

# EDS-400A

## Compact Recorder

● Compact & Lightweight

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-86



### Compact & lightweight 4-channel measurement per one unit

- Cascade connection of 8 units enables synchronous measurement in up to 32 channels.
- High-speed sampling at 100 kHz (in 1 channel)
- Synchronous sampling at 20 kHz in 4 channels
- Possible of measuring both strain and voltage signals
- Measures data synchronously by cascade connection.
- Suitable as on-vehicle data logger
- LAN port provided standard
- Analog filters provided standard
- Data Acquisition Software DCS-100A available as standard accessory
- Data Analysis Software DAS-200A\* also available (Option)

\* For DAS-200A, see page 4-9.

Connected to strain gages, strain-gage transducers and voltage-output sensors, the EDS-400A digitally records 4 channels of dynamic variables at high speed by built-in 16-bit A/D converters.

It is set up from the PC via LAN or by inserting the CF card in which measuring conditions are written beforehand.

Variables under measurement are digitized and saved to the CF card. If required, the data can graphically be monitored on the PC connected via LAN.

Saved data is transferred to the PC, online via LAN or offline via a CF card.

The software, a standard provision, enables the PC to present the data on graphic window, while the optional Data Analysis Software DAS-200A enables data analysis in various ways.

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

### Specifications

Channels	4
Connector	R05-R5F (Tajimi)
Applicable Plug	R05-PB5M (Tajimi)
Measuring Targets	Strain gages (Full bridge system) Strain-gage transducers Voltage
Applicable Bridge Resistance	120 to 1000 Ω (Full bridge system)
Gage Factor	2.00 fixed
Bridge Excitation	2 VDC
Measuring Targets	Strain 1 k, 2 k, 5 k, 10 k, and 20 k × 10 <sup>-6</sup> strain Voltage 1, 2, 5, 10 and 20 V
Accuracy	Within ±0.5%
Balance Adjustment (Zero Suppress)	ON/OFF setting possible for each individual channel
Adjustment Methods	True electron method (Adjustment value is saved in nonvolatile memory.)
Adjustment Range	Strain Input Resistance ±2% (±10000 × 10 <sup>-6</sup> strain) Voltage Input ±10 V
Max. Input Voltage	±30 V (For voltage signals)
Frequency Response*	DC to 20 kHz (Deviation: +1 dB, -3 dB)
LPF	Transfer Characteristic 2nd order Butterworth Cutoff Frequencies 20, 200, 2 k Hz and FLAT Amplitude Ratio at Cutoff Point -3 ±1 dB Attenuation (-12 ±1) dB/oct.
*Characteristic of analog section.	
A/D Converter	16 bits
Sampling Methods	Synchronous sampling of all channels
Sampling Frequencies	1, 2, 5, 10, 20, 50, 100, 200, 500, 1 k, 2 k, 5 k, 10 k, 20 k, 50 k, and 100 k Hz (16 steps) Note: Sampling at 50 kHz is possible for 1 or 2-channel measurement. Sampling at 100 kHz is possible for 1-channel measurement only.
Operating Switches	START/STOP, ZERO, READ
Method of Setting Measuring Conditions	From PC or CF card in which measuring conditions are written beforehand
Start/Stop of Recording	From PC, panel switch or ext. contact points
Balance Adjustment	From PC, panel switch or ext. contact points
LED Lamps	POWER Lights up when the EDS is turned on. SYNC Lights up to indicate synchronization condition. MEAS Lights up to indicate measurement in progress. 1, 2, 3, 4 Lights up to indicate channel status. READ Lights up to indicate condition setting in progress.
Operation Modes	Manual START signal from PC or a press of the front panel START/STOP button starts recording. It stops recording upon recording to a preset number of measured values or when receiving STOP signal from PC or when the START/STOP button is pressed once again. Trigger START signal from PC or a press of the front panel START/STOP button lets it wait for trigger signal, and starts recording when the trigger condition is satisfied. It stops recording upon recording to a preset number of measured values. Pretrigger data may be included in the number of measured values by setting.
Trigger Functions	Trigger Source External trigger signal, analog input Trigger Level Set for analog trigger mode only, in the full scale range in plus and minus directions. Trigger Slope Up, down or both Pretrigger Data Points to be Recorded Set in a range of 0 to 2000.



<b>Backup Functions</b>	Setting conditions, balance adjustment data (Saved in the nonvolatile memory)
<b>LAN Port</b>	10BASE-T/100BASE-TX
<b>Connector</b>	RJ-45 modular jack
<b>Monitor Display</b>	Waveform, bar graph and numeric data is monitored on the PC via a LAN port.
<b>Data Storage</b>	CF card (128 MB to 2 GB, writing speed 45x)
<b>Synchronous Operation</b>	Dedicated synchronous cable enables connection of up to 8 units in cascade for synchronized recording. While data is individually recorded in separate files in CF cards inserted into recorders, it is combined to a single file after transferred to the PC.
<b>Operating Temperature</b>	0 to 50°C
<b>Operating Humidity</b>	20 to 90% RH (Non-condensing)
<b>Vibration Resistance</b>	49.03 m/s <sup>2</sup> (5 G) (5 to 55 Hz) (When operating)
<b>Power Supply</b>	10 to 16 VDC, approx. 0.6 A (12 VDC) Power connector: RM12BRD-4PH (Hirose)
<b>Storage Temperature</b>	-10 to 60°C
<b>Operating Environment</b>	No dust and no induction noise from large-capacity motors, etc.
<b>Dimensions</b>	100 W x 50 H x 110 D mm (Excluding protrusions)
<b>Weight</b>	Approx. 500 g

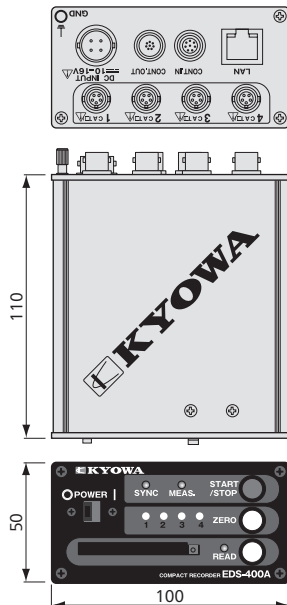
**Standard Accessories**

- DC power cable (P-76)
- Compact flash memory card (128 MB)
- DVD (Dynamic data acquisition software DCS-100A and instruction manual)
- Rubber feet

**Optional Accessories**

- Strain input conversion cable U-49 (30 cm)
- Voltage input cable U-50 (1.5 m)
- Synchronous cable N-79 (20 cm)
- AC adapter SA-10A-EDS (100 to 240 VAC) (For U.S.A.: UNI318-1215-EDS)
- Bridge connectors DB-120C-2R (2-wire)/DB-120C-3R (3-wire)
- Remote control unit RCU-04A
- Protect unit EDS-PMF
- Synchronous signal long-distance transmission unit (A05-2452)
- Data analysis software DAS-200A

**Dimensions**



**DCS-100A software for EDS-400A section**  
For details of DCS-100A, see page 4-3.

<b>Controllable Units</b>	8 (Max. 32)
<b>Interfaces</b>	LAN
<b>Data Storage</b>	Measured data is saved to CF card in the EDS or data folder in the PC in KS2 files.
<b>Channel Conditions</b>	Measuring channel, measuring mode (strain/ voltage), range, zero suppression ON/OFF, test ON/OFF, calibration coefficient, offset, unit, channel name, measuring range, rated capacity, rated output, numerical value display digits (Selection of arbitrary display items is possible.)
<b>Setting/Loading Parameters</b>	Loads parameters from EDS and sets the parameters in the EDS.
<b>Collecting Data</b>	Collects data saved in the CF card in the EDS via LAN or CF card in the PC.
<b>Erasing Data</b>	Erases data via LAN.
<b>Environmental Settings</b>	
<b>Hardware Configuration</b>	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.
<b>Communication Status</b>	Checked by reading the version of the EDS
<b>IP Address</b>	Settable, from the PC via LAN. It is saved in CF card.
<b>Measurement Conditions for Saving Data in CF Card</b>	
<b>Sampling Frequencies</b>	1 Hz to 100 k Hz (Depends on the number of measuring channels)
<b>Data File Size</b>	Max. 2 GB (Depends on the number of measuring channels)
<b>Measuring Modes</b>	Manual, analog trigger, and external trigger
<b>Manual Measurement</b>	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.
<b>Trigger Measurement</b>	Start/stop recording based upon specified trigger conditions.
<b>Trigger Conditions</b>	
<b>End Trigger</b>	Settable
<b>Delay Before and After Trigger</b>	Max. 2000 data points (Depends on the number of measuring channels)
<b>Trigger Channels</b>	1 host channel
<b>Trigger Level</b>	Sets in physical quantity.
<b>Trigger Slope</b>	Up, down or both
<b>Measurement Conditions for Saving Data in PC Hard Disk</b>	
<b>Sampling Frequencies</b>	1 Hz to 10 k Hz
<b>Data File Size</b>	Capacity of the hard disk
<b>Measuring Modes</b>	Manual, interval, and analog trigger
<b>Manual Measurement</b>	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.
<b>Interval Measurement</b>	Measurement is made automatically at preset intervals from the preset starting time.
<b>Analog Trigger Measurement</b>	Start/stop recording based upon specified trigger conditions.
<b>Trigger Conditions</b>	
<b>End Trigger</b>	Settable
<b>Delay Before and After Trigger</b>	Max. 32000 data points (Depends on the number of measuring channels)
<b>Trigger Channels</b>	1 host channel
<b>Trigger Level</b>	Sets in physical quantity.
<b>Trigger Slope</b>	Up, down or both

