

# “GLOBE” OSCILLOSCOPES



“GLOBE” 10MHz Single Beam Oscilloscope, Model PA-311, suitable for both student and service engineer. It is easy to use and understand yet sophisticated enough for general maintenance of most electronic appliances. A compact, lightweight, general purpose instrument capable of displaying waveforms up to 10MHz, 220V AC or 110V AC single phase supplies, with operation manual, fuse, power cord and Probes. Weight : approx. 3 kilos, dimensions : 270 x 220 x 90 mm., CE approved.

PA-311

## **CRT**

Type	3" round
Display area	8 x 10 DIV (1 DIV = 6mm)
Potential	1.3kV
Lightening color	Green

## **Vertical system**

Sensitivity	5mV / DIV - 5V / DIV +/- 3%
Width of band (-3dB)	DC : 0-10MHz AC : 10Hz - 10MHz
Input impedance	1M $\Omega$ +/- 3% 30pF +/- 5pF
Input coupling	DC , GND, AC
Max. input voltage	400V (DC + AC peak)
Trimming ratio	2.5 : 1

## **Horizontal system**

Sweep time	0.1S / DIV - 0.1 $\mu$ S / DIV +/- 3%
Trimming ratio	2.5 : 1

## **Trigger system**

Mode	AUTO, NORM, TV
Source	INT, LINE, EXT
Polarity	Positive or negative
Trigger sensitivity	INT : 1 DIV, EXT : 0.3V, TV : 2 DIV
External triggering signal input	Input impedance : 1M $\Omega$ +/- 3% 25pF +/- 5pF Max. input voltage : 160V (DC + AC peak)

## **X - Y operation**

Deflection factor	X : 0.5V / DIV +/- 5pF
Width of band (-3dB)	DC : 0 - 1 MHz AC : 10Hz - 1MHz
Phase error	$\leq 3^\circ$ (DC - 50kHz)

## **Calibration**

Source	1kHz +/- 2% 0.5Vp - p +/- 2% Square wave
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## **Power source**

Voltage	110 - 127 VAC +/- 10%, 220 - 240 VAC +/- 10%
Frequency	50Hz +/- 2Hz, 60Hz +/- 2Hz
Max consumption	25W

**“GLOBE” Dual Trace 20MHz Oscilloscope, Model PA-312**, suitable for student laboratory work. The unit is compact and designed for continual student use. 220V AC or 110V AC , with operation manual, fuse, power cord and 2 Probes. Weight : approx. 7.8 kilos, dimensions : 410 x 316 x 132 mm., CE Approved.



PA-312

**CRT**

Type 6" rectangle, internal graticule  
 Display area 8 x 10 DIV (DIV = 10mm)  
 Accelerating voltage 1.9kV  
 Brightness and focusing Controlled at the front panel  
 Trace rotation Adjusted at the front panel

**Vertical system**

Sensitivity and accuracy 5mV - 20V / DIV, +/- 3% 1mV / DIV - 1V / DIV, +/- 5%  
 (5 times, only CH1) 12 calibration steps in order of 1-2-5  
 Width of band (-3dB) DC (AC : 10Hz) - 20MHz  
 Rise time  $\leq 17.5\text{ns}$   
 Input impedance  $1\text{M}\Omega$  +/- 3% 30pF +/- 5pF  
 Input coupling AC, GND, DC  
 Max. input voltage 400V (DC + AC peak)  
 Vertical mode CH1, CH2, DUAL (CHOP, ALT) ADD, CH2 inverse  
 CH1 signal output 25mV / DIV  $50\Omega$  20Hz - 10MHz (-3dB)

**Horizontal system**

Time factor  $0.2\mu\text{s} - 0.2\text{s} / \text{DIV}$  19 steps in an order of 1-2-5  
 Multiplication factor 10 times (Max. sweep speed 20ns / DIV)  
 Accuracy +/- 3%, +/- 5% (10 times)

**Trigger system**

Mode AUTO, NORM, TV-V, TV-H  
 Source VERT (DUAL, ALT), CH1, EXT, LINE  
 Coupling AC  
 Polarity Positive or negative  
 External triggering signal input Input impedance :  $1\text{M}\Omega$  +/- 3% 25pF +/- 5pF  
 Max. input voltage : 400V  
 Sensitivity internal (External) 20Hz - 2MHz : 0.5DIV (0.2Vp-p) 2MHz - 20MHz : 1.5DIV (0.8Vp-p)  
 TV : 1.0DIV (1VP-p) 20MHz - 40MHz : 1.5DIV (0.8Vp-p)

**X - Y operation**

Input Axis X : CH1 input signal Axis Y : CH2 input signal  
 Width of band (-3dB) Axis X : DC - 500kHz  
 Phase error  $\leq 3^\circ$  (DC - 50kHz)

**Axis Z**

Input impedance  $20\text{K}\Omega - 30\text{K}\Omega$   
 Input signal 5Vp-p (Negative signal highlighted)  
 Width of band DC - 2MHz  
 Max. input voltage 30V (DC + AC peak)

**Calibration**

Source 1kHz 0.5Vp - p Square wave

**Power source**

Voltage 110 - 127 VAC +/- 10%, 220 - 240 VAC +/- 10%  
 Frequency 50Hz +/- 2Hz, 60Hz +/- 2Hz  
 Max consumption 45W