3.2V, LiFePO4, Lithium Iron Phosphate, Secondary Battery

The LiFePO4(Lithium Iron Phosphate) is a safe, cost effective, and environmentally friendly battery with a high efficiency. The Lithium Iron Phosphate composition has a higher thermo-resistance keeping the battery safe from exploding under intense conditions. The composition is not toxic unlike other Lead Acid batteries. The performance and stability of this secondary battery makes it a very cost effective choice and is a more competitive price than Li-ion. The typical life-cycle of the LiFePO4 battery is around 5 years at normal operating conditions. With a nominal working voltage of 3.2V gives this battery more power and high efficiency to fit your desired application.

Features

- Lithium Iron Phosphate (LiFePO4)
- Nominal Voltage: 3.2V
- Nominal Capacity: 400-12000mAh
- Secondary Battery Type (Rechargeable)
- Ultra-long life cycle(~5years)
- Overcharge/discharge protection
- Charger Available
- Deep over-discharge recovery to 0V

*Product images are for illustrative purposes only and may vary from actual design.

Application

- Portable Electronic Devices

Model List*(See part number scheme for model number details)

Model Number	Nominal Voltage(V)	Nominal Capacity(mAh)		Dimensions(mm) ϕxH	Approx. Weight(g)
		Typical	Minimum		
IFR14500E	3.2V	550	500	14.2x50	18
IFR18650E	3.2V	1500	1450	18.2x65	40
IFR18650P	3.2V	1150	1100	18.2x65	42
IFR22650E	3.2V	2050	2000	22.2x65	62
IFR22650P	3.2V	1550	1500	22.2x65	62
IFR26650E	3.2V	3100	3050	26.2x65	82
IFR26650P	3.2V	2350	2300	26.2x65	78
IFR32900E	3.2V	5500	5000	32.2x90.2	188
IFR32900E	3.2V	4600	4500	32.2x90.2	188
IFR421200E	3.2V	12000	11500	42.2x120.2	390
IFR17335E	3.2V	450	440	16.2x34	17

LiFePO4 Battery List(Standard)

Model Number	Nominal Voltage(V)	Nominal Capacity(mAh)	Dimensions(mm) ϕxH	Max Charge Current(A)	Max Discharge Current(A)
14500	3.2V	400	14.5x50.5	0.4	1.2
14500	3.2V	500	14.5x50.5	0.5	1.5
18500	3.2V	900	18.5x50.5	0.9	2.7
18500	3.2V	1000	18.5x50.5	1.0	3.0
18650	3.2V	1400	18.5x65.5	1.4	4.2
18650	3.2V	1500	18.5x65.5	1.5	4.5
22650	3.2V	2000	22.5x65.5	2.0	6.0
26650	3.2V	3000	26.5x65.5	3.0	9.0
26650	3.2V	3200	26.5x65.5	3.2	9.6
32650	3.2V	4000	32.5x65.5	4.0	12.0
32700	3.2V	5000	32.5x70.5	5.0	15.0

LiFePO4 Battery List(High Rate)

Model Number	Nominal Voltage(V)	Nominal Capacity(mAh)	Dimensions(mm) ϕxH	Max Charge Current(A)	Max Discharge Current(A)
18650P	3.2V	1100	18.5x65.5	0.4	1.2
26650P	3.2V	2300	26.5x65.5	0.5	1.5

Definitions

The definition of a battery in Chemistry is an electrolytic device that directly converts the electrochemical energy of active ingredients into electrical power through electrochemical redox (oxidation-reduction) reactions.

A Primary battery cannot be recharged and is discarded once it has expended its stored electrical energy. Conversely, a Secondary battery is capable of repeated use(rechargeable). Its charge may be fully restored by passing an electric current through the cell in the opposite direction to that of discharge, thus reversing the redox reactions.

Common types of commercial Secondary batteries are as follows:

1. Sealed Lead Acid (SLA)
2. Nickel-Metal Hydride (Ni-MH)
3. Lithium-Ion (Li-Ion)
4. Lithium Polymer (LiPO)
5. Lithium Iron Phosphate (LiFePO4)

Comparisons of Common Types of Commercial Secondary Batteries:

Categories	SLA	Ni-MH	Lithium-Ion	Lithium Polymer
Nominal Voltage	2.0	1.2	3.7	3.8
Energy Density Volumetric(Wh/l)	-	250-300	250-350	250-400
Energy Density Gravimetric (Wh/kg)	25-45	50-80	100-150	100-150
Advantages	1. Deep charge & discharge 2. Mature technology 3. Inexpensive	1. Can be discharged at high current 2. Safe	Long life cycle	1. Long life cycle 2. Safe 3. Variety of sizes
Disadvantages	1. Slow charging 2. Short life cycle	1. Memory Effect 2. Poor performance at high temperature	1. Expensive 2. Relatively unsafe 3. Poor charge/discharge at high current	1. Expensive 2. Poor charge/discharge at high current

Important note: By applying professional experience, knowledge, technical knowhow and continuous efforts by our engineering team, Autec brings domestically available, high-performance Lithium-Ion/Lithium Polymer, and LiFePO/LiFePO4 batteries that are capable of competing with the leading brands.

Autec performs the following tests on our cells an batteries:

No.	Group B: Environment Test
01	Temperature Cycling
02	Low Pressure
03	High Temperature & Humidity

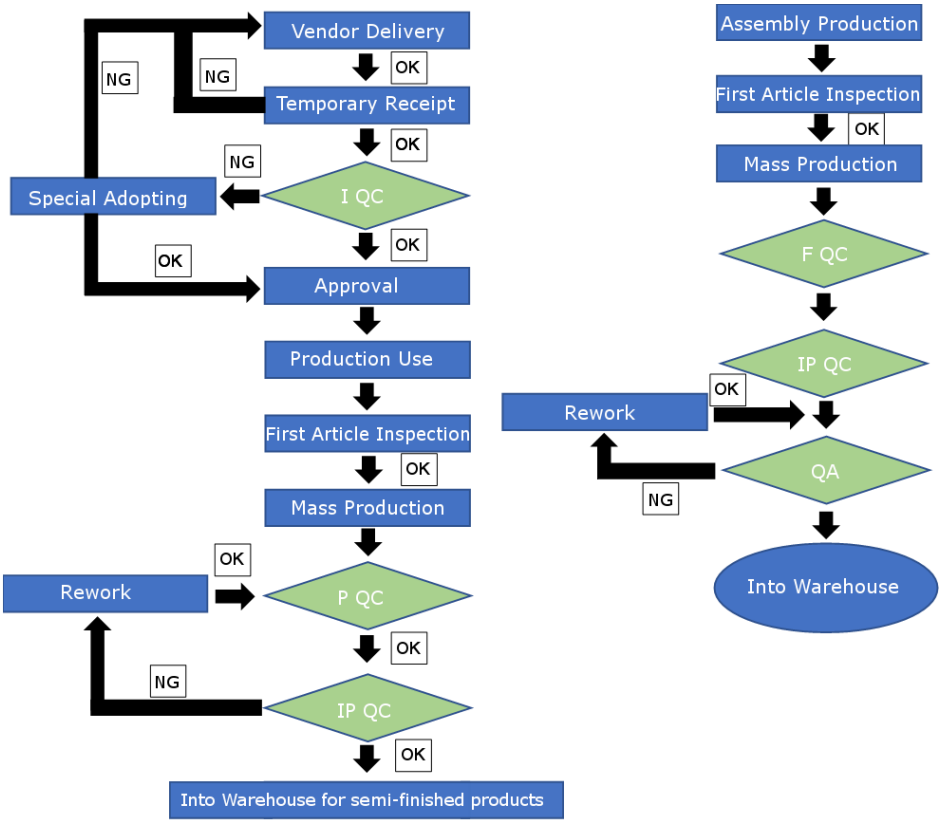
No.	Group C: Safety Test
01	Short-Circuit
02	Heating
03	Abnormal Charge
04	Overcharge
05	Impact
06	Crush
07	Nail Penetration

External Circuit Design:

1. PCB
2. Battery Pack Balancer

Autec Batteries have safety features with quality materials built in with the following:

1. High quality positive and negative electrodes
2. High quality separator material: Uniform thickness, and high mechanical strength.
3. Electrode workmanship: No sharp edges.
4. Keen attention to detail and quality workmanship throughout the assembly process for symmetry, uniformity, and consistent high quality.
5. Electrolyte: Characteristics and proportion of solvent substances, are verified.
6. Welding and stacking of cell tab for uniform length, impedance, position, and stacking method.
7. High quality sealing materials.
8. Industry standard cell tab packaging.



For further information and technical application guidance, please contact Autec Technical Sales.