Established 1981
Advanced Test Equipment Rentals
www.atecorp.com 800-404-ATEC (2832)

General Specifications

Measuring Functions	Realtime mode: Y-T, X-Y, Logging Memory mode: Y-T Memory output formats: Y-T, X-Y, Logging
Number of channels	4
Input types	Analog voltage and temperature (K, J, T thermocouples)
Memory size	16 Kwords/channel (1 word = 14 bits)
Recording method	Thermal array
Recording density	Voltage axis: 8 dots/mm Time axis: 10 dots/mm (at speeds less than 25 mm/s) 8 dots/mm (at 25 mm/s chart speed)
Recording paper	210 mm (W) x 40 m (L) roll chart, black trace
Channel expansion	One 160 mm channel, one 100 mm channel, two 80 mm channels, two 50 mm channels, four 40 mm channels X-Y: 105 x 105 mm
Recording width	Maximum writing width: 205 mm (1640 dots) Maximum signal amplitude: 160 mm (1280 dots)
Chart speeds	1, 2, 5, 10, 20, 25, 50 mm/min 1, 2, 5, 10, 20, 25 mm/s
Chart feed pitch	0.05 mm/pulse
Chart feed method	Friction feed
Chart feed accuracy	Y: ± 0.3% ± 1 dot; T, X: ± 2% ± 0.5 mm
Output types	Data recording Hard copy of display
Operating environment	0 to 40°C, 35 to 85% RH
Power requirements	100 VAC series: 100 to 120 VAC ± 10% 200 VAC series: 200 to 240 VAC ± 10%
Power consumption	190 VA maximum
Dimensions	405 (W) x 290 (D) x 120 (H) mm (excluding jog dial and rubber feet)
Weight	Approximately 22 lbs

Analog Input Specifications

Input system	Floating ground with guard shield
Input resistance	1MΩ (between + and - terminals)
Measurement ranges	Voltage: 0.05, 0.1, 0.2, 0.5, 1, 2, 5, 10, 20, 50, 100 V/full scale K: -200 to 1300°C J: -200 to 900°C T: -200 to 400°C
Recording accuracy (at 23 ± 5°C)	Voltage: ± 0.3% of full scale (reference range: 0.05V, filter 1.5 Hz) K: -200 to 0°C: 1.5°C; 0 to 1300°C: ± 1.0°C J: ± 1°C T: ± 1°C
Temperature coefficient	Zero drift 0.02% of full scale
Room temperature compensation accuracy (at 23 ±5°C)	AC drive models ± 1.0°C (when input terminals are K, J, T thermocouples) DC drive models ± 2.0°C (when input terminals are K, J, T thermocouples)
Maximum allowable input voltage	Between + and - input terminals: 250V (DC, AC p-p) Between terminals and ground: 250 Vrms
CMRR	120 dB (50/60 Hz)
A/D conversion	14-bit (successive approximation)
Filter	1.5 Hz, 500 Hz, 5 kHz (-6 dB/oct), OFF
Gain vernier	100 to 40%, continuously adjustable
Zero position	Settable anywhere between -10 to +110% in 0.1% steps

Realtime Recording

Sampling intervals	Analog channels only: 200 µs fixed Analog/temperature combination: 1 ms fixed Realtime X-Y: 50 ms (max)
Recording interval	5.0 ms maximum
Frequency response	Analog input channels only: DC to 1 kHz (-3dB) Analog/temperature combination: DC to 200 Hz
Number of grid patterns	Eight (Data can also be printed without grid)
Real/memory function	During realtime recording, a trigger signal causes a switch to memory recording

Memory Recording

Sampling intervals	Analog voltage only: 10 µs to 200 ms Analog/temperature combination: 1 ms to 200 ms
Frequency response (10 points/waveform)	Analog voltage only: DC to 10 Hz Analog/temperature combination: DC to 100 Hz
Chart feed speed	20 mm/s fixed
Memory segmentation	Two 8 Kword memory blocks or one 16 Kword block
Time axis format for Y-T output	Standard: 10 mm/200 words Expanded: x2, x4, x8 Compressed: x1/2, x1/4, x1/8 A4
Interpolation	Line
Pre and post trigger recording	10% steps from -100 to +100 % of selected memory block
Number of grid patterns	Eight (Data can also be printed without grid)

X-Y Recording

Output method	Hard copy of display only
Display size	63.3 mm in both X and Y directions (211 x 211 dots)
Channel configuration	Any channels can be programmed for X and Y input
Sampling interval	Realtime mode: 50 ms maximum Memory mode: Depends on Y-T memory mode setting
Grid pattern	10 divisions, fixed
Partial output	Specifiable from 0 to 100% in 10% steps; memory mode only

Logging Recording

Recording interval	Realtime logging: 1s, 10s, 1 min, 10 min
Sampling interval	Realtime logging: Same as for realtime recording Memory logging: Depends on Y-T memory mode setting

Display

Display screen	5-inch electroluminescent; amber color
Screen dimensions	95.9 x 76.7 mm (320 x 256 dots)
Dot pitch	0.3 x 0.3 mm
Dot size	0.22 x 0.22 mm
Frame frequency	60 Hz
Zooming function	Vertical: Between A and B cursors when the output format is 160 mm x 1 Horizontal: 7 steps in the range x1/8 to x8
Scrolling function	Activated by turning the jog dial
Cursors	Display values of T, (X) and Y axes Also display ΔT (ΔX) and ΔY in combination with the reference cursor

Calculation (memory modes only)

Arithmetic functions	+, -, x, ÷, interchannel calculation
Exponential functions	LOG, ABS, SQR, EXP
Moving average	Average can be set from 2 to 256 points in 2^n increments

Trigger

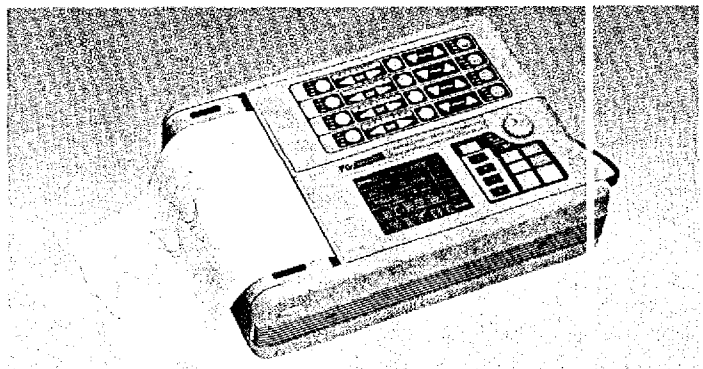
Trigger modes	Manual, External, A, A or B, A and B, Window In, Window Out
Trigger channel	Any channel
Trigger slope	Rising or falling
Trigger level	From 1 to 99% of full scale in 1% steps
Trigger functions	Start, stop, start & stop, trigger memory (realtime mode), trigger zoom (realtime mode)
Trigger action (memory mode only)	Single: only one triggering signal is recognized Repeat: The recorder rearms automatically following a triggering signal

Other Features

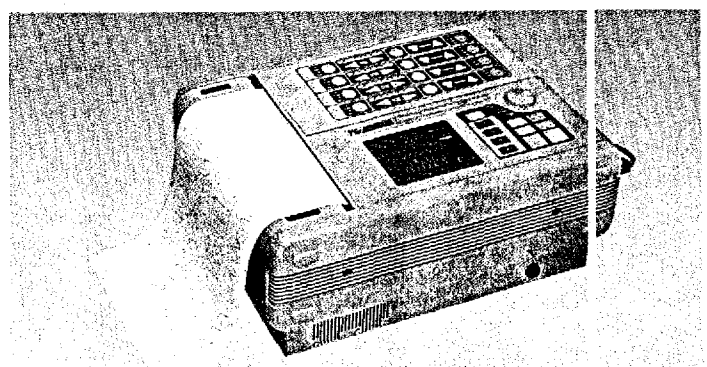
RS-232C interface	Functions: Data transmission, remote control, readout of recording parameters Baud rates: 9600, 4800, 2400, 1200, 600, 300 Data length: 7 or 8 bits Parity: Even, odd, or none Stop bit(s): 1 or 2
Annotation	Channel annotation (up to 14 characters per channel) System annotation
Trace intensity	Adjustable
Channel ID marks	On/Off
Clock function	Date/time function with battery back-up
Reprint function	Data captured in memory mode can be re-output in different formats

Options

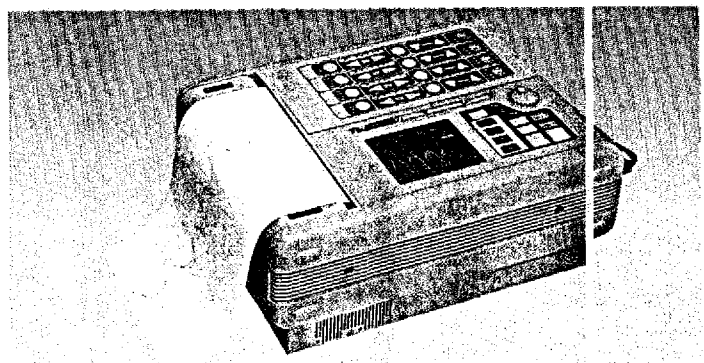
Dimensions of option housing (mm)	359 (W) x 252.4 (D) x 45 (H), additional 6 mm for rubber feet
Weight	DC/AC unit: 6 lbs Logic amp + GP-IB interface: 4.5 lbs DC/AC unit + logic amp + GP-IB interface: 6.5 lbs
DC/AC unit	12 VDC + 100 VAC series or 200 VAC series (specify when ordering)



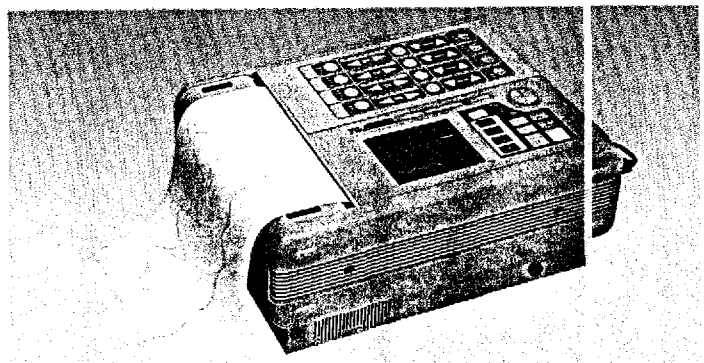
WR7800 AC Drive



WR7800 with AC Drive, Logic Amp, GP-IB Interface



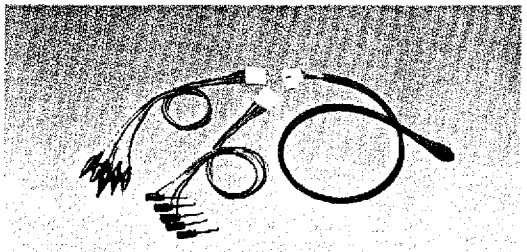
WR7800 with 12VDC/AC Drive



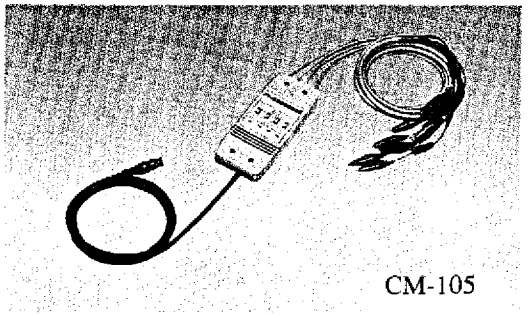
WR7800 with 12VDC/AC Drive, Logic Amp, GP-IB Interface

Logic Amplifier Specifications

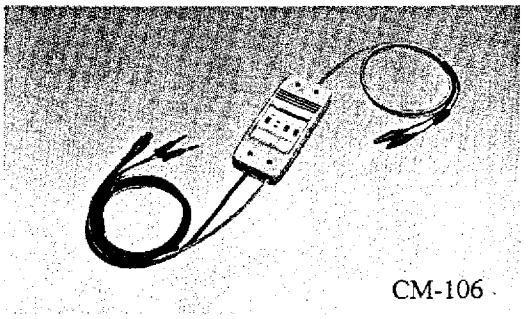
Number of inputs	16 channels in four groups of four: A, B, C, and D
Input level	1. 0 to + 24 V (max) Threshold level: + 1.4 or + 2.5 V (switchable for each group of four channels individually) 2. Contact input H: Open input terminal (50 kΩ min) L: Short input terminal to GND terminal (1 kΩ max) *Note* Threshold level is set to + 1.4 V
Input configuration	Single ended (ground level is common to all channels)
Sampling interval	Realtime Y-T: Varies according to chart speed Memory Y-T: Depends on memory sampling interval
Trigger setting	16-channel pattern trigger H, L, X (Don't care) selected from menu screen
Print on/off	Set for groups of four channels in menu screen (Four settings: A, AB, ABC, and ABCD)



RIC-10



CM-105



CM-106

3 Types of Probes for Logic Amps

The three types of selectable probes are the logic IC probe (RIC-10), perfect for measuring electronic ICs, the floating input probe (CM-105) for measuring relay coil voltage, and the voltage fluctuation probe (CM-106), ideal for measuring industrial power lines.

- **Probe RIC-10 for Logic ICs**

Application	Measurement of electronic ICs and digital signals or relay contact-point signals from sequence circuits, etc.
Applicable unit	Logic amp unit
Configuration	RIC-07 Logic IC cable, 1.4 m RIC-08 Alligator clip cable, 30 cm RIC-09 IC clip cable, 30 cm

- **Probe CM-105 (optional) for floating voltage input**

Application	Checking relay coil voltage or the operational timing of voltage ON/OFF from the control panel
Applicable unit	Logic amp unit
Configuration	Probe unit

- **CM-105 Specifications**

No. of inputs	4 channels (floating for each channel)
Input range	L = 50-150 VAC, 20-150 VDC H = 100-250 VAC, 80-250 VDC
Input resistance	L = approx. 50 kΩ, H = approx. 100 kΩ
Response times	H = within 1 ms, L = within 3 ms
Indicators	LED lights for each channel during detection
Maximum floating voltage	250 VDC, ACp-p
Voltage resistance between channels	1500 VAC for one minute

- **Probe CM-106 (optional) for voltage fluctuations**

Application	Detection of momentary voltage drops of industrial power lines and waveform recording of those drops
Applicable unit	Logic amp and analog amp units
Configuration	Probe unit

- **CM-106 Specifications**

No. of inputs	1 channel
Input resistance	Approx. 10 kΩ
Input range	100VAC/120VAC
Frequency range	Both 50 Hz/60Hz
Voltage fluctuation detection level	± 10%/± 0%
Trigger output	Ch 1 = detected at +10%, +20% Ch 2 = detected at -10%, -20%
Detection method	Full-wave rectification, peak value detection
Response times	Approx. 1 cycle of the input AC voltage
Max. allowable input voltage	160 Vrms
Max. floating voltage	160 Vrms
Voltage output	ATT, output at 1/100