

DA-37A (Carrier type)

- High response frequency of 10 kHz
- Digital sensitivity setting method
- Electronic automatic balancing
- Input/output isolation
- Automatic tracking type capacity balancing
- Equipped with digital monitor function
- Dual output method
- Built-in low-pass filter
- Equipped with strain bridge insulation check function
- Capable of external control of balance and calibration output
- Dual power supply method of AC and DC

This is a carrier type dynamic strainmeter that can be externally controlled via a PC. A digital sensitivity setting method is adopted for sensitivity adjustment to easily perform accurate sensitivity adjustments. It is a high-response type with a response frequency of 10 kHz. In addition, such functions as automatic tracking capacity balancing and digital monitoring of measurement values enable highly reliable dynamic strain measurements. Although this equipment is designed for one channel use when used alone, it can be configured for multichannel use by incorporating it into the dedicated case or rack.



Dynamic strainmeter DA-37A

Specifications

Number of measuring points	1 point
Applicable gauge resistance	60–1000 Ω
Gauge factor	2.00
Bridge excitation	2 or 0.5 Vrms (20 kHz)
Balancing method	
Resistance	Electronic automatic (remote control possible) Adjustment time: About 2 seconds Using nonvolatile memory
Capacity	Electronic automatic tracking
Balancing range	
Resistance	$\pm 10000 \times 10^{-6}$ strain
Capacity	5000 pF
Balancing accuracy	$\pm 1 \times 10^{-6}$ strain or less (Bridge excitation 2 Vrms, SENS of 200×10^{-6} strain or less)
Rated output (RO)	1 to 10 V can be set in 1 V steps
Sensitivity adjustment (SENS)	For rated output of 1 V, 50 to 5000×10^{-6} strain For rated output of 10 V, 500 to 10000×10^{-6} strain Both can be set in 1×10^{-3} strain steps (Bridge excitation 2 Vrms)
Fine adjustment (ATT)	0 to 1 times (OUT 2 only)
Sensitivity	50×10^{-6} strain, at bridge excitation of 2 Vrms
OUT 1	1 V (5 kΩ load)
OUT 2	12 mA or more (30 Ω load)
Measurement range	$\pm 50000 \times 10^{-6}$ strain (bridge excitation 2 Vrms)
Nonlinearity	$\pm 0.2\%$ FS
Maximum output	
OUT 1	± 10 V (5 kΩ load)
OUT 2	± 20 mA (30 Ω load) or ± 10 V (100 kΩ load)
Output shift	
Shift range	-10 to +10 V or OFF (can be set in 1 mV steps)
Calibration output	
Voltage	$\pm$ (RO, RO/2)
Accuracy	$\pm 0.5\%$ RO
Response frequency	DC to 10 kHz (-3 dB ± 1 dB) (Low pass filter: PASS, with coupling DC)
Low-pass filter	
Cutoff frequency	10 Hz, 30 Hz, 100 Hz, 300 Hz, 1 kHz (-3 dB ± 1 dB) and PASS
Cutoff property	Butterworth property -12 dB ± 1 dB/oct (10 to 1 kHz)
High-pass filter	Coupling AC mode
Cutoff frequency	About 0.3 Hz
S/N ratio	For bridge excitation 2 Vrms, maximum output 10 V 56 dBp-p or more (SENS = 100×10^{-6} strain or more, RO = 1 V, LPF = PASS) 62 dBp-p or more (SENS = 200×10^{-6} strain or more, RO = 1 V, LPF = PASS)

Stability	
Zero point	$\pm 0.1 \times 10^{-6}$ strain/ $^{\circ}$ C (at max. sensitivity) $\pm 0.5 \times 10^{-6}$ strain/24 h (at max. sensitivity) (Bridge excitation 2 Vrms)
Sensitivity	$\pm 0.05\%$ FS/ $^{\circ}$ C $\pm 0.2\%$ FS/24 h
Output monitor	Four-digit 1/2 digital display (Maximum/minimum values, open and over display function available) 21-point LED level meter
Vibration tolerance	29.4 m/s ² (50 Hz, 0.6 mm-p) three directions
Operating temperature / humidity range	-10 to +50 $^{\circ}$ C 85% RH or less (No condensation)
Power supply	
AC power supply	(1) Rated voltage AC 100 V, 50/60 Hz Allowable voltage: AC 90 to 110 V, 50/60 Hz Power consumption 9.2 VA max. (AC 100 V)
	(2) Rated voltage AC 110 to 120 V, 50/60 Hz Allowable voltage AC 99 to 132 V, 50/60 Hz Power consumption 9.8 VA max. (AC 120 V)
	(3) Rated voltage AC 200 to 240 V, 50/60 Hz Allowable voltage AC 180 to 264 V, 50/60 Hz Power consumption 14 VA max. (AC 240 V) (Either (1) or (3) as specified by the customer)
DC power supply	Rated voltage DC 12 to 24 V
	Allowable voltage DC 10 to 30 V
	Maximum power consumption 0.35 A max. (DC 12 V)
Outside dimension	40 (W) $\times$ 140 (H) $\times$ 266 (D) mm (Excluding protrusions)
Mass	Approx. 750 g

Standard accessories

Instruction Manual	1
AC power cable (CR-04)*	1
Output cable (CR-30)	2
Accessory box	1
Dedicated mounting screw (M3 bind screw)	2
Vinyl washer	2
Warranty certificate	1

* CR-061 included with DC power supply specification

Digital monitor

Monitor selection

DC	OUT1 average voltage value
PH	+ peak value of OUT1 from balancing or P/V reset
VH	- peak value of OUT1 from balancing or P/V reset
P-P	- Difference between PH and VH from balancing or P/V reset
OUT2	OUT2 average voltage value
R	Bridge insulation resistance

