



REVISIONS

DOC. NO. SPC-F004 * Effective: 7/8/02 * DCP No: 1398

DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
430	A	RELEASED	JWM	10/4/02	HO	2/11/03	DJC	2/25/03

General Specifications

Display

- 160 x 160 pixel graphic LCD (Viewing area: 63mm x 63mm)
- EL back-light

Measurement Rate

- Digital: 4 times/sec.
- Bar-Graph: 7 times/sec

Auto-Power Off

- 30 minutes
- Set up made (enable/disable)

Over Range Indication

- "OVER" display with beeper sound

Power

- 6 "AA" cells (9V Alkaline) or 6 "A" (7.2V) NiCd battery or 2 rechargeable Ni-Cd battery pack or AC adapter with internal charger
- Operating Time: Alkaline: 6 hrs. approx.
NiCd: 6 hrs. approx.
- Charging Time: 10 hrs approx. (with AC adapter)

Temperature:

- Operating Temp: 0°C ~ 40°C
- Storage Temp: -20% ~ 60°C (NiCd batteries removed)
- Charging Temp: 0°C to 45°C

RS232 Computer Interface

- Baud rate: 1200, 2400, 4800, 9600 bps
- Data bit: 8 bit
- Stop Bit: 1 bit
- Parity: none

Protection Level: (Class II: DC 1000V AC700V)

- per IEC1010-1

Size:

- 107mm(W) x 220mm(L) x 55mm(D)

Weight:

- 800g (net meter only)



Standard Accessories

- Alligator clip set
- Test lead set
- Operator Manual
- Holster Case
- AC power adapter
- RS232 interface cable
- Software PC diskette
- BNC adapter
- Oscilloscope probe

SPC-F004.DWG

TOLERANCES: UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.	DRAWN BY:	DATE:	DRAWING TITLE:			
	Jeff McVicker	10/4/02	5Mhz Multifunction Oscilloscope			
	CHECKED BY:	DATE:	SIZE	DWG. NO.	ELECTRONIC FILE	REV
	Hisham Odish	2/11/03	A	72-6920	36C3019.dwg	A
APPROVED BY:	DATE:	SCALE:	U.O.M.:	SHEET:		
Daniel Carey	2/25/03	NTS	Millimeters	1 OF 3		

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Electrical Specifications

Multimeter

DC Voltage (Auto/Manual)

Range	Resolution	Accuracy	Input Impedance	Overload Protection
400mV	0.1mV	±(0.3% rdg +5 digits)	10M	1,000V DC or AC Peak within 10 Seconds
4V	1mV			
40V	10mV			
400V	100mV			
1000V	1V			

AC Voltage (True RMS)

Range	Resolution	Accuracy		
		50Hz ~ 1KHz	1 KHz ~ 10KHz	10KHz ~ 30KHz
400mV	0.1mV	±(1.0% rdg +10 digits)	±(5.0% rdg +10 digits)	ns
4V	1mV	±(0.75% rdg +10 digits)	±(2.0% rdg +10 digits)	±(5.0% rdg +10 digits)
40V	10mV		±(1.0% rdg +10 digits)	
400V	100mV		±(1.0% rdg +10 digits)	
700V	1V	±(1.0% rdg +10 digits)	ns	ns

Resistance

Range	Resolution	Accuracy	Overload Protection
400	0.1	±(0.5% rdg + 10 digits)	250V DC or AC Peak within 10 Seconds
4K	1		
40K	10		
400K	100		
4M	1K		
40M	10K	±(1% rdg +5 digits)	

Diode Test

Range	Resolution	Accuracy	Open Circuit Voltage
Diode	1mV	±(2% rdg +5 digits)	Max. 5.0V

Capacitance

Range	Resolution	Accuracy
40nF	0.01nF	±(2% rdg + 10 digits)
400nF	0.1nF	
4µF	1nF	
40µF	10nF	
100µF	100nF	

Current (DC) Auto/Manual

Range	Resolution	Accuracy	Overload Protection
40mA	10µA	±(1.2% rdg + 10 digits)	250V/500mA Fused
400mA	100µA		
4A	1mA	±(1.5% rdg + 10 digits)	250V / 20A Fused
20A	10mA		

Current (AC) True RMS : Auto/Manual

Range	Resolution	Accuracy		Overload Protection
		50Hz ~ 1KHz	1KHz ~ 10KHz	
40mA	10µA	±(1.2% rdg + 10 digits)	±(4.0% rdg + 10 digits)	250V/500mA Fused
400mA	100µA			
4A	1mA	±(2.0% rdg + 10 digits)		250V / 20A Fused
20A	10mA			

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A	72-6920	36C3019.dwg	A
SCALE:	NTS	U.O.M.: Millimeters	SHEET: 2 OF 3

Electrical Specifications

Multimeter (continued)

Continuity

- less than 60Ω, buzzer sounds

AUX

- 400mV full scale DC Adapter required
- Temperature (°C, °F)
- Humidity (%RH)
- Hi current (A)

dB

- Reference Values: 2, 4, 8, 16, 50, 75, 93, 110, 125, 135, 150, 300, 600, 900, 1000, 1200

Video A/D Converter

- Resolution: 8 bits
- Sampling: 20 MS/S

Data Length

- Single Shot: 256 points

Cursor

- Type: ΔV, Δt%, Δt, Δ1/t

Test Probe

- Test Lead with Alligator Clip set
- Scope Probe (1:1) with BNC Adapter

Frequency Counter

- Range: 5Hz ~ 1.3 GHz
- Display: 8 digits
- Period Adjustment: 5Hz ~ 100MHz
- Internal Gate Time: 0.1S, 1S, 10S
- Display Hold Mode
- RPM Display
- Input Measurement:
 - CH A: 5Hz ~ 40MHz
 - CH B: 40MHz ~ 1.3 GHz
- Input Sensitivity:
 - 5Hz~10MHz: 100mV rms
 - 10MHz~40MHz: 200mV rms
 - 40MHz~80MHz: 300mV rms
 - 80MHz~1.3GHz: 200mV rms
- MIN/MAX/AVG:
 - Records minimum, average, and maximum
 - History graph display
- Hold: captures current reading
- Peak Hold:
 - Records peak maximum, minimum
 - History graph display

Digital Storage Oscilloscope (DSO)

Read Out Type

- Rising Time: less than 15nS
- Input Impedance: 1 Megohm
- Autosetting

Vertical

- Number of Channels: One
- Sensitivity: 10mV/div ~ 200V/div (14 divisions)
- Bandwidth: DC to 5MHz
- Sample Rate: 25MS/s
- Input Protection: 600Vpp

Horizontal

- Sweep: 125ns ~ 2s/div (23 divisions)
- Sweep Mode: Auto

Trigger

- Auto, Manual
- Slope: Rising, falling
- Trigger Adjustable: 15% ~ 85%

Input Impedance

- CH A: 1Megohm
- CH B: 50Megohm

Maximum Input Voltage

- CH A: 100V p/p
- CH B: 5V p/p

Simultaneous display in one screen (frequency, period, rpm)

Function Generator

- Output: Sine, triangle, square wave
- Range: 40Hz ~ 5MHz (6 range)
- Display: 3 digits
- Output Impedance: 600 ohm
- Amplitude: 2V~10V p/p
- Duty Cycle: 25%~75%
- Simultaneous display in one screen (frequency, period, duty, amplitude)

Logic Analyzer

Vertical

- Input Channel: one
- Input Impedance: 1 megohm
- Protection Level: 50V p/p max.

Horizontal

- Sweep Time: 125ns~2s/div (23 divisions)
- Sweep Mode: auto

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