

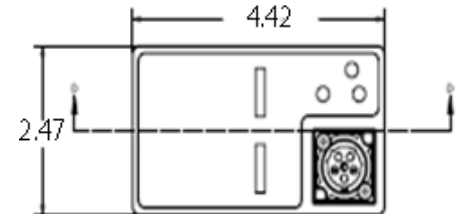
1. SCOPE

This specification describes the electrical, mechanical and environmental parameters for this battery pack consisting of a Lithium Ion cell 14.4V/ 7200 mAh x 2, with protection safety circuit and gas gauge with LCD display.

2. Dimensions:

- Thickness = 2.47''
- Width = 4.42''
- Length = 5.0''

3. Weight: 1500g

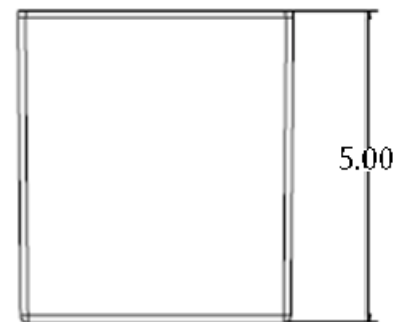


4. Cell specification: Lithium- Ion Battery

4.1 Nominal voltage: 28.8V (series) or 14.4V (parallel)

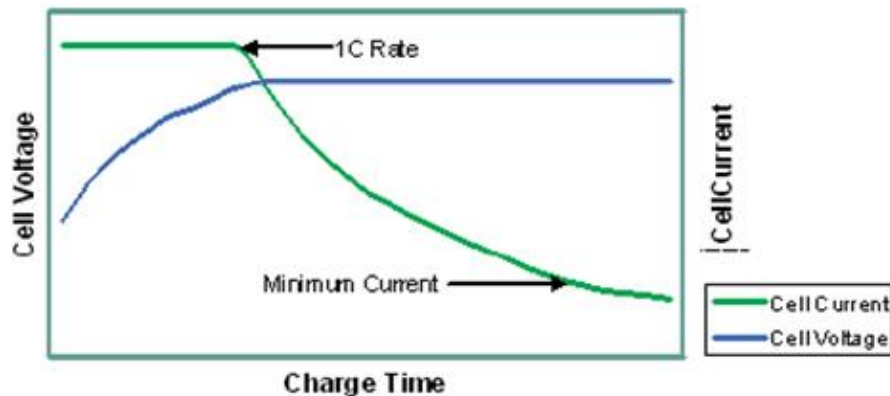
4.2 Capacity: Nominal 7200mAh x2 at 25°C using:

- Charge profile of 14.4V per sub-pack
- Recommended charge current of 3750mA
- Charging time of 3 hrs or a taper current of 360mA (C/20)
- Discharge profile with a maximum current of 1440mA (C/5) to 2.5V



4.3 Charging the Battery:

Lithium Ion Charging Characteristics



4.3.1 Charge condition:

- CV of 16.8V max
- CC of 3.0A max.

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4.3.2 To charge lithium-ion battery packs please follow the charging instruction stated below:

Charging instructions

- Charge Voltage: Limit the maximum charge voltage to 4.2V times the number of cells connected in series. This charging voltage is noted on the product specification sheet.
- Charge current: Packs should be charged at C rate for lithium-ion cells. C is the nominal capacity of the pack. (Example: for a 2400 mAh cell, charge at 2.4A).
- Pre-charge: If the cells are deeply depleted (less than 2.9V per cell), packs should be charged at 10% of their capacity (Example: for a 2400 mAh cell, charge at 240 mA) until reaching 3.0V per cell when charging can be continued as stated above.
- Charge temperature: Do not charge lithium ion cells at less than 0°C or more than 45°C.
- Reverse polarity: When connecting the cells to a charger, verify proper polarity.
- Charge method: Lithium ion cells should be charged using a constant current/constant voltage (CC/CV) method. Apply the charge current as stipulated above in step 2 until the pack reaches the voltage measured in step 1. Then, hold the voltage constant until the current tapers down to about 5% of nominal capacity (Example: for a 2400 mAh cell, charge until current is 120 mA).

4.4 Discharge condition:

- Cutoff voltage of 12.0V per sub-pack.
- Maximum discharge current of 4.0A per sub-pack (8A in parallel configuration).

4.5 Cycle life: 80% of initial minimum capacity after 300 cycles at 0.2C, 21°C

4.6 Temperature:

- Charge 0~45°C
- Discharge -20~60°C
- Storage 20~35°C

4.7 Products shipped have 40% state of charge typical

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5. Protection Safety Circuit

- Main IC controller is Texas Instruments BQ20855 with BQ29311 analog front end
- Overcharge cutoff voltage: 4.30V +/-25mV per cell
- Overdischarge cutoff voltage: 2.40V +/- 25mV per cell
- Overcurrent detection will occur at approximately 18.5A
- Thermistor: 10k, 5%
- Thermal Fuse: 93°C trip point

6. Additional component

- Polyester Label
- Polycarbonate ABS Plastic Tray
- Polycarbonate ABS Plastic Cover
- Nomex, Kapton Tape, PVC Heat Shrink, or similar insulators

7. Storage temperature and Humidity range

- -20~20°C,45-85%RH (within 1year)
- -20~45°C,45-85%RH (within 3 month)
- -20~60°C,45-85%RH (within 1 month)

8. Storage cautions

- Do not store packs in places of high temperature or under direct sunlight
- For long term storage, store packs in 30% charge state.
- Do not store packs in place which may expose them to rain, water or high humidity.

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