EDX-100A

Universal Recorder

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

TEDS C€

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-41A conditioner card mounted
- ●Variety of input conditioner cards
- ●TEDS compatible
- ●Voice memo is 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. (See page 3-66)

*For the Data Analysis Software DAS-200A, See 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 8 units of EDX-100A.

For PC connection, LAN and USB ports are provided. The LAN port enables PC to control up to 8 units of EDX-100A, while the USB port ensures easy connection between EDX-100A and PC.

In addition, EDX-100A is 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 details, see 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-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. Channels	Remark
EDX-100A-1	1	8	
EDX-100A-2	2	16	
EDX-100A-4	4	32	
EDX-100A-1H	1	8	
EDX-100A-2H	2	16	With handle grip
EDX-100A-4H	4	32	

Channels	See table above.
Analog Input	Optional conditioner cards
	Implement with DPM, CDV, CTA, CFV, CCA, CVM installed
	For details, see page 3-73.
CAN Data Input	Provided by the optional 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	CF cards recommended by Kyowa
	(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 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 mustn't be used as 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 is 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	Reads sensor's information and sets to channel condition automatically
	Supported conditioner cards: CDV-40B (-F), DPM-42B (-F), DPM-42B-I (-F), CCA-40A (-F), CDV-44AS, CDA-44AS/45AS, CVM-41A, AD-40AS (-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 are combined into a single file after online or offline data transfer to the PC.

Analog Output	Except for CDV-40B (-F) and AD-40AS(-F) 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 Resistant	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)
Impact Resistant	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)

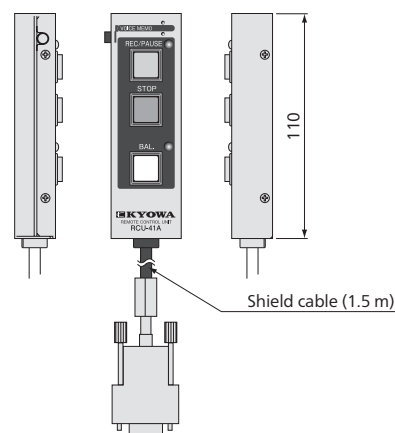| Standard Accessories	USB cable N-38 (1 m), Power cable P-76, Ground wire P-72, CF card, Dynamic Data Acquisition Software DCS-100A (DVD) No DCS-100A for models with suffix "-0"
Optional Accessories	USB cable N-39 (2 m) Synchronous cable N-95 (2 m) Camera synchronous cable N-98, N-99, N-101 AC adapter UIA 345-12 Cable fixture Remote Control Unit RCU-41A Battery Unit for Instantaneous Power Failure EDB-41B Synchronous extension unit ESYN-30A Monitor Unit EMON-20A 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: 730 mAh, nominal voltage: 12 V
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 recharging (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. 30 min with 1 (8 channels) CDV-40B card mounted on EDX-100A-1 (H) and full load applied
	Approx. 15 min with 2 16 channels) CDV-40B cards mounted on EDX-100A-2 (H) and full load applied
	EDX-200A-2H and full load applied
	Approx. 5 min with 4 32 channels) CDV-40B cards mounted on EDX-100A-4 (H) and full load applied
	EDX-200A-4H and full load applied
	*Built-in battery is fully recharged when ambient temperature is 20 to 30°C

●**DCS-100A Software for EDX-100A section**
 For details of DCS-100A, see page 4-3.

Controllable Units	8 (Max. 256 channels)
Interfaces	LAN, USB
Data Storage	Measured data is saved to CF card in the EDX and/or data folder in the PC

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 are freely be selected.)

TEDS Reads sensor's information and sets to channel condition automatically

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

Collecting Data Collects data saved in the CF card in the EDX via LAN or USB or directly insert the CF card in the PC.

Erasing Data Erases data via LAN or USB in on-line or off-line

Environmental Settings

Hardware configuration Number of connected recorders, setting device name
Allows hardware configuration of the recorder to be read if it is connected to the PC via USB or LAN.

Communication status Checked by reading the version of the EDX-100A

IP address Settable, from the PC via USB or LAN. It is saved in CF card.

Recorder Status Checked by reading the LED on the front panel

Others Switches external/ internal oscillators, sets the operation beep

Measuring Conditions for Saving Data in CF Card

Sampling Frequencies 1 Hz to 100 kHz, 1-2-5 series, 2^n series, or external clock
(Depends on the number of measuring channels.)

Data file size Max. 2 GB, depends on the number of measuring channels

Measuring modes Manual, manual (Data points preset), interval, analog trigger, external trigger, and composite 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 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 with the number of measuring channels.

Analog trigger

Trigger channels Any 1 channel of host EDX

Trigger level Sets in physical quantity

Trigger slope Up, down

External trigger

Trigger slope Up, down

Composite trigger

Trigger source Selectable from 2 desired channels of stand-alone or host unit, and 1 from external trigger. AND or OR logic is possible.

Trigger level Sets in physical quantity

Trigger slope Up, down

Measuring Conditions for Saving Data in Hard Disk of PC

Sampling Frequencies 1 Hz to 100 kHz, 1-2-5 series, 2^n series, or external clock

Data file size Capacity of hard disk

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 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 with the number of measuring channels.

Trigger channels Any 1 channel of host EDX

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).

■Synchronous Extension Unit ESYN-30A

●Usage on EDX-3000B and EDX-100A possible
●Usage possible simply by connecting to EDX (ESYN-30A power supply provided by EDX)

ESYN-30A is a unit that supports synchronous measurement in a dispersed layout using multiple EDX-3000B and EDX-100A units.

Display	POWER LED
	With EDX-3000B connected: Lit green
	With EDX-100A connected: Lit orange
Numbers of connected recorder	
EDX-3000B synchronous operation: Max. 10	
EDX-100A synchronous operation: Max. 8	
EDX-3000B, EDX-100A mixed synchronous operation [*1] : Max. 8	
Total Synchronization Cable Length [*2]	
EDX-3000B synchronous operation: 1000 m or less	
With EDX-100A synchronous operation: 50 m or less	
EDX-3000B, EDX-100A mixed synchronous operation [*1]: 50 m or less	
Synchronization Cable Length between Devices	
EDX-3000B synchronous operation: 100 m or less	
With EDX-100A synchronous operation: 50 m or less	
EDX-3000B, EDX-100A mixed synchronous operation [*1]: 50 m or less	
Dimensions	92 W × 24.6 H ×55 D mm (Excluding protrusions)
Weight	250 g or less

*1 The ID number of EDX-100A must bigger than an ID number of EDX-3000B.
*2 Not including N-95 cable length.
Note: When using ESYN-30A, do not use a remote control unit.

■Monitor Unit EMON-20A

●Monitoring any 8-channel data
●Touching the panel to control the EDX-100A and EDX-200A
●Setting channel conditions Measure ON/OFF, channel modes, measuring range, LPF, sampling frequencies, etc.
●Confirming recorded data on the spot

NEW

| Applicable Recorders	EDX-100A, and EDX-200A. Max 3 units in sync
	Firmware version 2.0 or newer of
	EDX-100A or EDX-200A is required.
Display	LCD: 5.7" color TFT, 320 x 240 touch panel
	Power LED: ON
Display Contents	Y-time graph: Max. 8 channels. In sync operation,
	only 1 channel every EDX other than the first EDX.
	Numeric monitoring: Max. 8 channels
	Data confirming: Max. 8 channels
Control Items	Measuring items: Monitor start (MONITOR),
	stop (STOP), record (REC),
	and balance (BAL)
	Channel conditions: Measuring range,
	switching modes, LPF
	Measuring conditions: Sampling frequencies
Other Functions	Languages selection of English or Japanese,
	backlight on or off, lighting time,
	and operating beeps
Power Supply	10 to 36 VDC, or a dedicated AC adapter
	450 mA or less at 12 V, 200 mA or less at 24 V
Dimensions	166 W × 29 H × 128.5 D mm (Excluding protrusions)
Weight	Approx. 550 g
Vibration Resistant	29.4 m/s^2 (3 G), 5 to 200 Hz
Operating Temperature	0 to 50°C
Operating Humidity	20 to 80% (Non-condensing)
Applicable Conditioner Cards for Data Acquisition	
Strain/Voltage/Acceleration Measurement Card	CVM-40A, CVM-41A
Strain/Voltage Measurement Card	CDV-40B/A, CDV-40B/A-F
Dynamic Strain Measurement Card	DPM-42B/A, DPM-42B/A-F,
	DPM-42B-I, DPM-42B-I-F
Thermocouple Card	CTA-40A
F/V Converter Card	CFV-40A
Charge Amplifier Card	CCA-40A, CCA-40A-F
Strain/Voltage Measurement Isolation Card	CDV-44AS
Constant Current Amplifier Card	CDA-44AS, CDA-45AS
A/D Converter Card	AD-40AS, AD-40AS-F
Applicable Cards for Data Monitoring	
CAN Card	CAN-41A

Standard Accessories

Connection cable Approx. 5 m

Data Recorders/Analyzers

■ **Dimensions** (Handle grip in blue)

● 1 Slot
EDX-100A-1
EDX-100A-1H
(With handle grip)

255±2
(88)
70±1
(138.5)
(144)
(261)
132.5±1
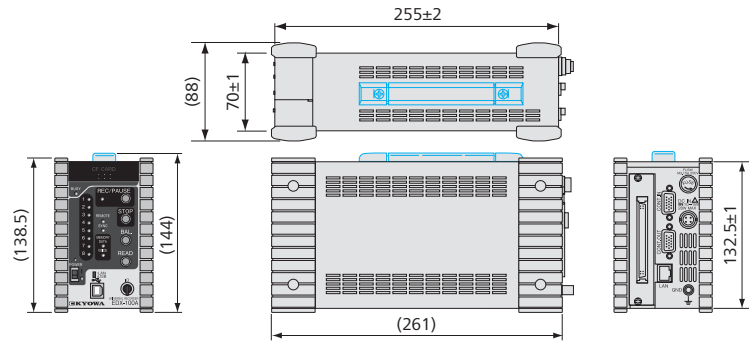
● 2 Slots
EDX-100A-2
EDX-100A-2H
(With handle grip)

255±2
(110.5)
92.5±1
(138.5)
(144)
(261)
132.5±1
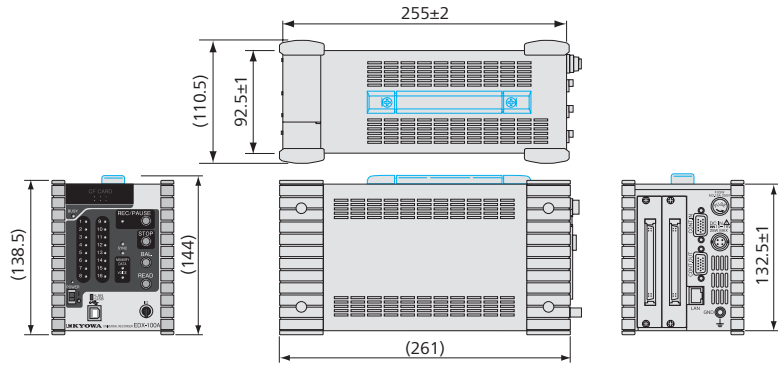
● 4 Slots
EDX-100A-4
EDX-100A-4H
(With handle grip)

255±2
(155.5)
137.5±1
(138.5)
(144)
(261)
132.5±1

EDX-100A
Recommended
products for
combination

Data Analysis Software
DAS-200A
→ 4-9