

## FEATURES

The OS-5020 is a portable-type, advanced-class oscilloscope with a bandwidth of DC to 20 MHz designed with the emphasis on operability and portability and has following features.

- (1) **Wide bandwidth** : The instrument has a bandwidth from DC to 20MHz.
- (2) **High sensitivity** : Sensitivity is 1 mV/div
- (3) **Large 6" screen** : Employment of a large square CRT makes waveforms easier to observe.
- (4) **Internal graticule** : Employment of an internal graticule CRT permits waveforms observation to be made without parallax error.
- (5) **ALT TRIG** : Even an observation of two waveforms of different frequencies, the waveform of the each channel is stably triggered.
- (6) **TV synchronization** : Employment of a new TV sync separator circuit allows the instrument to observe TV signals stably.
- (7) **Auto focusing** : Focusing shift is automatically corrected.



## SPECIFICATIONS

### CRT

**Type:** Large 6" screen with internal graticule.

Approximate 12kV [2 kV] acceleration potential.

**Phosphor** P31 standard

**Graticule** 8 × 10 div (div=10mm) Internal graticule

**Focusing:** Possible (with automatic focus correction circuit)

**Trace rotation:** Present

**Brightness adjustment:** Possible

### Z-AXIS INPUT (INTENSITY MODULATION)

DC-coupled, positive-going signal decreases intensity: 5Vp-p signal cause noticeable modulation at normal intensity: DC to 2MHz

**Input impedance** 33kohm (typ.) [47k ohms (typ.)]

**Maximum input voltage** 30V (DC + peak AC)

### VERTICAL DEFLECTION SYSTEM (2 identical channels)

#### Bandwidth and rise time

DC to at least 50MHz [20 MHz] and rise time 7ns [17.5 ns] or less. DC to at least 7 MHz and rise time 50ns or less at magnifier extends. The AC coupled lower-3dB point is 10 Hz or less.

### Deflection factor

5mV/div to 5V/div in 10 calibrated steps in a 1-2-5 sequence. Uncalibrated continuous control extends deflection factor to at least 12.5Volts per division in the 5 Volts/div position. ×5 magnifier increases sensitivity of each deflection factor setting to 1mV/div.

**Accuracy** ±3%

**Additional error for magnifier** ±2%

**Display modes** CH1, CH2 (normal or invert), Alternate, Chopped (approximate 250 kHz), Added

**Input impedance** Approximately 1 MΩ in parallel with 25pF

**Maximum input voltage** 300V (DC+ peak AC) or 500 Vp-p AC at 1 kHz or less

**Input coupling** AC, GND, DC

### HORIZONTAL DEFECTION SYSTEM

**Time base** 0.2us/div to 0.2s/div in 19 calibrated steps in a 1-2-5 sequence. Uncalibrated continuous control extends deflection factor to at least 0.5 seconds per division in the 0.2 sec/div position. ×10mag extends maximum sweep rate to 20 ns/div [100ns/div].

**Accuracy** ±3%

**Additional error for magnifier** ±2%

\*Technical Specifications & Appearance are subject to change without prior notice

## GENERAL SPECIFICATION

### TRIGGERING SYSTEM

Trigger modes	Automatic, Normal, TV (TV-H or TV-V)
Trigger source	Internal (CH1, CH2 V-MODE), Line, External
Trigger slope	+, -
TV sync polarity	TV (-)

### Triggering sensitivity and frequency

	Internal ( V-MODE)	External
20Hz-5MHz[20Hz-2MHz]	0.5div (2.0 div)	200mV
[2MHz-20MHz]	1.5 div (3.0 div)	800mV

<b>TV-V sensitivity</b>	SYNC section less 1 div or 1V
<b>AUTO low band</b>	Approximately 25Hz
<b>Trigger coupling</b>	AC: 20Hz to full brand width
<b>External trigger input impedance</b>	Approximately 1 MΩ in parallel with 30 pF
<b>Maximum input voltage</b>	300V (DC+AC peak)
<b>ALT MAG</b>	Present
<b>X-Y OPERATION (CH; Horiz, CH2; Vert)</b>	
<b>Deflection factor</b>	Same as vertical deflection
<b>X-bandwidth</b>	DC to at least 500 KHz
<b>Phase error</b>	3°C or less from DC to 50 kHz

### CALIBRATOR

An approximate 1 kHz frequency 0.5V (±3%) square wave.

### SIGNAL OUTPUT

#### CH1 VERT SIGNAL OUTPUT

Output voltage is at least 20 mV/div into a 50 ohm load.  
Bandwidth is 50 Hz to at least 5 MHz

### POWER SUPPLY

VOLTAGE ( 50Hz)	FUSE
220V ( 198-242V)	0.5A

<b>Power supply frequency</b>	50 Hz
<b>Power consumption</b>	Approx. 35W [30W] Max. 40 W at 120V 60Hz

### ENVIRONMENT

Limit of operation temperature	0-40°C
Limit of operation humidity	35-85%
Rated range of use temperature	10-35°C
Rated range of use humidity	45-85%
Storage and transport temperature	-20-70°C

### DIMENSIONS AND WEIGHT

Approx. 310 (W) × 130 (H) × 370(D) mm  
12.4(W) × 5.2(H) × 14.8(D) inch  
APPROX>6.5Kg (14.6 lbs) [6Kg(13.5 lbs)]

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