



Premium Series

# DATASHEET

Premium High Power & Density 12S Series



## PRODUCT OVERVIEW

The Premium 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 (Reliance RS60 & 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-RS60-01

TN12S3P-M65A-01

TN12S6P-RS60-01

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	36 Ah	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	302 Wh/kg	322 Wh/kg	302 Wh/kg	322 Wh/kg

**CURRENT PARAMETERS**

Max Continuous Discharge Current	150 A (8.3C)	78 A (4C)	300 A (8.3C)	156 A (4C)
Max Pulse Discharge Current ( $\leq 30s$ )	540A (30C)	117 A (6C)	1080 A (30C)	234 A (6C)
Max Charge Current	36 A (2C)	19.5 A (1C)	72 A (2C)	39 A (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	2.78 kg	2.8 kg	5.15 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 60°C	Cycle Life	~600 cycles @0.5C/-1C ~500 cycles @1C/1C
	Discharge: -20°C to 60°C	Designed to Meet	CE, UN 38.3, RoHS, IEC 62133
Storage Temperature	Short-term (<1 month): -20°C to 45°C	Warranty	12 months
	Long-term (>1 month): 0°C to 25°C		
Humidity	$\leq 85\%$ RH		

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

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