

DPM-911B/912B/913C

Strain Amplifier



High stability High accuracy Easy operation

- 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 ± 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
- Broad frequency response DC to 10 kHz (913C)

Models

| Models | Carrier Wave Frequencies | Frequency Response | SN Ratio |
|----------|--------------------------|--------------------|-----------------------------|
| DPM-911B | 5 kHz | DC to 2.5 kHz | 60dB _{p-p} or more |
| DPM-912B | 12 kHz | DC to 5 kHz | 58dB _{p-p} or more |
| DPM-913C | 28 kHz | DC to 10 kHz | 53dB _{p-p} or more |

(At bridge excitation=2 V_{rms}, bridge resistance 120 Ω, LPF=FLAT, 1000 × 10⁻⁶ strain input, 10.00 V output set)

Specifications

| | |
|--------------------------------------|--|
| Measuring Targets | Strain gages, strain-gage transducers |
| Channels | 1 |
| | Simultaneous operation is available by using multiple units. |
| Applicable Bridge Resistance | 60 to 1000 Ω |
| Gage Factor | 2.00 fixed |
| Bridge Excitation | 2 V _{rms} , 0.5 V _{rms} , switchable |
| Balance Adjustment | Resistance: Within $\pm 2\%$ ($\pm 10000 \times 10^{-6}$ strain) Capacity: Within 2000 pF |
| Balance Adjustment Method | Resistance: Auto balance Accuracy: Within $\pm 0.5 \times 10^{-6}$ strain (When 500×10^{-6} strain is input, outputs 10 V, excitation voltage: 2 V _{rms}) Capacitance: CST method (Capacitance self-tracking) |
| Nonlinearity | Within $\pm 0.1\%$ FS Within $\pm 0.2\%$ FS (913C) |
| Output Impedance | Approx. 2 Ω |
| Calibration Strain (CAL) | ± 1 (to 9999×10^{-6} strain) Setting: CAL switch (4-digital switch) Accuracy: Within $\pm(0.5\% + 0.5 \times 10^{-6}$ strain) Within $\pm(0.5\% + 1 \times 10^{-6}$ strain)(913C) Applicable scope of CAL accuracy: $\pm(10$ to $9999) \times 10^{-6}$ strain |
| Sensitivity Adjustment | Sensitivity is set in combination with CAL and VOLTAGE OUT switches (4-digit digital switches). CAL switch range: 100 to 9999×10^{-6} strain by 1×10^{-6} strain step VOLTAGE OUT switch range: 1.00 to 10.00 by 0.01 V step Accuracy: Within $\pm(0.5\% + 5$ mV) Range: $\times 200$ to $\times 20000$ |
| Fine Sensitivity Adjustment | Range: 1 to 1/2.5 |
| Frequency Response | See table below. Deviation: $\pm 10\%$ |
| LPF | Transfer characteristic: 2nd order Butterworth Cutoff frequencies: 10, 30, 100, 300 Hz, 1 kHz and FLAT - 6 steps Amplitude ratio at cutoff point: -3 ± 1 dB Attenuation: -12 ± 1 dB/oct. (Except when DPM-911B is set to 1 kHz) |
| HPF | Cutoff frequencies: 0.2 Hz, OFF - 2 steps |
| SN Ratio | See table below. |
| Output | OUTPUT A: ± 10 V (Load resistance 5 kΩ or more) OUTPUT B: ± 10 V (Load resistance 5 kΩ or more) |
| Stability | Temperature Zero point: Within $\pm 0.1 \times 10^{-6}$ strain per °C Zero point: Within $\pm 0.2 \times 10^{-6}$ strain per °C (913C) Sensitivity: Within $\pm 0.05\%/^{\circ}\text{C}$ Time Zero point: Within $\pm 0.5 \times 10^{-6}$ strain/24 h Zero point: Within $\pm 1.0 \times 10^{-6}$ strain/24 h (913C) Sensitivity: Within $\pm 0.3\%/24$ h Power supply Zero point: Within $\pm 0.05\%$ FS/power fluctuation $\pm 10\%$ Sensitivity: Within $\pm 0.05\%$ /power fluctuation $\pm 10\%$ |
| Withstand Voltage | 1000 VAC for 1 minute between measuring bridge and case 1000 VAC for 1 minute between AC power supply and case |
| Output Voltage Indication | 4½ digit digital display (7-segment LED) 11-segment LED bar meter |
| Over Input Indication | Output voltage display flashing (4½ digit digital display only) |
| Check Functions | Bridge check |
| Input Open Detection Function | When the input is open, output saturates to the negative side. (913C only) |
| Key Lock Functions | Locks all keys other than POWER switch. (Allows settings on CAL and VOLTAGE OUT switches to be changed.) |
| Remote Functions | Capable of controlling the following functions. Balance adjustment execute (BAL), calibration strain output execute (CAL), key lock |
| Synchronization Method | Automatically determines internal (INT) or external (EXT) and manual setting. |
| TEDS | Reads the sensor TEDS information, and sets the rated output to the VOLTAGE OUT output voltage. |



Dynamic Strain
Measuring Instruments

Outline

1-channel

2-channel

Telemeter

Multi-channel

Other

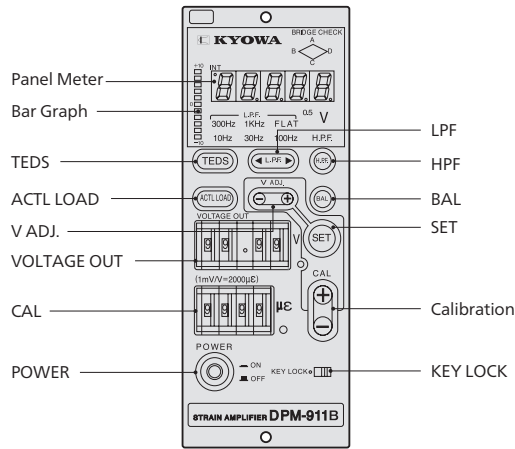
| | |
|--------------------------------|--|
| Actual Load Calibration | Sets actual load input to the VOLTAGE OUT output voltage. (Condition: Within the setting range of the sensitivity adjuster) |
| Vibration Resistant | 5 to 200 Hz, with 29.4 m/s ² (3 G) in X, Y and Z directions for 12 cycles, 10 min/cycle |
| Impact Resistant | 15 G, 11 ms or less, in X, Y and Z directions, every 3 cycles |
| Operating Temperature | -10 to 50°C |
| Operating Humidity | 20 to 85% (Non-condensing) |
| Storage Temperature | -30 to 70°C |
| Power Supply | 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: 911B |

| | |
|-------------------|---|
| Dimensions | 49 W x128.5 H x262.5 D mm (Excluding protrusions) Panel-cut dimensions: 50 W x113 H mm |
| Weight | Approx. 1.2 kg |

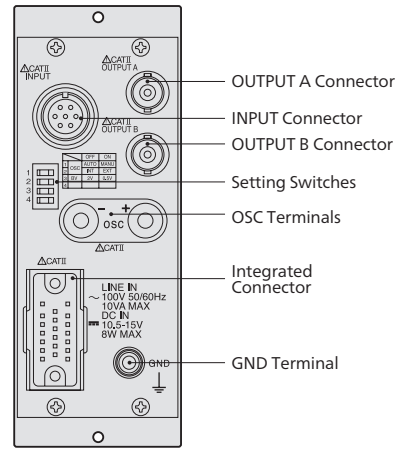
- Standard Accessories**
- Output cable U-08, U-59, 1 each
 - AC power cable P-25 (With 2-pin conversion plug CM-52)
 - Fuse (Midget type 0.5 A, 1 A)
 - Instruction manual
 - Simple manual sticker

- 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, shielded conversion cable N-117

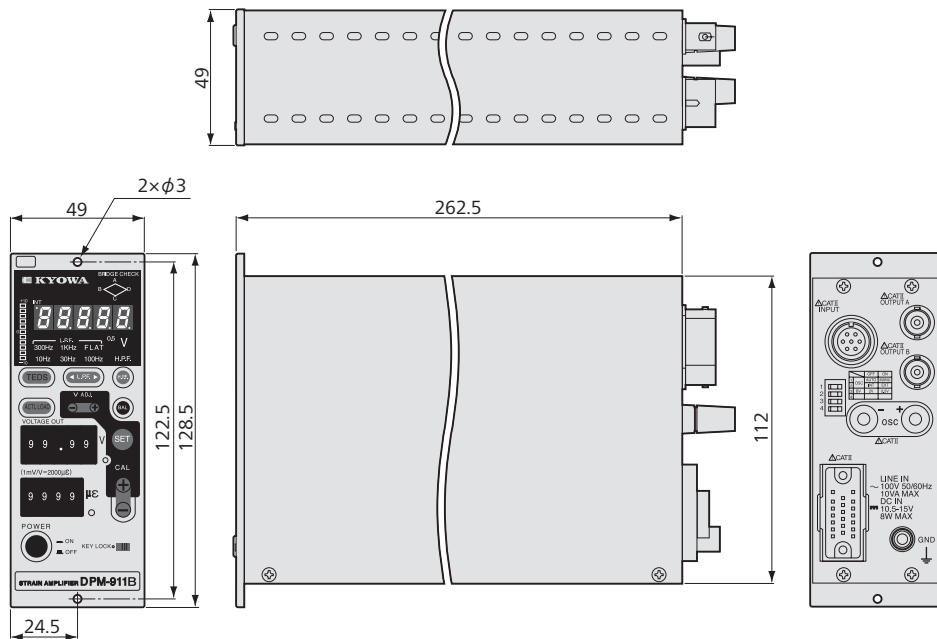
■ Front Panel



■ Rear Panel



■ Dimensions



DPM-911B/912B/913C (Figure is DPM-911B.)

DPM-911B/912B/913C 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