



MICROTEKNIK ENERGY SOLUTIONS

A Unit Of Microteknik



info@tek watt.com
info@microteknikenergy.com



www.tekwatt.com
www.microteknikenergy.com
www.microteknikenergysolutions.com



+91 0171- 2698855 | 2975855 | +91 8930345688



Registered Office

2759, Teknik House, Timber Market,
Ambala Cantt - 133001, Haryana

Manufacturing plant

73, Teknik Estate, Vikaspuri, Industrial Area,
Ambala Cantt-133006, Haryana

About Us

Microteknik Energy Solutions, a company focused on the product development and operations of lithium and its allied products, is one of the leading designer, manufacturer and supplier of customized batteries, battery packs and battery chargers for various applications and energy storage systems.

MICROTEKNIK” has been in the business for past 53 years and export in 86 countries.

The awareness to go green & to adopt eco-friendly means of transport is gaining momentum & so is the concept of e-vehicle. Here electric vehicle battery comes into the picture to power these vehicles. Microteknik Energy Solutions is providing dynamic battery solutions with variants for the same.

We are Innovative Li-Ion Battery Manufacturer in India for Various Fields Such As Medical, Homeland Security, Turbines, Solar and Electric Vehicles.

We are having most advanced technology production line, and ensure to deliver the best battery modules with special features like protection elements, communicative battery management systems (BMS) with display & standardization.



Our verticals

SCIENTIFIC EDUCATIONAL LABORATORY

WASTE MANAGEMENT

ENGINEERING TEACHING EQUIPMENTS

HOSPITAL FURNITURES & INSTRUMENTS

GREEN ENERGY SOLUTIONS
LITHIUM BATTERY / RENEWABLE ENERGY

Certificates



Mission

Given the focus by The Government of India to achieve 30% electric vehicle sales by 2030 which ultimate aims to reduce of carbon emission into climate and helps to enhance the economic and social life of People. Prime objective for company is to meet the requirement of new generation life which is growing with fast pace and requiring the instant solution.



Better TECHNOLOGIES that benefit both customers and the environment



Develop and provide ENERGY PRODUCTS to run life without producing any pollution



Clean and Green EARTH.

What is Lithium ion battery

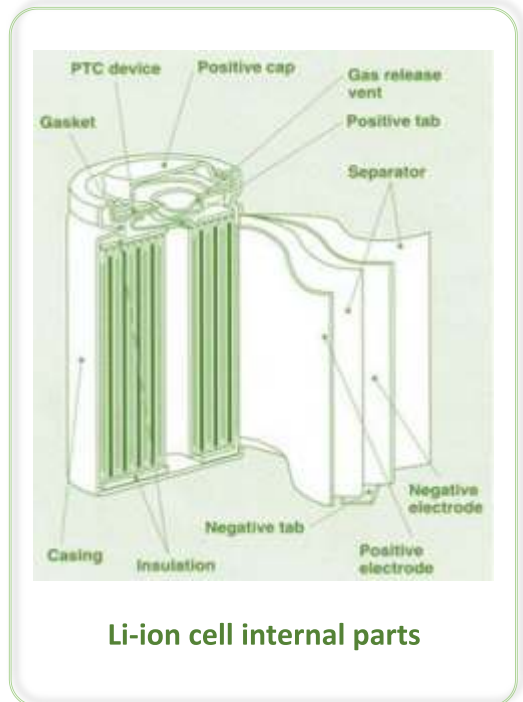
Lithium is a silver-white colored soft metal that belongs to the alkali metal group. Lithium is the lightest element known and has strong electrochemical potential. A lithium-ion battery or Li-ion battery (abbreviated as LIB) is a type of rechargeable battery in which lithium ions move from the negative electrode to the positive electrode during discharge and back when charging.

Li-ion batteries use an intercalated lithium compound as one electrode material, compared to the metallic lithium used in a non-rechargeable lithium battery. Lithium-ion batteries have become the most important application of lithium and storage technology in the area of portable and mobile application (e.g laptop, cell phone, smart phones, tablets, power tools, medical device bicycles and electric vehicles).

Lithium Ion & Lithium Polymer Batteries are widely preferred & used for electric vehicles due to the high energy density that they provide as compared to their weight.

With longer battery life, lower running costs & negligible maintenance, our lithium ion battery for electric vehicles are designed & equipped well in accordance with the Indian road conditions & environment after passing through stringent quality checks.

The demand for li-ion batteries in the automobile industry is expected to increase in line with rise in demand for electric vehicles. These batteries have gained popularity among automobile manufacturers as they offer an alternative to nickel metal batteries used in electric vehicles, due to their small size and light weight.



Battery Management System

The Battery Management System (BMS) is an essential component within a multiple cell battery packs. It monitors the state of the battery and control key operational parameters and thus ensuring safety.

We design BMS on four vital pillars of Monitoring, Protecting, Balancing and Communicating (MPBC).

PRODUCT FEATURES

Microteknik Energy Solutions has a wide range of Lithium-ion battery solutions to choose from. Our expertise lies in understanding the end-product specifications and designing battery pack with BMS that meet specific user requirements, taking into consideration environmental parameters.

The choice depends on the technical requirements of your product's application. The performance of the end product depends heavily on the performance of the battery, not all batteries function the same. Hence, battery design becomes a key element in the overall performance of the end product.

Safety And Quality

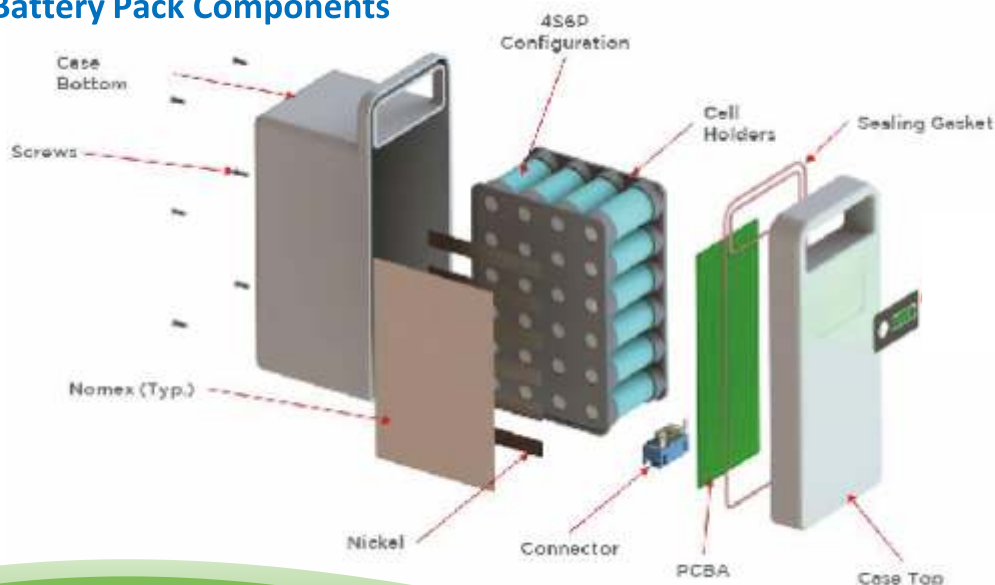
- At MES, we are equipped with advanced and sophisticated machinery for manufacturing and testing.
- We always test the battery pack at various levels using advanced machines to deliver the best quality batteries to the customers.
- We make batteries in both soft pack and hard enclosures according to the product application and demand of the customers to ensure maximum safety.
- Our experienced team designs the battery to ensure the maximum output at an economical price.



TEK WATT advantage

- Essentially safe technologies utilized with respect to battery chemistry.
- Small to medium/large format expertise; range of sizes (3-144V; 6W-15+kW) and shapes (round, flat, square and custom).
- In-house mechanical design capabilities for a customized plastic or metal housing for protection.
- Comprehensive testing performed to meet a wide variety of certifications and agency approvals to ensure safety and reliability.

Typical Battery Pack Components



E – FOUR WHEELER BATTERY



Technology advancement in Lithium Batteries has taken the whole nation by storm. Powering the vehicles with a more safe, clean & reliable source of energy has encouraged all, to accept this transaction happily.

TEK WATT Batteries provide electric car battery that is produced by using the automotive grade cell brackets/components & currently sharing the design with wire binding technology. The fuse protection at the single-cell level, voltage insulation & inbuilt thermal management systems, are all designed as per vehicles requirement. The special feature of the glass fiber heating sheet being used for heat dissipation & heating plate acts as a safety value.

Our electric car battery is a quality product which passes through a series of tests like vibration, nail penetration, high-temperature aging, extrusion, etc. and are then approved which makes them the best suitable options for any kind of E-four wheeler.

Specifications

| DESCRIPTION | UNIT | VALUE |
|--|-------|-------------------------|
| Single Cell | - | 26650-50A 3.7V, 5A |
| Nominal Voltage | VDC | 144 |
| Nominal Capacity | Ah | 120 |
| Maximum Discharge | A | 120 |
| Voltage Range | VDC | 110-168 |
| Energy | kWh | 17.28 |
| Charging protection voltage of cell | VDC | 4.23 |
| Discharging protection voltage of cell | VDC | 2.6 |
| Installation Position | - | Under Passenger Cabinet |
| Cooling Method | - | Natural Cooling |
| Weight | Kg | 126 |
| Cell balancing | - | Yes |
| Charging Time | Hours | 4-5 |
| Load Capacity | Nos. | 4 person |

E-SCOOTER/E-MOTORCYCLE BATTERY

Designed and Made in India, Lithium-ion E-Scooter battery is an ideal source of energy for E-scooters. They have excellent safety features & compact design, being the best options available & suitable for your scooters.

Our E-Scooter battery is easily replaceable with SLA & VRLA batteries & can be optimized according to the need. The different variants with an assurance to get a long battery life & 100% efficiency are available. They can be used for a longer time period as compared to the lead-acid battery packs & also take care of the environment, being non-polluting. We also offer electric bike batteries.

Our batteries do not require a battery change until the minimum lifespan of at least three years as they deliver high capacities. The maintenance is not required.



Specifications

| | TW 4820N | TW 4824N | TW 4830N | TW 6020N | TW 6024N | TW 6030N | TW 6024L | TW 6030L |
|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Chemistry | NMC | NMC | NMC | NMC | NMC | NMC | LFP | LFP |
| Pack Voltage Nominal (V) | 48 | 48 | 48 | 61.2 | 61.2 | 61.2 | 60.8 | 60.8 |
| Pack Energy (WH) | 960 | 1152 | 1440 | 1224 | 1468.8 | 1836 | 1459.2 | 1824 |
| Nom. Capacity (AH) | 20 | 24 | 30 | 20 | 24 | 30 | 24 | 30 |
| Upper Voltage Cut-off (V) | 58.6 | 58.6 | 58.6 | 67.3 | 67.3 | 67.3 | 69.9 | 69.9 |
| Lower Voltage Cut-off (V) | 38.4 | 38.4 | 38.4 | 52.0 | 52.0 | 52.0 | 54.7 | 54.7 |
| Continuous Power (A) | 20 | 24 | 30 | 20 | 24 | 30 | 24 | 30 |
| Charge Current (A) | 8 | 9 | 10 | 8 | 9 | 10 | 9 | 10 |
| Max. Discharge rate | 3C | 3C | 3C | 3C | 3C | 3C | 3C | 3C |
| Compatible Motor (W) | 500-600 | 500-600 | 500-600 | 500-600 | 500-600 | 800-1000 | 800-1000 | 800-1000 |
| Cell Balancing | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Weight (Kg) | 7.5 | 8.8 | 10.8 | 9.3 | 10.3 | 13.6 | 19 | 23 |
| Charging time (Hour) | 2.5 | 3 | 3.5 | 2.5 | 3 | 3.5 | 3 | 3.5 |
| Cycle Life (@ 25°C) @ 80% DoD | 600-800 | 600-800 | 600-800 | 600-800 | 600-800 | 600-800 | >1000 | >1000 |

E-RICKSHAW BATTERY



The growing trend & popularity pertaining to the need to save the environment, the demand for electric vehicles is emerging as a new revolution worldwide. E-Rickshaw amongst them is being commonly used nowadays.

We provide Lithium powered E-Rickshaw Battery – Electric Vehicle Batteries in India that are available in both Li-ion & LFP. The designing of these batteries is totally adaptable & in accordance with Indian roads & environmental conditions. The traits like portability, compatibility with Govt. E- mobility policies, cost-effectiveness & standardization make our e Rickshaw battery the most accepted in the Indian market. Its safe & compact design makes it be the best option available for electric vehicles.

The variants in Lithium batteries suits & fulfill all the requirements of running E-Rickshaws. We understand the customers need & customize the battery packs according to their specifications & deliver the quality products as our main focus is their satisfaction.

Specifications

| | 48V 60Ah | 48V 60Ah | 48V 84AH | 60V 84AH | 60V 102AH |
|---------------------------|-----------|-----------|-----------|-----------|-----------|
| Chemistry | NMC | LFP | LFP | LFP | LFP |
| Pack Voltage Nominal (V) | 48 | 48 | 48 | 60.8 | 60.8 |
| Pack Energy (WH) | 2880 | 2880 | 4032 | 5107.2 | 6201.6 |
| Nom. Capacity (AH) | 60 | 60 | 84 | 84 | 102 |
| Upper Voltage Cut-off (V) | 54.6 | 58.4 | 58.4 | 74 | 74 |
| Lower Voltage Cut-off (V) | 44.2 | 40 | 40 | 50.464 | 50.464 |
| Continuous Power (A) | 60 | 60 | 84 | 84 | 102 |
| Charge Current (A) | 12 | 10 | 15 | 15 | 18 |
| Max. Discharge rate | 3C | 3C | 3C | 3C | 3C |
| Compatible Motor (W) | 800-1000 | 800-1000 | 800-1000 | 1000-1500 | 1000-1500 |
| Cell Balancing | Yes | Yes | Yes | Yes | Yes |
| Weight (Kg) | 26 | 37 | 53 | 66 | 79 |
| Charging Time (Hour) | 5-6 | 5-6 | 5-6 | 5-6 | 5-6 |
| Life Cycle @25deg.C | 1200-1500 | 2500-3000 | 2500-3000 | 2500-3000 | 2500-3000 |
| Average Speed | 35 | 35 | 40 | 55 | 55 |
| Mileage Per Charge (km) | 60 | 65 | 75 | 70 | 80 |

UPS INVERTER BATTERY

UPS inverter battery packs are made available keeping in mind the demand for flexible shape, sizes, life cycles & cost-effective.

When powering up your UPS systems you can count on the **TEK WATT** Battery from MES. Utilizing Cell Chemistry Nickel Cobalt, our Batteries are a reliable and safe power solution. They are a lighter weight, drop-in Sealed Lead Acid (SLA) battery applications with the added benefit of an integrated BMS for cell and pack protection, and cell balancing circuitry.

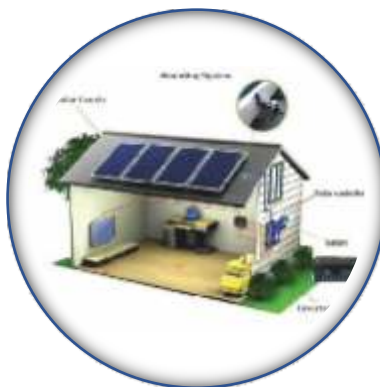


Specifications

| | TW-U 0296 | TW-U 0444 | TW-U 1000 | TW-U 2000 | TW-U 3000 | TW-U 3000 |
|-------------------------------|---------------------|-----------|-----------|-----------|-----------|-----------|
| Chemistry | NMC | NMC | NMC | NMC | NMC | NMC |
| Nom. VOLTAGE (V) | 14.8 | 14.8 | 48 | 48 | 48 | 48 |
| Energy (WH) | 296 | 444 | 960 | 1920 | 2880 | 3840 |
| Nom. Capacity (AH) | 20 | 30 | 20 | 40 | 60 | 80 |
| Charge (V) | 16.7 | 16.7 | 54.2 | 54.2 | 54.2 | 54.2 |
| Discharge cut-off (V) | 12 | 12 | 39 | 39 | 39 | 39 |
| Charging Current (A) | 6 | 6 | 8 | 8 | 12 | 16 |
| Max. Discharge current (A) | 20 | 30 | 20 | 40 | 60 | 80 |
| Charging time (Hour) | 3-4 | 4-5 | 5-6 | 5-6 | 5-6 | 5-6 |
| Weight (Kg) | 2.1 | 3.1 | 6.7 | 13.4 | 20.2 | 26.9 |
| Loadability (%) | 120% for 10 minutes | | | | | |
| Cycle Life (@ 25°C) @ 70% DoD | >1000 | | | | | |
| Charge Temperature | 0°C to 45°C | | | | | |
| Discharge Temperature | -20°C to 60°C | | | | | |
| Storage Temperature | -20°C to 60°C | | | | | |
| Humidity (Operating) | 5% to 95% | | | | | |
| Humidity (Storage) | <70% | | | | | |

BATTERY PACKS FOR SOLAR

When you're powering your home or business you need energy that you can depend on around-the-clock. When you use **TEK WATT** batteries as part of your solar energy system, you know you're making the absolute most of it. That's because our batteries are the ultimate clean energy, delivering highly-efficient, long life power you can depend on in even the most extreme environments.



Specifications

| Series Name | TWNS | | | TWLS | | | | | |
|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Model Name | 037015 | 111010 | 111020 | 032006 | 032012 | 128012 | 128024 | 128042 | 128060 |
| Chemistry | NMC | NMC | NMC | LFP | LFP | LFP | LFP | LFP | LFP |
| Nom. Voltage (V) | 3.7 | 11.1 | 11.1 | 3.2 | 3.2 | 12.8 | 12.8 | 12.8 | 12.8 |
| Energy (WH) | 56 | 111 | 222 | 19 | 38 | 154 | 307 | 538 | 768 |
| Nom. Capacity (AH) | 15 | 10 | 20 | 6 | 12 | 12 | 24 | 42 | 60 |
| Charging Voltage (V) | 4.2 | 12.5 | 12.5 | 3.6 | 3.6 | 14.4 | 14.4 | 14.4 | 14.4 |
| Weight (Kg) | 0.4 | 0.9 | 1.8 | 0.2 | 0.4 | 1.5 | 2.9 | 5.1 | 7.3 |

| Typical Charging rate | 0.2 to 0.5C | | | 0.2 to 0.5C | | | | | |
|-----------------------|-------------------|--|--|-----------------|--|--|--|--|--|
| Maxi. Discharge rate | 1C | | | 1C | | | | | |
| Charging time Solar | 6 to 8 Hour | | | 6 to 8 Hour | | | | | |
| Charging time AC | 3 to 4 Hour | | | 3 to 4 Hour | | | | | |
| Cycle Life (@ 25°C) | 600-800 @ 80% DoD | | | >1000 @ 80% DoD | | | | | |

| Charge Temperature | 0°C to 45°C | | | 0°C to 45°C | | | | | |
|-----------------------|---------------|--|--|---------------|--|--|--|--|--|
| Discharge Temperature | -20°C to 60°C | | | -20°C to 60°C | | | | | |
| Storage Temperature | -20°C to 60°C | | | -20°C to 60°C | | | | | |

POWER HOUSE/TELECOM BATTERY MODULE



These battery modules feature Lithium Iron Phosphate technology, which is the safest and most environmentally-friendly battery chemistry available today. Plus, with a cycle life in the thousands, maintenance time and cost are reduced, thus delivering low total cost of ownership over the lifetime of the product.

These powerhouse battery modules come with built-in protection and have a longer life span of up to fifteen years approximately.

Specifications

| Parameter | Unit | TWS-48-24 | TWS-48-48 | TWS-48-72 | TWS-48-96 |
|------------------------------|------|-----------|-----------|-----------|-----------|
| Chemistry | | LFP | LFP | LFP | LFP |
| Nom. VOLTAGE | V | 48 | 48 | 48 | 48 |
| Energy | WH | 2400 | 4800 | 7200 | 9600 |
| Nom. Capacity | AH | 50 | 100 | 150 | 200 |
| Operating charge | V | 54 | 54 | 54 | 54 |
| Operating Discharge | V | 40.5 | 40.5 | 40.5 | 40.5 |
| Charging Current | A | 10 | 50 | 20 | 20 |
| Continuous Discharge current | A | 50 | 100 | 150 | 200 |
| Peak current (upto 3 min) | A | 100 | 200 | 300 | 400 |
| Weight | Kg | 39 | 69 | 99 | 120 |

| | |
|-------------------------------|---------------|
| Cycle Life (@ 25°C) @ 70% DoD | >6000 |
| Charge Temperature | 0°C to 45°C |
| Discharge Temperature | -20°C to 60°C |
| Storage Temperature | -20°C to 60°C |
| Humidity (Operating) | 5% to 95% |
| Humidity (Storage) | <70% |

OTHER PRODUCT RANGE



Physics



Chemistry



Biology



Laboratory



Hospital Furnitures



Pharmacy Lab



Engineering



Wind Energy



BIO MEDICAL HOSPITAL INCINERATOR



E-WASTE INCINERATOR



ROTARY KILN INCINERATOR



TROMMEL MACHINE



DIAPER WASTE INCINERATOR



LARGE ANIMAL INCINERATOR



CREMATOR



PULTRY INCINERATOR



SANITARY NAPKIN INCINERATOR



SMALL ANIMAL INCINERATOR



MUNICIPAL SOLID WASTE INCINERATOR

BATTERY APPLICATIONS



E-MOBILITY



EMERGENCY LIGHTING



AERIAL WORK PLATFORM



ROBOTICS



MATERIAL HANDLING



LIGHT ELECTRIC VEHICLE



PROFESSIONAL CLEANING



MEDICAL CARTS



RENEWABLE & STORAGE

MICROTEKNIK ENERGY SOLUTIONS

A Unit Of Microteknik

Registered Office
2759, Teknik House, Timber Market,
Ambala Cantt - 133001, Haryana



info.tekwatt.com
info.microteknikenergy.com

Manufacturing plant
73, Teknik Estate, Vikaspuri, Industrial Area,
Ambala Cantt-133006, Haryana



www.tekwatt.com
www.microteknikenergy.com
www.microteknikenergysolutions.com