

Dynamic Strain
Measuring Instruments

Outline

1-channel

2-channel

Telemeter

Multi-channel

Other

DA-710A

DC Amplifier

● Isolated
● High accuracy



Highly accurate 2-channel isolated DC amplifiers

- Input-output isolation ensures excellent stability and makes it less affectable by noise.
- LPF enables measurement at high SN ratio.
- Highly accurate
- Allowable common mode voltage ± 300 V and allowable max. input voltage ± 110 V
- Voltage calibration function
- Moderate price

The DA-710A is a highly accurate 2-channel isolated DC amplifier which satisfies requirements for high input impedance, high gain accuracy and stability. Since the channels are isolated from each other, the DA-710A can effectively be used for measurement if the 2 channels are connected to different signal sources. In addition, input-output isolation ensures excellent stability and outstandingly minimizes noise effects. The allowable common mode voltage is ± 300 VDC, while setting the attenuation switch to 1/100 makes the allowable max. input voltage ± 110 VDC. Furthermore, high-frequency components are eliminated by the LPF for measurement at a high SN ratio. Thus, the DA-710A is used for various purposes including general micro voltage measurement, temperature measurement in combination with a thermocouple, and as a preamplifier for recorders and data processors.

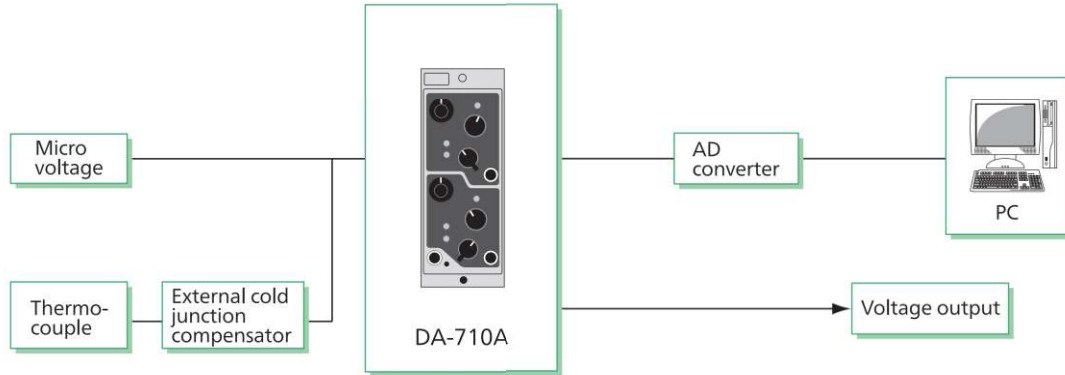
Specifications

Channels	2
Input Modes	Differential, isolated between input and output, and between channel and channel
Isolation Methods	Optical
Input Impedance	10 M Ω + 10 M Ω or more (ATT $\times 1$ and OFF) 1 M Ω + 1 M Ω or more (ATT $\times 1/100$)
Gain	13 steps of 10, 20, 50, 100, 200, 500 ($\times 1$ and $\times 1/100$) and OFF; continuously variable between $\times 1$ and $\times 2.5$ or more Gain accuracy: $\pm 0.1\%$ FS (ATT $\times 1$) $\pm 0.3\%$ FS (ATT $\times 1/100$)
Stability Zero Balance	Within $\pm 5 \mu\text{V}_{\text{RTI}} / ^\circ\text{C}$ (With input shorted and gain 500) Gain: Within $\pm 0.02\%/^\circ\text{C}$
Nonlinearity	Within $\pm 0.05\%$ FS
Frequency Response	DC to 10 kHz (+1, -3 dB)
Output A	± 10 V (Load resistance 10 k Ω or more)
Output B	± 10 V (Load resistance 10 k Ω or more)
Output Impedance	1 Ω or less
CMRR	120 dB or more (DC to 60 Hz) (With balanced input of 1 k Ω , gain 500 and ATT $\times 1$)
Allowable Common Mode Voltage	± 300 VDC or AC peak Insulation resistance 1000 M Ω or more
Allowable Max. Input Voltage	± 2 VDC or AC peak (ATT $\times 1$) ± 110 VDC or AC peak (ATT $\times 1/100$)
Zero Balance Adjustment Range (Output)	± 5 V (OUT A and B linked) ± 1 V (OUT B independent)
Noise	10 $\mu\text{V}_{\text{P-P}}$ (RTI) + 6 mV $_{\text{P-P}}$ (RTO) (With input shorted, gain 500 and ATT $\times 1$)
Calibration Voltage (Output)	Within 4 V $\pm 0.2\%$
Settling Time	100 μs or less, output: Within $\pm 0.1\%$
Overload Recovery Time	100 μs or less, output: Within $\pm 0.1\%$
Crosstalk Between Channels	10 $\mu\text{V}_{\text{P-P}}$ (RTI) + 6 mV $_{\text{P-P}}$ (RTO) or less
Common Mode Crosstalk Rejection Ratio	10 $\mu\text{V}_{\text{P-P}}$ (RTI) + 6 mV $_{\text{P-P}}$ (RTO) or less
LPF	Transfer characteristic: 2nd order Butterworth Cutoff frequencies: 10, 30, 100, 300, 1 k Hz and FLAT (6 steps) Amplitude ratio at cutoff point: -3 ± 1 dB Attenuation: (-12 ± 1) dB/oct.
Operating Temperature	-10 to 50°C
Operating Humidity	20 to 80% (Non-condensing)
Storage Temperature	-20 to 70°C
Storage Humidity	5 to 95% (Non-condensing)
Withstand Voltage	Between [Channel 1 input connector pin] and [Output, case, AC power supply]: 1 kVAC for 1 min Between [Channel 2 input connector pin] and [Output, case, AC power supply]: 1 kVAC for 1 min Between [AC power supply] and [Output, case]: 1 kVAC for 1 min Between [Channel 1 input] and [Channel 2 input]: 1 kVAC for 1 min
Power Supply	100 VAC, 4.5 VA
Dimensions	49 W x 128.5 H x 262.5 D mm (Excluding protrusions)
Weight	Approx. 1.0 kg

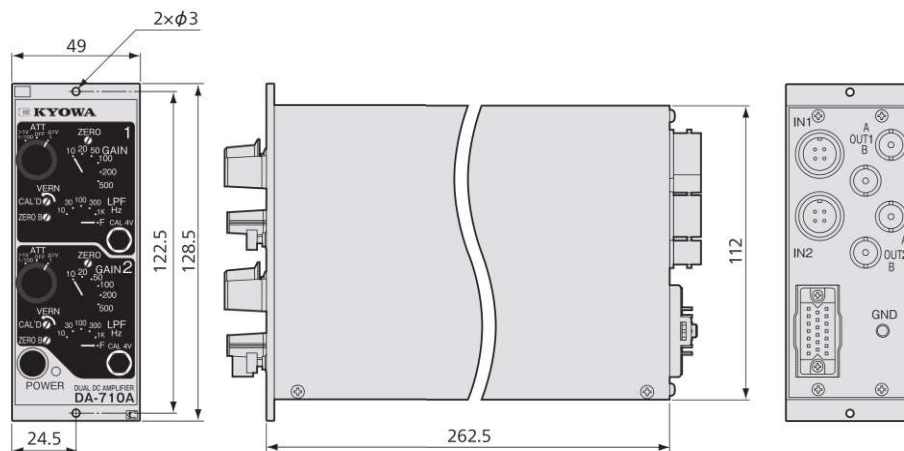
Standard Accessories	Input cable U-108 Output cable U-63 AC power cable P-25 (With 2-pin conversion plug CM-52) Miniature screwdriver CD-R (Instruction manual) Simplified manual
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Optional Accessories	Housing case YC-A Amplifier stand FA-1B
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Block diagram



Dimensions



DA-710A
Recommended
products for
combination

Compact Recording System
EDX-10 series
→ 3-51

Universal Recorder
EDX-200A
→ 3-57

Universal Recorder
EDX-100A
→ 3-65

Memory Recorder/Analyzer
EDX-5000A
→ 3-69

AD Converter+PC