

# Burroughs Corporation

ELECTRONIC COMPONENTS DIVISION

PLAINFIELD, NEW JERSEY

## NUMERICAL INDICATOR Engineering Data Report

Bulletin No. 1028

January 1, 1963

### 8421

(B5092) Ultra Long Life NIXIE<sup>R</sup> Tube

The 8421 (B5092) is a gas-filled, cold cathode, standard 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.

#### MECHANICAL DATA

Overall Length . . . . . 1.380 Max.  
Seated Height . . . . . 1.124 Max.  
Bulb Diameter . . . . . 1.080 Max.  
Numeral Height . . . . . .610 Nominal  
Pin Connection . . . . . See figure 3  
Mounting Position . . . . . See note 2  
Weight . . . . . .4 oz. nom.

#### ELECTRICAL DATA

##### Absolute Ratings

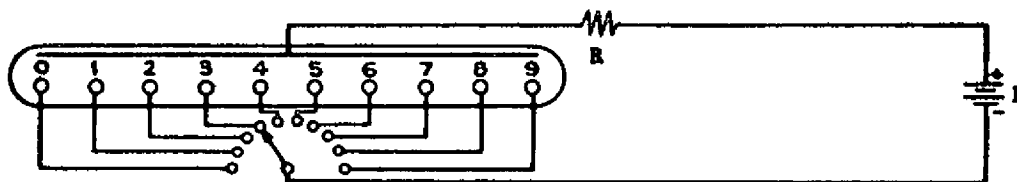
Ionization Voltage . . 170 Vdc Max.  
Supply Voltage . . . . 170 Vdc Min.  
(Note 1)  
Cathode Current . . . . 3.5 ma Max.

##### Test Conditions

Supply Voltage (E) . . 170 Vdc  
Series Resistor (R) . . 10 K  
Cathode Current (I<sub>k</sub>)  
(minimum) . . . . . 1.5 ma  
(maximum) . . . . . 3.0 ma

#### ENVIRONMENTAL DATA

Temperature . . . . . -65° C. to +85° C.  
Altitude . . . . . 70,000 ft.



E	R
170 V	10 K
200 V	24 K
250 V	56 K
300 V	82 K

Figure 1. Basic Circuit

#### NOTES

1. The minimum supply voltage should be 170 volts. However, the use of the highest available voltage with the appropriate series resistor is recommended to maintain cathode current within the specified limits. A supply voltage of 200 volts or more is recommended to assure proper operation at the temperature extremes.
2. The tube should be oriented with pins 1 and 8 in a vertical line with pin 8 at the top.

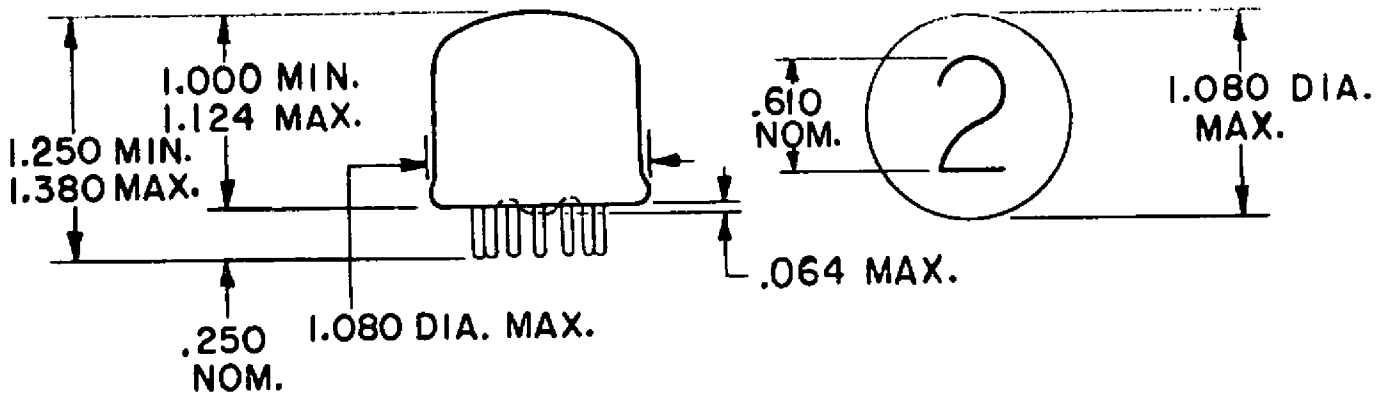
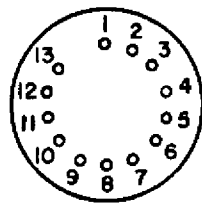


FIGURE 2. OUTLINE DRAWING



BOTTOM VIEW

PIN NO.	CHARACTERS
1	INTERNAL CONNECTION
2	ANODE
3	0
4	9
5	8
6	7
7	6
8	INTERNAL CONNECTION
9	5
10	4
11	3
12	2
13	1

FIGURE 3. PIN CONNECTIONS

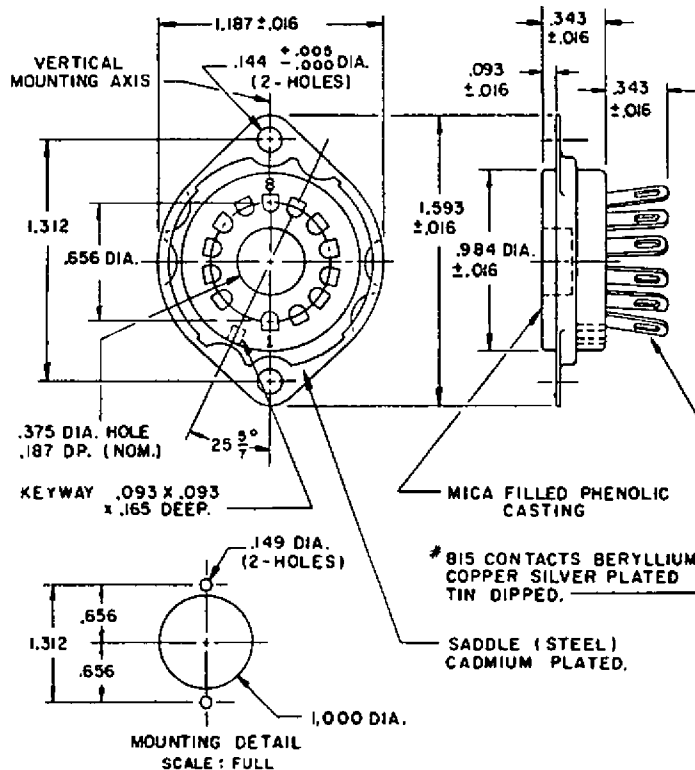


FIGURE 4 GENERAL PURPOSE SOCKET, SK-112