EDX-200A

Universal Recorder

EDX-200A-2H
EDX-200A-4H
EDX-200A-4T
EDX-200A-1

Except EDX-200A-4T and EDX-200A-4T-0

Improved real-time processing function with high-speed DSP

- ●Incorporated real-time digital filter
  8th digital filter enables to acquire clear waveform.
- ●High-speed/low-speed dual sampling
  Measurement of high-speed and low-speed phenomena while reducing data quantities is possible.
- ●All channels synchronous 10 kHz high-speed sampling (For 32 channels)
  Measurement of 3 channels synchronous at max. 100 kHz
- ●Variety of input conditioner cards
- ●One-wire synchronous (Except EDX-200A-1)
  With a maximum of 8 units using dispersion, support for large-scale measurements possible.

●Conditioner cards (For the details, see page 3-73)

Strain/voltage/acceleration measurement card	CVM-41A
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 (120 Ω)	CDA-44AS
Constant current amplifier card (350 Ω)	CDA-45AS
A/D Converter Cards	AD-40AS/40AS-F

EDX-200A-4T accepts only CVM-41A, CDV-40B, CDV-40B-F, and CAN-41A for which temperature expansion measures are taken.

●Option cards (For the details, see page 3-61)

Multichannel CAN card	ECAN-40A
Time synchronization card	ETIM-40A
GPS/multichannel CAN card	EGPC-40A

EDX-200A Specifications

Models

Models	Channels	Conditioner slots	Optional slots	DCS-100A*2	DCS-101A*3
EDX-200A-2H	16	2	1	Yes	
EDX-200A-2H-0					
EDX-200A-2H-1				Yes	Yes
EDX-200A-4H	32	4	1	Yes	
EDX-200A-4H-0					
EDX-200A-4H-1				Yes	Yes
EDX-200A-4T	32	4	1	Yes	
EDX-200A-4T-0					
EDX-200A-4T-1				Yes	Yes
EDX-200A-1	8	1		Yes	
EDX-200A-1-1				Yes	Yes

Notes: *1, Max. input channels are when 8 channels input cards inserted.
*2, Dynamic Data Acquisition Software
*3, Simultaneous Acquisition of Video and Numeric Data/Arithmetic Operations/FFT Analysis Optional Software

Measuring Targets Strain (Gage, transducer), voltage, thermocouples, pulse (F/V)
Piezoelectric acceleration (Built-in amplifier), CAN signals

Analog Input The conditioner cards for EDX series
(For the details, see page 3-73)
Note: EDX-200A-4T accepts only CVM-41A, CDV-40B and CDV-40B-F for which temperature expansion measures are taken.
Once mounted, the conditioner cards mustn't be replaced.

CAN Data Input CAN-41A must be mounted to the last slot.
Note: EDX-200A-4T accepts only CAN-41A for which temperature expansion measures are taken.
Once mounted, the CAN card mustn't be replaced.

Voice Memo Input 1 channel (Input voice memo data is recorded together with the measurement data)
Use remote control unit RCU-42A (Optional accessory)
Use the Data Analysis Software DAS-200A (Optional accessory) to play back recorded voice memos

Sampling All channels synchronously

Sampling Mode

Normal: All channels collected using the same sampling frequency
Dual: High-speed or low-speed, collected using 2 types of sampling frequencies set for each channel

Sampling frequencies

Normal mode

1-2-5 series	1 Hz to 100 kHz	
	1 Hz to 2 kHz	When using CAN-41A
2^n series	2 Hz to 65536 Hz	
	2 Hz to 2048 Hz	When using CAN-41A

Dual mode	High-speed sampling (Expressed as Sf)
	1-2-5 series 1 Hz to 100 k Hz
	2ⁿ series 2 Hz to 65536 Hz
	Low-speed sampling (Expressed as "Ss")
	1-2-5 series The division frequencies from high-speed sampling, and Ss ≤ Sf/4
	2ⁿ series The division frequencies from high-speed sampling, and Ss ≤ Sf/4
Acquisition channels	
Normal mode	Max. 32 channels, 320 k/I (I is the integer part of the set sampling frequency.
Dual mode	Max. 64 channels, 320 k/I (I is the integer part of the set sampling frequency.
Using CAN-41A	EDX-200A-4H Max. 24 + Channels of CAN data
	EDX-200A-2H Max. 8 + Channels of CAN data
	EDX-200A-1 Channels of CAN data
	EDX-200A-4T Max. 24 + Channels of CAN data
Digital Filter	Butterworth filter (IIR)
	Type of filter: LPF, HPF
	Order of a filter: 1 to 8
	Amplitude ratio at cutoff point: -3dB
	Attenuation: -6 x N dB (N is filtering times)
	Simultaneously use with built-in LPF possible.
	Application on CAN data not possible.
Data Recording	CF cards, 128 MB to 16 GB (Kyowa recommended items)
	Maximum data file size (Available for data acquisition):
	4 GB for 1-time measurement
	1 GB for repetitive measurement, 2 times or more
Display	Channel status display LED:
	EDX-200A-2H: 16; EDX-200A-4H/4T: 32; EDX-200A-1: 8
	Unit status display LED:
	EDX-200A-2H/4H/4T: 7; EDX-200A-1: 4
	Unit status display organic EL monitor:
	EDX-200A-2H/4H/4T: 1; EDX-200A-1: 0
Operating Switch	
UP, DOWN	: Status display organic EL monitor display switching
REC/PAUSE	: Start/pause data recording.
STOP	: Stop data recording.
BAL.	: Implement balance (Balance adjustment)
LOAD	: Read and configure conditions from CF card
OPT.	: Execute arbitrary configured functions
ID	: EDX identifier configuration
POWER	: Power switch
USB/LAN	: Communications I/F, switchable
Note: No UP, DOWN and ID switches for EDX-200A-1	
External Control Connector	CONT IN, CONT OUT
	(Remote control, for synchronous operation)
	Note: No CONT OUT of EDX-200A-1
Interfaces	USB (USB2.0 High Speed) 1 port
	Connector configuration: Series B receptacle
	LAN (10/100BASE-T) 2 port (However, LAN OUT is for synchronous operation)
	Connector configuration: RJ45 modular jack
	Note: No LAN OUT for EDX-200A-1
Synchronous Operation	With synchronization cable (N-95) connection, number of units with synchronous operation: 8
	With LAN cable connection, number of units with synchronous operation: 8
	No synchronous operation for EDX-200A-1
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 data acquisition software DCS-100A	
Saving Conditions	Recording of conditioner configuration conditions and measurement conditions within the EDX built- in nonvolatile memory, and immediate start of data collection using the previously configured measurement conditions after power-on is possible.
Measuring Modes	Manual measurement/trigger measurement/ interval measurement
Manual measurement	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 measurement	Data recording is automatically started when the preset trigger condition is satisfied.
	Note: No CAN data of CAN-41A is used as the trigger condition.
Interval measurement	Automatically recording functions based upon previously-set interval conditions
	Combination with measured mode when in dual sampling

High-speed sampling channel	Low-speed sampling channel
Manual	Manual
Trigger	Manual
	Interval
Interval	Interval

Recording Start/Stop	PC, operation switch (Panel screen), or using dedicated remote control
Balance Adjustment Operation	Strain input channel balance adjustment performed using PC operation switch, panel screen), or dedicated remote control
Recording data format	Kyowa standard file format KS2
	Analysis using optional Data Analysis Software DAS-200A is possible
Data Collection	Online using PC, or offline direct reading from CF card to PC
TEDS	Only when using online control from a PC
	Supported conditioner cards: CDV-40B (-F), DPM-42B (-F) DPM-42B-I (-F), CCA-40A (-F), CDV-44AS, CDA-44AS, CDA-45AS, CVM-41A
	Note: EDX-200A-4T accepts only CVM-41A, CDV-40B and CDV-40B-F for which temperature expansion measures are taken.
Power Supply	10 to 36 VDC, 33 VDC for EDX-200A-1
	connector type: RM12BRD-4PH (Hirose)
	Use DC power supply or AC adapter (Optional accessory)
Current Consumption	
EDX-200A-2H: Approx. 1.6 A (12 VDC, when CDV-40B ×2 installed)	
EDX-200A-4H: Approx. 2.6 A (12 VDC, when CDV-40B ×4 installed)	
EDX-200A-4T: Approx. 2.6 A (12 VDC, when CDV-40B ×4 installed)	
EDX-200A-1: Approx.1.0 A (12 VDC, when CDV-40B ×1 installed)	
Operating Temperature	0 to 50°C (EDX-200A-4T: -20 to 65°C)
Operating Humidity	20 to 90%RH (Non-condensing)
Storage Temperature	-20 to 60°C (EDX-200A-4T: -30 to 70°C)
Vibration Resistant	
49.0 m/s^2 (5 G), 5 to 55 Hz 1 cycle 1 min., each axis 15 cycles (Non-operating)	
29.4 m/s^2 (3 G), 5 to 55 Hz 1 cycle 1 min., each axis 15cycle (Operating)	
Impact Resistant	196.1 m/s^2 (20 G)/11 ms, 294.2 m/s^2 for EDX-200A-1
EMC Directive	EN61326-1 (Class A) , except EDX-200A-4T
Dimensions (Excluding protrusions)	
EDX-200A-2H: 120 W × 132.5 H ×255 D mm	
EDX-200A-4H: 165 W × 132.5 H ×255 D mm	
EDX-200A-4T: 185.2 W × 142.8 H ×255D mm	
Weight (Approx. kg)	
EDX-200A-2H: 1.8, 2.0 with 2 CDV-40B	
EDX-200A-4H: 2.1, 2.6 with 4 CDV-40B	
EDX-200A-4T: 3.7, 4.2 with 4 CDV-40B	
EDX-200A-1: 0.9, 1.1 with 1 CDV-40B	

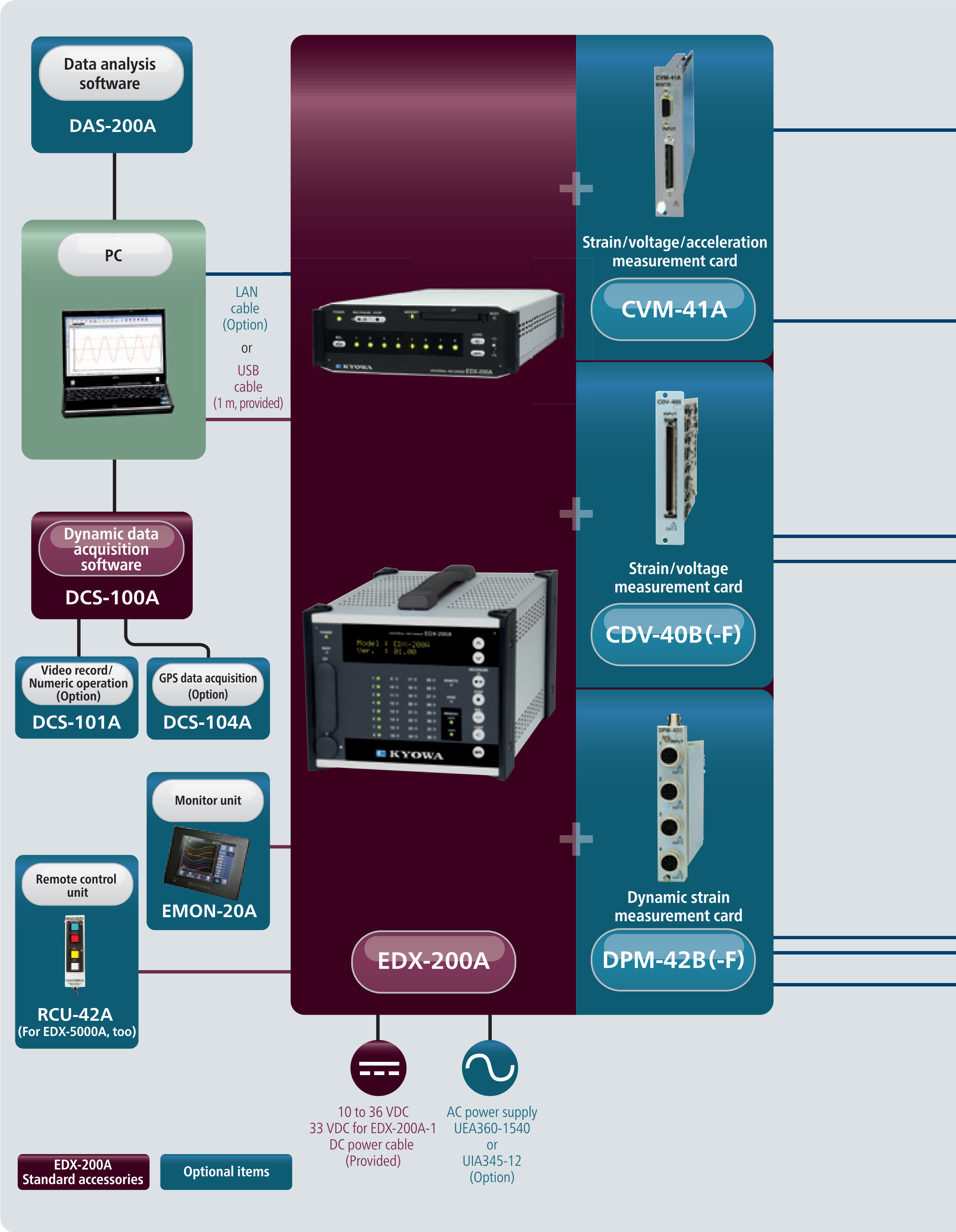
Standard Accessories

USB cable N-38 (1 m)
DC power cable P-76 (2 m)
Ground wire P-72 (5 m)
CF card (1 GB) inserted in the slot
Fuses (8 A for 4-slot model, 5 A for 2-slot model)
Dummy panel
Installed on the free slots before shipment
  EDX-200A-4H: 3 pcs
  EDX-200A-2H: 1pc
  EDX-200A-4T: None
EDX accessory bag
 Dynamic data acquisition software DCS-100A (DVD)
 Instruction manual (In English & Japanese, in the above DVD)

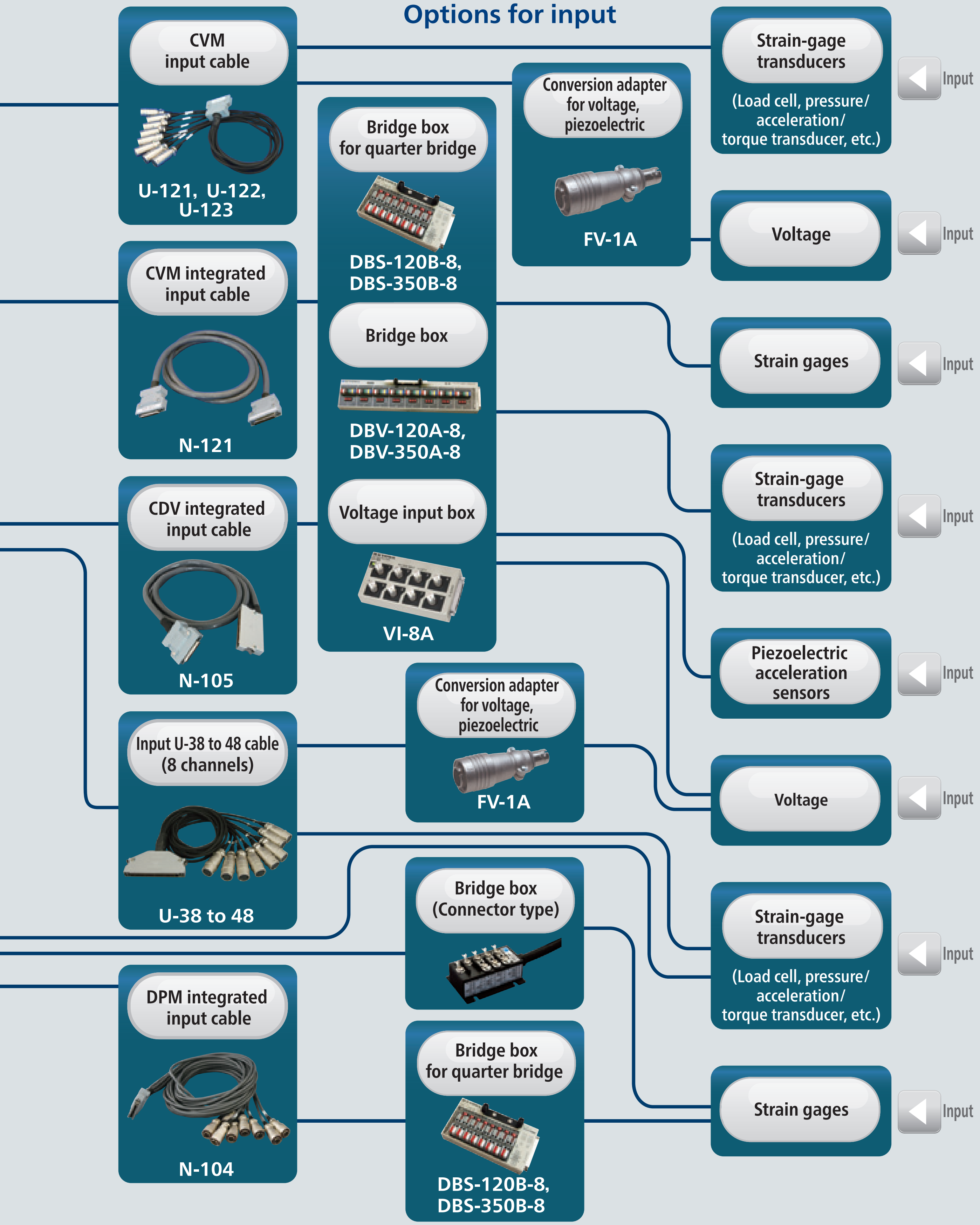
Optional Accessories

EDX-200A AC adapter 4H, 4T: UEA360-1540, 2H, -1: UIA345-12
EDX dummy panel (1) EDX1P-DUMMY
Remote control unit RCU-42A (1.5 m)
Battery Unit for Instantaneous Power Failure EDB-41B
Monitor Unit EMON-20A

Simplified configuration of the EDX-200A


Data analysis software
DAS-200A
PC
LAN cable (Option)
or
USB cable (1 m, provided)
Dynamic data acquisition software
DCS-100A
Video record/ Numeric operation (Option)
DCS-101A
GPS data acquisition (Option)
DCS-104A
Monitor unit
EMON-20A
Remote control unit
RCU-42A
(For EDX-5000A, too)
EDX-200A
Strain/voltage/acceleration measurement card
CVM-41A
Strain/voltage measurement card
CDV-40B(-F)
Dynamic strain measurement card
DPM-42B(-F)
10 to 36 VDC
33 VDC for EDX-200A-1
DC power cable
(Provided)
AC power supply
UEA360-1540
or
UIA345-12
(Option)
EDX-200A Standard accessories
Optional items

Options for input


CVM input cable
U-121, U-122, U-123
CVM integrated input cable
N-121
CDV integrated input cable
N-105
Input U-38 to 48 cable (8 channels)
U-38 to 48
DPM integrated input cable
N-104
Bridge box for quarter bridge
DBS-120B-8, DBS-350B-8
Bridge box
DBV-120A-8, DBV-350A-8
Voltage input box
VI-8A
Conversion adapter for voltage, piezoelectric
FV-1A
Conversion adapter for voltage, piezoelectric
FV-1A
Bridge box (Connector type)
Bridge box for quarter bridge
DBS-120B-8, DBS-350B-8
Strain-gage transducers
(Load cell, pressure/ acceleration/ torque transducer, etc.)
Input
Voltage
Input
Strain gages
Input
Strain-gage transducers
(Load cell, pressure/ acceleration/ torque transducer, etc.)
Input
Piezoelectric acceleration sensors
Input
Voltage
Input
Strain-gage transducers
(Load cell, pressure/ acceleration/ torque transducer, etc.)
Input
Strain gages
Input

●DCS-100A software for EDX-200A section
For details of DCS-100A, see page 4-3.

(Not included with EDX-200A-4H-0, EDX-200A-2H-0)

Controllable Units	Max. 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 in KS2 format.
Channel conditions	Measurement ON/OFF, mode, range, LPF, HPF, balance ON/OFF, CAL range, CAL ON/OFF, calibration coefficient, offset, units, CH name, measuring range, decimal point, rated capacity, rated output, chk.val.(Up), chk.val.(Down), internal calibration ON/OFF, offset ON/OFF, digital filter (HPF, LPF, cutoff frequency is selectable), sampling frequency (Select dual sampling high-speed, low-speed, high-speed + low-speed) (Selection of arbitrary display items possible)
TEDS	Reads sensor's information and sets to channel condition automatically
Dual Sampling	High-speed, low-speed data is displayed in numeric or graphic window. High-speed, low-speed data is saved in different files.
Setting/Loading Parameters	Loads parameters from EDX and sets the parameters in the EDX
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
CF Format	Formatting CF cards in the EDX-200A vis LAN or USB is possible
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 LAN or USB.
Communication status	Checked by reading the version of the EDX
IP address	Settable, from the PC via LAN or USB. It is saved in CF card.
Recorder status	Confirms them from the LED on the front panel
Others	Switches external/internal oscillators, sets the operation beep, balance reference value, A/D bits, synchronous operation modes (Selects using cable nor not)

Applicable Optional Cards

Functions / Cards	CAN Data Acquisition *1	Interval Measurement (GPS in sync) *1, *2	Point Zero Measurement (Manual)*1, *2	GPS Data Acquisition *1, *2	DIO Setting *3
ECAN-40A	Yes				Yes
ETIM-40A		Yes	Yes	Yes	Yes
EGPC-40A	Yes	Yes	Yes	Yes	Yes

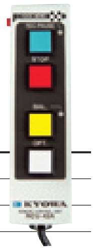
*1: When data is saved in CF card
*2: When the card is installed in host EDX
*3: When control signals ware from a remote control unit
A. Data is saved in the CF card.
B. If synchronous operation, only host EDX is settable.

CAN Data Acquisition	Max. 512 channels/unit of CAN data is possible. CAN data is saved to CF card in the EDX
Point Zero Manual Measurement	
	In multiple units of EDX-200A, allows acquisition to be started at zero second (0 ms) based on clock data of GPS satellite.
GSP Synchronous Interval Measurement	
	Allows multiple units of EDX-200A to be started acquisition based on clock data of GPS satellite.
GPS Data Acquisition	Monitors and records GPS data such as latitude, longitude, direction of movement, speed GPS data is saved to CF card in EDX-200A as NMEA format
DIO Settings	
I/O Points	Max. 8
I/O Settings	Sets every bit of digital input, digital output, and remote-control input

Measurement Conditions for Saving Data in CF Card	
Sampling Frequencies	1 Hz to 100 kHz, 1-2-5 series, 2n series, or external clock (Depends on the number of measuring channels. Dual sampling supports)
Data file size	Max. 4 GB
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	Start/stop recording based upon specified trigger conditions (The trigger standard values are set absolute triggers)
End Trigger	Settable
Delay	For both start/stop, max. 262144 data points/channel (Depending on the number of measuring channels)
Analog Trigger	
Trigger channels	Any channel of host EDX-200A
Trigger Level	Sets in physical quantity
Trigger Slope	Up, down
External trigger	
Trigger slope	Up, down
Composite trigger conditions	
Trigger source	Selects from analog channels (Host EDX any 4 channels), external trigger, and manual trigger AND or OR logic is possible.
Trigger level	Sets in physical quantity
Trigger slope	Up, down
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).
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 the hard disk
Measurement Mode	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	Start/stop recording based upon specified trigger conditions (The trigger standard values are set absolute triggers)
End Trigger	Settable
Delay	For both start/stop, max. 262144 data points/channel (Depending on the number of measuring channels)
Trigger channels	Any 1 channel of host EDX-200A
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).

●Remote Control Unit RCU-42A (Option)

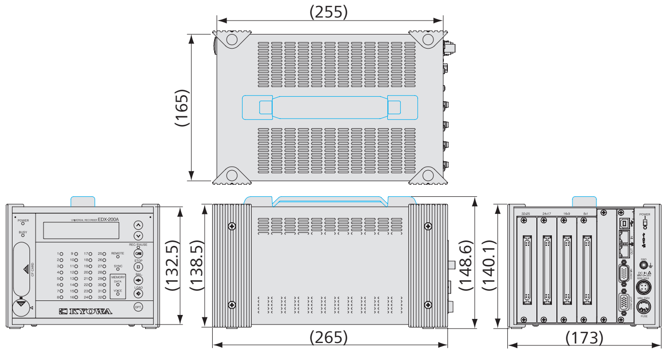
The front panel operation of the mainframe can be performed on this remote control unit. With a buzzer from the unit, an alarm sound can be clearly heard even though the sound from the mainframe is missed.



Control Functions	REC/PAUSE Starts/pauses data acquisition STOP Stops data acquisition BAL (balancing) OPT. (Optional function) VOICE MEMO (recording with the built-in microphone)
Indication	Recording, pausing and balancing are indicated with LED.
Cable Length	1.5 m

Dimensions (Handle grip in blue)

EDX-200A-4H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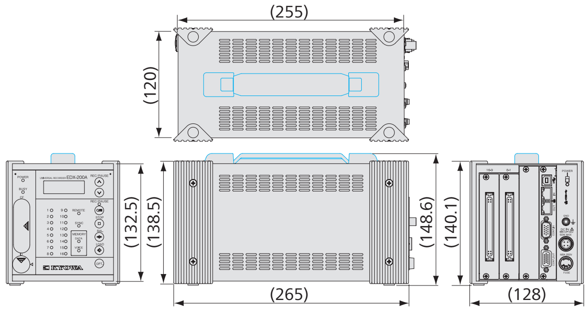
EDX-200A-2H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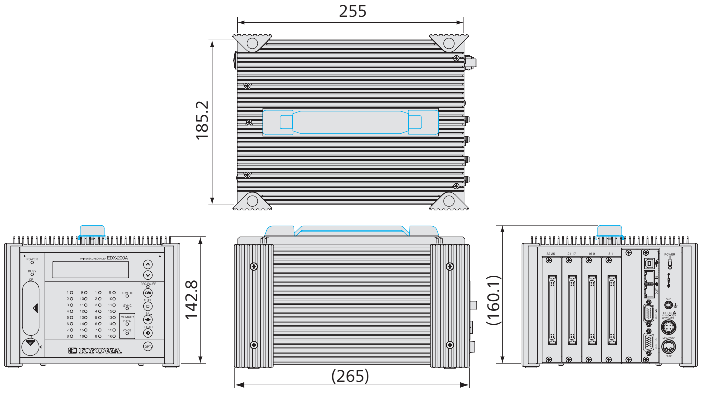
EDX-200A-4T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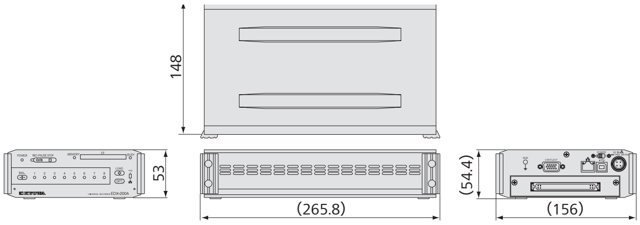
EDX-200A-1


148
53
(54.4)
(265.8)
(156)

EDX-200A
Recommended products for combination

Data Analysis Software
DAS-200A
→ 4-9