaining voltages.

K1C01	Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits		Units
						Min.	Max	
	<u>GROUP A</u>							
	Striking Voltage	Note 1		100%	Vs	-	400	V
	Maintaining Voltage	Ia = 3.0 mA Note 2		100%	Vm	302	314	V
	Regulation	Ia changed from 2.0 mA to 4.0 mA Notes 2 & 3.		100%	Vr	-	+0.5 -2.5	V
	Anode-cathode Leakage Current	Vak = 50V		100%	Iak		10.0	μA
5.12	<u>GROUP B</u> Lead Fragility	No voltages	6.5	Ia				
11.2	GROUPS C & D omitted <u>GROUP E</u> Resonance Search	Combined AQL Ia = 3.0 mA; RL=5k; frequency range 25 to 500 c/s	6.5	Ia				
	Vibrational Noise Output Voltage		2.5		Va AC	-	10.0	mV r.m.s.
	Resonant Frequency		2.5		f	200	-	c/s
11.3	Fatigue	No voltages Min pk accel = 5g Duration = 30, 39 30 hours. Frequency = 170 c/s		Ia				
	<u>Post Fatigue Tests</u>							
	Striking Voltage	Note 1	2.5		Vs	-	400	V
	Maintaining Voltage	Ia = 3.0 mA Note 2	2.5		Vm	302	314	V

K1001	Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits		Units
						Min.	Max.	
	<u>GROUP E</u> (Cont'd)							
	Shock	No voltages Hammer angle = 30°		IA				
	<u>Post Shock Tests</u>							
	Striking Voltage	Note 1	2.5		Vs	-	400	V
	Maintaining Voltage	Ia = 3.0 mA Note 2	2.5		Vm	302	314	V
	<u>GROUP F</u>							
AVI/5	Life	Ia = 3.0 mA Notes 1 & 2		IA				
AVI/5.3	Intermittent Life Test	Ia = 3.0 mA Notes 1 & 2		IA				
	<u>Life Test End-point</u> (500 hrs)							
AVI/5.6	Inoperatives		2.5					
	Striking Voltage	Note 1	2.5		Vs	-	400	V
	Maintaining Voltage	Ia = 3.0 mA; Note 2	2.5		Vm	302	314	V
	Regulation	Ia changed from 2.0 mA to 4.0 mA Notes 2 & 3	2.5		Vr	-	+0.5 -3.0	V
	Anode-cathode Leakage Current	Vak = 50V	2.5	I	Iak	-	15	uA
	<u>Life Test End-point</u> (1000 hrs)							
AVI/5.6	Inoperatives		4.0					
	Striking Voltage	Note 1	4.0		Vs	-	400	V
	Maintaining Voltage	Ia = 3.0 mA; Note 2	4.0		Vm	302	314	V
	Regulation	Ia changed from 2.0 mA to 4.0 mA Notes 2 & 3	4.0		Vr	-	+0.5 -3.25	V
	Anode-cathode Leakage Current	Vak = 50V	4.0		Iak	-	20	uA
	<u>GROUP G</u>							
AIX/2.5	Electrical re-test after 28-day holding period.							
AVI/5.6	Inoperatives		0.5	100%				
	Striking Voltage	Note 1	0.5	100%	Vs	-	410	V

Amendment No. 1 to

Specification CV.4047, Issue 3, dated 17th April, 1957.

Page 1

Rating

Normal Stabilised voltage

Add "C" in Note Column

Voltage Stability over current range

Delete:-  $\pm 1.0$   
Substitute:-  $+ 0.5$   
 $- 2.5$

/ Connections

Connections

Lead 6 Amend Anode to read Primary Anode

Dimensions

Delete:- A. Overall length and the figure 54.5  
in Max. Column.

Notes

Add Note C. The nominal stabilised voltage tends to rise  
towards 308V during life.

T.V.C.  
for R.R.E.