CDA/CDV-900A

(-DC only)

Signal Conditioner



CDV-900A CDA-900A

DC type signal conditioners with high SN ratio

- Easy setup to significantly reduce work time
- Frequency response range: DC to 500 kHz
- DC for use with extension cables (Cable extension to 2 km, CDA-900A)
- Excellent nonlinearity (within ±0.01% FS)
- TEDS/remote sensing auto detection

These signal conditioners integrate a DC bridge power supply, providing highly stable and accurate measurements with simple setup.
Sensitivity can be easily set by simply configuring the input strain and output voltage via digital switches, thus significantly improving work efficiency.

Specifications

Measuring Target	Strain gage, strain-gage transducer and voltage
Channels	1
Applicable Bridge Resistance	See table below.
Gage Factor	2.00 fixed
Bridge Excitation	See table below.
Balancing Range (BAL)	Within ±2% (±10000 $\times10^{-6}$ strain)
Balancing Method	Auto-balance
	Accuracy: ±1 $\times10^{-6}$ strain
	[At sensitive of 10 V/1000 $\times10^{-6}$ strain.]
	Saved in nonvolatile memory
Nonlinearity	Within ± 0.01% FS
Input Impedance	10 MΩ + 10 MΩ or more
Output Impedance	Approx. 2 Ω
Calibration (CAL)	Equivalent strain: ±(1 to 9999 $\times10^{-6}$ strain)
	DC voltage: ±(10 to 99990 μV)
	Settings: CAL switch (4-digit digital switch)
	Accuracy: Within ± (0.2% + 0.5 $\times10^{-6}$ strain)
	Within ± (0.1% + 5.0 μV_{RTI})
Sensitivity Adjuster	CAL switch and VOLTAGE OUT switch (4-digit digital switch) both required
	CAL switch: 100 to 9999 $\times10^{-6}$ strain (1 $\times10^{-6}$strain steps)
	1000 to 99990 μV (10 μV steps)
	VOLTAGE OUT switch: 1.00 to 10.00 V (0.01 V steps)
	Accuracy: Within ± (0.5% + 5 mV)
	Range: ×200 to ×10000
Fine Sensitivity Adjuster	1 to 1/2.5
Frequency Response	DC to 500 kHz
	(Deviation: +1 dB to -3 dB)
Low-pass Filter (LPF)	Transfer characteristic: 4th-order Butterworth
	Cutoff frequency: 10, 100, 1k, 10k, 100k Hz and FLAT (6 steps)
	Amplitude ratio at the cutoff point: -3 ±1 dB
	Attenuation: -24 ±1 dB/oct.
High-pass Filter (HPF)	Cutoff frequency: 0.2 Hz and OFF (2 steps)
Output	OUTPUT A: ±10 V (Load resistance: 5 kΩ or more)
	OUTPUT B: ±10 V (Load resistance: 5 kΩ or more)
Noise	

Low-pass filter	Noise (RTI)
FLAT	40 μV_{p-p} or less
100 kHz	16 μV_{p-p} or less
10 kHz	6 μV_{p-p} or less
1 kHz	4 μV_{p-p} or less
100 Hz	3 μV_{p-p} or less
10 Hz	2 μV_{p-p} or less

[At the bridge excitation: 2 V and bridge resistance: 120 Ω, when 1000 $\times10^{-6}$ strain is input, outputs 10 V.]

Safe Input	±15 V
Safe Common Mode Input	±10 V
CMRR	100 dB or more

Models

Model	Excitation Mode	Bridge Excitation *2	Applicable Bridge Resistance*3	User's Function	Remote Sensing	Cable Extension	CE Directive	AC Adapter
CDA-900A	Constant current *1	120 Ω: 8.3, 16.7 mA 350 Ω: 5.7, 14.3, 28.6 mA	120, 350 Ω	Bridge-resistance-compensation	—	Up to 2 km *4	—	Not required
CDA-900A-DC							Yes	Required
CDV-900A	Constant voltage	1, 2, 5, 10 V	60 to 1000 Ω	Cable-resistance compensation	Yes *5	Up to 2 km *5 (Using a sensing function)	—	Not required
CDV-900A-DC							Yes	Required

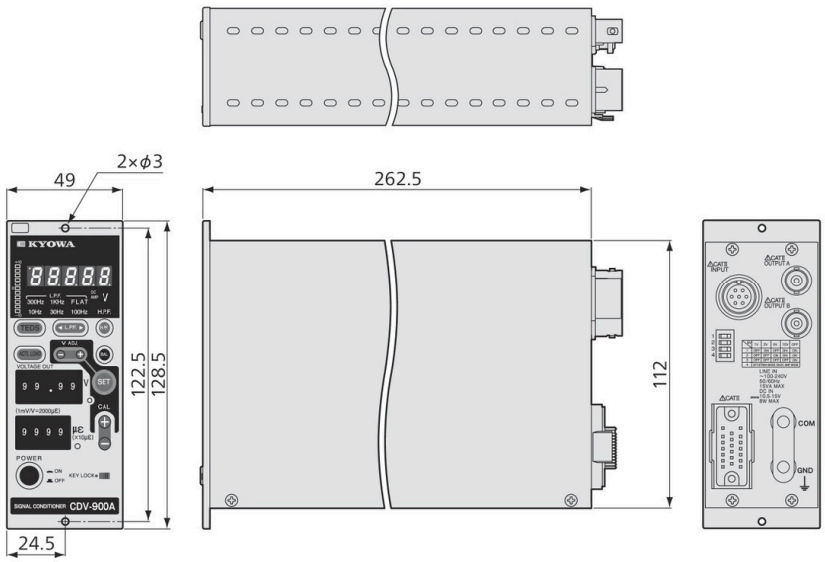
*1: 60.0 to 1000.0 Ω: By using the user-specified registration function)
*2: Setting by DIP switch 1 to 4 on rear panel
*3: The settable range varies depending on the bridge excitation.
*4: With the 4-conductor cable (0.5 mm^2)
*5: With the 6-conductor shielded cable (0.5 mm^2)
AUTO: The remote sensing connection is determined for turning ON/OFF the remote sensing automatically.
ALWAYS ON: Capable of setting the remote sensing "ALWAYS ON" on the user-specified registration function.

Stability	Temperature Zero point: ±1 ×10^{-6} strain/℃
	Sensitivity: ±0.01%/℃
	Time Zero point: ±5 ×10^{-6} strain/24 h
	Sensitivity: ±0.05%/24 h
	Power supply Zero point: ±0.05% FS/±10% fluctuation
	Sensitivity: ±0.05%/±10% fluctuation
	[when 1000×10^{-6} strain is input, outputs 10.00 V.]
Withstand Voltage (CDV/CDA-900A only)	
	AC power - chassis: 1000 VAC for 1 minute
Output Voltage Display	4½ digits, digital display (7-segment LED)
	11-segment LED bar graph meter
Over-input Indication	Output voltage: Flickers
	(4½ digits, digital display only)
Check Functions	Bridge resistance check
Key-lock Functions	For prohibiting operations other than POWER switch.
	(However, the setting values of the CAL switch
	and VOLTAGE OUT switch can be changed.)
Remote Functions	Performs BAL switch, CAL switch, and key-lock function
TEDS	Loads the TEDS information of the sensor and
	sets the rated output to the output voltage of
	the VOLTAGE OUT switch.
Actual Load Calibration	Sets the actual load to the output voltage
	of the VOLTAGE OUT switch.
User's Function	See table.
Remote Sensing	See table.
Cable Extension	See table.
Vibration Resistance	5 to 200 Hz, 29.4 m/s^2 (3 G)
	X, Y, and Z direction (12 cycles), 10 minutes/cycle
Impact Resistance	147 m/s^2 (15 G), 11 ms or less,
	3 cycles each in X, Y, and Z direction
Operating Temperature	-10 to 50℃
Operating Humidity	20 to 85% (Non-condensing)
Storage Temperature	-30 to 70 ℃
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 × 128.5 H × 262.5 D mm
	(Excluding protrusions)
Weight	Approx. 1.0 kg
Compliance (CDV/CDA-900A-DC only)	
	Directive 2014/30/EU (EMC)
	Directive 2011/65/EU, (EU)2015/863
	(10 restricted substances) (RoHS)

Standard Accessories Output cable U-08, U-59
AC power cable P-25 (With 2-pin conversion plug CM-52, CDA/CDV-900A only)
DC power cable P-69 (CDA/CDV-900A-DC only)
Ferrite core × 5 (CDA/CDV-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-1B
AC adapter UNI318-1215-AMP (CDA/CDV-900A-DC only)

Dimensions



CDV/CDA-900A (The figure is CDV-900A.)