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SOFTWARE
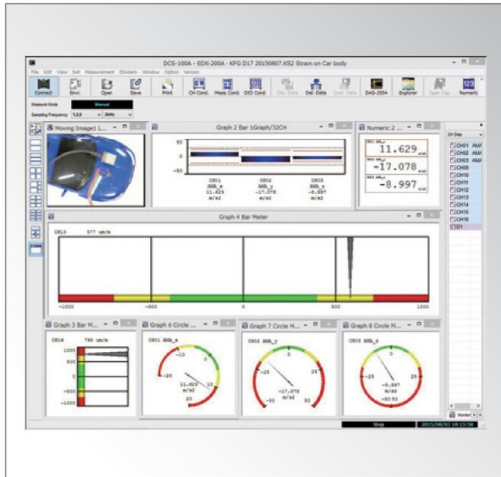
Software

DCS-100A

Dynamic Data Acquisition Software

Monitors measurement data with various graphs and numerical windows. Acquires data efficiently.

● The basic operation does not depend on the controlled measuring instrument, so even if the measuring instrument been changed, the DCS-100A is still user-friendly.

● Y-time, X-Y, bar graphs, circular meters, and numeric display are possible.

● Measuring condition setting, data acquisition, data collection, data reproduction and file conversion.
For analyzing the acquired data, an optional data analysis software DAS-200A is recommended.

● Acquires large capacity data by PC's hard disk.

● Collects data automatically.

● Easy operation with the toolbar, function keys and operation panel

● Converts Kyowa standard data file format (KS2) into CSV and Excel formats during data reproduction.

The software enables easy interactive setting of various conditions and facilitates efficient acquisition of required data by showing variables under measurement in graphs and numeric windows on the display.
Measuring instruments are CTRS-100 series, EDX-10 series, EDX-100A, EDX-200A, EDX-5000A, PCD-400A, PCD-430A, UCAM-550A, and NTB-500C.

Common Specifications

■ Operating Environment

OS	Windows® 8.1, Windows® 10
	English/Japanese, 32/64 bits support
	If 64-bit OS, operate in WOW64 (Windows 32-bit On Windows 64-bit) environment
CPU	Core i5 2 GHz or advanced
Memory	If 32-bit OS, 2 GB or more
	If 64-bit OS, 4 GB or more
Display	Resolution: 1024×768 pixels or more
* LAN Interface: 100 Base-TX or more	

■ Monitor Display

Y-time Graphs	Allows up to 16 channels of physical quantities to be graphed on Y axis with X axis for time.
	1 to 10 graphs per window
Y-time (All channels) Graphs	Allows all channels of physical quantities to be graphed on Y axis with X axis for time in the same color curves.
Y-time (DIV) Graphs	Allows up to 16 channels of physical quantities to be graphed on Y axis with X axis for time.
	Zero point of each channel is moved freely to a desired position on a division of Y axis.
X-Y Graphs	Variables of desired 8 channels each for both X axis and Y axis are graphed in free combination.
Bar Graphs	One bar graph has up to 32 channels and 1 to 4 graphs per window.
	Peak hold ON or OFF is possible. (Capable of displaying peak values.)
Circular Meters	Variable of 1 desired channel per circular meter
Bar Meters	Variable of 1 desired channel per horizontal or vertical bar meter
Numeric Windows	Shows numeric data of desired 1 or 16 channels or all channels. (Capable of displaying max. and min. values of every channel)
Over Input Indication	Capable of displaying the excessive channel values in red.
Graph Scale	Capable of displaying auto-scale and full scale values on the Y-time graph (Y axis), X-Y graph (X, Y axes) and bar graph (X, Y axes). The Y-time graph (Y axis) is able to change to 1 axis, 2 axes, or channel.
Display Color	Freely changeable graph by graph
Titles and Labels	Sets a desired title and labels for X and Y axes.
Number of Simultaneously Displayed Windows	
	32 numeric windows and 32 graph windows.
	64 in total. (Including reproduced data windows.)
	*However that the number of windows may be restricted by the CPU speed and memory of the PC.
Auxiliary Lines	Capable of displaying the desired auxiliary lines on the Y-time Graphs (X axis and Y axis), X-Y Graphs (X axis and Y axis), and Bar Graphs (X axis and Y axis). (Up to 4 auxiliary lines each for both X axis and Y axis.)
Comparative Data	Displays the comparative data (Previous KS2 format file) on the Y-time graphs, excluding the Y-time (All channels) graphs and Y-time (DIV) graphs, and X-Y graphs for comparing the monitor data.
	The size of the data file is maximum 10 MB.
	If the file size exceeds 10 MB, the DCS-100A displays the 10 MB data from its head.
Dual-display	Capable of moving the Numeric windows or Graph windows onto the sub display.

■ Channel Conditions & Measuring Conditions

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Setting Ranges	Applied recorder is set according to the specifications.
TEDS Information	Reading sensor's TEDS information and setting to channel conditions automatically (TEDS sensor only)
Saving and Loading Measurement Condition File	
	Capable of saving and loading the sensor information file (CSV format file) on the channel conditions.

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■Setting Environment

Data File Destinations	Measured data is saved in storage media of the controlled recorder. Also possible is direct saving in the hard disk of PC, while it is limited by the sampling frequency and the number of measuring channels.
Automatic Transfer of Data Files	Data files are automatically transferred to the hard disk of PC upon completion of recording.
Automatic Conversion	Data files are automatically converted to format of CSV, XLS, XLSX, or RPCⅢ, upon completion of recording.
Optional Units	Registers up to 3 user-defined units.
PAUSE Function While Recording Data	PAUSE function ON or OFF is possible.

■Data Files

Saving File Formats	Kyowa standard file format (KS2)
File Coupling	Data files saved in controlled recorders operated in synchronization are combined to a single data file at the time of collection by the PC.

■Data Reproduction

Y-time Graphs	Allows up to 16 channels of physical quantities to be graphed on Y axis with X axis for time. 1 to 10 graphs per window.
Y-time (DIV) Graphs	Allows up to 16 channels of physical quantities to be graphed on Y axis with X axis for time. Zero point of each channel is moved freely to a desired position on a division of Y axis.
X-Y Graphs	Variables of desired 8 channels each for both X axis and Y axis are graphed in free combination.
Numeric Windows	Shows numeric data in a list.
Graph Scale	Capable of displaying auto-scale and full scale values on the Y-time graph (Y axis), X-Y graph (X, Y axes) and bar graph (Y axis). The Y-time graph (Y axis) is able to change to 1 axis, 2 axes, or channel.
Display Color	Freely changeable graph by graph
Titles and Labels	Sets a desired title and labels for X and Y axes.
Number of Simultaneously Displayed Windows	32 numeric windows and 32 graph windows. 64 in total. (Including reproduced data windows.) *However that the number of windows may be restricted by the CPU speed and memory of the PC.
Size of Data Files Available on a Single Screen	Size of the data file 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 is displayed by setting the range.
File Conversion	Desired range or data of a desired channel is extracted and converted to CSV, XLS, XLSX, or RPCⅢ format file.
Auxiliary Lines	Capable of displaying the desired auxiliary lines on the Y-time Graphs (X axis and Y axis), X-Y Graphs (X axis and Y axis), and Bar Graphs (X axis and Y axis). (Up to 4 auxiliary lines each for both X axis and Y axis.)

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Max., Min., and Average	Capable of displaying the maximum value/minimum value/average value within the window in the Y-time Graphs. (Capable of displaying the maximum value/minimum value/average value when the number of channels is 1 or 2.)
Dual-display	Capable of moving the Numeric windows or Graph windows onto the sub display.

●Meters

Displays an arbitrary 1 channel data on bar meter or circular meter while monitoring data. Desired portions are displayed in desired color for easy discrimination.
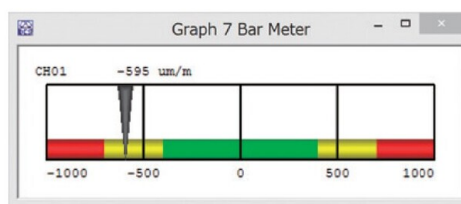
Horizontal bar meter
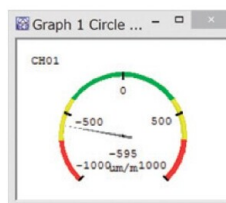
Circular meter normal display

Basic Operation Window

Menu bar — Each menu option provides a pulldown menu and changes depending on software operating status.

Measuring conditions — Measuring modes, sampling frequencies, etc.

Function keys — Enables to have any desired functions assigned for easy access.

Toolbar — Provides icons of frequently used options for easy selection.

List of channels — Easy selection of channels to be displayed on the graph window. To select, drag desired channels to the graph window.
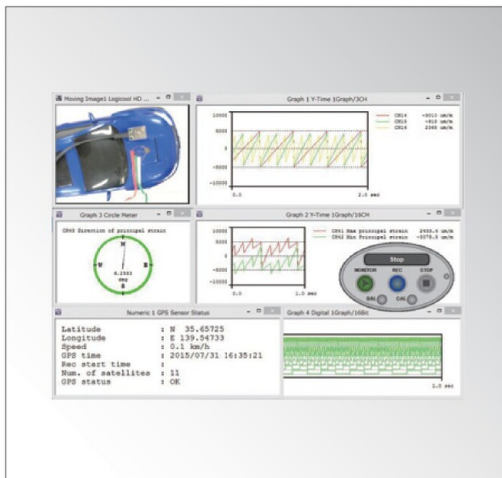
Data window — Shows numeric windows and various types of graph windows in free combination.

Status bar — Indicates the present status such as interval or trigger measurement, date, and time.

Operating panel — Provides MONITOR, REC/PAUSE, STOP, BAL and CAL buttons.

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SOFTWARE

Software

DCS-100A Optional Software

Optional software provides various additional functions.

Simultaneous Acquisition of Video and Numeric Data/Arithmetic Operations/FFT Analysis Optional Software
DCS-101A
- ●Records video using a webcam
- ●Records video as memo while measuring
- ●Real-time processing of the basic arithmetic calculations
- ●Real-time monitoring of the FFT analysis

GPS Data Acquisition Optional Software
DCS-104A
- ●Monitors and acquires the positioning data, received from GPS receivers which is connected to the PC, simultaneously with measurement data.
- ●Saves the acquired GPS data as a separate file having the same names as the measurement data. (Extension: NMEA)

CANdb File Read Optional Software
DCS-105A
- ●Sets CAN conditions of DCS-100A by reading CANdb file.

1000-channel for UCAM-550A Optional Software
DCS-106A
- ●Measures 1000-channel data.

Optional software chart

Software \ Instruments	EDX-5000A	EDX-100A	EDX-200A	EDX-10 Series	PCD-400A/430A	UCAM-550A	NTB-500C	CTRS-100 Series
DCS-100A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DCS-101A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DCS-104A		Yes	Yes	Yes	Yes			
DCS-105A	Yes	Yes	Yes					Yes
DCS-106A						Yes		

●DCS-101A Specifications

■Operating Environment
OS	Windows® 8.1, Windows® 10
	English/Japanese, 32/64 bits support
	If 64-bit OS, operate in WOW64 (Windows 32-bit On Windows 64-bit) environment.
CPU	Core i5 2 GHz or advanced
	* Core i5 3 GHz or advanced CPU is required for recording video, performing arithmetic operations, and FFT analysis simultaneously.
Memory	If 32-bit OS, 2 GB or more
	If 64-bit OS, 4 GB or more
Display	Resolution: 1024×768 pixels or more

■Video Data Acquisition
Applicable Cameras	DirectX-compatible web cameras (A web camera which the OS recognizes as an imaging device)
Number of Applicable Cameras	1
Resolution	640×480 pixels or more
Frame Rate	Max. 30 frames per second
Saving File Formats	AVI (Audio-Video Interleave)
Number of Video Capture Windows	1
Operations	Video data monitoring/recording in linkage with measuring operation
	Zooming

*Resolution/Size and frame rate varies with the camera.

■Measuring Conditions for Video Acquisition
Applicable Instruments	PCD-400A/430A, EDX-10B, EDX-100A, EDX-200A, UCAM-550A, NTB-500C, EDX-5000A, CTRS-100 series
Measuring Modes	Saved in the PC:
	Manual, manual (Data points preset)
	Saved in the measuring instrument
	Manual, manual (Data points preset), trigger

*Practical measuring conditions, which can be set, are limited by the measuring instruments.

■Video Playback
File Formats	AVI
Number of Playback Files	1
Number of Playback Windows	1
Operations	Play, stop, pause, frame-by-frame forward, backward, zoom, change of reproduce speed
Synchronized Cursors	Allows video and graphs to be reproduced with the synchronized cursors

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■**Arithmetic Operations**

Number of Calculation Channels	Max. 32
	*Up to 64 (EDX-5000A)
Calculation Channel Conditions	
	Calculation ON or OFF, arithmetic expression
	(within 200 characters), unit, number of
	numeric digits on display, channel name
	(within 40 characters)
Printout	Preview and printout of calculation channel
	conditions possible
Reading & Saving	Calculated channel conditions are read and
	saved as a file of calculated channel condition
	file. Matrix conditions are read and saved as a
	condition file (CSV format)
Operations	Calculating channel data is monitored together
	with measuring data and saved in the same
	data file.

■**Arithmetic Expression**

Applicable Channels	Measuring channels, calculation channels
Operators and Constants	
	＋,－,＊,／,＾《power》,PI[π],( )[parentheses]

Functions

SQR	Square root	LOG	LOG function (Common logarithm)
ABS	Absolute value	LN	LN function (Natural logarithm)
SIN	SIN function (Sine, angle: Unit radian)	EXP	EXP function (Exponential)
COS	COS function (Cosine, angle: Unit radian)	HMX	Max. principal strain
TAN	TAN function (Tangent, angle: Unit radian)	HMN	Min. principal strain
ASIN	ASIN function (Arcsine, angle: Unit radian)	HSM	Max. shearing strain
ACOS	ACOS function (Arccosine, angle: Unit radian)	SMX	Max. principal stress
ATAN	ATAN function (Arctangent, angle: Unit radian)	SMN	Min. principal stress
DSIN	ASIN function (Arcsine, angle: Unit degree)	SSM	Max. shearing stress
DCOS	ACOS function (Arcosine, angle: Unit degree)	DEG	Principal strain direction
DTAN	ATAN function (Arctangent, angle: Unit degree)		

■**Measuring Conditions for Arithmetic Operations**

Applicable Instruments	EDX-100A, EDX-200A, EDX-10B, UCAM-550A,
	NTB-500C, PCD-400A/430A, EDX-5000A,
	CTRS-100 series
Data Save Folders	PC data file folders
	*Saves in the EDX-5000A data drive.
Measuring Modes	Manual, manual (Data points preset)
	interval, and analog trigger
Sampling Frequencies	Max. 10 kHz
*Measuring conditions differ with measuring instruments.	
Others	Arithmetic operations are not available
	when measuring the CAN data with the
	EDX-100A/EDX-200A.

■**FFT Analysis**

Analysis Types	Linear spectrum, power spectrum,
	cross spectrum, auto-correlation,
	and cross-correlation
Number of Analytical Data	256, 512, 1024, 2048, 4096, and 8192
Window Functions	OFF, Hamming, Hanning, Fejer, Blackman,
	and Gaussian
Number of Analytical Result Windows	Max. 8

Image Display of Analytical Results

Types	Graph
Linear Spectrum	Amplitude (Linear or log), phase
Power Spectrum	Amplitude (Linear or log)
Cross Spectrum	Amplitude (Linear or log), phase
Auto-correlation	Correlation
Cross-correlation	Correlation

Saving	The analysis results are saved as DAS-200A
	FFT analysis files (CSV format).
Applicable Instruments	EDX-100A, EDX-200A, EDX-10B, NTB-500C,
	PCD-400A/430A, EDX-5000A, CTRS-100 series
*Measuring conditions differ with measuring instruments.	

●DCS-104A Specifications

■**Operating Environment**

OS	Windows® 8.1, Windows® 10
	English/Japanese, 32/64 bits support
	If 64-bit OS, operate in WOW64 (Windows 32-bit
	On Windows 64-bit) environment.
CPU	Core i5 2 GHz or advanced
Memory	If 32-bit OS, 2 GB or more
	If 64-bit OS, 4 GB or more
Display	Resolution: 1024×768 pixels or more

■**GPS Data Acquisition**

GPS Data Display	During monitoring and acquisition,
	arbitrary selection of latitude, longitude,
	direction of movement, speed, reception status,
	and number of received satellites for display is
	possible.
GPS Data File Formats	NMEA-0183 (Extension: NMEA)
	In the same folder as the acquisition data
	KS2 files, these are saved as a separate file
	with the same name as the KS2 file.

■**Applicable GPS Receivers**

Interface	RS-232C or USB connection (If USB connection,
	then a USB-RS port converter driver enables
	equivalent RS-232C connection)
	If the PC does not have a COM port, then use a
	RS-USB conversation adapter.
Output Format	NMEA-0183
Geographical Coordinates	WGS-84
Connected Units	1
Models Confirmed to Operate	HOLUX Comet USB/4
	SanJose Antares 7/RS

■**Measuring Conditions**

Applicable Instruments	PCD-400A/430A, EDX-10B, EDX-100A,
	EDX-200A
Measuring Modes	Saved in the PC:
	Manual, manual (Data points preset)
	Saved in the measuring instrument:
	Manual, manual (Data points preset), trigger
Sampling Frequencies	Max. 10 kHz

●DCS-105A Specifications

■**Operating Environment**

OS	Windows® 8.1, Windows® 10
	English/Japanese, 32/64 bits support
	If 64-bit OS, operate in WOW64 (Windows 32-bit
	On Windows 64-bit) environment.
CPU	Core i5 2 GHz or advanced
Memory	If 32-bit OS, 2 GB or more
	If 64-bit OS, 4 GB or more
Display	Resolution: 1024×768 pixels or more

■**LOADING CANdb FILE**

	Loads the CANdb file and sets the DCS-100A CAN conditions.
	Number of messages that can be load: 2048
	(Only CTRS-CAG010A supports CAN FD)
Target Measuring Instruments	
	EDX-100A, EDX-200A, EDX-5000A, CTRS-100 series
Target Conditioner Card	CAN-41A
Target Optional Card	ECAN-40A (optional card for the EDX-200A)
	EGPC-40A (optional card for the EDX-200A)
	EGPC-50A (GPS / Multi channel CAN Module)
Expansion Unit	CTRS-CAG010A (CAN unit)

●DCS-106A Specifications

Applicable Instruments	UCAM-550A
OS	Windows® 8.1, Windows® 10
	English/Japanese, 32/64 bits support
	If 64-bit OS, operate in WOW64 (Windows 32-bit
	On Windows 64-bit) environment.
CPU	Core i5 2.6 GHz or advanced
Memory	If 32-bit OS, 2 GB or more
	If 64-bit OS, 4 GB or more
Display	Resolution: 1024×768 pixels or more
Number of Acquisition Channels	
	Enables UCAM-550A (20 units) to perform
	measurement in 1000 channels.

Software

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