

# Datasheet

## TheBattery™ - HighDense

### Technical Specifications

Battery type	Multiple Samsung SDI batteries using Li-ion NMC chemistry
Power Conversion System	<p>One (0.5C) or two (1C) multiple Energy Storage Inverters (ESI) of:</p> <ul style="list-style-type: none"> <li>1450 kVA @Ugrid +/- 10% T<sub>Ambient</sub> max 35°C</li> <li>1550 kVA @Ugrid +/- 5% T<sub>Ambient</sub> max 35°C</li> <li>Above 35°C ambient power derating</li> </ul> <p>Features: modularity, redundancy, high efficiency, wide range, minimal low-load losses; reduction by smart control switching off unused inverters</p>
Energy Storage Inverter Efficiency	Typical 97.2%
Transformer	Built in MV/LV transformer
Required Connection	MV 6 – 36 kV compliant with EN 50160:2010
Connection Auxiliary Power	<p>3P + N 63A 230/400Vac; compliant with EN 50160:2010</p> <p>Optional: internal auxiliary power feed</p>
Frequency	50 Hz; compliant with EN 50160:2010
Earthing	<p>From grid connection</p> <p>Optional: connection of an external earthing pin</p>
System Controller and Communication	Combination of a high-end industrial controller with the RTU developed by Alfen. Various communication channels possible: local HMI, Modbus TCP/IP and Alfen's TheBattery Connect back office platform for remote monitoring and control. Platform offers flexible and open standard interfacing to the customer's Energy Management System.
Operational Modes of System Controller	Peak shaving, Energy trading (P/Q Control), Secondary Reserve, Frequency Response Service, Micro-grid and Black start (depending on availability of auxiliary power) Combination of black start with internal auxiliary power feed is a custom made option.
Operating Temperature Range	<p>-20°C to + 40°C</p> <p>Optional: temperature range extension (-40°C)</p>
Climatization	Air-conditioned battery compartment, liquid cooled inverter compartment
Standards	NEN3140, NEN3840, ISO9001, ISO14001, ISO 27001, Low Voltage Directive 2014/35/EU, EMC directive 2014/30/EU, Batteries directive 2006/66/EU, HD IEC 60364: 2005, NEN 1010: 2015, IEC 61439-2: 2011, EN-IEC 62477-1, EN 61000-6-2:2005, EN 61000-64:2007+A1:2011, IEC 62619: 2017, IEC 60947, IEC 61439, IEC 62271-100, IEC 62271-102, IEC 62271-103, IEC 62271-200. Road and sea transport ADR class 9, UN 3536, UN 3481 (Lithium-ion Batteries in equipment)

#### NOTE

Other system configurations upon request.  
 Subject to misprints, errors and technical modifications.  
 Values based on standard test conditions.  
 \* Alignment with Alfen NV required.



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Noise level	80(A) at 1 meter, optionally 60(A) at 1 meter
Warranties	2 year product warranty Battery capacity performance guarantee up to 10 years (depending on load profile)
Operation & Maintenance	Various Service Level Agreements available (Bronze, Silver, Gold, Platinum)
Type of enclosure	Containerized integrated solution
IP-value of enclosure	IP54
Dimensions (l x w x h)	40ft: 12.19m x 2.44m x 2.89m
System weight	40,000 - 41,600 kg
System battery capacity	max 3105 kWh (1C) - 3692 kWh (0.5C); other solutions are possible with Alfen's modular, integrated, multiple container solution

## Example configurations

Type	Battery capacity (kWh)	Power kVa (35°C, Ugrid +/- 5%)	Power kVa (35°C, Ugrid +/- 10%)	Container type (ft)	System weight (kg)
TB-40-3105	3105	3100	2900	40	40,000
TB-40-3692	3692	1,550	1450	40	41,600

### NOTE

Above is an indication of 2 sized systems which are possible with Alfen's TheBattery HighDense. Being a fully modular system however, the sizing of any given system can be subject to change due to the specific requirements of the project in question.



### Alfen B.V.

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