Li-ion Modular battery
TYVA MODULOO

VERSIONS
FE / FP / ME/ MP
PRECAUTIONS AND SAFETY MESURES

- Read the manual before assembling electrical and mechanical batteries
- Before making the connections, make freehand sketches defining all electrical connections
- Remove all metal objects from your hands: ring, bracelet, watch... etc.
- Use insulated tools
- Do not short-circuit the modules
- Do not immerse the modules in a wetland
- Do not insert metal objects into the modules
- Do not burn the modules
- Do not disassemble the modules
- Do not subject to shocks or falls
- In case modules have a default and no voltage, do not commission the module and contact TYVA ENERGIE at +33 (0)4 26 30 80 79 or an authorized distributor
- Use a battery charger suitable for (Voltage and load current)
- Use only accessories and screws supplied with modules TYVA MODULO
- For higher voltages up to 48 volts, use personal protective equipment: gloves, goggles and face shield, hearing protection.
- Do not integrate into modules of 18650 cells of different batches, voltage and chemistry.
TYVA MODULOO modules and accessories

- Tyva Moduloo modules equipped with their 5D discs
- Isolated tabs on the horizontal link
- Vertical connection to Staples
- Protective cover for 5D disk
- T20 screws
- 1 Mounting insulated tool
OVERVIEW TYVA MODULOO MODULE

Positive and negative disc connexions (5 directions)

For making electrical connections.

External BMS guidewire

Channels

Air circulation
(8 areas)

4 measurement zones for temperature sensor

4 feet for vertical assembly and electrical insulation

4 M4 fixing points

4 rails and 4 slides for horizontal assembly

Positive face

Negative face
1) Module assembly

1.1 Horizontal assembly

- Using a flat surface for the production and the assembly modules
- Using the rails and the slides present on the periphery modules

- Serialization with 4 modules

Production example, with an 4 modules assembly FE0314LN (3.3 V 13.6 Ah) which is a battery of 13.2 V 13.6 Ah

- Setting in parallel with 4 modules

Production example, with an 4 modules assembly FE0314LN (3.3 V 13.6 Ah) which is a battery of 3.3 V 54.4 Ah
1.2 Vertical assembly

This type of assembly is exclusive to the series connection of the modules. Use a flat surface

- Assembling a positive and negative pole
- Assembling the male and female feet

Production example, with an 3 module assemblage FE0314LN (3.3 V 13.6 Ah) which is a battery of 9.9 V 13.6 Ah

1.3 Horizontal and vertical mixed assembly
2) Creation of electrical connections

Before making the connections, make a freehand sketches defining all electrical connections

2.1 Installation of the horizontal connecting tab

- Putting in position the connector tab on the metal discs, with the T20 M4 screws provided
- Use the special key isolated to fix 2 screws
- Use only the specific screws supplied with Tyva MODULOO products

For applications or battery is vibration, electric vehicle 2 or 4 wheels, electric boat ... etc.
To coat a surface with all Loctite or AEC Polymers brand thread locking screws or (standard or medium braking).

2.2 Installation of the vertical clip

Each clip carries a maximum current of 30 A, depending on the charging current and discharge your application, it is possible to equip the disks up to 4 staples or a maximum continuous current of 120 A.

Putting in position the clip on the end of the tool or use the isolated key supplied with the kit

2 bosses of the clip must be in position in the 2 holes each flat being on the disks
3) Setting up of protective cover

- Using the two pins on the cover, insert the cover in available holes present on the upper face of each module
- Push down

4) Connection of external PCM or BMS

4.1 Connecting of BMS cord intermediate

Cord guides located on modules each side, allowing the wire passage with an outer 1.5 to 2mm diameter. It’s possible to place up to 8 in each guidewire.

- Placing into position ring terminals on the available four points on positive or negative each disk TYVA MODULO modules (Red mark on figure A)
- Fix the terminals using 4 M4 screws provided with TYVA MODULO products
- Position the cord with the cord guide 8 placed on each side of the modules (Blue marking on figure A)
- Do not pinch the cords and not obstruct the ventilation of 4 holes (Yellow marking)
4.2 Temperature sensor setting up

- Insert the temperature sensors in one of the 4 holes present on each positive or negative modules side
- Insert the probe wire of the taster in the thread guide
- Position the sensor wires with the 8 thread wire placed on module periphery (blue mark on figure A)

Figure A
6) Fixing Modules

A) Fixing at the centre:
Each block of 4 assembled modules form a mounting well for attaching the modules mechanically on a chassis.

- Insert a plastic threaded rod with a diameter of 6 or 7 mm
- Use a plastic/metal hex nut equipped with a washer

B) Fixing on the side:
The outer sides of each Tyva MODULO module are equipped with 4 guides for passing 4 mm diameter rods.
7) Assembly example

Li-ion NMC 28.8 V 46 Ah battery assembly created with 16 modules ME0323PC and an external BMS integrated in a housing.