



Premium Series

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	30 Ah
Energy		780 Wh	1,300 Wh
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 75 x 72 x 300 mm (no BMS)	150 x 80 x 300 mm 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): –20°C to 45°C	Warranty	12 months
	Long-term (>1 month): 0°C to 25°C		
Humidity	≤85% RH		

GOT QUESTIONS?
GET IN TOUCH WITH US

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