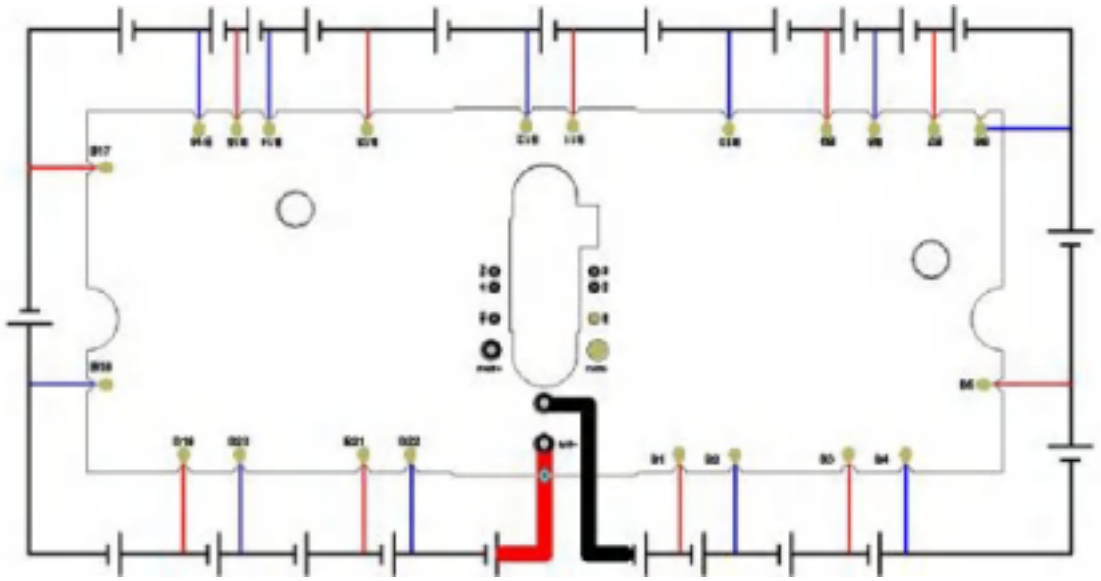
Segway PT Battery 73.6V 14AH

1. Photos of the different view of the battery

2. Schematic diagram of the line installation



3. Application Scope

The specification is applicable to the ternary battery pack manufactured by UNC Battery Co.,Ltd. **Technical Details**

NO.	Item	Technical Paramters	Notes
1	Rated Capacity	14 AH	Standard discharge (0.2 C5) after standard charge (0.2 C5)
2	Min Rated Capacity	12.6 AH	
3	Nominal Voltage	73.6V	
4	Recycle Life Span	60-80% of the Initial Capacity of the Cells	•Charge: CC@0.2C to84V, then CV till current to 0.05C •Rest: 30min. •Discharge: 0.2C to 46.0V •Temperature:20±5℃ •Carry out 1000cycles
5	Discharge Cut-off Voltage	46V	
6	Charging cut-off voltage	84V	
7	Cell and assembly method	LG 18650 3500 mAH	
8	Housing material	ABS+PC housing	
9	Standard charge	0.2C constant current(CC) charge to 84V,then constant voltage (CV) 84V charge till charge current decline to ≤0.05C	Charge time : Approx 8hrs
10	Standard discharge	Constant current 0.2C Cut-off voltage 57.5.0V	
11	Max Charge Current	4.5A	
12	Continuous Discharge Current	30A	
13	Operation Temperature Range	Charge: 0~45℃, Discharge: -10~60℃	60±25%R.H.
14	Storage Temperature Range	Less than 1 year: 0~25℃, Less than 3 months: -5~35℃	60±25%R.H. at the shipment state
15	Charge protection	When the Battery modules are charged to full, MOSFET disconnect the charger.	
16	Balancing	The intra-module balancing circuit is used to compensate slight capacity imbalance among the 23 cell blocks within a battery module.	
17	State of Charge(SOC) Measurement	Individual cell block voltage and charge/discharge current will be used to monitor the state of charge (SOC) of the battery module. The estimated capacity used for the calculations will be adjusted to meet the capacity of the lowest capacity cell block when the battery system is fully cycled. The state of charge will be adjusted for normal self discharge of the battery system when the unit is not on charge.	
18	I2C Communication	I2C Communications will be used to communicate with	
19	Status LED	A Dual LED on module to indicate working status. One is green and the other one is red. Blinking of the green LED indicates that the module is working properly. Blinking of the red LED indicates that the module has failure and needs service.	

5. Performance And Test Conditions

5.1 Standard Test Conditions

Test should be conducted with new batteries within one week after shipment from our factory and the batteries shall not be cycled more than five times before the test. Unless otherwise specified, test and measurement shall be done under temperature of 20±5℃ and relative humidity of 45~85%. If it is judged that the test results are not affected by such conditions, the tests may be conducted at temperature 15~30℃ and humidity 25~85%RH.

5.2 Measuring Instrument or Apparatus

5.2.1 Measuring Instrument or Apparatus

The dimension measurement shall be implemented by instruments with equal or more precision scale of 0.01mm.

5.2.2 Voltmeter

Standard class specified in the national standard or more sensitive class having inner impedance more than 10kΩ/V

5.2.3 Ammeter

Standard class specified in the national standard or more sensitive class. Total external resistance including ammeter and wire is less than 0.01Ω.

5.2.4 Impedance Meter

Impedance shall be measured by a sinusoidal alternating current method (1kHz LCR meter).

5.3 Standard Charge/Discharge

5.3.1 Standard Charge : 0.2C

Charging shall consist of charging at a 0.2C constant current rate until the battery reaches 84V. The battery shall then be charged at constant voltage of 84V volts while tapering the charge current. Charging shall be terminated when the charging current has tapered to 0.05 C5A. Charge time: Approx 7.0h, The battery shall demonstrate no permanent degradation when charged between 5 ºC and 45 ºC.

5.3.2 Standard Discharge : 0.2C

Battery shall be discharged at a constant current of 0.2C to 57.5.0V @ 20º minus&plus

5C 5.3.3 If no otherwise specified, the rest time between charging and discharging is 30min.

5.3.4 Appearance

There shall be no such defect as crack, rust, leakage, which may adversely affect commercial value of battery.

6. Handling of battery

6.1 Prohibition short circuit

Never short circuit battery. It generates very high current which causes heating of the battery and may cause electrolyte leakage, gassing or explosion that is very dangerous.The poles may be easily short-circuited by putting them on conductive surface. Such outer short circuit may lead to heat generation and damage of the battery. An appropriate circuitry with PCM shall be employed to protect accidental short circuit of the battery pack.

6.2 Mechanical shock

Falling, hitting, bending, etc. may cause degradation of battery characteristics.

7. Storing the Batteries

The batteries should be stored at room temperature, charged to about 30% to 50% of capacity. We recommend that batteries be charged about once per three months to prevent over-discharge.

8. Period of Warranty

The period of warranty is 12 months from the date of shipment. UNC guarantees to give a replacement in case of battery with defects proven due to manufacturing process instead of the customer abuse and misuse.

9. Other Chemical Reaction

Because batteries utilize a chemical reaction, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, if the various usage conditions such as charge, discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage. If the batteries cannot maintain a charge for long periods of time, even when they are charged correctly, this may indicate it is time to change the battery.

10. Others

Prevention of short circuit within a battery pack
Enough insulation layers between wiring and the cells shall be used to maintain extra safety protection.
The battery pack shall be structured with no short circuit internally, which may cause generation of smoke or firing.

11. Package Details

Gross Weight: 5.75KG Dimension(L*W*H): 42CM*27CM*16CM