

SPECIFICATION	MOS/CV 449	<u>SECURITY</u>	
ISSUE NO.4	DATED 20.8.58	<u>SPECIFICATION</u>	<u>VALVE</u>
To be read in conjunction with K.1001, BS.448, BS.1409		Unclassified	Unclassified

—————> Indicates a change.

TYPE OF VALVE: Gas-filled Voltage Reference Tube.				<u>MARKING</u>		
CATHODE: Cold.				See K.1001/4.		
ENVELOPE: Glass.				<u>BASE</u>		
PROTOTYPE: VX.375. 85A2.				BS.448/B7G.		
<u>RATINGS</u> (All limiting values are absolute)				<u>CONNECTORS</u>		
				Pin	Electrode	
			<u>NOTES</u>			
→ Max. Striking Voltage	(V)	115	A	1	Anode	a
→ Normal Stabilised Voltage	(V)	85		2	Cathode	k
→ Recommended Operating Current	(mA)	6.0		3	Internal Connection	IC
→ Max. Cathode Current	(mA)	10.0		4	Cathode	k
→ Min. Cathode Current	(mA)	1.0		5	Anode	a
→ Max. Incremental Resistance	(Ω)	450		6	Internal Connection	IC
				7	Cathode	k
				<u>DIMENSIONS</u>		
				See BS.448/B7G/2.1 Size Ref. No. 2.		
				<u>DIMENSIONS (mm)</u>	<u>MIN.</u>	<u>MAX.</u>
				"A" Seated Height	-	47.5
				"C" Diameter	16.0	19.0
				"D" Overall Length	-	54.5
				<u>MOUNTING POSITION</u>		
				Any.		
<u>NOTES</u>						
A. Measured at an anode current of 6.0 mA.						

TESTS

CV 449

To be Performed in Addition to those Applicable in K.1001

Test Conditions:- Unless otherwise specified.

Va (b)	R. lim.	Ia
(V)	( $\Omega$ )	(mA)
(Note a)	5K minimum	6.0 (Note b)

Note a A D.C. voltage not exceeding 100 volts shall be applied between the anode and cathode and shall be increased steadily at a rate not exceeding 25 volts/second until the valve strikes. The ripple content of the supply shall not exceed 0.25%.

Alternatively a D.C. voltage of 115 volts shall be applied between the anode and cathode in such a manner that this value is never exceeded. The valve shall strike within 5 seconds. The ripple current of the supply shall not exceed 0.25%.

Note b After the valve has struck, the supply voltage shall be further increased until the anode current is 6.0 mA. It shall be maintained constant for 3 minutes before any characteristic other than striking voltage, is measured.

	Test	Test Conditions	Insp. Level	Symbol	Limits		Units	Notes
					Min.	Max.		
a	Striking Voltage		100%	Va	-	115	V	1
b	Maintaining Voltage		100%	Vb	83	87	V	
c	Regulation (1)	$\delta$ Va for change of Ia from 5.8 to 6.2 mA.	100%		-	0.18	V	
d	Regulation (2)	$\delta$ Va for change of Ia from 1.0 to 10 mA.	100%		-	4.0	V	
e	Voltage Jumps	Ia varied from 1.0 mA to 10 mA Ra = 5,000 $\Omega$ . minimum.	100%			100	mV P/P.	2

f Voltage Stability During Life 1%(4)

The valve shall be set up to operate under normal conditions at Ik = 6.0 mA. The maximum percentage variation of the stabilised voltage during a life period of 1,000 hours shall not exceed 0.5%. The maximum percentage of variation of stabilised voltage after the first 300 hours shall not exceed 0.2%. The maximum short term (100 hours max.) percentage variation of stabilised voltage after the first 300 hours shall not exceed 0.1%.

This test may, if desired, be made on valves undergoing normal factory life tests and examination of the records of such tests will normally be considered to fulfil the requirements of this test clause.

NOTES

1. Test to be conducted in normal ambient room lighting (5 - 50 ft. candles)
2. A calibrated amplifier plus output indicator having a substantially linear response over the range 50 - 5,000 c.p.s. is to be connected between anode and cathode and the indicator observed whilst the anode current is varied through the full rated current range in not less than one second. Where an indicator with a persistence of less than one second is used the operation shall be repeated three times.