

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 EDS-400A, EDX-10 series, EDX-100A, EDX-200A, EDX-5000A, PCD-400A, PCD-430A, UCAM-550A, and NTB-500A.

Common specifications

■ Operating Environment	
OS	Windows Vista®, Windows® 7, Windows® 8, 8.1 or Windows® 10, English/Japanese 32, 64 bits support
CPU	Core2Duo 2 GHz or advanced
Memory	If 32-bit OS, 2 GB or more If 64-bit OS, 4 GB or more
Display	1024×768 pixels 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 (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.
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	
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.



■ 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.)
Max., Min., and Average	Capable of displaying the maximum value/minimum value/average value within the window on 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.
■ 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.

PCD-400A/430A control specifications See page 3-78

UCAM-550A control specifications See page 3-33

NTB-500A control specifications See page 3-37

EDS-400A control specifications See page 3-83

EDX-100A control specifications See page 3-63

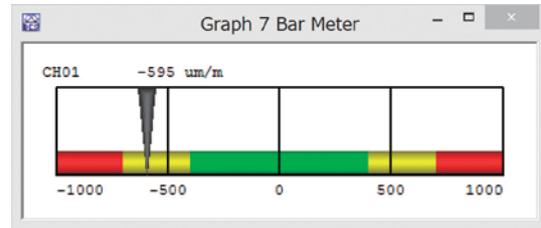
EDX-200A control specifications See page 3-55

EDX-5000A control specifications See page 3-68

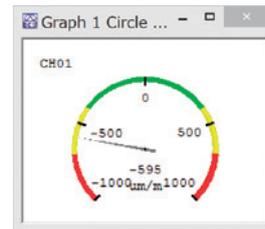
EDX-10 Series control specifications See page 3-49

● 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

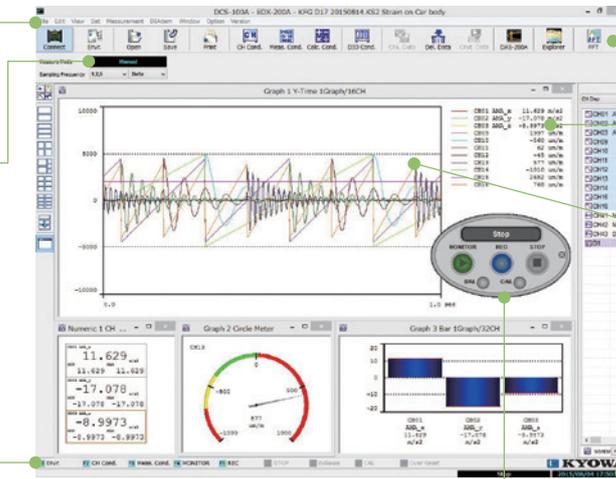
Each menu option provides a pulldown menu and changes depending on software operating status.

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.

DCS-100A Optional Software



Optional software is added and desired functions are realized.

Simultaneous Acquisition of Video and Numeric Data/Arithmetic Operations/FFT Analysis Optional Software

DCS-101A

- Acquires the video and physical quantities simultaneously.
- 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, simultaneously with measurement data.
- Saves the acquired GPS data as a separate file having the same names as the measurement data. (Extension: NMEA)
- Applicable measuring instruments: EDS-400A, EDX-100A, EDX-200A, PCD-400A/430A

CANdb File Read Optional Software

DCS-105A

- Sets CAN conditions of DCS-100A by reading CANdb file.
- Applicable conditioner cards: CAN-41A
- Applicable card for optional slot: ECAN-40A, EGPC-40A, EGPC-50A

1000-channel for UCAM-550A

Optional Software

DCS-106A

- Applicable measuring instruments: UCAM-550A
- Measures 1000-channel data.

Optional software chart

Software	Instrument EDX-5000A	EDX-100A	EDX-200A	EDX-10 Series	PCD-400A/430A	EDS-400A	UCAM-550A	NTB-500A
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	Yes		
DCS-105A	Yes	Yes	Yes					
DCS-106A							Yes	

DCS-101A specifications

■ Operating Environment	
OS	Windows Vista®, Windows® 7, Windows® 8, 8.1 or Windows® 10
	English/Japanese, 32, 64 bits support
CPU	Core2Duo 2 GHz or advanced * Core2Duo 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	1024x768 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	640x480 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 and frame rate depend on an applied camera.
■ Measuring Conditions for Video Acquisition	
Applicable Instruments	EDS-400A, PCD-400A/430A, EDX-10B, EDX-100A, EDX-200A, UCAM-550A, NTB-500A and EDX-5000A
Measuring Modes	Saved in the PC: Manual, manual (Data points preset) Saved in the measuring instrument: Manual, manual (Data points preset), trigger
■ 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
■ 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.



Software



DCS-104A specifications

Arithmetic Expression													
Applicable Channels	Measuring channels, calculation channels												
Operators and Constants													
+, -, *, /, ^ (power), Pi [π], () [parentheses]													
Function													
SQR	Square root	LOG	Common logarithm										
ABS	Absolute value	LN	Natural logarithm										
SIN	Sine	EXP	Exponent										
COS	Cosine	HMX	Max. principal strain										
TAN	Tangent	HMN	Min. principal strain										
ASIN	Arc sine (Return value: Radian)	HSM	Max. shearing strain										
ACOS	Arc cosine (Return value: Radian)	SMX	Max. principal stress										
ATAN	Arc tangent (Return value: Radian)	SMN	Min. principal stress										
DSIN	Arc sine (Return value: Angle)	SSM	Max. shearing stress										
DCOS	Arc cosine (Return value: Angle)	DEG	Principal strain direction										
DTAN	Arc tangent (Return value: Angle)												
Measuring Conditions for Arithmetic Operations													
Applicable Instruments	EDX-100A, EDX-200A, EDX-10B, EDS-400A, UCAM-550A, NTB-500A, PCD-400A/430A, EDX-5000A												
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													
	<table border="1"> <thead> <tr> <th>Types</th> <th>Graph</th> </tr> </thead> <tbody> <tr> <td>Linear Spectrum</td> <td>Amplitude (Linear or log), phase</td> </tr> <tr> <td>Power Spectrum</td> <td>Amplitude (Linear or log)</td> </tr> <tr> <td>Cross Spectrum</td> <td>Amplitude (Linear or log), phase</td> </tr> <tr> <td>Auto-correlation</td> <td>Correlation</td> </tr> <tr> <td>Cross-correlation</td> <td>Correlation</td> </tr> </tbody> </table>	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
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, EDS-400A, NTB-500A, PCD-400A/430A, EDX-5000A												
*Measuring conditions differ with measuring instruments.													

Operating Environment	
OS	Windows Vista®, Windows® 7, Windows® 8, 8.1 or Windows® 10, English/Japanese 32, 64 bits support
CPU	Core2Duo 2 GHz or advanced
Memory	If 32-bit OS, 2 GB or more If 64-bit OS, 4 GB or more
Display	1024x768 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/3XHL SanJose Antares 48USB/UBX5
Measuring Conditions	
Applicable Instruments	PCD-400A/430A, EDS-400A, 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
*Measuring conditions differ with measuring instruments.	

DCS-105A specifications

Operating Environment	
OS	Windows Vista®, Windows® 7, Windows® 8, 8.1 or Windows® 10, English/Japanese 32, 64 bits support
CPU	Core2Duo 2 GHz or advanced
Memory	If 32-bit OS, 2 GB or more If 64-bit OS, 4 GB or more
Display	1024x768 pixels or more
CANdb File Read	Sets CAN condition of DCS-100A by reading CANdb file.
Applicable Instruments	EDX-100A, EDX-200A, EDX-5000A
Applicable Conditioner Cards	CAN-41A
Applicable Card for Optional Slot	ECAN-40A (EDX-200A optional card) EGPC-40A (EDX-200A optional card) EGPC-50A (GPS/Multi-channel CAN Module)

DCS-106A specifications

Applicable Instruments	UCAM-550A
OS	Windows Vista®, Windows® 7, Windows® 8, 8.1 or Windows® 10, English/Japanese 32, 64 bits support
CPU	Intel 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	1024x768 pixels or more
Number of Acquisition Channels	Enables UCAM-550A (20 units) to perform measurement in 1000 channels.