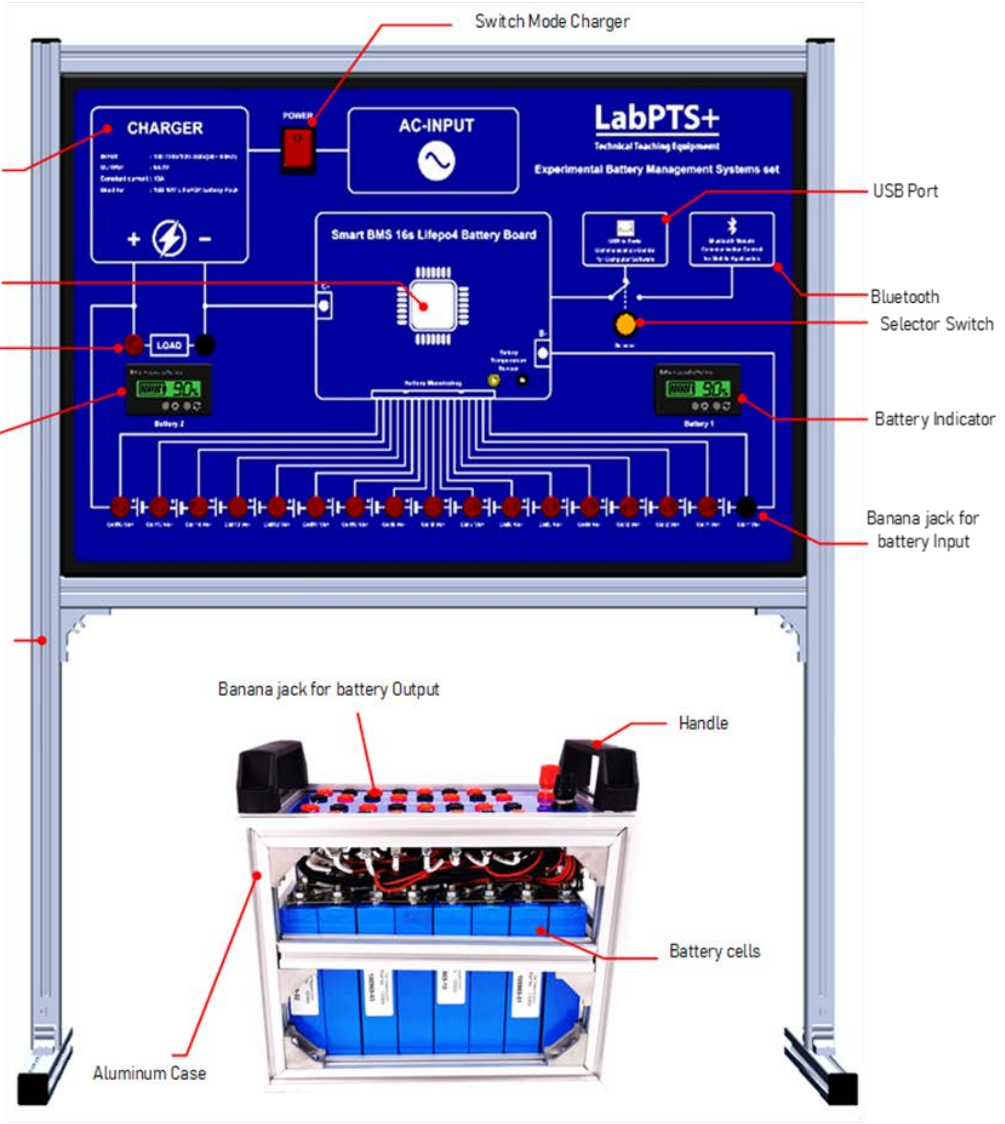
# Experimental Smart Battery Management System set

for Education in Automotive Control System Field




## FEATURE DETAIL

- Experimental Smart Battery Management System set is designed as the electric vehicle learning set so suitable undergraduate degree or vocational/diploma education.
- Cover the lesson comprehensive to electric vehicle system such as batter power supply, battery charger. electromechanical machine in automobile and sensor system, battery management, principle charger system.
- Support for software development or coding by simulation as electronic control unit (ECU)
- In addition, Experimental Smart Battery Management System set can interface with xMCU Development Board V1.0 for self-design and development about the electric vehicle system.
- Experimental Smart Battery Management System set can integrate learning with electric vehicle Lab kits.

## ACCESSORIES LAB KITS

- Experimental Smart Battery Management System set
- Battery Unit
- Banana Cable
- USB Communication Cable
- AC Power Cable
- Worksheet Document.

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## SYSTEM CONFIGURATIONS

| Module Interface | Description | Remark |
|---|---|---|
| **Smart-BMS 16S** | | |
| **- Model Number:** | 16S 48v 60A | |
| **- Constant Discharging Current** | 60A | |
| **- Over- Current Protection value** | 70A | |
| **- Constant Charge Current** | 40A | |
| **- Charge voltage** | 3.6V *Cell series | Lifepo4 |
| **- Over-charge detection Protection voltage** | 3.75±0.03V | #Cell series |
| **- Over-charge protection delay time** | 1000ms | |
| **- Over-charge protection recovery voltage** | 3.6±0.05V | |
| **- Balance start Voltage** | 3.4V | |
| **- Balance release voltage** | Less 3.4 | |
| **- Balance current** | 50-60mA | |
| **- Over-discharge detection voltage** | 2.7±0.1V | |
| **- Over-discharge protection delay time** | 1000ms | |
| **- Over-discharge protection recovery voltage** | 2.8±0.1V | |
| **- Discharge over temp protection** | 75±5 degree | |
| **- Over temp release conditions** | 65 degree | |
| **- Applications** | Electric vehicle, Automotive, | |
| **Charger** | | |
| **- Model Number** | UY360 | (For 16S |
| **- Input voltage** | 110/240 VAC | LiFepo4 |
| **- Output voltage** | 58.4V | Battery 48V) |
| **- Output current** | 5A or 6A(max) | |
| **- Charging indicator** | LED1 Red: Power On, LED 2 Red: Charging, LED 3 Green: Charged | |
| **- Applications** | LiFepo4, Lithium ion, Lead Acid | |
| **Battery** | | |
| **- Model Number:** | TB-027070145E-Fe-20Ah | |
| **- Nominal Capacity** | 20Ah | |
| **- Internal Impedance** | ≤10mΩ | |
| **- Nominal Voltage** | 3.2V | |
| **- Max charge Voltage** | 3.65V | At CC mode |
| **- End-of-charge Current** | 0.05C | At CV mode |
| **- Cut-off discharge Voltage** | 2.00V | |
| **- Standard Charge Method** | 1C CC/CV | 25±5℃ |
| **- Max pulse Discharge Current** | 5C | Discharge |
| **- Recommended discharge current** | ≤20A | Time: 10 |
| **- Max continuous discharge current** | ≤60A | seconds |
| **- Charging Temperature** | 0～45 degree | |
| **- Discharging Temperature** | -20～55 degree | |
| **- Storage Temperature** | 10～30 degree | |
| **- Appearance** | Without break, scratch, distortion, contamination, leakage and so on | |
| **Structure** | | |
| **- Material** | Aluminum | N/A |