EDX-100A

Universal Recorder

EDX-100A-1H   EDX-100A-2H   EDX-100A-4H

TEDS CE

Compact and lightweight, up to 256 channels measurement

- ●Compact and lightweight
- ●Available with 1, 2 and 4 slots
- ●LAN port for establishing multichannel network (Max. 256 channels)
- ●USB port for easy connection to PC
- ●Operable as a stand-alone unit
- ●High-speed sampling at 100 kHz (10 kHz for 16-channel measurement)
- ●CAN data acquisition possible with CAN-40A/41A conditioner card mounted
- ●Variety of input conditioner cards
- ●TEDS compatible
- ●Voice memo can be recorded by using an optional dedicated remote control unit.
- ●DCS-100A dynamic data acquisition software is included in standard accessories.
- ●Measured data is saved in Kyowa standard KS2 format and can be analyzed with optional Data Analysis Software DAS-200A *.
- ●Operates on 10 to 18 VDC.
- ●Distributed arrangement with EDX sync extension unit is possible. (Refer to page 3-66)

*For the Data Analysis Software DAS-200A, refer to page 4-9

Available with 1, 2 or 4 slots, the EDX-100A is a universal recorder that enables flexible configuration and free arrangement while ensuring multiple functions. The wide application range extends from small-scale measurement of 8 channels to large-scale measurement of up to 256 channels by connecting 4 units of EDX-100A.

For PC connection, LAN and USB ports are provided. The LAN port enables PC to control up to 4 units of EDX-100A, while the USB port ensures easy connection between EDX-100A and PC.

In addition, EDX-100A can be operated as a stand-alone unit without PC. A compact flash memory card enables condition setting and data collection.

To respond to the need for a wide variety of measurements, 6 different types of conditioner cards are available.

Note:

For LAN connection, use 2 straight cables and a LAN hub.

●Conditioner cards (For the detail refer to page 3-73)

Strain/voltage measurement card	CDV-40B/40B-F
Dynamic strain measurement card	DPM-42B
	DPM-42B-F
	DPM-42B-I
	DPM-42B-I-F
Thermocouple card	CTA-40A
F/V converter card	CFV-40A
Charge amplifier card	CCA-40A/40A-F
CAN card	CAN-40A/41A
Strain/voltage measurement isolation card	CDV-44AS
Constant current amplifier card	CDA-44AS/45AS
Strain/voltage/acceleration measurement card	CVM-41A
A/D Converter cards	AD-40AS/40AS-F

Specifications

Models

Models	Card Slots	Max. Number of Analog Input Channels	Remark
EDX-100A-1	1	8	
EDX-100A-2	2	16	
EDX-100A-4	4	32	
EDX-100A-1H	1	8	With handle grip
EDX-100A-2H	2	16	
EDX-100A-4H	4	32	

Number of Input Channels	Refer to table above.
Analog Input	Optional conditioner cards
	Implement with DPM, CDV, CTA, CFV, CCA, CVM installed
	For details, refer to P.3-73.
CAN Data Input	Povided by the optional CAN-40A or CAN-41A
Voice Memo Input	1 channel. An optional dedicated remote control unit
	RCU-41A enables recording of voice memo during
	measurement in manual mode.
	Playback of recorded voice memo requires an
	optional Data Analysis Software DAS-200A.
Sampling Methods	Synchronous sampling of all channels
Sampling Frequency Selection	
	1-2-5 series in a range of 1 Hz to 100 kHz
	2^n series in a range of 2 Hz to 65536 Hz
Sampling Frequencies (1-2-5 series)	
	1 Hz to 100 kHz for 1-channel measurement
	1 Hz to 50 kHz for 3-channel measurement
	1 Hz to 20 kHz for 8-channel measurement
	1 Hz to 10 kHz for 16-channel measurement
	1 Hz to 5 kHz for 32-channel measurement
	1 Hz to 1 kHz for CAN data measurement
Data Storage	Compact flash memory card (CF card)
	(128 MB to 8 GB; 45x speed or higher)
	Up to 2 GB data for 1 time of measurement
Setting Conditions	
	Online: From the PC via LAN or USB port
	Offline: By reading from the CF card which has measuring conditions
	written with the DCS-100A data acquisition software
Saving Conditions	Amplifier setting conditions and measuring conditions
	are saved in the internal nonvolatile memory, enabling
	immediate setup with previous conditions upon power-on.

Measuring Modes

Manual	Data recording is manually started/stopped or stopped when data is recorded to a preset number of measured data.
	Manual mode allows recording of voice memo during data recording.
Trigger	Data recording is automatically started when the preset trigger condition is satisfied.
	Note that any CAN data cannot be used as the trigger condition
Interval	Data recording is periodically made at preset intervals.

Manual Start/Stop of Data Recording
Possible by using the PC or by pressing the switch on the front panel or from the dedicated remote control unit

Balance Adjustment
Strain input channels can be balanced by pressing the BAL. switch on the front panel or from the dedicated remote control unit or from the PC.

Saved Data Format
Kyowa standard format KS2, which enables data analysis with the optional Data Analysis Software DAS-200A

Collecting Data LAN or USB port enables online data transfer to the PC, while CF card enables offline data transfer.

TEDS Function Usable when the EDX-100A is under the online control of the PC. Compatible conditioner cards are CDV-40B(-F), DPM-42B-F, DPM-42B-I-F, CVM-41A and CCA-40A(-F).

Synchronous Operation
Synchronous cable enables cascade connection of up to 8 units of the EDX-100A. While data is recorded as a separate file in the CF card inserted into each unit, files of all cards can be combined into a single file after online or offline data transfer to the PC.

Analog Output Except for CDV-40B(-F) and CAN-40A, conditioner cards provide an analog output connector, enabling voltage monitoring (5 V FS).

CF Card Slot 1 (For data recording and condition setting)

Interfaces LAN and USB (For control and data transfer), switchable
LAN I/F 10BASE-T／100BASE-TX Connector: RJ45 modular jack
USB I/F Conforms to USB 2.0 (High speed).
Connector: Series B receptacle

Operation Switches REC/PAUSE: Starts/pauses data recording.
STOP: Stops data recording.
BAL.: Execute balance adjustment.
READ: Reads and set conditions.
ID: Sets ID No. of EDX-100A.
LAN/USB: Switches communication port.

Indicators Operation status indicator LEDs: 7
Channel status indicator LEDs: The number corresponds to the number of channels provided.

External Control Connectors
CONT IN and CONT OUT (For remote control and synchronous operation)

Operating Temperature 0 to 50°C
Operating Humidity 20 to 90% RH (Non-condensing)
Storage Temperature -20 to 60°C
Vibration Resistance 29.42 m/s^2 (3 G), 5 to 55 Hz (When operating)
49.03 m/s^2 (5 G), 5 to 55 Hz (When not operating)
Shock Resistance 196.1 m/s^2 (20 G)/11 ms
EMC Directive EN61326-1(Class A)
Power Supply 10 to 18 VDC
Connector: RM12BRD-4PH (Hirose)
DC power supply or optional dedicated AC adapter is required.

Current Consumption:
EDX-100A-1: Approx. 1.2 A (When operated on 12 VDC with 1 CDV-40B card mounted and full load applied)
EDX-100A-2: Approx. 1.8 A (When operated on 12 VDC with 2 CDV-40B cards mounted and full load applied)
EDX-100A-4: Approx. 2.8 A (When operated on 12 VDC with 4 CDV-40B cards mounted and full load applied)

Dimensions EDX-100A-1: 70.0(W) x 132.5(H) x 255(D) mm
EDX-100A-2: 92.5(W) x 132.5(H) x 255(D) mm
EDX-100A-4: 137.5(W) x 132.5 (H) x 255(D) mm
excluding protrusions

Weight, Approx. EDX-100A-1: 1.6 kg (1.7 kg with 1 CDV-40B card mounted)
EDX-100A-2: 1.8 kg (2.0 kg with 2 CDV-40B cards mounted)
EDX-100A-4: 2.0 kg (2.6 kg with 4 CDV-40B cards mounted)

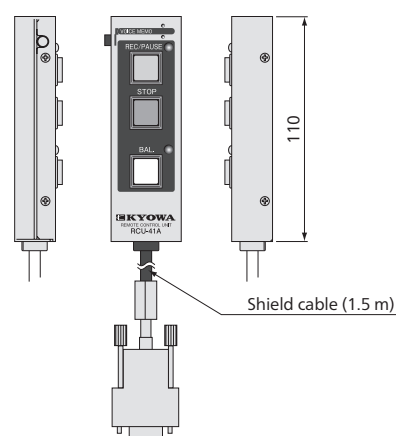| **Standard Accessories**	USB cable N-38 (1 m), Power cable P-76, Ground wire P-72, CF card, Dynamic Data Acquisition Software DCS-100A(DVD)
Optional Accessories	USB cable N-39 (2 m) Synchronous cable N-95 (2 m) Camera synchronous cable N-98, N-99, N-101 AC adapter UIA 345-12 Cable fixture Remote Control Unit RCU-41A Battery Unit for Instantaneous Power Failure EDB-41B Synchronous extension unit ESYN-30A Dummy panel EDX-2000-DUMMY

●Remote Control Unit RCU-41A

Control Buttons	(1) REC/PAUSE :	Starts/pauses data recording.
	(2) STOP :	Stops data recording.
	(3) BAL. :	Executes balance adjustment.
	(4) VOICE MEMO :	Records voice memo.
LED Indicators	REC/PAUSE, BAL	
Cable Length	1.5 m (To CONT IN connector of EDX-100A)	

■Dimensions

Shield cable (1.5 m)

●Battery Unit for Instantaneous Power Failure EDB-41B

Built-in Batteries Battery type: Ni-MH rechargeable battery
Nominal capacity: 730mAh, nominal voltage: 12V
External Power Input 11 V to 18 VDC
[DC IN]terminal model: RM12BRD-4PH (Hirose)
Use DC power or AC adapter (Optional) for EDX-100A
Power Output External power voltage when using external power drive
Approx. 11 to 15 V when using this units drive (in instantaneous stop)
[DC OUT]terminal model: RM12BRD-4S (Hirose)
Recharging Methods
Start automatic crecharging (Max. 3.5 h) by connecting the external power supply
Start discharging by resetting button to ON
(Refreshing time: Max 6.5 h)
Display BATTERY LEVEL LED (Residual capacity display)
CHARGE (charge/discharge display)
Buzzer Alarm of buzzing sound in instantaneous stop
Operating Temperature 0 to 50°C (0 to 30°C if refreshing)
Operating Humidity 20 to 90% RH (Non-condensing)
Storage Temperature -20 to 50°C
Dimensions 25(W)×132.5(H)×255(D) mm (Excluding protrusions)
Weight Approx. 500 g
Backup time * (reference value)
Approx.30min with 1 (8 channels) CDV-40B card mounted on EDX-100A-1 (H) and full load applied
Approx.15min with 2 16 channels) CDV-40B cards mounted on EDX-100A-2 (H) and full load applied
Approx. 5min with 4 32 channels) CDV-40B cards mounted on EDX-100A-4 (H) and full load applied
*Built-in battery is fully recharged when ambient temperature is 20 to 30°C

● Specifications of DCS-100A Software

Operating Environment	
OS	Windows Vista, 7, 8/8.1, Japanese/English
	32/64 bits support
	If 64-bit OS, operates in WOW64 environment
CPU	Core2Duo, 2 GHz or advanced
Memory	If OS is 32-bit Vista, 7, or 8/8.1, 2 GB or more
	If OS is 64-bit Vista, 7, or 8/8.1, 4 GB or more
Display	1024×768 pixels or more

Number of Controllable Units 8 (Max. 256 channels)

Applicable Conditioner Cards CDV-40B(-F), DPM-42B(-F,-I,-I-F), CCA-40A(-F), CVM-41A, CDA-44AS/45AS, CTA-40A, CFV-40A, CAN-40A, CAN-41A, CDV-44AS, AD-40AS(-F)

Setting Channel Conditions
Measuring channel, measuring mode, range, HPF, LPF, balance ON/OFF, calibration range, calibration ON/OFF, calibration coefficient, offset, unit, channel name, measuring range, rated capacity, rated output, number of display digits (Display items can freely be selected.)

Sampling Methods All channels in sync

Sampling Frequencies 1 Hz to 100 kHz
(depends on the number of measuring channels.)

Setting/Loading Parameters Loads parameters from EDX-100A and sets the parameters in the EDX-100A

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 preset number of measurements.

Interval Measurement Measurement is made automatically at preset intervals from the preset starting time.

Trigger Measurement Measurement starts/stops based on preset trigger conditions.
 End trigger settable
 Delay Max. 262144 values for both start and end. Delay differs depending on the number of measuring channels.
 Trigger level Set in a proper engineering unit
 Trigger slope Up, down

Measuring Conditions for Saving Data in CF Card
 Measuring modes Manual, manual manual (Data points preset), interval, analog trigger, external trigger, and composite trigger
 Data file size Max. 2 GB
 Analog trigger conditions
  Trigger channel 1 desired channel of stand-alone or master unit ·
 Composite trigger conditions
  Trigger source Selectable from 2 desired channels of stand-alone or master unit and external trigger
  AND/OR Signals of selected trigger channels and external trigger signal can be AND or OR.

Measuring Conditions for Saving Data in Hard Disk of PC
 Measuring modes Manual, manual (Data points preset), interval, and analog trigger
 Data file size Capacity of hard disk
 Analog trigger conditions
  End trigger Arbitrary 1 measuring channel

Setting/Reading Measuring Conditions
Measuring conditions can be saved in and read from CF card. They can also be set from the PC connected via USB or LAN port.

Monitor Display of graph data and numeric data

Collecting Data Data can automatically be collected and converted to CSV file upon completion of data recording. Data saved in CF card may be transferred to the PC, if off-line.

Erasing Data Data can be erased in on-line or off-line.

TEDS Information Reading sensor's information and setting to channel condition automatically

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.

Repetition Acquisition In long-term data acquisition, a specified amount of data (Or time) is saved in KS2 file .
Workable in manual mode (with the amount of acquired data pecified).

Monitor Display
 Y-Time graph Physical variables are graphed on Y axis with X axis for time. Up to 16 channels can be graphed and 1 to 4 graphs can be presented on a window.
 Y-Time (DIV) graph X physical variables of up to 16 channels are graphed on Y axis with X axis for time possible. Channel's zero position can be set on the Y axis.
 X-Y graph Variables of desired 8 channels each for both X and Y axes are graphed in free combinations.
 Bar graph One bar graph can contain up to 32 channels and 1 to 4 graphs can be presented on a window. Peak hold ON/OFF is possible.

 Bar meter Variable of 1 desired channel can be displayed on a horizontal or vertical bar meter.
 Circular meter Variable of 1 desired channel can be displayed on a circular meter.
 Numeric window Presents numeric data of desired 1 or 16 channels or all channels.
 Display color Freely changeable graph by graph
 Over-input indication Capable of display the excessive channel values in red
 Graph scale Capable of displaying auto-scale value and full-scale value on the Y-time graph (y axis), X-Y graph (X, y axis), and Bar graph (Y axis). The Y-Time graph (Y axis) is able to change to 1 axis or 2 axes and CH.
 Title and labels A desired title and labels for X and Y axes can be set.
 Number of simultaneously displayed windows
  0 numeric windows and 10 graph windows, 20 in total, can simultaneously displayed, including reproduced data windows. Note however that the maximum number of windows may not be available depending on the CPU speed and memory of the PC.
 Dual-display Capable of moving the numeric windows and graphic windows onto the sub display.

Data Reproduction
 Y-Time graph Physical variables are graphed on Y axis with X axis for time. Up to 16 channels can be graphed and 1 to 4 graphs can be presented on a window.
 Y-Time (DIV) graph Physical variables of up to 16 channels are graphed on Y axis with X axis for time possible. Channel's zero position can be set on the Y axis.
 X-Y graph Variables of desired 8 channels each for both X and Y axes are graphed in free combinations.
 Numeric window Presents data in a list.
 Graph scale Capable of displaying auto-scale value and full-scale value on the Y-time graph (y axis), X-Y graph (X, y axis), and Bar graph (Y axis). The Y-Time graph (Y axis) is able to change to 1 axis or 2 axes and CH.
 Display color Freely changeable graph by graph
 Title and labels A desired title and labels for X and Y axes can be set.
 Cursor Enables indication of the value at the cursor position in a proper engineering unit.
 Number of simultaneously displayed windows
  10 numeric windows and 10 graph windows, 20 in total, can simultaneously displayed, including graph and numeric windows in monitor measurement. Note however that the maximum number of windows may not be available depending on the CPU speed and memory of the PC.
 Size of data file available on a single screen
  Size of data file which can be displayed at a time on graph and numeric windows is maximum 10 MB. If the file size exceeds 10 MB, 10 MB data of a desired portion can be displayed by setting the range.
 File conversion Desired range or data of a desired channel can be extracted and converted to CSV or Excel format file.
 Dual-display Capable of moving the numeric windows and graphic windows onto the sub display.

Data File
 Saving format Kyowa standard file format KS2 to save data in the PC.
 File coupling Data files saved in controlled recorders operated in synchronization can be combined to a single data file at the time of collection by the PC.

Channel Conditions and Measuring Conditions
 Channel/measuring conditions Refer to the spec. of individual recorder
 TEDS information Reading sensor's information and setting to channel condition automatically
 Loading/saving condition file Loading and saving possible.
 Sensor's information file (CSV format) can be read or saved to or from the channel condition

Environment Settings
 Data Storage Measured data is directly saving in the hard disk of PC, while it is limited by the sampling frequency and the number of measuring channels.
 Data File Automatic Collection Data file can be automatic transfered to the hard disk of PC upon completion of recording
 Data File Automatic Conversion At the end of measurement, automatically converts the file (CSV, XLS, XLSX, or RPCⅢ format).
 Arbitrary Unit Settings The user can register 3 types of unit types
  Pause ON/OFF settable
 Hardware configuration Number of connected recorders, types of mounted conditioner cards. Number of slots and types of conditioner cards can freely be set. Hardware configuration of the recorder can be read if it is connected to the PC via USB or LAN.
 IP address Settable, from the PC via USB or LAN, or saved in CF card.
 Communication status Checked by reading the version of the EDX-100A