Move into the future with reliable measurements

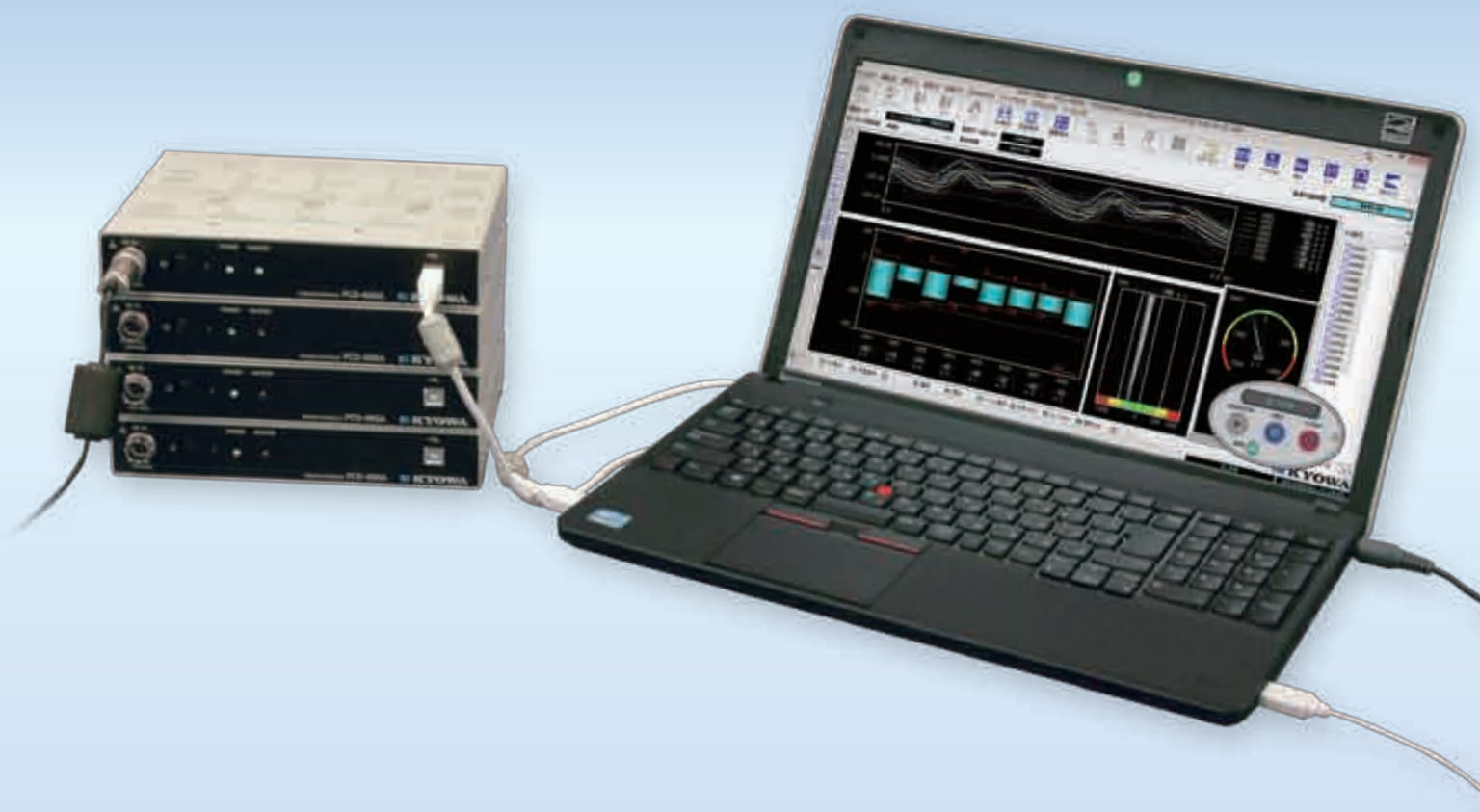
KYOWA

SENSOR INTERFACE

PCD-400A

Simple Configuration
Turns a PC into a Measuring Instrument

CE



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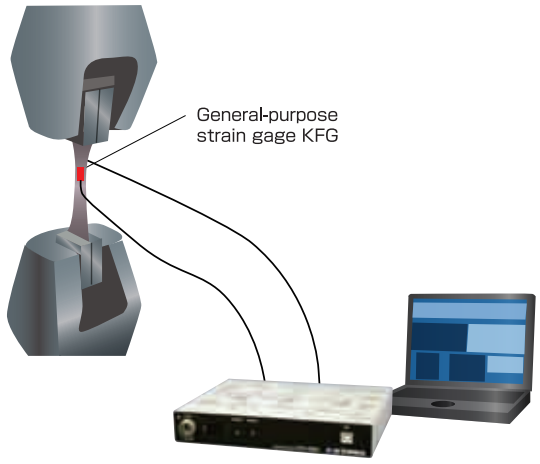
The Carrier Wave Type Measuring Instrument Allows for Compactness and Low Prices

- The stacked structure eliminats the need for synchronous cables
- Measuring instruments suitable for measuring the strain gage
- User-friendly measuring instrument with simple configuration
- Reasonable price and strong against noise

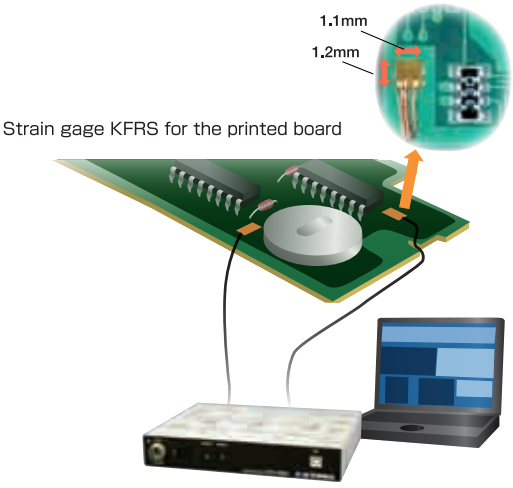
Can also be easily used for education, such as in universities, as well as with beginner users.

Connect a strain gage and a PC using a USB cable to start measurement

Tensile test of materials



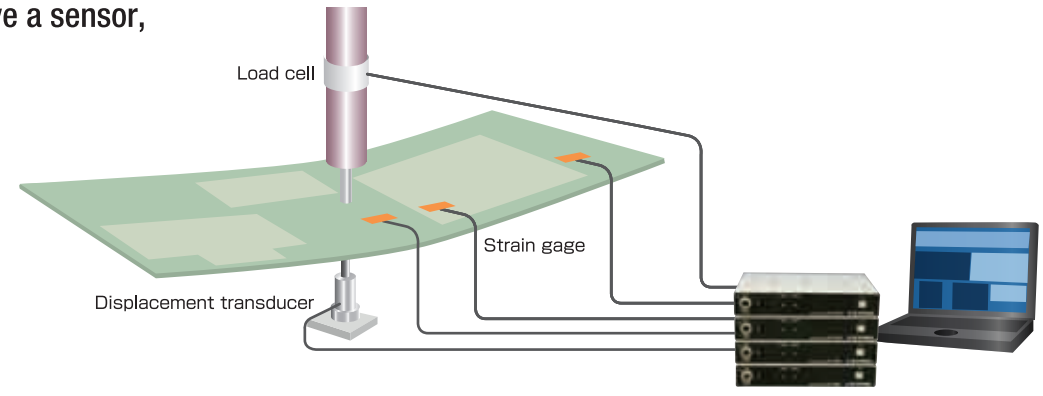
Stress measurement while mounting the printed board



Designed for users who want to start tests with ease

Since the configuration is simple, measurement can be easily started in any place if you have a sensor, a PC, and this product

Evaluation test of materials



Maximum Sampling Frequency of 10kHz
24-bit A-D Converter

Measurement can be started by simply connecting the PCD-400A and a PC

- You can easily start using this product by simply using a USB cable to connect it to a PC (Data acquisition software DCS-100A)

Compact and lightweight products smartly extended to a maximum of 16 channels

- Can be easily extended one after the other, from a minimum configuration of one unit for 4 channels, up to 4 units for 16 channels
- Smart wiring based on a stacked structure (using one USB cable and one power cable)

Strain gages can be directly connected to by using a built-in bridge circuit:

- A bridge box is not required even for quarter bridge system (This requires an input adaptor)
- Quarter bridge system, 2-/3-wire are switched using the software

A noise-resistant, carrier wave type amplifier

- Insulated between channels and between the input and output
  Strong against noise
- 24-bit high-resolution
- With a built-in low-pass filter

Various input adaptors


UI-10A

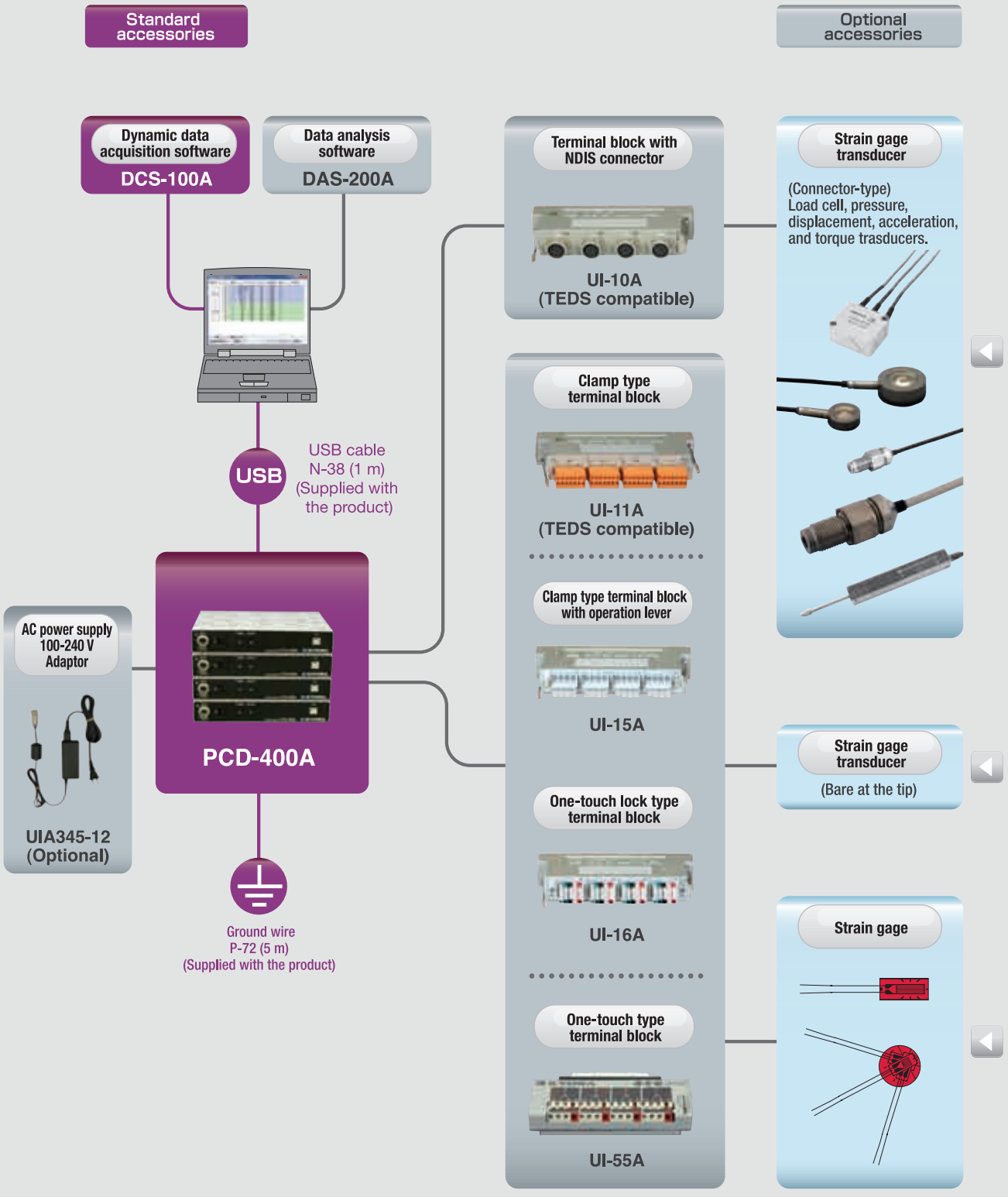

UI-11A


UI-15A


UI-16A


UI-55A

PCD-400A Simple Configuration Image



Options

Description	Model
AC adaptor	UIA345-12
USB cable (2 m)	N-39
DC power cable (11 to 16 VDC, 2 m)	P-76
Input cable (10 cm)	N-97
Connection connector set	ST-1A
Connection plate (maximum 4 plates)	CN-20

Description	Model
Input adaptors	
With NDIS connector (TEDS compatible)	UI-10A
Clamp type terminal block (TEDS compatible)	UI-11A
Clamp type terminal block with operation lever	UI-15A
One-touch lock type terminal block	UI-16A
One-touch type terminal block	UI-55A

PCD-400A Specifications

Model	PCD-400A
Applicable sensor	Strain gage and strain gage transducer
Number of input channels	4
Synchronous operation	A maximum of 4 units for 16 channels
Applicable gage resistance	Quarter bridge 2-wire system, 3-wire system: 120 Ω
	Half bridge system, Full bridge system: 120 to 1000 Ω
Input Connector	D-sub 37-pin connector
Bridge excitation	AC 2V_{rms}
Gage factor	Fixed at 2.00
Balance adjustment range	Resistance: Within ±2% (±10000 μm/m)
	Within 5000 pF
Balance adjustment type	Resistance: Pure electronic auto balance system
	Capacitance: CST method (automatic tracking)
Nonlinearity	Within ±0.1% FS
Range	200, 500, 1000, 2000, 5000, 10000,
	and 20000 μm/m – 7 steps
	Accuracy: Within ±0.5% FS
Frequency response range	DC to 200 Hz, within deviation ±10%
Sampling frequency	Maximum 10 kHz (Simultaneous 4-unit sampling
	for 16 channels at 10 kHz)
Low-pass filter	2nd Butterworth
	Cutoff frequency : 10, 30, 100 Hz,
	and flat – 4 steps
	Amplitude ratio at cutoff point : -3dB±1dB
	Attenuation : -12±1dB/oct.
AD converter	24-bit
Setting value retention	The range and balance adjustment value etc.
	are written to nonvolatile memory.
TEDS function	Reads the sensor TEDS information
	(Input adaptor: UI-10A and UI-11A only)
	Channel name writing
	(If the manufacturer's ID is Kyowa)

Interface	USB2.0 (Conforms to High-Speed USB standards.
	Can also be operated in a USB3.0 port.)
Stability	Temperature
	Zero point: Within ±0.2 μm/m/°C
	Sensitivity: Within ±0.05%/°C
	Time
	Zero point: Within ±1 μm/m/8h
	Sensitivity: Within ±0.3%/8h
Withstand voltage	250 VAC for 1 minute between input and chassis,
Operating temperature humidity range	0 to 40°C
	20 to 85% RH (Noncondensing)
Vibration resistance	±29.42m/s^2 (3G)
	5 to 200 Hz (12 cycles for each axis, 10 minutes/cycle)
Power supply	11 to 16 VDC
	Connector type: RM12BRD-4PH (Hirose)
Consumption current	0.7A or less (12 VDC)
External dimensions	210 (W) x 35 (H) x 157.5 (D) mm (excluding protrusions)
Weight	Approx. 700 g
EMC directive	EN61326-1 (Class A)
RoHS directive	EN50581

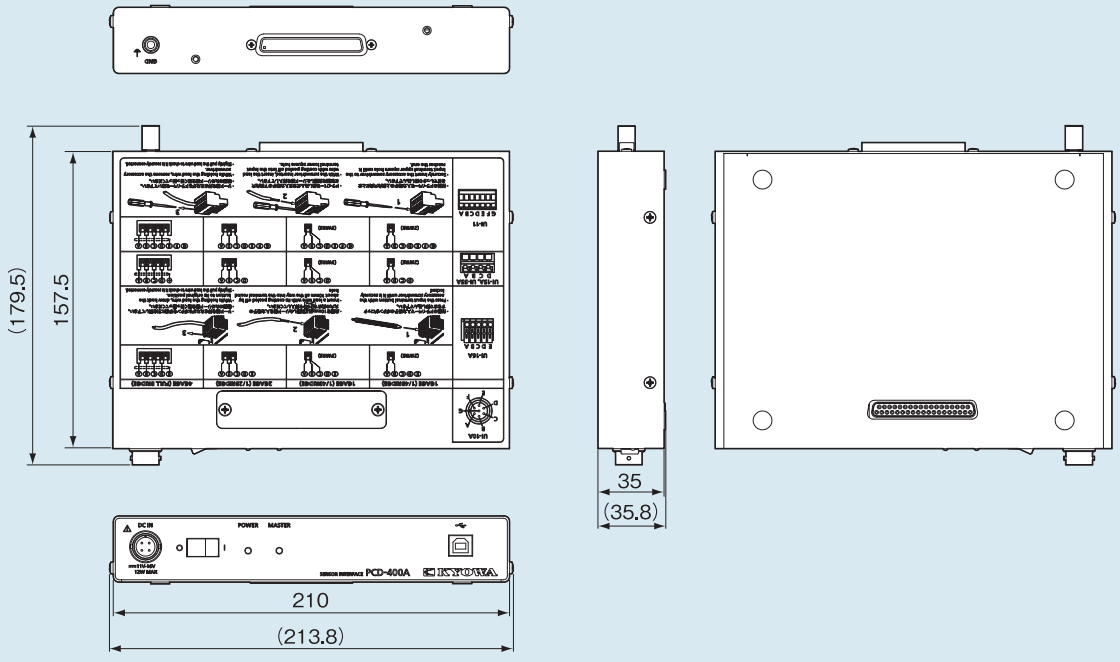
Standard accessories

USB cable N-38 (1 m)
Ground wire P-72 (5 m)
DVD (Dynamic data acquisition software DCS-100A)

Optional accessories

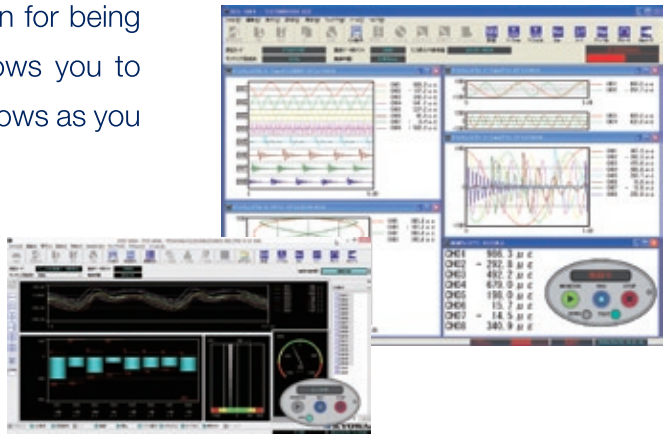
AC adaptor UIA345-12 (for 1 to 4 units)
USB cable N-39 (2 m)
DC power cable P-76 (11 to 16 VDC, 2 m)
Input cable N-97 (10 cm)
Connection connector set (ST-1A)
Connection plate (CN-20) (maximum 4 plates)
Input adaptors
- With NDI standard connector UI-10A (TEDS compatible)
- Clamp type terminal block UI-11A (TEDS compatible)
- Clamp type terminal block with operation lever UI-15A
- One-touch lock type terminal block UI-16A
- One-touch type terminal block UI-55A

Dimensions



DCS-100A Dynamic Data Acquisition Software

The DCS-100A software, which has a reputation for being easy to use, is a standard accessory. This allows you to simply arrange various graphs and numeric windows as you wish.



Setting of three steps for simple operation

Step1 Set channel conditions.

Step2 Set the measuring conditions.

Step3 Take a measurement.

DCS-100A specifications in PCD-400A

Number of measuring units	Maximum of 4 (maximum of 16 channels)
Interface	USB2.0 (Conforms to High-Speed USB standards. Can also be operated in a USB3.0 port.)
Data acquisition	Measurement data is saved on the PC hard disk (in KS2 files).
Channel conditions	Measurement ON/OFF, strain mode, range, low-pass filter, balance ON/OFF, calibration factor, offset, gage factor, unit, channel name, measurement range, number of decimals, rated capacity, rated output, upper value check, lower value check, offset zero ON/OFF (any display item selectable)
Sampling frequency	1 to 10 kHz (1/2/5 systems)
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.

Trigger conditions	
End trigger	Settings possible
Delay	For start/end, a maximum of 640,000 bits of data/ 1channel. * The amount of delay differs depending on the number of channels measured.
Trigger channel	Any 1 channel
Trigger level	Setting by physical quantity
Trigger slope	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
Repetition 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 unit
	Unit name settings possible on the PCD-400A
	Number of connected units readable from the PCD-400A
Automatic data file conversion	Automatic file conversion upon the termination of measurement (CSV, XLS, XLSX, and RPC Ⅲ formats)
Random unit settings	The user can register three available units at random.

Input Adaptors

An input adaptor can be selected and easily connected and disconnected according to the sensor type or cable specifications.

UI-10A (TEDS compatible)

With NDIS connector

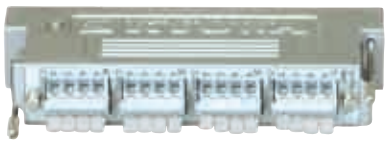
- Many of Kyowa's load cells, pressure transducers, acceleration transducers, and displacement transducers have the cable tip of a connector plug (NDIS). These sensors can therefore be connected with ease.

UI-11A (TEDS compatible)

Clamp type terminal block

UI-15A

Clamp type terminal block with operation lever



UI-16A

One-touch lock type terminal block

- Strain gages or transducers with the bare tip of a lead wire can be easily installed
- A built-in bridge circuit allows for direct connection of a strain gage. An external bridge box is not required in this case
- Optional connection cable N-97 is used when connecting the transducer of a connector plug

Connection cable N-97

UI-55A

One-touch type terminal block

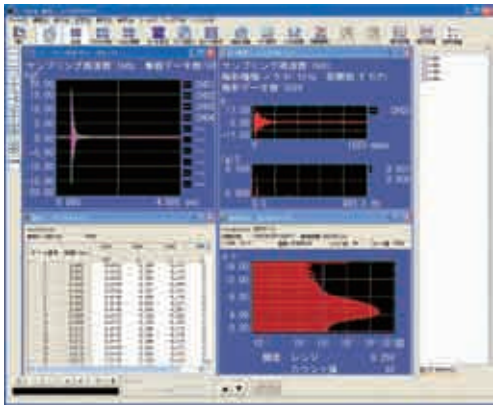
- Quarter bridge system, 2-/3-wire
  Compatible with half bridge system (2-gage system)
  Compatible with full bridge system (4-gage system)

DAS-200A Data Analysis Software

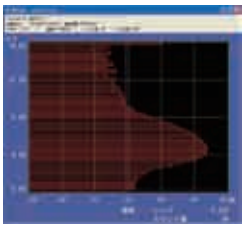
Reproduces and analyzes the acquired data
A maximum of eight data files can be displayed as graphs

The data analysis software DAS-200A brings out an additional function for reproducing and analyzing the acquired data. This software enables graph display, numeric display, and analyses of Kyowa standard data files (KS1 and KS2).

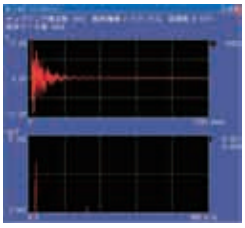
- Each screen of waveform graphs, FET analysis graphs, statistical calculation, header information, numeric value lists, and display conditions can be displayed for a single data file
- The acquired file can be split and converted into a CSV format-based file
- Statistical processing
- Arithmetic operation
- FFT analysis
- Frequency analysis
- Filter processing
- Differential/integral processing
- Graph display, as well as analysis condition file read/saving
- Reproduction function of acquired video
- Printer output



Whole screen



Frequency analysis



FFT analysis

Applicable measuring instruments

· EDS-400A	· EDX-100A
· EDX-200A	· EDX-10A series
· EDX-2000B	· EDX-3000A
· UCAM-550A	· NTB-500A
· PCD-400A	· PCD-300 series

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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.

JQA-0821
JQA-EM4824

Move into the future with reliable measurements

KYOWA

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