

QUICK REFERENCE DATA

Cold cathode, neon-filled, end viewing indicator tube with long life expectancy. This tube incorporates a red filter to improve the contrast of display.

Numeral height	$\left\{ \begin{array}{l} 15.5 \\ 0.6 \end{array} \right.$	mm in
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Numerals	0 1 2 3 4 5 6 7 8 9
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Cathode current	2.0	mA
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Minimum supply voltage	170	V
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CHARACTERISTICS AND RANGE VALUES FOR EQUIPMENT DESIGN measured at room temperature.

Minimum anode-to-cathode voltage necessary for ignition

(see note 1)	170	V
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Anode-to-cathode maintaining voltage at 2mA

(see page C1)	140 $\pm$ 10	V
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Anode-to-cathode voltage below which all tubes

will extinguish	120	V
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D.C. operation (see page D4)

Recommended cathode current	2.0	mA
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Minimum positive bias on non-conducting cathodes

(see note 2)	60	V
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Half wave a.c. supply (see page D4)

Recommended cathode current

Average	1.5	mA
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Peak	7.0	mA
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Minimum positive bias on non-conducting cathodes

(see note 2)	40	V
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LIFE EXPECTANCY at recommended operating conditions and room temperature (see note 2)

Continuous display of one digit	> 5000	hr
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Sequentially changing the display from one

digit to the others, every 100 hours or less	> 30 000	hr
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ABSOLUTE MAXIMUM RATINGS

Cathode current (Each digit)

Maximum average (averaging time = 20ms)	2.5	mA
Maximum peak	10	mA
Minimum for d.c. operation	1.0	mA
Maximum negative current	0	mA

Bulb temperature

Maximum	+ 70	°C
Minimum	- 50	°C

MOUNTING POSITION

Any

The characters are viewed through the dome of the envelope. The digits will appear upright (within $\pm 1.5^\circ$) when the tube is mounted with the line through pins 1 and 8 vertical, pin 8 uppermost.

OPERATING NOTES

1. Bulb temperatures below 10°C result in a reduced life expectancy and changes in characteristics.
For operation in equipment, to be used within a wide temperature range, the use of constant current operation (high supply voltage and high anode resistor) is recommended.
2. To obtain a good indication over life the voltage between the conducting and remaining cathodes should be greater than the values specified. These conditions are automatically satisfied when the non-conducting cathodes are isolated by, for example, mechanical contacts. It should be noted that when using curves on pages C2 and C3 that the probe current is not shared equally between non-illuminated cathodes.

ACCESSORY

Valve holder

B8 700 67

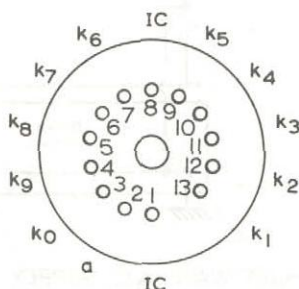
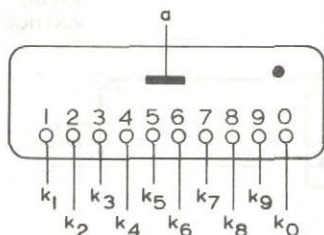
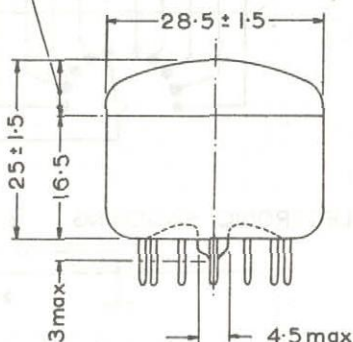
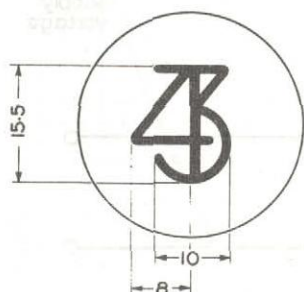


NUMERICAL INDICATOR TUBE

ZMI020
(formerly Z520M)

8374

This part of the
bulb is filter coated



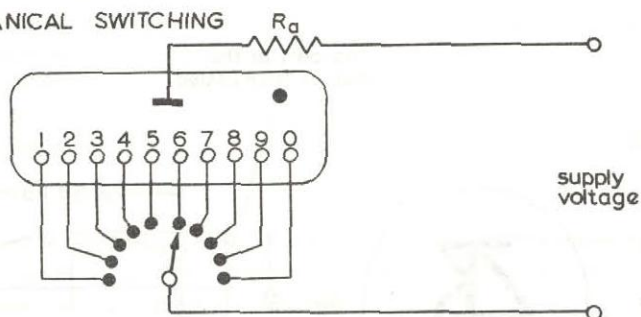
All dimensions in mm

BI3B Base

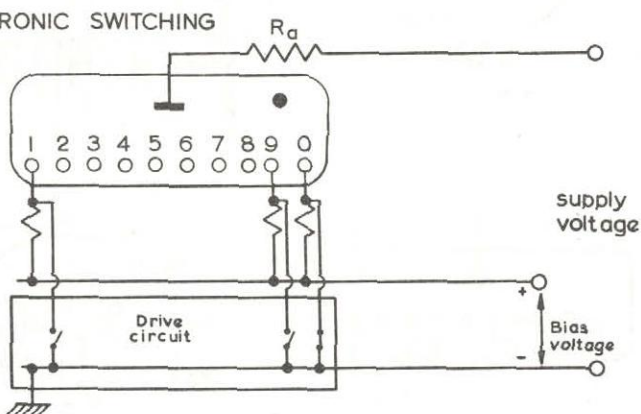
APPLICATION CIRCUITS

B 2632

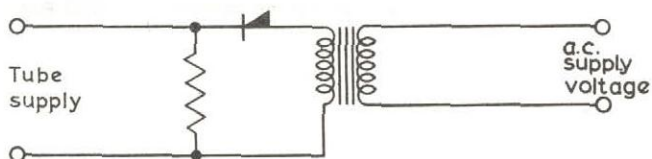
MECHANICAL SWITCHING

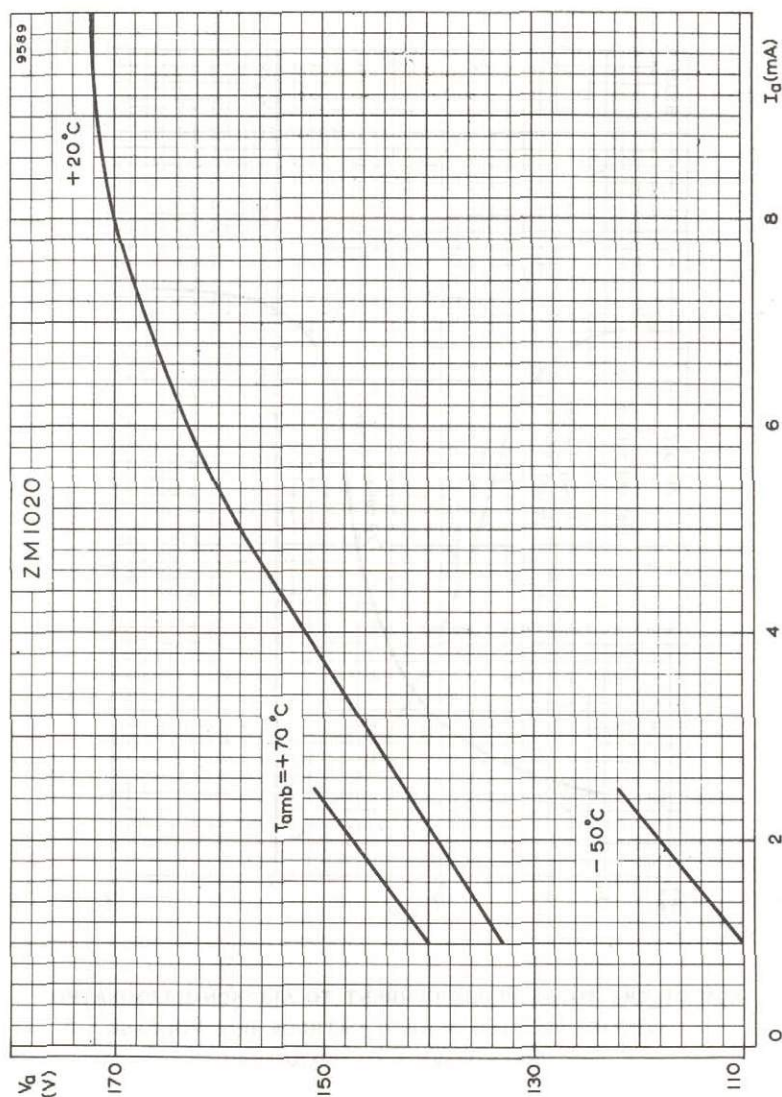


ELECTRONIC SWITCHING

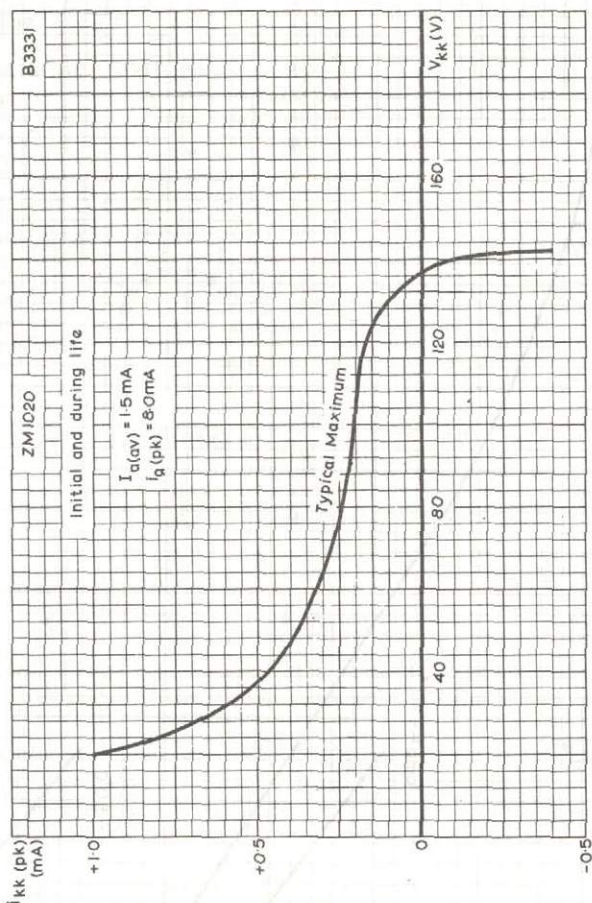


HALF WAVE A.C. SUPPLY

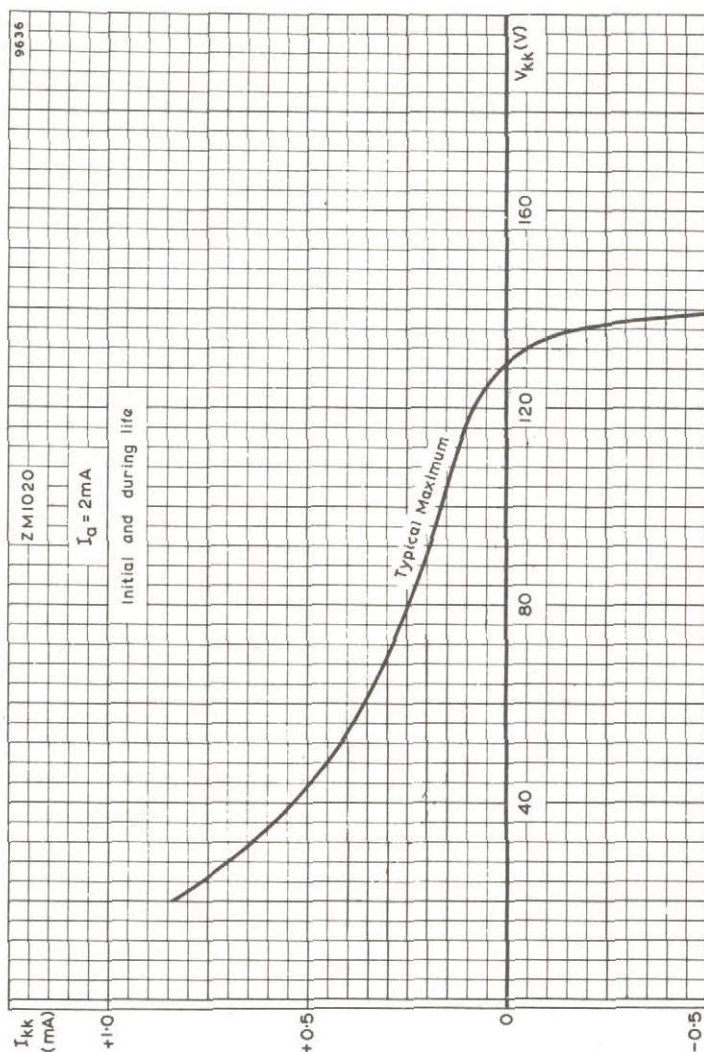




NOMINAL ANODE-TO-CATHODE MAINTAINING VOLTAGE
PLOTTED AGAINST ANODE CURRENT WITH AMBIENT
TEMPERATURE AS PARAMETER



SUM OF THE TOTAL PROBE CURRENT TO ALL NON-ILLUMINATED
CATHODES PLOTTED AGAINST CATHODE BIAS VOLTAGE
(HALF-WAVE A.C. OPERATION)



SUM OF THE TOTAL PROBE CURRENT TO ALL NON-ILLUMINATED
CATHODES PLOTTED AGAINST CATHODE BIAS VOLTAGE
(D.C. OPERATION)