Battery Fuel Gauge Specification

Model Number: FUEL02

Doc No: **FUEL02**

Version: **01**

Date: **2012-03-16**

MADE IN CHINA

Overview:

FUEL02 any new lithium battery batteries , lithium iron phosphate batteries, lead-acid, nickel metal hydride, etc. are common to high-precision current acquisition type (commonly known as: Coulomb meter) capacity display indicates parameter analyzer, hereinafter referred to gauge. Can always use a detailed understanding of the specific situation of the battery; has a wide operating voltage range, low power consumption, indicating high accuracy. Can be set payload capacity and other battery parameters, with automatic power-down memory function.

Display:

1 remaining battery capacity (Ah or mAh);

(2) the capacity of the percentage and the totem pole display;

3 battery voltage;

4 battery current value;

5 output power value;

6 for charging and discharging the remaining time.

Features:

1 remaining battery capacity display true high precision capacity indicator;

2 opens automatically when you use the backlight function

3 Down Memory Function

4. Adapt super power load

5 high sensitivity

6 Low Power

Wiring: When charging or discharging the maximum current is less than 10A, you can use the built-in type; below:

NOTE: applications than 3A, figure RS + / RS-wires must be directly welded to the circuit board, the socket can not be used.
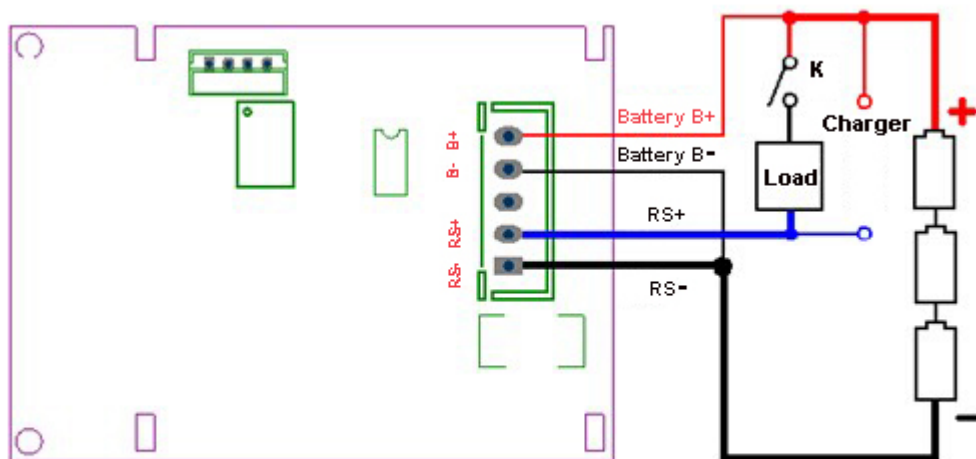
Built-in sample connection diagrams

When charging or discharging the maximum current is greater than 10A, need to use an external type:
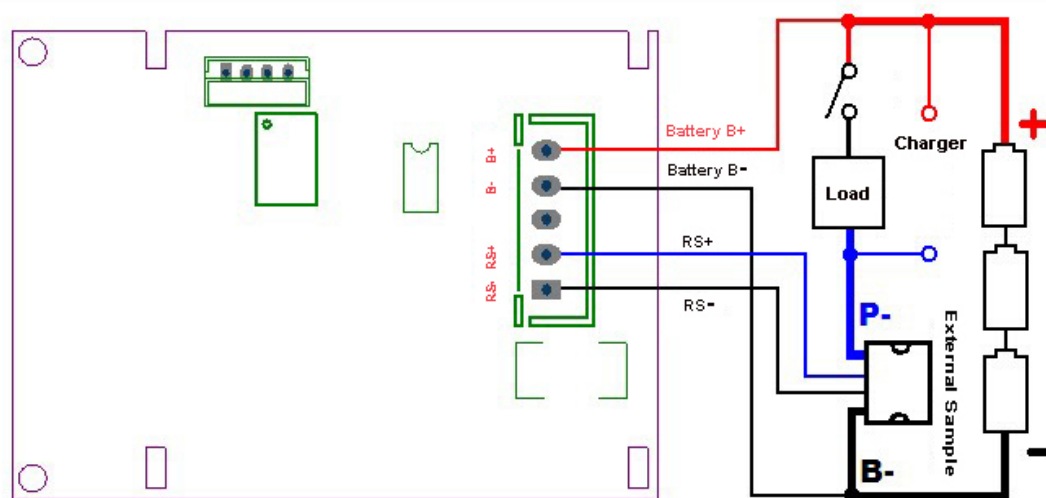
External Sample connection diagram

Basic electrical performance parameters:

Parameters	Min	Typ	Max	Unit
Operating Voltage Range 1 (routine use)	8.0	12.0	30.0	VDC
Operating Voltage Range 2 (high pressure)	30.0	36.0	63.0	VDC

Working power consumption		8.0	10. 0	mA
Standby Power		3.0	4.0	mA
Sleep Power Consumption		10	20	uA
Precision voltage acquisition		±1.0		％
Current acquisition accuracy		±1.0		％
Ambient temperature range	0	20	+35	℃
Current backlight lights		40	50	mA
Backlight off lamp current		30	40	mA
Battery capacity settings	0.1		590	Ah
Built-in operating current		5.0	100 （Instantaneous）	A
External Current		30.0	100 （Instantaneous）	A

Use Instructions:

1 is completed in accordance with the connection icon, and finally connect the battery B + to the entire circuit, then the LCD screen should display the battery voltage and the memory chip factory

Capacity, not the actual capacity of the battery. To get the actual battery capacity, first after the battery is fully discharged power, then charge, this time

Show the real capacity of the battery capacity is; If the screen does not display, you should check the power circuit connections are correct after re-power.

2 connected to the load, so that the circuit generates a current greater than 50mA, the bottom middle of the current value should be displayed at this time should be lit backlight power (eg

Backlight blinking, RS + and RS-position contrary to connect the positive and negative), which means that the load in the discharge, while the middle of the right side of the screen display time

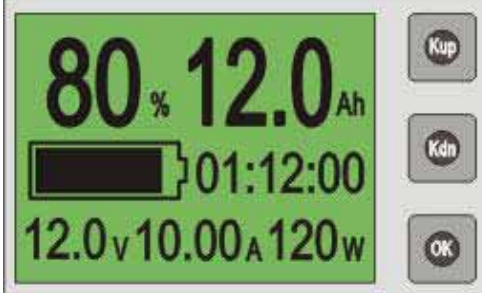Shows the time remaining for the current load current can be used.

3 Disconnect the load, connect the charger, then intermittent flashing backlight power (eg, lit it indicates the position of the positive and negative connections RS + and RS-opposite),
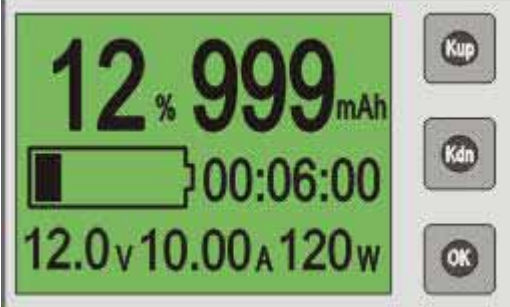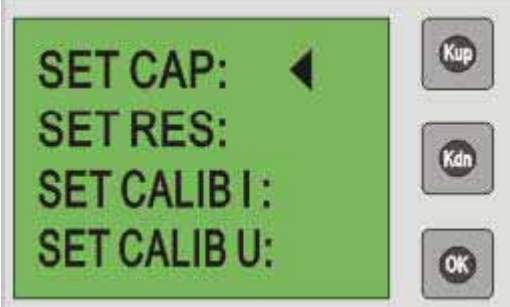
Instructions in the charge, while the middle of the right side of the screen displays the time full charging current for the current electricity needs much time, note that if the load Flow fluctuations, the time will fluctuate with, is a normal phenomenon.

4 during charge and discharge, you must let the fuel gauge energized in working

condition, otherwise the battery capacity will not be accurately calculated;

5 in the charge and discharge, the battery can not power off the table; at current value is less than the light, the backlight is off, the memory capacity of the fuel gauge will not be lost.

6. The payload capacity of the battery pack is unknown, then the first battery vent into engineering mode gauge will try to set up a large payload capacity.

Charging the battery pack again after the next full screen recording capacity value, then enter engineering mode power table will be set to the payload capacity

Capacity values recorded, so as to gauge shows the percentage of correct values.

7 Note that if the actual payload capacity battery setting error, then the percentage will have the capacity to display error, please correct settings;

8 Due to the high sensitivity, so standby (battery pack no input or output current), if subjected to radiation near the electrical interference (open

Open or close the motors and other inductive loads, etc.), may cause brief turn on the backlight, is a normal phenomenon.

9. RS + and RS-must be connected to the battery negative loop, non-connected to the positive loop!

10. Due to the sampling circuit interference filter delay, dramatic changes in the current situation may produce frequent errors collection, thereby affecting the capacity of accuracy

Parameter display and setting
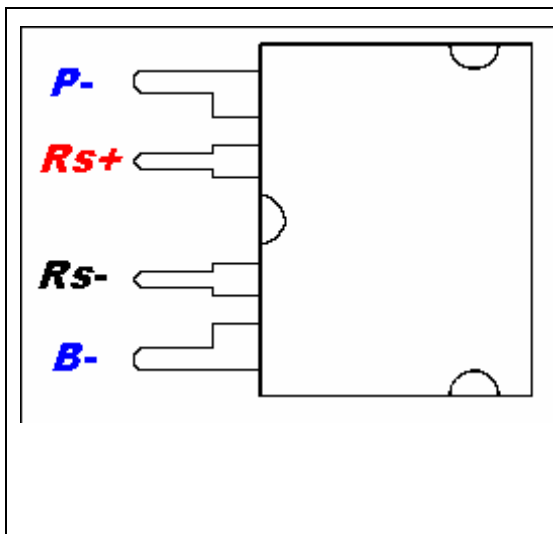
	The main interface description: 1 shows the percentage of the upper left corner of the current remaining capacity; (2) the upper right corner displays the current actual remaining capacity (Ah / mAh); 3 shows the battery symbol in the middle on the left, inside an intuitive totem Form displays the remaining capacity of the battery size ratio; 4 middle right shows charging or discharging the remaining time available for the remaining time, the maximum display 99:00:00; 5 The bottom of each voltage, current, power battery parameter display.

12 % 999 mAh [battery icon] 00:06:00 12.0 v 10.00 A 120 w Kup Kdn OK	Basic use: 1 in the charge and discharge current <40mA when entering a low-power standby state, the backlight off, display the remaining capacity and voltage values; (2) In the discharge current value> when 50mA, automatic backlight lit, but start to consume battery capacity value, display the remaining time available; (3) In the charging current value> when 50mA, backlight starts flashing, and began filling the battery capacity is calculated and displayed to the time required for a full charge;
SET OFFVOLT: **11.00 v** Kup Kdn OK	Off the set voltage value: 1 In order to ensure accurate low-power memory and battery capacity under low pressure, you need to correctly set the shutdown voltage value; 2 In the main screen, press the "OK" button for 2 seconds to enter "SET OFF VOLT" setup interface; 3 Press "Kup" and "Kdn" button to select the value, press "OK" button to select the current set position; 4 Press "OK" button for 3 seconds or does not operate automatically after 20 seconds to save and exit the setting screen, return to the main interface;
SET CAP: ◄ **SET RES:** **SET CALIB I :** **SET CALIB U:** Kup Kdn OK	Battery capacity (payload capacity) Set 1: 1 Note: Be sure to get an accurate battery capacity value, and then set! 2 Press and hold the power button 3 after entering the engineering mode menu selection interface.; 3 Press "Kup" or "Kdn" button to select the setting item; arrow pointing to "SET CAP" project; press "OK" button to enter; 4 Do not pay attention to other settings set their own parameters.

	Battery capacity (payload capacity) Set 2: 1 Press "Kup" or "Kdn" button to select an accurate battery capacity value; 2 Press the "OK" button to select the current set position; 3 confirm the value is correct, press the "OK" button for 3 seconds to save and exit the setting screen, return to the engineering mode menu interface; 4 After the power on again to work properly.
	Use external sampler: 1 between the sample and the power table Rs + / Rs-conductor signal cable, you can use 22/24 # Safety Line) extended its own. If more than 50cm or environmental electromagnetic interference is relatively large, set RS + / Rs-two twisted wires, can also be used in which a pair of cable strands. . 2 B-is a high-current line connected to the battery negative B-; P-current line is large, and the load connected to the negative charge. Typically an external battery pack sampler and the nearest connection. 3 In these current applications 20A Please external samplers installed on (the back of the metal-insulator sampler) on good heat dissipation metal.

Battery capacity zero and full power:
1 In some cases the need for the current memory capacity be zero or full power operation;
2 In the main screen, long press the "Kup" button will be full power operation with a capacity of maximum 100%. "; Press" Kdn "key memory capacity of the battery will be zero; note that the above operation will not be restored memory capacity value before;

Standby wake-up operation:
1 When the battery voltage falls below the shutdown will enter the low voltage power sleep state. To view the electricity goes to sleep, press any key gauge wakes up and displayed for 5 seconds, as the battery voltage does not rise to normal, will once again go to sleep. When gauge need to use the sleep state, which allows the battery pack into the charging or discharging state, press any key to wake gauge; again after power can also be powered down.
2 Note that in the sleep state, power is inoperative, this time for charging and discharging

the battery pack will not be logged.

3 In the larger battery capacity and the correct settings after shutdown voltage, power meter can be connected to the battery pack long without additional switches.