

## SPECIFICATIONS

All specifications allow for 20 minutes warm-up and are guaranteed at 15-35 degrees C (59-95 degrees F).

### Sync & Video Output

**VIDEO BANDWIDTH:** 98 MHz

#### HORIZONTAL SYNC:

RANGE: 10.0 KHz to 250 KHz

ACCURACY: +/- 200 nSec

STEPS: 10.0 KHz to 99.9 KHz, .1 KHz  
and 100 KHz to 250 KHz, 1 KHz

LEVEL: 5 VPP

POLARITY: (+) or (-)

#### VERTICAL SYNC:

RANGE: 10.0 Hz to 250 Hz

ACCURACY: +/- (1/H FREQ)\*(6)

STEPS: 10.0 Hz to 99.9 Hz, .1 Hz  
and 100 Hz to 250 Hz, 1 Hz

LEVEL: 5 VPP

POLARITY: (+) or (-)

#### COMPOSITE SYNC:

LEVEL: 5 VPP

POLARITY: (-)

#### HORIZONTAL RESOLUTION:

RANGE: 80 pixels to 1,024 pixels in one pixel steps

#### VERTICAL RESOLUTION:

RANGE: 80 pixels to 1,024 pixels in one pixel steps

#### MEMORY:

60 computer monitor setup storage locations.

#### VIDEO:

VIDEO PATTERNS: raster, dots, circle, color bars, staircase, windows, multiburst and text

##### DIGITAL

LEVEL: 5 VPP

POLARITY: (+) or (-)

VIDEO OUTPUT: red, green, blue and intensity.

##### ANALOG

LEVEL: 1 VPP, white level .714 V, black 0.0, and sync -.286 into 75 ohms.

POLARITY: (+) or (-)

SYNC ADDER: red, green, blue

MODE: Non-interlace or interlace

VIDEO OUTPUT: red, green, blue

**SYNC TIMING:** The CM2000 recognizes common computer monitor formats and adjusts the sync time, front porch and back porch.

**SYNC TIMING DEFAULT:** If the CM2000 does not recognize the computer monitor format it sets the output to 80% displayed video and 20% sync. The sync pulse is divided into thirds between the front porch, blanking and back porch.

**SYNC TIMING PROGRAMMING:** Sync timing parameters can be set through the IEEE 488 or RS232 interface buses.

#### HORIZONTAL

Minimum blanking time is 1.5 uSec. Minimum sync time is 0.3 uSec.

#### VERTICAL

Minimum blanking time is 1/H freq. Minimum sync time is 1/H freq.

### Digital Display

#### RINGER TEST

INDUCTOR RANGE: 10 uH and larger, non-iron core

ACCURACY: +/- 1 count on readings between 8 and 13 rings

RESOLUTION: +/- 1 count

EXCITING PULSE: 5 volts peak, 60 Hz rate

#### YOKES & FLYBACKS

counts rings up to a 25% damping point

#### SWITCHING TRANSFORMERS

counts rings up to a 5% damping point

#### DC VOLTMETER

RANGES: Autoranging in three ranges, 0.00 to 19.99 V, 20.0 to 199.9 V and 200 to 1999 V

ACCURACY: +/- 0.5% +/- 2 counts

RESOLUTION: 10 mV on 20 V range, .1 V on 200 V range and 1 V on 2000 V range

INPUT IMPEDANCE: 15 megohms +/- 1%

AC REJECTION: Greater than 60 dB

#### PEAK-TO-PEAK VOLTMETER

RANGES: Autoranged in three ranges, 0.0 to 19.9 V, 20 to 199 V, 200 to 1999 V

ACCURACY: +/- 1% +/- 2 counts, +/- 5%  
+/- 5 counts in the 200 to 1999 V range

FREQUENCY RESPONSE: 30 Hz to 5 MHz +/- 1 dB on 20 V range, 30 Hz to 250 KHz +/- 1 dB on 199 V and 2000 V ranges

RESOLUTION: .1 V on 20 V range and 1 V on 200 V and 2000 V ranges

INPUT IMPEDANCE: 15 megohm shunted by less than 40 pF

PROTECTION: 2000 VDC (DC + peak AC) across inputs. Maximum voltage between (-) and ground = 1500 V (DC + peak AC).

## Drive Signals

All drive signals are phase-locked to the SYNC & VIDEO OUTPUT.

SIGNALS AVAILABLE: video, composite sync, vertical sync, vertical drive, horizontal sync, horizontal drive

RANGE: 3 ranges, 0.0 to 3.0 VPP, 0 to 30 VPP and 0 to 300 VPP

ACCURACY:  $\pm 1\%$ ,  $\pm 2$  digits for H DRIVE signal

FREQUENCY RESPONSE: 30 Hz to 5 MHz  $< 3$  dB on 3.0 VPP and 30 VPP ranges. 30 Hz to 250 KHz  $< 3$  dB on 300 VPP range.

OUTPUT: 3 VPP range, 3 VPP,  $\pm 0.5$  V into 100 ohms circuit impedance, 30 VPP,  $\pm 5$  V into 100 ohms circuit impedance, 300 VPP,  $\pm 50$  V into 10,000 ohms circuit impedance.

PROTECTION:  $\pm 450$  V (DC + peak AC)

## General

DISPLAYS: LCD readout for FREQUENCY and PIXEL parameters. 3 1/2 digit LCD readout for DRIVE OUTPUT/DVM.

GUARANTEED OPERATING TEMPERATURE:

15 to 35 degrees Centigrade

WARM-UP TIME: 20 minutes

SIZE: 6" X 11.5" X 15" (15.2 X 29.1 X 38.1 cm) HWD.

WEIGHT: 16 pounds (7.3 kg).

POWER: 105 to 125 VAC 50/60 Hz, 60 Watts.

All specifications are subject to change without notice.

## OPTIONAL ACCESSORIES

22. **EXTENSION CABLE** (39B271) - Provides an extension cable for the SYNC & VIDEO Output Jack (12) (48 inches).

23. **UNIVERSAL CONNECTOR** (39B273) - Cable connects to SYNC & VIDEO OUTPUT Jack to provide a connection to monitors having non-standard connectors. (12 inches).

24. **CONNECTOR #1** (39B275) - Adapter connects between the SYNC & VIDEO OUTPUT Jack and the input cable of CGA, MDA and Hercules type monitors.

25. **CONNECTOR #2** (39B280) Adapter connects between the SYNC & VIDEO OUTPUT Jack and the input cable of EGA type monitors.

26. **CONNECTOR #3** (39B281) - Adapter connects between the SYNC & VIDEO OUTPUT Jack and the input cable of PGC type monitors.

27. **CONNECTOR #4** (39B274) - Adapter connects between the SYNC & VIDEO OUTPUT Jack and the input cable of VGA, PS/2®, SVGA and XGA type monitors.

28. **CONNECTOR #5** (39B276) - Adapter connects between the SYNC & VIDEO OUTPUT Jack and the input of Apple® and Macintosh® type monitors.

29. **CONNECTOR #6** (39B272) - BNC cable connects to SYNC & VIDEO OUTPUT Jack to provide a connection to monitors having BNC input connectors (48 inches).

30. **IB72 IEEE-488 BUS INTERFACE ACCESSORY** - Connects between the INTERFACE ACCESSORY Jack (16) and the IEEE-488 port of a bus controller to provide IEEE Bus operation.

31. **IB78 RS232 INTERFACE ACCESSORY** - Connects between the INTERFACE ACCESSORY Jack (16) and the RS232 serial port of a computer to provide automated testing and programming.

32. **PC263 PROTECTIVE COVER** - Snap-on cover protects front panel and provides Test Lead and Interface Connector storage.

33. **HP200 50 kV HIGH VOLTAGE PROBE** - Use with DVM TEST LEADS (21) to extend the DCV measuring range to 50 kV.

34. **TP212 10 kV TRANSIENT PROTECTOR PROBE** - Use with DVM TEST LEADS (21) to extend the DCV measuring range to 10 kV.

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