Move into the future with reliable measurements

KYOWA

Compact Recording System
EDX-10A series

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Easy & Compact

"Easy & Compact"

Our new compact recorder ensures easy connection to a PC, the easy addition of channels, and easy operation!

Don't you want to be able to take measurements with ease?
The EDX series can provide you with the solution.
When connected to your PC, the compact and lightweight EDX-10A series enables
the measurement of 4 channels (1 control unit and 1 measuring unit)
to 16 channels (1 control unit and 4 measuring units).
Configured in a stacked structure, the EDX-10A series facilitates connection between units.
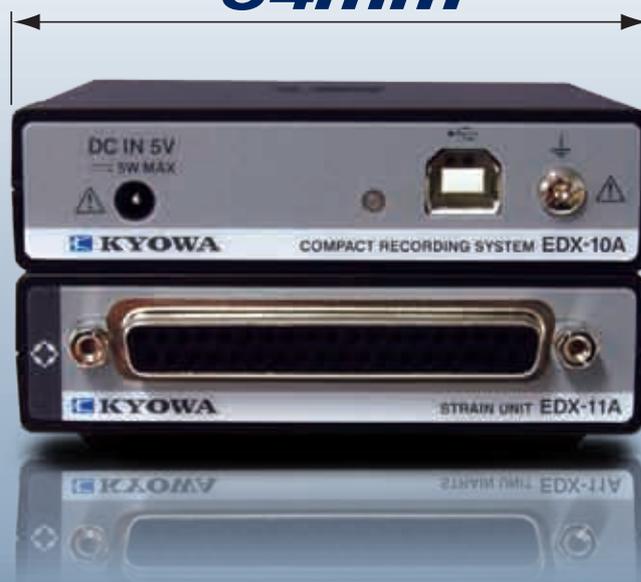All necessary measuring functions are packed into the smallest-possible system.

Compact Recording System
EDX-10A series
Actual size

84mm

Stacked configuration

Control unit
EDX-10A

Strain measuring unit
EDX-11A

One measuring unit can measure 4 channels
(up to 4 units for 16 channels).

High-speed simultaneous all-channel sampling (with 4 channels) at 20 kHz

1 Compact and Lightweight

Having the high-level necessary functions of a high-speed high-precision measurement, this product is extremely compact and lightweight, and can be carried comfortably in a 320-gram (84 [W] x 48 [H] x 84 [D], a 4-channel configuration), can carry in a bag.

2 Simple Configuration

In measurement with 1 measuring unit, electricity is supplied from the PC through the USB interface without requiring another power supply.* The simple stacked configuration does not need even a synchronous cable.

You can save cost by selecting the smallest measuring and calibration instrument that matches your purpose.

* To connect 2 to 4 measuring units, an optional AC adaptor is required.

3 Easy-to-use Software

Dynamic data acquisition software
DCS-100A
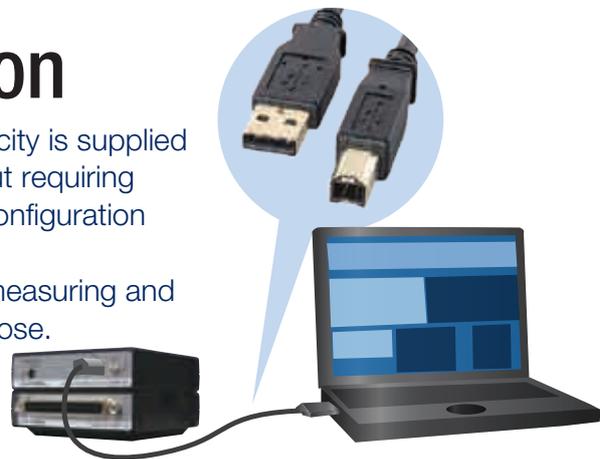
Establishing a good reputation for ease of use, DCS-100A software is included with the product as a standard accessory. This software ensures smooth operation in displaying various graphs, numerical values on the monitor, in laying out graphic and numerical windows freely on the screen.
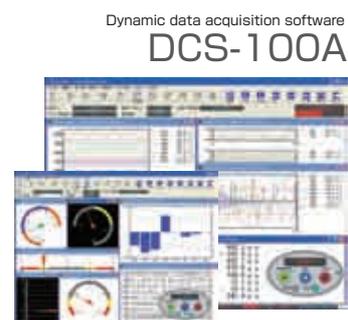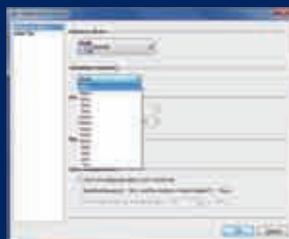
●Simple 3-step settings

Step1 Set channel conditions.   **Step2** Set the measuring conditions.   **Step3** Take a measurement.

Compact Recording System

EDX-10A series Lineup

The products in the EDX-10A series consist of measuring instruments capable of carrying out measurement simply by connecting a PC via a USB interface.

There are three types of measuring units. The EDX-11A can use a strain gage transducer to measure force, pressure, and displacement. The EDX-12A can measure voltage, and the EDX-13A can use a thermocouple to measure temperature.

When a single measuring unit is used, power is supplied via a USB interface, and thus no other power supply is required. The stacked unit configuration eliminates the need to use synchronous cables between units.

A single measuring unit can measure 4 channels and, when connected to added units, can accommodate a maximum of 16 channels—most suitable for small-scale measurements.

- In measurement with a single measuring unit, power can be taken from a PC's USB interface.
- A single measuring unit can measure 4 channels, and 4 units connected are capable of measuring 16 channels by using an AC adaptor (optional).
- The stacked unit configuration eliminates the need to use synchronous cables.
- A single measuring unit can perform simultaneous sampling from 4 channels at a maximum of 20 kHz.
- Compact and lightweight
- Simple connection via a USB cable
- DCS-100A dynamic data acquisition software, provided as a standard accessory, simplifies the data monitoring and acquisition process.
- The acquired data can be analyzed using the optional data analysis software DAS-200A in Kyowa standard format KS2.
- An input cable or an input adaptor enables smooth sensor connection.

Control Unit   EDX-10A

The control unit is designed to control the measuring unit and the PC via a USB cable.

- In measurement with a single measuring unit, power can be supplied from the PC via a USB interface.
- A set of 4 measuring units enables the measurement of 16 channels (by using an optional AC adaptor).

■Specifications

Interface	USB2.0 Connector shape: USB standard B receptacle
Number of units mounted	Maximum of 4 (16 channels)
Sampling frequency	1Hz to 20kHz : 1 to 4 channel 1Hz to 10kHz : 1 to 8 channel 1Hz to 5kHz : 1 to 16 channel 1/2/5 system Simultaneous sampling of all channels
Operating temperature range	0 to 40°C

Power supply	DC 5 V Supplied from a PC via a USB interface when a single measuring unit is used; for the combined use of 2 or more units, power is supplied via an AC adaptor.
Consumption current	140 mA or less (at a power supply DC of 5 V)
Weight	Approx. 170 g
External dimensions	84.0 (W) x 26.6 (H) x 84.0 (D) mm (excluding protrusions)
EMC standard	EN61326-1

Standard accessories   Dynamic data acquisition software DCS-100A (CD-ROM), USB cable N-38 (1 m), Ground wire P-72 (5 m), Rubber foot (8 pieces/sheet), Manual (Japanese/English in the CD-ROM)

Strain Measuring Unit — EDX-11A

The strain measuring unit is designed to measure strains.

■Specifications

Object to be measured	Strain gage transducer Strain gage (bridge box used)
Number of input channels	4
Measurement range	10000, 50000 μm/m (2 ranges)
Applicable bridge resistance	120 Ω to 1 kΩ
Bridge excitation	DC 2 V
Gage factor	Fixed at 2.00
Range accuracy	±0.3% FS for each range
Nonlinearity	±0.1% FS
AD Conversion	24 bits
Frequency response range	DC to 2kHz

Low-pass filter	Cutoff frequency: Lo (100 Hz), hi (2 kHz) 2nd-order Butterworth properties
Input connector	D-sub 37-pin connector
Consumption current	180 mA or less (120-Ω load, connected to all channels at a power supply DC 5 V)
Weight	Approx. 150 g
External dimensions	84.0 (W) x 26.6 (H) x 84.0 (D) mm (excluding protrusions)

Standard accessories Strain input cable U-124 (0.3 m), Connection screw (2 pieces, Small screw M3 x 5), Rubber foot (8 pieces/sheet)

Voltage Measuring Unit — EDX-12A

The voltage measuring unit is designed to measure voltage.

■Specifications

Object to be measured	Voltage
Number of input channels	4 (single-ended)
Measurement range	10 V, 50 V (2 ranges)
Range accuracy	±0.3% FS for each range
Nonlinearity	±0.1% FS
AD Conversion	24 bits
Response frequency range	DC to 2kHz

Low-pass filter	Cutoff frequency: Lo (100 Hz), Hi (2 kHz) 2nd-order Butterworth properties
Input connector	D-sub 37-pin connector
Consumption current	110 mA or less (at a power supply DC 5 V)
Weight	Approx. 150 g
External dimensions	84.0 (W) x 26.6 (H) x 84.0 (D) mm (excluding protrusions)

Standard accessories Input adaptor UI-51A, Connection screw (2 pieces, Small screw M3 x 5), Rubber foot (8 pieces/sheet)

Thermocouple measuring unit — EDX-13A

The thermocouple measuring unit is designed to measure temperature.

■Specifications

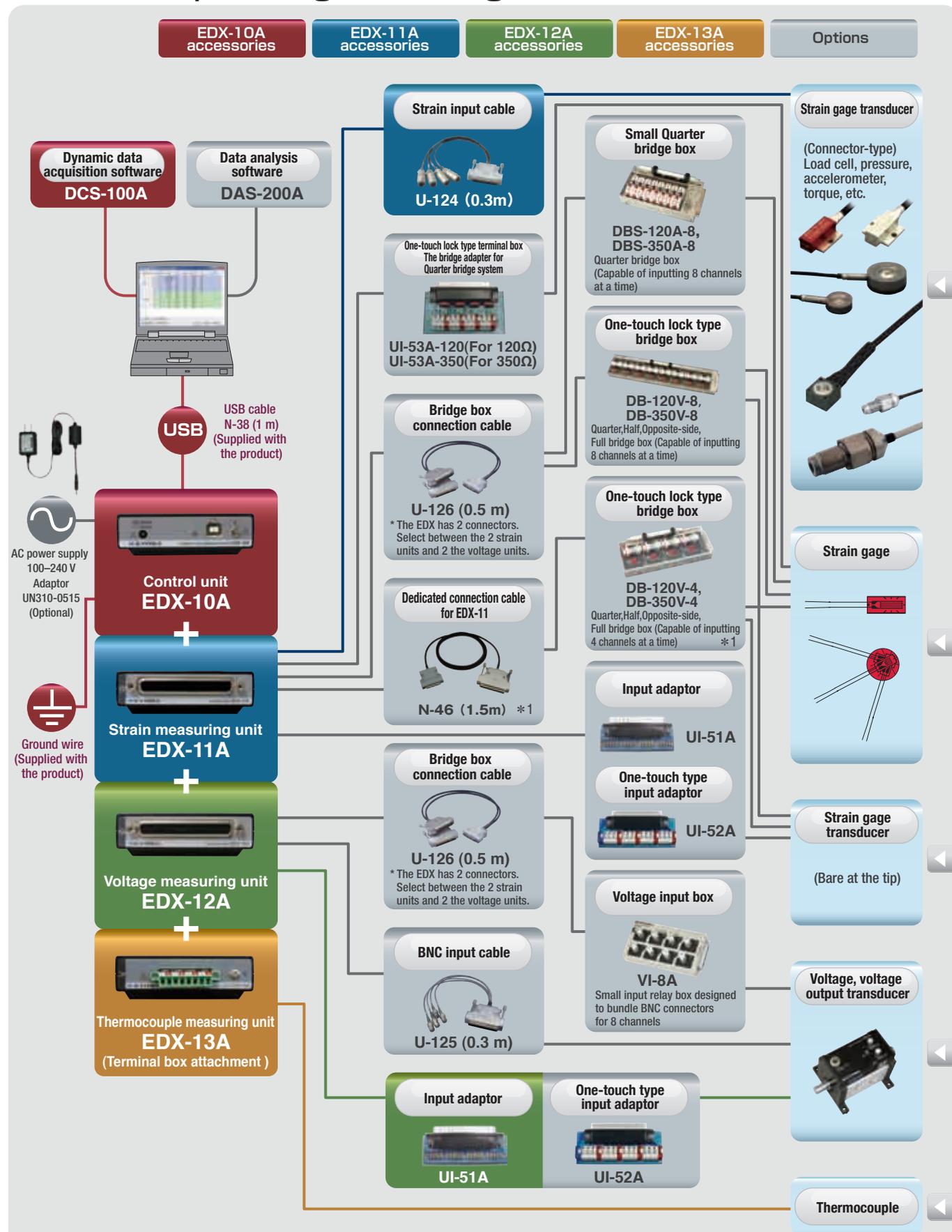|	
Object to be measured	Thermocouple
Number of input channels	4
Applicable sensors	K, T, J, N (Resistance of thermocouple: 1kΩ or less) (See the table below for details about the temperature measurement range, etc.)
Check function	Burnout check.
AD Conversion	24 bits
Sampling System	Scanning
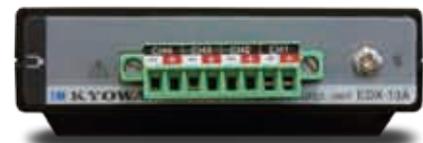
Inside Samping frequency	Approx. 0.5Hz, Approx. 2.0Hz
Input connector	Threaded connection type terminal box
Consumption current	120mA or less (DC5V)
Weight	Approx. 130g
External dimensions	84.0 (W) x 26.6 (H) x 84.0 (D) mm (excluding protrusions)

Standard accessories Terminal box 1piece, Screwdriver 1piece, Connection screw (2 pieces, Small screw M3 x 5), Rubber foot (8 pieces/sheet)

Type	Measurement Range	Resolution	Measurement Accuracy		Accuracy of internal reference contact compensator
K	−200.0～ ＋1370.0°C		−200.0 to −100.0°C or less	±(0.2%rdg ＋0.6°C)	Accuracy of internal reference contact compensator ±1.0°C [Input terminal temperature at equilibrium]
			−100.0～＋1370.0°C	±(0.1%rdg ＋0.4°C)	[Ambient temperature range: 25±10°C]
T	−200.0～ ＋400.0°C		−200.0 to −100.0°C or less	±(0.2%rdg ＋0.6°C)	*Mount the EDX-13A on the bottom when using it with measuring units other than the EDX-13A.
		0.1°C	−100.0～＋400.0°C	±(0.1%rdg ＋0.4°C)	±2.0°C [Input terminal temperature in equilibrium]
J	−200.0～ ＋1200.0°C		−200.0 to −100.0°C or less	±(0.2%rdg ＋0.6°C)	For temperatures other than those in the ambient temperature and operating
			−100.0～＋1200.0°C	±(0.1%rdg ＋0.4°C)	temperature ranges described above
N	−200.0～ ＋1300.0°C		−200.0 to −100.0°C or less	±(0.2%rdg ＋0.6°C)	
			−100.0～＋1300.0°C	±(0.1%rdg ＋0.4°C)	

*The measurement accuracy does not reflect the accuracy of the internal reference contact compensator and thermocouple.

EDX-10A Simple Configuration Image

| EDX-10A accessories | EDX-11A accessories | EDX-12A accessories | EDX-13A accessories | Options |

Dynamic data acquisition software
DCS-100A

Data analysis software
DAS-200A

Strain input cable
U-124 (0.3m)

One-touch lock type terminal box
The bridge adapter for Quarter bridge system
UI-53A-120(For 120Ω)
UI-53A-350(For 350Ω)

Small Quarter bridge box
DBS-120A-8, DBS-350A-8
Quarter bridge box (Capable of inputting 8 channels at a time)

Strain gage transducer
(Connector-type) Load cell, pressure, accelerometer, torque, etc.

USB

USB cable N-38 (1 m) (Supplied with the product)

Bridge box connection cable
U-126 (0.5 m)
* The EDX has 2 connectors. Select between the 2 strain units and 2 the voltage units.

One-touch lock type bridge box
DB-120V-8, DB-350V-8
Quarter,Half,Opposite-side, Full bridge box (Capable of inputting 8 channels at a time)

AC power supply 100–240 V Adaptor UN310-0515 (Optional)

Control unit
EDX-10A
+

Ground wire (Supplied with the product)

Dedicated connection cable for EDX-11
N-46 (1.5m) *1

One-touch lock type bridge box
DB-120V-4, DB-350V-4
Quarter,Half,Opposite-side, Full bridge box (Capable of inputting 4 channels at a time) *1

Strain gage

Strain measuring unit
EDX-11A
+

Input adaptor
UI-51A

One-touch type input adaptor
UI-52A

Strain gage transducer
(Bare at the tip)

Voltage measuring unit
EDX-12A
+

Bridge box connection cable
U-126 (0.5 m)
* The EDX has 2 connectors. Select between the 2 strain units and 2 the voltage units.

Voltage input box
VI-8A
Small input relay box designed to bundle BNC connectors for 8 channels

Thermocouple measuring unit
EDX-13A
(Terminal box attachment)

BNC input cable
U-125 (0.3 m)

Voltage, voltage output transducer

Input adaptor
UI-51A

One-touch type input adaptor
UI-52A

Thermocouple

Options(other than those shown in the figure above)

| Product name	Model
For EDX-13A　Terminal box	MC 1,5/ 8-STF-3,81
Input connector set (D-sub connector) (D-sub connection and hood)	EDX10-DSUB

*1 Included with the DB-120V-4E and DB-350-4E.

DCS-100A Software Specifications (standard accessory)

● Displays measurements in numerical values and various graphs
● Controls Kyowa's measuring instruments
● Saves measurements directly on the PC hard disk
● Starts the data processing/analysis software (optional) from the toolbar

Number of measuring units	Maximum of 4 (maximum of 16 channels)
Interface	USB
Data acquisition	Measurement data is saved on the PC hard disk (in KS2 files).
Channel conditions	Measurement ON/OFF, mode, range, low-pass filter, calibration factor, offset, unit, channel name, measurement range, number of decimals, rated capacity, upper value check, lower value check (any display item selectable)
Sampling frequency	1 to 20 kHz (1/2/5 systems) * Limited by the channel measured
Measurement mode	"Manual," "Manual" (specifying the amount of acquired data), "Interval," "Analog trigger"
Manual measurement	Data is acquired between REC and STOP or until the amount of the acquired data specified is reached after REC.
Interval measurement	Data acquisition is automatically performed after settings are made for the start time and acquisition interval.
Analog trigger measurement	Data acquisition is started/ended under preset trigger conditions.
Termination trigger Delay amount	Settings possible For start/end, a maximum of 262,144 bits of data/1 channel The amount of delay differs depending on the number of channels measured.
Trigger channel Trigger level Trigger slope	Any 1 channel Setting by physical quantity Rising edge/falling edge
Static measurement	Each time data acquisition is started, measurement data processed using a moving-average model is added to and saved as a CSV file. * Workable in "manual" or "interval" mode
Repeated data acquisition	In long-term data acquisition, a specified amount of data is saved in KS2 file at specified intervals. * Workable in manual mode (with the amount of acquired data specified)
Environmental settings Hardware configuration settings	Settings for the unit name and measurement unit Device name settings possible on the EDX-10A Hardware configuration readable from the EDX-10A
Automatic data file conversion	Automatic file conversion upon the termination of measurement (CSV, XLS, XLSX, and PPC III formats)
Random unit settings	The user can register three available units at random.
Monitor screen Chronological graph	Displays time on the X-axis, physical quantity on the Y-axis, up to 16 channels Displays up to 4 graphs on a screen
Chronological (DIV) graph	Displays time on the X-axis, physical quantity on the Y-axis, up to 16 channels Unlike the above chronological graph, the zero position of the channel displayed can be moved to any point on the Y-axis parting line.
X-Y graph	Any combination of 8 channels displayable in a graph on the X-Y axes
Bar graph	Up to 32 channels displayable on a single graph, up to 4 graphs on a single screen Peak Hold ON/OFF (numerical values displayable)
Bar meter	Any 1 channel displayable horizontally or vertically

Circle meter	Any 1 channel displayable in circle meter
Numerical display	One channel, 16 channels, all channels displayable at random (Maximum and minimum values displayable for any one channel only)
Circle meter	The numerical value of an input-over channel can be displayed in red.
Graph scale	An auto scale and full scale can be displayed with the Y-axis of a time series graph, the X-axis/Y-axis of an X-Y graph, and the Y-axis of a bay graph.
Display color	Changeable by graph
Title, label	Settings possible for title, X/Y axis label
Number of graphs simultaneously displayable	Numerical: 32; graph: 32 Up to 64 numerical values and graphs combined displayable (including graphs and numerical values displayed in data reproduction) * The maximum number may not be displayed depending on the CPU rate and memory capacity of the PC.
Data file Storable format	Storable in the Kyowa standard file format (hereinafter referred to as "KS2")
File combining	The data files each control unit acquires during synchronous operation are combined during asquisition and converted into one data file.
Data reproduction Chronological graph	Displays time on the X-axis, physical quantity on the Y-axis, up to 16 channels Displays up to 4 graphs on a screen
Chronological (DIV) graph	Displays time on the X-axis, physical quantity on the Y-axis, up to 16 channels Unlike the above chronological graph, the zero position of the channel displayed can be moved to any point on the Y-axis parting line.
X-Y graph	Any combination of 8 channels displayable in a graph on the X-Y axes
Numerical display	Display on a list
Display color	Changeable by graph
Title, label	Settings possible for title, X-Y axis label
Cursor display	Cursor position displayed in engineering values
Number of graphs simultaneously displayable	Numerical: 32, graph: 32 Up to 64 numerical values and graphs combined displayable (including graphs and numerical values displayed in data reproduction) * The maximum number may not be displayed depending on the CPU rate and memory capacity of the PC.
Data file size displayable	Data files of up to 10 MB displayable at a time in the graph/numerical display When the file size exceeds 10 MB, 10-MB data within any range can be displayed by setting the display range.
File conversion	File retrieval from any range or any channels, CSV file conversion, Excel format conversion, RPC III format conversion
Operating environment OS	Windows XP, Windows Vista, Windows 7 Japanese/English, 32/64 bit (Only 32-bit on Windows XP) *WOW64 on a 64-bit OS (Windows 32-bit On Windows 64-bit)
CPU	Pentium 4, 2 GHz or above (Pentium III 1 GHz or above on Windows XP)
Memory	2 GB or more (1 GB or more on Windows XP)
Display	Resolution: 1024 x 768 pixels or more
HDD	20 MB + measurement data storage upon installation

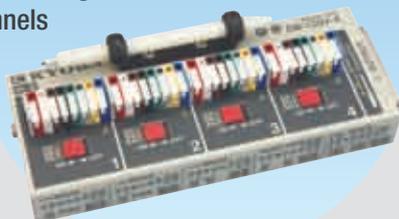■External dimensions
(for a 16-channel configuration)
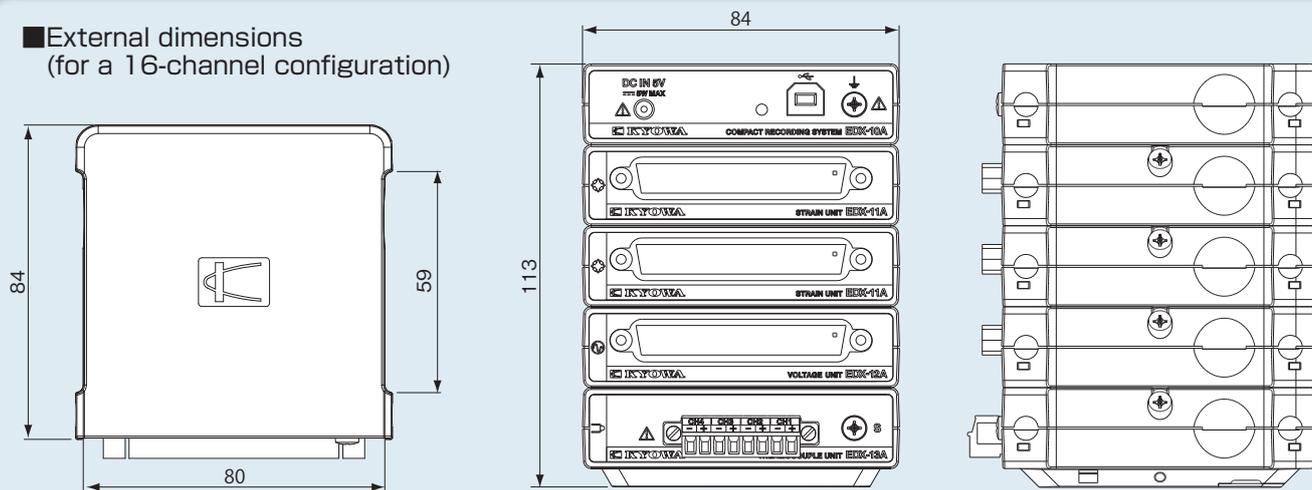
Products designed to fit your system configuration

EDX−11A for optional

One-touch lock type bridge box
DB-120V-4/4T/4E/4ET
DB-350V-4/4T/4E/4ET

Quarter,Half,Opposite-side,Full bridge box
(Capable of inputting 4 channels
at a time)

Type	Measurement channels	Item measured		Supplied accessories (Note 1)		
			Gage system: (Resistance value of adapted gage)	①	②	③
DB-120V-4	4	Strain gage	Quarter bridge 2-wire system:(120Ω)	Yes		
DB-120V-4T			Quarter bridge 3-wire system:(120Ω) Half bridge system:(120 to 1000Ω)	Yes		Yes
DB-120V-4E			Opposite side 2-active-gage system: (120Ω)Full bridge system:(120 to 1000Ω)		Yes	
DB-120V-4ET			(Gage changed using a switch.)		Yes	Yes
DB-350V-4			Quarter bridge 2-wire system:(350Ω)	Yes		
DB-350V-4T			Quarter bridge 3-wire system:(350Ω) Half bridge system:(120 to 1000Ω)	Yes		Yes
DB-350V-4E			Opposite side 2-active-gage system: (350Ω)Full bridge system:(120 to 1000Ω)		Yes	
DB-350V-4ET			(Gage changed using a switch.)		Yes	Yes

Note 1:
① Connection cable N-122 with four NDIS tip connectors
② Connection cable N-46 with dedicated EDX-11A connector
③ Bracket DBV4-MOUNT for bridge box

External dimensions	154 (W) x 22 (H) x 61.4 (D) mm (excluding protrusions)
Weight	Main body: Approx. 280 g
	Weight with DBV4-MOUNT equipped: Approx. 350 g
Usable wire range	Single wire: 0.4 to 1.2mm diameter (UL AWG26 to 16)
	Stranded wire: 0.2 to 0.75mm^2 (UL AWG24 to 20)

EDX−11A for optional

One-touch lock type terminal box
The bridge adapter for Quarter bridge system
UI-53A-120 (for 120Ω)
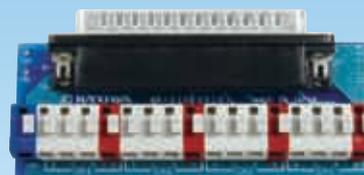# UI-53A-350 (for 350Ω)

4-channel
unit-mounted type
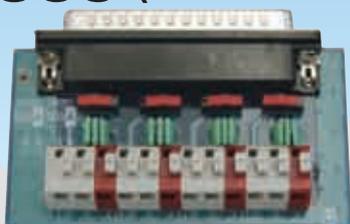
**Mounted on a strain measuring unit.
Quarter bridge system, 2-/3-wire strain gage is
connected directly to the main body.**

EDX−11A·12A for optional

One-touch type input adaptor
UI-52A

4-channel
unit-mounted type

**Mounted on a strain measuring unit.
Contains a loose wire at the tip
for a strain gage transducer.**

**Mounted on a voltage measuring unit.
Contains a loose wire at the tip
for a voltage input signal line.**

www.kyowa-ei.com

Specifications are subject to change without notice for improvement.

⚠️ **Safety precautions** Be sure to observe the safety precautions given in the instruction manual in order to ensure correct and safe operation.

CERTIFIED JQA MANAGEMENT SYSTEM
ISO 9001
ISO 14001
JQA-0821
JQA-EM4824

Move into the future with reliable measurements

📘 KYOWA

Manufacturer's Representative