

RETHIUM POWER TECH LLP

Battery Solution For Better World



THE LITHIUM-ION POWER AND ENERGY UNIT FOR RAILWAYS

PRODUCT CATALOGUE

R-POWER



R-POWER

BATTERY PACK

Each battery pack embeds a Lithium Ferrous Phosphate (LiFePO4) battery plus an internal BMS which communicates and controls its own operations.

- a. Cell temperature & resistance
- b. Low voltage cut-off
- c. High voltage cut-off
- d. High balancing current
- e. Communication

Key features:

- "Plug-and-Play" and flexible system
- Easy and quick deployment
- Smart monitoring and management
- Safe and robust technology
- Battery status display
- High balance current

Application

- Diesel Locomotive and Electric Locomotive
- Railway Signalling
- End On Generation (EOG)
- Electric Multiple Unit
- Traction Distribution Battery
- Train Lighting Battery





R-POWER

The Rethium's R-POWER is an innovative Lithium-Ion railroad battery is designed to replace traditional lead acid batteries. The R-Power is designed to meet the tough environments inside the railroad locomotive. The Railway coach battery system for train lighting is designed to withstand the vibrations and heat are generated as the train is speeding along the tracks facing the cold and the heat from different parts across India. Present day lead acid locomotive batteries weigh thousands of kgs. Whereas R-Power has significantly smaller overall dimensions and weighs 60% lesser than lead acid battery.

The R-Power Lithium-Ion battery has numerous advantages including:

- Higher energy density
- Significantly reduced weight and size
- Cycle life >3000
- No sulfation issues.
- Most importantly, completely maintenance free locomotive battery which greatly enhances personnel safety and reduces operational costs.
- Contains no acid and is completely sealed. Thus, personnel handling of the Lithium-Ion batteries will not be exposed to acid burns.
- With an onboard Battery Management System (BMS) with a custom software developed inhouse, R-Power offers the most modern battery with the best service life in the industry. BMS allows the battery cell to be performed within the given limits and keeps the cells balanced at all times and also monitors cell temperature to offer maximum service life to the battery pack.
- R-Power is supplied with a charger capable of working in 110/220 volts. With the modern technology inbuilt in R-Power, charging time is reduced 70% when compared to a standard lead acid battery. R-Power is provided with a power ON/ OFF switch which can turn off the unit when not in use, thus extending the battery life. With digital LCD display, the user can read the State Of Charge (SOC) and can determine the capacity of the battery before the unit is put for charging.
- R-Power can be customized based on customer requirements.



R-POWER

SPECIFICATION:

Diesel Locomotive Trains/ Technical Specification/ Lithium Ion Battery								
SI			Discharg					
No.	Voltage	Capacity	Initial Cranking Current	Initial Cranking Current	Charge Current	Charge Time	Cycle Life	
1	64V	100Ah	2300A	1400A	30A	3 hrs 20 min	3000	

Electric Locomotive & EMU/ Technical Specification/ Lithium Ion Battery							
			Discharge Current				
SI No.	Voltage	Capacity	Peak Current	Continuous Current	Charge Current	Charge Time	Cycle Life
1	110V	75Ah	50C (10 sec)	10C	22	3hrs 25min	3000

Train Lighting/ Technical Specification/ Lithium Ion Battery							
			Disc	harge Current			
SI No.	Voltage	Capacity	Peak Current	Continuous Current	Charge Current	Charge Time	Cycle Life
		250Ah –					
1	110V	750Ah	10C (10 Sec)	0.5C	150A	3hrs 20min	3000

Air Condition Train/ Technical Specification/ Lithium Ion Battery							
Discharge Current			1				
SI No.	Voltage	Capacity	Peak Current	Continiuos Current	Charge Current	Charge Time	Cycle Life
		500Ah –				1	
1	110V	750Ah	10C (10 Sec)	0.5C	225A	3hrs 20min	3000

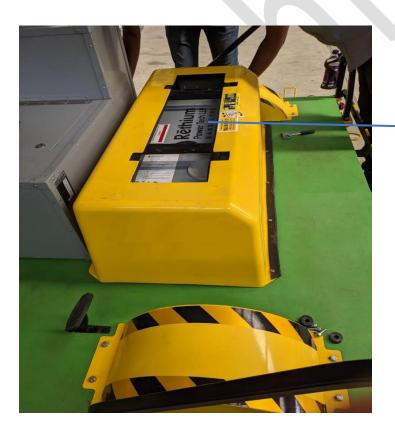
Note: Data in this document are subject to change without notice and become contractual only after written confirmation by Rethium

	0 ~ 10°C	@ <0.2P				
Charging	10 ~ 35°C	@ 0.5P				
	35 ~ 45°C	@<0.5P				
Discharging	-20	-20°C ~ 55°C				
	-20 ~ 25°C	1 Year				
Storage Temperature	-20 ~ 35°C	6 Months				
_	-20 ~ 45°C	3 Months				
,	-20 ~ 60°C	< Week				
1	RS485/ CAN					
ption of the BMS "ON" Mode	~ 20Ma					
ption of the BMS "Off" Mode	~ 20µA					
	Discharging Storage Temperature SOC @>50% (Follow the given SOP) ption of the BMS "ON" Mode	Charging				



Rethium has supplied the batteries to Metros and Railways for Track Inspecion Vehicles (TIV) application through vehicle OEMs. Below is the photo for your reference.





Li-Ion Battery (Inside View)

Battery Specification:

Chemistry: Lithium Ferrous

Phosphate

Battery Nominal Voltage: 48V DC

Battery Capacity: 100Ah

Communication: CAN

Charge Time: 4 hrs



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