3 phase/4 wire, 3 phase/3 wire, RS232/USB
1 phase/2 wire, 1 phase/3 wire, SD card data recorder

3 PHASE POWER ANALYZER

Model : DW-6093 *ISO-9001, CE, IEC1010*

Clamp Probes, A1, A2, A3
CP-1201

The Art of Measurement

SD card real time data recorder

3 PHASE POWER ANALYZER

Model : DW-6093

FEATURES

* Analysis for 3 phase multi-power system, 1P/2W, 1P/3W, 3P/3W, 3P/4W
* Voltage & Current are the True RMS value.
* True Power (KW - MW - GW) measurement.
* Apparent Power (KVA - MVA - GVA) measurement.
* Reactive Power (KVAR MVAR - GVAR) measurement.
* Watt-Hour (WH - SH - QH - PFH).
* Power Factor(PF) - Phase Angle(Φ).
* Voltage measurement range : 10 to 600 ACV
* Current probe input signal volage (ACV) : 200 mV/300 mV/500 mV/1 V/2 V/3 V. Current probe input current range (ACA) : 20 A/200 A/2000 A (1200 A)/30 A/300A /3000 A.
* Meter can cooperate the universal current probe.
* Programmable CT ratio (1 to 600) and PT ratio (1 to 1000).
* ACV input impedance is 10 Mega ohms.
* Safety Standard : IEC 1010, CAT III 600V
* Built-in clock and Calendar, real time data record with SD memory card , sampling time set from 2 to 7200 seconds. Just slot in the SD card into the computer, it can down load the all the measured value with the time information (year/month/data/ hour/minute/second) to the Excel directly, then user can make the further data analysis by themselves.
* Complete set with 4 PCs Test Leads, 4 PCs Alligator clips, 3 PCs Clamp Probe (CP-1201), AC to DC 9V adapter, 2 G SD memory card and Carrying bag.
* Computer data output, can cooperate with USB Cable /USB-01 RS232 cable/UPCB-02 and Data Acquisition software, SW-U811-WIN.

GENERAL SPECIFICATIONS:

Circuit	Custom one-chip of microprocessor LSI circuit	
Display	* LCD Size : 81.4 X 61 mm (3.2 X 2.4 inch) * Dot Matrix LCD (320 X 240 pixels) with back light.	
Measurement	* ACV * ACA * AC WATT (True Power) AC WATT(Apparent Power) AC WATT(Reactive Power) * Power factor * Phase angle * Frequency	
Wire connections	1P/2W, 1P/3W, 3P/3W, 3P/4W.	
Voltage ranges	10 ACV to 600 ACV, auto range.	
Current probe input signal and range	* Current probe input signal volage (ACV) : *200mV/300mV/500mV/1V/2V/3V.* * Current probe input current range (ACA) : *20 A/200A/2000A (1200 A)/30A/300A/3000A* * Meter can cooperate the universal current probe.	
Safety standard	IEC1010 CAT III 600 V.	
ACV input impedance	10 Mega ohms.	
Range select	ACV	Auto range.
	ACA	Manual range.
Clamp frequency response	40 Hz to 1 KHz.	
Spec. tested frequency	45 to 65 Hz.	
Over load protection	ACV	720 ACV rms
	ACA	1300 ACA with clamp probe ** For the Clamp ,CP-1201*
Over Indicator	* LCD display show " OL ". * The data save into the SD card will show " 9999 " or " 999 " (overleap the decimal point).	
Under Indicator	* LCD display show " UR ". * The data save into the SD card will show " 9999 " or " 999 " (overleap the decimal point).	
Data Hold	Freeze the display reading.	
Data Record	SD Card Record.	
Sampling Time	Approx. 1 second.	
Power ON/OFF	Manual OFF by push button.	
Real time data logger	* Real time data logger, saved the data into SD memory card and down load the all the measured value with the time information (year/month/data/ hour/minute/second) down load to the Excel * Sampling time for data logger : 2 seconds to 7200 seconds, the during of setting step are 2 seconds.	
Data Output USB/RS232 ** Computer interface*	RS232 computer serial interface : * Connect the optional USB cable USB-01 will get the USB plug. * Connect the optional RS232 cable UPCB-02 will get the RS232 plug.	
Operating Temperature	0 to 50℃ (32 to 122℉).	
Operating Humidity	Less than 80% R.H..	
Power Supply	* DC 1.5V, AA (UM-3) Battery X 8 PCs (Alkaline or heavy-duty battery). * AC to DC 9V power adapter.	
Power Consumption	* Meter : 300 DCmA. * Clamp : 34 DCmA.	
Clamp max. conductor Size	50 mm (2.0 inch) Dia. ** For the Clamp ,CP-1201*	
Weight	* Meter : 948g (includes batteries) * Clamp (includded cable) : 467g	
Dimension	*Meter :* 225 X 125 X 64 mm (8.86 X 4.92 X 2.52 inch)	
Dimension	*Clamp :* 210 X 64 X 33mm (8.3 X 2.5 X 1.3 inch)	
	Clamp Jaw : 86 mm (3.4 inch)- outside	
Accessories Included	* Instruction manual..... 1 PC * Test Leads (TL88-4AT).....1 Set (4 PCs) * Alligator clips (TL88-4AC) 1 Set (4 PCs) * Clamp Probe (CP-1201).....3 PCs * AC to DC 9V adapter.....1 PC * SD card (2 G)..... 1 PC * Carrying bag..... 1 PC	
Optional Accessories	* 2000 Amp current probe, CP-2000 * 200 Amp current probe, CP-200 * Flexible 3000 Amp current probe, CP-3000 * USB Cable , USB-01 * RS232 cable, UPCB-02 * Data Acquisition software, SW-U811	

ELECTRICAL SPECIFICATIONS:

ACV

Range	*Resolution*	*Accuracy*
10.0V to 600.0V ** Phase to neutral line*	0.1V	± (0.5%+0.5V)
10.0V to 600.0V ** Phase to phase*		

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ACA

Range	*Resolution*	*Accuracy*
20A	0.001A, *< 10 A* 0.01A, *≥ 10 A*	± (0.5%+0.1A)
200A	0.01A, *< 100 A* 0.1A, *≥ 100 A*	± (0.5%+0.5A)
1200A	0.1A, *< 1000 A* 1A, *≥ 1000 A*	± (0.5%+5A)

Power factor

Range	*Resolution*	*Accuracy*
0.00 to 1.00	0.01	± 0.04

Remark :
*** PFH : Long term power factor**
*** PFΣ :**
For 3Φ 4W, 3Φ 3W
PFΣ = (PF1 + PF2 + PF3)/3

For 1Φ 3W
PFΣ = (PF1 + PF2)/2

Φ (Phase angle)

Range	*Resolution*	*Accuracy*
-180° to 180°	0.1°	± 1° ** ACOS (PF)*

Frequency

Range	*Resolution*	*Accuracy*
45 to 65 Hz	0.1 Hz	0.1 Hz

Active (Real) Power

Range	*Resolution*	*Accuracy*
0.000 to 9.999 KW	*0.001/0.01/0.1 KW	± (1%+0.008KW)
10.00 to 99.99 KW	*0.01/0.1 KW	± (1%+0.08KW)
100.0 to 999.9 KW	0.1 KW	± (1%+0.8KW)
1.000 to 9.999 MW	0.001 MW	± (1%+0.008MW)

** : The resolution is changed according the different ACA range.*

Apparent Power

Range	*Resolution*	*Accuracy*
0.000 to 9.999 KVA	*0.001/0.01/0.1KVA	± (1%+0.008KVA)
10.00 to 99.99 KVA	*0.01/0.1 KVA	± (1%+0.08KVA)
100.0 to 999.9 KVA	0.1 KVA	± (1%+0.8KVA)
1.000 to 9.999 MVA	0.001 MVA	± (1%+0.008MVA)

** : The resolution is changed according the different ACA range.*

Reactive Power

Range	*Resolution*	*Accuracy*
0.000 to 9.999 KVAR	*0.001/0.01/0.1KVAR	± (1%+0.008 KVAR)
10.00 to 99.99 KVAR	*0.01/0.1 KVAR	± (1%+0.08 KVAR)
100.0 to 999.9 KVAR	0.1 KVAR	± (1%+0.8 KVAR)
1.000 to 9.999 MVAR	0.001 MVAR	± (1%+0.008 MVAR)

** : The resolution is changed according the different ACA range.*

Watt Hour (Active Power Hour) : WH

Range	*Resolution*	*Accuracy*
0.000 to 9.999 KWH	0.001 KWH	± (2%+0.008 KWH)
10.00 to 99.99 KWH	0.01 KWH	± (2%+0.08 KWH)
100.0 to 999.9 KWH	0.1 KWH	± (2%+0.8 KWH)
1.000 to 9.999 MWH	0.001 MWH	± (2%+0.008 MWH)

VA Hour (Apparent Power Hour) : SH

Range	*Resolution*	*Accuracy*
0.000 to 9.999 KVAH	0.001 KVAH	± (2%+0.008 KVAH)
10.00 to 99.99 KVAH	0.01 KVAH	± (2%+0.08 KVAH)
100.0 to 999.9 KVAH	0.1 KVAH	± (2%+0.8 KVAH)
1.000 to 9.999 MVAH	0.001 MVAH	± (2%+0.008 MVAH)

VAR Hour (Reactive Power Hour) : QH

Range	*Resolution*	*Accuracy*
0.000 to 9.999 KVARH	0.001 KVARH	± (2%+0.008 KVARH)
10.00 to 99.99 KVARH	0.01 KVARH	± (2%+0.08 KVARH)
100.0 to 999.9 KVARH	0.1 KVARH	± (2%+0.8 KVARH)
1.000 to 9.999 MVARH	0.001 MVARH	± (2%+0.008 MVARH)