DPM-3332

Bi-directional Digital DC Power Meter with built-in USB data logger & bluetooth

User Manual

Bi-Directional DC Power Meter with built-in USB data logger & bluetooth.

The new DPM-3332 is an upgrade version of previous DPM series. It measures current in both direction, using a battery as the reference, it measures the Charging and Discharging current.
DPM-3332 is a self contained with built in data adapter for data retrieval to PC* via USB port and for real time monitoring. In addition to USB, it can be connected through Bluetooth to smart phone. The new EEPROM is increased to 3,600 sets of data.
The direction of current is with reference to the receiving end (output) typically a battery. Current (charging) going to battery is Positive (+) and current out of battery (discharging) is Negative(-).
The power meter is powered up by 5-60V dc from either side or an external USB power bank for extended measured dc voltage range of 0-60V.

***Remark:**

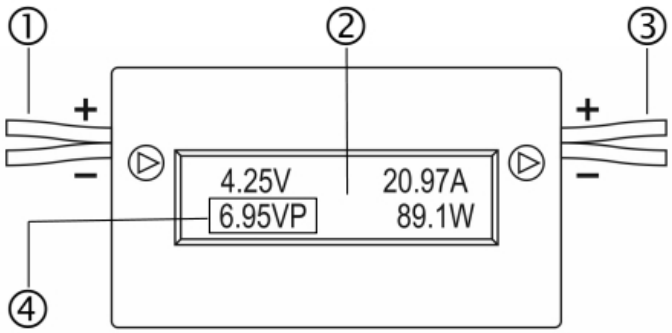
PC software, driver, software and Bluetooth manual can be downloaded from http://www.manson.com.hk/product/dpm-3332/

Precaution

a. Do not exceed 60A and 60V DC in application of DC Meter.
b. Do not apply 60A DC more than 5 second and non-repeatable within 60 second
c. This meter is designed and made for indoor use only.
d. Do not disassemble or attempt to repair the power meter.
e. If Start up screen does not appear, immediate remove all input and output connections power sources.
f. It is a good practice to have either input or output terminal connected on the supplied terminal block to prevent possible short circuiting
g. Double check on the correct polarity. If either input or output connection is in wrong polarity, there is no display on LCD.
h. Damage to the Power Meter may result if wrong polarity power is applied.
i. Never short leads connected to either input or output set of leads.
j. Do not exert pressure on the display to avoid damage to LCD display.

Controls, Indicators & terminals

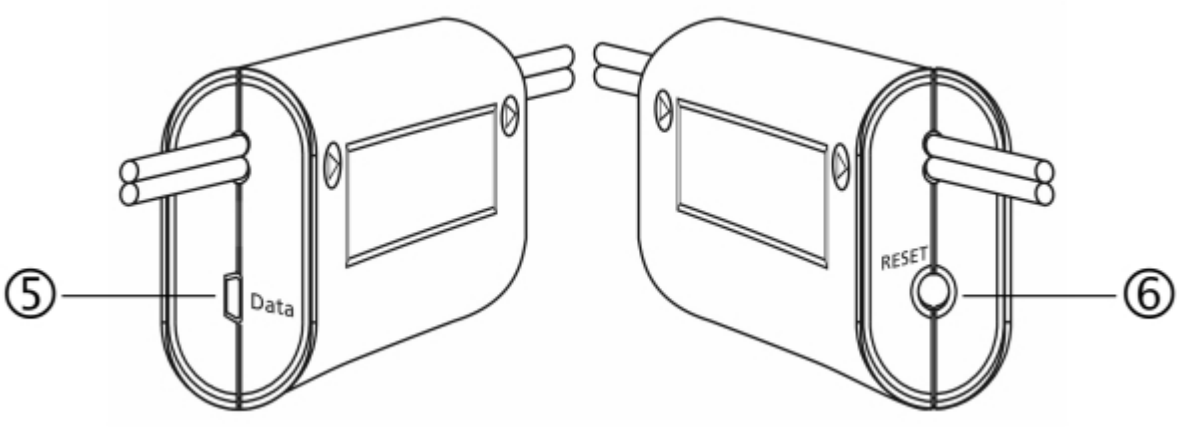
FRONT



①Bidirectional terminal for simultaneous connections to load & source.
②LCD Display : Constant displays: V, A, and W.
③Terminal for battery in bidirectional application.
④Scrolling Displays : Two sets of values for most parameters, the positive value means current going into the battery ③and the negative value means current coming out of the battery .

Parameters : Time period in use , Ah (Amp Hour) , WH(Watt Hour) , Vp (max voltage), Ap (max.current), Wp(max.Watt), Vm (min.Voltage), Negative : -Ah , -WH, -AP,-Wp back to Time period in use.
Freeze Scrolling display : Hold and release of any scrolling display by quick press of RESET button ⑥ .

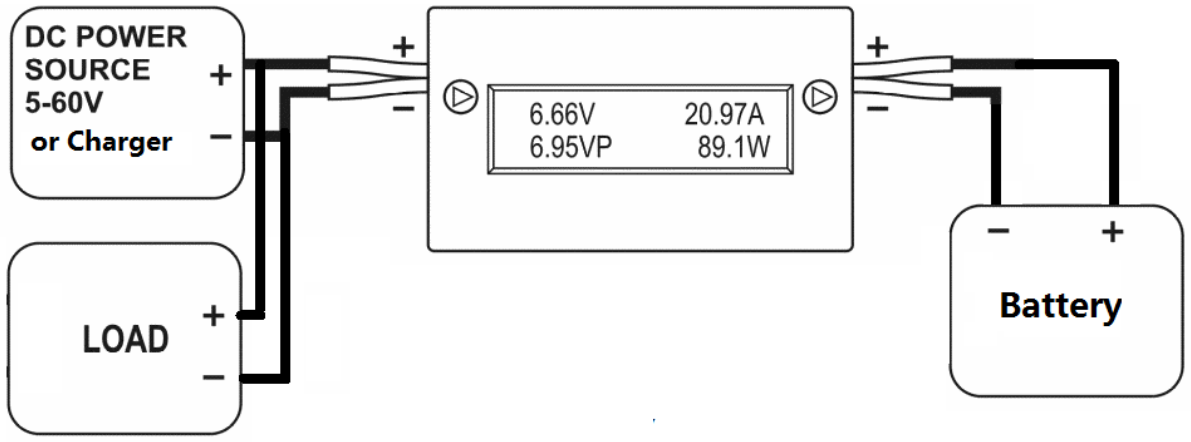
SIDE



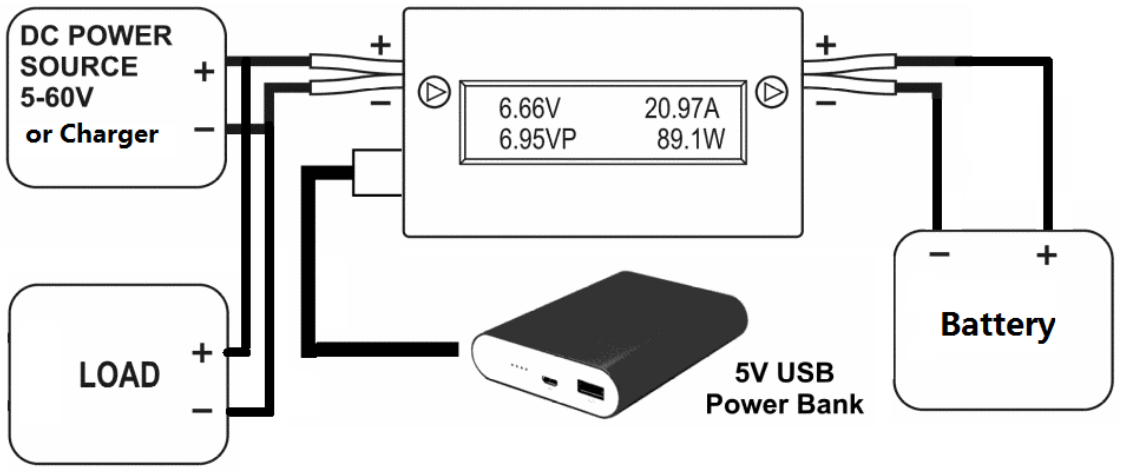
⑤Micro USB socket : Either for connection to PC for data retrieval & real time monitoring.
Or for connection to External Power source (such as 5V USB Power Bank) to extend voltage range from 5V-60V to 0V-60V.

⑥Reset Switch : To set the data logging interval from 30 sec to 180 sec.
To clear old data
To freeze and release rolling display 4.

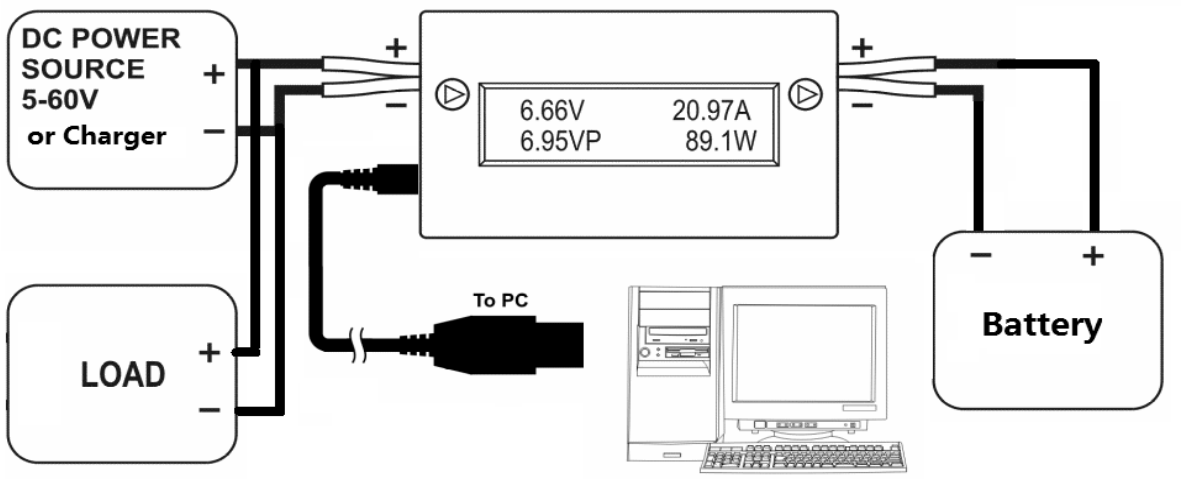
Bi-directional Connections with 5-60V dc range



Bi-directional application with external DC for 0-60V meter range

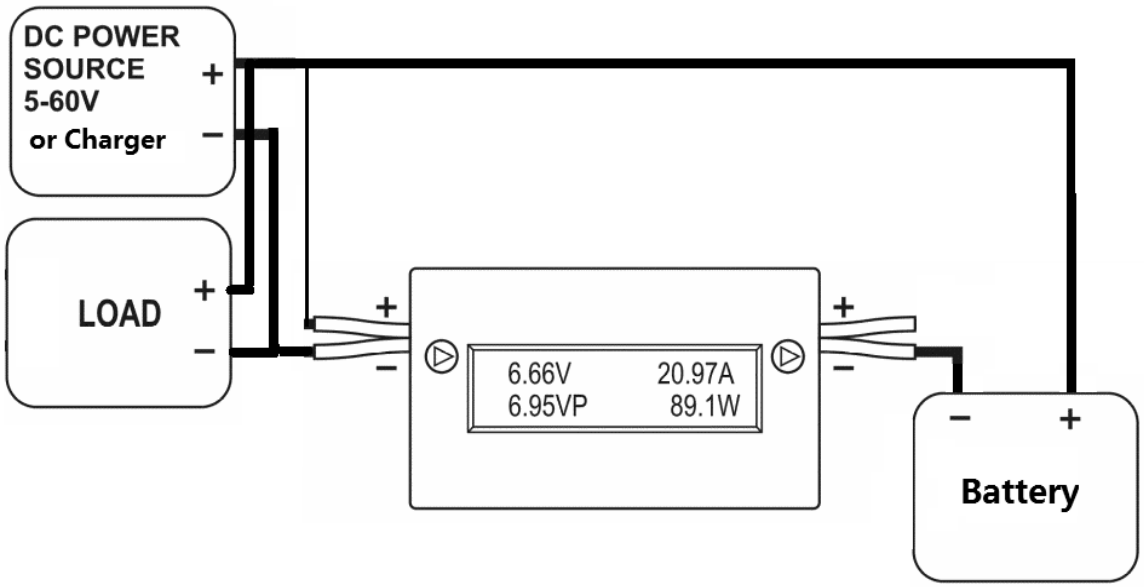


Bi-directional Application Connect to PC*



*Remark: PC software, driver, software and Bluetooth manual can be downloaded from http://www.manson.com.hk/product/dpm-3332/

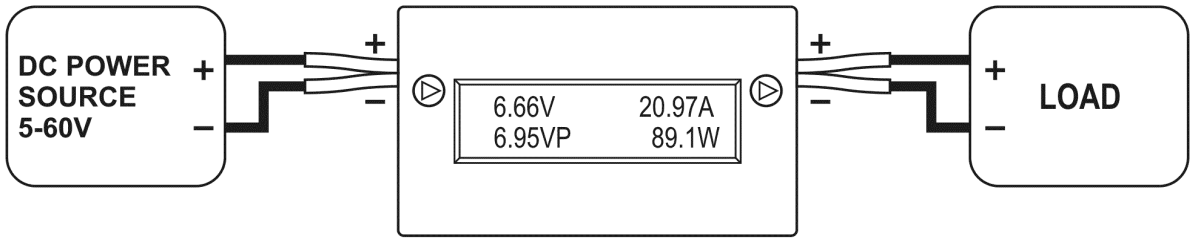
Bi-directional Application 3- wire connections



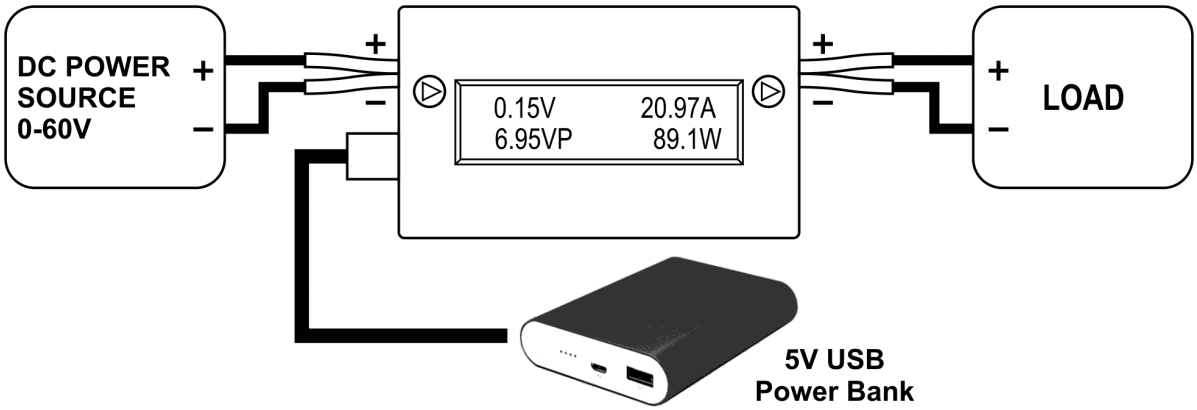
Unidirectional Connections

When used in unidirectional applications, there is **no** negative current.
Terminal 3 is normally used as a load terminal and Terminal 1 is for input source.

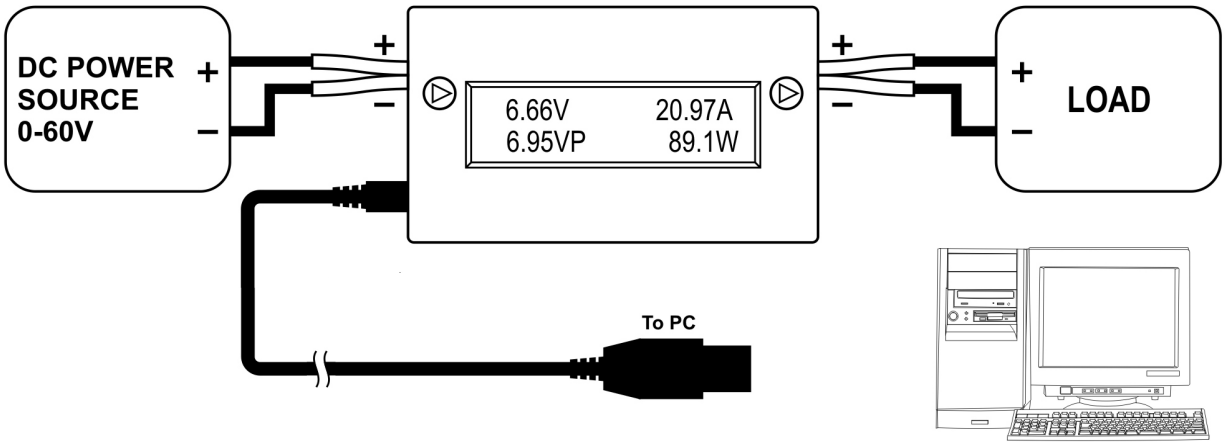
The following are some examples for four wire meter connections.



Unidirectional application with external dc for 0-60V meter range



Unidirectional Application Connect to a PC*



*Remark: PC software, driver, software and Bluetooth manual can be downloaded from http://www.manson.com.hk/product/dpm-3332/

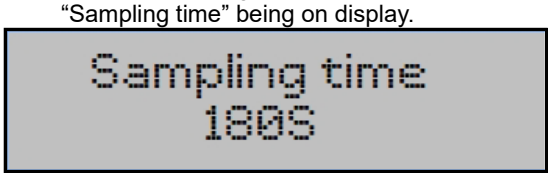
Operations and Displays

Installation of the DC Power Meter

1. First connect the leads to the side that provides the d.c. power to the meter and check for displays in the LCD. If no display shows up in LCD then check for reverse polarity.
2. Connect the remaining leads to complete the installation of DC Power Meter.

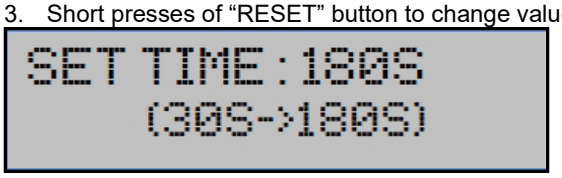
Set data logging time interval

1. On powering up DPM will display “Version No. & USB” then “Sampling time”. To enter sampling time setup mode, **PRESS** and **HOLD** the “RESET” button within 5 second of “Sampling time” being on display.

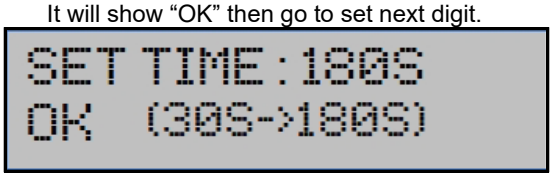


2. The sampling time can be adjusted between 30s and 180s. It starts with the setup of the far left digit at the hundred position first then the second and third digit. The number being set is flashing.

3. Short presses of “RESET” button to change value in the digit.

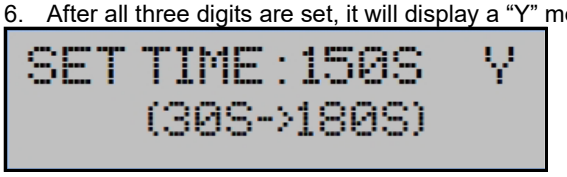


4. **PRESS** and **HOLD** the “RESET” button to confirm the chosen digit in the number. It will show “OK” then go to set next digit.

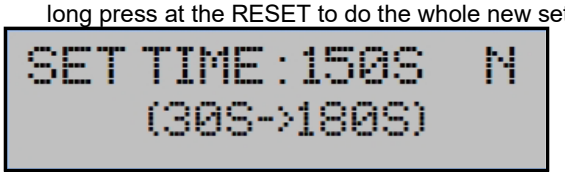


5. Repeat step 3 and step 4 for all digits.

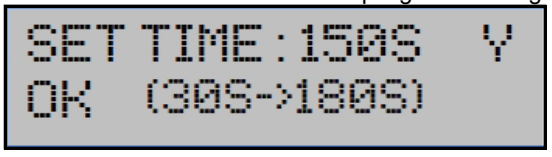
6. After all three digits are set, it will display a “Y” meaning YES for you to confirm by a long press of the RESET.



7. In case you want to change the new setting, a short press at the “RESET” button to change “Y” to “N” followed by a long press at the RESET to do the whole new setting of sampling period.



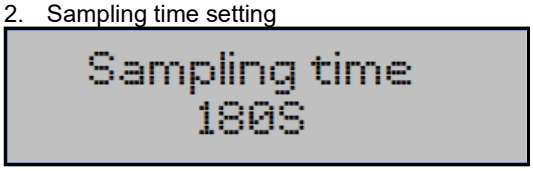
8. In the case the setting is correct, then **PRESS** and **HOLD** “RESET” button to confirm the value. It will show OK to confirm sampling time setting. Then the DPM go to operation mode.



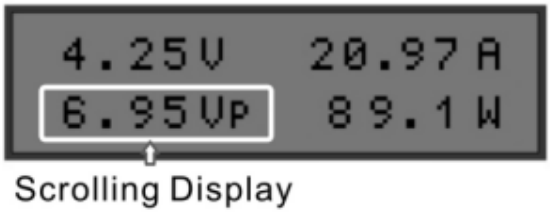
DISPLAY indications

1. On the first power up the display shows the firmware version and factory preset data port mode.

2. Sampling time setting



3. Measured Data Displays



The data in the scrolling quadrant: Time period in use, Ah (Amp Hour), WH(Watt Hour), Vp (max voltage), Ap (max.current), Wp(max.Watt), Vm (min.Voltage), Negative: -Ah, -WH, -AP,-Wp back to Time period in use, can be fixed and released by one quick press of the Reset button.

Current (Amps A, Peak Amps Ap, - Amps):
The Amps value is the average current through the Meter's black wire over the last screen update interval.
Ap is the Peak (maximum) is current to the LOAD side, since the start up screen to the present moment. Similarly for negative Ap.
V**oltage (Volts V, Maximum Voltage Vp Minimum Voltage Vm):**
The Volts value is the average voltage over the last screen update interval.
Vp is the Peak (maximum) voltage & Vm (minimum) from the source side since start up screen to the present moment. There is no negative Vp or Vm registered .

Charge (Amp-hours Ah , negative amp hour Ah):
Ah is total amp-hour delivered to the battery while negative Ah is the total Ah discharge from battery since start up synchronized with the internal clock of the MCU.

Energy (Watt-hours Wh and negative Watt hour):
Wh is total watt-hour delivered to the battery while negative Wh is the total Wh discharge from battery since start up synchronized with the internal clock of the MCU.

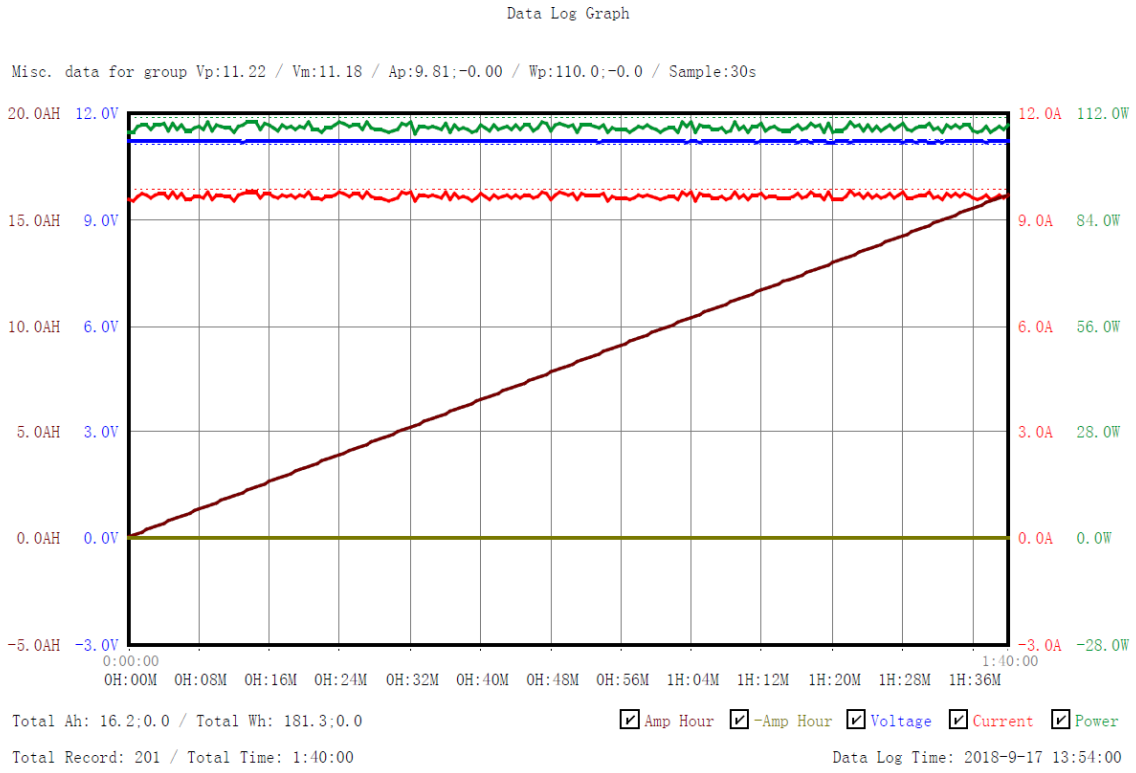
Power (Watts W, Peak Watts Wp，negative Watts W, negative Peak Watt):
The W value displayed is the average power delivered to the battery wie negative W is the discharge W from the battery over the last screen update interval. The displayed Peak Watts value (Wp) is the maximum power delivered to the battery and negative Wp is the maximum power discharged from battery...

Display duration time after power ON

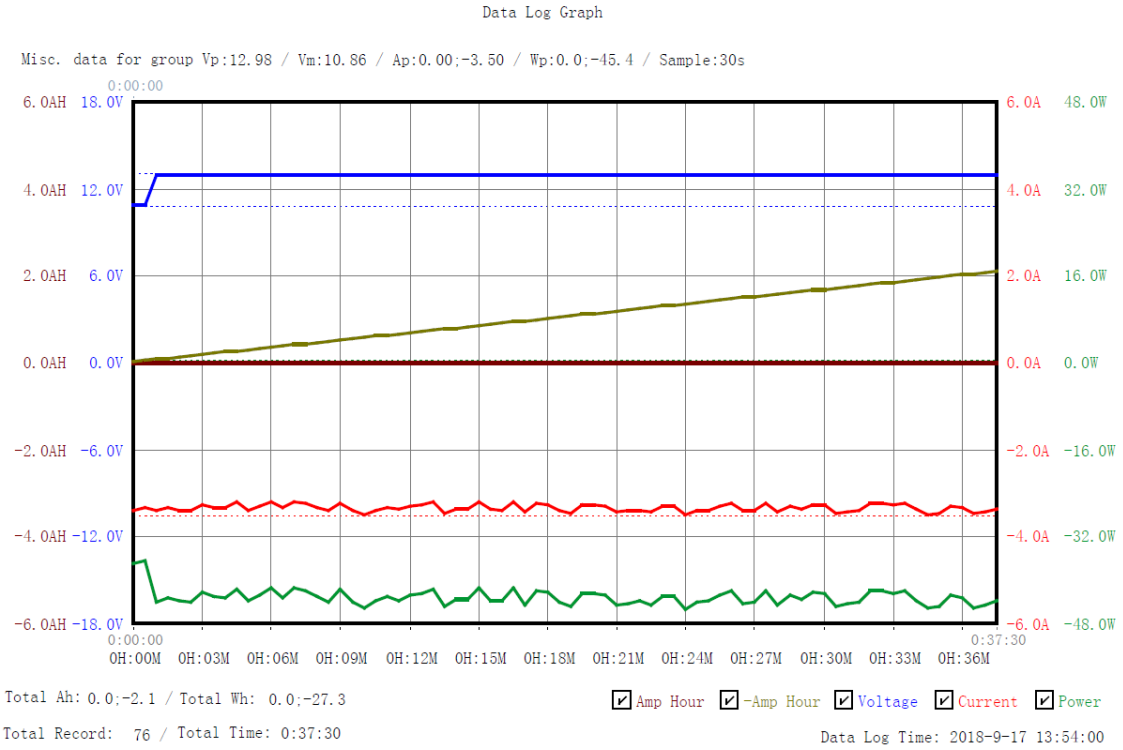
Reset DPM

The stored data can be reset to 0 by using reset button.
Press and hold the Reset button until the LCD display show “Press again 5 seconds to reset”,
Then release the Reset button quickly, press again and hold 5 seconds to delete all the stored measured data.

Charger Data Log Graph



Discharger Data Log Graph



Specifications

Measured Parameters	
Current Range Amp.	-20Amp to 20Amp continuous, 30Amp(-30Amp) max. for 30minus., 60Amp(-60Amp) max. for 5second and non-repeatable within 60 second
Voltage Range Volt.	5-60V or 0-60V with external DC source
Resolution of V & I	0.01V, 0.01A
Scrolling Display of Registered Parameters	
Ampere Hour (AH)	Max. recorded AH: 99,999AH; -99,999Ah Resolution of AH: 0.01AH for -1,000Ah< total recorded AH < 1,000AH 0.1AH for 10,000 > total recorded AH > 1,000AH or -10,000 < total recorded AH < -1,000AH 1AH for total recorded AH > 10,000AH or total recorded Ah< -10,000AH
Power Watt (Wp) registered	Max. recorded W: 3600W;-3600W Resolution of W: 0.1W
Energy: Kilo Watt Hour (KWH)	Max. recorded KWH: 9999.9KWH;-999.9KWH Resolution of KWH: 0.1KWH
Registered Peak Voltage (Vp), Min. Voltage (Vm), Peak Current (Ap), Negative Peak Current (-Ap)	The new high and low values of voltage and current will replace the old ones during the metering period and registered at the finish of the metering period
Accumulative Max. Operation Period logged	180 hours
Scrolling speed on LCD	3 seconds for one parameter
Data logging interval	Select-able from 30s to 180s
Operation Voltage & Current	5-60V and 20mA
5V USB Power Bank	5V, 20mA
Operation Condition	0-40°C, non condensing humidity
Storage Condition	Minus -10°C - 60°C
Construction	
LCD Display	VA=54 x 14.4mm, 16 character x 2 row STN 5*8 dots
Housing Material	Poly-carbonate
Dimension & Weight	75(L) x 45(W) x 23(D) mm 100g approx.
Supplied Accessories	Snap-on mounter, 2 screw-on type connector blocks, USB Cable
Approvals	CE EN 61326

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