

3057

Portable Recorder



3057
332 × 223 × 174 mm 5 kg
(13-1/8 × 8-3/4 × 6-7/8" 11 lbs)

The 3057 is a compact, dependable 150 mm portable recorder designed for virtually every application, including field and laboratory uses. It measures a mere 332 × 223 × 174 mm, (13-1/8 × 8-4/3 × 6-7/8"), and weighs only 5 kg (11 lbs) for one-pen, AC line operation model.

Exceptionally high reliability and stability are packed into this compact case. For example, the servo mechanism is an entirely new, advanced system using a trouble-free, non-contact ultrasonic pen position transducer.

The 3057 offers a full range of features . . . one or two pens, Z-fold or roll chart, vertical or flatbed, and remote control option. Moreover, power source is user definable . . . external AC or DC, internal rechargeable Ni-Cd battery or ten common 1.5 V batteries (IEC R20P, ANSI D-size, Mono 1.5 V or equivalent).

FEATURES

- 12 Calibrated Input Ranges from 10 mV to 50 V Full Scale
- 8 Pushbutton Selected Chart Speeds from 60 cm/min to 2 cm/h
- High Accuracy $\pm 0.5\%$
- Fast Response 300 mm/s max.
- Reliable, Accurate Chart Drive Using Pulse Motor and Crystal Oscillator . . . Chart Speed Accuracy $\pm 0.25\%$
- Mess-Free, Disposable Felt-Tip Pen
- Simple, Quick Pushbutton Operation from the Front
- Optional Remote Controls of Chart Speeds and Chart Drive Start/Stop
- Tilted Chart Plate

The chart magazine can be slanted for quick data review, and convenient note-taking on a flatbed table.



SPECIFICATIONS

Drive System: Automatic null-balancing DC servo mechanism using non-contact ultrasonic pen position transducer
Number of Pens: 1 or 2 (pen distance . . . approx. 5 mm on the time axis)
Writing System: Ink writing using disposable felt-tip pen cartridges
Ink Colors: Red for 1st pen, green for 2nd pen
Effective Recording Span: 150 mm (6")
Accuracy: $\pm 0.5\%$ of effective recording span (includes non-linearity

and deadband) at $23 \pm 5^\circ\text{C}$ on 500 mV range

Deadband: Less than 0.2% of effective recording span
Maximum Pen Speed (Nominal): 300 mm/second

Chart: Z-fold chart (174 mm × 15 mm; 6-7/8" 49 ft), or roll chart (174 mm × 20 mm; 6-7/8" × 66 ft), with calibrated width of 150 mm (100 uniform divisions at 1.5 mm/division), 5 mm uniform divisions on time axis

Chart Drive: Pulse motor drive using crystal oscillator

Chart Speeds: 2, 6, 20, 60 cm/min and cm/h (chart speed accuracy . . . $\pm 0.25\%$)

Type of Input: Floating

Voltage Ranges: 10, 20, 50, 100, 200, 500 mV, 1, 2, 5, 10, 20, 50 V full scale (12 calibrated ranges)

Zero Set: Adjustable for each pen over full effective recording span
Input Resistance: Approx. 1 M Ω constant on all voltage ranges

Maximum Allowable Source Resistance: 10 k Ω

Maximum Allowable Input Voltage (Continuous): 50 V DC on 10 to 500 mV ranges, 250 V DC on 1 to 50 V ranges

Maximum Common Mode Voltage: 130 Vrms (sine wave), 180 V DC

Common Mode Rejection: More than 130 dB at power line frequency, or at DC

Normal Mode Rejection: More than 50 dB at power line frequency

Pen Lift: Mechanical for both pens

Operating Position: Vertical or horizontal (vertical only for Z-fold chart)

Warm-up Time: Approx. 15 minutes

Operating Temperature Range: 0 to 50°C (32 to 122°F)

Humidity Range: 40 to 80% relative humidity

Dielectric Strength: 1,500 V AC for one minute between power line and case, 1,000 V AC for one minute between input terminals and case

Insulation Resistance: More than 100 M Ω at 500 V DC between power line and case, and between input terminals and case

Power Requirements: 3057□1 . . . external AC; 100 V (90 to 110 V), 115 V (100 to 130 V), 200 V (180 to 220 V), or 230 V (200 to 250 V) (must be specified), 50 and 60 Hz,

3057□2 . . . external AC (specify voltage), internal rechargeable Ni-Cd battery (installed, continuously operates about 10 hours on a single charge for one-pen model), and external 12 V DC,

3057□3 . . . external AC (specify voltage), internal ten 1.5 V batteries (supplied in an accessory box), and external 12 V DC

Power Consumption (Approx.):

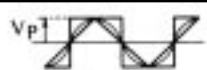
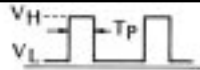
Model	Maximum	Balanced
1-pen model	16 VA	13 VA
2-pen model	22 VA	16 VA

Weight (Approx): 305711 . . . 5 kg (11.0 lbs), 305721 . . . 6 kg (13.2 lbs), 305712 or 305713 . . . 7 kg (15.4 lbs), 305722 or 305723 . . . 8 kg (17.6 lbs)

OPTIONAL FEATURES

Remote Chart Drive Control (Option Code . . . /CHC)

- Remote Control of Chart Speed by External Rectangular Waves or Pulse Train.

Remote Control Signal Waveforms	Rectangular Waves	Pulse Train
		
Signal Level	$4\text{ V} < V_p < 24\text{ V}$	$+4\text{ V} < V_H < +24\text{ V}$ $-24\text{ V} < V_L \leq +0.5\text{ V}$ $T_P > 1\text{ ms}$
Max. Signal Source Impedance	600 Ω	50 Ω
Chart Speed	0.3f cm/min (f . . . Hz or PPS)	
Max. Frequency	200 Hz	200 PPS

- Remote Control of Chart Drive START/STOP by External TTL-Level, Open Collector or Contact Signal:

L logic level or closed contact CHART DRIVE START.

H logic level or open contact CHART DRIVE STOP.

TTL or open collector remote control signal levels:

H . . . +2.4 to +5 V, L . . . 0 to +0.5 V.