



### MS-200

### Features

- 20MHz, Dual Channel
- High Sensitivity 1Mv/DIV
- Z Axis Input
- CH1 Output
- 10 times sweep magnification
- TV Synchronization, X-Y mode
- High luminance, internal graticule
- ALT Triggering Function
- Triggering level lock function
- Automatic synchronize function

SPECIFICATIONS	
<b>CRT</b>	
Type	6-inch rectangular type, internal graticule
Phosphor	P31
Ripple & Noise	CV $\leq 1\text{mV}$ (RMS)
Acceleration voltage	approx 2KV
Effective screen size	8x10 DIV (1 DIV=10mm (0.39in))
Trace rotation	provided
<b>TRIGGERING</b>	
Triggering source	CH1, CH2, LINE, EXT
Coupling	20Hz to full bandwidth
Slope	+/-
Sensitivity	20Hz-2MHz: 1.0 DIV, TRIG-ALT: 2DIV, EXT: 200Mv 2MHz-20MHz: 1.5DIV; 20MHz or higher: 2.0DIV
TRIG-ALT	3DIV, EXT: 800mv
TV	Sync pulse more than 1 DIV (EXT: 1V)
Triggering modes	AUTO, NORM, TV-V, TV-H (Both TV-V and TV-H synchronize only when the synchronizing signal is negative)
Input impedance	Approx: 1M ohm/ approx.25pF
Max input voltage	300V (DC+AC peak), AC: frequency not higher than 1 KHz
<b>VERTICAL AXIS</b>	
Sensitivity	5mV/ DIV, 10 steps in 1-2-5 sequence (X5 MAG: 1mV DIV)
Sensitivity accuracy	$\leq 3\%$ ( $\times 5\text{MAG}$ : $\leq 5\%$ )
Vernier vertical sensitivity	continuously variable to 1/2.5 or less of panel- indicated value
Frequency bandwidth	DC-20MHz ( $\times 5\text{MAG}$ : DC-7MHz)
AC coupling	Low limit frequency 10Hz. (With reference to 100KHz, 8DIV.Frequency response with-3dB)
Rise time	Approx.17.5Ns ( $\times 5\text{MAG}$ :Approx.50Ns) / 9.5nS (X5MAG: Approx.25nS)
Input impedance	Approx. 1M ohm//Approx. 25pF
Square wave characteristics	Overshoot: $\leq 5\%$ (At10Mv /DIV range)
DC balance shift	5mV/ DIV; $\pm 0.5$ DIV, 1mV/ mV DIV $\pm 2.0$ DIV
Vertical modes	CH1 single channel CH2 single channel DUAL: CH1 and CH2 are displayed ALT or CHOP selectable at any sweep rate ADD: CH1+CH2 algebraic addition
Input coupling	AC, GND, DC
Maximum input voltage	300V peak (AC: frequency 1KHz or lower)
<b>HORIZONTAL AXIS</b>	
Sweep time	0.2 $\mu$ Sec-0.5Sec/DIV,20Steps in 1-2-5sequence
Sweep time accuracy	$\pm 3\%$
Vernier sweep time control	$\leq 1/2.5$ of panel-indicated value
Sweep magnification	10 times $\times 10\text{MAG}$ sweep
time accuracy	$\pm 5\%$ ( 20nsec-50nsec are uncalibrated)
Linearity	$\pm 3\%$ , $\times 10\text{MAG}$ : $\pm 5\%$ ( 20ns and 50ns are uncalibrated)
<b>X-Y MODE</b>	
Sensitivity	Same as vertical axis
Frequency bandwidth	DC to at least 500 KHz
X-Y phase difference	$\leq 3^\circ$ at DC-50KHz
<b>Z AXIS</b>	
Sensitivity	5Vp-p (positive-going signal decreases intensity)
Frequency bandwidth	DC-2MHz
Input resistance	Approx. 47k ohm
Maximum input voltage	30V (DC+AC peak, AC frequency $\leq 1\text{KHz}$ )
<b>CALIBRATION VOLTAGE</b>	
Waveform	positive-going square wave
Frequency	Approx, 1 KHz
Output voltage	2Vp-p $\pm 2\%$
Output impedance	Approx. 1K ohm