

Burroughs Corporation

ELECTRONIC COMPONENTS DIVISION

PLAINFIELD, NEW JERSEY

NUMERICAL INDICATOR

8502

Bulletin No. 1049

October 15, 1963

B-4021 Low Voltage NIXIE Tube

The 8502 (B-4021) is a gas filled cold cathode, miniature size numerical indicating tube containing a common anode and ten metallic cathodes. The cathodes are formed in the shape of numerals (0 through 9). The tube is intended for use, as a direct in-line readout device in applications where a low (120 volt DC) ionization voltage is required.

ELECTRICAL DATA

ABSOLUTE RATINGS

Ionization Voltage 120 Vdc max.
Supply Voltage 120 Vdc min.
Cathode Current 2.0 mA max.

TEST CONDITIONS (FIGURE 1)

Supply Voltage (Ebb) 120 Vdc
Series Resistor (Rp) 20 K

TEST LIMITS (NOTES 1 & 3)

Cathode Current (Ik)
(minimum) 0.7 mA
(maximum) 1.4 mA
Ionization Voltage (Ebb) . . . 120 Vdc max.

MECHANICAL DATA (Note 2)

Outline See Figure 2
Pin Connection See Figure 3
Mounting Position See Figure 3
Weight 0.2 oz.

ENVIRONMENTAL DATA

Temperature -65°C to +85°C
(Note 1)
Altitude 70,000 ft. max.
Vibration (1) 10-50 cps .08" excursion
(2) 50-500-50 cps
10 G's acceleration
t = 15 minutes (Note 4)
Shock (1) 250 G's 1±.5 msec.
duration 50 G's 11±1 msec. duration
(Notes 5 and 6)

NOTES:

1. At temperatures above and below 25°C, changes in cathode current can be expected.
2. This tube is available with nominal 1.40 inch pin leads; it is then designated as Type B-4021L.
3. Glow on any tube part other than the numeral under test constitutes a failure of this test.
4. For this test, tubes are mounted in each of three planes, X-1, X-2, and Y-1, for one-third of the total excitation time. On each plane, the ten cathodes are energized sequentially at the test conditions.
5. Shock test may be performed on any shock machine capable of producing a half sine wave shock form of the specified duration and amplitude.
6. Each tube is subjected to a total of 20 shocks, 5 shocks in each of positions X-1, X-2, Y-1, and Y-2, in any sequence.

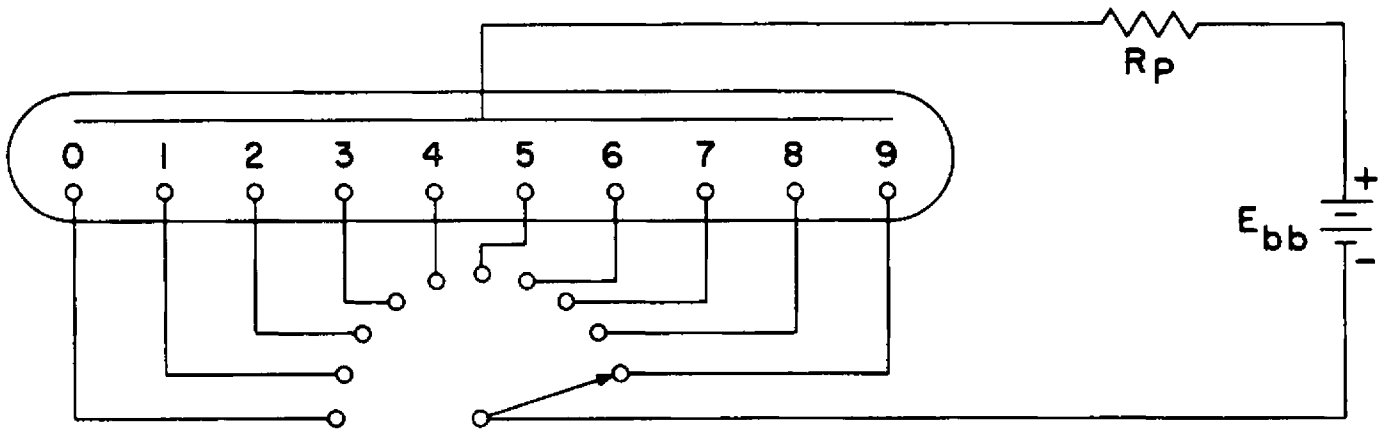


FIG. 1. TEST CIRCUIT

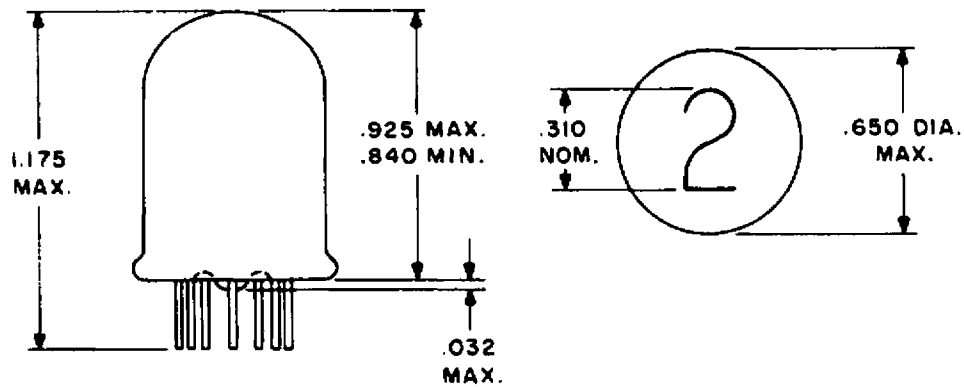
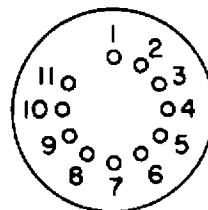


FIG. 2. OUTLINE DRAWING

PIN NO.	CHARACTER
1	NUMERAL 1
2	NUMERAL 2
3	NUMERAL 3
4	NUMERAL 4
5	NUMERAL 5
6	NUMERAL 6
7	NUMERAL 7
8	NUMERAL 8
9	NUMERAL 9
10	NUMERAL 0
11	ANODE



BOTTOM VIEW

FOR PROPER VIEWING, TUBE SHOULD BE MOUNTED WITH PINS 1 AND 7 VERTICALLY ALIGNED WITH PIN 7 AT THE TOP.

Fig. 3. Pin Connections