

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



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

The EDX-10 series compact recording system are measuring instruments that measure simply by being connected to a PC using the USB interface. The EDX-11A and EDX-14A measure strain-gage transducers, pressure, displacement, etc. The EDX-12A measures voltage, the EDX-15A measures force, pressure, displacement, and voltage, and the EDX-13A measures 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 to monitor or acquire data.
- Data is recorded as KS2, which is Kyowa standard file format. The optional Data Analysis Software 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
Compliance	Directive 2014/30/EU (EMC) Directive 2011/65/EU (RoHS)

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

Optional Accessories AC adapter UN310-0515 (For U.S.A.: UN312-0520)

Notes:

1. When power supply from a USB port, please connect the EDX-10B to the PC directly. Do not use USB hub.
2. The AC adapter operates any combination of up to 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-14A



A low power consumption unit for measuring strain based on the DC bridge excitation.

Specifications

Measuring Targets	Strain-gage transducers, strain gages*
Channels	4
Measuring Range	10 k, 50 k × 10 ⁻⁶ strain (2 steps)
Applicable Bridge Resistance	120 Ω to 1 kΩ
Bridge Excitation	1 VDC
Gage Factor	2.00 fixed
Range Accuracy	Each range within ±0.3%FS
Balance Adjustment	Within ±1/2 F.S. of setting range
Nonlinearity	Within ±0.1%FS
A/D Converter	24 bits
Frequency Response	DC to 2 kHz
LPF	Transfer characteristic: 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 × 26.6 H × 84.0 D mm (Excluding protrusions)
Compliance	Directive 2014/30/EU (EMC) Directive 2011/65/EU (RoHS)

*Bridge boxes or input adapters 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-53B-120/350
Bridge adapter for quarter bridge system UI-54B-120/350
One-touch type input adapter UI-55A

■ Strain/Voltage Measuring Unit EDX-15A



A unit for measuring both strain and voltage.

Specifications

Measuring Targets	Strain-gage transducers, strain gages*	Voltage
Channels	4	
Measuring Range	10 k, 50 k × 10 ⁻⁶ strain (2 steps)	10, 50 V
Applicable Bridge Resistance	120 Ω to 1 kΩ	
Bridge Excitation	1 VDC	
Gage Factor	2.00 fixed	
Range Accuracy	Each range within ±0.3%FS	
Balance Adjustment	Within ±1/2 F.S. of setting range	
Nonlinearity	Within ±0.1%FS	
A/D Converter	24 bits	
Frequency Response	DC to 2 kHz	
LPF	Transfer characteristic: 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 × 26.6 H × 84.0 D mm (Excluding protrusions)	
Compliance	Directive 2014/30/EU (EMC) Directive 2011/65/EU (RoHS)	

*Bridge boxes or input adapters 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-53B-120/350
Bridge adapter for quarter bridge system UI-54B-120/350
One-touch type input adapter UI-55A

■ Voltage Measuring Unit EDX-12A



A unit for measuring voltage

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
Balance Adjustment	Within $\pm 1/2$ F.S. of setting range
Nonlinearity	Within $\pm 0.1\%$ FS
A/D Converter	24 bits
Frequency Response	DC to 2 kHz
LPF	Transfer characteristic: 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 x 26.6 H x 84.0 D mm (Excluding protrusions)
Compliance	Directive 2014/30/EU (EMC) Directive 2011/65/EU (RoHS)

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

■ Thermocouple Measuring Unit EDX-13A



A unit for measuring temperature by using thermocouples

Specifications

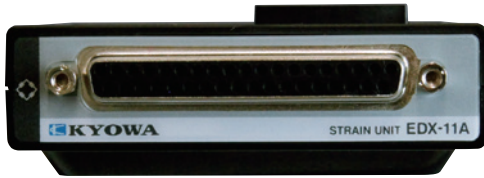
Measuring Targets	Thermocouples
Channels	4
Measuring Targets	K, T, J, N (Resistance of thermocouple: 1 kΩ or less) (See the table below for details about the temperature measuring range, etc.)
Check Functions	Burnout check
A/D Converter	24 bits
Sampling System	Scanning
Inside Sampling Frequencies	Approx. 0.5 Hz, approx. 2.0 Hz
Input Connectors	Screw type terminal box
Power Supply	5 VDC supplied by control unit
Current Consumption	120 mA or less (5 VDC)
Weight	Approx. 130 g
Dimensions	84.0 W x 26.6 H x 84.0 D mm (Excluding protrusions)
Compliance	Directive 2014/30/EU (EMC) Directive 2011/65/EU (RoHS)

Standard Accessories	Terminal box 1piece, screwdriver 1piece
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Types	Range	Accuracy (Resolution: 0.1 °C)		Accuracy of internal reference junction compensator
K	-200.0 to 1370.0°C	-200.0 to below -100.0°C	$\pm(0.2\%$ of reading + 0.6°C)	$\pm 1.0^\circ\text{C}$ (Input terminal temperature at equilibrium) (Ambient temperature: $25 \pm 10^\circ\text{C}$) Mount the EDX-13A on the bottom when using it with measuring units other than the EDX-13A. $\pm 2.0^\circ\text{C}$ (Input terminal temperature in equilibrium) <div style="border: 1px solid black; padding: 2px; display: inline-block;"> For temperatures other than those in the ambient temperature and operating temperature described above </div>
		-100.0 to 1370.0°C	$\pm(0.1\%$ of reading + 0.4°C)	
T	-200.0 to 400.0°C	-200.0 to below -100.0°C	$\pm(0.2\%$ of reading + 0.6°C)	
		-100.0 to 400.0°C	$\pm(0.1\%$ of reading + 0.4°C)	
J	-200.0 to 1200.0°C	-200.0 to below -100.0°C	$\pm(0.2\%$ of reading + 0.6°C)	
		-100.0 to 1200.0°C	$\pm(0.1\%$ of reading + 0.4°C)	
N	-200.0 to 1300.0°C	-200.0 to below -100.0°C	$\pm(0.2\%$ of reading + 0.6°C)	
		-100.0 to 1300.0°C	$\pm(0.1\%$ of reading + 0.4°C)	

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

■ Strain Measuring Unit EDX-11A



A unit for measuring strain based on the DC bridge excitation.

*Bridge boxes or input adapters are required for strain measurement.

Specifications

Measuring Targets	Strain-gage transducers Strain gage*
Channels	4
Measuring Range	10 k, 50 k × 10 ⁻⁶ strain (2 steps)
Balance Adjustment	Within ±1/2 F.S. of setting range
Applicable Bridge Resistance	120 Ω to 1 kΩ
Bridge Excitation	2 VDC
Gage Factor	2.00 fixed
Range Accuracy	Each range within ±0.3%FS
Nonlinearity	Within ±0.1%FS
A/D Converter	24 bits
Frequency Response	DC to 2 kHz
LPF	Transfer characteristic: 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 × 26.6 H × 84.0 D mm (Excluding protrusions)
Compliance	Directive 2014/30/EU (EMC) Directive 2011/65/EU (RoHS)

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, UI-55A Bridge adapter for quarter bridge system UI-53B-120/350 Bridge adapter for quarter bridge system UI-54B-120/350

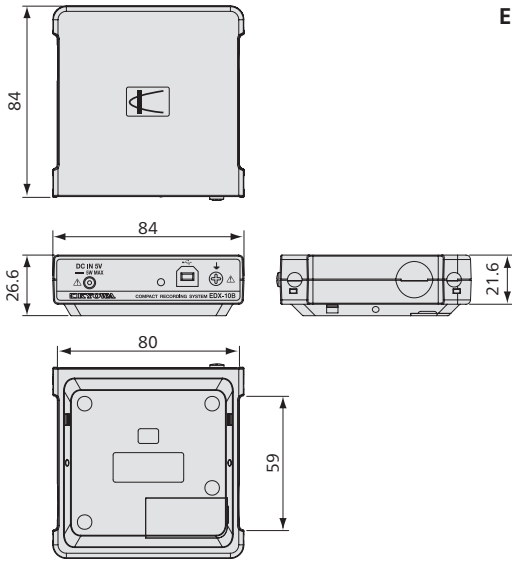
● DCS-100A software (standard accessory), specification for control of EDX-10B For details of DCS-100A, see page 4-3.

Controllable Units	Max. 4 (Max. 16 channels)
Interfaces	USB
Data Storage	Measured data is saved to data folder in the PC in KS2 format.
Channel Conditions	Measurement ON/OFF, mode, range, LPF, balance, calibration coefficient, offset, unit, channel name, measuring range, rated capacity, rated output, Deci Digits, 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 number of 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 by completion of recording using a preset number of measurements.
Interval Measurement	Measurement is made automatically at preset intervals from the preset starting time.
Analog Trigger Measurement	Start/stop recording based upon specified trigger conditions.
End Trigger	Settable
Delay	For both start and end, max. 262144 data/channel. *The delay time varies with the number of 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).
Environmental Settings	
Hardware Configuration	Setting of device name and measuring unit Configuration of device names connected to EDX-10B. Reading of hardware configuration from EDX-10B.

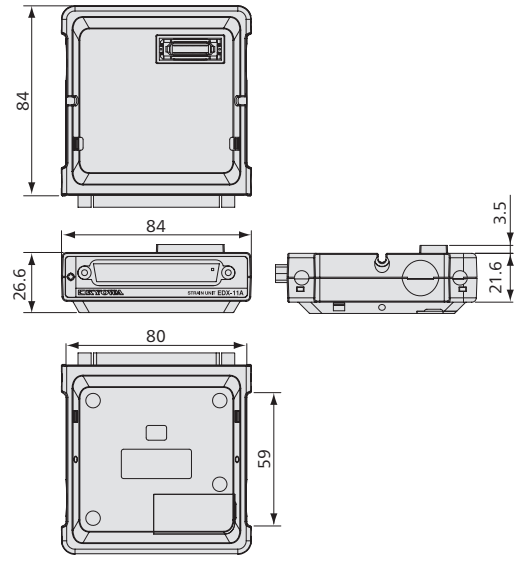


■ Dimensions

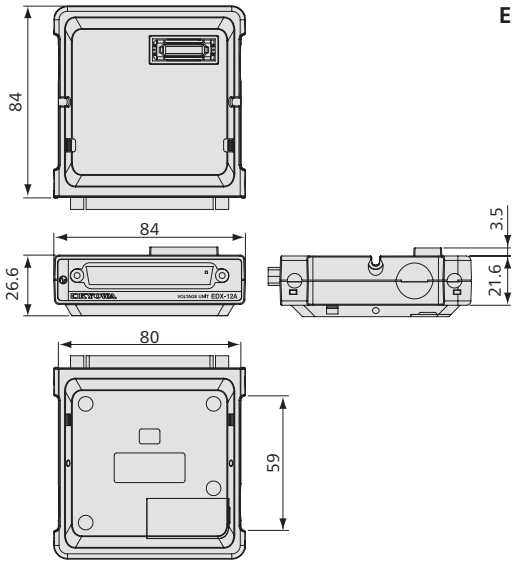
EDX-10B



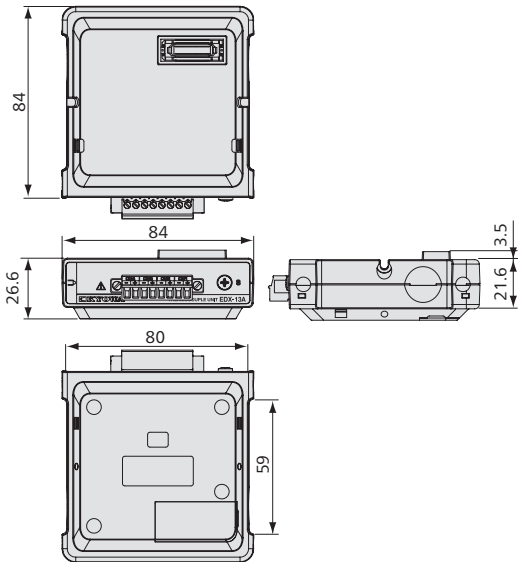
EDX-11A



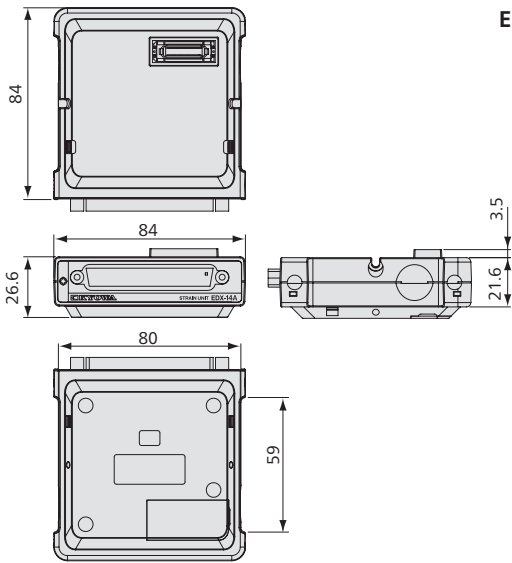
EDX-12A



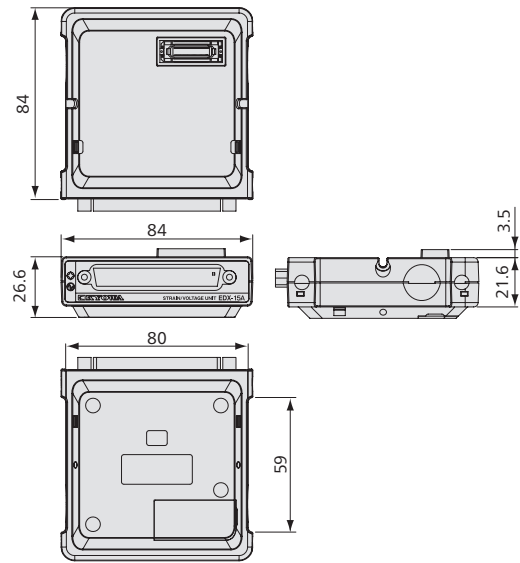
EDX-13A



EDX-14A



EDX-15A



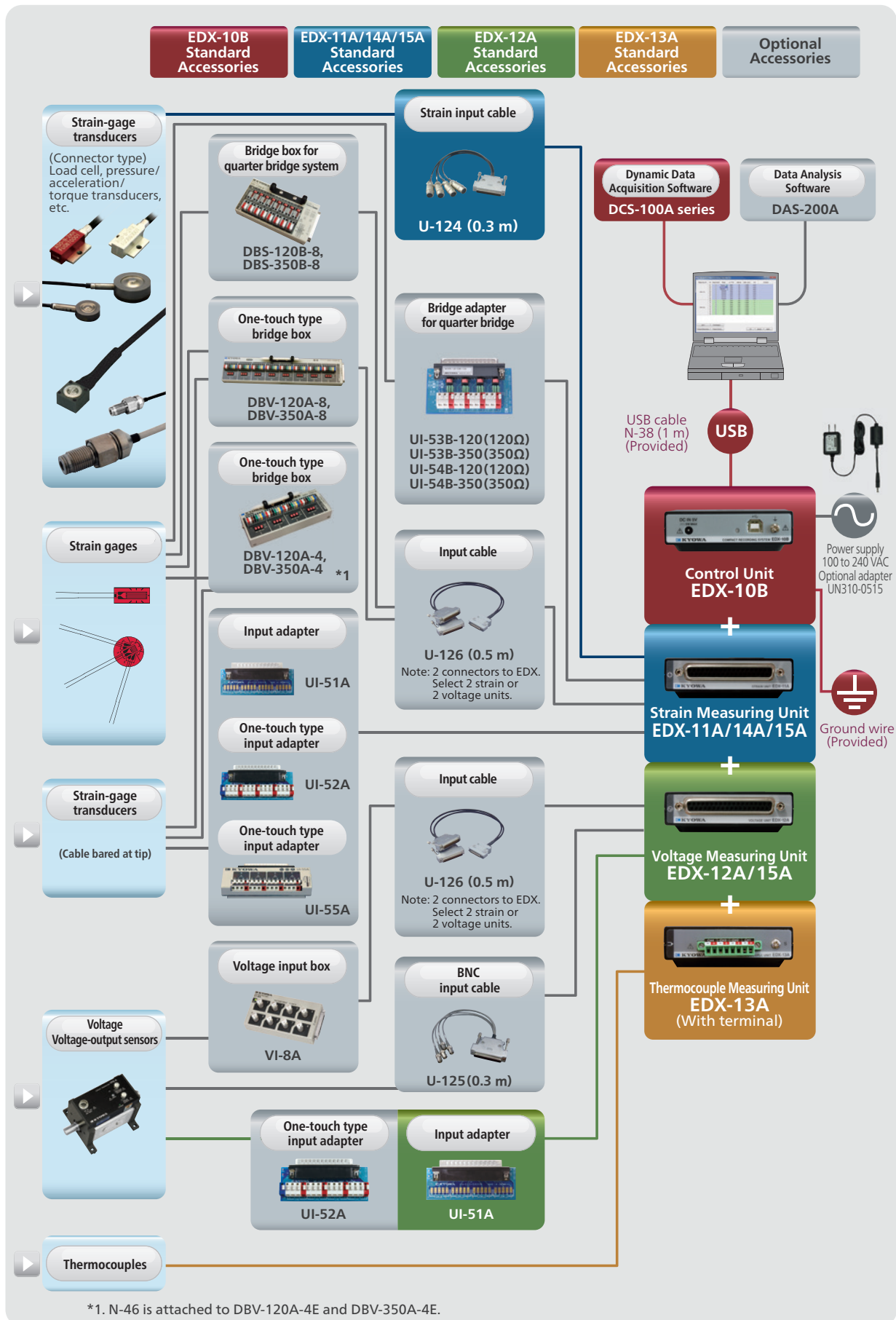
Data Recorders/
Analyzers

EDX-10 Series Recommended products for combination

Bridge box
DBV-120A-4E/ET
DBV-350A-4E/ET
→ 3-111

Data Analysis Software
DAS-200A
→ 4-7

Simplified configuration of the EDX-10 series



Data Recorders/
Analyzers