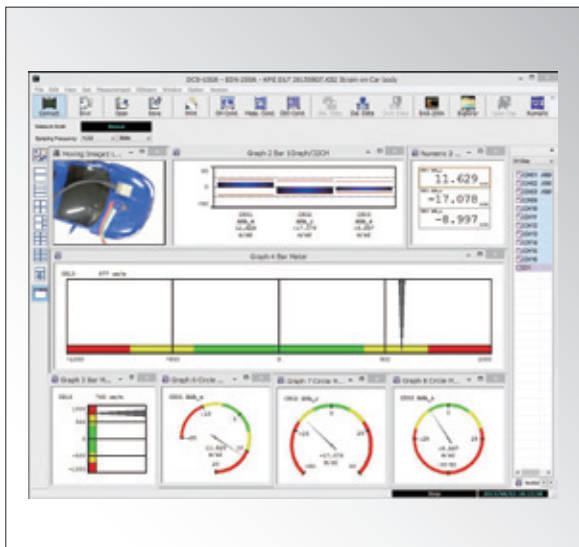


DCS-100A

Dynamic Data Acquisition Software



To monitor measurement data with various graph and numerical windows To realize efficient data acquisition

- The basic operating method does not depend on the controlled measuring instrument, so even if the measuring instrument been changed, it still user-friendly.
- Y-time, X-Y, bar graphs, circular meters, and numeric display are possible.
- Measuring condition setting, data acquisition, data collection, data acquisition and file conversion.
For analyzing the acquisition data, an optional data analysis software DAS-200A is recommended.
- Large capacity data acquisition by computer's hard disk is available
- Automatic data collection is possible.
- Easy operation with the toolbar, function keys and operation panel
- During data reproduction, Allows Kyowa standard data format (KS2) to be converted to CSV and Excel formats.

DCS-100A is a dynamic data acquisition software developed to make Kyowa measuring instruments even more powerful. The software enables easy interactive setting of various conditions and facilitates efficient acquisition of required data by showing variables under measurement in varied graph and numeric windows on the display.

Measuring instruments to be controlled are the Compact Recorder EDS-400A, Compact Recording System EDX-10 Series, Universal Recorders EDX-100A, EDX-200A and Memory Recorder/Analyzer EDX-5000A, Sensor Interface PCD-400A/430A, High-speed Data Logger UCAM-550A and Medium Speed Network Terminal Box NTB-500A.

Common specifications

■ Operating Environment

OS Windows® Vista®, 7, 8, 8.1, or 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

Interface 100BASE-TX or more, USB2.0

(Depending on the measurement device being controlled)

■ 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 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 or 2 axes and CH.

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.

Note: 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.



■ Setting Channel Conditions & Measuring Conditions	
Channel Conditions & Measuring Conditions	
	Applied recorder is set according to the specifications.
TEDS Information	Reading sensor's TEDS information and setting to channel conditions automatically
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 Window	Shows numeric data in a list.
Graph Scale	Capable of displaying auto-scale value and full-scale value on the Y-time graphs (Y axis), and X-Y graphs (X axis and Y axis). The Y-time graphs (Y axis) is able to change 1-axis and CH.
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 graph and numeric windows in monitor measurement. Note : However that the maximum number of windows may not be available depending on 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 line 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 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 3-77
UCAM-550A control specifications	See page 3-31
NTB-500A control specifications	See page 3-35
EDS-400A control specifications	See page 3-85
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

Basic Operation Display

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.

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

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

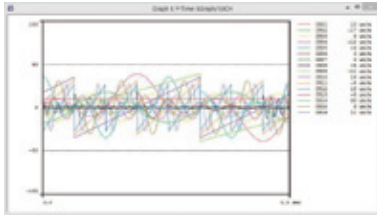


● Measure Operation Panel

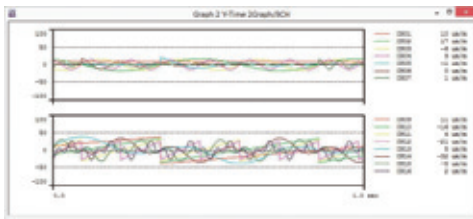
Frequently used functions such as monitor or data-acquisition start, stop and balance are operated easily by a big button. When it is necessary to set channel and measurement conditions, operation from monitor to acquisition is easy just by the panel.



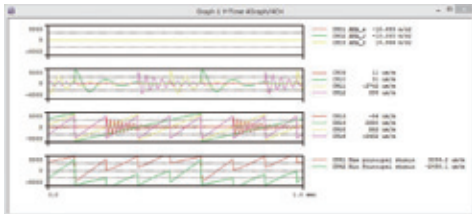
● Graphs



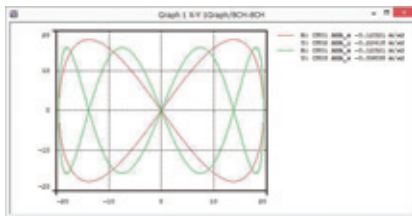
Y-time graphs [1 graph /16 channels]



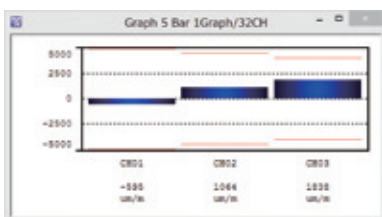
Y-time graphs [2 graphs - 8 channels]



Y-time graphs [4 graphs - 4 channels]



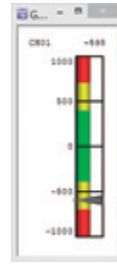
X-Y graphs



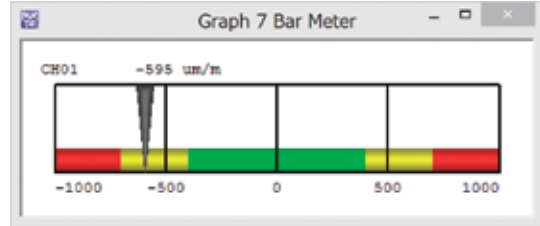
Bar Graphs

● Circular Meters, Bar Meters

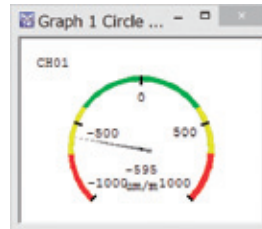
With both bar meters and circular meters, desired portions are displayed in desired color for easy discrimination.



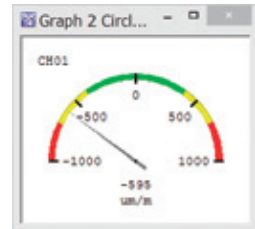
Vertical Bar Meter



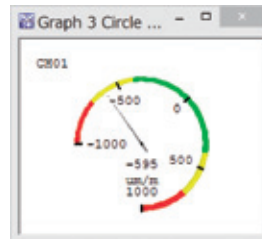
Horizontal Bar Meter



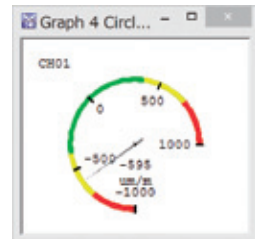
Normal Display



Semi-circular Display



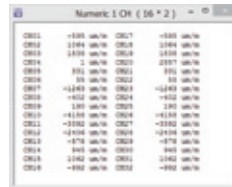
45°-turn Display



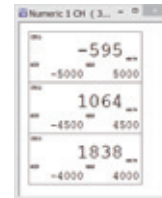
-45°-turn Display

● Numeric Windows

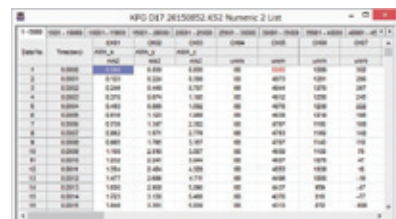
Shows numeric data of desired 1 or 16 channels or all channels.



All Channel Data



Numeric data list



Reproduced Data



DCS-100A Optional Software



Optional software supporting 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	Yes
DCS-101A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DCS-104A	Yes	Yes	Yes	Yes	Yes	Yes			
DCS-105A	Yes	Yes	Yes						
DCS-106A							Yes		

Optional software is added and desired functions are realized.

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

DCS-101A

- Simultaneous acquisition of video and physical quantities
- Real-time processing of the basic arithmetic calculations
- Real-time monitoring of the FFT analysis

GPS Data Acquisition Optional Software

DCS-104A

- Monitoring and acquisition of positioning data received from GPS receivers simultaneous with measurement data is possible.
- Acquisition GPS data is saved as a separate file with the same names as the measurement data (Extension: NMEA)
- Applicable measuring instruments are EDS-400A, EDX-100A, EDX-200A, PCD-400A/430A, and EDX-5000A

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

1000-channel for UCAM-550A Optional Software

DCS-106A

- Enables UCAM-550A to perform measurement in 1000 channels.

■ Main functions added by software options

Optional software	DCS-101A	DCS-104A	DCS-105A	DCS-106A
Video recording	30fps		<ul style="list-style-type: none"> · Sets CAN conditions of DCS-100A by reading CANdb files. · Applicable conditioner cards: CAN-41A · Applicable cards for optional slot: ECAN-40A, EGPC-40A 	<ul style="list-style-type: none"> · Enables to perform measurement from 301 to 1000 channels
Video playback	Yes			
Arithmetic operations in real time	Yes			
FFT analysis	Yes			
Linear spectrum	Yes			
Power spectrum	Yes			
Cross spectrum	Yes			
Auto-correlation	Yes			
Cross-correlation	Yes			
Filtering				
Digital filters				
Characteristics				
HPF & LPF				
Differentiation & integration				
Moving averaging				
GPS data acquisition		Yes		
CANdb file read			Yes	
1000-channel measurement				Yes



DCS-101A specifications

Operating Environment	
Applicable Instruments	EDS-400A, PCD-400A/430A, EDX-10B, EDX-100A, EDX-200A, EDX-5000A, UCAM-550A, and NTB-500A
Note: Measuring conditions differ with measuring instruments	
OS	Windows® Vista®, 7, 8, 8.1, or 10, English/Japanese 32, 64 bits support
CPU	Core2Duo 2 GHz or advanced * Core2Duo 3 GHz or advanced CPU is required for recording video and performing arithmetic operations 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, and zooming
Note: Resolution and frame rate depend on an applied camera.	

Measuring Conditions for Video Acquisition	
Data File Destinations	PC or measuring instrument
Measuring Modes	Manual, manual (Data points preset), or trigger. Note: Trigger mode available only if data is saved in the measuring instrument.

Video Playback	
File Formats	AVI
Number of Playback Files	1
Number of Playback Windows	1
Operation	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
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]			
Function	Square root		
Function	LOG		
ABS	Absolute value	LN	Common logarithm
SIN	Sine	EXP	Natural logarithm
COS	Cosine	HMX	Exponent
TAN	Tangent	HMN	Max. principal strain
ASIN	Arc sine (Return value: Radian)	HSM	Min. principal strain
ACOS	Arc cosine (Return value: Radian)	SMX	Max. shearing strain
ATAN	Arc tangent (Return value: Radian)	SMN	Max. principal stress
DSIN	Arc sine (Return value: Angle)	SSM	Min. principal stress
DCOS	Arc cosine (Return value: Angle)	DEG	Max. shearing stress
DTAN	Arc tangent (Return value: Angle)		Principal strain direction

Measuring Conditions for Arithmetic Operations	
Data Save Folders	PC data file folders
Measuring Modes	Manual, manual (Data points preset) interval, and analog trigger
Sampling Frequencies	Max. 10 kHz

FFT Analysis	
Analysis Types	Linear spectrum, power spectrum, cross spectrum, autocorrelation, and cross correlation
Number of Analytical Data	256, 512, 1024, 2048, 4096, and 8192
Window Functions	OFF, Hamming, Hann, Fejer, Blackman, and Gaussian
Number of Analytical Result Windows	Max. 8
Image Display of Analytical Results	
Linear Spectrum	Amplitude (Linear or log), phase
Power Spectrum	Amplitude (Linear or log)
Cross Spectrum	Amplitude (Linear or log), phase
Autocorrelation	Correlation
Cross Correlation	Correlation
Saving	The analysis results are saved as FFT analysis files (CSV format).
Applicable Instruments	EDS-400A, PCD-400A/430A, EDX-10B, EDX-100A, EDX-200A, EDX-5000A, and NTB-500A
Note: Measuring conditions differ with measuring instruments	

DCS-104A specifications

Operating Environment	
OS	Windows® Vista®, 7, 8, 8.1, or 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-100A, EDX-200A, EDX-5000A, EDX-10B
Data File Destinations	PC data file save folder
Measuring Modes	Manual, manual (Data points preset), or trigger. Note: Trigger mode available only if data is saved in the measuring instrument.
Note: Measuring conditions differ with measuring instruments	



●DCS-105A specifications

■Operating Environment	
OS	Windows® Vista®, 7, 8, 8.1, or 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
CANdb File Read	Sets CAN condition of DCS-100A by reading CANdb file
Applicable Instruments	EDX-100A, EDX-200A, and EDX-5000A
Applicable Conditioner Cards	CAN-41A
Applicable Card for Optional Slot	ECAN-40A, EGPC-40A (EDX-200A only)

●DCS-106A specifications

OS	Windows® Vista®, 7, 8, 8.1, or 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	1024×768 pixels or more
Number of Acquisition Channels	Enables UCAM-550A (20 units) to perform measurement in 1000 channels
Applicable Instruments	UCAM-550A

