

# DPM-951A, DPM-952A

## Strain Amplifier



### Robust against inverter noise

- Easy operation greatly reduce the working hours.
- Digital switch makes setting easy and the value set is easily seen even when power is off.
- High voltage output of  $\pm 10$  V and high SN ratio are ensured.
- Vertical bar meter is easy to check.
- The HPF cancels the effect of slow changes, such as temperature drift of gages or sensors.
- Sensitivity of TEDS compatible transducers is automatically registered.
- Input and output are isolated.
- Sensitivity is automatically set with the actual load calibration function.
- Built-in check function on bridge circuit

### Models

Models	Carrier Wave Frequencies	Frequency Response	SN Ratio
DPM-951A	5 kHz	DC to 2 kHz	58dB <sub>P-P</sub> or more
DPM-952A	12 kHz	DC to 5 kHz	53dB <sub>P-P</sub> or more

(At bridge excitation=2 V<sub>rms</sub>, bridge resistance 120 Ω, LPF=FLAT, 1000 × 10<sup>-6</sup> strain input, 10.00 V output set)

### Specifications

<b>Measuring Targets</b>	Strain gages, strain-gage transducers
<b>Channels</b>	1
	Simultaneous operation is available by using multiple units.
<b>Applicable Bridge Resistance</b>	60 to 1000 Ω
<b>Gage Factor</b>	2.00 fixed
<b>Bridge Excitation</b>	2 V <sub>rms</sub> , 0.5 V <sub>rms</sub> , switchable
<b>Balance Adjustment</b>	Resistance: Within $\pm 2\%$ ( $\pm 10000 \times 10^{-6}$ strain) Capacitance: Within 2000 pF
<b>Balance Adjustment Method</b>	Resistance: Auto balance Accuracy: Within $\pm 0.5 \times 10^{-6}$ strain (When $500 \times 10^{-6}$ strain is input, outputs 10 V, excitation voltage: 2 V <sub>rms</sub> ) Capacitance: CST method (Capacitance self-tracking)
<b>Nonlinearity</b>	Within $\pm 0.1\%$ FS
<b>Output Impedance</b>	Approx. 2 Ω
<b>Calibration Strain (CAL)</b>	$\pm (1 \text{ to } 9999 \times 10^{-6} \text{ strain})$ Setting: CAL switch (4-digital switch) Accuracy: Within $\pm (0.5\% + 0.5 \times 10^{-6} \text{ strain})$ Applicable scope of CAL accuracy: $\pm (10 \text{ to } 9999) \times 10^{-6} \text{ strain}$
<b>Sensitivity Adjustment</b>	Sensitivity is set in combination with CAL and VOLTAGE OUT switches (4-digit digital switches). CAL switch range: $100 \text{ to } 9999 \times 10^{-6} \text{ strain by } 1 \times 10^{-6} \text{ strain step (CAL)}$ VOLTAGE OUT switch range: 1.00 to 10.00 by 0.01 V step Accuracy: Within $\pm (0.5\% + 5 \text{ mV})$ Range: x200 to x20000
<b>Fine Sensitivity Adjustment</b>	Range: 1 to 1/2.5
<b>Frequency Response</b>	See table below. Deviation: $\pm 10\%$
<b>LPF</b>	Transfer characteristic: 2nd order Butterworth Cutoff frequencies: 10, 30, 100, 300, 1 k Hz and FLAT - 6 steps Amplitude ratio at cutoff point: $-3 \pm 1$ dB Attenuation: $-12 \pm 1$ dB/oct. (Except when 951A is set to 1 kHz)
<b>HPF</b>	Cutoff frequencies: 0.2 Hz, OFF - 2 steps
<b>SN Ratio</b>	See table below.
<b>Output</b>	OUTPUT A: $\pm 10$ V (Load resistance 5 kΩ or more) OUTPUT B: $\pm 10$ V (Load resistance 5 kΩ or more)
<b>Stability</b>	Temperature Zero point: $\pm 0.1 \times 10^{-6} \text{ strain per } ^\circ\text{C}$ Sensitivity: $\pm 0.05\%/^\circ\text{C}$ Time Zero point: $\pm 0.5 \times 10^{-6} \text{ strain/24 h}$ Sensitivity: $\pm 0.3\%/24 \text{ h}$ Power supply Zero point: Within $\pm 0.05\%$ FS/power fluctuation $\pm 10\%$ Sensitivity: Within $\pm 0.05\%$ /power fluctuation $\pm 10\%$
<b>Withstand Voltage</b>	1000 VAC for 1 min between measuring bridge and case 1000 VAC for 1 min between AC power supply and case
<b>Output Voltage Indication</b>	4½ digit digital display (7-segment LED) 11-segment LED bar meter
<b>Over Input Indication</b>	Output voltage display flashing (4½ digit digital display only)
<b>Check Functions</b>	Bridge check
<b>Key Lock Function</b>	Locks all keys other than POWER switch. (Allows settings on CAL and VOLTAGE OUT switches to be changed.)
<b>Remote Functions</b>	Capable of controlling the following functions. Balance adjustment execute (BAL), calibration strain output execute (CAL), key lock
<b>Synchronization Method</b>	Automatically determines internal (INT) or external (EXT) and manual setting.
<b>TEDS</b>	Reads the sensor TEDS information, and sets the rated output to the VOLTAGE OUT output voltage.
<b>Actual Load Calibration</b>	Sets actual load input to the VOLTAGE OUT output voltage. (Condition: Within the setting range of the sensitivity adjuster)



Dynamic Strain Measuring Instruments

Outline

1-channel

2-channel

Telemeter

Multi-channel

Other

<b>Vibration Resistant</b>	5 to 200 Hz, with 29.4 m/s <sup>2</sup> (3 G) in X, Y and Z directions for 12 cycles, 10 min/cycle
<b>Impact Resistant</b>	15 G, 11 ms or less, in X, Y and Z directions, every 3 cycles
<b>Operating Temperature</b>	-10 to 50°C
<b>Operating Humidity</b>	20 to 85% (Non-condensing)
<b>Storage Temperature</b>	-30 to 70°C
<b>Power Supply</b>	90 to 110 VAC (Approx. 12 VA: 100 VAC) 10.5 to 15 VDC (Approx. 0.6 A: 12 VDC)
	The following products are also available upon request.
	DPM-xxxx A115: 108 to 132 VAC
	DPM-xxxx A200: 180 to 220 VAC
	DPM-xxxx A230: 207 to 253 VAC
	xxxx: Part of model, example: 951A

<b>Dimensions</b>	49 W x 128.5 H x 262.5 D mm (Excluding protrusions) Panel-cut dimensions: 50 W x 113 H mm
<b>Weight</b>	Approx. 1.2 kg

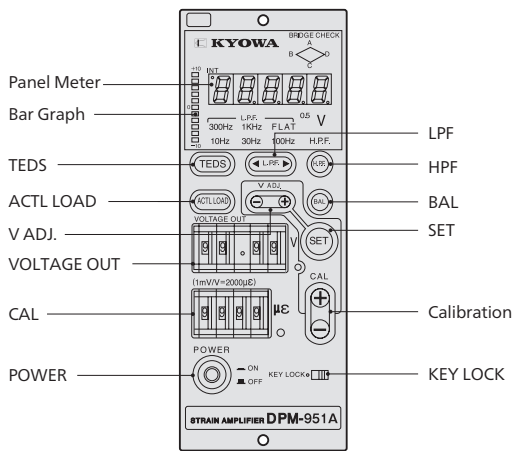
**Standard Accessories**

- Output cable U-08, U-59, 1 each
- AC power cable P-25 (With 2-pin conversion plug CM-52)
- Fuse (Midget type 0.5 A, 1 A)
- Instruction manual
- Simple manual sticker

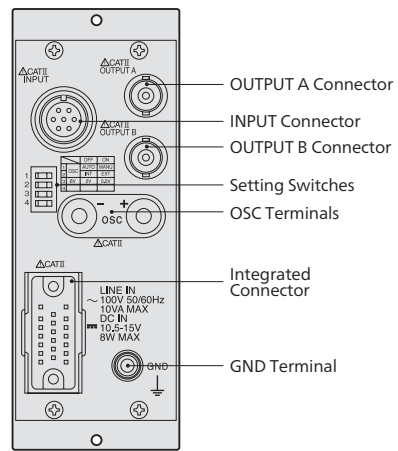
**Optional Accessories**

- Extension cables N-81 to N-85
- Bridge boxes DB, DBB, and DBS
- Housing case YC-A
- Noise filter F-7B, F-BNC
- Amplifier stand FA-1B

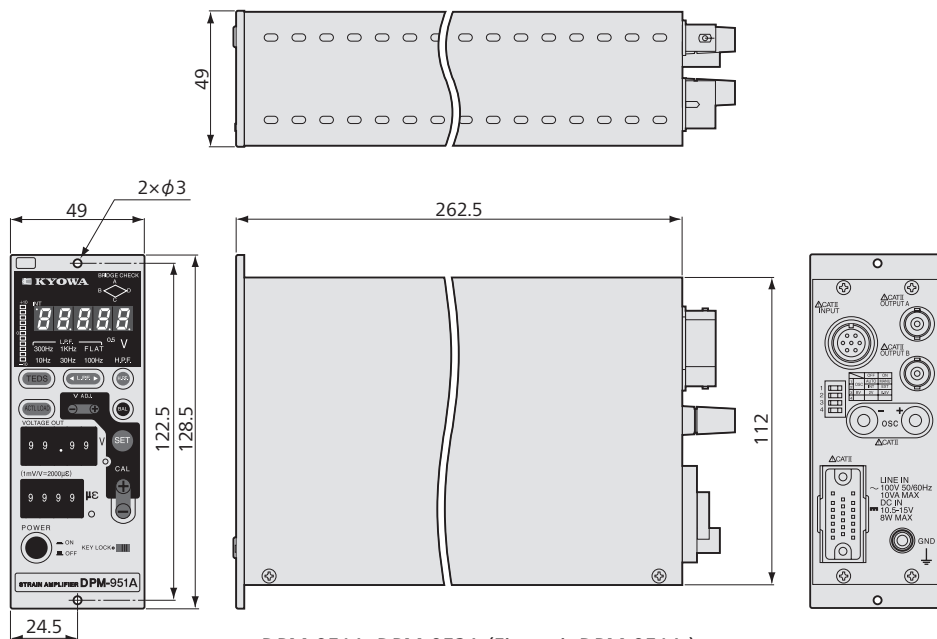
**Front Panel**



**Rear Panel**



**Dimensions**



**DPM-951A/952A**  
Recommended  
products for  
combination

Compact Recording System  
EDX-10 series  
→ 3-49

Universal Recorder  
EDX-200A  
→ 3-55

Universal Recorder  
EDX-100A  
→ 3-63

Memory Recorder/Analyzer  
EDX-5000A  
→ 3-68

A/D Converter+PC