

EDX-10 Series

Compact Recording System



Compact, lightweight, with a simple configuration, all channels synchronous 20 kHz high-speed sampling (For 4 channels)

■ Control Unit EDX-10B



A unit controls measuring units and performs communication with PC via USB interface.

The EDX-10 series compact recording system is measuring instruments that measure simply by being connected to a PC using the USB interface.

The EDX-11A and EDX-14A that measure with Strain-gage transducers, pressure, displacement, etc. The EDX-12A that measure voltage, the EDX-15A that measure force, pressure, displacement, and voltage, and the EDX-13A that measure temperature with a thermocouple.

A single unit for 4-channel measurement, 4 units for 16 channels, thus it is suitable for small-scale measurement.

Up to 4 measuring units are powered by USB interface, no separated power supply is required.

- With stacked connection, no synchronization cable is required, therefore wiring-saving.
- Max. sampling frequency 20 k Hz for 4 channels of a single measuring unit in sync.
- Compact & lightweight
- Simple connection using USB interface
- The standard accessory, Dynamic Data Acquisition Software DCS-100A, makes it easier data monitoring or acquisition.
- Data is recorded as KS2, which is Kyowa standard file format. The optional Data Analysis Software DAS-200A reads the file.
- Sensors are easily connected with one-touch input cables or input adapters.

Specifications

Interfaces	USB2.0 compliant
	Connector configuration: USB standard B receptacle
Installed Measuring Units	Max. 4 (16 channels)
Sampling Frequencies	1 Hz to 20 k Hz (1 to 4 channels)
	1 Hz to 10 k Hz (1 to 8 channels)
	1 Hz to 5 k Hz (1 to 16 channels)
Operating Temperature	0 to 40°C
Power Supply	5 VDC by USB bus power or a AC adapter
Current Consumption	140 mA or less (5 VDC)
Weight	Approx. 170 g
Dimensions	84.0 W × 26.6 H × 84.0 D mm
	(Excluding protrusions)
Control Software	DCS-100A
EMC Directive	EN61326-1 (Class A)
RoHS Directive	EN50581

Standard Accessories	USB cable N-38 (1 m)
	Ground wire P-72 (5 m)
	Dynamic data acquisition software DCS-100A (CD-ROM)

Optional Accessories	AC adapter UN310-0515
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Notes:

1. When power supply from a USB port, please connect the EDX-10B to the PC directly. No USB hub is required.
2. The AC adapter operates any 4 measuring units.
3. The combination of measuring units for power supply by USB port are as follows.

USB ports	EDX-11A units	Connection units
USB 3.0	0	Max. 4
	1	Max. 2
	2	
USB 2.0	0	Max. 2
	1	Max. 1



■ Strain Measuring Unit EDX-11A



A unit for measuring strain.

Specifications

Measuring Targets	Strain-gage transducers, strain gages (Using bridge boxes)
Channels	4
Measuring Range	10 k, 50 k $\mu\text{m}/\text{m}$ (2 steps)
Applicable Bridge Resistance	120 Ω to 1 k Ω
Bridge Excitation	2 VDC
Gage Factor	2.00 fixed
Range Accuracy	Each range within $\pm 0.3\%$ FS
Nonlinearity	Within $\pm 0.1\%$ FS
A/D Converter	24 bits
Frequency Response	DC to 2 kHz
LPF	2nd order Butterworth Cutoff frequencies: 100 Hz, 2 k Hz
Operating Temperature	0 to 40°C
Input Connectors	D-sub 37-pin connector
Power Supply	5 VDC supplied by control unit
Current Consumption	180 mA or less (120 Ω load with all channels connected, at power supply 5 VDC)
Weight	Approx. 150 g
Dimensions	84.0 W \times 26.6 H \times 84.0 D mm (Excluding protrusions)
EMC Directive	EN61326-1 (Class A)
RoHS Directive	EN50581

Standard Accessories Strain input cable U-124 (30 cm)

Optional Accessories Bridge box connection cable U-126 (50 cm)
Input Connector Set EDX10-DSUB
Input adapter UI-51A
One-touch type input adapter UI-52A
Bridge adapter for quarter bridge system UI-53A-120/350
Bridge adapter for quarter bridge system UI-54A-120/350
One-touch type input adapter UI-55A

Specifications

Measuring Targets	Voltage
Channels	4 (Single end)
Measuring Range	10 V, 50 V (2 steps)
Range Accuracy	Each range within $\pm 0.3\%$ FS
Nonlinearity	Within $\pm 0.1\%$ FS
A/D Converter	24 bits
Frequency Response	DC to 2 kHz
LPF	2nd order Butterworth Cutoff frequencies: 100 Hz, 2 k Hz
Operating Temperature	0 to 40°C
Input Connectors	D-sub 37-pin connector
Power Supply	5 VDC supplied by control unit
Current Consumption	110 mA or less (5 VDC)
Weight	Approx. 150 g
Dimensions	84.0 W \times 26.6 H \times 84.0 D mm (Excluding protrusions)
EMC Directive	EN61326-1 (Class A)
RoHS Directive	EN50581

Standard Accessories Input adapter UI-51A

Optional Accessories BNC input cable U-125 (30 cm)
Bridge box connection cable U-126 (50 cm)
Input Connector Set EDX10-DSUB
One-touch type input adapter UI-52A

Specifications

Measuring Targets	Thermocouples
Channels	4
Measuring Targets	K, T, J, N (Resistance of thermocouple: 1 k Ω or less) (See the table below for details about the temperature measuring range, etc.)
Check Functions	Burnout check.
A/D Converter	24 bits
Sampling System	Scanning
Inside Sampling Frequencies	Approx. 0.5 Hz, Approx. 2.0 Hz
Input Connectors	Screw type terminal box
Current Consumption	120 mA or less (5 VDC)
Weight	Approx. 130 g
Dimensions	84.0 W \times 26.6 H \times 84.0 D mm (Excluding protrusions)
EMC Directive	EN61326-1 (Class A)
RoHS Directive	EN50581

Standard Accessories Terminal box 1piece, Screwdriver 1piece

■ Voltage Measuring Unit EDX-12A



A unit for measuring voltage.

■ Thermocouple Measuring Unit EDX-13A



A unit for measuring temperature by using thermocouples

Types	Range	Accuracy (Resolution: 0.1 °C)		Accuracy of internal reference contact compensator
K	-200.0 to 1370.0°C	-200.0 to -100.0°C or less -100.0 to 1370.0°C	$\pm(0.2\%$ of reading + 0.6°C) $\pm(0.1\%$ of reading + 0.4°C)	$\pm 1.0^\circ\text{C}$ (Input terminal temperature at equilibrium) (Ambient temperature: 25 \pm 10°C)
T	-200.0 to 400.0°C	-200.0 to -100.0°C or less -100.0 to 400.0°C	$\pm(0.2\%$ of reading + 0.6°C) $\pm(0.1\%$ of reading + 0.4°C)	Mount the EDX-13A on the bottom when using it with measuring units other than the EDX-13A.
J	-200.0 to 1200.0°C	-200.0 to -100.0°C or less -100.0 to 1200.0°C	$\pm(0.2\%$ of reading + 0.6°C) $\pm(0.1\%$ of reading + 0.4°C)	$\pm 2.0^\circ\text{C}$ (Input terminal temperature in equilibrium)
N	-200.0 to 1300.0°C	-200.0 to -100.0°C or less -100.0 to 1300.0°C	$\pm(0.2\%$ of reading + 0.6°C) $\pm(0.1\%$ of reading + 0.4°C)	For temperatures other than those in the ambient temperature and operating temperature described above

Note: The measurement accuracy does not include the accuracy of the internal reference contact compensator and thermocouples.

Strain Measuring Unit EDX-14A



A unit for measuring strain

Specifications

Measuring Targets	Strain-gage transducers, strain gages*
Channels	4
Measuring Range	10 k, 50 k $\mu\text{m}/\text{m}$ (2 steps)
Applicable Bridge Resistance	120 Ω to 1 k Ω
Bridge Excitation	1 VDC
Gage Factor	2.00 fixed
Range Accuracy	Each range within $\pm 0.3\%$ FS
Nonlinearity	Within $\pm 0.1\%$ FS
A/D Converter	24 bits
Frequency Response	DC to 2 kHz
LPF	2nd order Butterworth Cutoff frequencies: 100 Hz, 2 k Hz
Operating Temperature	0 to 40°C
Input Connectors	D-sub 37-pin connector
Power Supply	5 VDC supplied by control unit
Current Consumption	140 mA or less (120 Ω load with all channels connected, at power supply 5 VDC)
Weight	Approx. 150 g
Dimensions	84.0 W \times 26.6 H \times 84.0 D mm (Excluding protrusions)
EMC Directive	EN61326-1 (Class A)
RoHS Directive	EN50581

*Bridge boxes are required for strain measurement

Standard Accessories	Strain input cable U-124 (30 cm)
Optional Accessories	Bridge box connection cable U-126 (50 cm) Input Connector Set EDX10-DSUB Input adapter UI-51A One-touch type input adapter UI-52A Bridge adapter for quarter bridge system UI-53A-120/350 Bridge adapter for quarter bridge system UI-54A-120/350 One-touch type input adapter UI-55A

Low-power Strain/Voltage Measuring Unit EDX-15A



Measurement of both strain and voltage in the same unit possible

Specifications

Measuring Targets	Strain-gage transducers, strain gages*	Voltage
Channels	4	
Measuring Range	10 k, 50 k $\mu\text{m}/\text{m}$ (2 steps)	10, 50 V
Applicable Bridge Resistance	120 Ω to 1 k Ω	
Bridge Excitation	1 VDC	
Gage Factor	2.00 fixed	
Range Accuracy	Each range within $\pm 0.3\%$ FS	
Nonlinearity	Within $\pm 0.1\%$ FS	
A/D Converter	24 bits	
Frequency Response	DC to 2 kHz	
LPF	2nd order Butterworth Cutoff frequencies: 100 Hz, 2 k Hz	
Operating Temperature	0 to 40°C	
Input Connectors	D-sub 37-pin connector	
Power Supply	5 VDC supplied by control unit	
Current Consumption	150 mA or less (120 Ω load with all channels connected, at power supply 5 VDC)	
Weight	Approx. 150 g	
Dimensions	84.0 W \times 26.6 H \times 84.0 D mm (Excluding protrusions)	
EMC Directive	EN61326-1 (Class A)	
RoHS Directive	EN50581	

*Bridge boxes are required for strain measurement

Standard Accessories	Strain input cable U-124 (30 cm) Conversion adapter FV-1A x4
Optional Accessories	Bridge box connection cable U-126 (50 cm) Input Connector Set EDX10-DSUB Input adapter UI-51A One-touch type input adapter UI-52A Bridge adapter for quarter bridge system UI-53A-120/350 Bridge adapter for quarter bridge system UI-54A-120/350 One-touch type input adapter UI-55A

Input adaptor (Supplied with the product)

(EDX-11A/14A/15A for optional) Input adapter UI-51A

- For strain-gage transducers
(Bared at the tip).



(EDX-11A/12A/14A/15A for optional) One-touch type input adapter UI-52A

- For strain-gage transducers
(Bared at the tip).
- For voltage input (Bared at the tip).



(EDX-11A/14A/15A for optional) Bridge adapter for quarter bridge system UI-53A-120 (For 120 Ω) UI-53A-350 (For 350 Ω)

- Quarter-bridge
2-/3-wire strain gage is
connected directly to the UI-53A



(EDX-11A/14A/15A for optional) Bridge adapter for quarter-bridge system UI-54A-120 (For 120 Ω) UI-54A-350 (For 350 Ω)

- Quarter-bridge 2-/3-wire strain gage is
connected directly to the UI-54A



(EDX-11A/14A/15A for optional) One-touch type input adapter UI-55A

- Strain gages and strain-gage transducers
of full-bridge system connected to
UI-55A directly.



● DCS-100A software for EDX-10B section

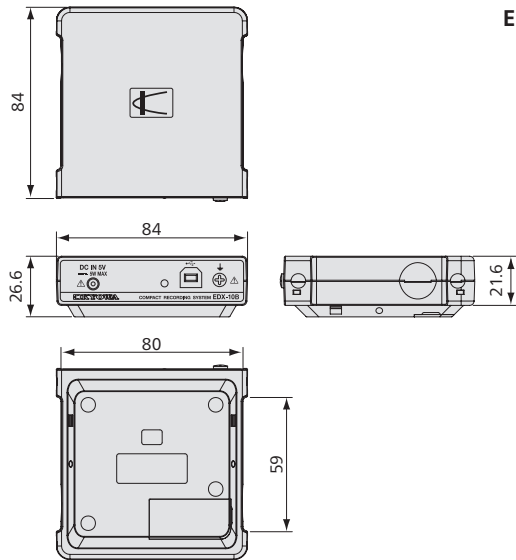
For details of DCS-100A, see page 4-3.

Controllable Units	Max. 4 (Max. 16 channels)
Interfaces	USB
Data Storage	Measured data is saved in the PC as KS2 file
Channel Conditions	Measurement ON/OFF, mode, range, LPF, balance, calibration coefficient, offset, unit, CH name, measuring range, decimal point, rated capacity, rated output, chk.val.(Up), chk.val. (Down), (Selection of any display item is possible)
Sampling Frequencies	1 Hz to 20 kHz (1-2-5 series) (Depends on the measuring channels)
Measuring Modes	Manual, manual (Data points preset), interval, and analog trigger
Manual Measurement	Measurement is made from a press of the REC button to a press of the STOP button or to completion of recording to the data points preset
Interval Measurement	Measurement is made automatically at preset intervals from the preset starting time.
Analog Trigger Measurement	Start and/or stop recording based on the specified trigger conditions
End trigger	Settable
Delay	Both start and stop, max. 262144 data items/channel Delay differs with the number of measurement channels
Trigger channels	Any 1 channel
Trigger level	Sets in physical quantity
Trigger slope	Up, down
Static Measurement	Every time the DCS-100A starts recording data, the DCS-100A additionally saves the moving- averaged measured data in a single CSV format file in manual and interval modes.
Repetition Acquisition	In long-term data acquisition, a specified amount of data (Or time) is saved in KS2 file . Workable in manual mode (Data points preset).
Environment Settings	
Hardware configuration	
	Setting of device name, and measuring unit
	Configuration of device names connected to EDX-10B is possible.
	Reading of hardware configuration from EDX-10B is possible.

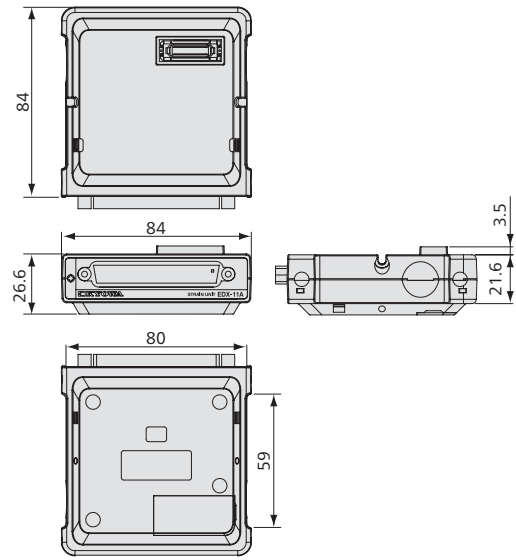


■ Dimensions

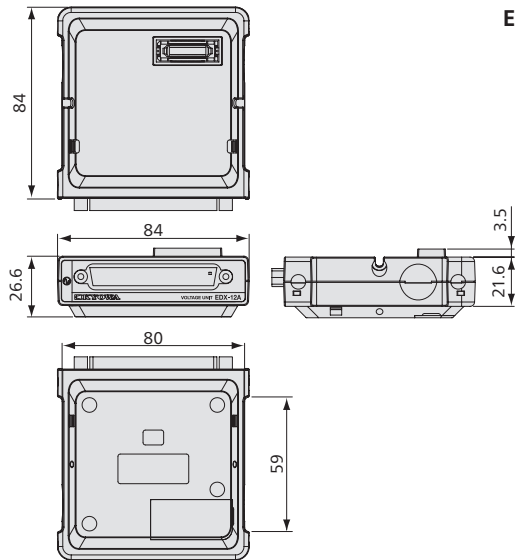
EDX-10B



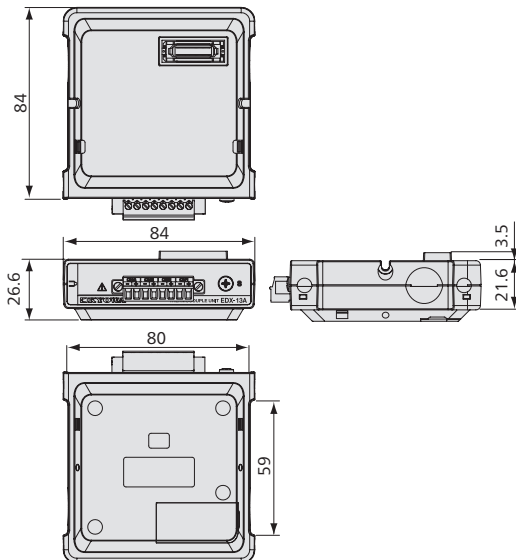
EDX-11A



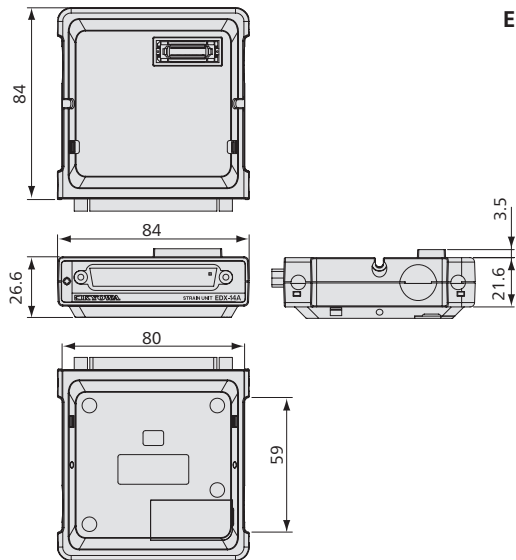
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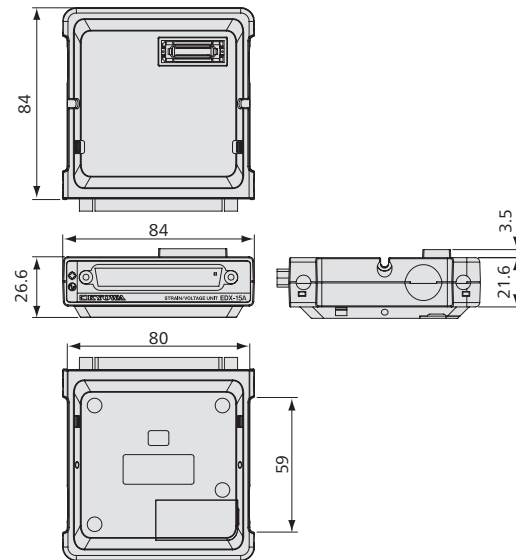
EDX-13A



EDX-14A



EDX-15A



EDX-10 Series
Recommended
products for
combination



Simplified configuration of the EDX-10 series

