ADMIRALTY SIGNAL & RADAR ESTABLISHMENT

VALVE ELECTRONIC

# CV4080

| Specification AD/CV4080<br>Issue No. 1 dated 5.11.58<br>To be read in conjunction with K1001, B.S.448 and B.S.1409. | SECURITY<br>Specification: Unclassified<br>Valve: Unclassified |
|---|---|

**TYPE OF VALVE:** Reliable Gas-Filled Voltage Stabiliser.

**CATHODE:** Cold

**ENVELOPE:** Glass, unmetallised.

**PROTOTYPE:** 75C1

**MARKING**

See K1001/4

**BASE**

See B.S.448/B7G

**RATINGS**

(All limiting values are absolute.)

| | | Note |
|---|---|---|
| Max. Striking Voltage (V) | 110 | A |
| Nominal Maintaining Voltage (V) | 78 | B |
| Max. Anode Current (mA) | 60 | |
| Min. Anode Current (mA) | 2 | |
| Max. Voltage Regulation over range 2-60 mA. (V) | 8 | |
| Max. Acceleration (continuous operation) (g) | 2.5 | |
| Max. Shock (short duration) (g) | 500 | |

**CONNECTIONS**

| Pin | Electrode |
|---|---|
| 1 | a |
| 2 | k |
| 3 | IC |
| 4 | k |
| 5 | a |
| 6 | IC |
| 7 | k |

**DIMENSIONS**

See B.S.448/B7G/2.1 Size Ref. No. 2.

| Dimension | | Min. | Max. |
|---|---|---|---|
| overall length | A mm. | - | 54.5 |
| diameter | B mm. | - | 19.0 |
| seated height | L mm. | - | 47.5 |

**MOUNTING POSITION**

Any.

**NOTES**

A. Measured either in total darkness or in normal ambient light.

B. Measured at 30 mA.

C. To maintain the stability of the valve characteristics a reverse current must not be drawn. This condition is satisfied provided the negative anode voltage does not exceed 70 volts.

## TESTS

To be performed in addition to those applicable in K1001. Tests are to be performed in the specified order unless otherwise agreed with the Inspecting Authority.

Test Conditions - unless otherwise stated:

| Va (V) | R lim. (ohms) | Ia (mA) |
|---|---|---|
| Adjusted Note (i) | 1000 | 30 Note (ii) |

Note (i) A Direct Voltage, not exceeding 50V shall be applied between anode and cathode and shall be increased steadily at a rate not exceeding 10V per second until the valve strikes. The ripple content of the supply shall not exceed 0.25%.

Note (ii) After the valve has struck, the supply voltage shall be adjusted until the anode current is 30 mA. It shall be maintained constant for 3 minutes before any characteristic, other than striking voltage, is measured.

| K1001 Ref. | Test | Test Conditions | AQL % | Insp. Level | Symbol | Limits Min. | Limits Max. | Unit |
|---|---|---|---|---|---|---|---|---|
| 7.1 | Glass Strain | No Voltages | 6.5 | I | | | | |
| | GROUP A | | | | | | | |
| | Striking Voltage | Note 1 | | 100% | Vs | - | 110 | V |
| | Maintaining Voltage | | | 100% | Vm | 75 | 81 | V |
| | Regulation | Ia changed from 2 to 60 mA Note 2. | | 100% | Vr | - | 8 | V |
| | Voltage Jumps | Vary Ia from 2 to 10 mA | | 100% | | | 300 | mV/p/p |
| | | 10 to 60 mA Notes 3, 4. | | | | | 100 | mV/p/p |
| | Oscillation | Vary Ia from 2 to 60 mA Notes 3, 4. | | 100% | Va A.C. | | 20 | mV/p/p |
| | GROUP B | Combined AQL | 6.5 | | | | | |
| | Striking Voltage | Note 6 | 2.5 | I | Vs | - | 110 | V |
| | Leakage Current | V supply = 55V Ra = 1 Megohm | 2.5 | I | Ia | - | 10 | /uA |
| | Microphony | Note 5. | 2.5 | I | - | - | 5 | mV/p/p |
| | GROUP C | | | | | | | |
| 7.2 | Base Strain | No Voltages | 6.5 | IA | | | | |
| | GROUP D | | | | | | | |
| 11.2 | Resonance Search | Ra = 27 k ohm Ia = 10 mA Frequency = 25-500 c/s Acceleration = 2 g Note 3 | | T.A. | | | | |
| | Vibration Noise | Frequency = 25-500 c/s | 2.5 | IA | V ac | | 5 | mV r.m.s. |

| K1001 Ref. | Test | Test Conditions | AQL % | Insp. Level | Symbol | Limits Min. | Limits Max. | Unit |
|---|---|---|---|---|---|---|---|---|
| | GROUP E | Combined AQL | 6.5 | | | | | |
| 11.3 | Fatigue Test | No Voltages<br>Acceleration = 5g<br>Frequency = 170 c/s ± 5 c/s<br>Duration = 30 + 30 + 39 hrs. | | IA | | | | |
| | Post Fatigue Tests | Combined AQL | 6.5 | | | | | |
| | Striking Voltage | Note 1. | 2.5 | | Vs | - | 110 | V |
| | Change in Maintaining Voltage | | 2.5 | | Δ Vm | | ±1.0 | V |
| | Microphony | Note 5. | 2.5 | | | | 10 | mV/p/p |
| 11.4 | Shock Test | No Voltages<br>Acceleration 500 g<br>(Hammer Angle 30°) | | IA | | | | |
| | Post Shock Tests | Combined AQL | 6.5 | | | | | |
| | Striking Voltage | Note 1. | 2.5 | | Vs | - | 110 | V |
| | Change in Maintaining Voltage | | 2.5 | | Δ Vm | | ±1.0 | V |
| | Microphony | Note 5. | 2.5 | | | | 10 | mV/p/p |
| | GROUP F | | | | | | | |
| | Life Test End Point 500 hours | Combined AQL | 6.5 | IA | | | | |
| | Inoperatives | | 2.5 | | | | | |
| | Striking Voltage | Note 1. | 2.5 | | Vs | - | 110 | V |
| | Maintaining Voltage | Vm 0-500 hours | 2.5 | | Δ Vm | | ±1.5 | V |
| | Regulation | Ia changed from 2-60 mA | 2.5 | | Vr | | 8 | V |
| | GROUP G | | | | | | | |
| A IX 2.5 | Re test after Holding Period of 28 days | | | 100% | | | | |
| | Inoperatives | | 0.5 | | | | | |
| | Striking Voltage | Note 1. | 0.5 | | Vs | - | 110 | V |
| | Maintaining Voltage | | 0.5 | | Vm | 75 | 81 | V |

NOTES

1. This test is to be conducted in normal ambient room lighting, 5 to 50 foot candles.

2. This is the difference between maintaining voltages at the maximum and minimum current specified.

3. A calibrated amplifier detector with CRT indicator having a substantially linear response over the range 50-5000 c/s is to be connected between anode and cathode.

4. The anode current is to be varied through the full-rated current range in not less than 1 second. Where an indicator with a persistence of less than 1 second is used, this test shall be performed at least three times, but if an indicator with a persistence of 1 second or more is used, one sweep is sufficient.

5. The valve shall be tested in an approved tapper, details of which can be obtained from the specifying authority.

6. The test is to be conducted in total darkness after the valves have been held in total darkness for 24 hours.

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION AD/CV4080

ISSUE NO. 1 DATED 5.11.58

AMENDMENT NO. 1

DIMENSIONS

Page 1 In Dimension "box" add the nomenclature after code letters as follows:-

A (overall length)
B (Diameter)
L (Seated height)

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