



Quality and reliability is our tradition

KYORITSU

**POWER METER SERIES
KEW 6310**



NEW ARRIVAL!! POWER QUALITY ANALYZER

TO CONTROL COMPLETELY POWER QUALITY AND POWER CONSUMPTION (ENERGY)!

TRUERMS

- 12 kinds of Power Measurements for Power Control and Applicable to Power Quality Control including Harmonics Analysis.
- One click easy-to-use operation helps complicated setting and processing of large data through the setting / analyzing software provided as accessory.
- Direct communication with PC via USB cable
- Built-in Input / Output Function of external signal enables the signal transmission to alarms.
- 2-way power supply by AC and Battery, and Nickel hydrogen battery usable with rechargeable function.
- Pull / Insert of CF card possible whenever on recording under the function of memory backup device (1GB usable).
- Can monitor insulation at leakage current by using optional leak clamp sensors.
- Built-in Print Screen Function enables to record display screen (Records 512 screens by using CF card: 1 screen 40KB).
- Can display Waveform and Vector, and can confirm the wiring connection, too.
- Complies fully with International Safety Standards IEC61010-1 CAT.Ⅲ 600V.

Can Make Measurement Very Easily By One-Touch Key.
 Abnormal Power Quality Causes Unexpected Troubles
 And Defective Products.
 KEW6310 Very Helpful To Find Out Various
 Troubles And Solution to Energy Saving.

Power Source can be taken through the measured line by using optional Power Supply Adaptor

(Refer Page 7)

2-way power supply system by AC and Battery, and Nickel hydrogen battery usable with rechargeable function (Protect rechargeable circuit with select cover)

Can display Waveform and Vector, and can confirm the wiring connection,



Power Consumption (Energy) Control

12 Kinds of Power Measurements

Voltage, Current, Active power, Reactive power, Apparent power, Power factor, Frequency, Current flowing on the neutral line (Only on 3 phase 4 wire measurement), Active power energy, Reactive power energy, Apparent power energy, Demand measurement (with digital output alarm function available)

Can Measure Regenerative power under Power Energy Deregulation in Japan.

Can judge either demand or regenerative power. (Regenerative power: Generated by privately owned generators and supplied to power companies.)

Unit	Max	Avg	Min
V	200.5	199.5	200.2
A	436.4	460.7	416.3
P	75.4	73.5	72.0
Q	144.4	146.9	141.9
S	87.5	91.9	83.3
PF	0.962	0.955	0.954
PA	38.5	39.0	38.2
QA	226.9	231.1	224.2
Q	132.4	136.9	127.6
SS	262.7	267.4	257.0
PF	0.954	0.941	0.940
PA	30.2	30.6	30.1

Instantaneous value measurement / saving

Measures Current / Voltage / Instantaneous averaged value of Power etc. / Maximum value / Minimum value.

Unit	Value
Elapsed Time	0000:03:44
Active	W+ : 28.1124 kWh
	W- : -0.5455 kWh
Apparent	WS+ : 32.9307 kWh
	WS- : -1.2337 kWh
Reactive	WQj+ : 16.5832 kWh
	WQj- : 0.0002 kWh

Integration value measurement / saving

Measures Active power energy / Apparent power energy / Reactive power energy.

Unit	Value
Time left	00:00:05
SDH Target	300.0 kWh
SDH Value	226.9 kWh
SDH Present	113.5 kWh
SDH Rate	3.13.7 kWh

Demand value measurement / saving

Sets Demand target value and measures Demand value from start to stop of measurement. Can warn with digital output terminal when the set value exceeds the target value.

PRINT SCREEN KEY Can save LCD's display screen in BMP (Bitmap) file. (Record 512 screens with CF card: One screen 40KB).



SET UP Setting of Instrument, Setting of Measurement

CONSUMPTION (ENERGY) CONTROL BUILT-IN THIS COMPACT MODEL

Direct Data Transmission to PC via USB

Easy-to-use setting-up and analyzing with KEW PQA MASTER supplied.

[System requirements]

- PC with CPU: Pentium3 500MHz or higher and with operating system of Windows®2000/XP
 - Memory: 64Mbyte or more
 - Display: Resolution 800 x 600 dots, 65536 colors or more
 - Hard-disk: space required 100Mbyte or more
 - Others: with CD-ROM drive and USB driver
- * Windows® is a registered trademark of Microsoft in the United States.
 * Pentium is registered trademark of Intel in the United States.



CF Card Interface Loaded

External Memory up to 1GB Available.*1

Recordable Number of Data Point / Approx. Time

Destination to save data	CF Card							Internal Memory
	32MB	64MB	128MB	256MB	512MB	1GB		
Capacity	32MB	64MB	128MB	256MB	512MB	1GB	1.8MB	
Instantaneous Measurement	1sec	16H	1D	2D	4D	8D	20D	
	1min	10D	21D	1M	2M	5M	11M	
	30min	10M	1Y	over 1Y	over 1Y	over 1Y	2D	
Integration Measurement	1sec	6H	12H	1D	2D	4D	8D	
	1min	7D	15D	1M	2M	4M	8M	
	30min	7M	1Y	over 1Y	over 1Y	over 1Y	1D	
DEMAND Measurement	1sec	3H	6H	13H	1D	1D	4D	
	1min	6D	12D	24D	1M	3M	6M	
	30min	6M	1Y	over 1Y	over 1Y	over 1Y	1D	
WAVE Range	1sec	22min	44min	1H	2H	5H	11H	
	1min	22H	1D	3D	7D	14D	29D	
	30min	25D	1M	3M	7M	1Y	over 1Y	
Harmonic Analysis	1sec	49min	1H	3H	6H	13H	1D	
	1min	2D	4D	8D	16D	1M	2M	
	30min	2M	4M	8M	1Y	over 1Y	over 1Y	
Swell / Dip / Int Measurement	Data	15,400	30,900	61,900	123,900	247,900	484,200	
	Data	14,100	28,300	56,600	113,200	226,500	442,400	
Inrush Current Measurement	Data	15,500	31,000	62,100	124,300	248,600	485,600	
	1sec	16H	1D	2D	4D	8D	20D	
	1min	10D	21D	1M	2M	5M	10M	
Capacitance	30min	10M	1Y	over 1Y	over 1Y	over 1Y	2D	
	1sec	12H	1D	2D	4D	8D	16D	
	1min	9D	18D	1M	2M	4M	9M	
Max number of file	Measurement data file (CSV)	512						6
	Graphics file (BMP)	7						7
	Setting file (KAS)	20						20

Designed For Various Wiring Systems

- Single Phase 2 wires (4 system load measurement possible),
- Single Phase 3 wires (2 system load measurement possible),
- Three Phase 3 wires (2 system load measurement possible),
- Three Phase 4 wires.

Power Quality Control

Can measure up to 63rd Harmonics

Can measure Swells / Dips / Instantaneous Stop, Transients, Inrush current, Unbalanced, and can simulate phase advance condenser, too.

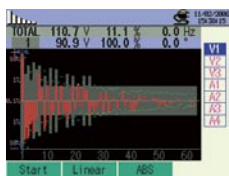
Wave Range Measurement / Saving

Displays vector / waveform corresponding to voltage and current of each channel.



Harmonics Measurement / Saving

Measures and analyzes harmonics contents of current and voltage of each phase.

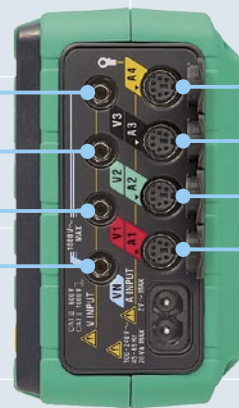


Quality

Can measure Swells / Dips / Interruptions, Transients, Inrush current, Unbalanced, and can simulate power factor correction with capacitor banks.

MM / DD & Time	RMS	Per Iod
11/02 15:39:28.93	155.5V	00:00:00.00
11/02 15:39:25.22	-	-
11/02 15:39:27.57	140.3V	00:00:00.00
11/02 15:39:24.14	-	-
11/02 15:39:28.53	-	-
11/02 15:39:34.89	146.1V	00:00:00.00

Voltage Input Terminals



Easy-To-Use Clamp type Setting

(Clamp Sensors: Option)

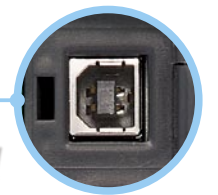


The Instrument automatically recognizes clamp sensors connected (Easy-to-use setting).

Current Input Terminals (With cover)

Can monitor insulation at leakage current by using leakage clamp sensors (Option).

USB Terminal



Digital Output Terminal*2

(1ch) *Open Collector Output (P8)



Analogue Input Terminal

(2ch : DC 50m/500m/5V)

CF Card Connector

Can Take Out and Put In CF Card whenever on recording under the function of memory backup device.



*1 : Downloading data from CF cards needs the optional card reader (8319) or card readers being on sale.
 *2 : The example of digital output is reference only. Please use the function according to customer's use.

IMPROVING POWER QUALITY CONTRIBUTES TO IMPROVE PRODUCTS QUALITY /

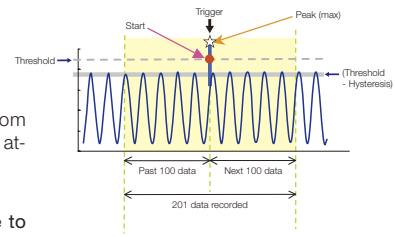
Quality Transient		
146.0Vpeak	Occurrence	132
MM / DD & Time	V peak	
2006/10/12 08:10:10.325	287.1V	
2006/10/12 08:10:22.220	286.9V	
2006/10/12 08:10:33.843	230.1V	
2006/10/12 08:10:34.000	228.1V	
2006/10/12 08:10:44.213	230.2V	
2006/10/12 08:10:45.233	244.8V	

Transients/Over Voltage (Impulse) QUALITY

- Can Set Detecting Level Value (Threshold Value).
- Easy-to-Use Checking the Occurrence data On The Display.

Cause of Transients Over Voltage

Arises from defective contact etc. of Breakers, Magnets and Relays. Reaches highest value (peak value) of voltage in a very short time from inputting voltage and this is a unipolar type voltage change (Spike) that attenuates slowly.



Bad Effect of Transients Over Voltage

Destroys the instrument's power source and causes reset action due to sudden voltage change (Spike).

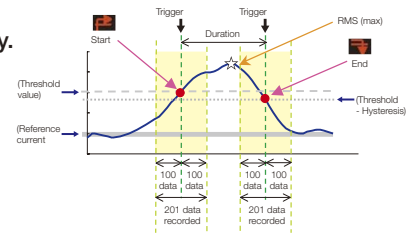
Quality Inrush current		
632.0A	Occurrence	13
MM / DD & Time	RMS	Period
10/12 08:36:14.99	632.2A	00:00:40.62
10/12 08:36:16.71	644.8A	00:00:05.80
10/12 08:36:18.82	647.6A	00:00:02.40
10/12 08:36:20.29	A	-
10/12 08:36:21.70	642.8A	00:00:40.62
10/12 08:36:23.58	A	-
10/12 08:36:25.37	646.9A	00:00:02.40
10/12 08:37:24.00	A	-

Inrush Current QUALITY

- Can Set Detecting Level Value (Threshold Value).
- Easy-to-Use Confirming the Occurrence data On The Display.

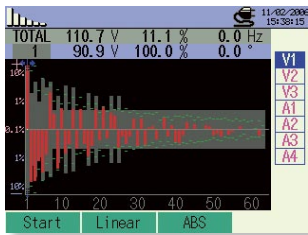
Cause of Inrush Current

Large current (Surge current) flows transiently at the time of starting of instruments etc. which have built-in motor, incandescent lamp, larger capacity smoothing condenser.



Bad Effect of Inrush Current

Causes bad effect to power switch's welding, fusing, breaker's trip and converter circuit etc. and also causes unstable power voltage.



Harmonics Analysis

- Can Measure and Analyze from 1st to 63rd Harmonics.
- Harmonics Contents (THD: Total Harmonics Distortion Display)
- Can Judge Inflow / Outflow.
- Can Set Detecting Level Value (Threshold Value).

Cause of Harmonics

Control circuits of instruments use inverter circuit (condenser input type converter circuit) and thyristor control circuit (phase control circuit). These circuits cause distortion in the current. The distortion causes harmonics.

Instruments Causing Harmonics

- Factory / Building
 - Direct current motor power device, electric furnace, inverter appliance, uninterrupted power supply, PC, fluorescent lamp, elevator, air-conditioning equipment etc.
- Residential House
 - Air Conditioner, PC, TV, Washing Machine, Refrigerator, Cleaner, Fluorescent Lamp etc.

Bad Effect of Harmonics

Causes burning of phase advance condenser and reactor, beat of transformer, wrong way of breaker, flicker of TV image, noise of audio players etc.

Quality Swell/Dip/Int		
100.1V	SWELL	DIP
Occurrence	1	4
96	INT	
MM / DD & Time	RMS	Period
10/12 08:07:50.18	V	-
10/12 08:07:55.98	49.9V	00:00:05.80
10/12 08:08:01.34	V	-
10/12 08:08:42.01	1.2V	00:00:40.62
10/12 08:08:49.15	V	-
10/12 08:08:51.55	200.6V	00:00:02.40

Swells/Dips/Instantaneous Stop QUALITY

- Can Set Detecting Level Value (Threshold value).
- Easy-to-Use Confirming the Occurrence data such as Swells/Dips/Instantaneous Stop on the Display.

Cause of Swells (Voltage rise)

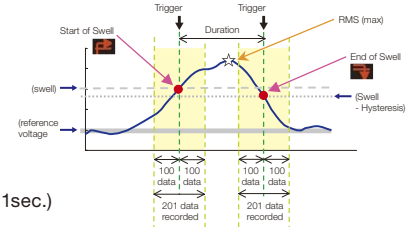
Voltage rises instantaneously by Inrush Current caused at the time of power input of the power line switchgear.

Cause of Dips (Voltage drop)

Voltage drop happens by Inrush Current caused at the time of starting of load of motors etc.

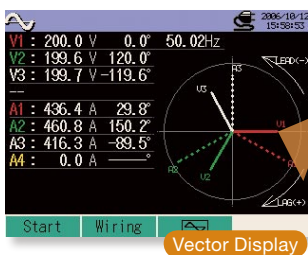
Cause of Instantaneous Stop

Power supply stops instantaneously due to thunderbolt etc. (Under 1 sec.) (Interruption of Service → Power supply stop more than 1sec.)



Bad Effect of Swells/Dips/Instantaneous Stop

Stops operation of instruments / welding robots and causes reset of OA appliances like PC.



Unbalance Rate QUALITY

- One Touch Switch to Vector display and Power display
- Easy-to-Use Confirming Phase angle difference thanks to Vector display

Cause of Unbalance

Specific Phase gets over loaded due to fluctuation of power line load and unbalanced equipment built. These cause distortion of voltage / current, voltage drop and antiphase voltage.

Bad Effect of Unbalance

Causes unbalance of voltage / current, uneven turning of motor, antiphase voltage, harmonics etc.

	1ch	2ch	3ch
V	200.5	199.5	200.2
A	436.4	460.7	416.3
P	75.4	79.5	72.0
Q	44.4	46.0	41.9
S	87.5	91.9	83.3
PF	0.862	0.865	0.864
PA	30.5	30.0	30.2
Q	226.9	kvar	f: 50.02
Q	132.4	kvar	An: 17.6
S	262.7	kVA	A4: 0.0
PF	0.864	DC1: 3.014	V
PA	30.2	deg	DC2: 3.016

SIMPLE AND EASY-TO-USE SETTING TO POWER CONSUMPTION (ENERGY) CONTROL

Phase Advance Condenser

QUALITY

1ch	2ch	3ch	
V : 200.3	199.4	200.1	V
A : 436.4	460.7	416.3	A
P : 75.5	79.4	72.0	kW
Q : 44.0	46.2	42.0	kvar
S : 87.4	91.9	83.3	kVA
PF: 0.864	0.864	0.864	
C : 44.0	46.2	42.0	kvar
P : 226.9	kW	f : 50.02	Hz
Q : 132.2	kvar	An: 0.0	A
S : 262.6	kVA	A4: 0.0	A
PF: 0.864	DC1: 3.018	V	
C : 132.2	kvar	DC2: 3.018	V

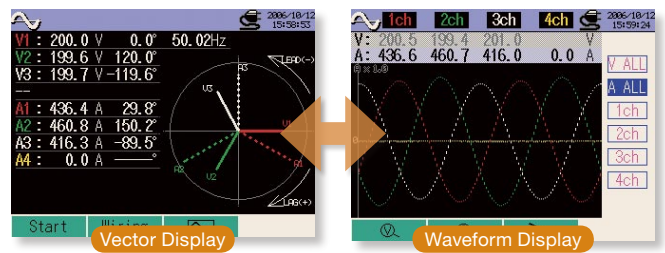
- Selects Best Capacity of Phase Advance Condenser by Referring to Loaded Capacity and Power Factor of Transformer.



Abnormal Power Quality Causes; Power down on On-Line in life lines, Defective products in production lines, Fire and Electric shock affecting damage directly to person. Be sure to monitor power lines to prevent troubles in the power lines.

Wave Range (Waveform Display)

WAVEFORM



- Check fluctuation of voltage and current simultaneously in each phase.
- Easy-to-Use Switching to Vector display and Waveform display.
- Built-in Function Confirming Wiring Connection

POWER CONSUMPTION (ENERGY) CONTROL

W

Wh

DEMAND

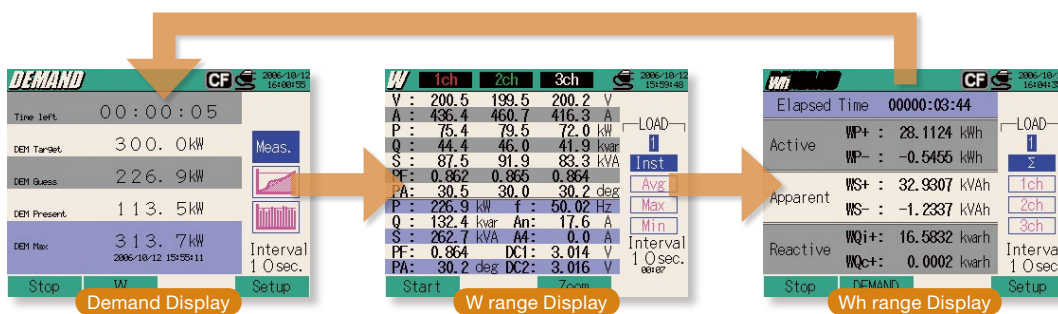
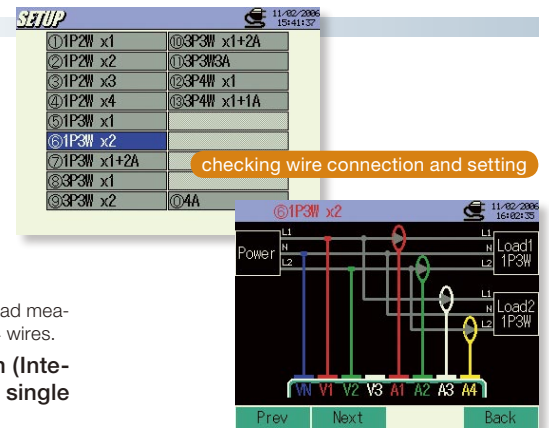
- 12 kinds of Power Measurements

Voltage, Current, Active power, Reactive power, Power factor, Frequency, Current flowing on the neutral line (Only on 3 phase 4 wire measurement), Active power energy, Reactive power energy, Apparent power energy, Demand measurement (with digital output function & buzzer warning)

- Monitors in Leakage Current by Using Leakage Clamp Sensors.
- Easy-to-use Confirming Wire Connection and Setting
- Designed to Various Wiring System

Single Phase 2 Wires (4 system load measurement possible), Single Phase 3 Wires (2 system load measurement possible), Three Phase 3 wires (2 system load measurement possible), Three Phase 4 wires.

- Easy-to-Use One-Touch Switch for Display of W (Instantaneous value) / Wh (Integration power consumption) / Demand and Can down load all these data at single operation.



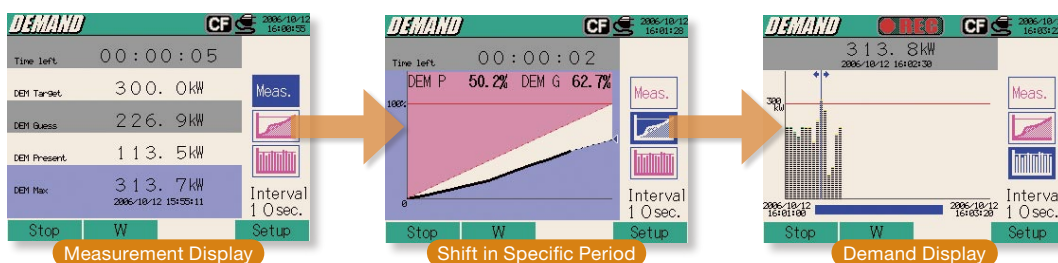
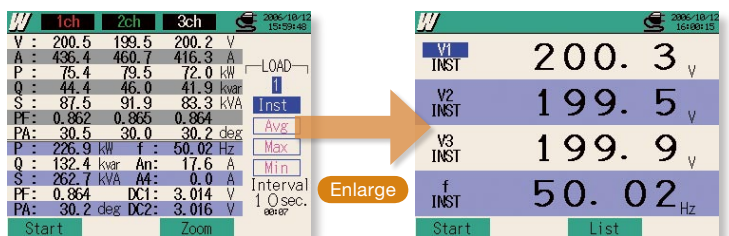
- Monitors Power Consumption and Power Factor in each Phase.

Can recognize working status in each phase.

- Measures Regenerative Power under Power Deregulation (Ex. in Japan).

Can distinguish either Demand or Regenerative power. (Regenerative power: Generated by privately owned generators and supplied to power companies.)

- Enlarged Screen Function (Setting possible at option)
- Visual Function Helps Check Demand Transition.



**SIMPLY CONNECT KEW6310 AND PC VIA USB, THEN ONE CLICK FOR EASY-TO-USE SETTING!
BUILT-IN NAVIGATION FUNCTION (W / HELP FUNCTION) HELPS YOU WHENEVER YOU NEED.**

SETTING FUNCTION

Can go to specific fields anytime by only recalling saved setting if setting of the measurement is saved depending on the specific field.

Checks Wiring Connection on Screen

EASY-TO-USE CLICK SYSTEM FOR COMPLICATED SETTINGS

Eliminates harmonics element by filter

Recognizes clamp sensors automatically

Downloaded CSV file data can be processed easily with spreadsheet like Excel etc.

Records necessary data only

Easy-to-use pre-setting with calendar function

*The present time synchronizes with PC.

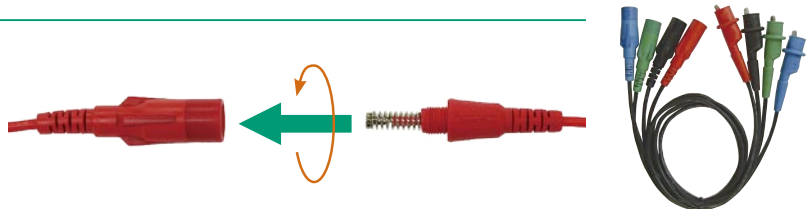
Options

SMALL TYPE SAFETY CLIP

MODEL 7198

Length: 650mm

The measuring terminal of voltage test lead (7141) is downsized.
Can connect it to M5 size screw on breaker terminals.



CARRYING CASE WITH MAGNET

MODEL 9132

Easy-to-use setting with magnet on the steel plate etc. of switch board



POWER SUPPLY ADAPTOR

MODEL 8312

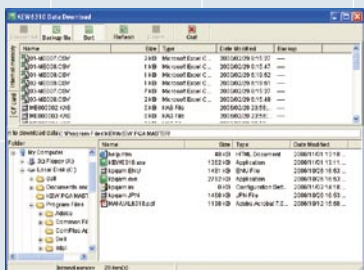


Power source can be taken through the measured line (100~240V)

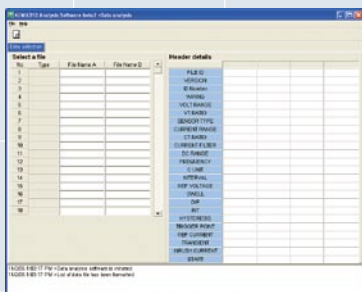


ANALYSIS FUNCTION

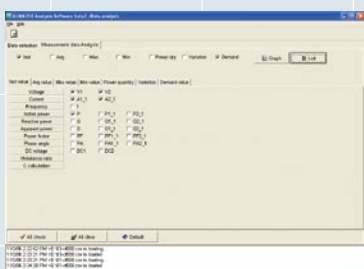
1. Open necessary data file



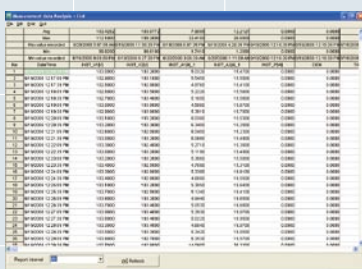
2. Start analyzing measured data



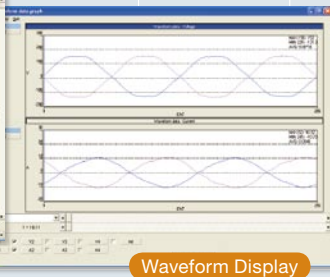
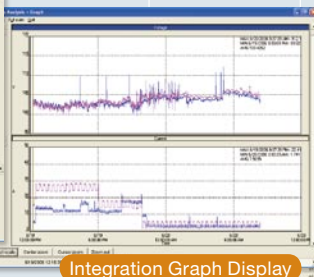
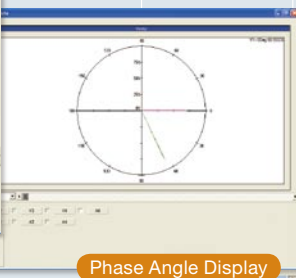
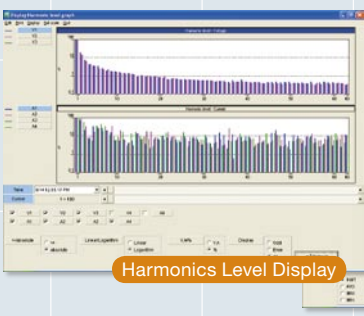
3. Select necessary data



4. Data List Display



5. Graph Display



- Can analyze large recorded data in a simple operation and make report easily.
- Can register, delete, refer, analyze and copy by collective data control.
- Can check real-time data during recording by PC.
- Can process data by taking out necessary part only of original data.
- Can set kinds of line and color in each graph display.
- Spreadsheet Function
Can display value data like spreadsheet that is displayed in the range of graph when selecting the tab of graph display, harmonics wave time-series display, harmonics wave instantaneous value display. Besides, can use them as text data.
- The data of temperature, illumination etc. can be inserted to the data of 6310 by using analogue terminals. Comparing these measured data with the data of power consumption, the detailed analysis can be possible.

*The display screen designs and functions are subject to change without prior notice.

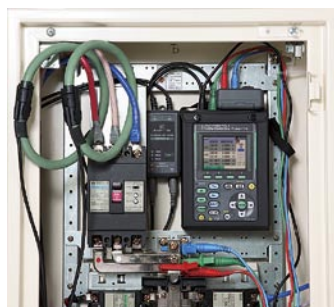
LOAD CURRENT DETECTING TYPE FLEXIBLE CLAMP SENSOR

KEW 8129

8129-01 (for 1ch)
8129-02 (for 2ch)
8129-03 (for 3ch)

**FLEXIBLE CLAMP SENSOR CAN MEASURE
UPTO AC3000A HIGH CURRENT**



NEW



MAX AC3000A Ø150 IEC61010 CE

	8129-01 (for 1ch)	8129-02 (for 2ch)	8129-03 (for 3ch)
Conductor size	max. Ø150mm		
Rated current	300/1000/3000A		
Output voltage	300A Range : AC500mV/AC300A (1.67mV/A) 1000A Range : AC500mV/AC1000A (0.5mV/A) 3000A Range : AC500mV/AC3000A (0.167mV/A)		
Accuracy	±1.0%rdg (45~65Hz)		
Phase Shift	within ±1°		
Withstand voltage	AC5350V for 5 seconds		
Cable length	Sensor part : approx. 2m Output cable : approx. 1m		
Output connector	MINI DIN 8PIN		
Operating temperature & humidity ranges	0~50°C, relative humidity 85% or less (no condensation)		
Output impedance	100Ω or less		
Applicable standards	IEC 61010-1, IEC 61010-2-032 CAT.Ⅲ 600V Pollution degree2, IEC 61326		
Dimensions	111(L) × 61(W) × 43(D) mm (except for protrusions)		
Weight	Approx. 410g	Approx. 680g	Approx. 950g
Accessories	Instruction Manual 7199 (Output Cable) × 1 9137 (Carrying Case)	Instruction Manual 7199 (Output Cable) × 2 9137 (Carrying Case)	Instruction Manual 7199 (Output Cable) × 3 9137 (Carrying Case)

Specifications

Instantaneous measurement ( Range)	
① Voltage Vi [V]	
Range	150/ 300/ 600/ 1000V
Allowable input	10 ~ 110% of each range
Display range	5 ~ 120% of each range
Crest factor	2.5 or less (100% or less of each range)
Accuracy	±0.3%rdg±0.2%f.s. (sine wave, 45 ~ 65Hz)
Instantaneous overload	1200Vrms(1697Vpeak):10 sec
② Current Ai [A]	
Range	8128(50A type) : 1/ 5/ 10/ 20/ 50A 8127(100A type) : 10/ 20/ 50/ 100A 8126(200A type) : 20/ 50/ 100/ 200A 8125(500A type) : 50/ 100/ 200/ 500A 8124(1000A type) : 100/ 200/ 500/ 1000A 8129(3000A type) : 300/ 1000/ 3000A
Allowable input	10 ~ 110% of each range
Display range	1 ~ 120% of each range
Crest factor	3.0 or less (90% or less of each range)
Accuracy	±0.3%rdg±0.2%f.s.+ Accuracy of Clamp sensor (sine wave, 45 ~ 65Hz)
Instantaneous overload	2Vrms(2.828Vpeak): for 10 sec
③ Active power Pi [W]	
Range	Depending on combinations of (V Range) x (A Range)
Accuracy	±0.3%rdg±0.2%f.s.+ Accuracy of Clamp sensor (Power factor 1, Sine wave 45 ~ 65Hz)
Influence of power factor	±1.0%rdg (reading at power factor 0.5 against power factor 1)
Polarity indication	Consumption: + (no mark) , Regenerating: -
④ Frequency f [Hz]	
Accuracy	±0.1%rdg±2dgt
Allowable input	10 ~ 110% of each Voltage range (sine wave, 45 ~ 65Hz)
Display range	40.00 ~ 70.00Hz
⑤ Analogue input DCi [V]	
Number of input	2 channel (I = 1,2)
Range	50m/ 500m/ 5V (selectable at each channel)
Accuracy	±0.5%f.s.
Input resistance	approx 225KΩ
⑥ Item and formula	
Apparent power S [VA], Reactive power Q [Var], Power factor PF, Neutral current	
Integration measurement ( Range)	
Active power quantity WP [Wh]	
Display range	0.00Wh ~ 999999GWh (Display digit and unit are unified to the bigger ones of IWS+ or IWS-.)
Apparent power quantity WS [VAh]	
Display range	0.00VAh ~ 999999GVAh (Display digit and unit are unified to the bigger ones of IWS+ or IWS-.)
Reactive power quantity WQ [varh]	
Display range	0.00varh ~ 999999Gvarh (Display digit and unit are unified to the bigger ones of IWS+ or IWS-.)
Elapsed time : time passed from the start of recording	
Display item	hhhhh : mm : ss (Hour : Minute : Second)
Display range	00000:00:00 ~ 99999:59:59
Demand measurement ( Range)	
① Target value (DEM Target)	
Display range	Fixed set value (1.000mW ~ 999.9TW)
② Predictive value (DEM Guess)	
Display range	Same decimal point place and unit to target value
③ Demand value (present value) (SDEM)	
Display range	Same decimal point place and unit to target value
④ Load factor	
Display range	0.00 ~ 9999.99% ("OL" is displayed when exceeding this range.)
Waveform measurement ( Range)	
Displayed data	2 waveforms (256 points)
Scale change	0.1/ 0.2/ 0.5/ 1.0/ 2.0/ 3.0 times of rating
Harmonic measurement ( Range)	
Meas. Method	PLL synchro system
Measuring range	45 ~ 65Hz
Analysis order	1 ~ 63rd
Window width	2 cycles
Window type	Rectangular
Analysis data	512 points
Analyzing rate	approx once / 2 sec
Display item	(1) Voltage per CH / Current, THD, Frequency (2) Voltage/ Rate of content/ Phase angle at each order
Power quality ( Range)	
Swell/ Dip/ Int measurement	
Meas. Method	Calculate RMS values based on an overlapped waveform at every half waveform.

Transient measurement		
Meas. Method	Sampling at every 100μs, and calculating the max value at every 2ms Judges the presence of events at every 1s.	
Inrush current measurement		
Meas. Method	Calculate RMS values based on an overlapped waveform at every half waveform.	
Unbalance ratio measurement		
Save item	(Measurement data at W Range) + (Unbalance ratio)	
Measurable wiring configuration	3P3W3A, 3P4Wx1, 3P4Wx1+1A	
Capacitance calculation		
Display item	Same to W Range (except for the change from PA to C)	
Save item	(Measurement data at W Range) + (calculated capacitance value)	
AC power supply		
Voltage range	AC100 ~ 240V±10%	
Frequency	45 ~ 65Hz	
Power consumption	20VA max	
DC power supply		
	Dry battery	Rechargeable battery
Type	Alkaline (LR6)	Ni-MH(HR-15-51)
Rated voltage	DC9V (=1.5Vx6)	DC7.2V (=1.2Vx6)
Current consumption	500mA typ.(@9V)	560mA typ.(@7.2V)
Possible measurement time	Backlight ON: 1 hour Backlight OFF: 2 hours (ref. at 23°C)	Backlight ON: 2 hours Backlight OFF: 5 hours (ref. at 23°C after full-charge)
Digital output function		
Output voltage	Open collector output	
Max. input	30V/ 50mA/ max. 200mW	
Output voltage	Hi Level 4.5~5.0V Lo Level 0~0.5V	
Scaling function		
VT ratio	0.01~9999.99(in increments of 0.01)	
CT ratio	0.01~9999.99(in increments of 0.01)	
Recording data		
Internal memory		
Memory	FLASH memory	
PC Card		
Card type	Compact flash card (CF card)	
Slot	Type I / II	
Format	FAT16	
Capacity	32M/ 64M/ 128M/ 256M/ 512M/ 1GB	
Max number of file	max 512 files (with name of one-byte 8 characters or less)	
Save format	CSV format	
External communication function		
Communication method	USB Ver1.1	
General specification		
Indication renewal	every 1 sec	
Temperature & humidity range (guaranteed accuracy)	23°C±5°C, Relative humidity 85% or less (no condensation)	
Operating Temperature & humidity range	0°C±40°C, Relative humidity 85% or less (no condensation)	
Storage Temperature & humidity range	-20°C±60°C, Relative humidity 85% or less (no condensation)	
Applicable standards	IEC61010-1, Measurement CAT.Ⅲ 600V Pollution degree 2, IEC 61010-031, IEC61326	
Dimension	175(L) x 120(W) x 68(D) mm	
Weight	approx 900g (including batteries)	
Accessories	7141(Voltage test lead) 7170(Power cord) 7148(USB cable) 9125(Carrying case) Input terminal plate (6-kind) x 1 pce. 8307(Compact flash card 128MB) 8319(Card reader) KEW POA MASTER(software) Cable maker Quick manual Alkaline size AA battery (LR6) x 6 pcs.	
Optional	7198(Small type safety clip) 8306(Compact flash card 64MB) 8322(Compact flash card 256MB) 8323(Compact flash card 1GB) 8124, 8125, 8126, 8127, 8128(Load current clamp sensor) 8129(Flexible clamp sensor) 8146, 8147, 8148(Leakage & Load current clamp sensor) 8141, 8142, 8143(Leakage current clamp sensor) 8312(Power supply adopter) 9132(Carrying case (for instrument))	



Safety Warnings :

Please read the "Safety Warnings" in the instruction manual supplied with the instrument thoroughly and completely for correct use. Failure to follow the safety rules can cause fire, trouble, electrical shock, etc. Therefore, make sure to operate the instrument on a correct power supply and voltage rating marked on each instrument.

For inquires or orders :



KYORITSU ELECTRICAL INSTRUMENTS WORKS, LTD.

<http://www.kew-ltd.co.jp>

No.5-20,Nakane 2-chome, Meguro-ku,
Tokyo, 152-0031 Japan
Phone:81-3-3723-0131
Fax:81-3-3723-0152
E-mail:info@kew-ltd.co.jp
Factories:Uwajima & Ehime



ISO 9001 : 2000 , BS EN 9001
APPROVED BY BVQI

