



# DATASHEET

## Premium High Density 12S Series

### PRODUCT OVERVIEW

The Premium High Power 12S Series is engineered for the toughest drone applications demanding extremely high discharge currents at 48V class.

Built with Molicel INR21700-P50S – one of the world’s highest power cylindrical Li-Ion cells – these packs excel in aggressive flight profiles, rapid climbs, and heavy payload lifts, maintaining low voltage sag even under extreme loads.

### APPLICATIONS



**Commercial Drones**  
Agriculture, Cargo, Missions, Tactical



**Robotics**  
Warehouse, Cargo, Missions, Tactical

### CONNECTORS

For models with Smart BMS:

- **AS150U** Connector (Power + Communication)

For models without Smart BMS, providing cell balancing capability:

- **XT90** Connector (Power)
- **Molex Micro-Fit 16-pin** Connector (Balancing)

### PROTECTION FEATURES

Overcharge Protection  
Over-discharge Protection  
Overcurrent Protection  
Short Circuit Protection  
Temperature Monitoring and Protection

### COMMUNICATION INTERFACES

CANBUS  
RS485  
UART

### ADDITIONAL FEATURES

State of Charge (SOC) Estimation  
Cell Balancing  
Remote Monitoring Capability

\*\* The above features apply only for battery models with smart BMS.

| M O D E L                          |   |  |  |
|------------------------------------|---|--|--|
|                                    |   | TN12S3P-P50S-01                              | TN12S6P-P50S-01                                |
| ELECTRICAL SPECIFICATIONS          |   |  |  |
| Cell Configuration                 |   | 12S 3P                                       | 12S 6P   |
| Nominal Voltage                    |   | 43.2V  | 43.2V  |
| Nominal Capacity                   |   | 15 Ah  | 30Ah   |
| Energy                             |   | 780Wh  | 1,300Wh  |
| Charge Voltage                     |   | 50.4V  | 50.4 V   |
| Cut-off Voltage                    |   | 33.6V  | 33.6V  |
| Energy Density                     |   | 260 Wh/kg                                    | 260 Wh/kg                                      |
| CURRENT PARAMETERS                 |   |  |  |
| Max Continuous Discharge Current   |   | 180 A (12C)                                  | 360 A (12C)                                    |
| Max Pulse Discharge Current (≤30s) |   | 300 A (20C)                                  | 600 A (20C)                                    |
| Max Charge Current                 |   | 75 A (5C)                                    | 150 A (5C)                                     |
| PHYSICAL SPECIFICATIONS            |   |  |  |
| Dimensions (L x W x H)             |   | 75 x 80 x 300 mm<br>75 x 72 x 300 mm(no BMS) | 150 x 80 x 300 mm<br>150 x 72 x 300 mm(no BMS) |
| Weight                             |   | 2.8 kg                                       | 5.3 kg   |
| Enclosure Material                 |   | PVC Shrink Wrap                              | PVC Shrink Wrap                                |
| ENVIRONMENTAL SPECIFICATIONS       |   | PERFORMANCE SPECIFICATIONS                   |  |
| Operating Temperature              | Charge: 0°C to 45°C                     | Cycle Life                                   | ~300–400 cycles @high C                        |
|                                    | Discharge: –20°C to 60°C                | Designed to Meet                             | CE, UN 38.3, RoHS, IEC 62133                   |
| Storage Temperature                | Short-term (<1 month):<br>–20°C to 45°C | Warranty                                     | 12 months                                      |
|                                    | Long-term (>1 month):<br>0°C to 25°C    |  |  |
| Humidity                           | ≤85% RH                                 |  |  |

GOT QUESTIONS?  
GET IN TOUCH WITH US

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