

# FLseries energy power batteries



## Introduce

TCSN FL series utilizes high-rate, long-life LFP batteries and features a built-in, high-quality BMS. Compared to traditional lead-acid batteries, these lithium batteries demonstrate exceptional performance and longevity, while also offering superior charging capabilities; they are widely applicable across a variety of scenarios, such as low-speed electric vehicles and sightseeing shuttles.

## Features

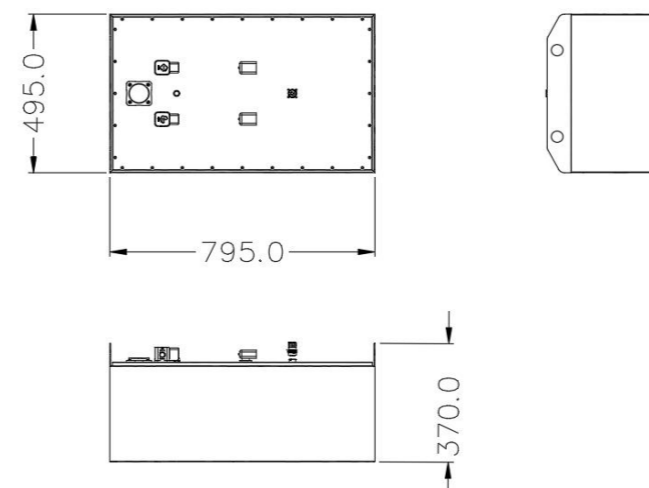
- Shock-resistant design**  
 Automotive-Grade Vibration-Resistant Design  
 Unafraid of Bumps — Rock-Solid Stability
- Safe and worry-free**  
 Using LFP batteries ensures high safety, no fire, and no explosion.
- Worry-Free After-Sales Service**  
 5-Year Standard Warranty  
 Long-Lasting Protection — Extendable
- Low self-discharge**  
 Significantly Reduced Power Loss During Hibernation  
 Monthly Self-Discharge  $\leq 2\%$
- Intelligent Management**  
 Remote Backend Monitoring  
 Data Management
- Environmentally Friendly**  
 Practicing the Circular Economy  
 Enabling Clean Operations

## Performance

Model	Dubhe FL48-460
<b>Performance</b>	
Cell	Square LFP230Ah
Terminal	M8
IP Grade	IP65
Self Discharge	$\leq 2\%$ /Month
Cycle Life	6000times(80%DOD)
Rated Charge Current	100A
Max. Charge Current	150A
Rated Charge Voltage	51~51.75V
Charge Cut-off Voltage	54.75V
Balancing Voltage	$> 51V$
Rated Discharge Current	200A
Max. Discharge Current	300A10S
Rated Discharge Cut-off Voltage	42V
Min. Discharge Cut-off Voltage	$> 37.5V$
Short Circuit Current	Approx.3000A

Performance parameters	
Capacity	460Ah(0.5C@25°C)
Nominal Voltage	48V
Energy	22080Wh
Weight	~148kg
Dimensions	795*495*370mm
Communication interface	RS485/CAN/Bluetooth
LCD Panel	4.2-inch touch screen
Storage Temp	-5°C to 35°C
Discharge Temp	-20°C to 55°C
Charge Temp	0°C to 45°C

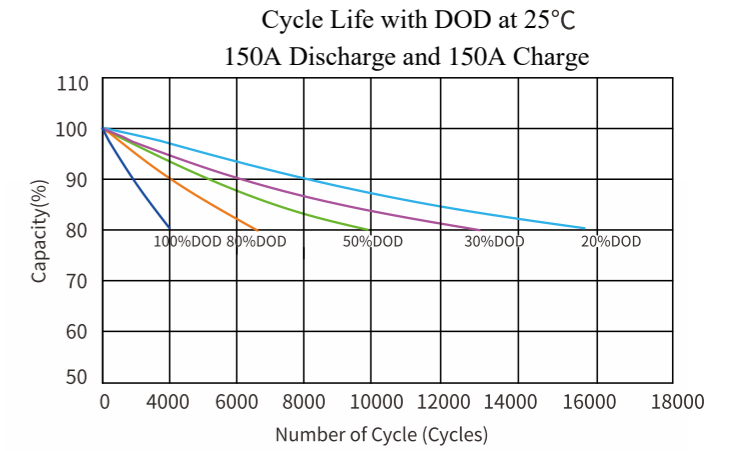
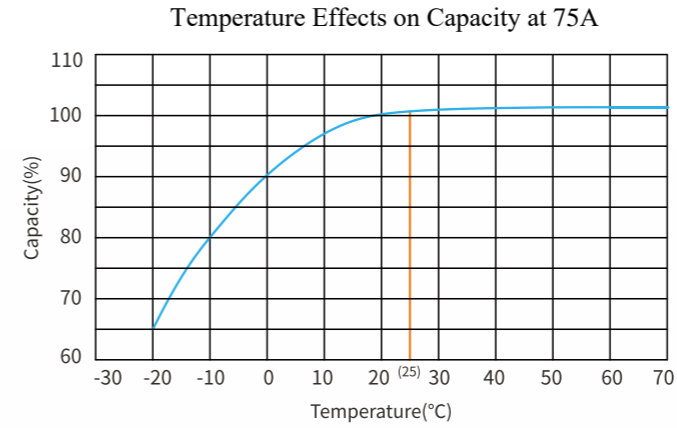
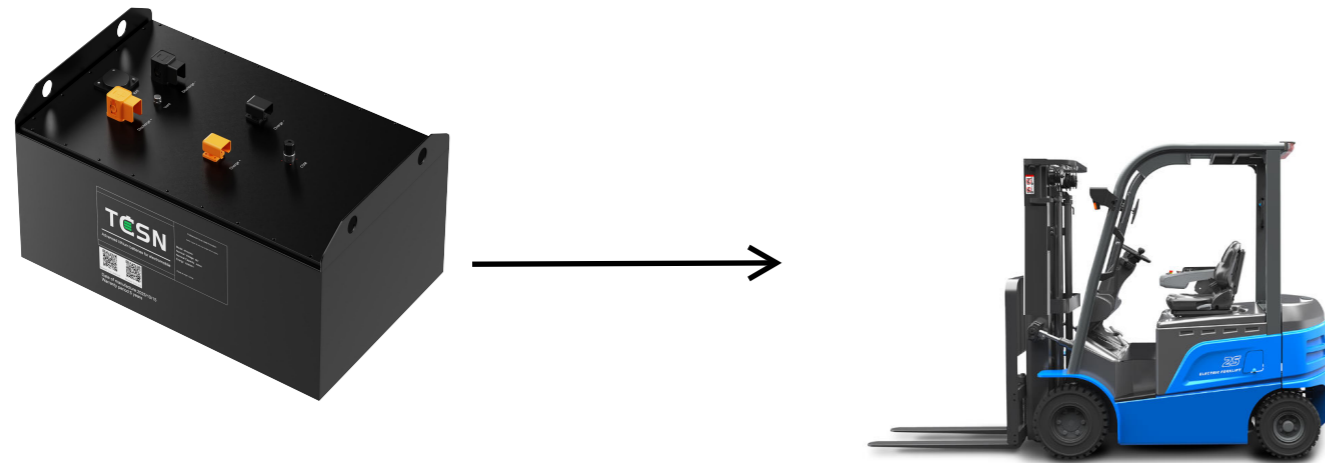
### Size



### Compliance

Certifications	Cell UN38.3
	Battery UN38.3
Transport Appraisal	UN3480,CLASS 9

# System Management Diagram



## Cautions

1. Do NOT short circuit, crush or disassemble.
2. Do NOT heat or incinerate.
3. Do NOT immerse in any liquid.
4. Store at 50% capacity. Recharge every 3 months. The storage area should be clean, cool, dry and ventilated.
5. Disconnect charging source prior to connecting or disconnecting battery terminals.
6. Do not dispose of batteries in a fire as they can explode.
7. Do not open, alter, or mutilate batteries. Released electrolyte is harmful to skin and eyes. It may be toxic.
8. Do not mix different types and brands of lithium-ion batteries.
9. Do not dispose in trash, follow local regulations and manufacturer's instruction.
10. See installation instructions before connecting to the supply.
11. The battery cabinet receives power from more than one source. Disconnection of all DC sources is required to De-energize this unit before installing or servicing. Wait 5 minutes before opening the unit.
12. Do not install on or over combustible surfaces.
13. Refer to manual before servicing.
14. Do not touch bare terminals.

## Characteristics Curve

