

CDV-900A, CDA-900A

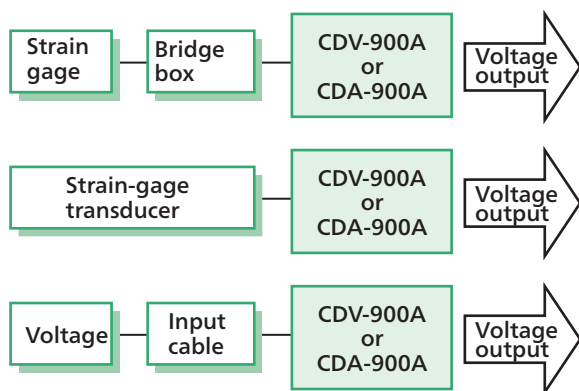
Signal Conditioner



High S/N is ensured by the strain DC amplifiers

- Easy operation greatly reduce the working hours
- High sensitivity (Up to 10 k times)
- Fast response (Up to 500 kHz)
- Long-distance testing (Up to 2 km)
- Excellent nonlinearity (Within $\pm 0.01\%$ FS)
- Universal power supply (100 to 240 VAC or 10.5 to 15 VDC)
- TEDS compatible
- Distinguish TEDS and remote sensing automatically
- Low noise (30% reduction when compared to conventional models)

Block diagram



Note: Output noise will increase in case of combining with a torque transducer.

Specifications

Models	CDV-900A	CDV-900A-DC	CDA-900A	CDA-900A-DC
Excitation Modes	Constant voltage		Constant current	
Bridge Excitation *1	1, 2, 5, 10 V		120 Ω : 8.3, 16.7 mA 350 Ω : 5.7, 14.3, 28.6 mA	
Applicable Bridge Resistance	60 to 1000 Ω		120, 350 Ω	
User's Function	Cable-resistance compensation		Bridge-resistance compensation	
Remote Sensing Mode	Auto (On/off automatically) Manual (On constantly)			
Extension Cable Length	Up to 2 km *2 (Using a sensing cable)		Up to 2 km *3	
CE Directive		Yes		Yes
Power Supply	100 to 240 VAC 10.5 to 15 VDC	10.5 to 15 VDC	100 to 240 VAC 10.5 to 15 VDC	10.5 to 15 VDC

Notes: *1: Setting by DIP switch 1 to 4 on rear panel
*2: By a 6-conductor (0.5 mm²) shielded cable with remote sensing
*3: By a 4-conductor (0.5 mm²) shielded cable

Measuring Targets	Strain Gages, strain-gage transducers and voltage														
Channels	1														
Gage Factor	2.00 fixed														
Balance Adjustment (Auto BAL)															
	Range: within $\pm 2\%$ (± 10 k $\mu\text{m}/\text{m}$)														
	Accuracy: ± 1 $\mu\text{m}/\text{m}$ (At sensitivity of 10 V per 1000 $\mu\text{m}/\text{m}$)														
	Storage: saved in nonvolatile memory														
Nonlinearity	Within $\pm 0.01\%$ FS														
Input Impedance	10 + 10 M Ω or more														
Output Impedance	Approx. 2 Ω														
Calibration (CAL)	Equivalent strain: $\pm(1$ to 9999 $\mu\text{m}/\text{m})$ DC voltage: $\pm(10$ to 99990 $\mu\text{V})$														
	Accuracy: within $\pm(0.2\%+0.5$ $\mu\text{m}/\text{m})$ within $\pm(0.1\%+5.0$ μV RTI)														
Sensitivity Adjustment	CAL SW & VOLTAGE SW (Both required)														
	CAL SW: 100 to 9999 $\mu\text{m}/\text{m}$, by 1 $\mu\text{m}/\text{m}$ step 1000 to 99990 μV , by 10 μV step														
	VOLTAGE SW: 1.00 to 10.00 V, by 0.01 V step														
	Accuracy: within $\pm(0.5\% + 5$ mV)														
	Range: x200 to x10000														
Fine Sensitivity Adjustment	Range: 1 to 1/2.5														
Frequency Response	DC to 500 kHz (Amplitude deviation: 1 to -3 dB)														
LPF	Transfer characteristic: 4th order Butterworth Cutoff frequencies: 10, 100, 1 k, 10 k, 100 k Hz and FLAT (6 steps) Amplitude ratio: -3 \pm 1 dB (At cutoff point) Attenuation: (-24 \pm 1) dB/oct.														
HPF	Cutoff frequencies: 0.2 Hz and off (2 steps)														
Output (Dual)	OUTPUT A: ± 10 V (Load resistance: 5 k Ω or more) OUTPUT B: ± 10 V (Load resistance: 5 k Ω or more)														
Noise (At Bridge excitation: 2 V, bridge resistance: 120 Ω, sensitivity: 10 V / 1000 $\mu\text{m}/\text{m}$)															
	<table border="1"> <thead> <tr> <th>LPF</th> <th>Noise</th> </tr> </thead> <tbody> <tr> <td>FLAT</td> <td>40 $\mu\text{Vp-p}$ or less</td> </tr> <tr> <td>100 kHz</td> <td>16 $\mu\text{Vp-p}$ or less</td> </tr> <tr> <td>10 kHz</td> <td>6 $\mu\text{Vp-p}$ or less</td> </tr> <tr> <td>1 kHz</td> <td>4 $\mu\text{Vp-p}$ or less</td> </tr> <tr> <td>100 Hz</td> <td>3 $\mu\text{Vp-p}$ or less</td> </tr> <tr> <td>10 Hz</td> <td>2 $\mu\text{Vp-p}$ or less</td> </tr> </tbody> </table>	LPF	Noise	FLAT	40 $\mu\text{Vp-p}$ or less	100 kHz	16 $\mu\text{Vp-p}$ or less	10 kHz	6 $\mu\text{Vp-p}$ or less	1 kHz	4 $\mu\text{Vp-p}$ or less	100 Hz	3 $\mu\text{Vp-p}$ or less	10 Hz	2 $\mu\text{Vp-p}$ or less
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	(At sensitivity: 10 V / 1000 $\mu\text{m}/\text{m}$)														

Safe Input Voltage	± 15 V
Safe Common Mode Input	± 10 V
CMRR	100 dB or more
Stability at Sensibility	10 V per 1000 µm/m
Temperature	Zero: ±1 µm/m per °C Sensibility: ±0.01%/°C
Time	Zero: ±5 µm/m for 24h Sensibility: ±0.05% for 24h
Power supply	Zero: ±0.05%FS (power fluctuation: ±10%) Sensibility: ±0.05%
Withstand Voltage	1 k VAC between AC line and case for 1 min
Output Voltage Indication	4½-digit (7-segment LED) indicator 11-segment LED bar meter
Over Input Indication	Output voltage indication flickers (7-segment LED)
Check Function	Bridge resistance check
Key-lock Function	Allows only power switch and dip switches to be operated
Remote Function	Performs BAL, CAL and key-lock
TEDS	Reads TEDS information and sets VOLTAGE OUT as rated output

Actual Load Sensitivity Setting	Registers VOLTAGE OUT data as output by the actual load applied
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	147.1 m/s ² (15 G), 11 ms or less, in X, Y and Z directions, every 3 cycles
Temperature	Operating range: -10 to 50 °C
Humidity	Operating range: 20 to 85% RH (Non-condensing)
Storage Temperature	-30 to 70 °C
Power Supply	100 to 240 VAC, Approx. 8 VA (At 100 VAC) 10.5 to 15 VDC, 4 W (At 12 VDC) CDA/CDV-900A-DC: DC power supply only
Dimensions	49 W x 128.5 H x 262.5 D mm (Excluding protrusions)
Panel-cut dimensions	50x113 mm (Only for mounting CDA/CDV-900A)

Standard Accessories Output cable U-08 (1.5 m), U-59 (1.5 m), 1 each AC power cable P-25 (With 2-pin conversion plug CM-39), Instruction manual, Simple manual sticker

Optional Accessories Input cable U-37 (1.3 m), Extension cables N-81 (5 m) to N-85 (50 m), Bridge boxes DB, DBB, and DBS, Housing case YC-A, Amplifier stand FA

■ Dimensions

