

INDICATOR TUBE

Cold cathode sign indicator tube for side viewing.

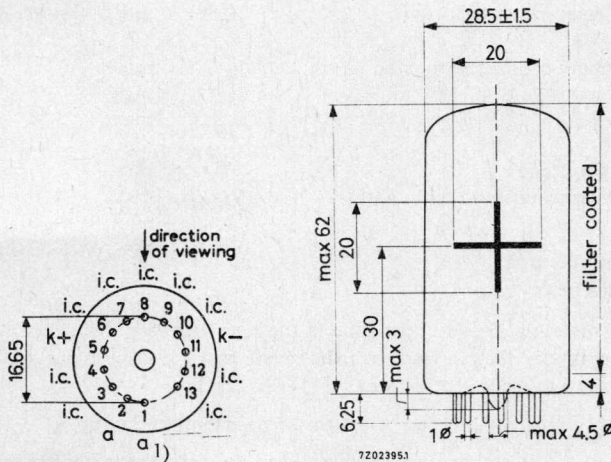
QUICK REFERENCE DATA

Sign height	20 mm
Signs	+ -
Supply voltage	170 V
Cathode current	4.5 mA

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: B13B



GENERAL

The tube has the same physical dimensions as the ZM1040 numeral indicator tube. The ZM1041 is provided with a red contrast filter.

1) Pins 1 and 2 to be interconnected externally.

CHARACTERISTICS

Ignition voltage	V_{ign}	max.	170	V
Maintaining voltage	V_m	see pages B51 and B52		
Extinguishing voltage	V_{ext}	min.	120	V
"Off" cathode probe current characteristic	see page B52			

PRINCIPLE OF OPERATION

The tube contains two cathodes, in the form of the signs + and -, and a common anode. By applying a suitable voltage between the anode and one of the cathodes the corresponding sign will be covered by a red neon glow.

ACCESSORIES

Socket 2422 505 00001 or 2422 505 00002

MOUNTING POSITION

Any
The signs are viewed through the side of the envelope.

LIMITING VALUES (Absolute max. rating system)

Anode voltage necessary for ignition	V_a	min.	170	V
Cathode current,				
average during any conduction period	I_k	min.	3	mA
average ($T_{av} = 20$ ms)	I_k	max.	6	mA
peak	I_{kp}	max.	20	mA
Impulse duration	T_{imp}	min.	80	μ s
Cathode selecting voltage	V_{kk}	min.	60	V
Bias voltage between anode and "off" cathode	V_{bias}	max.	120	V
Bulb temperature	t_{bulb}	max.	+70	$^{\circ}$ C
		min.	-50	$^{\circ}$ C ¹⁾

SHOCK AND VIBRATION

An indication for the ruggedness of the tube is the fact that 95% of the items sampled from the normal production line pass the shock and vibration tests specified below without perceptible damage.

Shock: 25 g_{peak} , 1000 shocks in one of the three positions of the tube.

Vibration: 2.5 g_{peak} , 50 Hz, during 32 hours in each of the three positions of the tube.

¹⁾ Bulb temperatures below 10 $^{\circ}$ C result in a reduced life expectancy and changes in characteristics (see page B52).

In designing equipment to be used within a wide temperature range the use of "constant current operation" (high supply voltage with a high anode series resistor) is recommended.

