CYBORG®
NETWORK COMMUNICATIONS
SECURE • RELIABLE • CONNECTED

CYBORG – RAKSHA CELL™
ADVANCED BATTERY SOLUTIONS WITH INTELLIGENT BMS
— POWERING MISSIONS. ANYWHERE.

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COMPLETE RANGE OF
LITHIUM & ADVANCED BATTERY SYSTEMS
BUILT FOR DEFENCE, INDUSTRY & MISSION CRITICAL APPLICATIONS

HIGH ENERGY DENSITY | LONG LIFE CYCLE | INTELLIGENT BMS | ENHANCED SAFETY | RUGGED & RELIABLE

1. LITHIUM-ION BATTERY VARIANTS (RECHARGEABLE)

	LCO LITHIUM COBALT OXIDE	NMC LITHIUM NICKEL MANGANESE COBALT	NCA LITHIUM NICKEL COBALT ALUMINUM	LMO LITHIUM MANGANESE OXIDE	LTO LITHIUM TITANATE OXIDE	LIFEPO4 (LFP) LITHIUM IRON PHOSPHATE	LIPO LITHIUM POLYMER
Nominal Voltage	3.6 – 3.7V/cell	3.6 – 3.7V/cell	3.6 – 3.7V/cell	3.7V/cell	2.3 – 2.4V/cell	3.2V/cell	3.7V/cell
Energy Density	High	High	Very High	Moderate	Moderate	Moderate	Very High
Cycle Life	500 – 1000	1000 – 2000	1000 – 2000	700 – 1500	10000 – 20000	2000 – 7000	500 – 1500
Safety	Moderate	Good	Good	Good	Excellent	Excellent	Moderate
Discharge Rate	Moderate	High	High	High	Very High	High	Very High
Operating Temp.	0°C to 45°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-30°C to 60°C	-20°C to 60°C	-20°C to 60°C
Applications	Laptops, Cameras, Mobile Devices	EV, E-Mobility, Power Tools, ESS	Aerospace, Drones, High Power Systems	Power Tools, Medical Devices, E-Bikes	EV Fast Charging, Industrial, UPS, Heavy Duty	Solar Storage, Telecom, Tactical Systems, Backup Power	UAV, RC, Robotics, Portable Devices

2. OTHER RECHARGEABLE BATTERIES

LEAD ACID
- Flooded
- VRLA
- AGM
- Gel

UPS, Telecom, Industrial Backup

NICKEL BASED
- NiCd
- NiMH

Industrial, Military, Aerospace

SODIUM BATTERIES
- Sodium-ion
- Sodium-sulfur

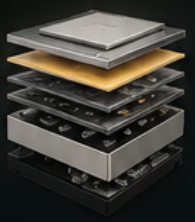
Grid Storage, Large Scale ESS

3. PRIMARY (NON-RECHARGEABLE)

- Lithium Thionyl Chloride (Li-SOCl2)
- Lithium Manganese Dioxide (Li-MnO2)
- Lithium Iron Disulfide (Li-FeS2)

Long Shelf Life | High Reliability
Military Beacons, Sensors, Tracking Devices

4. EMERGING TECHNOLOGY
SOLID-STATE LITHIUM



- Higher Energy Density
- Enhanced Safety
- Longer Life
- Future Military Platforms

5. BATTERY MANAGEMENT SYSTEM (BMS) TYPES

PASSIVE BMS


- Cell balancing via resistor discharge
- Cost effective
- For small packs

ACTIVE BMS


- Energy transfer cell-to-cell
- Higher efficiency
- For premium systems

SMART BMS


- SOC / SOH Monitoring
- Thermal Monitoring
- Fault Diagnostics
- Remote Alerts (CAN/RS485/BT)

DISTRIBUTED BMS


- Modular Architecture
- Scalable for large batteries
- High Reliability

CENTRALIZED BMS


- Single Master Controller
- Easy Integration
- Cost Effective

MILITARY GRADE BMS


- EMI / EMC Hardened
- Shock / Vibration Proof
- IP65 / IP67 Enclosure
- Secure & Rugged
- Redundant Protection

6. BMS PROTECTION FEATURES

- ✓ Overcharge Protection
- ✓ Over Discharge Protection
- ✓ Over Current Protection
- ✓ Short Circuit Protection
- ✓ Temperature Protection
- ✓ Cell Balancing (Active/Passive)
- ✓ Reverse Polarity Protection
- ✓ Fuse & Relay Protection
- ✓ Thermal Runaway Protection
- ✓ Fire Suppression Integration

7. COMMUNICATION INTERFACES

CANBUS	RS485	UART	Modbus
Ethernet	SNMP	Bluetooth	Wi-Fi
4G/5G	IoT Cloud	GPS (Optional)	SATCOM (Optional)

8. CYBORG – RAKSHA CELL™ APPLICATIONS

MAKE IN INDIA

DESIGNED IN INDIA | ENGINEERED FOR RELIABILITY | TESTED FOR EXTREME CONDITIONS | POWERING MISSIONS ANYWHERE. | PROUDLY MADE IN INDIA

CYBORG NETWORK COMMUNICATIONS | SECURE. CONNECTED. POWERED FOR MISSION SUCCESS.