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Specifications for Multifunction Storage Unit Type I

by

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1.0 General Description

The Multifunction Storage Unit, Type I is a storage device capable of storing geometrical information in visual display form. The storage is accomplished by means of an electrostatic storage cathode ray tube. The Storage Unit consists of this storage tube and its associated circuitry. Associated circuitry is considered to be all circuitry required by the storage tube itself which is necessary to make the unit a self-contained storage unit. The following six external signals are all that is required in order to write, store and erase in the unit: vertical deflection signal, horizontal deflection signal, gate signal, z axis signal, erase signal (local or remote) and AC power.

The erase signal causes the entire screen to be erased and primed for writing.

2.0 Specifications, Electrical

2.1 Vertical and Horizontal Deflection Amplifiers

Both vertical and horizontal deflection amplifiers are a part of the unit and satisfy the following specifications:

2.1.1 Sensitivity

0.25 volts/Div MAX (nominal), a division is one-tenth of the side of a square inscribed inside the useful screen diameter of 4 inches or about 0.25 inches.

2.1.2 Bandwidth

Greater than 1.25 Mc (3db point).

2.1.3 Rise Time

Less than 0.3 μ sec.

2.1.4 Input Attenuator

X1, X5, X20 volts/Div; AC or DC coupled, with 6:1 gain between fixed positions.

2.1.5 Input Impedance

1 meg or greater shunted by 50pf or less.

2.2 Z Axis Circuit

2.2.1 Input Impedance

1 meg.

2.2.2 Rise Time

Less than 0.5 μ sec.

2.3 Gate Circuit

2.3.1 Polarity

Positive.

2.3.2 Input Impedance

100 K or greater.

2.3.3 Rise Time

Less than 0.5 μ sec.

2.4 Power Requirements

117 vac, 60 cps.

3.0 Specifications, Mechanical

3.1 Front Panel Controls

The following controls are located on the front panel (the display surface of the storage tube is flush with the front panel):
focus, astigmatism, intensity, scale illumination, vertical and horizontal attenuator, vertical and horizontal position, storage threshold adjustment, storage on-off, local erase, Z axis input or gate selector and power on-off switch.

3.2 Front Panel Connectors

The following connectors are located on the front panel: ground,

vertical and horizontal amplifier inputs, gate input, Z axis input, external erase.

3.2.1 External Erase

It should be possible to accomplish external erasure by means of contact closure.

3.2.2 Vertical and Horizontal Deflection Amplifier Inputs

Vertical and horizontal input connectors may be either UHF or BNC connectors.

3.2.3 Gate and Z Axis Inputs

Gate and Z axis input connectors may be UHF, BNC or binding posts.

3.3 Dimensions

Outside dimensions should be approximately 13 inches high X 10 inches wide X 22 inches deep.

4.0 Specifications, Storage Tube

4.1 Light Output

20 foot-lamberts.

4.2 Written Resolution

50 lines/inch minimum.

4.3 Contrast

The tube must be bistable with light and dark tones. 3:1 contrast ratio.

4.4 Storage Time

Infinite.

4.5 Writing Speed

10^6 inches/sec.

4.6 Erasure Time

Less than 150 msec. from start of erase pulse until unit is again ready for writing.

4.7 Useful Screen Diameter

4 inches minimum.

4.8 Radius of Curvature

Flat.