

**3 phase/4 wire, 3 phase/3 wire, RS232/USB**  
**1 phase/2 wire, 1 phase/3 wire, SD card memory**

# 3 PHASE POWER ANALYZER

Model : DW-6092

ISO-9001, CE, IEC1010



LUTRON ELECTRONIC



**The Art of Measurement**

# SD card real time data logger 3 PHASE POWER ANALYZER

Model : DW-6092

## 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 measurement range: 0.2A to 1200 ACA.
* 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 download 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, 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 ranges	0.2 ACA to 1200 ACA, auto range/manual range.
Safety standard	IEC1010 CAT III 600 V.
ACV input impedance	10 Mega ohms.
Range select	ACV Auto range. ACA Auto range & 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 CP-1200
Over Indicator	Show " OL "
Under Indicator	Show " UR "
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 download the all the measured value with the time information ( year/month/data/ hour/minute/second ) down load to the Excel * Integration time for data logger : 2 seconds to 7200 seconds, the during of setting step are 2 seconds.
Data Output USB/RS232	RS232 computer serial interface :
* Computer 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°C ( 0 to 122°F ).
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 : 20 DCmA.
Clamp max. conductor Size	86 mm ( 3.4 inch ) Dia.
Weight	* Meter: 1049g ( includes batteries ) * Clamp : 522g
Dimension	<i>Meter</i> : 225 X 125 X 64 mm ( 8.86 X 4.92 X 2.52 inch ) <i>Clamp</i> : 210 X 64 X 33mm ( 8.3 X 2.5 X 1.3 inch ) Clamp Jaw : 50 mm (2.0 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-1200 )..... 3 PCs * AC to DC 9V adapter..... 1 PC * SD card ( 2 G )..... 1 PC * Carrying bag..... 1 PC
Optional Accessories	* USB Cable , USB-01 * RS232 cable, UPCB-02 * Data Acquisition software, SW-U811-WIN

## ELECTRICAL SPECIFICATIONS

### ACV

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

### 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 average power factor ( WH/SH )

\* PFΣ :

$$\text{For } 3\phi \text{ 4W, } 3\phi \text{ 3W} \quad \text{PF}\Sigma = ( \text{PF1} + \text{PF2} + \text{PF3} )/3$$

$$\text{For } 1\phi \text{ 3W} \quad \text{PF}\Sigma = ( \text{PF1} + \text{PF2} )/2$$

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

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

### Apparent Power

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

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

### Reactive Power

Range	Resolution	Accuracy
0.000 to 9.999 KVAR	*0.001/0.01/0.1 KVAR	± (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)

PATENT	CHINA : ZL 2008 2 0189918.5 ZL 2008 2 0189917.0 Germany : Nr. 20 2008 016 337.4	JAPAN : 3151214	TAIWAN : M 358970 M 359043	U.S.A. : Pending
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\* Appearance and specifications listed in this brochure are subject to change without notice.

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