



Premium Series

DATASHEET

Premium High Power & Density 12S Series



PRODUCT OVERVIEW

The Premium MoliceL 12S Series is engineered to power professional UAVs and drones requiring 48V-class systems, enabling greater flight efficiency, longer range, and reduced cable losses. Utilizing high energy density cells (MoliceL P60C & MoliceL M65A), this series delivers unmatched performance for endurance or heavy-lift drone applications.

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-P60C-01

TN12S3P-M65A-01

TN12S6P-P60C-01

TN12S6P-M65A-01

ELECTRICAL SPECIFICATIONS

Cell Configuration	12S 3P	12S 3P	12S 6P	12S 6P
Nominal Voltage	43.2V	43.2V	43.2V	43.2V
Nominal Capacity	18Ah	19.5Ah	36Ah	39Ah
Energy	780Wh	840Wh	1560Wh	1680Wh
Charge Voltage	50.4V	50.4V	50.4V	50.4V
Cut-off Voltage	33.6V	33.6V	33.6V	33.6V
Energy Density	288 Wh/kg	322 Wh/kg	288 Wh/kg	322 Wh/kg

CURRENT PARAMETERS

Max Continuous Discharge Current	180A (10C)	78A (4C)	360A (10C)	156A (4C)
Max Pulse Discharge Current ($\leq 30s$)	300A (16.7C)	117A (6C)	600A (16.7C)	234A (6C)
Max Charge Current	90A (5C)	19.5A (1C)	180A (5C)	39A (1C)

PHYSICAL SPECIFICATIONS

Dimensions (L x W x H)	75 x 80 x 300 mm 75 x 72 x 300 mm (no BMS)	75 x 80 x 300 mm 75 x 72 x 300 mm (no BMS)	150 x 80 x 300 mm 150 x 72 x 300 mm (no BMS)	150 x 80 x 300 mm 200 x 72 x 300 mm (no BMS)
Weight	2.9 kg	2.8 kg	5.4 kg	5.3 kg
Enclosure Material	PVC Shrink Wrap	PVC Shrink Wrap	PVC Shrink Wrap	PVC Shrink Wrap

ENVIRONMENTAL SPECIFICATIONS

PERFORMANCE SPECIFICATIONS

Operating Temperature	Charge: 0°C to 45°C Discharge: -20°C to 60°C	Cycle Life	~600 cycles @0.5C/-1C ~500 cycles @1C/1C
Storage Temperature	Short-term (<1 month): -20°C to 45°C Long-term (>1 month): 0°C to 25°C	Designed to Meet Warranty	CE, UN 38.3, RoHS, IEC 62133 12 months
Humidity	$\leq 85\%$ RH		

**GOT QUESTIONS?
GET IN TOUCH WITH US**

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