

TheBattery Mobile X

Datasheet



ALFEN
POWER TO ADAPT



Mobile energy anywhere

TheBattery Mobile X is a mobile battery energy storage system designed for reliable temporary and flexible power applications. Its liquid-cooled LFP architecture ensures high efficiency and stable operation across grid-related services, on-site applications, and off-grid or hybrid setups. With plug-and-play installation, TheBattery Mobile X enables rapid deployment in demanding environments.

Product highlights



Safe

Extensive electrical and thermal protection



Versatile

Flexible control modes for diverse applications



Durable

Long cycle life and consistent performance



Robust

Alfen's deployment-resilient 4th generation design

Use cases



Net congestion

Increase the maximum power capability of a grid connection by supplying additional power during peak loads.



Energy markets

Participate in the energy markets to stabilize the grid with software that enables imbalance (FCR), intraday (FFR) and day ahead market services.



Genset optimization

Connect a genset or another generation source and decrease the genset run time up to 80 % reducing fuel, emissions and noise.



Microgrid island

Increase the reliability of the energy supply during a grid failure. Our software ensures smooth transitioning and prevents blackouts.



Off grid

Go completely 0 % emissions by using only the TheBattery Mobile X or by connecting a renewable energy source.



Multi mobile

Incorporate multiple TheBattery Mobile X to meet any power, capacity or redundancy requirements. Our software ensures smooth interconnectivity.

Technical specifications

TheBatteryMobile X*	TB-MX-360	TB-MX-540	TB-MX-720
Rated AC power capability	270 kW / 270 kVA		
Rated AC energy capacity	360 kWh	540 kWh	720 kWh
Inverter	1x bidirectional 270 kVA air-cooled and 1x unidirectional 20 kW or 80 kW air-cooled		
Voltage	400 V AC ± 10 %		
Frequency	50 Hz or 60 Hz		

*All values apply at an ambient temperature of 20 °C. For 60 Hz the specifications may be different.

Battery

Battery type	Prismatic cells
Cell chemistry	Li-ion LiFePO ₄ (LFP)
Cooling	Liquid-cooled water-glycol
Cycle life	> 8000 cycles
Depth of discharge	100 %
Self-discharge	< 1 % per month

Connection

Type

AC input	1 x 400 A quick connect powerlock (N+PE+3P) 1 x 32 A or 125 A CEE connection
AC output	2 x 400 A (N+PE+3P/F) powerlock with motorized breaker 1 x 63 A CEE switchable - Each output is independently switchable through Modbus
Earthing	Provision for external pin or through grid connection

Compliance & Safety

General	- EU Declaration of Conformity - IEC 62933 series - UN 3536
Electrical safety	- Low Voltage Directive (LVD) 2014/35/EU, IEC 60364, EN IEC 60664-1/4, EN IEC 61140, EN IEC 62477, NEN 1010, NEN 3140 - EMC Directive 2014/30/EU, EN IEC 61000-6-2/4, EN IEC 62052-11/21/22/23
General safety	- IEC 62933-5-2 - IEC 62619 7.3.3 (system level thermal runaway propagation test) - UL 9540A (cell / module thermal runaway propagation test) - PGS 37-1
Battery	- EU Battery Regulation 2023/1542/EU, articles 6, 10, 12, 13 and 14 - IEC 62619 - UL 1973 - IEC 63056 - UN 38.3

Compliance & Safety

Grid codes	• EN 50549-1 • G 99 • Tested for national deviations. Grid code presets available; custom configurations upon request.
Electrical safety features	• Circuit breakers on each individual input and output • Emergency stop button • Built-in transformer • Anti-islanding protection • Isolation monitoring device DC-side standard • Isolation monitoring device AC-side optional (for IT grid system) • AC surge protection SPD type II
General safety features	• Li-ion LFP battery including Battery Management System • Smoke detector, emergency stop, visual warning indicator • 60-minute fire-rated wall for battery compartment • Optional deflagration panels • Rack and module designed and tested to withstand shocks & vibrations during transport

Control & Interfaces

Control modes	Peakshaving, Ancillary services (FCR/FFR), Microgrid island (back-up), Power peakshaving, Multi Mobile (ugrid & grid connected), Genset control, Storage mode, or Manual (P/Q)
API	Customer API (incl. hardware) integrable for control and monitor via own backoffice
Communication interface	Modbus TCP
Local interface	7" Touchscreen HMI for status, commands, and diagnosis
Monitoring	Real-time asset management & monitoring via Alfen Connect cloud-based platform
Data logging	Real-time and historical data via Alfen Connect cloud-based platform
External connection	Standard modem with 4G internet or wired network connection

General	TB-MX-360	TB-MX-540	TB-MX-720
BEES Round Trip Efficiency	> 84 %	> 85.1 %	> 85.3 %
Operating temperature range	-25 °C to +35 °C ambient; up to +45 °C with power derating to 50 %; -40 °C upon request		
Relative humidity	0-100 % (non-condensing)		
Dimensions	2.99 m x 2.44 m x 2.59 m (ISO 10 ft)		
Weight	9600 kg	10900 kg	12200 kg
IP-value of enclosure	IP54		
Environment class	C4, water, no salt		
Inverter overload capability	110 % of rated power for 10 minutes		
Altitude	1000 m with full power performance; maximum 2000 m with power derating to 90 %		
Sound level	Maximum 79 dB at 1 m distance; fan speed varies with temperature and system usage, resulting in lower sound levels under most conditions		
Colour	RAL 9010 incl. standard Alfen branding; custom branding and other colours upon request		
Transport	Forklift or four point lift, CSC compliant		

Other

Warranty	Standard 2 year
Guarantee	Standard 10 year on batteries; up to 15 year extension or flexible optional
Service	Various Service Level Agreements incl. 24/7 helpdesk available