

CDV-900A, CDA-900A

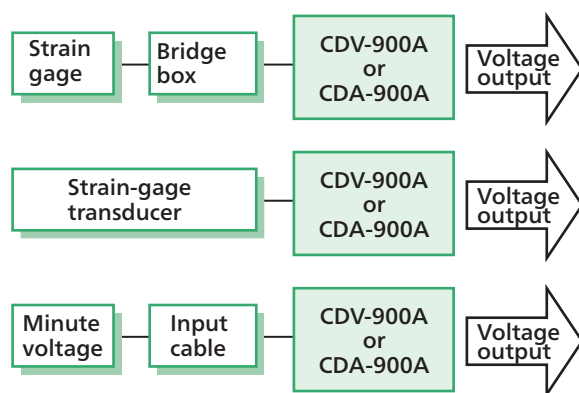
Signal Conditioner



High S/N is ensured by the strain DC amplifiers

- Easy operation greatly reduce the working hours.
- High sensitivity (Up to 10000 times)
- Fast response (DC 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



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

Models

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	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

*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

Specifications

Measuring Targets	Strain gages, strain-gage transducers and voltage	
Channels	1	
Gage Factor	2.00 fixed	
Balance Adjustment (Auto BAL)	Within $\pm 2\%$ ($\pm 10000 \times 10^{-6}$ strain)	
	Balance adjustment method: Auto balance	
	Accuracy: $\pm 1 \times 10^{-6}$ strain	
	(At sensitivity of 10 V per 1000 $\times 10^{-6}$ strain)	
	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: $\pm (1 \text{ to } 9999 \times 10^{-6}$ strain)	
	DC voltage: $\pm (10 \text{ to } 99990 \mu\text{V})$	
	Setting: CAL switch (4-digital switch)	
	Accuracy: Within $\pm (0.2\% + 0.5 \times 10^{-6}$ strain)	
	Within $\pm (0.1\% + 5.0 \mu\text{V}/\text{km})$	
Sensitivity Adjustment	Sensitivity is set in combination with CAL and VOLTAGE OUT switches (4-digit digital switches)	
	CAL switch range: 100 to 9999 $\times 10^{-6}$ strain by	
	1 $\times 10^{-6}$ strain step	
	VOLTAGE OUT switch range: 1.00 to 10.00 by 0.01 V step	
	Accuracy: Within $\pm (0.5\% + 5 \text{ mV})$	
	Range: $\times 200$ to $\times 10000$	
Fine Sensitivity Adjustment	Range: 1 to 1/2.5	
Frequency Response	DC to 500 kHz	
	(Amplitude deviation: 1, -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 at cutoff point: -3 ± 1 dB	
	Attenuation: (-24 ± 1) dB/oct.	
HPF	Cutoff frequencies: 0.2 Hz, OFF - 2 steps	
Output	OUTPUT A: ± 10 V (Load resistance: 5 k Ω or more)	
	OUTPUT B: ± 10 V (Load resistance: 5 k Ω or more)	
Noise	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
	(At Bridge excitation: 2 V, bridge resistance: 120 Ω , 1000 $\times 10^{-6}$ strain input, 10.00 V output set)	

Safe Input Voltage	± 15 V
Safe Common Mode Input	± 10 V
CMRR	100 dB or more
Stability Temperature	Zero point: ±1 × 10 ⁻⁶ strain per °C Sensitivity: ±0.01%/°C
Time	Zero point: ±5 × 10 ⁻⁶ strain per 24 h Sensitivity: ±0.05%/24 h
Power supply	Zero point: ±0.05%FS/power fluctuation ±10% Sensitivity: ±0.05%/power fluctuation ±10% (At sensitivity of 10 V per 1000 × 10 ⁻⁶ strain)
Withstand Voltage	1 kVAC for 1 min between AC power supply and case (CDV/CDA-900A only)
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 resistance check
Key Lock Function	Locks all keys other than POWER switch. (Allows settings on digital CAL and VOLTAGE OUT switches to be changed)
Remote Functions	Balance adjustment execute (BAL), calibration strain output execute (CAL), key lock
TEDS	Reads the sensor TEDS information, and sets the rated output to the VOLTAGE OUT output voltage.

Actual Load Calibration	Sets actual load input to the VOLTAGE OUT output voltage.
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% 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, approx. 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)
Weight	Approx. 1.0 kg
EMC Directive	EN61326-1 (Class A) (CDV/CDA-900A-DC only)

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| Standard Accessories | Output cable U-08, U-59
AC power cable P-25 (With 2-pin conversion plug CM-39, CDV/CDA-900A only)
DC power cable P-69 (CDV/CDA-900A-DC only)
Ferrite core x 5 (CDV/CDA-900A-DC only)
Instruction manual |
| Optional Accessories | Input cable U-37
Extension cables N-81 to N-85
Housing case YC-A
Amplifier stand FA
AC adapter SA-10A-AMP (CDV/CDA-900A-DC only) |

■ Dimensions

