DPM-951A, DPM-952A

Strain Amplifier

DPM-951A DPM-952A

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 ±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	53dB$_{p\text{-}p}$ or more*1
			58dB$_{p\text{-}p}$ or more*2
DPM-952A	12 kHz	DC to 5 kHz	47dB$_{p\text{-}p}$ or more*1
			53dB$_{p\text{-}p}$ or more*2

*1 RTI: Within 2 ×10^{-6} strain$_{p\text{-}p}$, when 500 ×10^{-6} strain is input, outputs 10.00 V.
*2 when 1000 ×10^{-6} strain is input, outputs 10.00 V.
[Common Condition] Bridge Excitation: 2 V$_{rms}$, Bridge Resistance: 120 Ω , LPF = FLAT

Power Supply

Models etc.	Power Supply
DPM-xxxx	90 to 110 VAC (Approx. 12 VA: 100 VAC)
DPM-xxxx A115	108 to 132 VAC (Approx. 12 VA: 115 VAC)
DPM-xxxx A200	180 to 220 VAC (Approx. 12 VA: 200 VAC)
DPM-xxxx A230	207 to 253 VAC (Approx. 12 VA: 230 VAC)
An optional DC power cable P-69 is required.	10.5 to 15 VDC (Approx. 0.6 A: 12 VDC)
xxxx: Part of model, example: 951A	

Specifications

Measuring Targets		Strain gages, strain-gage transducers
Channels		1
		Simultaneous operation is available by using multiple units.
Compatible 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 ±2% (±10000 ×10^{-6} strain)
		Capacitance: Within 2000 pF
Balance Adjustment Method		Resistance: Auto balance
		Accuracy: Within ±0.5 ×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 ±0.1%FS
Output Impedance		Approx. 2 Ω
Calibration Strain (CAL)		±(1 to 9999 ×10^{-6} strain)
		Setting: CAL switch (4-digital switch)
		Accuracy: Within ±(0.5% +0.5 ×10^{-6} strain)
		Applicable scope of CAL accuracy:
		±(10 to 9999) ×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 (CAL)
		(Set with CAL switches)
		VOLTAGE OUT switch range: 1.00 to 10.00 by
		0.01 V step
		Accuracy : Within ±0.5%
		(When Bridge Excitation is 2 V$_{rms}$)
		Range: ×200 to ×20000
Fine Sensitivity Adjustment		Range: 1 to 1/2.5
Frequency Response		See table below.
		Deviation: ±10%
LPF		Transfer characteristic: 2nd order Butterworth
		Cutoff frequencies: 10, 30, 100, 300 Hz, 1 k Hz and FLAT - 6 steps
		Amplitude ratio at cutoff point: -3±1 dB
		Attenuation: -12 ±1 dB/oct.
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: ±0.1 ×10^{-6} strain per °C
		Sensitivity: ±0.05%/°C
	Time	Zero point: ±0.5 ×10^{-6} strain/24 h
		Sensitivity: ±0.3%/24 h
	Power supply	Zero point: Within ±0.05%FS/power fluctuation ±10%
		Sensitivity: Within ±0.05%/power fluctuation ±10%
		Stability condition: When 500 ×10^{-6} strain is input,
		outputs 10.00 V.
Withstand Voltage		1000 VAC for 1 min between measuring bridge and case
		1000 VAC for 1 min 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
Key Lock Function		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.
		(Condition: Within the setting range of the
		sensitivity adjuster)

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/s² (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	See table on the page 3-7
Dimensions	49 W ×128.5 H ×262.5 D mm (Excluding protrusions)
	Panel-cut dimensions: 50 W ×113 H mm
Weight	Approx. 1.2 kg

Standard Accessories

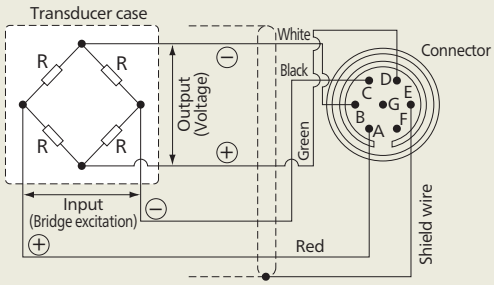
Output cable U-08, U-59, 1 each
AC power cable P-25 (With 2-pin conversion plug CM-52)
Fuse (Midget type 0.5 A, 1 A)
Instruction manual
Simple manual sticker

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

To Ensure Safe Usage

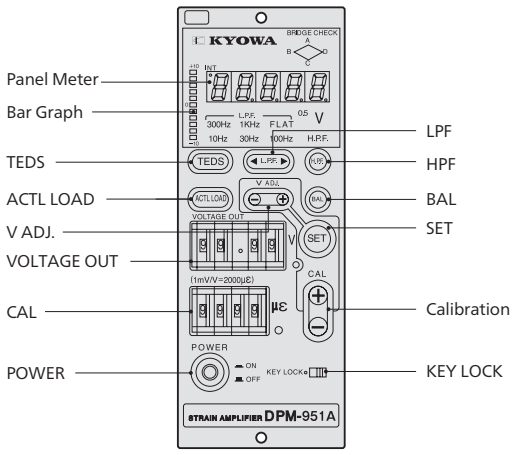
The bridge check function shows the error information - that indicates the wire-breaking location - on the monitor. Note that if 2 or more wires are broken, the bridge check function shows the error information of only one wire.



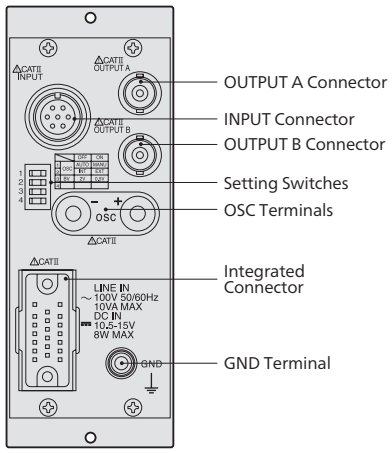
Wire-breaking locations	Error
A (Red)	Er-a
B (White)	Er-b
C (Black)	Er-c
D (Green)	Er-d
3 wires or more	Er-b

Panel

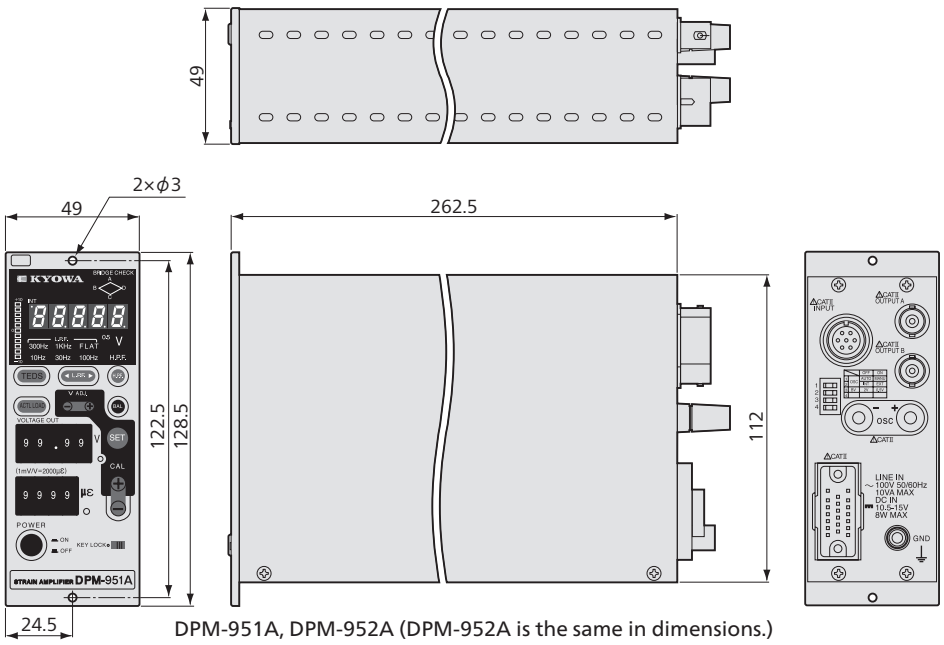
●Front



●Rear



Dimensions



DPM-951A, DPM-952A (DPM-952A is the same in dimensions.)