

24V Electrical System

Independent power. No grid connection. Bluetooth monitored.

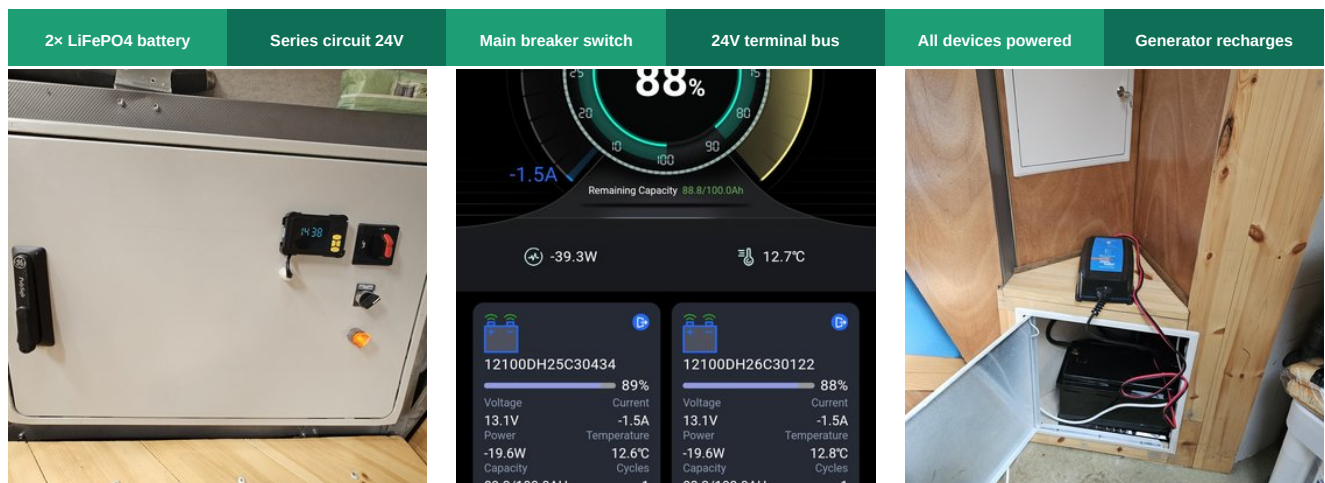
2 × Ultimatron LiFePO4 100Ah in series — 24V / 200Ah total.

Generator charge via external plug. Expandable to any 24V device.

Proven: 8% draw in 24 hours — fridge, lights, water system active.

Grid electricity is one of the most price-exposed recurring costs in a conventional home.

This system eliminates that dependency entirely — and provides more flexibility than a grid connection.



THE CONTROL PANEL

Main Control Cabinet

GE PolySafe enclosure with main breaker isolator switch. Digital clock display. Manual/Auto selector. Status indicator lamp. Clean, robust, lockable.

BLUETOOTH MONITORING

Battery App — Live Data

Real-time voltage, current, power draw, temperature, and remaining capacity for each cell. 26.2V system. 88% remaining. -39.3W draw visible from anywhere via phone.

THE BATTERY BANK

Ultimatron LiFePO4 Pack

2 × Ultimatron LiFePO4 12.8V 100Ah Polar batteries in series. 24V / 200Ah total. Victron Blue Smart charger above. Floor hatch access. Fully fused.

REAL-WORLD PERFORMANCE — MEASURED ON SITE

8% draw in 24 hours

Fridge running · Lights on · Water system active · Starting charge 96%

At this rate: ~12.5 days full operation per charge. In practice, a generator top-up every few days is sufficient.

THE BATTERY REVOLUTION — WHAT MOST PEOPLE HAVE NOT YET UNDERSTOOD

LiFePO4 batteries combined with modern low-draw 24V devices have fundamentally changed what is possible off-grid.

Fridges, pumps, lights, heaters, ventilators — every daily necessity now runs efficiently from a battery bank.

The assumption that a grid connection is essential is no longer true. The technology has moved. The assumption has not.

System Specifications

System voltage	24V DC
Battery type	Ultimatron LiFePO4 12.8V 100Ah Polar — Bluetooth
Battery quantity	2 units — connected in series
Total capacity	200Ah at 24V
Battery chemistry	Lithium Iron Phosphate — safe, stable, 2000+ cycle life
Bluetooth monitoring	Real-time voltage, current, power, temperature, capacity
Fuse	Main fuse on battery circuit
Main isolator	Breaker switch on control cabinet face
Distribution	24V terminal bus — expandable to unlimited devices
Compatible devices	Pumps, lights, ventilators, heater glow plugs, refrigerators
Charging method	Victron Blue Smart charger — automatic
Charge input	External male plug socket on zome exterior
Generator connection	Female plug from generator — plug in and switch on
Charge control	Automatic — Victron Blue Smart manages charge profile
Real-world draw	8% per 24 hours — fridge + lights + water system active
Runtime estimate	~12.5 days full operation per charge cycle
Solar ready	Yes — solar input can be integrated
Grid connection	None required
Enclosure	GE PolySafe IP-rated lockable cabinet
Battery location	Insulated floor hatch — accessible, protected

ON ELECTRICAL INDEPENDENCE

Most people assume a grid connection is essential. It is not.

LiFePO4 batteries have fundamentally changed what is possible off-grid. 2000+ charge cycles. No memory effect. Stable chemistry. Safe at low temperatures. These are not camping batteries — they are infrastructure-grade energy storage.

Combined with modern low-draw 24V devices, a 200Ah bank powers a full daily life. Fridge. Lights. Water pump. Heater glow plugs. Ventilation. Everything. The grid assumption belongs to a previous era of technology.

24V was chosen deliberately over 12V.

At 24V, cable losses are lower, wire gauges can be smaller, and the same physical battery bank delivers twice the watt-hours at the same current. Every device in the zome runs from the same 24V bus — a single, clean, expandable architecture.

Add batteries. Add solar. Add devices. The system scales without redesign. The grid never offered that kind of flexibility.

The technology has moved. The assumption that the grid is essential has not caught up.